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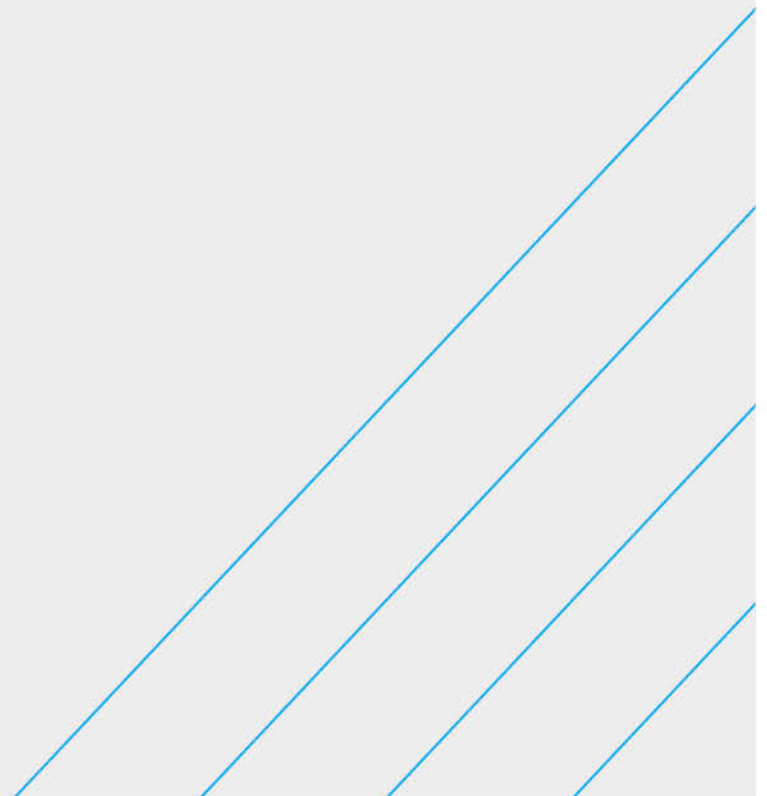
Sterling Shipyard Remediation and Infill Project

90% Environmental Remediation Design Report

Prepared for:

Vancouver Fraser Port Authority

October 21, 2021



Signature Page

Prepared By:

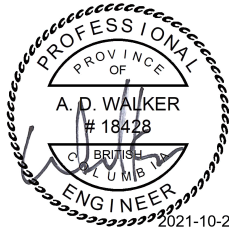



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Executive Summary

As authorized by the Vancouver Fraser Port Authority (port authority), SNC-Lavalin Inc. (SNC-Lavalin) has provided design and permitting consulting services for the Sterling Shipyard Remediation and Infill Project (Project) at the former Sterling Shipyard facility, located at 2089 to 2095 Commissioner Street (Site), on the southern shore of the Inner Vancouver Harbour, within port authority lands in Vancouver, BC.

The Site is approximately 1.1 hectares (ha) in size. The Site includes an upland area (0.5 ha), and undeveloped intertidal and subtidal areas (0.6 ha). Numerous environmental investigations, completed since 1992, identified hydrocarbon, metal and polychlorinated biphenyls (PCB) contamination across the Site, attributed to fill containing debris and woodwaste, a former boatway and ancillary facilities.

Consistent with port authority's mandate to protect the environment and vision for sustainable operations, the port authority considered multiple remedial options for the Site as presented in SNC-Lavalin's Remedial Option Evaluation (ROE) report dated 2019, and selected a 'full source removal' approach of remedial excavation of contaminated sediment in the intertidal area within a proposed sheet pile enclosure along the foreshore. The remediation will be followed by Site redevelopment by infilling the intertidal area to raise the Site grade and create about 0.5 ha of usable industrial land.

During the 30% geotechnical and structural design in early 2021, it was concluded that installation of a sheet pile wall would not be feasible due to the density of underlying soils. Rather, construction of a rock berm was selected as the preferred alternative. Despite this change and the resultant requirement to additionally remediate a portion of the subtidal area to enable construction of the rock berm, the remedial objectives of the Project remain unchanged and have been designed to:

- › remove known and inferred sediment contamination within the Project extent and dispose of the contaminated sediment off-Site;
- › support Site redevelopment, so that the remediated and infilled areas meet applicable regulatory criteria for the reclaimed land;
- › minimize long term monitoring requirements for post remedial groundwater and seepage (porewater) conditions; and
- › mitigate the potential need for operating a groundwater cut off trench in the upland area of the Site.

This report outlines the 90% remediation design for the Project, including the following major components, summarized as follows:

Execution Methodology and Requirements

The Project aims to remove contaminated sediments exceeding applicable remedial targets and underlying geotechnically unsuitable sands by excavation within the intertidal area. Contaminated sediments within the designed rock berm in the subtidal area will be remediated by dredging. When possible, excavated material should be 'hot loaded' for direct off-Site disposal. Sediment in the subtidal area will be mechanically dredged and drained before being loaded for off-Site disposal.

SNC-Lavalin will collect limited confirmatory samples from the remediation limits. The samples will be analyzed to confirm that constituent concentrations at the Project limits are less than the remedial targets. Should residual contaminated sediments and/or post remedial groundwater or porewater quality exceed regulatory criteria appropriate for the redeveloped land use, the residual contaminants will be managed through risk assessment.

Contaminated Material Disposal

Based on environmental investigation results to date, all contaminated materials removed during the remediation will be transported off-Site as exceeding BC *Contaminated Sites Regulation*¹ (CSR) Industrial Land Use (IL) standards but below BC *Hazardous Waste Regulation*² (HWR) standards. The material must be disposed at licensed facilities pre-approved by the port authority.

Remedial Extents and Volumes

The remedial extents, volume estimates and contaminated sediment disposal classification have changed since the ROE through subsequent phases of design. The changes were driven by constructability considerations and additional environmental investigation findings obtained from supplemental work completed in 2021. The table below summarizes the changes and presents the 90% design parameters.

Summary of Remedial Extents and Volumes and Contaminant Classification

Phase of Project	Remedial Design Parameters							
	Extent (m ²)	Intertidal Area				Subtidal Area		
		Volume (m ³)				Extent (m ²)	Volume (m ³)	
		>CL	Geotechnically Unsuitable	HW	Total		> CL and Geotechnically Unsuitable	HW
ROE	3,300	10,000	-	800 to 6,000	16,000	-	-	-
30%	3,300	9,100	-	2,200	11,300	-	-	-
60%	3,300	10,700	700	600	12,000	3,200	5,500	0
90%	3,300	11,300	700	0	12,000	3,400	6,000	0

"-" denotes the parameter was not considered or design was in progress.

Key Considerations for Project Schedule and Water Management

The Project construction is planned to start in the second quarter of 2022 and conclude in the first quarter of 2023. Details on Project timelines and the timing of remediation related activities will be in part dependent on the contractor's approved schedule. The Project schedule will also be dependent on excavation and dredging production rates, methods of contaminated material transport/disposal, water treatment/discharge performance, limitations on sediment removal during certain times, days, or seasons due to tidal considerations or waterway uses, and other construction and engineering aspects. The sequence of construction is expected to be at the discretion of the contractor subject to acceptance by the port authority and compliant with requirements of the Project Construction Environmental Management Plan (CEMP).

The Project contractor must implement construction methods and schedule that minimize water management requirements, including managing groundwater and seepage that can infiltrate and accumulate in the intertidal excavation area, and reducing dredge water generation during construction in the subtidal area. This includes performing the intertidal area remediation during summer months and/or at a time of year when high tide conditions are less frequent and incorporating efficient remediation and backfilling sequence to minimize the generation of water and maintain safe and uninterrupted progress of operations. The water management plan will be part of the contractor's execution plan to be approved by the port authority.

The Project Class A cost estimates will be submitted to the port authority under separate cover.

¹ *Contaminated Sites Regulation* (CSR), B.C. Reg. 375/96, includes amendments up to B.C. Reg. 64/2021, March 11, 2021.

² *Hazardous Waste Regulation* (HWR), B.C. Reg. 64/2021 / effective March 11, 2021.

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1 Introduction

SNC-Lavalin Inc. (SNC-Lavalin) has prepared this report in support of 90% design requirements of the Sterling Shipyard Remediation and Infill Project (Project) for the former Sterling Shipyard site, located at 2089 to 2095 Commissioner Street, Vancouver (the “Site”). This report builds upon the information presented in SNC-Lavalin’s 60% Environmental Remediation Design Report dated August 31, 2021 (SNC-Lavalin 2021a report) and incorporates additional environmental investigation results to provides an overview of the design basis and key remediation considerations and assumptions for the 90% design phase of the Project. The Project Class A cost estimates will be submitted to the port authority under separate cover.

1.1 Project Background and Understanding

1.1.1 Site Settings

The 1.1 hectares (ha) Site is located between the Lafarge Ready Mix concrete plant to the east, and the former Marco Marine Container Inc. (“Marco”) facility to the west, which is currently used for surface parking by various nearby companies. The City of Vancouver (COV) Victoria Drive combined sewer outfall is located west of the Site and discharges into Burrard Inlet. The Site includes an upland area (0.5 ha), and undeveloped intertidal and subtidal areas (0.6 ha) including a beach formerly occupied by the shipyard boatway extending to beyond the low tide line. For ease of reference in this report, the intertidal area is defined as the approximate area located between bathymetric elevation contours 5.00 m and 0.5 m Chart Datum (CD). The subtidal area is defined as the area north of bathymetric elevation contour 0.5 m CD. The remaining area within the Site boundary is defined as the upland area. A Site plan showing the general area and defining the approximate boundaries of upland, intertidal and subtidal areas is included as Drawing 677011-402.

1.1.2 Previous Environmental Studies

Numerous environmental investigations, completed since 1992, identify hydrocarbon, metal and polychlorinated biphenyls (PCB) contamination across the Site, associated with fill containing debris and/or woodwaste, and the former boatway and ancillary facilities. The accumulated conclusions from phases of intrusive and risk assessments, targeted remedial excavations (upland area), groundwater and seep water monitoring and toxicity testing, hydrogeological modelling studies, and an objective expert peer review indicated the following:

- › Contaminated sediments and a seep within the intertidal area posed unacceptable ecological risk;
- › No unacceptable risks were predicted for future industrial workers at the Site under both current conditions and a future development scenario within infilling of the intertidal area; and
- › Soil contamination (metals and hydrocarbons) and woodwaste fill material can remain (be managed in place) across the upland area. The contaminants may impose constraints for future development (i.e., additional disposal costs, limitations on building design or placement of utilities, generation of methane gas requiring subslab ventilation under buildings).

The port authority carefully considered multiple remedial options for the Site based on the SNC-Lavalin Remedial Option Evaluation (ROE) report¹, and selected a ‘full source removal’ approach of remedial excavation of contaminated sediment followed by Site redevelopment by infilling over the intertidal area and installation of a sheet pile wall to raise the grade and reclaim additional land (Option 3C of the ROE). No remedial work is planned for the upland area. During the 30% design phase it was determined that the conceptual sheet pile wall was not feasible due to the geotechnical condition encountered in the area. The port authority subsequently reviewed several recommended seawall alternatives and determined that the preferred seawall will comprise a rock-filled berm in place of the sheet pile wall.

The Project is expected to remove contaminated (exceeding applicable regulatory criteria) sediments and geotechnically unsuitable material by excavation within the intertidal area, and by dredging within the extent of the down-current toe of berm construction in the subtidal area. The removed materials will be disposed of off-Site at licensed facilities approved by the port authority. Structural fills will be placed to bring the intertidal remediated area up to a grade that is generally level with the adjacent property west of the Site.

¹ *Remedial Option Evaluation - Former Sterling Shipyard*, prepared by SNC-Lavalin, dated March 12, 2019.

2 Regulatory Framework

The Site is located within port authority jurisdiction; environmental quality at the Site is governed by federal legislation and supporting regulations and guidelines. However, as a matter of best practice, it is port authority's policy that environmental remediation and related site development work also be conducted to meet requirements of provincial legislation and municipal requirements in which the Site resides. Specific sediment guidelines and standards applicable to the remediation component of the Project are discussed below.

2.1 Sediment Guidelines

The Canadian Council of Ministers of the Environment (CCME) sediment quality guidelines (SQG) for the protection of aquatic life are applicable for characterizing sediment quality at the Site. There are two CCME SQGs: Interim Sediment Quality Guidelines ("ISQG", derived from Threshold Effects Levels [TELS]), and Probable Effects Levels (PELs). The ISQG represents concentrations below which adverse biological effects are rarely expected. The PEL represents the lower limit of the range of chemical concentrations that are usually or always associated with adverse biological effects. TELs and PELs are based on statistically derived percentiles from a database of co-occurrence data (i.e., biological effects and sediment chemistry), which includes studies containing both effects and no-effects biological data. An exceedance of the ISQG values should not be interpreted that concentrations will cause an adverse effect; rather, they are intended to assist in identifying situations that have the potential to be harmful to aquatic life.

A joint federal and provincial sediment technical committee was established in 1998 to harmonize procedures for assessing and managing contaminated sediments in BC. The committee included representatives from Environment Canada (currently Environment and Climate Change Canada), Fisheries and Oceans Canada, and BC Ministry of Water, Land and Air Protection (currently Ministry of Environment and Climate Change Strategy). As a result, the Criteria for Managing Contaminated Sediments in British Columbia (CMSCBC) were published in 2003 and subsequently became the current BC *Contaminated Sites Regulation*² (CSR) schedule 3.4 Generic Numerical Sediment Standards. The CSR Numerical Sediment Standards incorporate a more recent scientifically-based approach and present the harmonized numerical criteria values accepted by federal and provincial regulators, for application at both federal and provincial sites in BC. Hence, the CSR sediment standards are applicable to sediments at the Site.

The CSR sediment standards provide freshwater and marine/estuarine standards for sensitive and typical uses. The sensitive standards provide a relatively high level of protection for sediment dwelling organisms (i.e., sediment concentrations below the sensitive standards have a relatively low probability of a >20% effect of observing sediment toxicity); suitable for the near-term recovery of the benthic ecosystem where such habitat already exists. Whereas the typical sediment standards provide a moderate level of protection and are appropriate for industrial sites where sensitive components of the aquatic ecosystem are not present (and there is a 50% chance of a >20% effect); suitable for the longer-term recovery of the benthic ecosystem in such scenarios. The Site has been surrounded by former and active industrial operations since the early 1900s. The Site and neighbouring facilities, including the COV Victoria Drive sewer outfall, have all contributed to the industrialized nature of Burrard Inlet. Therefore, the CSR typical

² *Contaminated Sites Regulation* (CSR), B.C. Reg. 375/96, includes amendments up to B.C. Reg. 64/2021, March 11, 2021.

sediment standards are the appropriate and relevant guidelines for establishing Site-specific remediation objectives based on the history and adjacent land use, and were used to evaluate sediment analytical data and characterize sediment conditions.

The remedial strategy for the Project is to conduct a remedial excavation of contaminated sediments in the current intertidal area, within the planned permanent rock berm enclosure to be constructed north of the originally anticipated Project footprint. Contaminated sediments within the down-current toe of the rock berm (in the subtidal area) will be remediated by dredging. The planned Site redevelopment will include a compensatory habitat constructed in the current subtidal area and on the north side of the rock berm to enhance marine biodiversity and aquatic productivity. Although there are currently no recognized sensitive habitats in provincial or municipal land use plans in the area, the habitat is expected to create new ecologically productive areas and promote colonization of benthic invertebrates. Given the above and as a matter of best practice to support the Project, applicable regulatory criteria (herein referred to as the “Applicable Guidelines”) applied to existing sediment data obtained from the Site are as follows:

Current Intertidal Area – CSR typical sediment standards.

Current Subtidal Area – CSR typical and sensitive sediment standards.

CCME PELs which are similar to CSR typical sediment standard values, are also included within tabulated analytical results of this report for informational purposes.

2.2 Soil Guidelines

Schedule 3.4 Section 1 of the CSR defines sediment as “*particulate material that usually lies below water*”. Since the upland area of the Site is not usually under water, the CSR sediment standards and PELs used for the subtidal and intertidal areas do not apply to the uplands. Historical soil analytical results obtained from the lower uplands directly south of the intertidal area, have been compared to the CSR soil matrix standards for industrial land use (IL) considering Site-specific factors. The results are included in attached data tables and drawings to inform accumulated results of Site characterization for different areas.

The CSR IL standards are also used to establish off-Site disposal objectives for the contaminated sediment during the Project.

2.3 Soil Disposal and Hazardous Waste Management Guidelines

Disposal of contaminated sediments during the remediation has been evaluated using BC CSR soil IL standards. Provisions outlined in the BC *Hazardous Waste Regulation*³ (HWR) specify processes for storage, transport and/or treatment of material considered Hazardous Waste (HW). Sediment, soil, groundwater or porewater on a site may be classified as HW based on the contaminant concentration defined in the HWR and within the definition of “Dangerous Goods” under the federal *Transportation of Dangerous Goods Regulations*⁴ (TDGR). The relevant administrative requirements within the HWR would be applicable when/if material classified as HW is transported off site.

³ *Hazardous Waste Regulation* (HWR), B.C. Reg. 64/2021 / effective March 11, 2021.

⁴ *Transportation of Dangerous Goods Regulations* (TDGR) (Canada), SOR/2001-286, last amended on February 19, 2020.

3 Design Basis

The basis of design, including the remediation principle, and design rationale, criteria and assumptions informing management, contracting, costing and execution risk considerations, is outlined below.

3.1 Design Objectives

To support port authority's mandate for environment protection and sustainable operations, the remedial design objectives for the Project are to:

- › remove known and inferred hydrocarbon, metal and PCB contamination in sediment present within the Project extent and dispose of the contaminated sediment off-Site;
- › support the Site redevelopment, thus the remediated and infilled intertidal and subtidal areas meet the CSR Industrial Land Use (IL) soil standards applicable for the creation of new industrial land;
- › minimize long term monitoring requirements for post remedial groundwater and seepage (porewater) conditions; and
- › eliminate the potential need for operating a groundwater cut off trench at the northern end of the upland area.

3.2 Design Consideration and Approach

All available relevant data indicative of the current Site condition was utilized to develop the remediation design parameters to support port authority's remedial objectives. The Project was initially based on construction of a sheet pile retaining wall to support the development work. However, during the initial phases of design it was concluded that installation of a sheet pile wall would not be feasible due to the density of underlying soils. Rather, construction of a rock berm was selected as the preferred alternative; hence an additional investigation was required to obtain sediment characterization data within the footprint of the proposed rock berm seawall. To this end, SNC-Lavalin conducted a sediment quality investigation in the subtidal area of the Site in February 2021 to assess the degree and extent of contaminated sediment requiring removal during the planned rock berm construction. The investigation results were included in the SNC-Lavalin 2021a memorandum (included in Appendix II). To allow greatest tender pricing certainty pertaining to the overall contaminated material management strategy, the port authority also authorized SNC-Lavalin to complete a supplementary sediment investigation in August 2021 designed to obtain HW characterization data in the intertidal area. A summary of this investigation and associated environmental data and conclusions is included in Appendix I. Findings from the above-mentioned investigations were used to optimize remediation design parameters and inform cost estimating for the Project, including the updated overall remedial extents, volume estimate, and management methodology presented in the following sections.

3.2.1 Site Conditions

The substrate within the Project footprint generally comprises fill material including sand and gravel with varying compositions of woodwaste and silt overlying native marine sands followed by dense glacial till-like silt, sand and/or gravel. The surface characteristics of the Site and surrounding areas were documented by a bathymetric and topographic survey in November 2020 and incorporated into applicable drawings contained in this report.

The majority of the sediment contamination was found within a surficial thin gravelly sand and underlying woodwaste mixed with silt/sand (collectively “fill layer”). There is a low degree of variability in contaminant distribution in the fill layer. Supported by multiple lines of evidence (i.e., chemistry data, previous drill sampler refusal and limited Standard Penetration Testing penetration in till-like soils), polycyclic aromatic hydrocarbons (PAH), metal or PCB contaminants identified in the unconsolidated substrate have not appreciably penetrated into the underlying till formation.

The data was interpolated and extrapolated to estimate the vertical extent of contamination in the intertidal area (lateral extents are defined by adjacent property boundaries to the east and west, and by general high and low water lines to the south and north, respectively, and as defined by applicable drawings). The proposed vertical and lateral remedial extents in the subtidal area are driven by construction requirements for the rock berm, and the vertical remedial extent is limited by the presence of till-like silt, sand and/or gravel unit which is encountered from 0.3 m to 3.4 m below the existing seabed across the investigated subtidal area. Due to this constraint, the upper till unit at a localized area (i.e., at the westernmost borehole investigated, BH21-05), located directly north of the former Marco site, may not be removed by the planned subtidal area dredging remediation. The contaminant concentrations that may be left in place in this limited area include arsenic, copper, lead, and zinc greater than Applicable Guidelines that are vertically delineated at the location at approximately 2.4 m below the sea floor.

Drawing 509211-602 provides an overview of the current conditions in the upland, intertidal and subtidal areas, and the proposed remedial extents. Grain size distribution results and sediment chemistry data compared to Applicable Guidelines and are summarized in Tables 1 to 6 for the subtidal area, and Table 7 to 11 for the intertidal area. Historical upland soil data obtained from portions of the uplands immediately south and adjacent to the intertidal area are also provided in Tables 12 to 15 for reference.

3.2.2 Key Assumptions

Key assumptions associated with remediation execution and post remediation evaluation are outlined below.

3.2.2.1 Remediation Execution

The contaminated sediment within the intertidal area will be removed by excavation using land based earthmoving equipment and by shoring along the east, west and south boundaries of the excavation. The excavation will need to be conducted during periods of low tide to reduce water inflow to the work area. Geotechnically unsuitable marine sand below the woodwaste within the intertidal area will be also excavated for removal to meet subsequent infilling requirements, as outlined in applicable SNC-Lavalin geotechnical design reports/plans for the Project. Segregation of known contaminated sediments and underlying sand at depth (comprising about 5% of the total in situ volume to be removed) will not be effective, and the sand will likely be mixed with disturbed sediment/fill material during excavation. The excavated material should be ‘hot loaded’ for direct off-Site disposal if feasible, depending on the physical condition of the material and transport arrangement.

Sediment contamination present in fill within the subtidal area will be mechanically dredged and dewatered (further discussed in Section 3.4.1.2), and subsequently loaded for disposal. Based on results obtained from the February 2021 investigation, the laboratory-reported moisture content of subtidal sediment samples of the fill layer was generally low (between 10% and 20%) as consistent with visual observations during sampling activities. Therefore, physical stabilization of the dredged material before transport off-Site is unlikely required. However, to adequately address potential Project risks (further discussed in Section 3.5

below), physical stabilization should be considered by the port authority as a contingency measure for remediation (i.e., a payment and performance measurement item for the contractor).

The contractor's Project execution plan must indicate how excavation/dredging using machine controlled equipment will use available AutoCAD data files, the expected level of accuracy of machine controlled equipment, and the methods planned to monitor, validate, and adjust to improve the accuracy of machine controlled equipment execution. The contractor will be provided with survey control points with AutoCAD files showing topographic layers and applicable Universal Transverse Mercator (UTM) coordinates. The control points must be validated and used throughout construction by the contractor.

Based on environmental investigation results, all removed materials will be considered contaminated over Applicable Guidelines and classified as exceeding CSR IL standards but below HWR standards for off-Site disposal at a licensed and port authority-approved facilities. A summary of analytical data representative of in situ sediment conditions within the Project footprint and compared to applicable disposal standards is provided in the SNC-Lavalin memorandum included in Appendix I.

Acceptance requirements and tipping fees for contaminated woodwaste can vary significantly between disposal facilities. Therefore, to the extent practicable, segregation of the woodwaste from over or underlying sediment layers as it is being removed for transport should be considered by the contractor to manage disposal costs.

3.2.2.2 Confirmation of Remediation Sampling

SNC-Lavalin will collect limited confirmatory sediment samples with the assistance of the contractor, from the final limits of remediation. The samples will be analyzed by a certified analytical laboratory to confirm if constituent concentrations greater than the remedial targets remain present. The confirmatory sampling will be limited to pre-established locations where previous investigations did not 'delineate' the contamination, or areas where significant sediment resuspension were observed to occur. A location plan of the proposed confirmatory samples for the intertidal and subtidal areas is included on Drawings 509211-603 and 509211-604.

The sampling plan outlines the confirmatory sampling and contingency action decision framework, which describes how the confirmatory sampling will be conducted; i.e., sampling density and locations, chemical analyses, and sampling intervals. The framework also describes the decision process and methodology for determining when a defined portion of the Site meets remedial targets or requires contingency further removal. The sampling plan and the framework document will be used to guide the contractor to identify proper equipment and manpower required for supporting this work and develop the respective cost estimate.

3.2.2.3 Post Remediation Performance Verification

Based on the ROE and other preceding studies that considered attenuation modelling results, a groundwater cut off trench across the southern end of the upland area would only be required for no or partial source removal remedial options. Given the full source removal and infilling approach for the Project, a cut off trench constructed to intercept and divert groundwater flowing from the current upland area into the future infilled intertidal area would not be required to reduce the flux of potential contaminated groundwater at the foreshore.

Upon completion of the Project, the groundwater condition within the infilled area is anticipated to improve over time, as the source of historic contaminated porewater flux (contaminated materials) in the area would be remediated to meet Applicable Guidelines by the modified Option 3C method. The post development

scenario is expected to enhance attenuation of seepage/groundwater concentrations of the Site and reduce toxicity risks from the exposure pathway to aquatic receptors. Post remedial performance monitoring of groundwater within the infilled intertidal area and porewater⁵ from the newly formed intertidal area (i.e., the north face of the rock berm seawall) will be required.

Four multilevel groundwater monitoring wells were previously planned to be installed at locations spatially representative of the remedial extent. The number and final locations of the wells and porewater sampling stations will be determined in consultation with the port authority based on the outcome of the construction and remediation. The monitoring results will be used to demonstrate that the water quality has improved to meet appropriate provincial/federal numerical standards and guidelines or to an acceptable level that results in sufficient attenuation of porewater discharge at the foreshore to be considered protective of ecological receptors from chronic toxicity. At this time, three rounds of sampling, collected seasonally, are recommended as the initial sampling program.

Should residual contaminated sediments be identified due to access constraints or unforeseen circumstances during remediation, and/or post remedial groundwater or porewater quality exceed regulatory criteria appropriate for the redevelopment land use, the remaining contaminants will be managed through risk assessment. The scope and schedule of risk assessment will be discussed with the port authority at that time.

3.3 Design Parameter Description

3.3.1 Remediation Extents and Volumes

SNC-Lavalin used the characterization data, rock berm design/construction requirements and constraints to estimate the extent and volume of contaminated sediment to be removed. The design extents and remedial volumes are based on existing delineation of the vertical extent of contamination and additional contingency (generally up to an extra 1 m depth) to account uncertainty informed by in situ chemistry data and inferred stratigraphy. Drawings 677011-403 to 677011-405 illustrate the plan view and cross-sections of the planned remediation extents for both subtidal and intertidal areas.

The contractor must perform progress survey verification of the remedial extents to validate the effectiveness and precision of machine control execution, and to minimize excavation/dredging beyond the specified limits and provided in the electronic AutoCAD files, or a port authority agreed upon change in remedial limits (if required). SNC-Lavalin may complete quality assurance surveys to confirm contractor's survey results.

3.3.1.1 Intertidal Area

Sediments were contaminated to beyond 3 m depth with metals (copper, lead, mercury and zinc), PAH, and PCB across the intertidal area. In summary:

- › The anticipated excavation extent encompasses an area of about 3,300 m².
- › The maximum depth of remedial excavation is roughly 5 m below the current surface. The average depth of excavation is 3.5 m.

⁵ Porewater monitoring was not required based on the original Option 3C due to the sheet pile wall enclosure.

- › The estimated total in situ excavation volume is about 12,000 m³, comprising about 11,300 m³ of contaminated intertidal sediment, and 700 m³ of underlying geotechnically unsuitable and potentially contaminated marine sand.

The entire volume will be classified as greater than the BC CSR IL soil standards for disposal.

According to Toxicity Characteristic Leaching Procedure (TCLP) testing results of sediment samples of various compositions and concentrations, the sediment quality did not exceed HWR standards. As such, no HW is expected for the excavated substrate.

3.3.1.2 Subtidal Area

As stated in Section 3.2, the remedial extent in the subtidal area is driven by the construction need for the rock berm and limited by the presence of till-like soil between 0.3 m to 3.4 m below the sea floor. Since approximately 90% of the proposed construction footprint contains PAH, metal and PCB-contaminated sediment exceeding Applicable Guidelines, to support practical dredging without excessive and potentially costly sludge segregation, all the dredged material will be considered contaminated for off-Site disposal. In summary:

- › The anticipated dredging extent of subtidal sediment remediation encompasses about 3,400 m².
- › The maximum dredging depth is approximately 3.4 m below the existing sea floor. The average dredging depth is 1.7 m.
- › The estimated total in situ volume of contaminated subtidal sediments is about 6,000 m³.

Based on environmental investigation results including supporting TCLP testing data, the entire volume will be classified as greater than the BC CSR IL soil standards and less than BC HWR standards for disposal.

3.3.1.3 Summary

Due to external constraints and corresponding design considerations and in light of the results from recent supplemental work, the remedial extents and volume estimates and contaminated sediment classification have changed since the ROE through subsequent phases of design to support the full source removal objective for remediation. The changes are summarized below.

Table A: Summary of Remedial Extents and Volumes and Contaminant Classification

Phase of Project	Remedial Design Parameters							
	Intertidal Area					Subtidal Area		
	Extent (m ²)	Volume (m ³)				Extent (m ²)	Volume (m ³)	
		>CL	Geotechnically Unsuitable	HW	Total		> CL and Geotechnically Unsuitable	HW
ROE	3,300	10,000	-	800 to 6,000 ⁽¹⁾	16,000	-	-	-
30%	3,300	9,100	-	2,200 ⁽²⁾	11,300	-	-	-
60%	3,300	10,700	700	600 ⁽³⁾	12,000	3,200	5,500	0
90%	3,300	11,300	700	0	12,000	3,400	6,000	0

“-“ denotes the parameter was not considered or design was in progress.

⁽¹⁾ – due to the lack of TCLP data, the maximum HW volume estimate was based on approximate contaminant volume greater than 10X BC CSR IL standards.

⁽²⁾ – up to 20% of the contaminated material volume was assumed to be HW.

⁽³⁾ – 5% of the total contaminated sediment volume was estimated to be HW.

3.3.2 Remediation Schedule

The port authority plans to release the Project's invitation to tender in Q1 2022, and to start the construction in Q2 2022 for target completion in Q1 2023. Details on Project timelines and the timing of remediation related activities are not available and will be in part dependent on the contractor's submitted schedule. The sequence of construction is expected to be at the discretion of the contractor to be accepted by the port authority, to allow for a productive worksite that mitigates health, safety, environment and community risks or impacts, and is compliant with the Project Construction Environmental Management Plan (CEMP).

The Project schedule will consider methods of contaminated material transport/disposal, water treatment/discharge performance, and other construction and engineering aspects. The remediation duration will be affected by:

- › Excavation and dredging production rate and the timing with tides.
- › Contractor's timing and sequencing of work between the rock berm construction and infilling and compaction of the intertidal area.
- › Limitations on sediment removal during certain times, days, or seasons due to tidal considerations or waterway uses.
- › Project water management efficacy.
- › Constraints related to the rate of transport/disposal for removed sediments and imported engineered fill, including all probable modes of interim and final transportation (conveyor, pipeline, barge, dump truck or railcar).
- › Other non-production requirements such as resuspension control to minimize contaminated residuals (further discussed below in Section 3.4.2).

3.4 Remediation Performance Considerations

Contingent upon qualified contractor proposals for remediation equipment, construction sequence, method and siting for transport, treatment and disposal, several aspects of the Site condition may present uncertainty and risks to implement the Project, as discussed below.

3.4.1 Excavation and Dredge Water Management

The following outlines the principal requirements for excavation and dredge water management by the contractor. Redundancy and additional capacity may reduce treatment bottlenecks; however, there may be limitations due to available space or other restrictions unconfirmed at present. A conceptual layout plan of probable laydown and operation areas is included as Drawing 070-010-GA-003, which can be considered by the contractor to assess spatial requirements for scope-specific equipment and process.

3.4.1.1 Intertidal Area

The rock berm seawall will be constructed with the same permeability throughout. Therefore, should the rock berm be constructed concurrently with intertidal area remediation, seawater will freely seep through the rock berm to the intertidal area. Porewater/groundwater inflow is also expected within the intertidal area from excavations, and from the east and west sides bordering the Lafarge property and former

Marco facility, respectively. Estimated theoretical seepage rate ranges at each of these interfaces for a 1 m thick cross section are as follows:

Estimated Seepage Range – North Portion of Intertidal Area

Inflow Source	Seepage Rate (L/minute)
East Side	4 to 24
West Side	8 to 44
Bottom	0 to 2
Total	12 to 70

Estimated Seepage Range – South Portion of Intertidal Area

Inflow Source	Seepage Rate (L/minute)
East Side	1 to 12
West Side	6 to 32
Bottom	0 to 2
Total	7 to 46

The flux of water from the above sources will be highly dependent on excavation and backfilling method, rate and sequence, area and depth being excavated, tidal condition and weather/seasonal variations. If the sediment is significantly disturbed or water is overly entrained in the sediment during removal, the sediment may lose shear strength and become slurry-like ('fluid sediment'), which may trigger undesirable dewatering efforts prior to transport off-Site.

We expect the sediment removal in the intertidal area to be implemented by the contractor during low tide periods to reduce water inflow to the work area and circumvent excavation and management of fluid sediment. According to available predictive tools (e.g., US Environmental Protection Agency guidance), the estimated solids content of the fluid sediment (if it occurs) would be 10% to 20% by weight⁶. As such, for a slurry of fluid sediment at 10% to 20% solids by weight, approximately four volumes of water is entrained with every volume of in situ sediment removed. If the remediated material must be in a dewatered condition prior to transport for off-Site disposal, effective active or passive dewatering will be needed, and the excess water should be considered contaminated with hydrocarbons, metals and PCB, and will require treatment prior to discharge or disposal.

3.4.1.2 Subtidal Area

Water will be generated during mechanical dredging in the subtidal area, requiring dewatering and management of the resultant water. It is expected that contractor's dredge operators will hold filled clamshell or environmental buckets over water for one to two minutes to minimize the amount of water being loaded for subsequent management and/or direct transport/disposal. The contractor shall outline its water management and analytical testing plan for acceptance by the port authority prior to any discharge activities. If the dredged sediment must be in a dewatered condition prior to transport off-Site, an effective physical separation through a hydrocyclones or filter press/belt press will be needed.

⁶ Based on an assumed ratio of parts entrained water to parts in-situ sediment 4:1 to 5:1.

3.4.1.3 Project Water Discharge Compliance

Subject to port authority's approval, water meeting CCME Guidelines for Protection of Aquatic Life (WQG_{AL}) would not be considered a deleterious substance as defined by the Fisheries Act and may be discharged into Burrard Inlet. Alternatively, discharge of Project water may potentially occur into the COV sanitary sewer system. To utilize this option, a Waste Discharge Permit is required under the COV *Sewer and Watercourse Bylaw No. 8093* and the Greater Vancouver Sewerage and Drainage District (GVS&DD) *Sewer Use Bylaw No.299, 2007*.

Discharge of treated effluent to permitted locations on or off-Site and discharge criteria will require pre-approval by authorities having jurisdiction according to Project and Environmental Review (PER) approval by the port authority. A detailed description of the wastewater management requirements is provided in the Project CEMP. The treatment and discharge arrangement proposed by the contractor must strictly comply with the regulatory requirements during the duration of the Project. The temporary water treatment facility, if set up on-Site, may include equipment such as (but not necessarily limited to) holding/settlement tanks, oil/water separation equipment and filtration/adsorption media designed to efficiently remove contaminants of concern to meet discharge requirements. The facility must meet Project construction production rate to avoid considerable changes to sediment removal approach and water treatment infrastructure, which can affect remedial costs and schedule.

The contractor will be responsible for operation and maintenance of the treatment facility, and quality control (QC) of compliance monitoring of treatment and discharge. SNC-Lavalin will perform quality assurance (QA) monitoring, including submitting necessary effluent samples for independent laboratory testing at a specified frequency to validate the treatment system performance and inform any prompt improvements needed for operations.

3.4.1.4 Contractor Water Management Requirements

The contractor will be responsible for managing all Project water during construction execution, including management of groundwater and seepage into the intertidal excavation area, and reducing dredge water generation during construction in the subtidal area. The contractor shall implement construction methods and schedule that minimize the water management requirements. This includes performing the intertidal area remediation during summer months and/or at a time of year when high tide conditions are less frequent, developing an effective water management plan by incorporating appropriate remediation and backfilling sequence to minimize the generation of water and maintain safe and uninterrupted progress of operations. Project water that cannot be kept away from entering the remediation footprint must be collected by the contractor for analytical testing. Water not meeting the CCME WQGAL guidelines must not be discharged into Burrard Inlet and must undergo on-Site treatment and/or be disposed of appropriately off-Site to ensure regulatory and PER compliance. Discharging of treated water must be implemented following the CEMP requirements. The water management scheme must include a water treatment and discharge train capable of handling the water volume and quality commensurate with contractor's execution plan. The water management plan is considered as part of the contractor's execution plans to be reviewed and approved by the port authority.

3.4.2 Control Measures for Contaminant Release

Contaminated materials and water generated from the Project works have the potential to cause adverse effects. Major mitigation measures to circumvent impacts that can negatively affect Project performance, schedule and cost are summarized below.

3.4.2.1 Intertidal Area

Porewater/groundwater that can infiltrate and accumulate during remediation in the central portion of the intertidal area are expected to contain light non-aqueous phase liquid (LNAPL). This will require corresponding management to comply with applicable Project permit and regulatory requirements, and to contain and/or retain the LNAPL to avoid cross-contaminating underlying native soil or adjacent engineered backfill (if already in place) and spreading of LNAPL to surrounding areas.

3.4.2.2 Subtidal Area

During sediment removal by dredging in the subtidal area, suspended (particulate) and dissolved contaminant releases to water column of the foreshore area are directly linked to control of sediment resuspension. These contaminants will need to be managed using containment enclosures to contain or direct the movement of resuspended sediment for treatment. Appropriate operational and engineered controls shall be implemented to decrease contaminated sediment residuals and increase final removal accuracy (i.e., vertical extent of remediation). These may include sequencing sediment removal from upslope to downslope of the sea floor and up-current to down-current, executing multiple removal lifts (where required), and using physical barriers around the sediment removal operation, including silt curtains or similar barriers.

3.4.3 Contaminated Sediment Transport and Disposal

To the extent practicable, the removed sediments should be transported for direct off-Site management (treatment and disposal at a permitted receiving facility). Transport may involve several different technologies or modes of transport. Where possible, the removal, treatment and transport workflow system should be designed by the contractor to have as few rehandling operations as possible, in order to decrease risks and cost. The contractor must follow the CEMP to ensure that any on-Site offloading/staging/laydown areas are not cross-contaminated during operations, such as using aprons and catch basins if losses are expected. Community concerns regarding odour, dust, noise, lighting, and other issues must also be considered as part of the contractor's Project execution plan.

The need for utilizing a temporary holding area on the Site for removed contaminated sediments will be reduced or eliminated should contaminated materials be able to be hot loaded for off-Site disposal. Physical measures to control releases of semi-volatile substances (PAH) or suspended runoff from removed sediments during the remediation and off-Site transport must be conducted in strict accordance with the CEMP and applicable regulations and laws.

3.4.4 Uncertainty

Uncertainties which may limit remediation performance may include: land and water access for necessary support equipment considering water depths, slopes of the sediment surfaces and shoreline stability; land and shore-based survey controls to achieve an acceptable level of precision (to limit over-excavation and dredging); presence and extent of large buried debris; allowable navigation traffic (if barges are used); and habitat (environmental windows precluding work in some areas of the Site). Other potential performance 'bottlenecks' requiring special attention to evaluate contractors' proposals may include:

- › Undersized or ineffective facilities or equipment (in any steps of the operation).
- › Undersized offloading or transport capacity for removed sediments and imported engineered fill.
- › Insufficient numbers of barges (if used) for shuttling materials from the Site to offloading facilities and return (i.e., importing engineered fill back to the Site).
- › Inadequate access to or availability of roads, railways, and/or docks.
- › Regional or local limitations on rail or barge transportation infrastructure.
- › Limitations for moving operations in and out of enclosures and/or moving such enclosures (e.g., silt curtains).

The contractor must supply, operate and maintain a thoroughly evaluated system to address the above elements. Under most conditions, it will not be economically justifiable to have support equipment and/or personnel lie idle for extended periods. The contractor must adequately control throughput such that the remedial operation is not constrained and performance requirements related to Project schedule can be met.

3.5 Balanced Risk Allocation

The allocation of remediation risks in the eventual tender documents and contract between the port authority and contractor can have a significant impact on a contractor's tender price and the Project cost. Examples of potentially unbalanced risks include: unachievable over-removal allowances (i.e., removal beyond specified extents thereby increasing disposal quantities), weather, and, making the contractor responsible for achieving remedial target concentrations without additional compensation for contingency actions (e.g., when and where 'chasing' may be required in the intertidal area at the port authority's discretion based on confirmatory sampling results). When risk is unbalanced between the port authority and contractor, and the higher risk is assigned to the contractor, contractors will account for the increased risk in their tender prices. If required by the port authority, SNC-Lavalin will assist with developing preferred performance and payment measurement specifications, assessing an acceptable contingency appropriate to components of potential concern, and/or reviewing and challenging contracting strategies and cost estimates derived for the Project in order to reveal other methods, approaches or identified risks (cost, efficacy and schedule) to the benefit of the port authority.

4 References

Documents pertaining to environmental aspects of the Site are listed below:

- › *Phase I ESA*, Golder Associates Ltd., dated 1992, prepared for the City of Vancouver.
- › *Environmental Audit of Portions of Stewart Street and the Property at the Foot of Cambridge Street*; prepared by Envirochem Special Projects, dated 1992, prepared for VPA.
- › *Report of Findings - Soil, Sediment and Groundwater Investigation, Sterling Shipyard Site, 2089 Commissioner Street, Vancouver, B.C.*, dated May 1997, prepared by Keystone Environmental.
- › *Phase II Environmental Site Assessment, Sterling Shipyards, Vancouver, BC*, report dated July 1999, prepared by Hemmera Resource Consultants Ltd.
- › *Baseline Summary Report, Proposed Vancouver Harbor Ready Mix Concrete Plant, V, BC* dated June 2001, prepared by Hemmera Envirochem Inc. for Lafarge Canada Inc.
- › *Delineation Investigation, Sterling Shipyards, Commissioner Street, Vancouver, BC*, dated February 2003, prepared for Hemmera Envirochem Inc. for VPA.
- › *Intertidal Habitat Survey, Proposed Vancouver Lafarge Vancouver Harbour Batch Plant*, July 2001, Prepared by Aqualibrium Environmental Consulting Inc. (Aqualibrium, 2001).
- › *Groundwater Ecological Risk Assessment and Proposed Sediment Investigation Strategy, Former Sterling Shipyard Site, Vancouver, BC*, dated March 2003 prepared by EVS Environment Consultants for VPA.
- › *Detailed Site Investigation Sterling Shipyards 2089 Commissioner Street, Vancouver, BC*, dated November 2005, prepared by Hemmera Envirochem Inc.
- › *Supplemental Site Investigation Former Sterling Shipyards Site Vancouver Port Authority*, dated December 5, 2006, prepared by Golder Associates Ltd.
- › *Subtidal Sediment Quality Investigation Former Sterling Shipyard, Vancouver, BC*, dated January 14, 2006, prepared by Golder Associates Ltd.
- › *Supplementary Detailed Site Investigation, Risk Assessment and Remedial Plan, Former Sterling Shipyards Site, Vancouver Fraser Port Authority*, dated Sept 2009, prepared by Golder Associates, (Golder, 2009a).
- › *Confirmation of Uplands Remediation (Phase 1) - Former Sterling Shipyards, Vancouver, BC*, dated September 16, 2009, prepared by Golder Associates Ltd. (Golder, 2009b).
- › *Work Plan and Cost Estimate for Remedial Plan Development, Former Sterling Shipyards Site, Vancouver, BC*, dated May 28, 2012, prepared by SNC-Lavalin Inc. (SNC-Lavalin, 2012a).
- › *Project Update on Intertidal Area Investigation, Former Sterling Shipyard Site, Vancouver, BC* memorandum dated November 13, 2012, prepared by SNC-Lavalin Inc. (SNC-Lavalin, 2012b).
- › *Additional Investigation of Intertidal Area, Former Sterling Shipyard Site, Vancouver BC* Technical Memorandum, dated May 23, 2013, prepared by SNC-Lavalin. (SNC-Lavalin, 2013a).
- › *Re: Biophysical Survey of the Former Sterling Shipyard Site, Vancouver, BC*, dated June 13, 2013, prepared by Balanced Environmental. (Balanced Environmental, 2013).

- › *Additional Upland Soil Vapour and Groundwater Sampling Results, Former Sterling Shipyard Site, Vancouver, BC*, Technical Memorandum, dated August 15, 2013, prepared by SNC-Lavalin. (SNC-Lavalin, 2013b).
- › *Groundwater Model of the Sterling Shipyard Site in Vancouver, British Columbia* dated May 16, 2013, prepared by DHI Environment. (DHI, 2013a).
- › *Updated Groundwater Model of the Sterling Shipyard Site in Vancouver, British Columbia*, dated December 5, 2013, prepared by DHI Environment. (DHI, 2013a).
- › *Technical Review of Ecological Risk Assessment Work for (former) Sterling Shipyards Draft* dated August 6, 2013, prepared by Azimuth Consulting Group Partnership.
- › *Human Health Risk Assessment Update, Former Sterling Shipyard Site, Vancouver, BC* Technical Memorandum, dated June 5, 2014, prepared by SNC-Lavalin (SNC-Lavalin, 2014a).
- › *Fish and Fish Habitat Assessment for Sterling Shipyard Intertidal Reclamation*, dated May 13, 2014, prepared by SNC-Lavalin. (SNC-Lavalin, 2014b).
- › *Conceptual Intertidal Habitat Offset Plans for Remediation of the Former Sterling Shipyard Site*, dated July 25, 2014, prepared by SNC-Lavalin Inc. (SNC-Lavalin, 2014c).
- › *Preliminary Geotechnical Review and Recommendations*, prepared by SNC-Lavalin, dated November 28, 2014 (SNC-Lavalin, 2014d).
- › *Sterling Shipyard Remedial Planning – Summary*, Technical Memorandum dated July 6, 2015, prepared by SNC-Lavalin (SNC-Lavalin, 2015a).
- › *Order of Magnitude Costs for Construction Options – Former Sterling Shipyards, Vancouver, BC*, prepared by SNC-Lavalin, dated December 21, 2015 (SNC-Lavalin, 2015b).
- › *Results of Groundwater and Intertidal Seepage Water Sampling Event, Former Sterling Shipyard, 2089 Commissioner Street, Vancouver, BC*, prepared by SNC-Lavalin, dated February 21, 2019. (SNC-Lavalin, 2019).
- › *Remedial Options Evaluation, Former Sterling Shipyard*, prepared by SNC-Lavalin, dated March 12, 2019 (ROE).
- › *Sterling Shipyard Remediation and Infill Project – 30% Environmental Remediation Design Report*, prepared by SNC-Lavalin, dated April 15, 2021.
- › *Sterling Shipyard Remediation and Infill Project – 60% Environmental Remediation Design Report*, prepared by SNC-Lavalin, dated August 31, 2021 (SNC-Lavalin 2021a).

5 Notice to Reader

This report has been prepared and the work referred to in this report have been undertaken by SNC-Lavalin Inc. (SNC-Lavalin) for the exclusive use of Vancouver Fraser Port Authority (port authority), who has been party to the development of the scope of work and understands its limitations. The methodology, findings, conclusions and recommendations in this report are based solely upon the scope of work and subject to the time and budgetary considerations described in the proposal and/or contract pursuant to which this report was issued. Any use, reliance on, or decision made by a third party based on this report is the sole responsibility of such third party. SNC-Lavalin accepts no liability or responsibility for any damages that may be suffered or incurred by any third party as a result of the use of, reliance on, or any decision made based on this report.

The findings, conclusions and recommendations in this report (i) have been developed in a manner consistent with the level of skill normally exercised by professionals currently practicing under similar conditions in the area, and (ii) reflect SNC-Lavalin's best judgment based on information available at the time of preparation of this report. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our original contract and included in this report. The findings and conclusions contained in this report are valid only as of the date of this report and may be based, in part, upon information provided by others. If any of the information is inaccurate, new information is discovered, site conditions change or standards are amended, modifications to this report may be necessary. The results of this assessment should in no way be construed as a warranty that the subject site is free from any and all environmental impact.

Any soil and rock descriptions in this report and associated logs have been made with the intent of providing general information on the subsurface conditions of the site. This information should not be used as geotechnical data for any purpose unless specifically addressed in the text of this report. Groundwater conditions described in this report refer only to those observed at the location and time of observation noted in the report.

This report must be read as a whole, as sections taken out of context may be misleading. If discrepancies occur between the preliminary (draft) and final version of this report, it is the final version that takes precedence. Nothing in this report is intended to constitute or provide a legal opinion.

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TABLE 1: Summary of Analytical Results for Sediment - Grain Size

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Grain Size		
				Gravel %	Sand %	Silt/Clay %
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	44	39	18
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.2	19	66	15
	BH21-02-02	2021 02 24	1.5 - 1.7	13	84	3
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	26	53	22
	BH21-03-04	2021 02 24	3.5 - 3.7	7	57	36
BH21-04	BH21-04-02	2021 02 24	1.6 - 1.8	11	60	30
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	20	54	27
	BH21-05-02	2021 02 24	1.5 - 1.7	19	50	31
	BH21-05-03	2021 02 24	2.4 - 2.5	5	55	41
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	3	60	37
	BH21-06-07	2021 02 25	4.0 - 4.1	2	57	42
BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	5	50	46

Associated ALS file(s): VA21A3477.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

TABLE 2: Summary of Analytical Results for Subtidal Sediment - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Monocyclic Aromatic Hydrocarbons					Gross Parameters			Methyl Tert-butyl Ether [MTBE] (µg/g)	Petroleum Hydrocarbon Fractions				
					Benzene (µg/g)	Ethyl-benzene (µg/g)	Toluene (µg/g)	Xylenes (µg/g)	Styrene (µg/g)	VPH (C6-C10) (µg/g)	LEPH (C10-C19) (µg/g)	HEPH (C19-C32) (µg/g)		F1-BTEX (µg/g)	F2 (>C10-C16) (µg/g)	F3 (>C16-C34) (µg/g)	F4 (>C34-C50) (µg/g)	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	5	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	620	< 0.200	-	-	-	-	
	BH21-01-03	2021 02 24	2.0 - 2.1	60	-	-	-	-	-	-	< 200	< 200	-	-	-	-	-	
BH21-02	BH21-02-02	2021 02 24	1.5 - 1.7	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-02-04	2021 02 24	4.3 - 4.4	15	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-03-04	2021 02 24	3.5 - 3.7	220	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	< 200	< 200	< 0.200	< 5	< 30	< 50	< 50	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	10	0.0072	< 0.015	< 0.050	< 0.075	< 0.050	< 10	270	1,280	< 0.200	-	-	-	-	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	0	-	-	-	-	-	-	320	1,220	-	-	-	-	-	
	BH21-05-02	2021 02 24	1.5 - 1.7	50	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	260	< 0.200	-	-	-	-	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	35	0.0127	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	780	< 0.200	-	-	-	-	
	BH21-06-07	2021 02 25	4.0 - 4.1	230	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	40	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-07-04	2021 02 25	2.1 - 2.3	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BC Standard																		
CSR Marine and/or Estuarine Sediment (MR) ^b - Sensitive					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CSR Marine and/or Estuarine Sediment (MR) ^c - Typical					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Federal Guideline																		
CCME CEQG Probable Effect Level (PEL) ^d					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

SHADED Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b Pathways Included: Sensitive Site.

^c Pathways Included: Typical Site.

^d Guideline to protect marine aquatic life.

TABLE 3: Summary of Analytical Results for Subtidal Sediment - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (YYYY-MM-DD)	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																						
				Naphthalene µg/g	Methylnaphthalene, 1- µg/g	Methylnaphthalene, 2- µg/g	Methylnaphthalene, 1&2- µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Acridine µg/g	Fluoranthene µg/g	Pyrene µg/g	Benz(a)anthracene µg/g	Chrysene µg/g	Benzo(b)fluoranthene µg/g	Benzo(b+j)fluoranthene µg/g	Benzo(b+j+k)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenz(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	Quinoline µg/g
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	0.110	0.038	0.039	-	0.0606	0.154	0.131	0.797	0.297	< 0.070	2.12	2.56	0.577	0.594	-	0.901	1.21	0.313	0.680	0.374	0.103	0.373	< 0.010
	BH21-01-02	2021 02 24	1.4 - 1.6	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-01-03	2021 02 24	2.0 - 2.1	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	0.107	0.116	0.099	0.215	0.096	0.179	0.198	1.01	0.439	< 0.050	1.28	1.79	0.742	0.819	-	1.28	1.74	0.460	0.994	0.599	0.146	0.594	< 0.050
	BH21-02-02	2021 02 24	1.5 - 1.7	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	0.018	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
	BH21-02-03	2021 02 24	3.2 - 3.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-02-04	2021 02 24	4.3 - 4.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	0.027	< 0.010	0.012	-	0.0994	0.0406	0.053	0.389	0.164	< 0.020	0.649	1.07	0.341	0.294	-	0.460	0.659	0.199	0.401	0.232	0.0618	0.218	< 0.010
	BH21-03-04	2021 02 24	3.5 - 3.7	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
	BH21-03-05	2021 02 24	4.9 - 5.0	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	0.167	0.118	0.108	-	0.149	0.238	0.240	1.44	0.583	< 0.100	2.75	4.11	1.42	< 1.25	-	2.37	3.22	0.854	1.82	1.05	0.274	1.03	< 0.010
	BH21-04-02	2021 02 24	1.6 - 1.8	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-04-03	2021 02 24	4.3 - 4.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	1.05	0.231	0.246	-	0.189	1.06	0.976	9.18	3.09	< 0.420	14.7	12.5	6.37	5.44	-	6.25	8.53	2.28	4.93	2.46	0.601	2.27	0.018
	BH21-05-02	2021 02 24	1.5 - 1.7	0.416	0.040	0.036	-	0.0335	0.0961	0.058	0.310	0.134	< 0.030	0.689	0.815	0.262	0.270	-	0.331	0.331	< 0.120	0.255	0.141	0.0381	0.140	< 0.010
	BH21-05-03	2021 02 24	2.4 - 2.5	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.058	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-05-04	2021 02 24	2.8 - 2.9	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	0.139	0.053	0.051	-	0.0973	0.300	0.218	0.591	0.406	< 0.060	2.02	1.57	0.524	0.609	-	0.665	0.920	0.255	0.534	0.334	0.0804	0.336	< 0.010
	BH21-06-04	Duplicate	2.3 - 2.4	0.302	0.117	0.131	0.248	0.361	0.539	0.470	2.51	1.02	< 0.200	7.43	5.95	2.17	2.18	-	2.60	3.53	0.926	2.04	1.26	0.294	1.24	< 0.050
	QA/QC RPD%				74	75	88	*	115	57	73	124	86	*	114	116	122	113	-	119	117	114	117	116	114	115
BH21-07	BH21-06-07	2021 02 25	4.0 - 4.1	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-07-01	2021 02 25	0.7 - 0.8	< 0.010	< 0.010	< 0.010	-	0.0073	0.0087	0.010	0.042	0.0164	< 0.010	0.110	0.158	0.050	< 0.060	-	0.078	0.118	0.040	0.059	0.039	0.0099	0.040	< 0.010
	BH21-07-02	2021 02 25	1.3 - 1.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-07-03	Duplicate	1.3 - 1.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
QA/QC RPD%				*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*
BH21-07-04	2021 02 25	2.1 - 2.3	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Sensitive				0.24	n/a	0.12	n/a	0.079	0.055	0.089	0.34	0.15	n/a	0.93	0.87	0.43	0.52	n/a	n/a	n/a	n/a	0.47	n/a	0.084	n/a	n/a
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical				0.47	n/a	0.24	n/a	0.15	0.11	0.17	0.65	0.29	n/a	1.8	1.7	0.83	1	n/a	n/a	n/a	n/a	0.92	n/a	0.16	n/a	n/a
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^c				0.391	n/a	0.201	n/a	0.128	0.0889	0.144	0.544	0.245	n/a	1.494	1.398	0.693	0.846	n/a	n/a	n/a	n/a	0.763	n/a	0.135	n/a	n/a

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

SHADED Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 4: Summary of Analytical Results for Subtidal Sediment - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical Parameters	Sediment Salinity				Total Metals																					
				pH	% Saturation %	Soluble Chloride mg/L	Sodium Ion µg/g	Chloride Ion µg/g	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Lithium µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Uranium µg/g	Vanadium µg/g	Zinc µg/g	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	8.02	93.3	9,020	5,510	8,420	3.76	11.9	133	0.26	0.850	30.7	8.80	215	107	15.8	346	0.319	3.24	19.5	0.42	0.34	128	7.3	1.44	63.9	182	
	BH21-01-02	2021 02 24	1.4 - 1.6	8.86	-	-	-	-	0.22	3.93	97.8	0.36	0.472	21.3	9.22	25.7	4.57	14.9	499	< 0.0500	1.14	8.58	0.34	< 0.10	58.8	< 2.0	0.556	117	63.9	
	BH21-01-03	2021 02 24	2.0 - 2.1	8.82	-	-	-	-	0.14	1.94	65.7	0.30	0.110	18.0	7.67	22.7	3.99	13.7	449	< 0.0500	0.60	8.48	< 0.20	< 0.10	39.2	< 2.0	0.402	68.9	54.3	
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	8.08	97.7	9,480	6,160	9,260	6.72	25.3	93.2	0.21	1.14	34.5	8.11	414	170	16.1	285	1.13	4.88	24.3	0.54	0.43	89.9	11.4	2.07	57.4	261	
	BH21-02-02	2021 02 24	1.5 - 1.7	8.55	27.6	9,620	1,620	2,660	0.19	2.00	32.2	< 0.10	0.102	12.9	4.86	13.5	2.32	16.1	200	< 0.0500	2.06	5.56	< 0.20	< 0.10	35.9	< 2.0	0.678	44.3	29.5	
	BH21-02-03	2021 02 24	3.2 - 3.4	9.66	-	-	-	-	0.20	1.65	79.0	0.20	0.089	15.2	5.46	17.4	3.30	6.5	213	< 0.0500	0.18	8.70	< 0.20	< 0.10	38.4	< 2.0	0.510	49.6	36.4	
	BH21-02-04	2021 02 24	4.3 - 4.4	8.91	-	-	-	-	0.21	3.40	104	0.33	0.150	24.2	9.76	20.6	7.28	14.4	606	< 0.0500	1.44	9.91	< 0.20	< 0.10	55.7	< 2.0	0.645	88.4	72.6	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	8.36	28.8	10,500	1,860	3,020	1.78	5.50	48.9	0.13	0.236	18.4	6.29	40.4	39.8	27.1	239	0.200	2.32	10.2	< 0.20	< 0.10	147	3.5	1.33	56.9	66.7	
	BH21-03-04	2021 02 24	3.5 - 3.7	9.38	36.3	466	147	169	0.20	2.70	76.4	0.26	0.081	18.2	8.31	19.0	3.47	11.2	309	< 0.0500	0.21	11.2	< 0.20	< 0.10	35.3	< 2.0	0.394	65.0	54.4	
	BH21-03-05	2021 02 24	4.9 - 5.0	9.55	-	-	-	-	0.18	1.79	100	0.34	0.080	18.8	7.44	19.4	4.09	12.4	1,730	< 0.0500	0.77	7.29	< 0.20	< 0.10	87.4	< 2.0	0.438	81.1	51.8	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	8.56	102	3,570	2,340	3,640	326	570	176	0.53	2.62	91.0	35.8	1,110	628	14.4	806	1.28	52.4	46.7	0.90	1.76	216	54.8	2.89	64.1	2,070	
	BH21-04-02	2021 02 24	1.6 - 1.8	9.80	30.4	621	156	189	0.26	2.08	55.4	0.16	0.051	11.6	4.71	14.0	2.65	4.7	178	< 0.0500	0.30	8.40	< 0.20	< 0.10	29.6	< 2.0	0.327	37.2	28.6	
	BH21-04-03	2021 02 24	4.3 - 4.4	9.23	-	-	-	-	0.19	2.74	58.4	0.27	0.142	16.3	9.00	55.2	3.46	12.3	505	< 0.0500	0.63	8.40	0.27	0.11	34.1	< 2.0	0.324	74.4	58.4	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	8.45	142	5,240	4,500	7,440	150	334	149	0.44	2.50	69.8	21.7	757	450	16.2	459	2.09	37.2	40.6	0.97	1.66	441	34.5	2.34	64.2	1,510	
	BH21-05-02	2021 02 24	1.5 - 1.7	9.13	47.5	569	266	270	33.8	74.6	236	0.28	0.500	29.1	13.3	129	120	14.6	478	0.362	5.15	16.6	< 0.20	0.31	77.8	7.8	0.842	67.5	357	
	BH21-05-03	2021 02 24	2.4 - 2.5	8.23	-	-	-	-	0.52	3.87	77.3	0.26	0.096	17.6	8.82	20.9	3.87	14.4	346	< 0.0500	0.65	8.79	< 0.20	< 0.10	37.4	< 2.0	0.438	64.9	58.4	
	BH21-05-04	2021 02 24	2.8 - 2.9	8.87	-	-	-	-	0.11	2.14	60.9	0.22	0.057	15.6	7.47	17.0	2.53	11.7	312	< 0.0500	0.49	6.86	< 0.20	< 0.10	30.7	< 2.0	0.496	52.3	50.1	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	7.79	170	8,170	8,380	13,900	1.40	5.81	68.4	0.15	1.44	25.6	6.81	99.6	104	21.8	217	1.84	6.54	16.1	0.53	0.54	70.2	12.7	2.38	65.0	194	
	BH21-06-04	Duplicate	2.3 - 2.4	7.73	-	-	-	-	1.17	5.18	55.7	0.14	0.891	18.1	5.94	67.7	62.4	19.6	192	1.20	4.60	12.4	0.39	0.37	86.4	8.4	2.04	50.5	127	
	QA/QC RPD%			1	-	-	-	-	18	11	20	*	47	34	14	38	50	11	12	42	*	26	*	37	21	41	15	25	42	
BH21-07	BH21-06-07	2021 02 25	4.0 - 4.1	9.76	-	-	-	-	0.32	1.75	82.2	0.18	0.034	14.3	5.66	16.2	3.13	5.9	222	< 0.0500	0.27	9.05	< 0.20	< 0.10	32.5	< 2.0	0.369	45.8	35.8	
	BH21-07-01	2021 02 25	0.7 - 0.8	9.29	35.2	2,980	683	1,050	1.01	2.02	51.5	0.10	0.189	10.4	4.46	37.7	36.5	5.1	223	0.0627	0.39	5.83	< 0.20	< 0.10	32.5	< 2.0	0.325	41.4	61.2	
	BH21-07-02	2021 02 25	1.3 - 1.4	9.78	41.3	910	293	376	0.17	1.67	94.9	0.21	0.105	16.2	6.71	17.5	3.61	7.8	244	< 0.0500	0.24	10.1	< 0.20	< 0.10	40.3	< 2.0	0.403	53.0	43.1	
	BH21-07-03	Duplicate	1.3 - 1.4	9.80	-	-	-	-	0.17	1.50	85.0	0.18	0.073	13.2	5.76	16.9	3.67	6.7	204	< 0.0500	0.23	8.86	< 0.20	< 0.10	32.5	< 2.0	0.338	44.9	38.3	
QA/QC RPD%			0	-	-	-	-	*	*	11	*	*	20	15	3	2	*	18	*	*	13	*	*	21	*	18	17	12		
BH21-07-04	2021 02 25	2.1 - 2.3	9.31	-	-	-	-	0.14	3.65	81.8	0.25	0.061	16.5	10.2	19.5	3.79	12.5	470	< 0.0500	0.88	9.20	< 0.20	< 0.10	38.4	< 2.0	0.382	66.4	55.6		
BC Standard																														
CSR Marine and/or Estuarine Sediment (MR) ^a - Sensitive				n/a	n/a	n/a	n/a	n/a	n/a	26	n/a	n/a	2.6	99	n/a	67	69	n/a	n/a	0.43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	170
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical				n/a	n/a	n/a	n/a	n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																														
CCME CEQG Probable Effect Level (PEL) ^c				n/a	n/a	n/a	n/a	n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

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 - Denotes analysis not conducted.
 n/a Denotes no applicable standard/guideline.
 QA/QC RPD Denotes quality assurance/quality control relative percent difference
 * RPDs are not calculated where one or more concentrations are less than five times RDL.
 RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.
^b Pathways Included: Typical Site.
^c Guideline to protect marine aquatic life.

SHADED Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
 OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
 UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 5: Summary of Analytical Results for Subtidal Sediment - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs										Polychlorinated Biphenyls, Total [PCBs] µg/g
				Aroclor 1016 µg/g	Aroclor 1221 µg/g	Aroclor 1232 µg/g	Aroclor 1242 µg/g	Aroclor 1248 µg/g	Aroclor 1254 µg/g	Aroclor 1260 µg/g	Aroclor 1262 µg/g	Aroclor 1268 µg/g		
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.062	< 0.030	< 0.010	< 0.010	0.062	
	BH21-01-02	2021 02 24	1.4 - 1.6	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-01-03	2021 02 24	2.0 - 2.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	< 0.010	< 0.010	< 0.010	< 0.010	0.153	0.257	< 0.060	< 0.060	< 0.060	0.410	
	BH21-02-02	2021 02 24	1.5 - 1.7	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-02-03	2021 02 24	3.2 - 3.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-02-04	2021 02 24	4.3 - 4.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	< 0.010	< 0.010	< 0.010	< 0.010	0.014	0.014	< 0.010	< 0.010	< 0.010	0.028	
	BH21-03-04	2021 02 24	3.5 - 3.7	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-03-05	2021 02 24	4.9 - 5.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	< 0.060	< 0.060	< 0.060	< 0.060	< 0.060	0.220	< 0.080	< 0.080	< 0.080	0.220	
	BH21-04-02	2021 02 24	1.6 - 1.8	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-04-03	2021 02 24	4.3 - 4.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.328	< 0.100	< 0.100	< 0.100	0.328	
	BH21-05-02	2021 02 24	1.5 - 1.7	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	0.091	< 0.040	< 0.040	< 0.040	0.091	
	BH21-05-03	2021 02 24	2.4 - 2.5	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-05-04	2021 02 24	2.8 - 2.9	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-06-04	Duplicate	2.3 - 2.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	QA/QC RPD%				*	*	*	*	*	*	*	*	*	
BH21-06	BH21-06-07	2021 02 25	4.0 - 4.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-07-01	2021 02 25	0.7 - 0.8	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.022	< 0.010	< 0.010	< 0.010	0.022	
	BH21-07-02	2021 02 25	1.3 - 1.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-07	BH21-07-04	2021 02 25	2.1 - 2.3	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BC Standard														
CSR Marine and/or Estuarine Sediment (MR) ^b - Sensitive				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.12
CSR Marine and/or Estuarine Sediment (MR) ^c - Typical				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.23
Federal Guideline														
CCME CEQG Probable Effect Level (PEL) ^d				n/a	n/a	n/a	n/a	n/a	0.709	n/a	n/a	n/a	n/a	0.189

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

SHADED	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
OUTLINE	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE	Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 6: Summary of Analytical Results for Subtidal Sediment - Leachable PAH and Metals

Sample Location		BH21-04	BH21-05	BC Standard
Sample ID		BH21-04-01	BH21-05-01	HWR
Sample Date (yyyy mm dd)		2021 02 24	2021 02 24	Leachate Quality Standards (HWLQ)
Parameter	Units	Analytical Results		
TCLP Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene	µg/L	-	< 0.050	1
TCLP Metals				
Arsenic	µg/L	< 1,000	-	2,500
Lead	µg/L	< 250	-	5,000
Mercury	µg/L	-	< 1.0	100

Associated ALS file(s): VA21A3477.

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QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than HWR Leachate Quality Standards (HWLQ) Standard

TABLE 7: Summary of Analytical Results for Intertidal Sediment and Soil - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Monocyclic Aromatic Hydrocarbons					Gross Parameters				Methyl Tert-butyl Ether [MTBE] µg/g	
					Benzene µg/g	Ethylbenzene µg/g	Toluene µg/g	Xylenes µg/g	Styrene µg/g	VPH (C6-C10) µg/g	(C10-C19) µg/g	(C19-C32) µg/g	Hazardous Waste Oil and Grease µg/g		
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	30	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	20	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	25	-	-	-	-	-	-	< 100	< 100	-	-	
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	-	-	-	-	-	-	-	627	1,440	-	-	
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	5	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	0	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-10-4-121210	Duplicate	3.7 - 4.0	0	-	-	-	-	-	-	< 100	< 100	-	-	
	QA/QC RPD%					-	-	-	-	-	-	*	*	-	-
	BH12-10-5-121210	2012 12 10	4.7 - 5.0	20	-	-	-	-	-	-	-	< 100	< 100	-	-
BH12-11	BH12-11-1-121211	2012 12 11	0.7 - 0.8	55	-	-	-	-	-	-	< 100	1,230	-	-	
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	45	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	5	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-11-8-121211	2012 12 11	5.3 - 5.6	10	-	-	-	-	-	-	< 100	< 100	-	-	
BH21-8	BH21-8-01	2021 08 19	0.2 - 0.5	40	0.0069	< 0.015	< 0.050	< 0.075	< 0.050	< 10	-	-	22,600	< 0.200	
	BH21-8-03	2021 08 19	1.1 - 1.5	110	< 0.0100	< 0.016	0.093	< 0.075	< 0.050	< 25	-	-	< 1,000	< 0.200	
BH21-10	BH21-10-01	2021 08 19	0.2 - 0.6	10	0.0144	0.033	< 0.050	0.177	< 0.050	< 10	-	-	7,400	< 0.200	
BC Standard															
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hazardous Waste Regulation (HWR)					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30,000	n/a	
Federal Guideline															
CCME CEQG Probable Effect Level (PEL) ^c					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

Associated ALS file(s): VA21B7750.

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

OUTLINE	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
SHADED	Concentration greater than Hazardous Waste Regulation (HWR) standard
UNDERLINE	Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical	Total Metals																					
				pH	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Lithium µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Uranium µg/g	Vanadium µg/g	Zinc µg/g	
BH06-1	BH06-1	2006 06 16	0.0 - 0.1	8.85	15	< 5	27.9	< 0.5	< 0.5	10.2	2.5	<u>178</u>	107	-	-	0.0588	< 4	8.2	< 2	< 2	-	67.3	-	15.7	109	
	12287-02	2006 06 06	0.8 - 1.1	8.44	< 10	< 5	15.4	< 0.5	< 0.5	5.7	2.1	90.3	48	-	-	0.0217	< 4	5	< 2	< 2	-	11.1	-	11.2	89.3	
BH06-2	BH06-2	2006 06 16	0.0 - 0.1	7.15	10	7.2	22.1	< 0.5	0.82	8	2.9	131	134	-	-	0.218	14.6	10.9	< 2	< 2	-	17.9	-	24.5	183	
BH06-3	BH06-3	2006 06 16	0.0 - 0.1	8.14	29	<u>44.2</u>	75.1	< 0.5	0.54	24.6	4.9	<u>624</u>	<u>372</u>	-	-	<u>2.21</u>	4.7	18.9	< 2	< 2	-	74.7	-	29.5	<u>736</u>	
BH06-4	BH06-4	2006 06 16	0.0 - 0.1	7.2	76	<u>166</u>	80	< 0.5	3	105	17.2	<u>17,400</u>	<u>4,230</u>	-	-	<u>102</u>	19.3	150	< 4	< 4	-	254	-	43.1	<u>4,720</u>	
BH06-5	BH06-5	2006 06 16	0.0 - 0.1	7.97	13	23.8	138	< 0.5	< 0.5	32.5	5.6	<u>2,050</u>	<u>383</u>	-	-	<u>1.21</u>	5.1	27.8	< 2	< 2	-	117	-	33.1	<u>711</u>	
	12278-03	2006 06 14	3.8 - 4.1	7.62	< 10	< 5	52.5	< 0.5	< 0.5	8.5	4.1	10.3	< 30	-	-	0.0075	< 4	5.4	< 2	< 2	-	< 5	-	27.6	25.1	
BH06-6	BH06-6	2006 06 16	0.0 - 0.1	7.81	51	<u>162</u>	338	< 0.5	2	54.4	9.3	<u>3,540</u>	<u>1,940</u>	-	-	<u>18</u>	11	46.3	< 2	< 2	-	74.3	-	37.8	<u>2,600</u>	
	BH06-2d	Duplicate	0.0 - 0.1	7.7	90	<u>214</u>	409	< 0.5	<u>4.55</u>	67.3	12.4	<u>3,110</u>	<u>2,180</u>	-	-	<u>9.37</u>	18.4	71.2	< 2	< 2	-	129	-	41.2	<u>3,700</u>	
QA/QC RPD%				1	55	28	19	*	78	21	29	13	12	-	-	63	*	42	*	*	-	54	-	9	35	
BH06-7	BH06-7	2006 06 16	0.0 - 0.1	6.9	47	<u>71.7</u>	99	< 0.5	1.31	59.7	6.9	<u>4,570</u>	<u>3,520</u>	-	-	<u>18.9</u>	22	35.4	< 2	< 2	-	77.3	-	37.1	<u>1,650</u>	
	12289-02	2006 06 07	1.5 - 2.3	6.8	15	10.7	31.1	< 0.5	0.75	14.5	2.7	<u>576</u>	<u>190</u>	-	-	<u>2.52</u>	27	13.7	< 2	< 2	-	14.4	-	14	<u>418</u>	
	12289-03	2006 06 07	2.3 - 2.6	8.66	< 10	< 5	25.8	< 0.5	< 0.5	15	4.2	14.7	< 30	-	-	0.0706	< 4	7.8	< 2	< 2	-	< 5	-	26.3	37	
BH06-8	BH06-8	2006 06 16	0.0 - 0.1	8.09	131	<u>51.7</u>	113	< 0.5	0.79	39.5	6	<u>1,700</u>	<u>1,130</u>	-	-	<u>3.57</u>	5.7	24	< 2	< 2	-	170	-	36	<u>1,040</u>	
	12289-04	2006 06 07	0.9 - 1.1	7.83	25	<u>47.2</u>	155	< 0.5	1.25	55.3	6.2	<u>4,490</u>	<u>771</u>	-	-	<u>7.92</u>	8	35.4	< 2	< 2	-	123	-	34.2	<u>1,030</u>	
	12289-05	Duplicate	0.9 - 1.1	7.75	29	<u>47.8</u>	143	< 0.5	0.83	49.9	5.9	<u>3,720</u>	<u>703</u>	-	-	<u>6.57</u>	6.5	21.1	< 2	< 2	-	110	-	28.3	<u>974</u>	
QA/QC RPD%				1	15	1	8	*	40	10	5	19	9	-	-	19	*	51	*	*	-	11	-	19	6	
BH06-9	BH06-9	2006 06 16	0.0 - 0.1	8.09	< 10	28.5	72.8	< 0.5	< 0.5	17.7	4.9	<u>811</u>	<u>254</u>	-	-	<u>4.28</u>	4.1	8.1	< 2	< 2	-	15.7	-	39.6	<u>428</u>	
	BH06-9d	Duplicate	0.0 - 0.1	8	10	32.1	85.1	< 0.5	< 0.5	21.9	5.2	<u>1,020</u>	<u>493</u>	-	-	<u>6.28</u>	4.8	10.3	< 2	< 2	-	18.5	-	43.2	<u>598</u>	
	QA/QC RPD%				1	*	12	16	*	*	21	6	23	64	-	-	38	*	24	*	*	-	16	-	9	33
	12289-06	2006 06 07	0.0 - 0.8	7.66	10	15.1	54.4	< 0.5	< 0.5	25.1	9.1	<u>542</u>	<u>716</u>	-	-	<u>3.88</u>	6.6	13.9	< 2	< 2	-	17.1	-	43.5	<u>445</u>	
	12289-08	2006 06 07	1.2 - 1.5	7.47	< 10	5.7	47.9	< 0.5	< 0.5	13.6	5.7	69.3	85	-	-	0.534	4.1	6.7	< 2	< 2	-	5.5	-	38.3	112	
	12289-09	2006 06 07	1.7 - 2.3	7.79	< 10	< 5	35.3	< 0.5	< 0.5	12.6	4.1	60.6	82	-	-	0.308	< 4	6.3	< 2	< 2	-	< 5	-	36.6	83.3	
12289-10	Duplicate	1.7 - 2.3	7.94	< 10	7.7	34.7	< 0.5	< 0.5	11.6	4.3	57.8	58	-	-	0.369	< 4	5.1	< 2	< 2	-	< 5	-	34.2	95		
QA/QC RPD%				2	*	*	2	*	*	8	5	5	34	-	-	18	*	21	*	*	-	*	-	7	13	
BH06-10	BH06-10	2006 06 16	0.0 - 0.1	8.29	89	<u>255</u>	125	< 0.5	1.75	54.4	12	<u>1,440</u>	<u>691</u>	-	-	<u>4.38</u>	18.5	24	< 2	< 2	-	64.6	-	46.4	<u>2,130</u>	
	12290-01	2006 06 07	0.0 - 0.8	7.83	29	<u>73.4</u>	74.3	< 0.5	< 0.5	30.9	7.8	<u>968</u>	<u>304</u>	-	-	<u>3.78</u>	7.2	13.1	< 2	< 2	-	27.5	-	51.5	<u>842</u>	
	12290-04	2006 06 07	1.5 - 1.8	7.89	65	<u>173</u>	98.3	< 0.5	1.03	37.7	11.2	<u>1,160</u>	<u>401</u>	-	-	<u>2.58</u>	9.5	12.9	< 2	< 2	-	30	-	48.6	<u>1,340</u>	
	12290-06	2006 06 07	2.3 - 2.7	8.73	< 10	6	28.2	< 0.5	< 0.5	15.6	4.9	28.9	< 30	-	-	0.0784	< 4	10.3	< 2	< 2	-	< 5	-	32.8	48	
	12290-07	2006 06 07	2.9 - 3.0	8.96	< 10	< 5	51.5	< 0.5	< 0.5	10.9	4.9	12.9	< 30	-	-	0.0091	< 4	6.4	< 2	< 2	-	< 5	-	38.3	30.2	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

Associated ALS file(s): VA21B7750.

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical		Total Metals																				
				pH	pH	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Lithium µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Uranium µg/g	Vanadium µg/g	Zinc µg/g
BH06-11	BH06-11	2006 06 16	0.0 - 0.1	7.64	26	46.1	139	< 0.5	2.05	54.6	7.1	1,720	810	-	-	8.21	6.4	27.3	< 2	< 2	-	60.3	-	46	1,380	
	12290-08	2006 06 07	0.0 - 0.8	7.71	44	63.2	104	< 0.5	1.73	51.3	7.9	2,640	999	-	-	7.55	10	31.2	< 2	< 2	-	133	-	47.5	1,910	
	12290-12	2006 06 07	2.7 - 3.0	8.51	< 10	< 5	17.9	< 0.5	< 0.5	9.1	3.6	18.8	< 30	-	-	0.0292	< 4	6	< 2	< 2	-	< 5	-	25.3	35.1	
	12291-03	2006 06 07	3.5 - 3.7	8.84	< 10	6	24.5	< 0.5	< 0.5	13	4.6	14.5	< 30	-	-	0.0215	< 4	9.3	< 2	< 2	-	< 5	-	33.9	33.2	
BH06-12	BH06-12	2006 06 16	0.0 - 0.1	7.72	18	45.1	182	< 0.5	0.6	25.4	7.6	4,630	920	-	-	28.1	5	28.9	< 2	< 2	-	45.7	-	40.5	1,280	
	12291-04	2006 06 07	0.8 - 1.5	6.92	15	19.6	48.1	< 0.5	1.28	19.8	4.9	935	286	-	-	5.57	21.3	17.3	< 2	< 2	-	12.3	-	32.8	932	
	12291-06	2006 06 07	2.3 - 2.7	7.06	< 10	< 5	12.3	< 0.5	< 0.5	6.5	2.2	47.5	42	-	-	0.4	5.6	< 5	< 2	< 2	-	< 5	-	14.5	77.3	
BH06-13	BH06-13	2006 06 16	0.0 - 0.1	7.28	20	51.9	60.4	< 0.5	0.76	22.2	5.7	1,470	359	-	-	5.98	5.5	18.2	< 3	< 2	-	40.6	-	32.3	1,070	
	12291-08	2006 06 07	0.0 - 0.8	6.71	18	105	146	< 0.5	1.01	48.6	6.6	4,500	1,150	-	-	8.32	15.7	38.5	< 2	< 2	-	577	-	38	1,680	
	12291-10	2006 06 07	1.5 - 2.1	6.65	12	53.1	76.9	< 0.5	0.84	27.9	6	9,510	1,640	-	-	5.25	38.3	37.5	< 2	< 2	-	532	-	37.8	2,080	
BH06-14	BH06-14	2006 06 16	0.0 - 0.1	7.89	53	233	488	< 0.5	2.01	66.7	14.7	6,040	1,250	-	-	12.3	24.7	35.3	< 2	< 2	-	146	-	37.6	2,820	
	12291-12	2006 06 07	1.2 - 1.4	7.48	23	198	63	< 0.5	1.19	40	6	9,920	1,040	-	-	4.5	30.2	25.9	< 2	< 2	-	62.5	-	24.5	1,940	
	12292-03	2006 06 07	2.3 - 3.1	6.79	34	48.6	28.2	< 0.5	2.15	14.6	2.3	822	716	-	-	1.91	35.9	13	< 2	< 2	-	14.5	-	11.2	983	
	12292-04	Duplicate	2.3 - 3.1	7	20	44.2	65.6	< 0.5	1.43	7.1	< 2	874	150	-	-	2.91	40.3	7.4	< 2	< 2	-	9.3	-	11.7	783	
	QA/QC RPD%				3	52	9	80	*	40	*	*	6	131	-	-	41	12	55	*	*	-	44	-	4	23
BH06-15	12292-05	2006 06 07	3.7 - 3.8	8.28	< 10	< 5	26.6	< 0.5	< 0.5	12.1	3.6	13.2	< 30	-	-	0.0477	< 4	6.8	< 2	< 2	-	< 5	-	29.8	32.5	
	BH06-15	2006 06 16	0.0 - 0.1	8.33	< 10	11.8	76.1	< 0.5	< 0.5	11.7	3	250	86	-	-	1.46	< 4	5.3	< 3	< 2	-	11.1	-	23.9	157	
	BH06-15d	Duplicate	0.0 - 0.1	8.37	< 10	8	51.2	< 0.5	< 0.5	13.3	2.5	163	70	-	-	0.514	< 4	< 5	< 2	< 2	-	< 5	-	20.1	129	
	QA/QC RPD%				0	*	38	39	*	*	13	18	42	21	-	-	96	*	*	*	*	-	*	-	17	20
BH06-16	12070-01	2006 06 08	0.9 - 1.2	8.18	< 10	27.4	65.6	< 0.5	< 0.5	16.2	3.6	464	191	-	-	2.29	< 4	7.2	< 2	< 2	-	13.6	-	27.5	372	
	12070-03	2006 06 08	2.1 - 2.2	7.97	< 10	5.7	38.4	< 0.5	< 0.5	14.4	3.7	131	97	-	-	1.07	5.4	10	< 2	< 2	-	11.8	-	33.8	171	
	BH06-16	2006 06 16	0.0 - 0.1	8.07	832	17.7	27	< 0.5	< 0.5	11.9	3.1	364	3,720	-	-	0.1	< 4	8.7	< 2	< 2	-	1,180	-	20.9	206	
	12070-07	2006 06 08	1.4 - 1.5	8.12	< 10	< 5	16.4	< 0.5	< 0.5	8.9	3.4	7.9	< 30	-	-	0.0109	< 4	6.7	< 2	< 2	-	< 5	-	22.1	22.5	
BH06-17	12070-10	2006 06 08	2.6 - 2.7	8.07	127	7.8	19.2	< 0.5	0.74	15.8	4.1	2,220	327	-	-	0.0789	18.6	13.7	< 2	< 2	-	824	-	27.3	184	
	BH06-17	2006 06 16	0.0 - 0.1	7.81	236	27.9	38.1	< 0.5	0.9	517	10.3	2,620	1,080	-	-	0.27	9.9	474	< 2	< 2	-	730	-	22.4	593	
	12071-01	2006 06 08	0.9 - 1.4	7.6	< 10	6.4	6.2	< 0.5	0.92	6.1	< 2	19.4	< 30	-	-	0.0292	28.1	5.1	< 2	< 2	-	11.9	-	10.5	102	
BH06-18	12071-02	2006 06 08	1.5 - 1.8	7.73	39	6.8	14.6	< 0.5	0.68	13	2.1	162	345	-	-	0.0405	17.5	9.1	< 2	< 2	-	96.2	-	13.9	84.5	
	BH06-18	2006 06 16	0.0 - 0.1	8.09	100	257	137	< 0.5	1.83	51.6	13.6	1,030	559	-	-	3.63	16.8	22	< 2	< 2	-	45.6	-	51.8	2,160	
	12071-08	2006 06 08	0.8 - 1.1	8.26	257	336	78.5	< 0.5	0.98	40.2	22.5	1,360	414	-	-	6.06	23.6	17.5	< 2	< 2	-	40.9	-	44	1,710	
	12071-10	2006 06 08	1.5 - 1.8	8.11	245	409	88.9	< 0.5	1.84	43.4	24	1,180	530	-	-	2.96	33.2	19.5	< 2	< 2	-	55.6	-	44.7	1,990	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

Associated ALS file(s): VA21B7750.

All terms defined within the body of SNC-Lavalin's report.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical		Total Metals																				
				pH	pH	Antimony $\mu\text{g/g}$	Arsenic $\mu\text{g/g}$	Barium $\mu\text{g/g}$	Beryllium $\mu\text{g/g}$	Cadmium $\mu\text{g/g}$	Chromium $\mu\text{g/g}$	Cobalt $\mu\text{g/g}$	Copper $\mu\text{g/g}$	Lead $\mu\text{g/g}$	Lithium $\mu\text{g/g}$	Manganese $\mu\text{g/g}$	Mercury $\mu\text{g/g}$	Molybdenum $\mu\text{g/g}$	Nickel $\mu\text{g/g}$	Selenium $\mu\text{g/g}$	Silver $\mu\text{g/g}$	Strontium $\mu\text{g/g}$	Tin $\mu\text{g/g}$	Uranium $\mu\text{g/g}$	Vanadium $\mu\text{g/g}$	Zinc $\mu\text{g/g}$
BH06-19	BH06-19	2006 06 16	0.0 - 0.1	7.78	181	581	195	< 0.5	3.17	64.6	25.2	1,510	4,370	-	-	2.59	43.9	32.7	< 2	< 2	-	62	-	57.6	4,500	
	12071-11	2006 06 08	0.8 - 1.5	7.18	33	95.2	70.1	< 0.5	0.81	48.9	11.3	1,780	1,470	-	-	7.43	20	121	< 2	< 2	-	61.9	-	97.9	1,440	
	12072-01	2006 06 08	1.5 - 1.6	7.89	130	379	160	< 0.5	1.92	57.2	18.3	863	924	-	-	0.678	25.7	24.8	< 2	< 2	-	43.1	-	48.3	2,850	
BH06-20	BH06-20	2006 06 16	0.0 - 0.1	7.31	< 10	15.2	76.5	< 0.5	< 0.5	17.8	6.8	291	136	-	-	2.58	< 4	19.8	< 2	< 2	-	16.1	-	36.8	991	
	12072-02	2006 06 08	0.0 - 0.8	7.34	< 10	26.6	97.6	< 0.5	< 0.5	21.9	7.2	309	115	-	-	2.24	< 4	21.1	< 2	< 2	-	14.2	-	42	990	
BH06-21	BH06-21	2006 06 16	0.0 - 0.1	7.91	71	247	78.3	< 0.5	2.92	72	13.2	16,500	7,360	-	-	54.1	12.1	53.6	< 2	< 2	-	127	-	35.1	5,390	
	12072-03	2006 06 08	0.0 - 0.8	8.21	60	115	107	< 0.5	1.62	102	12.3	6,040	4,210	-	-	21.2	12.3	45.7	< 2	< 2	-	83.6	-	37.4	3,200	
BH06-22	BH06-22	2006 06 16	0.0 - 0.1	7.9	75	197	296	< 0.5	1.75	56.8	11.8	2,710	1,790	-	-	6.2	14.6	25.8	< 2	< 2	-	123	-	44.3	2,870	
	12072-04	2006 06 08	0.0 - 0.6	7.44	51	171	182	< 0.5	2.02	67.1	14.9	5,290	1,940	-	-	10.1	16.8	50.9	< 2	< 2	-	124	-	43	3,310	
BH06-23	BH06-23	2006 06 16	0.0 - 0.1	8.64	16	24.6	26.3	< 0.5	< 0.5	19	4.7	608	200	-	-	0.101	4.1	15	< 2	< 2	-	76.8	-	25.2	272	
	12072-05	2006 06 08	1.1 - 1.5	6.96	45	18	25.6	< 0.5	< 0.5	22.5	5.2	407	377	-	-	0.349	9.2	21	< 2	< 2	-	146	-	24.2	288	
BH06-25	12293-12	2006 06 09	2.4 - 3.0	8.22	< 10	5.2	20.3	< 0.5	< 0.5	12.9	3.4	26.1	< 30	-	-	0.1	< 4	8.1	< 2	< 2	-	< 5	-	24.1	40.8	
BH06-26	BH06-26	2006 06 16	0.0 - 0.1	8.19	208	479	171	< 0.5	2.11	68.1	21.6	1,380	603	-	-	2.66	31.4	24.3	< 3	< 2	-	62.3	-	50.9	3,540	
BH06-27	BH06-27	2006 06 16	0.0 - 0.1	8.08	29	76	101	< 0.5	1.47	68.8	10.1	2,640	1,670	-	-	8.84	9.6	42.4	< 2	< 2	-	44.5	-	40.2	2,140	
BH06-28	BH06-28	2006 06 16	0.0 - 0.1	8.97	< 10	6.6	13.4	< 0.5	< 0.5	7.8	2.8	302	96	-	-	0.0429	< 4	5.3	< 2	< 2	-	29.6	-	15.6	148	
BH06-29	BH06-29	2006 06 16	0.0 - 0.1	7.83	79	77.6	126	< 0.5	1.21	42.2	7.1	1,340	1,140	-	-	4.49	7.9	25.8	< 2	< 2	-	204	-	37.9	1,410	
TP06-123	12267-09	2006 06 07	0.4 - 0.5	7.73	23	120	171	< 0.5	1.75	34.4	7.4	4,000	1,080	-	-	9.22	5.7	18.7	< 2	< 2	-	60.1	-	18.2	2,820	
	12267-10	Duplicate	0.4 - 0.5	7.89	79	342	263	< 0.5	3.45	79.9	16.2	4,530	1,820	-	-	9.29	21	35	< 2	< 2	-	104	-	47.9	4,470	
	QA/QC RPD%				2	110	96	42	*	65	80	75	12	51	-	-	1	*	61	*	*	-	54	-	90	45
	12268-01	2006 06 07	2.8	7.37	26	62.4	112	< 0.5	1.5	22.7	3.7	1,550	1,130	-	-	6.25	24.2	15.1	< 2	< 2	-	48.2	-	18.6	1,340	
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	8.6	0.19	4.72	30.5	< 0.4	0.345	12.7	4.76	14.6	3.94	-	165	< 0.05	1.87	11.2	< 0.5	< 0.05	157	0.22	-	29.9	37.7	
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	9.35	0.25	2.08	51.3	< 0.4	0.198	36.9	4.4	18.2	2.82	-	149	< 0.05	5.08	7.91	< 0.5	< 0.05	24.8	0.64	-	36.6	32.5	
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	8.45	0.31	1.7	43	< 0.4	0.27	9.9	5.82	19.6	2.7	-	308	< 0.05	0.26	6.83	< 0.5	0.064	17.5	0.3	-	60.1	54.5	
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	7.5	7.99	26.4	80.8	< 0.4	0.59	22.1	5	1,220	418	-	229	5.72	8.95	11.7	0.61	0.413	85.2	18.1	-	42.3	426	
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	8.89	0.14	4.24	19.4	< 0.4	0.258	9.7	4	8.73	3.05	-	149	< 0.05	1.37	8.98	< 0.5	0.052	136	0.19	-	24.3	30	
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	9.75	0.22	1.21	47.8	< 0.4	0.392	8.7	3.66	16.1	2.42	-	130	0.074	0.11	5.48	< 0.5	< 0.05	24.1	0.17	-	49.6	28.8	
	BH12-10-4-121210	Duplicate	3.7 - 4.0	9.6	0.23	2.1	52.7	< 0.4	0.26	9.6	4.46	15.5	2.69	-	144	< 0.05	0.11	6.52	< 0.5	< 0.05	25.9	0.2	-	43.5	32.9	
	QA/QC RPD%				2	*	*	10	*	40	*	20	4	*	-	10	*	*	17	*	*	7	*	-	13	13
	BH12-10-5-121210	2012 12 10	4.7 - 5.0	8.91	0.11	1.42	56.2	< 0.4	0.119	9.2	5.69	16.5	2.48	-	286	< 0.05	0.24	7.07	< 0.5	< 0.05	17	0.22	-	38.4	49.4	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

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^b Guideline to protect marine aquatic life.

TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

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				pH	Antimony $\mu\text{g/g}$	Arsenic $\mu\text{g/g}$	Barium $\mu\text{g/g}$	Beryllium $\mu\text{g/g}$	Cadmium $\mu\text{g/g}$	Chromium $\mu\text{g/g}$	Cobalt $\mu\text{g/g}$	Copper $\mu\text{g/g}$	Lead $\mu\text{g/g}$	Lithium $\mu\text{g/g}$	Manganese $\mu\text{g/g}$	Mercury $\mu\text{g/g}$	Molybdenum $\mu\text{g/g}$	Nickel $\mu\text{g/g}$	Selenium $\mu\text{g/g}$	Silver $\mu\text{g/g}$	Strontium $\mu\text{g/g}$	Tin $\mu\text{g/g}$	Uranium $\mu\text{g/g}$	Vanadium $\mu\text{g/g}$	Zinc $\mu\text{g/g}$	
BH12-11	BH12-11-1-121211	2012 12 11	0.7 - 0.8	5.85	8.42	11.3	61	< 0.4	1.25	11.3	3.36	70.1	<u>151</u>	-	164	<u>0.855</u>	27.1	12.3	1.18	0.333	101	17.7	-	28.1	<u>557</u>	
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	8.5	0.27	3.66	11.4	< 0.4	0.257	4.9	2.78	4.94	2.94	-	118	< 0.05	1.49	4.64	< 0.5	< 0.05	41.3	0.35	-	18.1	24.4	
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	9.63	< 0.1	1.86	54.1	< 0.4	0.107	8.6	4.1	10.4	2.46	-	168	< 0.05	0.17	5.3	< 0.5	< 0.05	25.6	0.17	-	32.5	27.5	
	BH12-11-8-121211	2012 12 11	5.3 - 5.6	8.92	0.13	1.61	53.9	< 0.4	0.257	12.8	7.81	21.9	3.62	-	378	< 0.05	0.39	8.41	< 0.5	0.095	23.6	0.33	-	53.6	65.6	
BH21-8	BH21-8-01	2021 08 19	0.2 - 0.5	8.24	61.4	<u>294</u>	51.8	0.16	2.67	73.6	29.6	<u>15,600</u>	<u>4,270</u>	7.5	507	<u>52.1</u>	12.6	66.5	1.18	1.80	269	148	1.67	48.8	<u>5,820</u>	
	BH21-8-02	Duplicate	0.2 - 0.5	8.42	43.5	<u>284</u>	63.7	0.14	3.18	82.6	15.1	<u>14,600</u>	<u>3,620</u>	5.7	434	<u>61.9</u>	8.09	43.4	0.98	1.64	375	80.5	1.43	39.2	<u>5,450</u>	
	QA/QC RPD%				2	34	3	21	*	17	12	65	7	16	*	16	17	44	42	*	9	33	59	15	22	7
	BH21-8-03	2021 08 19	1.1 - 1.5	6.81	8.88	12.8	21.3	< 0.10	1.08	11.2	1.44	<u>184</u>	76.8	2.4	64.3	<u>1.02</u>	29.4	10.8	0.88	0.31	109	10.6	21.1	28.0	<u>335</u>	
	BH21-8-04	2021 08 19	2.3 - 2.7	8.48	0.54	4.33	29.5	0.14	0.228	12.2	4.86	<u>34.2</u>	10.1	11.4	217	<u>0.0978</u>	2.07	9.67	< 0.20	< 0.10	77.5	< 2.0	1.03	36.7	66.4	
BH21-9	BH21-9-01	2021 08 19	0.3 - 0.5	7.32	1.78	4.16	36.0	< 0.10	0.248	14.7	4.88	<u>280</u>	34.2	22.6	200	<u>0.871</u>	2.05	8.86	< 0.20	0.12	47.8	< 2.0	1.14	42.7	<u>324</u>	
	BH21-9-02	2021 08 19	1.4 - 1.7	8.57	0.88	4.56	36.4	0.16	0.309	14.8	4.91	71.2	14.8	11.0	204	0.236	2.20	10.6	0.24	< 0.10	96.0	< 2.0	1.00	37.0	121	
	BH21-9-03	2021 08 19	2.4 - 2.9	9.13	0.36	4.17	55.0	0.26	0.205	16.6	5.40	32.3	7.26	9.5	206	0.0703	1.53	10.8	< 0.20	< 0.10	96.4	< 2.0	0.971	42.1	58.6	
BH21-11	BH21-11-01	2021 08 19	0.5 - 0.9	8.28	8.76	23.3	72.0	< 0.10	1.28	28.3	6.29	<u>4,060</u>	<u>869</u>	11.6	254	<u>31.6</u>	4.14	17.5	< 0.20	0.35	123	13.6	0.872	43.9	<u>1,220</u>	
	BH21-11-02	Duplicate	0.5 - 0.9	8.36	8.52	26.3	63.5	< 0.10	0.547	15.9	6.65	<u>1,800</u>	<u>471</u>	12.9	264	<u>10.9</u>	2.64	10.5	< 0.20	0.16	99.1	5.3	0.794	39.3	<u>623</u>	
	QA/QC RPD%				1	3	12	13	*	80	56	6	77	59	11	4	97	44	50	*	*	22	*	9	11	65
	BH21-11-03	2021 08 19	1.4 - 1.8	8.36	0.24	4.03	19.9	< 0.10	0.165	8.52	3.36	11.5	6.01	7.9	184	0.133	1.46	6.11	< 0.20	< 0.10	34.3	< 2.0	0.982	25.6	27.8	
	BH21-11-04	2021 08 19	2.3 - 2.9	9.31	0.27	1.68	39.3	0.16	0.329	13.2	4.43	18.5	3.44	5.6	179	< 0.0500	0.22	7.63	< 0.20	< 0.10	38.1	< 2.0	0.516	48.6	32.7	
BH21-12	BH21-12-01	2021 08 19	0.8 - 1.1	5.58	18.4	25.8	39.3	< 0.10	1.93	30.0	7.72	<u>462</u>	<u>276</u>	5.7	301	<u>1.58</u>	28.8	43.9	0.89	0.20	91.6	17.3	10.1	32.0	<u>1,160</u>	
	BH21-12-02	2021 08 19	1.7 - 2.0	8.20	0.21	3.16	19.1	< 0.10	0.178	6.76	2.95	5.21	2.82	6.6	140	< 0.0500	1.11	5.07	< 0.20	< 0.10	25.8	< 2.0	1.06	18.4	20.5	
	BH21-12-03	2021 08 19	2.9 - 3.4	8.94	0.25	3.47	45.7	0.20	0.150	16.6	7.10	24.1	5.89	8.2	268	< 0.0500	1.34	10.6	< 0.20	< 0.10	88.9	< 2.0	0.640	46.7	43.6	
BH21-13	BH21-13-04	2021 08 19	3.7 - 4.2	9.58	0.21	2.21	52.4	0.17	0.062	13.7	5.36	13.6	3.02	4.5	180	< 0.0500	0.25	10.5	< 0.20	< 0.10	38.8	< 2.0	0.385	41.7	31.2	
BH21-14	BH21-14-01	2021 08 20	0.2 - 0.5	8.87	18.6	<u>52.7</u>	62.9	< 0.10	0.520	23.0	5.30	<u>630</u>	<u>462</u>	6.3	264	<u>1.85</u>	6.08	20.4	< 0.20	0.16	191	17.0	0.976	25.3	<u>893</u>	
	BH21-14-02	2021 08 20	1.1 - 1.4	8.21	30.6	<u>104</u>	85.5	< 0.10	2.35	<u>212</u>	14.6	<u>11,400</u>	<u>2,840</u>	3.0	548	<u>42.1</u>	14.4	98.8	0.65	0.98	444	122	1.65	21.3	<u>4,050</u>	
	BH21-14-03	Duplicate	1.1 - 1.4	8.15	23.1	<u>103</u>	111	< 0.10	1.78	95.1	13.8	<u>8,900</u>	<u>2,000</u>	3.9	476	<u>34.8</u>	15.7	81.3	0.37	0.57	518	81.8	1.16	19.0	<u>3,880</u>	
	QA/QC RPD%				1	28	1	26	*	28	76	6	25	35	*	14	19	9	19	*	53	15	39	35	11	4
BH21-14	BH21-14-04	2021 08 20	2.0 - 2.5	6.98	1.82	2.87	8.36	< 0.10	0.271	1.44	0.25	24.4	17.4	< 2.0	28.7	0.0727	17.8	1.38	0.30	< 0.10	68.0	< 2.0	1.79	3.18	69.6	
	BH21-14-05	2021 08 20	3.7 - 4.1	9.23	0.15	1.76	69.4	0.25	0.028	15.2	7.88	18.1	4.60	9.1	311	< 0.0500	0.45	12.1	< 0.20	< 0.10	35.4	< 2.0	0.356	59.7	49.2	
BH21-15	BH21-15-03	2021 08 20	1.5 - 2.0	9.05	0.14	2.58	23.0	0.14	0.063	11.4	4.45	13.3	2.84	14.3	216	< 0.0500	0.92	6.53	< 0.20	< 0.10	45.6	< 2.0	0.628	57.8	30.1	
BH21-16	BH21-16-03	2021 08 20	2.3 - 2.6	9.00	0.12	2.89	59.6	0.24	< 0.020	16.2	8.22	20.8	3.83	9.5	313	< 0.0500	0.39	8.40	< 0.20	< 0.10	36.9	< 2.0	0.394	67.4	48.7	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

Associated ALS file(s): VA21B7750.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE

Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE

Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 10: Summary of Analytical Results for Intertidal Sediment and Soil - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs										Polychlorinated Biphenyls, Total [PCBs] µg/g	
				Aroclor 1016 µg/g	Aroclor 1221 µg/g	Aroclor 1232 µg/g	Aroclor 1242 µg/g	Aroclor 1248 µg/g	Aroclor 1254 µg/g	Aroclor 1260 µg/g	Aroclor 1262 µg/g	Aroclor 1268 µg/g			
BH06-1	12287-02	2006 06 06	0.8 - 1.1	-	-	-	-	-	-	-	-	-	-	< 0.13	
BH06-7	12289-03	2006 06 07	2.3 - 2.6	-	-	-	-	-	-	-	-	-	-	< 0.05	
BH06-8	12289-04	2006 06 07	0.9 - 1.1	-	-	-	-	-	-	-	-	-	-	2.57	
	12289-05	Duplicate	0.9 - 1.1	-	-	-	-	-	-	-	-	-	-	4.66	
	QA/QC RPD%				-	-	-	-	-	-	-	-	-	58	
BH06-9	12289-09	2006 06 07	1.7 - 2.3	-	-	-	-	-	-	-	-	-	-	< 0.05	
	12289-10	Duplicate	1.7 - 2.3	-	-	-	-	-	-	-	-	-	-	< 0.05	
	QA/QC RPD%				-	-	-	-	-	-	-	-	-	*	
BH06-10	12290-04	2006 06 07	1.5 - 1.8	-	-	-	-	-	-	-	-	-	-	0.796	
	12290-07	2006 06 07	2.9 - 3.0	-	-	-	-	-	-	-	-	-	-	< 0.05	
BH06-11	12290-12	2006 06 07	2.7 - 3.0	-	-	-	-	-	-	-	-	-	-	< 0.05	
BH06-12	12291-06	2006 06 07	2.3 - 2.7	-	-	-	-	-	-	-	-	-	-	< 0.05	
BH06-13	12291-10	2006 06 07	1.5 - 2.1	-	-	-	-	-	-	-	-	-	-	3.12	
BH06-14	12291-12	2006 06 07	1.2 - 1.4	-	-	-	-	-	-	-	-	-	-	32.1	
	12292-03	2006 06 07	2.3 - 3.1	-	-	-	-	-	-	-	-	-	-	0.52	
	12292-04	Duplicate	2.3 - 3.1	-	-	-	-	-	-	-	-	-	-	3.32	
	QA/QC RPD%				-	-	-	-	-	-	-	-	-	146	
BH06-19	12071-11	2006 06 08	0.8 - 1.5	-	-	-	-	-	-	-	-	-	-	0.672	
BH06-21	12072-03	2006 06 08	0.0 - 0.8	-	-	-	-	-	-	-	-	-	-	14	
BH06-22	12072-04	2006 06 08	0.0 - 0.6	-	-	-	-	-	-	-	-	-	-	4.6	
BH21-8	BH21-8-01	2021 08 19	0.2 - 0.5	< 0.030	< 0.030	< 0.030	< 0.030	24.7	18.6	2.10	< 0.030	< 0.030	< 0.030	45.4	
	BH21-8-02	Duplicate	0.2 - 0.5	< 0.028	< 0.028	< 0.028	< 0.028	12.8	11.4	1.20	< 0.028	< 0.028	< 0.028	25.4	
	QA/QC RPD%				*	*	*	*	63	48	55	*	*	56	
	BH21-8-03	2021 08 19	1.1 - 1.5	< 0.010	< 0.010	< 0.010	< 0.010	0.085	0.035	< 0.010	< 0.010	< 0.010	< 0.010	0.120	
BH21-8-04	2021 08 19	2.3 - 2.7	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		
BH21-10	BH21-10-01	2021 08 19	0.2 - 0.6	< 0.030	< 0.030	< 0.030	< 0.030	14.5	8.29	0.987	< 0.030	< 0.030	< 0.030	23.8	
	BH21-10-02	2021 08 19	1.2 - 1.7	< 0.010	< 0.010	< 0.010	< 0.010	0.059	0.039	< 0.010	< 0.010	< 0.010	< 0.010	0.098	
BH21-11	BH21-11-01	2021 08 19	0.5 - 0.9	< 0.010	< 0.010	< 0.010	< 0.010	0.538	1.14	0.138	< 0.010	< 0.010	< 0.010	1.82	
	BH21-11-02	Duplicate	0.5 - 0.9	< 0.010	< 0.010	< 0.010	< 0.010	0.601	1.14	0.150	< 0.010	< 0.010	< 0.010	1.89	
	QA/QC RPD%				*	*	*	*	11	0	8	*	*	4	
	BH21-11-03	2021 08 19	1.4 - 1.8	< 0.010	< 0.010	< 0.010	< 0.010	0.027	< 0.020	< 0.010	< 0.010	< 0.010	< 0.010	0.027	
BH21-11-04	2021 08 19	2.3 - 2.9	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		
BH21-11-05	2021 08 19	3.5 - 4.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		
BH21-12	BH21-12-01	2021 08 19	0.8 - 1.1	< 0.010	< 0.010	< 0.010	< 0.010	0.103	0.250	< 0.030	< 0.030	< 0.030	< 0.030	0.353	
	BH21-12-02	2021 08 19	1.7 - 2.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-12-03	2021 08 19	2.9 - 3.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-14	BH21-14-01	2021 08 20	0.2 - 0.5	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	0.232	0.034	< 0.010	< 0.010	< 0.010	0.266	
	BH21-14-02	2021 08 20	1.1 - 1.4	< 0.065	< 0.065	< 0.065	< 0.065	6.32	9.26	1.13	< 0.065	< 0.065	< 0.065	16.7	
	BH21-14-03	Duplicate	1.1 - 1.4	< 0.030	< 0.030	< 0.030	< 0.030	4.76	6.91	1.17	< 0.030	< 0.030	< 0.030	12.8	
	QA/QC RPD%				*	*	*	*	28	29	3	*	*	26	
BH21-14-04	2021 08 20	2.0 - 2.5	< 0.010	< 0.010	< 0.010	< 0.010	0.129	0.065	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.194	
BH21-14-05	2021 08 20	3.7 - 4.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		
BH21-15	BH21-15-03	2021 08 20	1.5 - 2.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-16	BH21-16-03	2021 08 20	2.3 - 2.6	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BC Standard															
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.23
Federal Guideline															
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	n/a	n/a	n/a	0.709	n/a	n/a	n/a	n/a	0.189	

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

TABLE 11: Summary of Analytical Results for Intertidal Sediment - Leachable PAH and Metals

Sample Location Sample ID Sample Date (yyyy mm dd)	BH21-8			BH21-9	BH21-10	BH21-11	BH21-12	BH21-14			BC Standard	
	BH21-8-01 2021 08 19	BH21-8-02 2021 08 19	BH21-8-03 2021 08 19	BH21-9-01 2021 08 19	BH21-10-01 2021 08 19	BH21-11-01 2021 08 19	BH21-12-01 2021 08 19	BH21-14-01 2021 08 20	BH21-14-02 2021 08 20	BH21-14-04 2021 08 20	HWR Leachate Quality Standards (HWLQ)	
Parameter	Units	Analytical Results										
TCLP Polycyclic Aromatic Hydrocarbons												
Benzo(a)pyrene	µg/L	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.050	< 0.050	< 0.050	1
TCLP Metals												
Antimony	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	n/a
Arsenic	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	2,500
Barium	µg/L	< 2,500	< 2,500	-	-	-	< 2,500	< 2,500	< 2,500	< 2,500	-	100,000
Beryllium	µg/L	< 25	< 25	-	-	-	< 25	< 25	< 25	< 25	-	n/a
Boron	µg/L	970	1,120	-	-	-	< 500	830	< 500	1,420	-	500,000
Cadmium	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	500
Calcium	µg/L	728,000	522,000	-	-	-	583,000	56,000	752,000	1,740,000	-	n/a
Chromium	µg/L	< 250	< 250	-	-	-	< 250	< 250	< 250	< 250	-	5,000
Cobalt	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	n/a
Copper	µg/L	< 50	< 50	-	-	-	< 50	120	700	< 50	-	100,000
Iron	µg/L	< 5,000	143,000	-	-	-	< 5,000	< 5,000	< 5,000	33,600	-	n/a
Lead	µg/L	< 250	< 250	-	-	-	460	< 250	< 250	1,010	-	5,000
Magnesium	µg/L	109,000	93,700	-	-	-	25,500	44,600	19,100	181,000	-	n/a
Mercury	µg/L	< 1.0	< 1.0	-	-	-	2.4	< 1.0	< 1.0	< 1.0	-	100
Nickel	µg/L	< 250	< 250	-	-	-	< 250	< 250	< 250	330	-	n/a
Selenium	µg/L	< 100	< 100	-	-	-	< 100	< 100	< 100	< 100	-	1,000
Silver	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	5,000
Thallium	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	n/a
Uranium	µg/L	< 200	< 200	-	-	-	< 200	< 200	< 200	< 200	-	10,000
Vanadium	µg/L	< 150	< 150	-	-	-	< 150	< 150	< 150	< 150	-	n/a
Zinc	µg/L	970	< 500	-	-	-	10,200	2,530	3,290	11,200	-	500,000
Zirconium	µg/L	< 10,000	< 10,000	-	-	-	< 10,000	< 10,000	< 10,000	< 10,000	-	n/a

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QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than HWR Leachate Quality Standards (HWLQ) Standard

TABLE 12: Summary of Analytical Results for Upland Soil - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Petroleum Hydrocarbon Fractions			
					F2 (>C10-C16) µg/g	F3 (>C16-C34) µg/g	F4 (>C34-C50) µg/g	F4G (>C50) µg/g
BH06-60	12844-02	2006 06 20	0.9 - 1.4	-	4,100	14,000	19,000	8,600
	12844-04	2006 06 20	2.4 - 2.7	-	31	320	270	200
	12844-05	Duplicate	2.4 - 2.7	-	80	480	450	300
	QA/QC RPD%				88	40	50	*
	12844-07	2006 06 20	4.6 - 4.9	-	< 5	24	< 5	-
BH06-61	12844-10	2006 06 20	1.8 - 2.1	-	61	1,500	300	1,700
	12844-11	2006 06 20	4.0 - 4.3	-	< 5	15	< 5	-
BH06-62	12407-05	2006 06 20	1.2 - 1.5	-	270	120,000	24,000	35,000
	12407-07	2006 06 20	2.4 - 2.7	-	140	980	540	2,800
TP06-121	12267-02	2006 06 07	0.4 - 0.5	-	61	1,430	535	2,300
	12267-04	2006 06 07	1.4 - 1.5	-	7,390	14,300	2,550	9,120
TP06-122	12267-06	2006 06 07	0.4 - 0.5	-	< 30	710	210	880
TP06-124	12269-01	2006 06 08	0.4 - 0.5	-	150	7,390	6,020	19,400
	12269-02	2006 06 08	1.2	-	0.204	0.069	< 0.05	-
	12269-03	2006 06 08	2.0	-	8,830	15,300	2,200	-
TP06-125	12269-05	2006 06 08	0.4 - 0.5	-	2,090	8,450	2,660	11,600
	12269-07	2006 06 08	2.1 - 2.2	-	3,240	7,120	2,950	8,940
	12269-08	2006 06 08	2.1 - 2.2	-	5,500	19,000	3,300	-
TP06-127	12270-03	2006 06 08	1.0 - 1.1	-	< 150	360	< 6,020	520
	12270-06	2006 06 08	4.0	-	34	2,300	1,100	3,100
TP06-128	12270-08	2006 06 08	0.6 - 0.7	-	780	1,720	< 6,020	1,180
	12270-09	2006 06 08	1.0	-	10,300	24,100	2,300	38,400
	12270-11	2006 06 08	3.0	-	53	1,300	790	2,500
BC Standard								
CSR Industrial Land Use (IL) ^b					n/a	n/a	n/a	n/a

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 13: Summary of Analytical Results for Upland Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																	
				Naphthalene µg/g	Methylnaphthalene, 2- µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Fluoranthene µg/g	Pyrene µg/g	Benz(a)anthracene µg/g	Chrysene µg/g	Benzo(b)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenz(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	
BH06-24	BH06-24	2006 06 16	0.0 - 0.1	0.443	0.408	0.453	0.478	0.515	4.51	1.2	6.36	5.62	3.18	4.06	4.56	1.64	3.08	2.44	0.49	2.27	
BH06-60	12844-02	2006 06 20	0.9 - 1.4	0.967	1.07	< 0.5	2.64	2.77	8.62	2.62	10.8	7.53	2.97	3.33	4.26	1.3	3.63	2.88	0.627	2.92	
	12844-04	2006 06 20	2.4 - 2.7	< 0.05	< 0.05	< 0.05	0.085	0.094	0.323	0.091	0.321	0.233	0.086	0.091	0.096	< 0.05	0.061	< 0.05	< 0.05	< 0.05	
	12844-05	Duplicate	2.4 - 2.7	< 0.05	< 0.05	< 0.05	0.082	0.089	0.29	0.085	0.311	0.234	0.093	0.104	0.105	< 0.05	0.075	< 0.05	< 0.05	< 0.05	
	QA/QC RPD%				*	*	*	*	*	11	*	3	*	*	*	*	*	*	*	*	*
BH06-61	12844-07	2006 06 20	4.6 - 4.9	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	12844-10	2006 06 20	1.8 - 2.1	0.294	0.207	< 0.05	0.101	0.105	0.472	0.161	0.412	0.549	0.325	0.259	0.244	0.092	0.201	0.114	0.054	0.123	
	12844-11	2006 06 20	4.0 - 4.3	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
BH06-62	12407-05	2006 06 20	1.2 - 1.5	4.55	1.13	0.48	0.065	0.187	2.21	0.454	0.816	0.796	0.325	0.675	< 0.6	< 0.3	0.311	0.486	< 0.1	0.922	
	12407-07	2006 06 20	2.4 - 2.7	< 0.1	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	0.294	1.11	0.153	0.095	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
TP06-121	12267-02	2006 06 07	0.4 - 0.5	0.23	0.067	0.181	0.077	0.084	0.902	0.276	1.65	1.41	0.774	0.948	1.66	0.505	1.05	1.1	0.174	1.14	
	12267-04	2006 06 07	1.4 - 1.5	0.547	0.407	< 0.05	< 0.04	0.69	3.53	1.2	7.94	6.97	3.79	4.19	7.08	2.3	4.78	4.08	0.796	4.34	
TP06-122	12267-06	2006 06 07	0.4 - 0.5	0.301	0.054	0.059	< 0.04	< 0.05	0.732	0.054	0.559	0.308	0.115	0.258	0.285	0.078	0.11	0.127	< 0.05	0.172	
TP06-124	12269-01	2006 06 08	0.4 - 0.5	0.391	0.247	0.196	< 0.04	0.057	0.953	0.278	2.44	2.01	1.07	1.27	2.22	0.641	1.28	1.3	0.213	2.04	
	12269-02	2006 06 08	1.2	2.1	3.4	0.204	0.143	< 0.5	19.4	8.2	30	< 30	< 30 ^a	< 10	< 50 ^a	< 50 ^a	< 30	< 0.5	< 5	< 50	
	12269-03	2006 06 08	2.0	< 0.05	< 0.05	< 0.05	1.25	1.57	2.41	1.39	4.52	4.12	2.28	3.08	4.52	1.42	2.91	2.39	0.47	2.64	
TP06-125	12269-05	2006 06 08	0.4 - 0.5	0.69	0.71	0.809	0.692	0.7	7.8	1.43	11.9	11.9	5.47	7.5	8.84	3.15	5.72	4.71	1.08	5.15	
	12269-07	2006 06 08	2.1 - 2.2	2.4	3.69	< 0.05	2.83	2.49	18.9	3.05	18.5	16.8	6.64	7.57	10.5	4	6.96	4.66	1.06	4.66	
	12269-08	2006 06 08	2.1 - 2.2	2.72	4.54	1.88	1.72	2.31	12.8	2.63	10.6	9.98	5.56	6.31	10.4	4.07	7.88	5.22	1.31	4.58	
TP06-127	12270-03	2006 06 08	1.0 - 1.1	0.314	0.083	< 0.05	< 0.04	< 0.05	0.444	< 0.05	0.444	0.152	0.051	0.223	0.319	0.066	0.062	0.094	< 0.05	0.096	
	12270-06	2006 06 08	4.0	0.17	0.204	0.052	0.05	0.078	0.798	0.204	1.06	0.953	0.522	0.63	0.891	0.284	0.581	0.464	0.102	0.46	
TP06-128	12270-08	2006 06 08	0.6 - 0.7	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	0.058	0.065	< 0.05	0.077	0.139	< 0.05	0.087	0.095	< 0.05	0.105	
	12270-09	2006 06 08	1.0	< 0.05	5.76	< 0.05	< 0.04	3.95	< 0.05	< 0.05	4.71	4.49	1.72	2.41	1.46	0.51	1.2	1.07	0.184	1.3	
	12270-11	2006 06 08	3.0	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	0.106	0.053	0.152	0.188	0.104	0.124	0.135	< 0.05	0.085	0.068	< 0.05	0.084	
BC Standard																					
CSR Industrial Land Use (IL) ^b				20	950	n/a	15,000	9,500	50	30	200	100	10	4,500	10	10	50	10	10	n/a	

All terms defined within the body of SNC-Lavalin's report.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Laboratory detection limit exceeds regulatory standard/guideline.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 14: Summary of Analytical Results for Upland Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	pH		Total Metals																	
				pH	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc	
				pH	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
BH06-24	BH06-24	2006 06 16	0.0 - 0.1	7.85	85	191	184	< 0.5	1.48	50.7	10.7	3,930	975	8.48	12.5	26.3	< 2 ^a	< 2	< 1	213	39.8	2,160	
	12293-07	2006 06 09	2.7 - 3.0	7.22	16	78	55.5	< 0.5	0.99	29	6.2	590	173	0.517	21	9.5	< 2 ^a	< 2	< 1	12	34.8	643	
BH06-60	12844-02	2006 06 20	0.9 - 1.4	8.18	< 10	33.6	92.4	< 0.5	1.46	48.7	6.1	1,460	848	8.2	4	12.2	< 2 ^a	< 2	< 1	9	44.5	483	
BH06-61	12844-10	2006 06 20	1.8 - 2.1	7.42	16	8.5	7	< 0.5	2.19	< 2	< 2	60.5	152	0.198	20	< 5	< 2 ^a	< 2	< 1	< 5	5.4	367	
	12844-11	2006 06 20	4.0 - 4.3	8.8	< 10	< 5	59.4	< 0.5	< 0.5	14.3	5.7	22.5	< 30	0.0379	< 4	9.1	< 2 ^a	< 2	< 1	< 5	40.9	42.6	
BH06-62	12407-03	2006 06 20	0.0 - 0.3	7.5	223	305	251	< 0.5	4.58	86.4	14.3	3,200	1,410	7.7	18.4	43	< 4 ^a	< 2	< 1	345	53.4	3,050	
	12407-05	2006 06 20	1.2 - 1.5	6.64	201	16.1	91.6	< 0.5	< 0.5	8.9	< 2	1,250	4,730	1.61	< 4	5.2	< 2 ^a	< 2	< 1	358	6.5	294	
TP06-120	12266-12	2006 06 07	1.4 - 1.5	6.72	381	32.7	410	< 0.5	3.67	35	14.3	697	6,230	0.675	5.5	104	< 2 ^a	< 2	< 1	537	46.3	3,520	
	12267-01	2006 06 07	1.4 - 1.5	7.06	76	21.5	26.3	< 0.5	1.51	13	4.3	356	1,280	0.222	46.3	21.3	< 2 ^a	< 2	< 1	59.5	37.6	822	
TP06-121	12267-02	2006 06 07	0.4 - 0.5	7.78	33	75.8	149	< 0.5	0.89	34.6	8.1	3,670	1,440	6	5	42	< 2 ^a	< 2	< 1	75.4	46.4	1,190	
	12267-04	2006 06 07	1.4 - 1.5	7.49	46	118	273	< 0.5	0.93	40.4	8.1	5,550	1,620	9.95	8.3	63.1	< 2 ^a	< 2	< 1	66.6	34.2	1,890	
TP06-122	12267-06	2006 06 07	0.4 - 0.5	7.38	111	16.5	1,120	< 0.5	1.02	18.1	7.9	356	1,450	0.205	< 4	33.5	< 2 ^a	< 2	< 1	172	36.8	1,020	
	12267-08	2006 06 07	1.5	6.59	58	25.1	63.4	< 0.5	1.1	7.4	7.7	184	476	0.216	37.2	38.8	< 2 ^a	< 2	< 1	40.8	25.7	690	
TP06-124	12269-01	2006 06 08	0.4 - 0.5	6.81	14	30.9	394	< 0.5	1.18	164	19.9	4,260	1,320	12.5	6.6	31.4	< 2 ^a	< 2	< 1	802	27	1,190	
	12269-03	2006 06 08	2.0	7.04	53	80	117	< 0.5	3.37	37.6	9.6	2,670	1,210	7.82	31.2	53.9	< 2 ^a	< 2	< 1	37.4	22.5	2,640	
TP06-125	12269-05	2006 06 08	0.4 - 0.5	7.88	122	617	554	< 0.5	5.5	241	29.4	6,340	2,400	16.1	36.6	110	< 2 ^a	< 2	< 1	113	62.2	6,270	
	12269-07	2006 06 08	2.1 - 2.2	7.52	122	159	218	< 0.5	2.15	82.7	18.2	1,760	1,090	9.84	12.6	101	< 2 ^a	< 2	< 1	131	59.9	2,480	
	12269-08	2006 06 08	2.1 - 2.2	7.38	59	177	225	< 0.5	2.8	96.9	22.3	2,130	1,260	11.4	14.7	214	< 2 ^a	< 2	< 1	68.1	59.1	2,870	
TP06-127	12270-02	2006 06 08	0.6 - 0.7	8.42	< 10	< 5	42.9	< 0.5	< 0.5	10.6	5.1	46	< 30	0.136	< 4	5.1	< 2 ^a	< 2	< 1	< 5	41.5	58	
	12270-03	2006 06 08	1.0 - 1.1	7.51	46	5.6	137	< 0.5	< 0.5	14.2	5.9	95.6	164	0.066	< 4	17.2	< 2 ^a	< 2	< 1	28.5	42.8	231	
TP06-128	12270-08	2006 06 08	0.6 - 0.7	7.09	< 10	11	66.1	< 0.5	< 0.5	13.6	4.7	390	38	1.85	< 4	< 5	< 2 ^a	< 2	< 1	< 5	48.2	139	
	12270-09	2006 06 08	1.0	8.06	831	74.8	59.7	< 0.5	< 0.5	39.8	10.1	1,430	8,660	8.42	11	41.2	< 2 ^a	< 2	< 1	907	32.3	762	
BC Standard																							
CSR Industrial Land Use (IL) ^b				n/a	40	10	1,500	350 ^c	3.5 - 75 ^c	60	25	300 ^c	1,000 ^c	75	150	70 - 250 ^c	1	40	25	300	300	150 - 200 ^c	

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Laboratory detection limit exceeds regulatory standard/guideline.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

^c Standard is pH dependent.

