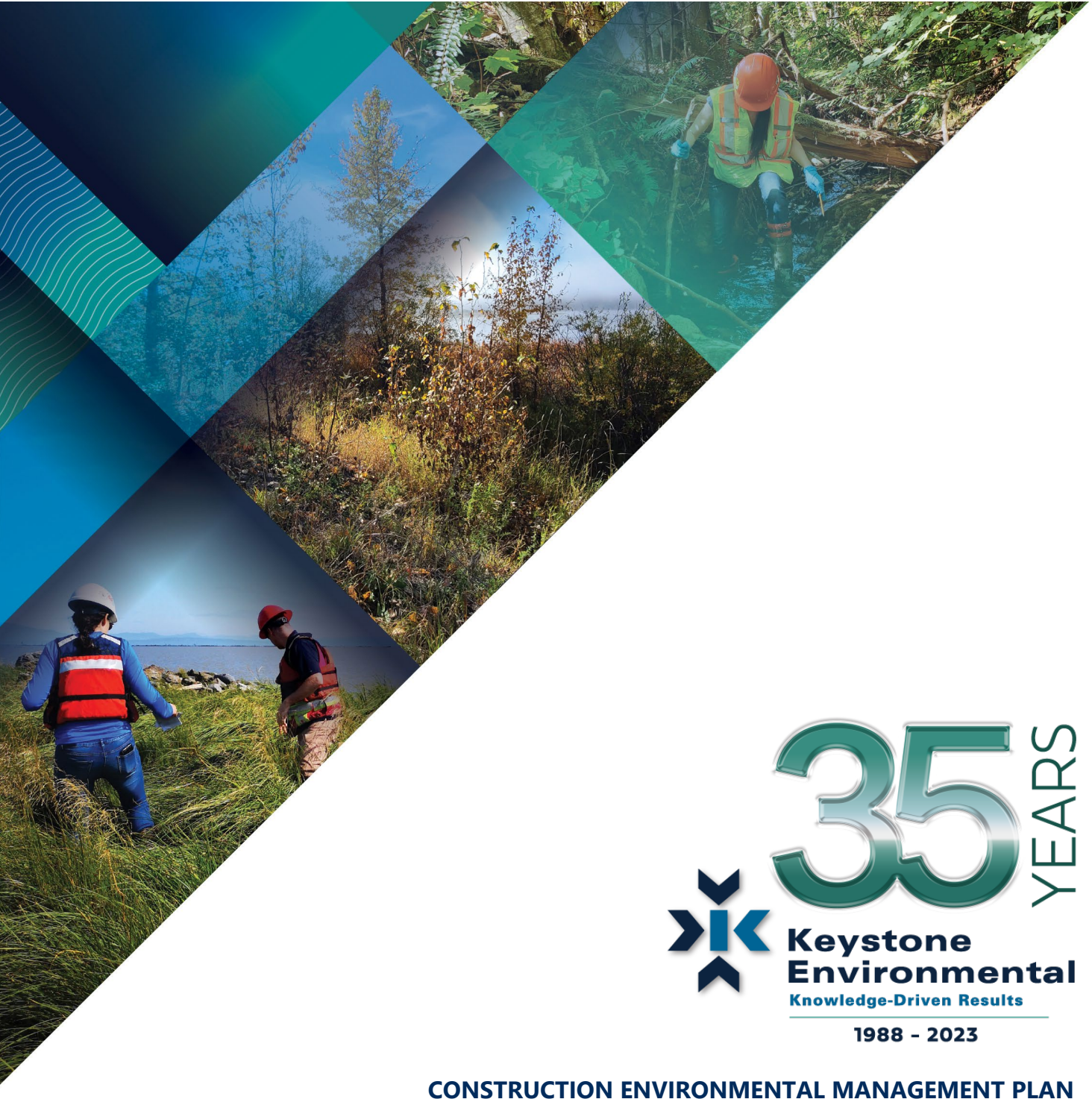

35 YEARS

Keystone Environmental

Knowledge-Driven Results

1988 – 2023

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

10566, 10582, and 10620/10626 Scott Road
Surrey, BC

Prepared For: Brunswick Property Holdings Ltd.

Project No: 15934
May 2023

Suite 320-4400 Dominion Street
Burnaby, BC V5G 4G3 | Canada

Ph: 604-430-0671
Fax: 604-430-0672

keyinfo@keystoneenvironmental.ca
KeystoneEnvironmental.ca

EXECUTIVE SUMMARY

Keystone Environmental Ltd. (Keystone Environmental) is pleased to submit this Construction Environmental Management Plan (CEMP) for development of an industrial business park (the Project) located at 10566, 10582, and 10620/10626 Scott Road in Surrey, BC (the Site). Keystone Environmental has been retained to prepare this Construction Environmental Management Plan (CEMP) to outline environmental protection measures required during the construction process.

The Project is understood to involve the following key activities:

- Delineating environmentally sensitive areas that will be retained, including streamside protection and enhancement areas (SPEAs).
- Installing erosion and sediment control (ESC) provisions, as per the ESC plan prepared by a professional engineer.
- Demolition and removing asphalt pads.
- Vegetation removal and grubbing.
- Infilling aquatic features, as per the Fisheries and Oceans Canada (DFO) Letter of Advice (LOA).
- Regrading (i.e., cut and fill).
- Constructing retaining walls and installing components of the stormwater system.
- Building construction.

Keystone Environmental has identified potential environmental concerns in relation to Project works, which include, but are not limited to:

- Effects to downstream fish-bearing watercourses due to dewatering and infilling activities, such as changes in the quantity or quality of flow; or Site run-off which could drain to the municipal storm system or fish habitat.
- Harm to wildlife, including species of management concern during vegetation clearing activities, dewatering, and infilling activities.
- Harm or disturbance to nesting birds due to vegetation clearing during the bird nesting window (March 1 to August 31).

