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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Barge Ramp Facility, Proposed VFPA Lease Lands, Adjacent to 2320 Rogers Avenue, Coquitlam, BC

VFPA PER No. 19-092

PREPARED FOR

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TABLE OF CONTENTS

ATTACHMENTS

FIGURES

APPENDICES

1. INTRODUCTION

Hall Constructors Corporation (Hall) has retained Active Earth Engineering Ltd. (Active Earth) to act as the overall Qualified Environmental Professional (QEP) in relation to an application to lease foreshore lands and an adjacent water area from the Vancouver Fraser Port Authority (VFPA), and to construct a permanent shore-access barge ramp within the lease area (the Project). Hall proposes to primarily use the ramp to load barges with excavation spoils (non-contaminated soil) for subsequent Disposal at Sea, under permit from Environment and Climate Change Canada (ECCC). The ramp may also be used to import clean granular material (e.g. gravel) for various construction purposes at various job sites in the Metro Vancouver area, though the volume and frequency of this import activity is anticipated to be significantly less than Disposal at Sea export activity.

This Construction Environmental Management Plan (CEMP) summarizes the roles and responsibilities and for relevant parties involved in the Project, and presents the relevant best management practices and mitigation measures for identified potential environmental hazards.

Hall will be the VFPA Permit Holder and the lead Contractor for the Project. All references to "the Contractor" in this document are therefore interchangeable with "Permit Holder".

The PER application package was initially submitted on September 3, 2019 and preliminary VFPA reviews were conducted between approximately September and November 2019. Responses to initial VFPA review comments and stakeholder feedback were submitted to VFPA on December 13, 2019. Several project design changes were identified and discussed with VFPA in January 2020, and the relevant permit application documents were revised and re-submitted in early April 2020. Additional design changes were identified and discussed with VFPA between May and July 2020, resulting in additional revisions reflected herein.

This Version 1.2 of the CEMP follows Version 1.1 (April 7, 2020) and is intended to reflect significant updates to the barge ramp design to address all feedback received to date from VFPA, DFO, First Nations, and local marine users (e.g. Lafarge and Forrest Marine).

1.1. CEMP Objectives

This CEMP has been prepared to serve as a guide to assist Hall, and any of their sub-contractors and sub-consultants, in completing the Project in a manner that is environmentally responsible and complies with applicable environmental laws and regulations.

This CEMP was also prepared to satisfy the requirements of the VFPA's Project Environmental Review (PER) process, including the VFPA *Application Submission Requirements* checklist for the Project, and the VFPA *Guidelines – Construction and Environmental Management Plan (April 2018)*.

The CEMP provides a framework for environmental monitoring, and for identifying and promoting environmental values, incorporating environmental protection measures into daily work activities, and establishing measures to identify, report and respond to environmentally significant issues and incidents.

The CEMP should not be used to determine which parties are financially or contractually responsible for any particular tasks.

1.2. CEMP Updates

The CEMP has been prepared based on our understanding of the nature of the Project at the time of writing. Modifications may be required due to unforeseen circumstances encountered throughout the Project or to reflect changes to Site conditions as well as the Project design and/or execution. The Project will be managed using an adaptive management approach, and all modifications to the CEMP will be made available for review by Hall and VFPA.

2. PROJECT INFORMATION

The following sections provide relevant project information.

2.1. Location

The Project is situated along the north shore of the Fraser River, to the south of Rogers Avenue, in Coquitlam, BC. The geographical coordinates of the approximate centre of the Project area are 49° 13′ 18.2″ North and 122° 49′ 38.7″ West.

The attached Figure 1 illustrates the Project location.

2.2. Project Description

Construction for the Project consists of the following components:

1. Installation of 20 steel piles within the water lease area, including:
    - Eight piles for barge mooring, clustered into three dolphins (two sets of three, one set of two).
    - Four piles to support the head frame.
    - Eight piles to support the barge deck and ramp.

    All piles will be installed using a vibratory pile driver, situated on a scow. The mooring piles will be spaced to accommodate a barge measuring approximately 17.7m (58 ft) by 73.1m (240 ft).

2. Installation of two piles within the foreshore lease area as an abutment to the barge deck. To be situated entirely above the high-water mark (HWM, +3.25 Chart Datum).

3. Installation of a prefabricated pile-supported ramp headframe structure, a prefabricated pile supported stationary barge deck, and a prefabricated pile supported barge ramp.
4. Installation of ancillary components in and around the barge ramp structure, such as lights.
5. Grading of a portion the existing foreshore berm (fill material) to enable trucks to access to the deck and ramp. This will consist of approximately a 0.5m deep cut into a portion of the berm, and placement of approximately 0.5m thickness of structural fill on the north (upland) side of the berm.
6. Conducting beach improvements west of the barge ramp, as part of the proposed habitat offsetting program, which has been designed to more than offset the relatively minor in-water losses (due to the piles) and riparian area losses (due to the deck abutment). These beach improvements will consist of regrading, strategic placement of riprap, and tree/shrub plantings.

These project components are presented in greater detail in various design Drawings, provided under separate cover.

Given the scope of the Project, the environmental protection measures outlined herein focus on Pollution Prevention and Best Management Practices (BMP) for the Project construction.

2.3. Estimated Project Schedule

No in-water works will occur during the sensitive period for the Fraser River (March 1 to June 15).

The application for DFO Request for Review is anticipated to be submitted by August 7, 2020. Assuming it is reviewed/processed by DFO within six weeks (mid September), and assuming that minimal additional VFPA review is required, the Project construction works are projected to commence in late October 2020. We anticipate that the primary factor controlling the project start date will be the DFO Review process.

The following table presents the estimated schedule (15 weeks total) for specific Project tasks, assuming that the in-water works do not necessarily need to occur within any other specified fisheries window(s):

ESTIMATED PROJECT SCHEDULE

TASK	ESTIMATED DURATION AND COMPLETION DATE
Preparation and submission of documents required to satisfy Permit Conditions (if any)	2 weeks (October 7, 2020)
Mobilization and site preparation/servicing	2 weeks (October 21, 2020)
Pile driving	3 weeks (November 11, 2020)
Ramp installation, grading, foreshore habitat offset (beach improvements)	4 weeks (December 9, 2020)
Lighting, final paving, and ancillary works	2 weeks (December 23, 2020)

ESTIMATED PROJECT SCHEDULE

TASK	ESTIMATED DURATION AND COMPLETION DATE
Clean-up and demobilization	2 weeks (January 6, 2020)

The timelines presented above represent best estimates at the time of writing and may change based on feedback from the PER process or other factors.

2.4. Site Description

The current Site conditions are summarized as follows (see attached Figure 2):

- The southern portion of the Site (water lease area) is occupied by the Fraser River and intertidal area, with the riverbed / foreshore elevations ranging from approximately 2-3m geodetic elevation to -9m geodetic elevation within the lease area. The riverbed contours are provided in detail on the All-Span design drawings, provided under separate cover.
- The ground surface across intertidal area is comprised of silt, gravel / cobbles, and some concrete debris.
- The northern portion of the Site (foreshore lease area) is generally flat, with a gravel fill surface.
- A berm of fill soil is present along the south edge of the foreshore area, above the high-water level (HWL). The fill berm area is lightly vegetated, primarily with blackberries.
- Recent environmental investigations by Active Earth at the off-Site private titled parcels to the north identified historical imported fill soil up to 2.5m in depth; no soil contamination was identified with respect to the standards that apply to those lands under the BC Contaminated Sites Regulation (CSR). Fill soil is therefore also likely to be present within the Site (foreshore lease area).
- No Species at Risk were identified at the Site. Further details on Species at Risk, habitat, and sensitive species are provided in the *Fish & Fish Habitat Impact Assessment* report, prepared by Phoenix Environmental Services Ltd. (Phoenix), dated July 20, 2020.
- An archaeological assessment has identified moderate to high potential for archaeological deposits to be present in the vicinity of the Site. However, the risk of encountering such resources is considered low, given that construction will involve minimal excavation work (i.e. for the abutment piling caps) and that such work is restricted to areas that were infilled extensively in the 1970s. Further details are discussed below (Section 5.12).

3. CONTACTS AND RESPONSIBILITIES

The key personnel and respective responsibilities are presented below.

3.1. Key Project Personnel

The current Project contact list is provided below. This list may be updated as the Project proceeds.

PROJECT CONTACT LIST

Name	Project Role / Company	Phone Number
Dan Foulkes	Construction Project Manager, Hall Constructors Corporation (lease holder)	604-897-7061
Steve Boyce, B.A. (Env), LEED G.A.	Environmental Manager, Active Earth Engineering Ltd.	778-888-0473
Erin Vandal, B.Sc., R.B.Tech.	Environmental Monitor, Active Earth Engineering Ltd.	604-341-6461
Ken Lambertsen, R.P.Bio.	Senior Biologist, Phoenix Environmental Services Ltd.	604-880-4055
Dete Mordhorst, P.Eng.	Senior Engineer (barge ramp design), All-Span Engineering & Construction Ltd.	604-940-2212
Ryan Syjuco, AScT.	Engineering Designer (civil design), Aplin & Martin Consultants Ltd	780-670-2644 x1514
Kira Kristensen, B.A.	Senior Archaeologist, Madrone Environmental Services Ltd.	250-746-5545 x234
Spencer Chaisson	Environment Coordinator Vancouver Fraser Port Authority	604-665-9389
Rebecca Siefert	Biologist Fisheries & Oceans Canada	604-666-2430
Lawrence Kuan	Navigable Waters Protection Officer Transport Canada	604-349-4322
Mark D. Reed, RBO	Building Technologist, Building Permits Div. City of Coquitlam (Municipal Contact)	604-927-3451

Additional emergency response contact information is provided in Section 6.1.

3.2. Environmental Monitor Responsibilities

The primary responsibility of the Environmental Monitor (EM) is to ensure that the environmental protection objectives of the permit holder, VFPA, and applicable approvals/permits are communicated to the Contractor, and that the Project work is regularly monitored in order to document and communicate compliance or non-compliance. The EM assists and supports the Permit Holder, who is ultimately responsible for ensuring that the requirements of this CEMP, and other applicable conditions, are adhered to.

We understand that Hall will retain Active Earth to act as the EM for the Project. We will be responsible for the tasks indicated below, assuming that we continue to be retained throughout the duration of the work.

Phoenix will provide additional habitat assessment and biology EM support services, if warranted.

Responsibilities of the EM include the following:

- The EM will Monitor compliance with the CEMP and relevant permit conditions.
- Communicate the requirements of the CEMP to Project members during pre-job and tailgate meetings.
- Observe activities onsite as per the schedule established between parties prior to Project start. The EM will remain on-call during non-critical work periods to respond to emerging environmental issues.
- Review the contractor's work procedures to ensure functionality and compliance with the CEMP and applicable regulations, standards and BMPs.
- Provide advice in preparing for work activities in a manner that mitigates adverse effects.
- The EM has the authority to modify and/or halt any construction activity at any time if deemed necessary for the protection of the environment.
- Advise Project members if Project activities have caused or are likely to cause an environmental incident and make recommendations for corrective action.
- Make recommendations to ensure that best practices for Erosion and Sediment Control (ESC) are adopted by the contractor concurrent with the works.
- Ensure that the contractor maintains on-Site copies of all documentation regarding environmental mitigation (e.g. this CEMP, the ESC Plan, the PER permit and conditions, letter(s) from DFO, etc.).
- Liaise and coordinate with the Marine Mammal Observers (MMO). Ensure that the MMO's recommendations are addressed and adhered to.
- Conduct monitoring of the ESC infrastructure, per the notations on the Preliminary Drainage and Grading Plan prepared by Aplin & Martin.
- Liaise directly with project members and provide technical advice for the purpose of resolving situations that may impact the environment as they arise.
- Communicate with other Project members as warranted to ensure that the respective parties comprehend any respond to any EM issues quickly and appropriately, including representatives from Phoenix, All-Span, and Aplin & Martin.
- Maintain complete records of activities related to the implementation of the CEMP. This should include any measurements taken, observations, photographs and incident reports.
- Complete and submit environmental monitoring reports to the permit holder, VFPA, and other parties (as required within permit/approval conditions) and will report any

unanticipated adverse effects to the environment. Such reports should include the nature of the effect, its cause, mitigation and/or remediation implemented, and whether a work stoppage was ordered, as well photographs, analyses, and measurements, if applicable.