TABLE 15: Summary of Analytical Results for Upland Soil - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs
				Polychlorinated Biphenyls, Total [PCBs] µg/g
TP06-121	12267-04	2006 06 07	1.4 - 1.5	15.4
BC Standard				
CSR Industrial Land Use (IL) ^a				35

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

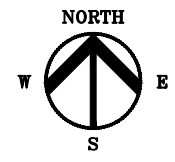
BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

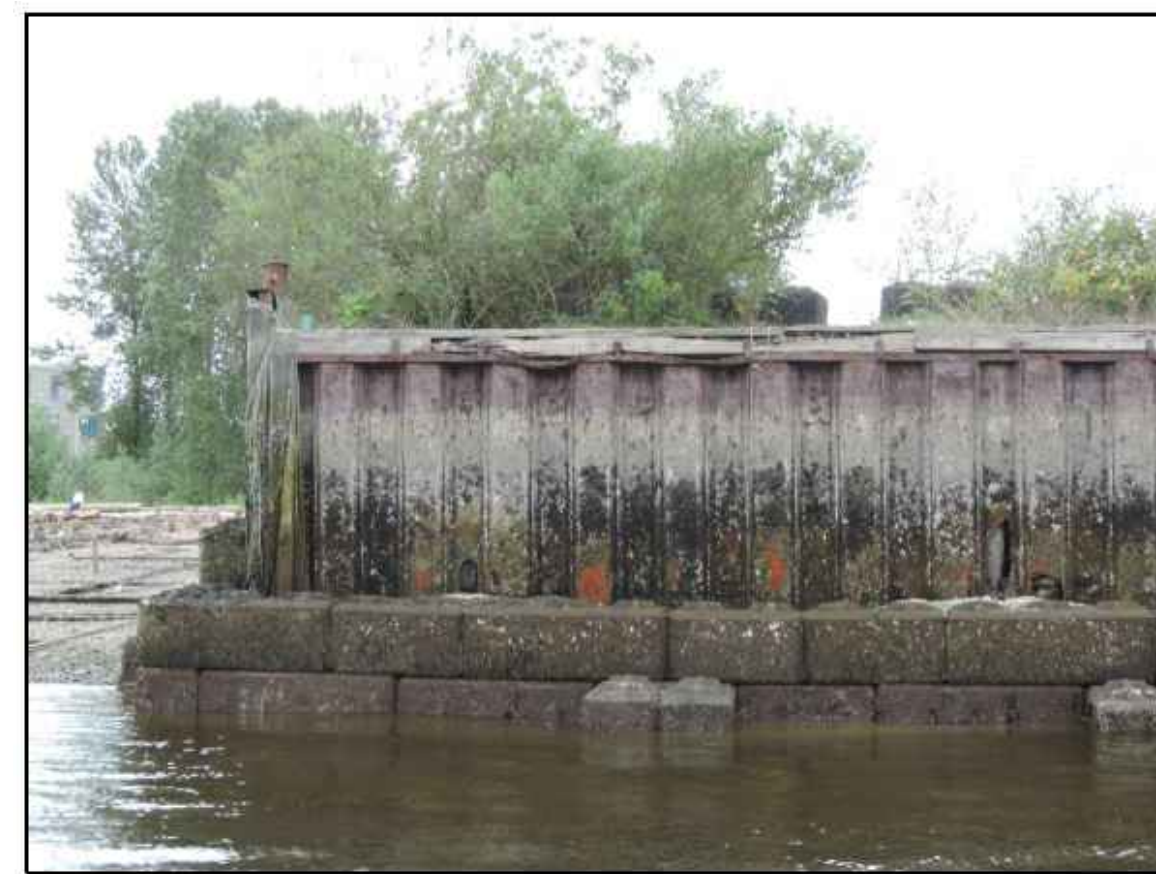
Drawings

- › 677011-402 – Site Layout Plan
- › 509211-602 – Summary of Sediment/Soil Analytical Results
- › 509211-603/604 – Proposed Confirmatory Sampling Plan
- › 677011-403 – Sediment Remediation Extents – Plan View
- › 677011-404/405 – Remedial Extent Sections
- › 070-010-GA-003 – Conceptual Contractor Plant Layout





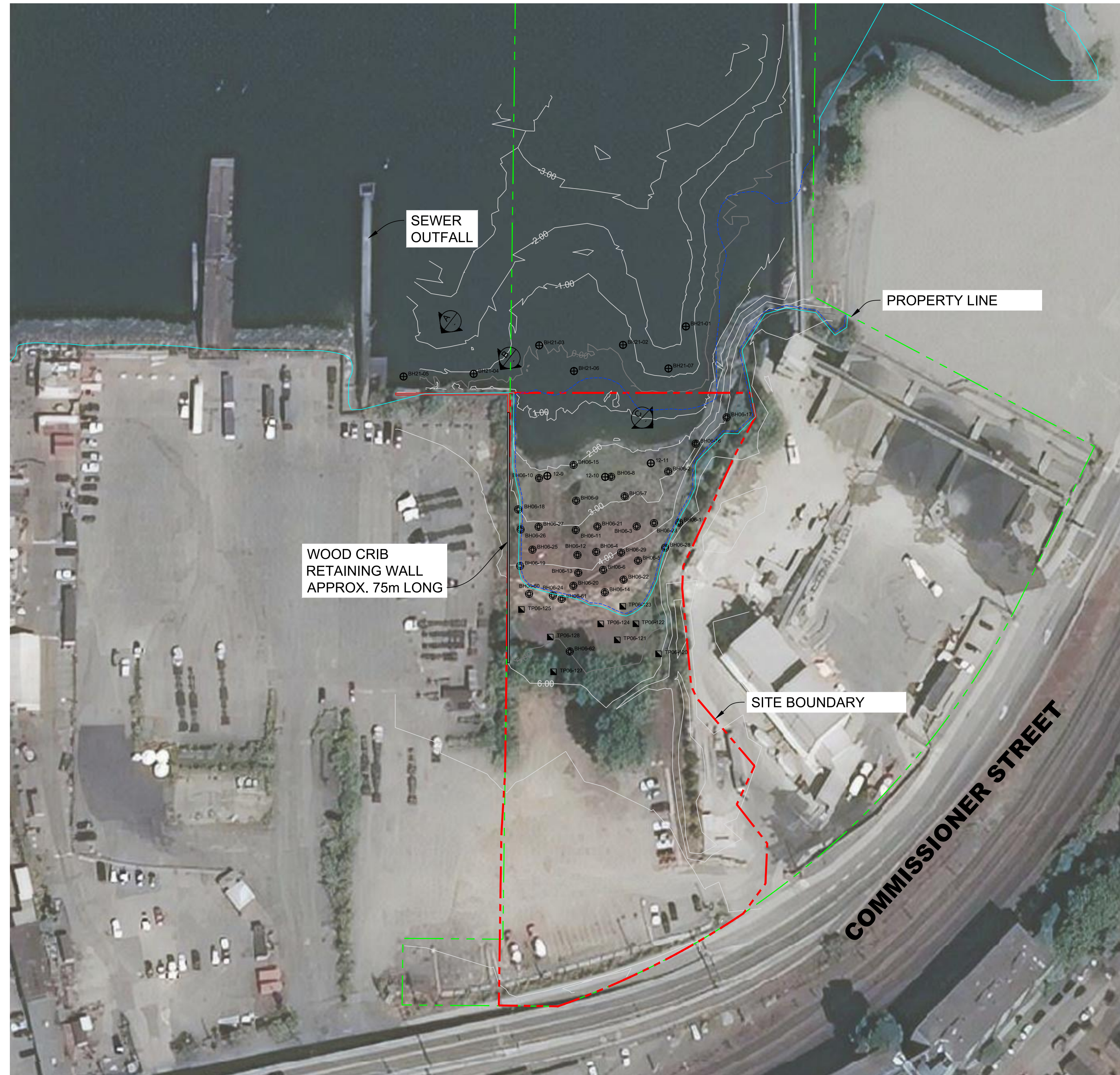
VIEW A



VIEW B



VIEW C



LEGEND

- - - SITE BOUNDARY
- - - PROPERTY LINE
- FENCE
- - - MINOR CONTOUR
- - - MAJOR CONTOUR
- - - HIGH WATER MARK
- - - LOW WATER MARK
- BOREHOLE
- BOREHOLE (OTHERS)
- TESTPIT (OTHERS)

NOTES

1. ORIGINAL DRAWING IN COLOUR.
2. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INTRUSIVE WORK. NOT ALL UTILITIES MAY BE SHOWN.
3. ELEVATIONS ARE IN METRES, TO CHART DATUM CITY OF VANCOUVER MONUMENT V-2901 LOCATED AT THE INTERSECTION OF VICTORIA DRIVE AND COMMISSIONER STREET. ELEVATION = +8.316m (CHART DATUM), +5.271m (GEODETIC DATUM).
4. CHART DATUM = CVD28GVRD GEODETIC DATUM + 3.045m

REFERENCE DRAWINGS

No.	DATE	DESCRIPTION

20-191-GA-002	2021-02-26	SNC-LAVALIN
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REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
3	2021-10-20	ISSUED TO CLIENT	PES	BH
2	2021-10-04	ISSUED TO CLIENT AS DRAFT	PES	BH
1	2021-08-30	ISSUED TO CLIENT	PES	BH
0	2021-07-14	ISSUED TO CLIENT AS DRAFT	PES	BH



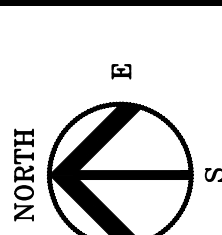
CLIENT NAME:
VANCOUVER FRASER
PORT AUTHORITY

PROJECT LOCATION:
FORMER STERLING SHIPYARD SITE
2089-2095 COMMISSIONER ST., VAN., BC

SNC-LAVALIN

SITE LAYOUT PLAN

DWN BY: JG	SCALE: 1:750	DATE: 2021-07-13	DWG No: 677011-402	REV: 3
CHK'D: BH	PLOT: 20211020.1444	CADFILE677011-402R2	677011-402	



LEGEND

- SITE BOUNDARY
- FORMER STERLING SHIPYARD SITE
- CITY OF VANCOUVER SEWER OUTFALL RIGHT-OF-WAY LICENSE BOUNDARY
- LOT BOUNDARY
- FENCE
- FORMER STRUCTURE
- HIGH WATER MARK
- INTERTIDAL AREA
- APPROXIMATE EXTENTS OF PROPOSED REMEDIATION
- BORERHOLE
- BORERHOLE (OTHERS)
- MONITORING WELL (OTHERS)
- TESTPIT (OTHERS)

LOCATION	DEPTH RANGE	ANALYTICAL SEDIMENT RESULTS
BH21-05	1.5 - 1.7	PAH >RFD, Metals >RFD, PCB <STD
BH21-05-02	1.5 - 1.7	PAH >RFD, Metals >RFD, PCB <STD

DEPTH OF SAMPLE (m)
DEPTH RANGE DEFINED AS DEPTH BELOW SEA FLOOR

SAMPLE OBTAINED FROM TILL-LIKE FORMATION

RED = CONCENTRATION GREATER THAN THE APPLICABLE CSR SEDIMENT MARINE SENSITIVE STANDARDS
 BLUE = CONCENTRATION GREATER THAN THE APPLICABLE CSR SEDIMENT MARINE TYPICAL STANDARDS
 GREEN = CONCENTRATION LESS THAN OR EQUAL TO THE APPLICABLE GUIDELINES/STANDARDS
 PURPLE = CONCENTRATION GREATER THAN THE APPLICABLE CSR & SOIL STANDARDS
 CYAN = CONCENTRATION GREATER THAN THE APPLICABLE COME CCGG PEL SEDIMENT GUIDELINES

PAH	Metals	PCB
CSR & SOIL STANDARDS (µg/g)	SEE TABLES	SEE TABLES
CSR SEDIMENT MARINE SENSITIVE STANDARDS (µg/g)	SEE TABLES	SEE TABLES
COME CCGG PEL SEDIMENT GUIDELINES (µg/g)	SEE TABLES	SEE TABLES
CSR SEDIMENT MARINE TYPICAL STANDARDS (µg/g)	SEE TABLES	SEE TABLES

NOTE:
 SEDIMENT STANDARDS/GUIDELINES APPLY ONLY TO THE SUBTIDAL AND INTERTIDAL LOCATIONS.
 CSR SEDIMENT MARINE SENSITIVE STANDARDS APPLY ONLY TO THE SUBTIDAL LOCATIONS.
 CSR IL SOIL STANDARDS APPLY ONLY TO THE UPLAND LOCATIONS.

NOTES

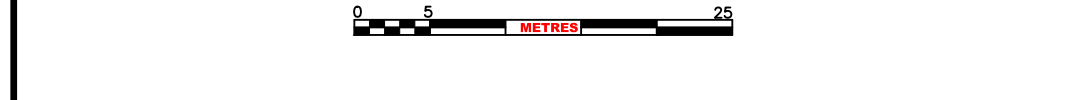
- ORIGINAL DRAWING IN COLOUR.
- LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INTRUSIVE WORK. NOT ALL UTILITIES MAY BE SHOWN.

REFERENCE DRAWINGS

No.	DATE	DESCRIPTION
	2021-03-10	ESRI AERIAL IMAGERY
	2008-01-24	GOLDER ASSOCIATES (06-1412-013)

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
4	2021-10-20	ISSUED TO CLIENT	PES	BH
3	2021-09-15	ISSUED TO CLIENT AS DRAFT	PES	BH
2	2021-07-12	ISSUED TO CLIENT AS DRAFT	PES	BH
1	2021-04-22	ISSUED TO CLIENT AS DRAFT	PES	BH
0	2021-04-14	ISSUED TO CLIENT AS DRAFT	PES	BH



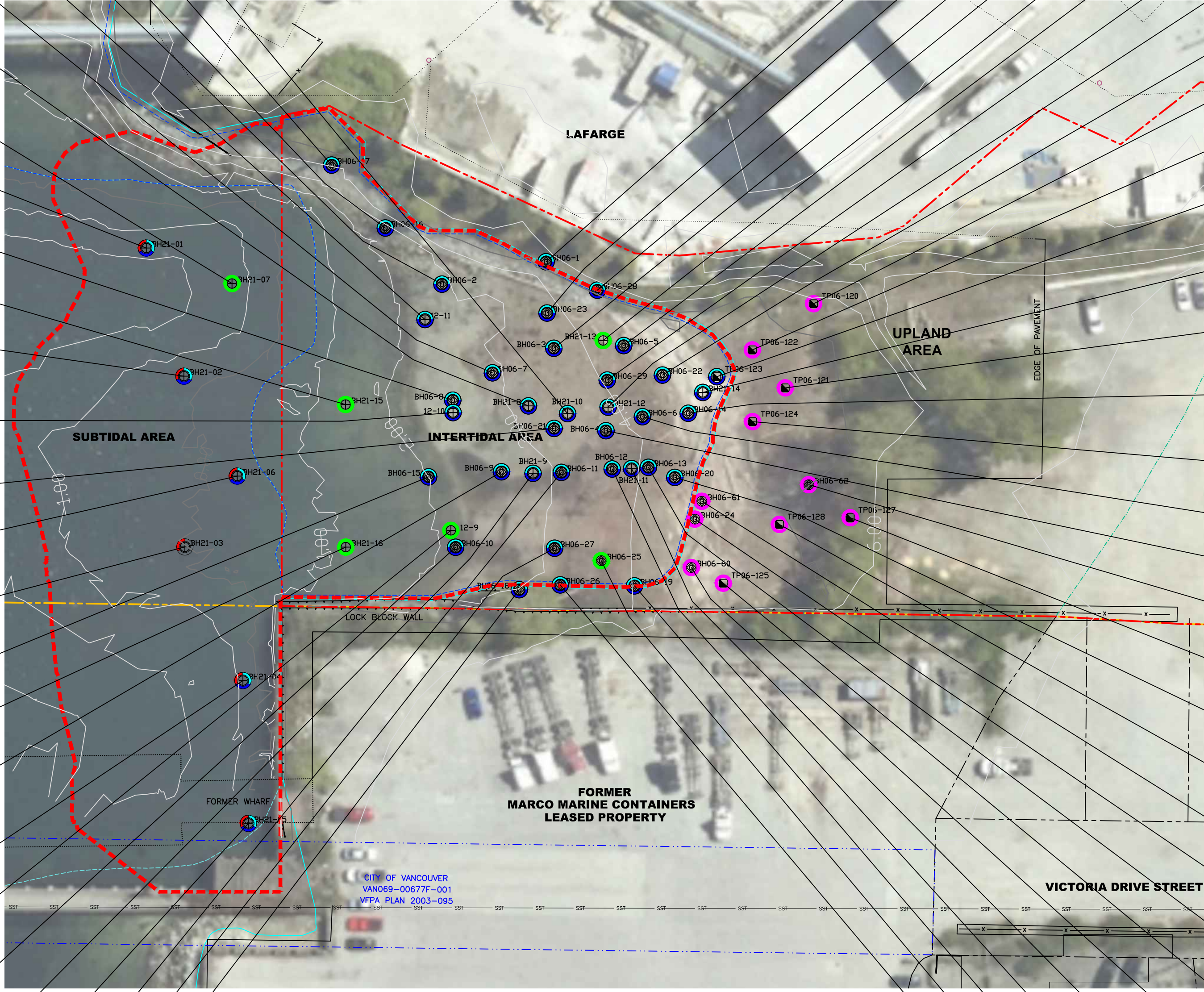
CLIENT NAME:
VANCOUVER FRASER PORT AUTHORITY

PROJECT LOCATION:
FORMER STERLING SHIPYARD SITE
2089-2095 COMMISSIONER ST., VAN., BC

TITLE:
SUMMARY OF SEDIMENT/SOIL ANALYTICAL RESULTS



DWN BY: PES	SCALE: 1:500	DATE: 2021-04-13	DWG No: REV.: 4
CHK'D: BH	PLOT: 2021.1020.1452	CADFILE: 509211-R14	509211-602



BH06-10	Depth Range	PAH	Metals	PCB
BH06-10-01	0.2 - 0.6	>RFD	>RFD	-
BH06-10-02	1.2 - 1.7	>RFD	<STD	-
BH06-10-04	3.0 - 3.3	<STD	-	-

BH06-1	Depth Range	PAH	Metals	PCB
BH06-1	0.0 - 0.1	<STD	>RFD	-
BH06-1	0.8 - 1.1	<STD	<STD	<STD

CONFIRMATORY SAMPLE NOTES

The following notes pertain to the current intertidal and subtidal areas proposed for excavation and dredging.

1. CONFIRMATORY STANDARDS/GUIDELINES

- a) Regulatory Standards/Guidelines Definitions:
 - i. CSR IL standards: BC Contaminated Sites Regulation Industrial Land Use Standards for Soil. Pathways applied to CSR IL standards are intake of contaminated soil, toxicity to soil invertebrates and plants and groundwater flow to surface water used by marine aquatic life. The intake and toxicity mandatory pathways have been included, but risk assessors may disregard in locations where the depth of samples negates the pathway.
 - ii. CSR Sediment Marine Sensitive standards: BC Contaminated Sites Regulation Sediment Standards for marine sensitive sediment use.
 - iii. CSR Sediment Marine Typical standards: BC Contaminated Sites Regulation Sediment Standards for marine typical sediment use.
 - iv. CCME CEQG PEL Sediment Guidelines: Canadian Council of Ministers of the Environment Canadian Environmental Quality Guidelines Probable Effect Level for Marine Sediment Use.
 - b) Intertidal Area: Investigation was completed to CSR Sediment Marine Typical standards and CCME CEQG PEL Sediment guidelines. Confirmatory sampling is proposed based on CSR IL soil standards as this land will become upland once filled.
 - c) Subtidal Area Investigation was completed to CSR Sediment Marine Sensitive and Typical standards and CCME CEQG PEL Sediment guidelines.
 - v. Under Rock Berm: Confirmatory sampling is proposed based on CSR IL soil standards as this area will be under the rock berm
 - vi. Beyond Rock Berm: Any confirmatory sampling that may take place past the toe of the rock berm in support of dredging requirements is proposed based on CSR Sediment Marine Sensitive and Typical standards and CCME CEQG PEL Sediment guidelines.
2. **USE OF EXISTING CHARACTERIZATION RESULTS FROM PREVIOUS INVESTIGATIONS** (analytical data obtained from boreholes that vertically delineated the contamination)
- a) Intertidal Area
 - i. PAH and Metals: Existing locations shown in Blue are being used as confirmatory sample locations for PAH and Metals. Excavation is expected to range between 2.0 and 5.0 m. Samples in that depth range were identified as confirmatory samples that are less than CSR IL standards.
 - ii. PCB: All PCB samples in the intertidal zone were less than the CSR IL standards. Depths ranged from 0.0 to 3.1 m and cover the area with a density of greater than 1 sample/400m².
 - b) Subtidal Area: Existing locations shown in Blue are being used as confirmatory sample locations. These locations have till (or till-like) samples identified that are less than CSR IL standards for PAH, Metals and PCB. The existing samples are sufficient for the area extending out to the rock berm toe (density of greater than 1 sample/400 m²).

3. PROPOSED SAMPLE LOCATIONS

- a) Intertidal Area: To provide sufficient coverage in the north and southeast areas of the intertidal area (1 sample/400 m²), 4 additional confirmatory samples are proposed. Proposed samples are based on a vertical cut along the east side of the excavation area.
- b) Subtidal Area: If additional dredging occurs beyond this area for construction of the rock berm, additional samples will be collected. These 4 contingency samples are shown in the Subtidal Area in red. This provides a sampling density of 1 sample/400 m². Depending on dredge cut thickness, mechanical removal bucket configuration and efficacy of machined/GPS controlled execution, additional confirmatory or grid samples may need to be collected to validate the final vertical limits are reached.

4. PROPOSED CONFIRMATORY SAMPLE DEPTHS / ANTICIPATED MATERIAL TYPE

- a) Intertidal Area: Proposed sample depths are shown on the drawing based on anticipated excavation depth. Materials encountered are expected to be SILT and SAND and possible SAND and GRAVEL.
- b) Subtidal Area: If dredging occurs beyond the proposed rock berm toe, samples will be collected from the floor of the dredged surface. If the dredging contacts the till surface, material would be expected to be a SAND and GRAVEL TILL or a TILL-LIKE SILT and SAND. If dredging does not contact the till surface, material is expected to be SAND and GRAVEL.

5. PROPOSED CONFIRMATORY SAMPLE ANALYSIS

- a) Intertidal Area: Based on CSR IL standards, the 3 wall confirmatory samples are proposed for analysis for PAH, METALS and PCB. The confirmatory floor sample is proposed for analysis of PAH and METALS.
- b) Subtidal Area: Based on comparison to sediment standards/guidelines, any confirmatory samples beyond the proposed rock berm toe are proposed for analysis for PAH, METALS and PCB.

6. PROPOSED SAMPLE METHODOLOGY

- a) All samples will be collected via grab sample method during excavation or dredging.

7. EXCEEDANCES IN CONFIRMATORY SAMPLES

- a) Intertidal Area: Any exceedances identified in confirmatory samples will be dealt with through risk assessment, as will any previously identified exceedances left in place. If the scenario occurs where the excavation has not been backfilled, additional excavation and re-sampling could be completed at the client's discretion.
- b) Subtidal Area: Any exceedances identified in confirmatory samples will be dealt with through risk assessment, as will any previously identified exceedances left in place.

LEGEND

NOTES

REFERENCE DRAWINGS

DWG. NO.	DATE	DESCRIPTION
	2021-03-10	ESRI AERIAL IMAGERY
FIGURE 2	2008-01-24	GOLDER ASSOCIATES (06-1412-013)

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
3	2021-10-20	ISSUED TO CLIENT	PES	BH
2	2021-10-04	ISSUED TO CLIENT AS DRAFT	PES	BH
1	2021-07-14	ISSUED TO CLIENT AS DRAFT	PES	BH
0	2021-04-22	ISSUED TO CLIENT AS DRAFT	PES	BH



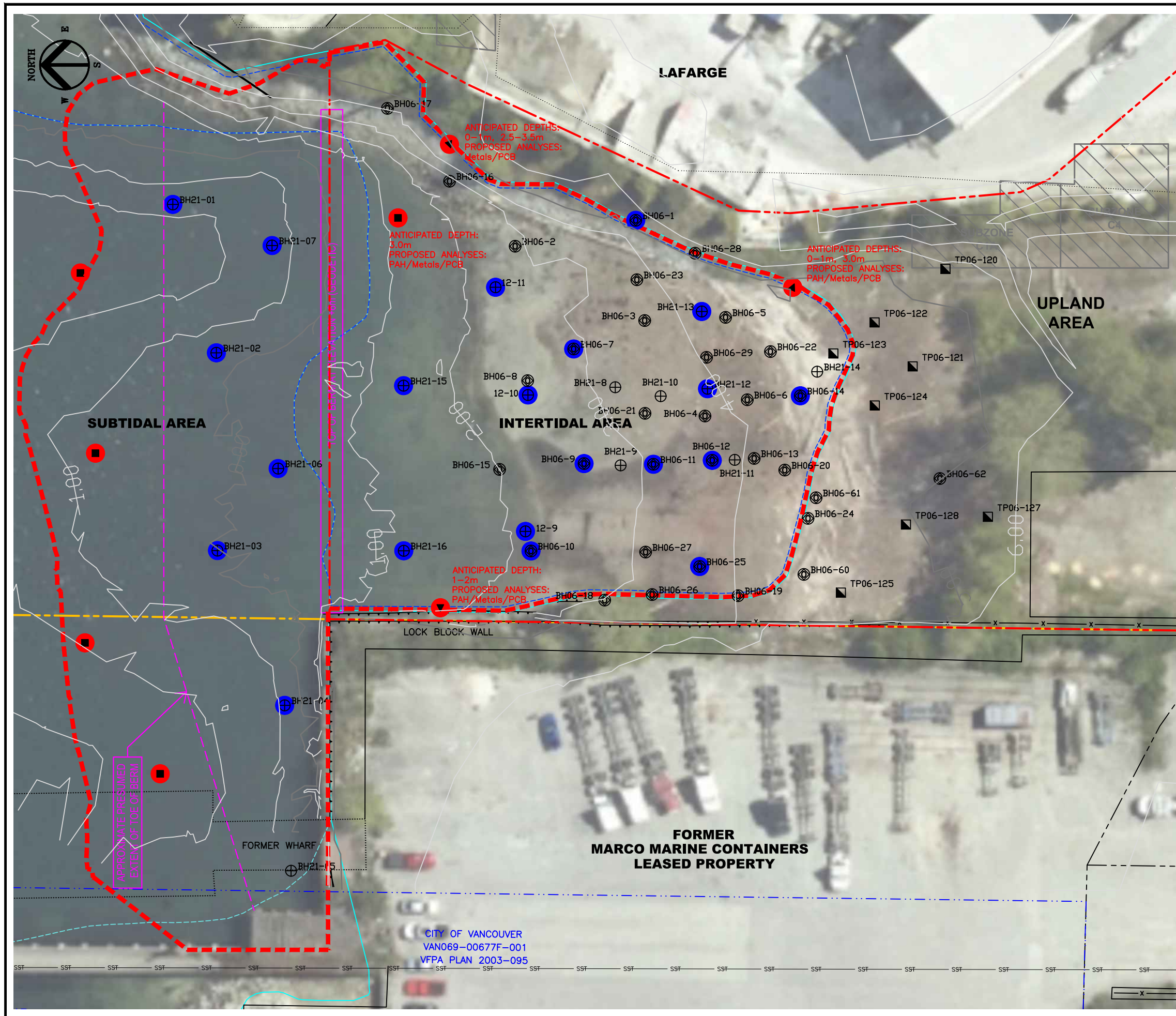
CLIENT NAME:
VANCOUVER FRASER
PORT AUTHORITY

PROJECT LOCATION:
FORMER STERLING SHIPYARD SITE
2089-2095 COMMISSIONER ST., VAN., BC



TITLE: PROPOSED CONFIRMATORY SAMPLING PLAN - NOTES

DWN BY: PES	SCALE: 1:500	DATE: 2021-04-21	DWG No: REV.: 3
CHK'D: NS	PLOT: 20211020.1454	CADFILE: 509211-R14	509211-603



LEGEND

- - - SITE BOUNDARY
- - - FORMER STERLING SHIPYARD SITE
- - - CITY OF VANCOUVER SEWER OUTFALL RIGHT-OF-WAY LICENSE BOUNDARY
- - - LOT BOUNDARY
- x FENCE
- - - - - FORMER STRUCTURE
- 1.00 MINOR CONTOUR
- 0.00 MAJOR CONTOUR
- HIGH WATER MARK
- LOW WATER MARK
- REMEDIAL EXCAVATION (GOLDER 2008)
- APPROXIMATE EXTENTS OF PROPOSED REMEDIATION
- + BOREHOLE
- ⊙ BOREHOLE (OTHERS)
- ⊕ MONITORING WELL (OTHERS)
- TESTPIT (OTHERS)
- FLOOR/WALL SAMPLE
- + EXISTING CONFIRMATORY BASE SAMPLE
- + PROPOSED CONFIRMATORY SAMPLE

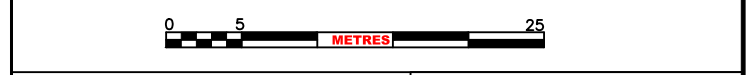
- ### NOTES
1. ORIGINAL DRAWING IN COLOUR.
 2. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INTRUSIVE WORK. NOT ALL UTILITIES MAY BE SHOWN.
 3. CONTOURS ARE BATHYMETRIC ELEVATIONS IN METER, TO CHART DATUM.

REFERENCE DRAWINGS

2021-03-10	ESRI AERIAL IMAGERY	
2008-01-24	GOLDER ASSOCIATES (06-1412-013)	
DWG. NO.	DATE	DESCRIPTION

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
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2	2021-10-04	ISSUED TO CLIENT AS DRAFT	PES	BH
1	2021-07-14	ISSUED TO CLIENT AS DRAFT	PES	BH
0	2021-04-22	ISSUED TO CLIENT AS DRAFT	PES	BH



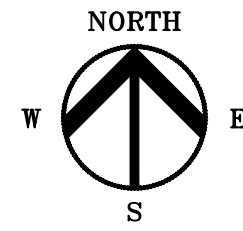
CLIENT NAME:
VANCOUVER FRASER PORT AUTHORITY

PROJECT LOCATION:
FORMER STERLING SHIPYARD SITE
2089-2095 COMMISSIONER ST., VAN., BC

SNC • LAVALIN

PROPOSED CONFIRMATORY SAMPLING PLAN

DWN BY: PES	SCALE: 1:500	DATE: 2021-04-21	DWG No: REV.: 3
CHK'D: NS	PLOT: 20211020.1457	CADFILE: 509211-R14	509211-604



LEGEND

- - - - - BOUNDARY OF ANTICIPATED EXTENT OF SEDIMENT REMEDIATION
- DREDGING AREA (SEDIMENT IS CONSIDERED CONTAMINATED)
- REVETMENT (SEDIMENT IS KNOWN TO BE CONTAMINATED)
- REMEDIAL EXCAVATION EXTENT (INTERTIDAL AREA)

NOTES

1. ORIGINAL DRAWING IN COLOUR.
2. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INTRUSIVE WORK. NOT ALL UTILITIES MAY BE SHOWN.
3. ELEVATIONS ARE IN METRES, TO CHART DATUM CITY OF VANCOUVER MONUMENT V-2901 LOCATED AT THE INTERSECTION OF VICTORIA DRIVE AND COMMISSIONER STREET.
ELEVATION = +8.316m (CHART DATUM),
+5.271m (GEODETTIC DATUM).
4. CHART DATUM = CVD28GVRD GEODETTIC DATUM + 3.045m

REFERENCE DRAWINGS

No.	DATE	DESCRIPTION
20-191-MA-101	2021-02-26	SNC-LAVALIN

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
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1	2021-08-30	ISSUED TO CLIENT	PES	BH
0	2021-07-14	ISSUED TO CLIENT AS DRAFT	PES	BH



CLIENT NAME:
VANCOUVER FRASER
PORT AUTHORITY

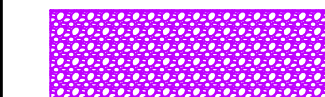

PROJECT LOCATION:
FORMER STERLING SHIPYARD SITE
2089-2095 COMMISSIONER ST., VAN., BC

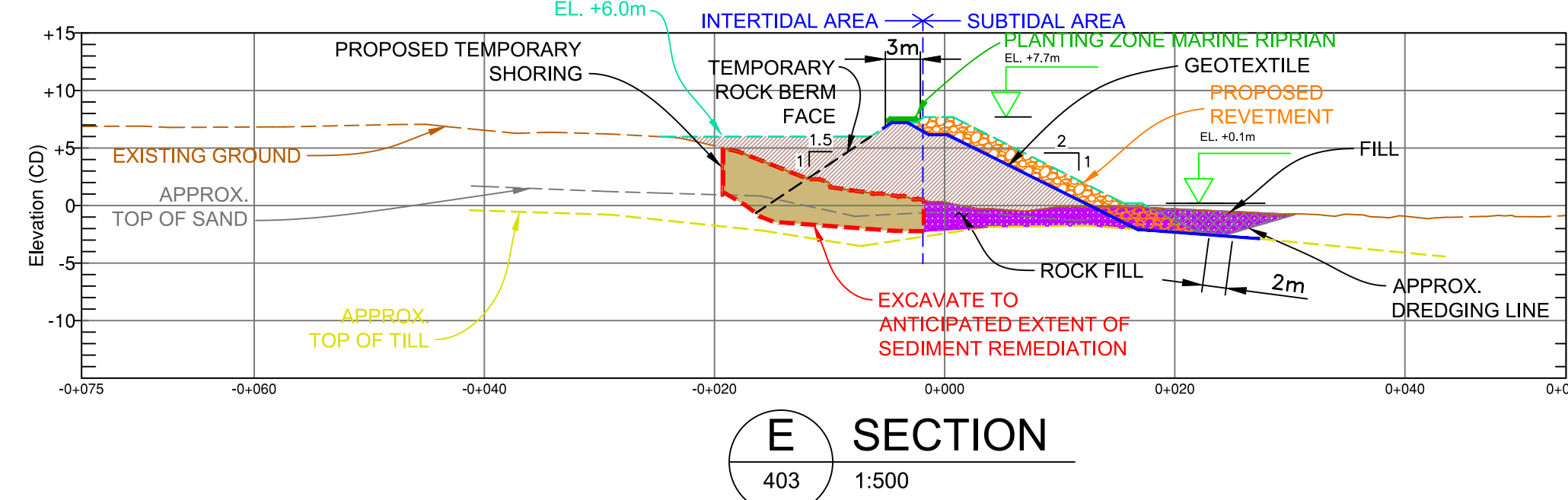
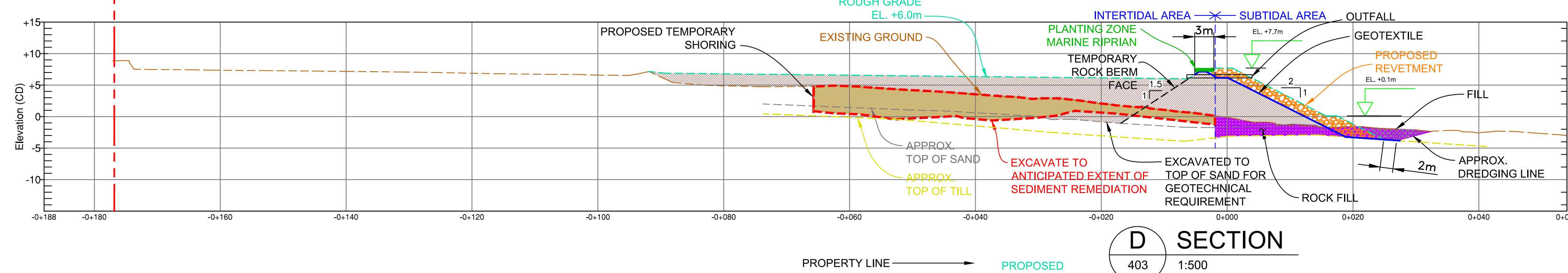
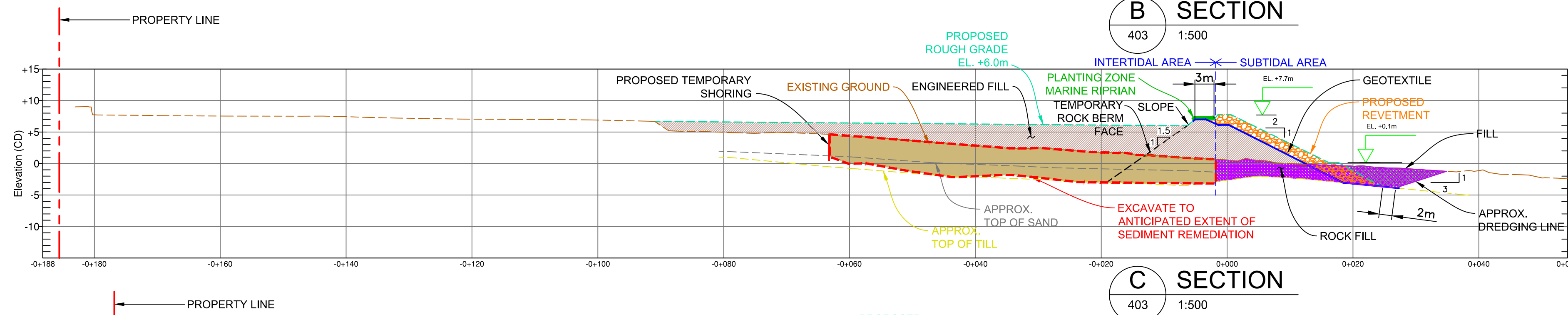
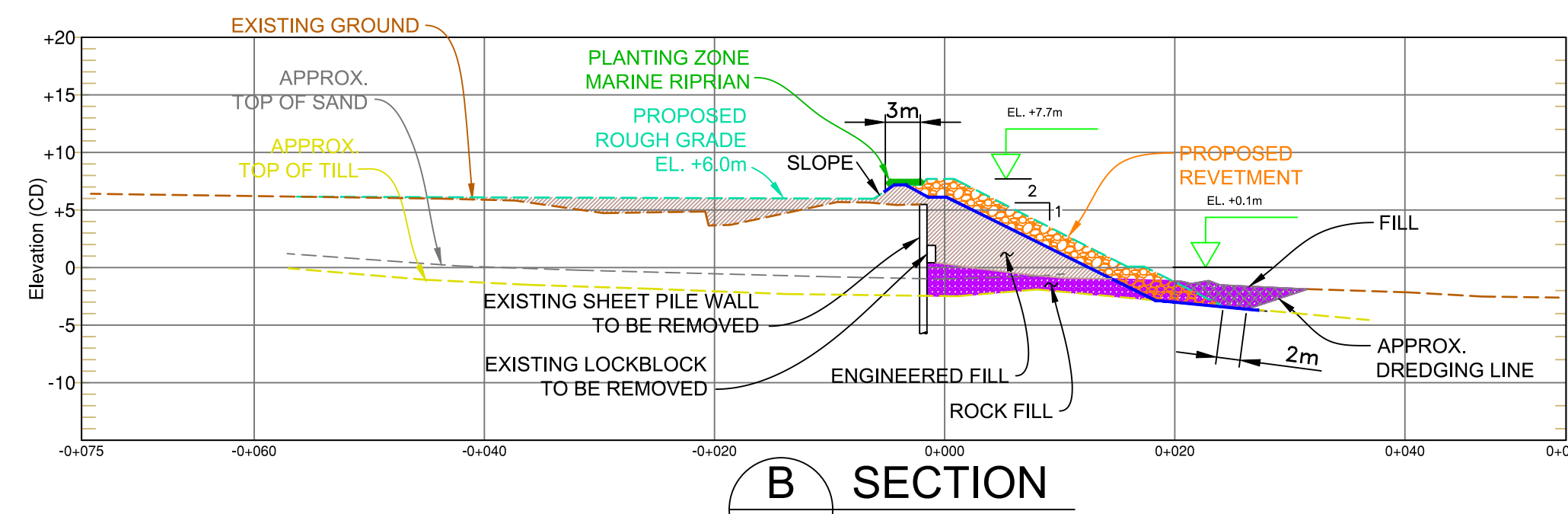
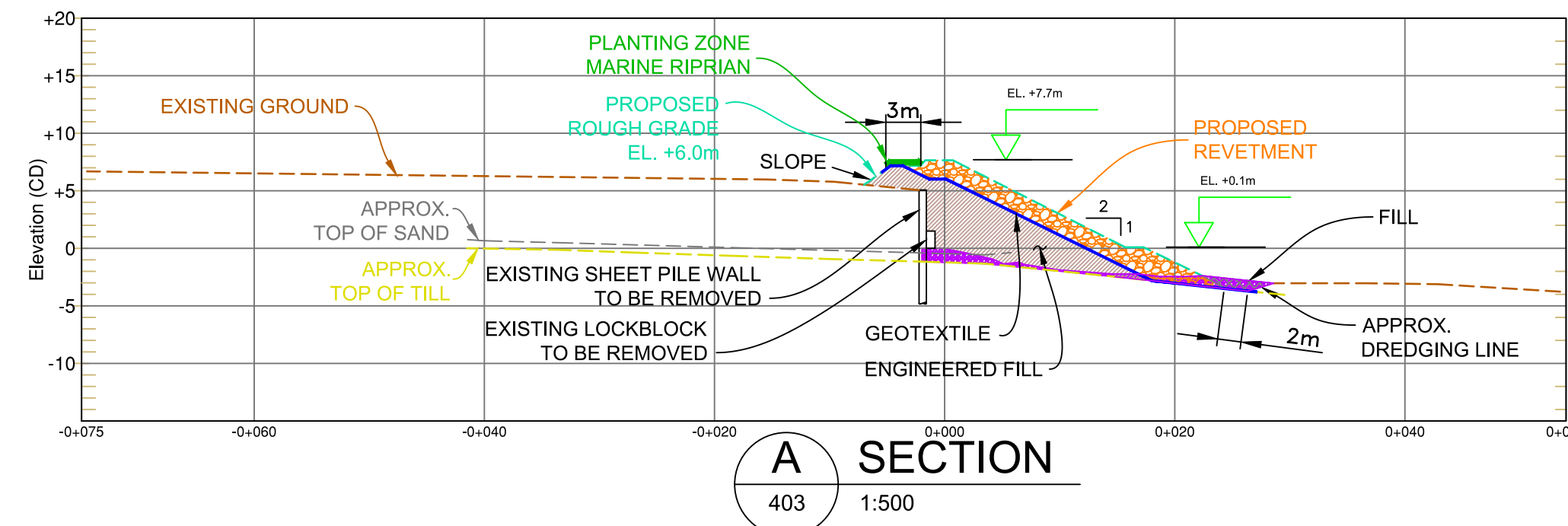


TITLE:
**SEDIMENT REMEDIATION EXTENTS -
PLAN VIEW**

DWN BY: JG	SCALE: 1:600	DATE: 2021-07-13	DWG No:	REV: 3
CHK'D: BH	PLOT: 20211020.1446	CADFILE: 677011-403R2	677011-403	

LEGEND

-  SEDIMENT REMEDIATION BY DREDGING
-  SEDIMENT REMEDIATION BY EXCAVATION



NOTES

1. ORIGINAL DRAWING IN COLOUR.
2. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INTRUSIVE WORK. NOT ALL UTILITIES MAY BE SHOWN.
3. ELEVATIONS ARE IN METRES, TO CHART DATUM CITY OF VANCOUVER MONUMENT V-2901 LOCATED AT THE INTERSECTION OF VICTORIA DRIVE AND COMMISSIONER STREET. ELEVATION = +8.316m (CHART DATUM), +5.271m (GEODETTIC DATUM).
4. CHART DATUM = CVD28GVRD GEODETTIC DATUM + 3.045m

REFERENCE DRAWINGS

No.	DATE	DESCRIPTION
20-191-MA-102	2021-03-01	SNC-LAVALIN

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
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2	2021-09-24	ISSUED TO CLIENT AS DRAFT	PES	BH
1	2021-08-30	ISSUED TO CLIENT	PES	BH
0	2021-07-14	ISSUED TO CLIENT AS DRAFT	PES	BH



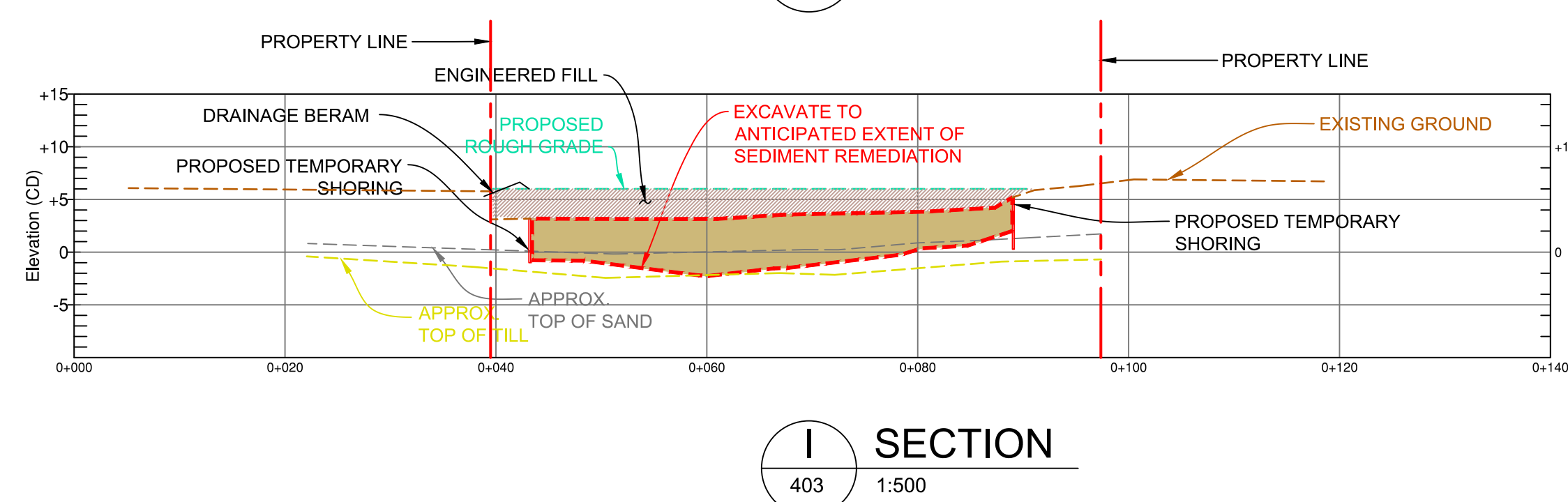
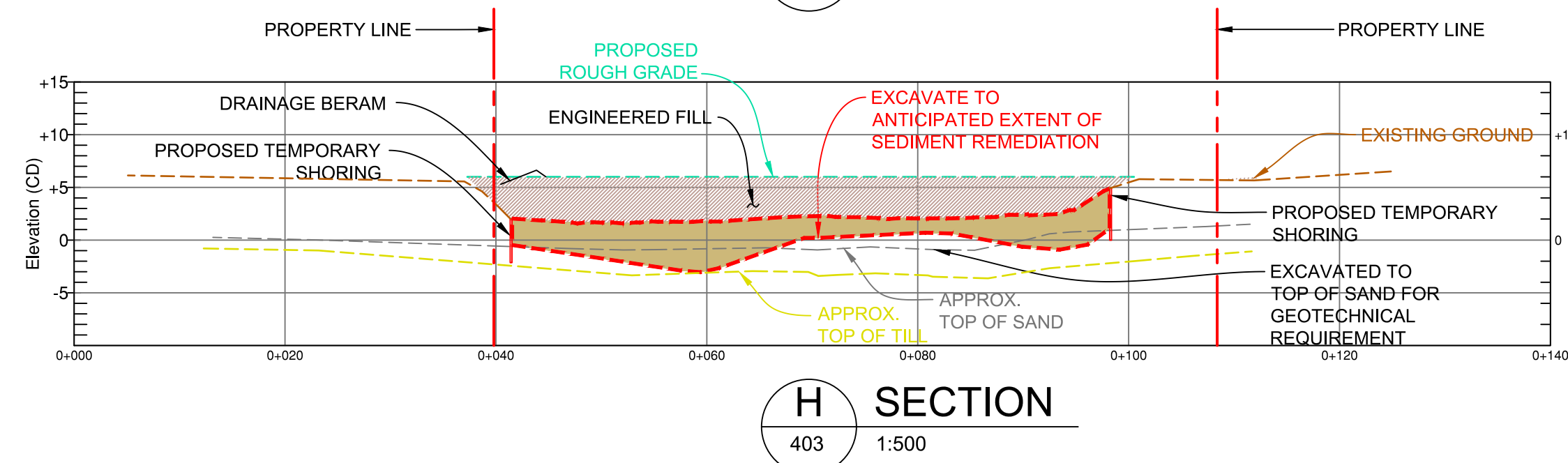
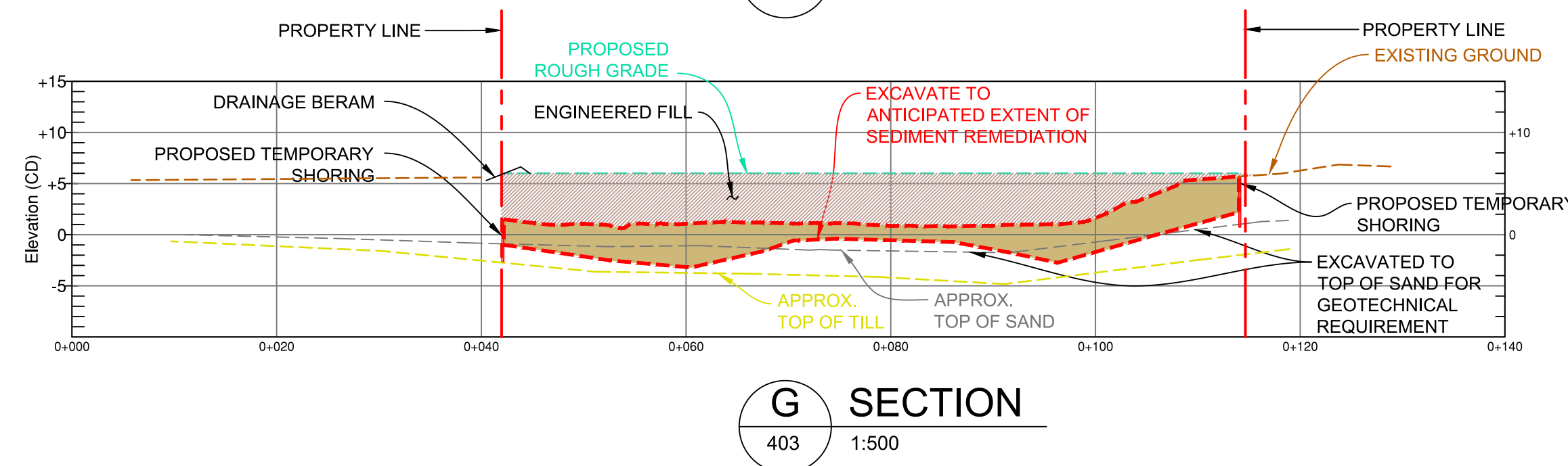
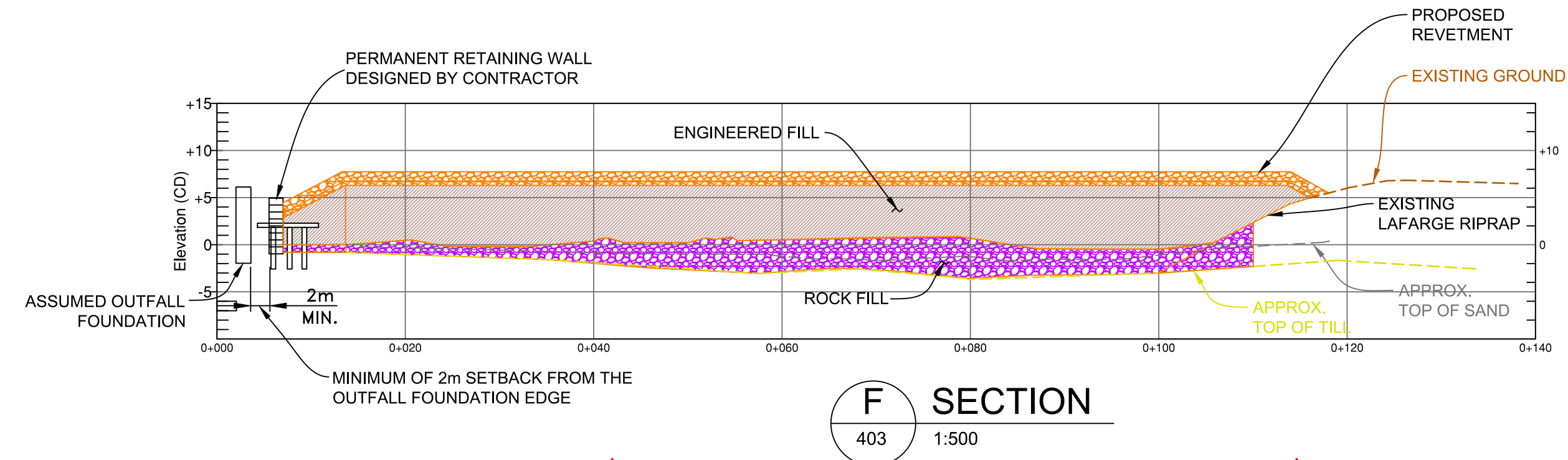
CLIENT NAME:
VANCOUVER FRASER
PORT AUTHORITY

PROJECT LOCATION:
FORMER STERLING SHIPYARD SITE
2089-2095 COMMISSIONER ST., VAN., BC



REMEDIAL EXTENT SECTIONS

DWN BY: JG	SCALE: 1:500	DATE: 2021-07-13	DWG No:	REV: 3
CHK'D: BH	PLOT: 20211020.1448	CADFILE: 677011-403R.dwg	677011-404	



LEGEND

- SEDIMENT REMEDIATION BY DREDGING
- SEDIMENT REMEDIATION BY EXCAVATION

NOTES

1. ORIGINAL DRAWING IN COLOUR.
2. LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INTRUSIVE WORK. NOT ALL UTILITIES MAY BE SHOWN.
3. ELEVATIONS ARE IN METRES, TO CHART DATUM CITY OF VANCOUVER MONUMENT V-2901 LOCATED AT THE INTERSECTION OF VICTORIA DRIVE AND COMMISSIONER STREET.
ELEVATION = +8.316m (CHART DATUM),
+5.271m (GEODETTIC DATUM).
4. CHART DATUM = CVD28GVRD GEODETTIC DATUM + 3.045m

REFERENCE DRAWINGS

No.	DATE	DESCRIPTION
20-191-MA-103	2021-03-03	SNC-LAVALIN

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
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1	2021-08-30	ISSUED TO CLIENT	PES	BH
0	2021-07-14	ISSUED TO CLIENT AS DRAFT	PES	BH



CLIENT NAME:
VANCOUVER FRASER
PORT AUTHORITY

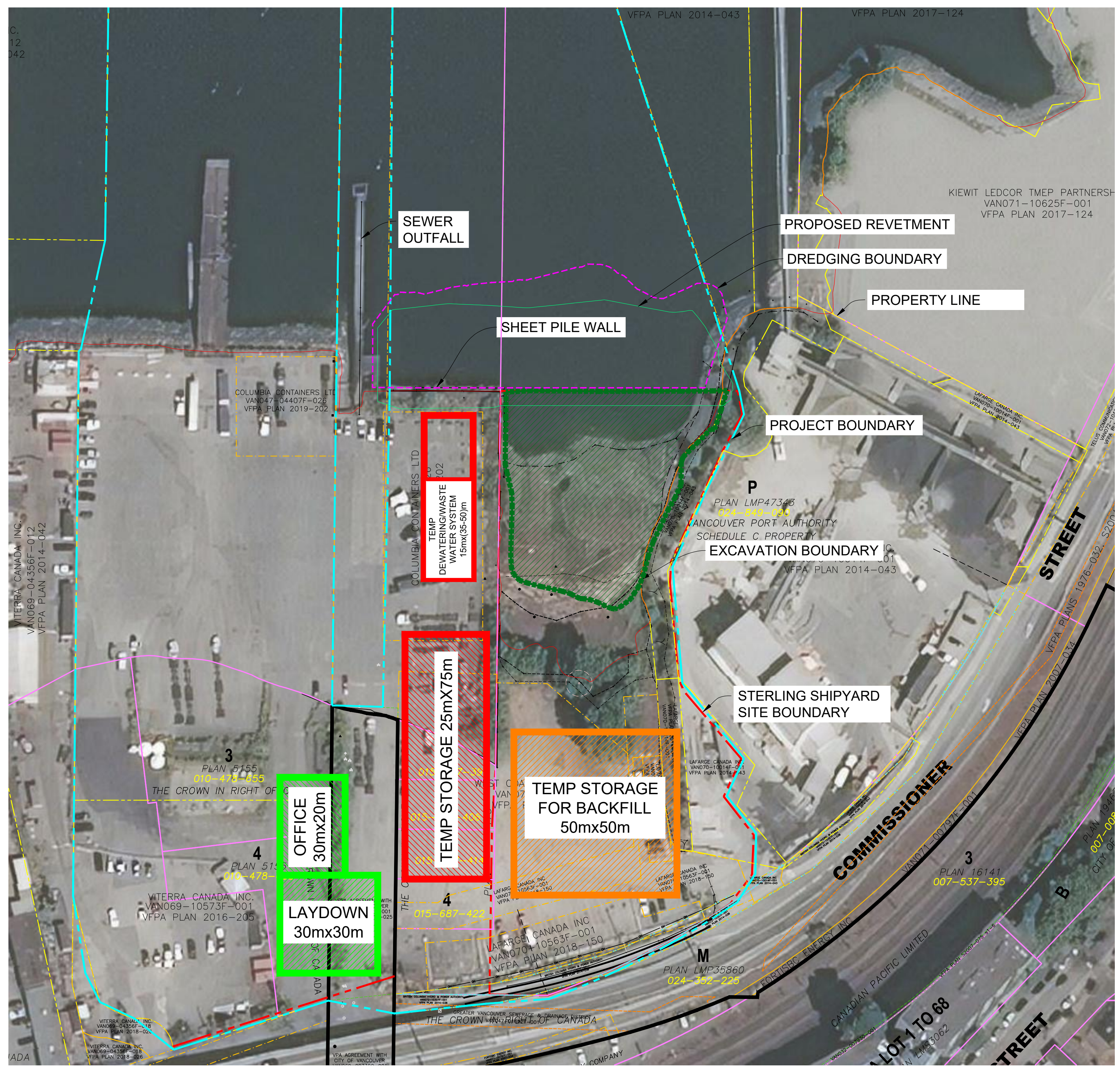
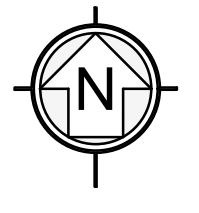
PROJECT LOCATION:
FORMER STERLING SHIPYARD SITE
2089-2095 COMMISSIONER ST., VAN., BC



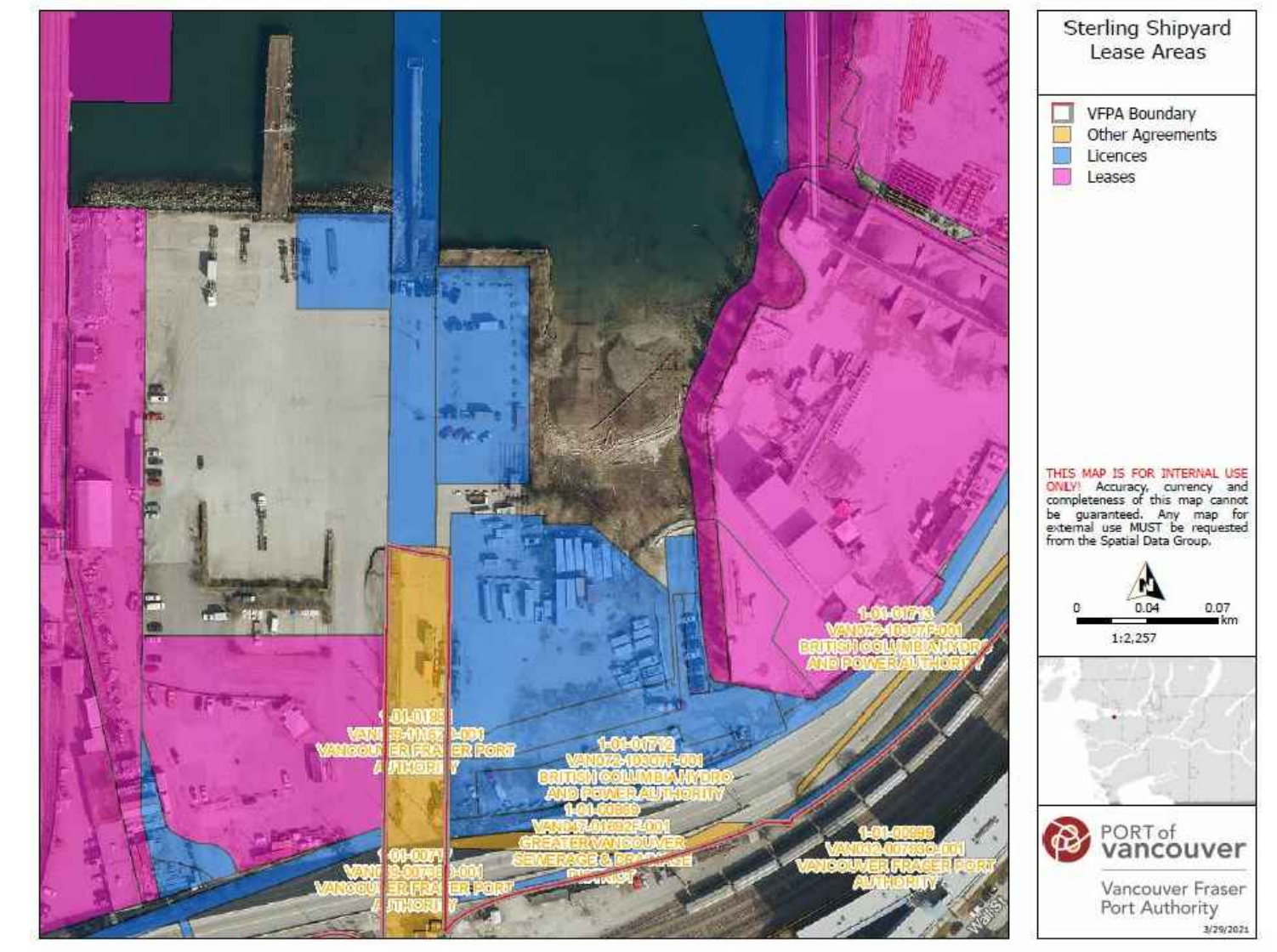
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REMEDIAL EXTENT SECTIONS

DWN BY: JG	SCALE: 1:500	DATE: 2021-07-13	DWG No:	REV.: 3
CHK'D: BH	PLOT: 20211020.1449	CADFILE: 677011-403R2	677011-405	

TITLE BLOCK CL-17B.rwg
 DATE: 2021/09/28 - 5:56pm
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PLAN
 1:750

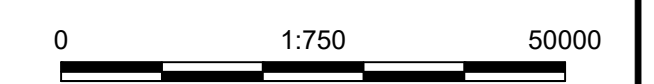


Show high tide and low tide lines

- LEGEND:**
- PROJECT BOUNDARY
 - SITE BOUNDARY
 - PROPERTY LINE
 - PROPOSED EXCAVATION LIMITS
 - PRIORITY 1 AREAS
 - PRIORITY 2 AREAS
 - PRIORITY 3 AREAS

- NOTES:**
1. FOR GENERAL NOTES, SEE DWG 070-010-GA-001.
 2. ELEVATIONS ARE IN METRES, TO CHART DATUM CITY OF VANCOUVER MONUMENT V-2901 LOCATED AT THE INTERSECTION OF VICTORIA DRIVE AND COMMISSIONER STREET.
 ELEVATION = 8.316m (CHART DATUM),
 5.271m (GEODETIC DATUM).
 3. CHART DATUM = CVD28GVRD GEODETIC DATUM + 3.045m

PRELIMINARY
 DO NOT USE FOR CONSTRUCTION



Ref. No.	REFERENCE

<p>677011</p>		PB 21/09/21 ISSUED FOR 90% REVIEW PA 21/05/12 ISSUED FOR 60% REVIEW No. Date REVISION Dr'n Ch'd
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VANCOUVER FRASER PORT AUTHORITY
 ENGINEERING DEPARTMENT

DESIGN BY	-
DRAWN BY	J. GENG
APPROVED	-
DATE	2021-MAY-12
SCALE	AS SHOWN
VFPA SITE	VAN 070

STERLING SHIPYARD REMEDIATION & INFILL
CONCEPTUAL CONTRACTOR PLANT LAYOUT

SIZE DWG: **070-010-GA-003**
 SHEET: **1 of X**
 REV: **PB**

Appendix I

SNC-Lavalin Memorandum – Intertidal Area Sediment
Quality Investigation Results





MEMORANDUM

To: Kate Schendel, M.Sc., P.Ag.
Acting Manager and Environmental Specialist

Date: October 21, 2021

From: Bill Hung

Ref: 685033

Subject: Sediment Quality Investigation Results
Intertidal Area, Former Sterling Shipyard
2089 to 2095 Commissioner Street, Vancouver, BC

1 Introduction

As requested by the Vancouver Fraser Port Authority (port authority), SNC-Lavalin Inc. (SNC-Lavalin) has prepared this memorandum to document results of the sediment quality investigation conducted in August 2021 in the intertidal area at the former Sterling shipyard boatway, located at 2089 to 2095 Commissioner Street in Vancouver (“Site”). The work was conducted under port authority Contract 19-0258 for Ad Hoc Environmental Consulting Services.

2 Background and Objectives

The port authority has planned to complete Sterling Shipyard Remediation and Infill Project (Project) at the Site in 2022/2023. The Project is expected to remove contaminated sediments (exceeding applicable regulatory criteria) and geotechnically unsuitable sands by excavation within the intertidal area of the Site. Contaminated sediments within the down-current toe of a proposed rock berm in the adjacent subtidal area to the north will be remediated by dredging. The removed materials will be disposed of off Site at licensed facilities approved by the port authority. The remediation will be followed by Site redevelopment by infilling over the intertidal area to raise the grade and reclaim additional land for future industrial use.

The objective of the investigation was to determine whether sediments in the intertidal area exceeded applicable BC *Hazardous Waste Regulation*¹ (HWR) standards. Due to the lack of TCLP results from the intertidal area in the past, direct comparison of available in situ investigation data to the HWR leachate quality standards was not recommended for managing off-Site disposal of excavated substrate. To reflect the limited analytical information, it was estimated that 5% to 20% of the contaminated material volume in the intertidal area may be considered Hazardous Waste (HW). However, as informed by the Project Class B cost estimates (June 2021) prepared by Handscomb Limited of Vancouver, BC, it was identified that the cost implications of not having certainty of the HW quantity for the intertidal area could be substantial (>\$250,000). Therefore, it is determined that the proposed investigation was required to:

¹ *Hazardous Waste Regulation* (HWR), B.C. Reg. 64/2021 / effective March 11, 2021.



- › obtain sediment HW characterization data from strategic (worst case contaminant concentrations) locations in the intertidal area to mitigate Project scope risks (uncertainties) and enable a preferred ‘hot loading’ excavation and transport methodology for remediation of the intertidal area; and
- › allow greatest tender pricing certainty pertaining to the HW quantity and overall contaminated material management and disposal for the Project.

3 Regulatory Framework

The Site is located on the port authority land and is under federal jurisdiction. Environmental quality at the Site is governed by federal legislation and supporting regulations and guidelines. However, as a matter of best practice, it is port authority’s policy that environmental remediation and related site development work also be conducted to meet requirements of provincial legislation and municipal requirements in which the Site resides. Specific sediment guidelines and standards applicable to the Site are outlined below.

3.1 Sediment Guidelines

The Canadian Council of Ministers of the Environment (CCME) sediment quality guidelines (SQG) for the protection of aquatic life are applicable for characterizing sediment quality at the Site. There are two CCME SQGs: Interim Sediment Quality Guidelines (“ISQG”, derived from Threshold Effects Levels [TELs]), and Probable Effects Levels (PELs). The ISQG represents concentrations below which adverse biological effects are rarely expected. The PEL represents the lower limit of the range of chemical concentrations that are usually or always associated with adverse biological effects. TELs and PELs are based on statistically derived percentiles from a database of co-occurrence data (i.e., biological effects and sediment chemistry), which includes studies containing both effects and no-effects biological data. An exceedance of the ISQG values should not be interpreted that concentrations will cause an adverse effect; rather, they are intended to assist in identifying situations that have the potential to be harmful to aquatic life.

A joint federal and provincial sediment technical committee was established in 1998 to harmonize procedures for assessing and managing contaminated sediments in BC. The committee included representatives from Environment Canada (currently Environment and Climate Change Canada), Fisheries and Oceans Canada, and BC Ministry of Water, Land and Air Protection (currently Ministry of Environment and Climate Change Strategy [ENV]). As a result, the Criteria for Managing Contaminated Sediments in British Columbia (CMSCBC) were published in 2003 and subsequently became the current BC *Contaminated Sites Regulation*² (CSR) schedule 3.4 Generic Numerical Sediment Standards. The CSR Numerical Sediment Standards incorporate a more recent scientifically-based approach and present the harmonized numerical criteria values accepted by federal and provincial regulators, for application at both federal and provincial sites in BC. Hence, the CSR sediment standards are also applicable to sediments at the Site.

² *Contaminated Sites Regulation* (CSR), B.C. Reg. 375/96, includes amendments up to B.C. Reg. 64/2021, March 11, 2021.



The CSR sediment standards provide freshwater and marine/estuarine standards for sensitive and typical uses. The sensitive standards provide a relatively high level of protection for sediment dwelling organisms (i.e., sediment concentrations below the sensitive standards have a relatively low probability of a >20% effect of observing sediment toxicity), suitable for the near-term recovery of the benthic ecosystem where such habitat already exists. Whereas the typical sediment standards provide a moderate level of protection and are appropriate for industrial sites where sensitive components of the aquatic ecosystem are not present (and there is a 50% chance of a >20% effect); suitable for the longer-term recovery of the benthic ecosystem in such scenarios. The Site has been surrounded by former and active industrial operations since the early 1900s. The Site and neighbouring facilities, including a City of Vancouver combined sewer outfall northwest of the Site, have all contributed to the industrialized nature of Burrard Inlet. Therefore, the CSR typical sediment standards are the appropriate and relevant guidelines for establishing Site-specific remediation objectives based on the history and adjacent land use, and were used to evaluate sediment analytical data and characterize sediment conditions.

The remedial strategy for the Project is to conduct a remedial excavation of contaminated sediments in the current intertidal area. Contaminated sediments within the extent of the down-current toe of the rock berm barrier wall in the subtidal area will be remediated by dredging. The remediation will be followed by Site redevelopment to infill the intertidal area and raise the Site grading to create additional usable industrial land. A compensatory habitat will be constructed in the current subtidal area and on the north side of the rock berm to enhance marine biodiversity and aquatic productivity. Although there are currently no recognized sensitive habitats in provincial or municipal land use plans in the area, the habitat is expected to create new ecologically productive areas and promote colonization of benthic invertebrates. Given the above and as a matter of best practice to support the Project, applicable regulatory criteria (herein referred to as the “Applicable Guidelines”) applied to existing sediment data obtained from the Site are as follows:

- › **Current Intertidal Area - CSR typical sediment standards; and**
- › **Current Subtidal Area - CSR typical and sensitive sediment standards.**

CCME PELs which are similar to CSR typical sediment standard values, are also included within the tabulated analytical results for comparison.

3.2 Soil Guidelines

Schedule 3.4 Section 1 of the CSR defines sediment as “*particulate material that usually lies below water*”. Since the upland area of the Site is not usually under water, the CSR sediment standards and PELs used for the subtidal and intertidal areas do not apply to the uplands. Historical soil analytical results obtained from the lower uplands directly south of the intertidal area, have been compared to the CSR soil matrix standards for industrial land use (IL) considering Site-specific factors. The results are included in attached data tables and drawing to inform accumulated results of Site characterization for different areas.

The CSR IL standards are also used to establish off-Site disposal objectives for the excavated contaminated sediment during the Project.



3.3 Hazardous Waste Management Guidelines

Provisions outlined in the BC HWR relating to “Dangerous Goods” defined under the federal *Transportation of Dangerous Goods Regulations*³ (TDGR) specify processes for storage, transport and/or treatment of material considered HW. The relevant administrative requirements within the HWR would be applicable when contaminated sediments at the Site are being transported off Site.

4 Methodology

SNC-Lavalin obtained a port authority Category A Permit to enable the field investigation and coordinated access to the intertidal area with port authority representatives to ensure required security protocols are followed. All field tasks were completed in accordance with SNC-Lavalin’s health and safety program and preferred operating procedures (POPs) that conform with industry best practices and applicable regulatory guidelines and protocols.

4.1 Sediment Quality Investigation

The field investigation was conducted by SNC-Lavalin on August 19 and 20, 2021. Under the direction of SNC-Lavalin, Blue Max Drilling Inc. of Surrey, BC (Blue Max) advanced seven boreholes (BHs 21-8 through 21-16) at locations shown on Drawing 509211-602. To support the project objective, all of the locations except for BHs 21-13, 21-15 and 21-16 were selected based on historical analytical results showing the highest concentrations of known and suspect contaminants of concern (COCs) in sediment, porewater and groundwater, including metals, hydrocarbons and polychlorinated biphenyls (PCB). BHs 21-13, 21-15 and 21-16 were completed to provide sediment quality data from pre-defined vertical extents of the planned remedial excavation.

Prior to the drilling, a BC One Call was completed to assist in identifying potential utility services proximate to the investigated locations. The drilling program was carried out using a track-mounted sonic vibratory drill rig during low tide periods to enable access and operation at each location. The boreholes were drilled from the existing ground surface to a maximum depth of 4.3 m to obtain sediment samples for characterization of targeted contaminants.

Sediment stratigraphy was logged and cored sediment samples were collected from each borehole for selective laboratory analysis of parameters of interest, including: polycyclic aromatic hydrocarbons (PAH); metals; PCB; benzene, toluene, ethylbenzene, and total xylenes (BTEX); and mineral oil and grease (MOG). Selected samples were analyzed for leachable metals and PAH using the ENV-approved TCLP. A total of 23 sediment samples, including three quality assurance / quality control (QA/QC) field duplicate samples, were submitted with appropriate chain-of-custody documentation to ALS Canada Ltd. (ALS) in Burnaby, BC for analysis of some or more of the above parameters. The sampling and analysis rate were appropriate to meet the investigation objectives.

The boreholes were backfilled with bentonite sealants upon completion. Excess spoils collected during the drilling were drummed and transported by Blue Max to a licensed soil disposal facility. A photograph from the borehole drilling is shown below.

³ *Transportation of Dangerous Goods Regulations* (TDGR) (Canada), SOR/2001-286, last amended on February 19, 2020.



Photograph 1: Drilling investigation at Borehole 12-16, located in the northwest portion of the intertidal area (looking north from the central portion of intertidal area)

4.2 QA/QC

QA/QC measures were undertaken for all sampling and analyses to reduce field variability and laboratory measurement uncertainty. In addition, ALS also analyzed and reported data for sample duplicates, spikes, and surrogates as an internal quality control measure; this data is provided in the ALS laboratory analytical report (Attachment 3).



5 Investigation Results

The investigation results are presented below. A copy of laboratory certificate of analysis is included in Attachment 3.

5.1 Stratigraphy and Field Observations

General sediment conditions observed at the investigated locations were similar to those identified during previous assessments of the Site. The stratigraphy comprised sand and gravel fill underlain by a woodwaste layer, followed by sand and/or silt with shell fragments of various thickness. The sand and silt unit was observed to the maximum investigated depth of 4.3 m below ground surface (bgs), or is underlain by a till-like sand and/or silt formation extending beyond 4.3 m bgs.

Hydrocarbon-like odours were noted on sediment samples recovered from near surface depths to 1.7 m bgs at several locations, including BHs 21-8, 13 and 14 in the south portion of the intertidal area and where historic elevated hydrocarbon concentrations were measured in porewater samples, and BH21-15 in the north portion proximate to the subtidal area. Measured sediment headspace vapour concentrations were insignificant (up to 110 parts per million by volume) on the samples exhibiting the odour.

Detailed descriptions of the sediment profile observed are provided in the borehole logs included in Attachment 1. Examples of the cored samples are shown in below photographs.



Photograph 2: Sediment sample of lower woodwaste layer and underlying till-like grey sand and silt from BH21-14-05 (approximately 3.7 m bgs)



Photograph 3: Sediment sample of grey sand and underlying till-like silt (light brown colour) from BH21-16 (~2 m bgs)



5.2 Sediment Quality

Analytical results from the August 2021 investigation along with data from previous investigations conducted in the intertidal and subtidal areas and portions of uplands (bordering of the intertidal area) of the Site are summarized in Tables 1 through 14 and on Drawing 509211-602.

As shown in Tables 6 to 10 and on Drawing 509211-602, sediment samples collected from all the boreholes except BHs 21-13, 21-15 and 21-16, had concentrations of PAH (more than ten constituents), metals (arsenic, cadmium, chromium, copper, lead, mercury and/or zinc), and/or PCB greater than Applicable Guidelines. The sediment contamination extends from roughly 0.2 m to beyond 2.9 m bgs, and is inferred to be vertically delineated at a maximum depth of 5 m bgs in the intertidal area based on all available data to date. The remaining samples, including those obtained from BHs 21-13, 21-15 and 21-16 which were intended to provide confirmation of vertical remedial limit in advance of excavation of the intertidal area, were less than Applicable Guidelines for all parameters analyzed.

Selected samples containing the highest concentrations of COCs and lower concentrations considering laboratory-reported PAH toxicity equivalency quotient (TEQ) values, were analyzed for leachable metals and PAH using the TCLP method. The results for all samples tested were less than applicable HWR leachate quality standards. BHs 21-8 and 21-10 were placed in an area where a former porewater sample collected in 2018 (PW18-1) contained elevated concentrations of light extractable petroleum hydrocarbons (EPHW_{C10-C19}/LEPHw) inferring the presence of free phase hydrocarbons (FP). The sediment samples recovered from BHs 21-8 and 21-10 were tested for parameters regulated by the HWR (i.e., BTEX and MOG). The BTEX concentrations were low and consistent with historical results. Therefore, BTEX TCLP testing for the samples were not required to compare with HWR leachate quality standards. The samples analyzed for MOG were less than the applicable HWR standard.

A summary of TCLP concentrations for the evaluated samples is provided in Table A below. It should be noted that TCLP results are attributable to a variety of factors (including but not limited to pH which is a function of leachability, the absence/presence of organic ligands capable of forming stable complexes with metal elements) and not directly sediment concentrations dependent.

Table A: TCLP Concentration Summary

Parameter	BH21-8-01		BH21-8-02		BH21-11-01		BH21-12-01		BH21-14-01		BH21-14-02	
	Total (µg/g)	TCLP (µg/L)	Total (µg/g)	TCLP (µg/L)	Total (µg/g)	TCLP (µg/L)	Total (µg/g)	TCLP (µg/L)	Total (µg/g)	TCLP (µg/L)	Total (µg/g)	TCLP (µg/L)
Arsenic	294	< 1,000	284	< 1,000	23.3	< 1,000	25.8	< 1,000	52.7	< 1,000	104	< 1,000
Copper	15,600	< 50	14,600	< 50	4,060	< 50	462	120	630	700	11,400	< 50
Lead	4,270	< 250	3,620	< 250	869	460	276	< 250	462	< 250	2,840	1,010
Mercury	52.1	< 1.0	61.9	< 1.0	31.6	2.4	1.58	< 1.0	1.85	< 1.0	42.1	< 1.0
Zinc	5,820	970	5,450	< 500	1,220	10,200	1,160	2,530	893	3,290	4,050	11,200

Benzo(a)pyrene TCLP results were less than laboratory method detection limit of 0.05 µg/L for all samples analyzed.



5.3 QA/QC Results

Blind field duplicate results and relative percent difference (RPD) calculations for the three QA/QC samples obtained are presented in Tables 7 to 9. Results of duplicate sample testing indicated that RPDs were within SNC-Lavalin’s acceptance criteria (50%), or less than five times the reported detection limits (i.e., no RPD was calculated) except the following samples.

- › RPDs calculated for sample pair BH21-8-01/02 (0.2 m to 0.5 m depth), collected from a borehole in the central portion of the intertidal area, exceeded the acceptable RPD for concentrations of acenaphthene, cobalt and tin.
- › RPDs calculated for sample pair BH21-11-01/02 (0.5 m to 0.9 m depth), collected from a borehole also located in the central portion of the intertidal area, exceeded the acceptable RPD for concentrations of cadmium, chromium, copper, lead, mercury and zinc.
- › RPDs calculated for sample pair BH21-14-02/03 (1.1 m to 1.4 m depth), obtained from the south portion of the intertidal area, exceeded the acceptable RPD for concentrations of 1-methylnaphthalene, 2-methylnaphthalene, 1,2-methylnaphthalene, acenaphthene, chromium and silver.

An internal review of analytical results and laboratory reports was conducted by SNC-Lavalin for the exceedances. No laboratory QA/QC issues were suspected. ALS subsequently confirmed that all laboratory QC results were acceptable and there were no sources of potential carry-over present. ALS also reviewed the sample chromatograms and mass spectrums and indicated that there were no issues with the data quality or laboratory errors found. As the soil samples in question consisted of either woodwaste or sand containing abundant wood debris, the quantity of organic matter of varying sizes and varying content of fine-grained sand within one sample of the duplicate set may produce considerably different results. It is of SNC-Lavalin and ALS opinions that sample heterogeneity was the main cause for the discrepancies, and the results do not change the interpretation of the sediment data. The analytical results are considered reliable.

6 2021 Representative Data Comparison

The 2021 investigation data for key PAH and inorganic contaminant indicators was compared to the pre-2021 data for the intertidal area to confirm that sufficient data was collected to be considered representative of the material to be excavated. The 95th percentile concentration (5% of the data set exceeds the referenced value) were calculated and the maximum concentrations were presented for each contaminant indicator for both the pre-2021 and 2021 data sets and are shown below.

Table B: Data Comparison Summary (Pre-2021 to 2021)

Parameter	Pre-2021		2021	
	95 th Percentile (µg/g)	Maximum (µg/g)	95 th Percentile (µg/g)	Maximum (µg/g)
Naphthalene	3.30	11.5	0.65	3.2
Acenaphthene	5.21	23.2	1.81	4.22
Fluoranthene	33.6	80.3	77.2	97.9
Benzo(a)pyrene	10.4	18.2	39.7	39.8
Arsenic	341	581	266	294



Table B (Cont'd): Data Comparison Summary (Pre-2021 to 2021)

Parameter	Pre-2021		2021	
	95 th Percentile (µg/g)	Maximum (µg/g)	95 th Percentile (µg/g)	Maximum (µg/g)
Copper	6040	17400	14280	15600
Lead	3680	7360	3542	4270
Mercury	18.7	102	51.1	61.9
Zinc	3668	5390	5310	5820
Total PCB	17.6	32.1	25.4	45.4

BOLD indicates higher concentrations (Pre-2021 or 2021).

The data comparison indicated:

- › Fluoranthene, benzo(a)pyrene, zinc and total PCB concentrations had higher 95th percentiles and maximums in the 2021 data set.
- › Copper and mercury maximum concentrations were higher in the pre-2021 data set, but the 95th percentile was higher in the 2021 data set. This indicates that the majority of the pre-2021 concentrations were statistically lower than those measured by the 2021 data set.
- › Naphthalene and acenaphthene concentrations were higher in the pre-2021 data set. However, these parameters do not have HWR leachate quality standards and, therefore, do not affect evaluation for HW.
- › Arsenic and lead concentrations were higher in the pre-2021 data set. However, an evaluation of the concentrations shows that the 95th percentiles are in the same general range of concentrations and all analyzed TCLP concentrations were well below the standards.

The substrate in the study area is expected to be compositionally heterogenous and replicating analytical results is often not possible. As such, on a sub-sample scale, some constituents could be measured at high concentrations during analysis to be reported in the results (heterogenous bias). However, based on the TCLP results provided and statistical data comparison, it is of our opinion that the 2021 data sufficiently represents the material to be excavated and can be used to draw conclusions in comparison to HWR standards.

7 Conclusions

Drawing 509211-602 provides an overview of the current sediment and soil condition on the Site. The following conclusions are based on the 2021 intertidal area investigation results and previously reported sediment conditions for both the intertidal and subtidal areas:

- › The sediment contaminant profile is consistent with those identified previously in the intertidal and subtidal areas. The contaminant types are PAH, metals and PCB, whereas the contamination in soil in the lower uplands consisted primarily of hydrocarbons (PAH and petroleum hydrocarbon fractions).
- › The majority of the sediment contamination in the intertidal and subtidal areas was found within the fill layer consisting of surficial gravelly sand and underlying woodwaste mixed with silt/sand. There is a low degree of variability in contaminant distribution in the fill layer.



- › Sediment contaminant concentrations were generally one to two orders of magnitude greater than Applicable Guidelines. Based on the investigations completed to date and supporting Toxicity Characteristic Leaching Procedure (TCLP) testing results obtained in 2021, sediments in the intertidal and subtidal areas did not exceed the HWR standards. The characterization results to determine the absence of HW are reliable.
- › The concentrations of PAH, metal and PCB sediment contaminants measured during the August 2021 investigation were in the same range of previous results identified in the intertidal area.
- › Based on all available results, the till formation beneath the fill layer is not contaminated except for the upper till unit at a localized subtidal area directly north of the former Marco Marine Container Inc. site. The contaminant concentrations included arsenic, copper, lead, and zinc greater than Applicable Guidelines, and are vertically delineated at the location at approximately 2.4 m below the sea floor.
- › During the Project, excavated or dredged sediments can be disposed of off Site as exceeding CSR IL standards but less than HWR standards. A summary of sample analytical data representative of in situ sediments within the Project footprint and compared to applicable disposal standards is included in Attachment 2.
- › Porewater/groundwater that may infiltrate and accumulate during remediation in the intertidal area may contain FP, and require corresponding management to comply with applicable Project permit and regulatory requirements.

8 Notice to Reader

This report has been prepared and the work referred to in this report have been undertaken by SNC-Lavalin Inc. (SNC-Lavalin) for the exclusive use of Vancouver Fraser Port Authority (port authority), who has been party to the development of the scope of work and understands its limitations. The methodology, findings, conclusions and recommendations in this report are based solely upon the scope of work and subject to the time and budgetary considerations described in the proposal and/or contract pursuant to which this report was issued. Any use, reliance on, or decision made by a third party based on this report is the sole responsibility of such third party. SNC-Lavalin accepts no liability or responsibility for any damages that may be suffered or incurred by any third party as a result of the use of, reliance on, or any decision made based on this report.

The findings, conclusions and recommendations in this report (i) have been developed in a manner consistent with the level of skill normally exercised by professionals currently practicing under similar conditions in the area, and (ii) reflect SNC-Lavalin's best judgment based on information available at the time of preparation of this report. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our original contract and included in this report. The findings and conclusions contained in this report are valid only as of the date of this report and may be based, in part, upon information provided by others. If any of the information is inaccurate, new information is discovered, site conditions change or standards are amended, modifications to this report may be necessary. The results of this assessment should in no way be construed as a warranty that the subject site is free from any and all environmental impact.



Any soil and rock descriptions in this report and associated logs have been made with the intent of providing general information on the subsurface conditions of the site. This information should not be used as geotechnical data for any purpose unless specifically addressed in the text of this report. Groundwater conditions described in this report refer only to those observed at the location and time of observation noted in the report.

This report must be read as a whole, as sections taken out of context may be misleading. If discrepancies occur between the preliminary (draft) and final version of this report, it is the final version that takes precedence. Nothing in this report is intended to constitute or provide a legal opinion.

The contents of this report are confidential and proprietary. Other than by port authority, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of port authority and SNC-Lavalin.

9 Closure

We trust this report is sufficient for your requirements. Please contact the undersigned if you have any questions.



Bill Hung, MSc, P.Ag.

Senior Project Manager

Environment

Engineering, Design & Project Management

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Drawing

- › 509211-602 - Summary of Sediment/Soil Analytical Results

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TABLE 1: Summary of Analytical Results for Subtidal Sediment - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Monocyclic Aromatic Hydrocarbons					Gross Parameters			Methyl Tert-butyl Ether [MTBE] (µg/g)	Petroleum Hydrocarbon Fractions				
					Benzene (µg/g)	Ethyl-benzene (µg/g)	Toluene (µg/g)	Xylenes (µg/g)	Styrene (µg/g)	VPH (C6-C10) (µg/g)	LEPH (C10-C19) (µg/g)	HEPH (C19-C32) (µg/g)		F1-BTEX (µg/g)	F2 (>C10-C16) (µg/g)	F3 (>C16-C34) (µg/g)	F4 (>C34-C50) (µg/g)	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	5	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	620	< 0.200	-	-	-	-	
	BH21-01-03	2021 02 24	2.0 - 2.1	60	-	-	-	-	-	-	< 200	< 200	-	-	-	-	-	
BH21-02	BH21-02-02	2021 02 24	1.5 - 1.7	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-02-04	2021 02 24	4.3 - 4.4	15	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-03-04	2021 02 24	3.5 - 3.7	220	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	< 200	< 200	< 0.200	< 5	< 30	< 50	< 50	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	10	0.0072	< 0.015	< 0.050	< 0.075	< 0.050	< 10	270	1,280	< 0.200	-	-	-	-	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	0	-	-	-	-	-	-	320	1,220	-	-	-	-	-	
	BH21-05-02	2021 02 24	1.5 - 1.7	50	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	260	< 0.200	-	-	-	-	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	35	0.0127	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	780	< 0.200	-	-	-	-	
	BH21-06-07	2021 02 25	4.0 - 4.1	230	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	40	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-07-04	2021 02 25	2.1 - 2.3	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BC Standard																		
CSR Marine and/or Estuarine Sediment (MR) ^b - Sensitive					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CSR Marine and/or Estuarine Sediment (MR) ^c - Typical					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Federal Guideline																		
CCME CEQG Probable Effect Level (PEL) ^d					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

SHADED	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
OUTLINE	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE	Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b Pathways Included: Sensitive Site.

^c Pathways Included: Typical Site.

^d Guideline to protect marine aquatic life.

TABLE 2: Summary of Analytical Results for Subtidal Sediment - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																						
				Naphthalene	Methylnaphthalene, 1-	Methylnaphthalene, 2-	Methylnaphthalene, 1&2-	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Acridine	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(b+j)fluoranthene	Benzo(b+i+k)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Quinoline
				µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	0.110	0.038	0.039	-	0.0606	0.154	0.131	0.797	0.297	< 0.070	2.12	2.56	0.577	0.594	-	0.901	1.21	0.313	0.680	0.374	0.103	0.373	< 0.010
	BH21-01-02	2021 02 24	1.4 - 1.6	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-01-03	2021 02 24	2.0 - 2.1	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	0.107	0.116	0.099	0.215	0.096	0.179	0.198	1.01	0.439	< 0.050	1.28	1.79	0.742	0.819	-	1.28	1.74	0.460	0.994	0.599	0.146	0.594	< 0.050
	BH21-02-02	2021 02 24	1.5 - 1.7	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	0.018	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
	BH21-02-03	2021 02 24	3.2 - 3.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-02-04	2021 02 24	4.3 - 4.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	0.027	< 0.010	0.012	-	0.0994	0.0406	0.053	0.389	0.164	< 0.020	0.649	1.07	0.341	0.294	-	0.460	0.659	0.199	0.401	0.232	0.0618	0.218	< 0.010
	BH21-03-04	2021 02 24	3.5 - 3.7	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
	BH21-03-05	2021 02 24	4.9 - 5.0	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	0.167	0.118	0.108	-	0.149	0.238	0.240	1.44	0.583	< 0.100	2.75	4.11	1.42	< 1.25	-	2.37	3.22	0.854	1.82	1.05	0.274	1.03	< 0.010
	BH21-04-02	2021 02 24	1.6 - 1.8	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-04-03	2021 02 24	4.3 - 4.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	1.05	0.231	0.246	-	0.189	1.06	0.976	9.18	3.09	< 0.420	14.7	12.5	6.37	5.44	-	6.25	8.53	2.28	4.93	2.46	0.601	2.27	0.018
	BH21-05-02	2021 02 24	1.5 - 1.7	0.416	0.040	0.036	-	0.0335	0.0961	0.058	0.310	0.134	< 0.030	0.689	0.815	0.262	0.270	-	0.331	0.331	< 0.120	0.255	0.141	0.0381	0.140	< 0.010
	BH21-05-03	2021 02 24	2.4 - 2.5	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.058	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-05-04	2021 02 24	2.8 - 2.9	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	0.139	0.053	0.051	-	0.0973	0.300	0.218	0.591	0.406	< 0.060	2.02	1.57	0.524	0.609	-	0.665	0.920	0.255	0.534	0.334	0.0804	0.336	< 0.010
	BH21-06-04	Duplicate	2.3 - 2.4	0.302	0.117	0.131	0.248	0.361	0.539	0.470	2.51	1.02	< 0.200	7.43	5.95	2.17	2.18	-	2.60	3.53	0.926	2.04	1.26	0.294	1.24	< 0.050
QA/QC RPD%				74	75	88	*	115	57	73	124	86	*	114	116	122	113	-	119	117	114	117	116	114	115	*
BH21-07	BH21-06-07	2021 02 25	4.0 - 4.1	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-07-01	2021 02 25	0.7 - 0.8	< 0.010	< 0.010	< 0.010	-	0.0073	0.0087	0.010	0.042	0.0164	< 0.010	0.110	0.158	0.050	< 0.060	-	0.078	0.118	0.040	0.059	0.039	0.0099	0.040	< 0.010
	BH21-07-02	2021 02 25	1.3 - 1.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-07-03	Duplicate	1.3 - 1.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
QA/QC RPD%				*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*
BH21-07-04	2021 02 25	2.1 - 2.3	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Sensitive				0.24	n/a	0.12	n/a	0.079	0.055	0.089	0.34	0.15	n/a	0.93	0.87	0.43	0.52	n/a	n/a	n/a	n/a	0.47	n/a	0.084	n/a	n/a
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical				0.47	n/a	0.24	n/a	0.15	0.11	0.17	0.65	0.29	n/a	1.8	1.7	0.83	1	n/a	n/a	n/a	n/a	0.92	n/a	0.16	n/a	n/a
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^c				0.391	n/a	0.201	n/a	0.128	0.0889	0.144	0.544	0.245	n/a	1.494	1.398	0.693	0.846	n/a	n/a	n/a	n/a	0.763	n/a	0.135	n/a	n/a

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

SHADED	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
OUTLINE	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE	Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 3: Summary of Analytical Results for Subtidal Sediment - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical Parameters	Sediment Salinity				Total Metals																					
				pH	% Saturation %	Soluble Chloride mg/L	Sodium Ion µg/g	Chloride Ion µg/g	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Lithium µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Uranium µg/g	Vanadium µg/g	Zinc µg/g	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	8.02	93.3	9,020	5,510	8,420	3.76	11.9	133	0.26	0.850	30.7	8.80	215	107	15.8	346	0.319	3.24	19.5	0.42	0.34	128	7.3	1.44	63.9	182	
	BH21-01-02	2021 02 24	1.4 - 1.6	8.86	-	-	-	-	0.22	3.93	97.8	0.36	0.472	21.3	9.22	25.7	4.57	14.9	499	< 0.0500	1.14	8.58	0.34	< 0.10	58.8	< 2.0	0.556	117	63.9	
	BH21-01-03	2021 02 24	2.0 - 2.1	8.82	-	-	-	-	0.14	1.94	65.7	0.30	0.110	18.0	7.67	22.7	3.99	13.7	449	< 0.0500	0.60	8.48	< 0.20	< 0.10	39.2	< 2.0	0.402	68.9	54.3	
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	8.08	97.7	9,480	6,160	9,260	6.72	25.3	93.2	0.21	1.14	34.5	8.11	414	170	16.1	285	1.13	4.88	24.3	0.54	0.43	89.9	11.4	2.07	57.4	261	
	BH21-02-02	2021 02 24	1.5 - 1.7	8.55	27.6	9,620	1,620	2,660	0.19	2.00	32.2	< 0.10	0.102	12.9	4.86	13.5	2.32	16.1	200	< 0.0500	2.06	5.56	< 0.20	< 0.10	35.9	< 2.0	0.678	44.3	29.5	
	BH21-02-03	2021 02 24	3.2 - 3.4	9.66	-	-	-	-	0.20	1.65	79.0	0.20	0.089	15.2	5.46	17.4	3.30	6.5	213	< 0.0500	0.18	8.70	< 0.20	< 0.10	38.4	< 2.0	0.510	49.6	36.4	
	BH21-02-04	2021 02 24	4.3 - 4.4	8.91	-	-	-	-	0.21	3.40	104	0.33	0.150	24.2	9.76	20.6	7.28	14.4	606	< 0.0500	1.44	9.91	< 0.20	< 0.10	55.7	< 2.0	0.645	88.4	72.6	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	8.36	28.8	10,500	1,860	3,020	1.78	5.50	48.9	0.13	0.236	18.4	6.29	40.4	39.8	27.1	239	0.200	2.32	10.2	< 0.20	< 0.10	147	3.5	1.33	56.9	66.7	
	BH21-03-04	2021 02 24	3.5 - 3.7	9.38	36.3	466	147	169	0.20	2.70	76.4	0.26	0.081	18.2	8.31	19.0	3.47	11.2	309	< 0.0500	0.21	11.2	< 0.20	< 0.10	35.3	< 2.0	0.394	65.0	54.4	
	BH21-03-05	2021 02 24	4.9 - 5.0	9.55	-	-	-	-	0.18	1.79	100	0.34	0.080	18.8	7.44	19.4	4.09	12.4	1,730	< 0.0500	0.77	7.29	< 0.20	< 0.10	87.4	< 2.0	0.438	81.1	51.8	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	8.56	102	3,570	2,340	3,640	326	570	176	0.53	2.62	91.0	35.8	1,110	628	14.4	806	1.28	52.4	46.7	0.90	1.76	216	54.8	2.89	64.1	2,070	
	BH21-04-02	2021 02 24	1.6 - 1.8	9.80	30.4	621	156	189	0.26	2.08	55.4	0.16	0.051	11.6	4.71	14.0	2.65	4.7	178	< 0.0500	0.30	8.40	< 0.20	< 0.10	29.6	< 2.0	0.327	37.2	28.6	
	BH21-04-03	2021 02 24	4.3 - 4.4	9.23	-	-	-	-	0.19	2.74	58.4	0.27	0.142	16.3	9.00	55.2	3.46	12.3	505	< 0.0500	0.63	8.40	0.27	0.11	34.1	< 2.0	0.324	74.4	58.4	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	8.45	142	5,240	4,500	7,440	150	334	149	0.44	2.50	69.8	21.7	757	450	16.2	459	2.09	37.2	40.6	0.97	1.66	441	34.5	2.34	64.2	1,510	
	BH21-05-02	2021 02 24	1.5 - 1.7	9.13	47.5	569	266	270	33.8	74.6	236	0.28	0.500	29.1	13.3	129	120	14.6	478	0.362	5.15	16.6	< 0.20	0.31	77.8	7.8	0.842	67.5	357	
	BH21-05-03	2021 02 24	2.4 - 2.5	8.23	-	-	-	-	0.52	3.87	77.3	0.26	0.096	17.6	8.82	20.9	3.87	14.4	346	< 0.0500	0.65	8.79	< 0.20	< 0.10	37.4	< 2.0	0.438	64.9	58.4	
	BH21-05-04	2021 02 24	2.8 - 2.9	8.87	-	-	-	-	0.11	2.14	60.9	0.22	0.057	15.6	7.47	17.0	2.53	11.7	312	< 0.0500	0.49	6.86	< 0.20	< 0.10	30.7	< 2.0	0.496	52.3	50.1	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	7.79	170	8,170	8,380	13,900	1.40	5.81	68.4	0.15	1.44	25.6	6.81	99.6	104	21.8	217	1.84	6.54	16.1	0.53	0.54	70.2	12.7	2.38	65.0	194	
	BH21-06-04	Duplicate	2.3 - 2.4	7.73	-	-	-	-	1.17	5.18	55.7	0.14	0.891	18.1	5.94	67.7	62.4	19.6	192	1.20	4.60	12.4	0.39	0.37	86.4	8.4	2.04	50.5	127	
	QA/QC RPD%				1	-	-	-	-	18	11	20	*	47	34	14	38	50	11	12	42	*	26	*	37	21	41	15	25	42
BH21-07	BH21-06-07	2021 02 25	4.0 - 4.1	9.76	-	-	-	-	0.32	1.75	82.2	0.18	0.034	14.3	5.66	16.2	3.13	5.9	222	< 0.0500	0.27	9.05	< 0.20	< 0.10	32.5	< 2.0	0.369	45.8	35.8	
	BH21-07-01	2021 02 25	0.7 - 0.8	9.29	35.2	2,980	683	1,050	1.01	2.02	51.5	0.10	0.189	10.4	4.46	37.7	36.5	5.1	223	0.0627	0.39	5.83	< 0.20	< 0.10	32.5	< 2.0	0.325	41.4	61.2	
	BH21-07-02	2021 02 25	1.3 - 1.4	9.78	41.3	910	293	376	0.17	1.67	94.9	0.21	0.105	16.2	6.71	17.5	3.61	7.8	244	< 0.0500	0.24	10.1	< 0.20	< 0.10	40.3	< 2.0	0.403	53.0	43.1	
	BH21-07-03	Duplicate	1.3 - 1.4	9.80	-	-	-	-	0.17	1.50	85.0	0.18	0.073	13.2	5.76	16.9	3.67	6.7	204	< 0.0500	0.23	8.86	< 0.20	< 0.10	32.5	< 2.0	0.338	44.9	38.3	
QA/QC RPD%				0	-	-	-	-	*	*	11	*	*	20	15	3	2	*	18	*	*	13	*	*	21	*	18	17	12	
BH21-07-04	2021 02 25	2.1 - 2.3	9.31	-	-	-	-	-	0.14	3.65	81.8	0.25	0.061	16.5	10.2	19.5	3.79	12.5	470	< 0.0500	0.88	9.20	< 0.20	< 0.10	38.4	< 2.0	0.382	66.4	55.6	
BC Standard																														
CSR Marine and/or Estuarine Sediment (MR) ^a - Sensitive				n/a	n/a	n/a	n/a	n/a	n/a	26	n/a	n/a	2.6	99	n/a	67	69	n/a	n/a	0.43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	170
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical				n/a	n/a	n/a	n/a	n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																														
CCME CEQG Probable Effect Level (PEL) ^c				n/a	n/a	n/a	n/a	n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

All terms defined within the body of SNC-Lavalin's report.
 < Denotes concentration less than indicated detection limit or RPD less than indicated value.
 - Denotes analysis not conducted.
 n/a Denotes no applicable standard/guideline.
 QA/QC RPD Denotes quality assurance/quality control relative percent difference
 * RPDs are not calculated where one or more concentrations are less than five times RDL.
 RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.
^b Pathways Included: Typical Site.
^c Guideline to protect marine aquatic life.