The principal objective of this CEMP is to protect environmentally valuable resources with potential to be affected during Project activities. The primary means of achieving this objective includes:

- Clear delineation of the approved Project footprint, including access and laydown areas, prior to construction start-up.
- Implementation of erosion and sediment control measures and structures according to the ESC Plan.
- Completion of wildlife surveys and salvage prior to vegetation clearing, infilling, and dewatering activities.
- Implementation of adaptive management to identify and implement additional measures or maintenance requirements, as necessary.

This CEMP has been prepared as a guide for: the Contractor working on the Project; regulatory agencies; and the Project Environmental Monitor. Mitigations were designed to be Site-specific and are based on best management practices and government guidelines, policies, and legislation. Agency permits, approvals, and authorizations were also incorporated into this CEMP.

This Executive Summary is subject to the same general limitations as contained in the report and must be read in conjunction with the entire report.

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY i
TABLE OF CONTENTS iii
LIST OF ACRONYMS vi
1. INTRODUCTION 1
2. PROJECT INFORMATION 2
2.1 Project Location 2
2.2 Project Description 2
2.3 Project Schedule 2
2.4 Site Description 3
3. CONTACTS AND RESPONSIBILITIES 4
3.1 Key Project Personnel 4
3.2 Environmental Responsibilities 4
3.2.1 Qualified Environmental Professional 4
3.2.2 Environmental Monitor 4
3.3 Contractor Responsibilities 5
4. Regulatory Framework 6
5. PROJECT MITIGATION MEASURES AND ENVIRONMENTAL SPECIFICATIONS 7
5.1 General Mitigation 7
5.2 Site Access, Mobilization and laydown Areas 8
5.3 Air Quality / Dust Control 8
5.4 Noise Abatement 8
5.5 Vehicles and Equipment – Fuelling and Servicing 8
5.6 Erosion and Sediment Control 9
5.7 Storage and Handling Practices for Contaminated Soil 10
5.8 Vegetation Management 10
5.8.1 Invasive Species Management 12
5.9 Wildlife Management 13
5.9.1 Nesting Birds 14
5.9.2 Amphibians 14

TABLE OF CONTENTS (CONT'D)

Page

5.9.3 Barn Owl 15
5.10 Concrete 15
5.11 Instream Works 16
5.11.1 Dewatering Plan 17
5.12 Heritage or Archeology 18
5.13 Sensitive Habitat Features and Species 18
6. EMERGENCY RESPONSE 19
6.1 Emergency Communication 19
6.2 Environmental Emergency Plan 19
6.3 Environmental Spill Prevention and Response Plan 19
6.3.1 Spill Response Plan 19
6.4 Fuel Management/ Spill Prevention Plan 20
6.5 Waste Management 21
6.5.1 Garbage and General Waste 21
6.5.2 Concrete 21
6.5.3 Solid Waste 21
6.5.4 Sanitary Wastes 22
6.5.5 Hazardous Wastes 22
6.6 Fire Prevention 22
7. ENVIRONMENTAL MONITORING PROGRAM 23
7.1 Environmental Monitoring 23
7.1.1 Water Quality Monitoring 24
7.1.2 Environmental Compliance Tracking 24
8. CONCLUSION 26
9. STATEMENT OF LIMITATIONS 27
10. PROFESSIONAL STATEMENT 28
11. REFERENCES 29

LIST OF APPENDICES

Appendix A Fisheries and Oceans Canada Letter of Advice

Appendix B Archaeological Change Find Procedures (Forthcoming)

LIST OF ACRONYMS

BC	British Columbia
BCWQG	BC Water Quality Guidelines
BMP	Best Management Practices
CO_2	Carbon Dioxide
ECCC	Environment and Climate Change Canada
EIR	Environmental Incident Report
EMBC	Emergency Management BC
CEMP	Construction Environmental Management Plan
ESC	Erosion and Sediment Control
FLNRORD	Ministry of Forests, Lands, Natural Resource Operations and Rural Development
MBCA	Migratory Birds Convention Act
MOE	Ministry of Environment
NTU	Nephelometric Turbidity Units
OCP	Official Community Plan
QEP	Qualified Environmental Professional
R.P.Bio.	Registered Professional Biologist
RAPA	Riparian Areas Protection Act
RAR	Riparian Areas Regulation
SARA	Species at Risk Act
SPEA	Streamside Protection and Enhancement Area
TSS	Total Suspended Solids
WSA	Water Sustainability Act

1. INTRODUCTION

Keystone Environmental Ltd. (Keystone Environmental) was retained by Brunswick Property Holdings Ltd. (the Client/ Proponent) to complete a Construction Environmental Management Plan (CEMP) for development of an industrial business (the Project) located at 10566, 10582, and 10620/10626 Scott Road in Surrey, BC (the Site).

The purpose of this CEMP is to guide the implementation of mitigation measures and environmental monitoring during construction to fulfill Project obligations under applicable regulatory approvals and permits for the Site, and to reduce the likelihood of deleterious impacts to the environment during construction. This CEMP has incorporated government guidelines, best management practices (BMPs), environmental legislation, and requirements under the environmental assessment conducted for the Project (Keystone Environmental 2022). This CEMP is considered a living document and will be updated to accommodate changes to the construction plan or site conditions.

2. PROJECT INFORMATION

2.1 Project Location

The Site is comprised of three properties located east of Scott Road and is approximately 107,180 m^2. The properties within the Site include: 10566, 10582, and 10620/10626 Scott Road in Surrey, BC. There are industrial lots to the north, south, and west of the Site. There is a school east of the Site and residential properties further east of the school.