- The permit holder or EM will notify VFPA immediately in the event of a non-compliance.

These responsibilities will be refined and/or expanded if Project conditions change, and a revised CEMP will be issued as warranted.

Regarding the frequency of EM inspections during Project construction the EM will complete the following:

- Attend the pre-construction site kick-off meeting and will review EM obligations with the project members.
- Conduct monitoring site visits as warranted during Site preparation (e.g. establishment of ESC controls, etc.).
- Complete weekly monitoring site visits at minimum during the Project.
- Conduct additional site visits as needed during environmentally sensitive works (i.e. construction below the HWL, construction following or during high-precipitation events, etc.). Specifically, the EM will conduct a site visit within 48 hours of any Significant Rainfall Event (SRE), defined as greater than 25mm of rainfall in a 24-hour period.

A template EM site inspection and CEMP verification record, and a template EM report are provided in Appendix A. The information collected on the site inspection record will be relayed in the weekly EM report, which will be distributed digitally to the Contractor / Permit Holder for initial review before forwarding to VFPA. This record is also to be used by the EM during each Site visit to confirm that on-Site staff are sufficiently aware of the CEMP requirements.

We note that Active Earth will act as EM for the project activities only if we are retained by Hall to do so.

3.2.1. EM Training and Records

All on-Site Project staff are required to undergo an orientation session based on the CEMP. The EM will directly orient all Contractor supervisors, and these supervisors will be responsible for orienting their respective on-Site team members. Orientation record keeping is discussed in the following section.

3.3. Permit Holder / Contractor Responsibilities

Hall will be the Permit Holder <u>and Contractor</u> for the Project. The primary responsibility of the Contractor / Permit Holder is to ensure that the environmental protection objectives of the permit, VFPA, and applicable approvals/permits are met by ensuring that the requirements of this CEMP, and other applicable conditions, are adhered to.

Responsibilities of the Contractor / Permit Holder include the following:

- Review the project CEMP with their staff and sub-contractors prior to commencing works.
- Comply with the VFPA project permit and any other agency permit or licence issued for the Project, as well as all other applicable federal, provincial and municipal laws, statutes, by-laws, regulations, orders and policies.
- The Contractor must cooperate with the Project EM. The Contractor must comply with written or verbal instructions with respect to conducting activities in compliance with the mitigation measures outlined in the CEMP.
- Correct deficiencies and any non-compliance issues upon direction from the EM, whether written or verbal. Corrections should be made as soon as reasonably possible, ideally within 24 hours of directions. The Permit Holder or EM will notify VFPA immediately in the event of a non-compliance.
- Ensure that all on-Site Project staff have been oriented to the CEMP and will maintain records of all oriented personnel.
- Relevant aspects of the CEMP will be discussed and documented as part of daily tailgate meetings. This will form part of the Contractor's "Star Card" program, which is aimed at raising awareness with respect to safety and environmental issues, on a daily basis.
- The Contractor / Permit Holder will review and retain all EM reports and will then promptly forward the reports to VFPA.

3.3.1. Marine Mammal Observers Responsibilities

The primary responsibility of the MMO is to observe for the presence of marine mammals and fish, establish in-water works protocols, and supply technical support in the protection of sensitive wildlife. The MMO will report to the EM.

Responsibilities for the MMO include the following:

- Maintain daily-sightings log records of marine mammals and fish.
- Advise on program requirements to facilitate the CEMP. This includes in-water protocols such as Marine Mammal and fish monitoring zone, Marine Mammal Exclusion Zone (MMEZ), and associated responses based on oceanography, geography, marine species and project components, such as pile driving and potential dredging activities.
- Observe for the presence of marine mammals and fish 30 minutes pre-hammering, during hammering, and 30 minutes post-hammering.
- Advise Operators of the presence of marine mammals entering or leaving the marine mammal exclusion zone.
- Issue a stop-work and resume work notification to contractors when necessary.
- Immediately report to the EM of any incidents.

The EM or Contractor will ensure the following:

- Provide the MMO with construction activity updates, including 30-minutes pre-activity notification.
- Communicate with the MMO on mitigation measures advisories.
- Enforce stop-work and resume work notifications and mitigation measures as recommended by the MMO.

4. RELEVANT ENVIRONMENTAL LEGISLATION

The following table lists applicable legislation and non-regulatory guidelines relating to environmental management at the Site. These documents were considered in the drafting of this CEMP. This list is not exhaustive.

A brief description of how each document directly applies in the context of the overall Project is also provided.

APPLICABLE LEGISLATION AND NON-REGULATORY GUIDELINES

Document	Description	Applicability and Project Compliance
Federal Legislation		
Fisheries Act, R.S.C., 1985 as amended (particularly Sections 34 and 35)	General prohibition on the deposit of a harmful or deleterious substance into waters frequented by fish, and works or undertakings that result in harm to fish, unless authorized.	Act applies to the Project. Self-assessment underway. DFO project review request to be submitted August 2019. Habitat Assessment report identified the need for rip rap armour on the face of the barge ramp deck, to provide refuge for small fish species.
Migratory Bird Convention Act	Legal framework for the protection and conservation of migrating birds and their nests.	Act applies to the Project. The completed Habitat Assessment report has identified no migratory birds and/or nests at the Site. No special mitigation measures required.
Species at Risk Act	To prevent the disappearance of wildlife species in Canada, and to support the recovery of wildlife species that are extirpated, endangered, or threatened, and to manage species of special concern.	Act applies to the Project. The completed Habitat Assessment report has identified no Species at Risk at the Site. No special mitigation measures required.

Document	Description	Applicability and Project Compliance
VFPA Non-Road Diesel Emissions (NRDE) Fee[1]	The NRDE fee recovers costs associated with managing air quality and reducing diesel particulate matter emissions	The NRDE Fee is applicable to all parties granted the right by VFPA to occupy lands owned, managed, or administered, by VFPA. Responsible parties must not introduce non-road diesel engines that are "non-certified" (Tier 0) or certified as "Tier 1" without prior written approval from VFPA.
Provincial Legislation		
BC Environmental Management Act, S.B.C 2003, c. 53, as amended	Provides overall framework for protecting the quality of water, land and air.	Act applies to the Project. Project must be conducted in a manner that avoids harm to water, land, and air. Details provided throughout this CEMP.
Contaminated Sites Regulation (CSR), B.C. Reg. 375/96, as amended	Provides standards for contaminated site assessment and remediation. This dictates the quality of fill soil allowed to be imported to the Site, and approvals required for import.	Off-Site disposal to provincial lands of any suspect contaminated soil, vapour, groundwater, or sediment must be managed according to the CSR.
Spill Reporting Regulation (SRR), B.C. Reg. 187/2017, as amended	Defines "spill" and includes requirements for reporting through the Emergency Management BC Program (formerly PEP).	Applies to the Project. See Section 6.3 for spill response plan details.
Guidelines and BMPs		
British Columbia Approved and Working Water Quality Guidelines (BCWQG) – BC ENV	Guidelines for Surface Water Quality	Applies to the Project. The Project must avoid impacts to surface water at concentrations exceeding the BCWQG.
Standards and Best Practices for Instream Works, 2004 Edition – BC ENV	Sets out provincial standards and recommended best practices for the planning, design and construction of instream projects.	Applies to the Project. The Project shall be conducted in general compliance with these standards and best practices.

5. PROJECT MITIGATION MEASURES AND ENVIRONMENTAL SPECIFICATIONS

Mitigation measures, environmental practices, and/or specifications are provided for the following topics:

[1] Vancouver Fraser Port Authority, Fee Document, Section 3J Non-Road Diesel Emissions Fee.

- Environmental Management Team Communication
- General Practices
- Site Access, Mobilization and Laydown Areas
- Air Quality and Dust Control Plan
- Noise and Vibration
- Machinery and Equipment
- Erosion and Sediment Control Plan
- Contaminated Soil and Groundwater Management
- Vegetation and Wildlife Management
- Concrete Works and Grouting
- Marine Works
- Archaeological Resources
- Sensitive Habitat Features and Species

5.1. Environmental Management Team Communication

The Environmental Management Team includes QEPs from Active Earth and Phoenix Environmental, working in conjunction with Hall and Hall's subcontractors and design subconsultants. The roles, responsibilities, and key contracts for the team members are detailed in Section 3, above.

All EM reports, all key EM observations, all non-compliance issues and events, and all other relevant environmental performance matters will be communicated promptly to VFPA and other relevant regulators. EM information will typically be communicated first to the Permit Holder for review and comment, and then immediately to VFPA.

5.2. General Practices

Relevant general construction best practices are presented below:

- The Contractor[2] and crew supervisors/foremen shall review this CEMP and the applicable guidelines prior to each project phase or new activity.
- The Contractor will know how to properly install any protection measures and understand BMPs used on the project. Improperly installed measures do not perform their intended functions and subsequently do not provide environmental protection.

[2] Throughout this section and subsequent sections, use of the term "Contractor" is assumed to include Hall and any subcontractors.

- The Contractor shall stockpile, or have readily available, supplies of erosion and sediment control materials as appropriate on-Site, such as (but not limited to) rock, gravel, grass seed, silt fencing, staking, polyethylene sheeting, etc.
- The Contractor shall plan and schedule upland/foreshore project activities for dry weather whenever possible and will minimize upland/foreshore project works and equipment travel during periods of heavy precipitation.
- The Contractor and Site managers will be prepared to change existing measures and BMPs should they fail, or additional measures be required. The EM will be notified of any changes to ensure they are adequate and installed properly.

5.3. Site Access, Mobilization and Laydown Areas

The Contractor's access, mobilization, and laydown plan is summarized below (see attached Figure 2):

- All trucks, equipment and supplies involved in the upland construction works (ESC installation measures, grading, fill placement, lock-block placement, site servicing, paving, lighting, etc.) shall access the Site from Rogers Avenue and through the property at 2320 Rogers Avenue. We note that Hall has secured lease and access arrangements with the owner of the private upland parcels, to facilitate this work.
- Supplies, tools, materials, and equipment will be temporarily stored as necessary within the upland portion of the lease area and on the adjacent private lands. All laydown shall occur above the HWM, on flat and stable land situated at least 30m from any waterbody.
- Spill mitigation measures applicable to all aspects of the Project, including mobilization and laydown, are detailed in Section 6.3.
- Access for construction of the abutment piles and for habitat offsetting shall be from the upland side, not the water side.
- Access for placement of the prefabricated barge deck and ramp shall be from the water side.
- All pile-driving work shall be accessed from the water side, via spud-anchored scows (barges).