SHADED Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 4: Summary of Analytical Results for Subtidal Sediment - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs										
				Aroclor 1016 µg/g	Aroclor 1221 µg/g	Aroclor 1232 µg/g	Aroclor 1242 µg/g	Aroclor 1248 µg/g	Aroclor 1254 µg/g	Aroclor 1260 µg/g	Aroclor 1262 µg/g	Aroclor 1268 µg/g	Polychlorinated Biphenyls, Total [PCBs] µg/g	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.062	< 0.030	< 0.010	< 0.010	0.062	
	BH21-01-02	2021 02 24	1.4 - 1.6	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-01-03	2021 02 24	2.0 - 2.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	< 0.010	< 0.010	< 0.010	< 0.010	0.153	0.257	< 0.060	< 0.060	< 0.060	0.410	
	BH21-02-02	2021 02 24	1.5 - 1.7	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-02-03	2021 02 24	3.2 - 3.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-02-04	2021 02 24	4.3 - 4.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	< 0.010	< 0.010	< 0.010	< 0.010	0.014	0.014	< 0.010	< 0.010	< 0.010	0.028	
	BH21-03-04	2021 02 24	3.5 - 3.7	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-03-05	2021 02 24	4.9 - 5.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	< 0.060	< 0.060	< 0.060	< 0.060	< 0.060	0.220	< 0.080	< 0.080	< 0.080	0.220	
	BH21-04-02	2021 02 24	1.6 - 1.8	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-04-03	2021 02 24	4.3 - 4.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.328	< 0.100	< 0.100	< 0.100	0.328	
	BH21-05-02	2021 02 24	1.5 - 1.7	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	0.091	< 0.040	< 0.040	< 0.040	0.091	
	BH21-05-03	2021 02 24	2.4 - 2.5	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-05-04	2021 02 24	2.8 - 2.9	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-06-04	Duplicate	2.3 - 2.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	QA/QC RPD%				*	*	*	*	*	*	*	*	*	
BH21-06	BH21-06-07	2021 02 25	4.0 - 4.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.022	< 0.010	< 0.010	< 0.010	0.022
		BH21-07-02	2021 02 25	1.3 - 1.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
BH21-07	BH21-07-04	2021 02 25	2.1 - 2.3	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BC Standard														
CSR Marine and/or Estuarine Sediment (MR) ^b - Sensitive				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.12
CSR Marine and/or Estuarine Sediment (MR) ^c - Typical				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.23
Federal Guideline														
CCME CEQG Probable Effect Level (PEL) ^d				n/a	n/a	n/a	n/a	n/a	0.709	n/a	n/a	n/a	n/a	0.189

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

SHADED	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
OUTLINE	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE	Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 5: Summary of Analytical Results for Subtidal Sediment - Leachable PAH and Metals

Sample Location		BH21-04	BH21-05	BC Standard
Sample ID		BH21-04-01	BH21-05-01	HWR
Sample Date (yyyy mm dd)		2021 02 24	2021 02 24	Leachate Quality Standards (HWLQ)
Parameter	Units	Analytical Results		
TCLP Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene	µg/L	-	< 0.050	1
TCLP Metals				
Arsenic	µg/L	< 1,000	-	2,500
Lead	µg/L	< 250	-	5,000
Mercury	µg/L	-	< 1.0	100

Associated ALS file(s): VA21A3477.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than HWR Leachate Quality Standards (HWLQ) Standard

TABLE 6: Summary of Analytical Results for Intertidal Sediment and Soil - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Monocyclic Aromatic Hydrocarbons					Gross Parameters				Methyl Tert-butyl Ether [MTBE] µg/g	
					Benzene µg/g	Ethylbenzene µg/g	Toluene µg/g	Xylenes µg/g	Styrene µg/g	VPH (C6-C10) µg/g	(C10-C19) µg/g	(C19-C32) µg/g	Hazardous Waste Oil and Grease µg/g		
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	30	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	20	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	25	-	-	-	-	-	-	< 100	< 100	-	-	
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	-	-	-	-	-	-	-	627	1,440	-	-	
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	5	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	0	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-10-4-121210	Duplicate	3.7 - 4.0	0	-	-	-	-	-	-	< 100	< 100	-	-	
	QA/QC RPD%					-	-	-	-	-	-	*	*	-	-
	BH12-10-5-121210	2012 12 10	4.7 - 5.0	20	-	-	-	-	-	-	-	< 100	< 100	-	-
	BH12-11-1-121211	2012 12 11	0.7 - 0.8	55	-	-	-	-	-	-	-	< 100	1,230	-	-
BH12-11	BH12-11-2-121211	2012 12 11	2.1 - 2.2	45	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	5	-	-	-	-	-	-	< 100	< 100	-	-	
	BH12-11-8-121211	2012 12 11	5.3 - 5.6	10	-	-	-	-	-	-	< 100	< 100	-	-	
BH21-8	BH21-8-01	2021 08 19	0.2 - 0.5	40	0.0069	< 0.015	< 0.050	< 0.075	< 0.050	< 10	-	-	22,600	< 0.200	
	BH21-8-03	2021 08 19	1.1 - 1.5	110	< 0.0100	< 0.016	0.093	< 0.075	< 0.050	< 25	-	-	< 1,000	< 0.200	
BH21-10	BH21-10-01	2021 08 19	0.2 - 0.6	10	0.0144	0.033	< 0.050	0.177	< 0.050	< 10	-	-	7,400	< 0.200	
BC Standard															
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hazardous Waste Regulation (HWR)					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30,000	n/a	
Federal Guideline															
CCME CEQG Probable Effect Level (PEL) ^c					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

Associated ALS file(s): VA21B7750.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

OUTLINE	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
SHADED	Concentration greater than Hazardous Waste Regulation (HWR) standard
UNDERLINE	Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

TABLE 7: Summary of Analytical Results for Intertidal Sediment and Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm)	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																							
				Naphthalene	Methylnaphthalene, 1-	Methylnaphthalene, 2-	Methylnaphthalene, 1&2-	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Acridine	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(b+g)fluoranthene	Benzo(b+j+k)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Quinoline	
BH06-1	BH06-1	2006 06 16	0.0 - 0.1	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	12287-02	2006 06 06	0.8 - 1.1	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
BH06-2	BH06-2	2006 06 16	0.0 - 0.1	0.218	-	< 0.05	-	0.056	< 0.04	< 0.05	0.191	0.071	-	0.267	0.262	0.159	0.174	0.19	-	-	< 0.05	0.169	0.132	< 0.05	0.14	-	
BH06-3	BH06-3	2006 06 16	0.0 - 0.1	5.51	-	0.935	-	0.181	6.42	3.91	10.2	3.44	-	9.21	6.39	1.73	2.16	1.92	-	-	0.729	1.21	0.699	0.158	0.771	-	
BH06-4	BH06-4	2006 06 16	0.0 - 0.1	1.5	-	1.68	-	1.32	0.658	0.661	3.85	2.09	-	13.2	12.2	7.45	8.46	12.8	-	-	4.02	10.5	8.28	2.06	8.6	-	
BH06-5	BH06-5	2006 06 16	0.0 - 0.1	0.089	-	< 0.05	-	0.059	< 0.04	0.056	0.519	0.123	-	0.841	0.739	0.493	0.617	0.793	-	-	0.298	0.473	0.349	0.083	0.33	-	
BH06-6	BH06-6	2006 06 16	0.0 - 0.1	1.42	-	0.429	-	0.272	3.48	1.65	4.96	2.55	-	13	8.92	2.83	3.94	4.25	-	-	1.48	2.44	1.79	0.39	1.9	-	
	BH06-2d	Duplicate	0.0 - 0.1	2.76	-	0.846	-	0.404	4.14	2.15	6.3	3.88	-	16.8	11.1	4.86	5.48	6.93	-	-	2.77	4.38	2.95	0.683	3.05	-	
QA/QC RPD%				64	-	65	-	39	17	26	24	41	-	26	22	53	33	48	-	-	61	57	49	55	46	-	
BH06-7	BH06-7	2006 06 16	0.0 - 0.1	0.742	-	0.262	-	0.423	0.372	0.315	3.96	1.03	-	9.26	11.7	5.17	6.03	9.79	-	-	3.57	6.53	4.85	1.33	4.48	-	
	12289-02	2006 06 07	1.5 - 2.3	0.496	-	0.103	-	0.108	1.53	0.762	3.18	0.377	-	1.04	1.19	0.337	0.262	0.631	-	-	0.192	0.419	0.312	0.075	0.35	-	
	12289-03	2006 06 07	2.3 - 2.6	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
BH06-8	BH06-8	2006 06 16	0.0 - 0.1	1.09	-	0.591	-	0.213	3.62	3.43	19.5	12	-	21.9	16.5	4.88	5.4	5	-	-	1.9	3.09	1.66	0.363	1.62	-	
	12289-04	2006 06 07	0.9 - 1.1	0.209	-	0.135	-	0.46	0.163	0.218	1.56	0.687	-	4.57	8.21	2.06	3.4	6.98	-	-	2.14	4.02	3.22	0.785	2.9	-	
	12289-05	Duplicate	0.9 - 1.1	0.225	-	0.148	-	0.272	0.228	0.233	1.76	0.589	-	3.3	5.92	1.58	1.65	4.69	-	-	1.5	2.6	2.07	0.511	1.81	-	
QA/QC RPD%				7	-	9	-	51	33	7	12	15	-	32	32	26	69	39	-	-	35	43	43	42	46	-	
BH06-9	BH06-9	2006 06 16	0.0 - 0.1	0.434	-	0.266	-	0.245	0.352	0.368	2.59	0.929	-	3.84	4.49	1.82	2.15	2.97	-	-	1.03	2.01	1.17	0.247	1.27	-	
	BH06-9d	Duplicate	0.0 - 0.1	0.709	-	0.388	-	0.315	1.42	1.11	4.34	1.3	-	5.02	5.73	2.31	3.14	3.42	-	-	1.38	2.42	1.48	0.33	1.6	-	
	QA/QC RPD%				48	-	37	-	25	121	100	51	33	-	27	24	24	37	14	-	-	29	19	23	29	23	-
	12289-06	2006 06 07	0.0 - 0.8	0.728	-	0.209	-	0.152	0.753	0.273	1.05	0.469	-	3.2	5.56	1.1	0.822	2.09	-	-	0.649	1.22	0.822	0.182	0.747	-	
	12289-08	2006 06 07	1.2 - 1.5	2.05	-	0.697	-	0.203	5.22	2.35	19.9	4.43	-	24.8	25.4	7.18	8.59	8.9	-	-	2.96	7.34	5.04	1.05	5.02	-	
	12289-09	2006 06 07	1.7 - 2.3	0.132	-	< 0.05	-	< 0.05	0.117	< 0.05	0.218	0.09	-	1.34	1.24	0.234	0.152	0.259	-	-	0.092	0.171	0.101	< 0.05	0.102	-	
12289-10	Duplicate	1.7 - 2.3	0.079	-	< 0.05	-	< 0.05	0.054	< 0.05	0.088	0.05	-	0.354	0.407	0.077	0.078	0.147	-	-	0.065	0.091	0.064	< 0.05	0.061	-		
QA/QC RPD%				50	-	*	-	*	74	*	85	57	-	116	101	101	64	*	-	-	34	61	45	*	50	-	
BH06-10	BH06-10	2006 06 16	0.0 - 0.1	0.528	-	0.165	-	0.329	0.355	0.388	2.77	1.47	-	10.2	7.47	3.01	3.46	3.71	-	-	1.58	2.44	1.5	0.383	1.54	-	
	12290-01	2006 06 07	0.0 - 0.8	0.178	-	0.089	-	0.176	0.143	0.118	0.76	0.346	-	2.59	3.93	1.28	1.42	2.8	-	-	0.932	1.64	0.996	0.251	0.946	-	
	12290-04	2006 06 07	1.5 - 1.8	0.083	-	< 0.05	-	0.083	0.139	0.075	0.374	0.195	-	1.28	1.5	0.49	0.477	1.06	-	-	0.387	0.59	0.428	0.105	0.394	-	
	12290-06	2006 06 07	2.3 - 2.7	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
	12290-07	2006 06 07	2.9 - 3.0	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
BH06-11	BH06-11	2006 06 16	0.0 - 0.1	2.62	-	0.623	-	0.401	5.18	1.79	6.73	3.78	-	26.2	18.7	6.01	7.36	6.64	-	-	2.44	3.72	2.41	0.53	2.37	-	
	12290-08	2006 06 07	0.0 - 0.8	11.5	-	2.3	-	0.975	23.2	13.4	18.4	14.1	-	80.3	57.7	14.1	22.7	17.9	-	-	5.88	9.68	5.46	1.34	5.39	-	
	12290-12	2006 06 07	2.7 - 3.0	1.8	-	0.201	-	< 0.05	0.412	0.299	0.586	0.108	-	0.293	0.195	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
	12291-03	2006 06 07	3.5 - 3.7	4.78	-	10.8	-	0.129	12.6	8.32	8.6	3.75	-	34.9	13.8	2.87	2.13	2.97	-	-	1.11	1.58	0.68	0.185	0.638	-	
BH06-12	BH06-12	2006 06 16	0.0 - 0.1	0.297	-	0.242	-	0.256	0.094	0.137	1.01	0.42	-	1.9	1.78	0.933	1.17	1.45	-	-	0.554	1.02	0.91	0.183	0.872	-	
	12291-04	2006 06 07	0.8 - 1.5	0.447	-	0.127	-	0.209	0.188	0.173	1.51	0.453	-	2.48	1.99	0.886	1.08	1.36	-	-	0.529	0.851	0.633	0.134	0.672	-	
	12291-06	2006 06 07	2.3 - 2.7	0.286	-	< 0.05	-	< 0.05	0.152	< 0.05	0.288	0.112	-	0.277	0.282	0.088	0.121	0.107	-	-	< 0.05	0.078	0.052	< 0.05	0.088	-	
BC Standard																											
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				0.47	n/a	0.24	n/a	0.15	0.11	0.17	0.65	0.29	n/a	1.8	1.7	0.83	1	n/a	n/a	n/a	n/a	0.92	n/a	0.16	n/a	n/a	n/a
Federal Guideline																											
CCME CEQG Probable Effect Level (PEL) ^b				0.391	n/a	0.201	n/a	0.128	0.0889	0.144	0.544	0.245	n/a	1.494	1.398	0.693	0.846	n/a	n/a	n/a	n/a	0.763	n/a	0.135	n/a	n/a	

Associated ALS file(s): VA21B7750.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

^b Guideline to protect marine aquatic life.

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 7: Summary of Analytical Results for Intertidal Sediment and Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																							
				Naphthalene	Methylnaphthalene, 1-	Methylnaphthalene, 2-	Methylnaphthalene, 1&2-	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Acridine	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(b+j)fluoranthene	Benzo(b+j+k)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Quinoline	
BH06-13	BH06-13	2006 06 16	0.0 - 0.1	0.353	-	0.12	-	0.143	0.107	0.101	1.35	0.216	-	2.1	1.7	0.626	0.898	0.999	-	-	0.329	0.49	0.444	0.077	0.44	-	
	12291-08	2006 06 07	0.0 - 0.8	0.073	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.132	< 0.05	-	0.167	0.136	< 0.05	0.076	0.101	-	-	< 0.05	0.051	0.055	< 0.05	0.073	-	
	12291-10	2006 06 07	1.5 - 2.1	0.062	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.885	0.064	-	0.897	0.676	0.187	0.32	0.381	-	-	0.135	0.103	0.143	< 0.05	0.156	-	
BH06-14	BH06-14	2006 06 16	0.0 - 0.1	0.721	-	0.374	-	0.487	0.465	0.51	5.94	1.79	-	15.3	11.6	7.65	9.47	11.6	-	-	4.26	8.12	6.3	1.18	5.67	-	
	12291-12	2006 06 07	1.2 - 1.4	< 0.05	-	< 0.05	-	< 0.05	< 0.04	1.67	7.82	5.53	-	42.3	26.7	17.1	20.2	30.1	-	-	9.19	18.2	12.9	3.58	11.6	-	
	12292-03	2006 06 07	2.3 - 3.1	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	0.806	0.638	0.311	0.364	0.574	-	-	0.178	0.334	0.233	0.079	0.293	-	
	12292-04	Duplicate	2.3 - 3.1	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	1.52	1.27	0.65	0.845	1.02	-	-	0.431	0.725	0.435	0.125	0.464	-	
	QA/QC RPD%				*	-	*	-	*	*	*	*	*	-	61	66	71	80	56	-	-	83	74	60	45	45	-
BH06-15	12292-05	2006 06 07	3.7 - 3.8	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
	BH06-15	2006 06 16	0.0 - 0.1	0.073	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.236	0.131	-	0.719	0.606	0.317	0.438	0.604	-	-	0.26	0.4	0.234	0.054	0.229	-	
	BH06-15d	Duplicate	0.0 - 0.1	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.375	0.198	-	1.02	0.656	0.605	0.964	1.34	-	-	0.537	0.8	0.48	0.098	0.459	-	
	QA/QC RPD%				*	-	*	-	*	*	*	45	41	-	35	8	62	75	76	-	-	70	67	69	58	67	-
	12070-01	2006 06 08	0.9 - 1.2	0.587	-	0.391	-	0.068	0.8	0.972	5.67	1.75	-	6.1	4.73	2.07	2.21	2.21	-	-	0.773	1.69	0.838	0.203	0.833	-	
BH06-16	2006 06 08	2.1 - 2.2	0.991	-	0.227	-	0.126	0.773	0.311	1.18	0.434	-	2.03	1.71	0.553	0.642	0.721	-	-	0.273	0.446	0.264	0.061	0.3	-		
BH06-16	BH06-16	2006 06 16	0.0 - 0.1	0.052	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.135	0.161	-	0.232	0.24	0.191	0.457	0.478	-	-	0.196	0.156	0.138	< 0.05	0.12	-	
	12070-07	2006 06 08	1.4 - 1.5	0.138	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.093	< 0.05	-	0.094	0.091	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
	12070-10	2006 06 08	2.6 - 2.7	0.154	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.118	0.051	-	0.216	0.235	0.087	0.07	0.089	-	-	< 0.05	0.061	< 0.05	< 0.05	< 0.05	-	
BH06-17	BH06-17	2006 06 16	0.0 - 0.1	0.348	-	0.071	-	< 0.05	0.047	< 0.05	0.351	0.111	-	0.417	0.354	0.115	0.142	0.172	-	-	0.084	0.104	0.082	< 0.05	0.087	-	
	12071-01	2006 06 08	0.9 - 1.4	0.106	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.096	< 0.05	-	0.172	0.19	0.066	0.073	0.073	-	-	< 0.05	0.052	< 0.05	< 0.05	< 0.05	-	
	12071-02	2006 06 08	1.5 - 1.8	0.06	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.059	< 0.05	-	< 0.05	0.086	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
BH06-18	BH06-18	2006 06 16	0.0 - 0.1	0.328	-	0.083	-	0.216	0.406	0.209	1.51	0.614	-	5.37	3.58	1.87	3.62	2.97	-	-	1.04	1.72	1.19	0.228	1.28	-	
	12071-08	2006 06 08	0.8 - 1.1	0.125	-	< 0.05	-	0.055	0.197	0.082	0.334	0.203	-	1.42	1.52	0.503	0.502	0.747	-	-	0.249	0.411	0.227	0.052	0.23	-	
	12071-10	2006 06 08	1.5 - 1.8	0.57	-	0.123	-	0.149	0.568	0.326	1.62	0.763	-	3.94	3.94	1.84	2.47	2.71	-	-	1.08	1.72	0.944	0.266	0.969	-	
BH06-19	BH06-19	2006 06 16	0.0 - 0.1	0.276	-	0.168	-	0.263	0.195	0.334	2.27	4.2	-	5.41	4.26	2.66	3.88	3.29	-	-	1.29	1.96	1.25	0.306	1.24	-	
	12071-11	2006 06 08	0.8 - 1.5	3.35	-	3.29	-	0.741	2.8	2.63	22.5	5.51	-	25.8	23.7	9.21	10.4	10.7	-	-	3.55	8.56	4.53	0.997	4.68	-	
	12072-01	2006 06 08	1.5 - 1.6	0.294	-	0.201	-	0.091	0.333	0.305	2.42	0.632	-	2.88	2.47	1.02	1.14	1.12	-	-	0.445	0.927	0.511	0.112	0.551	-	
BH06-20	BH06-20	2006 06 16	0.0 - 0.1	0.186	-	0.068	-	0.104	< 0.04	< 0.05	0.483	0.17	-	0.875	0.795	0.452	0.463	0.64	-	-	0.285	0.436	0.319	0.069	0.297	-	
	12072-02	2006 06 08	0.0 - 0.8	0.149	-	0.053	-	0.067	< 0.04	< 0.05	0.331	0.088	-	0.557	0.514	0.238	0.314	0.381	-	-	0.111	0.247	0.192	< 0.05	0.199	-	
BH06-21	BH06-21	2006 06 16	0.0 - 0.1	0.649	-	0.616	-	1.84	0.704	0.344	2.05	2.64	-	45.4	31.7	17.1	17.2	24.4	-	-	7.71	17.2	11.2	2.66	10.2	-	
	12072-03	2006 06 08	0.0 - 0.8	0.24	-	0.184	-	0.426	0.176	0.124	0.632	0.481	-	10.2	7.17	2.48	3.08	4.96	-	-	1.47	3.4	1.92	0.479	1.89	-	
BH06-22	BH06-22	2006 06 16	0.0 - 0.1	1.09	-	0.465	-	0.32	2.38	1.68	6.57	1.81	-	8.38	6.47	2.7	2.8	4.37	-	-	1.48	3.03	2.4	0.504	2.38	-	
	12072-04	2006 06 08	0.0 - 0.6	3.03	-	0.388	-	0.388	2.18	1.14	5.63	1.29	-	10.2	8.13	5.04	6.13	7.96	-	-	2.53	5.54	3.04	0.759	2.92	-	
BH06-23	BH06-23	2006 06 16	0.0 - 0.1	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.5	< 0.05	-	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
	12072-05	2006 06 08	1.1 - 1.5	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.143	< 0.05	-	0.204	0.204	0.088	0.107	0.126	-	-	0.055	0.088	0.069	< 0.05	0.076	-	
BH06-25	12293-12	2006 06 09	2.4 - 3.0	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	0.054	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
BC Standard																											
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				0.47	n/a	0.24	n/a	0.15	0.11	0.17	0.65	0.29	n/a	1.8	1.7	0.83	1	n/a	n/a	n/a	n/a	0.92	n/a	0.16	n/a	n/a	
Federal Guideline																											
CCME CEQG Probable Effect Level (PEL) ^b				0.391	n/a	0.201	n/a	0.128	0.0889	0.144	0.544	0.245	n/a	1.494	1.398	0.693	0.846	n/a	n/a	n/a	n/a	0.763	n/a	0.135	n/a	n/a	

Associated ALS file(s): VA21B7750.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 7: Summary of Analytical Results for Intertidal Sediment and Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																						
				Naphthalene	Methylnaphthalene, 1-	Methylnaphthalene, 2-	Methylnaphthalene, 1&2-	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Acridine	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(b+)fluoranthene	Benzo(b+ k)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Quinoline
BH06-26	BH06-26	2006 06 16	0.0 - 0.1	0.223	-	0.115	-	0.293	0.264	0.185	1.62	0.611	-	5.13	4.36	2.35	2.37	3.11	-	-	1.2	2.14	1.35	0.326	1.34	-
BH06-27	BH06-27	2006 06 16	0.0 - 0.1	1.78	-	0.684	-	0.468	2.06	1.05	11.3	1.23	-	18.8	13.4	2.5	3.56	5.29	-	-	2.1	3.16	2.17	0.506	2.12	-
BH06-28	BH06-28	2006 06 16	0.0 - 0.1	<0.05	-	<0.05	-	<0.05	<0.04	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
BH06-29	BH06-29	2006 06 16	0.0 - 0.1	6.2	-	0.848	-	0.447	15.5	11.3	35.5	6.77	-	35.5	22.9	7.22	8.27	8.58	-	-	3.14	4.95	2.74	0.594	2.86	-
TP06-123	12267-09	2006 06 07	0.4 - 0.5	1.12	-	0.341	-	0.525	0.8	0.946	7.08	2.39	-	21.5	16.5	10.7	12.1	21.2	-	-	6.88	12.8	7.81	2.53	6.97	-
	12267-10	Duplicate	0.4 - 0.5	0.726	-	0.562	-	1.08	1.26	0.984	5.48	2.79	-	25.9	21.7	11.8	15.3	24	-	-	9.34	16.9	9.15	2.12	7.54	-
	QA/QC RPD%			43	-	49	-	69	45	4	25	15	-	19	27	10	23	12	-	-	30	28	16	18	8	-
BH12-9	12268-01	2006 06 07	2.8	0.117	-	<0.05	-	<0.05	<0.04	0.109	0.584	0.227	-	1.61	1.33	0.752	0.958	1.47	-	-	0.459	0.852	0.594	0.168	0.611	-
	BH12-9-2-121210	2012 12 10	1.5 - 1.8	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
BH12-10	BH12-9-4-121210	2012 12 10	4.3 - 4.6	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
	BH12-10-1-121210	2012 12 10	0.5 - 0.6	0.21	-	0.1	-	0.13	0.12	0.16	1	0.4	-	2.1	2.4	0.81	0.91	0.99	-	-	0.45	0.99	0.58	0.16	0.73	-
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
	BH12-10-4-121210	Duplicate	3.7 - 4.0	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
	QA/QC RPD%			*	-	*	-	*	*	*	*	*	-	*	*	*	*	*	*	-	-	*	*	*	*	*
BH12-11	BH12-10-5-121210	2012 12 10	4.7 - 5.0	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
	BH12-11-1-121211	2012 12 11	0.7 - 0.8	0.33	-	0.075	-	<0.05	0.098	0.12	0.55	0.17	-	1	1	0.21	0.29	0.15	-	-	0.071	0.15	0.07	<0.05	0.12	-
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
	BH12-11-8-121211	2012 12 11	5.3 - 5.6	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-
BH21-8	BH21-8-01	2021 08 19	0.2 - 0.5	<0.470 ^a	0.211	0.326	0.537	7.46	1.05	1.10	<3.88 ^a	8.33	<4.42	77.2	57.6	40.6	42.5	-	46.1	61.9	15.8	39.8	20.6	6.14	19.3	<0.190
	BH21-8-02	Duplicate	0.2 - 0.5	0.350	0.155	0.246	0.401	7.84	0.484	1.17	<7.53 ^a	9.58	<2.03	97.9	72.9	39.3	40.4	-	46.9	62.9	16.0	39.7	23.1	6.63	21.4	<0.170
	QA/QC RPD%			*	31	28	29	5	74	6	*	14	*	24	23	3	5	-	2	2	1	0	11	8	10	*
	BH21-8-03	2021 08 19	1.1 - 1.5	0.353	0.081	0.129	0.210	0.151	0.0687	0.072	<0.240	0.188	<0.100	0.694	1.06	0.209	<0.220	-	0.343	0.470	0.127	0.326	0.276	<0.0650	0.587	<0.040
	BH21-8-04	2021 08 19	2.3 - 2.7	0.094	0.020	<0.010	0.020	0.0117	0.0555	0.020	0.030	0.0151	<0.010	0.056	0.049	0.022	0.021	-	0.026	0.026	<0.010	<0.030	0.020	<0.0100	0.017	<0.010
BH21-9	BH21-9-01	2021 08 19	0.3 - 0.5	0.027	<0.010	<0.010	<0.015	0.0481	0.0186	0.016	0.071	0.0642	<0.100	0.190	0.174	0.092	0.102	-	0.125	0.168	0.043	0.104	0.096	0.0217	0.104	<0.010
	BH21-9-02	2021 08 19	1.4 - 1.7	0.148	0.041	0.015	0.056	0.0163	0.112	0.030	0.093	0.0383	0.017	0.147	0.145	0.057	0.058	-	0.062	0.082	0.020	0.054	0.044	0.0102	0.042	<0.010
	BH21-9-03	2021 08 19	2.4 - 2.9	0.114	0.065	0.015	0.080	<0.0100	0.152	0.017	0.030	0.0112	<0.010	0.045	0.035	0.015	0.015	-	0.018	0.018	<0.010	<0.020	0.013	<0.0050	0.011	<0.010
BH21-10	BH21-10-01	2021 08 19	0.2 - 0.6	<0.370	0.243	0.275	0.518	0.841	0.122	0.209	<0.720 ^a	0.765	<0.350	2.34	6.82	1.62	1.90	-	5.37	7.25	1.88	4.32	3.06	0.828	3.07	<0.150
	BH21-10-02	2021 08 19	1.2 - 1.7	0.448	0.061	0.077	0.138	0.0745	0.0674	0.069	0.431	0.119	<0.040	0.495	0.559	0.176	0.183	-	0.230	0.307	0.077	0.189	0.154	<0.0350	0.175	<0.010
	BH21-10-04	2021 08 19	3.0 - 3.5	<0.010	<0.010	<0.010	<0.015	<0.0050	<0.0050	<0.010	<0.010	<0.0040	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.015	<0.010	<0.010	<0.010	<0.0050	<0.010	<0.010
BH21-12	BH21-12-01	2021 08 19	0.8 - 1.1	0.514	0.309	0.247	0.556	5.51	0.511	2.30	23.8	4.30	<0.820	43.9	44.6	15.9	19.1	-	20.3	28.2	7.92	20.9	13.2	2.48	13.0	<0.090
	BH21-12-02	2021 08 19	1.7 - 2.0	<0.010	<0.010	<0.010	<0.015	<0.0050	<0.0050	<0.010	0.015	0.0056	<0.010	0.018	0.016	<0.010	<0.010	-	<0.010	<0.015	<0.010	<0.010	<0.020	<0.0050	0.026	<0.010
	BH21-12-03	2021 08 19	2.9 - 3.4	<0.010	<0.010	<0.010	<0.015	<0.0050	<0.0050	<0.010	<0.010	<0.0040	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.015	<0.010	<0.010	<0.010	<0.0050	<0.010	<0.010
BH21-13	BH21-13-04	2021 08 19	3.7 - 4.2	<0.010	<0.010	<0.010	<0.015	<0.0050	<0.0050	<0.010	<0.010	<0.0040	<0.010	<0.010	<0.010	<0.010	<0.010	-	<0.010	<0.015	<0.010	<0.010	<0.010	<0.0050	<0.010	<0.010
BH21-14	BH21-14-01	2021 08 20	0.2 - 0.5	0.013	<0.010	<0.010	<0.015	0.0510	0.0116	0.014	0.150	0.0626	<0.010	0.386	0.336	0.176	0.227	-	0.326	0.432	0.106	0.232	0.229	0.0465	0.255	<0.010
	BH21-14-02	2021 08 20	1.1 - 1.4	<3.20 ^a	1.80	1.57	3.37	1.51	4.22	4.51	21.7	7.88	<2.60	49.8	34.9	21.3	21.3	-	25.9	33.7	7.82	20.2	13.9	3.42	12.6	<0.090
	BH21-14-03	Duplicate	1.1 - 1.4	<0.650 ^a	0.949	0.491	1.44	1.81	1.81	3.42	19.6	5.92	<1.50	34.4	26.5	15.2	15.6	-	17.9	23.6	5.74	14.1	10.1	2.52	9.28	<0.070
QA/QC RPD%			*	62	105	80	18	80	27	10	28	*	37	27	33	31	-	37	35	31	36	32	30	30	*	
BH21-14-04	2021 08 20	2.0 - 2.5	<0.025	<0.020	<0.010	<0.022	<0.0300	<0.0400	<0.025	<0.090	<0.120	<0.060	0.231	0.251	<0.100	0.247	-	<0.100	<0.104	<0.030	0.067	<0.100	0.0154	<0.050	<0.010	
BH21-14-05	2021 08 2																									

TABLE 8: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical	Total Metals																					
				pH	Antimony $\mu\text{g/g}$	Arsenic $\mu\text{g/g}$	Barium $\mu\text{g/g}$	Beryllium $\mu\text{g/g}$	Cadmium $\mu\text{g/g}$	Chromium $\mu\text{g/g}$	Cobalt $\mu\text{g/g}$	Copper $\mu\text{g/g}$	Lead $\mu\text{g/g}$	Lithium $\mu\text{g/g}$	Manganese $\mu\text{g/g}$	Mercury $\mu\text{g/g}$	Molybdenum $\mu\text{g/g}$	Nickel $\mu\text{g/g}$	Selenium $\mu\text{g/g}$	Silver $\mu\text{g/g}$	Strontium $\mu\text{g/g}$	Tin $\mu\text{g/g}$	Uranium $\mu\text{g/g}$	Vanadium $\mu\text{g/g}$	Zinc $\mu\text{g/g}$	
BH06-1	BH06-1	2006 06 16	0.0 - 0.1	8.85	15	< 5	27.9	< 0.5	< 0.5	10.2	2.5	<u>178</u>	107	-	-	0.0588	< 4	8.2	< 2	< 2	-	67.3	-	15.7	109	
	12287-02	2006 06 06	0.8 - 1.1	8.44	< 10	< 5	15.4	< 0.5	< 0.5	5.7	2.1	90.3	48	-	-	0.0217	< 4	5	< 2	< 2	-	11.1	-	11.2	89.3	
BH06-2	BH06-2	2006 06 16	0.0 - 0.1	7.15	10	7.2	22.1	< 0.5	0.82	8	2.9	131	134	-	-	0.218	14.6	10.9	< 2	< 2	-	17.9	-	24.5	183	
BH06-3	BH06-3	2006 06 16	0.0 - 0.1	8.14	29	44.2	75.1	< 0.5	0.54	24.6	4.9	624	372	-	-	2.21	4.7	18.9	< 2	< 2	-	74.7	-	29.5	736	
BH06-4	BH06-4	2006 06 16	0.0 - 0.1	7.2	76	166	80	< 0.5	3	105	17.2	17,400	4,230	-	-	102	19.3	150	< 4	< 4	-	254	-	43.1	4,720	
BH06-5	BH06-5	2006 06 16	0.0 - 0.1	7.97	13	23.8	138	< 0.5	< 0.5	32.5	5.6	2,050	383	-	-	1.21	5.1	27.8	< 2	< 2	-	117	-	33.1	711	
	12278-03	2006 06 14	3.8 - 4.1	7.62	< 10	< 5	52.5	< 0.5	< 0.5	8.5	4.1	10.3	< 30	-	-	0.0075	< 4	5.4	< 2	< 2	-	< 5	-	27.6	25.1	
BH06-6	BH06-6	2006 06 16	0.0 - 0.1	7.81	51	162	338	< 0.5	2	54.4	9.3	3,540	1,940	-	-	18	11	46.3	< 2	< 2	-	74.3	-	37.8	2,600	
	BH06-2d	Duplicate	0.0 - 0.1	7.7	90	214	409	< 0.5	4.55	67.3	12.4	3,110	2,180	-	-	9.37	18.4	71.2	< 2	< 2	-	129	-	41.2	3,700	
	QA/QC RPD%				1	55	28	19	*	78	21	29	13	12	-	-	63	*	42	*	*	-	54	-	9	35
BH06-7	BH06-7	2006 06 16	0.0 - 0.1	6.9	47	71.7	99	< 0.5	1.31	59.7	6.9	4,570	3,520	-	-	18.9	22	35.4	< 2	< 2	-	77.3	-	37.1	1,650	
	12289-02	2006 06 07	1.5 - 2.3	6.8	15	10.7	31.1	< 0.5	0.75	14.5	2.7	576	190	-	-	2.52	27	13.7	< 2	< 2	-	14.4	-	14	418	
	12289-03	2006 06 07	2.3 - 2.6	8.66	< 10	< 5	25.8	< 0.5	< 0.5	15	4.2	14.7	< 30	-	-	0.0706	< 4	7.8	< 2	< 2	-	< 5	-	26.3	37	
BH06-8	BH06-8	2006 06 16	0.0 - 0.1	8.09	131	51.7	113	< 0.5	0.79	39.5	6	1,700	1,130	-	-	3.57	5.7	24	< 2	< 2	-	170	-	36	1,040	
	12289-04	2006 06 07	0.9 - 1.1	7.83	25	47.2	155	< 0.5	1.25	55.3	6.2	4,490	771	-	-	7.92	8	35.4	< 2	< 2	-	123	-	34.2	1,030	
	12289-05	Duplicate	0.9 - 1.1	7.75	29	47.8	143	< 0.5	0.83	49.9	5.9	3,720	703	-	-	6.57	6.5	21.1	< 2	< 2	-	110	-	28.3	974	
	QA/QC RPD%				1	15	1	8	*	40	10	5	19	9	-	-	19	*	51	*	*	-	11	-	19	6
BH06-9	BH06-9	2006 06 16	0.0 - 0.1	8.09	< 10	28.5	72.8	< 0.5	< 0.5	17.7	4.9	811	254	-	-	4.28	4.1	8.1	< 2	< 2	-	15.7	-	39.6	428	
	BH06-9d	Duplicate	0.0 - 0.1	8	10	32.1	85.1	< 0.5	< 0.5	21.9	5.2	1,020	493	-	-	6.28	4.8	10.3	< 2	< 2	-	18.5	-	43.2	598	
	QA/QC RPD%				1	*	12	16	*	*	21	6	23	64	-	-	38	*	24	*	*	-	16	-	9	33
	12289-06	2006 06 07	0.0 - 0.8	7.66	10	15.1	54.4	< 0.5	< 0.5	25.1	9.1	542	716	-	-	3.88	6.6	13.9	< 2	< 2	-	17.1	-	43.5	445	
	12289-08	2006 06 07	1.2 - 1.5	7.47	< 10	5.7	47.9	< 0.5	< 0.5	13.6	5.7	69.3	85	-	-	0.534	4.1	6.7	< 2	< 2	-	5.5	-	38.3	112	
	12289-09	2006 06 07	1.7 - 2.3	7.79	< 10	< 5	35.3	< 0.5	< 0.5	12.6	4.1	60.6	82	-	-	0.308	< 4	6.3	< 2	< 2	-	< 5	-	36.6	83.3	
	12289-10	Duplicate	1.7 - 2.3	7.94	< 10	7.7	34.7	< 0.5	< 0.5	11.6	4.3	57.8	58	-	-	0.369	< 4	5.1	< 2	< 2	-	< 5	-	34.2	95	
QA/QC RPD%				2	*	*	2	*	*	8	5	5	34	-	-	18	*	21	*	*	-	*	-	7	13	
BH06-10	BH06-10	2006 06 16	0.0 - 0.1	8.29	89	255	125	< 0.5	1.75	54.4	12	1,440	691	-	-	4.38	18.5	24	< 2	< 2	-	64.6	-	46.4	2,130	
	12290-01	2006 06 07	0.0 - 0.8	7.83	29	73.4	74.3	< 0.5	< 0.5	30.9	7.8	968	304	-	-	3.78	7.2	13.1	< 2	< 2	-	27.5	-	51.5	842	
	12290-04	2006 06 07	1.5 - 1.8	7.89	65	173	98.3	< 0.5	1.03	37.7	11.2	1,160	401	-	-	2.58	9.5	12.9	< 2	< 2	-	30	-	48.6	1,340	
	12290-06	2006 06 07	2.3 - 2.7	8.73	< 10	6	28.2	< 0.5	< 0.5	15.6	4.9	28.9	< 30	-	-	0.0784	< 4	10.3	< 2	< 2	-	< 5	-	32.8	48	
	12290-07	2006 06 07	2.9 - 3.0	8.96	< 10	< 5	51.5	< 0.5	< 0.5	10.9	4.9	12.9	< 30	-	-	0.0091	< 4	6.4	< 2	< 2	-	< 5	-	38.3	30.2	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

Associated ALS file(s): VA21B7750.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

^b Guideline to protect marine aquatic life.

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 8: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical	Total Metals																					
				pH	Antimony $\mu\text{g/g}$	Arsenic $\mu\text{g/g}$	Barium $\mu\text{g/g}$	Beryllium $\mu\text{g/g}$	Cadmium $\mu\text{g/g}$	Chromium $\mu\text{g/g}$	Cobalt $\mu\text{g/g}$	Copper $\mu\text{g/g}$	Lead $\mu\text{g/g}$	Lithium $\mu\text{g/g}$	Manganese $\mu\text{g/g}$	Mercury $\mu\text{g/g}$	Molybdenum $\mu\text{g/g}$	Nickel $\mu\text{g/g}$	Selenium $\mu\text{g/g}$	Silver $\mu\text{g/g}$	Strontium $\mu\text{g/g}$	Tin $\mu\text{g/g}$	Uranium $\mu\text{g/g}$	Vanadium $\mu\text{g/g}$	Zinc $\mu\text{g/g}$	
BH06-11	BH06-11	2006 06 16	0.0 - 0.1	7.64	26	46.1	139	< 0.5	2.05	54.6	7.1	1,720	810	-	-	8.21	6.4	27.3	< 2	< 2	-	60.3	-	46	1,380	
	12290-08	2006 06 07	0.0 - 0.8	7.71	44	63.2	104	< 0.5	1.73	51.3	7.9	2,640	999	-	-	7.55	10	31.2	< 2	< 2	-	133	-	47.5	1,910	
	12290-12	2006 06 07	2.7 - 3.0	8.51	< 10	< 5	17.9	< 0.5	< 0.5	9.1	3.6	18.8	< 30	-	-	0.0292	< 4	6	< 2	< 2	-	< 5	-	25.3	35.1	
	12291-03	2006 06 07	3.5 - 3.7	8.84	< 10	6	24.5	< 0.5	< 0.5	13	4.6	14.5	< 30	-	-	0.0215	< 4	9.3	< 2	< 2	-	< 5	-	33.9	33.2	
BH06-12	BH06-12	2006 06 16	0.0 - 0.1	7.72	18	45.1	182	< 0.5	0.6	25.4	7.6	4,630	920	-	-	28.1	5	28.9	< 2	< 2	-	45.7	-	40.5	1,280	
	12291-04	2006 06 07	0.8 - 1.5	6.92	15	19.6	48.1	< 0.5	1.28	19.8	4.9	935	286	-	-	5.57	21.3	17.3	< 2	< 2	-	12.3	-	32.8	932	
	12291-06	2006 06 07	2.3 - 2.7	7.06	< 10	< 5	12.3	< 0.5	< 0.5	6.5	2.2	47.5	42	-	-	0.4	5.6	< 5	< 2	< 2	-	< 5	-	14.5	77.3	
BH06-13	BH06-13	2006 06 16	0.0 - 0.1	7.28	20	51.9	60.4	< 0.5	0.76	22.2	5.7	1,470	359	-	-	5.98	5.5	18.2	< 3	< 2	-	40.6	-	32.3	1,070	
	12291-08	2006 06 07	0.0 - 0.8	6.71	18	105	146	< 0.5	1.01	48.6	6.6	4,500	1,150	-	-	8.32	15.7	38.5	< 2	< 2	-	577	-	38	1,680	
	12291-10	2006 06 07	1.5 - 2.1	6.65	12	53.1	76.9	< 0.5	0.84	27.9	6	9,510	1,640	-	-	5.25	38.3	37.5	< 2	< 2	-	532	-	37.8	2,080	
BH06-14	BH06-14	2006 06 16	0.0 - 0.1	7.89	53	233	488	< 0.5	2.01	66.7	14.7	6,040	1,250	-	-	12.3	24.7	35.3	< 2	< 2	-	146	-	37.6	2,820	
	12291-12	2006 06 07	1.2 - 1.4	7.48	23	198	63	< 0.5	1.19	40	6	9,920	1,040	-	-	4.5	30.2	25.9	< 2	< 2	-	62.5	-	24.5	1,940	
	12292-03	2006 06 07	2.3 - 3.1	6.79	34	48.6	28.2	< 0.5	2.15	14.6	2.3	822	716	-	-	1.91	35.9	13	< 2	< 2	-	14.5	-	11.2	983	
	12292-04	Duplicate	2.3 - 3.1	7	20	44.2	65.6	< 0.5	1.43	7.1	< 2	874	150	-	-	2.91	40.3	7.4	< 2	< 2	-	9.3	-	11.7	783	
	QA/QC RPD%				3	52	9	80	*	40	*	*	6	131	-	-	41	12	55	*	*	-	44	-	4	23
BH06-15	12292-05	2006 06 07	3.7 - 3.8	8.28	< 10	< 5	26.6	< 0.5	< 0.5	12.1	3.6	13.2	< 30	-	-	0.0477	< 4	6.8	< 2	< 2	-	< 5	-	29.8	32.5	
	BH06-15	2006 06 16	0.0 - 0.1	8.33	< 10	11.8	76.1	< 0.5	< 0.5	11.7	3	250	86	-	-	1.46	< 4	5.3	< 3	< 2	-	11.1	-	23.9	157	
	BH06-15d	Duplicate	0.0 - 0.1	8.37	< 10	8	51.2	< 0.5	< 0.5	13.3	2.5	163	70	-	-	0.514	< 4	< 5	< 2	< 2	-	< 5	-	20.1	129	
	QA/QC RPD%				0	*	38	39	*	*	13	18	42	21	-	-	96	*	*	*	*	-	*	-	17	20
BH06-16	12070-01	2006 06 08	0.9 - 1.2	8.18	< 10	27.4	65.6	< 0.5	< 0.5	16.2	3.6	464	191	-	-	2.29	< 4	7.2	< 2	< 2	-	13.6	-	27.5	372	
	12070-03	2006 06 08	2.1 - 2.2	7.97	< 10	5.7	38.4	< 0.5	< 0.5	14.4	3.7	131	97	-	-	1.07	5.4	10	< 2	< 2	-	11.8	-	33.8	171	
	BH06-16	2006 06 16	0.0 - 0.1	8.07	832	17.7	27	< 0.5	< 0.5	11.9	3.1	364	3,720	-	-	0.1	< 4	8.7	< 2	< 2	-	1,180	-	20.9	206	
	12070-07	2006 06 08	1.4 - 1.5	8.12	< 10	< 5	16.4	< 0.5	< 0.5	8.9	3.4	7.9	< 30	-	-	0.0109	< 4	6.7	< 2	< 2	-	< 5	-	22.1	22.5	
BH06-17	12070-10	2006 06 08	2.6 - 2.7	8.07	127	7.8	19.2	< 0.5	0.74	15.8	4.1	2,220	327	-	-	0.0789	18.6	13.7	< 2	< 2	-	824	-	27.3	184	
	BH06-17	2006 06 16	0.0 - 0.1	7.81	236	27.9	38.1	< 0.5	0.9	517	10.3	2,620	1,080	-	-	0.27	9.9	474	< 2	< 2	-	730	-	22.4	593	
	12071-01	2006 06 08	0.9 - 1.4	7.6	< 10	6.4	6.2	< 0.5	0.92	6.1	< 2	19.4	< 30	-	-	0.0292	28.1	5.1	< 2	< 2	-	11.9	-	10.5	102	
BH06-18	12071-02	2006 06 08	1.5 - 1.8	7.73	39	6.8	14.6	< 0.5	0.68	13	2.1	162	345	-	-	0.0405	17.5	9.1	< 2	< 2	-	96.2	-	13.9	84.5	
	BH06-18	2006 06 16	0.0 - 0.1	8.09	100	257	137	< 0.5	1.83	51.6	13.6	1,030	559	-	-	3.63	16.8	22	< 2	< 2	-	45.6	-	51.8	2,160	
	12071-08	2006 06 08	0.8 - 1.1	8.26	257	336	78.5	< 0.5	0.98	40.2	22.5	1,360	414	-	-	6.06	23.6	17.5	< 2	< 2	-	40.9	-	44	1,710	
	12071-10	2006 06 08	1.5 - 1.8	8.11	245	409	88.9	< 0.5	1.84	43.4	24	1,180	530	-	-	2.96	33.2	19.5	< 2	< 2	-	55.6	-	44.7	1,990	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

Associated ALS file(s): VA21B7750.

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UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 8: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical		Total Metals																				
				pH	pH	Antimony $\mu\text{g/g}$	Arsenic $\mu\text{g/g}$	Barium $\mu\text{g/g}$	Beryllium $\mu\text{g/g}$	Cadmium $\mu\text{g/g}$	Chromium $\mu\text{g/g}$	Cobalt $\mu\text{g/g}$	Copper $\mu\text{g/g}$	Lead $\mu\text{g/g}$	Lithium $\mu\text{g/g}$	Manganese $\mu\text{g/g}$	Mercury $\mu\text{g/g}$	Molybdenum $\mu\text{g/g}$	Nickel $\mu\text{g/g}$	Selenium $\mu\text{g/g}$	Silver $\mu\text{g/g}$	Strontium $\mu\text{g/g}$	Tin $\mu\text{g/g}$	Uranium $\mu\text{g/g}$	Vanadium $\mu\text{g/g}$	Zinc $\mu\text{g/g}$
BH06-19	BH06-19	2006 06 16	0.0 - 0.1	7.78	181	<u>581</u>	195	< 0.5	3.17	64.6	25.2	<u>1,510</u>	<u>4,370</u>	-	-	<u>2.59</u>	43.9	32.7	< 2	< 2	-	62	-	57.6	<u>4,500</u>	
	12071-11	2006 06 08	0.8 - 1.5	7.18	33	<u>95.2</u>	70.1	< 0.5	0.81	48.9	11.3	<u>1,780</u>	<u>1,470</u>	-	-	<u>7.43</u>	20	121	< 2	< 2	-	61.9	-	97.9	<u>1,440</u>	
	12072-01	2006 06 08	1.5 - 1.6	7.89	130	<u>379</u>	160	< 0.5	1.92	57.2	18.3	<u>863</u>	<u>924</u>	-	-	<u>0.678</u>	25.7	24.8	< 2	< 2	-	43.1	-	48.3	<u>2,850</u>	
BH06-20	BH06-20	2006 06 16	0.0 - 0.1	7.31	< 10	15.2	76.5	< 0.5	< 0.5	17.8	6.8	<u>291</u>	<u>136</u>	-	-	<u>2.58</u>	< 4	19.8	< 2	< 2	-	16.1	-	36.8	<u>991</u>	
	12072-02	2006 06 08	0.0 - 0.8	7.34	< 10	<u>26.6</u>	97.6	< 0.5	< 0.5	21.9	7.2	<u>309</u>	<u>115</u>	-	-	<u>2.24</u>	< 4	21.1	< 2	< 2	-	14.2	-	42	<u>990</u>	
BH06-21	BH06-21	2006 06 16	0.0 - 0.1	7.91	71	<u>247</u>	78.3	< 0.5	2.92	72	13.2	<u>16,500</u>	<u>7,360</u>	-	-	<u>54.1</u>	12.1	53.6	< 2	< 2	-	127	-	35.1	<u>5,390</u>	
	12072-03	2006 06 08	0.0 - 0.8	8.21	60	<u>115</u>	107	< 0.5	1.62	102	12.3	<u>6,040</u>	<u>4,210</u>	-	-	<u>21.2</u>	12.3	45.7	< 2	< 2	-	83.6	-	37.4	<u>3,200</u>	
BH06-22	BH06-22	2006 06 16	0.0 - 0.1	7.9	75	<u>197</u>	296	< 0.5	1.75	56.8	11.8	<u>2,710</u>	<u>1,790</u>	-	-	<u>6.2</u>	14.6	25.8	< 2	< 2	-	123	-	44.3	<u>2,870</u>	
	12072-04	2006 06 08	0.0 - 0.6	7.44	51	<u>171</u>	182	< 0.5	2.02	67.1	14.9	<u>5,290</u>	<u>1,940</u>	-	-	<u>10.1</u>	16.8	50.9	< 2	< 2	-	124	-	43	<u>3,310</u>	
BH06-23	BH06-23	2006 06 16	0.0 - 0.1	8.64	16	24.6	26.3	< 0.5	< 0.5	19	4.7	<u>608</u>	<u>200</u>	-	-	0.101	4.1	15	< 2	< 2	-	76.8	-	25.2	<u>272</u>	
	12072-05	2006 06 08	1.1 - 1.5	6.96	45	18	25.6	< 0.5	< 0.5	22.5	5.2	<u>407</u>	<u>377</u>	-	-	0.349	9.2	21	2	< 2	-	146	-	24.2	<u>288</u>	
BH06-25	12293-12	2006 06 09	2.4 - 3.0	8.22	< 10	5.2	20.3	< 0.5	< 0.5	12.9	3.4	26.1	< 30	-	-	0.1	< 4	8.1	< 2	< 2	-	< 5	-	24.1	40.8	
BH06-26	BH06-26	2006 06 16	0.0 - 0.1	8.19	208	<u>479</u>	171	< 0.5	2.11	68.1	21.6	<u>1,380</u>	<u>603</u>	-	-	<u>2.66</u>	31.4	24.3	< 3	< 2	-	62.3	-	50.9	<u>3,540</u>	
BH06-27	BH06-27	2006 06 16	0.0 - 0.1	8.08	29	<u>76</u>	101	< 0.5	1.47	68.8	10.1	<u>2,640</u>	<u>1,670</u>	-	-	<u>8.84</u>	9.6	42.4	< 2	< 2	-	44.5	-	40.2	<u>2,140</u>	
BH06-28	BH06-28	2006 06 16	0.0 - 0.1	8.97	< 10	6.6	13.4	< 0.5	< 0.5	7.8	2.8	<u>302</u>	<u>96</u>	-	-	0.0429	< 4	5.3	< 2	< 2	-	29.6	-	15.6	148	
BH06-29	BH06-29	2006 06 16	0.0 - 0.1	7.83	79	<u>77.6</u>	126	< 0.5	1.21	42.2	7.1	<u>1,340</u>	<u>1,140</u>	-	-	<u>4.49</u>	7.9	25.8	< 2	< 2	-	204	-	37.9	<u>1,410</u>	
TP06-123	12267-09	2006 06 07	0.4 - 0.5	7.73	23	<u>120</u>	171	< 0.5	1.75	34.4	7.4	<u>4,000</u>	<u>1,080</u>	-	-	<u>9.22</u>	5.7	18.7	< 2	< 2	-	60.1	-	18.2	<u>2,820</u>	
	12267-10	Duplicate	0.4 - 0.5	7.89	79	<u>342</u>	263	< 0.5	3.45	79.9	16.2	<u>4,530</u>	<u>1,820</u>	-	-	<u>9.29</u>	21	35	< 2	< 2	-	104	-	47.9	<u>4,470</u>	
	QA/QC RPD%				2	110	<u>96</u>	42	*	65	80	75	12	51	-	-	1	*	61	*	*	-	54	-	90	45
	12268-01	2006 06 07	2.8	7.37	26	<u>62.4</u>	112	< 0.5	1.5	22.7	3.7	<u>1,550</u>	<u>1,130</u>	-	-	<u>6.25</u>	24.2	15.1	< 2	< 2	-	48.2	-	18.6	<u>1,340</u>	
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	8.6	0.19	4.72	30.5	< 0.4	0.345	12.7	4.76	14.6	3.94	-	165	< 0.05	1.87	11.2	< 0.5	< 0.05	157	0.22	-	29.9	37.7	
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	9.35	0.25	2.08	51.3	< 0.4	0.198	36.9	4.4	18.2	2.82	-	149	< 0.05	5.08	7.91	< 0.5	< 0.05	24.8	0.64	-	36.6	32.5	
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	8.45	0.31	1.7	43	< 0.4	0.27	9.9	5.82	19.6	2.7	-	308	< 0.05	0.26	6.83	< 0.5	0.064	17.5	0.3	-	60.1	54.5	
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	7.5	7.99	26.4	80.8	< 0.4	0.59	22.1	5	<u>1,220</u>	<u>418</u>	-	229	<u>5.72</u>	8.95	11.7	0.61	0.413	85.2	18.1	-	42.3	<u>426</u>	
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	8.89	0.14	4.24	19.4	< 0.4	0.258	9.7	4	8.73	3.05	-	149	< 0.05	1.37	8.98	< 0.5	0.052	136	0.19	-	24.3	30	
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	9.75	0.22	1.21	47.8	< 0.4	0.392	8.7	3.66	16.1	2.42	-	130	0.074	0.11	5.48	< 0.5	< 0.05	24.1	0.17	-	49.6	28.8	
	BH12-10-4-121210	Duplicate	3.7 - 4.0	9.6	0.23	2.1	52.7	< 0.4	0.26	9.6	4.46	15.5	2.69	-	144	< 0.05	0.11	6.52	< 0.5	< 0.05	25.9	0.2	-	43.5	32.9	
	QA/QC RPD%				2	*	*	10	*	40	*	20	4	*	-	10	*	*	17	*	*	7	*	-	13	13
	BH12-10-5-121210	2012 12 10	4.7 - 5.0	8.91	0.11	1.42	56.2	< 0.4	0.119	9.2	5.69	16.5	2.48	-	286	< 0.05	0.24	7.07	< 0.5	< 0.05	17	0.22	-	38.4	49.4	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

Associated ALS file(s): VA21B7750.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE
UNDERLINE

Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 8: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical	Total Metals																					
				pH	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Lithium µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Uranium µg/g	Vanadium µg/g	Zinc µg/g	
BH12-11	BH12-11-1-121211	2012 12 11	0.7 - 0.8	5.85	8.42	11.3	61	< 0.4	1.25	11.3	3.36	70.1	<u>151</u>	-	164	<u>0.855</u>	27.1	12.3	1.18	0.333	101	17.7	-	28.1	<u>557</u>	
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	8.5	0.27	3.66	11.4	< 0.4	0.257	4.9	2.78	4.94	2.94	-	118	< 0.05	1.49	4.64	< 0.5	< 0.05	41.3	0.35	-	18.1	24.4	
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	9.63	< 0.1	1.86	54.1	< 0.4	0.107	8.6	4.1	10.4	2.46	-	168	< 0.05	0.17	5.3	< 0.5	< 0.05	25.6	0.17	-	32.5	27.5	
	BH12-11-8-121211	2012 12 11	5.3 - 5.6	8.92	0.13	1.61	53.9	< 0.4	0.257	12.8	7.81	21.9	3.62	-	378	< 0.05	0.39	8.41	< 0.5	0.095	23.6	0.33	-	53.6	65.6	
BH21-8	BH21-8-01	2021 08 19	0.2 - 0.5	8.24	61.4	<u>294</u>	51.8	0.16	2.67	73.6	29.6	<u>15,600</u>	<u>4,270</u>	7.5	507	<u>52.1</u>	12.6	66.5	1.18	1.80	269	148	1.67	48.8	<u>5,820</u>	
	BH21-8-02	Duplicate	0.2 - 0.5	8.42	43.5	<u>284</u>	63.7	0.14	3.18	82.6	15.1	<u>14,600</u>	<u>3,620</u>	5.7	434	<u>61.9</u>	8.09	43.4	0.98	1.64	375	80.5	1.43	39.2	<u>5,450</u>	
	QA/QC RPD%				2	34	3	21	*	17	12	65	7	16	*	16	17	44	42	*	9	33	59	15	22	7
	BH21-8-03	2021 08 19	1.1 - 1.5	6.81	8.88	12.8	21.3	< 0.10	1.08	11.2	1.44	<u>184</u>	76.8	2.4	64.3	<u>1.02</u>	29.4	10.8	0.88	0.31	109	10.6	21.1	28.0	<u>335</u>	
BH21-9	BH21-9-01	2021 08 19	0.3 - 0.5	7.32	1.78	4.16	36.0	< 0.10	0.248	14.7	4.88	<u>280</u>	34.2	22.6	200	<u>0.871</u>	2.05	8.86	< 0.20	0.12	47.8	< 2.0	1.14	42.7	<u>324</u>	
	BH21-9-02	2021 08 19	1.4 - 1.7	8.57	0.88	4.56	36.4	0.16	0.309	14.8	4.91	71.2	14.8	11.0	204	0.236	2.20	10.6	0.24	< 0.10	96.0	< 2.0	1.00	37.0	121	
	BH21-9-03	2021 08 19	2.4 - 2.9	9.13	0.36	4.17	55.0	0.26	0.205	16.6	5.40	32.3	7.26	9.5	206	0.0703	1.53	10.8	< 0.20	< 0.10	96.4	< 2.0	0.971	42.1	58.6	
BH21-11	BH21-11-01	2021 08 19	0.5 - 0.9	8.28	8.76	23.3	72.0	< 0.10	1.28	28.3	6.29	<u>4,060</u>	<u>869</u>	11.6	254	<u>31.6</u>	4.14	17.5	< 0.20	0.35	123	13.6	0.872	43.9	<u>1,220</u>	
	BH21-11-02	Duplicate	0.5 - 0.9	8.36	8.52	26.3	63.5	< 0.10	0.547	15.9	6.65	<u>1,800</u>	<u>471</u>	12.9	264	<u>10.9</u>	2.64	10.5	< 0.20	0.16	99.1	5.3	0.794	39.3	<u>623</u>	
	QA/QC RPD%				1	3	12	13	*	80	56	6	77	59	11	4	97	44	50	*	*	22	*	9	11	65
	BH21-11-03	2021 08 19	1.4 - 1.8	8.36	0.24	4.03	19.9	< 0.10	0.165	8.52	3.36	11.5	6.01	7.9	184	0.133	1.46	6.11	< 0.20	< 0.10	34.3	< 2.0	0.982	25.6	27.8	
	BH21-11-04	2021 08 19	2.3 - 2.9	9.31	0.27	1.68	39.3	0.16	0.329	13.2	4.43	18.5	3.44	5.6	179	< 0.0500	0.22	7.63	< 0.20	< 0.10	38.1	< 2.0	0.516	48.6	32.7	
BH21-12	BH21-11-05	2021 08 19	3.5 - 4.0	9.59	0.20	2.41	61.9	0.13	0.026	12.0	4.29	13.7	3.31	4.2	173	< 0.0500	0.30	7.74	0.81	< 0.10	30.8	< 2.0	0.308	41.8	28.8	
	BH21-12-01	2021 08 19	0.8 - 1.1	5.58	18.4	25.8	39.3	< 0.10	1.93	30.0	7.72	<u>462</u>	<u>276</u>	5.7	301	<u>1.58</u>	28.8	43.9	0.89	0.20	91.6	17.3	10.1	32.0	<u>1,160</u>	
	BH21-12-02	2021 08 19	1.7 - 2.0	8.20	0.21	3.16	19.1	< 0.10	0.178	6.76	2.95	5.21	2.82	6.6	140	< 0.0500	1.11	5.07	< 0.20	< 0.10	25.8	< 2.0	1.06	18.4	20.5	
BH21-13	BH21-12-03	2021 08 19	2.9 - 3.4	8.94	0.25	3.47	45.7	0.20	0.150	16.6	7.10	24.1	5.89	8.2	268	< 0.0500	1.34	10.6	< 0.20	< 0.10	88.9	< 2.0	0.640	46.7	43.6	
BH21-14	BH21-13-04	2021 08 19	3.7 - 4.2	9.58	0.21	2.21	52.4	0.17	0.062	13.7	5.36	13.6	3.02	4.5	180	< 0.0500	0.25	10.5	< 0.20	< 0.10	38.8	< 2.0	0.385	41.7	31.2	
BH21-14	BH21-14-01	2021 08 20	0.2 - 0.5	8.87	18.6	<u>52.7</u>	62.9	< 0.10	0.520	23.0	5.30	<u>630</u>	<u>462</u>	6.3	264	<u>1.85</u>	6.08	20.4	< 0.20	0.16	191	17.0	0.976	25.3	<u>893</u>	
	BH21-14-02	2021 08 20	1.1 - 1.4	8.21	30.6	<u>104</u>	85.5	< 0.10	2.35	<u>212</u>	14.6	<u>11,400</u>	<u>2,840</u>	3.0	548	<u>42.1</u>	14.4	98.8	0.65	0.98	444	122	1.65	21.3	<u>4,050</u>	
	BH21-14-03	Duplicate	1.1 - 1.4	8.15	23.1	<u>103</u>	111	< 0.10	1.78	95.1	13.8	<u>8,900</u>	<u>2,000</u>	3.9	476	<u>34.8</u>	15.7	81.3	0.37	0.57	518	81.8	1.16	19.0	<u>3,880</u>	
	QA/QC RPD%				1	28	1	26	*	28	76	6	25	35	*	14	19	9	19	*	53	15	39	35	11	4
BH21-14	BH21-14-04	2021 08 20	2.0 - 2.5	6.98	1.82	2.87	8.36	< 0.10	0.271	1.44	0.25	24.4	17.4	< 2.0	28.7	0.0727	17.8	1.38	0.30	< 0.10	68.0	< 2.0	1.79	3.18	69.6	
	BH21-14-05	2021 08 20	3.7 - 4.1	9.23	0.15	1.76	69.4	0.25	0.028	15.2	7.88	18.1	4.60	9.1	311	< 0.0500	0.45	12.1	< 0.20	< 0.10	35.4	< 2.0	0.356	59.7	49.2	
BH21-15	BH21-15-03	2021 08 20	1.5 - 2.0	9.05	0.14	2.58	23.0	0.14	0.063	11.4	4.45	13.3	2.84	14.3	216	< 0.0500	0.92	6.53	< 0.20	< 0.10	45.6	< 2.0	0.628	57.8	30.1	
BH21-16	BH21-16-03	2021 08 20	2.3 - 2.6	9.00	0.12	2.89	59.6	0.24	< 0.020	16.2	8.22	20.8	3.83	9.5	313	< 0.0500	0.39	8.40	< 0.20	< 0.10	36.9	< 2.0	0.394	67.4	48.7	
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

Associated ALS file(s): VA21B7750.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs										Polychlorinated Biphenyls, Total [PCBs] µg/g
				Aroclor 1016 µg/g	Aroclor 1221 µg/g	Aroclor 1232 µg/g	Aroclor 1242 µg/g	Aroclor 1248 µg/g	Aroclor 1254 µg/g	Aroclor 1260 µg/g	Aroclor 1262 µg/g	Aroclor 1268 µg/g		
BH06-1	12287-02	2006 06 06	0.8 - 1.1	-	-	-	-	-	-	-	-	-	-	< 0.13
BH06-7	12289-03	2006 06 07	2.3 - 2.6	-	-	-	-	-	-	-	-	-	-	< 0.05
BH06-8	12289-04	2006 06 07	0.9 - 1.1	-	-	-	-	-	-	-	-	-	-	2.57
	12289-05	Duplicate	0.9 - 1.1	-	-	-	-	-	-	-	-	-	-	4.66
	QA/QC RPD%				-	-	-	-	-	-	-	-	-	58
BH06-9	12289-09	2006 06 07	1.7 - 2.3	-	-	-	-	-	-	-	-	-	-	< 0.05
	12289-10	Duplicate	1.7 - 2.3	-	-	-	-	-	-	-	-	-	-	< 0.05
	QA/QC RPD%				-	-	-	-	-	-	-	-	-	*
BH06-10	12290-04	2006 06 07	1.5 - 1.8	-	-	-	-	-	-	-	-	-	-	0.796
	12290-07	2006 06 07	2.9 - 3.0	-	-	-	-	-	-	-	-	-	-	< 0.05
BH06-11	12290-12	2006 06 07	2.7 - 3.0	-	-	-	-	-	-	-	-	-	-	< 0.05
BH06-12	12291-06	2006 06 07	2.3 - 2.7	-	-	-	-	-	-	-	-	-	-	< 0.05
BH06-13	12291-10	2006 06 07	1.5 - 2.1	-	-	-	-	-	-	-	-	-	-	3.12
BH06-14	12291-12	2006 06 07	1.2 - 1.4	-	-	-	-	-	-	-	-	-	-	32.1
	12292-03	2006 06 07	2.3 - 3.1	-	-	-	-	-	-	-	-	-	-	0.52
	12292-04	Duplicate	2.3 - 3.1	-	-	-	-	-	-	-	-	-	-	3.32
	QA/QC RPD%				-	-	-	-	-	-	-	-	-	146
BH06-19	12071-11	2006 06 08	0.8 - 1.5	-	-	-	-	-	-	-	-	-	-	0.672
BH06-21	12072-03	2006 06 08	0.0 - 0.8	-	-	-	-	-	-	-	-	-	-	14
BH06-22	12072-04	2006 06 08	0.0 - 0.6	-	-	-	-	-	-	-	-	-	-	4.6
BH21-8	BH21-8-01	2021 08 19	0.2 - 0.5	< 0.030	< 0.030	< 0.030	< 0.030	24.7	18.6	2.10	< 0.030	< 0.030	< 0.030	45.4
	BH21-8-02	Duplicate	0.2 - 0.5	< 0.028	< 0.028	< 0.028	< 0.028	12.8	11.4	1.20	< 0.028	< 0.028	< 0.028	25.4
	QA/QC RPD%				*	*	*	*	63	48	55	*	*	56
	BH21-8-03	2021 08 19	1.1 - 1.5	< 0.010	< 0.010	< 0.010	< 0.010	0.085	0.035	< 0.010	< 0.010	< 0.010	< 0.010	0.120
BH21-10	BH21-10-01	2021 08 19	0.2 - 0.6	< 0.030	< 0.030	< 0.030	< 0.030	14.5	8.29	0.987	< 0.030	< 0.030	< 0.030	23.8
	BH21-10-02	2021 08 19	1.2 - 1.7	< 0.010	< 0.010	< 0.010	< 0.010	0.059	0.039	< 0.010	< 0.010	< 0.010	< 0.010	0.098
BH21-11	BH21-11-01	2021 08 19	0.5 - 0.9	< 0.010	< 0.010	< 0.010	< 0.010	0.538	1.14	0.138	< 0.010	< 0.010	< 0.010	1.82
	BH21-11-02	Duplicate	0.5 - 0.9	< 0.010	< 0.010	< 0.010	< 0.010	0.601	1.14	0.150	< 0.010	< 0.010	< 0.010	1.89
	QA/QC RPD%				*	*	*	*	11	0	8	*	*	4
	BH21-11-03	2021 08 19	1.4 - 1.8	< 0.010	< 0.010	< 0.010	< 0.010	0.027	< 0.020	< 0.010	< 0.010	< 0.010	< 0.010	0.027
BH21-12	BH21-12-01	2021 08 19	0.8 - 1.1	< 0.010	< 0.010	< 0.010	< 0.010	0.103	0.250	< 0.030	< 0.030	< 0.030	< 0.030	0.353
	BH21-12-02	2021 08 19	1.7 - 2.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
	BH21-12-03	2021 08 19	2.9 - 3.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
BH21-14	BH21-14-01	2021 08 20	0.2 - 0.5	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	0.232	0.034	< 0.010	< 0.010	< 0.010	0.266
	BH21-14-02	2021 08 20	1.1 - 1.4	< 0.065	< 0.065	< 0.065	< 0.065	6.32	9.26	1.13	< 0.065	< 0.065	< 0.065	16.7
	BH21-14-03	Duplicate	1.1 - 1.4	< 0.030	< 0.030	< 0.030	< 0.030	4.76	6.91	1.17	< 0.030	< 0.030	< 0.030	12.8
	QA/QC RPD%				*	*	*	*	28	29	3	*	*	26
BH21-14	BH21-14-04	2021 08 20	2.0 - 2.5	< 0.010	< 0.010	< 0.010	< 0.010	0.129	0.065	< 0.010	< 0.010	< 0.010	< 0.010	0.194
	BH21-14-05	2021 08 20	3.7 - 4.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
BH21-15	BH21-15-03	2021 08 20	1.5 - 2.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
BH21-16	BH21-16-03	2021 08 20	2.3 - 2.6	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
BC Standard														
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.23
Federal Guideline														
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	n/a	n/a	n/a	0.709	n/a	n/a	n/a	n/a	0.189

Associated ALS file(s): VA21B7750.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

TABLE 10: Summary of Analytical Results for Intertidal Sediment - Leachable PAH and Metals

Sample Location		BH21-8			BH21-9	BH21-10	BH21-11	BH21-12	BH21-14			BC Standard
Sample ID	Sample Date (yyyy mm dd)	BH21-8-01	BH21-8-02	BH21-8-03	BH21-9-01	BH21-10-01	BH21-11-01	BH21-12-01	BH21-14-01	BH21-14-02	BH21-14-04	HWR
Parameter	Units	2021 08 19	2021 08 19	2021 08 19	2021 08 19	2021 08 19	2021 08 19	2021 08 19	2021 08 20	2021 08 20	2021 08 20	Leachate Quality Standards (HWLQ)
TCLP Polycyclic Aromatic Hydrocarbons												
Benzo(a)pyrene	µg/L	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.050	< 0.050	< 0.050	1
TCLP Metals												
Antimony	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	n/a
Arsenic	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	2,500
Barium	µg/L	< 2,500	< 2,500	-	-	-	< 2,500	< 2,500	< 2,500	< 2,500	-	100,000
Beryllium	µg/L	< 25	< 25	-	-	-	< 25	< 25	< 25	< 25	-	n/a
Boron	µg/L	970	1,120	-	-	-	< 500	830	< 500	1,420	-	500,000
Cadmium	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	500
Calcium	µg/L	728,000	522,000	-	-	-	583,000	56,000	752,000	1,740,000	-	n/a
Chromium	µg/L	< 250	< 250	-	-	-	< 250	< 250	< 250	< 250	-	5,000
Cobalt	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	n/a
Copper	µg/L	< 50	< 50	-	-	-	< 50	120	700	< 50	-	100,000
Iron	µg/L	< 5,000	143,000	-	-	-	< 5,000	< 5,000	< 5,000	33,600	-	n/a
Lead	µg/L	< 250	< 250	-	-	-	460	< 250	< 250	1,010	-	5,000
Magnesium	µg/L	109,000	93,700	-	-	-	25,500	44,600	19,100	181,000	-	n/a
Mercury	µg/L	< 1.0	< 1.0	-	-	-	2.4	< 1.0	< 1.0	< 1.0	-	100
Nickel	µg/L	< 250	< 250	-	-	-	< 250	< 250	< 250	330	-	n/a
Selenium	µg/L	< 100	< 100	-	-	-	< 100	< 100	< 100	< 100	-	1,000
Silver	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	5,000
Thallium	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	n/a
Uranium	µg/L	< 200	< 200	-	-	-	< 200	< 200	< 200	< 200	-	10,000
Vanadium	µg/L	< 150	< 150	-	-	-	< 150	< 150	< 150	< 150	-	n/a
Zinc	µg/L	970	< 500	-	-	-	10,200	2,530	3,290	11,200	-	500,000
Zirconium	µg/L	< 10,000	< 10,000	-	-	-	< 10,000	< 10,000	< 10,000	< 10,000	-	n/a

Associated ALS file(s): VA21B7750.

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than HWR Leachate Quality Standards (HWLQ) Standard

TABLE 11: Summary of Analytical Results for Upland Soil - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Petroleum Hydrocarbon Fractions			
					F2 (>C10-C16) µg/g	F3 (>C16-C34) µg/g	F4 (>C34-C50) µg/g	F4G (>C50) µg/g
BH06-60	12844-02	2006 06 20	0.9 - 1.4	-	4,100	14,000	19,000	8,600
	12844-04	2006 06 20	2.4 - 2.7	-	31	320	270	200
	12844-05	Duplicate	2.4 - 2.7	-	80	480	450	300
	QA/QC RPD%				88	40	50	*
	12844-07	2006 06 20	4.6 - 4.9	-	< 5	24	< 5	-
BH06-61	12844-10	2006 06 20	1.8 - 2.1	-	61	1,500	300	1,700
	12844-11	2006 06 20	4.0 - 4.3	-	< 5	15	< 5	-
BH06-62	12407-05	2006 06 20	1.2 - 1.5	-	270	120,000	24,000	35,000
	12407-07	2006 06 20	2.4 - 2.7	-	140	980	540	2,800
TP06-121	12267-02	2006 06 07	0.4 - 0.5	-	61	1,430	535	2,300
	12267-04	2006 06 07	1.4 - 1.5	-	7,390	14,300	2,550	9,120
TP06-122	12267-06	2006 06 07	0.4 - 0.5	-	< 30	710	210	880
TP06-124	12269-01	2006 06 08	0.4 - 0.5	-	150	7,390	6,020	19,400
	12269-02	2006 06 08	1.2	-	0.204	0.069	< 0.05	-
	12269-03	2006 06 08	2.0	-	8,830	15,300	2,200	-
TP06-125	12269-05	2006 06 08	0.4 - 0.5	-	2,090	8,450	2,660	11,600
	12269-07	2006 06 08	2.1 - 2.2	-	3,240	7,120	2,950	8,940
	12269-08	2006 06 08	2.1 - 2.2	-	5,500	19,000	3,300	-
TP06-127	12270-03	2006 06 08	1.0 - 1.1	-	< 150	360	< 6,020	520
	12270-06	2006 06 08	4.0	-	34	2,300	1,100	3,100
TP06-128	12270-08	2006 06 08	0.6 - 0.7	-	780	1,720	< 6,020	1,180
	12270-09	2006 06 08	1.0	-	10,300	24,100	2,300	38,400
	12270-11	2006 06 08	3.0	-	53	1,300	790	2,500
BC Standard								
CSR Industrial Land Use (IL) ^b					n/a	n/a	n/a	n/a

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 12: Summary of Analytical Results for Upland Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																	
				Naphthalene µg/g	Methylnaphthalene, 2- µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Fluoranthene µg/g	Pyrene µg/g	Benz(a)anthracene µg/g	Chrysene µg/g	Benzo(b)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenz(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	
BH06-24	BH06-24	2006 06 16	0.0 - 0.1	0.443	0.408	0.453	0.478	0.515	4.51	1.2	6.36	5.62	3.18	4.06	4.56	1.64	3.08	2.44	0.49	2.27	
BH06-60	12844-02	2006 06 20	0.9 - 1.4	0.967	1.07	< 0.5	2.64	2.77	8.62	2.62	10.8	7.53	2.97	3.33	4.26	1.3	3.63	2.88	0.627	2.92	
	12844-04	2006 06 20	2.4 - 2.7	< 0.05	< 0.05	< 0.05	0.085	0.094	0.323	0.091	0.321	0.233	0.086	0.091	0.096	< 0.05	0.061	< 0.05	< 0.05	< 0.05	
	12844-05	Duplicate	2.4 - 2.7	< 0.05	< 0.05	< 0.05	0.082	0.089	0.29	0.085	0.311	0.234	0.093	0.104	0.105	< 0.05	0.075	< 0.05	< 0.05	< 0.05	
	QA/QC RPD%				*	*	*	*	*	11	*	3	*	*	*	*	*	*	*	*	*
BH06-61	12844-07	2006 06 20	4.6 - 4.9	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	12844-10	2006 06 20	1.8 - 2.1	0.294	0.207	< 0.05	0.101	0.105	0.472	0.161	0.412	0.549	0.325	0.259	0.244	0.092	0.201	0.114	0.054	0.123	
	12844-11	2006 06 20	4.0 - 4.3	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
BH06-62	12407-05	2006 06 20	1.2 - 1.5	4.55	1.13	0.48	0.065	0.187	2.21	0.454	0.816	0.796	0.325	0.675	< 0.6	< 0.3	0.311	0.486	< 0.1	0.922	
	12407-07	2006 06 20	2.4 - 2.7	< 0.1	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	0.294	1.11	0.153	0.095	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
TP06-121	12267-02	2006 06 07	0.4 - 0.5	0.23	0.067	0.181	0.077	0.084	0.902	0.276	1.65	1.41	0.774	0.948	1.66	0.505	1.05	1.1	0.174	1.14	
	12267-04	2006 06 07	1.4 - 1.5	0.547	0.407	< 0.05	< 0.04	0.69	3.53	1.2	7.94	6.97	3.79	4.19	7.08	2.3	4.78	4.08	0.796	4.34	
TP06-122	12267-06	2006 06 07	0.4 - 0.5	0.301	0.054	0.059	< 0.04	< 0.05	0.732	0.054	0.559	0.308	0.115	0.258	0.285	0.078	0.11	0.127	< 0.05	0.172	
TP06-124	12269-01	2006 06 08	0.4 - 0.5	0.391	0.247	0.196	< 0.04	0.057	0.953	0.278	2.44	2.01	1.07	1.27	2.22	0.641	1.28	1.3	0.213	2.04	
	12269-02	2006 06 08	1.2	2.1	3.4	0.204	0.143	< 0.5	19.4	8.2	30	< 30	< 30 ^a	< 10	< 50 ^a	< 50 ^a	< 30	< 0.5	< 5	< 50	
	12269-03	2006 06 08	2.0	< 0.05	< 0.05	< 0.05	1.25	1.57	2.41	1.39	4.52	4.12	2.28	3.08	4.52	1.42	2.91	2.39	0.47	2.64	
TP06-125	12269-05	2006 06 08	0.4 - 0.5	0.69	0.71	0.809	0.692	0.7	7.8	1.43	11.9	11.9	5.47	7.5	8.84	3.15	5.72	4.71	1.08	5.15	
	12269-07	2006 06 08	2.1 - 2.2	2.4	3.69	< 0.05	2.83	2.49	18.9	3.05	18.5	16.8	6.64	7.57	10.5	4	6.96	4.66	1.06	4.66	
	12269-08	2006 06 08	2.1 - 2.2	2.72	4.54	1.88	1.72	2.31	12.8	2.63	10.6	9.98	5.56	6.31	10.4	4.07	7.88	5.22	1.31	4.58	
TP06-127	12270-03	2006 06 08	1.0 - 1.1	0.314	0.083	< 0.05	< 0.04	< 0.05	0.444	< 0.05	0.444	0.152	0.051	0.223	0.319	0.066	0.062	0.094	< 0.05	0.096	
	12270-06	2006 06 08	4.0	0.17	0.204	0.052	0.05	0.078	0.798	0.204	1.06	0.953	0.522	0.63	0.891	0.284	0.581	0.464	0.102	0.46	
TP06-128	12270-08	2006 06 08	0.6 - 0.7	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	0.058	0.065	< 0.05	0.077	0.139	< 0.05	0.087	0.095	< 0.05	0.105	
	12270-09	2006 06 08	1.0	< 0.05	5.76	< 0.05	< 0.04	3.95	< 0.05	< 0.05	4.71	4.49	1.72	2.41	1.46	0.51	1.2	1.07	0.184	1.3	
	12270-11	2006 06 08	3.0	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	0.106	0.053	0.152	0.188	0.104	0.124	0.135	< 0.05	0.085	0.068	< 0.05	0.084	
BC Standard																					
CSR Industrial Land Use (IL) ^b				20	950	n/a	15,000	9,500	50	30	200	100	10	4,500	10	10	50	10	10	n/a	

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QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Laboratory detection limit exceeds regulatory standard/guideline.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 13: Summary of Analytical Results for Upland Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	pH		Total Metals																	
				pH	Antimony $\mu\text{g/g}$	Arsenic $\mu\text{g/g}$	Barium $\mu\text{g/g}$	Beryllium $\mu\text{g/g}$	Cadmium $\mu\text{g/g}$	Chromium $\mu\text{g/g}$	Cobalt $\mu\text{g/g}$	Copper $\mu\text{g/g}$	Lead $\mu\text{g/g}$	Mercury $\mu\text{g/g}$	Molybdenum $\mu\text{g/g}$	Nickel $\mu\text{g/g}$	Selenium $\mu\text{g/g}$	Silver $\mu\text{g/g}$	Thallium $\mu\text{g/g}$	Tin $\mu\text{g/g}$	Vanadium $\mu\text{g/g}$	Zinc $\mu\text{g/g}$	
BH06-24	BH06-24	2006 06 16	0.0 - 0.1	7.85	85	191	184	< 0.5	1.48	50.7	10.7	3,930	975	8.48	12.5	26.3	< 2 ^a	< 2	< 1	213	39.8	2,160	
	12293-07	2006 06 09	2.7 - 3.0	7.22	16	78	55.5	< 0.5	0.99	29	6.2	590	173	0.517	21	9.5	< 2 ^a	< 2	< 1	12	34.8	643	
BH06-60	12844-02	2006 06 20	0.9 - 1.4	8.18	< 10	33.6	92.4	< 0.5	1.46	48.7	6.1	1,460	848	8.2	4	12.2	< 2 ^a	< 2	< 1	9	44.5	483	
BH06-61	12844-10	2006 06 20	1.8 - 2.1	7.42	16	8.5	7	< 0.5	2.19	< 2	< 2	60.5	152	0.198	20	< 5	< 2 ^a	< 2	< 1	< 5	5.4	367	
	12844-11	2006 06 20	4.0 - 4.3	8.8	< 10	< 5	59.4	< 0.5	< 0.5	14.3	5.7	22.5	< 30	0.0379	< 4	9.1	< 2 ^a	< 2	< 1	< 5	40.9	42.6	
BH06-62	12407-03	2006 06 20	0.0 - 0.3	7.5	223	305	251	< 0.5	4.58	86.4	14.3	3,200	1,410	7.7	18.4	43	< 4 ^a	< 2	< 1	345	53.4	3,050	
	12407-05	2006 06 20	1.2 - 1.5	6.64	201	16.1	91.6	< 0.5	< 0.5	8.9	< 2	1,250	4,730	1.61	< 4	5.2	< 2 ^a	< 2	< 1	358	6.5	294	
TP06-120	12266-12	2006 06 07	1.4 - 1.5	6.72	381	32.7	410	< 0.5	3.67	35	14.3	697	6,230	0.675	5.5	104	< 2 ^a	< 2	< 1	537	46.3	3,520	
	12267-01	2006 06 07	1.4 - 1.5	7.06	76	21.5	26.3	< 0.5	1.51	13	4.3	356	1,280	0.222	46.3	21.3	< 2 ^a	< 2	< 1	59.5	37.6	822	
TP06-121	12267-02	2006 06 07	0.4 - 0.5	7.78	33	75.8	149	< 0.5	0.89	34.6	8.1	3,670	1,440	6	5	42	< 2 ^a	< 2	< 1	75.4	46.4	1,190	
	12267-04	2006 06 07	1.4 - 1.5	7.49	46	118	273	< 0.5	0.93	40.4	8.1	5,550	1,620	9.95	8.3	63.1	< 2 ^a	< 2	< 1	66.6	34.2	1,890	
TP06-122	12267-06	2006 06 07	0.4 - 0.5	7.38	111	16.5	1,120	< 0.5	1.02	18.1	7.9	356	1,450	0.205	< 4	33.5	< 2 ^a	< 2	< 1	172	36.8	1,020	
	12267-08	2006 06 07	1.5	6.59	58	25.1	63.4	< 0.5	1.1	7.4	7.7	184	476	0.216	37.2	38.8	< 2 ^a	< 2	< 1	40.8	25.7	690	
TP06-124	12269-01	2006 06 08	0.4 - 0.5	6.81	14	30.9	394	< 0.5	1.18	164	19.9	4,260	1,320	12.5	6.6	31.4	< 2 ^a	< 2	< 1	802	27	1,190	
	12269-03	2006 06 08	2.0	7.04	53	80	117	< 0.5	3.37	37.6	9.6	2,670	1,210	7.82	31.2	53.9	< 2 ^a	< 2	< 1	37.4	22.5	2,640	
TP06-125	12269-05	2006 06 08	0.4 - 0.5	7.88	122	617	554	< 0.5	5.5	241	29.4	6,340	2,400	16.1	36.6	110	< 2 ^a	< 2	< 1	113	62.2	6,270	
	12269-07	2006 06 08	2.1 - 2.2	7.52	122	159	218	< 0.5	2.15	82.7	18.2	1,760	1,090	9.84	12.6	101	< 2 ^a	< 2	< 1	131	59.9	2,480	
	12269-08	2006 06 08	2.1 - 2.2	7.38	59	177	225	< 0.5	2.8	96.9	22.3	2,130	1,260	11.4	14.7	214	< 2 ^a	< 2	< 1	68.1	59.1	2,870	
TP06-127	12270-02	2006 06 08	0.6 - 0.7	8.42	< 10	< 5	42.9	< 0.5	< 0.5	10.6	5.1	46	< 30	0.136	< 4	5.1	< 2 ^a	< 2	< 1	< 5	41.5	58	
	12270-03	2006 06 08	1.0 - 1.1	7.51	46	5.6	137	< 0.5	< 0.5	14.2	5.9	95.6	164	0.066	< 4	17.2	< 2 ^a	< 2	< 1	28.5	42.8	231	
TP06-128	12270-08	2006 06 08	0.6 - 0.7	7.09	< 10	11	66.1	< 0.5	< 0.5	13.6	4.7	390	38	1.85	< 4	< 5	< 2 ^a	< 2	< 1	< 5	48.2	139	
	12270-09	2006 06 08	1.0	8.06	831	74.8	59.7	< 0.5	< 0.5	39.8	10.1	1,430	8,660	8.42	11	41.2	< 2 ^a	< 2	< 1	907	32.3	762	
BC Standard																							
CSR Industrial Land Use (IL) ^b				n/a	40	10	1,500	350 ^c	3.5 - 75 ^c	60	25	300 ^c	1,000 ^c	75	150	70 - 250 ^c	1	40	25	300	300	150 - 200 ^c	

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Laboratory detection limit exceeds regulatory standard/guideline.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

^c Standard is pH dependent.

TABLE 14: Summary of Analytical Results for Upland Soil - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs
				Polychlorinated Biphenyls, Total [PCBs] µg/g
TP06-121	12267-04	2006 06 07	1.4 - 1.5	15.4
BC Standard				
CSR Industrial Land Use (IL) ^a				35

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

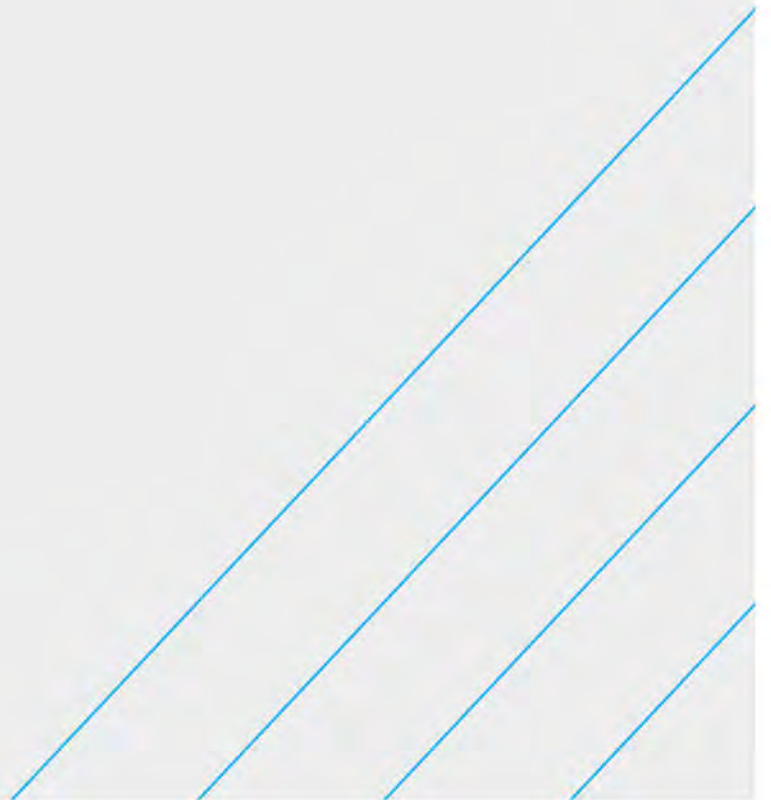
RDL Denotes reported detection limit.

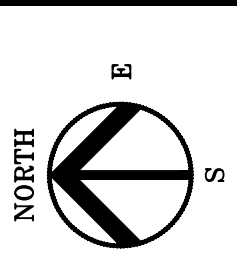
BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

Drawing

- › 509211-602 - Summary of Sediment/Soil Analytical Results





LEGEND

- SITE BOUNDARY
- FORMER STERLING SHIPYARD SITE
- CITY OF VANCOUVER SEWER OUTFALL RIGHT-OF-WAY LICENSE BOUNDARY
- LOT BOUNDARY
- FENCE
- FORMER STRUCTURE
- HIGH WATER MARK
- INTERTIDAL AREA
- APPROXIMATE EXTENTS OF PROPOSED REMEDIATION
- BORERHOLE
- BORERHOLE (OTHERS)
- MONITORING WELL (OTHERS)
- TESTPIT (OTHERS)

LOCATION	DEPTH RANGE	ANALYTICAL SEDIMENT RESULTS
BH21-05	1.5 - 1.7	PAH >RFD Metals >RFD PCB <STO

- DEPTH OF SAMPLE (m)
- DEPTH RANGE DEFINED AS DEPTH BELOW SEA FLOOR
- SAMPLE OBTAINED FROM TILL-LIKE FORMATION
- RED (+) = CONCENTRATION GREATER THAN THE APPLICABLE CSR SEDIMENT MARINE SENSITIVE STANDARDS
- BLUE (+) = CONCENTRATION GREATER THAN THE APPLICABLE CSR SEDIMENT MARINE TYPICAL STANDARDS
- GREEN (+) = CONCENTRATION LESS THAN OR EQUAL TO THE APPLICABLE GUIDELINES/STANDARDS
- PINK (+) = CONCENTRATION GREATER THAN THE APPLICABLE CSR & SOIL STANDARDS
- CYAN (+) = CONCENTRATION GREATER THAN THE APPLICABLE COME COGQ PEL SEDIMENT GUIDELINES

PAH	Metals	PCB
CSR & SOIL STANDARDS (µg/g)	SEE TABLES	SEE TABLES
CSR SEDIMENT MARINE SENSITIVE STANDARDS (µg/g)	SEE TABLES	SEE TABLES
CSR SEDIMENT MARINE TYPICAL STANDARDS (µg/g)	SEE TABLES	SEE TABLES
COME COGQ PEL SEDIMENT GUIDELINES (µg/g)	SEE TABLES	SEE TABLES

NOTE:
 SEDIMENT STANDARDS/GUIDELINES APPLY ONLY TO THE SUBTIDAL AND INTERTIDAL LOCATIONS.
 CSR SEDIMENT MARINE SENSITIVE STANDARDS APPLY ONLY TO THE SUBTIDAL LOCATIONS.
 CSR IL SOIL STANDARDS APPLY ONLY TO THE UPLAND LOCATIONS.

NOTES

- ORIGINAL DRAWING IN COLOUR.
- LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INTRUSIVE WORK. NOT ALL UTILITIES MAY BE SHOWN.

REFERENCE DRAWINGS

No.	DATE	DESCRIPTION
	2021-03-10	ESRI AERIAL IMAGERY
FIGURE 2	2008-01-24	GOLDER ASSOCIATES (06-1412-013)

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
4	2021-10-20	ISSUED TO CLIENT	PES	BH
3	2021-09-15	ISSUED TO CLIENT AS DRAFT	PES	BH
2	2021-07-12	ISSUED TO CLIENT AS DRAFT	PES	BH
1	2021-04-22	ISSUED TO CLIENT AS DRAFT	PES	BH
0	2021-04-14	ISSUED TO CLIENT AS DRAFT	PES	BH



CLIENT NAME:
 VANCOUVER FRASER PORT AUTHORITY

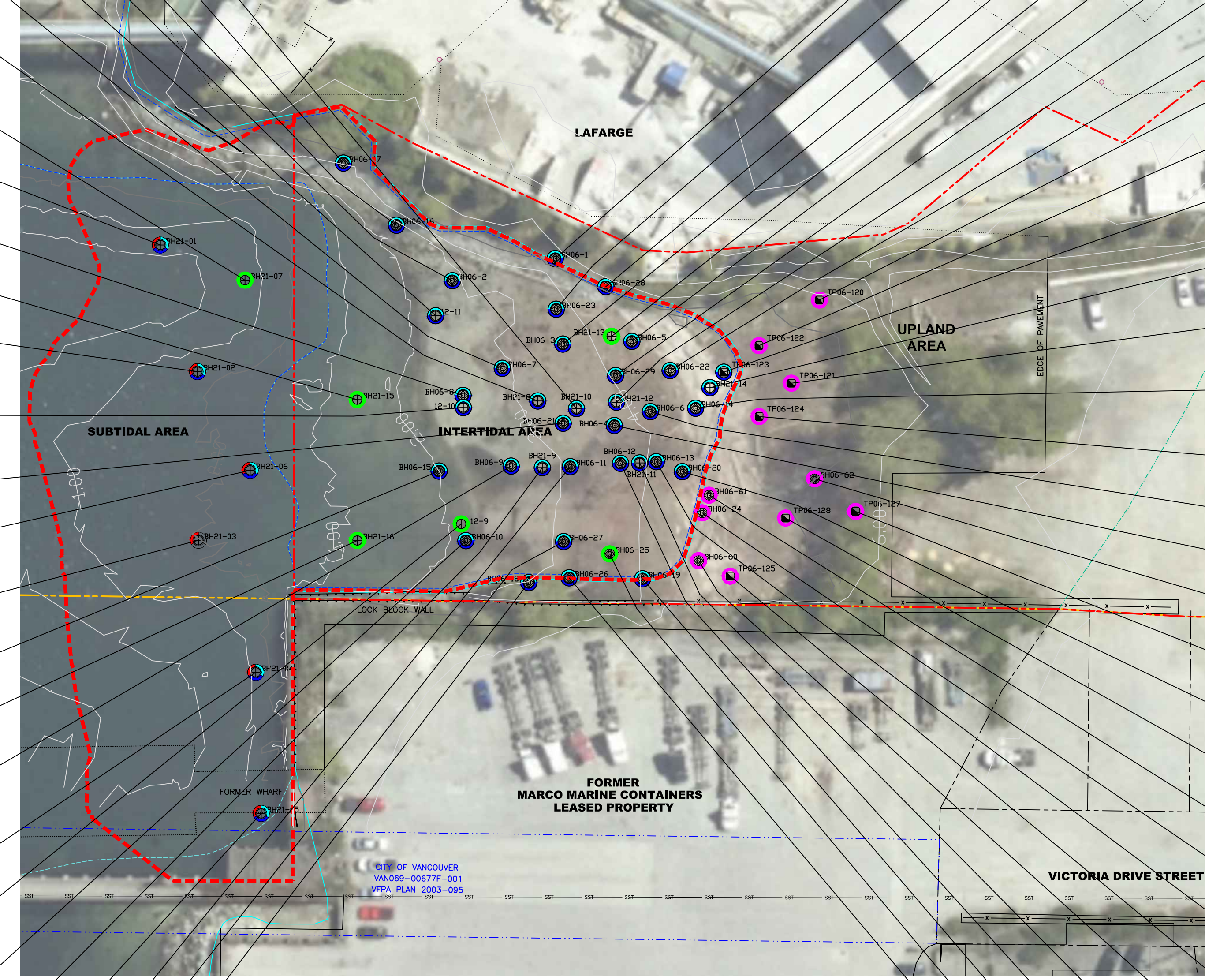
PROJECT LOCATION:
 FORMER STERLING SHIPYARD SITE
 2089-2095 COMMISSIONER ST., VAN., BC

TITLE:
SUMMARY OF SEDIMENT/SOIL ANALYTICAL RESULTS



DWN BY: PES	SCALE: 1:500	DATE: 2021-04-13	DWG No: REV.: 4
CHK'D: BH	PLOT: 2021.1020.1452	CADFILE: 509211-R14	509211-602

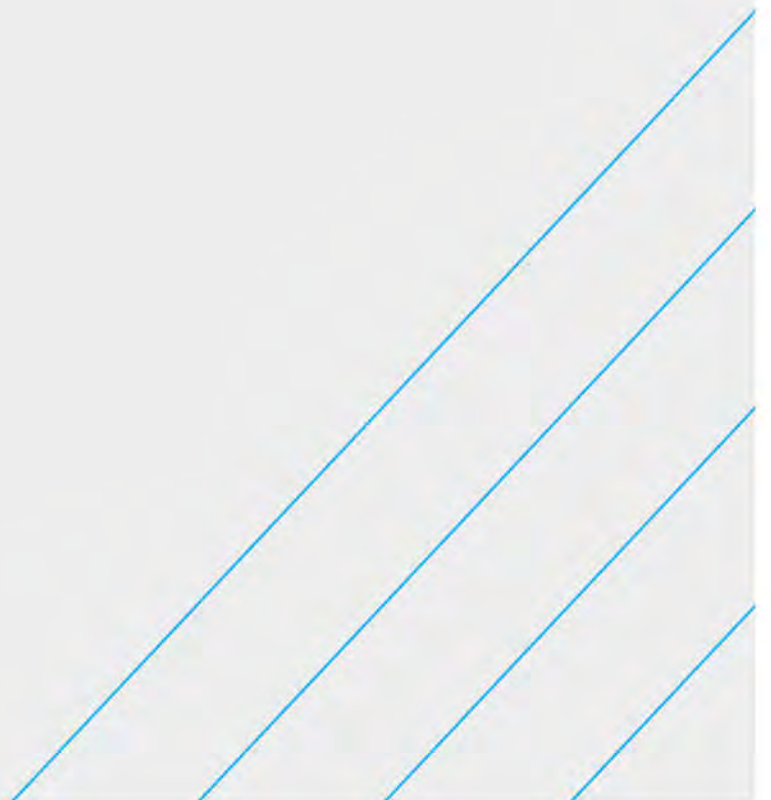
BH06-10	Depth Range	PAH	Metals	PCB
BH06-10-01	0.2 - 0.6	>RFD	>RFD	-
BH06-10-02	1.2 - 1.7	>RFD	<STO	-
BH06-10-04	3.0 - 3.3	<STO	-	-



BH06-1	Depth Range	PAH	Metals	PCB
BH06-1	0.0 - 0.1	<STO	>RFD	-
BH06-1	0.8 - 1.1	<STO	<STO	<STO

Attachment 1

Borehole Logs





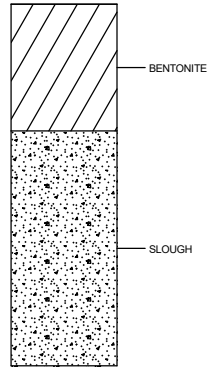
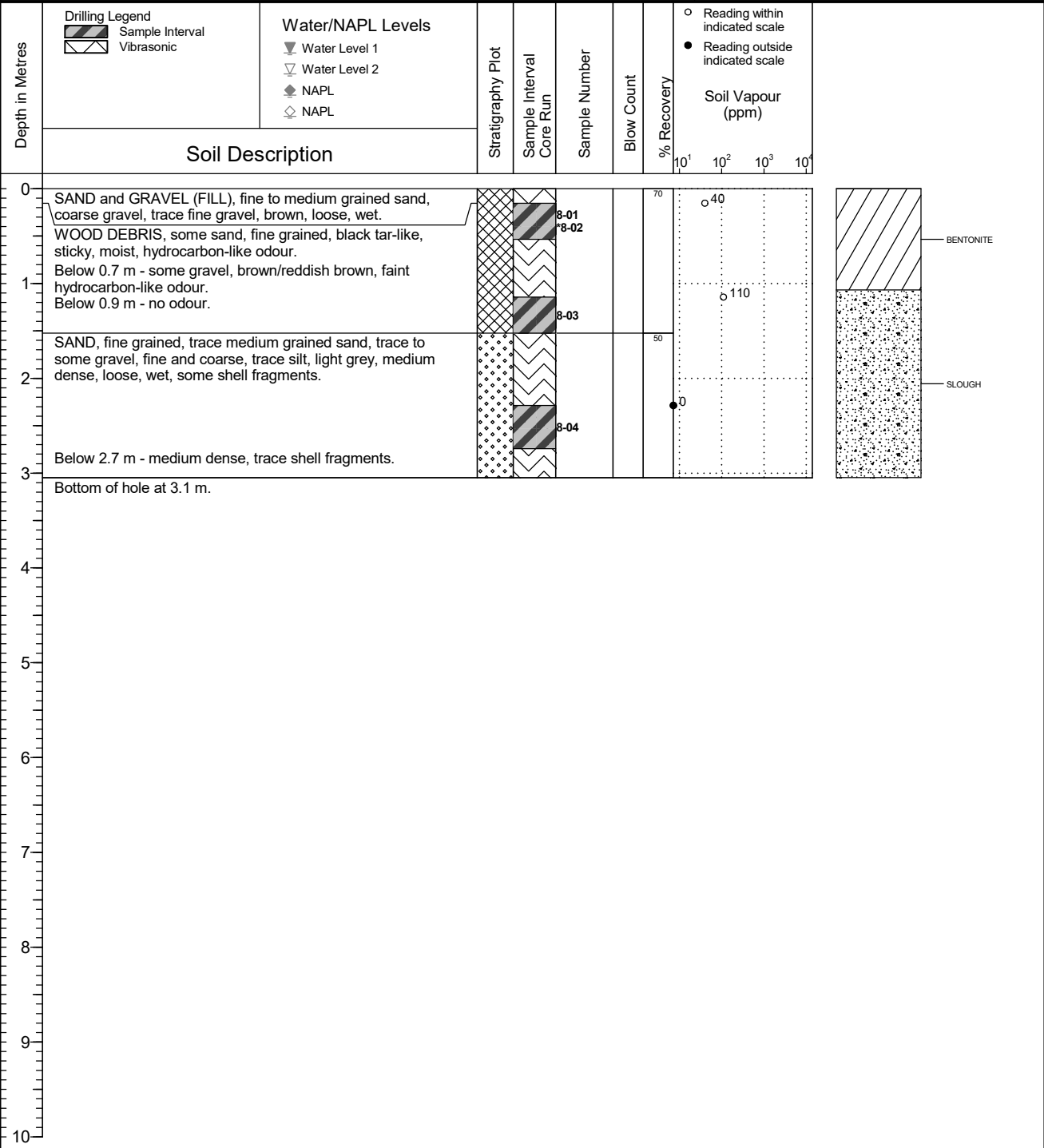
Client
Vancouver Fraser Port Authority

Location
Former Sterling Shipyards, Vancouver, BC

Borehole No. : BH21-8

PAGE 1 OF 1

Drilling Contractor: Blue Max Drilling Inc.	Date Monitored: n/a	Project Number: 509211
Drilling Method: Vibratory Sonic	Ground Surface Elev. (m): n/a	Borehole Logged By: CA
Borehole Dia. (m): 0.10	Top of Casing Elev. (m): n/a	Date Drilled: 2021 08 19
Pipe/Slotted Pipe Dia. (m): none/none	Northing: 5459361.490	Easting: 495309.765
		Log Typed By: NDS



NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.



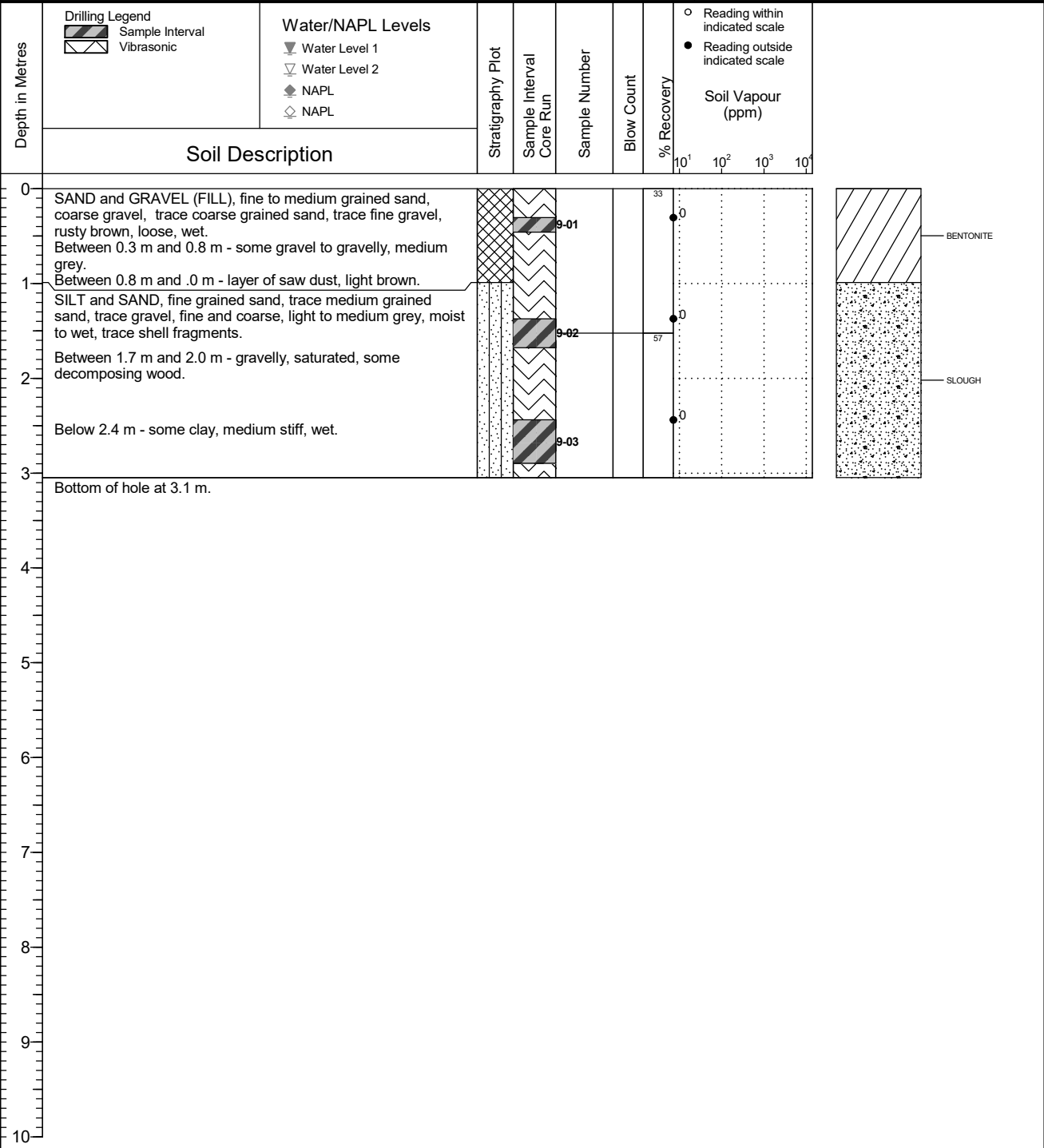
Client
Vancouver Fraser Port Authority

Location
Former Sterling Shipyards, Vancouver, BC

Borehole No. : BH21-9

PAGE 1 OF 1

Drilling Contractor: Blue Max Drilling Inc.	Date Monitored: n/a	Project Number: 509211
Drilling Method: Vibratory Sonic	Ground Surface Elev. (m): n/a	Borehole Logged By: CA
Borehole Dia. (m): 0.10	Top of Casing Elev. (m): n/a	Date Drilled: 2021 08 19
Pipe/Slotted Pipe Dia. (m): none/none	Northing: 5459360.807	Easting: 495299.772
		Log Typed By: NDS



QA-CA 2021 09 10 Print Date:2021-09-10

NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.



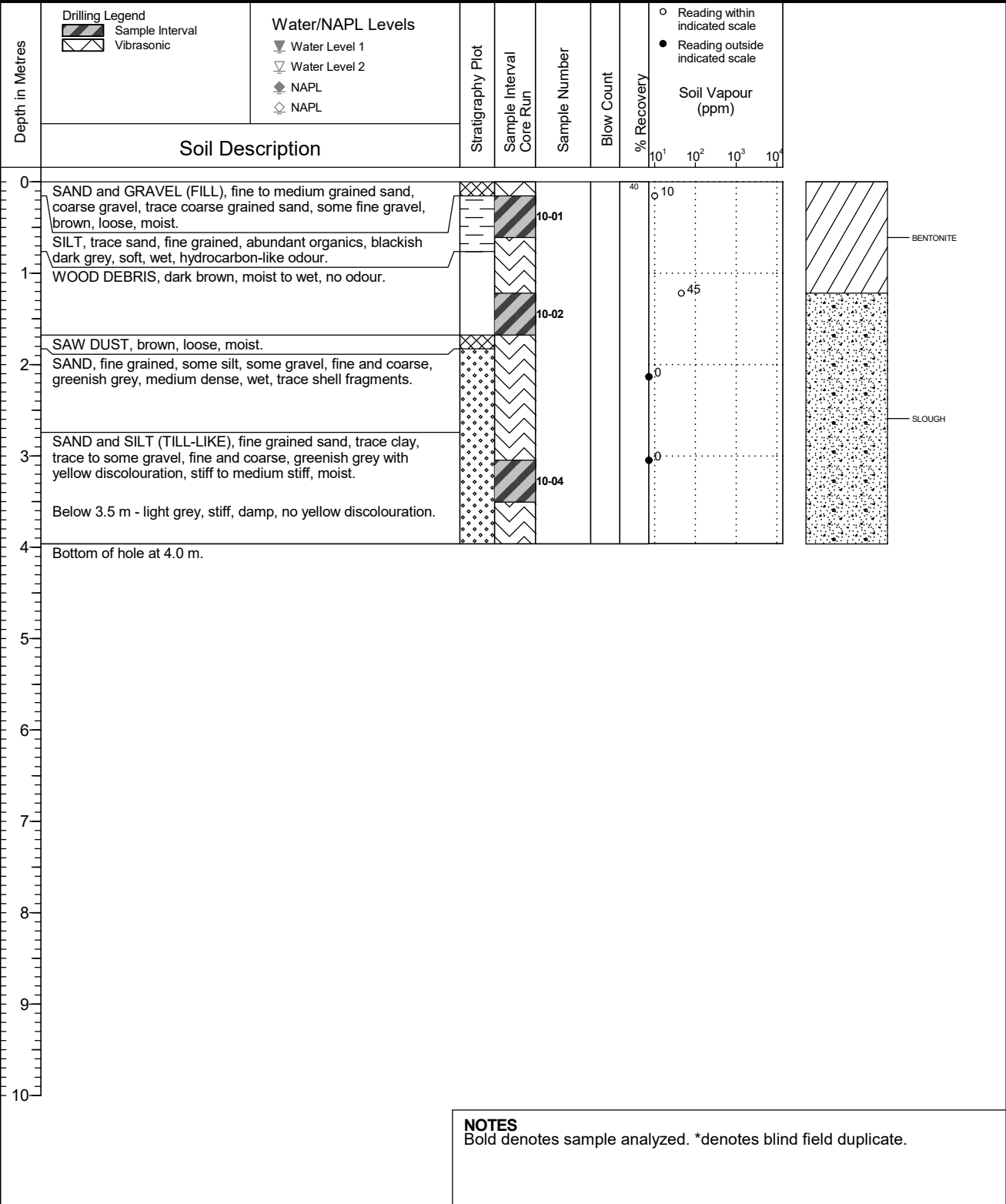
Client
Vancouver Fraser Port Authority

Location
Former Sterling Shipyards, Vancouver, BC

Borehole No. : BH21-10

PAGE 1 OF 1

Drilling Contractor: Blue Max Drilling Inc.	Date Monitored: n/a	Project Number: 509211
Drilling Method: Vibratory Sonic	Ground Surface Elev. (m): n/a	Borehole Logged By: CA
Borehole Dia. (m): 0.10	Top of Casing Elev. (m): n/a	Date Drilled: 2021 08 19
Pipe/Slotted Pipe Dia. (m): none/none	Northing: 5459355.684	Easting: 495308.623
		Log Typed By: NDS



NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.