2.2 Project Description

The Project is understood to involve the following key activities:

- Delineating environmentally sensitive areas that will be retained, including streamside protection and enhancement areas (SPEAs) and land that has been designated as a "wildlife corridor."
- Installing erosion and sediment control (ESC) provisions, as per the ESC plan prepared by a professional engineer.
- Demolishing and removing asphalt pads.
- Clearing and grubbing vegetation.
- Infilling aquatic features, as per the DFO LOA.
- Regrading (i.e., cut and fill).
- Constructing retaining walls and installing components of the stormwater system.
- Constructing buildings.

Standard heavy construction equipment including excavators, loaders, graders, cranes, and pavers will be used throughout the duration of construction activities. Materials may include but are not limited to structural steel; pre-cast and cast-in-place concrete; low- and high-density polyethylene plastics; timber; and asphalt. It is understood that use of explosives will not be a required component of the Project.

For further details, please refer to the comprehensive Construction and Demolition Methodology Letter prepared by Wales McLelland Construction.

2.3 Project Schedule

Table 1 Estimated Project Timeline

Task	Start	Finish
Permitting		
Environmental permitting	Fall 2020	Winter 2021/22
Construction		
Site preparation	May 2023	June 2025
Preload	June 2022	June 2025
Building envelope and interior construction	April 2025	May 2026

2.4 Site Description

The Site is approximately 107,180 m^2 and includes 67,400 m^2 of developable area comprised of two large industrial warehouses, access roads, loading bays, paved open spaces, and parking spaces. This developable area is the western 63% of the Site, which has been historically occupied for farming, storage, trucking and other similar uses. The proposed business park will be a state-of-the-art high-capacity warehouse and distribution logistic facilities with the latest sustainable features such as energy efficient building envelope design, power, lighting, HVAC, plumbing, sensors and automated control systems. While there is a general demand for and insufficient supply of local industrial spaces, there is an urgent lack of supply for the specific type of project proposed here to meet the demands of today's global supply chain, changing consumer markets and requirements for green sustainable facilities and infrastructures.

The Project proposes to maintain 39,780 m^2 of regulated aquatic and streamside setback areas on-Site.

A detailed description of existing ecological conditions of the Site including vegetation, wildlife, and aquatic and riparian habitat is found in environmental assessment conducted for the Project (Keystone Environmental 2022).

3. CONTACTS AND RESPONSIBILITIES

3.1 Key Project Personnel

Table 2 outlines the roles and responsibilities of the Contractor, Project Manager, and the Environmental Monitor, for achieving compliance with the CEMP.

Table 2 Project Team Roles

Role	Party	Address	Contact	Contact Information
Project Manager	Brunswick Property Holdings Ltd.	2960 Altamont Cres. West Vancouver BC V7V 3C1	Mr. John Robertshaw	604-922-4259; john@jrobertshaw.com
Qualified Environmental Professional	Keystone Environmental Ltd.	Suite 320 4400 Dominion Street Burnaby, BC V5G 4G3	Dr. Jamie Slogan, Ph.D., R.P.Bio.	604.430.0671 jslogan@keystoneenvironmental.ca
Environmental Monitor	Keystone Environmental Ltd.	Suite 320 4400 Dominion Street Burnaby, BC V5G 4G3	TBD	TBD
Contractor	TBD	N/A	N/A	N/A

3.2 Environmental Responsibilities

3.2.1 Qualified Environmental Professional

The Qualified Environmental Professional (QEP) will report directly to the proponent's Project Manager. The QEP will be responsible for providing overall environmental management and coordination. They must be registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association. Roles will include environmental compliance tracking and reporting, managing the EM, and liaising with regulatory agencies and other authorities in accordance with the CEMP. Additional responsibilities of the QEP include:

- Overseeing changes to this CEMP as required.
- Conducting field work that requires a Biologist, which includes but may not be limited to, wildlife salvages and surveys.
- Providing oversight and direction to the Environmental Monitor.
- Reviewing environmental monitoring reports.

3.2.2 Environmental Monitor

The Environmental Monitor will report directly to the QEP and liaise with the Client's Project Manager, Contractor, and applicable regulatory agencies. The Environmental Monitor must be a trained applied scientist or technologist acting under the supervision of a QEP. They must be registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association. The

Environmental Monitor may appoint a designate to work on their behalf in writing. The Environmental Monitor will have the following responsibilities and authorities:

- The Environmental Monitor will have the authority to stop work if deemed necessary to address risks to the environment.
- Monitor construction activities to affirm work complies with the mitigative measures outlined in the CEMP. The frequency of the monitoring activities would be influenced by the type of activities and weather conditions.
- Provide full time monitoring during all phases of construction in and around a stream, inclusive of work within a SPEA.
- When works involve temporary flow diversions to isolate the work site:
  - Monitor diversions daily to ensure the pumps and flow bypasses are in proper working condition.
  - Ensure diversion works that include pump intakes are screened for fish and aquatic species.
  - Complete wildlife searches and salvages in advance work instream works (to be led by a QEP).
- Monitor erosion and sediment control measures (including water quality tests) to affirm that measures are working effectively.
- Attend Site meetings, as required, to maintain environmental communications between the Project Team.
- Inform the Contractor and the QEP immediately of construction activities that fail to meet the environmental requirements as described in the CEMP.
- Promote timely correction of environmental deficiencies by working directly with the Contractor.