5.4. Air Quality and Dust Control Plan

Air emissions such as vehicle/equipment exhaust, dust and vapours associated with construction activities will be minimized and managed to avoid adverse health, safety, nuisance and other environmental effects on and off-site. General considerations are summarized below:

- Dust-generating activities will be minimized as much as possible, especially during windy periods. Dust suppression agents, if used, shall be approved by VFPA for use. Consideration of run off from any dust suppression agents, including water, will be considered for impacts to storm water management.
- The track out of vehicles from the Site will be managed (cleaning of roadways, etc.) in order to reduce the potential for the dispersion of material and debris as fugitive dust.

- Material loads entering or exiting the Site shall be covered as appropriate.
- No burning of oils, rubber, tires and any other material shall take place at the Site.
- Stationary emission sources (e.g. portable diesel generators, compressors, etc.) will be used only as necessary and turned off when not in use.
- Equipment and vehicles shall be turned off when not in active use; no idling will be permitted.
- All equipment, vehicles and stationary emission sources will be well-maintained and used at optimal loads to minimize emissions.
- Vehicles or equipment producing excessive exhaust will be repaired or replaced prior to being used on the Project.

We note that the Contractor will utilize only Tier 4 machinery and equipment for the Project.

Further details are provided below.

5.4.1. Dust Control

Air quality monitoring is required when a risk of fugitive dust (airborne soil particulate) emissions is present. The primary risk is to the health of on-Site workers, though fugitive dust migrating off-Site could pose a risk to the public. These risks may be particularly present during the Project activities such as grading, material stockpiling, and fill placement.

Dust suppression measures shall be implemented as warranted, including the use of hoses and/or water trucks to moisten the Site surface, active work areas, and nearby truck access routes as needed. Clear crush gravel will be temporarily installed on heavily travelled earthen surfaces at the Site, as needed.

Application and handling of the any dust palliative, with the exception of water, shall be conducted only following discussion with, and approval from, VFPA.

Stockpiles of any fine-grained materials (not anticipated) should be covered during dry an/or windy weather.

Monitoring should include ongoing visual checks for presence of visible dust during the higher-risk activities listed above, particularly during periods of extended dry whether. If significant fugitive dust is visible on-Site (e.g. dust "clouds" are being generated), or is observed migrating off-Site, the generating activity shall be halted or modified, and dust suppression methods should be implemented or enhanced. Though visual monitoring is anticipated to be sufficient, a hand-held dust monitor may be used if required to monitor conditions at the down-wind Site boundary, with average daily concentrations not to exceed the BC Ambient Air Quality Residential Objective of 1.7 mg/(dm^2-day).

During regular monitoring events, the EM will record presence/absence of visible dust, and communicate recommendations promptly, as warranted.

All on-Site workers will have a properly fit-tested half-face dust mask on hand (i.e. on-Site), fitted with dust cartridges (p100 or better). The masks should be cleaned and inspected before use to ensure a proper fit and to check cartridge expiry dates.

These dust control and protection procedures will be discussed at regular Site Health & Safety Meetings.

5.4.2. Odours and Fumes – Idle Reduction

To mitigate the risks of excessive exhaust, all equipment and vehicles should be well-maintained and idle reduction measures should be implemented, including:

- Establishing entry/exit points for equipment and vehicles accessing the Site, to reduce on-Site congestion.
- Using automatic transfer switches on generators.
- Turning off vehicles and equipment when not active. Specifically, when "down times" will exceed 1 minute (light duty vehicles) or 5 minutes (heavy duty diesel vehicles), idle motorists should turn off their engines. Exceptions include idling to bring equipment to operating temperature, extreme weather (heat or cold), while operating auxiliary equipment that requires an idling engine, or other relevant activities.
- Vehicle staging areas and on-Site combustion engines should be located away from sensitive receptors (e.g. fresh air intakes and windows for any temporary Site office trailers).

These idle reduction procedures should be discussed and reinforced at regular Site Health & Safety Meetings and by posting signage on-Site.

If any personnel are required to work in close proximity to equipment exhaust points, hosing and/or fans shall be used to re-direct the exhaust. Relevant on-Site workers should have a properly fit-tested half-face dust mask on hand (i.e. on-Site), fitted with VOC cartridges. The mask shall be cleaned and inspected before use, as above. The Project is not considered to present a risk of generating other noxious odours or fumes.

5.5. Noise and Vibration

Noise generation and vibrations resulting from equipment and associated construction activities during construction will be addressed through the noise management practices summarized below:

- Construction activities shall be limited to Monday to Saturday between 7:00 a.m. and 8:00 p.m., excluding holidays. Should construction activities be required outside these hours, the contractor must contact VFPA to determine if exceptions are permitted.
- All equipment shall be properly maintained to limit noise emissions and fitted with functioning exhaust and muffler systems. Machinery covers and equipment panels shall

be well fitted and remain in place to muffle noise. Bolts and fasteners shall be tight to avoid rattling.

- Engines shall be turned off when not in use or reduced to limited idle (or as appropriate to reduce air emissions).
- The affected community (neighbouring owners / tenants) and the host municipality (Coquitlam) shall be notified of the nature and likely duration of any particularly noisy operations, and when it will be necessary to work outside daytime and early evening hours. We note that the pile driving work is anticipated to be conducted via vibratory-drive and will therefore produce significantly less noise and vibration than a conventional diesel pile hammer.
- Noise monitoring will be conducted during particularly noisy activities to ensure the predicted impacts are not exceeded (see Section 5.11 for further discussion).

5.6. Equipment and Machinery

The following table summarises the equipment and machinery to be used during on-Site construction. As indicated, the Contractor will utilize only Tier 4 machinery and equipment for the Project.

EQUIPMENT & MACHINERY

TYPE	FUEL TYPE	YEAR OF MANUFACTURE	ENGINE POWER RATING
Excavator - Cat 336F Long Reach	Diesel	2016	320hp
Grader - Cat 12M	Diesel	2017	220hp
Paver - Cat 1055F	Diesel	2018	225hp
Roller - Bomag BW154AD	Diesel	2018	75hp
Crane - 200t Liebherr	Diesel	2017	500hp
Tug Boat - Ocean Warlock	Diesel	Various	1800hp
Scow/Pile Driver - Derek	NA	Various	NA
Tandem Dump Trucks	Diesel	Various	NA
Light-Duty Crew Trucks	Diesel	various	NA

Equipment and machinery practices and mitigation measures are summarized below:

- Equipment and machinery shall be in good operating condition and maintained free of leaks, excess oil and grease, invasive species, and noxious weeds. Equipment will be checked daily for leaks or spills.
- Equipment will be operated at optimum rated loads and be turned off when not in use to minimize exhaust and noise emissions. Equipment producing excessive exhaust or noise shall be repaired or replaced.

- Refueling and light daily maintenance of equipment (e.g. greasing) shall occur on land at least 30 m from any waterbody, where possible. Where 30 m is not possible, a location as far as possible from the waterbody will be chosen, taking into consideration topographic features and slope. The refueling area will have a spill containment kit immediately accessible and personnel will be knowledgeable in the use of the kit (see Section 7 for the Fuel Management Plan). Active Earth shall review the refueling area location prior to use.
- No major maintenance activities (engine servicing, hydraulic repairs, etc.) shall occur on-Site, regardless of distance to a waterbody, unless absolutely necessary. The Contractor shall notify the EM if such work is necessary, and will follow the directions and guidance provided by the EM (the EM will also conduct an inspection on every day of necessary major maintenance).
- A spill containment kit shall be readily accessible both on Site and on each piece of equipment in the event of a release of a deleterious substance to the environment. All members of the construction team shall be trained in the use of spill containment equipment/items. Any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities must immediately be reported to the Emergency Management BC Program 24-hour phone line at 1-800-663-3456 (see Section 6.3 below for Spill Response Plan).
- Light spill will be reduced by pointing lights downward and placing task lighting as close to the work area as possible.

5.7. Erosion and Sediment Control Plan

The Project will occur adjacent to the Fraser River, and will involve grading and fill placement. These activities present the risk of causing soil/sediment to enter the Fraser River, to be tracked off-Site, and/or to generate dust. The Contractor shall manage soil/materials, surface runoff, and disturbed soil during construction, as summarized by the Erosion and Sediment Control (ESC) measures presented below.

5.7.1. General ESC Measures and BMPs

The following lists specific applicable ESC measures and BMPs:

- Erosion and sediment control devices will be available for use on site. Prior to commencement of the work, the Contractor must obtain sufficient quantities of silt fence, straw bales, sandbags, gravel, and polyethylene sheeting. These materials must be on-Site and available for installation prior to the commencement of any ground disturbance work.
- Construction team members shall be trained in the installation and use of the devices, as follows:
    - Silt fencing is to be installed effectively (e.g. keyed-in) along the banks of any watercourses, extending a minimum of 5 meters outside of the immediate working area to contain all sediment and/or run-off.

  - Any catch basins within 30 meters of the working area must have approved inlet protection bags installed.

- If the Contractor is unsure of how best to implement ESC measures, or has any questions or concerns, they must contact the EM.
- The EM must review installation and approve placement and use prior to work beginning. These measures will be inspected by the EM during the course of the construction activities. Necessary repairs or additional installations are to be made by the contractor immediately if any damage occurs such that ESC is compromised, as directed by the EM.
- The Contractor shall be prepared to quickly erect measures to minimize sediment entering receiving waters if necessary. The overall goal is to isolate the work area and prevent any potential sediment laden runoff from entering a waterbody or encroaching onto adjacent properties or roadways. The EM will check the Contractor's readiness (e.g. staffing, equipment and available supplies) during regular EM inspections.
- The Contractor shall minimize the area of soil exposed at any one time by: phasing construction activities; retaining vegetation as much as possible; and, once construction works are completed, stabilizing any exposed soils as soon as possible using temporary measures such as mulch, erosion sediment control blankets, hydro-seeding, and/or plastic sheeting or planting long-term vegetation (if during the appropriate time of year).
- Periods of heavy precipitation are possible during the proposed construction schedule. As much as possible, upland earthworks will be scheduled to be conducted and completed during dry weather. When significant wet weather is encountered, additional measures may be required to minimize erosion potential.
- Vehicles and/or machinery traveling to or in the site must be restricted to either paved or maintained gravel surfaces. Tracking through exposed soils is to be prohibited, unless otherwise specified by the Environmental Monitor.
- Work which involves heavy machinery that is disturbing earth material *may* be suspended during significant rainfall events (SRE), at the discretion of the EM. An SRE is typically determined as 25+mm rainfall within a 24-hour period.
- All material stockpiles (soils, road base / aggregates) are to be covered before and during any rainfall, or prior to the end of the working day.

5.7.2. Drainage Monitoring

The proposed drainage infrastructure is presented on the Aplin & Martin Preliminary Grading and Drainage Plan, provided under separate cover.

We note that any water flowing from the upland/foreshore portion of the Site to the water portion of the Site must meet DFO and FLNRO requirements at all time, and immediate corrective action must be taken to mitigate any deficiencies. This includes water collected and discharged to the existing 450mm dia. storm outfall pipe through the on-Site storm water infrastructure. The

applicable water quality guidelines to protect freshwater aquatic life for discharge of sediment, sediment-laden water, and turbid water are as follows:

- Total Suspended Solids should not exceed 25 mg/L above background at any one time for a duration of 24 hours in all waters during clear flows or in clear waters. Total Suspended Solids should not exceed 10 mg/L above background at any one time when background is 25 - 100 mg/L during high flows or in turbid waters. Total Suspended Solids should not change background by 10% when background is > 100 mg/L at any time during high flows or in turbid waters.
- Turbidity shall not exceed 8 nephelometric turbidity units (NTU) above background in all waters during clear flows. Turbidity should not exceed 5 NTU above background when background is 8 - 50 NTU during high flows or in turbid waters. Turbidity shall not change background by 10% when background is > 50 NTU at any time during high flows or in turbid waters.