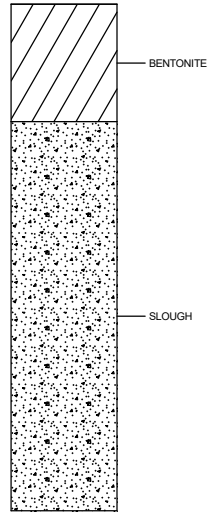
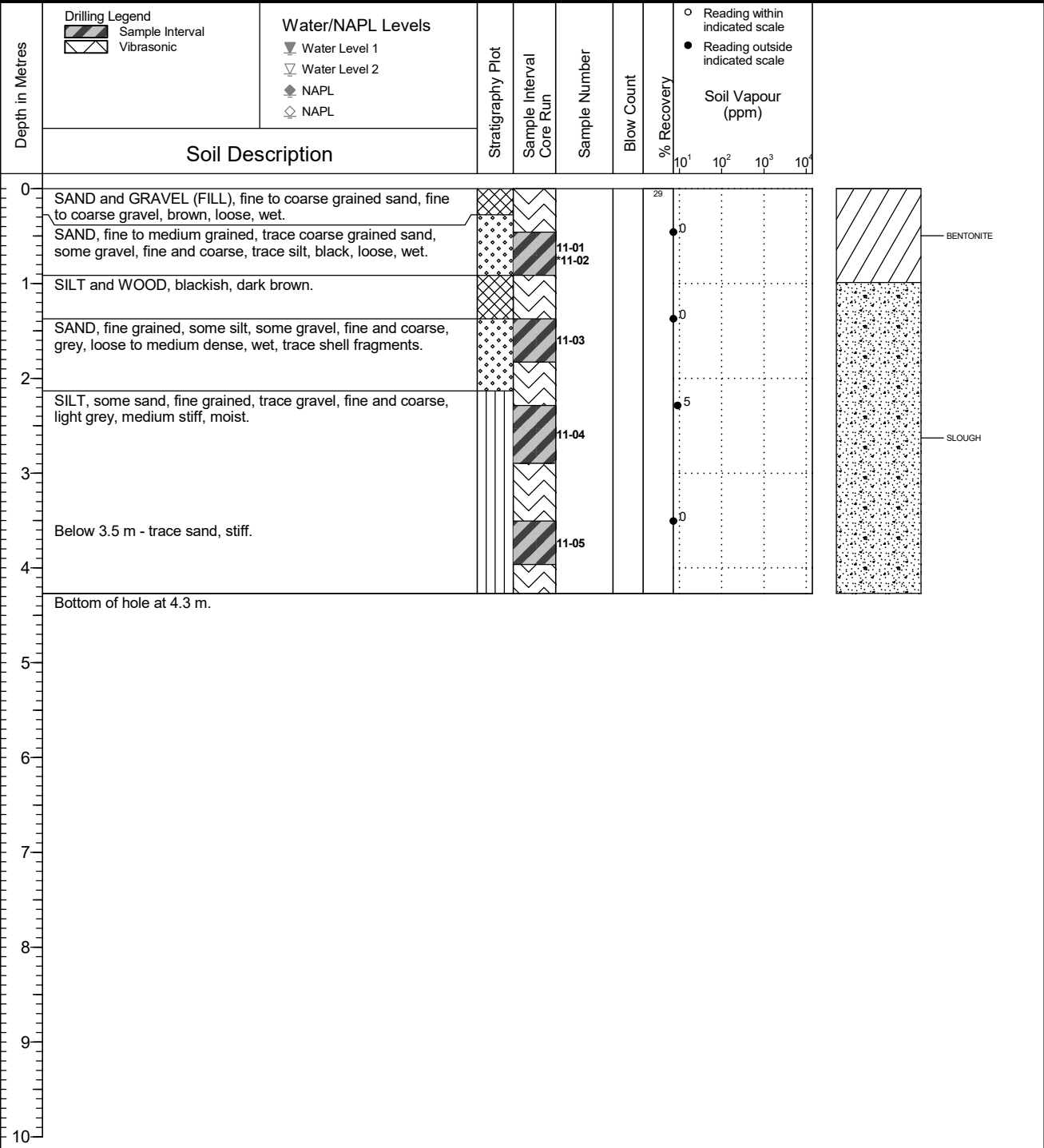
Client
Vancouver Fraser Port Authority

Location
Former Sterling Shipyards, Vancouver, BC

Borehole No. : BH21-11

PAGE 1 OF 1

Drilling Contractor: Blue Max Drilling Inc.	Date Monitored: n/a	Project Number: 509211
Drilling Method: Vibratory Sonic	Ground Surface Elev. (m): n/a	Borehole Logged By: CA
Borehole Dia. (m): 0.10	Top of Casing Elev. (m): n/a	Date Drilled: 2021 08 19
Pipe/Slotted Pipe Dia. (m): none/none	Northing: 5459346.206	Easting: 495300.474
		Log Typed By: NDS



NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.



Client
Vancouver Fraser Port Authority

Borehole No. : BH21-12

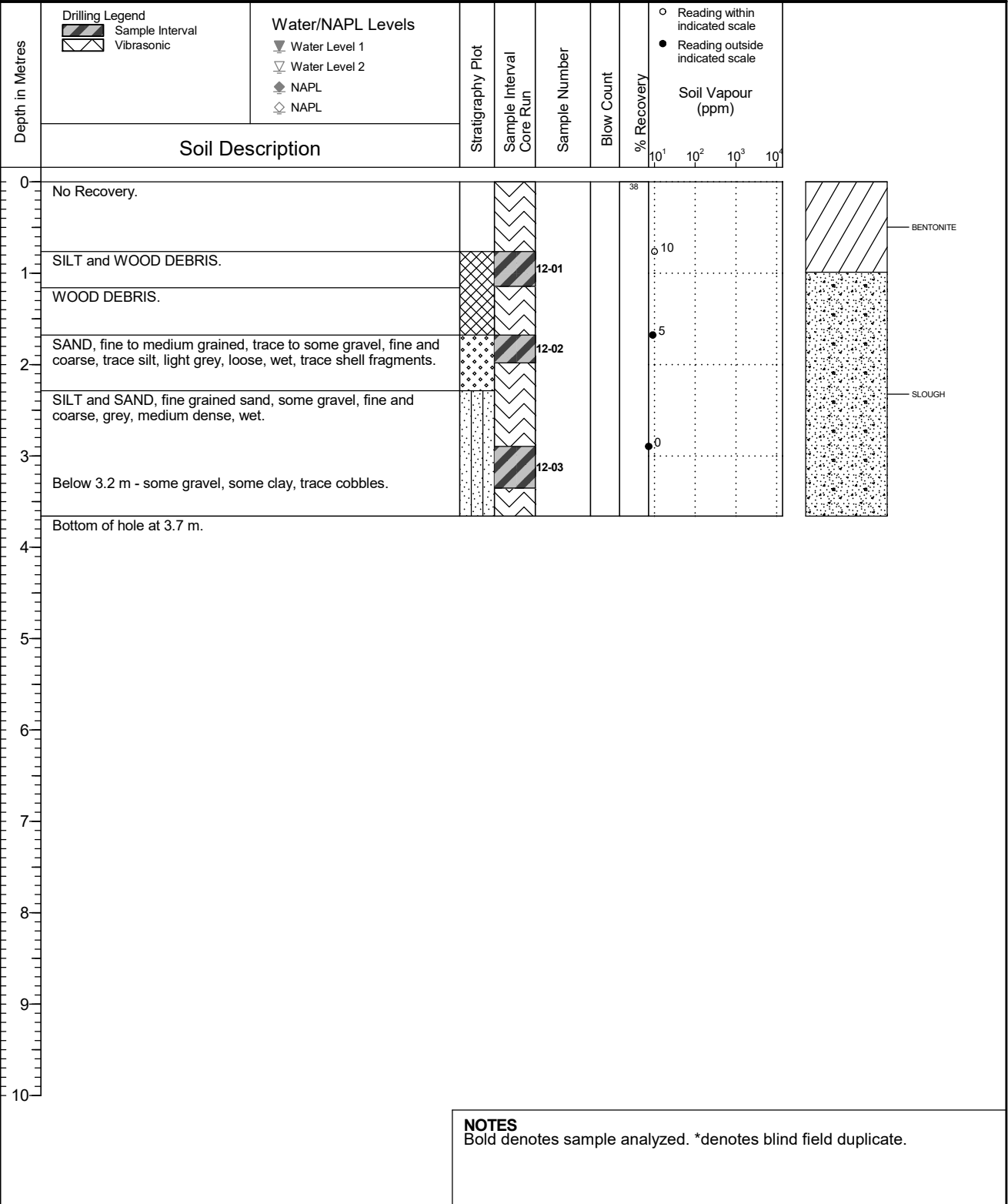
Location
Former Sterling Shipyards, Vancouver, BC

PAGE 1 OF 1

Drilling Contractor Blue Max Drilling Inc.
Drilling Method Vibratory Sonic
Borehole Dia. (m) 0.10
Pipe/Slotted Pipe Dia. (m) none/none

Date Monitored n/a
Ground Surface Elev. (m) n/a
Top of Casing Elev. (m) n/a
Northing: 5459349.688 Easting: 495309.575

Project Number: 509211
Borehole Logged By: CA
Date Drilled: 2021 08 19
Log Typed By: NDS



QA-CA 2021 09 10 Print Date:2021-09-10

NOTES
Bold denotes sample analyzed. *denotes blind field duplicate.



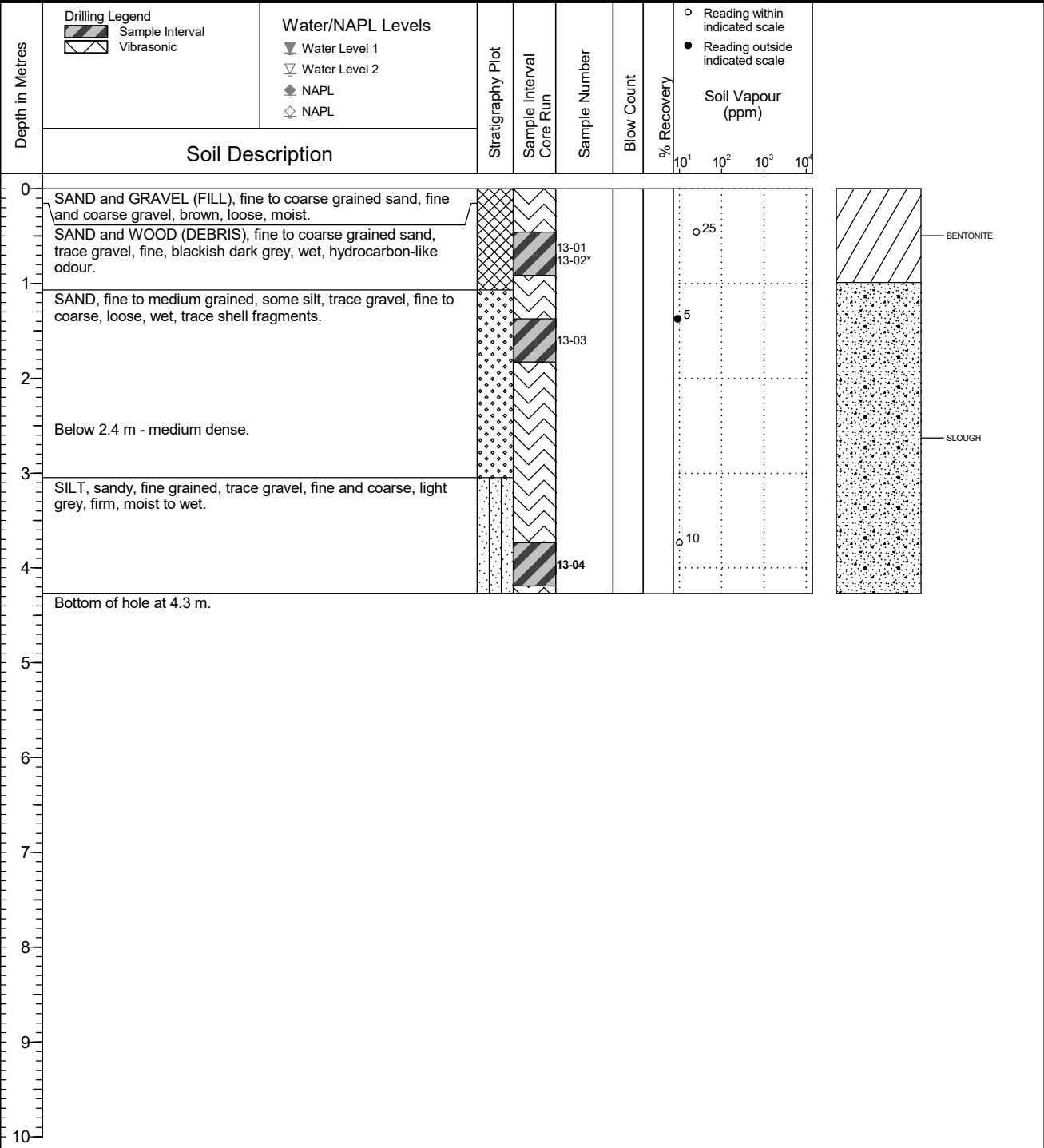
Client
Vancouver Fraser Port Authority

Location
Former Sterling Shipyards, Vancouver, BC

Borehole No. : BH21-13

PAGE 1 OF 1

Drilling Contractor: Blue Max Drilling Inc.	Date Monitored: n/a	Project Number: 509211
Drilling Method: Vibratory Sonic	Ground Surface Elev. (m): n/a	Borehole Logged By: CA
Borehole Dia. (m): 0.10	Top of Casing Elev. (m): n/a	Date Drilled: 2021 08 19
Pipe/Slotted Pipe Dia. (m): none/none	Northing: 5459350.421	Easting: 495319.458
		Log Typed By: NDS



NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.



Client
Vancouver Fraser Port Authority

Borehole No. : BH21-14

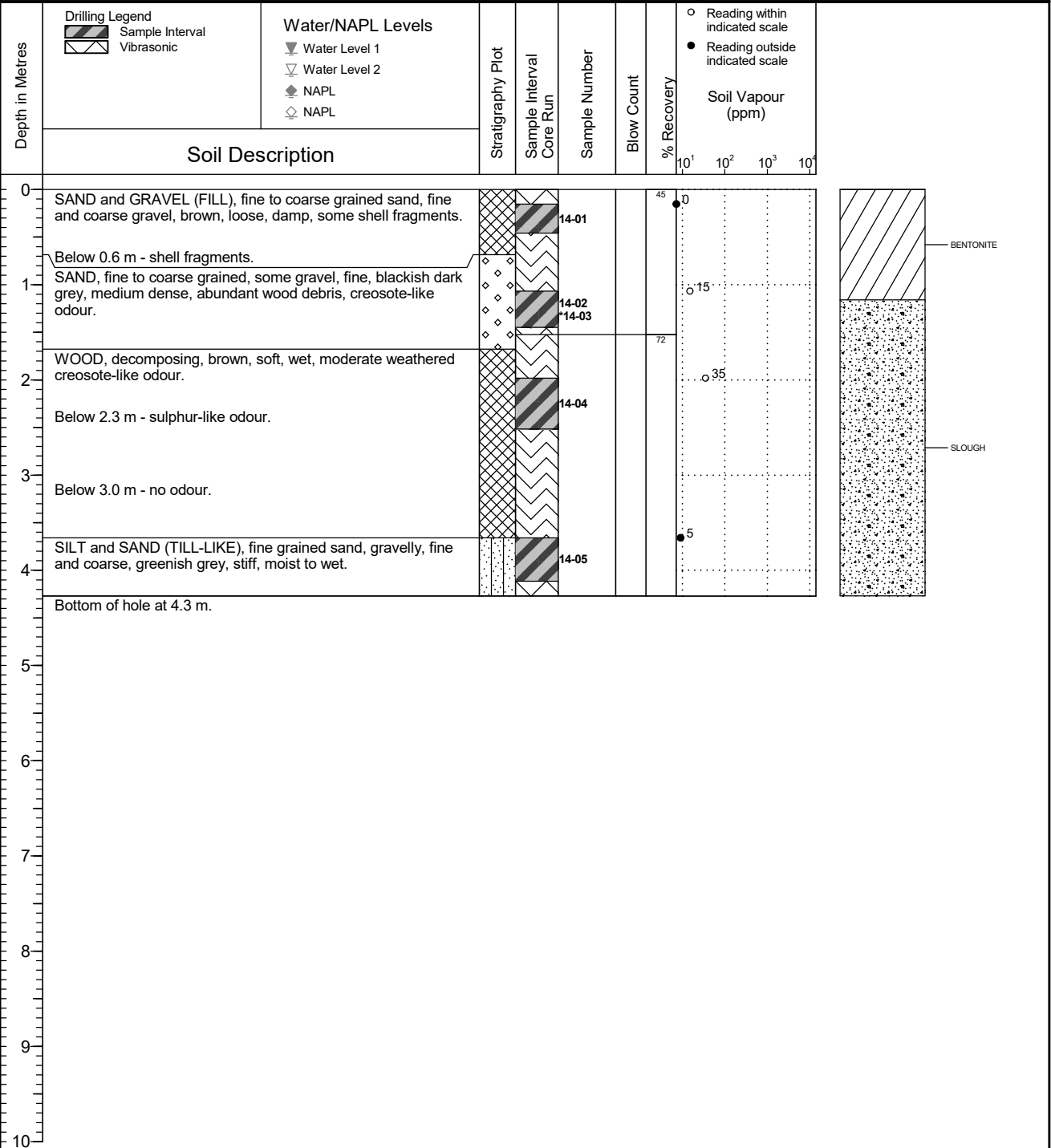
Location
Former Sterling Shipyards, Vancouver, BC

PAGE 1 OF 1

Drilling Contractor Blue Max Drilling Inc.
Drilling Method Vibratory Sonic
Borehole Dia. (m) 0.10
Pipe/Slotted Pipe Dia. (m) none/none

Date Monitored n/a
Ground Surface Elev. (m) n/a
Top of Casing Elev. (m) n/a
Northing: 5459335.655 Easting: 495311.757

Project Number: 509211
Borehole Logged By: CA
Date Drilled: 2021 08 20
Log Typed By: NDS



NOTES
Bold denotes sample analyzed. *denotes blind field duplicate.



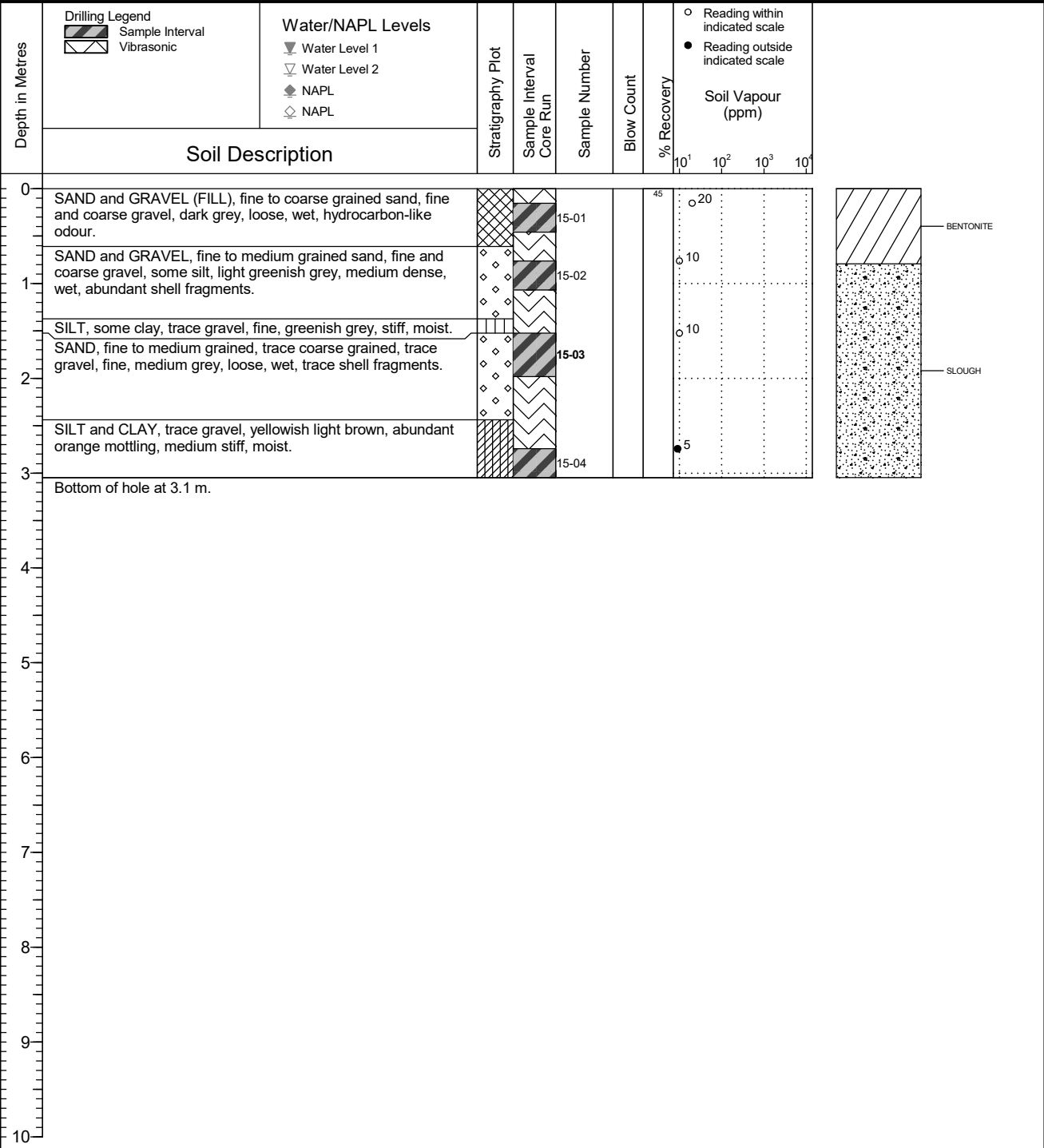
Client
Vancouver Fraser Port Authority

Location
Former Sterling Shipyards, Vancouver, BC

Borehole No. : BH21-15

PAGE 1 OF 1

Drilling Contractor: Blue Max Drilling Inc.	Date Monitored: n/a	Project Number: 509211
Drilling Method: Vibratory Sonic	Ground Surface Elev. (m): n/a	Borehole Logged By: CA
Borehole Dia. (m): 0.10	Top of Casing Elev. (m): n/a	Date Drilled: 2021 08 20
Pipe/Slotted Pipe Dia. (m): none/none	Northing: 5459388.582	Easting: 495309.967
		Log Typed By: NDS



NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.



Client
Vancouver Fraser Port Authority

Borehole No. : BH21-16

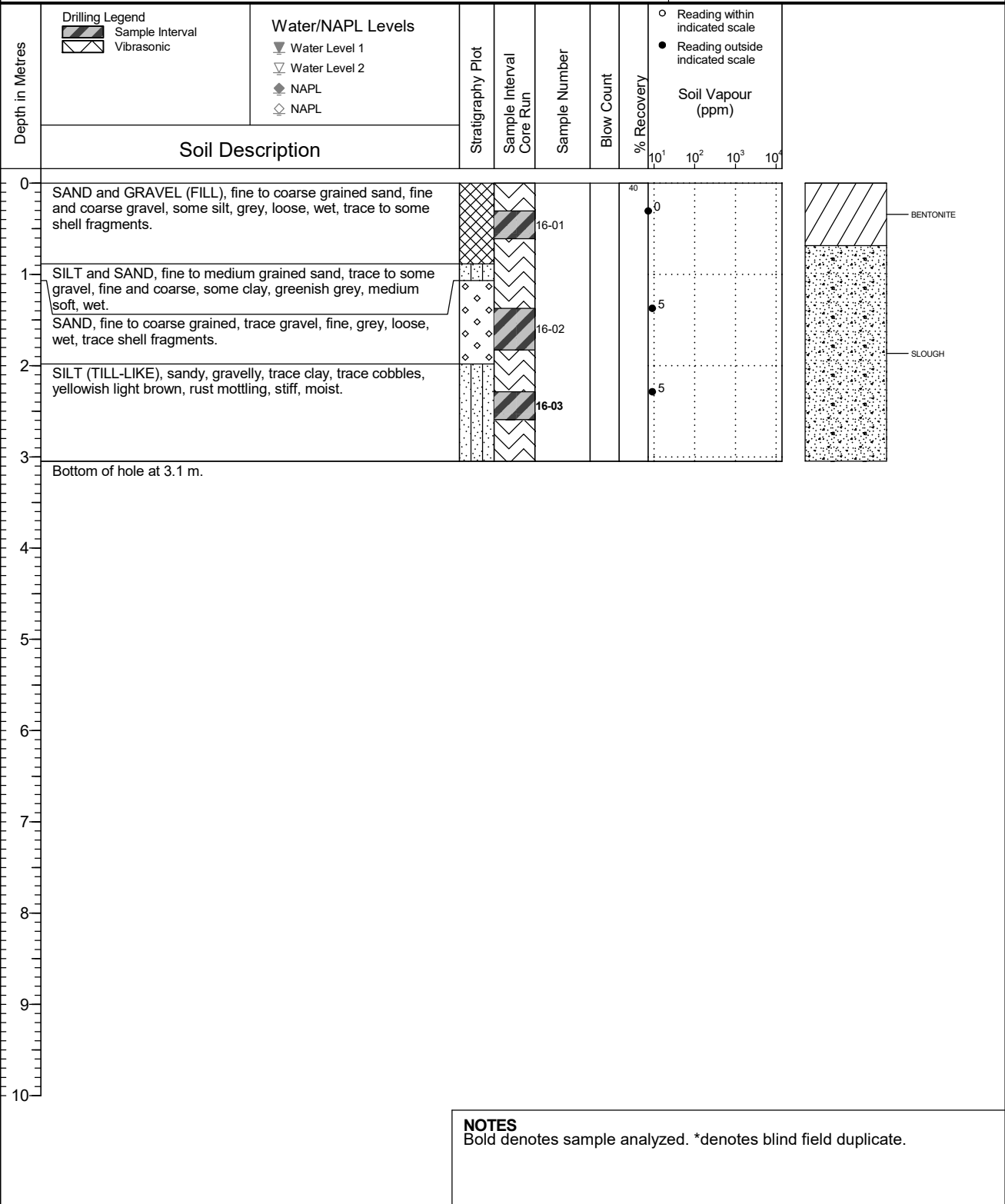
Location
Former Sterling Shipyards, Vancouver, BC

PAGE 1 OF 1

Drilling Contractor Blue Max Drilling Inc.
Drilling Method Vibratory Sonic
Borehole Dia. (m) 0.10
Pipe/Slotted Pipe Dia. (m) none/none

Date Monitored n/a
Ground Surface Elev. (m) n/a
Top of Casing Elev. (m) n/a
Northing: 5459388.553 Easting: 495288.844

Project Number: 509211
Borehole Logged By: CA
Date Drilled: 2021 08 20
Log Typed By: NDS



NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.

Attachment 2

Sediment Sample Analytical Results
Compared to Disposal Standards

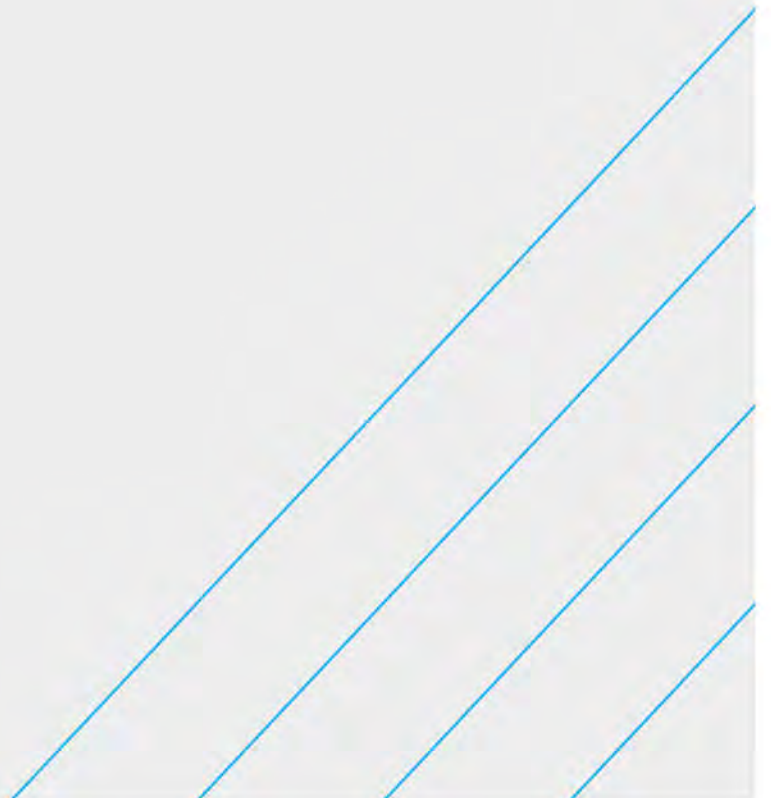


TABLE 1: Summary of Analytical Results for Subtidal Sediment - Grain Size

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Grain Size		
				Gravel %	Sand %	Silt/Clay %
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	44	39	18
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.2	19	66	15
	BH21-02-02	2021 02 24	1.5 - 1.7	13	84	3
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	26	53	22
	BH21-03-04	2021 02 24	3.5 - 3.7	7	57	36
BH21-04	BH21-04-02	2021 02 24	1.6 - 1.8	11	60	30
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	20	54	27
	BH21-05-02	2021 02 24	1.5 - 1.7	19	50	31
	BH21-05-03	2021 02 24	2.4 - 2.5	5	55	41
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	3	60	37
	BH21-06-07	2021 02 25	4.0 - 4.1	2	57	42
BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	5	50	46

Associated ALS file(s): VA21A3477.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

TABLE 2: Summary of Analytical Results for Subtidal Sediment - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Monocyclic Aromatic Hydrocarbons					Gross Parameters			Petroleum Hydrocarbon Fractions				MTBE µg/g
					Benzene µg/g	Ethyl-benzene µg/g	Toluene µg/g	Xylenes µg/g	Styrene µg/g	VPH (C6-C10) µg/g	LEPH (C10-C19) µg/g	HEPH (C19-C32) µg/g	F1-BTEX µg/g	F2 (>C10-C16) µg/g	F3 (>C16-C34) µg/g	F4 (>C34-C50) µg/g	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	5	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	620	-	-	-	-	< 0.200
	BH21-01-03	2021 02 24	2.0 - 2.1	60	-	-	-	-	-	-	< 200	< 200	-	-	-	-	-
BH21-02	BH21-02-02	2021 02 24	1.5 - 1.7	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	-	-	-	-	< 0.200
	BH21-02-04	2021 02 24	4.3 - 4.4	15	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 5	< 30	< 50	< 50	< 0.200
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	-	-	-	-	< 0.200
	BH21-03-04	2021 02 24	3.5 - 3.7	220	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	< 200	< 200	< 5	< 30	< 50	< 50	< 0.200
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	10	0.0072	< 0.015	< 0.050	< 0.075	< 0.050	< 10	270	1,280	-	-	-	-	< 0.200
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	0	-	-	-	-	-	-	320	1,220	-	-	-	-	-
	BH21-05-02	2021 02 24	1.5 - 1.7	50	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	260	-	-	-	-	< 0.200
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	35	0.0127	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	780	-	-	-	-	< 0.200
	BH21-06-07	2021 02 25	4.0 - 4.1	230	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 5	< 30	< 50	< 50	< 0.200
BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	40	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	-	-	-	-	< 0.200
	BH21-07-04	2021 02 25	2.1 - 2.3	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 5	< 30	< 50	< 50	< 0.200
BC Standard																	
CSR Industrial Land Use (IL) ^b					6.5	200	200	20	50	200	2,000	5,000	n/a	n/a	n/a	n/a	20,000

Associated ALS file(s): VA21A3477.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 3: Summary of Analytical Results for Subtidal Sediment - PAH

Sample Location Sample ID Sample Date (yyyy mm dd) Depth Interval (m) Parameter	Units	BH21-01			BH21-02				BH21-03			BH21-04			BH21-05				BC Standard CSR Industrial Land Use (IL) ^a
		BH21-01-01	BH21-01-02	BH21-01-03	BH21-02-01	BH21-02-02	BH21-02-03	BH21-02-04	BH21-03-01	BH21-03-04	BH21-03-05	BH21-04-01	BH21-04-02	BH21-04-03	BH21-05-01	BH21-05-02	BH21-05-03	BH21-05-04	
		2021 02 24 0.2 - 0.3	2021 02 24 1.4 - 1.6	2021 02 24 2.0 - 2.1	2021 02 24 0.2 - 0.2	2021 02 24 1.5 - 1.7	2021 02 24 3.2 - 3.4	2021 02 24 4.3 - 4.4	2021 02 24 0.9 - 1.1	2021 02 24 3.5 - 3.7	2021 02 24 4.9 - 5.0	2021 02 24 0.6 - 0.8	2021 02 24 1.6 - 1.8	2021 02 24 4.3 - 4.4	2021 02 24 0.3 - 0.5	2021 02 24 1.5 - 1.7	2021 02 24 2.4 - 2.5	2021 02 24 2.8 - 2.9	
Analytical Results																			
Polycyclic Aromatic Hydrocarbons																			
Naphthalene	µg/g	0.110	< 0.050	< 0.010	0.107	< 0.010	< 0.050	< 0.050	0.027	< 0.010	< 0.050	0.167	< 0.050	< 0.050	1.05	0.416	< 0.050	< 0.050	20
Methylnaphthalene, 1-	µg/g	0.038	< 0.050	< 0.010	0.116	< 0.010	< 0.050	< 0.050	< 0.010	< 0.010	< 0.050	0.118	< 0.050	< 0.050	0.231	0.040	< 0.050	< 0.050	1,000
Methylnaphthalene, 2-	µg/g	0.039	< 0.050	< 0.010	0.099	< 0.010	< 0.050	< 0.050	0.012	< 0.010	< 0.050	0.108	< 0.050	< 0.050	0.246	0.036	< 0.050	< 0.050	950
Methylnaphthalene, 1&2-	µg/g	-	< 0.075	-	0.215	-	< 0.075	< 0.075	-	-	< 0.075	-	< 0.075	< 0.075	-	-	< 0.075	< 0.075	n/a
Acenaphthylene	µg/g	0.0606	< 0.050	< 0.0050	0.096	< 0.0050	< 0.050	< 0.050	0.0994	< 0.0050	< 0.050	0.149	< 0.050	< 0.050	0.189	0.0335	< 0.050	< 0.050	n/a
Acenaphthene	µg/g	0.154	< 0.050	< 0.0050	0.179	< 0.0050	< 0.050	< 0.050	0.0406	< 0.0050	< 0.050	0.238	< 0.050	< 0.050	1.06	0.0961	< 0.050	< 0.050	15,000
Fluorene	µg/g	0.131	< 0.050	< 0.010	0.198	< 0.010	< 0.050	< 0.050	0.053	< 0.010	< 0.050	0.240	< 0.050	< 0.050	0.976	0.058	< 0.050	< 0.050	9,500
Phenanthrene	µg/g	0.797	< 0.050	< 0.010	1.01	< 0.010	< 0.050	< 0.050	0.389	< 0.010	< 0.050	1.44	< 0.050	< 0.050	9.18	0.310	< 0.050	< 0.050	50
Anthracene	µg/g	0.297	< 0.050	< 0.0040	0.439	< 0.0040	< 0.050	< 0.050	0.164	< 0.0040	< 0.050	0.583	< 0.050	< 0.050	3.09	0.134	< 0.050	< 0.050	30
Acridine	µg/g	< 0.070	< 0.050	< 0.010	< 0.050	< 0.010	< 0.050	< 0.050	< 0.020	< 0.010	< 0.050	< 0.100	< 0.050	< 0.050	< 0.420	< 0.030	< 0.050	< 0.050	n/a
Fluoranthene	µg/g	2.12	< 0.050	< 0.010	1.28	< 0.010	< 0.050	< 0.050	0.649	< 0.010	< 0.050	2.75	< 0.050	< 0.050	14.7	0.689	< 0.050	< 0.050	200
Pyrene	µg/g	2.56	< 0.050	< 0.010	1.79	0.018	< 0.050	< 0.050	1.07	< 0.010	< 0.050	4.11	< 0.050	< 0.050	12.5	0.815	0.058	< 0.050	100
Benz(a)anthracene	µg/g	0.577	< 0.050	< 0.010	0.742	< 0.010	< 0.050	< 0.050	0.341	< 0.010	< 0.050	1.42	< 0.050	< 0.050	6.37	0.262	< 0.050	< 0.050	10
Chrysene	µg/g	0.594	< 0.050	< 0.010	0.819	< 0.010	< 0.050	< 0.050	0.294	< 0.010	< 0.050	< 1.25	< 0.050	< 0.050	5.44	0.270	< 0.050	< 0.050	4,500
Benzo(b+j)fluoranthene	µg/g	0.901	< 0.050	< 0.010	1.28	< 0.010	< 0.050	< 0.050	0.460	< 0.010	< 0.050	2.37	< 0.050	< 0.050	6.25	0.331	< 0.050	< 0.050	10
Benzo(b+j+k)fluoranthene	µg/g	1.21	< 0.075	< 0.015	1.74	< 0.015	< 0.075	< 0.075	0.659	< 0.015	< 0.075	3.22	< 0.075	< 0.075	8.53	0.331	< 0.075	< 0.075	n/a
Benzo(k)fluoranthene	µg/g	0.313	< 0.050	< 0.010	0.460	< 0.010	< 0.050	< 0.050	0.199	< 0.010	< 0.050	0.854	< 0.050	< 0.050	2.28	< 0.120	< 0.050	< 0.050	10
Benzo(a)pyrene	µg/g	0.680	< 0.050	< 0.010	0.994	< 0.010	< 0.050	< 0.050	0.401	< 0.010	< 0.050	1.82	< 0.050	< 0.050	4.93	0.255	< 0.050	< 0.050	50
Indeno(1,2,3-cd)pyrene	µg/g	0.374	< 0.050	< 0.010	0.599	< 0.010	< 0.050	< 0.050	0.232	< 0.010	< 0.050	1.05	< 0.050	< 0.050	2.46	0.141	< 0.050	< 0.050	10
Dibenz(a,h)anthracene	µg/g	0.103	< 0.050	< 0.0050	0.146	< 0.0050	< 0.050	< 0.050	0.0618	< 0.0050	< 0.050	0.274	< 0.050	< 0.050	0.601	0.0381	< 0.050	< 0.050	10
Benzo(g,h,i)perylene	µg/g	0.373	< 0.050	< 0.010	0.594	< 0.010	< 0.050	< 0.050	0.218	< 0.010	< 0.050	1.03	< 0.050	< 0.050	2.27	0.140	< 0.050	< 0.050	n/a
Quinoline	µg/g	< 0.010	< 0.050	< 0.010	< 0.050	< 0.010	< 0.050	< 0.050	< 0.010	< 0.010	< 0.050	< 0.010	< 0.050	< 0.050	0.018	< 0.010	< 0.050	< 0.050	10

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BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 3: Summary of Analytical Results for Subtidal Sediment - PAH

Sample Location		BH21-06				BH21-07				BC Standard	
Sample ID	Sample Date (yyyy mm dd)	BH21-06-03	BH21-06-04	QA/QC RPD %	BH21-06-07	BH21-07-01	BH21-07-02	BH21-07-03	QA/QC RPD %	BH21-07-04	CSR Industrial Land Use (IL) ^a
Depth Interval (m)		2021 02 25	Duplicate		2021 02 25	2021 02 25	2021 02 25	Duplicate		2021 02 25	
Parameter	Units	2.3 - 2.4	2.3 - 2.4		4.0 - 4.1	0.7 - 0.8	1.3 - 1.4	2.1 - 2.3		2.1 - 2.3	
Analytical Results											
Polycyclic Aromatic Hydrocarbons											
Naphthalene	µg/g	0.139	0.302	74	< 0.050	< 0.010	< 0.050	< 0.050	*	< 0.050	20
Methylnaphthalene, 1-	µg/g	0.053	0.117	75	< 0.050	< 0.010	< 0.050	< 0.050	*	< 0.050	1,000
Methylnaphthalene, 2-	µg/g	0.051	0.131	88	< 0.050	< 0.010	< 0.050	< 0.050	*	< 0.050	950
Methylnaphthalene, 1&2-	µg/g	-	0.248	*	< 0.075	-	< 0.075	< 0.075	*	< 0.075	n/a
Acenaphthylene	µg/g	0.0973	0.361	115	< 0.050	0.0073	< 0.050	< 0.050	*	< 0.050	n/a
Acenaphthene	µg/g	0.300	0.539	57	< 0.050	0.0087	< 0.050	< 0.050	*	< 0.050	15,000
Fluorene	µg/g	0.218	0.470	73	< 0.050	0.010	< 0.050	< 0.050	*	< 0.050	9,500
Phenanthrene	µg/g	0.591	2.51	124	< 0.050	0.042	< 0.050	< 0.050	*	< 0.050	50
Anthracene	µg/g	0.406	1.02	86	< 0.050	0.0164	< 0.050	< 0.050	*	< 0.050	30
Acridine	µg/g	< 0.060	< 0.200	*	< 0.050	< 0.010	< 0.050	< 0.050	*	< 0.050	n/a
Fluoranthene	µg/g	2.02	7.43	114	< 0.050	0.110	< 0.050	< 0.050	*	< 0.050	200
Pyrene	µg/g	1.57	5.95	116	< 0.050	0.158	< 0.050	< 0.050	*	< 0.050	100
Benz(a)anthracene	µg/g	0.524	2.17	122	< 0.050	0.050	< 0.050	< 0.050	*	< 0.050	10
Chrysene	µg/g	0.609	2.18	113	< 0.050	< 0.060	< 0.050	< 0.050	*	< 0.050	4,500
Benzo(b+j)fluoranthene	µg/g	0.665	2.60	119	< 0.050	0.078	< 0.050	< 0.050	*	< 0.050	10
Benzo(b+j+k)fluoranthene	µg/g	0.920	3.53	117	< 0.075	0.118	< 0.075	< 0.075	*	< 0.075	n/a
Benzo(k)fluoranthene	µg/g	0.255	0.926	114	< 0.050	0.040	< 0.050	< 0.050	*	< 0.050	10
Benzo(a)pyrene	µg/g	0.534	2.04	117	< 0.050	0.059	< 0.050	< 0.050	*	< 0.050	50
Indeno(1,2,3-cd)pyrene	µg/g	0.334	1.26	116	< 0.050	0.039	< 0.050	< 0.050	*	< 0.050	10
Dibenz(a,h)anthracene	µg/g	0.0804	0.294	114	< 0.050	0.0099	< 0.050	< 0.050	*	< 0.050	10
Benzo(g,h,i)perylene	µg/g	0.336	1.24	115	< 0.050	0.040	< 0.050	< 0.050	*	< 0.050	n/a
Quinoline	µg/g	< 0.010	< 0.050	*	< 0.050	< 0.010	< 0.050	< 0.050	*	< 0.050	10

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BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 4: Summary of Analytical Results for Subtidal Sediment - Total Metals

Sample Location Sample ID Sample Date (yyyy mm dd) Depth Interval (m) Parameter	BH21-01			BH21-02				BH21-03			BH21-04			BH21-05				BH21-06		BC Standard CSR Industrial Land Use (IL) ^a			
	BH21-01-01 2021 02 24 0.2 - 0.3	BH21-01-02 2021 02 24 1.4 - 1.6	BH21-01-03 2021 02 24 2.0 - 2.1	BH21-02-01 2021 02 24 0.2 - 0.2	BH21-02-02 2021 02 24 1.5 - 1.7	BH21-02-03 2021 02 24 3.2 - 3.4	BH21-02-04 2021 02 24 4.3 - 4.4	BH21-03-01 2021 02 24 0.9 - 1.1	BH21-03-04 2021 02 24 3.5 - 3.7	BH21-03-05 2021 02 24 4.9 - 5.0	BH21-04-01 2021 02 24 0.6 - 0.8	BH21-04-02 2021 02 24 1.6 - 1.8	BH21-04-03 2021 02 24 4.3 - 4.4	BH21-05-01 2021 02 24 0.3 - 0.5	BH21-05-02 2021 02 24 1.5 - 1.7	BH21-05-03 2021 02 24 2.4 - 2.5	BH21-05-04 2021 02 24 2.8 - 2.9	BH21-06-03 2021 02 25 2.3 - 2.4	BH21-06-04 Duplicate 2.3 - 2.4		QA/QC RPD % 2021 02 25 4.0 - 4.1		
Units	Analytical Results																						
Physical Parameters																							
pH	pH	8.02	8.86	8.82	8.08	8.55	9.66	8.91	8.36	9.38	9.55	8.56	9.80	9.23	8.45	9.13	8.23	8.87	7.79	7.73	1	9.76	n/a
Soil Salinity																							
% Saturation	%	93.3	-	-	97.7	27.6	-	-	28.8	36.3	-	102	30.4	-	142	47.5	-	-	170	-	-	-	n/a
Soluble Chloride	mg/L	9,020	-	-	9,480	9,620	-	-	10,500	466	-	3,570	621	-	5,240	569	-	-	8,170	-	-	-	n/a
Sodium Ion	µg/g	5,510	-	-	6,160	1,620	-	-	1,860	147	-	2,340	156	-	4,500	266	-	-	8,380	-	-	-	1,000
Chloride Ion	µg/g	8,420	-	-	9,260	2,660	-	-	3,020	169	-	3,640	189	-	7,440	270	-	-	13,900	-	-	-	2,500
Total Metals																							
Antimony	µg/g	3.76	0.22	0.14	6.72	0.19	0.20	0.21	1.78	0.20	0.18	326	0.26	0.19	150	33.8	0.52	0.11	1.40	1.17	18	0.32	40
Arsenic	µg/g	11.9	3.93	1.94	25.3	2.00	1.65	3.40	5.50	2.70	1.79	570	2.08	2.74	334	74.6	3.87	2.14	5.81	5.18	11	1.75	10
Barium	µg/g	133	97.8	65.7	93.2	32.2	79.0	104	48.9	76.4	100	176	55.4	58.4	149	236	77.3	60.9	68.4	55.7	20	82.2	1,500
Beryllium	µg/g	0.26	0.36	0.30	0.21	< 0.10	0.20	0.33	0.13	0.26	0.34	0.53	0.16	0.27	0.44	0.28	0.26	0.22	0.15	0.14	*	0.18	350 (pH >=6.0)
Cadmium	µg/g	0.850	0.472	0.110	1.14	0.102	0.089	0.150	0.236	0.081	0.080	2.62	0.051	0.142	2.50	0.500	0.096	0.057	1.44	0.891	47	0.034	75 (pH >=7.5)
Chromium	µg/g	30.7	21.3	18.0	34.5	12.9	15.2	24.2	18.4	18.2	18.8	91.0	11.6	16.3	69.8	29.1	17.6	15.6	25.6	18.1	34	14.3	60
Cobalt	µg/g	8.80	9.22	7.67	8.11	4.86	5.46	9.76	6.29	8.31	7.44	35.8	4.71	9.00	21.7	13.3	8.82	7.47	6.81	5.94	14	5.66	25
Copper	µg/g	215	25.7	22.7	414	13.5	17.4	20.6	40.4	19.0	19.4	1,110	14.0	55.2	757	129	20.9	17.0	99.6	67.7	38	16.2	300 (pH >=6.5)
Lead	µg/g	107	4.57	3.99	170	2.32	3.30	7.28	39.8	3.47	4.09	628	2.65	3.46	450	120	3.87	2.53	104	62.4	50	3.13	1,000 (pH >=6.0)
Lithium	µg/g	15.8	14.9	13.7	16.1	16.1	6.5	14.4	27.1	11.2	12.4	14.4	4.7	12.3	16.2	14.6	14.4	11.7	21.8	19.6	11	5.9	450
Manganese	µg/g	346	499	449	285	200	213	606	239	309	1,730	806	178	505	459	478	346	312	217	192	12	222	2,000
Mercury	µg/g	0.319	< 0.0500	< 0.0500	1.13	< 0.0500	< 0.0500	< 0.0500	0.200	< 0.0500	< 0.0500	1.28	< 0.0500	< 0.0500	2.09	0.362	< 0.0500	< 0.0500	1.84	1.20	42	< 0.0500	75
Molybdenum	µg/g	3.24	1.14	0.60	4.88	2.06	0.18	1.44	2.32	0.21	0.77	52.4	0.30	0.63	37.2	5.15	0.65	0.49	6.54	4.60	35	0.27	150
Nickel	µg/g	19.5	8.58	8.48	24.3	5.56	8.70	9.91	10.2	11.2	7.29	46.7	8.40	8.40	40.6	16.6	8.79	6.86	16.1	12.4	26	9.05	250 (pH >=7.5)
Selenium	µg/g	0.42	0.34	< 0.20	0.54	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	0.90	< 0.20	0.27	0.97	< 0.20	< 0.20	< 0.20	0.53	0.39	*	< 0.20	1
Silver	µg/g	0.34	< 0.10	< 0.10	0.43	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.76	< 0.10	0.11	1.66	0.31	< 0.10	< 0.10	0.54	0.37	*	< 0.10	40
Strontium	µg/g	128	58.8	39.2	89.9	35.9	38.4	55.7	147	35.3	87.4	216	29.6	34.1	441	77.8	37.4	30.7	70.2	86.4	21	32.5	150,000
Tin	µg/g	7.3	< 2.0	< 2.0	11.4	< 2.0	< 2.0	< 2.0	3.5	< 2.0	< 2.0	54.8	< 2.0	< 2.0	34.5	7.8	< 2.0	< 2.0	12.7	8.4	*	< 2.0	300
Uranium	µg/g	1.44	0.556	0.402	2.07	0.678	0.510	0.645	1.33	0.394	0.438	2.89	0.327	0.324	2.34	0.842	0.438	0.496	2.38	2.04	15	0.369	150
Vanadium	µg/g	63.9	117	68.9	57.4	44.3	49.6	88.4	56.9	65.0	81.1	64.1	37.2	74.4	64.2	67.5	64.9	52.3	65.0	50.5	25	45.8	300
Zinc	µg/g																		194	127	42		150 (pH <8.0)
		182	63.9	54.3	261	29.5	36.4	72.6	66.7	54.4	51.8	2,070	28.6	58.4	1,510	357	58.4	50.1				35.8	200 (pH >=8.0)

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RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 4: Summary of Analytical Results for Subtidal Sediment - Total Metals

Sample Location	BH21-07					QA/QC RPD %	BH21-07-04 2021 02 25 2.1 - 2.3	BC Standard CSR Industrial Land Use (IL) ^a
	Sample ID	BH21-07-01 2021 02 25 0.7 - 0.8	BH21-07-02 2021 02 25 1.3 - 1.4	BH21-07-03 Duplicate 2.1 - 2.3	BH21-07-04 2021 02 25 2.1 - 2.3			
Sample Date (yyyy mm dd)	Analytical Results							
Depth Interval (m)								
Parameter	Units							
Physical Parameters								
pH	pH	9.29	9.78	9.80	0	9.31	n/a	
Soil Salinity								
% Saturation	%	35.2	41.3	-	-	-	n/a	
Soluble Chloride	mg/L	2,980	910	-	-	-	n/a	
Sodium Ion	µg/g	683	293	-	-	-	1,000	
Chloride Ion	µg/g	1,050	376	-	-	-	2,500	
Total Metals								
Antimony	µg/g	1.01	0.17	0.17	*	0.14	40	
Arsenic	µg/g	2.02	1.67	1.50	11	3.65	10	
Barium	µg/g	51.5	94.9	85.0	11	81.8	1,500	
Beryllium	µg/g	0.10	0.21	0.18	*	0.25	350 (pH >=6.0)	
Cadmium	µg/g	0.189	0.105	0.073	*	0.061	75 (pH >=7.5)	
Chromium	µg/g	10.4	16.2	13.2	20	16.5	60	
Cobalt	µg/g	4.46	6.71	5.76	15	10.2	25	
Copper	µg/g	37.7	17.5	16.9	3	19.5	300 (pH >=6.5)	
Lead	µg/g	36.5	3.61	3.67	2	3.79	1,000 (pH >=6.0)	
Lithium	µg/g	5.1	7.8	6.7	*	12.5	450	
Manganese	µg/g	223	244	204	18	470	2,000	
Mercury	µg/g	0.0627	< 0.0500	< 0.0500	*	< 0.0500	75	
Molybdenum	µg/g	0.39	0.24	0.23	*	0.88	150	
Nickel	µg/g	5.83	10.1	8.86	13	9.20	250 (pH >=7.5)	
Selenium	µg/g	< 0.20	< 0.20	< 0.20	*	< 0.20	1	
Silver	µg/g	< 0.10	< 0.10	< 0.10	*	< 0.10	40	
Strontium	µg/g	32.5	40.3	32.5	21	38.4	150,000	
Tin	µg/g	< 2.0	< 2.0	< 2.0	*	< 2.0	300	
Uranium	µg/g	0.325	0.403	0.338	18	0.382	150	
Vanadium	µg/g	41.4	53.0	44.9	17	66.4	300	
Zinc	µg/g						150 (pH <8.0)	
		61.2	43.1	38.3	12	55.6	200 (pH >=8.0)	

Associated ALS file(s): VA21A3477.

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QA/QC RPD Denotes quality assurance/quality control relative percent difference

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RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

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TABLE 5: Summary of Analytical Results for Subtidal Sediment - PCBs

Sample Location		BH21-01			BH21-02				BH21-03			BH21-04			BC Standard
Sample ID	Sample Date (yyyy mm dd)	BH21-01-01	BH21-01-02	BH21-01-03	BH21-02-01	BH21-02-02	BH21-02-03	BH21-02-04	BH21-03-01	BH21-03-04	BH21-03-05	BH21-04-01	BH21-04-02	BH21-04-03	CSR Industrial Land Use (IL) ^a
Depth Interval (m)		2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 24	
Parameter	Units	Analytical Results													
PCBs															
Aroclor 1016	µg/g	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.060	< 0.010	< 0.010	n/a
Aroclor 1221	µg/g	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.060	< 0.010	< 0.010	n/a
Aroclor 1232	µg/g	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.060	< 0.010	< 0.010	n/a
Aroclor 1242	µg/g	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.060	< 0.010	< 0.010	n/a
Aroclor 1248	µg/g	< 0.010	< 0.010	< 0.010	0.153	< 0.010	< 0.010	< 0.010	0.014	< 0.010	< 0.010	< 0.060	< 0.010	< 0.010	n/a
Aroclor 1254	µg/g	0.062	< 0.010	< 0.010	0.257	< 0.010	< 0.010	< 0.010	0.014	< 0.010	< 0.010	0.220	< 0.010	< 0.010	n/a
Aroclor 1260	µg/g	< 0.030	< 0.010	< 0.010	< 0.060	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.080	< 0.010	< 0.010	n/a
Aroclor 1262	µg/g	< 0.010	< 0.010	< 0.010	< 0.060	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.080	< 0.010	< 0.010	n/a
Aroclor 1268	µg/g	< 0.010	< 0.010	< 0.010	< 0.060	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.080	< 0.010	< 0.010	n/a
Polychlorinated Biphenyls, Total [PCBs]	µg/g	0.062	< 0.010	< 0.010	0.410	< 0.010	< 0.010	< 0.010	0.028	< 0.010	< 0.010	0.220	< 0.010	< 0.010	35

Associated ALS file(s): VA21A3477.

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RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 5: Summary of Analytical Results for Subtidal Sediment - PCBs

Sample Location		BH21-05				BH21-06				BH21-07				BC Standard
Sample ID	Sample Date (yyyy mm dd)	BH21-05-01	BH21-05-02	BH21-05-03	BH21-05-04	BH21-06-03	BH21-06-04	QA/QC RPD %	BH21-06-07	BH21-07-01	BH21-07-02	BH21-07-04	CSR Industrial Land Use (IL) ^a	
Depth Interval (m)		2021 02 24	2021 02 24	2021 02 24	2021 02 24	2021 02 25	Duplicate		2021 02 25	2021 02 25	2021 02 25	2021 02 25		
Parameter	Units	0.3 - 0.5	1.5 - 1.7	2.4 - 2.5	2.8 - 2.9	2.3 - 2.4	2.3 - 2.4		4.0 - 4.1	0.7 - 0.8	1.3 - 1.4	2.1 - 2.3		
		Analytical Results												
PCBs														
Aroclor 1016	µg/g	< 0.200	< 0.040	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	< 0.010	< 0.010	< 0.010	n/a	
Aroclor 1221	µg/g	< 0.200	< 0.040	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	< 0.010	< 0.010	< 0.010	n/a	
Aroclor 1232	µg/g	< 0.200	< 0.040	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	< 0.010	< 0.010	< 0.010	n/a	
Aroclor 1242	µg/g	< 0.200	< 0.040	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	< 0.010	< 0.010	< 0.010	n/a	
Aroclor 1248	µg/g	< 0.200	< 0.040	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	< 0.010	< 0.010	< 0.010	n/a	
Aroclor 1254	µg/g	0.328	0.091	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	0.022	< 0.010	< 0.010	n/a	
Aroclor 1260	µg/g	< 0.100	< 0.040	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	< 0.010	< 0.010	< 0.010	n/a	
Aroclor 1262	µg/g	< 0.100	< 0.040	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	< 0.010	< 0.010	< 0.010	n/a	
Aroclor 1268	µg/g	< 0.100	< 0.040	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	< 0.010	< 0.010	< 0.010	n/a	
Polychlorinated Biphenyls, Total [PCBs]	µg/g	0.328	0.091	< 0.010	< 0.010	< 0.010	< 0.010	*	< 0.010	0.022	< 0.010	< 0.010	35	

Associated ALS file(s): VA21A3477.

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QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD

Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 6: Summary of Analytical Results for Subtidal Sediment - Leachable PAH and Metals

Sample Location		BH21-04	BH21-05	BC Standard
Sample ID		BH21-04-01	BH21-05-01	HWR
Sample Date (yyyy mm dd)		2021 02 24	2021 02 24	Leachate Quality Standards (HWLQ)
Parameter	Units	Analytical Results		
TCLP Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene	µg/L	-	< 0.050	1
TCLP Metals				
Arsenic	µg/L	< 1,000	-	2,500
Lead	µg/L	< 250	-	5,000
Mercury	µg/L	-	< 1.0	100

Associated ALS file(s): VA21A3477.

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

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RDL Denotes reported detection limit.

BOLD Concentration greater than HWR Leachate Quality Standards (HWLQ) Standard

TABLE 7: Summary of Analytical Results for Intertidal Soil and Sediment - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Monocyclic Aromatic Hydrocarbons					Gross Parameters				Methyl Tert-butyl Ether [MTBE] (µg/g)
					Benzene (µg/g)	Ethylbenzene (µg/g)	Toluene (µg/g)	Xylenes (µg/g)	Styrene (µg/g)	VPH (C6-C10) (µg/g)	LEPH (C10-C19) (µg/g)	HEPH (C19-C32) (µg/g)	Hazardous Waste Oil and Grease (µg/g)	
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	30	-	-	-	-	-	-	< 100	< 100	-	-
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	20	-	-	-	-	-	-	< 100	< 100	-	-
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	25	-	-	-	-	-	-	< 100	< 100	-	-
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	-	-	-	-	-	-	-	627	1,440	-	-
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	5	-	-	-	-	-	-	< 100	< 100	-	-
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	0	-	-	-	-	-	-	< 100	< 100	-	-
	BH12-10-4-121210	Duplicate	3.7 - 4.0	0	-	-	-	-	-	-	< 100	< 100	-	-
	QA/QC RPD%					-	-	-	-	-	-	*	*	-
BH12-11	BH12-10-5-121210	2012 12 10	4.7 - 5.0	20	-	-	-	-	-	-	< 100	< 100	-	-
	BH12-11-1-121211	2012 12 11	0.7 - 0.8	55	-	-	-	-	-	-	< 100	1,230	-	-
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	45	-	-	-	-	-	-	< 100	< 100	-	-
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	5	-	-	-	-	-	-	< 100	< 100	-	-
BH21-8	BH12-11-8-121211	2012 12 11	5.3 - 5.6	10	-	-	-	-	-	-	< 100	< 100	-	-
	BH21-8-01	2021 08 19	0.2 - 0.5	40	0.0069	< 0.015	< 0.050	< 0.075	< 0.050	< 10	-	-	22,600	< 0.200
BH21-10	BH21-8-03	2021 08 19	1.1 - 1.5	110	< 0.0100	< 0.016	0.093	< 0.075	< 0.050	< 25	-	-	< 1,000	< 0.200
	BH21-10-01	2021 08 19	0.2 - 0.6	10	0.0144	0.033	< 0.050	0.177	< 0.050	< 10	-	-	7,400	< 0.200
BC Standard														
CSR Industrial Land Use (IL) ^b					6.5	200	200	20	50	200	2,000	5,000	n/a	20,000
Hazardous Waste Regulation (HWR)					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30,000	n/a

Associated ALS file(s): VA21B7750.

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

SHADED Concentration greater than Hazardous Waste Regulation (HWR) standard

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil,

toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 8: Summary of Analytical Results for Intertidal Soil and Sediment - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Polycyclic Aromatic Hydrocarbons																						
					Naphthalene µg/g	Methylnaphthalene, 1- µg/g	Methylnaphthalene, 2- µg/g	Methylnaphthalene, 1&2- µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Acridine µg/g	Fluoranthene µg/g	Pyrene µg/g	Benzo(a)anthracene µg/g	Chrysene µg/g	Benzo(b)fluoranthene µg/g	Benzo(b+g)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenz(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	Quinoline µg/g	
BH06-1	12287-02	2006 06 06	0.8 - 1.1	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
	BH06-1	2006 06 16	0.0 - 0.1	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	
BH06-2	BH06-2	2006 06 16	0.0 - 0.1	-	0.218	-	< 0.05	-	0.056	< 0.04	< 0.05	0.191	0.071	-	0.267	0.262	0.159	0.174	0.19	-	-	0.114	0.169	0.132	< 0.05	0.14	-
BH06-3	BH06-3	2006 06 16	0.0 - 0.1	-	5.51	-	0.935	-	0.181	6.42	3.91	10.2	3.44	-	9.21	6.39	1.73	2.16	1.92	-	-	0.729	1.21	0.699	0.158	0.771	-
BH06-4	BH06-4	2006 06 16	0.0 - 0.1	-	1.5	-	1.68	-	1.32	0.658	0.661	3.85	2.09	-	13.2	12.2	7.45	8.46	12.8	-	-	4.02	10.5	8.28	2.06	8.6	-
BH06-5	BH06-5	2006 06 16	0.0 - 0.1	-	0.089	-	< 0.05	-	0.059	< 0.04	0.056	0.519	0.123	-	0.841	0.739	0.493	0.617	0.793	-	-	0.298	0.473	0.349	0.083	0.33	-
BH06-6	BH06-6	2006 06 16	0.0 - 0.1	-	1.42	-	0.429	-	0.272	3.48	1.65	3.48	2.55	-	13	8.92	2.83	3.94	4.25	-	-	1.48	2.44	1.79	0.39	1.9	-
	BH06-2d	Duplicate	0.0 - 0.1	-	2.76	-	0.846	-	0.404	4.14	2.15	6.3	3.88	-	16.8	11.1	4.86	5.48	6.93	-	-	2.77	4.38	2.95	0.683	3.05	-
QA/QC RPD%					64	-	65	-	39	17	26	24	41	-	26	22	53	33	48	-	-	61	57	49	55	46	-
BH06-7	12289-02	2006 06 07	1.5 - 2.3	-	0.496	-	0.103	-	0.108	1.53	0.762	3.18	0.377	-	1.04	1.19	0.337	0.262	0.631	-	-	0.192	0.419	0.312	0.075	0.35	-
	12289-03	2006 06 07	2.3 - 2.6	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-
BH06-8	BH06-7	2006 06 16	0.0 - 0.1	-	0.742	-	0.262	-	0.423	0.372	0.315	3.96	1.03	-	9.26	11.7	5.17	6.03	9.79	-	-	3.57	6.53	4.85	1.33	4.48	-
	12289-04	2006 06 07	0.9 - 1.1	-	0.209	-	0.135	-	0.46	0.163	0.218	1.56	0.687	-	4.57	8.21	2.06	3.4	6.98	-	-	2.14	4.02	3.22	0.785	2.9	-
BH06-8	12289-05	Duplicate	0.9 - 1.1	-	0.225	-	0.148	-	0.272	0.228	0.233	1.76	0.589	-	3.3	5.92	1.58	1.65	4.69	-	-	1.5	2.6	2.07	0.511	1.81	-
	QA/QC RPD%					7	-	9	-	51	33	7	12	15	-	32	32	26	69	39	-	-	35	43	43	42	46
BH06-9	BH06-8	2006 06 16	0.0 - 0.1	-	1.09	-	0.591	-	0.213	3.62	3.43	19.5	12	-	21.9	16.5	4.88	5.4	5	-	-	1.9	3.09	1.66	0.363	1.62	-
	12289-06	2006 06 07	0.0 - 0.8	-	0.728	-	0.209	-	0.152	0.753	0.273	1.05	0.469	-	3.2	5.56	1.1	0.822	2.09	-	-	0.649	1.22	0.822	0.182	0.747	-
BH06-9	12289-08	2006 06 07	1.2 - 1.5	-	2.05	-	0.697	-	0.203	5.22	2.35	19.9	4.43	-	24.8	25.4	7.18	8.59	8.9	-	-	2.96	7.34	5.04	1.05	5.02	-
	12289-09	2006 06 07	1.7 - 2.3	-	0.132	-	< 0.05	-	< 0.05	0.117	< 0.05	0.218	0.09	-	1.34	1.24	0.234	0.152	0.259	-	-	0.092	0.171	0.101	< 0.05	0.102	-
BH06-9	12289-10	Duplicate	1.7 - 2.3	-	0.079	-	< 0.05	-	< 0.05	0.054	< 0.05	0.088	0.05	-	0.354	0.407	0.077	0.078	0.147	-	-	0.065	0.091	0.064	< 0.05	0.061	-
	QA/QC RPD%					50	-	*	-	*	74	*	85	57	-	116	101	101	64	*	-	-	34	61	45	*	50
BH06-9	BH06-9	2006 06 16	0.0 - 0.1	-	0.434	-	0.266	-	0.245	0.352	0.368	2.59	0.929	-	3.84	4.49	1.82	2.15	2.97	-	-	1.03	2.01	1.17	0.247	1.27	-
	BH06-9d	Duplicate	0.0 - 0.1	-	0.709	-	0.388	-	0.315	1.42	1.11	4.34	1.3	-	5.02	5.73	2.31	3.14	3.42	-	-	1.38	2.42	1.48	0.33	1.6	-
QA/QC RPD%					48	-	37	-	25	121	100	51	33	-	27	24	24	37	14	-	-	29	19	23	29	23	-
BH06-10	12290-01	2006 06 07	0.0 - 0.8	-	0.178	-	0.089	-	0.176	0.143	0.118	0.76	0.346	-	2.59	3.93	1.28	1.42	2.8	-	-	0.932	1.64	0.996	0.251	0.946	-
	12290-04	2006 06 07	1.5 - 1.8	-	0.083	-	< 0.05	-	0.083	0.139	0.075	0.374	0.195	-	1.28	1.5	0.49	0.477	1.06	-	-	0.387	0.59	0.428	0.105	0.394	-
BH06-10	12290-06	2006 06 07	2.3 - 2.7	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-
	12290-07	2006 06 07	2.9 - 3.0	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-
BH06-10	BH06-10	2006 06 16	0.0 - 0.1	-	0.528	-	0.165	-	0.329	0.355	0.388	2.77	1.47	-	10.2	7.47	3.01	3.46	3.71	-	-	1.58	2.44	1.5	0.383	1.54	-
	12290-08	2006 06 07	0.0 - 0.8	-	11.5	-	2.3	-	0.975	23.2	13.4	18.4	14.1	-	80.3	57.7	14.1	22.7	17.9	-	-	5.88	9.68	5.46	1.34	5.39	-
BH06-11	12290-12	2006 06 07	2.7 - 3.0	-	1.8	-	0.201	-	< 0.05	0.412	0.299	0.586	0.108	-	0.293	0.195	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	-
	12291-03	2006 06 07	3.5 - 3.7	-	4.78	-	10.8	-	0.129	12.6	8.32	8.6	3.75	-	34.9	13.8	2.87	2.13	2.97	-	-	1.11	1.58	0.68	0.185	0.638	-
BH06-11	BH06-11	2006 06 16	0.0 - 0.1	-	2.62	-	0.623	-	0.401	5.18	1.79	6.73	3.78	-	26.2	18.7	6.01	7.36	6.64	-	-	2.44	3.72	2.41	0.53	2.37	-
	12291-04	2006 06 07	0.8 - 1.5	-	0.447	-	0.127	-	0.209	0.188	0.173	1.51	0.453	-	2.48	1.99	0.886	1.08	1.36	-	-	0.529	0.851	0.633	0.134	0.672	-
BH06-12	12291-06	2006 06 07	2.3 - 2.7	-	0.286	-	< 0.05	-	< 0.05	0.152	< 0.05	0.288	0.112	-	0.277	0.282	0.088	0.121	0.107	-	-	< 0.05	0.078	0.052	< 0.05	0.088	-
	BH06-12	2006 06 16	0.0 - 0.1	-	0.297	-	0.242	-	0.256	0.094	0.137	1.01	0.42	-	1.9	1.78	0.933	1.17	1.45	-	-	0.554	1.02	0.91	0.183	0.872	-
BH06-13	12291-08	2006 06 07	0.0 - 0.8	-	0.073	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.132	< 0.05	-	0.167	0.136	< 0.05	0.076	0.101	-	-	< 0.05	0.051	0.055	< 0.05	0.073	-
	12291-10	2006 06 07	1.5 - 2.1	-	0.062	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.885	0.064	-	0.897	0.676	0.187	0.32	0.381	-	-	0.135	0.103	0.143	< 0.05	0.156	-
BH06-13	BH06-13	2006 06 16	0.0 - 0.1	-	0.353	-	0.12	-	0.143	0.107	0.101	1.35	0.216	-	2.1	1.7	0.626	0.898	0.999	-	-	0.329	0.49	0.444	0.077	0.44	-
	12291-12	2006 06 07	1.2 - 1.4	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	1.67	7.82	5.53	-	42.3	26.7	17.1	20.2	30.1	-	-	9.19	18.2	12.9	3.58	11.6	-
BH06-14	12292-03	2006 06 07	2.3 - 3.1	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	0.806	0.638	0.311	0.364	0.574	-	-	0.178	0.334	0.233	0.079	0.293	-
	12292-04	Duplicate	2.3 - 3.1	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	1.52	1.27	0.65	0.845	1.02	-	-	0.431	0.725	0.435	0.125	0.464	-
QA/QC RPD%					*	-	*	-	*	*	*	*	*	-	61	66	71	80	56	-	-	83	74	60	45	45	-
BH06-14	122																										

TABLE 8: Summary of Analytical Results for Intertidal Soil and Sediment - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Polycyclic Aromatic Hydrocarbons																											
					Naphthalene µg/g	Methylnaphthalene, 1- µg/g	Methylnaphthalene, 2- µg/g	Methylnaphthalene, 1&2- µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Acridine µg/g	Fluoranthene µg/g	Pyrene µg/g	Benz(a)anthracene µg/g	Chrysene µg/g	Benzo(b)fluoranthene µg/g	Benzo(b+j)fluoranthene µg/g	Benzo(b+k)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenz(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	Quinoline µg/g					
BH06-16	12070-07	2006 06 08	1.4 - 1.5	-	0.138	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.093	< 0.05	-	0.094	0.091	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-				
	12070-10	2006 06 08	2.6 - 2.7	-	0.154	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.118	0.051	-	0.216	0.235	0.087	0.07	0.089	-	-	< 0.05	0.061	< 0.05	< 0.05	< 0.05	-					
BH06-17	BH06-16	2006 06 16	0.0 - 0.1	-	0.052	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.135	0.161	-	0.232	0.24	0.191	0.457	0.478	-	-	< 0.05	0.156	0.138	< 0.05	0.12	-					
	12071-01	2006 06 08	0.9 - 1.4	-	0.106	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.096	< 0.05	-	0.172	0.19	0.066	0.073	0.073	-	-	< 0.05	0.052	< 0.05	< 0.05	< 0.05	-					
	12071-02	2006 06 08	1.5 - 1.8	-	0.06	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.059	< 0.05	-	< 0.05	0.086	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-					
BH06-18	BH06-17	2006 06 16	0.0 - 0.1	-	0.348	-	0.071	-	< 0.05	0.047	< 0.05	0.351	0.111	-	0.417	0.354	0.115	0.142	0.172	-	-	0.084	0.104	0.082	< 0.05	0.087	-					
	12071-08	2006 06 08	0.8 - 1.1	-	0.125	-	< 0.05	-	0.055	0.197	0.082	0.334	0.203	-	1.42	1.52	0.503	0.502	0.747	-	-	0.249	0.411	0.227	0.052	0.23	-					
	12071-10	2006 06 08	1.5 - 1.8	-	0.57	-	0.123	-	0.149	0.568	0.326	1.62	0.763	-	3.94	3.94	1.84	2.47	2.71	-	-	1.08	1.72	0.944	0.266	0.969	-					
BH06-19	BH06-18	2006 06 16	0.0 - 0.1	-	0.328	-	0.083	-	0.216	0.406	0.209	1.51	0.614	-	5.37	3.58	1.87	3.62	2.97	-	-	1.04	1.72	1.19	0.228	1.28	-					
	12071-11	2006 06 08	0.8 - 1.5	-	3.35	-	3.29	-	0.741	2.8	2.63	22.5	5.51	-	25.8	23.7	9.21	10.4	10.7	-	-	3.55	8.56	4.53	0.997	4.68	-					
	12072-01	2006 06 08	1.5 - 1.6	-	0.294	-	0.201	-	0.091	0.333	0.305	2.42	0.632	-	2.88	2.47	1.02	1.14	1.12	-	-	0.445	0.927	0.511	0.112	0.551	-					
BH06-20	BH06-19	2006 06 16	0.0 - 0.1	-	0.276	-	0.168	-	0.263	0.195	0.334	2.27	4.2	-	5.41	4.26	2.66	3.88	3.29	-	-	1.29	1.96	1.25	0.306	1.24	-					
	12072-02	2006 06 08	0.0 - 0.8	-	0.149	-	0.053	-	0.067	< 0.04	< 0.05	0.331	0.088	-	0.557	0.514	0.238	0.314	0.381	-	-	0.111	0.247	0.192	< 0.05	0.199	-					
	BH06-20	2006 06 16	0.0 - 0.1	-	0.186	-	0.068	-	0.104	< 0.04	< 0.05	0.483	0.17	-	0.875	0.795	0.452	0.463	0.64	-	-	0.285	0.436	0.319	0.069	0.297	-					
BH06-21	12072-03	2006 06 08	0.0 - 0.8	-	0.24	-	0.184	-	0.426	0.176	0.124	0.632	0.481	-	10.2	7.17	2.48	3.08	4.96	-	-	1.47	3.4	1.92	0.479	1.89	-					
	BH06-21	2006 06 16	0.0 - 0.1	-	0.649	-	0.616	-	1.84	0.704	0.344	2.05	2.64	-	45.4	31.7	17.1	17.2	24.4	-	-	7.71	17.2	11.2	2.66	10.2	-					
BH06-22	12072-04	2006 06 08	0.0 - 0.6	-	3.03	-	0.388	-	0.388	2.18	1.14	5.63	1.29	-	10.2	8.13	5.04	6.13	7.96	-	-	2.53	5.54	3.04	0.759	2.92	-					
	BH06-22	2006 06 16	0.0 - 0.1	-	1.09	-	0.465	-	0.32	2.38	1.68	6.57	1.81	-	8.38	6.47	2.7	2.8	4.37	-	-	1.48	3.03	2.4	0.504	2.38	-					
BH06-23	12072-05	2006 06 08	1.1 - 1.5	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	0.143	< 0.05	-	0.204	0.204	0.088	0.107	0.126	-	-	0.055	0.088	0.069	< 0.05	0.076	-					
	BH06-23	2006 06 16	0.0 - 0.1	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.5	< 0.05	-	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-					
BH06-25	12293-12	2006 06 09	2.4 - 3.0	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	0.054	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-					
BH06-26	BH06-26	2006 06 16	0.0 - 0.1	-	0.223	-	0.115	-	0.293	0.264	0.185	1.62	0.611	-	5.13	4.36	2.35	2.37	3.11	-	-	1.2	2.14	1.35	0.326	1.34	-					
BH06-27	BH06-27	2006 06 16	0.0 - 0.1	-	1.78	-	0.684	-	0.468	2.06	1.05	11.3	1.23	-	18.8	13.4	2.5	3.56	5.29	-	-	2.1	3.16	2.17	0.506	2.12	-					
BH06-28	BH06-28	2006 06 16	0.0 - 0.1	-	< 0.05	-	< 0.05	-	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-					
BH06-29	BH06-29	2006 06 16	0.0 - 0.1	-	6.2	-	0.848	-	0.447	15.5	11.3	35.5	6.77	-	35.5	22.9	7.22	8.27	8.58	-	-	3.14	4.95	2.74	0.594	2.86	-					
TP06-123	12267-09	2006 06 07	0.4 - 0.5	-	1.12	-	0.341	-	0.525	0.8	0.946	7.08	2.39	-	21.5	16.5	10.7	12.1	21.2	-	-	6.88	12.8	7.81	2.53	6.97	-					
	12267-10	Duplicate	0.4 - 0.5	-	0.726	-	0.562	-	1.08	1.26	0.984	5.48	2.79	-	25.9	21.7	11.8	15.3	24	-	-	9.34	16.9	9.15	2.12	7.54	-					
QA/QC RPD%					43	-	49	-	69	45	4	25	15	-	19	27	10	23	12	-	-	30	28	16	18	8	-					
12268-01					2006 06 07	2.8	-	-	-	0.117	-	< 0.05	-	< 0.05	< 0.04	0.109	0.584	0.227	-	1.61	1.33	0.752	0.958	1.47	-	-	0.459	0.852	0.594	0.168	0.611	-
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	30	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-				
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	20	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-				
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	25	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-				
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	-	0.21	-	0.1	-	0.13	0.12	0.16	1	0.4	-	2.1	2.4	0.81	0.91	0.99	1.6	-	-	0.45	0.99	0.58	0.16	0.73	-				
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	5	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-				
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	0	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-			
	BH12-10-4-121210	Duplicate	3.7 - 4.0	0	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-			
	QA/QC RPD%					*	-	*	-	*	*	*	*	*	-	*	*	*	*	*	*	-	*	*	*	*	*	*	-			
BH12-11	BH12-10-5-121210	2012 12 10	4.7 - 5.0	20	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-				
	BH12-11-1-121211	2012 12 11	0.7 - 0.8	55	0.33	-	0.075	-	< 0.05	0.098	0.12	0.55	0.17	-	1	1	0.21	0.29	0.15	0.26	-	-	0.071	0.15	0.07	< 0.05	0.12	-				
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	45	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	-				
	BH12-11-5-121211	2012																														

TABLE 8: Summary of Analytical Results for Intertidal Soil and Sediment - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Polycyclic Aromatic Hydrocarbons																							
					Naphthalene µg/g	Methylnaphthalene, 1- µg/g	Methylnaphthalene, 2- µg/g	Methylnaphthalene, 1&2- µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Acridine µg/g	Fluoranthene µg/g	Pyrene µg/g	Benz(a)anthracene µg/g	Chrysene µg/g	Benzo(b)fluoranthene µg/g	Benzo(b+)fluoranthene µg/g	Benzo(b+h)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenz(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	Quinoline µg/g	
BH21-12	BH21-12-01	2021 08 19	0.8 - 1.1	10	0.514	0.309	0.247	0.556	5.51	0.511	2.30	23.8	4.30	< 0.820	43.9	44.6	15.9	19.1	-	20.3	28.2	7.92	20.9	13.2	2.48	13.0	< 0.090	
	BH21-12-02	2021 08 19	1.7 - 2.0	5	< 0.010	< 0.010	< 0.010	< 0.015	< 0.0050	< 0.0050	< 0.010	0.015	0.0056	< 0.010	0.018	0.016	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.020	< 0.0050	0.026	< 0.010	
	BH21-12-03	2021 08 19	2.9 - 3.4	0	< 0.010	< 0.010	< 0.010	< 0.015	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010	
BH21-13	BH21-13-04	2021 08 19	3.7 - 4.2	10	< 0.010	< 0.010	< 0.010	< 0.015	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010	
BH21-14	BH21-14-01	2021 08 20	0.2 - 0.5	0	0.013	< 0.010	< 0.010	< 0.015	0.0510	0.0116	0.014	0.150	0.0626	< 0.010	0.386	0.336	0.176	0.227	-	0.326	0.432	0.106	0.232	0.229	0.0465	0.255	< 0.010	
	BH21-14-02	2021 08 20	1.1 - 1.4	15	< 3.20	1.80	1.57	3.37	1.51	4.22	4.51	21.7	7.88	< 2.60	49.8	34.9	21.3	21.3	-	25.9	33.7	7.82	20.2	13.9	3.42	12.6	< 0.090	
	BH21-14-03	Duplicate	1.1 - 1.4	15	< 0.650	0.949	0.491	1.44	1.81	1.81	3.42	19.6	5.92	< 1.50	34.4	26.5	15.2	15.6	-	17.9	23.6	5.74	14.1	10.1	2.52	9.28	< 0.070	
	QA/QC RPD%					*	62	105	80	18	80	27	10	28	*	37	27	33	31	-	37	35	31	36	32	30	30	*
	BH21-14-04	2021 08 20	2.0 - 2.5	35	< 0.025	< 0.020	< 0.010	< 0.022	< 0.0300	< 0.0400	< 0.025	< 0.090	< 0.120	< 0.060	0.231	0.251	< 0.100	0.247	-	< 0.100	< 0.104	< 0.030	0.067	< 0.100	0.0154	< 0.050	< 0.010	
BH21-14-05	2021 08 20	3.7 - 4.1	5	< 0.010	< 0.010	< 0.010	< 0.015	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010	
BH21-15	BH21-15-03	2021 08 20	1.5 - 2.0	10	< 0.010	< 0.010	< 0.010	< 0.015	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010	
BH21-16	BH21-16-03	2021 08 20	2.3 - 2.6	5	< 0.010	< 0.010	< 0.010	< 0.015	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010	
BC Standard																												
CSR Industrial Land Use (IL) ^b					20	1,000	950	n/a	n/a	15,000	9,500	50	30	n/a	200	100	10	4,500	10	10	n/a	10	50	10	10	n/a	10	

Associated Bureau Veritas Laboratories file(s): B2B3985.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 9: Summary of Analytical Results for Intertidal Soil and Sediment - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	pH		Total Metals																								
				pH	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Strontium	Thallium	Tin	Tungsten	Uranium	Vanadium	Zinc
				µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
BH06-1	12287-02	2006 06 06	0.8 - 1.1	8.44	-	< 10	< 5	15.4	< 0.5	-	< 0.5	5.7	2.1	90.3	-	48	-	-	0.0217	< 4	5	< 2 ^a	< 2	-	< 1	11.1	-	-	11.2	89.3
	BH06-1	2006 06 16	0.0 - 0.1	8.85	-	15	< 5	27.9	< 0.5	-	< 0.5	10.2	2.5	178	-	107	-	-	0.0588	< 4	8.2	< 2 ^a	< 2	-	< 1	67.3	-	-	15.7	109
BH06-2	BH06-2	2006 06 16	0.0 - 0.1	7.15	-	10	7.2	22.1	< 0.5	-	0.82	8	2.9	131	-	134	-	-	0.218	14.6	10.9	< 2 ^a	< 2	-	< 1	17.9	-	-	24.5	183
BH06-3	BH06-3	2006 06 16	0.0 - 0.1	8.14	-	29	44.2	75.1	< 0.5	-	0.54	24.6	4.9	624	-	372	-	-	2.21	4.7	18.9	< 2 ^a	< 2	-	< 1	74.7	-	-	29.5	736
BH06-4	BH06-4	2006 06 16	0.0 - 0.1	7.2	-	76	166	80	< 0.5	-	3	105	17.2	17,400	-	4,230	-	-	102	19.3	150	< 4 ^a	< 4	-	< 4	254	-	-	43.1	4,720
BH06-5	12278-03	2006 06 14	3.8 - 4.1	7.62	-	< 10	< 5	52.5	< 0.5	-	< 0.5	8.5	4.1	10.3	-	< 30	-	-	0.0075	< 4	5.4	< 2 ^a	< 2	-	< 1	< 5	-	-	27.6	25.1
	BH06-5	2006 06 16	0.0 - 0.1	7.97	-	13	23.8	138	< 0.5	-	< 0.5	32.5	5.6	2,050	-	383	-	-	1.21	5.1	27.8	< 2 ^a	< 2	-	< 1	117	-	-	33.1	711
BH06-6	BH06-6	2006 06 16	0.0 - 0.1	7.81	-	51	162	338	< 0.5	-	2	54.4	9.3	3,540	-	1,940	-	-	18	11	46.3	< 2 ^a	< 2	-	< 1	74.3	-	-	37.8	2,600
	BH06-2d	Duplicate	0.0 - 0.1	7.7	-	90	214	409	< 0.5	-	4.55	67.3	12.4	3,110	-	2,180	-	-	9.37	18.4	71.2	< 2 ^a	< 2	-	< 1	129	-	-	41.2	3,700
	QA/QC RPD%			1	-	55	28	19	*	-	78	21	29	13	-	12	-	-	63	50	42	*	*	-	*	54	-	-	9	35
BH06-7	12289-02	2006 06 07	1.5 - 2.3	6.8	-	15	10.7	31.1	< 0.5	-	0.75	14.5	2.7	576	-	190	-	-	2.52	27	13.7	< 2 ^a	< 2	-	< 1	14.4	-	-	14	418
	12289-03	2006 06 07	2.3 - 2.6	8.66	-	< 10	< 5	25.8	< 0.5	-	< 0.5	15	4.2	14.7	-	< 30	-	-	0.0706	< 4	7.8	< 2 ^a	< 2	-	< 1	< 5	-	-	26.3	37
	BH06-7	2006 06 16	0.0 - 0.1	6.9	-	47	71.7	99	< 0.5	-	1.31	59.7	6.9	4,570	-	3,520	-	-	18.9	22	35.4	< 2 ^a	< 2	-	< 1	77.3	-	-	37.1	1,650
BH06-8	12289-04	2006 06 07	0.9 - 1.1	7.83	-	25	47.2	155	< 0.5	-	1.25	55.3	6.2	4,490	-	771	-	-	7.92	8	35.4	< 2 ^a	< 2	-	< 1	123	-	-	34.2	1,030
	12289-05	Duplicate	0.9 - 1.1	7.75	-	29	47.8	143	< 0.5	-	0.83	49.9	5.9	3,720	-	703	-	-	6.57	6.5	21.1	< 2 ^a	< 2	-	< 1	110	-	-	28.3	974
	QA/QC RPD%			1	-	15	1	8	*	-	40	10	5	19	-	9	-	-	19	21	51	*	*	-	*	11	-	-	19	6
	BH06-8	2006 06 16	0.0 - 0.1	8.09	-	131	51.7	113	< 0.5	-	0.79	39.5	6	1,700	-	1,130	-	-	3.57	5.7	24	< 2 ^a	< 2	-	< 1	170	-	-	36	1,040
BH06-9	12289-06	2006 06 07	0.0 - 0.8	7.66	-	10	15.1	54.4	< 0.5	-	< 0.5	25.1	9.1	542	-	716	-	-	3.88	6.6	13.9	< 2 ^a	< 2	-	< 1	17.1	-	-	43.5	445
	12289-08	2006 06 07	1.2 - 1.5	7.47	-	< 10	5.7	47.9	< 0.5	-	< 0.5	13.6	5.7	69.3	-	85	-	-	0.534	4.1	6.7	< 2 ^a	< 2	-	< 1	5.5	-	-	38.3	112
	12289-09	2006 06 07	1.7 - 2.3	7.79	-	< 10	< 5	35.3	< 0.5	-	< 0.5	12.6	4.1	60.6	-	82	-	-	0.308	< 4	6.3	< 2 ^a	< 2	-	< 1	< 5	-	-	36.6	83.3
	12289-10	Duplicate	1.7 - 2.3	7.94	-	< 10	7.7	34.7	< 0.5	-	< 0.5	11.6	4.3	57.8	-	58	-	-	0.369	< 4	5.1	< 2 ^a	< 2	-	< 1	< 5	-	-	34.2	95
	QA/QC RPD%			2	-	*	*	2	*	-	*	8	5	5	-	34	-	-	18	*	21	*	*	-	*	*	-	-	7	13
	BH06-9	2006 06 16	0.0 - 0.1	8.09	-	< 10	28.5	72.8	< 0.5	-	< 0.5	17.7	4.9	811	-	254	-	-	4.28	4.1	8.1	< 2 ^a	< 2	-	< 1	15.7	-	-	39.6	428
	BH06-9d	Duplicate	0.0 - 0.1	8	-	10	32.1	85.1	< 0.5	-	< 0.5	21.9	5.2	1,020	-	493	-	-	6.28	4.8	10.3	< 2 ^a	< 2	-	< 1	18.5	-	-	43.2	598
	QA/QC RPD%			1	-	12	16	*	-	*	21	6	23	-	64	-	-	38	16	24	*	*	-	*	16	-	-	9	33	
BH06-10	12290-01	2006 06 07	0.0 - 0.8	7.83	-	29	73.4	74.3	< 0.5	-	< 0.5	30.9	7.8	968	-	304	-	-	3.78	7.2	13.1	< 2 ^a	< 2	-	< 1	27.5	-	-	51.5	842
	12290-04	2006 06 07	1.5 - 1.8	7.89	-	65	173	98.3	< 0.5	-	1.03	37.7	11.2	1,160	-	401	-	-	2.58	9.5	12.9	< 2 ^a	< 2	-	< 1	30	-	-	48.6	1,340
	12290-06	2006 06 07	2.3 - 2.7	8.73	-	< 10	6	28.2	< 0.5	-	< 0.5	15.6	4.9	28.9	-	< 30	-	-	0.0784	< 4	10.3	< 2 ^a	< 2	-	< 1	< 5	-	-	32.8	48
	12290-07	2006 06 07	2.9 - 3.0	8.96	-	< 10	< 5	51.5	< 0.5	-	< 0.5	10.9	4.9	12.9	-	< 30	-	-	0.0091	< 4	6.4	< 2 ^a	< 2	-	< 1	< 5	-	-	38.3	30.2
	BH06-10	2006 06 16	0.0 - 0.1	8.29	-	89	255	125	< 0.5	-	1.75	54.4	12	1,440	-	691	-	-	4.38	18.5	24	< 2 ^a	< 2	-	< 1	64.6	-	-	46.4	2,130
BH06-11	12290-08	2006 06 07	0.0 - 0.8	7.71	-	44	63.2	104	< 0.5	-	1.73	51.3	7.9	2,640	-	999	-	-	7.55	10	31.2	< 2 ^a	< 2	-	< 1	133	-	-	47.5	1,910
	12290-12	2006 06 07	2.7 - 3.0	8.51	-	< 10	< 5	17.9	< 0.5	-	< 0.5	9.1	3.6	18.8	-	< 30	-	-	0.0292	< 4	6	< 2 ^a	< 2	-	< 1	< 5	-	-	25.3	35.1
	12291-03	2006 06 07	3.5 - 3.7	8.84	-	< 10	6	24.5	< 0.5	-	< 0.5	13	4.6	14.5	-	< 30	-	-	0.0215	< 4	9.3	< 2 ^a	< 2	-	< 1	< 5	-	-	33.9	33.2
	BH06-11	2006 06 16	0.0 - 0.1	7.64	-	26	46.1	139	< 0.5	-	2.05	54.6	7.1	1,720	-	810	-	-	8.21	6.4	27.3	< 2 ^a	< 2	-	< 1	60.3	-	-	46	1,380
BH06-12	12291-04	2006 06 07	0.8 - 1.5	6.92	-	15	19.6	48.1	< 0.5	-	1.28	19.8	4.9	935	-	286	-	-	5.57	21.3	17.3	< 2 ^a	< 2	-	< 1	12.3	-	-	32.8	932
	12291-06	2006 06 07	2.3 - 2.7	7.06	-	< 10	< 5	12.3	< 0.5	-	< 0.5	6.5	2.2	47.5	-	42	-	-	0.4	5.6	< 5	< 2 ^a	< 2	-	< 1	< 5	-	-	14.5	77.3
	BH06-12	2006 06 16	0.0 - 0.1	7.72	-	18	45.1	182	< 0.5	-	0.6	25.4	7.6	4,630	-	920	-	-	28.1	5	28.9	< 2 ^a	< 2	-	< 1	45.7	-	-	40.5	1,280
BH06-13	12291-08	2006 06 07	0.0 - 0.8	6.71	-	18	105	146	< 0.5	-	1.01	48.6	6.6	4,500	-	1,150	-	-	8.32	15.7	38.5	< 2 ^a	< 2	-	< 1	577	-	-	38	1,680
	12291-10	2006 06 07	1.5 - 2.1	6.65	-	12	53.1	76.9	< 0.5	-	0.84	27.9	6	9,510	-	1,640	-	-	5.25	38.3	37.5	< 2 ^a	< 2	-	< 1	532	-	-	37.8	2,080
	BH06-13	2006 06 16	0.0 - 0.1	7.28	-	20	51.9	60.4	< 0.5	-	0.76	22.2	5.7</																	

TABLE 9: Summary of Analytical Results for Intertidal Soil and Sediment - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	pH		Total Metals																									
				pH	Aluminum µg/g	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Boron µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Lithium µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Thallium µg/g	Tin µg/g	Tungsten µg/g	Uranium µg/g	Vanadium µg/g	Zinc µg/g	
BH06-16	12070-07	2006 06 08	1.4 - 1.5	8.12	-	< 10	< 5	16.4	< 0.5	-	< 0.5	8.9	3.4	7.9	-	< 30	-	-	0.0109	< 4	6.7	< 2 ^a	< 2	-	< 1	< 5	-	-	22.1	22.5	
	12070-10	2006 06 08	2.6 - 2.7	8.07	-	127	7.8	19.2	< 0.5	-	0.74	15.8	4.1	2,220	-	327	-	-	0.0789	18.6	13.7	< 2 ^a	< 2	-	< 1	< 5	-	-	27.3	184	
	BH06-16	2006 06 16	0.0 - 0.1	8.07	-	832	17.7	27	< 0.5	-	< 0.5	11.9	3.1	364	-	3,720	-	-	0.1	< 4	8.7	< 2 ^a	< 2	-	< 1	1,180	-	-	20.9	206	
BH06-17	12071-01	2006 06 08	0.9 - 1.4	7.6	-	< 10	6.4	6.2	< 0.5	-	0.92	6.1	< 2	19.4	-	< 30	-	-	0.0292	28.1	5.1	< 2 ^a	< 2	-	< 1	11.9	-	-	10.5	102	
	12071-02	2006 06 08	1.5 - 1.8	7.73	-	39	6.8	14.6	< 0.5	-	0.68	13	2.1	162	-	345	-	-	0.0405	17.5	9.1	< 2 ^a	< 2	-	< 1	96.2	-	-	13.9	84.5	
	BH06-17	2006 06 16	0.0 - 0.1	7.81	-	236	27.9	38.1	< 0.5	-	0.9	517	10.3	2,620	-	1,080	-	-	0.27	9.9	474	< 2 ^a	< 2	-	< 1	730	-	-	22.4	593	
BH06-18	12071-08	2006 06 08	0.8 - 1.1	8.26	-	257	336	78.5	< 0.5	-	0.98	40.2	22.5	1,360	-	414	-	-	6.06	23.6	17.5	< 2 ^a	< 2	-	< 1	40.9	-	-	44	1,710	
	12071-10	2006 06 08	1.5 - 1.8	8.11	-	245	409	88.9	< 0.5	-	1.84	43.4	24	1,180	-	530	-	-	2.96	33.2	19.5	< 2 ^a	< 2	-	< 1	55.6	-	-	44.7	1,990	
	BH06-18	2006 06 16	0.0 - 0.1	8.09	-	100	257	137	< 0.5	-	1.83	51.6	13.6	1,030	-	559	-	-	3.63	16.8	22	< 2 ^a	< 2	-	< 1	45.6	-	-	51.8	2,160	
BH06-19	12071-11	2006 06 08	0.8 - 1.5	7.18	-	33	95.2	70.1	< 0.5	-	0.81	48.9	11.3	1,780	-	1,470	-	-	7.43	20	121	< 2 ^a	< 2	-	< 1	61.9	-	-	97.9	1,440	
	12072-01	2006 06 08	1.5 - 1.6	7.89	-	130	379	160	< 0.5	-	1.92	57.2	18.3	863	-	924	-	-	0.678	25.7	24.8	< 2 ^a	< 2	-	< 1	43.1	-	-	48.3	2,850	
	BH06-19	2006 06 16	0.0 - 0.1	7.78	-	181	581	195	< 0.5	-	3.17	64.6	25.2	1,510	-	4,370	-	-	2.59	43.9	32.7	< 2 ^a	< 2	-	< 1	62	-	-	57.6	4,500	
BH06-20	12072-02	2006 06 08	0.0 - 0.8	7.34	-	< 10	26.6	97.6	< 0.5	-	< 0.5	21.9	7.2	309	-	115	-	-	2.24	< 4	21.1	< 2 ^a	< 2	-	< 1	14.2	-	-	42	990	
	BH06-20	2006 06 16	0.0 - 0.1	7.31	-	< 10	15.2	76.5	< 0.5	-	< 0.5	17.8	6.8	291	-	136	-	-	2.58	< 4	19.8	< 2 ^a	< 2	-	< 1	16.1	-	-	36.8	991	
	BH06-21	2006 06 08	0.0 - 0.8	8.21	-	60	115	107	< 0.5	-	1.62	102	12.3	6,040	-	4,210	-	-	21.2	12.3	45.7	< 2 ^a	< 2	-	< 1	83.6	-	-	37.4	3,200	
BH06-22	BH06-21	2006 06 16	0.0 - 0.1	7.91	-	71	247	78.3	< 0.5	-	2.92	72	13.2	16,500	-	7,360	-	-	54.1	12.1	53.6	< 2 ^a	< 2	-	< 1	127	-	-	35.1	5,390	
	12072-04	2006 06 08	0.0 - 0.6	7.44	-	51	171	182	< 0.5	-	2.02	67.1	14.9	5,290	-	1,940	-	-	10.1	16.8	50.9	< 2 ^a	< 2	-	< 1	124	-	-	43	3,310	
	BH06-22	2006 06 16	0.0 - 0.1	7.9	-	75	197	296	< 0.5	-	1.75	56.8	11.8	2,710	-	1,790	-	-	6.2	14.6	25.8	< 2 ^a	< 2	-	< 1	123	-	-	44.3	2,870	
BH06-23	12072-05	2006 06 08	1.1 - 1.5	6.96	-	45	18	25.6	< 0.5	-	< 0.5	22.5	5.2	407	-	377	-	-	0.349	9.2	21	2	< 2	-	< 1	146	-	-	24.2	288	
	BH06-23	2006 06 16	0.0 - 0.1	8.64	-	16	24.6	26.3	< 0.5	-	< 0.5	19	4.7	608	-	200	-	-	0.101	4.1	15	< 2 ^a	< 2	-	< 1	76.8	-	-	25.2	272	
	BH06-25	2006 06 09	2.4 - 3.0	8.22	-	< 10	5.2	20.3	< 0.5	-	< 0.5	12.9	3.4	26.1	-	< 30	-	-	0.1	< 4	8.1	< 2 ^a	< 2	-	< 1	< 5	-	-	24.1	40.8	
BH06-26	BH06-26	2006 06 16	0.0 - 0.1	8.19	-	208	479	171	< 0.5	-	2.11	68.1	21.6	1,380	-	603	-	-	2.66	31.4	24.3	< 3 ^a	< 2	-	< 1	62.3	-	-	50.9	3,540	
BH06-27	BH06-27	2006 06 16	0.0 - 0.1	8.08	-	29	76	101	< 0.5	-	1.47	68.8	10.1	2,640	-	1,670	-	-	8.84	9.6	42.4	< 2 ^a	< 2	-	< 1	44.5	-	-	40.2	2,140	
BH06-28	BH06-28	2006 06 16	0.0 - 0.1	8.97	-	< 10	6.6	13.4	< 0.5	-	< 0.5	7.8	2.8	302	-	96	-	-	0.0429	< 4	5.3	< 2 ^a	< 2	-	< 1	29.6	-	-	15.6	148	
BH06-29	BH06-29	2006 06 16	0.0 - 0.1	7.83	-	79	77.6	126	< 0.5	-	1.21	42.2	7.1	1,340	-	1,140	-	-	4.49	7.9	25.8	< 2 ^a	< 2	-	< 1	204	-	-	37.9	1,410	
TP06-123	12267-09	2006 06 07	0.4 - 0.5	7.73	-	23	120	171	< 0.5	-	1.75	34.4	7.4	4,000	-	1,080	-	-	9.22	5.7	18.7	< 2 ^a	< 2	-	< 1	60.1	-	-	18.2	2,820	
	12267-10	Duplicate	0.4 - 0.5	7.89	-	79	342	263	< 0.5	-	3.45	79.9	16.2	4,530	-	1,820	-	-	9.29	21	35	< 2 ^a	< 2	-	< 1	104	-	-	47.9	4,470	
	QA/QC RPD%				2	-	110	96	42	*	-	65	80	75	12	-	51	-	-	1	115	61	*	*	-	*	54	-	-	90	45
	12268-01	2006 06 07	2.8	7.37	-	26	62.4	112	< 0.5	-	1.5	22.7	3.7	1,550	-	1,130	-	-	6.25	24.2	15.1	< 2 ^a	< 2	-	< 1	48.2	-	-	18.6	1,340	
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	8.6	8,630	0.19	4.72	30.5	< 0.4	-	0.345	12.7	4.76	14.6	13,700	3.94	-	165	< 0.05	1.87	11.2	< 0.5	< 0.05	157	0.142	0.22	-	-	29.9	37.7	
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	9.35	7,520	0.25	2.08	51.3	< 0.4	-	0.198	36.9	4.4	18.2	15,400	2.82	-	149	< 0.05	5.08	7.91	< 0.5	< 0.05	24.8	0.05	0.64	-	-	36.6	32.5	
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	8.45	10,900	0.31	1.7	43	< 0.4	-	0.27	9.9	5.82	19.6	14,500	2.7	-	308	< 0.05	0.26	6.83	< 0.5	0.064	17.5	0.062	0.3	-	-	60.1	54.5	
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	7.5	8,700	7.99	26.4	80.8	< 0.4	-	0.59	22.1	5	1,220	20,100	418	-	229	5.72	8.95	11.7	0.61	0.413	85.2	0.053	18.1	-	-	42.3	426	
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	8.89	6,790	0.14	4.24	19.4	< 0.4	-	0.258	9.7	4	8.73	11,600	3.05	-	149	< 0.05	1.37	8.98	< 0.5	0.052	136	0.172	0.19	-	-	24.3	30	
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	9.75	7,320	0.22	1.21	47.8	< 0.4	-	0.392	8.7	3.66	16.1	11,300	2.42	-	130	0.074	0.11	5.48	< 0.5	< 0.05	24.1	< 0.05	0.17	-	-	49.6	28.8	
BH12-10-4-121210	Duplicate	3.7 - 4.0	9.6	7,920	0.23	2.1	52.7	< 0.4	-	0.26	9.6	4.46	15.5	12,500	2.69	-	144	< 0.05	0.11	6.52	< 0.5	< 0.05	25.9	0.051	0.2	-	-	43.5	32.9		
	QA/QC RPD%				2	8	*	*	10	*	-	40	10	20	4	10	11	-	10	*	*	17	*	*	7	*	*	-	-	13	13
	BH12-10-5-121210	2012 12 10	4.7 - 5.0	8.91	10,200	0.11	1.42	56.2	< 0.4	-	0.119	9.2	5.69	16.5	15,500	2.48	-	286	< 0.05	0.24	7.07	< 0.5	< 0.05	17	0.057	0.22	-	-	38.4	49.4	
BH12-11	BH12-11-1-121211	2012 12 11	0.7 - 0.8	5.85	5,100	8.42	11.3	61	< 0.4																						

TABLE 9: Summary of Analytical Results for Intertidal Soil and Sediment - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	pH		Total Metals																									
				pH	Aluminum µg/g	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Boron µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Iron µg/g	Lead µg/g	Lithium µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Thallium µg/g	Tin µg/g	Tungsten µg/g	Uranium µg/g	Vanadium µg/g	Zinc µg/g	
BH21-11	BH21-11-01	2021 08 19	0.5 - 0.9	8.28	9,530	8.76	23.3	72.0	< 0.10	10.6	1.28	28.3	6.29	4,060	34,900	869	11.6	254	31.6	4.14	17.5	< 0.20	0.35	123	0.070	13.6	< 0.50	0.872	43.9	1,220	
	BH21-11-02	Duplicate	0.5 - 0.9	8.36	9,850	8.52	26.3	63.5	< 0.10	7.2	0.547	15.9	6.65	1,800	25,700	471	12.9	264	10.9	2.64	10.5	< 0.20	0.16	99.1	0.055	5.3	< 0.50	0.794	39.3	623	
	QA/QC RPD%				1	3	3	12	13	*	*	80	56	6	77	30	59	11	4	97	44	50	*	*	22	*	88	*	9	11	65
	BH21-11-03	2021 08 19	1.4 - 1.8	8.36	6,830	0.24	4.03	19.9	< 0.10	< 5.0	0.165	8.52	3.36	11.5	10,600	6.01	7.9	184	0.133	1.46	6.11	< 0.20	< 0.10	34.3	0.217	< 2.0	< 0.50	0.982	25.6	27.8	
	BH21-11-04	2021 08 19	2.3 - 2.9	9.31	9,180	0.27	1.68	39.3	0.16	< 5.0	0.329	13.2	4.43	18.5	14,200	3.44	5.6	179	< 0.0500	0.22	7.63	< 0.20	< 0.10	38.1	0.069	< 2.0	< 0.50	0.516	48.6	32.7	
BH21-12	BH21-11-05	2021 08 19	3.5 - 4.0	9.59	7,760	0.20	2.41	61.9	0.13	< 5.0	0.026	12.0	4.29	13.7	13,300	3.31	4.2	173	< 0.0500	0.30	7.74	0.81	< 0.10	30.8	0.052	< 2.0	< 0.50	0.308	41.8	28.8	
	BH21-12-01	2021 08 19	0.8 - 1.1	5.58	5,300	18.4	25.8	39.3	< 0.10	60.4	1.93	30.0	7.72	462	84,900	276	5.7	301	1.58	28.8	43.9	0.89	0.20	91.6	0.072	17.3	3.30	10.1	32.0	1,160	
	BH21-12-02	2021 08 19	1.7 - 2.0	8.20	5,170	0.21	3.16	19.1	< 0.10	< 5.0	0.178	6.76	2.95	5.21	8,590	2.82	6.6	140	< 0.0500	1.11	5.07	< 0.20	< 0.10	25.8	0.199	< 2.0	< 0.50	1.06	18.4	20.5	
	BH21-12-03	2021 08 19	2.9 - 3.4	8.94	11,900	0.25	3.47	45.7	0.20	5.6	0.150	16.6	7.10	24.1	18,900	5.89	8.2	268	< 0.0500	1.34	10.6	< 0.20	< 0.10	88.9	0.112	< 2.0	0.65	0.640	46.7	43.6	
BH21-13	BH21-13-04	2021 08 19	3.7 - 4.2	9.58	8,830	0.21	2.21	52.4	0.17	< 5.0	0.062	13.7	5.36	13.6	15,000	3.02	4.5	180	< 0.0500	0.25	10.5	< 0.20	< 0.10	38.8	0.052	< 2.0	< 0.50	0.385	41.7	31.2	
BH21-14	BH21-14-01	2021 08 20	0.2 - 0.5	8.87	6,030	18.6	52.7	62.9	< 0.10	13.2	0.520	23.0	5.30	630	43,400	462	6.3	264	1.85	6.08	20.4	< 0.20	0.16	191	0.083	17.0	2.88	0.976	25.3	893	
	BH21-14-02	2021 08 20	1.1 - 1.4	8.21	5,300	30.6	104	85.5	< 0.10	83.8	2.35	212	14.6	11,400	128,000	2,840	3.0	548	42.1	14.4	98.8	0.65	0.98	444	< 0.050	122	5.20	1.65	21.3	4,050	
	BH21-14-03	Duplicate	1.1 - 1.4	8.15	4,340	23.1	103	111	< 0.10	46.8	1.78	95.1	13.8	8,900	116,000	2,000	3.9	476	34.8	15.7	81.3	0.37	0.57	518	< 0.050	81.8	1.54	1.16	19.0	3,880	
	QA/QC RPD%				1	20	28	1	26	*	57	28	76	6	25	10	35	*	14	19	9	19	*	53	15	*	39	*	35	11	4
	BH21-14-04	2021 08 20	2.0 - 2.5	6.98	590	1.82	2.87	8.36	< 0.10	111	0.271	1.44	0.25	24.4	1,670	17.4	< 2.0	28.7	0.0727	17.8	1.38	0.30	< 0.10	68.0	< 0.050	< 2.0	< 0.50	1.79	3.18	69.6	
BH21-14-05	2021 08 20	3.7 - 4.1	9.23	13,400	0.15	1.76	69.4	0.25	6.6	0.028	15.2	7.88	18.1	23,600	4.60	9.1	311	< 0.0500	0.45	12.1	< 0.20	< 0.10	35.4	< 0.050	< 2.0	< 0.50	0.356	59.7	49.2		
BH21-15	BH21-15-03	2021 08 20	1.5 - 2.0	9.05	10,300	0.14	2.58	23.0	0.14	8.8	0.063	11.4	4.45	13.3	18,400	2.84	14.3	216	< 0.0500	0.92	6.53	< 0.20	< 0.10	45.6	< 0.050	< 2.0	< 0.50	0.628	57.8	30.1	
BH21-16	BH21-16-03	2021 08 20	2.3 - 2.6	9.00	16,100	0.12	2.89	59.6	0.24	7.9	< 0.020	16.2	8.22	20.8	23,700	3.83	9.5	313	< 0.0500	0.39	8.40	< 0.20	< 0.10	36.9	0.056	< 2.0	< 0.50	0.394	67.4	48.7	
BC Standard																															
CSR Industrial Land Use (IL) ^b				n/a	250,000	40	10	1,500	200 - 350 ^c	1,000,000	75 ^c	60	25	75 - 300 ^c	150,000	300 - 1,000 ^c	450	2,000	75	150	70 - 250 ^c	1	40	150,000	25	300	200	150	300	150 - 200 ^c	

Associated Bureau Veritas Laboratories file(s): B2B3985.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Laboratory detection limit exceeds regulatory standard/guideline.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

^c Standard is pH dependent.