3.3 Contractor Responsibilities

The Contractor(s) retained for the Project will report directly to the Project Manager. The Contractor is responsible for:

- Observing sensitive environmental areas as delineated in the field and applying activity specific BMPs listed in this CEMP when working in and round these areas.
- Understanding that these sensitive environmental areas cannot be entered without permission from the QEP.
- Complying with all legislative and regulatory requirements, and applicable permits and approvals.
- Complying with the contract documents and requirements of the CEMP.
- Reporting and documenting all environmental incidents, as outlined in this CEMP.
- Incorporating environmental protection strategies into the design and planned work practices.
- Understanding the roles and responsibilities of the QEP and EM.
- Correcting deficiencies.
- Conducting routine visual checks on vehicles, fuels storage areas, and equipment at the start of each day to identify potential equipment leaks.
- Remaining on call to respond to environmental issues.
- Providing individuals that are appropriately trained and equipped to respond to environmental incidents, such as spills.

4. REGULATORY FRAMEWORK

The following permits and approvals have been obtained for the Project:

- Fisheries and Oceans Canada (DFO) Letter of Advice (LOA) - Forthcoming
- Vancouver Fraser Port Authority (VFPA) Project Permit - Forthcoming

A copy of these approvals will be readily available on Site at all times. In addition to the above-listed approvals, works must adhere to the following federal legislation

Federal

- Fisheries Act
- Migratory Bird Conventions Act (MBCA)
- Species at Risk Act (SARA)
- Impact Assessment Act, 2019

5. PROJECT MITIGATION MEASURES AND ENVIRONMENTAL SPECIFICATIONS

5.1 General Mitigation

The Contractor is responsible for implementation of the following general environmental protection measures during construction, operations and post-construction maintenance:

- This CEMP will be reviewed during the construction kick-off meeting. Environmental protection measures must be reviewed by the Contractor and all employees involved with the Project. This meeting may include representatives from Brunswick Property Holdings Ltd., and Keystone Environmental, as well as the prime contractor and applicable sub-contractors.
- All copies of permits, licenses and approvals will be available for review on-Site. Works must comply with the terms and conditions of all permits, licences, and approvals. Changes to proposed works relevant to these permits, licenses, and approvals must be approved by Brunswick Property Holdings Ltd., as well as the appropriate regulatory agencies.
- The Contractor must have a spill prevention plan and appropriate equipment in place prior to Project start-up.
- The limits of disturbance (buffer zones/delineated work zones) to sensitive habitats (particularly around aquatic and forested riparian areas) will be clearly delineated in the field to avoid encroachment or damage to sensitive habitat adjacent to Project activities. These areas will be reviewed during the kick-off meeting.
- Equipment will be brought on Site through existing access roads and pre-approved detour/access areas.
- All equipment will be clean and maintained in good operating condition. Equipment refuelling (e.g., excavators) will be conducted >30 m from watercourses. For equipment that is engine-powered or contains oils and greases (e.g., excavators, cranes, welding machines) and require periodic maintenance or servicing, a mechanic will mobilize to the Site with all necessary supplies to undertake such activities and contain any potentially deleterious substances.
- Project activities must be conducted to avoid unauthorized discharges (liquid or solid) to any municipal drainage, terrestrial, or aquatic area.
- Exposed soil surfaces on Site should be contained to the active work area at any given time during the Project and to an area that can feasibly be protected against erosion and sediment migration as outlined in the Erosion and Sediment Control Plan (ESC Plan).
- Spill kits with adequate quantities of cleaning materials must be available prior to Project start-up on Site and in each piece of equipment on –Site during Project works.
- All Project activities must be in compliance with the plans, terms, and conditions of permits approved by regulatory agencies.
- All debris and deleterious substances generated by the construction activities associated with the Project will be appropriately managed in the immediate work area and disposed of in accordance with applicable legislation, guidelines, and BMPs.
- An Environmental Monitor will be retained by the Project Manager for the Project.
- Exposed soils will be managed as per the ESC Plan when rainfall is anticipated to avoid erosion and off-Site sedimentation.

5.2 Site Access, Mobilization and laydown Areas

- Mobilization will be planned to minimize the number of trips to and from the site.
- A laydown area for storage of equipment and materials will be established. It will be located on a flat, stable area at least 30 m from any waterbody or in another location approved by the QEP.

5.3 Air Quality / Dust Control

As per the Best Practices for the Reduction of Air Emissions from Construction and Demolition Activities[1] and the Environmental Best Practices for Highway Maintenance Activities[2], street cleaning will be conducted where dust and dirt is seen to be accumulating on the road and there is potential for generation of dust by construction vehicles. Mitigation of fugitive dust during the Project will include the following:

- Roads must be kept clean and free of dust/mud through mechanical and hand sweeping or the application of water. Site roads are to be maintained regularly, with the frequency increased during off Site hauling and other activities that increase the risk of off-Site tracking. Water must not be taken from watercourses, wetlands, or ditches for dust suppression purposes, unless with an approved permit.
- Unpaved roads will be maintained through the use of water spray, shoveling, and picking up spilled material and loose sediment.
- Site entrances and exits should be capped with clear crush or asphalt.
- Vehicles will be kept clean and free of dirt or debris.
- Trucks will be required to cover their loads during transport.
- Trucks will keep their speed below 15 km/h when travelling on unpaved roads.

5.4 Noise Abatement

The project is located in rural and industrial areas with a moderate level of baseline noise. Construction activities shall be conducted during standard port authority construction hours between the hours of 7:00 a.m. and 8:00 p.m. between Monday and Saturday, with no works permitted on Sundays or holidays.

5.5 Vehicles and Equipment – Fuelling and Servicing

Construction activities will require heavy equipment, as well as small engine-powered equipment and tools, which use fuel, lubricating oils and hydraulic fluids. The off-Site migration of these compounds can adversely affect terrestrial and aquatic environments. Contaminants must not be permitted to enter any drainage, wetland, or watercourse. The following mitigation measures are to be adhered to during the Project activities.