The EM will utilize a Turbidity Meter to measure water quality for turbidity in the field. The Turbidity Meter will be calibrated per the manufacturer's specifications and recommended calibration frequency. If field-measured Turbidity exceeds these guidelines, all potential turbidity-causing construction activities must immediately cease, and a sample will be collected and submitted for rushed TSS laboratory analysis.

5.8. Contaminated Soil and Groundwater Management

Recent environmental investigations by Active Earth at private titled parcels to the north of the Site identified historical imported fill soil up to 2.5m in depth. Based on this work, historical fill soil is likely present within foreshore portion of the Site. No soil or groundwater contamination was identified during off-Site investigation work, when considering the current standards that apply to those lands under the BC CSR.

The Project will not involve the excavation, stockpiling, or off-Site disposal of any existing on-Site soil. Furthermore, the project with not involve the pumping, storage, or discharge of groundwater, or the decommissioning of any groundwater monitoring wells.

If any of these aspects of the Project scope change, and/or any suspect contaminated media is encountered during construction, the relevant tasks will halt until a soil and/or groundwater management plan is prepared by Active Earth and reviewed by VFPA.

If the Site grading work will involve the import of soil (i.e. sands or gravels less than 2mm in diameter), we note the following:

- Active Earth will review any available chemical data from the source facility, to determine whether the material is chemically suitable for import.
- As the soil is being imported and placed, Active Earth will collect representative samples for laboratory analysis of the typical Potential Contaminants of Concern (PCOCs) for general

imported material, including: Light and Heavy Extractible Petroleum Hydrocarbons (LEPHs, HEPHs), Polycyclic Aromatic Hydrocarbons (PAHs), and Metals.

- Any imported soil must be within the relevant Industrial Land Use (IL) standards provided under the BC CSR, and within the relevant IL guidelines/standards provided by the Canadian Council of Ministers of the Environment (CCME), including:
    - *The Canadian Environmental Quality Guidelines (CEQG), Soil Quality Guidelines for the Protection of Environmental and Human Health, for Industrial Lands*
    - *Canada-Wide Standards (CWS) for Petroleum Hydrocarbons (PHC) for Industrial lands.*
- Results of the sampling work will be reported to the Contractor and VFPA. Any non-conforming imported soil shall be immediately removed and replaced by the Contractor, and the chemical quality of the replacement material will be similarly confirmed, documented, and reported.

5.9. Vegetation and Wildlife Management

The details of the existing on-Site habitat are documented in the Habitat Assessment Report, provided under separate cover. The Contractor will minimize the potential for negative impacts to wildlife and vegetation during construction-related activities through implementation of the following mitigation measures:

- Should a rare or sensitive species be identified at the Site by any party during the Project, the EM shall be notified immediately for further direction, followed by notification to VFPA.
- Vegetation removal will be minimized as much as possible. No large trees will be removed. Coarse woody debris will be retained on the ground wherever possible to provide cover and reduce erosion potential.
- Vegetation removal that will affect trees used by birds and wildlife shall be avoided while these animals are breeding, nesting, roosting or rearing young. Any relevant vegetation removal will be conducted outside of the general bird breeding season, which falls between March 1 and August 15.
- Any vegetation to be removed within the breeding season shall be surveyed (inspected) by an appropriately qualified environmental professional (e.g. Phoenix) prior to the start of work to identify any breeding, nesting, roosting or rearing birds and determine appropriate mitigation.
- Organic/food waste will be managed to avoid attracting wildlife to the Site.

5.10. Concrete Works and Grouting

We understand that the Project will not involve any significant concrete pouring/forming or grouting work. Precast concrete will be placed overtop of the piles supporting the deck as capping.

If this changes, the concrete pouring work will not proceed until a management plan is prepared by Active Earth and reviewed by VFPA.

5.11. Marine Works

The Project will include the following marine construction-related work:

- Installation of 20 steel piles within the water lease area, including:
  - Eight piles for barge mooring, clustered into three dolphins (two sets of three, one set of two).
  - Four piles to support the head frame.
  - Eight piles to support the barge deck and ramp.

  All piles will be installed using a vibratory pile driver, situated on a scow.
- Regrading of the beach and strategic placement of imported granular soils as part of the beach improvements, with details to be confirmed in the upcoming detailed design.

The Contractor shall mitigate the potential impacts to aquatic resources during these marine construction-related activities by implementing the measures presented below:

- Marine construction will coincide with DFO timing windows for least risk in marine and estuarine habitat. These timing windows have been evaluated by a Phoenix, as summarized in the DFO Project Review Request, provided under separate cover.
- Barges, scows, or other vessels will not ground on the foreshore or river/seabed or otherwise disturb the foreshore or river/seabed (including disturbance as a result of vessel propeller wash).
- Visual Monitoring:
  - Establish a Marine Mammal and Fish Observer program to mitigate impacts of underwater noise related to pile driving on marine mammal and fish resources. The program will include establishing a MMEZ, as well as a monitoring program by trained MMOs, who will be responsible for issuing stop-work and resume work notifications during in-water works such as pile driving.
  - Silt curtains shall be installed around the aquatic work area for the duration of the piling activities such that any silt plumes generated by the work can be contained.
- Acoustic Monitoring:
  - A bubble curtain will be installed around the pile prior to driving to reduce underwater noise.
  - Underwater noise will be monitored using a hydrophone positioned within 10m from the pile.
  - If sound pressures over 30kPa (184dB) are measured, work will be halted immediately, and measures will be implemented to reduce underwater noise before

work is resumed. Pile driving will be completed through vibration hammering which presents a much lower risk of elevated underwater noise than impact hammering.

5.12. Archaeological Resources

An archaeological assessment has identified moderate to high potential for archaeological deposits to be present within the vicinity of the Site. However, the risk of encountering such resources is considered low, given that construction will involve minimal excavation work (i.e. for the abutment piling caps) and that such work is restricted to areas that were infilled extensively in the 1970s. Further details are provided under separate cover. Further details are provided in the *Archaeological Overview Assessment* report, prepared by Madrone Environmental Services Ltd. (Madrone), dated July 23, 2020.

The Contractor must ensure that archaeological resources are not impacted during construction-related activities. An archeological Chance Find Procedures (CFP) document has been prepared by Madrone Environmental Services Ltd. to address the possibility of exposing archeological resources, to provide protocols to follow in the event that a chance archaeological find is made, and to provide a guide for the identification of archaeological sites. In general, the following shall be undertaken by the Contractor to mitigate impact in the event that evidence of what is suspected to be an archaeological resource is encountered:

1. Immediately stop any activities that might disturb the archaeological resource or the site in which it is contained.
2. Not move or otherwise disturb the artifacts or other remains present at the site.
3. Stake or flag off the suspected archaeological resource area to prevent additional disturbances.
4. The Contractor will immediately notify the Environmental Manager.

5.13. Sensitive Habitat Features and Species

The details of the existing on-Site habitat are documented in the Habitat Assessment report, provided under separate cover. No Species-at-Risk are deemed likely to be present within the Project area, and works below the high water mark have been minimised (i.e. to piling only) and scheduled (during fall and winter) to reduce the potential risk to fish and fish habitat.

The mitigation measures recommended in the Habitat Assessment include construction timing, marine mammal and fish observers, use of vibration piling, bubble and silt curtains within the water column, and monitoring of potential scour caused by the new structure and barges. The presence of piles within the water and the presence of the barge abutments and access road in the potential riparian area are deemed unavoidable residual habitat impacts – these impacts are to be

offset with an area of beach expansion and riparian planting downstream and adjacent to the barge ramp.

6. EMERGENCY RESPONSE

This section provides a comprehensive emergency response plan for the Project, and is intended to compliment and supplement the Contractor's detailed Health and Safety plan.

6.1. Emergency Communication

The following table summarizes key contact information for individuals and services that may be required in the event of an environmental emergency. This contact table should be posted at strategic locations on-Site.

KEY CONTACT INFORMATION

SERVICE	CONTACT INFORMATION
Fire / Police / Ambulance EMERGENCY	911
City of Coquitlam RCMP (non-emergency)	604-945-1550
Poison Control	1-800-567-8911
Emergency Management BC (Spill Reporting)	1-800-663-3456
Marine Oil Spill Report	1-800-645-7911
Canadian Coast Guard (Marine Pollution Reporting)	1-800-889-8852
Fisheries and Oceans Canada	1-866-845-6776 604-607-4186
WorkSafeBC	1-800-661-2112 1-866-922-4357 (after hours EMERGENCY) 1-604-273-7711 (after hours EMERGENCY)
BC Hydro (Electrical Emergency)	1-888-POWERON (1-888-769-3766)
Fortis BC (Natural Gas Emergency)	1-800-663-9911
McRae's Environmental (Vacuum Truck)	604-940-6200
Hall Constructors Corporation (Dan Foulkes - Project Manager)	604-207-0964 (office) 604-220-7833 (mobile)
Active Earth Engineering Ltd. (Steve Boyce – Environmental Manager)	778-430-5475 (office) 778-888-0473 (mobile)
Phoenix Environmental Services Ltd. (Kira Kristensen – Senior Archaeologist)	250-746-5545 x234 (office)
Vancouver Fraser Port Authority (Spencer Chaisson – Environment Coordinator)	604-665-9389 (office)

In the event of any emergency:

1. All on-Site staff will be alerted using the method established by the Contractor's Health and Safety Plan.
2. All Site work shall cease.
3. Emergency services will be contacted as warranted.
4. All on-Site staff will gather at the established muster point, per the Contractor's Health and Safety Plan. This may exclude any staff that are directly involved in the immediate emergency response, as warranted.
5. For environmental emergencies, and specifically for spills, the Contractor will follow the procedures detailed below.
6. VFPA will be notified as soon as is practical.

6.2. Environmental Emergency Plan

The following summarizes the potential environmental emergencies that may occur while construction is ongoing:

- Reportable spills of fuels or other harmful substances.
- Sediment laden water leaving the Site or entering a waterbody.
- Negative wildlife interactions.
- Observation of previously unidentified sensitive environmental features.

In the event of any Environmental Emergency, the Contractor will:

1. Immediately cease any work or activity that is contributing to the environmental emergency.
2. Notify the EM, for further assistance and direction.
3. Follow the Emergency Spill Response Plan (ESRP) detailed below, if the environmental emergency involves a spill.
4. Notify VFPA as soon as is practical.

6.3. Emergency Spill Response Plan

This section details the Project ESRP, which addresses the emergency procedures and contingency plan to be followed in the event of a spill occurring during construction. The procedures were developed with a specific emphasis on the protection the Fraser River waters and foreshore.

This ESRP identifies the incident response procedures including communications, containment, clean-up, debriefing and follow-up reporting, and describes the spill abatement materials and equipment to be maintained on-Site.

6.3.1. Regulatory Framework

This ESRP has been developed to generally conform with the applicable sections of the following Guidelines:

- *BC Guidelines for Industry Emergency Response Plans* (revised from 1992) prepared by the BC Ministry of Environment as the key (lead) provincial agency under the BC Emergency Program Act and its regulation (Schedule 1) and by mandate.

The main purpose of the Guidelines is to promote the development of comprehensive and consistent emergency response plans by industry, in cooperation with the provincial government and local governments. Users have the responsibility of judging the extent to which the Guidelines apply to their specific situation.