TABLE 10: Summary of Analytical Results for Intertidal Soil and Sediment - PCBs

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs										Polychlorinated Biphenyls, Total [PCBs] µg/g
				Aroclor 1016 µg/g	Aroclor 1221 µg/g	Aroclor 1232 µg/g	Aroclor 1242 µg/g	Aroclor 1248 µg/g	Aroclor 1254 µg/g	Aroclor 1260 µg/g	Aroclor 1262 µg/g	Aroclor 1268 µg/g		
BH06-1	12287-02	2006 06 06	0.8 - 1.1	-	-	-	-	-	-	-	-	-	-	< 0.13
BH06-7	12289-03	2006 06 07	2.3 - 2.6	-	-	-	-	-	-	-	-	-	-	< 0.05
BH06-8	12289-04	2006 06 07	0.9 - 1.1	-	-	-	-	-	-	-	-	-	-	2.57
	12289-05	Duplicate	0.9 - 1.1	-	-	-	-	-	-	-	-	-	-	4.66
	QA/QC RPD%			-	-	-	-	-	-	-	-	-	-	58
BH06-9	12289-09	2006 06 07	1.7 - 2.3	-	-	-	-	-	-	-	-	-	-	< 0.05
	12289-10	Duplicate	1.7 - 2.3	-	-	-	-	-	-	-	-	-	-	< 0.05
	QA/QC RPD%			-	-	-	-	-	-	-	-	-	-	*
BH06-10	12290-04	2006 06 07	1.5 - 1.8	-	-	-	-	-	-	-	-	-	-	0.796
	12290-07	2006 06 07	2.9 - 3.0	-	-	-	-	-	-	-	-	-	-	< 0.05
BH06-11	12290-12	2006 06 07	2.7 - 3.0	-	-	-	-	-	-	-	-	-	-	< 0.05
BH06-12	12291-06	2006 06 07	2.3 - 2.7	-	-	-	-	-	-	-	-	-	-	< 0.05
BH06-13	12291-10	2006 06 07	1.5 - 2.1	-	-	-	-	-	-	-	-	-	-	3.12
BH06-14	12291-12	2006 06 07	1.2 - 1.4	-	-	-	-	-	-	-	-	-	-	32.1
	12292-03	2006 06 07	2.3 - 3.1	-	-	-	-	-	-	-	-	-	-	0.52
	12292-04	Duplicate	2.3 - 3.1	-	-	-	-	-	-	-	-	-	-	3.32
	QA/QC RPD%			-	-	-	-	-	-	-	-	-	-	146
BH06-19	12071-11	2006 06 08	0.8 - 1.5	-	-	-	-	-	-	-	-	-	-	0.672
BH06-21	12072-03	2006 06 08	0.0 - 0.8	-	-	-	-	-	-	-	-	-	-	14
BH06-22	12072-04	2006 06 08	0.0 - 0.6	-	-	-	-	-	-	-	-	-	-	4.6
BH21-8	BH21-8-01	2021 08 19	0.2 - 0.5	< 0.030	< 0.030	< 0.030	< 0.030	24.7	18.6	2.10	< 0.030	< 0.030	45.4	
	BH21-8-02	Duplicate	0.2 - 0.5	< 0.028	< 0.028	< 0.028	< 0.028	12.8	11.4	1.20	< 0.028	< 0.028	25.4	
	QA/QC RPD%			*	*	*	*	63	48	55	*	*	56	
	BH21-8-03	2021 08 19	1.1 - 1.5	< 0.010	< 0.010	< 0.010	< 0.010	0.085	0.035	< 0.010	< 0.010	< 0.010	0.120	
BH21-8-04	2021 08 19	2.3 - 2.7	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		
BH21-10	BH21-10-01	2021 08 19	0.2 - 0.6	< 0.030	< 0.030	< 0.030	< 0.030	14.5	8.29	0.987	< 0.030	< 0.030	23.8	
	BH21-10-02	2021 08 19	1.2 - 1.7	< 0.010	< 0.010	< 0.010	< 0.010	0.059	0.039	< 0.010	< 0.010	< 0.010	0.098	
BH21-11	BH21-11-01	2021 08 19	0.5 - 0.9	< 0.010	< 0.010	< 0.010	< 0.010	0.538	1.14	0.138	< 0.010	< 0.010	1.82	
	BH21-11-02	Duplicate	0.5 - 0.9	< 0.010	< 0.010	< 0.010	< 0.010	0.601	1.14	0.150	< 0.010	< 0.010	1.89	
	QA/QC RPD%			*	*	*	*	11	0	8	*	*	4	
	BH21-11-03	2021 08 19	1.4 - 1.8	< 0.010	< 0.010	< 0.010	< 0.010	0.027	< 0.020	< 0.010	< 0.010	< 0.010	0.027	
BH21-11-04	2021 08 19	2.3 - 2.9	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		
BH21-11-05	2021 08 19	3.5 - 4.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		
BH21-12	BH21-12-01	2021 08 19	0.8 - 1.1	< 0.010	< 0.010	< 0.010	< 0.010	0.103	0.250	< 0.030	< 0.030	< 0.030	0.353	
	BH21-12-02	2021 08 19	1.7 - 2.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-12-03	2021 08 19	2.9 - 3.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-14	BH21-14-01	2021 08 20	0.2 - 0.5	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	0.232	0.034	< 0.010	< 0.010	0.266	
	BH21-14-02	2021 08 20	1.1 - 1.4	< 0.065	< 0.065	< 0.065	< 0.065	6.32	9.26	1.13	< 0.065	< 0.065	16.7	
	BH21-14-03	Duplicate	1.1 - 1.4	< 0.030	< 0.030	< 0.030	< 0.030	4.76	6.91	1.17	< 0.030	< 0.030	12.8	
	QA/QC RPD%			*	*	*	*	28	29	3	*	*	26	
BH21-14-04	2021 08 20	2.0 - 2.5	< 0.010	< 0.010	< 0.010	< 0.010	0.129	0.065	< 0.010	< 0.010	< 0.010	0.194		
BH21-14-05	2021 08 20	3.7 - 4.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010		
BH21-15	BH21-15-03	2021 08 20	1.5 - 2.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-16	BH21-16-03	2021 08 20	2.3 - 2.6	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BC Standard														
CSR Industrial Land Use (IL) ^a				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	35

Associated ALS file(s): VA21B7750.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 11: Summary of Analytical Results for Intertidal Sediment and Soil - Leachable PAH and Metals

Sample Location Sample ID Sample Date (yyyy mm dd)	BH21-8			BH21-9	BH21-10	BH21-11	BH21-12	BH21-14			BC Standard	
	BH21-8-01 2021 08 19	BH21-8-02 2021 08 19	BH21-8-03 2021 08 19	BH21-9-01 2021 08 19	BH21-10-01 2021 08 19	BH21-11-01 2021 08 19	BH21-12-01 2021 08 19	BH21-14-01 2021 08 20	BH21-14-02 2021 08 20	BH21-14-04 2021 08 20	HWR Leachate Quality Standards (HWLQ)	
Parameter	Units	Analytical Results										
TCLP Polycyclic Aromatic Hydrocarbons												
Benzo(a)pyrene	µg/L	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.050	< 0.050	< 0.050	1
TCLP Metals												
Antimony	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	n/a
Arsenic	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	2,500
Barium	µg/L	< 2,500	< 2,500	-	-	-	< 2,500	< 2,500	< 2,500	< 2,500	-	100,000
Beryllium	µg/L	< 25	< 25	-	-	-	< 25	< 25	< 25	< 25	-	n/a
Boron	µg/L	970	1,120	-	-	-	< 500	830	< 500	1,420	-	500,000
Cadmium	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	500
Calcium	µg/L	728,000	522,000	-	-	-	583,000	56,000	752,000	1,740,000	-	n/a
Chromium	µg/L	< 250	< 250	-	-	-	< 250	< 250	< 250	< 250	-	5,000
Cobalt	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	n/a
Copper	µg/L	< 50	< 50	-	-	-	< 50	120	700	< 50	-	100,000
Iron	µg/L	< 5,000	143,000	-	-	-	< 5,000	< 5,000	< 5,000	33,600	-	n/a
Lead	µg/L	< 250	< 250	-	-	-	460	< 250	< 250	1,010	-	5,000
Magnesium	µg/L	109,000	93,700	-	-	-	25,500	44,600	19,100	181,000	-	n/a
Mercury	µg/L	< 1.0	< 1.0	-	-	-	2.4	< 1.0	< 1.0	< 1.0	-	100
Nickel	µg/L	< 250	< 250	-	-	-	< 250	< 250	< 250	330	-	n/a
Selenium	µg/L	< 100	< 100	-	-	-	< 100	< 100	< 100	< 100	-	1,000
Silver	µg/L	< 50	< 50	-	-	-	< 50	< 50	< 50	< 50	-	5,000
Thallium	µg/L	< 1,000	< 1,000	-	-	-	< 1,000	< 1,000	< 1,000	< 1,000	-	n/a
Uranium	µg/L	< 200	< 200	-	-	-	< 200	< 200	< 200	< 200	-	10,000
Vanadium	µg/L	< 150	< 150	-	-	-	< 150	< 150	< 150	< 150	-	n/a
Zinc	µg/L	970	< 500	-	-	-	10,200	2,530	3,290	11,200	-	500,000
Zirconium	µg/L	< 10,000	< 10,000	-	-	-	< 10,000	< 10,000	< 10,000	< 10,000	-	n/a

Associated ALS file(s): VA21B7750.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

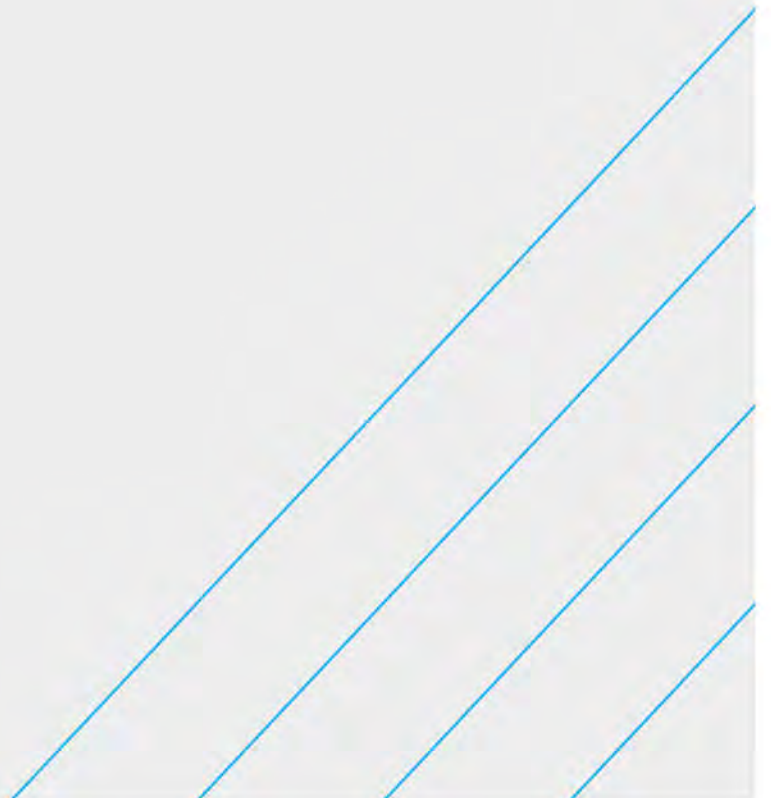
* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than HWR Leachate Quality Standards (HWLQ) Standard

Attachment 3

Laboratory Analytical Reports





CERTIFICATE OF ANALYSIS

Work Order : **VA21B7750**
Amendment : **(Partial Results)**
Client : **SNC-Lavalin Inc.**
Contact : Chetiya Amarasinghe
Address : Suite 1300 - 3777 Kingsway Avenue
 Burnaby BC Canada V5H 3Z7
Telephone : 604 515 5151
Project : 685033
PO : ----
C-O-C number : 17-866800,17-866801,17-866802
Sampler : CA
Site : ----
Quote number : Western Canada Standing Offer
No. of samples received : 35
No. of samples analysed : 26

Page : 1 of 26
Laboratory : Vancouver - Environmental
Account Manager : Selam Worku
Address : 8081 Lougheed Highway
 Burnaby BC Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 20-Aug-2021 19:45
Date Analysis Commenced : 25-Aug-2021
Issue Date : 07-Sep-2021 10:07

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Harsha Attanayake	Laboratory Analyst	Organics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia
Woochan Song	Lab Analyst	Metals, Burnaby, British Columbia

(Partial Results)



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Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
mg/kg	milligrams per kilogram
mg/kg wwt	milligrams per kilogram wet weight
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
ABL	<i>Approximate Result: May be biased low.</i>
DLCI	<i>Detection Limit Raised: Chromatographic interference due to co-elution.</i>
DLHC	<i>Detection Limit Raised: Dilution required due to high concentration of test analyte(s).</i>
DLHM	<i>Detection Limit Adjusted: Sample has high moisture content.</i>
DLQ	<i>Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.</i>
LSRA	<i>Low surrogate recovery was observed due to adsorptive material in sample (e.g. charcoal). Results for other analytes within the same test represent solvent extractable concentrations</i>
LTIS	<i>Limited sample available for TCLP or SPLP inorganics/SVOCs (<100g). Leachate fluid volume & sample weight were scaled down proportionately to permit analysis. Test results from modified TCLP or SPLP procedures may be unsuitable for regulatory purposes.</i>

(Partial Results)

Page : 3 of 26
Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033



PRAR *PCB pattern most closely resembles Aroclor reported. Match is not exact.*

(Partial Results)

Page : 4 of 26
 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-8-01	BH21-8-02	BH21-8-03	BH21-8-04	BH21-9-01
(Matrix: Soil/Solid)					Client sampling date / time	19-Aug-2021 08:50	19-Aug-2021 08:55	19-Aug-2021 09:00	19-Aug-2021 09:05	19-Aug-2021 10:10
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-001	VA21B7750-002	VA21B7750-003	VA21B7750-004	VA21B7750-005	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	45.9	40.6	78.0	27.5	21.7	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.24	8.42	6.81	8.48	7.32	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	9330	9620	2220	9050	11400	
antimony	7440-36-0	E440	0.10	mg/kg	61.4	43.5	8.88	0.54	1.78	
arsenic	7440-38-2	E440	0.10	mg/kg	294	284	12.8	4.33	4.16	
barium	7440-39-3	E440	0.50	mg/kg	51.8	63.7	21.3	29.5	36.0	
beryllium	7440-41-7	E440	0.10	mg/kg	0.16	0.14	<0.10	0.14	<0.10	
bismuth	7440-69-9	E440	0.20	mg/kg	1.86	1.42	1.08	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	89.7	77.4	196	8.5	8.1	
cadmium	7440-43-9	E440	0.020	mg/kg	2.67	3.18	1.08	0.228	0.248	
calcium	7440-70-2	E440	50	mg/kg	42900	59400	7400	12600	5480	
chromium	7440-47-3	E440	0.50	mg/kg	73.6	82.6	11.2	12.2	14.7	
cobalt	7440-48-4	E440	0.10	mg/kg	29.6	15.1	1.44	4.86	4.88	
copper	7440-50-8	E440	0.50	mg/kg	15600	14600	184	34.2	280	
iron	7439-89-6	E440	50	mg/kg	137000	89100	6390	15100	16300	
lead	7439-92-1	E440	0.50	mg/kg	4270	3620	76.8	10.1	34.2	
lithium	7439-93-2	E440	2.0	mg/kg	7.5	5.7	2.4	11.4	22.6	
magnesium	7439-95-4	E440	20	mg/kg	16900	19100	6540	4780	4540	
manganese	7439-96-5	E440	1.0	mg/kg	507	434	64.3	217	200	
mercury	7439-97-6	E510	0.0500	mg/kg	52.1	61.9	1.02	0.0978	0.871	
molybdenum	7439-98-7	E440	0.10	mg/kg	12.6	8.09	29.4	2.07	2.05	
nickel	7440-02-0	E440	0.50	mg/kg	66.5	43.4	10.8	9.67	8.86	
phosphorus	7723-14-0	E440	50	mg/kg	1100	842	480	390	596	
potassium	7440-09-7	E440	100	mg/kg	1640	1560	1240	1090	1240	
selenium	7782-49-2	E440	0.20	mg/kg	1.18	0.98	0.88	<0.20	<0.20	
silver	7440-22-4	E440	0.10	mg/kg	1.80	1.64	0.31	<0.10	0.12	
sodium	7440-23-5	E440	50	mg/kg	11200	10200	23700	1770	2470	
strontium	7440-24-6	E440	0.50	mg/kg	269	375	109	77.5	47.8	
sulfur	7704-34-9	E440	1000	mg/kg	68100	57700	17300	5100	3100	

(Partial Results)

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Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033



Analytical Results

Table with columns: Sub-Matrix: Soil, Client sample ID, Client sampling date / time, Analyte, CAS Number, Method, LOR, Unit, and results for samples BH21-8-01, BH21-8-02, BH21-8-03, BH21-8-04, and BH21-9-01. Rows include Metals (thallium, tin, titanium, tungsten, uranium, vanadium, zinc, zirconium), TCLP Extractables (benzo(a)pyrene), TCLP Extractables Surrogates (chrysene-d12, naphthalene-d8, phenanthrene-d10), TCLP Metals (pH), and Aggregate Organics (waste oil content). Includes Volatile Organic Compounds (benzene).

(Partial Results)

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Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033



Analytical Results

Table with columns: Sub-Matrix: Soil, Client sample ID, Client sampling date / time, Analyte, CAS Number, Method, LOR, Unit, and results for samples BH21-8-01 through BH21-9-01. Includes sections for Volatile Organic Compounds [Fuels], Volatile Organic Compounds Surrogates, Hydrocarbons, Hydrocarbons Surrogates, and Polycyclic Aromatic Hydrocarbons.

(Partial Results)



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 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033

Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-8-01	BH21-8-02	BH21-8-03	BH21-8-04	BH21-9-01
(Matrix: Soil/Solid)										
Client sampling date / time					19-Aug-2021 08:50	19-Aug-2021 08:55	19-Aug-2021 09:00	19-Aug-2021 09:05	19-Aug-2021 10:10	
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-001	VA21B7750-002	VA21B7750-003	VA21B7750-004	VA21B7750-005	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
benzo(b+j+k)fluoranthene	----	E641A-L	0.015	mg/kg	61.9	62.9	0.470	0.026	0.168	
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	19.3	21.4	0.587	0.017	0.104	
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	15.8	16.0	0.127	<0.010	0.043	
chrysene	218-01-9	E641A-L	0.010	mg/kg	42.5	40.4	<0.220 ^{DLO}	0.021	0.102	
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	6.14	6.63	<0.0650 ^{DLO}	<0.0100 ^{DLO}	0.0217	
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	77.2	97.9	0.694	0.056	0.190	
fluorene	86-73-7	E641A-L	0.010	mg/kg	1.10	1.17	0.072	0.020	0.016	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	20.6	23.1	0.276	0.020	0.096	
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	0.211	0.155	0.081	0.020	<0.010	
methylnaphthalene, 1+2-	----	E641A-L	0.015	mg/kg	0.537	0.401	0.210	0.020	<0.015	
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	0.326	0.246	0.129	<0.010	<0.010	
naphthalene	91-20-3	E641A-L	0.010	mg/kg	<0.470 ^{DLO}	0.350	0.353	0.094	0.027	
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	<3.88 ^{DLO}	<7.53 ^{DLO}	<0.240 ^{DLO}	0.030	0.071	
pyrene	129-00-0	E641A-L	0.010	mg/kg	57.6	72.9	1.06	0.049	0.174	
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.190 ^{DLO}	<0.170 ^{DLO}	<0.040 ^{DLO}	<0.010	<0.010	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L	0.020	mg/kg	58.9	59.5	0.461	0.028	0.163	
IACR (CCME)	----	E641A-L	0.150	-	675	679	4.83	0.343	1.80	
PAHs, total (BC Sched 3.4)	----	E641A-L	0.040	mg/kg	282	316	3.25	0.374	0.929	
PAHs, total (TEQ, BC HWR)	----	E641A-L	0.020	mg/kg	58.9	59.5	0.461	0.028	0.163	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.1	%	120	121	108	112	116	
chrysene-d12	1719-03-5	E641A-L	0.1	%	110	110	128	124	130	
naphthalene-d8	1146-65-2	E641A-L	0.1	%	118	111	115	105	110	
phenanthrene-d10	1517-22-2	E641A-L	0.1	%	123	124	112	106	113	
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.030 ^{DLHC}	<0.028 ^{DLHC}	<0.010	<0.010	----	
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.030 ^{DLHC}	<0.028 ^{DLHC}	<0.010	<0.010	----	
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.030 ^{DLHC}	<0.028 ^{DLHC}	<0.010	<0.010	----	
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.030 ^{DLHC}	<0.028 ^{DLHC}	<0.010	<0.010	----	
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	24.7 ^{PRAR}	12.8 ^{PRAR}	0.085 ^{PRAR}	<0.010	----	
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	18.6	11.4	0.035	<0.010	----	

(Partial Results)



Page : 8 of 26
Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

Analytical Results

Table with columns: Client sample ID, Client sampling date / time, Analyte, CAS Number, Method, LOR, Unit, and results for samples BH21-8-01, BH21-8-02, BH21-8-03, BH21-8-04, and BH21-9-01. Rows include Polychlorinated Biphenyls (Aroclor 1260, 1262, 1268, total) and Polychlorinated Biphenyls Surrogates (decachlorobiphenyl).

Please refer to the General Comments section for an explanation of any qualifiers detected.

(Partial Results)

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 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-9-02	BH21-9-03	BH21-10-01	BH21-10-02	BH21-10-04
(Matrix: Soil/Solid)					Client sampling date / time	19-Aug-2021 10:15	19-Aug-2021 10:20	19-Aug-2021 10:50	19-Aug-2021 10:55	19-Aug-2021 11:05
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-006	VA21B7750-007	VA21B7750-008	VA21B7750-009	VA21B7750-011	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	30.6	19.2	39.6	60.0	12.9	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.57	9.13	----	----	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	9910	14000	----	----	----	
antimony	7440-36-0	E440	0.10	mg/kg	0.88	0.36	----	----	----	
arsenic	7440-38-2	E440	0.10	mg/kg	4.56	4.17	----	----	----	
barium	7440-39-3	E440	0.50	mg/kg	36.4	55.0	----	----	----	
beryllium	7440-41-7	E440	0.10	mg/kg	0.16	0.26	----	----	----	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	----	----	----	
boron	7440-42-8	E440	5.0	mg/kg	8.1	8.8	----	----	----	
cadmium	7440-43-9	E440	0.020	mg/kg	0.309	0.205	----	----	----	
calcium	7440-70-2	E440	50	mg/kg	14700	12900	----	----	----	
chromium	7440-47-3	E440	0.50	mg/kg	14.8	16.6	----	----	----	
cobalt	7440-48-4	E440	0.10	mg/kg	4.91	5.40	----	----	----	
copper	7440-50-8	E440	0.50	mg/kg	71.2	32.3	----	----	----	
iron	7439-89-6	E440	50	mg/kg	15800	17000	----	----	----	
lead	7439-92-1	E440	0.50	mg/kg	14.8	7.26	----	----	----	
lithium	7439-93-2	E440	2.0	mg/kg	11.0	9.5	----	----	----	
magnesium	7439-95-4	E440	20	mg/kg	4970	5300	----	----	----	
manganese	7439-96-5	E440	1.0	mg/kg	204	206	----	----	----	
mercury	7439-97-6	E510	0.0500	mg/kg	0.236	0.0703	----	----	----	
molybdenum	7439-98-7	E440	0.10	mg/kg	2.20	1.53	----	----	----	
nickel	7440-02-0	E440	0.50	mg/kg	10.6	10.8	----	----	----	
phosphorus	7723-14-0	E440	50	mg/kg	362	474	----	----	----	
potassium	7440-09-7	E440	100	mg/kg	1280	1790	----	----	----	
selenium	7782-49-2	E440	0.20	mg/kg	0.24	<0.20	----	----	----	
silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	----	----	----	
sodium	7440-23-5	E440	50	mg/kg	1960	1760	----	----	----	
strontium	7440-24-6	E440	0.50	mg/kg	96.0	96.4	----	----	----	
sulfur	7704-34-9	E440	1000	mg/kg	5700	3100	----	----	----	
thallium	7440-28-0	E440	0.050	mg/kg	0.174	0.129	----	----	----	

(Partial Results)



Page : 10 of 26
Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

Analytical Results

Table with columns: Sub-Matrix: Soil, Client sample ID, Client sampling date / time, Analyte, CAS Number, Method, LOR, Unit, and results for BH21-9-02, BH21-9-03, BH21-10-01, BH21-10-02, BH21-10-04. Rows include Metals (tin, titanium, tungsten, uranium, vanadium, zinc, zirconium), TCLP Extractables (benzo(a)pyrene), TCLP Extractables Surrogates (chrysene-d12, naphthalene-d8, phenanthrene-d10), TCLP Metals (pH), and Aggregate Organics (waste oil content). Includes Volatile Organic Compounds (benzene, ethylbenzene, methyl-tert-butyl ether).

(Partial Results)

Page : 11 of 26
Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033



Analytical Results

Table with columns: Sub-Matrix: Soil, Client sample ID, Client sampling date / time, Analyte, CAS Number, Method, LOR, Unit, and results for client samples BH21-9-02, BH21-9-03, BH21-10-01, BH21-10-02, and BH21-10-04. Rows include Volatile Organic Compounds [Fuels], Volatile Organic Compounds Surrogates, Hydrocarbons, Hydrocarbons Surrogates, and Polycyclic Aromatic Hydrocarbons.

(Partial Results)



Page : 12 of 26
 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033

Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-9-02	BH21-9-03	BH21-10-01	BH21-10-02	BH21-10-04
(Matrix: Soil/Solid)					Client sampling date / time	19-Aug-2021 10:15	19-Aug-2021 10:20	19-Aug-2021 10:50	19-Aug-2021 10:55	19-Aug-2021 11:05
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-006	VA21B7750-007	VA21B7750-008	VA21B7750-009	VA21B7750-011	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	0.041	0.065	0.243	0.061	<0.010	
methylnaphthalene, 1+2-	----	E641A-L	0.015	mg/kg	0.056	0.080	0.518	0.138	<0.015	
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	0.015	0.015	0.275	0.077	<0.010	
naphthalene	91-20-3	E641A-L	0.010	mg/kg	0.148	0.114	<0.370 ^{DLQ}	0.448	<0.010	
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	0.093	0.030	<0.720 ^{DLQ}	0.431	<0.010	
pyrene	129-00-0	E641A-L	0.010	mg/kg	0.145	0.035	6.82	0.559	<0.010	
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.010	<0.010	<0.150 ^{DLQ}	<0.010	<0.010	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L	0.020	mg/kg	0.084	<0.020	6.39	0.274	<0.020	
IACR (CCME)	----	E641A-L	0.150	-	0.926	0.241	68.0	3.21	<0.150	
PAHs, total (BC Sched 3.4)	----	E641A-L	0.040	mg/kg	0.924	0.449	20.0	2.89	<0.040	
PAHs, total (TEQ, BC HWR)	----	E641A-L	0.020	mg/kg	0.084	<0.020	6.39	0.274	<0.020	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.1	%	128	103	129	96.8	110	
chrysene-d12	1719-03-5	E641A-L	0.1	%	129	111	122	128	121	
naphthalene-d8	1146-65-2	E641A-L	0.1	%	121	96.0	113	120	102	
phenanthrene-d10	1517-22-2	E641A-L	0.1	%	123	98.2	112	117	103	
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	----	----	<0.030 ^{DLHC}	<0.010	----	
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	----	----	<0.030 ^{DLHC}	<0.010	----	
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	----	----	<0.030 ^{DLHC}	<0.010	----	
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	----	----	<0.030 ^{DLHC}	<0.010	----	
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	----	----	14.5 ^{PRAR}	0.059 ^{PRAR}	----	
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	----	----	8.29	0.039	----	
Aroclor 1260	11096-82-5	E685	0.010	mg/kg	----	----	0.987	<0.010	----	
Aroclor 1262	37324-23-5	E685	0.010	mg/kg	----	----	<0.030 ^{DLHC}	<0.010	----	
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	----	----	<0.030 ^{DLHC}	<0.010	----	
polychlorinated biphenyls [PCBs], total	----	E685	0.010	mg/kg	----	----	23.8	0.098	----	
Polychlorinated Biphenyls Surrogates										
decachlorobiphenyl	2051-24-3	E685	0.01	%	----	----	105	91.8	----	

Please refer to the General Comments section for an explanation of any qualifiers detected.

(Partial Results)



Page : 13 of 26
 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033

Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-11-01	BH21-11-02	BH21-11-03	BH21-11-04	BH21-11-05
Client sampling date / time					19-Aug-2021 11:35	19-Aug-2021 11:40	19-Aug-2021 11:45	19-Aug-2021 11:48	19-Aug-2021 11:50	
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-012	VA21B7750-013	VA21B7750-014	VA21B7750-015	VA21B7750-016	
					Result	Result	Result	Result	Result	
Physical Tests										
moisture	----	E144	0.25	%	16.2	14.0	15.6	13.2	11.7	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.28	8.36	8.36	9.31	9.59	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	9530	9850	6830	9180	7760	
antimony	7440-36-0	E440	0.10	mg/kg	8.76	8.52	0.24	0.27	0.20	
arsenic	7440-38-2	E440	0.10	mg/kg	23.3	26.3	4.03	1.68	2.41	
barium	7440-39-3	E440	0.50	mg/kg	72.0	63.5	19.9	39.3	61.9	
beryllium	7440-41-7	E440	0.10	mg/kg	<0.10	<0.10	<0.10	0.16	0.13	
bismuth	7440-69-9	E440	0.20	mg/kg	0.20	<0.20	<0.20	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	10.6	7.2	<5.0	<5.0	<5.0	
cadmium	7440-43-9	E440	0.020	mg/kg	1.28	0.547	0.165	0.329	0.026	
calcium	7440-70-2	E440	50	mg/kg	17600	17900	5130	3680	3060	
chromium	7440-47-3	E440	0.50	mg/kg	28.3	15.9	8.52	13.2	12.0	
cobalt	7440-48-4	E440	0.10	mg/kg	6.29	6.65	3.36	4.43	4.29	
copper	7440-50-8	E440	0.50	mg/kg	4060	1800	11.5	18.5	13.7	
iron	7439-89-6	E440	50	mg/kg	34900	25700	10600	14200	13300	
lead	7439-92-1	E440	0.50	mg/kg	869	471	6.01	3.44	3.31	
lithium	7439-93-2	E440	2.0	mg/kg	11.6	12.9	7.9	5.6	4.2	
magnesium	7439-95-4	E440	20	mg/kg	5270	5690	3550	3770	3350	
manganese	7439-96-5	E440	1.0	mg/kg	254	264	184	179	173	
mercury	7439-97-6	E510	0.0500	mg/kg	31.6	10.9	0.133	<0.0500	<0.0500	
molybdenum	7439-98-7	E440	0.10	mg/kg	4.14	2.64	1.46	0.22	0.30	
nickel	7440-02-0	E440	0.50	mg/kg	17.5	10.5	6.11	7.63	7.74	
phosphorus	7723-14-0	E440	50	mg/kg	452	486	243	364	431	
potassium	7440-09-7	E440	100	mg/kg	1440	1460	730	1180	1010	
selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	0.81	
silver	7440-22-4	E440	0.10	mg/kg	0.35	0.16	<0.10	<0.10	<0.10	
sodium	7440-23-5	E440	50	mg/kg	2620	2060	592	740	835	
strontium	7440-24-6	E440	0.50	mg/kg	123	99.1	34.3	38.1	30.8	
sulfur	7704-34-9	E440	1000	mg/kg	11100	5700	2700	<1000	<1000	
thallium	7440-28-0	E440	0.050	mg/kg	0.070	0.055	0.217	0.069	0.052	

(Partial Results)



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Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

Analytical Results

Table with columns: Client sample ID, Analyte, CAS Number, Method, LOR, Unit, and results for BH21-11-01 to BH21-11-05. Includes sections for Metals and TCLP Metals.

(Partial Results)



Page : 15 of 26
 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033

Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-11-01	BH21-11-02	BH21-11-03	BH21-11-04	BH21-11-05
(Matrix: Soil/Solid)					Client sampling date / time	19-Aug-2021 11:35	19-Aug-2021 11:40	19-Aug-2021 11:45	19-Aug-2021 11:48	19-Aug-2021 11:50
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-012	VA21B7750-013	VA21B7750-014	VA21B7750-015	VA21B7750-016	
					Result	Result	Result	Result	Result	
TCLP Metals										
silver, TCLP	7440-22-4	E444	0.050	mg/L	<0.050	----	----	----	----	----
thallium, TCLP	7440-28-0	E444	1.0	mg/L	<1.0	----	----	----	----	----
uranium, TCLP	7440-61-1	E444	0.20	mg/L	<0.20	----	----	----	----	----
vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	----	----	----	----	----
zinc, TCLP	7440-66-6	E444	0.50	mg/L	10.2	----	----	----	----	----
zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	----	----	----	----	----
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	0.538 ^{PRAR}	0.601 ^{PRAR}	0.027 ^{PRAR}	<0.010	<0.010	<0.010
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	1.14	1.14	<0.020 ^{DLCI}	<0.010	<0.010	<0.010
Aroclor 1260	11096-82-5	E685	0.010	mg/kg	0.138	0.150	<0.010	<0.010	<0.010	<0.010
Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
polychlorinated biphenyls [PCBs], total	----	E685	0.010	mg/kg	1.82	1.89	0.027	<0.010	<0.010	<0.010
Polychlorinated Biphenyls Surrogates										
decachlorobiphenyl	2051-24-3	E685	0.01	%	96.5	90.2	98.5	89.2	102	

Please refer to the General Comments section for an explanation of any qualifiers detected.

(Partial Results)



Page : 16 of 26
Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

Analytical Results

Table with columns: Client sample ID, Analyte, CAS Number, Method, LOR, Unit, and sampling dates/times for BH21-12-01, BH21-12-02, BH21-12-03, BH21-13-04, and BH21-14-01. Rows include Physical Tests (moisture, pH) and Metals (aluminum, antimony, arsenic, etc.).

(Partial Results)

Page : 17 of 26
 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-12-01	BH21-12-02	BH21-12-03	BH21-13-04	BH21-14-01
Client sampling date / time					19-Aug-2021 12:15	19-Aug-2021 12:20	19-Aug-2021 12:25	19-Aug-2021 13:00	20-Aug-2021 08:55	
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-017	VA21B7750-018	VA21B7750-019	VA21B7750-023	VA21B7750-024	
					Result	Result	Result	Result	Result	
Metals										
tin	7440-31-5	E440	2.0	mg/kg	17.3	<2.0	<2.0	<2.0	17.0	
titanium	7440-32-6	E440	1.0	mg/kg	309	316	793	646	307	
tungsten	7440-33-7	E440	0.50	mg/kg	3.30	<0.50	0.65	<0.50	2.88	
uranium	7440-61-1	E440	0.050	mg/kg	10.1	1.06	0.640	0.385	0.976	
vanadium	7440-62-2	E440	0.20	mg/kg	32.0	18.4	46.7	41.7	25.3	
zinc	7440-66-6	E440	2.0	mg/kg	1160	20.5	43.6	31.2	893	
zirconium	7440-67-7	E440	1.0	mg/kg	2.7	1.4	3.5	2.7	1.0	
TCLP Extractables										
benzo(a)pyrene, TCLP	50-32-8	E644	-	mg/L	Not Authorised	---	---	---	Not Authorised	
TCLP Extractables Surrogates										
chrysene-d12, TCLP	1719-03-5	E644	-	%	Not Authorised	---	---	---	Not Authorised	
naphthalene-d8, TCLP	1146-65-2	E644	-	%	Not Authorised	---	---	---	Not Authorised	
phenanthrene-d10, TCLP	1517-22-2	E644	-	%	Not Authorised	---	---	---	Not Authorised	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	Not Authorised	---	---	---	Not Authorised	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	Not Authorised	---	---	---	Not Authorised	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	Not Authorised	---	---	---	Not Authorised	
pH, TCLP final	----	EPP444	0.010	pH units	Not Authorised	---	---	---	Not Authorised	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.511	<0.0050	<0.0050	<0.0050	0.0116	
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	5.51	<0.0050	<0.0050	<0.0050	0.0510	
acridine	260-94-6	E641A-L	0.010	mg/kg	<0.820 ^{DL0}	<0.010	<0.010	<0.010	<0.010	
anthracene	120-12-7	E641A-L	0.0040	mg/kg	4.30	0.0056	<0.0040	<0.0040	0.0626	
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	15.9	<0.010	<0.010	<0.010	0.176	
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	20.9	<0.010	<0.010	<0.010	0.232	

(Partial Results)



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 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033

Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-12-01	BH21-12-02	BH21-12-03	BH21-13-04	BH21-14-01
(Matrix: Soil/Solid)					Client sampling date / time	19-Aug-2021 12:15	19-Aug-2021 12:20	19-Aug-2021 12:25	19-Aug-2021 13:00	20-Aug-2021 08:55
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-017	VA21B7750-018	VA21B7750-019	VA21B7750-023	VA21B7750-024	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg	20.3	<0.010	<0.010	<0.010	<0.010	0.326
benzo(b+j+k)fluoranthene	----	E641A-L	0.015	mg/kg	28.2	<0.015	<0.015	<0.015	<0.015	0.432
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	13.0	0.026	<0.010	<0.010	<0.010	0.255
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	7.92	<0.010	<0.010	<0.010	<0.010	0.106
chrysene	218-01-9	E641A-L	0.010	mg/kg	19.1	<0.010	<0.010	<0.010	<0.010	0.227
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	2.48	<0.0050	<0.0050	<0.0050	<0.0050	0.0465
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	43.9	0.018	<0.010	<0.010	<0.010	0.386
fluorene	86-73-7	E641A-L	0.010	mg/kg	2.30	<0.010	<0.010	<0.010	<0.010	0.014
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	13.2	<0.020 ^{DLO}	<0.010	<0.010	<0.010	0.229
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	0.309	<0.010	<0.010	<0.010	<0.010	<0.010
methylnaphthalene, 1+2-	----	E641A-L	0.015	mg/kg	0.556	<0.015	<0.015	<0.015	<0.015	<0.015
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	0.247	<0.010	<0.010	<0.010	<0.010	<0.010
naphthalene	91-20-3	E641A-L	0.010	mg/kg	0.514	<0.010	<0.010	<0.010	<0.010	0.013
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	23.8	0.015	<0.010	<0.010	<0.010	0.150
pyrene	129-00-0	E641A-L	0.010	mg/kg	44.6	0.016	<0.010	<0.010	<0.010	0.336
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.090 ^{DLO}	<0.010	<0.010	<0.010	<0.010	<0.010
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L	0.020	mg/kg	29.4	<0.020	<0.020	<0.020	<0.020	0.367
IACR (CCME)	----	E641A-L	0.150	-	308	<0.150	<0.150	<0.150	<0.150	4.29
PAHs, total (BC Sched 3.4)	----	E641A-L	0.040	mg/kg	184	0.055	<0.040	<0.040	<0.040	1.70
PAHs, total (TEQ, BC HWR)	----	E641A-L	0.020	mg/kg	29.4	<0.020	<0.020	<0.020	<0.020	0.367
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.1	%	106	113	106	95.0	99.2	
chrysene-d12	1719-03-5	E641A-L	0.1	%	128	124	118	119	124	
naphthalene-d8	1146-65-2	E641A-L	0.1	%	115	106	101	95.7	99.4	
phenanthrene-d10	1517-22-2	E641A-L	0.1	%	110	108	102	98.8	104	
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	----	<0.030 ^{DLO}	
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	----	<0.030 ^{DLO}	
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	----	<0.030 ^{DLO}	
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	<0.010	----	<0.030 ^{DLO}	
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	0.103 ^{PRAR}	<0.010	<0.010	----	<0.030 ^{DLO}	

(Partial Results)



Page : 19 of 26
Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

Analytical Results

Table with columns: Client sample ID, Client sampling date / time, Analyte, CAS Number, Method, LOR, Unit, and results for samples BH21-12-01, BH21-12-02, BH21-12-03, BH21-13-04, and BH21-14-01. Includes sub-sections for Polychlorinated Biphenyls and Polychlorinated Biphenyls Surrogates.

Please refer to the General Comments section for an explanation of any qualifiers detected.

(Partial Results)

Page : 20 of 26
Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033



Analytical Results

Table with columns: Client sample ID, Analyte, CAS Number, Method, LOR, Unit, and results for BH21-14-02, BH21-14-03, BH21-14-04, BH21-14-05, and BH21-15-03. Includes sections for Physical Tests and Metals.

(Partial Results)

Page : 21 of 26
Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-14-02	BH21-14-03	BH21-14-04	BH21-14-05	BH21-15-03
Client sampling date / time					20-Aug-2021 09:05	20-Aug-2021 09:10	20-Aug-2021 09:15	20-Aug-2021 09:20	20-Aug-2021 10:15	
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-025	VA21B7750-026	VA21B7750-027	VA21B7750-028	VA21B7750-031	
					Result	Result	Result	Result	Result	
Metals										
tin	7440-31-5	E440	2.0	mg/kg	122	81.8	<2.0	<2.0	<2.0	
titanium	7440-32-6	E440	1.0	mg/kg	282	219	18.0	696	660	
tungsten	7440-33-7	E440	0.50	mg/kg	5.20	1.54	<0.50	<0.50	<0.50	
uranium	7440-61-1	E440	0.050	mg/kg	1.65	1.16	1.79	0.356	0.628	
vanadium	7440-62-2	E440	0.20	mg/kg	21.3	19.0	3.18	59.7	57.8	
zinc	7440-66-6	E440	2.0	mg/kg	4050	3880	69.6	49.2	30.1	
zirconium	7440-67-7	E440	1.0	mg/kg	2.6	1.7	<1.0	2.7	1.7	
TCLP Extractables										
benzo(a)pyrene, TCLP	50-32-8	E644	-	mg/L	Not Authorised	---	Not Authorised	---	---	
TCLP Extractables Surrogates										
chrysene-d12, TCLP	1719-03-5	E644	-	%	Not Authorised	---	Not Authorised	---	---	
naphthalene-d8, TCLP	1146-65-2	E644	-	%	Not Authorised	---	Not Authorised	---	---	
phenanthrene-d10, TCLP	1517-22-2	E644	-	%	Not Authorised	---	Not Authorised	---	---	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	Not Authorised	----	Not Authorised	----	----	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	Not Authorised	----	Not Authorised	----	----	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	Not Authorised	----	Not Authorised	----	----	
pH, TCLP final	----	EPP444	0.010	pH units	Not Authorised	----	Not Authorised	----	----	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	4.22	1.81	<0.040 ^{DLO}	<0.0050	<0.0050	
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	1.51	1.81	<0.0300 ^{DLO}	<0.0050	<0.0050	
acridine	260-94-6	E641A-L	0.010	mg/kg	<2.60 ^{DLO}	<1.50 ^{DLO}	<0.060 ^{DLO}	<0.010	<0.010	
anthracene	120-12-7	E641A-L	0.0040	mg/kg	7.88	5.92	<0.120 ^{DLO}	<0.0040	<0.0040	
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	21.3	15.2	<0.100 ^{DLO}	<0.010	<0.010	
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	20.2	14.1	0.067	<0.010	<0.010	

(Partial Results)



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 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033

Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-14-02	BH21-14-03	BH21-14-04	BH21-14-05	BH21-15-03
(Matrix: Soil/Solid)										
Client sampling date / time					20-Aug-2021 09:05	20-Aug-2021 09:10	20-Aug-2021 09:15	20-Aug-2021 09:20	20-Aug-2021 10:15	
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-025	VA21B7750-026	VA21B7750-027	VA21B7750-028	VA21B7750-031	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg	25.9	17.9	<0.100 ^{DLO}	<0.010	<0.010	<0.010
benzo(b+j+k)fluoranthene	----	E641A-L	0.015	mg/kg	33.7	23.6	<0.104	<0.015	<0.015	<0.015
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	12.6	9.28	<0.050 ^{DLO}	<0.010	<0.010	<0.010
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	7.82	5.74	<0.030 ^{DLO}	<0.010	<0.010	<0.010
chrysene	218-01-9	E641A-L	0.010	mg/kg	21.3	15.6	0.247	<0.010	<0.010	<0.010
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	3.42	2.52	0.0154	<0.0050	<0.0050	<0.0050
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	49.8	34.4	0.231	<0.010	<0.010	<0.010
fluorene	86-73-7	E641A-L	0.010	mg/kg	4.51	3.42	<0.025 ^{DLO}	<0.010	<0.010	<0.010
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	13.9	10.1	<0.100 ^{DLO}	<0.010	<0.010	<0.010
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	1.80	0.949	<0.020 ^{DLO}	<0.010	<0.010	<0.010
methylnaphthalene, 1+2-	----	E641A-L	0.015	mg/kg	3.37	1.44	<0.022	<0.015	<0.015	<0.015
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	1.57	0.491	<0.010	<0.010	<0.010	<0.010
naphthalene	91-20-3	E641A-L	0.010	mg/kg	<3.20 ^{DLO}	<0.650 ^{DLO}	<0.025 ^{DLO}	<0.010	<0.010	<0.010
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	21.7	19.6	<0.090 ^{DLO}	<0.010	<0.010	<0.010
pyrene	129-00-0	E641A-L	0.010	mg/kg	34.9	26.5	0.251	<0.010	<0.010	<0.010
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.090 ^{DLO}	<0.070 ^{DLO}	<0.010	<0.010	<0.010	<0.010
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L	0.020	mg/kg	30.8	21.8	0.102	<0.020	<0.020	<0.020
IACR (CCME)	----	E641A-L	0.150	-	362	255	0.946	<0.150	<0.150	<0.150
PAHs, total (BC Sched 3.4)	----	E641A-L	0.040	mg/kg	192	141	0.811	<0.040	<0.040	<0.040
PAHs, total (TEQ, BC HWR)	----	E641A-L	0.020	mg/kg	30.8	21.8	0.102	<0.020	<0.020	<0.020
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.1	%	114	111	117	115	118	118
chrysene-d12	1719-03-5	E641A-L	0.1	%	127	123	128	128	127	127
naphthalene-d8	1146-65-2	E641A-L	0.1	%	103	94.6	108	98.9	103	103
phenanthrene-d10	1517-22-2	E641A-L	0.1	%	111	107	116	109	112	112
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.065 ^{DLHC}	<0.030 ^{DLHC}	<0.010	<0.010	<0.010	<0.010
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.065 ^{DLHC}	<0.030 ^{DLHC}	<0.010	<0.010	<0.010	<0.010
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.065 ^{DLHC}	<0.030 ^{DLHC}	<0.010	<0.010	<0.010	<0.010
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.065 ^{DLHC}	<0.030 ^{DLHC}	<0.010	<0.010	<0.010	<0.010
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	6.32 ^{PRAR}	4.76 ^{PRAR}	0.129 ^{PRAR}	<0.010	<0.010	<0.010

(Partial Results)



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Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

Analytical Results

Table with columns: Client sample ID, Client sampling date / time, Analyte, CAS Number, Method, LOR, Unit, and results for samples BH21-14-02, BH21-14-03, BH21-14-04, BH21-14-05, and BH21-15-03. Includes sub-sections for Polychlorinated Biphenyls and Polychlorinated Biphenyls Surrogates.

Please refer to the General Comments section for an explanation of any qualifiers detected.

(Partial Results)



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 Work Order : VA21B7750
 Client : SNC-Lavalin Inc.
 Project : 685033

Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-16-03	----	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time	20-Aug-2021 11:00	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-035	-----	-----	-----	-----	
						Result	---	---	---	---
Physical Tests										
moisture	----	E144	0.25	%	13.2	---	---	---	---	
pH (1:2 soil:water)	----	E108	0.10	pH units	9.00	---	---	---	---	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	16100	---	---	---	---	
antimony	7440-36-0	E440	0.10	mg/kg	0.12	---	---	---	---	
arsenic	7440-38-2	E440	0.10	mg/kg	2.89	---	---	---	---	
barium	7440-39-3	E440	0.50	mg/kg	59.6	---	---	---	---	
beryllium	7440-41-7	E440	0.10	mg/kg	0.24	---	---	---	---	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	---	---	---	---	
boron	7440-42-8	E440	5.0	mg/kg	7.9	---	---	---	---	
cadmium	7440-43-9	E440	0.020	mg/kg	<0.020	---	---	---	---	
calcium	7440-70-2	E440	50	mg/kg	3510	---	---	---	---	
chromium	7440-47-3	E440	0.50	mg/kg	16.2	---	---	---	---	
cobalt	7440-48-4	E440	0.10	mg/kg	8.22	---	---	---	---	
copper	7440-50-8	E440	0.50	mg/kg	20.8	---	---	---	---	
iron	7439-89-6	E440	50	mg/kg	23700	---	---	---	---	
lead	7439-92-1	E440	0.50	mg/kg	3.83	---	---	---	---	
lithium	7439-93-2	E440	2.0	mg/kg	9.5	---	---	---	---	
magnesium	7439-95-4	E440	20	mg/kg	7690	---	---	---	---	
manganese	7439-96-5	E440	1.0	mg/kg	313	---	---	---	---	
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	---	---	---	---	
molybdenum	7439-98-7	E440	0.10	mg/kg	0.39	---	---	---	---	
nickel	7440-02-0	E440	0.50	mg/kg	8.40	---	---	---	---	
phosphorus	7723-14-0	E440	50	mg/kg	432	---	---	---	---	
potassium	7440-09-7	E440	100	mg/kg	1670	---	---	---	---	
selenium	7782-49-2	E440	0.20	mg/kg	<0.20	---	---	---	---	
silver	7440-22-4	E440	0.10	mg/kg	<0.10	---	---	---	---	
sodium	7440-23-5	E440	50	mg/kg	1070	---	---	---	---	
strontium	7440-24-6	E440	0.50	mg/kg	36.9	---	---	---	---	
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---	---	---	---	
thallium	7440-28-0	E440	0.050	mg/kg	0.056	---	---	---	---	

(Partial Results)

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Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-16-03	----	----	----	----
(Matrix: Soil/Solid)					Client sampling date / time	20-Aug-2021 11:00	---	---	---	---
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-035	-----	-----	-----	-----	
					Result	---	---	---	---	
Metals										
tin	7440-31-5	E440	2.0	mg/kg	<2.0	---	---	---	---	
titanium	7440-32-6	E440	1.0	mg/kg	780	---	---	---	---	
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	---	---	---	---	
uranium	7440-61-1	E440	0.050	mg/kg	0.394	---	---	---	---	
vanadium	7440-62-2	E440	0.20	mg/kg	67.4	---	---	---	---	
zinc	7440-66-6	E440	2.0	mg/kg	48.7	---	---	---	---	
zirconium	7440-67-7	E440	1.0	mg/kg	2.0	---	---	---	---	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	<0.0050	---	---	---	---	
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	<0.0050	---	---	---	---	
acridine	260-94-6	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
anthracene	120-12-7	E641A-L	0.0040	mg/kg	<0.0040	---	---	---	---	
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
benzo(b+j+k)fluoranthene	----	E641A-L	0.015	mg/kg	<0.015	---	---	---	---	
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
chrysene	218-01-9	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	<0.0050	---	---	---	---	
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
fluorene	86-73-7	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
methylnaphthalene, 1+2-	----	E641A-L	0.015	mg/kg	<0.015	---	---	---	---	
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
naphthalene	91-20-3	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
pyrene	129-00-0	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.010	---	---	---	---	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L	0.020	mg/kg	<0.020	---	---	---	---	

(Partial Results)

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Analytical Results

Sub-Matrix: Soil					Client sample ID				
(Matrix: Soil/Solid)					BH21-16-03	----	----	----	----
Client sampling date / time					20-Aug-2021 11:00	----	----	----	----
Analyte	CAS Number	Method	LOR	Unit	VA21B7750-035	-----	-----	-----	-----
					Result	---	---	---	---
Polycyclic Aromatic Hydrocarbons									
IACR (CCME)	----	E641A-L	0.150	-	<0.150	----	----	----	----
PAHs, total (BC Sched 3.4)	----	E641A-L	0.040	mg/kg	<0.040	----	----	----	----
PAHs, total (TEQ, BC HWR)	----	E641A-L	0.020	mg/kg	<0.020	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates									
acridine-d9	34749-75-2	E641A-L	0.1	%	110	----	----	----	----
chrysene-d12	1719-03-5	E641A-L	0.1	%	124	----	----	----	----
naphthalene-d8	1146-65-2	E641A-L	0.1	%	96.6	----	----	----	----
phenanthrene-d10	1517-22-2	E641A-L	0.1	%	104	----	----	----	----
Polychlorinated Biphenyls									
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	----	----	----	----
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	----	----	----	----
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	----	----	----	----
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	----	----	----	----
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.010	----	----	----	----
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	<0.010	----	----	----	----
Aroclor 1260	11096-82-5	E685	0.010	mg/kg	<0.010	----	----	----	----
Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	----	----	----	----
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	----	----	----	----
polychlorinated biphenyls [PCBs], total	----	E685	0.010	mg/kg	<0.010	----	----	----	----
Polychlorinated Biphenyls Surrogates									
decachlorobiphenyl	2051-24-3	E685	0.01	%	99.8	----	----	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.

(Partial Results)

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Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: Soil/Solid

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Metals	VA21B7750-001	BH21-8-01	cobalt	7440-48-4	E440	53.9 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA21B7750-001	BH21-8-01	iron	7439-89-6	E440	32.8 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA21B7750-001	BH21-8-01	tungsten	7440-33-7	E440	142 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

Qualifier Description

DUP-H Duplicate results outside ALS DQO, due to sample heterogeneity.

Matrix Spike (MS) Recoveries

Polycyclic Aromatic Hydrocarbons	VA21B7750-024	BH21-14-01	benz(a)anthracene	56-55-3	E641A-L	199 % MS-B	50.0-140%	Recovery greater than upper data quality objective
Polycyclic Aromatic Hydrocarbons	VA21B7750-024	BH21-14-01	benzo(a)pyrene	50-32-8	E641A-L	192 % MS-B	50.0-140%	Recovery greater than upper data quality objective
Polycyclic Aromatic Hydrocarbons	VA21B7750-024	BH21-14-01	benzo(b+j)fluoranthene	----	E641A-L	197 % MS-B	50.0-140%	Recovery greater than upper data quality objective
Polycyclic Aromatic Hydrocarbons	VA21B7750-024	BH21-14-01	benzo(g,h,i)perylene	191-24-2	E641A-L	143 % MS-B	50.0-140%	Recovery greater than upper data quality objective
Polycyclic Aromatic Hydrocarbons	VA21B7750-024	BH21-14-01	chrysene	218-01-9	E641A-L	179 % MS-B	50.0-140%	Recovery greater than upper data quality objective
Polycyclic Aromatic Hydrocarbons	VA21B7750-024	BH21-14-01	fluoranthene	206-44-0	E641A-L	245 % MS-B	50.0-140%	Recovery greater than upper data quality objective
Polycyclic Aromatic Hydrocarbons	VA21B7750-024	BH21-14-01	indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	147 % MS-B	50.0-140%	Recovery greater than upper data quality objective
Polycyclic Aromatic Hydrocarbons	VA21B7750-024	BH21-14-01	pyrene	129-00-0	E641A-L	223 % MS-B	50.0-140%	Recovery greater than upper data quality objective

Result Qualifiers

Qualifier Description

(Partial Results)

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Matrix: Soil/Solid

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
---------------	----------------------	----------------------	---------	------------	--------	--------	--------	---------

MS-B Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Regular Sample Surrogates

Sub-Matrix: Soil

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Result	Limits	Comment
Samples Submitted							
Volatile Organic Compounds Surrogates	VA21B7750-003	BH21-8-03	bromofluorobenzene, 4-	460-00-4	Not Authorised	70.0-130 %	Recovery less than lower data quality objective
Hydrocarbons Surrogates	VA21B7750-001	BH21-8-01	dichlorotoluene, 3,4-	97-75-0	Not Authorised	70.0-130 %	Recovery less than lower data quality objective
Hydrocarbons Surrogates	VA21B7750-003	BH21-8-03	dichlorotoluene, 3,4-	97-75-0	Not Authorised	70.0-130 %	Recovery less than lower data quality objective
Hydrocarbons Surrogates	VA21B7750-008	BH21-10-01	dichlorotoluene, 3,4-	97-75-0	Not Authorised	70.0-130 %	Recovery less than lower data quality objective

(Partial Results)

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Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Aggregate Organics : Waste Oil Content (BC HWR) by Gravimetry (wet weight)											
Glass soil jar/Teflon lined cap BH21-10-01	E569SG.A	19-Aug-2021	27-Aug-2021	28 days	8 days	✓	27-Aug-2021	40 days	0 days	✓	
Aggregate Organics : Waste Oil Content (BC HWR) by Gravimetry (wet weight)											
Glass soil jar/Teflon lined cap BH21-8-01	E569SG.A	19-Aug-2021	27-Aug-2021	28 days	8 days	✓	27-Aug-2021	40 days	0 days	✓	
Aggregate Organics : Waste Oil Content (BC HWR) by Gravimetry (wet weight)											
Glass soil jar/Teflon lined cap BH21-8-03	E569SG.A	19-Aug-2021	27-Aug-2021	28 days	8 days	✓	27-Aug-2021	40 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-10-01	E581.VH+F1	19-Aug-2021	26-Aug-2021	----	----			40 days	7 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-8-01	E581.VH+F1	19-Aug-2021	26-Aug-2021	----	----			40 days	7 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-8-03	E581.VH+F1	19-Aug-2021	26-Aug-2021	----	----			40 days	7 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-14-01	E510	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	7 days	✓	

(Partial Results)

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Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-14-02	E510	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	7 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-14-03	E510	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	7 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-14-04	E510	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	7 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-14-05	E510	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	7 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-15-03	E510	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	7 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-16-03	E510	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	7 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-11-01	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-11-02	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-11-03	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✓	

(Partial Results)

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Client : SNC-Lavalin Inc.
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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-11-04	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-11-05	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✔	
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Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-13-04	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-8-01	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-8-02	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-8-03	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✔	

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-8-04	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-9-01	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-9-02	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-9-03	E510	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	28 days	8 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-14-01	E440	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	7 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-14-02	E440	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	7 days	✓	
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Glass soil jar/Teflon lined cap BH21-14-05	E440	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	7 days	✓	

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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap BH21-15-03	E440	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	7 days	✓	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap BH21-16-03	E440	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	7 days	✓	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap BH21-11-01	E440	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	8 days	✓	
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Glass soil jar/Teflon lined cap BH21-12-02	E440	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	8 days	✓	

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap BH21-12-03	E440	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	8 days	✓	
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Glass soil jar/Teflon lined cap BH21-13-04	E440	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	8 days	✓	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap BH21-8-01	E440	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	8 days	✓	
Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap BH21-8-02	E440	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	8 days	✓	
Metals : Metals in Soil/Solid by CRC ICPCS											
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Metals : Metals in Soil/Solid by CRC ICPCS											
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Metals : Metals in Soil/Solid by CRC ICPCS											
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Metals : Metals in Soil/Solid by CRC ICPCS											
Glass soil jar/Teflon lined cap BH21-9-03	E440	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	180 days	8 days	✓	

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Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-10-01	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-10-02	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-10-04	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-11-01	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-11-02	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-11-03	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-11-04	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-11-05	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-12-01	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-12-02	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-12-03	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-13-04	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-14-01	E144	20-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-14-02	E144	20-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-14-03	E144	20-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-14-04	E144	20-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-14-05	E144	20-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-15-03	E144	20-Aug-2021	----	----	----		26-Aug-2021	0 days	----	

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Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-16-03	E144	20-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-8-01	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
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Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-9-02	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-9-03	E144	19-Aug-2021	----	----	----		26-Aug-2021	0 days	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap BH21-14-01	E108	20-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	30 days	7 days	✓

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Matrix: **Soil/Solid**

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Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
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Glass soil jar/Teflon lined cap BH21-11-02	E108	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	30 days	8 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-11-03	E108	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	30 days	8 days	✓	

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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-8-04	E108	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	30 days	8 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-9-01	E108	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	30 days	8 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-9-02	E108	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	30 days	8 days	✓	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-9-03	E108	19-Aug-2021	27-Aug-2021	----	----		27-Aug-2021	30 days	8 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-10-01	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-10-02	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-11-01	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-11-02	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-11-03	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	

(Partial Results)

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Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-11-04	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-8-01	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-8-02	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-8-03	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-8-04	E685	19-Aug-2021	26-Aug-2021	----	----		28-Aug-2021	40 days	2 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-11-05	E685	19-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-12-01	E685	19-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-12-02	E685	19-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-12-03	E685	19-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	

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Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-14-01	E685	20-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-14-02	E685	20-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-14-03	E685	20-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-14-04	E685	20-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-14-05	E685	20-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-15-03	E685	20-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-16-03	E685	20-Aug-2021	26-Aug-2021	----	----		30-Aug-2021	40 days	4 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-13-04	E641A-L	19-Aug-2021	27-Aug-2021	14 days	7 days	✓	27-Aug-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-14-01	E641A-L	20-Aug-2021	27-Aug-2021	14 days	7 days	✓	27-Aug-2021	40 days	0 days	✓	

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Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-14-02	E641A-L	20-Aug-2021	27-Aug-2021	14 days	7 days	✔	27-Aug-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-14-03	E641A-L	20-Aug-2021	27-Aug-2021	14 days	7 days	✔	27-Aug-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-14-04	E641A-L	20-Aug-2021	27-Aug-2021	14 days	7 days	✔	27-Aug-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-14-05	E641A-L	20-Aug-2021	27-Aug-2021	14 days	7 days	✔	27-Aug-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-15-03	E641A-L	20-Aug-2021	27-Aug-2021	14 days	7 days	✔	27-Aug-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-16-03	E641A-L	20-Aug-2021	27-Aug-2021	14 days	7 days	✔	27-Aug-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-10-01	E641A-L	19-Aug-2021	27-Aug-2021	14 days	8 days	✔	27-Aug-2021	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-10-02	E641A-L	19-Aug-2021	27-Aug-2021	14 days	8 days	✔	27-Aug-2021	40 days	1 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-10-04	E641A-L	19-Aug-2021	27-Aug-2021	14 days	8 days	✔	27-Aug-2021	40 days	1 days	✔	

(Partial Results)

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Matrix: Soil/Solid

Evaluation: x = Holding time exceedance ; v = Within Holding Time

Table with columns: Analyte Group, Method, Sampling Date, Extraction / Preparation (Preparation Date, Holding Times Rec, Actual, Eval), Analysis (Analysis Date, Holding Times Rec, Actual, Eval). Rows include Polycyclic Aromatic Hydrocarbons (PAHs) for various sample IDs (BH21-12-01 to BH21-9-02).

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Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex: Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-9-03	E641A-L	19-Aug-2021	27-Aug-2021	14 days	8 days	✔	27-Aug-2021	40 days	1 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) BH21-14-01	E644	30-Aug-2021	04-Sep-2021	24 days	15 days	✔		40 days	3 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) BH21-14-02	E644	30-Aug-2021	04-Sep-2021	24 days	15 days	✔		40 days	3 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) BH21-14-04	E644	30-Aug-2021	04-Sep-2021	24 days	15 days	✔		40 days	3 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) BH21-10-01	E644	30-Aug-2021	04-Sep-2021	25 days	16 days	✔		40 days	3 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) BH21-12-01	E644	30-Aug-2021	04-Sep-2021	25 days	16 days	✔		40 days	3 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) BH21-8-01	E644	30-Aug-2021	04-Sep-2021	25 days	16 days	✔		40 days	3 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) BH21-8-02	E644	30-Aug-2021	04-Sep-2021	25 days	16 days	✔		40 days	3 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) BH21-8-03	E644	30-Aug-2021	04-Sep-2021	25 days	16 days	✔		40 days	3 days	✔	

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Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
TCLP Extractables : PAHs by GC-MS (TCLP)										
Amber glass/Teflon lined cap (sodium bisulfate) BH21-9-01	E644	30-Aug-2021	04-Sep-2021	25 days	16 days	✓		40 days	3 days	✓
TCLP Metals : Mercury by CVAAS (TCLP)										
HDPE - total (lab preserved) BH21-11-01	E512	02-Sep-2021	----	----	----		05-Sep-2021	----	17 days	
TCLP Metals : Mercury by CVAAS (TCLP)										
HDPE - total (lab preserved) BH21-12-01	E512	30-Aug-2021	----	----	----			----	----	
TCLP Metals : Mercury by CVAAS (TCLP)										
HDPE - total (lab preserved) BH21-14-01	E512	30-Aug-2021	----	----	----			----	----	
TCLP Metals : Mercury by CVAAS (TCLP)										
HDPE - total (lab preserved) BH21-14-02	E512	30-Aug-2021	----	----	----			----	----	
TCLP Metals : Mercury by CVAAS (TCLP)										
HDPE - total (lab preserved) BH21-8-01	E512	30-Aug-2021	----	----	----			----	----	
TCLP Metals : Mercury by CVAAS (TCLP)										
HDPE - total (lab preserved) BH21-8-02	E512	30-Aug-2021	----	----	----			----	----	
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BH21-12-01	E444	30-Aug-2021	----	----	----			180 days	----	EHT
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BH21-14-01	E444	30-Aug-2021	----	----	----			180 days	----	EHT

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Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BH21-14-02	E444	30-Aug-2021	----	----	----			180 days	----	EHT
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BH21-8-01	E444	30-Aug-2021	----	----	----			180 days	----	EHT
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BH21-8-02	E444	30-Aug-2021	----	----	----			180 days	----	EHT
TCLP Metals : Metals by CRC ICPMS (TCLP)										
HDPE - total (lab preserved) BH21-11-01	E444	02-Sep-2021	----	----	----		05-Sep-2021	180 days	17 days	✓
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-10-01	EPP444	19-Aug-2021		----	----			----	----	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-11-01	EPP444	19-Aug-2021		----	----			----	----	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-12-01	EPP444	19-Aug-2021		----	----			----	----	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-14-01	EPP444	20-Aug-2021		----	----			----	----	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)										
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-14-02	EPP444	20-Aug-2021		----	----			----	----	

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Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-14-04	EPP444	20-Aug-2021		----	----		----	----	----		
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-8-01	EPP444	19-Aug-2021		----	----		----	----	----		
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-8-02	EPP444	19-Aug-2021		----	----		----	----	----		
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-8-03	EPP444	19-Aug-2021		----	----		----	----	----		
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-9-01	EPP444	19-Aug-2021		----	----		----	----	----		
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-10-01	E611A	19-Aug-2021	26-Aug-2021	----	----		26-Aug-2021	40 days	7 days		✔
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-8-01	E611A	19-Aug-2021	26-Aug-2021	----	----		26-Aug-2021	40 days	7 days		✔
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-8-03	E611A	19-Aug-2021	26-Aug-2021	----	----			40 days	7 days		✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

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Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
BTEX by Headspace GC-MS	E611A	277289	1	10	10.0	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	276735	2	23	8.7	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	276736	3	23	13.0	5.0	✔
Moisture Content by Gravimetry	E144	276738	2	26	7.6	5.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	276734	2	21	9.5	5.0	✔
PCB Aroclors by GC-ECD	E685	276383	2	21	9.5	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	276737	2	23	8.7	5.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	277290	1	7	14.2	5.0	✔
Waste Oil Content (BC HWR) by Gravimetry (wet weight)	E569SG.A	276235	1	4	25.0	5.0	✔
Laboratory Control Samples (LCS)							
BTEX by Headspace GC-MS	E611A	277289	1	10	10.0	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	276735	4	23	17.3	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	276736	5	23	21.7	10.0	✔
Moisture Content by Gravimetry	E144	276738	2	26	7.6	5.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	276734	2	21	9.5	5.0	✔
PCB Aroclors by GC-ECD	E685	276383	2	21	9.5	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	276737	2	23	8.7	5.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	277290	1	7	14.2	5.0	✔
Waste Oil Content (BC HWR) by Gravimetry (wet weight)	E569SG.A	276235	1	4	25.0	5.0	✔
Method Blanks (MB)							
BTEX by Headspace GC-MS	E611A	277289	1	10	10.0	5.0	✔
Mercury by CVAAS (TCLP)	E512	284497	1	1	100.0	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	276735	2	23	8.7	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	284498	1	1	100.0	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	276736	2	23	8.7	5.0	✔
Moisture Content by Gravimetry	E144	276738	2	26	7.6	5.0	✔
PAHs by GC-MS (TCLP)	E644	284594	2	9	22.2	5.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	276734	2	21	9.5	5.0	✔
PCB Aroclors by GC-ECD	E685	276383	2	21	9.5	5.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	277290	1	7	14.2	5.0	✔
Waste Oil Content (BC HWR) by Gravimetry (wet weight)	E569SG.A	276235	1	4	25.0	5.0	✔
Matrix Spikes (MS)							
BTEX by Headspace GC-MS	E611A	277289	1	10	10.0	5.0	✔
Mercury by CVAAS (TCLP)	E512	284497	1	1	100.0	5.0	✔
Metals by CRC ICPMS (TCLP)	E444	284498	1	1	100.0	5.0	✔
PAHs by GC-MS (TCLP)	E644	284594	2	9	22.2	5.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	276734	2	21	9.5	5.0	✔

(Partial Results)

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Matrix: **Soil/Solid**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)			
			QC	Regular	Actual	Expected	Evaluation	
<i>Analytical Methods</i>								
Matrix Spikes (MS) - Continued								
PCB Aroclors by GC-ECD	E685	276383	2	21	9.5	5.0	✓	
VH and F1 by Headspace GC-FID	E581.VH+F1	277290	1	7	14.2	5.0	✓	

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Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Vancouver - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally $20 \pm 5^\circ\text{C}$), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at $<60^\circ\text{C}$) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Moisture Content by Gravimetry	E144 Vancouver - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C . Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Metals in Soil/Solid by CRC ICPMS	E440 Vancouver - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl . Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Elemental Sulfur may be poorly recovered by this method. Analysis is by Collision/Reaction Cell ICPMS.
Metals by CRC ICPMS (TCLP)	E444 Vancouver - Environmental	Soil/Solid	EPA 1311/6020B (mod)	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Vancouver - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO_3 and HCl , followed by CVAAS analysis.
Mercury by CVAAS (TCLP)	E512 Vancouver - Environmental	Soil/Solid	SW 846 -1311/245.1 CVAA ON TCLP LEACHATE	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by CVAAS.
Waste Oil Content (BC HWR) by Gravimetry (wet weight)	E569SG.A Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (Waste Oil Content) (mod)	A silica gel treated petroleum ether sample extract is evaporated to dryness. The weight of the residue is determined gravimetrically. For classification of samples as waste oil under the HWR, Waste Oil Content is reported by weight on an as-received basis.
VH and F1 by Headspace GC-FID	E581.VH+F1 Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.

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Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
BTEX by Headspace GC-MS	E611A Vancouver - Environmental	Soil/Solid	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L Vancouver - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.
PAHs by GC-MS (TCLP)	E644 Vancouver - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by GC-MS.
PCB Aroclors by GC-ECD	E685 Vancouver - Environmental	Soil/Solid	EPA 8082A (mod)	PCB Aroclors are analyzed by GC-ECD
Waste Oil Content (BC HWR 41.1) by Gravimetry	EC569SG Vancouver - Environmental	Soil/Solid	unit conversion	Convert waste oil content from sample wet weight basis to dry weight basis by using moisture. For assessment of compliance of the Total Oil standard under section 41.1 of the HWR (Standards for Management of Hydrocarbon Contaminated Soils), Waste Oil Content is reported on a dry weight basis.
VPH: VH-BTEX-Styrene	EC580A Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (VPH in Water and Solids) (mod)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VH-BTEX = Volatile Hydrocarbons (VH6-10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene.
Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Vancouver - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Vancouver - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
Oil & Grease Extraction for Gravimetry	EP567 Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (Oil & Grease) (mod)	A subsample of the sediment/soil is extracted with 1:1 hexane:acetone using a rotary extraction apparatus.
Waste Oil Content (BC HWR) Extraction for Gravimetry	EP569SG Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (Waste Oil Content) (mod)	A subsample is dried by magnesium sulfate and extracted with petroleum ether in Soxhlet. The extract is dried with sodium sulfate and treated with silica gel.
VOCs Methanol Extraction for Headspace Analysis	EP581 Vancouver - Environmental	Soil/Solid	EPA 5035A (mod)	VOCs in samples are extracted with methanol. Extracts are then prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.

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<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Vancouver - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
PHCs and PAHs Extraction (TCLP)	EP602 Vancouver - Environmental	Soil/Solid	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
PCB Aroclors Extraction	EP685 Vancouver - Environmental	Soil/Solid	EPA 3570/3550C (mod)	Samples are subsampled and PCBs are extracted with solvents using a mechanical shaking extractor. Water is added to the extract and the resulting hexane extract undergoes one or more of the following clean-up procedures (if required): florisil clean-up, silica gel clean-up, sulphur clean-up and/or sulphuric acid clean-up.
TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)	EPP444 Vancouver - Environmental	Soil/Solid	EPA 1311	Preparation of a Toxicity Characteristic Leaching Procedure (TCLP) solid sample involves particle size reduction, homogenization, then determination of appropriate extraction fluid. A measured portion of fresh subsample is placed in an extraction bottle with the appropriate extraction fluid then tumbled in a rotary extractor for 18+/- 2 hours at 23 +/- 2 C. The liquid leachate is filtered to separate from solids then bottled and prepared for analytical tests.

QUALITY CONTROL REPORT

Work Order	: VA21B7750	Page	: 1 of 23
Amendment	: (Partial Results)		
Client	: SNC-Lavalin Inc.	Laboratory	: Vancouver - Environmental
Contact	: Chetiya Amarasinghe	Account Manager	: Selam Worku
Address	: c/o Accounts Payable Processing 202 - 455 Rene-Levesque Blvd Montreal QC Canada H2Z 1Z3	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: 685033	Date Samples Received	: 20-Aug-2021 19:45
PO	: ----	Date Analysis Commenced	: 25-Aug-2021
C-O-C number	: 17-866800,17-866801,17-866802	Issue Date	: 07-Sep-2021 10:08
Sampler	: CA		
Site	: ----		
Quote number	: Western Canada Standing Offer		
No. of samples received	: 35		
No. of samples analysed	: 26		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Harsha Attanayake	Laboratory Analyst	Organics, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Sristika Chand	Lab Analyst	Metals, Burnaby, British Columbia
Woochan Song	Lab Analyst	Metals, Burnaby, British Columbia

(Partial Results)



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General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.

(Partial Results)



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Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Soil/Solid

Table with columns: Laboratory sample ID, Client sample ID, Analyte, CAS Number, Method, LOR, Unit, Original Result, Duplicate Result, RPD(%) or Difference, Duplicate Limits, Qualifier. Includes sections for Physical Tests and Metals.

(Partial Results)

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Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Table with columns: Laboratory sample ID, Client sample ID, Analyte, CAS Number, Method, LOR, Unit, Original Result, Duplicate Result, RPD(%) or Difference, Duplicate Limits, Qualifier. It contains two main sections: Metals (QC Lot: 276736) - continued and Metals (QC Lot: 277453).

(Partial Results)

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Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Table with columns: Laboratory sample ID, Client sample ID, Analyte, CAS Number, Method, LOR, Unit, Original Result, Duplicate Result, RPD(%) or Difference, Duplicate Limits, Qualifier. Rows include Metals (QC Lot: 277453), Metals (QC Lot: 277454), Aggregate Organics (QC Lot: 276235), Volatile Organic Compounds (QC Lot: 277289), Hydrocarbons (QC Lot: 277290), and Polycyclic Aromatic Hydrocarbons (QC Lot: 276734).

(Partial Results)

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Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 276734) - continued											
VA21B7750-001	BH21-8-01	benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	19.3	23.1	17.9%	50%	----
		benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	15.8	17.6	10.9%	50%	----
		chrysene	218-01-9	E641A-L	0.010	mg/kg	42.5	43.1	1.46%	50%	----
		dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	6.14	7.18	15.6%	50%	----
		fluoranthene	206-44-0	E641A-L	0.294	mg/kg	77.2	90.8	16.2%	50%	----
		fluorene	86-73-7	E641A-L	0.010	mg/kg	1.10	1.10	0.706%	50%	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	20.6	24.8	18.2%	50%	----
		methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	0.211	0.223	5.38%	50%	----
		methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	0.326	0.314	3.76%	50%	----
		naphthalene	91-20-3	E641A-L	0.470	mg/kg	<0.470	<0.420	0.050	Diff <2x LOR	----
		phenanthrene	85-01-8	E641A-L	3.88	mg/kg	<3.88	<5.27	1.39	Diff <2x LOR	----
		pyrene	129-00-0	E641A-L	0.294	mg/kg	57.6	67.2	15.4%	50%	----
quinoline	6027-02-7	E641A-L	0.190	mg/kg	<0.190	<0.140	0.050	Diff <2x LOR	----		
Polycyclic Aromatic Hydrocarbons (QC Lot: 277456)											
VA21B7750-023	BH21-13-04	acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A-L	0.0040	mg/kg	<0.0040	<0.0040	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		naphthalene	91-20-3	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		phenanthrene	85-01-8	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		pyrene	129-00-0	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----		
Polychlorinated Biphenyls (QC Lot: 276383)											

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Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polychlorinated Biphenyls (QC Lot: 276383) - continued											
VA21B7750-001	BH21-8-01	Aroclor 1016	12674-11-2	E685	0.030	mg/kg	<0.030	<0.030	0.030	Diff <2x LOR	----
		Aroclor 1221	11104-28-2	E685	0.030	mg/kg	<0.030	<0.030	0.030	Diff <2x LOR	----
		Aroclor 1232	11141-16-5	E685	0.030	mg/kg	<0.030	<0.030	0.030	Diff <2x LOR	----
		Aroclor 1242	53469-21-9	E685	0.030	mg/kg	<0.030	<0.030	0.030	Diff <2x LOR	----
		Aroclor 1248	12672-29-6	E685	0.030	mg/kg	24.7	24.3	1.77%	50%	----
		Aroclor 1254	11097-69-1	E685	0.030	mg/kg	18.6	16.5	12.3%	50%	----
		Aroclor 1260	11096-82-5	E685	0.030	mg/kg	2.10	1.63	24.9%	50%	----
		Aroclor 1262	37324-23-5	E685	0.030	mg/kg	<0.030	<0.030	0.030	Diff <2x LOR	----
		Aroclor 1268	11100-14-4	E685	0.030	mg/kg	<0.030	<0.030	0.030	Diff <2x LOR	----
Polychlorinated Biphenyls (QC Lot: 277452)											
VA21B7750-016	BH21-11-05	Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1254	11097-69-1	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1260	11096-82-5	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----

Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.

(Partial Results)



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Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 276738)						
moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 277457)						
moisture	---	E144	0.25	%	<0.25	---
Metals (QCLot: 276735)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 276736)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---

(Partial Results)



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Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 276736) - continued						
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 277453)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----
magnesium	7439-95-4	E440	20	mg/kg	<20	----
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----

(Partial Results)



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Work Order : VA21B7750
Client : SNC-Lavalin Inc.
Project : 685033

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 277453) - continued						
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 277454)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
TCLP Metals (QCLot: 284497)						
mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP Metals (QCLot: 284498)						
antimony, TCLP	7440-36-0	E444	1	mg/L	<1.0	----
arsenic, TCLP	7440-38-2	E444	1	mg/L	<1.0	----
barium, TCLP	7440-39-3	E444	2.5	mg/L	<2.5	----
beryllium, TCLP	7440-41-7	E444	0.025	mg/L	<0.025	----
boron, TCLP	7440-42-8	E444	0.5	mg/L	<0.50	----
cadmium, TCLP	7440-43-9	E444	0.05	mg/L	<0.050	----
calcium, TCLP	7440-70-2	E444	10	mg/L	<10	----
chromium, TCLP	7440-47-3	E444	0.25	mg/L	<0.25	----
cobalt, TCLP	7440-48-4	E444	0.05	mg/L	<0.050	----
copper, TCLP	7440-50-8	E444	0.05	mg/L	<0.050	----
iron, TCLP	7439-89-6	E444	5	mg/L	<5.0	----
lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	----
magnesium, TCLP	7439-95-4	E444	2.5	mg/L	<2.5	----
nickel, TCLP	7440-02-0	E444	0.25	mg/L	<0.25	----
selenium, TCLP	7782-49-2	E444	0.1	mg/L	<0.10	----
silver, TCLP	7440-22-4	E444	0.05	mg/L	<0.050	----
thallium, TCLP	7440-28-0	E444	1	mg/L	<1.0	----
uranium, TCLP	7440-61-1	E444	0.2	mg/L	<0.20	----
vanadium, TCLP	7440-62-2	E444	0.15	mg/L	<0.15	----
zinc, TCLP	7440-66-6	E444	0.5	mg/L	<0.50	----
zirconium, TCLP	7440-67-7	E444	10	mg/L	<10	----
Aggregate Organics (QCLot: 276235)						
waste oil content (BC HWR)	----	E569SG.A	1000	mg/kg wwt	<1000	----
Volatile Organic Compounds (QCLot: 277289)						
benzene	71-43-2	E611A	0.005	mg/kg	<0.0050	----

(Partial Results)



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Project : 685033

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Volatile Organic Compounds (QCLot: 277289) - continued						
ethylbenzene	100-41-4	E611A	0.015	mg/kg	<0.015	---
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.04	mg/kg	<0.040	---
styrene	100-42-5	E611A	0.05	mg/kg	<0.050	---
toluene	108-88-3	E611A	0.05	mg/kg	<0.050	---
xylene, m+p-	179601-23-1	E611A	0.05	mg/kg	<0.050	---
xylene, o-	95-47-6	E611A	0.05	mg/kg	<0.050	---
Hydrocarbons (QCLot: 277290)						
VHs (C6-C10)	---	E581.VH+F1	10	mg/kg	<10	---
Polycyclic Aromatic Hydrocarbons (QCLot: 276734)						
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	<0.0050	---
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	<0.0050	---
acridine	260-94-6	E641A-L	0.01	mg/kg	<0.010	---
anthracene	120-12-7	E641A-L	0.004	mg/kg	<0.0040	---
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	<0.010	---
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	<0.010	---
benzo(b+j)fluoranthene	---	E641A-L	0.01	mg/kg	<0.010	---
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	<0.010	---
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	<0.010	---
chrysene	218-01-9	E641A-L	0.01	mg/kg	<0.010	---
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	<0.0050	---
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	<0.010	---
fluorene	86-73-7	E641A-L	0.01	mg/kg	<0.010	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	<0.010	---
methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	<0.010	---
methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	<0.010	---
naphthalene	91-20-3	E641A-L	0.01	mg/kg	<0.010	---
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	<0.010	---
pyrene	129-00-0	E641A-L	0.01	mg/kg	<0.010	---
quinoline	6027-02-7	E641A-L	0.01	mg/kg	<0.010	---
Polycyclic Aromatic Hydrocarbons (QCLot: 277456)						
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	<0.0050	---
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	<0.0050	---
acridine	260-94-6	E641A-L	0.01	mg/kg	<0.010	---
anthracene	120-12-7	E641A-L	0.004	mg/kg	<0.0040	---
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	<0.010	---
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	<0.010	---

(Partial Results)



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Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 277456) - continued						
benzo(b+j)fluoranthene	---	E641A-L	0.01	mg/kg	<0.010	---
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	<0.010	---
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	<0.010	---
chrysene	218-01-9	E641A-L	0.01	mg/kg	<0.010	---
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	<0.0050	---
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	<0.010	---
fluorene	86-73-7	E641A-L	0.01	mg/kg	<0.010	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	<0.010	---
methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	<0.010	---
methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	<0.010	---
naphthalene	91-20-3	E641A-L	0.01	mg/kg	<0.010	---
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	<0.010	---
pyrene	129-00-0	E641A-L	0.01	mg/kg	<0.010	---
quinoline	6027-02-7	E641A-L	0.01	mg/kg	<0.010	---
Polychlorinated Biphenyls (QCLot: 276383)						
Aroclor 1016	12674-11-2	E685	0.01	mg/kg	<0.010	---
Aroclor 1221	11104-28-2	E685	0.01	mg/kg	<0.010	---
Aroclor 1232	11141-16-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1242	53469-21-9	E685	0.01	mg/kg	<0.010	---
Aroclor 1248	12672-29-6	E685	0.01	mg/kg	<0.010	---
Aroclor 1254	11097-69-1	E685	0.01	mg/kg	<0.010	---
Aroclor 1260	11096-82-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1262	37324-23-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1268	11100-14-4	E685	0.01	mg/kg	<0.010	---
Polychlorinated Biphenyls (QCLot: 277452)						
Aroclor 1016	12674-11-2	E685	0.01	mg/kg	<0.010	---
Aroclor 1221	11104-28-2	E685	0.01	mg/kg	<0.010	---
Aroclor 1232	11141-16-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1242	53469-21-9	E685	0.01	mg/kg	<0.010	---
Aroclor 1248	12672-29-6	E685	0.01	mg/kg	<0.010	---
Aroclor 1254	11097-69-1	E685	0.01	mg/kg	<0.010	---
Aroclor 1260	11096-82-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1262	37324-23-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1268	11100-14-4	E685	0.01	mg/kg	<0.010	---

(Partial Results)

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Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

Table with columns: Analyte, CAS Number, Method, LOR, Unit, Spike Concentration, Recovery (%), Recovery Limits (%), Qualifier. Includes sections for Physical Tests (pH, moisture) and Metals (mercury, aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, lithium, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, selenium, silver).

(Partial Results)

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Client : SNC-Lavalin Inc.
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Sub-Matrix: Soil/Solid

Table with columns: Analyte, CAS Number, Method, LOR, Unit, Concentration, LCS, Recovery (%), Recovery Limits (%), Qualifier. Includes sections for Metals (QCLot: 276736) and Metals (QCLot: 277453).

(Partial Results)



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 Client : SNC-Lavalin Inc.
 Project : 685033

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 277453) - continued									
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	103	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	102	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	102	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	95.3	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	99.1	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	103	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	102	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	98.4	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	100	80.0	120	----
Metals (QCLot: 277454)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	108	80.0	120	----
Aggregate Organics (QCLot: 276235)									
waste oil content (BC HWR)	----	E569SG.A	1000	mg/kg wwt	4250 mg/kg wwt	91.8	70.0	130	----
Volatile Organic Compounds (QCLot: 277289)									
benzene	71-43-2	E611A	0.005	mg/kg	2.5 mg/kg	96.0	70.0	130	----
ethylbenzene	100-41-4	E611A	0.015	mg/kg	2.5 mg/kg	86.0	70.0	130	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.04	mg/kg	2.5 mg/kg	95.4	70.0	130	----
styrene	100-42-5	E611A	0.05	mg/kg	2.5 mg/kg	90.7	70.0	130	----
toluene	108-88-3	E611A	0.05	mg/kg	2.5 mg/kg	96.0	70.0	130	----
xylene, m+p-	179601-23-1	E611A	0.05	mg/kg	5 mg/kg	96.0	70.0	130	----
xylene, o-	95-47-6	E611A	0.05	mg/kg	2.5 mg/kg	87.2	70.0	130	----
Hydrocarbons (QCLot: 277290)									
VHs (C6-C10)	----	E581.VH+F1	10	mg/kg	85.8 mg/kg	124	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 276734)									
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	0.5 mg/kg	105	60.0	130	----
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	0.5 mg/kg	104	60.0	130	----
acridine	260-94-6	E641A-L	0.01	mg/kg	0.5 mg/kg	95.8	60.0	130	----
anthracene	120-12-7	E641A-L	0.004	mg/kg	0.5 mg/kg	101	60.0	130	----
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	0.5 mg/kg	72.1	60.0	130	----
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	0.5 mg/kg	85.0	60.0	130	----
benzo(b+j)fluoranthene	----	E641A-L	0.01	mg/kg	0.5 mg/kg	99.3	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	0.5 mg/kg	123	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	0.5 mg/kg	95.6	60.0	130	----
chrysene	218-01-9	E641A-L	0.01	mg/kg	0.5 mg/kg	74.0	60.0	130	----

(Partial Results)

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Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 276734) - continued									
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	0.5 mg/kg	88.9	60.0	130	----
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	0.5 mg/kg	101	60.0	130	----
fluorene	86-73-7	E641A-L	0.01	mg/kg	0.5 mg/kg	103	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	0.5 mg/kg	108	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	0.5 mg/kg	107	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	0.5 mg/kg	107	60.0	130	----
naphthalene	91-20-3	E641A-L	0.01	mg/kg	0.5 mg/kg	108	50.0	130	----
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	0.5 mg/kg	101	60.0	130	----
pyrene	129-00-0	E641A-L	0.01	mg/kg	0.5 mg/kg	104	60.0	130	----
quinoline	6027-02-7	E641A-L	0.01	mg/kg	0.5 mg/kg	93.5	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 277456)									
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	0.5 mg/kg	102	60.0	130	----
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	0.5 mg/kg	100	60.0	130	----
acridine	260-94-6	E641A-L	0.01	mg/kg	0.5 mg/kg	93.2	60.0	130	----
anthracene	120-12-7	E641A-L	0.004	mg/kg	0.5 mg/kg	98.6	60.0	130	----
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	0.5 mg/kg	95.2	60.0	130	----
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	0.5 mg/kg	96.0	60.0	130	----
benzo(b+j)fluoranthene	----	E641A-L	0.01	mg/kg	0.5 mg/kg	100.0	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	0.5 mg/kg	102	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	0.5 mg/kg	99.2	60.0	130	----
chrysene	218-01-9	E641A-L	0.01	mg/kg	0.5 mg/kg	97.2	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	0.5 mg/kg	96.1	60.0	130	----
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	0.5 mg/kg	100	60.0	130	----
fluorene	86-73-7	E641A-L	0.01	mg/kg	0.5 mg/kg	101	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	0.5 mg/kg	102	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	0.5 mg/kg	103	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	0.5 mg/kg	100	60.0	130	----
naphthalene	91-20-3	E641A-L	0.01	mg/kg	0.5 mg/kg	103	50.0	130	----
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	0.5 mg/kg	99.7	60.0	130	----
pyrene	129-00-0	E641A-L	0.01	mg/kg	0.5 mg/kg	102	60.0	130	----
quinoline	6027-02-7	E641A-L	0.01	mg/kg	0.5 mg/kg	90.1	60.0	130	----
Polychlorinated Biphenyls (QCLot: 276383)									
Aroclor 1260	11096-82-5	E685	0.01	mg/kg	0.125 mg/kg	116	65.0	130	----
Polychlorinated Biphenyls (QCLot: 277452)									
Aroclor 1260	11096-82-5	E685	0.01	mg/kg	0.125 mg/kg	123	65.0	130	----

(Partial Results)

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Table with 11 columns: Sample ID, Location, Compound Name, CAS No., Method, Concentration 1, Concentration 2, Value 1, Value 2, Value 3, Value 4. Sections include TCLP Metals (QCLot: 284497), TCLP Metals (QCLot: 284498), Volatile Organic Compounds (QCLot: 277289), Hydrocarbons (QCLot: 277290), and Polycyclic Aromatic Hydrocarbons (QCLot: 276734).

(Partial Results)



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Polycyclic Aromatic Hydrocarbons (QCLot: 276734) - continued

Table with 11 columns: Sample ID, Location, Compound Name, CAS No., Method, Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, Unit 6. Lists compounds like benzo(a)pyrene, benzo(b+j)fluoranthene, etc.

Polycyclic Aromatic Hydrocarbons (QCLot: 277456)

Table with 11 columns: Sample ID, Location, Compound Name, CAS No., Method, Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, Unit 6. Lists compounds like acenaphthene, acenaphthylene, acridine, etc.

Polychlorinated Biphenyls (QCLot: 276383)

Table with 11 columns: Sample ID, Location, Compound Name, CAS No., Method, Unit 1, Unit 2, Unit 3, Unit 4, Unit 5, Unit 6. Lists compound Aroclor 1260.

Polychlorinated Biphenyls (QCLot: 277452)

(Partial Results)



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Polychlorinated Biphenyls (QCLot: 277452) - continued

VA21B7750-016	BH21-11-05	Aroclor 1260	11096-82-5	E685	0.121 mg/kg	0.125 mg/kg	120	50.0	150	----
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Qualifiers

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

(Partial Results)



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Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Soil/Solid**

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 276735)									
QC-276735-003	SCP SS-2	mercury	7439-97-6	E510	0.059 mg/kg	111	70.0	130	----
Metals (QCLot: 276736)									
QC-276736-003	SCP SS-2	aluminum	7429-90-5	E440	9817 mg/kg	114	70.0	130	----
QC-276736-003	SCP SS-2	antimony	7440-36-0	E440	3.99 mg/kg	106	70.0	130	----
QC-276736-003	SCP SS-2	arsenic	7440-38-2	E440	3.73 mg/kg	114	70.0	130	----
QC-276736-003	SCP SS-2	barium	7440-39-3	E440	105 mg/kg	105	70.0	130	----
QC-276736-003	SCP SS-2	beryllium	7440-41-7	E440	0.349 mg/kg	111	70.0	130	----
QC-276736-003	SCP SS-2	boron	7440-42-8	E440	8.5 mg/kg	124	40.0	160	----
QC-276736-003	SCP SS-2	cadmium	7440-43-9	E440	0.91 mg/kg	106	70.0	130	----
QC-276736-003	SCP SS-2	calcium	7440-70-2	E440	31082 mg/kg	105	70.0	130	----
QC-276736-003	SCP SS-2	chromium	7440-47-3	E440	101 mg/kg	118	70.0	130	----
QC-276736-003	SCP SS-2	cobalt	7440-48-4	E440	6.9 mg/kg	109	70.0	130	----
QC-276736-003	SCP SS-2	copper	7440-50-8	E440	123 mg/kg	103	70.0	130	----
QC-276736-003	SCP SS-2	iron	7439-89-6	E440	23558 mg/kg	108	70.0	130	----
QC-276736-003	SCP SS-2	lead	7439-92-1	E440	267 mg/kg	106	70.0	130	----
QC-276736-003	SCP SS-2	lithium	7439-93-2	E440	9.5 mg/kg	104	70.0	130	----
QC-276736-003	SCP SS-2	magnesium	7439-95-4	E440	5509 mg/kg	111	70.0	130	----
QC-276736-003	SCP SS-2	manganese	7439-96-5	E440	269 mg/kg	112	70.0	130	----
QC-276736-003	SCP SS-2	molybdenum	7439-98-7	E440	1.03 mg/kg	111	70.0	130	----
QC-276736-003	SCP SS-2	nickel	7440-02-0	E440	26.7 mg/kg	110	70.0	130	----
QC-276736-003	SCP SS-2	phosphorus	7723-14-0	E440	752 mg/kg	117	70.0	130	----
QC-276736-003	SCP SS-2	potassium	7440-09-7	E440	1587 mg/kg	121	70.0	130	----
QC-276736-003	SCP SS-2	sodium	7440-23-5	E440	797 mg/kg	112	70.0	130	----
QC-276736-003	SCP SS-2	strontium	7440-24-6	E440	86.1 mg/kg	112	70.0	130	----
QC-276736-003	SCP SS-2	thallium	7440-28-0	E440	0.0786 mg/kg	104	40.0	160	----
QC-276736-003	SCP SS-2	tin	7440-31-5	E440	10.6 mg/kg	107	70.0	130	----
QC-276736-003	SCP SS-2	titanium	7440-32-6	E440	839 mg/kg	124	70.0	130	----
QC-276736-003	SCP SS-2	uranium	7440-61-1	E440	0.52 mg/kg	116	70.0	130	----
QC-276736-003	SCP SS-2	vanadium	7440-62-2	E440	32.7 mg/kg	114	70.0	130	----

(Partial Results)

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Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 276736) - continued									
QC-276736-003	SCP SS-2	zinc	7440-66-6	E440	297 mg/kg	106	70.0	130	----
QC-276736-003	SCP SS-2	zirconium	7440-67-7	E440	5.73 mg/kg	106	70.0	130	----
Metals (QCLot: 277453)									
QC-277453-003	SCP SS-2	aluminum	7429-90-5	E440	9817 mg/kg	108	70.0	130	----
QC-277453-003	SCP SS-2	antimony	7440-36-0	E440	3.99 mg/kg	107	70.0	130	----
QC-277453-003	SCP SS-2	arsenic	7440-38-2	E440	3.73 mg/kg	108	70.0	130	----
QC-277453-003	SCP SS-2	barium	7440-39-3	E440	105 mg/kg	96.4	70.0	130	----
QC-277453-003	SCP SS-2	beryllium	7440-41-7	E440	0.349 mg/kg	105	70.0	130	----
QC-277453-003	SCP SS-2	boron	7440-42-8	E440	8.5 mg/kg	114	40.0	160	----
QC-277453-003	SCP SS-2	cadmium	7440-43-9	E440	0.91 mg/kg	102	70.0	130	----
QC-277453-003	SCP SS-2	calcium	7440-70-2	E440	31082 mg/kg	104	70.0	130	----
QC-277453-003	SCP SS-2	chromium	7440-47-3	E440	101 mg/kg	111	70.0	130	----
QC-277453-003	SCP SS-2	cobalt	7440-48-4	E440	6.9 mg/kg	106	70.0	130	----
QC-277453-003	SCP SS-2	copper	7440-50-8	E440	123 mg/kg	112	70.0	130	----
QC-277453-003	SCP SS-2	iron	7439-89-6	E440	23558 mg/kg	106	70.0	130	----
QC-277453-003	SCP SS-2	lead	7439-92-1	E440	267 mg/kg	107	70.0	130	----
QC-277453-003	SCP SS-2	lithium	7439-93-2	E440	9.5 mg/kg	100	70.0	130	----
QC-277453-003	SCP SS-2	magnesium	7439-95-4	E440	5509 mg/kg	108	70.0	130	----
QC-277453-003	SCP SS-2	manganese	7439-96-5	E440	269 mg/kg	109	70.0	130	----
QC-277453-003	SCP SS-2	molybdenum	7439-98-7	E440	1.03 mg/kg	106	70.0	130	----
QC-277453-003	SCP SS-2	nickel	7440-02-0	E440	26.7 mg/kg	103	70.0	130	----
QC-277453-003	SCP SS-2	phosphorus	7723-14-0	E440	752 mg/kg	105	70.0	130	----
QC-277453-003	SCP SS-2	potassium	7440-09-7	E440	1587 mg/kg	115	70.0	130	----
QC-277453-003	SCP SS-2	sodium	7440-23-5	E440	797 mg/kg	111	70.0	130	----
QC-277453-003	SCP SS-2	strontium	7440-24-6	E440	86.1 mg/kg	115	70.0	130	----
QC-277453-003	SCP SS-2	thallium	7440-28-0	E440	0.0786 mg/kg	106	40.0	160	----
QC-277453-003	SCP SS-2	tin	7440-31-5	E440	10.6 mg/kg	107	70.0	130	----
QC-277453-003	SCP SS-2	titanium	7440-32-6	E440	839 mg/kg	115	70.0	130	----
QC-277453-003	SCP SS-2	uranium	7440-61-1	E440	0.52 mg/kg	112	70.0	130	----
QC-277453-003	SCP SS-2	vanadium	7440-62-2	E440	32.7 mg/kg	108	70.0	130	----
QC-277453-003	SCP SS-2	zinc	7440-66-6	E440	297 mg/kg	102	70.0	130	----
QC-277453-003	SCP SS-2	zirconium	7440-67-7	E440	5.73 mg/kg	98.5	70.0	130	----

(Partial Results)



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Sub-Matrix: **Soil/Solid**

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 277454)									
QC-277454-003	SCP SS-2	mercury	7439-97-6	E510	0.059 mg/kg	112	70.0	130	----

Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																							
Company: <u>SNC-Lavalin Inc.</u>		Select Report Format: <input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input type="checkbox"/> EDD (DIGITAL)			Regular [R] <input checked="" type="checkbox"/> Standard TAT if received by 3 pm - business days - no surcharges apply																																																																							
Contact: <u>Chetiya Amarasinghe</u>		Quality Control (QC) Report with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			Priority (business days)		EMERGENCY																																																																					
Phone: <u>604-317-6992</u>		<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked			4 day [P4-20%] <input type="checkbox"/>		1 Business day [E - 100%] <input type="checkbox"/>																																																																					
Company address below will appear on the final report		Select Distribution: <input type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			3 day [P3-25%] <input type="checkbox"/>		Same Day, Weekend or Statutory holiday [E2 -200%] <input type="checkbox"/> (Laboratory opening fees may apply)																																																																					
Street: <u>3777, Kingsway</u>		Email 1 or Fax: <u>nadine.schwager@snc.lavalin.com</u>			Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm																																																																							
City/Province: <u>Burnaby, BC</u>		Email 2: <u>Chetiya.amarasinghe@snc.lavalin.com</u>			Excesses that can not be performed according to the service level selected, you will be contacted.																																																																							
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Copy of Invoice with Report <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Select Invoice Distribution: <input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">CSR Metals (Hydrocarbons)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHS & TEQ</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PCB</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX / VPH</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Oil & Grease (Silica)</td> </tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>4</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>3</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>2</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>3</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>4</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>2</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> </table>						NUMBER OF CONTAINERS	CSR Metals (Hydrocarbons)	PAHS & TEQ	PCB	BTEX / VPH	Oil & Grease (Silica)	5	X	X	X	X	5	X	X	X	X	5	X	X	X	X	4	X	X	X	X	3	X	X	X	X	2	X	X	X	X	3	X	X	X	X	5	X	X	X	X	5	X	X	X	X	4	X	X	X	X	5	X	X	X	X	2	X	X	X	X
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Company: <u>SNC-Lavalin Inc.</u>		Email 1 or Fax: <u>Bill.Hung@snc.lavalin.com</u>			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">CSR Metals (Hydrocarbons)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHS & TEQ</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PCB</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX / VPH</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Oil & Grease (Silica)</td> </tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>4</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>3</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>2</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>3</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>4</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> <tr><td>2</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> </table>						NUMBER OF CONTAINERS	CSR Metals (Hydrocarbons)	PAHS & TEQ	PCB	BTEX / VPH	Oil & Grease (Silica)	5	X	X	X	X	5	X	X	X	X	5	X	X	X	X	4	X	X	X	X	3	X	X	X	X	2	X	X	X	X	3	X	X	X	X	5	X	X	X	X	5	X	X	X	X	4	X	X	X	X	5	X	X	X	X	2	X	X	X	X
NUMBER OF CONTAINERS	CSR Metals (Hydrocarbons)	PAHS & TEQ	PCB	BTEX / VPH								Oil & Grease (Silica)																																																																
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Contact: <u>Chetiya Amarasinghe</u>		Email 2: <u>Chetiya.amarasinghe@snc.lavalin.com</u>			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">CSR Metals (Hydrocarbons)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHS & TEQ</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PCB</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX / VPH</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Oil & Grease (Silica)</td> </tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> </table>						NUMBER OF CONTAINERS	CSR Metals (Hydrocarbons)	PAHS & TEQ	PCB	BTEX / VPH	Oil & Grease (Silica)	5	X	X	X	X																																																							
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Project Information		Oil and Gas Required Fields (client use)			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">CSR Metals (Hydrocarbons)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHS & TEQ</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PCB</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX / VPH</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Oil & Grease (Silica)</td> </tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> </table>						NUMBER OF CONTAINERS	CSR Metals (Hydrocarbons)	PAHS & TEQ	PCB	BTEX / VPH	Oil & Grease (Silica)	5	X	X	X	X																																																							
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ALS Account # / Quote #: <u>685033</u>		AFE/Cost Center: PO#			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">NUMBER OF CONTAINERS</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">CSR Metals (Hydrocarbons)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHS & TEQ</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PCB</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX / VPH</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Oil & Grease (Silica)</td> </tr> <tr><td>5</td><td>X</td><td>X</td><td>X</td><td>X</td></tr> </table>						NUMBER OF CONTAINERS	CSR Metals (Hydrocarbons)	PAHS & TEQ	PCB	BTEX / VPH	Oil & Grease (Silica)	5	X	X	X	X																																																							
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Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																																					
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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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JUNE 2016 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Affix ALS barcode label here (lab use only)

COC Number: 17 - 866802

Page 3 of 3

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REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION WHITE - LABORATORY COPY YELLOW - CLIENT COPY JUNE 2018 (RIGHT)

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Appendix II

SNC-Lavalin Memorandum – Subtidal Area Sediment
Quality Investigation Results



MEMORANDUM

To: Kate Schendel, M.Sc., P.Ag.
Acting Manager and Environmental Specialist

Date: August 27, 2021

From: Bill Hung

Ref: 680409

Subject: Sediment Quality Investigation Results
Subtidal Area North of Former Sterling Shipyard
2089 to 2095 Commissioner Street, Vancouver, BC

1 Introduction

As requested by the Vancouver Fraser Port Authority (port authority), SNC-Lavalin Inc. (SNC-Lavalin) has prepared the following report to document results of the sediment quality assessment conducted in February 2021 in the subtidal area (port authority owned water lot) north of the former Sterling shipyard boatway, located at 2089 to 2095 Commissioner Street in Vancouver (collectively, the “Site”).

The work was carried out under port authority Contract 19-0258 for Ad Hoc Environmental Consulting Services.

2 Objectives

The investigation was conducted to obtain sediment characterization data to inform the sediment quality and the quantity of contaminated sediment (exceeding applicable regulatory criteria) within the toe of a proposed rock berm barrier wall associated with the ongoing port authority Sterling Shipyard Remediation and Infill Project (Project). The investigation results have been used by SNC-Lavalin to verify remediation and construction design parameters and assist with cost estimate for the Project.

3 Regulatory Framework

The Site including the subtidal area is located on the port authority land, which is under federal jurisdiction and, as such, environmental quality is governed by federal legislation and supporting regulations and guidelines. However, as a matter of best practice, it is port authority’s policy that environmental remediation and related site development work also be conducted to meet requirements of the provincial legislation and municipal requirements in which the Site resides. Specific sediment guidelines and standards applicable to the Site are discussed below.



3.1 Sediment Guidelines

The Canadian Council of Ministers of the Environment (CCME) sediment quality guidelines (SQG) for the protection of aquatic life are applicable for characterizing sediment quality at the Site. There are two CCME SQGs: Interim Sediment Quality Guidelines (“ISQG”, derived from Threshold Effects Levels [TELs]), and Probable Effects Levels (PELs). The ISQG represents concentrations below which adverse biological effects are rarely expected. The PEL represents the lower limit of the range of chemical concentrations that are usually or always associated with adverse biological effects. TELs and PELs are based on statistically derived percentiles from a database of co-occurrence data (i.e., biological effects and sediment chemistry), which includes studies containing both effects and no-effects biological data. An exceedance of the ISQG values should not be interpreted that concentrations will cause an adverse effect; rather, they are intended to assist in identifying situations that have the potential to be harmful to aquatic life.

A joint federal and provincial sediment technical committee was established in 1998 to harmonize procedures for assessing and managing contaminated sediments in BC. The committee included representatives from Environment Canada (currently Environment and Climate Change Canada), Fisheries and Oceans Canada, and BC Ministry of Water, Land and Air Protection (currently Ministry of Environment and Climate Change Strategy). As a result, the Criteria for Managing Contaminated Sediments in British Columbia (CMSCBC) were published in 2003 and subsequently became the current BC *Contaminated Sites Regulation*¹ (CSR) schedule 3.4 Generic Numerical Sediment Standards. The CSR Numerical Sediment Standards incorporate a more recent scientifically-based approach and present the harmonized numerical criteria values accepted by federal and provincial regulators, for application at both federal and provincial sites in BC. Hence, the CSR sediment standards are also applicable to sediments at the Site.

The CSR sediment standards provide freshwater and marine/estuarine standards for sensitive and typical uses. The sensitive standards provide a relatively high level of protection for sediment dwelling organisms (i.e., sediment concentrations below the sensitive standards have a relatively low probability of a >20% effect of observing sediment toxicity); suitable for the near-term recovery of the benthic ecosystem where such habitat already exists. Whereas the typical sediment standards provide a moderate level of protection and are appropriate for industrial sites where sensitive components of the aquatic ecosystem are not present (and there is a 50% chance of a >20% effect); suitable for the longer-term recovery of the benthic ecosystem in such scenarios. The Site has been surrounded by former and active industrial operations since the early 1900s. The Site and neighbouring facilities, including a City of Vancouver combined sewer outfall near the Site, have all contributed to the industrialized nature of Burrard Inlet. Therefore, the CSR typical sediment standards are the appropriate and relevant guidelines for establishing Site-specific remediation objectives based on the history and adjacent land use, and were used to evaluate sediment analytical data and characterize sediment conditions.

¹ *Contaminated Sites Regulation* (CSR), B.C. Reg. 375/96, including amendments up to B.C. Reg. 161/2020, February 1, 2021.



The remedial strategy for the Project is to conduct a remedial excavation of contaminated sediments in the current intertidal area (3,270 m²). Contaminated sediments within the extent of the down-current toe of the rock berm barrier wall in the subtidal area will be remediated by dredging (3,215 m²). The remediation will be followed by Site redevelopment to infill the intertidal area and raise the Site grading to create additional usable industrial land. A compensatory habitat will be constructed in the current subtidal area and on the north side of the rock berm to enhance marine biodiversity and aquatic productivity. Although there are currently no recognized sensitive habitats in provincial or municipal land use plans in the area, the habitat is expected to create new ecologically productive areas and promote colonization of benthic invertebrates. Given the above and as a matter of best practice to support the Project, applicable regulatory criteria (herein referred to as the “Applicable Guidelines”) applied to existing sediment data obtained from the Site are as follows:

- › **Current Intertidal Area - CSR typical sediment standards; and**
- › **Current Subtidal Area - CSR typical and sensitive sediment standards.**

CCME PELs which are similar to CSR typical sediment standard values, are also included within the tabulated analytical results for informational purposes.

3.2 Soil Guidelines

Schedule 3.4 Section 1 of the CSR defines sediment as “particulate material that usually lies below water”. Since the upland area of the Site is not usually under water, the CSR sediment standards and PELs used for the subtidal and intertidal areas do not apply to the uplands. For inform and the purpose of this memorandum, historical soil analytical results obtained from the lower uplands directly south of the intertidal area, have been compared to the CSR soil matrix standards for industrial land use (IL) considering Site-specific factors.

3.3 Hazardous Waste Management Guidelines

The provisions outlined in the BC Hazardous Waste Regulation² (HWR) relating to “Dangerous Goods” defined under the federal *Transportation of Dangerous Goods Regulations*³ (TDGR) specify processes for the storage, transport and/or treatment of material considered Hazardous Waste. The relevant administrative requirements within the HWR would be applicable if contaminated sediments are being transported off Site.

4 Methodology

To facilitate the field investigation, a port authority Category A Permit was obtained and access to the subtidal area was coordinated with port authority representatives and relevant agencies having jurisdiction for vessel-related activities to ensure required security protocols are followed.

All field tasks were completed in accordance with SNC-Lavalin’s preferred operating procedures (POPs) and health and safety programs.

² *Hazardous Waste Regulation* (HWR), B.C. Reg. 63/88, includes amendments up to B.C. Reg. 243/2016, November 1, 2017.

³ *Transportation of Dangerous Goods Regulations* (TDGR) (Canada), SOR/2001-286, last amended on February 19, 2020.



4.1 Sediment Quality Investigation

The field investigation was conducted by SNC-Lavalin on February 24 and 25, 2021. Under the direction of SNC-Lavalin, Mud Bay Drilling of Surrey, BC (Mud Bay) advanced seven boreholes (BHs 21-01 through 21-07) at pre-determined locations shown on Drawing 509211-602.

Prior to the drilling, a BC One Call was completed to assist in identifying potential utility services proximate to the investigated locations. The drilling program was carried out using a barge configured with a sonic vibratory drill rig and when tide levels were satisfactory high to enable barge access and operation at each location⁴. The boreholes were drilled from the sea floor (mud line) to a maximum depth of 5.8 m below the mud line to obtain sediment samples for characterization of targeted contaminants and grain-size distribution representative of the investigation extent. The boreholes were advanced until sufficient penetration of the till-like sediment at depth was obtained.

Sediment stratigraphy was logged and cored sediment samples were collected from each borehole for selective laboratory analysis of grain size and potential contaminants of concern (PCOCs), including and in order of importance: polycyclic aromatic hydrocarbons (PAH); metals; polychlorinated biphenyl (PCBs); leachate PAH and metals⁵, extractable petroleum hydrocarbons (EPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX); volatile petroleum hydrocarbons (VPH), petroleum hydrocarbon fractions F1 to F4, and salinity (sodium and chloride). A total of 24 sediment samples, including two quality assurance / quality control (QA/QC) field duplicate samples, were submitted with appropriate chain-of-custody documentation to ALS Canada Ltd. (ALS) in Burnaby, BC for analysis of some or more of the above parameters. The sampling and analysis rate were appropriate to meet the investigation objectives.

The boreholes were backfilled with bentonite grout upon completion. Excess spoils collected during the drilling were drummed and transported by Mud Bay to a licensed soil disposal facility.

A selective photograph from the borehole drilling is shown below.

⁴ The drilling was completed by maximizing the use of tide windows such that there was at least 4 m of water at the shallowest sea floor borehole locations (3 m is the minimum amount of water level for the barge to operate in the area).

⁵ Toxicity Characteristic Leaching Procedure (TCLP) analysis was conducted on samples found to contain the highest concentrations of contaminants of concern exceeding Applicable Guidelines.



Photograph 1: Sediment investigation borehole drilling (hands-free drill rod handling and safety cage being used).

4.2 QA/QC

QA/QC measures were undertaken for all sampling and analyses to reduce field variability and laboratory measurement uncertainty. In addition, ALS routinely analyzes and reports data for sample duplicates, spikes, and surrogates as an internal quality control measure; this data is provided in the ALS laboratory analytical report (Attachment 2).



5 Investigation Results

The sediment investigation results are presented below. A copy of laboratory certificate of analysis is included in Attachment 2.

5.1 Stratigraphy and Field Observations

Physical sediment conditions observed at the investigated locations in the subtidal area were similar to those identified during previous assessments of the Site. The stratigraphy comprised predominantly silt, sand and/or gravel fill with varying compositions of woodwaste/organics and occasional metal debris and shell fragments of varying thickness to 3.4 m bgs, overlying a native, till-like silt, sand and/or gravel formation which extends beyond the maximum depth investigated of 5.8 m. Twelve sediment samples collected from the boreholes were analyzed for grain-size distribution. The analytical results were generally consistent with the field sediment description, and indicated that the samples contained primarily sand (i.e., gravelly sand, silty/clayey sand, or sand with trace to some clay, silt and gravel). The results of the grain-size analysis are summarized in Table 1.

Hydrocarbon or creosote-like odours were noted on sediment samples recovered from the fill layer at BHs 21-05 and 21-07. Measured sediment headspace vapour concentrations were insignificant (up to 50 parts per million by volume) on the samples exhibiting the odour.

Detailed descriptions of the sediment profile observed are provided in the borehole logs included in Attachment 1. Examples of the cored samples can be seen in below photographs.



Photograph 2: Retrieved cored sample – sand fill from BH21-04-02 (approximately 1.7 m below mud line).



Photograph 3: Retrieved cored sample – till-like sand and gravel from BH21-03-05 (4 m below mud line).



5.2 Sediment Quality

Analytical results from the subtidal area investigation along with data from previous investigations conducted in the intertidal area and portions of uplands (bordering of the intertidal area) of the Site are summarized in Tables 2 through 14 and on Drawing 509211-602.

As shown in Tables 3 to 6 and on Drawing 509211-602, eight (including a QA/QC field duplicate sample) of the sediment samples collected from 0.2 m to 2.4 m below the mud line at all the borehole locations across the subtidal area except BH21-07, contained concentrations of PAH (more than 10 constituents), metals (arsenic, cadmium, cooper, lead, mercury and/or zinc) and PCBs greater than Applicable Guidelines, but less than the BC (HWR) leachate quality standards for the selected samples evaluated.

The remaining samples were less than Applicable Guidelines for the parameters analyzed.

5.3 QA/QC Results

Blind field duplicate results and relative percent difference (RPD) calculations for the two QA/QC samples obtained from the subtidal sediment quality investigation are presented in Tables 3 to 5. Results of duplicate sample testing indicated that RPDs were within SNC-Lavalin's acceptance criteria (50%), or less than five times the reported detection limits (i.e., no RPD was calculated) except the following samples.

RPDs calculated for sample pair BH21-06-03/04, collected from a borehole located closest to the intertidal area, exceeded the acceptable RPD for concentrations of multiple PAH constituents, including naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b+j)fluoranthene, benzo(b+j+k)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene and benzo(g,h,i)perylene. The samples consisted sandy and silty woodwaste with trace clay. Sample heterogeneity due to organic matter of varying sizes and varying high water content may affect measured PAH concentrations within the woodwaste. As such, it is our opinion that the sample heterogeneity/moisture content would have been the root cause for the discrepancies, and the results do not change the interpretation of the sediment data obtained from the subtidal area.

No laboratory-related QA/QC issues were identified. The analytical results are considered reliable.

6 Conclusions

Drawing 509211-602 provides an overview of the current sediment and soil condition on the Site. The following conclusions are based on the 2021 subtidal area investigation results and previously reported sediment characteristics for the intertidal area:

- › The subtidal area sediment contaminant types are PAH, metals and PCBs which are similar to those identified in the intertidal area, where the majority of the contamination was found within the fill layer consisting of surficial gravelly sand and underlying fibrous woodwaste mixed with silt/sand.
- › The contaminant concentrations in both the subtidal and intertidal areas were generally one to two orders of magnitude greater than Applicable Guidelines.
- › There is a low degree of variability in contaminant distribution in the fill layer in both the subtidal and intertidal areas.



- › Within the investigated subtidal area, the till formation beneath the fill layer is not contaminated except for the upper till unit at the westernmost borehole (BH21-05), located directly north of the former Marco Marine Container Inc. site. The contaminant concentrations included arsenic, copper, lead, and zinc greater than Applicable Guidelines, and are vertically delineated at the location at approximately 2.4 m below the mud line.
- › Based on past investigations completed within the intertidal area, no contamination was found in the till formation. Although only one of the many boreholes investigated across the intertidal area was advanced into the till, it is unlikely that PAH, metal, or PCB contaminants would have appreciably penetrated into the till-like soil. This is supported by multiple lines of evidence to date, including available chemistry data and geotechnical investigation findings (previous drill sampler refusal or limited Standard Penetration Testing penetration into the till).
- › No sediment contaminants were found to exceed the HWR leachate quality standards.

7 Notice to Reader

This report has been prepared and the work referred to in this report have been undertaken by SNC-Lavalin Inc. (SNC-Lavalin) for the exclusive use of Vancouver Fraser Port Authority (port authority), who has been party to the development of the scope of work and understands its limitations. The methodology, findings, conclusions and recommendations in this report are based solely upon the scope of work and subject to the time and budgetary considerations described in the proposal and/or contract pursuant to which this report was issued. Any use, reliance on, or decision made by a third party based on this report is the sole responsibility of such third party. SNC-Lavalin accepts no liability or responsibility for any damages that may be suffered or incurred by any third party as a result of the use of, reliance on, or any decision made based on this report.

The findings, conclusions and recommendations in this report (i) have been developed in a manner consistent with the level of skill normally exercised by professionals currently practicing under similar conditions in the area, and (ii) reflect SNC-Lavalin's best judgment based on information available at the time of preparation of this report. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our original contract and included in this report. The findings and conclusions contained in this report are valid only as of the date of this report and may be based, in part, upon information provided by others. If any of the information is inaccurate, new information is discovered, site conditions change or standards are amended, modifications to this report may be necessary. The results of this assessment should in no way be construed as a warranty that the subject site is free from any and all environmental impact.

Any soil and rock descriptions in this report and associated logs have been made with the intent of providing general information on the subsurface conditions of the site. This information should not be used as geotechnical data for any purpose unless specifically addressed in the text of this report. Groundwater conditions described in this report refer only to those observed at the location and time of observation noted in the report.

This report must be read as a whole, as sections taken out of context may be misleading. If discrepancies occur between the preliminary (draft) and final version of this report, it is the final version that takes precedence. Nothing in this report is intended to constitute or provide a legal opinion.



The contents of this report are confidential and proprietary. Other than by port authority, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of port authority and SNC-Lavalin.

8 Closure

We trust this report is sufficient for your requirements. Please contact the undersigned if you have any questions.



Bill Hung, MSc, P.Ag.
Senior Project Manager

Environment
Engineering, Design & Project Management

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Tables

- 1: Summary of Analytical Results for Sediment – Grain Size
- 2: Summary of Analytical Results for Subtidal Sediment – Hydrocarbons
- 3: Summary of Analytical Results for Subtidal Sediment – Polycyclic Aromatic Hydrocarbons
- 4: Summary of Analytical Results for Subtidal Sediment – Total Metals
- 5: Summary of Analytical Results for Subtidal Sediment – PCB
- 6: Summary of Analytical Results for Subtidal Sediment – Leachable PAH and Metals
- 7: Summary of Analytical Results for Intertidal Sediment and Soil – Hydrocarbons
- 8: Summary of Analytical Results for Intertidal Sediment and Soil – Polycyclic Aromatic Hydrocarbons
- 9: Summary of Analytical Results for Intertidal Sediment and Soil – Total Metals
- 10: Summary of Analytical Results for Intertidal Sediment and Soil – PCB
- 11: Summary of Analytical Results for Upland Soil – Hydrocarbons
- 12: Summary of Analytical Results for Upland Soil – Polycyclic Aromatic Hydrocarbons
- 13: Summary of Analytical Results for Upland Soil – Total Metals
- 14: Summary of Analytical Results for Upland Soil – PCB

Drawing

- > 509211-602 - Summary of Sediment/Soil Analytical Results

Attachments

- 1: Borehole Logs
- 2: Laboratory Analytical Reports

Tables

- 1: Summary of Analytical Results for Sediment – Grain Size
- 2: Summary of Analytical Results for Subtidal Sediment – Hydrocarbons
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- 6: Summary of Analytical Results for Subtidal Sediment – Leachable PAH and Metals
- 7: Summary of Analytical Results for Intertidal Sediment and Soil – Hydrocarbons
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- 9: Summary of Analytical Results for Intertidal Sediment and Soil – Total Metals
- 10: Summary of Analytical Results for Intertidal Sediment and Soil – PCB
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TABLE 1: Summary of Analytical Results for Sediment - Grain Size

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Grain Size		
				Gravel %	Sand %	Silt/Clay %
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	44	39	18
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.2	19	66	15
	BH21-02-02	2021 02 24	1.5 - 1.7	13	84	3
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	26	53	22
	BH21-03-04	2021 02 24	3.5 - 3.7	7	57	36
BH21-04	BH21-04-02	2021 02 24	1.6 - 1.8	11	60	30
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	20	54	27
	BH21-05-02	2021 02 24	1.5 - 1.7	19	50	31
	BH21-05-03	2021 02 24	2.4 - 2.5	5	55	41
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	3	60	37
	BH21-06-07	2021 02 25	4.0 - 4.1	2	57	42
BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	5	50	46

Associated ALS file(s): VA21A3477.