- All machinery operating in the vicinity of surface water drainage (e.g., catch basins, ditches) will be free of excess oil and grease, and will be in good mechanical order to avoid the potential for leaks or spills.
- All equipment is to be inspected daily, at a minimum.

[1] Available at: http://www.bieapfremp.org/Toolbox%20pdfs/EC%20-%20Final%20Code%20of%20Practice%20-%20Construction%20%20Demolition.pdf

[2] Available at: http://www.th.gov.bc.ca/publications/eng_publications/environment/bestpractice.htm

- All refuelling vehicles will be equipped with automatic back-pressure shut-off valves, and nozzles will be kept locked at all times, except during refuelling. Spigots will be metal to prevent them being accidentally or intentionally damaged. An appropriately trained crew member is to remain in attendance at all times while refuelling is being carried out. Designated suppliers for any fuelling operations that use tanker trucks must also conform to all specifications listed, and the driver must stay with the pump during fuelling activities.
- All grease and oil required for maintenance will be carefully applied. Any excess must be cleaned up and disposed of in a prompt and environmentally appropriate manner.
- Refuelling is not to occur within 30 m of Site drainages, ditches, watercourse, or wetlands.
- Refuelling procedures and handling of flammable liquids must also be covered within the Contractor's own Occupational Health & Safety Program.

5.6 Erosion and Sediment Control

- An ESC Plan will be developed by a Professional Engineer/ESC Supervisor (P.Eng) prior to the start of Site alterations, which will outline measures to protect the integrity of the SPEA during construction activities. The ESC Plan will indicate specified ESC measures and parameters to be installed throughout the Project area. ESC structures (e.g., silt fencing, catch basin protection, straw bales or equivalent as filters in interceptor trenches, environmentally friendly flocculants) will be installed according to the ESC Plan and in consultation with the ESC Supervisor or Environmental Monitor. It will be the responsibility of the Contractor to maintain the ESC measures on Site throughout the duration of the Project.
- The Environmental Monitor will be on Site to assess the ESC measures at a minimum weekly and within 24 hours of a significant rainfall event, defined as any precipitation event that exceeds 25 mm/day. During extended dry periods (from May to September), the inspection frequency can be reduced to bi-weekly intervals, as well as within 24 hours following a significant rainfall event, or as prescribed by the ESC plan.
- Construction activities should be avoided during periods of severe precipitation.
- Project activities will be planned to reduce the generation of sediment-laden water within the work Site (e.g., implementing a phased-approach to vegetation clearing to reduce the area of exposed soils, covering exposed soils, etc.).
- The area of exposed soils will be restricted to the approved Project footprint and must be managed (e.g., covered with polyethylene sheeting, straw), or otherwise mitigated as indicated in the ESC Plan following vegetation clearing and excavation works.
- Mitigative measures must be applied to protect excavated material and debris from erosion and reintroduction into the watercourse (e.g., applying an erosion blanket, seeding, and planting with native vegetation).
- Material stockpiles should be covered with tarpaulin or polyethylene sheeting when not in use and when rainfall is forecast.

- Exposed soils will be stabilized as soon as practicable following construction activities. Backfilling of excavations and re-grading of the Site will be completed as soon as possible stabilize disturbed slopes and exposed soils.
- Excess soils will be managed according to soil management requirements or permits for the type of soil.
- Water discharged from the Site should meet the British Columbia Water Quality Guidelines (BCWQG) outlined in Section 7.1.1. The Environmental Monitor will measure water quality of Site runoff and discharge water through the use of field instruments. When required, water samples will be collected and submitted for further analysis at a lab.
- The discharge of deleterious substances off-Site via storm drains and sanitary sewers will be prohibited.
- The point of discharge for any water retention and/or treatment system must be protected from scour to avoid sediment generation.
- Catch basins within the vicinity of the Project area will be protected with filter cloth or filter sock inserts.

5.7 Storage and Handling Practices for Contaminated Soil

Works may require the importation of soils from off-Site. When required, the Contractor will be responsible for providing documentation that any imported soils meet applicable environmental regulations and standards (BC Contaminated Sites Regulation). If contaminated soil or suspected contaminants are identified during project works, the following mitigation measures will be followed to reduce potential effects to non-contaminated soils:

- Excavated soil suspected or identified to contain contaminants must be classified, immediately removed from the Site after excavation, and disposed of at appropriate disposal facilities.
- When immediate removal and disposal is not feasible, contaminated soil may be temporarily stockpiled on impermeable ground prior to off-Site disposal. This containment cell must be isolated by berms (e.g., poly-wrapped sandbags or other suitable substitute, such as straw bales, no-posts) to avoid the spread of materials.
- Contaminated or potentially contaminated stockpiles must be covered with polyethylene sheeting that extends over the containment cell walls or berms and is weighted down to avoid contact with precipitation. Surface run-off must be directed away from the stockpile.
- During excavation and/or loading of haul trucks with contaminated soils, all equipment operators must minimize movements, swing paths, and distances travelled in order to avoid spreading contamination.
- Equipment used during contaminated soil excavation or loading must be cleaned prior to moving it out of the immediate work zone or be left parked in the same area. Sides, bumpers and wheels must be cleaned, and any soils spilled around the truck by the loader swept back into the stockpile.
- All haul trucks must be equipped with load covers prior to leaving the Site.

5.8 Vegetation Management

The project is anticipated to avoid impacts to terrestrial habitat and vegetation, as most of the footprint overlaps with an industrial yard void of vegetation, and therefore a re-vegetation plan is not proposed.