Spill and emergency response management overlap substantially with the occupational health and safety procedures that will be implemented in compliance with the *Workers Compensation Act: Occupational Health and Safety Regulation (OHSR, 1997)*. Occupational health and safety aspects are addressed separately. Liaison will occur between safety personnel and environmental personnel to assure smooth coordination between health/safety requirements and environmental requirements. Generally, there is little conflict between occupational health and safety and environmental requirements. In the event of conflict, occupational health and safety requirements would generally supersede environmental requirements.

In addition to legislation and guidelines outlined previously, the ESRP considered the following key legislation and guidelines:

- Canadian Standards Association (CAN/CSA-Z73 1-03) Emergency Planning for Industry (2003);
- BC ENV Guidelines for Industry Emergency Response Plans (2002); and,
- Provincial Spill Reporting Regulation (SRR).

6.3.2. Potential Construction Impacts

The greatest risk of spills on the Site will be from petroleum products such as fuels, hydraulic fluids and other such hydrocarbons (often flammable), and glycols (antifreeze). Spill size may vary from small quantities (e.g. drips from loose fittings) to moderate quantities (diesel, oil or hydraulic spills due to tank or hose ruptures). The risk of large spills is considered low (e.g. rupture of bulk re-fueling tank). Further considerations for fueling and fuel storage are provided in Section 7, below.

The extent of damage, or impact, caused by a spill is proportional to the quantity of material, the toxicity of the spilled substance, the receiving environment, and the amount of time required to identify the spill and respond with containment and clean-up. Contamination of land and/or water from spills can result in pollution of soil and groundwater. In addition, air quality can be impacted, particularly indoors or in confined spaces. Contamination can be lethal or sub-lethal to aquatic and terrestrial wildlife, and can degrade drinking water quality in the aquifer.

6.3.3. Emergency Spill Response Procedures

Classification

The appropriate response to an emergency is dependent upon the potential severity. The following classification levels are provided in order to help classify the potential severity of an incident, thereby guiding the response requirement:

- Level 1: minor spills requiring (an) on-site worker(s) to respond and take necessary individual or collective actions.
- Level 2: intermediate level spills requiring response by on-site or off-site trained staff but posing no danger to the public.
- Level 3: a major incident beyond the resources of a single facility, where there are subsidiary problems to complicate the situation such as fire, explosion, toxic compounds, and threat to life, property and the environment. Assistance will be required from local, regional, and/or provincial organizations. The media will be present and politicians at all levels will be requesting action.

The first step in the emergency response is classifying incidents and initiating an appropriate response.

Action Plan

The following presents the immediate steps required by the Contractor in response to a spill:

1. Identify the type of emergency and associated injuries and/or casualties;
2. Locate the source of the spill, the immediate area of risk, and the potential for the situation to escalate;
3. Initiate evacuation procedures for non-essential personnel if needed;
4. Notify the EM and Implement procedures for the protection of personnel, property and the environment;
5. Alert the emergency response services and activate the appropriate warning system;
6. Mobilize resources to isolate the hazard; and

7 Begin clean-up procedures once all imminent hazards have been mitigated.

The EM and VFPA will evaluate the situation to determine if DFO must also be notified.

Depending on the level of risk, the evacuation may include all members of the public, non-essential staff, and/or all staff who are not suitably trained and actively involved in the spill assessment and clean-up process. A designated safe evacuation muster point will be established on-Site away from all active construction.

Equipment and vehicles may be required to be moved in order to access a spill area and undertake clean-up; this should occur only after the risks of such moving work have been assessed and deemed acceptable.

Spill Clean-Up Procedures

Spill clean-up procedures include the following:

1 Ensure safety in the spill area before entering;

2 Stop the flow of the hazardous material if it is safe to do so;

3 Secure and isolate the spill area;

4 Assess the situation (identify product, equipment involved, affected area, spill status, time of spill);

5 Review the Material Safety Data Sheets (MSDS) for the spilled product, if available. Do not proceed with clean-up unless the product and associated risks have been adequately identified.

6 Contact the appropriate personnel and external agencies if necessary;

7 Begin containing and recovering the spill with on-Site emergency spill equipment if it is safe to do so; and,

8 Complete the spill notification and reporting procedure.

Clean-up and Remediation Procedures

In the event of Level 1 spill, the clean-up may be handled by on-Site personnel. All Level 1 spills should be reported to the EM and VFPA on the same, or next, business day as the occurrence.

In the event of a Level 2 or Level 3 spill, Emergency Management BC (EMBC, formerly PEP) should be notified immediately by telephone. In addition, a contaminated site specialist (Active Earth) should be retained to assess the impacts of the spill.

The material (e.g., soil) impacted as the result of a spill, as well as the spill abatement materials used to contain a spill, must be disposed to designated hazardous substances waste bin(s). Designated hazardous substances waste bin(s) will be identified with signage. As necessary, the

contents of the bins will be disposed to a licensed facility and shall be transported by an appropriately licensed hauler. Manifests and/or bills of lading are required for all hazardous wastes transported off-Site.

Larger scale Site remediation may be required depending upon a variety of conditions including but not limited to the size of the spill; type of hazardous substance spilled; the time between release and identification of a spill; and the location of the spill. A contaminated site specialist (Active Earth) should determine whether or not site assessment and/or remediation is required. In the event that remediation is required, the party responsible for the spill will complete the work in accordance with applicable laws and regulations.

The contaminated site specialist may require the installation of groundwater monitoring wells and/or porewater sampling stations, to assess potential impacts and to develop an appropriate remediation strategy.

6.3.4. Spill Prevention and Risk Management

Spill Abatement Materials

Spill kits are to be readily available on the Site. At a minimum, each spill kit should contain sufficient hydrophobic absorbent material (e.g. oil absorbent pads and socks) to contain and clean up potential drips, leaks, or spills (e.g. ruptured hydraulic line), as well as gloves and heavy plastic bags to receive used absorbent materials and affected soils or wastes. Standard spill kits will contain the following, at minimum:

- 10 Absorbent Pads (15" x 18")
- 2 Absorbent Socks (2" x 4')
- 2 Disposal bags with Ties
- 1 Absorbent Sock (3" x 10')
- 1 Bag of granular cellulose
- Nitrile/chemical resistant gloves

Given the relatively small size of the Site, each piece of heavy equipment need not be affixed with its own full spill kit as detailed above. Each piece of heavy equipment should be affixed with a small spill kit containing absorbent pads/socks, which may be used for “first response” in the event of a spill from the equipment.

Signage on each kit should identify the contents to ensure that kits are fully stocked. Signage should also be placed on-Site to identify the locations of the spill kits.

Risk Management

All contractors and staff working on the Project should develop an understanding of the risks associated with possible spills or environmental emergencies including consideration of the likelihood of a particular event occurring and its potential consequences. Specifically, all contractors and staff should be made aware of the need to protect the Fraser River foreshore and water areas.

Risk management should include but will not be limited to:

- Identifying hazards of anticipated operational activities;
- Identifying potential failures or accidents (including frequency);
- If applicable, calculating the expected and upset quantity of material that could be released as a result of failures or accidents; and,
- Evaluating the consequences of such occurrences to the environment as well as to the safety of Site personnel and the public.

Typically, environmental hazard identification and risk assessment/analysis will be conducted as part of developing and formalizing work methods for specific operation activities. Measures to reduce or otherwise mitigate risk can be included in the analysis and communicated to personnel, in part to increase their awareness of the value of risk prevention.

Additional fuel management considerations are specified in Section 7.

Hazard Identification & Reporting

The purpose of hazard identification is to identify potential environmental damage that may result from a spill or incident. This includes assessment of Site factors, including but not limited to:

- Proximity to watercourses and other environmentally sensitive areas, storm water conveyances, and the potential for contamination to spread off-Site as a result of construction;
- Pathways to the environment (air, land, water) in the event of a spill, the potential effects of a spill on air and water quality and any potential dangers to fish and wildlife and human health;
- Access/egress for emergency vehicles and available area on-Site for the mobilization of clean-up equipment in the event of a spill;
- Up-to-date inventory of all deleterious, toxic and/or hazardous materials harmful to human health and/or the environment to be utilized during operation; and,
- A system to manage Material Safety Data Sheets (MSDS) for hazardous materials used on-Site.

Hazard identification should form part of daily tailgate meetings (Hall Star Cards). Completed Star Cards will be maintained on-Site by the Contractor. If significant hazards are identified during pre-meetings, or during the course of work, this information should be communicated by the task supervisor to the Contractor foreman.

Contractor Responsibilities

As with all aspects of this CEMP, sub-contractors will be made aware of their responsibilities pertaining to spill prevention and risk management. These responsibilities will be communicated to supervisors as part of the CEMP orientation, who will be tasked with relaying this information to their workers.

Monitoring

The Contractor and EM will work together to ensure that all sub-contractors comply with these spill prevention and risk management protocols. Specifically, the EM and Contractor will both:

- Periodically check spill kits to verify that they contain an appropriate minimum amount of spill response materials for the Site area / facilities for which the kits are intended, and that they are properly replenished;
- Check the condition of storage areas for any hazardous substances or wastes on a weekly basis (e.g. check for possible damage or failure of containment structures, verify that weather-proofing is intact, check that proper signage and labeling is in place, etc.);
- Check that call-out lists are being kept at required locations and are up to date;
- Check that any new contractors have been duly oriented with respect to the CEMP and ESRP; and,
- Check that MSDS are being kept on file for all on-Site hazardous substances.

In addition, the Contractor will periodically check the condition of fuel tanks, fuel lines and hydraulic hoses on any equipment on-Site. The EM will periodically confirm that the Contractor is performing this task.

These inspections will be reported in the regular (weekly) EM reports.

6.3.5. Spill Notification and Reporting

Notification Procedures

The notification/reporting pathway (i.e. Internal or External) will depend on the quantity (i.e. volume), type (i.e. substance/material) and the receiving environment (i.e. land, air or water) of the spill.

In the event of a reportable spill as defined in the Spill Reporting Regulations, the spill must be reported immediately to EMBC. Typically for hazardous materials such as those anticipated for this operation (e.g. Class 3 Flammable Liquids), the threshold for reporting spills to EMBC is 100 Litres. However, other substances Classes have significantly lower Reportable Volumes, such as engine coolant (Class 6) at 5 Litres. The Reportable Volumes for all substances Classes are provided in Appendix B.

All spills that threaten or occur in an aquatic environment (Fraser River) will be reported to EMBC and DFO.

When there is doubt as to whether or not a spill exceeds EMBC notification/reporting thresholds, EMBC will be contacted.

Incident Notification Guidelines

In the event of an environmental incident (e.g. a spill), the individual reporting a spill to EMBC or other agency will typically be asked to provide the following information:

- Contact information of caller (e.g., name and telephone number);
- Contact name of individual or company that caused the spill/release;
- Location and estimated time of spill/release;
- Type and quantity of hazardous material spilled or released;
- The cause and effect of the spill/release;
- Details of actions taken or proposed to be taken to stop and/or contain the effects of the spill;
- A description of the spill location and the area surrounding the spill;
- The details of further action contemplated or required;
- The names of agencies on the scene; and
- The names of other persons or agencies contacted about the spill.

The contact numbers and the notification guidelines listed above will be posted on-Site at strategic areas.

Incident Reporting Guidelines

Following initial notification, the Contractor will provide a written incident report within 24 hours of the incident being controlled to such a degree that it no longer poses an acute risk to human health or the environment. The report will be submitted to EMBC as required, and VFPA. If required, environmental incident reports will be submitted to other relevant agencies including the City of Coquitlam. Incident reports are expected to identify the reporting organization, date,

time, location, hazardous materials involved, volume/quantity, cause and effect of the spill, and persons or organizations notified.