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

TABLE 2: Summary of Analytical Results for Subtidal Sediment - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Monocyclic Aromatic Hydrocarbons					Gross Parameters			Methyl Tert-butyl Ether [MTBE] (µg/g)	Petroleum Hydrocarbon Fractions				
					Benzene (µg/g)	Ethyl-benzene (µg/g)	Toluene (µg/g)	Xylenes (µg/g)	Styrene (µg/g)	VPH (C6-C10) (µg/g)	LEPH (C10-C19) (µg/g)	HEPH (C19-C32) (µg/g)		F1-BTEX (µg/g)	F2 (>C10-C16) (µg/g)	F3 (>C16-C34) (µg/g)	F4 (>C34-C50) (µg/g)	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	5	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	620	< 0.200	-	-	-	-	
	BH21-01-03	2021 02 24	2.0 - 2.1	60	-	-	-	-	-	-	< 200	< 200	-	-	-	-	-	
BH21-02	BH21-02-02	2021 02 24	1.5 - 1.7	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-02-04	2021 02 24	4.3 - 4.4	15	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-03-04	2021 02 24	3.5 - 3.7	220	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	< 200	< 200	< 0.200	< 5	< 30	< 50	< 50	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	10	0.0072	< 0.015	< 0.050	< 0.075	< 0.050	< 10	270	1,280	< 0.200	-	-	-	-	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	0	-	-	-	-	-	-	320	1,220	-	-	-	-	-	
	BH21-05-02	2021 02 24	1.5 - 1.7	50	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	260	< 0.200	-	-	-	-	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	35	0.0127	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	780	< 0.200	-	-	-	-	
	BH21-06-07	2021 02 25	4.0 - 4.1	230	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	40	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	< 10	< 200	< 200	< 0.200	-	-	-	-	
	BH21-07-04	2021 02 25	2.1 - 2.3	0	< 0.0050	< 0.015	< 0.050	< 0.075	< 0.050	-	-	-	< 0.200	< 5	< 30	< 50	< 50	
BC Standard																		
CSR Marine and/or Estuarine Sediment (MR) ^b - Sensitive					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
CSR Marine and/or Estuarine Sediment (MR) ^c - Typical					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Federal Guideline																		
CCME CEQG Probable Effect Level (PEL) ^d					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b Pathways Included: Sensitive Site.

^c Pathways Included: Typical Site.

^d Guideline to protect marine aquatic life.

SHADED Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 3: Summary of Analytical Results for Subtidal Sediment - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																						
				Naphthalene	Methylnaphthalene, 1-	Methylnaphthalene, 2-	Methylnaphthalene, 1&2-	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Acridine	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(b+j)fluoranthene	Benzo(b+i+k)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Quinoline
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	0.110	0.038	0.039	-	0.0606	0.154	0.131	0.797	0.297	< 0.070	2.12	2.56	0.577	0.594	-	0.901	1.21	0.313	0.680	0.374	0.103	0.373	< 0.010
	BH21-01-02	2021 02 24	1.4 - 1.6	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-01-03	2021 02 24	2.0 - 2.1	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	0.107	0.116	0.099	0.215	0.096	0.179	0.198	1.01	0.439	< 0.050	1.28	1.79	0.742	0.819	-	1.28	1.74	0.460	0.994	0.599	0.146	0.594	< 0.050
	BH21-02-02	2021 02 24	1.5 - 1.7	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	0.018	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
	BH21-02-03	2021 02 24	3.2 - 3.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-02-04	2021 02 24	4.3 - 4.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	0.027	< 0.010	0.012	-	0.0994	0.0406	0.053	0.389	0.164	< 0.020	0.649	1.07	0.341	0.294	-	0.460	0.659	0.199	0.401	0.232	0.0618	0.218	< 0.010
	BH21-03-04	2021 02 24	3.5 - 3.7	< 0.010	< 0.010	< 0.010	-	< 0.0050	< 0.0050	< 0.010	< 0.010	< 0.0040	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	-	< 0.010	< 0.015	< 0.010	< 0.010	< 0.010	< 0.0050	< 0.010	< 0.010
	BH21-03-05	2021 02 24	4.9 - 5.0	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	0.167	0.118	0.108	-	0.149	0.238	0.240	1.44	0.583	< 0.100	2.75	4.11	1.42	< 1.25	-	2.37	3.22	0.854	1.82	1.05	0.274	1.03	< 0.010
	BH21-04-02	2021 02 24	1.6 - 1.8	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-04-03	2021 02 24	4.3 - 4.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	1.05	0.231	0.246	-	0.189	1.06	0.976	9.18	3.09	< 0.420	14.7	12.5	6.37	5.44	-	6.25	8.53	2.28	4.93	2.46	0.601	2.27	0.018
	BH21-05-02	2021 02 24	1.5 - 1.7	0.416	0.040	0.036	-	0.0335	0.0961	0.058	0.310	0.134	< 0.030	0.689	0.815	0.262	0.270	-	0.331	0.331	< 0.120	0.255	0.141	0.0381	0.140	< 0.010
	BH21-05-03	2021 02 24	2.4 - 2.5	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.058	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-05-04	2021 02 24	2.8 - 2.9	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	0.139	0.053	0.051	-	0.0973	0.300	0.218	0.591	0.406	< 0.060	2.02	1.57	0.524	0.609	-	0.665	0.920	0.255	0.534	0.334	0.0804	0.336	< 0.010
	BH21-06-04	Duplicate	2.3 - 2.4	0.302	0.117	0.131	0.248	0.361	0.539	0.470	2.51	1.02	< 0.200	7.43	5.95	2.17	2.18	-	2.60	3.53	0.926	2.04	1.26	0.294	1.24	< 0.050
QA/QC RPD%				74	75	88	*	115	57	73	124	86	*	114	116	122	113	-	119	117	114	117	116	114	115	*
BH21-07	BH21-06-07	2021 02 25	4.0 - 4.1	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-07-01	2021 02 25	0.7 - 0.8	< 0.010	< 0.010	< 0.010	-	0.0073	0.0087	0.010	0.042	0.0164	< 0.010	0.110	0.158	0.050	< 0.060	-	0.078	0.118	0.040	0.059	0.039	0.0099	0.040	< 0.010
	BH21-07-02	2021 02 25	1.3 - 1.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
	BH21-07-03	Duplicate	1.3 - 1.4	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
QA/QC RPD%				*	*	*	*	*	*	*	*	*	*	*	*	*	*	-	*	*	*	*	*	*	*	*
BH21-07-04	2021 02 25	2.1 - 2.3	< 0.050	< 0.050	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	-	< 0.050	< 0.075	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050
BC Standard																										
CSR Marine and/or Estuarine Sediment (MR) ^a - Sensitive				0.24	n/a	0.12	n/a	0.079	0.055	0.089	0.34	0.15	n/a	0.93	0.87	0.43	0.52	n/a	n/a	n/a	n/a	0.47	n/a	0.084	n/a	n/a
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical				0.47	n/a	0.24	n/a	0.15	0.11	0.17	0.65	0.29	n/a	1.8	1.7	0.83	1	n/a	n/a	n/a	n/a	0.92	n/a	0.16	n/a	n/a
Federal Guideline																										
CCME CEQG Probable Effect Level (PEL) ^c				0.391	n/a	0.201	n/a	0.128	0.0889	0.144	0.544	0.245	n/a	1.494	1.398	0.693	0.846	n/a	n/a	n/a	n/a	0.763	n/a	0.135	n/a	n/a

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

SHADED Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 4: Summary of Analytical Results for Subtidal Sediment - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical Parameters	Sediment Salinity				Total Metals																					
				pH	% Saturation %	Soluble Chloride mg/L	Sodium Ion µg/g	Chloride Ion µg/g	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Lithium µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Uranium µg/g	Vanadium µg/g	Zinc µg/g	
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	8.02	93.3	9,020	5,510	8,420	3.76	11.9	133	0.26	0.850	30.7	8.80	215	107	15.8	346	0.319	3.24	19.5	0.42	0.34	128	7.3	1.44	63.9	182	
	BH21-01-02	2021 02 24	1.4 - 1.6	8.86	-	-	-	-	0.22	3.93	97.8	0.36	0.472	21.3	9.22	25.7	4.57	14.9	499	< 0.0500	1.14	8.58	0.34	< 0.10	58.8	< 2.0	0.556	117	63.9	
	BH21-01-03	2021 02 24	2.0 - 2.1	8.82	-	-	-	-	0.14	1.94	65.7	0.30	0.110	18.0	7.67	22.7	3.99	13.7	449	< 0.0500	0.60	8.48	< 0.20	< 0.10	39.2	< 2.0	0.402	68.9	54.3	
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	8.08	97.7	9,480	6,160	9,260	6.72	25.3	93.2	0.21	1.14	34.5	8.11	414	170	16.1	285	1.13	4.88	24.3	0.54	0.43	89.9	11.4	2.07	57.4	261	
	BH21-02-02	2021 02 24	1.5 - 1.7	8.55	27.6	9,620	1,620	2,660	0.19	2.00	32.2	< 0.10	0.102	12.9	4.86	13.5	2.32	16.1	200	< 0.0500	2.06	5.56	< 0.20	< 0.10	35.9	< 2.0	0.678	44.3	29.5	
	BH21-02-03	2021 02 24	3.2 - 3.4	9.66	-	-	-	-	0.20	1.65	79.0	0.20	0.089	15.2	5.46	17.4	3.30	6.5	213	< 0.0500	0.18	8.70	< 0.20	< 0.10	38.4	< 2.0	0.510	49.6	36.4	
	BH21-02-04	2021 02 24	4.3 - 4.4	8.91	-	-	-	-	0.21	3.40	104	0.33	0.150	24.2	9.76	20.6	7.28	14.4	606	< 0.0500	1.44	9.91	< 0.20	< 0.10	55.7	< 2.0	0.645	88.4	72.6	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	8.36	28.8	10,500	1,860	3,020	1.78	5.50	48.9	0.13	0.236	18.4	6.29	40.4	39.8	27.1	239	0.200	2.32	10.2	< 0.20	< 0.10	147	3.5	1.33	56.9	66.7	
	BH21-03-04	2021 02 24	3.5 - 3.7	9.38	36.3	466	147	169	0.20	2.70	76.4	0.26	0.081	18.2	8.31	19.0	3.47	11.2	309	< 0.0500	0.21	11.2	< 0.20	< 0.10	35.3	< 2.0	0.394	65.0	54.4	
	BH21-03-05	2021 02 24	4.9 - 5.0	9.55	-	-	-	-	0.18	1.79	100	0.34	0.080	18.8	7.44	19.4	4.09	12.4	1,730	< 0.0500	0.77	7.29	< 0.20	< 0.10	87.4	< 2.0	0.438	81.1	51.8	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	8.56	102	3,570	2,340	3,640	326	570	176	0.53	2.62	91.0	35.8	1,110	628	14.4	806	1.28	52.4	46.7	0.90	1.76	216	54.8	2.89	64.1	2,070	
	BH21-04-02	2021 02 24	1.6 - 1.8	9.80	30.4	621	156	189	0.26	2.08	55.4	0.16	0.051	11.6	4.71	14.0	2.65	4.7	178	< 0.0500	0.30	8.40	< 0.20	< 0.10	29.6	< 2.0	0.327	37.2	28.6	
	BH21-04-03	2021 02 24	4.3 - 4.4	9.23	-	-	-	-	0.19	2.74	58.4	0.27	0.142	16.3	9.00	55.2	3.46	12.3	505	< 0.0500	0.63	8.40	0.27	0.11	34.1	< 2.0	0.324	74.4	58.4	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	8.45	142	5,240	4,500	7,440	150	334	149	0.44	2.50	69.8	21.7	757	450	16.2	459	2.09	37.2	40.6	0.97	1.66	441	34.5	2.34	64.2	1,510	
	BH21-05-02	2021 02 24	1.5 - 1.7	9.13	47.5	569	266	270	33.8	74.6	236	0.28	0.500	29.1	13.3	129	120	14.6	478	0.362	5.15	16.6	< 0.20	0.31	77.8	7.8	0.842	67.5	357	
	BH21-05-03	2021 02 24	2.4 - 2.5	8.23	-	-	-	-	0.52	3.87	77.3	0.26	0.096	17.6	8.82	20.9	3.87	14.4	346	< 0.0500	0.65	8.79	< 0.20	< 0.10	37.4	< 2.0	0.438	64.9	58.4	
	BH21-05-04	2021 02 24	2.8 - 2.9	8.87	-	-	-	-	0.11	2.14	60.9	0.22	0.057	15.6	7.47	17.0	2.53	11.7	312	< 0.0500	0.49	6.86	< 0.20	< 0.10	30.7	< 2.0	0.496	52.3	50.1	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	7.79	170	8,170	8,380	13,900	1.40	5.81	68.4	0.15	1.44	25.6	6.81	99.6	104	21.8	217	1.84	6.54	16.1	0.53	0.54	70.2	12.7	2.38	65.0	194	
	BH21-06-04	Duplicate	2.3 - 2.4	7.73	-	-	-	-	1.17	5.18	55.7	0.14	0.891	18.1	5.94	67.7	62.4	19.6	192	1.20	4.60	12.4	0.39	0.37	86.4	8.4	2.04	50.5	127	
	QA/QC RPD%				1	-	-	-	-	18	11	20	*	47	34	14	38	50	11	12	42	*	26	*	37	21	41	15	25	42
BH21-07	BH21-06-07	2021 02 25	4.0 - 4.1	9.76	-	-	-	-	0.32	1.75	82.2	0.18	0.034	14.3	5.66	16.2	3.13	5.9	222	< 0.0500	0.27	9.05	< 0.20	< 0.10	32.5	< 2.0	0.369	45.8	35.8	
	BH21-07-01	2021 02 25	0.7 - 0.8	9.29	35.2	2,980	683	1,050	1.01	2.02	51.5	0.10	0.189	10.4	4.46	37.7	36.5	5.1	223	0.0627	0.39	5.83	< 0.20	< 0.10	32.5	< 2.0	0.325	41.4	61.2	
	BH21-07-02	2021 02 25	1.3 - 1.4	9.78	41.3	910	293	376	0.17	1.67	94.9	0.21	0.105	16.2	6.71	17.5	3.61	7.8	244	< 0.0500	0.24	10.1	< 0.20	< 0.10	40.3	< 2.0	0.403	53.0	43.1	
	BH21-07-03	Duplicate	1.3 - 1.4	9.80	-	-	-	-	0.17	1.50	85.0	0.18	0.073	13.2	5.76	16.9	3.67	6.7	204	< 0.0500	0.23	8.86	< 0.20	< 0.10	32.5	< 2.0	0.338	44.9	38.3	
QA/QC RPD%				0	-	-	-	-	*	*	11	*	*	20	15	3	2	*	18	*	*	13	*	*	21	*	18	17	12	
BH21-07-04	2021 02 25	2.1 - 2.3	9.31	-	-	-	-	-	0.14	3.65	81.8	0.25	0.061	16.5	10.2	19.5	3.79	12.5	470	< 0.0500	0.88	9.20	< 0.20	< 0.10	38.4	< 2.0	0.382	66.4	55.6	
BC Standard																														
CSR Marine and/or Estuarine Sediment (MR) ^a - Sensitive				n/a	n/a	n/a	n/a	n/a	n/a	26	n/a	n/a	2.6	99	n/a	67	69	n/a	n/a	0.43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	170
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical				n/a	n/a	n/a	n/a	n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																														
CCME CEQG Probable Effect Level (PEL) ^c				n/a	n/a	n/a	n/a	n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

SHADED Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 5: Summary of Analytical Results for Subtidal Sediment - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs										Polychlorinated Biphenyls, Total [PCBs] µg/g
				Aroclor 1016 µg/g	Aroclor 1221 µg/g	Aroclor 1232 µg/g	Aroclor 1242 µg/g	Aroclor 1248 µg/g	Aroclor 1254 µg/g	Aroclor 1260 µg/g	Aroclor 1262 µg/g	Aroclor 1268 µg/g		
BH21-01	BH21-01-01	2021 02 24	0.2 - 0.3	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.062	< 0.030	< 0.010	< 0.010	0.062	
	BH21-01-02	2021 02 24	1.4 - 1.6	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-01-03	2021 02 24	2.0 - 2.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-02	BH21-02-01	2021 02 24	0.2 - 0.3	< 0.010	< 0.010	< 0.010	< 0.010	0.153	0.257	< 0.060	< 0.060	< 0.060	0.410	
	BH21-02-02	2021 02 24	1.5 - 1.7	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-02-03	2021 02 24	3.2 - 3.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-02-04	2021 02 24	4.3 - 4.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-03	BH21-03-01	2021 02 24	0.9 - 1.1	< 0.010	< 0.010	< 0.010	< 0.010	0.014	0.014	< 0.010	< 0.010	< 0.010	0.028	
	BH21-03-04	2021 02 24	3.5 - 3.7	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-03-05	2021 02 24	4.9 - 5.0	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-04	BH21-04-01	2021 02 24	0.6 - 0.8	< 0.060	< 0.060	< 0.060	< 0.060	< 0.060	0.220	< 0.080	< 0.080	< 0.080	0.220	
	BH21-04-02	2021 02 24	1.6 - 1.8	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-04-03	2021 02 24	4.3 - 4.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-05	BH21-05-01	2021 02 24	0.3 - 0.5	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	0.328	< 0.100	< 0.100	< 0.100	0.328	
	BH21-05-02	2021 02 24	1.5 - 1.7	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	0.091	< 0.040	< 0.040	< 0.040	0.091	
	BH21-05-03	2021 02 24	2.4 - 2.5	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-05-04	2021 02 24	2.8 - 2.9	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BH21-06	BH21-06-03	2021 02 25	2.3 - 2.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-06-04	Duplicate	2.3 - 2.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	QA/QC RPD%				*	*	*	*	*	*	*	*	*	
BH21-06	BH21-06-07	2021 02 25	4.0 - 4.1	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
	BH21-07	BH21-07-01	2021 02 25	0.7 - 0.8	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.022	< 0.010	< 0.010	< 0.010	0.022
		BH21-07-02	2021 02 25	1.3 - 1.4	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
	BH21-07-04	2021 02 25	2.1 - 2.3	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	
BC Standard														
CSR Marine and/or Estuarine Sediment (MR) ^b - Sensitive				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.12
CSR Marine and/or Estuarine Sediment (MR) ^c - Typical				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.23
Federal Guideline														
CCME CEQG Probable Effect Level (PEL) ^d				n/a	n/a	n/a	n/a	n/a	0.709	n/a	n/a	n/a	n/a	0.189

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QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Sensitive Site.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

SHADED	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Sensitive
OUTLINE	Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE	Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 6: Summary of Analytical Results for Subtidal Sediment - Leachable PAH and Metals

Sample Location		BH21-04	BH21-05	BC Standard
Sample ID		BH21-04-01	BH21-05-01	HWR
Sample Date (yyyy mm dd)		2021 02 24	2021 02 24	Leachate Quality Standards (HWLQ)
Parameter	Units	Analytical Results		
TCLP Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene	µg/L	-	< 0.050	1
TCLP Metals				
Arsenic	µg/L	< 1,000	-	2,500
Lead	µg/L	< 250	-	5,000
Mercury	µg/L	-	< 1.0	100

Associated ALS file(s): VA21A3477.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than HWR Leachate Quality Standards (HWLQ) Standard

TABLE 7: Summary of Analytical Results for Intertidal Sediment and Soil - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Gross Parameters		
					(C10-C19) µg/g	(C19-C32) µg/g	
TP06-123	12267-09	2006 06 07	0.4 - 0.5	-	-	-	
	12267-10	Duplicate	0.4 - 0.5	-	-	-	
	QA/QC RPD%					-	-
	12268-01	2006 06 07	2.8	-	-	-	
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	30	< 100	< 100	
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	20	< 100	< 100	
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	25	< 100	< 100	
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	-	627	1,440	
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	5	< 100	< 100	
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	0	< 100	< 100	
	BH12-10-4-121210	Duplicate	3.7 - 4.0	0	< 100	< 100	
	QA/QC RPD%					*	*
	BH12-10-5-121210	2012 12 10	4.7 - 5.0	20	< 100	< 100	
BH12-11	BH12-11-1-121211	2012 12 11	0.7 - 0.8	55	< 100	1,230	
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	45	< 100	< 100	
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	5	< 100	< 100	
	BH12-11-8-121211	2012 12 11	5.3 - 5.6	10	< 100	< 100	
BC Standard							
CSR Marine and/or Estuarine Sediment (MR) ^b - Typical					n/a	n/a	
Federal Guideline							
CCME CEQG Probable Effect Level (PEL) ^c					n/a	n/a	

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b Pathways Included: Typical Site.

^c Guideline to protect marine aquatic life.

OUTLINE
UNDERLINE

Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 8: Summary of Analytical Results for Intertidal Sediment and Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm)	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																	
				Naphthalene µg/g	Methylnaphthalene, 2- µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Fluoranthene µg/g	Pyrene µg/g	Benz(a)anthracene µg/g	Chrysene µg/g	Benzo(b)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenzo(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	
BH06-1	BH06-1	2006 06 16	0.0 - 0.1	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
	12287-02	2006 06 06	0.8 - 1.1	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
BH06-2	BH06-2	2006 06 16	0.0 - 0.1	0.218	< 0.05	0.056	< 0.04	< 0.05	0.191	0.071	0.267	0.262	0.159	0.174	0.19	0.114	0.169	0.132	< 0.05	0.14	
BH06-3	BH06-3	2006 06 16	0.0 - 0.1	<u>5.51</u>	<u>0.935</u>	<u>0.181</u>	<u>6.42</u>	<u>3.91</u>	<u>10.2</u>	<u>3.44</u>	<u>9.21</u>	<u>6.39</u>	<u>1.73</u>	<u>2.16</u>	1.92	0.729	<u>1.21</u>	0.699	<u>0.158</u>	0.771	
BH06-4	BH06-4	2006 06 16	0.0 - 0.1	<u>1.5</u>	<u>1.68</u>	<u>1.32</u>	<u>0.658</u>	<u>0.661</u>	<u>3.85</u>	<u>2.09</u>	<u>13.2</u>	<u>12.2</u>	<u>7.45</u>	<u>8.46</u>	12.8	4.02	<u>10.5</u>	8.28	<u>2.06</u>	8.6	
BH06-5	BH06-5	2006 06 16	0.0 - 0.1	0.089	< 0.05	0.059	< 0.04	0.056	0.519	0.123	0.841	0.739	0.493	0.617	0.793	0.298	0.473	0.349	0.083	0.33	
BH06-6	BH06-6	2006 06 16	0.0 - 0.1	<u>1.42</u>	<u>0.429</u>	<u>0.272</u>	<u>3.48</u>	<u>1.65</u>	<u>4.96</u>	<u>2.55</u>	<u>13</u>	<u>8.92</u>	<u>2.83</u>	<u>3.94</u>	4.25	1.48	<u>2.44</u>	1.79	<u>0.39</u>	1.9	
	BH06-2d	Duplicate	0.0 - 0.1	<u>2.76</u>	<u>0.846</u>	<u>0.404</u>	<u>4.14</u>	<u>2.15</u>	<u>6.3</u>	<u>3.88</u>	<u>16.8</u>	<u>11.1</u>	<u>4.86</u>	<u>5.48</u>	6.93	2.77	<u>4.38</u>	2.95	<u>0.683</u>	3.05	
QA/QC RPD%				64	65	39	17	26	24	41	26	22	53	33	48	61	57	49	55	46	
BH06-7	BH06-7	2006 06 16	0.0 - 0.1	<u>0.742</u>	<u>0.262</u>	<u>0.423</u>	<u>0.372</u>	<u>0.315</u>	<u>3.96</u>	<u>1.03</u>	<u>9.26</u>	<u>11.7</u>	<u>5.17</u>	<u>6.03</u>	9.79	3.57	<u>6.53</u>	4.85	<u>1.33</u>	4.48	
	12289-02	2006 06 07	1.5 - 2.3	<u>0.496</u>	0.103	0.108	<u>1.53</u>	<u>0.762</u>	<u>3.18</u>	<u>0.377</u>	1.04	1.19	0.337	0.262	0.631	0.192	0.419	0.312	0.075	0.35	
	12289-03	2006 06 07	2.3 - 2.6	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
BH06-8	BH06-8	2006 06 16	0.0 - 0.1	<u>1.09</u>	<u>0.591</u>	<u>0.213</u>	<u>3.62</u>	<u>3.43</u>	<u>19.5</u>	<u>12</u>	<u>21.9</u>	<u>16.5</u>	<u>4.88</u>	<u>5.4</u>	5	1.9	<u>3.09</u>	1.66	<u>0.363</u>	1.62	
	12289-04	2006 06 07	0.9 - 1.1	0.209	0.135	<u>0.46</u>	<u>0.163</u>	<u>0.218</u>	<u>1.56</u>	<u>0.687</u>	<u>4.57</u>	<u>8.21</u>	<u>2.06</u>	<u>3.4</u>	6.98	2.14	<u>4.02</u>	3.22	<u>0.785</u>	2.9	
	12289-05	Duplicate	0.9 - 1.1	0.225	0.148	<u>0.272</u>	<u>0.228</u>	<u>0.233</u>	<u>1.76</u>	<u>0.589</u>	<u>3.3</u>	<u>5.92</u>	<u>1.58</u>	<u>1.65</u>	4.69	1.5	<u>2.6</u>	2.07	<u>0.511</u>	1.81	
	QA/QC RPD%				7	9	51	33	7	12	15	32	32	26	69	39	35	43	43	42	46
BH06-9	BH06-9	2006 06 16	0.0 - 0.1	<u>0.434</u>	<u>0.266</u>	<u>0.245</u>	<u>0.352</u>	<u>0.368</u>	<u>2.59</u>	<u>0.929</u>	<u>3.84</u>	<u>4.49</u>	<u>1.82</u>	<u>2.15</u>	2.97	1.03	<u>2.01</u>	1.17	<u>0.247</u>	1.27	
	BH06-9d	Duplicate	0.0 - 0.1	<u>0.709</u>	<u>0.388</u>	<u>0.315</u>	<u>1.42</u>	<u>1.11</u>	<u>4.34</u>	<u>1.3</u>	<u>5.02</u>	<u>5.73</u>	<u>2.31</u>	<u>3.14</u>	3.42	1.38	<u>2.42</u>	1.48	<u>0.33</u>	1.6	
	QA/QC RPD%				48	37	25	121	100	51	33	27	24	24	37	14	29	19	23	29	23
	12289-06	2006 06 07	0.0 - 0.8	<u>0.728</u>	<u>0.209</u>	<u>0.152</u>	<u>0.753</u>	<u>0.273</u>	<u>1.05</u>	<u>0.469</u>	<u>3.2</u>	<u>5.56</u>	<u>1.1</u>	<u>0.822</u>	2.09	0.649	<u>1.22</u>	0.822	<u>0.182</u>	0.747	
	12289-08	2006 06 07	1.2 - 1.5	<u>2.05</u>	<u>0.697</u>	<u>0.203</u>	<u>5.22</u>	<u>2.35</u>	<u>19.9</u>	<u>4.43</u>	<u>24.8</u>	<u>25.4</u>	<u>7.18</u>	<u>8.59</u>	8.9	2.96	<u>7.34</u>	5.04	<u>1.05</u>	5.02	
	12289-09	2006 06 07	1.7 - 2.3	0.132	< 0.05	< 0.05	<u>0.117</u>	< 0.05	0.218	0.09	1.34	1.24	0.234	0.152	0.259	0.092	0.171	0.101	< 0.05	0.102	
	12289-10	Duplicate	1.7 - 2.3	0.079	< 0.05	< 0.05	0.054	< 0.05	0.088	0.05	0.354	0.407	0.077	0.078	0.147	0.065	0.091	0.064	< 0.05	0.061	
	QA/QC RPD%				50	*	*	74	*	85	57	116	101	101	64	*	34	61	45	*	50
BH06-10	BH06-10	2006 06 16	0.0 - 0.1	<u>0.528</u>	0.165	<u>0.329</u>	<u>0.355</u>	<u>0.388</u>	<u>2.77</u>	<u>1.47</u>	<u>10.2</u>	<u>7.47</u>	<u>3.01</u>	<u>3.46</u>	3.71	1.58	<u>2.44</u>	1.5	<u>0.383</u>	1.54	
	12290-01	2006 06 07	0.0 - 0.8	0.178	0.089	<u>0.176</u>	<u>0.143</u>	0.118	<u>0.76</u>	<u>0.346</u>	<u>2.59</u>	<u>3.93</u>	<u>1.28</u>	<u>1.42</u>	2.8	0.932	<u>1.64</u>	0.996	<u>0.251</u>	0.946	
	12290-04	2006 06 07	1.5 - 1.8	0.083	< 0.05	0.083	<u>0.139</u>	0.075	0.374	0.195	1.28	<u>1.5</u>	0.49	0.477	1.06	0.387	0.59	0.428	0.105	0.394	
	12290-06	2006 06 07	2.3 - 2.7	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	12290-07	2006 06 07	2.9 - 3.0	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
BH06-11	BH06-11	2006 06 16	0.0 - 0.1	<u>2.62</u>	<u>0.623</u>	<u>0.401</u>	<u>5.18</u>	<u>1.79</u>	<u>6.73</u>	<u>3.78</u>	<u>26.2</u>	<u>18.7</u>	<u>6.01</u>	<u>7.36</u>	6.64	2.44	<u>3.72</u>	2.41	<u>0.53</u>	2.37	
	12290-08	2006 06 07	0.0 - 0.8	<u>11.5</u>	<u>2.3</u>	<u>0.975</u>	<u>23.2</u>	<u>13.4</u>	<u>18.4</u>	<u>14.1</u>	<u>80.3</u>	<u>57.7</u>	<u>14.1</u>	<u>22.7</u>	17.9	5.88	<u>9.68</u>	5.46	<u>1.34</u>	5.39	
	12290-12	2006 06 07	2.7 - 3.0	<u>1.8</u>	0.201	< 0.05	<u>0.412</u>	<u>0.299</u>	<u>0.586</u>	0.108	0.293	0.195	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	12291-03	2006 06 07	3.5 - 3.7	<u>4.78</u>	<u>10.8</u>	<u>0.129</u>	<u>12.6</u>	<u>8.32</u>	<u>8.6</u>	<u>3.75</u>	<u>34.9</u>	<u>13.8</u>	<u>2.87</u>	<u>2.13</u>	2.97	1.11	<u>1.58</u>	0.68	<u>0.185</u>	0.638	
BH06-12	BH06-12	2006 06 16	0.0 - 0.1	0.297	<u>0.242</u>	<u>0.256</u>	<u>0.094</u>	<u>0.137</u>	<u>1.01</u>	<u>0.42</u>	<u>1.9</u>	<u>1.78</u>	<u>0.933</u>	<u>1.17</u>	1.45	0.554	<u>1.02</u>	0.91	<u>0.183</u>	0.872	
	12291-04	2006 06 07	0.8 - 1.5	<u>0.447</u>	0.127	<u>0.209</u>	<u>0.188</u>	<u>0.173</u>	<u>1.51</u>	<u>0.453</u>	<u>2.48</u>	<u>1.99</u>	<u>0.886</u>	<u>1.08</u>	1.36	0.529	<u>0.851</u>	0.633	0.134	0.672	
	12291-06	2006 06 07	2.3 - 2.7	0.286	< 0.05	< 0.05	<u>0.152</u>	< 0.05	0.288	0.112	0.277	0.282	0.088	0.121	0.107	< 0.05	0.078	0.052	< 0.05	0.088	
BC Standard																					
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				0.47	0.24	0.15	0.11	0.17	0.65	0.29	1.8	1.7	0.83	1	n/a	n/a	0.92	n/a	0.16	n/a	
Federal Guideline																					
CCME CEQG Probable Effect Level (PEL) ^b				0.391	0.201	0.128	0.0889	0.144	0.544	0.245	1.494	1.398	0.693	0.846	n/a	n/a	0.763	n/a	0.135	n/a	

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

^b Guideline to protect marine aquatic life.

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 8: Summary of Analytical Results for Intertidal Sediment and Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yy yy mm dd)	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																		
				Naphthalene (µg/g)	Methylnaphthalene, 2- (µg/g)	Acenaphthylene (µg/g)	Acenaphthene (µg/g)	Fluorene (µg/g)	Phenanthrene (µg/g)	Anthracene (µg/g)	Fluoranthene (µg/g)	Pyrene (µg/g)	Benz(a)anthracene (µg/g)	Chrysene (µg/g)	Benzo(b)fluoranthene (µg/g)	Benzo(k)fluoranthene (µg/g)	Benzo(a)pyrene (µg/g)	Indeno(1,2,3-cd)pyrene (µg/g)	Dibenzo(a,h)anthracene (µg/g)	Benzo(g,h,i)perylene (µg/g)		
BH06-13	BH06-13	2006 06 16	0.0 - 0.1	0.353	0.12	0.143	0.107	0.101	1.35	0.216	2.1	1.7	0.626	0.898	0.999	0.329	0.49	0.444	0.077	0.44		
	12291-08	2006 06 07	0.0 - 0.8	0.073	< 0.05	< 0.05	< 0.04	< 0.05	0.132	< 0.05	0.167	0.136	< 0.05	0.076	0.101	< 0.05	0.051	0.055	< 0.05	0.073		
	12291-10	2006 06 07	1.5 - 2.1	0.062	< 0.05	< 0.05	< 0.04	< 0.05	0.885	0.064	0.897	0.676	0.187	0.32	0.381	0.135	0.103	0.143	< 0.05	0.156		
BH06-14	BH06-14	2006 06 16	0.0 - 0.1	0.721	0.374	0.487	0.465	0.51	5.94	1.79	15.3	11.6	7.65	9.47	11.6	4.26	8.12	6.3	1.18	5.67		
	12291-12	2006 06 07	1.2 - 1.4	< 0.05	< 0.05	< 0.05	< 0.04	1.67	7.82	5.53	42.3	26.7	17.1	20.2	30.1	9.19	18.2	12.9	3.58	11.6		
	12292-03	2006 06 07	2.3 - 3.1	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	0.806	0.638	0.317	0.438	0.574	0.178	0.334	0.233	0.079	0.293		
	12292-04	Duplicate	2.3 - 3.1	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	1.52	1.27	0.65	0.845	1.02	0.431	0.725	0.435	0.125	0.464		
	QA/QC RPD%				*	*	*	*	*	*	*	61	66	71	80	56	83	74	60	45	45	
BH06-15	12292-05	2006 06 07	3.7 - 3.8	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
	BH06-15	2006 06 16	0.0 - 0.1	0.073	< 0.05	< 0.05	< 0.04	< 0.05	0.236	0.131	0.719	0.606	0.317	0.438	0.604	0.26	0.4	0.234	0.054	0.229		
	BH06-15d	Duplicate	0.0 - 0.1	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	0.375	0.198	1.02	0.656	0.605	0.964	1.34	0.537	0.8	0.48	0.098	0.459		
	QA/QC RPD%				*	*	*	*	*	45	41	35	8	62	75	76	70	67	69	58	67	
BH06-16	12070-01	2006 06 08	0.9 - 1.2	0.587	0.391	0.068	0.8	0.972	5.67	1.75	6.1	4.73	2.07	2.21	2.21	0.773	1.69	0.838	0.203	0.833		
	12070-03	2006 06 08	2.1 - 2.2	0.991	0.227	0.126	0.773	0.311	1.18	0.434	2.03	1.71	0.553	0.642	0.721	0.273	0.446	0.264	0.061	0.3		
	BH06-16	2006 06 16	0.0 - 0.1	0.052	< 0.05	< 0.05	< 0.04	< 0.05	0.135	0.161	0.232	0.24	0.191	0.457	0.478	0.196	0.156	0.138	< 0.05	0.12		
BH06-17	12070-07	2006 06 08	1.4 - 1.5	0.138	< 0.05	< 0.05	< 0.04	< 0.05	0.093	< 0.05	0.094	0.091	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
	12070-10	2006 06 08	2.6 - 2.7	0.154	< 0.05	< 0.05	< 0.04	< 0.05	0.118	0.051	0.216	0.235	0.087	0.07	0.089	< 0.05	0.061	< 0.05	< 0.05	< 0.05		
	BH06-17	2006 06 16	0.0 - 0.1	0.348	0.071	< 0.05	0.047	< 0.05	0.351	0.111	0.417	0.354	0.115	0.142	0.172	0.084	0.104	0.082	< 0.05	0.087		
BH06-18	12071-01	2006 06 08	0.9 - 1.4	0.106	< 0.05	< 0.05	< 0.04	< 0.05	0.096	< 0.05	0.172	0.19	0.066	0.073	0.073	< 0.05	0.052	< 0.05	< 0.05	< 0.05		
	12071-02	2006 06 08	1.5 - 1.8	0.06	< 0.05	< 0.05	< 0.04	< 0.05	0.059	< 0.05	< 0.05	0.086	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
	BH06-18	2006 06 16	0.0 - 0.1	0.328	0.083	0.216	0.406	0.209	1.51	0.614	5.37	3.58	1.87	3.62	2.97	1.04	1.72	1.19	0.228	1.28		
	12071-08	2006 06 08	0.8 - 1.1	0.125	< 0.05	0.055	0.197	0.082	0.334	0.203	1.42	1.52	0.503	0.502	0.747	0.249	0.411	0.227	0.052	0.23		
BH06-19	12071-10	2006 06 08	1.5 - 1.8	0.57	0.123	0.149	0.568	0.326	1.62	0.763	3.94	3.94	1.84	2.47	2.71	1.08	1.72	0.944	0.266	0.969		
	BH06-19	2006 06 16	0.0 - 0.1	0.276	0.168	0.263	0.195	0.334	2.27	4.2	5.41	4.26	2.66	3.88	3.29	1.29	1.96	1.25	0.306	1.24		
	12071-11	2006 06 08	0.8 - 1.5	3.35	3.29	0.741	2.8	2.63	22.5	5.51	25.8	23.7	9.21	10.4	10.7	3.55	8.56	4.53	0.997	4.68		
BH06-20	12072-01	2006 06 08	1.5 - 1.6	0.294	0.201	0.091	0.333	0.305	2.42	0.632	2.88	2.47	1.02	1.14	1.12	0.445	0.927	0.511	0.112	0.551		
	BH06-20	2006 06 16	0.0 - 0.1	0.186	0.068	0.104	< 0.04	< 0.05	0.483	0.17	0.875	0.795	0.452	0.463	0.64	0.285	0.436	0.319	0.069	0.297		
	12072-02	2006 06 08	0.0 - 0.8	0.149	0.053	0.067	< 0.04	< 0.05	0.331	0.088	0.557	0.514	0.238	0.314	0.381	0.111	0.247	0.192	< 0.05	0.199		
BH06-21	BH06-21	2006 06 16	0.0 - 0.1	0.649	0.616	1.84	0.704	0.344	2.05	2.64	45.4	31.7	17.1	17.2	24.4	7.71	17.2	11.2	2.66	10.2		
	12072-03	2006 06 08	0.0 - 0.8	0.24	0.184	0.426	0.176	0.124	0.632	0.481	10.2	7.17	2.48	3.08	4.96	1.47	3.4	1.92	0.479	1.89		
BH06-22	BH06-22	2006 06 16	0.0 - 0.1	1.09	0.465	0.32	2.38	1.68	6.57	1.81	8.38	6.47	2.7	2.8	4.37	1.48	3.03	2.4	0.504	2.38		
	12072-04	2006 06 08	0.0 - 0.6	3.03	0.388	0.388	2.18	1.14	5.63	1.29	10.2	8.13	5.04	6.13	7.96	2.53	5.54	3.04	0.759	2.92		
BH06-23	BH06-23	2006 06 16	0.0 - 0.1	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.5	< 0.05	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
	12072-05	2006 06 08	1.1 - 1.5	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	0.143	< 0.05	0.204	0.204	0.088	0.107	0.126	0.055	0.088	0.069	< 0.05	0.076		
BH06-25	12293-12	2006 06 09	2.4 - 3.0	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	0.054	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05		
BC Standard																						
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				0.47	0.24	0.15	0.11	0.17	0.65	0.29	1.8	1.7	0.83	1	n/a	n/a	0.92	n/a	0.16	n/a		
Federal Guideline																						
CCME CEQG Probable Effect Level (PEL) ^b				0.391	0.201	0.128	0.0889	0.144	0.544	0.245	1.494	1.398	0.693	0.846	n/a	n/a	0.763	n/a	0.135	n/a		

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 8: Summary of Analytical Results for Intertidal Sediment and Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy-mm-dd)	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																
				Naphthalene (µg/g)	Methylnaphthalene, 2- (µg/g)	Acenaphthylene (µg/g)	Acenaphthene (µg/g)	Fluorene (µg/g)	Phenanthrene (µg/g)	Anthracene (µg/g)	Fluoranthene (µg/g)	Pyrene (µg/g)	Benz(a)anthracene (µg/g)	Chrysene (µg/g)	Benzo(b)fluoranthene (µg/g)	Benzo(k)fluoranthene (µg/g)	Benzo(a)pyrene (µg/g)	Indeno(1,2,3-cd)pyrene (µg/g)	Dibenz(a,h)anthracene (µg/g)	Benzo(g,h,i)perylene (µg/g)
BH06-26	BH06-26	2006 06 16	0.0 - 0.1	0.223	0.115	0.293	0.264	0.185	1.62	0.611	5.13	4.36	2.35	2.37	3.11	1.2	2.14	1.35	0.326	1.34
BH06-27	BH06-27	2006 06 16	0.0 - 0.1	1.78	0.684	0.468	2.06	1.05	11.3	1.23	18.8	13.4	2.5	3.56	5.29	2.1	3.16	2.17	0.506	2.12
BH06-28	BH06-28	2006 06 16	0.0 - 0.1	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH06-29	BH06-29	2006 06 16	0.0 - 0.1	6.2	0.848	0.447	15.5	11.3	35.5	6.77	35.5	22.9	7.22	8.27	8.58	3.14	4.95	2.74	0.594	2.86
TP06-123	12267-09	2006 06 07	0.4 - 0.5	1.12	0.341	0.525	0.8	0.946	7.08	2.39	21.5	16.5	10.7	12.1	21.2	6.88	12.8	7.81	2.53	6.97
	12267-10	Duplicate	0.4 - 0.5	0.726	0.562	1.08	1.26	0.984	5.48	2.79	25.9	21.7	11.8	15.3	24	9.34	16.9	9.15	2.12	7.54
	QA/QC RPD%			43	49	69	45	4	25	15	19	27	10	23	12	30	28	16	18	8
	12268-01	2006 06 07	2.8	0.117	< 0.05	< 0.05	< 0.04	0.109	0.584	0.227	1.61	1.33	0.752	0.958	1.47	0.459	0.852	0.594	0.168	0.611
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	0.21	0.1	0.13	0.12	0.16	1	0.4	2.1	2.4	0.81	0.91	0.99	0.45	0.99	0.58	0.16	0.73
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH12-10-4-121210	Duplicate	3.7 - 4.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	QA/QC RPD%			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	BH12-10-5-121210	2012 12 10	4.7 - 5.0	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BH12-11	BH12-11-1-121211	2012 12 11	0.7 - 0.8	0.33	0.075	< 0.05	0.098	0.12	0.55	0.17	1	1	0.21	0.29	0.15	0.071	0.15	0.07	< 0.05	0.12
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	BH12-11-8-121211	2012 12 11	5.3 - 5.6	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
BC Standard																				
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				0.47	0.24	0.15	0.11	0.17	0.65	0.29	1.8	1.7	0.83	1	n/a	n/a	0.92	n/a	0.16	n/a
Federal Guideline																				
CCME CEQG Probable Effect Level (PEL) ^b				0.391	0.201	0.128	0.0889	0.144	0.544	0.245	1.494	1.398	0.693	0.846	n/a	n/a	0.763	n/a	0.135	n/a

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 * RPDs are not calculated where one or more concentrations are less than five times RDL.
 RDL Denotes reported detection limit.

^a Pathways Included: Typical Site. OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
^b Guideline to protect marine aquatic life. UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical		Total Metals																		
				pH	pH	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Vanadium µg/g	Zinc µg/g
BH06-1	BH06-1	2006 06 16	0.0 - 0.1	8.85	15	< 5	27.9	< 0.5	< 0.5	10.2	2.5	178	107	-	0.0588	< 4	8.2	< 2	< 2	-	67.3	15.7	109	
	12287-02	2006 06 06	0.8 - 1.1	8.44	< 10	< 5	15.4	< 0.5	< 0.5	5.7	2.1	90.3	48	-	0.0217	< 4	5	< 2	< 2	-	11.1	11.2	89.3	
BH06-2	BH06-2	2006 06 16	0.0 - 0.1	7.15	10	7.2	22.1	< 0.5	0.82	8	2.9	131	134	-	0.218	14.6	10.9	< 2	< 2	-	17.9	24.5	183	
BH06-3	BH06-3	2006 06 16	0.0 - 0.1	8.14	29	44.2	75.1	< 0.5	0.54	24.6	4.9	624	372	-	2.21	4.7	18.9	< 2	< 2	-	74.7	29.5	736	
BH06-4	BH06-4	2006 06 16	0.0 - 0.1	7.2	76	166	80	< 0.5	3	105	17.2	17,400	4,230	-	102	19.3	150	< 4	< 4	-	254	43.1	4,720	
BH06-5	BH06-5	2006 06 16	0.0 - 0.1	7.97	13	23.8	138	< 0.5	< 0.5	32.5	5.6	2,050	383	-	1.21	5.1	27.8	< 2	< 2	-	117	33.1	711	
	12278-03	2006 06 14	3.8 - 4.1	7.62	< 10	< 5	52.5	< 0.5	< 0.5	8.5	4.1	10.3	< 30	-	0.0075	< 4	5.4	< 2	< 2	-	< 5	27.6	25.1	
BH06-6	BH06-6	2006 06 16	0.0 - 0.1	7.81	51	162	338	< 0.5	2	54.4	9.3	3,540	1,940	-	18	11.4	46.3	< 2	< 2	-	74.3	37.8	2,600	
	BH06-2d	Duplicate	0.0 - 0.1	7.7	90	214	409	< 0.5	4.55	67.3	12.4	3,110	2,180	-	9.37	18.4	71.2	< 2	< 2	-	129	41.2	3,700	
	QA/QC RPD%				1	55	28	19	*	78	21	29	13	12	-	63	*	42	*	*	-	54	9	35
BH06-7	BH06-7	2006 06 16	0.0 - 0.1	6.9	47	71.7	99	< 0.5	1.31	59.7	6.9	4,570	3,520	-	18.9	22	35.4	< 2	< 2	-	77.3	37.1	1,650	
	12289-02	2006 06 07	1.5 - 2.3	6.8	15	10.7	31.1	< 0.5	0.75	14.5	2.7	576	190	-	2.52	27	13.7	< 2	< 2	-	14.4	14	418	
	12289-03	2006 06 07	2.3 - 2.6	8.66	< 10	< 5	25.8	< 0.5	< 0.5	15	4.2	14.7	< 30	-	0.0706	< 4	7.8	< 2	< 2	-	< 5	26.3	37	
BH06-8	BH06-8	2006 06 16	0.0 - 0.1	8.09	131	51.7	113	< 0.5	0.79	39.5	6	1,700	1,130	-	3.57	5.7	24	< 2	< 2	-	170	36	1,040	
	12289-04	2006 06 07	0.9 - 1.1	7.83	25	47.2	155	< 0.5	1.25	55.3	6.2	4,490	771	-	7.92	8	35.4	< 2	< 2	-	123	34.2	1,030	
	12289-05	Duplicate	0.9 - 1.1	7.75	29	47.8	143	< 0.5	0.83	49.9	5.9	3,720	703	-	6.57	6.5	21.1	< 2	< 2	-	110	28.3	974	
	QA/QC RPD%				1	15	1	8	*	40	10	5	19	9	-	19	*	51	*	*	-	11	19	6
BH06-9	BH06-9	2006 06 16	0.0 - 0.1	8.09	< 10	28.5	72.8	< 0.5	< 0.5	17.7	4.9	811	254	-	4.28	4.1	8.1	< 2	< 2	-	15.7	39.6	428	
	BH06-9d	Duplicate	0.0 - 0.1	8	10	32.1	85.1	< 0.5	< 0.5	21.9	5.2	1,020	493	-	6.28	4.8	10.3	< 2	< 2	-	18.5	43.2	598	
	QA/QC RPD%				1	*	12	16	*	*	21	6	23	64	-	38	*	24	*	*	-	16	9	33
	12289-06	2006 06 07	0.0 - 0.8	7.66	10	15.1	54.4	< 0.5	< 0.5	25.1	9.1	542	716	-	3.88	6.6	13.9	< 2	< 2	-	17.1	43.5	445	
	12289-08	2006 06 07	1.2 - 1.5	7.47	< 10	5.7	47.9	< 0.5	< 0.5	13.6	5.7	69.3	85	-	0.534	4.1	6.7	< 2	< 2	-	5.5	38.3	112	
	12289-09	2006 06 07	1.7 - 2.3	7.79	< 10	< 5	35.3	< 0.5	< 0.5	12.6	4.1	60.6	82	-	0.308	< 4	6.3	< 2	< 2	-	< 5	36.6	83.3	
	12289-10	Duplicate	1.7 - 2.3	7.94	< 10	7.7	34.7	< 0.5	< 0.5	11.6	4.3	57.8	58	-	0.369	< 4	5.1	< 2	< 2	-	< 5	34.2	95	
QA/QC RPD%				2	*	*	2	*	*	8	5	5	34	-	18	*	21	*	*	-	*	7	13	
BH06-10	BH06-10	2006 06 16	0.0 - 0.1	8.29	89	255	125	< 0.5	1.75	54.4	12	1,440	691	-	4.38	18.5	24	< 2	< 2	-	64.6	46.4	2,130	
	12290-01	2006 06 07	0.0 - 0.8	7.83	29	73.4	74.3	< 0.5	< 0.5	30.9	7.8	968	304	-	3.78	7.2	13.1	< 2	< 2	-	27.5	51.5	842	
	12290-04	2006 06 07	1.5 - 1.8	7.89	65	173	98.3	< 0.5	1.03	37.7	11.2	1,160	401	-	2.58	9.5	12.9	< 2	< 2	-	30	48.6	1,340	
	12290-06	2006 06 07	2.3 - 2.7	8.73	< 10	6	28.2	< 0.5	< 0.5	15.6	4.9	28.9	< 30	-	0.0784	< 4	10.3	< 2	< 2	-	< 5	32.8	48	
	12290-07	2006 06 07	2.9 - 3.0	8.96	< 10	< 5	51.5	< 0.5	< 0.5	10.9	4.9	12.9	< 30	-	0.0091	< 4	6.4	< 2	< 2	-	< 5	38.3	30.2	
BC Standard																								
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																								
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

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^b Guideline to protect marine aquatic life.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical		Total Metals																		
				pH	pH	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Vanadium µg/g	Zinc µg/g
BH06-11	BH06-11	2006 06 16	0.0 - 0.1	7.64	26	46.1	139	< 0.5	2.05	54.6	7.1	1,720	810	-	8.21	6.4	27.3	< 2	< 2	-	60.3	46	1,380	
	12290-08	2006 06 07	0.0 - 0.8	7.71	44	63.2	104	< 0.5	1.73	51.3	7.9	2,640	999	-	7.55	10	31.2	< 2	< 2	-	133	47.5	1,910	
	12290-12	2006 06 07	2.7 - 3.0	8.51	< 10	< 5	17.9	< 0.5	< 0.5	9.1	3.6	18.8	< 30	-	0.0292	< 4	6	< 2	< 2	-	< 5	25.3	35.1	
BH06-12	12291-03	2006 06 07	3.5 - 3.7	8.84	< 10	6	24.5	< 0.5	< 0.5	13	4.6	14.5	< 30	-	0.0215	< 4	9.3	< 2	< 2	-	< 5	33.9	33.2	
	BH06-12	2006 06 16	0.0 - 0.1	7.72	18	45.1	182	< 0.5	0.6	25.4	7.6	4,630	920	-	28.1	5	28.9	< 2	< 2	-	45.7	40.5	1,280	
	12291-04	2006 06 07	0.8 - 1.5	6.92	15	19.6	48.1	< 0.5	1.28	19.8	4.9	935	286	-	5.57	21.3	17.3	< 2	< 2	-	12.3	32.8	932	
BH06-13	12291-06	2006 06 07	2.3 - 2.7	7.06	< 10	< 5	12.3	< 0.5	< 0.5	6.5	2.2	47.5	42	-	0.4	5.6	< 5	< 2	< 2	-	< 5	14.5	77.3	
	BH06-13	2006 06 16	0.0 - 0.1	7.28	20	51.9	60.4	< 0.5	0.76	22.2	5.7	1,470	359	-	5.98	5.5	18.2	< 3	< 2	-	40.6	32.3	1,070	
	12291-08	2006 06 07	0.0 - 0.8	6.71	18	105	146	< 0.5	1.01	48.6	6.6	4,500	1,150	-	8.32	15.7	38.5	< 2	< 2	-	577	38	1,680	
BH06-14	12291-10	2006 06 07	1.5 - 2.1	6.65	12	53.1	76.9	< 0.5	0.84	27.9	6	9,510	1,640	-	5.25	38.3	37.5	< 2	< 2	-	532	37.8	2,080	
	BH06-14	2006 06 16	0.0 - 0.1	7.89	53	233	488	< 0.5	2.01	66.7	14.7	6,040	1,250	-	12.3	24.7	35.3	< 2	< 2	-	146	37.6	2,820	
	12291-12	2006 06 07	1.2 - 1.4	7.48	23	198	63	< 0.5	1.19	40	6	9,920	1,040	-	4.5	30.2	25.9	< 2	< 2	-	62.5	24.5	1,940	
	12292-03	2006 06 07	2.3 - 3.1	6.79	34	48.6	28.2	< 0.5	2.15	14.6	2.3	822	716	-	1.91	35.9	13	< 2	< 2	-	14.5	11.2	983	
	12292-04	Duplicate	2.3 - 3.1	7	20	44.2	65.6	< 0.5	1.43	7.1	< 2	874	150	-	2.91	40.3	7.4	< 2	< 2	-	9.3	11.7	783	
QA/QC RPD%				3	52	9	80	*	40	*	*	6	131	-	41	12	55	*	*	-	44	4	23	
BH06-15	12292-05	2006 06 07	3.7 - 3.8	8.28	< 10	< 5	26.6	< 0.5	< 0.5	12.1	3.6	13.2	< 30	-	0.0477	< 4	6.8	< 2	< 2	-	< 5	29.8	32.5	
	BH06-15	2006 06 16	0.0 - 0.1	8.33	< 10	11.8	76.1	< 0.5	< 0.5	11.7	3	250	86	-	1.46	< 4	5.3	< 3	< 2	-	11.1	23.9	157	
	BH06-15d	Duplicate	0.0 - 0.1	8.37	< 10	8	51.2	< 0.5	< 0.5	13.3	2.5	163	70	-	0.514	< 4	< 5	< 2	< 2	-	< 5	20.1	129	
	QA/QC RPD%				0	*	38	39	*	*	13	18	42	21	-	96	*	*	*	*	-	*	17	20
BH06-16	12070-01	2006 06 08	0.9 - 1.2	8.18	< 10	27.4	65.6	< 0.5	< 0.5	16.2	3.6	464	191	-	2.29	< 4	7.2	< 2	< 2	-	13.6	27.5	372	
	12070-03	2006 06 08	2.1 - 2.2	7.97	< 10	5.7	38.4	< 0.5	< 0.5	14.4	3.7	131	97	-	1.07	5.4	10	< 2	< 2	-	11.8	33.8	171	
	BH06-16	2006 06 16	0.0 - 0.1	8.07	832	17.7	27	< 0.5	< 0.5	11.9	3.1	364	3,720	-	0.1	< 4	8.7	< 2	< 2	-	1,180	20.9	206	
	12070-07	2006 06 08	1.4 - 1.5	8.12	< 10	< 5	16.4	< 0.5	< 0.5	8.9	3.4	7.9	< 30	-	0.0109	< 4	6.7	< 2	< 2	-	< 5	22.1	22.5	
BH06-17	12070-10	2006 06 08	2.6 - 2.7	8.07	127	7.8	19.2	< 0.5	0.74	15.8	4.1	2,220	327	-	0.0789	18.6	13.7	< 2	< 2	-	824	27.3	184	
	BH06-17	2006 06 16	0.0 - 0.1	7.81	236	27.9	38.1	< 0.5	0.9	517	10.3	2,620	1,080	-	0.27	9.9	474	< 2	< 2	-	730	22.4	593	
	12071-01	2006 06 08	0.9 - 1.4	7.6	< 10	6.4	6.2	< 0.5	0.92	6.1	< 2	19.4	< 30	-	0.0292	28.1	5.1	< 2	< 2	-	11.9	10.5	102	
BH06-18	12071-02	2006 06 08	1.5 - 1.8	7.73	39	6.8	14.6	< 0.5	0.68	13	2.1	162	345	-	0.0405	17.5	9.1	< 2	< 2	-	96.2	13.9	84.5	
	BH06-18	2006 06 16	0.0 - 0.1	8.09	100	257	137	< 0.5	1.83	51.6	13.6	1,030	559	-	3.63	16.8	22	< 2	< 2	-	45.6	51.8	2,160	
	12071-08	2006 06 08	0.8 - 1.1	8.26	257	336	78.5	< 0.5	0.98	40.2	22.5	1,360	414	-	6.06	23.6	17.5	< 2	< 2	-	40.9	44	1,710	
	12071-10	2006 06 08	1.5 - 1.8	8.11	245	409	88.9	< 0.5	1.84	43.4	24	1,180	530	-	2.96	33.2	19.5	< 2	< 2	-	55.6	44.7	1,990	
BC Standard																								
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																								
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

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TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical		Total Metals																		
				pH	pH	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Vanadium µg/g	Zinc µg/g
BH06-19	BH06-19	2006 06 16	0.0 - 0.1	7.78	181	581	195	< 0.5	3.17	64.6	25.2	1,510	4,370	-	2.59	43.9	32.7	< 2	< 2	-	62	57.6	4,500	
	12071-11	2006 06 08	0.8 - 1.5	7.18	33	95.2	70.1	< 0.5	0.81	48.9	11.3	1,780	1,470	-	7.43	20	121	< 2	< 2	-	61.9	97.9	1,440	
	12072-01	2006 06 08	1.5 - 1.6	7.89	130	379	160	< 0.5	1.92	57.2	18.3	863	924	-	0.678	25.7	24.8	< 2	< 2	-	43.1	48.3	2,850	
BH06-20	BH06-20	2006 06 16	0.0 - 0.1	7.31	< 10	15.2	76.5	< 0.5	< 0.5	17.8	6.8	291	136	-	2.58	< 4	19.8	< 2	< 2	-	16.1	36.8	991	
	12072-02	2006 06 08	0.0 - 0.8	7.34	< 10	26.6	97.6	< 0.5	< 0.5	21.9	7.2	309	115	-	2.24	< 4	21.1	< 2	< 2	-	14.2	42	990	
BH06-21	BH06-21	2006 06 16	0.0 - 0.1	7.91	71	247	78.3	< 0.5	2.92	72	13.2	16,500	7,360	-	54.1	12.1	53.6	< 2	< 2	-	127	35.1	5,390	
	12072-03	2006 06 08	0.0 - 0.8	8.21	60	115	107	< 0.5	1.62	102	12.3	6,040	4,210	-	21.2	12.3	45.7	< 2	< 2	-	83.6	37.4	3,200	
BH06-22	BH06-22	2006 06 16	0.0 - 0.1	7.9	75	197	296	< 0.5	1.75	56.8	11.8	2,710	1,790	-	6.2	14.6	25.8	< 2	< 2	-	123	44.3	2,870	
	12072-04	2006 06 08	0.0 - 0.6	7.44	51	171	182	< 0.5	2.02	67.1	14.9	5,290	1,940	-	10.1	16.8	50.9	< 2	< 2	-	124	43	3,310	
BH06-23	BH06-23	2006 06 16	0.0 - 0.1	8.64	16	24.6	26.3	< 0.5	< 0.5	19	4.7	608	200	-	0.101	4.1	15	< 2	< 2	-	76.8	25.2	272	
	12072-05	2006 06 08	1.1 - 1.5	6.96	45	18	25.6	< 0.5	< 0.5	22.5	5.2	407	377	-	0.349	9.2	21	2	< 2	-	146	24.2	288	
BH06-25	12293-12	2006 06 09	2.4 - 3.0	8.22	< 10	5.2	20.3	< 0.5	< 0.5	12.9	3.4	26.1	< 30	-	0.1	< 4	8.1	< 2	< 2	-	< 5	24.1	40.8	
BH06-26	BH06-26	2006 06 16	0.0 - 0.1	8.19	208	479	171	< 0.5	2.11	68.1	21.6	1,380	603	-	2.66	31.4	24.3	< 3	< 2	-	62.3	50.9	3,540	
BH06-27	BH06-27	2006 06 16	0.0 - 0.1	8.08	29	76	101	< 0.5	1.47	68.8	10.1	2,640	1,670	-	8.84	9.6	42.4	< 2	< 2	-	44.5	40.2	2,140	
BH06-28	BH06-28	2006 06 16	0.0 - 0.1	8.97	< 10	6.6	13.4	< 0.5	< 0.5	7.8	2.8	302	96	-	0.0429	< 4	5.3	< 2	< 2	-	29.6	15.6	148	
BH06-29	BH06-29	2006 06 16	0.0 - 0.1	7.83	79	77.6	126	< 0.5	1.21	42.2	7.1	1,340	1,140	-	4.49	7.9	25.8	< 2	< 2	-	204	37.9	1,410	
TP06-123	12267-09	2006 06 07	0.4 - 0.5	7.73	23	120	171	< 0.5	1.75	34.4	7.4	4,000	1,080	-	9.22	5.7	18.7	< 2	< 2	-	60.1	18.2	2,820	
	12267-10	Duplicate	0.4 - 0.5	7.89	79	342	263	< 0.5	3.45	79.9	16.2	4,530	1,820	-	9.29	21	35	< 2	< 2	-	104	47.9	4,470	
	QA/QC RPD%				2	110	96	42	*	65	80	75	12	51	-	1	*	61	*	*	-	54	90	45
	12268-01	2006 06 07	2.8	7.37	26	62.4	112	< 0.5	1.5	22.7	3.7	1,550	1,130	-	6.25	24.2	15.1	< 2	< 2	-	48.2	18.6	1,340	
BH12-9	BH12-9-2-121210	2012 12 10	1.5 - 1.8	8.6	0.19	4.72	30.5	< 0.4	0.345	12.7	4.76	14.6	3.94	165	< 0.05	1.87	11.2	< 0.5	< 0.05	157	0.22	29.9	37.7	
	BH12-9-3-121210	2012 12 10	3.0 - 3.4	9.35	0.25	2.08	51.3	< 0.4	0.198	36.9	4.4	18.2	2.82	149	< 0.05	5.08	7.91	< 0.5	< 0.05	24.8	0.64	36.6	32.5	
	BH12-9-4-121210	2012 12 10	4.3 - 4.6	8.45	0.31	1.7	43	< 0.4	0.27	9.9	5.82	19.6	2.7	308	< 0.05	0.26	6.83	< 0.5	0.064	17.5	0.3	60.1	54.5	
BH12-10	BH12-10-1-121210	2012 12 10	0.5 - 0.6	7.5	7.99	26.4	80.8	< 0.4	0.59	22.1	5	1,220	418	229	5.72	8.95	11.7	0.61	0.413	85.2	18.1	42.3	426	
	BH12-10-2-121210	2012 12 10	2.1 - 2.4	8.89	0.14	4.24	19.4	< 0.4	0.258	9.7	4	8.73	3.05	149	< 0.05	1.37	8.98	< 0.5	0.052	136	0.19	24.3	30	
	BH12-10-3-121210	2012 12 10	3.7 - 4.0	9.75	0.22	1.21	47.8	< 0.4	0.392	8.7	3.66	16.1	2.42	130	0.074	0.11	5.48	< 0.5	< 0.05	24.1	0.17	49.6	28.8	
	BH12-10-4-121210	Duplicate	3.7 - 4.0	9.6	0.23	2.1	52.7	< 0.4	0.26	9.6	4.46	15.5	2.69	144	< 0.05	0.11	6.52	< 0.5	< 0.05	25.9	0.2	43.5	32.9	
	QA/QC RPD%				2	*	*	10	*	40	*	20	4	*	10	*	*	17	*	*	7	*	13	13
	BH12-10-5-121210	2012 12 10	4.7 - 5.0	8.91	0.11	1.42	56.2	< 0.4	0.119	9.2	5.69	16.5	2.48	286	< 0.05	0.24	7.07	< 0.5	< 0.05	17	0.22	38.4	49.4	
BC Standard																								
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																								
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 9: Summary of Analytical Results for Intertidal Sediment and Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Physical	Total Metals																		
				pH	Antimony µg/g	Arsenic µg/g	Barium µg/g	Beryllium µg/g	Cadmium µg/g	Chromium µg/g	Cobalt µg/g	Copper µg/g	Lead µg/g	Manganese µg/g	Mercury µg/g	Molybdenum µg/g	Nickel µg/g	Selenium µg/g	Silver µg/g	Strontium µg/g	Tin µg/g	Vanadium µg/g	Zinc µg/g
BH12-11	BH12-11-1-121211	2012 12 11	0.7 - 0.8	5.85	8.42	11.3	61	< 0.4	1.25	11.3	3.36	70.1	151	164	0.855	27.1	12.3	1.18	0.333	101	17.7	28.1	557
	BH12-11-2-121211	2012 12 11	2.1 - 2.2	8.5	0.27	3.66	11.4	< 0.4	0.257	4.9	2.78	4.94	2.94	118	< 0.05	1.49	4.64	< 0.5	< 0.05	41.3	0.35	18.1	24.4
	BH12-11-5-121211	2012 12 11	4.0 - 4.3	9.63	< 0.1	1.86	54.1	< 0.4	0.107	8.6	4.1	10.4	2.46	168	< 0.05	0.17	5.3	< 0.5	< 0.05	25.6	0.17	32.5	27.5
	BH12-11-8-121211	2012 12 11	5.3 - 5.6	8.92	0.13	1.61	53.9	< 0.4	0.257	12.8	7.81	21.9	3.62	378	< 0.05	0.39	8.41	< 0.5	0.095	23.6	0.33	53.6	65.6
BC Standard																							
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				n/a	n/a	50	n/a	n/a	5	190	n/a	130	130	n/a	0.84	n/a	n/a	n/a	n/a	n/a	n/a	n/a	330
Federal Guideline																							
CCME CEQG Probable Effect Level (PEL) ^b				n/a	n/a	41.6	n/a	n/a	4.2	160	n/a	108	112	n/a	0.7	n/a	n/a	n/a	n/a	n/a	n/a	n/a	271

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n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

OUTLINE Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical
UNDERLINE Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 10: Summary of Analytical Results for Intertidal Sediment and Soil - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs
				Polychlorinated Biphenyls, Total [PCBs] µg/g
BH06-1	12287-02	2006 06 06	0.8 - 1.1	< 0.13
BH06-7	12289-03	2006 06 07	2.3 - 2.6	< 0.05
BH06-8	12289-04	2006 06 07	0.9 - 1.1	<u>2.57</u>
	12289-05	Duplicate	0.9 - 1.1	<u>4.66</u>
	QA/QC RPD%			58
BH06-9	12289-09	2006 06 07	1.7 - 2.3	< 0.05
	12289-10	Duplicate	1.7 - 2.3	< 0.05
	QA/QC RPD%			*
BH06-10	12290-04	2006 06 07	1.5 - 1.8	<u>0.796</u>
	12290-07	2006 06 07	2.9 - 3.0	< 0.05
BH06-11	12290-12	2006 06 07	2.7 - 3.0	< 0.05
BH06-12	12291-06	2006 06 07	2.3 - 2.7	< 0.05
BH06-13	12291-10	2006 06 07	1.5 - 2.1	<u>3.12</u>
BH06-14	12291-12	2006 06 07	1.2 - 1.4	<u>32.1</u>
	12292-03	2006 06 07	2.3 - 3.1	<u>0.52</u>
	12292-04	Duplicate	2.3 - 3.1	<u>3.32</u>
	QA/QC RPD%			146
BH06-19	12071-11	2006 06 08	0.8 - 1.5	<u>0.672</u>
BH06-21	12072-03	2006 06 08	0.0 - 0.8	<u>14</u>
BH06-22	12072-04	2006 06 08	0.0 - 0.6	<u>4.6</u>
BC Standard				
CSR Marine and/or Estuarine Sediment (MR) ^a - Typical				0.23
Federal Guideline				
CCME CEQG Probable Effect Level (PEL) ^b				0.189

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

^a Pathways Included: Typical Site.

^b Guideline to protect marine aquatic life.

<u>OUTLINE</u>
<u>UNDERLINE</u>

Concentration greater than CSR Marine and/or Estuarine Sediment (MR) standard - Typical

Concentration greater than CCME CEQG Probable Effect Level (PEL) Guideline

TABLE 11: Summary of Analytical Results for Upland Soil - Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Field Screen ^a (ppm)	Petroleum Hydrocarbon Fractions			
					F2 (>C10-C16) µg/g	F3 (>C16-C34) µg/g	F4 (>C34-C50) µg/g	F4G (>C50) µg/g
BH06-60	12844-02	2006 06 20	0.9 - 1.4	-	4,100	14,000	19,000	8,600
	12844-04	2006 06 20	2.4 - 2.7	-	31	320	270	200
	12844-05	Duplicate	2.4 - 2.7	-	80	480	450	300
	QA/QC RPD%				88	40	50	*
	12844-07	2006 06 20	4.6 - 4.9	-	< 5	24	< 5	-
BH06-61	12844-10	2006 06 20	1.8 - 2.1	-	61	1,500	300	1,700
	12844-11	2006 06 20	4.0 - 4.3	-	< 5	15	< 5	-
BH06-62	12407-05	2006 06 20	1.2 - 1.5	-	270	120,000	24,000	35,000
	12407-07	2006 06 20	2.4 - 2.7	-	140	980	540	2,800
TP06-121	12267-02	2006 06 07	0.4 - 0.5	-	61	1,430	535	2,300
	12267-04	2006 06 07	1.4 - 1.5	-	7,390	14,300	2,550	9,120
TP06-122	12267-06	2006 06 07	0.4 - 0.5	-	< 30	710	210	880
TP06-124	12269-01	2006 06 08	0.4 - 0.5	-	150	7,390	6,020	19,400
	12269-02	2006 06 08	1.2	-	0.204	0.069	< 0.05	-
	12269-03	2006 06 08	2.0	-	8,830	15,300	2,200	-
TP06-125	12269-05	2006 06 08	0.4 - 0.5	-	2,090	8,450	2,660	11,600
	12269-07	2006 06 08	2.1 - 2.2	-	3,240	7,120	2,950	8,940
	12269-08	2006 06 08	2.1 - 2.2	-	5,500	19,000	3,300	-
TP06-127	12270-03	2006 06 08	1.0 - 1.1	-	< 150	360	< 6,020	520
	12270-06	2006 06 08	4.0	-	34	2,300	1,100	3,100
TP06-128	12270-08	2006 06 08	0.6 - 0.7	-	780	1,720	< 6,020	1,180
	12270-09	2006 06 08	1.0	-	10,300	24,100	2,300	38,400
	12270-11	2006 06 08	3.0	-	53	1,300	790	2,500
BC Standard								
CSR Industrial Land Use (IL) ^b					n/a	n/a	n/a	n/a

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Field screening results are measured based on a 'dry headspace' method using a combustible gas meter calibrated to a hexane standard.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 12: Summary of Analytical Results for Upland Soil - Polycyclic Aromatic Hydrocarbons

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	Polycyclic Aromatic Hydrocarbons																	
				Naphthalene µg/g	Methylnaphthalene, 2- µg/g	Acenaphthylene µg/g	Acenaphthene µg/g	Fluorene µg/g	Phenanthrene µg/g	Anthracene µg/g	Fluoranthene µg/g	Pyrene µg/g	Benz(a)anthracene µg/g	Chrysene µg/g	Benzo(b)fluoranthene µg/g	Benzo(k)fluoranthene µg/g	Benzo(a)pyrene µg/g	Indeno(1,2,3-cd)pyrene µg/g	Dibenz(a,h)anthracene µg/g	Benzo(g,h,i)perylene µg/g	
BH06-24	BH06-24	2006 06 16	0.0 - 0.1	0.443	0.408	0.453	0.478	0.515	4.51	1.2	6.36	5.62	3.18	4.06	4.56	1.64	3.08	2.44	0.49	2.27	
BH06-60	12844-02	2006 06 20	0.9 - 1.4	0.967	1.07	< 0.5	2.64	2.77	8.62	2.62	10.8	7.53	2.97	3.33	4.26	1.3	3.63	2.88	0.627	2.92	
	12844-04	2006 06 20	2.4 - 2.7	< 0.05	< 0.05	< 0.05	0.085	0.094	0.323	0.091	0.321	0.233	0.086	0.091	0.096	< 0.05	0.061	< 0.05	< 0.05	< 0.05	
	12844-05	Duplicate	2.4 - 2.7	< 0.05	< 0.05	< 0.05	0.082	0.089	0.29	0.085	0.311	0.234	0.093	0.104	0.105	< 0.05	0.075	< 0.05	< 0.05	< 0.05	
	QA/QC RPD%				*	*	*	*	*	11	*	3	*	*	*	*	*	*	*	*	*
BH06-61	12844-07	2006 06 20	4.6 - 4.9	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
	12844-10	2006 06 20	1.8 - 2.1	0.294	0.207	< 0.05	0.101	0.105	0.472	0.161	0.412	0.549	0.325	0.259	0.244	0.092	0.201	0.114	0.054	0.123	
	12844-11	2006 06 20	4.0 - 4.3	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
BH06-62	12407-05	2006 06 20	1.2 - 1.5	4.55	1.13	0.48	0.065	0.187	2.21	0.454	0.816	0.796	0.325	0.675	< 0.6	< 0.3	0.311	0.486	< 0.1	0.922	
	12407-07	2006 06 20	2.4 - 2.7	< 0.1	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	0.294	1.11	0.153	0.095	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	
TP06-121	12267-02	2006 06 07	0.4 - 0.5	0.23	0.067	0.181	0.077	0.084	0.902	0.276	1.65	1.41	0.774	0.948	1.66	0.505	1.05	1.1	0.174	1.14	
	12267-04	2006 06 07	1.4 - 1.5	0.547	0.407	< 0.05	< 0.04	0.69	3.53	1.2	7.94	6.97	3.79	4.19	7.08	2.3	4.78	4.08	0.796	4.34	
TP06-122	12267-06	2006 06 07	0.4 - 0.5	0.301	0.054	0.059	< 0.04	< 0.05	0.732	0.054	0.559	0.308	0.115	0.258	0.285	0.078	0.11	0.127	< 0.05	0.172	
TP06-124	12269-01	2006 06 08	0.4 - 0.5	0.391	0.247	0.196	< 0.04	0.057	0.953	0.278	2.44	2.01	1.07	1.27	2.22	0.641	1.28	1.3	0.213	2.04	
	12269-02	2006 06 08	1.2	2.1	3.4	0.204	0.143	< 0.5	19.4	8.2	30	< 30	< 30 ^a	< 10	< 50 ^a	< 50 ^a	< 30	< 0.5	< 5	< 50	
	12269-03	2006 06 08	2.0	< 0.05	< 0.05	< 0.05	1.25	1.57	2.41	1.39	4.52	4.12	2.28	3.08	4.52	1.42	2.91	2.39	0.47	2.64	
TP06-125	12269-05	2006 06 08	0.4 - 0.5	0.69	0.71	0.809	0.692	0.7	7.8	1.43	11.9	11.9	5.47	7.5	8.84	3.15	5.72	4.71	1.08	5.15	
	12269-07	2006 06 08	2.1 - 2.2	2.4	3.69	< 0.05	2.83	2.49	18.9	3.05	18.5	16.8	6.64	7.57	10.5	4	6.96	4.66	1.06	4.66	
	12269-08	2006 06 08	2.1 - 2.2	2.72	4.54	1.88	1.72	2.31	12.8	2.63	10.6	9.98	5.56	6.31	10.4	4.07	7.88	5.22	1.31	4.58	
TP06-127	12270-03	2006 06 08	1.0 - 1.1	0.314	0.083	< 0.05	< 0.04	< 0.05	0.444	< 0.05	0.444	0.152	0.051	0.223	0.319	0.066	0.062	0.094	< 0.05	0.096	
	12270-06	2006 06 08	4.0	0.17	0.204	0.052	0.05	0.078	0.798	0.204	1.06	0.953	0.522	0.63	0.891	0.284	0.581	0.464	0.102	0.46	
TP06-128	12270-08	2006 06 08	0.6 - 0.7	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	< 0.05	< 0.05	0.058	0.065	< 0.05	0.077	0.139	< 0.05	0.087	0.095	< 0.05	0.105	
	12270-09	2006 06 08	1.0	< 0.05	5.76	< 0.05	< 0.04	3.95	< 0.05	< 0.05	4.71	4.49	1.72	2.41	1.46	0.51	1.2	1.07	0.184	1.3	
	12270-11	2006 06 08	3.0	< 0.05	< 0.05	< 0.05	< 0.04	< 0.05	0.106	0.053	0.152	0.188	0.104	0.124	0.135	< 0.05	0.085	0.068	< 0.05	0.084	
BC Standard																					
CSR Industrial Land Use (IL) ^b				20	950	n/a	15,000	9,500	50	30	200	100	10	4,500	10	10	50	10	10	n/a	

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Laboratory detection limit exceeds regulatory standard/guideline.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

TABLE 13: Summary of Analytical Results for Upland Soil - Total Metals

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	pH		Total Metals																		
				pH	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc		
				pH	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
BH06-24	BH06-24	2006 06 16	0.0 - 0.1	7.85	85	191	184	< 0.5	1.48	50.7	10.7	3,930	975	8.48	12.5	26.3	< 2 ^a	< 2	< 1	213	39.8	2,160		
	12293-07	2006 06 09	2.7 - 3.0	7.22	16	78	55.5	< 0.5	0.99	29	6.2	590	173	0.517	21	9.5	< 2 ^a	< 2	< 1	12	34.8	643		
BH06-60	12844-02	2006 06 20	0.9 - 1.4	8.18	< 10	33.6	92.4	< 0.5	1.46	48.7	6.1	1,460	848	8.2	4	12.2	< 2 ^a	< 2	< 1	9	44.5	483		
BH06-61	12844-10	2006 06 20	1.8 - 2.1	7.42	16	8.5	7	< 0.5	2.19	< 2	< 2	60.5	152	0.198	20	< 5	< 2 ^a	< 2	< 1	< 5	5.4	367		
	12844-11	2006 06 20	4.0 - 4.3	8.8	< 10	< 5	59.4	< 0.5	< 0.5	14.3	5.7	22.5	< 30	0.0379	< 4	9.1	< 2 ^a	< 2	< 1	< 5	40.9	42.6		
BH06-62	12407-03	2006 06 20	0.0 - 0.3	7.5	223	305	251	< 0.5	4.58	86.4	14.3	3,200	1,410	7.7	18.4	43	< 4 ^a	< 2	< 1	345	53.4	3,050		
	12407-05	2006 06 20	1.2 - 1.5	6.64	201	16.1	91.6	< 0.5	< 0.5	8.9	< 2	1,250	4,730	1.61	< 4	5.2	< 2 ^a	< 2	< 1	358	6.5	294		
TP06-120	12266-12	2006 06 07	1.4 - 1.5	6.72	381	32.7	410	< 0.5	3.67	35	14.3	697	6,230	0.675	5.5	104	< 2 ^a	< 2	< 1	537	46.3	3,520		
	12267-01	2006 06 07	1.4 - 1.5	7.06	76	21.5	26.3	< 0.5	1.51	13	4.3	356	1,280	0.222	46.3	21.3	< 2 ^a	< 2	< 1	59.5	37.6	822		
TP06-121	12267-02	2006 06 07	0.4 - 0.5	7.78	33	75.8	149	< 0.5	0.89	34.6	8.1	3,670	1,440	6	5	42	< 2 ^a	< 2	< 1	75.4	46.4	1,190		
	12267-04	2006 06 07	1.4 - 1.5	7.49	46	118	273	< 0.5	0.93	40.4	8.1	5,550	1,620	9.95	8.3	63.1	< 2 ^a	< 2	< 1	66.6	34.2	1,890		
TP06-122	12267-06	2006 06 07	0.4 - 0.5	7.38	111	16.5	1,120	< 0.5	1.02	18.1	7.9	356	1,450	0.205	< 4	33.5	< 2 ^a	< 2	< 1	172	36.8	1,020		
	12267-08	2006 06 07	1.5	6.59	58	25.1	63.4	< 0.5	1.1	7.4	7.7	184	476	0.216	37.2	38.8	< 2 ^a	< 2	< 1	40.8	25.7	690		
TP06-124	12269-01	2006 06 08	0.4 - 0.5	6.81	14	30.9	394	< 0.5	1.18	164	19.9	4,260	1,320	12.5	6.6	31.4	< 2 ^a	< 2	< 1	802	27	1,190		
	12269-03	2006 06 08	2.0	7.04	53	80	117	< 0.5	3.37	37.6	9.6	2,670	1,210	7.82	31.2	53.9	< 2 ^a	< 2	< 1	37.4	22.5	2,640		
TP06-125	12269-05	2006 06 08	0.4 - 0.5	7.88	122	617	554	< 0.5	5.5	241	29.4	6,340	2,400	16.1	36.6	110	< 2 ^a	< 2	< 1	113	62.2	6,270		
	12269-07	2006 06 08	2.1 - 2.2	7.52	122	159	218	< 0.5	2.15	82.7	18.2	1,760	1,090	9.84	12.6	101	< 2 ^a	< 2	< 1	131	59.9	2,480		
	12269-08	2006 06 08	2.1 - 2.2	7.38	59	177	225	< 0.5	2.8	96.9	22.3	2,130	1,260	11.4	14.7	214	< 2 ^a	< 2	< 1	68.1	59.1	2,870		
TP06-127	12270-02	2006 06 08	0.6 - 0.7	8.42	< 10	< 5	42.9	< 0.5	< 0.5	10.6	5.1	46	< 30	0.136	< 4	5.1	< 2 ^a	< 2	< 1	< 5	41.5	58		
	12270-03	2006 06 08	1.0 - 1.1	7.51	46	5.6	137	< 0.5	< 0.5	14.2	5.9	95.6	164	0.066	< 4	17.2	< 2 ^a	< 2	< 1	28.5	42.8	231		
TP06-128	12270-08	2006 06 08	0.6 - 0.7	7.09	< 10	11	66.1	< 0.5	< 0.5	13.6	4.7	390	38	1.85	< 4	< 5	< 2 ^a	< 2	< 1	< 5	48.2	139		
	12270-09	2006 06 08	1.0	8.06	831	74.8	59.7	< 0.5	< 0.5	39.8	10.1	1,430	8,660	8.42	11	41.2	< 2 ^a	< 2	< 1	907	32.3	762		
BC Standard																								
CSR Industrial Land Use (IL) ^b				n/a	40	10	1,500	350 ^c	3.5 - 75 ^c	60	25	300 ^c	1,000 ^c	75	150	70 - 250 ^c	1	40	25	300	300	150 - 200 ^c		

All terms defined within the body of SNC-Lavalin's report.

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- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a Laboratory detection limit exceeds regulatory standard/guideline.

^b The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

^c Standard is pH dependent.

TABLE 14: Summary of Analytical Results for Upland Soil - PCB

Sample Location	Sample ID	Sample Date (yyyy mm dd)	Depth Interval (m)	PCBs
				Polychlorinated Biphenyls, Total [PCBs] $\mu\text{g/g}$
TP06-121	12267-04	2006 06 07	1.4 - 1.5	15.4
BC Standard				
CSR Industrial Land Use (IL) ^a				35

All terms defined within the body of SNC-Lavalin's report.

< Denotes concentration less than indicated detection limit or RPD less than indicated value.

- Denotes analysis not conducted.

n/a Denotes no applicable standard/guideline.

QA/QC RPD Denotes quality assurance/quality control relative percent difference

* RPDs are not calculated where one or more concentrations are less than five times RDL.

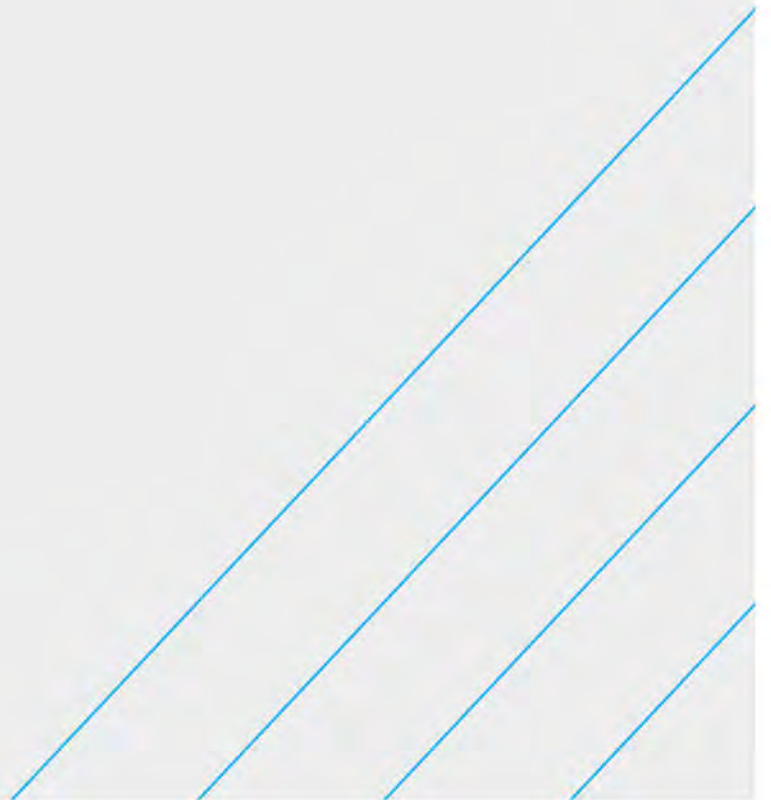
RDL Denotes reported detection limit.

BOLD Concentration greater than CSR Industrial Land Use (IL) standard

^a The site-specific factors used for determining the matrix standards for this site include: intake of contaminated soil, toxicity to soil invertebrates and plants, and groundwater flow to surface water used by marine and/or estuarine aquatic life (whichever is most stringent).

Drawing

- › 509211-602 - Summary of Sediment/Soil Analytical Results





LEGEND

- SITE BOUNDARY
- FORMER STERLING SHIPYARD SITE
- CITY OF VANCOUVER SEWER OUTFALL
- RIGHT-OF-WAY LICENSE BOUNDARY
- LOT BOUNDARY
- x FENCE
- FORMER STRUCTURE
- HIGH WATER MARK
- INTERTIDAL AREA
- REMEDIAL EXCAVATION (GOLDER 2008)
- ⊕ BOREHOLE
- ⊕ BOREHOLE (OTHERS)
- ⊕ MONITORING WELL (OTHERS)
- ⊕ TESTPI (OTHERS)

LOCATION	DEPTH RANGE	PAH	Metals	PCB
BH21-05	1.5 - 1.7	>RFD	>RFD	<STD

SAMPLE ID
 DEPTH OF SAMPLE (m)
 (DEPTH RANGE DEFINED AS DEPTH BELOW SEA FLOOR)
 SAMPLE OBTAINED FROM TILL-LIKE HARD SAND AND GRAVEL

- ⊕ **RFD** - CONCENTRATION GREATER THAN THE APPLICABLE CSR SEDIMENT MARINE SENSITIVE STANDARDS
- ⊕ **BLUE** - CONCENTRATION GREATER THAN THE APPLICABLE CSR SEDIMENT MARINE TYPICAL STANDARDS
- ⊕ **GREEN** - CONCENTRATION LESS THAN OR EQUAL TO THE APPLICABLE GUIDELINES/STANDARDS
- ⊕ **PURPLE** - CONCENTRATION GREATER THAN THE APPLICABLE CSR IL SOIL STANDARDS
- ⊕ **CYAN** - CONCENTRATION GREATER THAN THE APPLICABLE CEGO PEL SEDIMENT GUIDELINES

PAH POLYCYCLIC AROMATIC HYDROCARBONS
 PCB POLYCHLORINATED BIPHENYLS
 < DENOTES CONCENTRATION LESS THAN INDICATED DETECTION LIMIT
 - NOT ANALYZED

	PAH	Metals	PCB
CSR IL SOIL STANDARDS (µg/g)	SEE TABLES	SEE TABLES	SEE TABLES
CSR SEDIMENT MARINE SENSITIVE STANDARDS (µg/g)	SEE TABLES	SEE TABLES	SEE TABLES
CSR IL SOIL TYPICAL STANDARDS (µg/g)	SEE TABLES	SEE TABLES	SEE TABLES
CSR SEDIMENT MARINE TYPICAL STANDARDS (µg/g)	SEE TABLES	SEE TABLES	SEE TABLES

NOTE:
 SEDIMENT STANDARDS/GUIDELINES APPLY ONLY TO THE SUBTIDAL AND INTERTIDAL LOCATIONS.
 CSR SEDIMENT MARINE SENSITIVE STANDARDS APPLY ONLY TO THE SUBTIDAL LOCATIONS.
 CSR IL SOIL STANDARDS APPLY ONLY TO THE UPLAND LOCATIONS.

NOTES

- ORIGINAL DRAWING IN COLOUR.
- LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED PRIOR TO INTRUSIVE WORK. NOT ALL UTILITIES MAY BE SHOWN.

REFERENCE DRAWINGS

No.	DATE	DESCRIPTION
2021-03-10	ESRI AERIAL IMAGERY	
2008-01-24	GOLDER ASSOCIATES (06-1412-013)	

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHK
3	2021-08-27	ISSUED TO CLIENT	PES	BH
2	2021-07-12	ISSUED TO CLIENT AS DRAFT	PES	BH
1	2021-04-22	ISSUED TO CLIENT AS DRAFT	PES	BH
0	2021-04-14	ISSUED TO CLIENT AS DRAFT	PES	BH



CLIENT NAME:
 VANCOUVER FRASER
 PORT AUTHORITY

PROJECT LOCATION:
 FORMER STERLING SHIPYARD SITE
 2089-2095 COMMISSIONER ST., VAN., BC



SUMMARY OF SEDIMENT/SOIL ANALYTICAL RESULTS

DWN BY: PES	SCALE: 1:500	DATE: 2021-04-13	DWG No: REV: 3
CHK'D: BH	PLT: 20210827.1349	CADFILE: 509211-R12	509211-602

BH06-17	Depth Range	PAH	Metals
BH06-17	0.0 - 0.1	<STD	>RFD
12071-01	0.9 - 1.4	<STD	<STD
12071-02	1.5 - 1.8	<STD	>RFD

BH06-16	Depth Range	PAH	Metals
BH06-16	0.0 - 0.1	<STD	>RFD
12070-07	1.4 - 1.5	<STD	<STD
12070-10	2.6 - 2.7	<STD	>RFD

BH06-2	Depth Range	PAH	Metals
BH06-2	0.0 - 0.1	<STD	>RFD

BH12-11	Depth Range	PAH	Metals
BH12-11-1-121211	0.7 - 0.8	<STD	>RFD
BH12-11-2-121211	2.1 - 2.2	<STD	<STD
BH12-11-3-121211	4.0 - 4.3	<STD	<STD
BH12-11-4-121211	5.3 - 5.6	<STD	<STD

BH06-7	Depth Range	PAH	Metals	PCB
BH06-7	0.0 - 0.1	>RFD	>RFD	-
12289-02	1.5 - 2.3	>RFD	>RFD	-
12289-03	2.3 - 2.6	<STD	<STD	<STD

BH21-07	Depth Range	PAH	Metals	PCB
BH21-07-01	0.7 - 0.8	<STD	<STD	<STD
BH21-07-02	1.3 - 1.4	<STD	<STD	<STD
BH21-07-03	DUP. OF ABOVE	<STD	<STD	<STD
BH21-07-04	2.1 - 2.3	<STD	<STD	<STD

BH21-01	Depth Range	PAH	Metals	PCB
BH21-01-01	0.2 - 0.3	>RFD	>RFD	<STD
BH21-01-02	1.4 - 1.6	<STD	<STD	<STD
BH21-01-03	2.0 - 2.1	<STD	<STD	<STD

BH06-8	Depth Range	PAH	Metals	PCB
BH06-8	0.0 - 0.1	>RFD	>RFD	-
12289-04	0.9 - 1.1	>RFD	>RFD	>RFD
12289-05	DUP. OF ABOVE	>RFD	>RFD	>RFD

BH12-10	Depth Range	PAH	Metals
BH12-10-1-121210	0.5 - 0.6	>RFD	>RFD
BH12-10-2-121210	2.1 - 2.4	<STD	<STD
BH12-10-3-121210	3.7 - 4.0	<STD	<STD
BH12-10-4-121210	DUP. OF ABOVE	<STD	<STD
BH12-10-5-121210	4.7 - 5.0	<STD	<STD

BH21-02	Depth Range	PAH	Metals	PCB
BH21-02-01	0.2 - 0.3	>RFD	>RFD	>RFD
BH21-02-02	1.5 - 1.7	<STD	<STD	<STD
BH21-02-03	3.2 - 3.4	<STD	<STD	<STD
BH21-02-04	4.3 - 4.4	<STD	<STD	<STD

BH06-21	Depth Range	PAH	Metals	PCB
BH06-21	0.0 - 0.1	>RFD	>RFD	-
12072-03	0.0 - 0.8	>RFD	>RFD	>RFD

BH21-06	Depth Range	PAH	Metals	PCB
BH21-06-01	2.3 - 2.4	>RFD	>RFD	<STD
BH21-06-04	DUP. OF ABOVE	>RFD	>RFD	<STD
BH21-06-07	4.0 - 4.1	<STD	<STD	<STD

BH06-15	Depth Range	PAH	Metals
BH06-15	0.0 - 0.1	<STD	>RFD
BH06-15a	DUP. OF ABOVE	<STD	>RFD
12070-01	0.9 - 1.2	>RFD	>RFD
12070-03	2.1 - 2.2	>RFD	>RFD

BH21-03	Depth Range	PAH	Metals	PCB
BH21-03-01	0.9 - 1.1	>RFD	<STD	<STD
BH21-03-04	3.5 - 3.7	<STD	<STD	<STD
BH21-03-05	4.9 - 5.0	<STD	<STD	<STD

BH06-9	Depth Range	PAH	Metals	PCB
BH06-9	0.0 - 0.1	>RFD	>RFD	-
BH06-9d	DUP. OF ABOVE	>RFD	>RFD	-
12289-06	0.0 - 0.8	>RFD	>RFD	-
12289-08	1.2 - 1.5	>RFD	>RFD	-
12289-09	1.7 - 2.3	>RFD	>RFD	<STD
12289-10	DUP. OF ABOVE	<STD	<STD	<STD

BH12-9	Depth Range	PAH	Metals
BH12-9-2-121210	1.5 - 1.8	<STD	<STD
BH12-9-3-121210	3.0 - 3.4	<STD	<STD
BH12-9-4-121210	4.3 - 4.6	<STD	<STD

BH21-04	Depth Range	PAH	Metals	PCB
BH21-04-01	0.6 - 0.8	>RFD	>RFD	>RFD
BH21-04-02	1.6 - 1.8	<STD	<STD	<STD
BH21-04-03	4.3 - 4.4	<STD	<STD	<STD

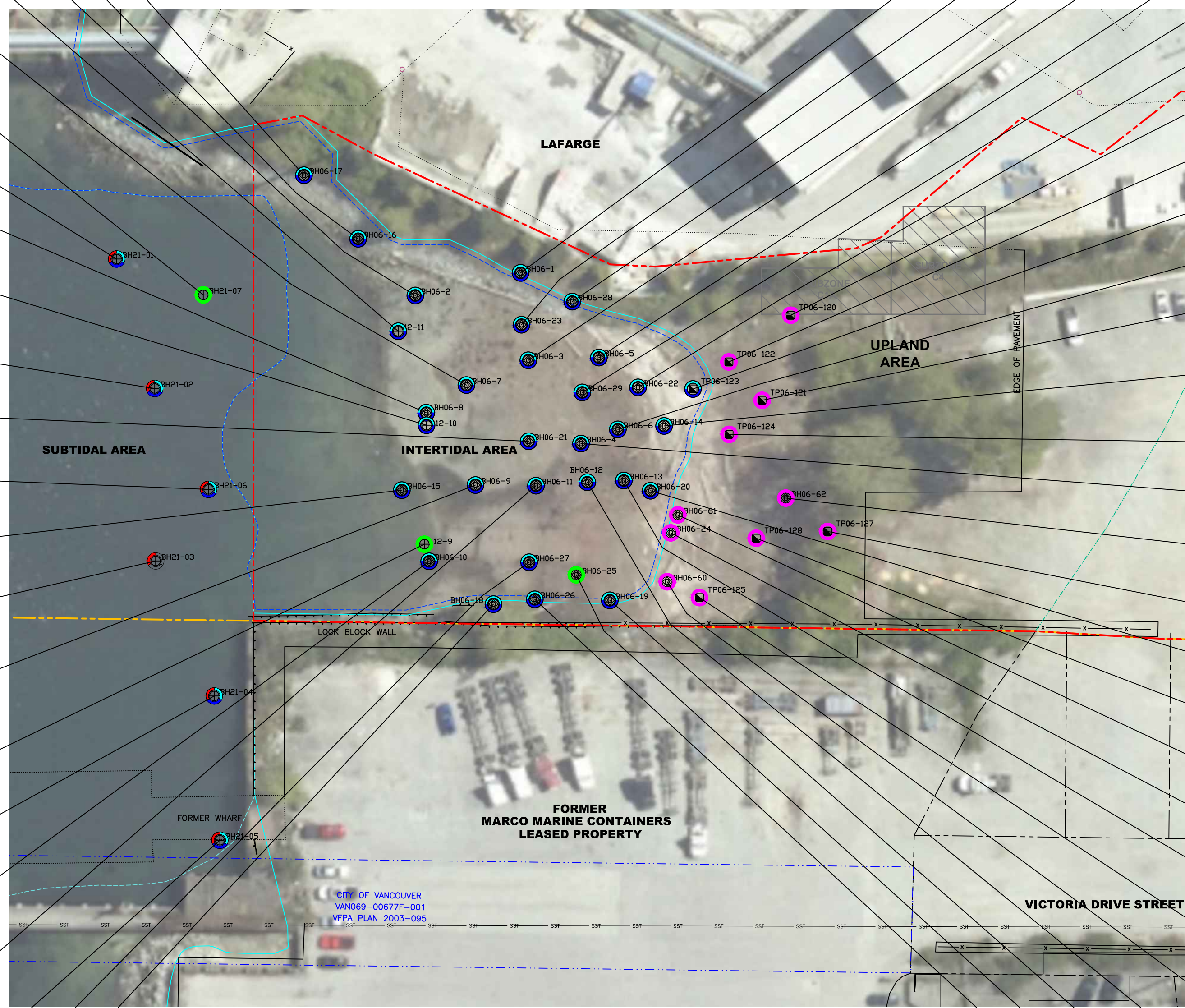
BH06-10	Depth Range	PAH	Metals	PCB
BH06-10	0.0 - 0.1	>RFD	>RFD	-
12290-01	0.0 - 0.8	>RFD	>RFD	-
12290-04	1.5 - 1.8	>RFD	>RFD	>RFD
12290-06	2.3 - 2.7	<STD	<STD	-
12290-07	2.9 - 3.0	<STD	<STD	<STD

BH06-11	Depth Range	PAH	Metals	PCB
BH06-11	0.0 - 0.1	>RFD	>RFD	-
12290-08	0.0 - 0.8	>RFD	>RFD	-
12290-12	2.7 - 3.0	>RFD	>RFD	<STD
12291-03	3.5 - 3.7	>RFD	>RFD	<STD

BH21-05	Depth Range	PAH	Metals	PCB
BH21-05-01	0.3 - 0.5	>RFD	>RFD	>RFD
BH21-05-02	1.5 - 1.7	>RFD	>RFD	<STD
BH21-05-03	2.4 - 2.5	<STD	<STD	<STD
BH21-05-04	2.8 - 2.9	<STD	<STD	<STD

BH06-27	Depth Range	PAH	Metals
BH06-27	0.0 - 0.1	>RFD	>RFD

BH06-18	Depth Range	PAH	Metals
BH06-18	0.0 - 0.1	>RFD	>RFD
12071-08	0.8 - 1.1	>RFD	>RFD
12071-10	1.5 - 1.8	>RFD	>RFD



BH06-1	Depth Range	PAH	Metals	PCB
BH06-1	0.0 - 0.1	<STD	>RFD	-
12287-02	0.8 - 1.1	<STD	<STD	<STD

BH06-23	Depth Range	PAH	Metals
BH06-23	0.0 - 0.1	<STD	>RFD
12072-05	1.1 - 1.5	<STD	>RFD

BH06-28	Depth Range	PAH	Metals
BH06-28	0.0 - 0.1	<STD	>RFD

BH06-3	Depth Range	PAH	Metals
BH06-3	0.0 - 0.1	>RFD	>RFD

BH06-5	Depth Range	PAH	Metals
BH06-5	0.0 - 0.1	<STD	>RFD
12278-03	3.8 - 4.1	-	<STD

BH06-29	Depth Range	PAH	Metals
BH06-29	0.0 - 0.1	>RFD	>RFD

BH06-22	Depth Range	PAH	Metals	PCB
BH06-22	0.0 - 0.1	>RFD	>RFD	-
12072-04	0.0 - 0.6	>RFD	>RFD	>RFD

TP06-120	Depth Range	Metals
12286-12	1.4 - 1.5	>RFD
12287-01	DUP. OF ABOVE	>RFD

TP06-122	Depth Range	PAH	Metals
12287-06	0.4 - 0.5	<STD	>RFD
12287-08	1.5	-	>RFD

TP06-123	Depth Range	PAH	Metals
12287-09	0.4 - 0.5	>RFD	>RFD
12287-10	DUP. OF ABOVE	>RFD	>RFD
12288-01	2.8	>RFD	>RFD

BH06-6	Depth Range	PAH	Metals
BH06-6	0.0 - 0.1	>RFD	>RFD
BH06-26	DUP. OF ABOVE	>RFD	>RFD

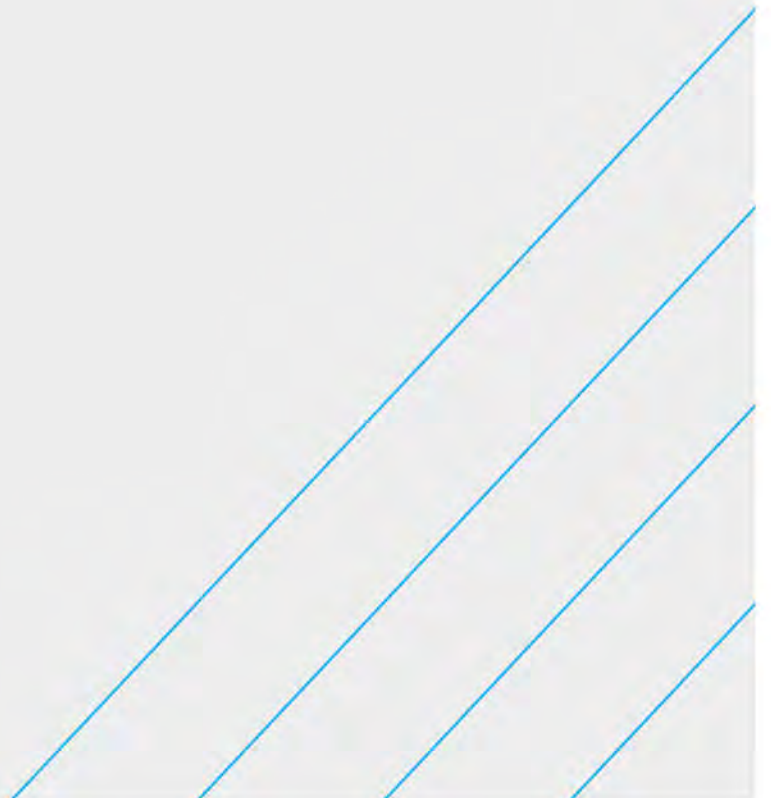
TP06-121	Depth Range	PAH	Metals	PCB
12287-02	0.4 - 0.5	<STD	>RFD	-
12287-04	1.4 - 1.5	<STD	>RFD	<STD

BH06-14	Depth Range	PAH	Metals	PCB
BH06-14	0.0 - 0.1	>RFD	>RFD	-
12291-12	1.2 - 1.4	>RFD	>RFD	>RFD
12292-03	2.3 - 3.1	<STD	>RFD	>RFD
12292-04	DUP. OF ABOVE	>RFD	>RFD	>RFD
12292-05	3.7 - 3.8	<STD	<STD	-

TP06-124	Depth Range	PAH	Metals
12289-01	0.4 - 0.5	<STD	>RFD

Attachment 1

Borehole Logs





Client
Vancouver Fraser Port Authority

Borehole No. : BH21-01

Location
Former Sterling Shipyards, Vancouver, BC

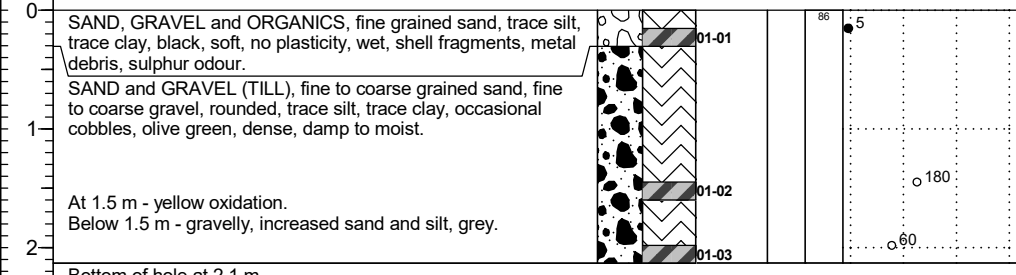
PAGE 1 OF 1

Drilling Contractor Mud Bay Drilling Co. Ltd.
Drilling Method Vibratory Sonic
Borehole Dia. (m) 0.15
Pipe/Slotted Pipe Dia. (m) none/none

Date Monitored n/a
Ground Surface Elev. (m) n/a
Top of Casing Elev. (m) n/a
Northing: 5459418.106 Easting: 495333.153

Project Number: 509211
Borehole Logged By: GS
Date Drilled: 2021 02 24
Log Typed By: NDS

Depth in Metres	Drilling Legend Sample Interval Vibrasonic	Water/NAPL Levels Water Level 1 Water Level 2 NAPL NAPL	Stratigraphy Plot	Sample Interval Core Run	Sample Number	Blow Count	% Recovery	○ Reading within indicated scale ● Reading outside indicated scale	Soil Vapour (ppm)
	Soil Description	10 ¹ 10 ² 10 ³ 10 ⁴							



Bottom of hole at 2.1 m.

NOTES

Bold denotes sample analyzed. *denotes blind field duplicate.



Client
Vancouver Fraser Port Authority

Borehole No. : BH21-02

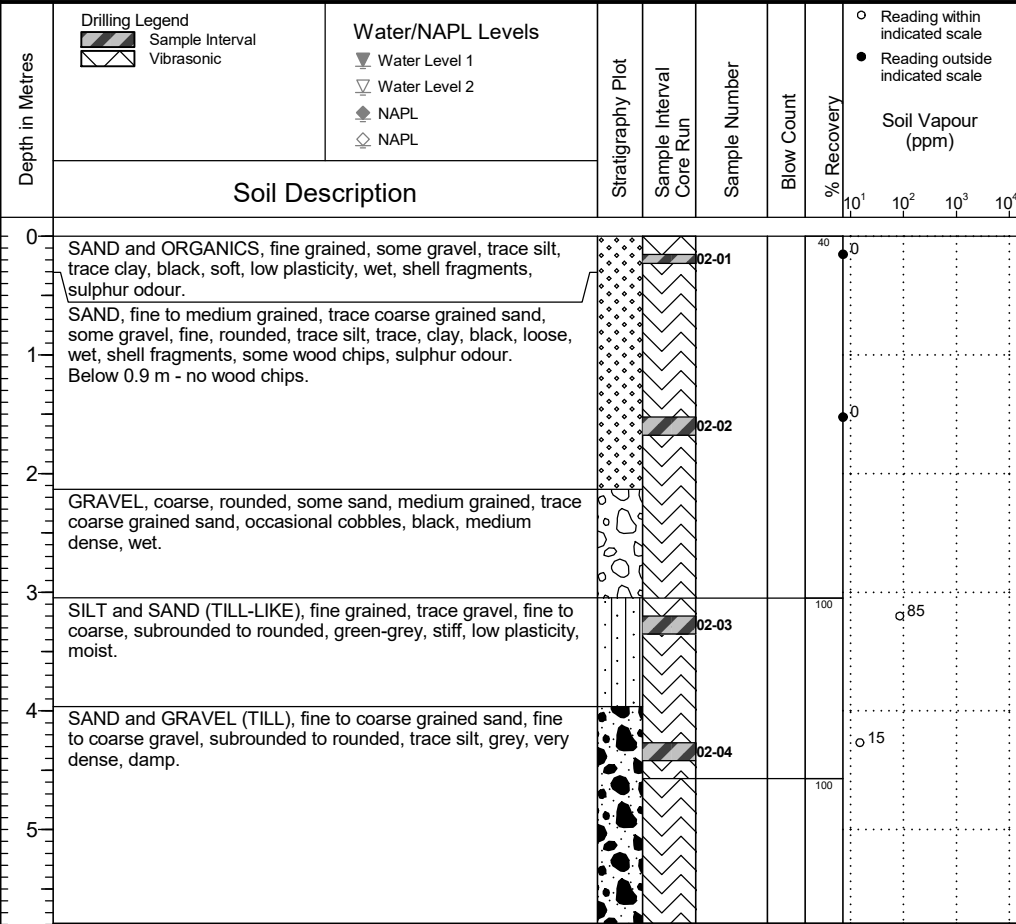
Location
Former Sterling Shipyards, Vancouver, BC

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Drilling Contractor Mud Bay Drilling Co. Ltd.
Drilling Method Vibratory Sonic
Borehole Dia. (m) 0.15
Pipe/Slotted Pipe Dia. (m) none/none

Date Monitored n/a
Ground Surface Elev. (m) n/a
Top of Casing Elev. (m) n/a
Northing: 5459412.534 Easting: 495314.168

Project Number: 509211
Borehole Logged By: GS
Date Drilled: 2021 02 24
Log Typed By: NDS



NOTES
Bold denotes sample analyzed. *denotes blind field duplicate.



Client
Vancouver Fraser Port Authority

Borehole No. : BH21-03

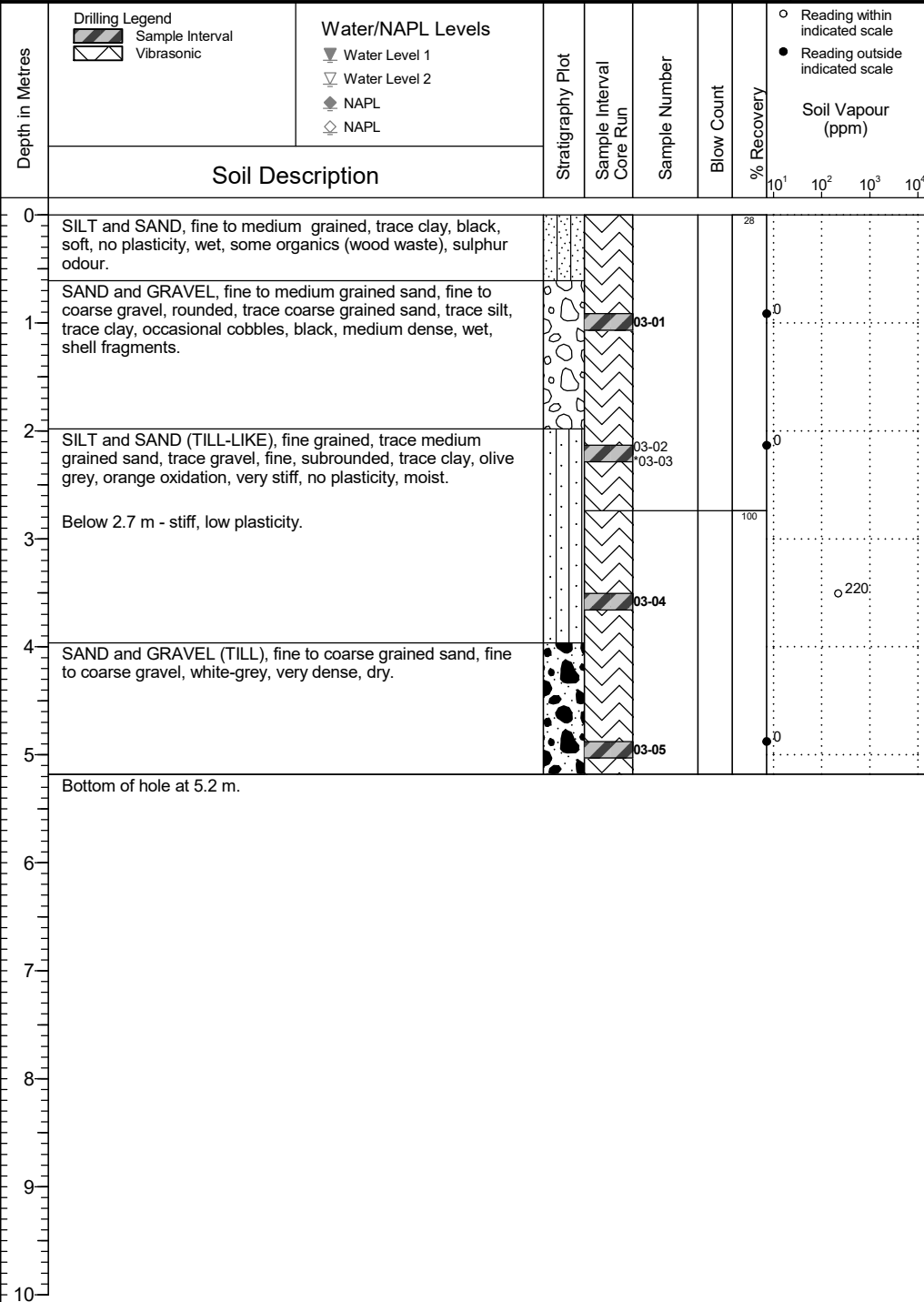
Location
Former Sterling Shipyards, Vancouver, BC

PAGE 1 OF 1

Drilling Contractor Mud Bay Drilling Co. Ltd.
Drilling Method Vibratory Sonic
Borehole Dia. (m) 0.15
Pipe/Slotted Pipe Dia. (m) none/none

Date Monitored n/a
Ground Surface Elev. (m) n/a
Top of Casing Elev. (m) n/a
Northing: 5459412.397 Easting: 495288.870

Project Number: 509211
Borehole Logged By: GS
Date Drilled: 2021 02 24
Log Typed By: NDS



NOTES
Bold denotes sample analyzed. *denotes blind field duplicate.