Potential effects to terrestrial habitat and vegetation include propagating invasive and non-native species and accidental encroachment of vegetation removal into areas outside of the Project footprint. The following mitigation measures will be implemented throughout Project activities to reduce the likelihood of deleterious effects to vegetation:

- Vegetation clearing should seek to avoid the nesting bird period (March 1 to August 31[3]). If clearing is required during this period, nesting bird surveys are required, as described in Section 5.9.1.
- Vegetation clearing should seek to avoid the period of increased amphibian activity (i.e., spring and summer). If clearing is required during the spring or summer, amphibian salvages will be conducted, as described in Section 5.9.2.
- Prior to tree clearing, the Contractor will hold a project kick-off meeting, which will be attended by the Environmental Monitor and the signing Forester (or designated representative). The location of windfirm trees and tree protection measures will be reviewed by the Forester.
- The Environmental Monitor will walk vegetated areas of the Site prior to clearing to confirm the results of previous vegetation assessments and to identify any potential sensitive plant species that may have moved into the Site since the previous assessments.
- Revegetation of the Site within the works areas is not anticipated. Therefore, a revegetation plan is not required. Any accidental clearing will be revegetated with a native coastal vegetation mix, or native plant mix meeting DFO riparian planting guidelines, approved by a Qualified Professional.
- The construction boundary, including all SPEA setbacks for retained areas, must be clearly delineated prior to construction start-up to avoid accidental encroachment outside of the Project boundary. The SPEA will be delineated by a BCLS with staking at 20 m intervals or within the line of sight of the previous staking. Snow and silt fencing will be established at the staking, and clear signage will be installed indicating that encroachment into the SPEA is not permissible.
- Windfirm trees, will be flagged clearly in the field. Tree protection fencing shall be established around the critical root zone. Equipment tracking, material storage, and vegetation or soil disturbance is not permitted within the critical root zones.
- Construction within 1.5 m of tree critical root zones must be monitored by the Forester or Forester's representative. The Contractor will be responsible for notifying the Forester or QEP of planned construction activities within 1.5 m of a critical root zone in advance of works.
- Large-diameter (i.e., >0.3 m diameter at breast height) wildlife trees are located within proposed clearing areas. Large-diameter trees and large-woody debris may be segregated and used in habitat compensation areas as per the Habitat Offsetting Plan. Tree stockpile locations will be identified in consultation with the construction Contractor.
- The Environmental Monitor will be present during clearing activities within a SPEA.
- Machinery and equipment must be clean and free of soils and plant materials prior to mobilization and demobilization to and from the Site to avoid or reduce the potential for the spread or introduction of invasive plant species.

[3] Develop with Care: https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/best-management-practices/develop-with-care/dwc-section-4.pdf

- Machine operators will take care when backing up or swinging around to avoid damaging overhanging limbs and nearby trees marked to be protected.
- All work areas outside the Project footprint will be restored through native plantings and seeding.

5.8.1 Invasive Species Management

Invasive species observed within the site with applicable Best Management Practices are listed in Table 3. The removal of invasive species from Site will be the responsibility of the Contractor and or sub-contractor with guidance from the Environmental Monitor.

Table 3 Invasive Plant Species Observed On-Site

Common Name	Scientific Name	Best Management Practices
Canada thistle	*Cirsium arvense*	Invasive species Council of BC [4]
Knotweed	*Fallopia* sp.	See section 5.8.1.1
Purple loosestrife	*Lythrum salicaria*	Metro Vancouver BMP [5]
Giant hogweed	*Heracleum mantegazzianum*	Metro Vancouver BMP [6]
Himalayan blackberry	*Rubus armeniacus*	See section 5.8.1.2

5.8.1.1 Knotweed Monitoring and Removal

Knotweed (*Reynoutria* spp.), noxious weed, was found within the Site. Knotweed removal on-Site will incorporate the following mitigation measures, at a minimum:

- If feasible, plants and affected soils should be buried on-Site to a minimum depth of 5 m.
- Where knotweed and soil removal are required, an Environmental Monitor trained in knotweed root identification should be present to assess the extent of soil contamination and to assist the Contractor in targeting and removing knotweed roots and immediately adjacent soils.
- If knotweed is to be disposed off-Site, contact an approved disposal facility (e.g., Vancouver Landfill, Mission Landfill) prior to removal of knotweed soil to coordinate a disposal location and time. The agreed upon disposal facility will be indicated during the kickoff meeting prior to the knotweed removal works. The Contractor will need to document disposal of knotweed and/or other plants regulated by the BC *Weed Control Act*.
- Plant debris/seeds must be immediately bagged before transporting to a pre-approved and designated licensed disposal site. This disposal facility will be indicated during the kickoff meeting prior to the plant removal.
- Chemical treatment (e.g., foliar spray or stem injection with an approved herbicide) by a certified pesticide applicator may be conducted. If herbicide treatment is conducted it should be performed in accordance with the requirements of the BC *Integrated Pest Management Act*. Stem injection should be

[4] Canada-Thistle_Factsheet_26032019.pdf (bcinvasives.ca)
[5] PurpleLoosestrifeBMP.pdf (metrovancouver.org)
[6] GiantHogweedBMP.pdf (metrovancouver.org)

used for plants located within five metres of the high-water mark opposed to spray or wipe on pesticide methods.

- Use separate trucks for hauling of knotweed soil and backfilling to prevent cross-contamination.
- Hauling trucks should have haul loads tarped when removing materials off-Site.
- Infested areas will be restricted to vehicles and equipment used in removal/excavation, which will be inspected for loose soil and plant material before leaving the infested area, and thoroughly cleaned if required.
- Material remaining after vehicle or equipment cleaning will be contained, collected and disposed of along with other knotweed material (soil/clippings).
- Delineate infected area with temporary exclusion fencing or tape to minimize risk of accidental spread of seeds and plant material to other Project areas.
- Post-treatment monitoring should be conducted for a period of three years to document conditions potential re-growth of invasive plant species where further maintenance may be required. If regrowth of knotweed is observed, it will be treated chemically or mechanically, in accordance with applicable regulations.