In addition, incident reports shall describe how the spill or release occurred, what remedial action was taken or is planned, and what actions will be implemented to prevent a recurrence.

Post Incident Evaluation/Debriefing

Following clean-up of a significant spill, such as a reportable spill under the Spill Reporting Regulation, a debriefing will be held with all personnel involved in the spill within 72 hours. The debriefing will normally include review of the following:

- Root cause of the spill;
- Measures to prevent the spill from occurring again;
- Review with associated personnel; and,
- Determine how the spill response could have been improved.

A more informal debriefing (e.g., one-on-one between foreman and worker) may be held for lesser spills as part of ongoing training in spill prevention and response. Follow up measures will be implemented to prevent recurrence. These measures will be documented in Weekly EM reports.

6.4. Emergency Spill Response Plan Summary

This ESRP summary will be posted at strategic locations on the Site.

In response to a spill, immediately undertake the following steps:

1. Identify the type of emergency (Level 1, 2 or 3) and associated casualties;
    - Level 1: minor spills requiring (an) on-site worker(s) to respond and take necessary individual or collective actions.
    - Level 2: intermediate level spills requiring response by on-site or off-site trained staff but posing no danger to the public.
    - Level 3: a major incident beyond the resources of a single facility, where there are subsidiary problems to complicate the situation such as fire, explosion, toxic compounds, and threat to life, property and the environment. Assistance will be required from local, regional, and/or provincial organizations. The media will be present and politicians at all levels will be requesting action.
2. Initiate the appropriate response to an emergency dependent upon the potential severity.
3. Locate the source of the spill or emergency, the immediate area of risk and the potential for the situation to escalate.

4. Initiate evacuation procedures if needed, and implement procedures for the protection of personnel, property and the environment.
5. Alert the emergency response services and activate the appropriate warning system.
6. Contact EM and mobilize resources to isolate the hazard and begin clean-up procedures.
    - Ensure safety in the spill area before entering;
    - Stop the flow of the hazardous material if it is safe to do so;
    - Secure and isolate the spill area;
    - Assess the situation (identify product, equipment involved, affected area, spill status, time of spill);
    - Contact the appropriate personnel and external agencies if necessary; and,
    - Begin containing and recovering the spill with onsite emergency spill equipment if it is safe to do so.
7. Complete the spill notification and reporting procedure.

7. FUEL MANAGEMENT PLAN

Fuels and other petrochemical substances will be managed as follows:

- No refuelling will occur within 30 m of any surface waterbody. Any refuelling that occurs on-Site should occur as far as reasonably possible from surface waterbodies (Fraser River, drainage ditches, etc.), and will occur on a flat surface to minimize the risk of run-off. Where possible, on-Site refuelling should occur over a hard surface (concrete or asphalt). Location shall be approved by the EM.
- No fuels, oils, lubricants or other petrochemical products to be stored within 30 m of any waterbody. Refueling equipment and tanks will be kept clean and maintained in good working order.
- No bulk fuel storage shall occur on-Site (excluding vehicle/equipment individual fuel tanks). As such, secondary fuel containment facilities will not be required.
- No major maintenance activities (engine servicing, hydraulic repairs, etc.) shall occur on-Site, regardless of distance to a waterbody, unless absolutely necessary. If deemed necessary, such equipment maintenance or repair must occur at least 30m from any surface waterbody.
- All waste liquids and products (filters, oily rags, etc.) shall be removed from the Site on a regular basis by a duly-licensed contractor, and disposal records will be maintained on-Site.
- Spill kits will be available, as described above.

8. WASTE MANAGEMENT

The Contractor will give consideration to the end destination of all products and materials brought to their construction site. This will include hazardous wastes such as fuels and lubricants and their empty containers following use, as well as used oily rags and used spill kit products, but also non-hazardous construction wastes and general refuse (wood, cigarette butts, coffee cups, water bottles etc.).

Throughout the course of the Project, the Contractor shall collect, handle and dispose of all waste materials and construction by-products appropriately, and in compliance with all relevant local, provincial, and federal legislation.

The Contractor will follow the best practices listed below:

- The Contractor will adhere to all applicable legislation with respect to the handling, transportation, and/or disposal of all materials related to this project (waste or otherwise). These regulations include (but are not be limited to) the BC Hazardous Waste Regulations,

Spill Reporting Regulations, Workers Compensation Board Regulations, and the Transportation of Dangerous Goods Regulations.

- Hazardous wastes generated could include waste petroleum products (engine oils, lubricants) from machinery and equipment, spent batteries, solvents and cleaning agents, etc. The Contractor will provide labelled separate container(s) for potentially hazardous waste such as oily rags and hydrocarbon absorbent pads.
- All hydrocarbon products and other hazardous wastes potentially present during project activities will be identified and the associated Workplace Hazardous Materials Information System (WHMIS) and MSDS made available to all construction team members.
- All recyclable or compostable materials will be collected separately from general waste as per Metro Vancouver Regional District requirements.
- Transportation of all wastes, recyclables, and compostable materials, shall be performed in a manner which prevents littering during transit to the receiver facility.

The attached Figure 2 depicts the specific locations for waste collection and sorting.

9. LIMITATIONS

The use of this report by anyone is subject to the following conditions and limitations:

1. This report has been prepared at the request of the client and for the specific use referred to herein. The client and the Vancouver Fraser Port Authority may rely on this report. It is not reasonable for any other party to rely on the contents of this report without first obtaining written authorization from the client and Active Earth Engineering Ltd.
2. Liability is expressly denied to any person other than the parties indicated above and those who obtain written consent. Accordingly, Active Earth Engineering Ltd. does not accept responsibility for any damage suffered by any such person as a result of decisions made or actions based on this report. Diligence by all intended users is assumed.
3. This report is believed to provide a reasonable representation of: the general environmental condition at the Site; the environmental risks presented by the Project; and, appropriate mitigation measures to be implemented by the Contractor. The conclusions and recommendations made in this report reflect Active Earth's best judgment in light of the information available at the time of reporting. Should additional information become available or Site conditions change, the conclusions and recommendations of this report may be subject to change.
4. Active Earth Engineering Ltd. has agreed to conduct various assessments and prepare this report as requested by the client named in the report for the use specified by the client, which is stated in the report. The client has agreed that the performance of this work and the report format are appropriate for the intended use.
5. Active Earth Engineering Ltd. has relied in part on input from Phoenix Environmental Services Ltd. for habitat, fisheries and biology information in Sections 2.2, 2.3, 3.2, 4, 5.7, 5.9, 5.11, and 5.13 of this report.
6. Written consent from Active Earth Engineering Ltd. must be obtained before any part of the report can be used for any purpose by anyone other than the client and other intended users identified in the report. Liability to any other party or for any other use is expressly denied regardless of who pays Active Earth Engineering Ltd.'s fee. Written consent and approval of Active Earth Engineering Ltd. must also be obtained before the report (or any part of it) can be altered or conveyed to other parties or the public through prospectus, offering memoranda, advertising, public relations, news, sales or other media.

10. REFERENCES

1. Fisheries Act, R.S.C., 1985 as amended (http://laws-lois.justice.gc.ca/eng/acts/f-14/)
2. BC Riparian Areas Regulation (RAR), 2004 as amended (http://www.bclaws.ca/civix/document/id/complete/statreg/376_2004)
3. BC Water Sustainability Act (WSA) (http://www.bclaws.ca/civix/document/id/complete/statreg/14015)
4. BC Environmental Management Act, S.B.C 2003, c. 53, as amended (http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/03053_00)
5. BC Contaminated Sites Regulation (CSR), B.C. Reg. 375/96, as amended (http://www.bclaws.ca/Recon/document/ID/freeside/375_96_00)
6. BC Spill Reporting Regulation (SRR), B.C. Reg. 187/2017, as amended
7. Land Development Guidelines for the Protection of Aquatic Habitat, 1992 Edition, updated 1993 – DFO (http://www.dfo-mpo.gc.ca/Library/165353.pdf)
8. Urban Storm Water Guidelines and Best Management Practices for Protection of Fish and Fish Habitat – DFO (http://www.dfo-mpo.gc.ca/Library/277967.pdf)
9. British Columbia Approved and Working Water Quality Guidelines – BC ENV (http://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-quality/water-quality-guidelines)
10. Best Practices for Urban and Rural Development, 2004 Edition – BC ENV (http://www.env.gov.bc.ca/wld/documents/bmp/urban_ebmp/EBMP%20PDF%203.pdf)
11. Standards and Best Practices for Instream Works, 2004 Edition – BC ENV (http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf)
12. BC Wildlife Act (http://www.bclaws.ca/Recon/document/ID/freeside/00_96488_01)
13. Migratory Bird Convention Act (MBCA), 1994 as amended (https://laws-lois.justice.gc.ca/eng/acts/m-7.01/page-1.html)
14. Species at Risk Act (SARA), 2002 as amended (https://laws-lois.justice.gc.ca/eng/acts/s-15.3/page-1.html)
15. VFPA Non-Road Diesel Emissions (NRDE) (https://www.portvancouver.com/environment/air-energy-climate-action/terminal-energy-efficiency/nrde/)
16. VFPA Guidelines – Construction and Environmental Management Plan (April 2018) (https://www.portvancouver.com/wp-content/uploads/2018/04/PER-Construction-Environmental-Management-Plan-CEMP-Guideline-UPDATE.pdf)

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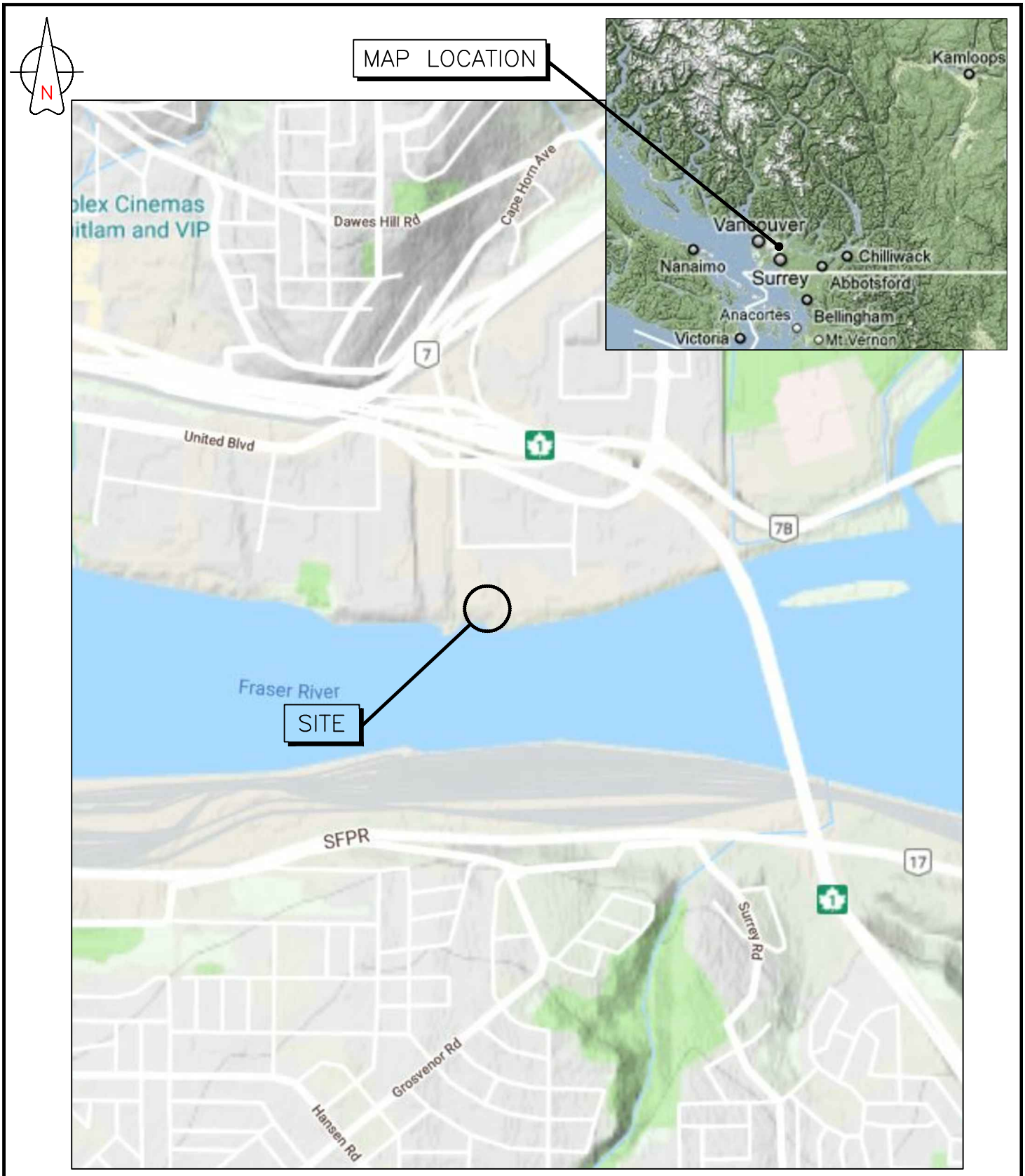
FIGURES