Client
Vancouver Fraser Port Authority

Borehole No. : BH21-04

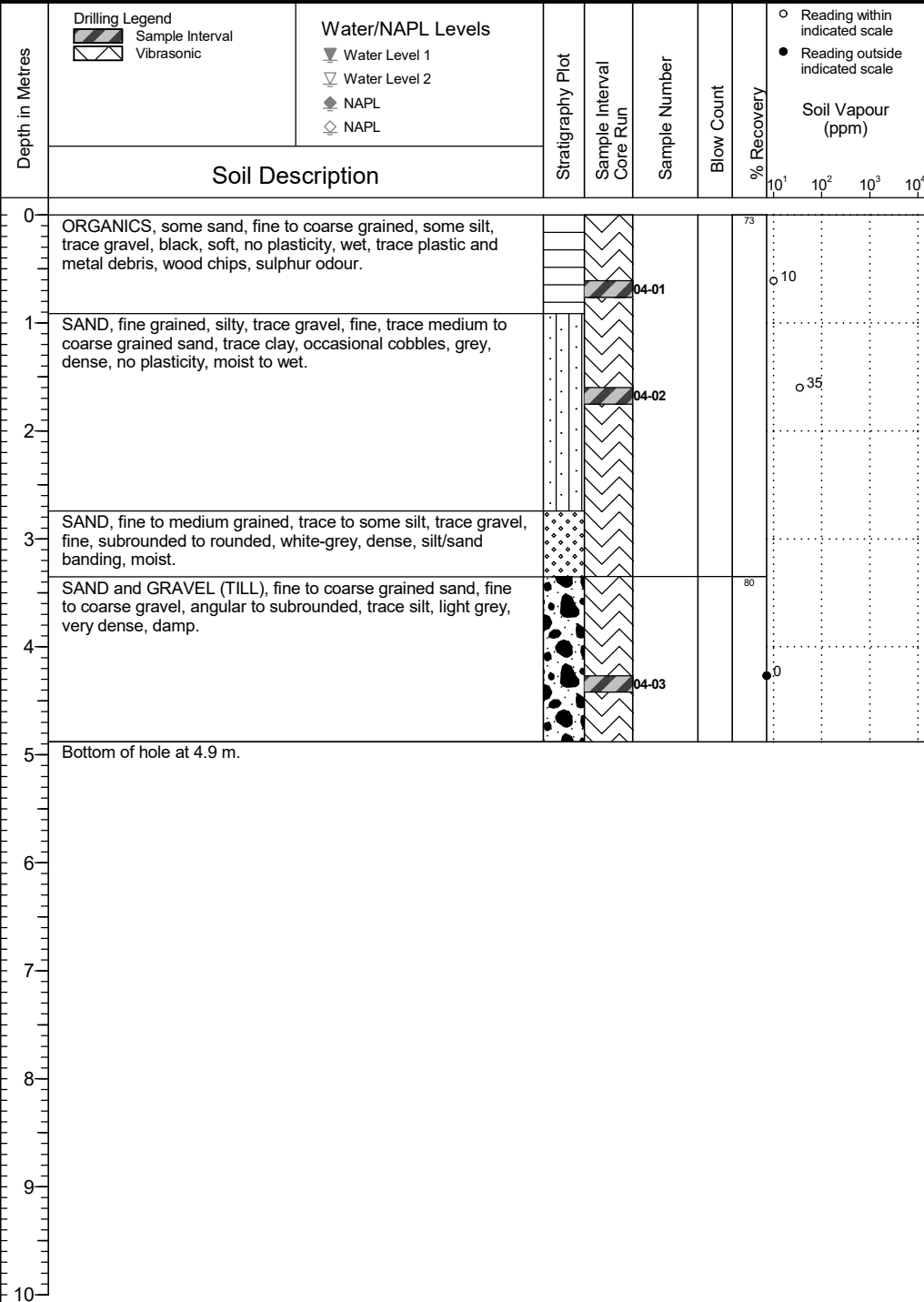
Location
Former Sterling Shipyards, Vancouver, BC

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Drilling Contractor Mud Bay Drilling Co. Ltd.
Drilling Method Vibratory Sonic
Borehole Dia. (m) 0.15
Pipe/Slotted Pipe Dia. (m) none/none

Date Monitored n/a
Ground Surface Elev. (m) n/a
Top of Casing Elev. (m) n/a
Northing: 5459403.795 Easting: 495269.069

Project Number: 509211
Borehole Logged By: GS
Date Drilled: 2021 02 24
Log Typed By: NDS



NOTES
Bold denotes sample analyzed. *denotes blind field duplicate.



Client
Vancouver Fraser Port Authority

Borehole No. : BH21-05

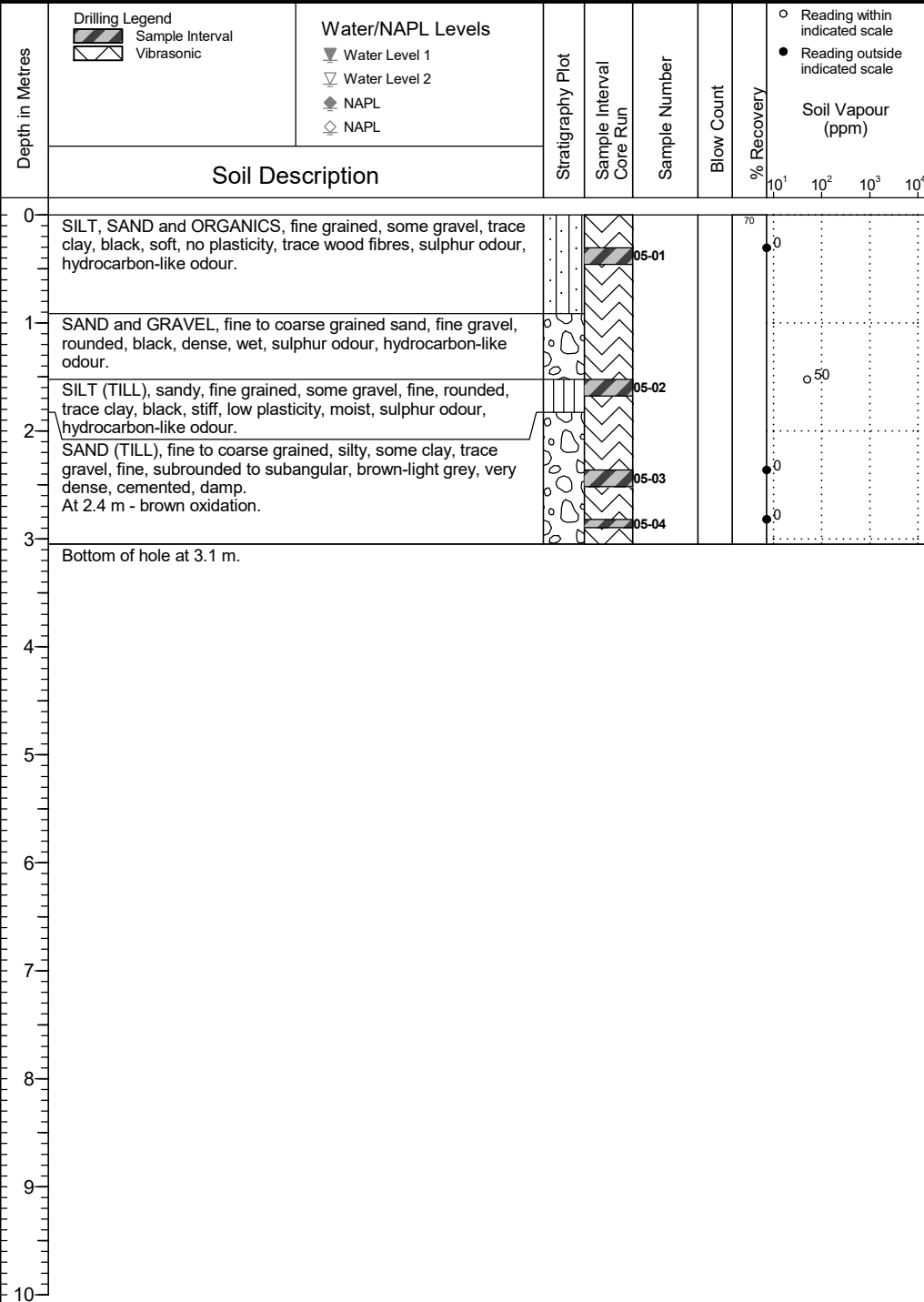
Location
Former Sterling Shipyards, Vancouver, BC

PAGE 1 OF 1

Drilling Contractor Mud Bay Drilling Co. Ltd.
Drilling Method Vibratory Sonic
Borehole Dia. (m) 0.15
Pipe/Slotted Pipe Dia. (m) none/none

Date Monitored n/a
Ground Surface Elev. (m) n/a
Top of Casing Elev. (m) n/a
Northing: 5459402.977 Easting: 495247.908

Project Number: 509211
Borehole Logged By: GS
Date Drilled: 2021 02 24
Log Typed By: NDS



NOTES
Bold denotes sample analyzed. *denotes blind field duplicate.



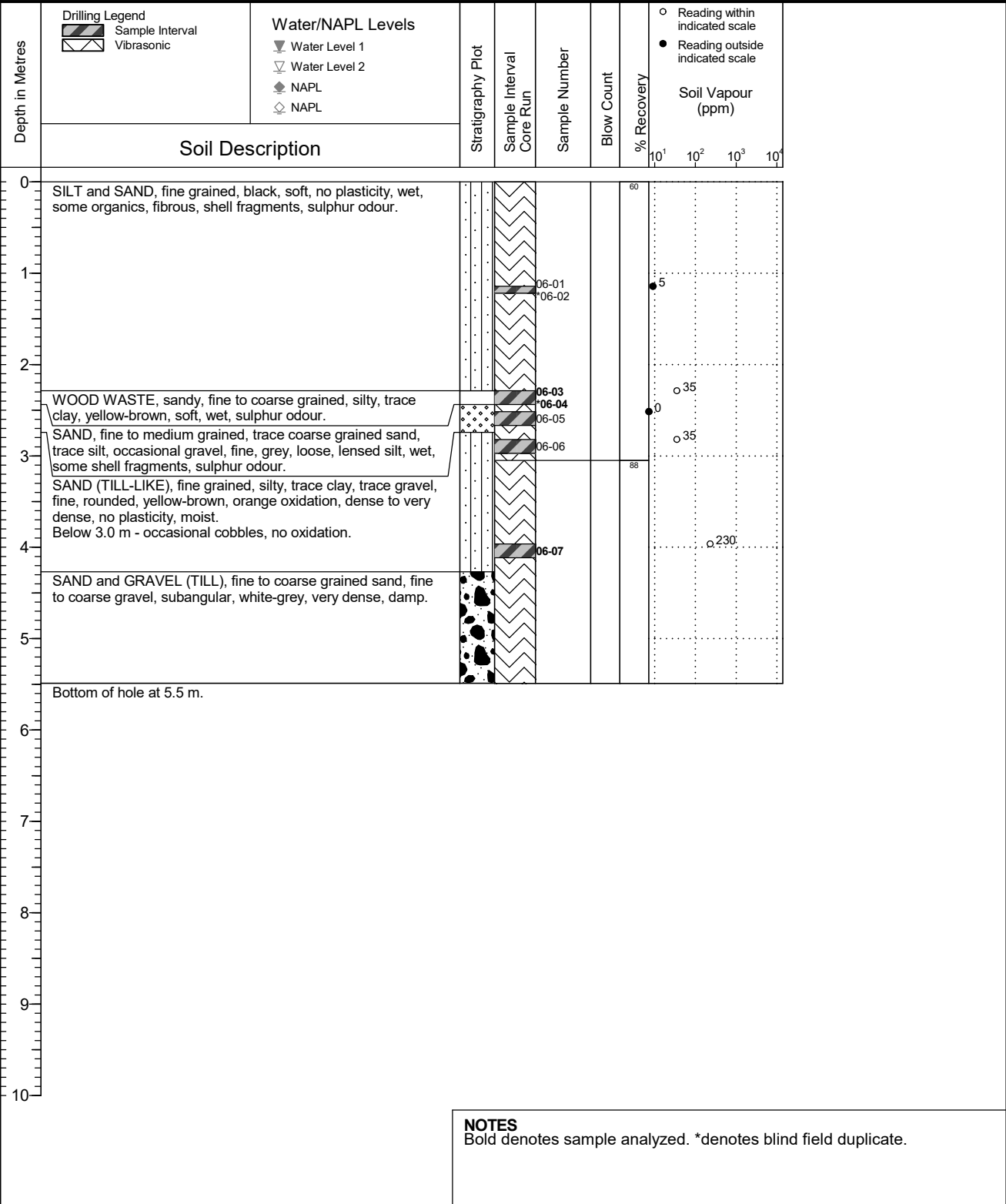
Client
Vancouver Fraser Port Authority

Location
Former Sterling Shipyards, Vancouver, BC

Borehole No. : BH21-06

PAGE 1 OF 1

Drilling Contractor: Mud Bay Drilling Co. Ltd.	Date Monitored: n/a	Project Number: 509211
Drilling Method: Vibratory Sonic	Ground Surface Elev. (m): n/a	Borehole Logged By: GS
Borehole Dia. (m): 0.15	Top of Casing Elev. (m): n/a	Date Drilled: 2021 02 25
Pipe/Slotted Pipe Dia. (m): none/none	Northing: 5459404.632	Easting: 495299.364
		Log Typed By: NDS



NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.



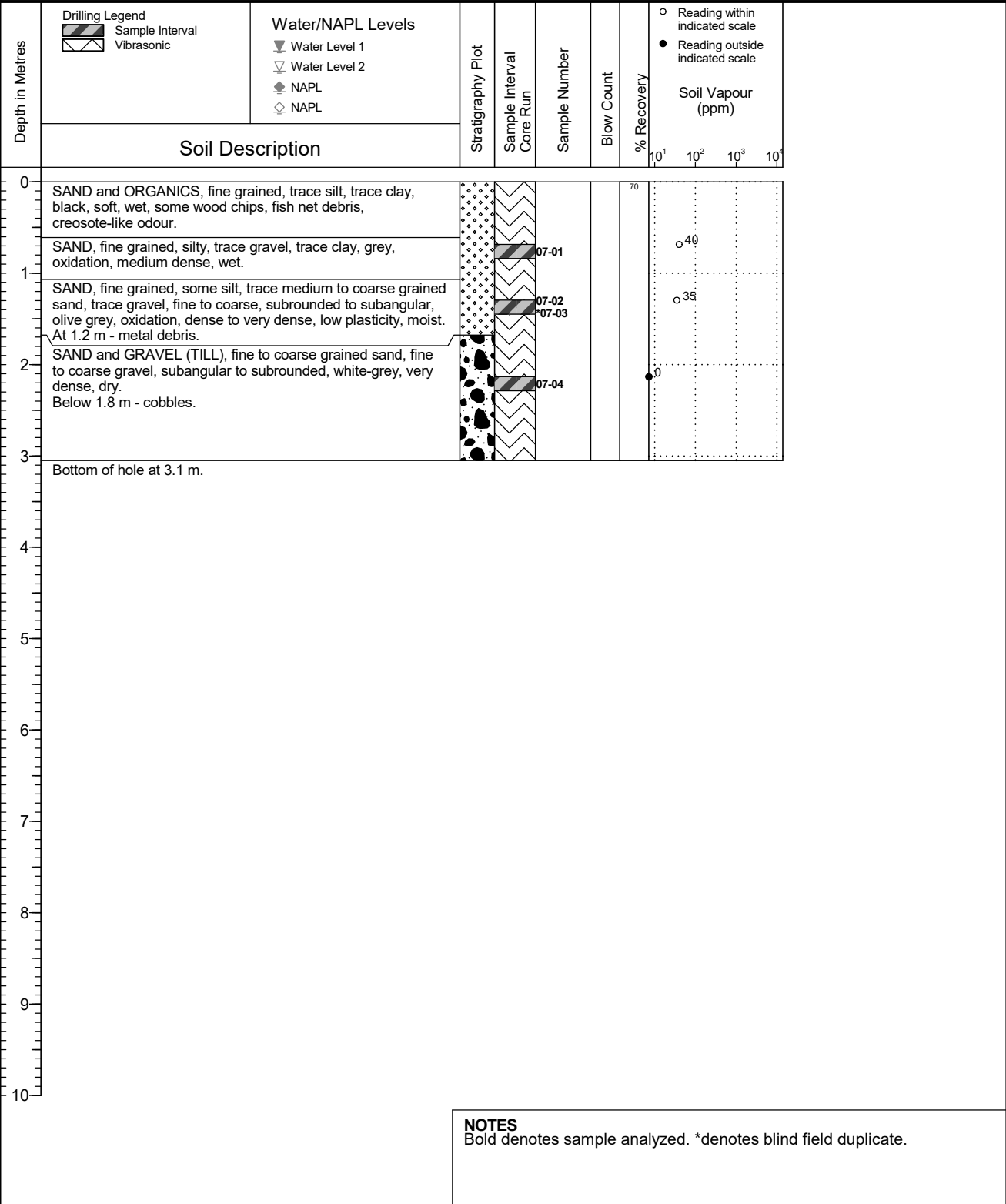
Client
Vancouver Fraser Port Authority

Location
Former Sterling Shipyards, Vancouver, BC

Borehole No. : BH21-07

PAGE 1 OF 1

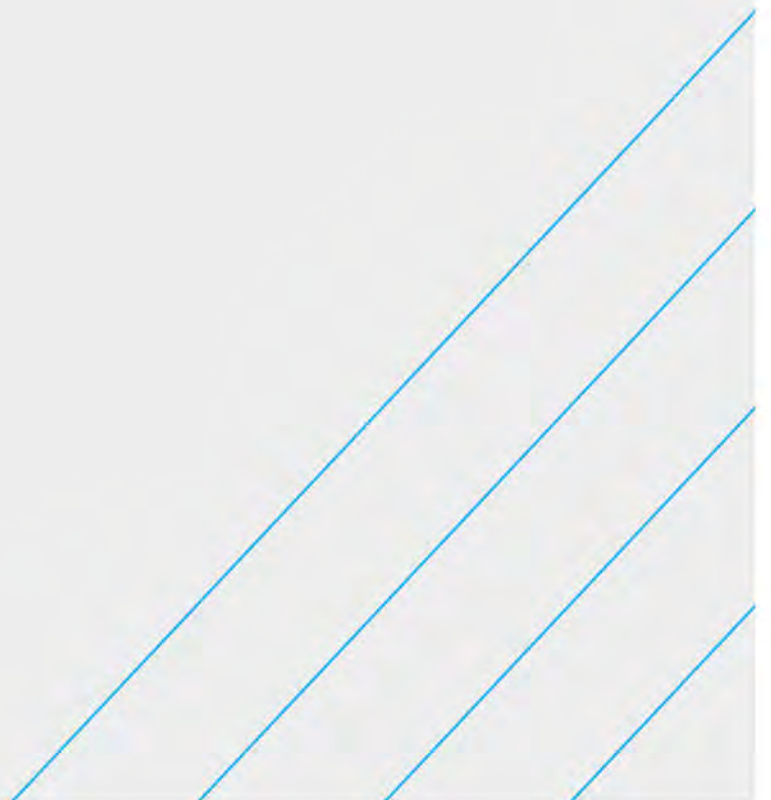
Drilling Contractor: Mud Bay Drilling Co. Ltd.	Date Monitored: n/a	Project Number: 509211
Drilling Method: Vibratory Sonic	Ground Surface Elev. (m): n/a	Borehole Logged By: GS
Borehole Dia. (m): 0.15	Top of Casing Elev. (m): n/a	Date Drilled: 2021 02 25
Pipe/Slotted Pipe Dia. (m): none/none	Northing: 5459405.408	Easting: 495327.892
		Log Typed By: NDS



NOTES
 Bold denotes sample analyzed. *denotes blind field duplicate.

Attachment 2

Laboratory Analytical Reports





CERTIFICATE OF ANALYSIS

Work Order : **VA21A3477**
Amendment : **3**
Client : **SNC-Lavalin Inc.**
Contact : Bill Hung
Address : 8648 Commerce Court
Burnaby BC Canada V5A 4N6
Telephone : 604 515 5151
Project : 680409
PO : ----
C-O-C number : 17-864163, 162
Sampler : GS
Site : ----
Quote number : Western Canada Standing Offer
No. of samples received : 24
No. of samples analysed : 24

Page : 1 of 30
Laboratory : Vancouver - Environmental
Account Manager : Selam Worku
Address : 8081 Lougheed Highway
Burnaby BC Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 25-Feb-2021 21:34
Date Analysis Commenced : 01-Mar-2021
Issue Date : 22-Mar-2021 10:39

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Angela Ren	Team Leader - Metals	Metals, Burnaby, British Columbia
Dan Gebert	Laboratory Analyst	Metals, Burnaby, British Columbia
Dee Lee	Analyst	Metals, Burnaby, British Columbia
Erick Magalhaes	Analyst	Metals, Burnaby, British Columbia
Hedy Lai	Team Leader - Inorganics	Inorganics, Saskatoon, Saskatchewan
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Lindsay Gung	Supervisor - Water Chemistry	Inorganics, Burnaby, British Columbia
Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Shaneel Dayal	Analyst	Metals, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	No Unit
%	percent
µg/L	micrograms per litre
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Total PAHs have been added to all samples. Also, PSA graph is attached to the report.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLCI	Detection Limit Raised: Chromatographic interference due to co-elution.
DLQ	Detection Limit raised due to co-eluting interference. GCMS qualifier ion ratio did not meet acceptance criteria.
PRAR	PCB pattern most closely resembles Aroclor reported. Match is not exact.



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-01-01	BH21-01-02	BH21-01-03	BH21-02-01	BH21-02-02
(Matrix: Soil/Solid)										
Client sampling date / time					24-Feb-2021 09:30	24-Feb-2021 09:35	24-Feb-2021 09:40	24-Feb-2021 10:55	24-Feb-2021 11:05	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-001	VA21A3477-002	VA21A3477-003	VA21A3477-004	VA21A3477-005	
					Result	Result	Result	Result	Result	
Physical Tests										
% saturation	----	E141	1.0	%	93.3	----	----	97.7	27.6	
moisture	----	E144	0.25	%	45.4	9.49	14.7	31.9	16.6	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.02	8.86	8.82	8.08	8.55	
Particle Size										
passing (0.0312 mm)	----	E184	1.0	%	11.8	----	----	11.1	----	
passing (0.020 mm)	----	E184	1.0	%	10.1	----	----	9.6	----	
passing (0.005 mm)	----	E184	1.0	%	4.4	----	----	4.6	----	
passing (0.004 mm)	----	E184	1.0	%	4.0	----	----	4.2	----	
passing (0.002 mm)	----	E184	1.0	%	3.1	----	----	3.4	----	
grain size curve	----	E185A	-	-	See Attached	----	----	See Attached	----	
clay (<0.004mm)	----	EC184E	1.0	%	----	----	----	----	<1.0	
silt (0.063mm - 0.004mm)	----	EC184E	1.0	%	----	----	----	----	3.0	
sand (2.0mm - 0.063mm)	----	EC184E	1.0	%	----	----	----	----	76.4	
gravel (>2mm)	----	EC184E	1.0	%	----	----	----	----	20.6	
Saturated Paste Extractables										
chloride, soluble ion content	16887-00-6	EC239A.CI	1.0	mg/kg	8420	----	----	9260	2660	
chloride, soluble ion content	16887-00-6	E239.CI	2.0	mg/L	9020	----	----	9480	9620	
sodium, soluble ion content	17341-25-2	EC442	1.00	mg/kg	5510	----	----	6160	1620	
sodium, soluble ion content	17341-25-2	E442	2.0	mg/L	5910	----	----	6300	5880	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	17200	23300	19400	14600	11200	
antimony	7440-36-0	E440	0.10	mg/kg	3.76	0.22	0.14	6.72	0.19	
arsenic	7440-38-2	E440	0.10	mg/kg	11.9	3.93	1.94	25.3	2.00	
barium	7440-39-3	E440	0.50	mg/kg	133	97.8	65.7	93.2	32.2	
beryllium	7440-41-7	E440	0.10	mg/kg	0.26	0.36	0.30	0.21	<0.10	
bismuth	7440-69-9	E440	0.20	mg/kg	0.23	<0.20	<0.20	0.43	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	26.6	21.2	9.0	22.3	5.9	
cadmium	7440-43-9	E440	0.020	mg/kg	0.850	0.472	0.110	1.14	0.102	
calcium	7440-70-2	E440	50	mg/kg	17200	5940	4620	12300	4400	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-01-01	BH21-01-02	BH21-01-03	BH21-02-01	BH21-02-02
Client sampling date / time					24-Feb-2021 09:30	24-Feb-2021 09:35	24-Feb-2021 09:40	24-Feb-2021 10:55	24-Feb-2021 11:05	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-001	VA21A3477-002	VA21A3477-003	VA21A3477-004	VA21A3477-005	
					Result	Result	Result	Result	Result	
Metals										
chromium	7440-47-3	E440	0.50	mg/kg	30.7	21.3	18.0	34.5	12.9	
cobalt	7440-48-4	E440	0.10	mg/kg	8.80	9.22	7.67	8.11	4.86	
copper	7440-50-8	E440	0.50	mg/kg	215	25.7	22.7	414	13.5	
iron	7439-89-6	E440	50	mg/kg	29800	27800	23700	28100	14600	
lead	7439-92-1	E440	0.50	mg/kg	107	4.57	3.99	170	2.32	
lithium	7439-93-2	E440	2.0	mg/kg	15.8	14.9	13.7	16.1	16.1	
magnesium	7439-95-4	E440	20	mg/kg	8820	11100	10500	8520	4820	
manganese	7439-96-5	E440	1.0	mg/kg	346	499	449	285	200	
mercury	7439-97-6	E510	0.0500	mg/kg	0.319	<0.0500	<0.0500	1.13	<0.0500	
molybdenum	7439-98-7	E440	0.10	mg/kg	3.24	1.14	0.60	4.88	2.06	
nickel	7440-02-0	E440	0.50	mg/kg	19.5	8.58	8.48	24.3	5.56	
phosphorus	7723-14-0	E440	50	mg/kg	766	563	432	808	366	
potassium	7440-09-7	E440	100	mg/kg	2290	1990	1530	2070	1290	
selenium	7782-49-2	E440	0.20	mg/kg	0.42	0.34	<0.20	0.54	<0.20	
silver	7440-22-4	E440	0.10	mg/kg	0.34	<0.10	<0.10	0.43	<0.10	
sodium	7440-23-5	E440	50	mg/kg	7100	2120	2220	7580	2500	
strontium	7440-24-6	E440	0.50	mg/kg	128	58.8	39.2	89.9	35.9	
sulfur	7704-34-9	E440	1000	mg/kg	12600	<1000	<1000	10200	2400	
thallium	7440-28-0	E440	0.050	mg/kg	0.190	0.062	<0.050	0.180	0.061	
tin	7440-31-5	E440	2.0	mg/kg	7.3	<2.0	<2.0	11.4	<2.0	
titanium	7440-32-6	E440	1.0	mg/kg	888	1260	809	716	640	
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	0.61	<0.50	0.60	<0.50	
uranium	7440-61-1	E440	0.050	mg/kg	1.44	0.556	0.402	2.07	0.678	
vanadium	7440-62-2	E440	0.20	mg/kg	63.9	117	68.9	57.4	44.3	
zinc	7440-66-6	E440	2.0	mg/kg	182	63.9	54.3	261	29.5	
zirconium	7440-67-7	E440	1.0	mg/kg	5.9	7.0	3.1	4.4	<1.0	
Volatile Organic Compounds [Fuels]										
benzene	71-43-2	E611A	0.0050	mg/kg	<0.0050	---	---	---	<0.0050	
ethylbenzene	100-41-4	E611A	0.015	mg/kg	<0.015	---	---	---	<0.015	
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.200	mg/kg	<0.200	---	---	---	<0.200	
styrene	100-42-5	E611A	0.050	mg/kg	<0.050	---	---	---	<0.050	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-01-01	BH21-01-02	BH21-01-03	BH21-02-01	BH21-02-02
(Matrix: Soil/Solid)					Client sampling date / time	24-Feb-2021 09:30	24-Feb-2021 09:35	24-Feb-2021 09:40	24-Feb-2021 10:55	24-Feb-2021 11:05
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-001	VA21A3477-002	VA21A3477-003	VA21A3477-004	VA21A3477-005	
					Result	Result	Result	Result	Result	
Volatile Organic Compounds [Fuels]										
toluene	108-88-3	E611A	0.050	mg/kg	<0.050	---	---	---	---	<0.050
xylene, m+p-	179601-23-1	E611A	0.050	mg/kg	<0.050	---	---	---	---	<0.050
xylene, o-	95-47-6	E611A	0.050	mg/kg	<0.050	---	---	---	---	<0.050
xylenes, total	1330-20-7	E611A	0.075	mg/kg	<0.075	---	---	---	---	<0.075
Volatile Organic Compounds Surrogates										
bromofluorobenzene, 4-	460-00-4	E611A	0.050	%	70.6	---	---	---	---	72.4
difluorobenzene, 1,4-	540-36-3	E611A	0.050	%	85.0	---	---	---	---	88.7
Hydrocarbons										
EPH (C10-C19)	---	E601A	200	mg/kg	<200	---	<200	---	---	<200
EPH (C19-C32)	---	E601A	200	mg/kg	630	---	<200	---	---	<200
VHs (C6-C10)	---	E581.VH+F1	10	mg/kg	<10	---	---	---	---	<10
HEPHs	---	EC600A	200	mg/kg	620	---	<200	---	---	<200
LEPHs	---	EC600A	200	mg/kg	<200	---	<200	---	---	<200
VPHs	---	EC580A	10	mg/kg	<10	---	---	---	---	<10
Hydrocarbons Surrogates										
bromobenzotrifluoride, 2- (EPH surr)	392-83-6	E601A	5.0	%	85.9	---	85.6	---	---	83.7
dichlorotoluene, 3,4-	97-75-0	E581.VH+F1	1.0	%	89.0	---	---	---	---	106
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.154	---	<0.0050	---	---	<0.0050
acenaphthene	83-32-9	E641A	0.050	mg/kg	---	<0.050	---	0.179	---	---
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	0.0606	---	<0.0050	---	---	<0.0050
acenaphthylene	208-96-8	E641A	0.050	mg/kg	---	<0.050	---	0.096	---	---
acridine	260-94-6	E641A-L	0.010	mg/kg	<0.070 ^{DLO}	---	<0.010	---	---	<0.010
acridine	260-94-6	E641A	0.050	mg/kg	---	<0.050	---	<0.050	---	---
anthracene	120-12-7	E641A-L	0.0040	mg/kg	0.297	---	<0.0040	---	---	<0.0040
anthracene	120-12-7	E641A	0.050	mg/kg	---	<0.050	---	0.439	---	---
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	0.577	---	<0.010	---	---	<0.010
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	---	<0.050	---	0.742	---	---
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	0.680	---	<0.010	---	---	<0.010
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	---	<0.050	---	0.994	---	---
benzo(b+j)fluoranthene	---	E641A-L	0.010	mg/kg	0.901	---	<0.010	---	---	<0.010



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-01-01	BH21-01-02	BH21-01-03	BH21-02-01	BH21-02-02
(Matrix: Soil/Solid)										
Client sampling date / time					24-Feb-2021 09:30	24-Feb-2021 09:35	24-Feb-2021 09:40	24-Feb-2021 10:55	24-Feb-2021 11:05	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-001	VA21A3477-002	VA21A3477-003	VA21A3477-004	VA21A3477-005	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
benzo(b+j)fluoranthene	----	E641A	0.050	mg/kg	----	<0.050	----	1.28	----	
benzo(b+j+k)fluoranthene	----	E641A-L	0.015	mg/kg	1.21	----	<0.015	----	<0.015	
benzo(b+j+k)fluoranthene	----	E641A	0.075	mg/kg	----	<0.075	----	1.74	----	
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	0.373	----	<0.010	----	<0.010	
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	----	<0.050	----	0.594	----	
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	0.313	----	<0.010	----	<0.010	
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	----	<0.050	----	0.460	----	
chrysene	218-01-9	E641A-L	0.010	mg/kg	0.594	----	<0.010	----	<0.010	
chrysene	218-01-9	E641A	0.050	mg/kg	----	<0.050	----	0.819	----	
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.103	----	<0.0050	----	<0.0050	
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	----	<0.050	----	0.146	----	
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	2.12	----	<0.010	----	<0.010	
fluoranthene	206-44-0	E641A	0.050	mg/kg	----	<0.050	----	1.28	----	
fluorene	86-73-7	E641A-L	0.010	mg/kg	0.131	----	<0.010	----	<0.010	
fluorene	86-73-7	E641A	0.050	mg/kg	----	<0.050	----	0.198	----	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	0.374	----	<0.010	----	<0.010	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	----	<0.050	----	0.599	----	
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	0.038	----	<0.010	----	<0.010	
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	----	<0.050	----	0.116	----	
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	0.039	----	<0.010	----	<0.010	
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	----	<0.050	----	0.099	----	
methylnaphthalenes, 1+2-	----	E641A	0.075	mg/kg	----	<0.075	----	0.215	----	
naphthalene	91-20-3	E641A-L	0.010	mg/kg	0.110	----	<0.010	----	<0.010	
naphthalene	91-20-3	E641A	0.050	mg/kg	----	<0.050	----	0.107	----	
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	0.797	----	<0.010	----	<0.010	
phenanthrene	85-01-8	E641A	0.050	mg/kg	----	<0.050	----	1.01	----	
pyrene	129-00-0	E641A-L	0.010	mg/kg	2.56	----	<0.010	----	0.018	
pyrene	129-00-0	E641A	0.050	mg/kg	----	<0.050	----	1.79	----	
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.010	----	<0.010	----	<0.010	
quinoline	6027-02-7	E641A	0.050	mg/kg	----	<0.050	----	<0.050	----	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	----	<0.065	----	1.46	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-01-01	BH21-01-02	BH21-01-03	BH21-02-01	BH21-02-02
(Matrix: Soil/Solid)										
Client sampling date / time					24-Feb-2021 09:30	24-Feb-2021 09:35	24-Feb-2021 09:40	24-Feb-2021 10:55	24-Feb-2021 11:05	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-001	VA21A3477-002	VA21A3477-003	VA21A3477-004	VA21A3477-005	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
PAHs, total (BC Sched 3.4)	----	E641A-L	0.040	mg/kg	8.22	----	<0.040	----	<0.040	
PAHs, total (BC Sched 3.4)	----	E641A	0.20	mg/kg	----	<0.20	----	7.90	----	
PAHs, total (EPA 16)	----	E641A-L	0.040	mg/kg	10.1	----	<0.040	----	<0.040	
PAHs, total (EPA 16)	----	E641A	0.20	mg/kg	----	<0.20	----	10.7	----	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.010	%	87.0	----	79.6	----	82.1	
acridine-d9	34749-75-2	E641A	0.050	%	----	75.2	----	91.1	----	
chrysene-d12	1719-03-5	E641A-L	0.010	%	86.1	----	85.7	----	90.5	
chrysene-d12	1719-03-5	E641A	0.050	%	----	86.2	----	87.0	----	
naphthalene-d8	1146-65-2	E641A-L	0.010	%	85.5	----	91.2	----	95.6	
naphthalene-d8	1146-65-2	E641A	0.050	%	----	91.0	----	88.2	----	
phenanthrene-d10	1517-22-2	E641A-L	0.010	%	87.3	----	90.7	----	94.6	
phenanthrene-d10	1517-22-2	E641A	0.050	%	----	87.7	----	89.4	----	
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.010	<0.010	<0.010	0.153 ^{PRAR}	<0.010	
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	0.062	<0.010	<0.010	0.257	<0.010	
Aroclor 1260	11096-82-5	E685	0.010	mg/kg	<0.030 ^{DLCI}	<0.010	<0.010	<0.060 ^{DLCI}	<0.010	
Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.060 ^{DLCI}	<0.010	
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.060 ^{DLCI}	<0.010	
polychlorinated biphenyls [PCBs], total	----	E685	0.010	mg/kg	0.062	<0.010	<0.010	0.410	<0.010	
Polychlorinated Biphenyls Surrogates										
Decachlorobiphenyl	2051-24-3	E685	0.010	%	95.8	93.8	95.8	96.5	93.2	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-02-03	BH21-02-04	BH21-03-01	BH21-03-04	BH21-03-05
Client sampling date / time					24-Feb-2021 11:20	24-Feb-2021 11:30	24-Feb-2021 12:20	24-Feb-2021 12:30	24-Feb-2021 12:40	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-006	VA21A3477-007	VA21A3477-008	VA21A3477-009	VA21A3477-010	
					Result	Result	Result	Result	Result	
Physical Tests										
% saturation	----	E141	1.0	%	----	----	28.8	36.3	----	
moisture	----	E144	0.25	%	13.8	4.38	19.9	12.2	2.48	
pH (1:2 soil:water)	----	E108	0.10	pH units	9.66	8.91	8.36	9.38	9.55	
Particle Size										
passing (0.0312 mm)	----	E184	1.0	%	----	----	13.8	23.3	----	
passing (0.020 mm)	----	E184	1.0	%	----	----	11.7	20.0	----	
passing (0.005 mm)	----	E184	1.0	%	----	----	4.6	8.7	----	
passing (0.004 mm)	----	E184	1.0	%	----	----	4.0	7.9	----	
passing (0.002 mm)	----	E184	1.0	%	----	----	3.0	6.2	----	
grain size curve	----	E185A	-	-	----	----	See Attached	See Attached	----	
Saturated Paste Extractables										
chloride, soluble ion content	16887-00-6	EC239A.Cl	1.0	mg/kg	----	----	3020	169	----	
chloride, soluble ion content	16887-00-6	E239.Cl	2.0	mg/L	----	----	10500	466	----	
sodium, soluble ion content	17341-25-2	EC442	1.00	mg/kg	----	----	1860	147	----	
sodium, soluble ion content	17341-25-2	E442	2.0	mg/L	----	----	6460	405	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	11800	24000	13000	15400	21900	
antimony	7440-36-0	E440	0.10	mg/kg	0.20	0.21	1.78	0.20	0.18	
arsenic	7440-38-2	E440	0.10	mg/kg	1.65	3.40	5.50	2.70	1.79	
barium	7440-39-3	E440	0.50	mg/kg	79.0	104	48.9	76.4	100	
beryllium	7440-41-7	E440	0.10	mg/kg	0.20	0.33	0.13	0.26	0.34	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0.24	<0.20	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	6.2	8.9	7.8	6.9	11.9	
cadmium	7440-43-9	E440	0.020	mg/kg	0.089	0.150	0.236	0.081	0.080	
calcium	7440-70-2	E440	50	mg/kg	3260	5500	18600	2880	61500	
chromium	7440-47-3	E440	0.50	mg/kg	15.2	24.2	18.4	18.2	18.8	
cobalt	7440-48-4	E440	0.10	mg/kg	5.46	9.76	6.29	8.31	7.44	
copper	7440-50-8	E440	0.50	mg/kg	17.4	20.6	40.4	19.0	19.4	
iron	7439-89-6	E440	50	mg/kg	17500	28600	18400	20600	24400	
lead	7439-92-1	E440	0.50	mg/kg	3.30	7.28	39.8	3.47	4.09	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-02-03	BH21-02-04	BH21-03-01	BH21-03-04	BH21-03-05
Client sampling date / time					24-Feb-2021 11:20	24-Feb-2021 11:30	24-Feb-2021 12:20	24-Feb-2021 12:30	24-Feb-2021 12:40	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-006	VA21A3477-007	VA21A3477-008	VA21A3477-009	VA21A3477-010	
					Result	Result	Result	Result	Result	
Metals										
lithium	7439-93-2	E440	2.0	mg/kg	6.5	14.4	27.1	11.2	12.4	
magnesium	7439-95-4	E440	20	mg/kg	4840	11700	6170	7750	9720	
manganese	7439-96-5	E440	1.0	mg/kg	213	606	239	309	1730	
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	0.200	<0.0500	<0.0500	
molybdenum	7439-98-7	E440	0.10	mg/kg	0.18	1.44	2.32	0.21	0.77	
nickel	7440-02-0	E440	0.50	mg/kg	8.70	9.91	10.2	11.2	7.29	
phosphorus	7723-14-0	E440	50	mg/kg	398	476	497	214	394	
potassium	7440-09-7	E440	100	mg/kg	1420	2470	1570	1570	2170	
selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	<0.20	
silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	
sodium	7440-23-5	E440	50	mg/kg	1040	1140	3400	882	1200	
strontium	7440-24-6	E440	0.50	mg/kg	38.4	55.7	147	35.3	87.4	
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	3700	<1000	<1000	
thallium	7440-28-0	E440	0.050	mg/kg	0.056	0.095	0.106	0.085	0.054	
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	3.5	<2.0	<2.0	
titanium	7440-32-6	E440	1.0	mg/kg	743	1130	712	824	1100	
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
uranium	7440-61-1	E440	0.050	mg/kg	0.510	0.645	1.33	0.394	0.438	
vanadium	7440-62-2	E440	0.20	mg/kg	49.6	88.4	56.9	65.0	81.1	
zinc	7440-66-6	E440	2.0	mg/kg	36.4	72.6	66.7	54.4	51.8	
zirconium	7440-67-7	E440	1.0	mg/kg	3.5	3.7	1.8	2.7	3.1	
Volatile Organic Compounds [Fuels]										
benzene	71-43-2	E611A	0.0050	mg/kg	----	<0.0050	<0.0050	<0.0050	----	
ethylbenzene	100-41-4	E611A	0.015	mg/kg	----	<0.015	<0.015	<0.015	----	
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.200	mg/kg	----	<0.200	<0.200	<0.200	----	
styrene	100-42-5	E611A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
toluene	108-88-3	E611A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
xylene, m+p-	179601-23-1	E611A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
xylene, o-	95-47-6	E611A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
xylenes, total	1330-20-7	E611A	0.075	mg/kg	----	<0.075	<0.075	<0.075	----	
Volatile Organic Compounds Surrogates										



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-02-03	BH21-02-04	BH21-03-01	BH21-03-04	BH21-03-05
(Matrix: Soil/Solid)										
Client sampling date / time					24-Feb-2021 11:20	24-Feb-2021 11:30	24-Feb-2021 12:20	24-Feb-2021 12:30	24-Feb-2021 12:40	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-006	VA21A3477-007	VA21A3477-008	VA21A3477-009	VA21A3477-010	
					Result	Result	Result	Result	Result	
Volatile Organic Compounds Surrogates										
bromofluorobenzene, 4-	460-00-4	E611A	0.050	%	---	75.0	77.1	76.0	---	
difluorobenzene, 1,4-	540-36-3	E611A	0.050	%	---	93.1	104	92.3	---	
Hydrocarbons										
chromatogram to baseline at nC50	---	E601.SG	-	-	---	Yes	---	Yes	---	
EPH (C10-C19)	---	E601A	200	mg/kg	---	---	<200	<200	---	
EPH (C19-C32)	---	E601A	200	mg/kg	---	---	<200	<200	---	
F1 (C6-C10)	---	E581.VH+F1	5.0	mg/kg	---	<5.0	---	<5.0	---	
F1-BTEX	---	EC580	5.0	mg/kg	---	<5.0	---	<5.0	---	
F2 (C10-C16)	---	E601.SG	30	mg/kg	---	<30	---	<30	---	
F3 (C16-C34)	---	E601.SG	50	mg/kg	---	<50	---	<50	---	
F4 (C34-C50)	---	E601.SG	50	mg/kg	---	<50	---	<50	---	
VHs (C6-C10)	---	E581.VH+F1	10	mg/kg	---	---	<10	---	---	
HEPHs	---	EC600A	200	mg/kg	---	---	<200	<200	---	
LEPHs	---	EC600A	200	mg/kg	---	---	<200	<200	---	
VPHs	---	EC580A	10	mg/kg	---	---	<10	---	---	
Hydrocarbons Surrogates										
bromobenzotrifluoride, 2- (EPH surr)	392-83-6	E601A	5.0	%	---	---	90.7	86.5	---	
bromobenzotrifluoride, 2- (F2-F4 surr)	392-83-6	E601.SG	10	%	---	78.2	---	82.4	---	
dichlorotoluene, 3,4-	97-75-0	E581.VH+F1	1.0	%	---	112	107	116	---	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	---	---	0.0406	<0.0050	---	
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	---	---	0.0994	<0.0050	---	
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
acridine	260-94-6	E641A-L	0.010	mg/kg	---	---	<0.020 ^{DLO}	<0.010	---	
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
anthracene	120-12-7	E641A-L	0.0040	mg/kg	---	---	0.164	<0.0040	---	
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	---	---	0.341	<0.010	---	
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	---	---	0.401	<0.010	---	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-02-03	BH21-02-04	BH21-03-01	BH21-03-04	BH21-03-05
(Matrix: Soil/Solid)										
Client sampling date / time					24-Feb-2021 11:20	24-Feb-2021 11:30	24-Feb-2021 12:20	24-Feb-2021 12:30	24-Feb-2021 12:40	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-006	VA21A3477-007	VA21A3477-008	VA21A3477-009	VA21A3477-010	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
benzo(b+j)fluoranthene	---	E641A-L	0.010	mg/kg	---	---	0.460	<0.010	---	
benzo(b+j)fluoranthene	---	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
benzo(b+j+k)fluoranthene	---	E641A-L	0.015	mg/kg	---	---	0.659	<0.015	---	
benzo(b+j+k)fluoranthene	---	E641A	0.075	mg/kg	<0.075	<0.075	---	---	<0.075	
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	---	---	0.218	<0.010	---	
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	---	---	0.199	<0.010	---	
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
chrysene	218-01-9	E641A-L	0.010	mg/kg	---	---	0.294	<0.010	---	
chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	---	---	0.0618	<0.0050	---	
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	---	---	0.649	<0.010	---	
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
fluorene	86-73-7	E641A-L	0.010	mg/kg	---	---	0.053	<0.010	---	
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	---	---	0.232	<0.010	---	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	---	---	<0.010	<0.010	---	
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	---	---	0.012	<0.010	---	
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
methylnaphthalenes, 1+2-	---	E641A	0.075	mg/kg	<0.075	<0.075	---	---	<0.075	
naphthalene	91-20-3	E641A-L	0.010	mg/kg	---	---	0.027	<0.010	---	
naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	---	---	0.389	<0.010	---	
phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
pyrene	129-00-0	E641A-L	0.010	mg/kg	---	---	1.07	<0.010	---	
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
quinoline	6027-02-7	E641A-L	0.010	mg/kg	---	---	<0.010	<0.010	---	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-02-03	BH21-02-04	BH21-03-01	BH21-03-04	BH21-03-05
(Matrix: Soil/Solid)					Client sampling date / time	24-Feb-2021 11:20	24-Feb-2021 11:30	24-Feb-2021 12:20	24-Feb-2021 12:30	24-Feb-2021 12:40
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-006	VA21A3477-007	VA21A3477-008	VA21A3477-009	VA21A3477-010	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
quinoline	6027-02-7	E641A	0.050	mg/kg	<0.050	<0.050	---	---	<0.050	
B(a)P total potency equivalents [B(a)P TPE]	---	E641A	0.065	mg/kg	<0.065	<0.065	---	---	<0.065	
PAHs, total (BC Sched 3.4)	---	E641A-L	0.040	mg/kg	---	---	3.60	<0.040	---	
PAHs, total (BC Sched 3.4)	---	E641A	0.20	mg/kg	<0.20	<0.20	---	---	<0.20	
PAHs, total (EPA 16)	---	E641A-L	0.040	mg/kg	---	---	4.70	<0.040	---	
PAHs, total (EPA 16)	---	E641A	0.20	mg/kg	<0.20	<0.20	---	---	<0.20	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.010	%	---	---	88.7	79.5	---	
acridine-d9	34749-75-2	E641A	0.050	%	73.2	76.1	---	---	85.0	
chrysene-d12	1719-03-5	E641A-L	0.010	%	---	---	88.5	91.1	---	
chrysene-d12	1719-03-5	E641A	0.050	%	84.7	81.1	---	---	88.3	
naphthalene-d8	1146-65-2	E641A-L	0.010	%	---	---	88.5	95.6	---	
naphthalene-d8	1146-65-2	E641A	0.050	%	85.3	88.0	---	---	96.0	
phenanthrene-d10	1517-22-2	E641A-L	0.010	%	---	---	89.7	93.3	---	
phenanthrene-d10	1517-22-2	E641A	0.050	%	86.7	85.9	---	---	93.1	
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.010	<0.010	0.014 ^{PRAAR}	<0.010	<0.010	
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	<0.010	<0.010	0.014	<0.010	<0.010	
Aroclor 1260	11096-82-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
polychlorinated biphenyls [PCBs], total	---	E685	0.010	mg/kg	<0.010	<0.010	0.028	<0.010	<0.010	
Polychlorinated Biphenyls Surrogates										
Decachlorobiphenyl	2051-24-3	E685	0.010	%	98.0	96.2	96.5	97.2	104	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-04-01	BH21-04-02	BH21-04-03	BH21-05-01	BH21-05-02
(Matrix: Soil/Solid)					Client sampling date / time	24-Feb-2021 13:30	24-Feb-2021 13:40	24-Feb-2021 13:50	24-Feb-2021 14:20	24-Feb-2021 14:30
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-011	VA21A3477-012	VA21A3477-013	VA21A3477-014	VA21A3477-015	
					Result	Result	Result	Result	Result	
Physical Tests										
% saturation	----	E141	1.0	%	102	30.4	----	142	47.5	
moisture	----	E144	0.25	%	39.8	12.5	4.76	46.7	13.8	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.56	9.80	9.23	8.45	9.13	
Particle Size										
passing (0.0312 mm)	----	E184	1.0	%	----	17.1	----	19.3	22.4	
passing (0.020 mm)	----	E184	1.0	%	----	14.3	----	16.5	19.5	
passing (0.005 mm)	----	E184	1.0	%	----	4.9	----	7.1	9.9	
passing (0.004 mm)	----	E184	1.0	%	----	4.2	----	6.2	9.1	
passing (0.002 mm)	----	E184	1.0	%	----	3.0	----	4.5	7.4	
grain size curve	----	E185A	-	-	----	See Attached	----	See Attached	See Attached	
Saturated Paste Extractables										
chloride, soluble ion content	16887-00-6	EC239A.Cl	1.0	mg/kg	3640	189	----	7440	270	
chloride, soluble ion content	16887-00-6	E239.Cl	2.0	mg/L	3570	621	----	5240	569	
sodium, soluble ion content	17341-25-2	EC442	1.00	mg/kg	2340	156	----	4500	266	
sodium, soluble ion content	17341-25-2	E442	2.0	mg/L	2290	514	----	3170	561	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	15800	7930	19700	16400	19100	
antimony	7440-36-0	E440	0.10	mg/kg	326	0.26	0.19	150	33.8	
arsenic	7440-38-2	E440	0.10	mg/kg	570	2.08	2.74	334	74.6	
barium	7440-39-3	E440	0.50	mg/kg	176	55.4	58.4	149	236	
beryllium	7440-41-7	E440	0.10	mg/kg	0.53	0.16	0.27	0.44	0.28	
bismuth	7440-69-9	E440	0.20	mg/kg	1.45	<0.20	<0.20	1.18	0.30	
boron	7440-42-8	E440	5.0	mg/kg	40.1	<5.0	8.9	41.8	13.2	
cadmium	7440-43-9	E440	0.020	mg/kg	2.62	0.051	0.142	2.50	0.500	
calcium	7440-70-2	E440	50	mg/kg	33900	2700	4150	67000	11400	
chromium	7440-47-3	E440	0.50	mg/kg	91.0	11.6	16.3	69.8	29.1	
cobalt	7440-48-4	E440	0.10	mg/kg	35.8	4.71	9.00	21.7	13.3	
copper	7440-50-8	E440	0.50	mg/kg	1110	14.0	55.2	757	129	
iron	7439-89-6	E440	50	mg/kg	82200	13600	27900	58500	36400	
lead	7439-92-1	E440	0.50	mg/kg	628	2.65	3.46	450	120	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-04-01	BH21-04-02	BH21-04-03	BH21-05-01	BH21-05-02
Client sampling date / time					24-Feb-2021 13:30	24-Feb-2021 13:40	24-Feb-2021 13:50	24-Feb-2021 14:20	24-Feb-2021 14:30	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-011	VA21A3477-012	VA21A3477-013	VA21A3477-014	VA21A3477-015	
					Result	Result	Result	Result	Result	
Metals										
lithium	7439-93-2	E440	2.0	mg/kg	14.4	4.7	12.3	16.2	14.6	
magnesium	7439-95-4	E440	20	mg/kg	11600	3820	11600	11400	9450	
manganese	7439-96-5	E440	1.0	mg/kg	806	178	505	459	478	
mercury	7439-97-6	E510	0.0500	mg/kg	1.28	<0.0500	<0.0500	2.09	0.362	
molybdenum	7439-98-7	E440	0.10	mg/kg	52.4	0.30	0.63	37.2	5.15	
nickel	7440-02-0	E440	0.50	mg/kg	46.7	8.40	8.40	40.6	16.6	
phosphorus	7723-14-0	E440	50	mg/kg	907	318	560	1270	714	
potassium	7440-09-7	E440	100	mg/kg	2760	1000	1520	2760	2200	
selenium	7782-49-2	E440	0.20	mg/kg	0.90	<0.20	0.27	0.97	<0.20	
silver	7440-22-4	E440	0.10	mg/kg	1.76	<0.10	0.11	1.66	0.31	
sodium	7440-23-5	E440	50	mg/kg	6950	765	857	8990	1430	
strontium	7440-24-6	E440	0.50	mg/kg	216	29.6	34.1	441	77.8	
sulfur	7704-34-9	E440	1000	mg/kg	25300	<1000	1400	22000	3200	
thallium	7440-28-0	E440	0.050	mg/kg	0.348	<0.050	0.061	0.308	0.118	
tin	7440-31-5	E440	2.0	mg/kg	54.8	<2.0	<2.0	34.5	7.8	
titanium	7440-32-6	E440	1.0	mg/kg	880	466	982	765	969	
tungsten	7440-33-7	E440	0.50	mg/kg	2.60	<0.50	<0.50	3.70	1.80	
uranium	7440-61-1	E440	0.050	mg/kg	2.89	0.327	0.324	2.34	0.842	
vanadium	7440-62-2	E440	0.20	mg/kg	64.1	37.2	74.4	64.2	67.5	
zinc	7440-66-6	E440	2.0	mg/kg	2070	28.6	58.4	1510	357	
zirconium	7440-67-7	E440	1.0	mg/kg	9.6	2.3	3.6	7.6	4.9	
TCLP Extractables										
benzo(a)pyrene, TCLP	50-32-8	E644	0.000050	mg/L	----	----	----	<0.000050	----	
TCLP Extractables Surrogates										
chrysene-d12, TCLP	1719-03-5	E644	0.050	%	----	----	----	101	----	
naphthalene-d8, TCLP	1146-65-2	E644	0.050	%	----	----	----	99.0	----	
phenanthrene-d10, TCLP	1517-22-2	E644	0.050	%	----	----	----	100	----	
TCLP Metals										
pH, TCLP 1st preliminary	----	EPP444	0.010	pH units	9.78	----	----	9.93	----	
pH, TCLP 2nd preliminary	----	EPP444	0.010	pH units	2.30	----	----	2.88	----	
pH, TCLP extraction fluid initial	----	EPP444	0.010	pH units	4.93	----	----	4.93	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-04-01	BH21-04-02	BH21-04-03	BH21-05-01	BH21-05-02
(Matrix: Soil/Solid)					Client sampling date / time	24-Feb-2021 13:30	24-Feb-2021 13:40	24-Feb-2021 13:50	24-Feb-2021 14:20	24-Feb-2021 14:30
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-011	VA21A3477-012	VA21A3477-013	VA21A3477-014	VA21A3477-015	
					Result	Result	Result	Result	Result	
TCLP Metals										
pH, TCLP final	----	EPP444	0.010	pH units	6.48	----	----	6.52	----	
arsenic, TCLP	7440-38-2	E444	1.0	mg/L	<1.0	----	----	----	----	
lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	----	----	----	----	
mercury, TCLP	7439-97-6	E512	0.0010	mg/L	----	----	----	<0.0010	----	
Volatile Organic Compounds [Fuels]										
benzene	71-43-2	E611A	0.0050	mg/kg	0.0072	----	----	----	<0.0050	
ethylbenzene	100-41-4	E611A	0.015	mg/kg	<0.015	----	----	----	<0.015	
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.200	mg/kg	<0.200	----	----	----	<0.200	
styrene	100-42-5	E611A	0.050	mg/kg	<0.050	----	----	----	<0.050	
toluene	108-88-3	E611A	0.050	mg/kg	<0.050	----	----	----	<0.050	
xylene, m+p-	179601-23-1	E611A	0.050	mg/kg	<0.050	----	----	----	<0.050	
xylene, o-	95-47-6	E611A	0.050	mg/kg	<0.050	----	----	----	<0.050	
xylenes, total	1330-20-7	E611A	0.075	mg/kg	<0.075	----	----	----	<0.075	
Volatile Organic Compounds Surrogates										
bromofluorobenzene, 4-	460-00-4	E611A	0.050	%	71.1	----	----	----	75.4	
difluorobenzene, 1,4-	540-36-3	E611A	0.050	%	82.3	----	----	----	90.7	
Hydrocarbons										
EPH (C10-C19)	----	E601A	200	mg/kg	270	----	----	330	<200	
EPH (C19-C32)	----	E601A	200	mg/kg	1290	----	----	1260	260	
VHs (C6-C10)	----	E581.VH+F1	10	mg/kg	<10	----	----	----	<10	
HEPHs	----	EC600A	200	mg/kg	1280	----	----	1220	260	
LEPHs	----	EC600A	200	mg/kg	270	----	----	320	<200	
VPHs	----	EC580A	10	mg/kg	<10	----	----	----	<10	
Hydrocarbons Surrogates										
bromobenzotrifluoride, 2- (EPH surr)	392-83-6	E601A	5.0	%	90.3	----	----	86.0	84.4	
dichlorotoluene, 3,4-	97-75-0	E581.VH+F1	1.0	%	85.8	----	----	----	99.6	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.238	----	----	1.06	0.0961	
acenaphthene	83-32-9	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	0.149	----	----	0.189	0.0335	
acenaphthylene	208-96-8	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-04-01	BH21-04-02	BH21-04-03	BH21-05-01	BH21-05-02
(Matrix: Soil/Solid)										
Client sampling date / time						24-Feb-2021 13:30	24-Feb-2021 13:40	24-Feb-2021 13:50	24-Feb-2021 14:20	24-Feb-2021 14:30
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-011	VA21A3477-012	VA21A3477-013	VA21A3477-014	VA21A3477-015	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
acridine	260-94-6	E641A-L	0.010	mg/kg	<0.100 ^{DLO}	----	----	<0.420 ^{DLO}	<0.030 ^{DLO}	
acridine	260-94-6	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
anthracene	120-12-7	E641A-L	0.0040	mg/kg	0.583	----	----	3.09	0.134	
anthracene	120-12-7	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	1.42	----	----	6.37	0.262	
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	1.82	----	----	4.93	0.255	
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg	2.37	----	----	6.25	0.331	
benzo(b+j)fluoranthene	----	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
benzo(b+j+k)fluoranthene	----	E641A-L	0.015	mg/kg	3.22	----	----	8.53	0.331	
benzo(b+j+k)fluoranthene	----	E641A	0.075	mg/kg	----	<0.075	<0.075	----	----	
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	1.03	----	----	2.27	0.140	
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	0.854	----	----	2.28	<0.120 ^{DLO}	
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
chrysene	218-01-9	E641A-L	0.010	mg/kg	<1.25 ^{DLO}	----	----	5.44	0.270	
chrysene	218-01-9	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.274	----	----	0.601	0.0381	
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	2.75	----	----	14.7	0.689	
fluoranthene	206-44-0	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
fluorene	86-73-7	E641A-L	0.010	mg/kg	0.240	----	----	0.976	0.058	
fluorene	86-73-7	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	1.05	----	----	2.46	0.141	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	0.118	----	----	0.231	0.040	
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	0.108	----	----	0.246	0.036	
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
methylnaphthalenes, 1+2-	----	E641A	0.075	mg/kg	----	<0.075	<0.075	----	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-04-01	BH21-04-02	BH21-04-03	BH21-05-01	BH21-05-02
(Matrix: Soil/Solid)					Client sampling date / time	24-Feb-2021 13:30	24-Feb-2021 13:40	24-Feb-2021 13:50	24-Feb-2021 14:20	24-Feb-2021 14:30
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-011	VA21A3477-012	VA21A3477-013	VA21A3477-014	VA21A3477-015	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
naphthalene	91-20-3	E641A-L	0.010	mg/kg	0.167	----	----	1.05	0.416	
naphthalene	91-20-3	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	1.44	----	----	9.18	0.310	
phenanthrene	85-01-8	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
pyrene	129-00-0	E641A-L	0.010	mg/kg	4.11	----	----	12.5	0.815	
pyrene	129-00-0	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.010	----	----	0.018	<0.010	
quinoline	6027-02-7	E641A	0.050	mg/kg	----	<0.050	<0.050	----	----	
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	----	<0.065	<0.065	----	----	
PAHs, total (BC Sched 3.4)	----	E641A-L	0.040	mg/kg	13.3	----	----	60.3	3.41	
PAHs, total (BC Sched 3.4)	----	E641A	0.20	mg/kg	----	<0.20	<0.20	----	----	
PAHs, total (EPA 16)	----	E641A-L	0.040	mg/kg	18.5	----	----	73.3	3.99	
PAHs, total (EPA 16)	----	E641A	0.20	mg/kg	----	<0.20	<0.20	----	----	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.010	%	87.8	----	----	86.4	86.5	
acridine-d9	34749-75-2	E641A	0.050	%	----	76.9	77.4	----	----	
chrysene-d12	1719-03-5	E641A-L	0.010	%	86.8	----	----	82.8	83.9	
chrysene-d12	1719-03-5	E641A	0.050	%	----	87.8	90.9	----	----	
naphthalene-d8	1146-65-2	E641A-L	0.010	%	87.3	----	----	80.6	83.2	
naphthalene-d8	1146-65-2	E641A	0.050	%	----	90.6	94.4	----	----	
phenanthrene-d10	1517-22-2	E641A-L	0.010	%	86.7	----	----	84.6	85.8	
phenanthrene-d10	1517-22-2	E641A	0.050	%	----	89.8	94.6	----	----	
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.060 ^{DLCI}	<0.010	<0.010	<0.200 ^{DLCI}	<0.040 ^{DLCI}	
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.060 ^{DLCI}	<0.010	<0.010	<0.200 ^{DLCI}	<0.040 ^{DLCI}	
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.060 ^{DLCI}	<0.010	<0.010	<0.200 ^{DLCI}	<0.040 ^{DLCI}	
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.060 ^{DLCI}	<0.010	<0.010	<0.200 ^{DLCI}	<0.040 ^{DLCI}	
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.060 ^{DLCI}	<0.010	<0.010	<0.200 ^{DLCI}	<0.040 ^{DLCI}	
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	0.220	<0.010	<0.010	0.328	0.091	
Aroclor 1260	11096-82-5	E685	0.010	mg/kg	<0.080 ^{DLCI}	<0.010	<0.010	<0.100 ^{DLCI}	<0.040 ^{DLCI}	
Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.080 ^{DLCI}	<0.010	<0.010	<0.100 ^{DLCI}	<0.040 ^{DLCI}	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-04-01	BH21-04-02	BH21-04-03	BH21-05-01	BH21-05-02
Client sampling date / time					24-Feb-2021 13:30	24-Feb-2021 13:40	24-Feb-2021 13:50	24-Feb-2021 14:20	24-Feb-2021 14:30	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-011	VA21A3477-012	VA21A3477-013	VA21A3477-014	VA21A3477-015	
					Result	Result	Result	Result	Result	
Polychlorinated Biphenyls										
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.080 ^{DLCI}	<0.010	<0.010	<0.100 ^{DLCI}	<0.040 ^{DLCI}	
polychlorinated biphenyls [PCBs], total	----	E685	0.010	mg/kg	0.220	<0.010	<0.010	0.328	0.091	
Polychlorinated Biphenyls Surrogates										
Decachlorobiphenyl	2051-24-3	E685	0.010	%	93.2	94.2	94.8	93.5	102	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-05-03	BH21-05-04	BH21-06-03	BH21-06-04	BH21-06-07
(Matrix: Soil/Solid)					Client sampling date / time	24-Feb-2021 14:40	24-Feb-2021 14:50	25-Feb-2021 09:20	25-Feb-2021 09:30	25-Feb-2021 09:40
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-016	VA21A3477-017	VA21A3477-018	VA21A3477-019	VA21A3477-020	
					Result	Result	Result	Result	Result	
Physical Tests										
% saturation	----	E141	1.0	%	----	----	170	----	----	
moisture	----	E144	0.25	%	13.2	6.40	45.6	58.4	12.6	
pH (1:2 soil:water)	----	E108	0.10	pH units	8.23	8.87	7.79	7.73	9.76	
Particle Size										
passing (0.0312 mm)	----	E184	1.0	%	30.0	----	22.6	----	26.0	
passing (0.020 mm)	----	E184	1.0	%	26.3	----	19.0	----	22.2	
passing (0.005 mm)	----	E184	1.0	%	14.0	----	6.7	----	9.2	
passing (0.004 mm)	----	E184	1.0	%	12.9	----	6.0	----	8.3	
passing (0.002 mm)	----	E184	1.0	%	10.7	----	4.7	----	6.5	
grain size curve	----	E185A	-	-	See Attached	----	See Attached	----	See Attached	
Saturated Paste Extractables										
chloride, soluble ion content	16887-00-6	EC239A.Cl	1.0	mg/kg	----	----	13900	----	----	
chloride, soluble ion content	16887-00-6	E239.Cl	2.0	mg/L	----	----	8170	----	----	
sodium, soluble ion content	17341-25-2	EC442	1.00	mg/kg	----	----	8380	----	----	
sodium, soluble ion content	17341-25-2	E442	2.0	mg/L	----	----	4930	----	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	15900	13600	12700	10000	9760	
antimony	7440-36-0	E440	0.10	mg/kg	0.52	0.11	1.40	1.17	0.32	
arsenic	7440-38-2	E440	0.10	mg/kg	3.87	2.14	5.81	5.18	1.75	
barium	7440-39-3	E440	0.50	mg/kg	77.3	60.9	68.4	55.7	82.2	
beryllium	7440-41-7	E440	0.10	mg/kg	0.26	0.22	0.15	0.14	0.18	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	1.80	1.02	<0.20	
boron	7440-42-8	E440	5.0	mg/kg	9.0	6.5	26.4	35.2	6.5	
cadmium	7440-43-9	E440	0.020	mg/kg	0.096	0.057	1.44	0.891	0.034	
calcium	7440-70-2	E440	50	mg/kg	3170	2640	8560	9520	2810	
chromium	7440-47-3	E440	0.50	mg/kg	17.6	15.6	25.6	18.1	14.3	
cobalt	7440-48-4	E440	0.10	mg/kg	8.82	7.47	6.81	5.94	5.66	
copper	7440-50-8	E440	0.50	mg/kg	20.9	17.0	99.6	67.7	16.2	
iron	7439-89-6	E440	50	mg/kg	22700	16100	21300	17200	16100	
lead	7439-92-1	E440	0.50	mg/kg	3.87	2.53	104	62.4	3.13	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-05-03	BH21-05-04	BH21-06-03	BH21-06-04	BH21-06-07
Client sampling date / time					24-Feb-2021 14:40	24-Feb-2021 14:50	25-Feb-2021 09:20	25-Feb-2021 09:30	25-Feb-2021 09:40	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-016	VA21A3477-017	VA21A3477-018	VA21A3477-019	VA21A3477-020	
					Result	Result	Result	Result	Result	
Metals										
lithium	7439-93-2	E440	2.0	mg/kg	14.4	11.7	21.8	19.6	5.9	
magnesium	7439-95-4	E440	20	mg/kg	8440	7010	6190	5890	4600	
manganese	7439-96-5	E440	1.0	mg/kg	346	312	217	192	222	
mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500	<0.0500	1.84	1.20	<0.0500	
molybdenum	7439-98-7	E440	0.10	mg/kg	0.65	0.49	6.54	4.60	0.27	
nickel	7440-02-0	E440	0.50	mg/kg	8.79	6.86	16.1	12.4	9.05	
phosphorus	7723-14-0	E440	50	mg/kg	253	172	607	531	346	
potassium	7440-09-7	E440	100	mg/kg	1920	1590	1670	1630	1160	
selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	0.53	0.39	<0.20	
silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0.54	0.37	<0.10	
sodium	7440-23-5	E440	50	mg/kg	1400	614	7140	7830	1030	
strontium	7440-24-6	E440	0.50	mg/kg	37.4	30.7	70.2	86.4	32.5	
sulfur	7704-34-9	E440	1000	mg/kg	<1000	<1000	13100	12300	<1000	
thallium	7440-28-0	E440	0.050	mg/kg	0.062	0.058	0.162	0.152	<0.050	
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	12.7	8.4	<2.0	
titanium	7440-32-6	E440	1.0	mg/kg	926	829	725	637	562	
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	
uranium	7440-61-1	E440	0.050	mg/kg	0.438	0.496	2.38	2.04	0.369	
vanadium	7440-62-2	E440	0.20	mg/kg	64.9	52.3	65.0	50.5	45.8	
zinc	7440-66-6	E440	2.0	mg/kg	58.4	50.1	194	127	35.8	
zirconium	7440-67-7	E440	1.0	mg/kg	3.2	2.1	2.6	2.6	3.1	
Volatile Organic Compounds [Fuels]										
benzene	71-43-2	E611A	0.0050	mg/kg	----	----	0.0127	----	<0.0050	
ethylbenzene	100-41-4	E611A	0.015	mg/kg	----	----	<0.015	----	<0.015	
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.200	mg/kg	----	----	<0.200	----	<0.200	
styrene	100-42-5	E611A	0.050	mg/kg	----	----	<0.050	----	<0.050	
toluene	108-88-3	E611A	0.050	mg/kg	----	----	<0.050	----	<0.050	
xylene, m+p-	179601-23-1	E611A	0.050	mg/kg	----	----	<0.050	----	<0.050	
xylene, o-	95-47-6	E611A	0.050	mg/kg	----	----	<0.050	----	<0.050	
xylenes, total	1330-20-7	E611A	0.075	mg/kg	----	----	<0.075	----	<0.075	
Volatile Organic Compounds Surrogates										



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-05-03	BH21-05-04	BH21-06-03	BH21-06-04	BH21-06-07
(Matrix: Soil/Solid)					Client sampling date / time	24-Feb-2021 14:40	24-Feb-2021 14:50	25-Feb-2021 09:20	25-Feb-2021 09:30	25-Feb-2021 09:40
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-016	VA21A3477-017	VA21A3477-018	VA21A3477-019	VA21A3477-020	
					Result	Result	Result	Result	Result	
Volatile Organic Compounds Surrogates										
bromofluorobenzene, 4-	460-00-4	E611A	0.050	%	---	---	70.8	---	73.6	
difluorobenzene, 1,4-	540-36-3	E611A	0.050	%	---	---	75.6	---	86.6	
Hydrocarbons										
chromatogram to baseline at nC50	---	E601.SG	-	-	---	---	---	---	Yes	
EPH (C10-C19)	---	E601A	200	mg/kg	---	---	<200	---	---	
EPH (C19-C32)	---	E601A	200	mg/kg	---	---	780	---	---	
F1 (C6-C10)	---	E581.VH+F1	5.0	mg/kg	---	---	---	---	<5.0	
F1-BTEX	---	EC580	5.0	mg/kg	---	---	---	---	<5.0	
F2 (C10-C16)	---	E601.SG	30	mg/kg	---	---	---	---	<30	
F3 (C16-C34)	---	E601.SG	50	mg/kg	---	---	---	---	<50	
F4 (C34-C50)	---	E601.SG	50	mg/kg	---	---	---	---	<50	
VHs (C6-C10)	---	E581.VH+F1	10	mg/kg	---	---	<10	---	---	
HEPHs	---	EC600A	200	mg/kg	---	---	780	---	---	
LEPHs	---	EC600A	200	mg/kg	---	---	<200	---	---	
VPHs	---	EC580A	10	mg/kg	---	---	<10	---	---	
Hydrocarbons Surrogates										
bromobenzotrifluoride, 2- (EPH surr)	392-83-6	E601A	5.0	%	---	---	86.7	---	---	
bromobenzotrifluoride, 2- (F2-F4 surr)	392-83-6	E601.SG	10	%	---	---	---	---	73.4	
dichlorotoluene, 3,4-	97-75-0	E581.VH+F1	1.0	%	---	---	80.5	---	113	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	---	---	0.300	---	---	
acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	---	0.539	<0.050	
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	---	---	0.0973	---	---	
acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	---	0.361	<0.050	
acridine	260-94-6	E641A-L	0.010	mg/kg	---	---	<0.060 ^{DLO}	---	---	
acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	---	<0.200 ^{DLO}	<0.050	
anthracene	120-12-7	E641A-L	0.0040	mg/kg	---	---	0.406	---	---	
anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	---	1.02	<0.050	
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	---	---	0.524	---	---	
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	---	2.17	<0.050	
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	---	---	0.534	---	---	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-05-03	BH21-05-04	BH21-06-03	BH21-06-04	BH21-06-07
(Matrix: Soil/Solid)										
Client sampling date / time					24-Feb-2021 14:40	24-Feb-2021 14:50	25-Feb-2021 09:20	25-Feb-2021 09:30	25-Feb-2021 09:40	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-016	VA21A3477-017	VA21A3477-018	VA21A3477-019	VA21A3477-020	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	---	2.04	<0.050	
benzo(b+j)fluoranthene	---	E641A-L	0.010	mg/kg	---	---	0.665	---	---	
benzo(b+j)fluoranthene	---	E641A	0.050	mg/kg	<0.050	<0.050	---	2.60	<0.050	
benzo(b+j+k)fluoranthene	---	E641A-L	0.015	mg/kg	---	---	0.920	---	---	
benzo(b+j+k)fluoranthene	---	E641A	0.075	mg/kg	<0.075	<0.075	---	3.53	<0.075	
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	---	---	0.336	---	---	
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	---	1.24	<0.050	
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	---	---	0.255	---	---	
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	---	0.926	<0.050	
chrysene	218-01-9	E641A-L	0.010	mg/kg	---	---	0.609	---	---	
chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	---	2.18	<0.050	
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	---	---	0.0804	---	---	
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	---	0.294	<0.050	
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	---	---	2.02	---	---	
fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	---	7.43	<0.050	
fluorene	86-73-7	E641A-L	0.010	mg/kg	---	---	0.218	---	---	
fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	---	0.470	<0.050	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	---	---	0.334	---	---	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	---	1.26	<0.050	
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	---	---	0.053	---	---	
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	<0.050	<0.050	---	0.117	<0.050	
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	---	---	0.051	---	---	
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	<0.050	<0.050	---	0.131	<0.050	
methylnaphthalenes, 1+2-	---	E641A	0.075	mg/kg	<0.075	<0.075	---	0.248	<0.075	
naphthalene	91-20-3	E641A-L	0.010	mg/kg	---	---	0.139	---	---	
naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	<0.050	---	0.302	<0.050	
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	---	---	0.591	---	---	
phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050	<0.050	---	2.51	<0.050	
pyrene	129-00-0	E641A-L	0.010	mg/kg	---	---	1.57	---	---	
pyrene	129-00-0	E641A	0.050	mg/kg	0.058	<0.050	---	5.95	<0.050	
quinoline	6027-02-7	E641A-L	0.010	mg/kg	---	---	<0.010	---	---	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-05-03	BH21-05-04	BH21-06-03	BH21-06-04	BH21-06-07
(Matrix: Soil/Solid)					Client sampling date / time	24-Feb-2021 14:40	24-Feb-2021 14:50	25-Feb-2021 09:20	25-Feb-2021 09:30	25-Feb-2021 09:40
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-016	VA21A3477-017	VA21A3477-018	VA21A3477-019	VA21A3477-020	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
quinoline	6027-02-7	E641A	0.050	mg/kg	<0.050	<0.050	---	<0.050	<0.050	
B(a)P total potency equivalents [B(a)P TPE]	---	E641A	0.065	mg/kg	<0.065	<0.065	---	3.06	<0.065	
PAHs, total (BC Sched 3.4)	---	E641A-L	0.040	mg/kg	---	---	7.14	---	---	
PAHs, total (BC Sched 3.4)	---	E641A	0.20	mg/kg	<0.20	<0.20	---	25.4	<0.20	
PAHs, total (EPA 16)	---	E641A-L	0.040	mg/kg	---	---	8.68	---	---	
PAHs, total (EPA 16)	---	E641A	0.20	mg/kg	<0.20	<0.20	---	31.3	<0.20	
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.010	%	---	---	84.8	---	---	
acridine-d9	34749-75-2	E641A	0.050	%	82.6	81.8	---	83.5	88.1	
chrysene-d12	1719-03-5	E641A-L	0.010	%	---	---	81.2	---	---	
chrysene-d12	1719-03-5	E641A	0.050	%	91.8	86.5	---	83.0	94.1	
naphthalene-d8	1146-65-2	E641A-L	0.010	%	---	---	85.6	---	---	
naphthalene-d8	1146-65-2	E641A	0.050	%	94.6	92.0	---	84.2	95.6	
phenanthrene-d10	1517-22-2	E641A-L	0.010	%	---	---	87.0	---	---	
phenanthrene-d10	1517-22-2	E641A	0.050	%	93.7	89.2	---	85.9	96.0	
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1260	11096-82-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
polychlorinated biphenyls [PCBs], total	---	E685	0.010	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	
Polychlorinated Biphenyls Surrogates										
Decachlorobiphenyl	2051-24-3	E685	0.010	%	92.2	97.5	95.5	96.2	100	

Please refer to the General Comments section for an explanation of any qualifiers detected.



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-07-01	BH21-07-02	BH21-07-03	BH21-07-04	----
(Matrix: Soil/Solid)					Client sampling date / time	25-Feb-2021 10:50	25-Feb-2021 10:55	25-Feb-2021 11:10	25-Feb-2021 11:30	----
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-021	VA21A3477-022	VA21A3477-023	VA21A3477-024	-----	
					Result	Result	Result	Result	---	
Physical Tests										
% saturation	----	E141	1.0	%	35.2	41.3	----	----	----	
moisture	----	E144	0.25	%	16.1	11.8	12.0	4.14	----	
pH (1:2 soil:water)	----	E108	0.10	pH units	9.29	9.78	9.80	9.31	----	
Particle Size										
passing (0.0312 mm)	----	E184	1.0	%	25.5	----	----	----	----	
passing (0.020 mm)	----	E184	1.0	%	21.6	----	----	----	----	
passing (0.005 mm)	----	E184	1.0	%	8.1	----	----	----	----	
passing (0.004 mm)	----	E184	1.0	%	7.4	----	----	----	----	
passing (0.002 mm)	----	E184	1.0	%	5.9	----	----	----	----	
grain size curve	----	E185A	-	-	See Attached	----	----	----	----	
Saturated Paste Extractables										
chloride, soluble ion content	16887-00-6	EC239A.Cl	1.0	mg/kg	1050	376	----	----	----	
chloride, soluble ion content	16887-00-6	E239.Cl	2.0	mg/L	2980	910	----	----	----	
sodium, soluble ion content	17341-25-2	EC442	1.00	mg/kg	683	293	----	----	----	
sodium, soluble ion content	17341-25-2	E442	2.0	mg/L	1940	710	----	----	----	
Metals										
aluminum	7429-90-5	E440	50	mg/kg	9310	12900	10600	18100	----	
antimony	7440-36-0	E440	0.10	mg/kg	1.01	0.17	0.17	0.14	----	
arsenic	7440-38-2	E440	0.10	mg/kg	2.02	1.67	1.50	3.65	----	
barium	7440-39-3	E440	0.50	mg/kg	51.5	94.9	85.0	81.8	----	
beryllium	7440-41-7	E440	0.10	mg/kg	0.10	0.21	0.18	0.25	----	
bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	----	
boron	7440-42-8	E440	5.0	mg/kg	5.0	6.9	6.5	7.9	----	
cadmium	7440-43-9	E440	0.020	mg/kg	0.189	0.105	0.073	0.061	----	
calcium	7440-70-2	E440	50	mg/kg	3780	3560	2920	4140	----	
chromium	7440-47-3	E440	0.50	mg/kg	10.4	16.2	13.2	16.5	----	
cobalt	7440-48-4	E440	0.10	mg/kg	4.46	6.71	5.76	10.2	----	
copper	7440-50-8	E440	0.50	mg/kg	37.7	17.5	16.9	19.5	----	
iron	7439-89-6	E440	50	mg/kg	15700	20600	17700	24000	----	
lead	7439-92-1	E440	0.50	mg/kg	36.5	3.61	3.67	3.79	----	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	BH21-07-01	BH21-07-02	BH21-07-03	BH21-07-04	----
Client sampling date / time					25-Feb-2021 10:50	25-Feb-2021 10:55	25-Feb-2021 11:10	25-Feb-2021 11:30	----	----
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-021	VA21A3477-022	VA21A3477-023	VA21A3477-024	-----	----
					Result	Result	Result	Result	-----	----
Metals										
lithium	7439-93-2	E440	2.0	mg/kg	5.1	7.8	6.7	12.5	-----	----
magnesium	7439-95-4	E440	20	mg/kg	3740	5410	4660	9710	-----	----
manganese	7439-96-5	E440	1.0	mg/kg	223	244	204	470	-----	----
mercury	7439-97-6	E510	0.0500	mg/kg	0.0627	<0.0500	<0.0500	<0.0500	-----	----
molybdenum	7439-98-7	E440	0.10	mg/kg	0.39	0.24	0.23	0.88	-----	----
nickel	7440-02-0	E440	0.50	mg/kg	5.83	10.1	8.86	9.20	-----	----
phosphorus	7723-14-0	E440	50	mg/kg	376	443	383	454	-----	----
potassium	7440-09-7	E440	100	mg/kg	1150	1540	1270	1690	-----	----
selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	<0.20	<0.20	-----	----
silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	<0.10	<0.10	-----	----
sodium	7440-23-5	E440	50	mg/kg	1220	1140	1010	1090	-----	----
strontium	7440-24-6	E440	0.50	mg/kg	32.5	40.3	32.5	38.4	-----	----
sulfur	7704-34-9	E440	1000	mg/kg	1500	<1000	<1000	<1000	-----	----
thallium	7440-28-0	E440	0.050	mg/kg	<0.050	0.059	<0.050	<0.050	-----	----
tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	-----	----
titanium	7440-32-6	E440	1.0	mg/kg	590	746	569	834	-----	----
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	<0.50	0.67	-----	----
uranium	7440-61-1	E440	0.050	mg/kg	0.325	0.403	0.338	0.382	-----	----
vanadium	7440-62-2	E440	0.20	mg/kg	41.4	53.0	44.9	66.4	-----	----
zinc	7440-66-6	E440	2.0	mg/kg	61.2	43.1	38.3	55.6	-----	----
zirconium	7440-67-7	E440	1.0	mg/kg	2.5	3.6	3.3	3.1	-----	----
Volatile Organic Compounds [Fuels]										
benzene	71-43-2	E611A	0.0050	mg/kg	<0.0050	----	----	<0.0050	-----	----
ethylbenzene	100-41-4	E611A	0.015	mg/kg	<0.015	----	----	<0.015	-----	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.200	mg/kg	<0.200	----	----	<0.200	-----	----
styrene	100-42-5	E611A	0.050	mg/kg	<0.050	----	----	<0.050	-----	----
toluene	108-88-3	E611A	0.050	mg/kg	<0.050	----	----	<0.050	-----	----
xylene, m+p-	179601-23-1	E611A	0.050	mg/kg	<0.050	----	----	<0.050	-----	----
xylene, o-	95-47-6	E611A	0.050	mg/kg	<0.050	----	----	<0.050	-----	----
xylenes, total	1330-20-7	E611A	0.075	mg/kg	<0.075	----	----	<0.075	-----	----
Volatile Organic Compounds Surrogates										



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-07-01	BH21-07-02	BH21-07-03	BH21-07-04	----
(Matrix: Soil/Solid)										
Client sampling date / time					25-Feb-2021 10:50	25-Feb-2021 10:55	25-Feb-2021 11:10	25-Feb-2021 11:30	----	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-021	VA21A3477-022	VA21A3477-023	VA21A3477-024	-----	
					Result	Result	Result	Result	----	
Volatile Organic Compounds Surrogates										
bromofluorobenzene, 4-	460-00-4	E611A	0.050	%	81.8	----	----	72.0	----	
difluorobenzene, 1,4-	540-36-3	E611A	0.050	%	102	----	----	90.3	----	
Hydrocarbons										
chromatogram to baseline at nC50	----	E601.SG	-	-	----	----	----	Yes	----	
EPH (C10-C19)	----	E601A	200	mg/kg	<200	----	----	----	----	
EPH (C19-C32)	----	E601A	200	mg/kg	<200	----	----	----	----	
F1 (C6-C10)	----	E581.VH+F1	5.0	mg/kg	----	----	----	<5.0	----	
F1-BTEX	----	EC580	5.0	mg/kg	----	----	----	<5.0	----	
F2 (C10-C16)	----	E601.SG	30	mg/kg	----	----	----	<30	----	
F3 (C16-C34)	----	E601.SG	50	mg/kg	----	----	----	<50	----	
F4 (C34-C50)	----	E601.SG	50	mg/kg	----	----	----	<50	----	
VHs (C6-C10)	----	E581.VH+F1	10	mg/kg	<10	----	----	----	----	
HEPHs	----	EC600A	200	mg/kg	<200	----	----	----	----	
LEPHs	----	EC600A	200	mg/kg	<200	----	----	----	----	
VPHs	----	EC580A	10	mg/kg	<10	----	----	----	----	
Hydrocarbons Surrogates										
bromobenzotrifluoride, 2- (EPH surr)	392-83-6	E601A	5.0	%	102	----	----	----	----	
bromobenzotrifluoride, 2- (F2-F4 surr)	392-83-6	E601.SG	10	%	----	----	----	88.3	----	
dichlorotoluene, 3,4-	97-75-0	E581.VH+F1	1.0	%	105	----	----	104	----	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.0087	----	----	----	----	
acenaphthene	83-32-9	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	0.0073	----	----	----	----	
acenaphthylene	208-96-8	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
acridine	260-94-6	E641A-L	0.010	mg/kg	<0.010	----	----	----	----	
acridine	260-94-6	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
anthracene	120-12-7	E641A-L	0.0040	mg/kg	0.0164	----	----	----	----	
anthracene	120-12-7	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	0.050	----	----	----	----	
benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	0.059	----	----	----	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-07-01	BH21-07-02	BH21-07-03	BH21-07-04	----
(Matrix: Soil/Solid)										
Client sampling date / time					25-Feb-2021 10:50	25-Feb-2021 10:55	25-Feb-2021 11:10	25-Feb-2021 11:30	----	
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-021	VA21A3477-022	VA21A3477-023	VA21A3477-024	-----	
					Result	Result	Result	Result	----	
Polycyclic Aromatic Hydrocarbons										
benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg	0.078	----	----	----	----	
benzo(b+j)fluoranthene	----	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
benzo(b+j+k)fluoranthene	----	E641A-L	0.015	mg/kg	0.118	----	----	----	----	
benzo(b+j+k)fluoranthene	----	E641A	0.075	mg/kg	----	<0.075	<0.075	<0.075	----	
benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	0.040	----	----	----	----	
benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	0.040	----	----	----	----	
benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
chrysene	218-01-9	E641A-L	0.010	mg/kg	<0.060 ^{DLCL}	----	----	----	----	
chrysene	218-01-9	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.0099	----	----	----	----	
dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
fluoranthene	206-44-0	E641A-L	0.010	mg/kg	0.110	----	----	----	----	
fluoranthene	206-44-0	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
fluorene	86-73-7	E641A-L	0.010	mg/kg	0.010	----	----	----	----	
fluorene	86-73-7	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	0.039	----	----	----	----	
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	<0.010	----	----	----	----	
methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	<0.010	----	----	----	----	
methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
methylnaphthalenes, 1+2-	----	E641A	0.075	mg/kg	----	<0.075	<0.075	<0.075	----	
naphthalene	91-20-3	E641A-L	0.010	mg/kg	<0.010	----	----	----	----	
naphthalene	91-20-3	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
phenanthrene	85-01-8	E641A-L	0.010	mg/kg	0.042	----	----	----	----	
phenanthrene	85-01-8	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
pyrene	129-00-0	E641A-L	0.010	mg/kg	0.158	----	----	----	----	
pyrene	129-00-0	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.010	----	----	----	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	BH21-07-01	BH21-07-02	BH21-07-03	BH21-07-04	----
(Matrix: Soil/Solid)					Client sampling date / time	25-Feb-2021 10:50	25-Feb-2021 10:55	25-Feb-2021 11:10	25-Feb-2021 11:30	----
Analyte	CAS Number	Method	LOR	Unit	VA21A3477-021	VA21A3477-022	VA21A3477-023	VA21A3477-024	-----	----
					Result	Result	Result	Result	-----	----
Polycyclic Aromatic Hydrocarbons										
quinoline	6027-02-7	E641A	0.050	mg/kg	----	<0.050	<0.050	<0.050	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A	0.065	mg/kg	----	<0.065	<0.065	<0.065	----	----
PAHs, total (BC Sched 3.4)	----	E641A-L	0.040	mg/kg	0.471	----	----	----	----	----
PAHs, total (BC Sched 3.4)	----	E641A	0.20	mg/kg	----	<0.20	<0.20	<0.20	----	----
PAHs, total (EPA 16)	----	E641A-L	0.040	mg/kg	0.668	----	----	----	----	----
PAHs, total (EPA 16)	----	E641A	0.20	mg/kg	----	<0.20	<0.20	<0.20	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
acridine-d9	34749-75-2	E641A-L	0.010	%	97.3	----	----	----	----	----
acridine-d9	34749-75-2	E641A	0.050	%	----	82.9	92.7	84.3	----	----
chrysene-d12	1719-03-5	E641A-L	0.010	%	99.0	----	----	----	----	----
chrysene-d12	1719-03-5	E641A	0.050	%	----	100	106	93.3	----	----
naphthalene-d8	1146-65-2	E641A-L	0.010	%	107	----	----	----	----	----
naphthalene-d8	1146-65-2	E641A	0.050	%	----	105	106	100	----	----
phenanthrene-d10	1517-22-2	E641A-L	0.010	%	105	----	----	----	----	----
phenanthrene-d10	1517-22-2	E641A	0.050	%	----	99.8	107	95.2	----	----
Polychlorinated Biphenyls										
Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	----	<0.010	----	----
Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	----	<0.010	----	----
Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	----	<0.010	----	----
Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	----	<0.010	----	----
Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.010	<0.010	----	<0.010	----	----
Aroclor 1254	11097-69-1	E685	0.010	mg/kg	0.022	<0.010	----	<0.010	----	----
Aroclor 1260	11096-82-5	E685	0.010	mg/kg	<0.010	<0.010	----	<0.010	----	----
Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	<0.010	----	<0.010	----	----
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	<0.010	----	<0.010	----	----
polychlorinated biphenyls [PCBs], total	----	E685	0.010	mg/kg	0.022	<0.010	----	<0.010	----	----
Polychlorinated Biphenyls Surrogates										
Decachlorobiphenyl	2051-24-3	E685	0.010	%	94.5	93.8	----	93.0	----	----

Please refer to the General Comments section for an explanation of any qualifiers detected.



QUALITY CONTROL INTERPRETIVE REPORT

Work Order	: VA21A3477	Page	: 1 of 37
Amendment	: 3		
Client	: SNC-Lavalin Inc.	Laboratory	: Vancouver - Environmental
Contact	: Bill Hung	Account Manager	: Selam Worku
Address	: 8648 Commerce Court Burnaby BC Canada V5A 4N6	Address	: 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9
Telephone	: ----	Telephone	: +1 604 253 4188
Project	: 680409	Date Samples Received	: 25-Feb-2021 21:34
PO	: ----	Issue Date	: 22-Mar-2021 10:39
C-O-C number	: 17-864163, 162		
Sampler	: GS		
Site	: ----		
Quote number	: Western Canada Standing Offer		
No. of samples received	: 24		
No. of samples analysed	: 24		

This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO: Data Quality Objective.

LOR: Limit of Reporting (detection limit).

RPD: Relative Percent Difference.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- No Matrix Spike outliers occur.
- Duplicate outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- Reference Material (RM) Sample outliers occur - please see the following pages for full details.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Metals	VA21A3477-021	BH21-07-01	antimony	7440-36-0	E440	39.2 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA21A3477-001	BH21-01-01	antimony	7440-36-0	E440	50.9 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA21A3477-001	BH21-01-01	arsenic	7440-38-2	E440	35.1 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA21A3477-001	BH21-01-01	cadmium	7440-43-9	E440	34.8 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA21A3477-021	BH21-07-01	copper	7440-50-8	E440	39.6 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA21A3477-001	BH21-01-01	lead	7439-92-1	E440	57.3 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Metals	VA21A3477-001	BH21-01-01	sulfur	7704-34-9	E440	38.9 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.

Reference Material (RM) Sample								
Metals	QC-MRG2-1577820 03	----	molybdenum	7439-98-7	E440	139 % MES	70.0-130%	Recovery greater than upper control limit

Result Qualifiers

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).



Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 15:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 15:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Hydrocarbons : BC PHC - EPH by GC-FID										
Glass soil jar/Teflon lined cap BH21-06-03	E601A	25-Feb-2021	04-Mar-2021	14 days	6 days	✓	04-Mar-2021	40 days	0 days	✓
Hydrocarbons : BC PHC - EPH by GC-FID										
Glass soil jar/Teflon lined cap BH21-01-01	E601A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓
Hydrocarbons : BC PHC - EPH by GC-FID										
Glass soil jar/Teflon lined cap BH21-01-03	E601A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓
Hydrocarbons : BC PHC - EPH by GC-FID										
Glass soil jar/Teflon lined cap BH21-02-02	E601A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓
Hydrocarbons : BC PHC - EPH by GC-FID										
Glass soil jar/Teflon lined cap BH21-03-01	E601A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓
Hydrocarbons : BC PHC - EPH by GC-FID										
Glass soil jar/Teflon lined cap BH21-03-04	E601A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓
Hydrocarbons : BC PHC - EPH by GC-FID										
Glass soil jar/Teflon lined cap BH21-04-01	E601A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Hydrocarbons : BC PHC - EPH by GC-FID											
Glass soil jar/Teflon lined cap BH21-05-01	E601A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Hydrocarbons : BC PHC - EPH by GC-FID											
Glass soil jar/Teflon lined cap BH21-05-02	E601A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Hydrocarbons : BC PHC - EPH by GC-FID											
Glass soil jar/Teflon lined cap BH21-07-01	E601A	25-Feb-2021	04-Mar-2021	14 days	7 days	✓	05-Mar-2021	40 days	0 days	✓	
Hydrocarbons : CCME PHC - F2-F4 by GC-FID											
Glass soil jar/Teflon lined cap BH21-06-07	E601.SG	25-Feb-2021	04-Mar-2021	14 days	6 days	✓	04-Mar-2021	40 days	0 days	✓	
Hydrocarbons : CCME PHC - F2-F4 by GC-FID											
Glass soil jar/Teflon lined cap BH21-02-04	E601.SG	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Hydrocarbons : CCME PHC - F2-F4 by GC-FID											
Glass soil jar/Teflon lined cap BH21-03-04	E601.SG	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Hydrocarbons : CCME PHC - F2-F4 by GC-FID											
Glass soil jar/Teflon lined cap BH21-07-04	E601.SG	25-Feb-2021	04-Mar-2021	14 days	7 days	✓	05-Mar-2021	40 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-06-07	E581.VH+F1	25-Feb-2021	01-Mar-2021	40 days	3 days	✓	02-Mar-2021	36 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-07-01	E581.VH+F1	25-Feb-2021	01-Mar-2021	40 days	3 days	✓	02-Mar-2021	36 days	0 days	✓	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-07-04	E581.VH+F1	25-Feb-2021	01-Mar-2021	40 days	3 days	✓	02-Mar-2021	36 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-02-02	E581.VH+F1	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-02-04	E581.VH+F1	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-03-01	E581.VH+F1	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-03-04	E581.VH+F1	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-04-01	E581.VH+F1	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-05-02	E581.VH+F1	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-06-03	E581.VH+F1	25-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Hydrocarbons : VH and F1 by Headspace GC-FID											
Glass soil methanol vial BH21-01-01	E581.VH+F1	24-Feb-2021	01-Mar-2021	40 days	5 days	✓	02-Mar-2021	34 days	0 days	✓	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-06-03	E510	25-Feb-2021	04-Mar-2021	28 days	7 days	✓	05-Mar-2021	20 days	0 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-06-04	E510	25-Feb-2021	04-Mar-2021	28 days	7 days	✓	05-Mar-2021	20 days	0 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-06-07	E510	25-Feb-2021	04-Mar-2021	28 days	7 days	✓	05-Mar-2021	20 days	0 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-07-01	E510	25-Feb-2021	05-Mar-2021	28 days	7 days	✓	05-Mar-2021	20 days	0 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-07-02	E510	25-Feb-2021	05-Mar-2021	28 days	7 days	✓	05-Mar-2021	20 days	0 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-07-03	E510	25-Feb-2021	05-Mar-2021	28 days	7 days	✓	05-Mar-2021	20 days	0 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-07-04	E510	25-Feb-2021	05-Mar-2021	28 days	7 days	✓	05-Mar-2021	20 days	0 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-01-01	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✓	05-Mar-2021	19 days	0 days	✓	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-01-02	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✓	05-Mar-2021	19 days	0 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-01-03	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-02-01	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-02-02	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-02-03	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-02-04	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-03-01	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-03-04	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-03-05	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-04-01	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-04-02	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-04-03	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-05-01	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-05-02	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-05-03	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Mercury in Soil/Solid by CVAAS											
Glass soil jar/Teflon lined cap BH21-05-04	E510	24-Feb-2021	04-Mar-2021	28 days	8 days	✔	05-Mar-2021	19 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-06-03	E440	25-Feb-2021	04-Mar-2021	180 days	7 days	✔	05-Mar-2021	172 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-06-04	E440	25-Feb-2021	04-Mar-2021	180 days	7 days	✔	05-Mar-2021	172 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-06-07	E440	25-Feb-2021	04-Mar-2021	180 days	7 days	✔	05-Mar-2021	172 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-07-01	E440	25-Feb-2021	05-Mar-2021	180 days	7 days	✔	05-Mar-2021	172 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-07-02	E440	25-Feb-2021	05-Mar-2021	180 days	7 days	✔	05-Mar-2021	172 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-07-03	E440	25-Feb-2021	05-Mar-2021	180 days	7 days	✔	05-Mar-2021	172 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-07-04	E440	25-Feb-2021	05-Mar-2021	180 days	7 days	✔	05-Mar-2021	172 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-01-01	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-01-02	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-01-03	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-02-01	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-02-02	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-02-03	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-02-04	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-03-01	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-03-04	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-03-05	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-04-01	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-04-02	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-04-03	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-05-01	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✔	05-Mar-2021	171 days	0 days	✔	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-05-02	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✓	05-Mar-2021	171 days	0 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-05-03	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✓	05-Mar-2021	171 days	0 days	✓	
Metals : Metals in Soil/Solid by CRC ICPMS											
Glass soil jar/Teflon lined cap BH21-05-04	E440	24-Feb-2021	04-Mar-2021	180 days	8 days	✓	05-Mar-2021	171 days	0 days	✓	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag BH21-01-01	E185A	24-Feb-2021	----	----	----		04-Mar-2021	----	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag BH21-02-01	E185A	24-Feb-2021	----	----	----		04-Mar-2021	----	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag BH21-03-01	E185A	24-Feb-2021	----	----	----		04-Mar-2021	----	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag BH21-03-04	E185A	24-Feb-2021	----	----	----		04-Mar-2021	----	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag BH21-04-02	E185A	24-Feb-2021	----	----	----		04-Mar-2021	----	----		
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method											
LDPE bag BH21-05-01	E185A	24-Feb-2021	----	----	----		04-Mar-2021	----	----		



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag BH21-05-02	E185A	24-Feb-2021	----	----	----		04-Mar-2021	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag BH21-05-03	E185A	24-Feb-2021	----	----	----		04-Mar-2021	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag BH21-06-03	E185A	25-Feb-2021	----	----	----		04-Mar-2021	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag BH21-06-07	E185A	25-Feb-2021	----	----	----		04-Mar-2021	----	----	
Particle Size : Grain Size Report (Attachment) Pipet/Sieve Method										
LDPE bag BH21-07-01	E185A	25-Feb-2021	----	----	----		04-Mar-2021	----	----	
Particle Size : Particle Size Analysis - Pipette Method										
LDPE bag BH21-01-01	E184	24-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔
Particle Size : Particle Size Analysis - Pipette Method										
LDPE bag BH21-02-01	E184	24-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔
Particle Size : Particle Size Analysis - Pipette Method										
LDPE bag BH21-03-01	E184	24-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔
Particle Size : Particle Size Analysis - Pipette Method										
LDPE bag BH21-03-04	E184	24-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Particle Size : Particle Size Analysis - Pipette Method											
LDPE bag BH21-04-02	E184	24-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔	
Particle Size : Particle Size Analysis - Pipette Method											
LDPE bag BH21-05-01	E184	24-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔	
Particle Size : Particle Size Analysis - Pipette Method											
LDPE bag BH21-05-02	E184	24-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔	
Particle Size : Particle Size Analysis - Pipette Method											
LDPE bag BH21-05-03	E184	24-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔	
Particle Size : Particle Size Analysis - Pipette Method											
LDPE bag BH21-06-03	E184	25-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔	
Particle Size : Particle Size Analysis - Pipette Method											
LDPE bag BH21-06-07	E184	25-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔	
Particle Size : Particle Size Analysis - Pipette Method											
LDPE bag BH21-07-01	E184	25-Feb-2021	----	----	----		03-Mar-2021	0 days	0 days	✔	
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap BH21-01-01	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----		
Physical Tests : Moisture Content by Gravimetry											
Glass soil jar/Teflon lined cap BH21-01-02	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----		



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-01-03	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-02-01	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-02-02	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-02-03	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-02-04	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-03-01	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-03-04	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-03-05	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-04-01	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-04-02	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-04-03	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-05-01	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-05-02	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-05-03	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-05-04	E144	24-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-06-03	E144	25-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-06-04	E144	25-Feb-2021	----	----	----		03-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-06-07	E144	25-Feb-2021	----	----	----		03-Mar-2021	----	----	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-07-01	E144	25-Feb-2021	----	----	----		04-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-07-02	E144	25-Feb-2021	----	----	----		04-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-07-03	E144	25-Feb-2021	----	----	----		04-Mar-2021	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap BH21-07-04	E144	25-Feb-2021	----	----	----		04-Mar-2021	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap BH21-06-03	E108	25-Feb-2021	04-Mar-2021	30 days	7 days	✔	04-Mar-2021	22 days	0 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap BH21-06-04	E108	25-Feb-2021	04-Mar-2021	30 days	7 days	✔	04-Mar-2021	22 days	0 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap BH21-06-07	E108	25-Feb-2021	04-Mar-2021	30 days	7 days	✔	04-Mar-2021	22 days	0 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap BH21-07-01	E108	25-Feb-2021	05-Mar-2021	30 days	7 days	✔	05-Mar-2021	22 days	0 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap BH21-07-02	E108	25-Feb-2021	05-Mar-2021	30 days	7 days	✔	05-Mar-2021	22 days	0 days	✔



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-07-03	E108	25-Feb-2021	05-Mar-2021	30 days	7 days	✔	05-Mar-2021	22 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-07-04	E108	25-Feb-2021	05-Mar-2021	30 days	7 days	✔	05-Mar-2021	22 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-01-01	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-01-02	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-01-03	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-02-01	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-02-02	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-02-03	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-02-04	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-03-01	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-03-04	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-03-05	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-04-01	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-04-02	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-04-03	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-05-01	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-05-02	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-05-03	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✔	04-Mar-2021	21 days	0 days	✔	



Matrix: **Soil/Solid**

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)											
Glass soil jar/Teflon lined cap BH21-05-04	E108	24-Feb-2021	04-Mar-2021	30 days	8 days	✓	04-Mar-2021	21 days	0 days	✓	
Physical Tests : Saturation Percentage											
Glass soil jar/Teflon lined cap BH21-06-03	E141	25-Feb-2021	----	----	----		04-Mar-2021	28 days	6 days	✓	
Physical Tests : Saturation Percentage											
Glass soil jar/Teflon lined cap BH21-01-01	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✓	
Physical Tests : Saturation Percentage											
Glass soil jar/Teflon lined cap BH21-02-01	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✓	
Physical Tests : Saturation Percentage											
Glass soil jar/Teflon lined cap BH21-02-02	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✓	
Physical Tests : Saturation Percentage											
Glass soil jar/Teflon lined cap BH21-03-01	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✓	
Physical Tests : Saturation Percentage											
Glass soil jar/Teflon lined cap BH21-03-04	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✓	
Physical Tests : Saturation Percentage											
Glass soil jar/Teflon lined cap BH21-04-01	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✓	
Physical Tests : Saturation Percentage											
Glass soil jar/Teflon lined cap BH21-04-02	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✓	



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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap BH21-05-01	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✔
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap BH21-05-02	E141	24-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✔
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap BH21-07-01	E141	25-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✔
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap BH21-07-02	E141	25-Feb-2021	----	----	----		04-Mar-2021	28 days	7 days	✔
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD										
Glass soil jar/Teflon lined cap BH21-07-01	E685	25-Feb-2021	04-Mar-2021	----	----		07-Mar-2021	2 days	2 days	✔
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD										
Glass soil jar/Teflon lined cap BH21-07-02	E685	25-Feb-2021	04-Mar-2021	----	----		07-Mar-2021	2 days	2 days	✔
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD										
Glass soil jar/Teflon lined cap BH21-07-04	E685	25-Feb-2021	04-Mar-2021	----	----		07-Mar-2021	2 days	2 days	✔
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD										
Glass soil jar/Teflon lined cap BH21-01-01	E685	24-Feb-2021	03-Mar-2021	----	----		07-Mar-2021	3 days	3 days	✔
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD										
Glass soil jar/Teflon lined cap BH21-01-02	E685	24-Feb-2021	03-Mar-2021	----	----		07-Mar-2021	3 days	3 days	✔



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			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-01-03	E685	24-Feb-2021	03-Mar-2021	----	----		07-Mar-2021	3 days	3 days	✔	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-02-01	E685	24-Feb-2021	03-Mar-2021	----	----		07-Mar-2021	3 days	3 days	✔	
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Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
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Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
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Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-04-02	E685	24-Feb-2021	03-Mar-2021	----	----		07-Mar-2021	3 days	3 days	✔	
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Glass soil jar/Teflon lined cap BH21-04-03	E685	24-Feb-2021	03-Mar-2021	----	----		07-Mar-2021	3 days	3 days	✔	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
Glass soil jar/Teflon lined cap BH21-05-01	E685	24-Feb-2021	03-Mar-2021	----	----		07-Mar-2021	3 days	3 days	✔	
Polychlorinated Biphenyls : PCB Aroclors by GC-ECD											
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Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-06-03	E641A-L	25-Feb-2021	04-Mar-2021	14 days	6 days	✔	04-Mar-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-01-01	E641A-L	24-Feb-2021	04-Mar-2021	14 days	7 days	✔	04-Mar-2021	40 days	0 days	✔	
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Glass soil jar/Teflon lined cap BH21-04-01	E641A-L	24-Feb-2021	04-Mar-2021	14 days	7 days	✔	04-Mar-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-05-01	E641A-L	24-Feb-2021	04-Mar-2021	14 days	7 days	✔	04-Mar-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-05-02	E641A-L	24-Feb-2021	04-Mar-2021	14 days	7 days	✔	04-Mar-2021	40 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)											
Glass soil jar/Teflon lined cap BH21-07-01	E641A-L	25-Feb-2021	04-Mar-2021	14 days	7 days	✓	05-Mar-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-06-04	E641A	25-Feb-2021	04-Mar-2021	14 days	6 days	✓	04-Mar-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-06-07	E641A	25-Feb-2021	04-Mar-2021	14 days	6 days	✓	04-Mar-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-01-02	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-02-01	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-02-03	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-02-04	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-03-05	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-04-02	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✓	04-Mar-2021	40 days	0 days	✓	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-04-03	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✔	04-Mar-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-05-03	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✔	04-Mar-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-05-04	E641A	24-Feb-2021	04-Mar-2021	14 days	7 days	✔	04-Mar-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-07-02	E641A	25-Feb-2021	04-Mar-2021	14 days	7 days	✔	05-Mar-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-07-03	E641A	25-Feb-2021	04-Mar-2021	14 days	7 days	✔	05-Mar-2021	40 days	0 days	✔	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS											
Glass soil jar/Teflon lined cap BH21-07-04	E641A	25-Feb-2021	04-Mar-2021	14 days	7 days	✔	05-Mar-2021	40 days	0 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap BH21-06-03	E442	25-Feb-2021	----	----	----		04-Mar-2021	180 days	7 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap BH21-07-01	E442	25-Feb-2021	----	----	----		04-Mar-2021	180 days	7 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap BH21-07-02	E442	25-Feb-2021	----	----	----		04-Mar-2021	180 days	7 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-01-01	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-02-01	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-02-02	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-03-01	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-03-04	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-04-01	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-04-02	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-05-01	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)										
Glass soil jar/Teflon lined cap BH21-05-02	E442	24-Feb-2021	----	----	----		04-Mar-2021	180 days	8 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-01-01	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-02-01	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-02-02	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-03-01	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-03-04	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-04-01	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-04-02	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-05-01	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-05-02	E239.CI	24-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times Rec Actual		Eval	Analysis Date	Holding Times Rec Actual		Eval	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-06-03	E239.CI	25-Feb-2021	----	----	----		04-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-07-01	E239.CI	25-Feb-2021	----	----	----		05-Mar-2021	0 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap BH21-07-02	E239.CI	25-Feb-2021	----	----	----		05-Mar-2021	0 days	0 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Glass vial (sodium bisulfate) BH21-05-01	E644	18-Mar-2021	19-Mar-2021	35 days	22 days	✔	19-Mar-2021	40 days	0 days	✔	
TCLP Metals : Mercury by CVAAS (TCLP)											
Glass vial - total (lab preserved) BH21-05-01	E512	18-Mar-2021	----	----	----		19-Mar-2021	49 days	22 days	✔	
TCLP Metals : Metals by CRC ICPMS (TCLP)											
HDPE - total (lab preserved) BH21-04-01	E444	18-Mar-2021	----	----	----		19-Mar-2021	201 days	23 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 180 Day HT (e.g. metals ex. Hg) BH21-04-01	EPP444	24-Feb-2021	18-Mar-2021	----	----		----	----	----		
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 14 day HT (e.g. CN, SVOC, NOX) BH21-05-01	EPP444	24-Feb-2021	18-Mar-2021	----	----		----	----	----		
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-06-07	E611A	25-Feb-2021	01-Mar-2021	40 days	3 days	✔	02-Mar-2021	36 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-07-01	E611A	25-Feb-2021	01-Mar-2021	40 days	3 days	✓	02-Mar-2021	36 days	0 days	✓	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-07-04	E611A	25-Feb-2021	01-Mar-2021	40 days	3 days	✓	02-Mar-2021	36 days	0 days	✓	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-02-02	E611A	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-02-04	E611A	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-03-01	E611A	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-03-04	E611A	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-04-01	E611A	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-05-02	E611A	24-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS											
Glass soil methanol vial BH21-06-03	E611A	25-Feb-2021	01-Mar-2021	40 days	4 days	✓	02-Mar-2021	35 days	0 days	✓	



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS										
Glass soil methanol vial BH21-01-01	E611A	24-Feb-2021	01-Mar-2021	40 days	5 days	✔	02-Mar-2021	34 days	0 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).



Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: ✖ = QC frequency outside specification; ✔ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Laboratory Duplicates (DUP)							
BC PHC - EPH by GC-FID	E601A	157777	2	10	20.0	5.0	✔
BTEX by Headspace GC-MS	E611A	156680	1	16	6.2	5.0	✔
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	157788	2	12	16.6	5.0	✔
CCME PHC - F2-F4 by GC-FID	E601.SG	157780	2	4	50.0	5.0	✔
Chloride by IC (Saturated Paste)	E239.Cl	157785	2	12	16.6	5.0	✔
Mercury in Soil/Solid by CVAAS	E510	157782	2	27	7.4	5.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	157783	3	30	10.0	5.0	✔
Moisture Content by Gravimetry	E144	157789	2	24	8.3	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	157779	2	14	14.2	5.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	157778	2	10	20.0	5.0	✔
Particle Size Analysis - Pipette Method	E184	157572	1	11	9.0	5.0	✔
PCB Aroclors by GC-ECD	E685	157781	2	23	8.7	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	157784	2	27	7.4	5.0	✔
Saturation Percentage	E141	157786	2	12	16.6	5.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	156681	1	16	6.2	5.0	✔
Laboratory Control Samples (LCS)							
BC PHC - EPH by GC-FID	E601A	157777	4	10	40.0	10.0	✔
BTEX by Headspace GC-MS	E611A	156680	1	16	6.2	5.0	✔
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	157788	4	12	33.3	10.0	✔
CCME PHC - F2-F4 by GC-FID	E601.SG	157780	4	4	100.0	10.0	✔
Chloride by IC (Saturated Paste)	E239.Cl	157785	4	12	33.3	10.0	✔
Mercury in Soil/Solid by CVAAS	E510	157782	4	27	14.8	10.0	✔
Metals in Soil/Solid by CRC ICPMS	E440	157783	5	30	16.6	10.0	✔
Moisture Content by Gravimetry	E144	157789	2	24	8.3	5.0	✔
PAHs by Hex:Ace GC-MS	E641A	157779	4	14	28.5	10.0	✔
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	157778	4	10	40.0	10.0	✔
Particle Size Analysis - Pipette Method	E184	157572	1	11	9.0	5.0	✔
PCB Aroclors by GC-ECD	E685	157781	2	23	8.7	5.0	✔
pH by Meter (1:2 Soil:Water Extraction)	E108	157784	2	27	7.4	5.0	✔
Saturation Percentage	E141	157786	4	12	33.3	10.0	✔
VH and F1 by Headspace GC-FID	E581.VH+F1	156681	1	16	6.2	5.0	✔
Method Blanks (MB)							
BC PHC - EPH by GC-FID	E601A	157777	2	10	20.0	5.0	✔
BTEX by Headspace GC-MS	E611A	156680	1	16	6.2	5.0	✔
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	157788	2	12	16.6	5.0	✔
CCME PHC - F2-F4 by GC-FID	E601.SG	157780	2	4	50.0	5.0	✔
Chloride by IC (Saturated Paste)	E239.Cl	157785	2	12	16.6	5.0	✔



Matrix: **Soil/Solid**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		Evaluation
			QC	Regular	Actual	Expected	
Analytical Methods							
Method Blanks (MB) - Continued							
Mercury by CVAAS (TCLP)	E512	166096	1	3	33.3	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	157782	2	27	7.4	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	166201	1	3	33.3	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	157783	2	30	6.6	5.0	✓
Moisture Content by Gravimetry	E144	157789	2	24	8.3	5.0	✓
PAHs by GC-MS (TCLP)	E644	166099	1	3	33.3	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	157779	2	14	14.2	5.0	✓
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	157778	2	10	20.0	5.0	✓
PCB Aroclors by GC-ECD	E685	157781	2	23	8.7	5.0	✓
Saturation Percentage	E141	157786	2	12	16.6	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	156681	1	16	6.2	5.0	✓
Matrix Spikes (MS)							
BTEX by Headspace GC-MS	E611A	156680	1	16	6.2	5.0	✓
Mercury by CVAAS (TCLP)	E512	166096	1	3	33.3	5.0	✓
Metals by CRC ICPMS (TCLP)	E444	166201	1	3	33.3	5.0	✓
PAHs by GC-MS (TCLP)	E644	166099	1	3	33.3	5.0	✓
PCB Aroclors by GC-ECD	E685	157781	2	23	8.7	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	156681	1	16	6.2	5.0	✓



Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Vancouver - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally 20 ± 5°C), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at <60 °C) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Saturation Percentage	E141 Vancouver - Environmental	Soil/Solid	CSSS Ch. 18 (mod)/AER D50	Saturation Percentage (SP) is determined as the total volume of water present in a saturated paste (in mL) divided by the dry weight of the sample (in grams), expressed as a percentage.
Moisture Content by Gravimetry	E144 Vancouver - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Particle Size Analysis - Pipette Method	E184 Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	Soil material is separated from coarse material (>2mm). A specimen is then disaggregated through mixing with Calgon solution. The material is then suspended in solution wherein regular aliquots are taken using a mechanical pipette at specific time intervals. The aliquots are dried and material in suspension determined gravimetrically. The principles of Stokes' Law are applied to determine the amount of material remaining in solution as well as the maximum particle size remaining in solution at the specified time.
Grain Size Report (Attachment) Pipet/Sieve Method	E185A Saskatoon - Environmental	Soil/Solid	SSIR-51 Method 3.2.1	A grain size curve is a graphical representation of the particle sizing of a sample representing the percent passing against the effective particle size.
Chloride by IC (Saturated Paste)	E239.Cl Vancouver - Environmental	Soil/Solid	CSSS Ch. 15 (mod)/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining a soil extract produced by the saturated paste extraction procedure which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
Metals in Soil/Solid by CRC ICPMS	E440 Vancouver - Environmental	Soil/Solid	EPA 6020B (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available. Silicate minerals are not solubilized. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. Analysis is by Collision/Reaction Cell ICPMS.
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442 Vancouver - Environmental	Soil/Solid	CSSS CH15/EPA 6020B (mod)	A soil extract produced by the saturated paste extraction procedure is analyzed for Calcium, Magnesium, Potassium and Sodium by Collision/Reaction Cell ICPMS as per "Soil Sampling Methods of Analysis" By M Carter.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Metals by CRC ICPMS (TCLP)	E444 Vancouver - Environmental	Soil/Solid	EPA 1311/6020B (mod)	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by Collision/Reaction Cell ICPMS.
Mercury in Soil/Solid by CVAAS	E510 Vancouver - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl, followed by CVAAS analysis.
Mercury by CVAAS (TCLP)	E512 Vancouver - Environmental	Soil/Solid	SW 846 -1311/245.1 CVAA ON TCLP LEACHATE	An extract produced by the Toxicity Characteristic Leachate Procedure (TCLP) as per EPA 1311 is analyzed by CVAAS.
VH and F1 by Headspace GC-FID	E581.VH+F1 Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
CCME PHC - F2-F4 by GC-FID	E601.SG Vancouver - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Sample extracts are subjected to in-situ silica gel treatment prior to analysis by GC-FID for CCME Fractions 2-4 (F2-F4).
BC PHC - EPH by GC-FID	E601A Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (EPH in Solids by GC/FID) (mod)	Extractable Petroleum Hydrocarbons (EPH) are analyzed by GC-FID.
BTEX by Headspace GC-MS	E611A Vancouver - Environmental	Soil/Solid	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PAHs by Hex:Ace GC-MS	E641A Vancouver - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L Vancouver - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.
PAHs by GC-MS (TCLP)	E644 Vancouver - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by GC-MS.
PCB Aroclors by GC-ECD	E685 Vancouver - Environmental	Soil/Solid	EPA 8082A (mod)	PCB Aroclors are analyzed by GC-ECD



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Particle Size Analysis (Pipette) - MMER Classification	EC184E Saskatoon - Environmental	Soil/Solid	Metal Mining Technical Guidance for Environmental Effects Monitoring (2012)	The particle size determination is performed by various methods to generate a Grain Size curve. The data from the curve is then used to produce particle size ranges based on the Metal Mining Effluent Regulations (MMER) classification system for Environmental Effects Monitoring.
Chloride by IC (Saturated Paste) (mg/kg)	EC239A.Cl Vancouver - Environmental	Soil/Solid	CSSS Ch. 15 (mod)/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining a soil extract produced by the saturated paste extraction procedure which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
Ca, K, Mg, Na by ICPMS (Saturated Paste, mg/kg)	EC442 Vancouver - Environmental	Soil/Solid	CSSS CH15/EPA 6020B (mod)	A soil extract produced by the saturated paste extraction procedure is analyzed for Calcium, Magnesium, Potassium, Sodium by ICPMS.
F1-BTEX	EC580 Vancouver - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	F1-BTEX is calculated as follows: F1-BTEX = F1 (C6-C10) minus benzene, toluene, ethylbenzene and xylenes (BTEX).
VPH: VH-BTEX-Styrene	EC580A Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (VPH in Water and Solids) (mod)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VH-BTEX = Volatile Hydrocarbons (VH6-10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene.
LEPH and HEPH: EPH-PAH	EC600A Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (LEPH and HEPH) (mod)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(b+j+k)fluoranthene, Benzo(a)pyrene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, and Pyrene.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Vancouver - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.
Digestion for Metals and Mercury	EP440 Vancouver - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
VOCs Methanol Extraction for Headspace Analysis	EP581 Vancouver - Environmental	Soil/Solid	EPA 5035A (mod)	VOCs in samples are extracted with methanol. Extracts are then prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Vancouver - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
PHCs and PAHs Extraction (TCLP)	EP602 Vancouver - Environmental	Soil/Solid	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
PCB Aroclors Extraction	EP685 Vancouver - Environmental	Soil/Solid	EPA 3570/3550C (mod)	Samples are subsampled and PCBs are extracted with solvents using a mechanical shaking extractor. Water is added to the extract and the resulting hexane extract undergoes one or more of the following clean-up procedures (if required): florisil clean-up, silica gel clean-up, sulphur clean-up and/or sulphuric acid clean-up.
Dry and Grind	EPP442 Saskatoon - Environmental	Soil/Solid	Soil Sampling and Methods of Analysis, Carter 2008	After removal of any coarse fragments and reservation of wet subsamples a portion of homogenized sample is set in a tray and dried at less than 60 C until dry. The sample is then particle size reduced with an automated crusher or mortar and pestle, typically to <2 mm. Further size reduction may be needed for particular tests.
TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)	EPP444 Vancouver - Environmental	Soil/Solid	EPA 1311	Preparation of a Toxicity Characteristic Leaching Procedure (TCLP) solid sample involves particle size reduction, homogenization, then determination of appropriate extraction fluid. A measured portion of fresh subsample is placed in an extraction bottle with the appropriate extraction fluid then tumbled in a rotary extractor for 18+/- 2 hours at 23 +/- 2 C. The liquid leachate is filtered to separate from solids then bottled and prepared for analytical tests.

QUALITY CONTROL REPORT

Work Order : **VA21A3477**

Page : 1 of 30

Amendment : **3**

Client : SNC-Lavalin Inc.
Contact : Bill Hung
Address : 455 Rene-Levesque Blvd. West
 Montreal QC Canada H2Z 1Z3
Telephone : ----
Project : 680409
PO : ----
C-O-C number : 17-864163, 162
Sampler : GS
Site : ----
Quote number : Western Canada Standing Offer
No. of samples received : 24
No. of samples analysed : 24

Laboratory : Vancouver - Environmental
Account Manager : Selam Worku
Address : 8081 Lougheed Highway
 Burnaby, British Columbia Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 25-Feb-2021 21:34
Date Analysis Commenced : 01-Mar-2021
Issue Date : 22-Mar-2021 10:39

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits
- Reference Material (RM) Report; Recovery and Acceptance Limits
- Method Blank (MB) Report; Recovery and Acceptance Limits
- Laboratory Control Sample (LCS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
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Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
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Ophelia Chiu	Department Manager - Organics	Organics, Burnaby, British Columbia
Paul Cushing	Team Leader - Organics	Organics, Burnaby, British Columbia
Robin Weeks	Team Leader - Metals	Metals, Burnaby, British Columbia
Shaneel Dayal	Analyst	Metals, Burnaby, British Columbia



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Services number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percentage Difference

= Indicates a QC result that did not meet the ALS DQO.



Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test specific).

Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 157784)											
VA21A3477-001	BH21-01-01	pH (1:2 soil:water)	----	E108	0.10	pH units	8.02	8.12	1.24%	5%	----
Physical Tests (QC Lot: 157789)											
VA21A3477-001	BH21-01-01	moisture	----	E144	0.25	%	45.4	46.5	2.46%	20%	----
Physical Tests (QC Lot: 158534)											
VA21A3477-021	BH21-07-01	pH (1:2 soil:water)	----	E108	0.10	pH units	9.29	9.26	0.323%	5%	----
Physical Tests (QC Lot: 158538)											
VA21A3477-021	BH21-07-01	moisture	----	E144	0.25	%	16.1	17.3	7.02%	20%	----
Particle Size (QC Lot: 157572)											
VA21A2293-004	Anonymous	passing (0.002 mm)	----	E184	1.0	%	6.2	5.8	0.4	Diff <2x LOR	----
		passing (0.004 mm)	----	E184	1.0	%	7.5	7.1	0.4	Diff <2x LOR	----
		passing (0.005 mm)	----	E184	1.0	%	8.1	7.8	0.4	Diff <2x LOR	----
		passing (0.020 mm)	----	E184	1.0	%	18.1	17.9	0.2	Diff <2x LOR	----
		passing (0.0312 mm)	----	E184	1.0	%	21.0	20.9	0.1	Diff <2x LOR	----
Saturated Paste Extractables (QC Lot: 157785)											
VA21A3477-001	BH21-01-01	chloride, soluble ion content	16887-00-6	E239.Cl	20.0	mg/L	9020	9460	4.79%	30%	----
Saturated Paste Extractables (QC Lot: 157786)											
VA21A3477-001	BH21-01-01	% saturation	----	E141	1.0	%	93.3	100	7.01%	20%	----
Saturated Paste Extractables (QC Lot: 157788)											
VA21A3477-001	BH21-01-01	sodium, soluble ion content	17341-25-2	E442	2.0	mg/L	5910	6030	2.02%	30%	----
Saturated Paste Extractables (QC Lot: 158535)											
VA21A3477-021	BH21-07-01	chloride, soluble ion content	16887-00-6	E239.Cl	20.0	mg/L	2980	3380	12.6%	30%	----
Saturated Paste Extractables (QC Lot: 158536)											
VA21A3477-021	BH21-07-01	% saturation	----	E141	1.0	%	35.2	34.6	1.75%	20%	----
Saturated Paste Extractables (QC Lot: 158537)											
VA21A3477-021	BH21-07-01	sodium, soluble ion content	17341-25-2	E442	2.0	mg/L	1940	2210	13.1%	30%	----
Metals (QC Lot: 157782)											
VA21A3477-001	BH21-01-01	mercury	7439-97-6	E510	0.0500	mg/kg	0.319	0.237	29.4%	40%	----
Metals (QC Lot: 157783)											
VA21A3477-001	BH21-01-01	aluminum	7429-90-5	E440	50	mg/kg	17200	14900	13.9%	40%	----
		antimony	7440-36-0	E440	0.10	mg/kg	3.76	2.23	50.9%	30%	DUP-H
		arsenic	7440-38-2	E440	0.10	mg/kg	11.9	8.34	35.1%	30%	DUP-H



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 157783) - continued											
VA21A3477-001	BH21-01-01	barium	7440-39-3	E440	0.50	mg/kg	133	101	26.9%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.26	0.25	0.01	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	0.23	<0.20	0.03	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	26.6	18.7	7.9	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.850	0.598	34.8%	30%	DUP-H
		calcium	7440-70-2	E440	50	mg/kg	17200	18300	6.64%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	30.7	25.5	18.3%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	8.80	7.76	12.6%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	215	170	23.4%	30%	----
		iron	7439-89-6	E440	50	mg/kg	29800	25900	14.0%	30%	----
		lead	7439-92-1	E440	0.50	mg/kg	107	59.4	57.3%	40%	DUP-H
		lithium	7439-93-2	E440	2.0	mg/kg	15.8	13.8	14.1%	30%	----
		magnesium	7439-95-4	E440	20	mg/kg	8820	7440	17.0%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	346	306	12.4%	30%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	3.24	2.38	30.4%	40%	----
		nickel	7440-02-0	E440	0.50	mg/kg	19.5	15.2	24.6%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	766	667	13.9%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	2290	1980	14.2%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	0.42	0.35	0.07	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	0.34	0.22	0.12	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	7100	5820	19.8%	40%	----
		strontium	7440-24-6	E440	0.50	mg/kg	128	154	18.5%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	12600	8500	38.9%	30%	DUP-H
		thallium	7440-28-0	E440	0.050	mg/kg	0.190	0.156	0.034	Diff <2x LOR	----
tin	7440-31-5	E440	2.0	mg/kg	7.3	5.3	2.0	Diff <2x LOR	----		
titanium	7440-32-6	E440	1.0	mg/kg	888	722	20.6%	40%	----		
tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----		
uranium	7440-61-1	E440	0.050	mg/kg	1.44	1.14	23.2%	30%	----		
vanadium	7440-62-2	E440	0.20	mg/kg	63.9	57.6	10.4%	30%	----		
zinc	7440-66-6	E440	2.0	mg/kg	182	137	27.8%	30%	----		
zirconium	7440-67-7	E440	1.0	mg/kg	5.9	4.6	1.3	Diff <2x LOR	----		
Metals (QC Lot: 158532)											
VA21A3477-021	BH21-07-01	antimony	7440-36-0	E440	0.10	mg/kg	1.01	0.68	39.2%	30%	DUP-H
		arsenic	7440-38-2	E440	0.10	mg/kg	2.02	2.13	5.20%	30%	----
		copper	7440-50-8	E440	0.50	mg/kg	37.7	56.3	39.6%	30%	DUP-H



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 158532) - continued											
VA21A3477-021	BH21-07-01	lead	7439-92-1	E440	0.50	mg/kg	36.5	39.8	8.72%	40%	----
		molybdenum	7439-98-7	E440	0.10	mg/kg	0.39	0.43	0.04	Diff <2x LOR	----
VA21A3477-021	BH21-07-01	aluminum	7429-90-5	E440	50	mg/kg	9310	10700	14.1%	40%	----
		barium	7440-39-3	E440	0.50	mg/kg	51.5	62.9	19.9%	40%	----
		beryllium	7440-41-7	E440	0.10	mg/kg	0.10	0.14	0.03	Diff <2x LOR	----
		bismuth	7440-69-9	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		boron	7440-42-8	E440	5.0	mg/kg	5.0	6.4	1.3	Diff <2x LOR	----
		cadmium	7440-43-9	E440	0.020	mg/kg	0.189	0.236	21.8%	30%	----
		calcium	7440-70-2	E440	50	mg/kg	3780	3940	4.18%	30%	----
		chromium	7440-47-3	E440	0.50	mg/kg	10.4	11.6	11.0%	30%	----
		cobalt	7440-48-4	E440	0.10	mg/kg	4.46	5.09	13.2%	30%	----
		iron	7439-89-6	E440	50	mg/kg	15700	17600	11.5%	30%	----
		lithium	7439-93-2	E440	2.0	mg/kg	5.1	5.9	0.8	Diff <2x LOR	----
		magnesium	7439-95-4	E440	20	mg/kg	3740	4560	19.7%	30%	----
		manganese	7439-96-5	E440	1.0	mg/kg	223	248	10.4%	30%	----
		nickel	7440-02-0	E440	0.50	mg/kg	5.83	6.69	13.7%	30%	----
		phosphorus	7723-14-0	E440	50	mg/kg	376	414	9.52%	30%	----
		potassium	7440-09-7	E440	100	mg/kg	1150	1350	16.0%	40%	----
		selenium	7782-49-2	E440	0.20	mg/kg	<0.20	<0.20	0	Diff <2x LOR	----
		silver	7440-22-4	E440	0.10	mg/kg	<0.10	<0.10	0	Diff <2x LOR	----
		sodium	7440-23-5	E440	50	mg/kg	1220	1460	18.0%	40%	----
		strontium	7440-24-6	E440	0.50	mg/kg	32.5	36.3	11.1%	40%	----
		sulfur	7704-34-9	E440	1000	mg/kg	1500	1100	300	Diff <2x LOR	----
		thallium	7440-28-0	E440	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		tin	7440-31-5	E440	2.0	mg/kg	<2.0	<2.0	0	Diff <2x LOR	----
		titanium	7440-32-6	E440	1.0	mg/kg	590	661	11.2%	40%	----
		tungsten	7440-33-7	E440	0.50	mg/kg	<0.50	<0.50	0	Diff <2x LOR	----
		uranium	7440-61-1	E440	0.050	mg/kg	0.325	0.370	13.0%	30%	----
		vanadium	7440-62-2	E440	0.20	mg/kg	41.4	46.4	11.3%	30%	----
		zinc	7440-66-6	E440	2.0	mg/kg	61.2	76.9	22.7%	30%	----
		zirconium	7440-67-7	E440	1.0	mg/kg	2.5	3.2	0.7	Diff <2x LOR	----
Metals (QC Lot: 158533)											
VA21A3477-021	BH21-07-01	mercury	7439-97-6	E510	0.0500	mg/kg	0.0627	0.0659	0.0032	Diff <2x LOR	----
Volatile Organic Compounds (QC Lot: 156680)											
VA21A3477-001	BH21-01-01	benzene	71-43-2	E611A	0.0050	mg/kg	<0.0050	<0.0050	0	Diff <2x LOR	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Volatile Organic Compounds (QC Lot: 156680) - continued											
VA21A3477-001	BH21-01-01	ethylbenzene	100-41-4	E611A	0.015	mg/kg	<0.015	<0.015	0	Diff <2x LOR	----
		methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.200	mg/kg	<0.200	<0.200	0	Diff <2x LOR	----
		styrene	100-42-5	E611A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		toluene	108-88-3	E611A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		xylene, m+p-	179601-23-1	E611A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		xylene, o-	95-47-6	E611A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 156681)											
VA21A3477-001	BH21-01-01	F1 (C6-C10)	----	E581.VH+F1	5.0	mg/kg	<5.0	<5.0	0	Diff <2x LOR	----
		VHs (C6-C10)	----	E581.VH+F1	10	mg/kg	<10	<10	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 157777)											
VA21A3477-001	BH21-01-01	EPH (C10-C19)	----	E601A	200	mg/kg	<200	<200	0	Diff <2x LOR	----
		EPH (C19-C32)	----	E601A	200	mg/kg	630	810	180	Diff <2x LOR	----
Hydrocarbons (QC Lot: 157780)											
VA21A3477-007	BH21-02-04	F2 (C10-C16)	----	E601.SG	30	mg/kg	<30	<30	0	Diff <2x LOR	----
		F3 (C16-C34)	----	E601.SG	50	mg/kg	<50	<50	0	Diff <2x LOR	----
		F4 (C34-C50)	----	E601.SG	50	mg/kg	<50	<50	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 158528)											
VA21A3477-021	BH21-07-01	EPH (C10-C19)	----	E601A	200	mg/kg	<200	<200	0	Diff <2x LOR	----
		EPH (C19-C32)	----	E601A	200	mg/kg	<200	<200	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 158530)											
VA21A3477-024	BH21-07-04	F2 (C10-C16)	----	E601.SG	30	mg/kg	<30	<30	0	Diff <2x LOR	----
		F3 (C16-C34)	----	E601.SG	50	mg/kg	<50	<50	0	Diff <2x LOR	----
		F4 (C34-C50)	----	E601.SG	50	mg/kg	<50	<50	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 157778)											
VA21A3477-001	BH21-01-01	acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.154	0.153	0.980%	50%	----
		acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	0.0606	0.0497	19.6%	50%	----
		acridine	260-94-6	E641A-L	0.070	mg/kg	<0.070	<0.050	0.020	Diff <2x LOR	----
		anthracene	120-12-7	E641A-L	0.0040	mg/kg	0.297	0.372	22.5%	50%	----
		benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	0.577	0.538	7.01%	50%	----
		benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	0.680	0.655	3.72%	50%	----
		benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg	0.901	0.886	1.63%	50%	----
		benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	0.373	0.358	4.11%	50%	----
		benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	0.313	0.311	0.857%	50%	----
		chrysene	218-01-9	E641A-L	0.010	mg/kg	0.594	0.716	18.6%	50%	----
		dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.103	0.0969	5.94%	50%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 157778) - continued											
VA21A3477-001	BH21-01-01	fluoranthene	206-44-0	E641A-L	0.010	mg/kg	2.12	1.44	38.5%	50%	----
		fluorene	86-73-7	E641A-L	0.010	mg/kg	0.131	0.128	2.40%	50%	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	0.374	0.355	5.19%	50%	----
		methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	0.038	0.032	0.006	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	0.039	0.033	0.006	Diff <2x LOR	----
		naphthalene	91-20-3	E641A-L	0.010	mg/kg	0.110	0.122	10.6%	50%	----
		phenanthrene	85-01-8	E641A-L	0.010	mg/kg	0.797	0.722	9.86%	50%	----
		pyrene	129-00-0	E641A-L	0.010	mg/kg	2.56	1.73	38.9%	50%	----
quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----		
Polycyclic Aromatic Hydrocarbons (QC Lot: 157779)											
VA21A3477-002	BH21-01-02	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	----	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		
quinoline	6027-02-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----		
Polycyclic Aromatic Hydrocarbons (QC Lot: 158527)											
VA21A3477-021	BH21-07-01	acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.0087	0.0110	0.0024	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	0.0073	0.0083	0.0010	Diff <2x LOR	----
		acridine	260-94-6	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A-L	0.0040	mg/kg	0.0164	0.0236	35.5%	50%	----



Sub-Matrix: Soil/Solid

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 158527) - continued											
VA21A3477-021	BH21-07-01	benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	0.050	0.063	24.1%	50%	----
		benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	0.059	0.060	2.28%	50%	----
		benzo(b+j)fluoranthene	----	E641A-L	0.010	mg/kg	0.078	0.092	15.7%	50%	----
		benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	0.040	0.047	17.9%	50%	----
		benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	0.040	0.044	10.9%	50%	----
		chrysene	218-01-9	E641A-L	0.060	mg/kg	<0.060	<0.090	0.030	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.0099	0.0118	0.0019	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A-L	0.010	mg/kg	0.110	0.132	18.2%	50%	----
		fluorene	86-73-7	E641A-L	0.010	mg/kg	0.010	0.010	0.0002	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	0.039	0.044	13.9%	50%	----
		methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		naphthalene	91-20-3	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		phenanthrene	85-01-8	E641A-L	0.010	mg/kg	0.042	0.056	27.5%	50%	----
		pyrene	129-00-0	E641A-L	0.010	mg/kg	0.158	0.197	21.9%	50%	----
		quinoline	6027-02-7	E641A-L	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 158529)											
VA21A3477-022	BH21-07-02	acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		acridine	260-94-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		anthracene	120-12-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(b+j)fluoranthene	----	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		chrysene	218-01-9	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluoranthene	206-44-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		fluorene	86-73-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----



Sub-Matrix: **Soil/Solid**

Laboratory Duplicate (DUP) Report

Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 158529) - continued											
VA21A3477-022	BH21-07-02	pyrene	129-00-0	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
		quinoline	6027-02-7	E641A	0.050	mg/kg	<0.050	<0.050	0	Diff <2x LOR	----
Polychlorinated Biphenyls (QC Lot: 157781)											
VA21A3477-001	BH21-01-01	Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1254	11097-69-1	E685	0.010	mg/kg	0.062	0.053	15.4%	50%	----
		Aroclor 1260	11096-82-5	E685	0.030	mg/kg	<0.030	<0.030	0	Diff <2x LOR	----
		Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----		
Polychlorinated Biphenyls (QC Lot: 158531)											
VA21A3477-021	BH21-07-01	Aroclor 1016	12674-11-2	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1221	11104-28-2	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1232	11141-16-5	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1242	53469-21-9	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1248	12672-29-6	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1254	11097-69-1	E685	0.010	mg/kg	0.022	0.022	0.0001	Diff <2x LOR	----
		Aroclor 1260	11096-82-5	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
		Aroclor 1262	37324-23-5	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----
Aroclor 1268	11100-14-4	E685	0.010	mg/kg	<0.010	<0.010	0	Diff <2x LOR	----		

Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 157789)						
moisture	----	E144	0.25	%	<0.25	----
Physical Tests (QCLot: 158538)						
moisture	----	E144	0.25	%	<0.25	----
Saturated Paste Extractables (QCLot: 157785)						
chloride, soluble ion content	16887-00-6	E239.Cl	2	mg/L	<2.0	----
Saturated Paste Extractables (QCLot: 157786)						
% saturation	----	E141	1	%	50.0	----
Saturated Paste Extractables (QCLot: 157788)						
sodium, soluble ion content	17341-25-2	E442	2	mg/L	<2.0	----
Saturated Paste Extractables (QCLot: 158535)						
chloride, soluble ion content	16887-00-6	E239.Cl	2	mg/L	<2.0	----
Saturated Paste Extractables (QCLot: 158536)						
% saturation	----	E141	1	%	50.0	----
Saturated Paste Extractables (QCLot: 158537)						
sodium, soluble ion content	17341-25-2	E442	2	mg/L	<2.0	----
Metals (QCLot: 157782)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
Metals (QCLot: 157783)						
aluminum	7429-90-5	E440	50	mg/kg	<50	----
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	----
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	----
barium	7440-39-3	E440	0.5	mg/kg	<0.50	----
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	----
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	----
boron	7440-42-8	E440	5	mg/kg	<5.0	----
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	----
calcium	7440-70-2	E440	50	mg/kg	<50	----
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	----
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	----
copper	7440-50-8	E440	0.5	mg/kg	<0.50	----
iron	7439-89-6	E440	50	mg/kg	<50	----
lead	7439-92-1	E440	0.5	mg/kg	<0.50	----
lithium	7439-93-2	E440	2	mg/kg	<2.0	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 157783) - continued						
magnesium	7439-95-4	E440	20	mg/kg	<20	---
manganese	7439-96-5	E440	1	mg/kg	<1.0	---
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	---
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	---
phosphorus	7723-14-0	E440	50	mg/kg	<50	---
potassium	7440-09-7	E440	100	mg/kg	<100	---
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	---
silver	7440-22-4	E440	0.1	mg/kg	<0.10	---
sodium	7440-23-5	E440	50	mg/kg	<50	---
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	---
sulfur	7704-34-9	E440	1000	mg/kg	<1000	---
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	---
tin	7440-31-5	E440	2	mg/kg	<2.0	---
titanium	7440-32-6	E440	1	mg/kg	<1.0	---
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	---
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	---
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	---
zinc	7440-66-6	E440	2	mg/kg	<2.0	---
zirconium	7440-67-7	E440	1	mg/kg	<1.0	---
Metals (QCLot: 158532)						
aluminum	7429-90-5	E440	50	mg/kg	<50	---
antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
boron	7440-42-8	E440	5	mg/kg	<5.0	---
cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
calcium	7440-70-2	E440	50	mg/kg	<50	---
chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
iron	7439-89-6	E440	50	mg/kg	<50	---
lead	7439-92-1	E440	0.5	mg/kg	<0.50	---
lithium	7439-93-2	E440	2	mg/kg	<2.0	---
magnesium	7439-95-4	E440	20	mg/kg	<20	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 158532) - continued						
manganese	7439-96-5	E440	1	mg/kg	<1.0	----
molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
phosphorus	7723-14-0	E440	50	mg/kg	<50	----
potassium	7440-09-7	E440	100	mg/kg	<100	----
selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
sodium	7440-23-5	E440	50	mg/kg	<50	----
strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
tin	7440-31-5	E440	2	mg/kg	<2.0	----
titanium	7440-32-6	E440	1	mg/kg	<1.0	----
tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
zinc	7440-66-6	E440	2	mg/kg	<2.0	----
zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
Metals (QCLot: 158533)						
mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	----
TCLP Extractables (QCLot: 166099)						
benzo(a)pyrene, TCLP	50-32-8	E644	0.05	µg/L	<0.050	----
TCLP Metals (QCLot: 166096)						
mercury, TCLP	7439-97-6	E512	0.001	mg/L	<0.0010	----
TCLP Metals (QCLot: 166201)						
arsenic, TCLP	7440-38-2	E444	1	mg/L	<1.0	----
lead, TCLP	7439-92-1	E444	0.25	mg/L	<0.25	----
Volatile Organic Compounds (QCLot: 156680)						
benzene	71-43-2	E611A	0.005	mg/kg	<0.0050	----
ethylbenzene	100-41-4	E611A	0.015	mg/kg	<0.015	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.05	mg/kg	<0.050	----
styrene	100-42-5	E611A	0.05	mg/kg	<0.050	----
toluene	108-88-3	E611A	0.05	mg/kg	<0.050	----
xylene, m+p-	179601-23-1	E611A	0.05	mg/kg	<0.050	----
xylene, o-	95-47-6	E611A	0.05	mg/kg	<0.050	----
Hydrocarbons (QCLot: 156681)						



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Hydrocarbons (QCLot: 156681) - continued						
F1 (C6-C10)	---	E581.VH+F1	5	mg/kg	<5.0	---
VHs (C6-C10)	---	E581.VH+F1	10	mg/kg	<10	---
Hydrocarbons (QCLot: 157777)						
EPH (C10-C19)	---	E601A	200	mg/kg	<200	---
EPH (C19-C32)	---	E601A	200	mg/kg	<200	---
Hydrocarbons (QCLot: 157780)						
F2 (C10-C16)	---	E601.SG	25	mg/kg	<25	---
F3 (C16-C34)	---	E601.SG	50	mg/kg	<50	---
F4 (C34-C50)	---	E601.SG	50	mg/kg	<50	---
Hydrocarbons (QCLot: 158528)						
EPH (C10-C19)	---	E601A	200	mg/kg	<200	---
EPH (C19-C32)	---	E601A	200	mg/kg	<200	---
Hydrocarbons (QCLot: 158530)						
F2 (C10-C16)	---	E601.SG	25	mg/kg	<25	---
F3 (C16-C34)	---	E601.SG	50	mg/kg	<50	---
F4 (C34-C50)	---	E601.SG	50	mg/kg	<50	---
Polycyclic Aromatic Hydrocarbons (QCLot: 157778)						
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	<0.0050	---
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	<0.0050	---
acridine	260-94-6	E641A-L	0.01	mg/kg	<0.010	---
anthracene	120-12-7	E641A-L	0.004	mg/kg	<0.0040	---
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	<0.010	---
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	<0.010	---
benzo(b+j)fluoranthene	---	E641A-L	0.01	mg/kg	<0.010	---
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	<0.010	---
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	<0.010	---
chrysene	218-01-9	E641A-L	0.01	mg/kg	<0.010	---
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	<0.0050	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 157778) - continued						
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	<0.010	---
fluorene	86-73-7	E641A-L	0.01	mg/kg	<0.010	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	<0.010	---
methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	<0.010	---
methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	<0.010	---
naphthalene	91-20-3	E641A-L	0.01	mg/kg	<0.010	---
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	<0.010	---
pyrene	129-00-0	E641A-L	0.01	mg/kg	<0.010	---
quinoline	6027-02-7	E641A-L	0.01	mg/kg	<0.010	---
Polycyclic Aromatic Hydrocarbons (QCLot: 157779)						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	---
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	---
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	---
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	---
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	---
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	---
benzo(b+j)fluoranthene	---	E641A	0.05	mg/kg	<0.050	---
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	---
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	---
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	---
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	---
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	---
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	---
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 157779) - continued						
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	----
					<0.050	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----
					<0.050	----
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
					<0.050	----
quinoline	6027-02-7	E641A	0.05	mg/kg	<0.050	----
					<0.050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 158527)						
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	<0.0050	----
					<0.0050	----
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	<0.0050	----
acridine	260-94-6	E641A-L	0.01	mg/kg	<0.010	----
anthracene	120-12-7	E641A-L	0.004	mg/kg	<0.0040	----
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	<0.010	----
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
benzo(b+j)fluoranthene	----	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
chrysene	218-01-9	E641A-L	0.01	mg/kg	<0.010	----
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	<0.0050	----
					<0.0050	----
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	<0.010	----
fluorene	86-73-7	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	<0.010	----
methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
naphthalene	91-20-3	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	<0.010	----
pyrene	129-00-0	E641A-L	0.01	mg/kg	<0.010	----
quinoline	6027-02-7	E641A-L	0.01	mg/kg	<0.010	----
					<0.010	----
Polycyclic Aromatic Hydrocarbons (QCLot: 158529)						



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 158529) - continued						
acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
acridine	260-94-6	E641A	0.05	mg/kg	<0.050	---
anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	---
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	---
benzo(b+j)fluoranthene	---	E641A	0.05	mg/kg	<0.050	---
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	---
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	---
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	---
fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	<0.050	---
naphthalene	91-20-3	E641A	0.05	mg/kg	<0.050	---
phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	---
					<0.050	---
pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	---
quinoline	6027-02-7	E641A	0.05	mg/kg	<0.050	---
Polychlorinated Biphenyls (QCLot: 157781)						
Aroclor 1016	12674-11-2	E685	0.01	mg/kg	<0.010	---
Aroclor 1221	11104-28-2	E685	0.01	mg/kg	<0.010	---
Aroclor 1232	11141-16-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1242	53469-21-9	E685	0.01	mg/kg	<0.010	---
Aroclor 1248	12672-29-6	E685	0.01	mg/kg	<0.010	---
Aroclor 1254	11097-69-1	E685	0.01	mg/kg	<0.010	---
Aroclor 1260	11096-82-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1262	37324-23-5	E685	0.01	mg/kg	<0.010	---
Aroclor 1268	11100-14-4	E685	0.01	mg/kg	<0.010	---



Sub-Matrix: **Soil/Solid**

<i>Analyte</i>	<i>CAS Number</i>	<i>Method</i>	<i>LOR</i>	<i>Unit</i>	<i>Result</i>	<i>Qualifier</i>
Polychlorinated Biphenyls (QCLot: 158531)						
Aroclor 1016	12674-11-2	E685	0.01	mg/kg	<0.010	----
Aroclor 1221	11104-28-2	E685	0.01	mg/kg	<0.010	----
Aroclor 1232	11141-16-5	E685	0.01	mg/kg	<0.010	----
Aroclor 1242	53469-21-9	E685	0.01	mg/kg	<0.010	----
Aroclor 1248	12672-29-6	E685	0.01	mg/kg	<0.010	----
Aroclor 1254	11097-69-1	E685	0.01	mg/kg	<0.010	----
Aroclor 1260	11096-82-5	E685	0.01	mg/kg	<0.010	----
Aroclor 1262	37324-23-5	E685	0.01	mg/kg	<0.010	----
Aroclor 1268	11100-14-4	E685	0.01	mg/kg	<0.010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 157784)									
pH (1:2 soil:water)	---	E108	---	pH units	6 pH units	99.5	95.0	105	---
Physical Tests (QCLot: 157789)									
moisture	---	E144	0.25	%	50 %	101	90.0	110	---
Physical Tests (QCLot: 158534)									
pH (1:2 soil:water)	---	E108	---	pH units	6 pH units	100	95.0	105	---
Physical Tests (QCLot: 158538)									
moisture	---	E144	0.25	%	50 %	101	90.0	110	---
Saturated Paste Extractables (QCLot: 157785)									
chloride, soluble ion content	16887-00-6	E239.Cl	2	mg/L	100 mg/L	101	80.0	120	---
Saturated Paste Extractables (QCLot: 157786)									
% saturation	---	E141	1	%	100 %	100	90.0	110	---
Saturated Paste Extractables (QCLot: 157788)									
sodium, soluble ion content	17341-25-2	E442	2	mg/L	50 mg/L	102	80.0	120	---
Saturated Paste Extractables (QCLot: 158535)									
chloride, soluble ion content	16887-00-6	E239.Cl	2	mg/L	100 mg/L	101	80.0	120	---
Saturated Paste Extractables (QCLot: 158536)									
% saturation	---	E141	1	%	100 %	102	90.0	110	---
Saturated Paste Extractables (QCLot: 158537)									
sodium, soluble ion content	17341-25-2	E442	2	mg/L	50 mg/L	102	80.0	120	---
Metals (QCLot: 157782)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	101	80.0	120	---
Metals (QCLot: 157783)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	104	80.0	120	---
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	104	80.0	120	---
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	100	80.0	120	---
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	106	80.0	120	---
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	102	80.0	120	---
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	98.4	80.0	120	---
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	95.8	80.0	120	---
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	104	80.0	120	---
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	101	80.0	120	---
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	104	80.0	120	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 157783) - continued									
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	101	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	99.9	80.0	120	----
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	104	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	104	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	103	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	106	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	104	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	99.5	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	101	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	109	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	108	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	102	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	100	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	104	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	103	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	103	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	97.5	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	94.4	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	100	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	102	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	104	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	101	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	92.4	80.0	120	----
Metals (QCLot: 158532)									
aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	108	80.0	120	----
antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	116	80.0	120	----
arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	106	80.0	120	----
barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	113	80.0	120	----
beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	100	80.0	120	----
bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	105	80.0	120	----
boron	7440-42-8	E440	5	mg/kg	100 mg/kg	94.5	80.0	120	----
cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	103	80.0	120	----
calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	105	80.0	120	----
chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	105	80.0	120	----
cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	106	80.0	120	----
copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	103	80.0	120	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 158532) - continued									
iron	7439-89-6	E440	50	mg/kg	100 mg/kg	104	80.0	120	----
lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	108	80.0	120	----
lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	102	80.0	120	----
magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	112	80.0	120	----
manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	109	80.0	120	----
molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	104	80.0	120	----
nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	105	80.0	120	----
phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	109	80.0	120	----
potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	108	80.0	120	----
selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	111	80.0	120	----
silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	105	80.0	120	----
sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	110	80.0	120	----
strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	116	80.0	120	----
sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	106	80.0	120	----
thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	104	80.0	120	----
tin	7440-31-5	E440	2	mg/kg	50 mg/kg	104	80.0	120	----
titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	99.0	80.0	120	----
tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	104	80.0	120	----
uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	109	80.0	120	----
vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	106	80.0	120	----
zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	105	80.0	120	----
zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	99.6	80.0	120	----
Metals (QCLot: 158533)									
mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	101	80.0	120	----
Volatile Organic Compounds (QCLot: 156680)									
benzene	71-43-2	E611A	0.005	mg/kg	2.5 mg/kg	103	70.0	130	----
ethylbenzene	100-41-4	E611A	0.015	mg/kg	2.5 mg/kg	90.9	70.0	130	----
methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.05	mg/kg	2.5 mg/kg	102	70.0	130	----
styrene	100-42-5	E611A	0.05	mg/kg	2.5 mg/kg	98.1	70.0	130	----
toluene	108-88-3	E611A	0.05	mg/kg	2.5 mg/kg	92.4	70.0	130	----
xylene, m+p-	179601-23-1	E611A	0.05	mg/kg	5 mg/kg	130	70.0	130	----
xylene, o-	95-47-6	E611A	0.05	mg/kg	2.5 mg/kg	95.9	70.0	130	----
Hydrocarbons (QCLot: 156681)									
F1 (C6-C10)	----	E581.VH+F1	5	mg/kg	93.6 mg/kg	114	70.0	130	----
VHs (C6-C10)	----	E581.VH+F1	10	mg/kg	85.8 mg/kg	127	70.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Hydrocarbons (QCLot: 157777)									
EPH (C10-C19)	---	E601A	200	mg/kg	1134.37 mg/kg	97.7	70.0	130	---
EPH (C19-C32)	---	E601A	200	mg/kg	575.98 mg/kg	94.3	70.0	130	---
					10183 mg/kg	92.0	70.0	130	---
Hydrocarbons (QCLot: 157780)									
F2 (C10-C16)	---	E601.SG	25	mg/kg	618.75 mg/kg	98.4	70.0	130	---
F3 (C16-C34)	---	E601.SG	50	mg/kg	1242.49 mg/kg	96.4	70.0	130	---
F4 (C34-C50)	---	E601.SG	50	mg/kg	993.9 mg/kg	92.2	70.0	130	---
					1238 mg/kg	78.8	70.0	130	---
Hydrocarbons (QCLot: 158528)									
EPH (C10-C19)	---	E601A	200	mg/kg	1134.37 mg/kg	97.2	70.0	130	---
					7113 mg/kg	101	70.0	130	---
EPH (C19-C32)	---	E601A	200	mg/kg	575.98 mg/kg	99.2	70.0	130	---
Hydrocarbons (QCLot: 158530)									
F2 (C10-C16)	---	E601.SG	25	mg/kg	618.75 mg/kg	98.7	70.0	130	---
F3 (C16-C34)	---	E601.SG	50	mg/kg	1242.49 mg/kg	95.4	70.0	130	---
F4 (C34-C50)	---	E601.SG	50	mg/kg	993.9 mg/kg	91.4	70.0	130	---
Polycyclic Aromatic Hydrocarbons (QCLot: 157778)									
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	0.5 mg/kg	96.4	60.0	130	---
					0.638 mg/kg	73.3	60.0	130	---
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	0.5 mg/kg	96.9	60.0	130	---
					0.2 mg/kg	86.9	60.0	130	---
acridine	260-94-6	E641A-L	0.01	mg/kg	0.5 mg/kg	85.9	60.0	130	---
anthracene	120-12-7	E641A-L	0.004	mg/kg	0.5 mg/kg	91.7	60.0	130	---
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	0.5 mg/kg	90.4	60.0	130	---
					0.545 mg/kg	71.5	60.0	130	---
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	0.5 mg/kg	95.3	60.0	130	---
					0.135 mg/kg	71.7	60.0	130	---
benzo(b+j)fluoranthene	---	E641A-L	0.01	mg/kg	0.5 mg/kg	87.0	60.0	130	---
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	0.5 mg/kg	94.3	60.0	130	---
					0.377 mg/kg	71.2	60.0	130	---
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	0.5 mg/kg	94.6	60.0	130	---
					0.34 mg/kg	71.3	60.0	130	---
chrysene	218-01-9	E641A-L	0.01	mg/kg	0.5 mg/kg	96.7	60.0	130	---
					0.666 mg/kg	74.2	60.0	130	---
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	0.5 mg/kg	94.0	60.0	130	---
					1.196 mg/kg	74.9	60.0	130	---
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	0.5 mg/kg	96.0	60.0	130	---



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 157778) - continued									
fluorene	86-73-7	E641A-L	0.01	mg/kg	0.5 mg/kg	94.6	60.0	130	----
					0.989 mg/kg	76.6	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	0.5 mg/kg	88.9	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	0.5 mg/kg	95.1	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	0.5 mg/kg	92.9	60.0	130	----
					1.088 mg/kg	70.7	60.0	130	----
naphthalene	91-20-3	E641A-L	0.01	mg/kg	0.5 mg/kg	96.5	50.0	130	----
					1.03 mg/kg	73.2	50.0	130	----
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	0.5 mg/kg	92.8	60.0	130	----
					1.13 mg/kg	72.4	60.0	130	----
pyrene	129-00-0	E641A-L	0.01	mg/kg	0.5 mg/kg	101	60.0	130	----
quinoline	6027-02-7	E641A-L	0.01	mg/kg	0.5 mg/kg	84.0	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 157779)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	96.4	60.0	130	----
					0.638 mg/kg	73.3	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	96.9	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	85.9	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	91.7	60.0	130	----
					0.32 mg/kg	82.0	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	90.4	60.0	130	----
					0.545 mg/kg	71.5	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	95.3	60.0	130	----
					0.135 mg/kg	71.7	60.0	130	----
benzo(b+j)fluoranthene	----	E641A	0.05	mg/kg	0.5 mg/kg	87.0	60.0	130	----
					0.793 mg/kg	69.5	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	94.3	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	94.6	60.0	130	----
					0.34 mg/kg	71.3	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	96.7	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	94.0	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	96.0	60.0	130	----
					1.757 mg/kg	73.7	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	94.6	60.0	130	----
					0.989 mg/kg	76.6	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	88.9	60.0	130	----
					0.445 mg/kg	70.2	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	0.5 mg/kg	95.1	60.0	130	----
					1.256 mg/kg	73.5	60.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 157779) - continued									
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	0.5 mg/kg	92.9	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	0.5 mg/kg	96.5	50.0	130	----
					1.03 mg/kg	73.2	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	92.8	60.0	130	----
					1.13 mg/kg	72.4	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	----
					1.325 mg/kg	73.0	60.0	130	----
quinoline	6027-02-7	E641A	0.05	mg/kg	0.5 mg/kg	84.0	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 158527)									
acenaphthene	83-32-9	E641A-L	0.005	mg/kg	1 mg/kg	98.4	60.0	130	----
					0.638 mg/kg	96.4	60.0	130	----
acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	1 mg/kg	97.7	60.0	130	----
acridine	260-94-6	E641A-L	0.01	mg/kg	1 mg/kg	90.1	60.0	130	----
anthracene	120-12-7	E641A-L	0.004	mg/kg	1 mg/kg	93.5	60.0	130	----
benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	1 mg/kg	90.5	60.0	130	----
benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	1 mg/kg	87.0	60.0	130	----
					0.135 mg/kg	77.3	60.0	130	----
benzo(b+j)fluoranthene	----	E641A-L	0.01	mg/kg	1 mg/kg	87.8	60.0	130	----
					0.793 mg/kg	87.7	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	1 mg/kg	97.0	60.0	130	----
					0.377 mg/kg	98.3	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	1 mg/kg	98.3	60.0	130	----
					0.34 mg/kg	97.1	60.0	130	----
chrysene	218-01-9	E641A-L	0.01	mg/kg	1 mg/kg	94.8	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	1 mg/kg	101	60.0	130	----
					1.196 mg/kg	102	60.0	130	----
fluoranthene	206-44-0	E641A-L	0.01	mg/kg	1 mg/kg	97.6	60.0	130	----
fluorene	86-73-7	E641A-L	0.01	mg/kg	1 mg/kg	97.5	60.0	130	----
					0.989 mg/kg	96.2	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	1 mg/kg	92.4	60.0	130	----
					0.445 mg/kg	89.7	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	1 mg/kg	96.7	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	1 mg/kg	95.1	60.0	130	----
					1.088 mg/kg	91.1	60.0	130	----
naphthalene	91-20-3	E641A-L	0.01	mg/kg	1 mg/kg	96.5	50.0	130	----
					1.03 mg/kg	100	50.0	130	----
phenanthrene	85-01-8	E641A-L	0.01	mg/kg	1 mg/kg	96.4	60.0	130	----
pyrene	129-00-0	E641A-L	0.01	mg/kg	1 mg/kg	101	60.0	130	----



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Laboratory Control Sample (LCS) Report				Qualifier
					Spike Concentration	Recovery (%) LCS	Recovery Limits (%)		
						Low	High		
Polycyclic Aromatic Hydrocarbons (QCLot: 158527) - continued									
quinoline	6027-02-7	E641A-L	0.01	mg/kg	1 mg/kg	87.0	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 158529)									
acenaphthene	83-32-9	E641A	0.05	mg/kg	1 mg/kg	98.4	60.0	130	----
					0.638 mg/kg	96.4	60.0	130	----
acenaphthylene	208-96-8	E641A	0.05	mg/kg	1 mg/kg	97.7	60.0	130	----
					0.2 mg/kg	94.3	60.0	130	----
acridine	260-94-6	E641A	0.05	mg/kg	1 mg/kg	90.1	60.0	130	----
anthracene	120-12-7	E641A	0.05	mg/kg	1 mg/kg	93.5	60.0	130	----
benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	1 mg/kg	90.5	60.0	130	----
					0.545 mg/kg	88.6	60.0	130	----
benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	1 mg/kg	87.0	60.0	130	----
benzo(b+)fluoranthene	----	E641A	0.05	mg/kg	1 mg/kg	87.8	60.0	130	----
benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	1 mg/kg	97.0	60.0	130	----
benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	1 mg/kg	98.3	60.0	130	----
					0.34 mg/kg	97.1	60.0	130	----
chrysene	218-01-9	E641A	0.05	mg/kg	1 mg/kg	94.8	60.0	130	----
dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	1 mg/kg	101	60.0	130	----
					1.196 mg/kg	102	60.0	130	----
fluoranthene	206-44-0	E641A	0.05	mg/kg	1 mg/kg	97.6	60.0	130	----
fluorene	86-73-7	E641A	0.05	mg/kg	1 mg/kg	97.5	60.0	130	----
					0.989 mg/kg	96.2	60.0	130	----
indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	1 mg/kg	92.4	60.0	130	----
					0.445 mg/kg	89.7	60.0	130	----
methylnaphthalene, 1-	90-12-0	E641A	0.05	mg/kg	1 mg/kg	96.7	60.0	130	----
					1.256 mg/kg	97.0	60.0	130	----
methylnaphthalene, 2-	91-57-6	E641A	0.05	mg/kg	1 mg/kg	95.1	60.0	130	----
naphthalene	91-20-3	E641A	0.05	mg/kg	1 mg/kg	96.5	50.0	130	----
phenanthrene	85-01-8	E641A	0.05	mg/kg	1 mg/kg	96.4	60.0	130	----
					1.13 mg/kg	91.3	60.0	130	----
pyrene	129-00-0	E641A	0.05	mg/kg	1 mg/kg	101	60.0	130	----
quinoline	6027-02-7	E641A	0.05	mg/kg	1 mg/kg	87.0	60.0	130	----
Polychlorinated Biphenyls (QCLot: 157781)									
Aroclor 1260	11096-82-5	E685	0.01	mg/kg	0.125 mg/kg	98.6	65.0	130	----
Polychlorinated Biphenyls (QCLot: 158531)									
Aroclor 1260	11096-82-5	E685	0.01	mg/kg	0.125 mg/kg	99.4	65.0	130	----



Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
TCLP Extractables (QCLot: 166099)										
VA21A3477-014	BH21-05-01	benzo(a)pyrene, TCLP	50-32-8	E644	0.550 µg/L	0.5 µg/L	110	50.0	150	----
TCLP Metals (QCLot: 166096)										
VA21A4766-002	Anonymous	mercury, TCLP	7439-97-6	E512	0.0009 mg/L	0.001 mg/L	92.0	50.0	140	----
TCLP Metals (QCLot: 166201)										
VA21A3477-011	BH21-04-01	arsenic, TCLP	7440-38-2	E444	4.8 mg/L	5 mg/L	96.6	50.0	140	----
		lead, TCLP	7439-92-1	E444	10.1 mg/L	10 mg/L	101	50.0	140	----
Volatile Organic Compounds (QCLot: 156680)										
VA21A3477-005	BH21-02-02	benzene	71-43-2	E611A	1.90 mg/kg	3.125 mg/kg	87.2	60.0	140	----
		ethylbenzene	100-41-4	E611A	1.58 mg/kg	3.125 mg/kg	72.4	60.0	140	----
		methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	2.02 mg/kg	3.125 mg/kg	92.5	60.0	140	----
		styrene	100-42-5	E611A	1.71 mg/kg	3.125 mg/kg	78.3	60.0	140	----
		toluene	108-88-3	E611A	1.71 mg/kg	3.125 mg/kg	78.5	60.0	140	----
		xylene, m+p-	179601-23-1	E611A	4.44 mg/kg	6.25 mg/kg	102	60.0	140	----
		xylene, o-	95-47-6	E611A	1.65 mg/kg	3.125 mg/kg	75.7	60.0	140	----
Hydrocarbons (QCLot: 156681)										
VA21A3477-007	BH21-02-04	F1 (C6-C10)	----	E581.VH+F1	151 mg/kg	187.5 mg/kg	77.1	60.0	140	----
		VHs (C6-C10)	----	E581.VH+F1	151 mg/kg	171.9 mg/kg	84.0	60.0	140	----
Polychlorinated Biphenyls (QCLot: 157781)										
VA21A3477-001	BH21-01-01	Aroclor 1260	11096-82-5	E685	0.063 mg/kg	0.125 mg/kg	76.0	50.0	150	----
Polychlorinated Biphenyls (QCLot: 158531)										
VA21A3477-021	BH21-07-01	Aroclor 1260	11096-82-5	E685	0.080 mg/kg	0.125 mg/kg	77.2	50.0	150	----



Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix: **Soil/Solid**

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Particle Size (QCLot: 157572)									
QC-157572-001	RM	passing (0.002 mm)	----	E184	19.34 %	104	60.0	140	----
QC-157572-001	RM	passing (0.004 mm)	----	E184	21.51 %	103	60.0	140	----
QC-157572-001	RM	passing (0.005 mm)	----	E184	22.6 %	102	60.0	140	----
QC-157572-001	RM	passing (0.020 mm)	----	E184	35.27 %	107	60.0	140	----
QC-157572-001	RM	passing (0.0312 mm)	----	E184	41.61 %	101	60.0	140	----
Saturated Paste Extractables (QCLot: 157785)									
QC-157785-003	RM	chloride, soluble ion content	16887-00-6	E239.Cl	994 mg/L	90.9	70.0	130	----
Saturated Paste Extractables (QCLot: 157786)									
QC-157786-003	RM	% saturation	----	E141	50.2 %	104	80.0	120	----
Saturated Paste Extractables (QCLot: 157788)									
QC-157788-003	RM	sodium, soluble ion content	17341-25-2	E442	610 mg/L	91.1	70.0	130	----
Saturated Paste Extractables (QCLot: 158535)									
QC-158535-003	RM	chloride, soluble ion content	16887-00-6	E239.Cl	994 mg/L	91.5	70.0	130	----
Saturated Paste Extractables (QCLot: 158536)									
QC-158536-003	RM	% saturation	----	E141	50.2 %	108	80.0	120	----
Saturated Paste Extractables (QCLot: 158537)									
QC-158537-003	RM	sodium, soluble ion content	17341-25-2	E442	610 mg/L	87.4	70.0	130	----
Metals (QCLot: 157782)									
QC-157782-003	SCP SS-2	mercury	7439-97-6	E510	0.059 mg/kg	101	70.0	130	----
Metals (QCLot: 157783)									
QC-157783-003	SCP SS-2	aluminum	7429-90-5	E440	9817 mg/kg	110	70.0	130	----
QC-157783-003	SCP SS-2	antimony	7440-36-0	E440	3.99 mg/kg	98.4	70.0	130	----
QC-157783-003	SCP SS-2	arsenic	7440-38-2	E440	3.73 mg/kg	101	70.0	130	----
QC-157783-003	SCP SS-2	barium	7440-39-3	E440	105 mg/kg	105	70.0	130	----
QC-157783-003	SCP SS-2	beryllium	7440-41-7	E440	0.349 mg/kg	102	70.0	130	----
QC-157783-003	SCP SS-2	boron	7440-42-8	E440	8.5 mg/kg	114	40.0	160	----
QC-157783-003	SCP SS-2	cadmium	7440-43-9	E440	0.91 mg/kg	100	70.0	130	----
QC-157783-003	SCP SS-2	calcium	7440-70-2	E440	31082 mg/kg	102	70.0	130	----
QC-157783-003	SCP SS-2	chromium	7440-47-3	E440	101 mg/kg	116	70.0	130	----



Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 157783) - continued									
QC-157783-003	SCP SS-2	cobalt	7440-48-4	E440	6.9 mg/kg	102	70.0	130	----
QC-157783-003	SCP SS-2	copper	7440-50-8	E440	123 mg/kg	102	70.0	130	----
QC-157783-003	SCP SS-2	iron	7439-89-6	E440	23558 mg/kg	102	70.0	130	----
QC-157783-003	SCP SS-2	lead	7439-92-1	E440	267 mg/kg	105	70.0	130	----
QC-157783-003	SCP SS-2	lithium	7439-93-2	E440	9.5 mg/kg	102	70.0	130	----
QC-157783-003	SCP SS-2	magnesium	7439-95-4	E440	5509 mg/kg	105	70.0	130	----
QC-157783-003	SCP SS-2	manganese	7439-96-5	E440	269 mg/kg	111	70.0	130	----
QC-157783-003	SCP SS-2	molybdenum	7439-98-7	E440	1.03 mg/kg	# 139	70.0	130	MES
QC-157783-003	SCP SS-2	nickel	7440-02-0	E440	26.7 mg/kg	113	70.0	130	----
QC-157783-003	SCP SS-2	phosphorus	7723-14-0	E440	752 mg/kg	99.1	70.0	130	----
QC-157783-003	SCP SS-2	potassium	7440-09-7	E440	1587 mg/kg	116	70.0	130	----
QC-157783-003	SCP SS-2	sodium	7440-23-5	E440	797 mg/kg	106	70.0	130	----
QC-157783-003	SCP SS-2	strontium	7440-24-6	E440	86.1 mg/kg	106	70.0	130	----
QC-157783-003	SCP SS-2	thallium	7440-28-0	E440	0.0786 mg/kg	92.7	40.0	160	----
QC-157783-003	SCP SS-2	tin	7440-31-5	E440	10.6 mg/kg	100	70.0	130	----
QC-157783-003	SCP SS-2	titanium	7440-32-6	E440	839 mg/kg	113	70.0	130	----
QC-157783-003	SCP SS-2	uranium	7440-61-1	E440	0.52 mg/kg	106	70.0	130	----
QC-157783-003	SCP SS-2	vanadium	7440-62-2	E440	32.7 mg/kg	106	70.0	130	----
QC-157783-003	SCP SS-2	zinc	7440-66-6	E440	297 mg/kg	103	70.0	130	----
QC-157783-003	SCP SS-2	zirconium	7440-67-7	E440	5.73 mg/kg	99.2	70.0	130	----
Metals (QCLot: 158532)									
QC-158532-003	SCP SS-2	aluminum	7429-90-5	E440	9817 mg/kg	116	70.0	130	----
QC-158532-003	SCP SS-2	antimony	7440-36-0	E440	3.99 mg/kg	108	70.0	130	----
QC-158532-003	SCP SS-2	arsenic	7440-38-2	E440	3.73 mg/kg	106	70.0	130	----
QC-158532-003	SCP SS-2	barium	7440-39-3	E440	105 mg/kg	106	70.0	130	----
QC-158532-003	SCP SS-2	beryllium	7440-41-7	E440	0.349 mg/kg	100	70.0	130	----
QC-158532-003	SCP SS-2	boron	7440-42-8	E440	8.5 mg/kg	115	40.0	160	----
QC-158532-003	SCP SS-2	cadmium	7440-43-9	E440	0.91 mg/kg	108	70.0	130	----
QC-158532-003	SCP SS-2	calcium	7440-70-2	E440	31082 mg/kg	109	70.0	130	----
QC-158532-003	SCP SS-2	chromium	7440-47-3	E440	101 mg/kg	119	70.0	130	----
QC-158532-003	SCP SS-2	cobalt	7440-48-4	E440	6.9 mg/kg	106	70.0	130	----
QC-158532-003	SCP SS-2	copper	7440-50-8	E440	123 mg/kg	101	70.0	130	----



Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 158532) - continued									
QC-158532-003	SCP SS-2	iron	7439-89-6	E440	23558 mg/kg	108	70.0	130	----
QC-158532-003	SCP SS-2	lead	7439-92-1	E440	267 mg/kg	109	70.0	130	----
QC-158532-003	SCP SS-2	lithium	7439-93-2	E440	9.5 mg/kg	106	70.0	130	----
QC-158532-003	SCP SS-2	magnesium	7439-95-4	E440	5509 mg/kg	110	70.0	130	----
QC-158532-003	SCP SS-2	manganese	7439-96-5	E440	269 mg/kg	115	70.0	130	----
QC-158532-003	SCP SS-2	molybdenum	7439-98-7	E440	1.03 mg/kg	100	70.0	130	----
QC-158532-003	SCP SS-2	nickel	7440-02-0	E440	26.7 mg/kg	107	70.0	130	----
QC-158532-003	SCP SS-2	phosphorus	7723-14-0	E440	752 mg/kg	108	70.0	130	----
QC-158532-003	SCP SS-2	potassium	7440-09-7	E440	1587 mg/kg	121	70.0	130	----
QC-158532-003	SCP SS-2	sodium	7440-23-5	E440	797 mg/kg	110	70.0	130	----
QC-158532-003	SCP SS-2	strontium	7440-24-6	E440	86.1 mg/kg	112	70.0	130	----
QC-158532-003	SCP SS-2	thallium	7440-28-0	E440	0.0786 mg/kg	100.0	40.0	160	----
QC-158532-003	SCP SS-2	tin	7440-31-5	E440	10.6 mg/kg	98.1	70.0	130	----
QC-158532-003	SCP SS-2	titanium	7440-32-6	E440	839 mg/kg	117	70.0	130	----
QC-158532-003	SCP SS-2	uranium	7440-61-1	E440	0.52 mg/kg	115	70.0	130	----
QC-158532-003	SCP SS-2	vanadium	7440-62-2	E440	32.7 mg/kg	112	70.0	130	----
QC-158532-003	SCP SS-2	zinc	7440-66-6	E440	297 mg/kg	104	70.0	130	----
QC-158532-003	SCP SS-2	zirconium	7440-67-7	E440	5.73 mg/kg	102	70.0	130	----
Metals (QCLot: 158533)									
QC-158533-003	SCP SS-2	mercury	7439-97-6	E510	0.059 mg/kg	93.9	70.0	130	----
Hydrocarbons (QCLot: 157777)									
QC-157777-003	Petroleum Hydrocarbon IRM	EPH (C10-C19)	----	E601A	7113 mg/kg	90.6	70.0	130	----
Hydrocarbons (QCLot: 157780)									
QC-157780-003	Petroleum Hydrocarbon IRM	F2 (C10-C16)	----	E601.SG	4720 mg/kg	71.6	70.0	130	----
QC-157780-003	Petroleum Hydrocarbon IRM	F3 (C16-C34)	----	E601.SG	14124 mg/kg	72.2	70.0	130	----
Hydrocarbons (QCLot: 158528)									
QC-158528-003	Petroleum Hydrocarbon IRM	EPH (C19-C32)	----	E601A	10183 mg/kg	99.3	70.0	130	----
Hydrocarbons (QCLot: 158530)									
QC-158530-003	Petroleum Hydrocarbon IRM	F2 (C10-C16)	----	E601.SG	4720 mg/kg	89.9	70.0	130	----
QC-158530-003	Petroleum Hydrocarbon IRM	F3 (C16-C34)	----	E601.SG	14124 mg/kg	90.9	70.0	130	----



Sub-Matrix: Soil/Solid

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Hydrocarbons (QCLot: 158530) - continued									
QC-158530-003	Petroleum Hydrocarbon IRM	F4 (C34-C50)	----	E601.SG	1238 mg/kg	96.8	70.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 157778)									
QC-157778-003	RM	anthracene	120-12-7	E641A-L	0.32 mg/kg	82.0	60.0	130	----
QC-157778-003	RM	benzo(b+j)fluoranthene	----	E641A-L	0.793 mg/kg	69.5	60.0	130	----
QC-157778-003	RM	fluoranthene	206-44-0	E641A-L	1.757 mg/kg	73.7	60.0	130	----
QC-157778-003	RM	indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.445 mg/kg	70.2	60.0	130	----
QC-157778-003	RM	methylnaphthalene, 1-	90-12-0	E641A-L	1.256 mg/kg	73.5	60.0	130	----
QC-157778-003	RM	pyrene	129-00-0	E641A-L	1.325 mg/kg	73.0	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 157779)									
QC-157779-003	RM	acenaphthylene	208-96-8	E641A	0.2 mg/kg	86.9	60.0	130	----
QC-157779-003	RM	benzo(g,h,i)perylene	191-24-2	E641A	0.377 mg/kg	71.2	60.0	130	----
QC-157779-003	RM	chrysene	218-01-9	E641A	0.666 mg/kg	74.2	60.0	130	----
QC-157779-003	RM	dibenz(a,h)anthracene	53-70-3	E641A	1.196 mg/kg	74.9	60.0	130	----
QC-157779-003	RM	methylnaphthalene, 2-	91-57-6	E641A	1.088 mg/kg	70.7	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 158527)									
QC-158527-003	RM	acenaphthylene	208-96-8	E641A-L	0.2 mg/kg	94.3	60.0	130	----
QC-158527-003	RM	anthracene	120-12-7	E641A-L	0.32 mg/kg	86.2	60.0	130	----
QC-158527-003	RM	benz(a)anthracene	56-55-3	E641A-L	0.545 mg/kg	88.6	60.0	130	----
QC-158527-003	RM	chrysene	218-01-9	E641A-L	0.666 mg/kg	107	60.0	130	----
QC-158527-003	RM	fluoranthene	206-44-0	E641A-L	1.757 mg/kg	94.1	60.0	130	----
QC-158527-003	RM	methylnaphthalene, 1-	90-12-0	E641A-L	1.256 mg/kg	97.0	60.0	130	----
QC-158527-003	RM	phenanthrene	85-01-8	E641A-L	1.13 mg/kg	91.3	60.0	130	----
QC-158527-003	RM	pyrene	129-00-0	E641A-L	1.325 mg/kg	94.0	60.0	130	----
Polycyclic Aromatic Hydrocarbons (QCLot: 158529)									
QC-158529-003	RM	anthracene	120-12-7	E641A	0.32 mg/kg	86.2	60.0	130	----
QC-158529-003	RM	benzo(a)pyrene	50-32-8	E641A	0.135 mg/kg	77.3	60.0	130	----
QC-158529-003	RM	benzo(b+j)fluoranthene	----	E641A	0.793 mg/kg	87.7	60.0	130	----
QC-158529-003	RM	benzo(g,h,i)perylene	191-24-2	E641A	0.377 mg/kg	98.3	60.0	130	----
QC-158529-003	RM	chrysene	218-01-9	E641A	0.666 mg/kg	107	60.0	130	----
QC-158529-003	RM	fluoranthene	206-44-0	E641A	1.757 mg/kg	94.1	60.0	130	----
QC-158529-003	RM	methylnaphthalene, 2-	91-57-6	E641A	1.088 mg/kg	91.1	60.0	130	----
QC-158529-003	RM	naphthalene	91-20-3	E641A	1.03 mg/kg	100	50.0	130	----



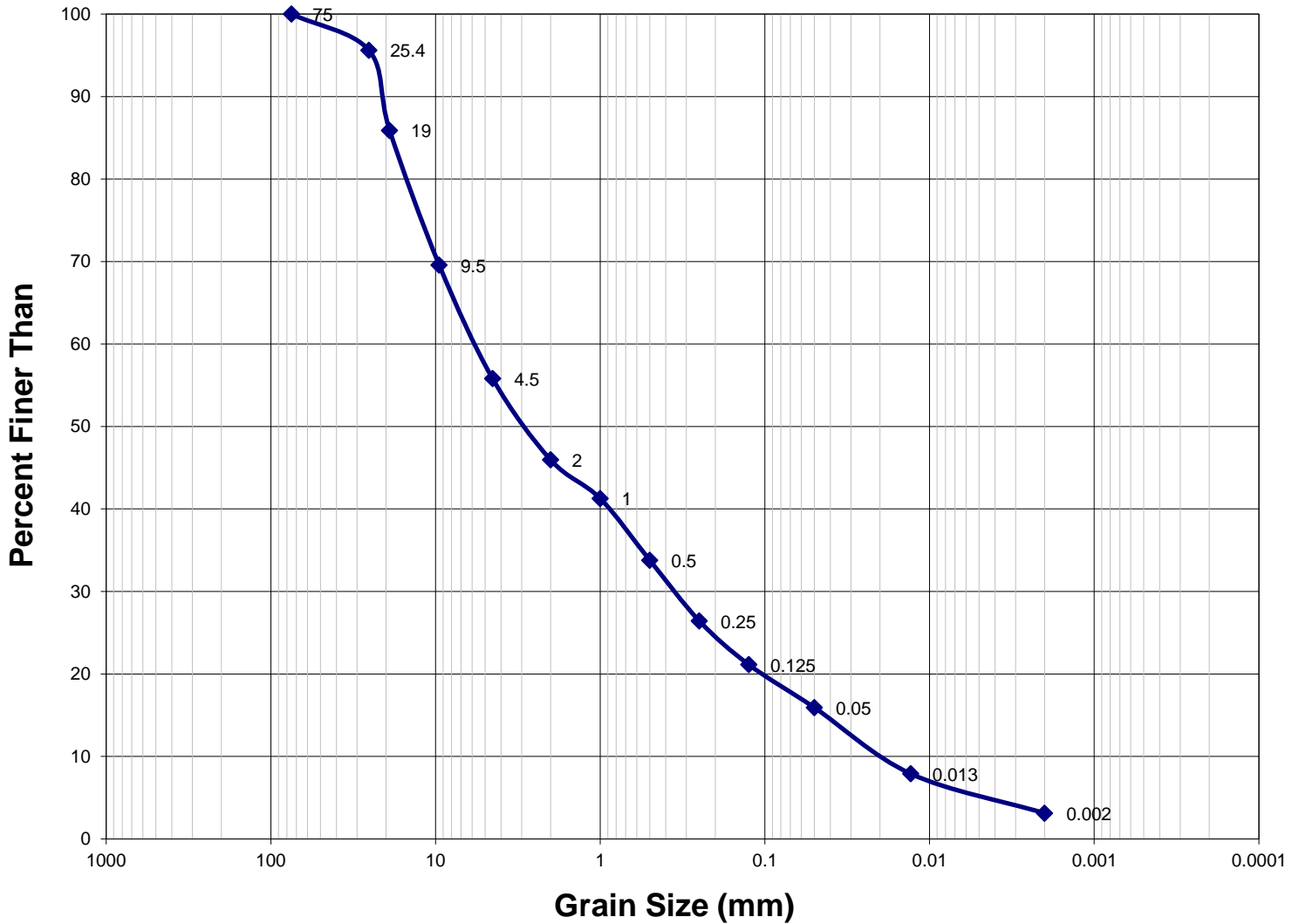
Sub-Matrix: **Soil/Solid**

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Polycyclic Aromatic Hydrocarbons (QCLot: 158529) - continued									
QC-158529-003	RM	pyrene	129-00-0	E641A	1.325 mg/kg	94.0	60.0	130	----

Qualifiers

Qualifier	Description
MES	Data Quality Objective was marginally exceeded (by < 10% absolute) for < 10% of analytes in a Multi-Element Scan / Multi-Parameter Scan (considered acceptable as per OMOE & CCME).

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

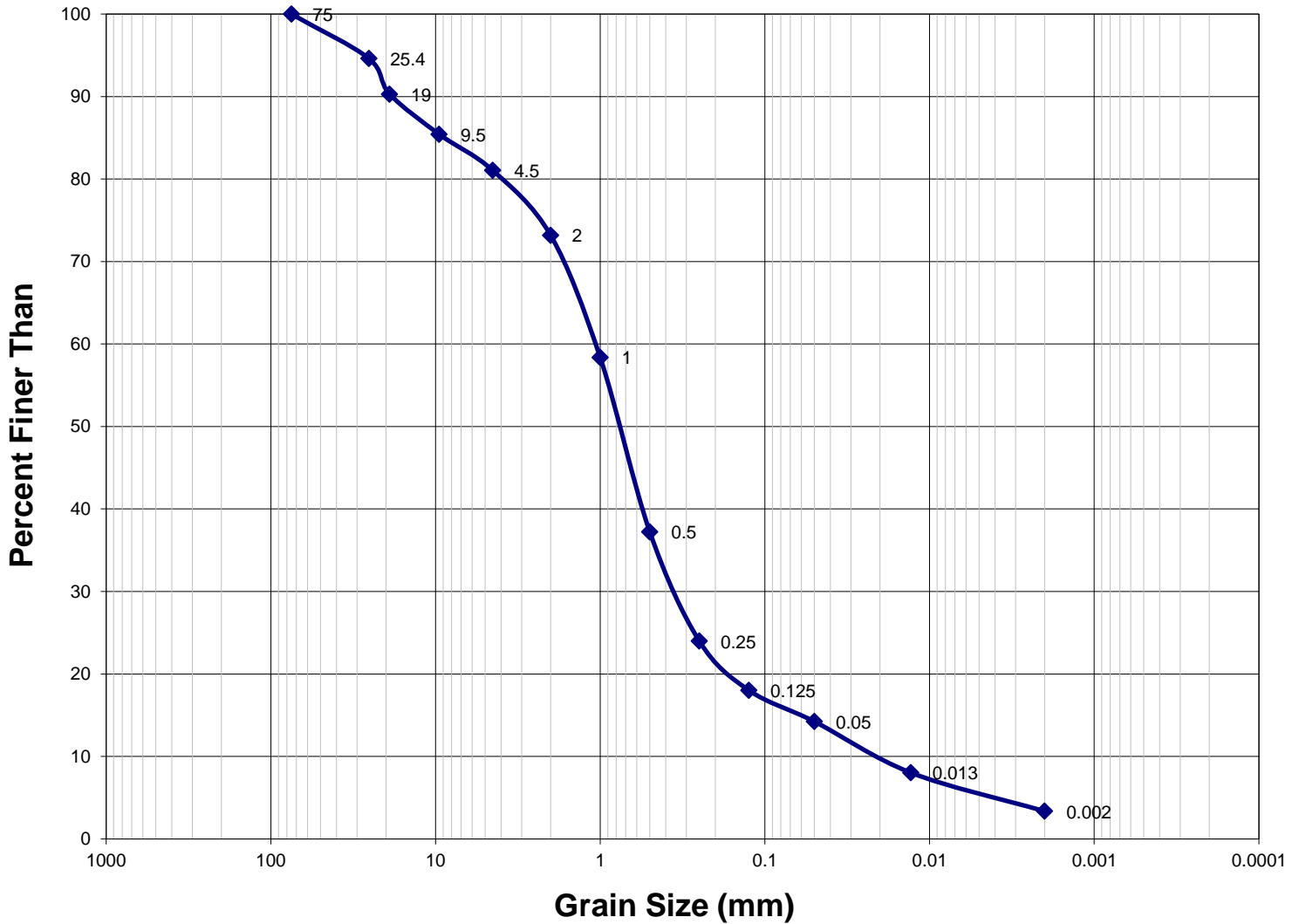
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	44
Coarse Sand	2.0mm - 4.75mm	11
Medium Sand	0.425mm - 2.0mm	12
Fine Sand	0.075mm - 0.425mm	16
Fines	< 0.075mm	18

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	54
Sand	0.05mm - 2mm	30
Silt	0.002mm - 0.05mm	13
Clay	< 0.002mm	3

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

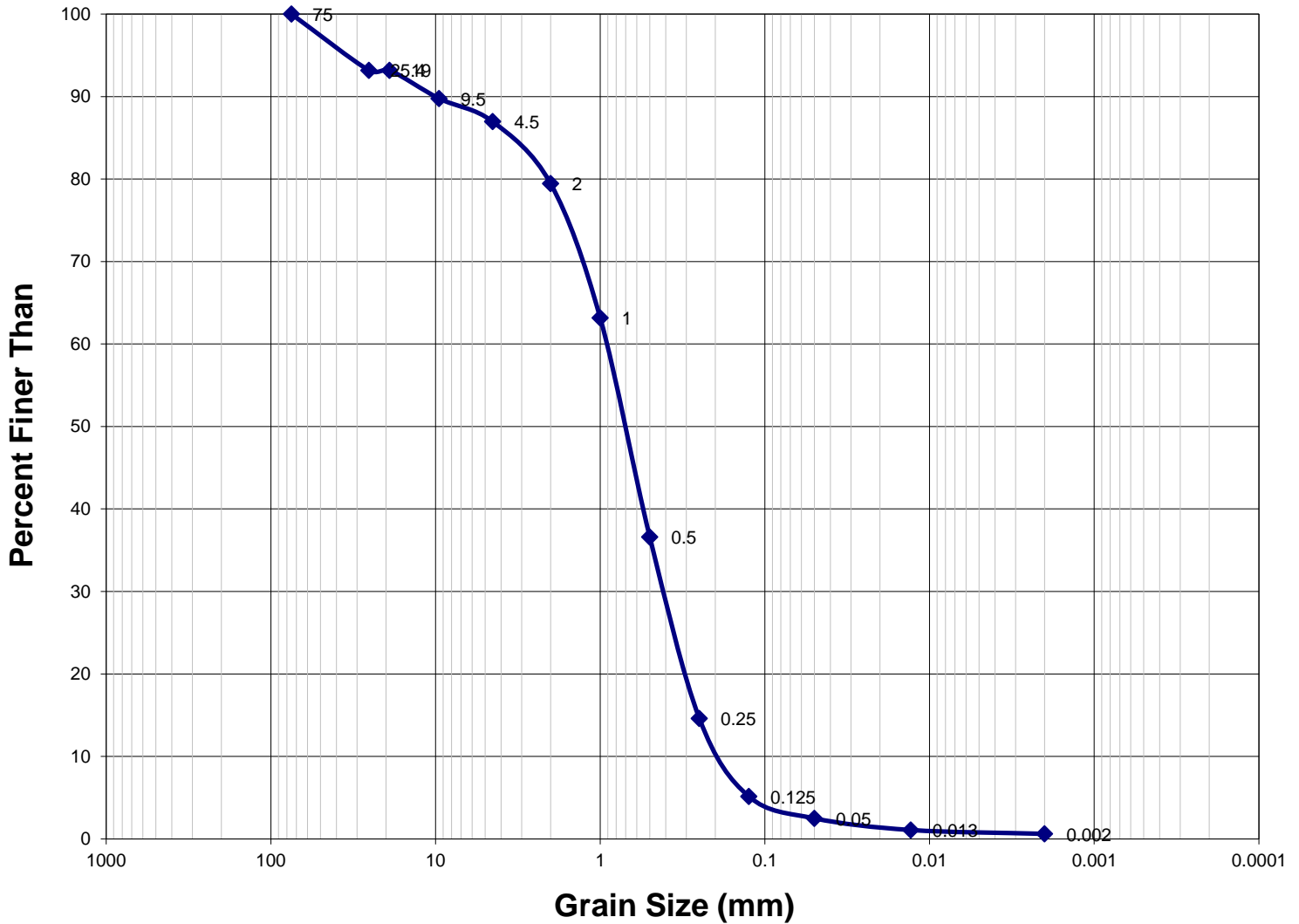
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	19
Coarse Sand	2.0mm - 4.75mm	8
Medium Sand	0.425mm - 2.0mm	36
Fine Sand	0.075mm - 0.425mm	22
Fines	< 0.075mm	15

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	27
Sand	0.05mm - 2mm	59
Silt	0.002mm - 0.05mm	11
Clay	< 0.002mm	3

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	13
Coarse Sand	2.0mm - 4.75mm	8
Medium Sand	0.425mm - 2.0mm	43
Fine Sand	0.075mm - 0.425mm	33
Fines	< 0.075mm	3

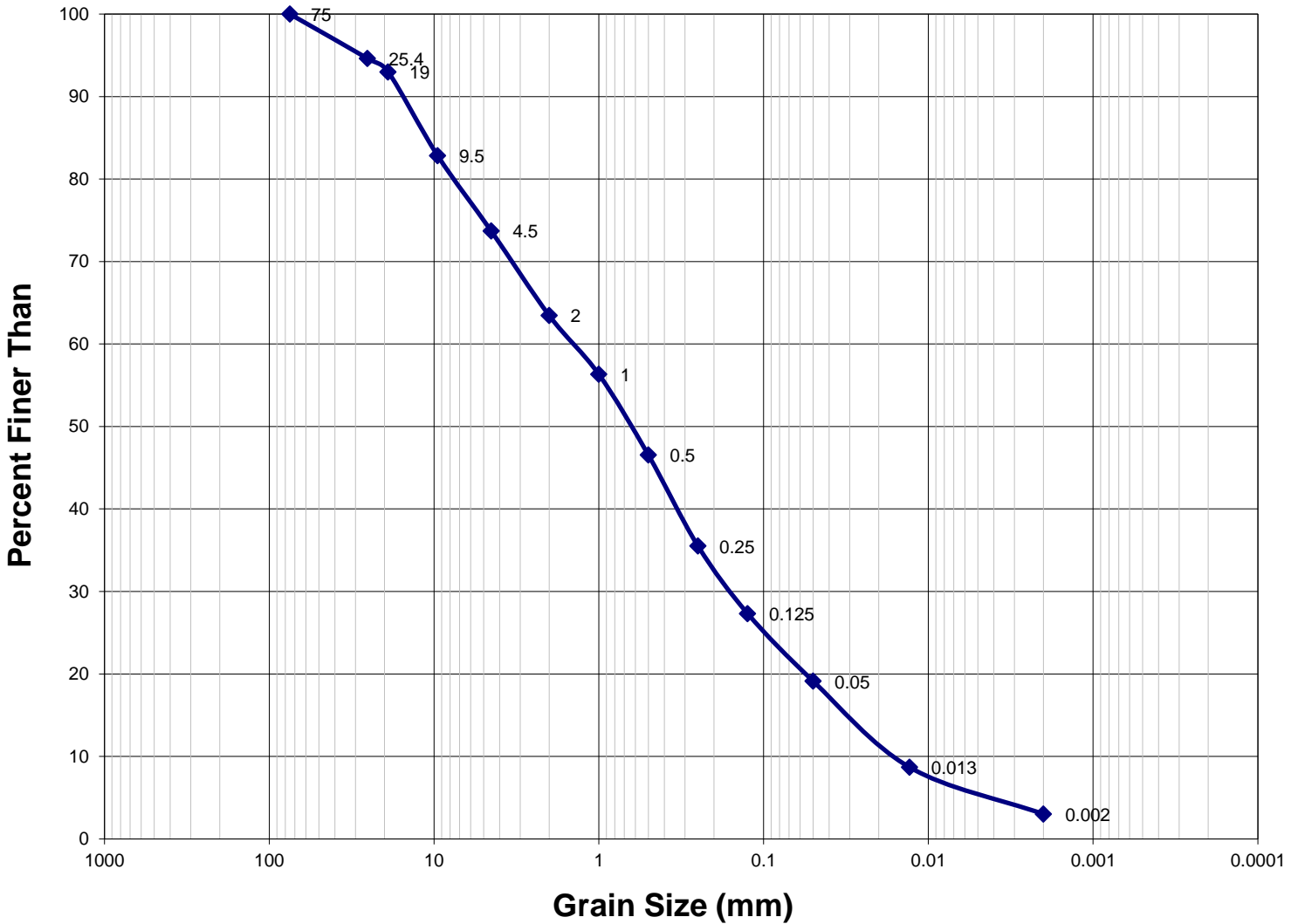
Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	21
Sand	0.05mm - 2mm	77
Silt	0.002mm - 0.05mm	2
Clay	< 0.002mm	1

Texture Sample contains material greater than 4.75mm. T



Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	26
Coarse Sand	2.0mm - 4.75mm	11
Medium Sand	0.425mm - 2.0mm	17
Fine Sand	0.075mm - 0.425mm	25
Fines	< 0.075mm	22

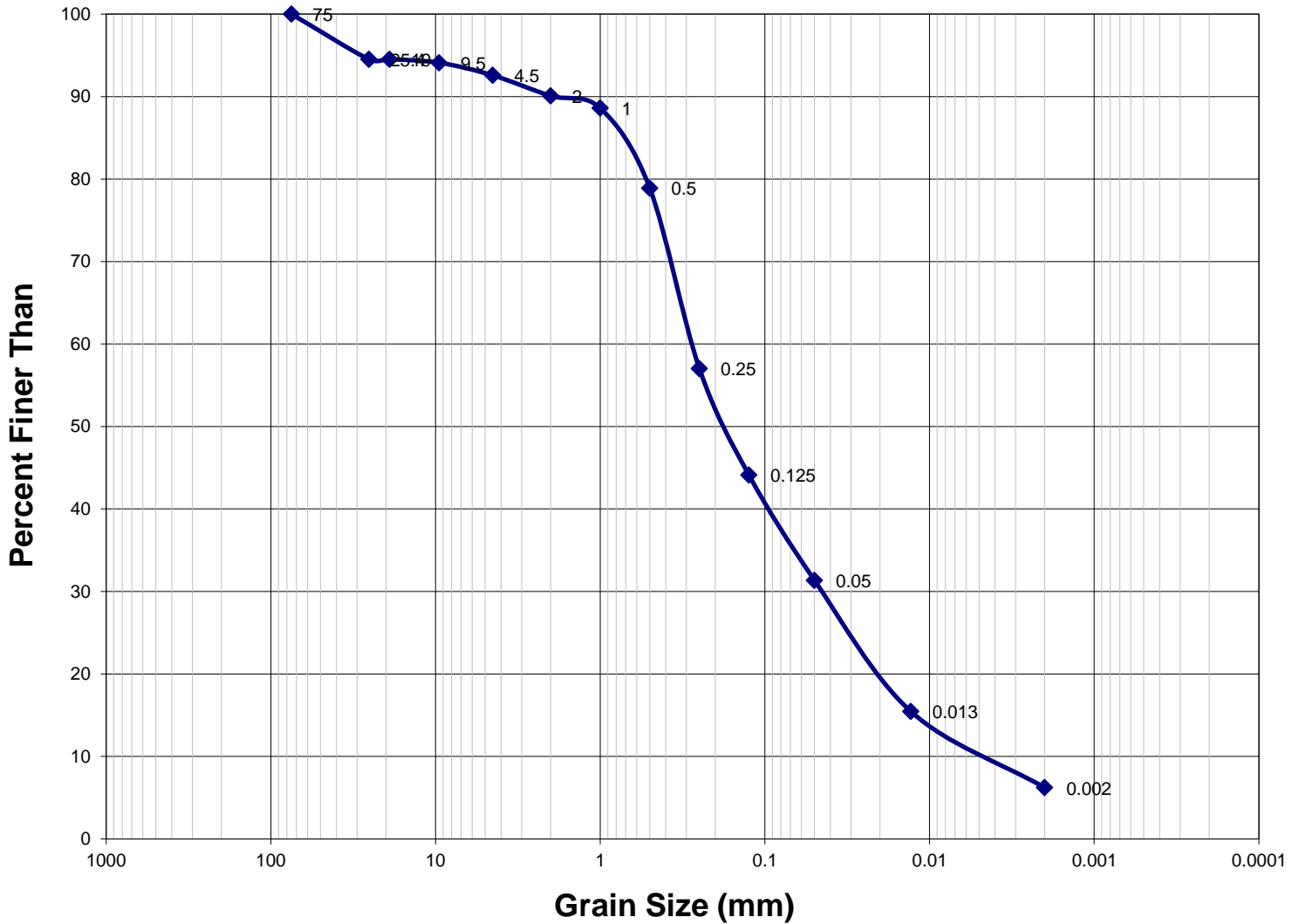
Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	37
Sand	0.05mm - 2mm	44
Silt	0.002mm - 0.05mm	16
Clay	< 0.002mm	3

Texture Sample contains material greater than 4.75mm. T



Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

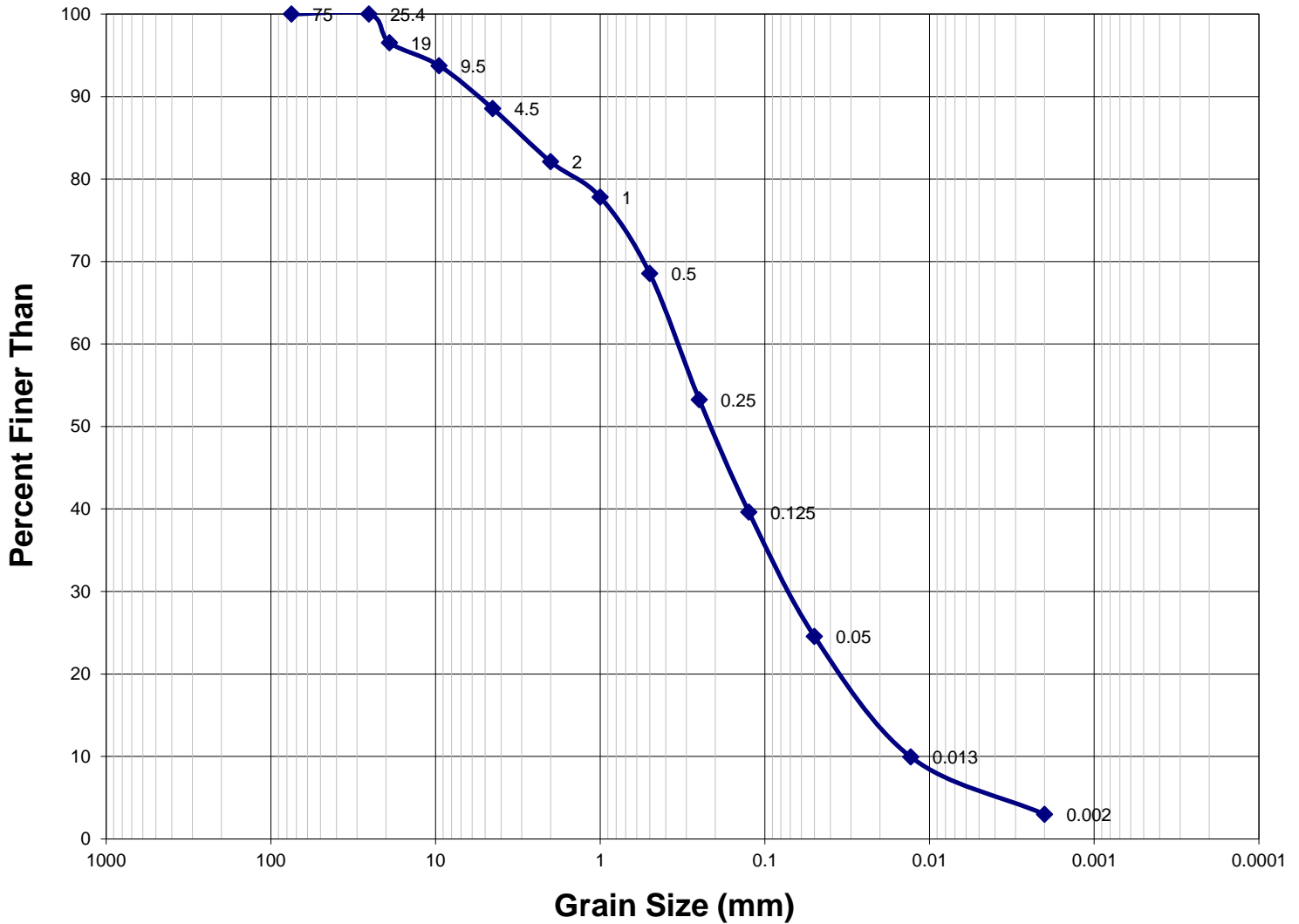
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	7
Coarse Sand	2.0mm - 4.75mm	3
Medium Sand	0.425mm - 2.0mm	11
Fine Sand	0.075mm - 0.425mm	43
Fines	< 0.075mm	36

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	10
Sand	0.05mm - 2mm	59
Silt	0.002mm - 0.05mm	25
Clay	< 0.002mm	6

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	11
Coarse Sand	2.0mm - 4.75mm	7
Medium Sand	0.425mm - 2.0mm	14
Fine Sand	0.075mm - 0.425mm	39
Fines	< 0.075mm	30

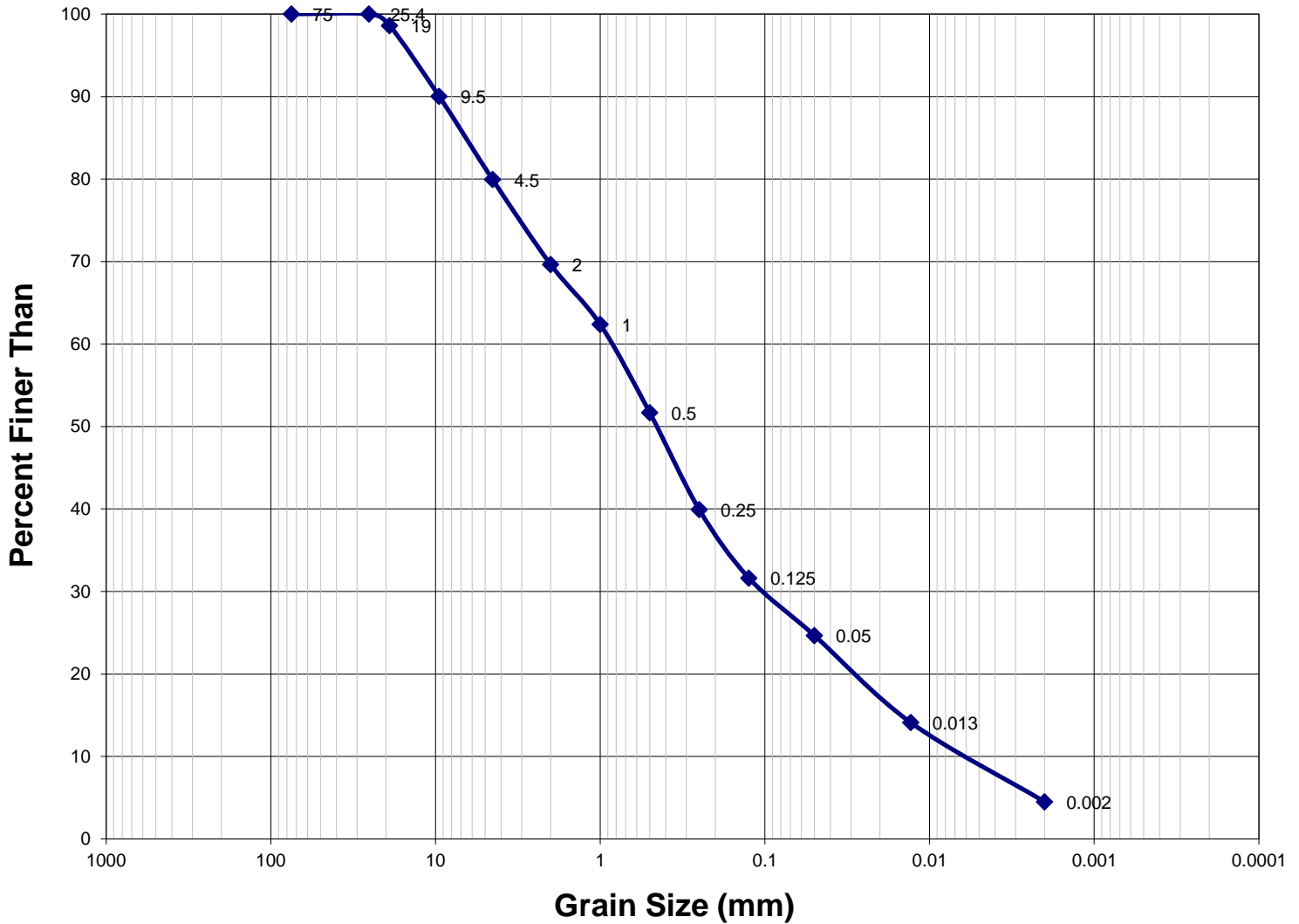
Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	18
Sand	0.05mm - 2mm	58
Silt	0.002mm - 0.05mm	22
Clay	< 0.002mm	3

Texture Sample contains material greater than 4.75mm. T



Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

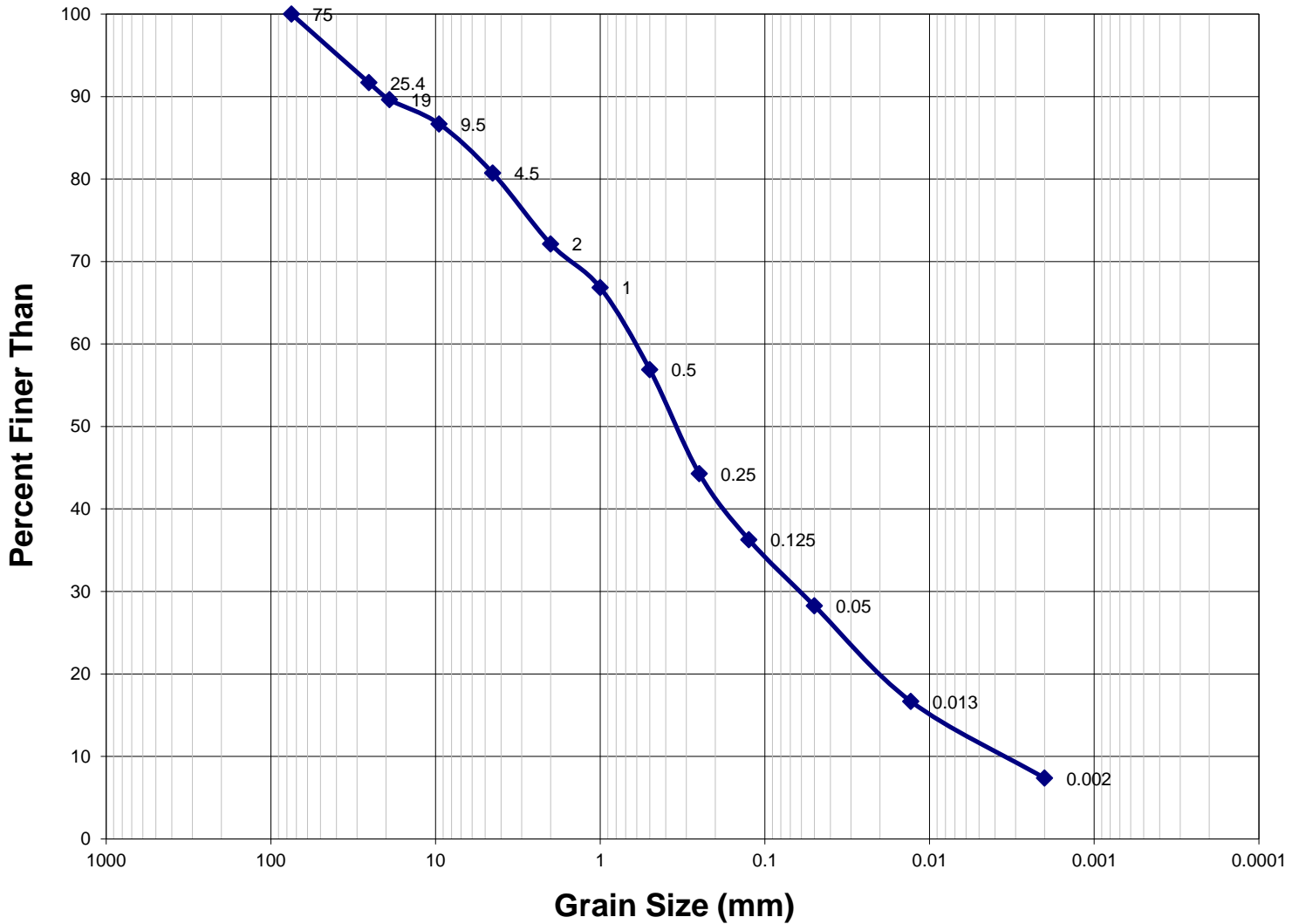
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	20
Coarse Sand	2.0mm - 4.75mm	11
Medium Sand	0.425mm - 2.0mm	18
Fine Sand	0.075mm - 0.425mm	25
Fines	< 0.075mm	27

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	30
Sand	0.05mm - 2mm	45
Silt	0.002mm - 0.05mm	20
Clay	< 0.002mm	5

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	19
Coarse Sand	2.0mm - 4.75mm	9
Medium Sand	0.425mm - 2.0mm	15
Fine Sand	0.075mm - 0.425mm	26
Fines	< 0.075mm	31

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	28
Sand	0.05mm - 2mm	44
Silt	0.002mm - 0.05mm	21
Clay	< 0.002mm	7

Texture: Sample contains material greater than 4.75mm. T



Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	5
Coarse Sand	2.0mm - 4.75mm	1
Medium Sand	0.425mm - 2.0mm	16
Fine Sand	0.075mm - 0.425mm	38
Fines	< 0.075mm	41

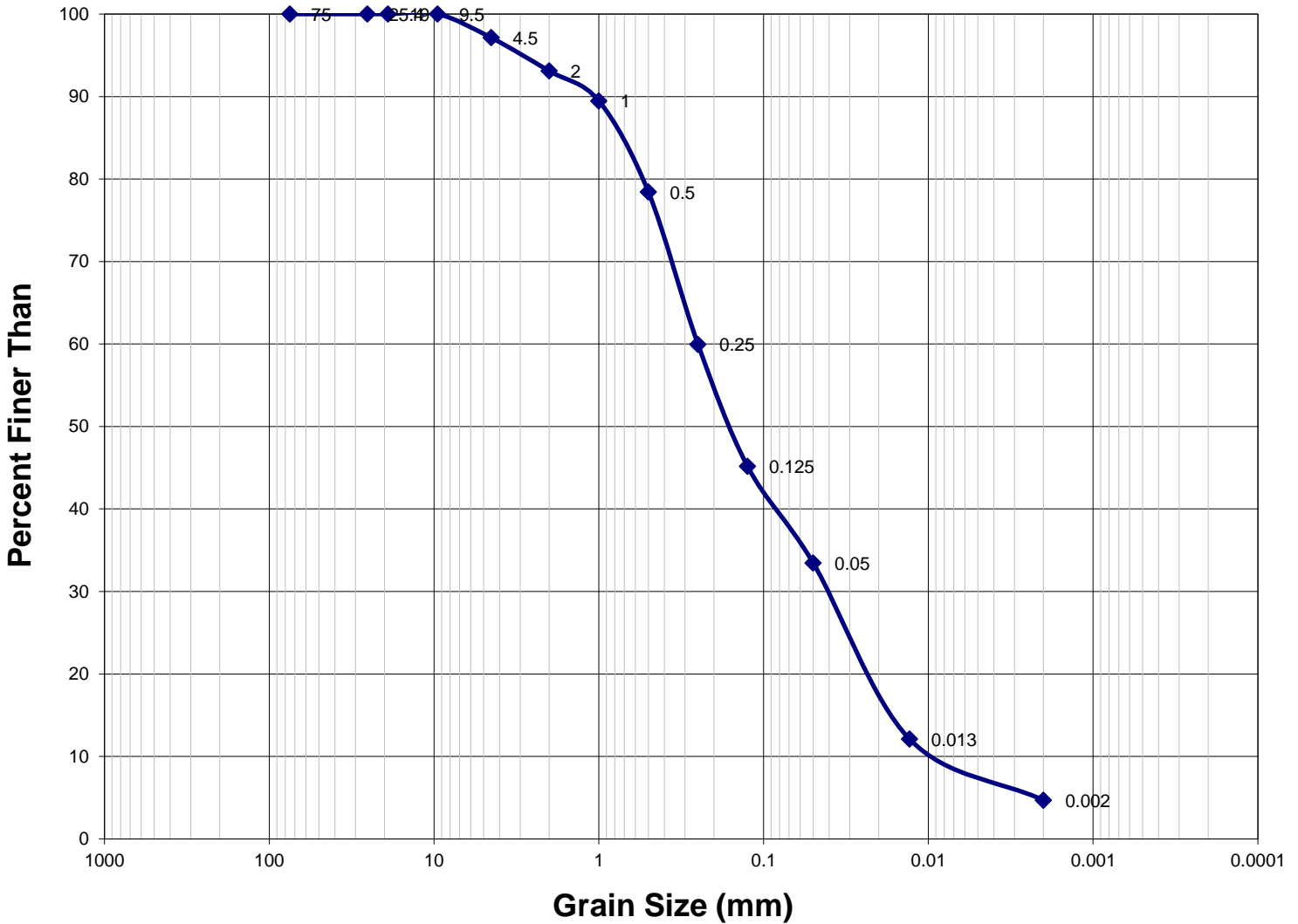
Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	6
Sand	0.05mm - 2mm	57
Silt	0.002mm - 0.05mm	26
Clay	< 0.002mm	11

Texture Sample contains material greater than 4.75mm. T



Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

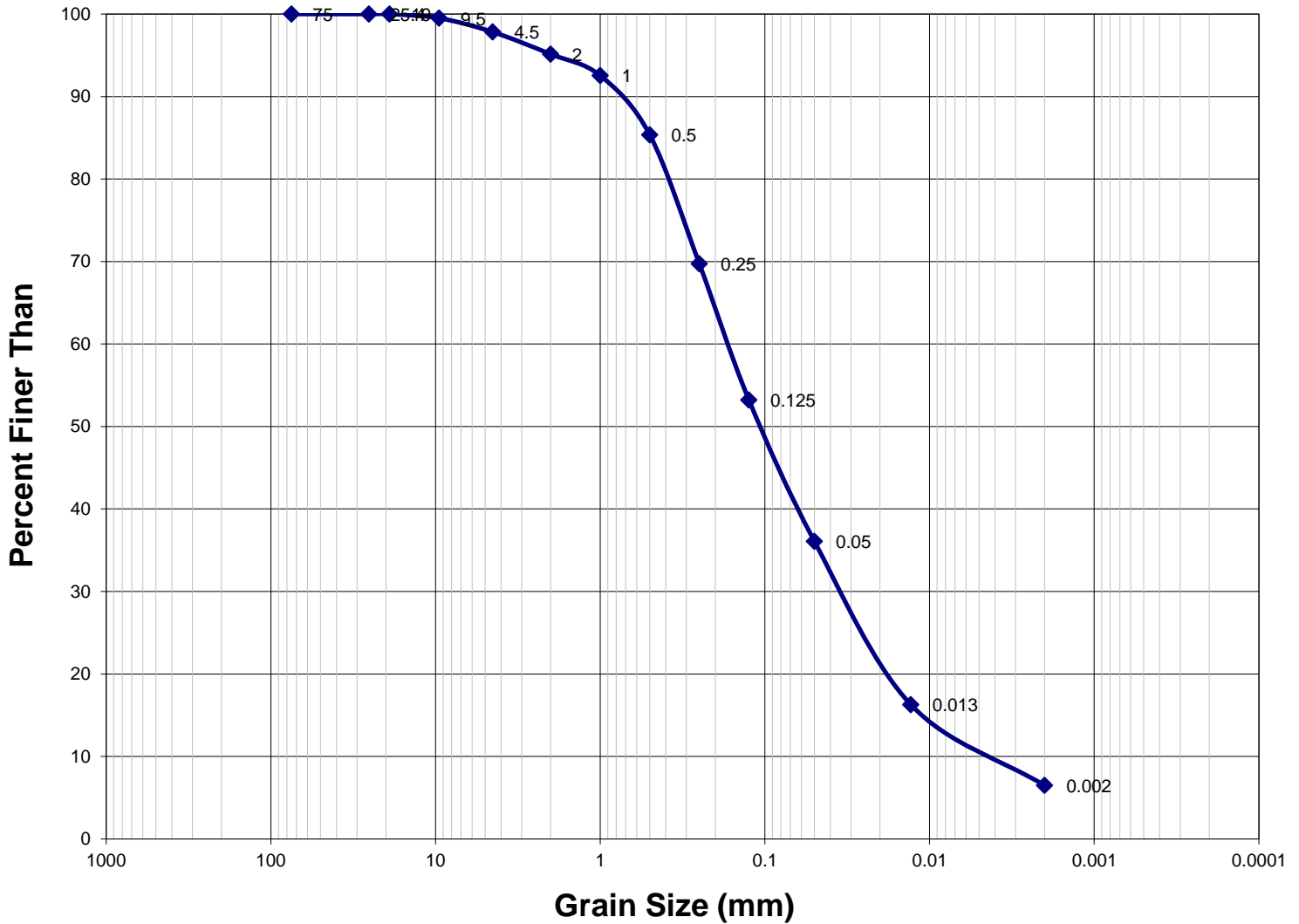
Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	3
Coarse Sand	2.0mm - 4.75mm	4
Medium Sand	0.425mm - 2.0mm	15
Fine Sand	0.075mm - 0.425mm	41
Fines	< 0.075mm	37

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	7
Sand	0.05mm - 2mm	60
Silt	0.002mm - 0.05mm	29
Clay	< 0.002mm	5

Texture Sample contains material greater than 4.75mm. T

Particle Size Distribution Curve



Summary of Results

Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	2
Coarse Sand	2.0mm - 4.75mm	3
Medium Sand	0.425mm - 2.0mm	10
Fine Sand	0.075mm - 0.425mm	44
Fines	< 0.075mm	42

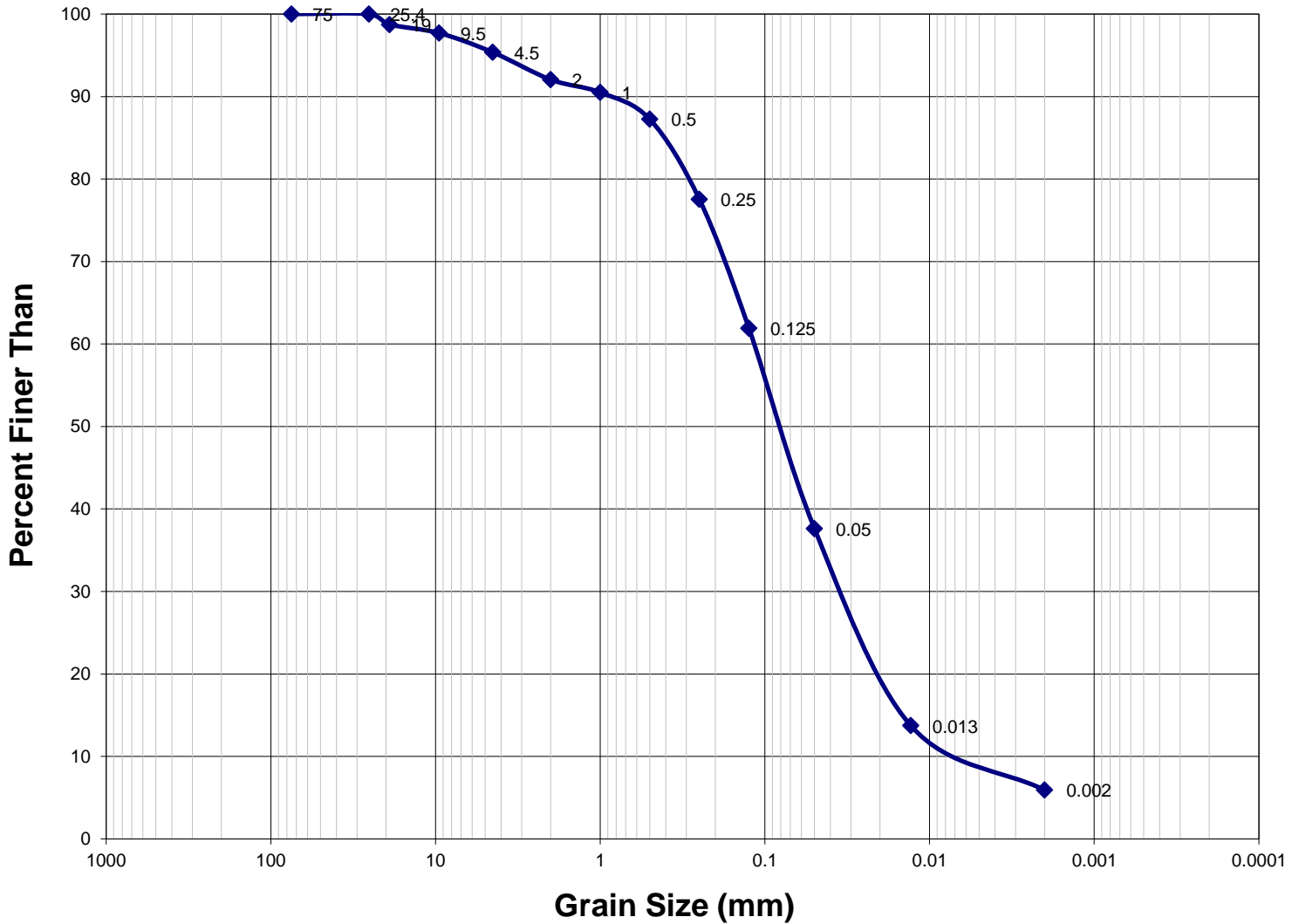
Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	5
Sand	0.05mm - 2mm	59
Silt	0.002mm - 0.05mm	30
Clay	< 0.002mm	6

Texture Sample contains material greater than 4.75mm. T



Particle Size Distribution Curve



Summary of Results

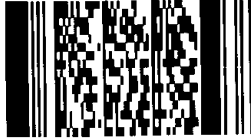
Unified Soil Classification System (USCS)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	4.75mm - 3"	5
Coarse Sand	2.0mm - 4.75mm	3
Medium Sand	0.425mm - 2.0mm	5
Fine Sand	0.075mm - 0.425mm	42
Fines	< 0.075mm	46

Canadian Soil Survey Committee (CSSC)

Size Class	Size Range	Wt. (%)
Cobbles	> 3"	0
Gravel	2mm - 3"	8
Sand	0.05mm - 2mm	54
Silt	0.002mm - 0.05mm	32
Clay	< 0.002mm	6

Texture Sample contains material greater than 4.75mm. T

Report To Contact and company name below will appear on the final report		Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																																																																																																																																																																		
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Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)		SAMPLE CONDITION AS RECEIVED (lab use only)																																																																																																																																																																																																		
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		1. Please run all PAHs analysis (including individuals and total PAHs) 2. Analytical Procs Per ALS-SNC-Lavalin price list dated June 04, 2020		Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																																																																																																																																																																		
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1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

Affix ALS barcode label here (lab use only)

COC Number: 17-864162

Page 2 of 2

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Report To Contact and company name below will appear on the final report		Report Format / Distribution			Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)																																																				
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		<u>BH21-06-03</u>		<u>25-02-21</u>							<u>9:20</u>	<u>Soil</u>	<u>7</u>	X	X	X																																									
		<u>BH21-06-04</u>									<u>9:30</u>		<u>4</u>		X	X																																									
		<u>BH21-06-07</u>									<u>9:40</u>		<u>7</u>		X	X																																									
		<u>BH21-07-01</u>			<u>10:50</u>		<u>7</u>	X	X	X																																															
		<u>BH21-07-02</u>			<u>10:55</u>		<u>4</u>		X	X																																															
		<u>BH21-07-03</u>			<u>11:10</u>		<u>4</u>		X	X																																															
		<u>BH21-07-04</u>			<u>11:30</u>		<u>6</u>		X	X																																															
Drinking Water (DW) Samples (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)			SAMPLE CONDITION AS RECEIVED (lab use only)																																																				
Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input type="checkbox"/> NO		1. Please run all PAHs analysis (including individuals and total PAH) 2. Analytical Prices Per ALS - SVC-Lavalin Price list dated on June 04, 2020			Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/>																																																				
Are samples for human consumption/ use? <input type="checkbox"/> YES <input type="checkbox"/> NO					Ice Packs <input checked="" type="checkbox"/> Ice Cubes <input checked="" type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/>																																																				
					Cooling Initiated <input type="checkbox"/>																																																				
					INITIAL COOLER TEMPERATURES °C			FINAL COOLER TEMPERATURES °C																																																	
								<u>10 (ave of 9)</u>																																																	
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)																																																				
Released by: <u>George Sun</u>		Received by: _____			Time: <u>21:30</u>		Time: _____		Received by: <u>CC</u>																																																
Date: <u>26-02-25</u>		Date: _____			Date: _____		Date: <u>Eds 25</u>		Time: <u>9:30</u>																																																

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



SNC • LAVALIN

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