5.8.1.2 Himalayan Blackberry

Himalayan blackberry (*Rubus armeniacus)* was identified throughout the Site. The following measures will be implemented during Himalayan blackberry removal within the Site.

- Environmental monitoring will be conducted during blackberry removal to confirm that invasive plants are removed in a manner that reduces potential for regrowth or spreading to other areas.
- Contact a disposal facility prior to removal of the Himalayan blackberry to coordinate disposal.
- Use machinery or hand tools to remove the roots of Himalayan blackberries where possible. The roots should be excavated to a depth of at least 10 cm below grade to target root crowns and disposed of off-Site at a previously approved disposal facility.
- If invasive plant material and underlying soil is to be stockpiled before bagging and loading onto trucks, it should be placed on, and covered by, tarps or polyethylene sheeting.

5.9 Wildlife Management

The following mitigation measures are to be followed throughout the duration of the Project to avoid or reduce the potential for adverse effects to wildlife and contravention of the *Migratory Birds Convention Act*:

- Dewatering and vegetation clearing activities should be scheduled during late-summer or fall, if feasible, to avoid sensitive timing for amphibians, birds, and other wildlife. Specific activities that will require salvages and surveys to be conducted prior to works include: vegetation clearing during the bird nesting window, dewatering and infilling of watercourses and or wetlands during amphibian breading season.
- Pre-clearing wildlife surveys and salvages will be supervised by a Qualified Environmental Professional (QEP) prior to all vegetation clearing, dewatering, and infilling activities identified as having to potential

to cause harm to wildlife. The surveys will be competed as needed in select areas within the Site where active works are scheduled to take place.

- Surveys and salvage will be conducted during the appropriate timing windows to avoid or reduce potential effects to protected wildlife and wildlife features (e.g., raptor nests, amphibian breeding).
- Garbage must be disposed of in secure bins and staging areas must be clean and free of food items to avoid attracting wildlife on-Site.
- Contact the Environmental Monitor in the event that wildlife is found trapped on-Site. The appropriate regulatory authority and wildlife management professional will be contacted to advise on removal.

5.9.1 Nesting Birds

- Nests of eagles, heron, osprey, or peregrine falcon are protected year-round from destruction. Disturbance or removal of the nest would need to be conducted under the terms and conditions of a General Wildlife Permit.
- Vegetation clearing, inclusive of shrub, tree, and ground vegetation, should seek to avoid the breeding bird window, as defined by the Provincial Develop with Care guidelines (i.e., March 1 to August 31).
- If vegetation clearing, inclusive of shrub, tree, and ground vegetation removal, is scheduled during the nesting window (March 1 to August 31), pre-clearing bird nest surveys will be conducted by a QEP. The bird nest surveys will be conducted no more than five days in advance of clearing works. If clearing activities are not completed within five days of the survey, additional surveys may be required by the QEP. If an active nest is identified, the following will be implemented:
  - The QEP will prescribe a protective buffer, in consideration of the bird species, nature of the proposed works, and the level of the bird's habituation to auditory and visual disturbances. The buffer will be no less than 10 m in radius.
  - The QEP will regularly monitor the nesting activity and confirm when the nest is inactive.
  - Before vegetation clearing resumes within the protective buffer, the QEP will supervise a survey for active nests that were established since the buffer was erected.
- If a suspected bird nest is found during construction works, the Environmental Monitor will be notified, and work will temporarily stop within 10 m of the nest until the nest activity is affirmed. The Environmental Monitor will prescribe additional measures (e.g., a protected buffer) as needed.

5.9.2 Amphibians

- Numerous species of amphibians have been observed overlapping the Site, including the northern red-legged frog, a species of management concern. Vegetation disturbance and instream works should seek to avoid periods of increased amphibian activity (i.e., spring and summer).
- Wildlife exclusion fencing (i.e., silt fencing) will be installed around the Project boundary to deter amphibians from entering the construction area. The fencing will generally follow the edge of the SPEAs/ wildlife corridors and the property boundaries.
- If vegetation disturbance is required during the spring or summer (i.e., the period of increased amphibian activity), the Environmental Monitor will oversee the implementation of a terrestrial amphibian salvage under the terms and conditions of a provincial wildlife salvage permit. The Contractor will be responsible for giving a minimum of two weeks advance notice prior to vegetation disturbance, to provide adequate time to conduct a salvage.

- If instream activities are proposed during the spring or summer (i.e., the period of increased amphibian activity), the Environmental Monitor will oversee the implementation of an amphibian salvage, under the terms and conditions of a provincial wildlife salvage permit. The Contractor will be responsible for giving a minimum of two weeks advance notice prior to instream activities, to provide adequate time to conduct a salvage.