LOCATION PLAN

REFERENCE: GOOGLE MAPS

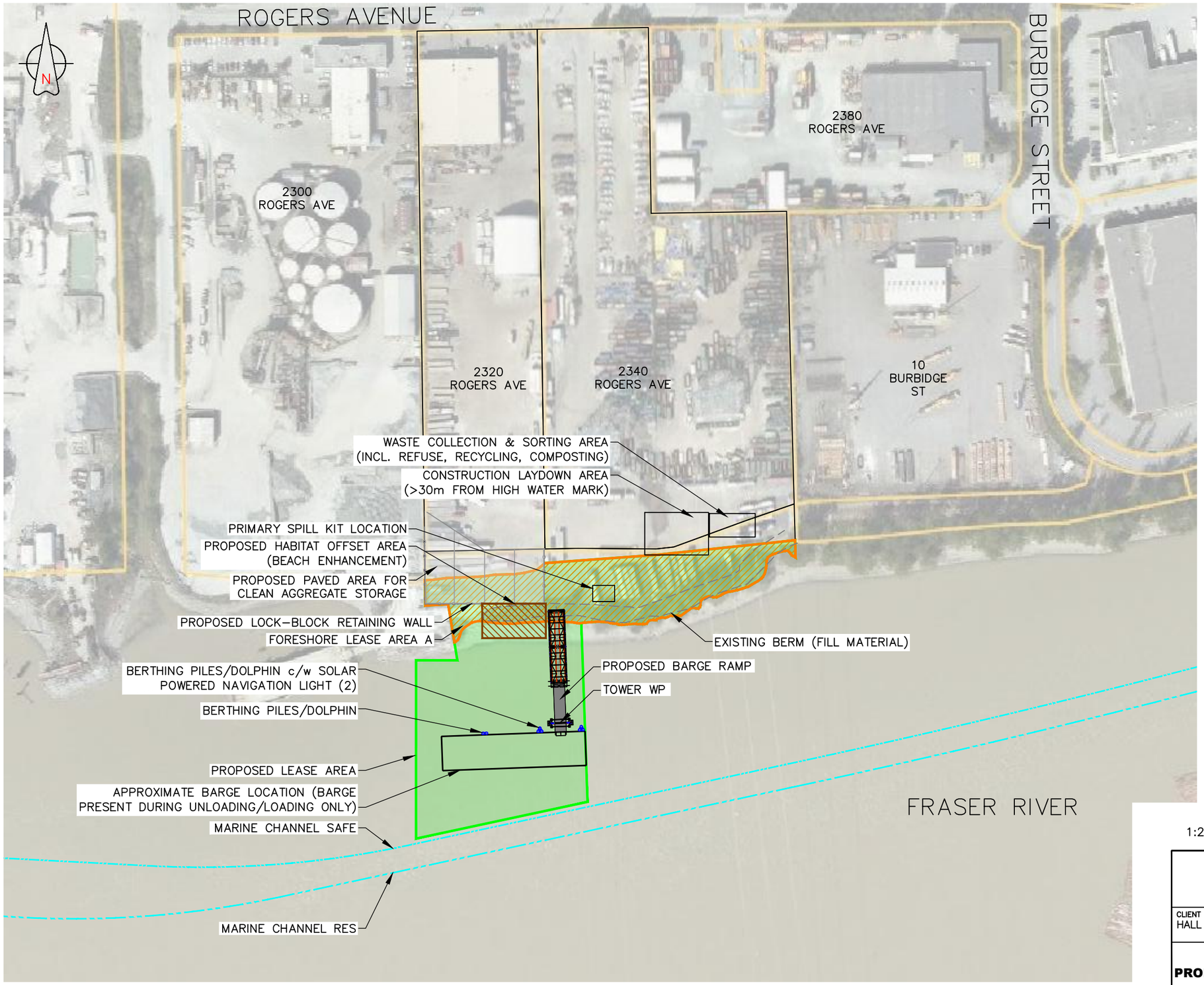
SCALE: N.T.S.

HALL CONSTRUCTORS

ACTIVE EARTH ENGINEERING LTD

PROPOSED BARGE RAMP – NEAR 2320 ROGERS AVE. COQUITLAM, BC

date: AUG 19	scale: N.T.S.
	drawn: EB
	checked: SB
	file: 1886–1
drawing no: FIGURE 1	issue: A



LEGEND

- APPROXIMATE LEGAL LOT LINE
- FORESHORE LEASE AREA A
- PROPOSED LEASE AREA
- PROPOSED HABITAT OFFSET AREA

ISSUED FOR VFPA PERMIT REVIEW

1:2000 — 0 — 40 — 120m

ACTIVE EARTH ENGINEERING LTD

CLIENT NAME: HALL CONSTRUCTORS	PROJECT LOCATION: COQUITLAM, BC

CEMP SITE PLAN
PROPOSED BARGE RAMP NEAR 2320 ROGERS AVENUE

DWN BY: GM	DWG NAME: -2	DATE: 2020-07-20	FIGURE 2
CHK'D: MD	PLOT:	CADFILE: 1886b	

REFERENCE: CITY OF COQUITLAM – Q THE MAP, INCLUDING AERIAL PHOTOGRAPH DATED 2018 & ALL-SPAN ENGINEERING & CONSTRUCTION LTD. PROJECT-19011

PATH:

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APPENDIX A

Environmental Monitoring Templates

ACTIVE EARTH ENGINEERING LTD

EM Site Inspection and CEMP Verification

Version Date: August 9, 2019

Project: Barge Ramp Construction near 2320 Rogers Avenue, Coquitlam, BC (PER No, 19-092)

Monitor Name: _____

Monitor Company: _____

Inspection Date: _____

Weather:

Current Site Activities:

INSPECTION ITEM	YES	NO	N/A	REFERENCES AND NOTES
Documentation, Contacts, Emergency Response				
CEMP available on-Site				
Relevant permits/notifications in place and available on-Site (VFPA, DFO, etc.)				
CEMP/Project contacts posted on-Site and up to date				CEMP 3.1
Emergency Response contacts posed on-Site and up to date				CEMP 6.1
Emergency Spill Response Plan summary (1 page) posted on-Site				CEMP 6.4
Spill kits well located, readily accessible, stocked, and signage posted on-Site				CEMP 6.3.4
Hazardous substances/products inventory (MSDS) on-Site				CEMP 6.3.4 / 8
Erosion and Sediment Controls				
Sufficient and appropriate ESC supplies available on-Site				CEMP 5.7.1
ESC measures in place and operational (silt fencing, catch basin protection, etc.)				CEMP 5.7.1
ESC measures operating effectively (no discharge of untreated water)				CEMP 5.7.1
On-Site vehicles/equipment travelling on paved or maintained gravel surfaces				CEMP 5.7.1
Significant Rainfall Event (SRE) within last 24 hours				CEMP 5.7.1
Materials stockpiled and covered as required				CEMP 5.7.1
Surface water being collected and treated appropriately prior to discharge				CEMP 5.7.2
Calibrated Turbidity probe available to EM				CEMP 5.7.2
Air Quality Controls				
Significant on-Site dust visible				CEMP 5.4.1
Off-Site dust migration visible				CEMP 5.4.1
If yes to either above: dust measurements are required				If yes - results:
Dust control equipment/supplies available if required				CEMP 5.4
Truck wash station operating effectively (also an ESC consideration)				CEMP 5.4
Off-Site roadways in good condition (also an ESC consideration)				CEMP 5.4
Staff working near dust have masks with valid p110 dust cartridges available				CEMP 5.4.1
Idle reduction requirements being followed				CEMP 5.4.2
All equipment well maintained (no noxious fumes or smoke)				CEMP 5.4.2
Staff working near odours have masks with valid VOC cartridges available				CEMP 5.4.2
Noise and Vibration				
All construction occurring within mandated hours (M-S, 7am to 8pm)				CEMP 5.5
All equipment well maintained (not overly noisy)				CEMP 5.5
Pile driving or other particularly noisy activities occurring				CEMP 5.5
If yes to above, have neighbours and municipality been notified				CEMP 5.5
If pile driving us occurring, is marine vibration monitoring occurring				If yes - results (kPa):
Marine Works				
Marine construction occurring within appropriate fisheries windows				CEMP 2.3 / 5.11
Fill placement below HWM occurring appropriately to minimize impacts				CEMP 5.11
Pile driving occurring appropriately to minimize impacts				CEMP 5.11
No equipment operating on the intertidal foreshore				CEMP 5.11
CEMP Training and Awareness				
All supervisors (contractor and sub-contractors) oriented by EM				
All site staff (contractor and sub-contractors) oriented by EM or their supervisor				
Environmental hazards/controls discussed in regular H&S Tailgate meetings				
Site staff aware of ESC hazards to environment, and mitigation measures				
Site staff aware of marine fill placement and pile driving hazards / mitigations				
Site staff aware that any discharge direct to foreshore / waterbody is prohibited				
Site staff aware of emergency/incident contacts and protocols, spill kit locations				
Site staff aware of fueling / maintenance / waste handling requirements				
Site staff have been trained in use of spill kit materials				
Other:				
Importation of backfill material				CEMP 5.8
Sample collected of backfill material				If yes - Sample ID:
Waste / garbage / recycling / compost storage areas in good condition				CEMP 8
Contractor is periodically checking fuel tanks/lines and hydraulic hoses				CEMP 6.3.4
Contractor is checking equipment condition daily (no leaks)				CEMP 5.6
No fueling or maintenance within 30m of waterbody. All fueling on flat surface.				CEMP 5.6 / 7
No fuels, oil, chemicals stored within 30m of waterbody. No bulk fuel storage on Site.				CEMP 7
All equipment / supplies laydown occurring on flat stable land >30m above HWM				CEMP 5.3
Waste liquids/products properly stored/labelled and disposed appropriately				CEMP 7/8
Other:				
Other:				
Other:				

DRAINAGE / DISCHARGE MONITORING	
Monitoring Point:	Water Quality Observations:
Turbidity Measurement(s):	Other Measurement(s):
Sample ID (TSS laboratory analysis if Turbidity exceeds CEMP 5.7.2 Criteria):	

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APPENDIX B

Spill Reporting Regulation including Reportable Volumes

PROVINCE OF BRITISH COLUMBIA

REGULATION OF THE MINISTER OF ENVIRONMENT AND CLIMATE CHANGE STRATEGY

Environmental Management Act

Ministerial Order No. M 329

I, George Heyman, Minister of Environment and Climate Change Strategy, order that, effective October 30, 2017, the Spill Reporting Regulation, B.C. Reg. 263/90, is repealed and the attached Spill Reporting Regulation is made.

September 14, 2017

Date

Minister of Environment and Climate Change Strategy

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Act and section: *Environmental Management Act*, S.B.C. 2003, c. 53, ss. 92.1 and 139

Other: OIC 1223/90

R10163014

SPILL REPORTING REGULATION

Contents

Definitions

1 In this regulation:

"Act" means the *Environmental Management Act*;

"body of water" includes

(a) a stream, as defined in the *Water Sustainability Act*,

(b) an aquifer, as defined in the *Water Sustainability Act*,

(c) fish habitat, as defined in the Water Sustainability Regulation, B.C. Reg. 36/2016, and

(d) any of the following that could drain or empty directly into a body of water:

(i) a naturally formed pool of water other than one referred to in paragraph (a), (b) or (c);

(ii) a ditch;

"contact information", in relation to a person, means the address, telephone number and, if any, email address of the person;

"emergency response completion date", in relation to a spill, has the meaning given in section 8 *[emergency response completion date]*;

"listed quantity", in relation to a listed substance, means the quantity listed in Column 2 of the Schedule opposite the listed substance or, if more than one quantity is listed, the highest of those quantities;

"listed substance" means a substance listed in Column 1 of the Schedule;

"Provincial Emergency Program" has the same meaning as in the *Emergency Program Act*.

Reportable spills

2 This regulation applies for the purposes of section 91.2 (1) (a) *[responsible persons – spill response]* of the Act in relation to a spill of a listed substance, other than natural gas, if

(a) the spill enters, or is likely to enter, a body of water, or

(b) the quantity of the substance spilled is, or is likely to be, equal to or greater than the listed quantity for the listed substance.

Reportable spills of natural gas

3 This regulation applies for the purposes of section 91.2 (1) (a) *[responsible persons – spill response]* of the Act in relation to a spill of natural gas if

(a) the spill is caused by a break in a pipeline or fitting operated above 100 psi that results in a sudden and uncontrolled release of natural gas, and

(b) the quantity of natural gas spilled is, or is likely to be, equal to or greater than the listed quantity for natural gas.

Initial report

4 (1) If a spill occurs or is at imminent risk of occurring, a responsible person must ensure that the actual or potential spill is immediately reported to the Provincial Emergency Program by calling 1-800-663-3456.

(2) A report under this section must include, to the extent practicable, the following information:

(a) the contact information for

(i) the individual making the report,

(ii) the responsible person in relation to the spill, and

(iii) the owner of the substance spilled;

(b) the date and time of the spill;

(c) the location of the spill site;

(d) a description of the spill site and the surrounding area;

(e) a description of the source of the spill;

(f) the type and quantity of the substance spilled;

(g) a description of the circumstances, cause and adverse effects of the spill;

(h) details of action taken or proposed to comply with section 91.2 (2) *[responsible persons – spill response]* of the Act;

(i) the names of the government, federal government, local government and first nation government agencies at the spill site;

(j) the names of other persons or government, federal government, local government or first nation government agencies advised about the spill.

Updates to minister

5 (1) A responsible person for a spill that occurs on or after October 30, 2018 must, until the emergency response completion date, submit written reports on the spill to the minister in accordance with subsection (2).

(2) A report under subsection (1) must be made

(a) as soon as practicable on request of the minister,

(b) at least once every 30 days after the date the spill began, and

(c) at any time the responsible person has reason to believe that information previously reported by the responsible person under section 4 or this section was or has become inaccurate or incomplete.

(3) A report under this section must be made in the manner and form specified by the minister and must include, to the extent practicable, the information set out in section 6 (2).

End-of-spill report

6 (1) The responsible person for a spill that occurs on or after October 30, 2018 must submit a written report on the spill to the minister within 30 days after the emergency response completion date for that spill.

(2) A report under this section must be made in the manner and form specified by the minister and must include the following information:

(a) the contact information of

(i) the responsible person, and

(ii) the owner of the substance spilled;

(b) the date, time and duration of the spill;

(c) the location of the spill site, which must be specified by

(i) its address, if any, and

(ii) its latitude and longitude;

(d) a description of the spill site and sites affected by the spill;

(e) a description of the source of the spill;

(f) the type and quantity of the substance spilled;

(g) a description of the circumstances, cause and adverse effects of the spill, including, without limitation, a description of the following:

(i) the activity during which the spill occurred (e.g., transportation, transfer of cargo, fuelling, cleaning, maintenance);

(ii) the incident leading to the spill (e.g., tank rupture, overfill, collision, rollover, derailment, fire, explosion);

(iii) the underlying cause of the spill (e.g., human error, external conditions, organizational or management failure);

(iv) the adverse effects of the spill to human health, which must specify

(A) the number of injuries,

(B) the number of fatalities, and

(C) the number of evacuees;

(v) the adverse effects of the spill to the environment and infrastructure at the spill site and the area surrounding the spill, which description must specify

(A) the size of the area adversely affected by the spill,

(B) the biological and other resources adversely affected by the spill, including, without limitation,

(I) bodies of water,

(II) flora and fauna, and

(III) animal, fish and plant habitat;

(h) details of action taken to comply with section 91.2 *[responsible persons – spill response]* of the Act;

(i) how and where waste from the spill was disposed of;

(j) a copy of data from and reports of sampling, testing, monitoring and assessing carried out during spill response actions;

(k) a map of the spill site and the area surrounding the spill and photographs of the spill;

(l) the names of agencies on the scene;

(m) the names of other persons or agencies advised about the spill.

Lessons-learned report

7 (1) A director may order a responsible person in relation to a spill of a listed substance to submit a written report on the spill to the director.

(2) An order under subsection (1) must be made in writing and within 6 months after the emergency response completion date for the spill.

(3) A responsible person to whom an order under subsection (1) is directed must submit the report to the director in the manner and form specified by the director and must include

(a) a description of the effectiveness of the spill response actions,

(b) a description of actions taken to prevent future spills and improve response to future spills,

(c) if the responsible person is a regulated person,

(i) a description of any changes that the person intends to make to the person's spill contingency plan to improve response to future spills,

(ii) if the spill occurred in a geographic response area, a description of any changes that the person considers should be made to the related geographic response plan to improve response to future spills, and

(iii) if spill response actions were carried out by a PRO, a description of any changes that the person considers should be made to the PRO's area response plan to improve response to future spills, and

(d) responses to any specific questions the director asks in the order.

Emergency response completion date

8 For the purposes of this regulation, the emergency response completion date for a spill is the date on which all of the following criteria are met:

(a) the incident command post is disestablished;

(b) the source of the spill is under control and is neither spilling nor at imminent risk of spilling;

(c) emergency actions to stabilize, contain and remove the spill have been taken;

(d) the waste removed from the spill site has been

(i) received at a facility for disposal, or

(ii) received for transportation to a facility for disposal;

(e) if applicable, all notices respecting evacuation from the spill site have expired or been rescinded;

(f) all equipment, personnel and other resources used in emergency spill response actions have been removed from the spill site, other than equipment, personnel or other resources required for

(i) sampling, testing, monitoring or assessing at the spill site, or

(ii) recovery or restoration of the spill site.

Application to oil and gas permit holders

9 The following sections do not apply to a person who holds a permit to carry out an oil or gas activity to which the Emergency Management Regulation, B.C. Reg. 204/2013, applies:

(a) section 5 *[updates to minister]*;

(b) section 6 *[end-of-spill report]*;

(c) section 7 *[lessons-learned report]*.

SCHEDULE

Definitions

1 In this Schedule, **"Federal Regulations"** means the Transportation of Dangerous Goods Regulations made under the *Transportation of Dangerous Goods Act, 1992* (Canada).

Item	Column 1 **Substances**	Column 2 **Quantity**
1	Class 1, Explosives as defined in section 2.9 of the Federal Regulations	50 g, or less if the substance poses a danger to public safety
2	Class 2.1, Flammable Gases, other than natural gas, as defined in section 2.14 (a) of the Federal Regulations	10 kg
3	Class 2.2 Non-flammable and Non-toxic Gases as defined in section 2.14 (b) of the Federal Regulations	10 kg
4	Class 2.3, Toxic Gases as defined in section 2.14 (c) of the Federal Regulations	5 kg
5	Class 3, Flammable Liquids as defined in section 2.18 of the Federal Regulations	100 L
6	Class 4, Flammable Solids as defined in section 2.20 of the Federal Regulations	25 kg
7	Class 5.1, Oxidizing Substances as defined in section 2.24 (a) of the Federal Regulations	50 kg or 50 L

Item	Column 1 **Substances**	Column 2 **Quantity**
8	Class 5.2, Organic Peroxides as defined in section 2.24 (b) of the Federal Regulations	1 kg or 1 L
9	Class 6.1, Toxic Substances as defined in section 2.27 (a) of the Federal Regulations	5 kg or 5 L
10	Class 6.2, Infectious Substances as defined in section 2.27 (b) of the Federal Regulations	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
11	Class 7, Radioactive Materials as defined in section 2.37 of the Federal Regulations	Any quantity that could pose a danger to public safety and an emission level greater than the emission level established in section 20 of the Packaging and Transport of Nuclear Substances Regulations, 2015 (Canada)
12	Class 8, Corrosives as defined in section 2.40 of the Federal Regulations	5 kg or 5 L
13	Class 9, Miscellaneous Products, Substances or Organisms as defined in section 2.43 of the Federal Regulations	25 kg or 25 L
14	waste containing dioxin as defined in section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
15	leachable toxic waste as defined in section 1 of the Hazardous Waste Regulation	25 kg or 25 L
16	waste containing polycyclic aromatic hydrocarbon as defined in section 1 of the Hazardous Waste Regulation	5 kg or 5 L
17	waste asbestos as defined in section 1 of the Hazardous Waste Regulation	50 kg
18	waste oil as defined in section 1 of the Hazardous Waste Regulation	100 L
19	waste that contains a pest control product as defined in section 1 of the Hazardous Waste Regulation	5 kg or 5 L
20	PCB wastes as defined in section 1 of the Hazardous Waste Regulation	25 kg or 25 L
21	waste containing tetrachloroethylene as defined in section 1 of the Hazardous Waste Regulation	50 kg or 50 L
22	biomedical waste as defined in section 1 of the Hazardous Waste Regulation	1 kg or 1 L, or less if the waste poses a danger to public safety or the environment
23	a hazardous waste as defined in section 1 of the Hazardous Waste Regulation and not covered under items 1 to 22	25 kg or 25 L

Item	Column 1 **Substances**	Column 2 **Quantity**
24	a substance, not covered by items 1 to 23, that can cause pollution	200 kg or 200 L
25	natural gas	10 kg