5.9.3 Barn Owl

Please refer to Species at Risk Management – Management of Barn Owls on VFPA Properties (December 2022), prepared by Ausenco and Barn Owl Critical Habitat Assessment 10566, 10582, and 10620/10626 Scott Road, Surrey BC by Keystone Environmental Ltd. (April 2023). Ausenco (2022), and Keystone Environmental recommend the following mitigations for reducing the negative effects as discussed for the Site:

- Ensure that the landowners are aware of the Barn Owl habitat legal protection.
- Avoid using rodenticides in the CH areas of the Site (Figure 1).
- For the new proposed buildings, ensure that the buildings have air intake fans screened to prevent injury to owls that may find them attractive for nesting or roosting.
- Consider erecting artificial structures for nesting or roosting in the southern section of the Site around the wetlands as a compensation for the proposed forage habitat loss.
- Consider eradicating invasive species and replacing them with native plants along the areas immediately adjacent to the defined CH for the owl at the Site (i.e., wetlands).
- Retain existing Barn Owl habitat attributes in the southern section of the Site immediately outside of the CH defined on the Site (i.e., the wetlands).
- Table 1 of the Ausenco (2022) report states that a *SARA* permit is required if a listed species has identified potential adverse effects on it or its habitat. Thes adverse effects need to be identified and measures are to be taken to avoid or lessen and monitor the adverse effects.

5.10 Concrete

Liquid concrete can be highly toxic to aquatic wildlife due to the generation of high pH. The pH of concrete and wash-off water from concrete can be as high as 12 (i.e., very alkaline) and must be kept out of surface waters, even for brief episodes. The BCWQG have specified an acceptable pH range of 6.5 to 9.0, understanding that deviations will likely be small, short-term in nature, and not be harmful. If a large concrete spill occurs and/or the pH of a receiving waterbody exceeds these criteria, carbon dioxide treatment, or other suitable methods identified in consultation with the Environmental Monitor and any applicable regulatory body, is to be initiated in order to reduce the pH to an acceptable level.

The following general mitigation measure should be implemented for concrete works[7]:

- Concrete works should be scheduled during dry weather to reduce the risk of heavy precipitation with uncured concrete and run-off into watercourses and drainages.
- Fresh concrete will be tarped to reduce or eliminate contact with storm water run-off until the concrete is sufficiently cured (minimum 24 hours).

[7] Ministry of the Environment / Fisheries and Oceans Canada Land Development Guidelines for the Protection of Aquatic Habitat, 1992.

- When working near water, carbon dioxide (CO_2) tanks with bubblers should be available on-Site during concrete works to lower pH to acceptable levels in the event of a spill. It will be the responsibility of the Contractor to implement the use of the CO_2 tank bubbler when required based on direction of the Environmental Monitor.
- Crews will be responsible for removing any spilled concrete or concrete debris using shovels and any liquid with shop vacuums or equivalent gear. Concrete works must follow the BMPs developed for cast-in-place activities by Environment and Climate Change Canada (ECCC).
- Concrete delivery trucks will be equipped with enclosed washout systems and will be returned to the supplier for complete washout.
- Pumper trucks will also wash-out back into their own hoppers and return to the supplier for discharge of wash water.
- Any tools will be washed off into the trucks or pumpers, or into a barrel which will be emptied at an appropriate land site for infiltration. No washing of equipment or tools is to take place on land or outside of the concrete truck washout storage tanks. Discharge and infiltration of concrete wash water is prohibited on-Site.
- If necessary, block storm drains/catch basins in the vicinity of construction works to avoid accidental discharge of water that has contacted uncured concrete.
- Excess concrete, grout, drilling wastes, and other liquid waste products must be directed to secure containment facilities for subsequent removal and disposal at an appropriate facility. If concrete material (solid form) has entered the water and it can be recovered, the material must be removed from the water, as it may continue to leach alkaline material into the surrounding water.
- Secure open bags of concrete mix when not in use.
- Install secondary containment facilities to capture potential overflow or spilled concrete.
- Any water that has come in contact with concrete will be tested against the BCWQG criteria for pH (between 6.5 and 9.0).

5.11 Instream Works

The Project will involve instream works as that were reviewed by DFO and subject to the LOA issued by DFO. Activities that are proposed in and about a stream include infilling existing drainages, and re-routing and re-aligning drainage pathways. To comply with regulatory requirements, the following measures will be implemented in advance of and during all instream works:

- Instream works shall occur during the reduced risk instream work window from August 1 to September 15; or, based on Project justification and risk, instream work may occur outside of the reduced risk instream work window, provided that:
  - The stream is completely dry or has marginal flow for the duration of the construction activities.
  - A QEP evaluates the proposed timing of the work based on environmental values (including fish, amphibians, wildlife, any listed species present), water quality, channel stability, weather, water levels, and the nature of the work.
  - A QEP considers additional construction mitigation measures that are required during the instream work.
  - A QEP is present on-Site full-time during the instream works.

- The QEPs rationale for conducting instream works outside of the reduced risk instream work window are documented in writing and submitted as part of the post construction reporting for this Project.

- Instream works must be conducted in dry conditions isolated from flow.

5.11.1 Dewatering Plan

- Where dewatering is required, the following will be adhered to:
  - If work involves dewatering/isolating flow around a stream suspected to contain amphibians, wildlife exclusion fencing will be installed around the feature to deter amphibians and other wildlife from breeding/entering the work area.
  - A wildlife search and salvage will commence prior to conducting instream works, under applicable wildlife handling permits. The salvage will be completed under the direction of the Environmental Monitor.
  - If water diversions or dewatering is required, the pump intakes will be screened for fish and aquatic species in accordance with the "interim code of practice: end of pipe fish protection screens for small water intakes in freshwater" (Fisheries and Oceans Canada, 2020).
  - Water will be discharged in a manner that reduces the likelihood of scour or erosion (e.g., to a permeable surface, using flow dissipators, etc.)
- Water quality monitoring must be conducted daily during instream works by the Environmental Monitor. Measurements must be taken upstream of the work area and within the extent of the sedimentation plume downstream of the work area. Measures must be taken immediately prior to works beginning, and then at regular intervals until the works are completed. The water quality criteria is provided in Section 7.1.1.
- Proceed rapidly following the commencement of instream works to reduce the likelihood of deleterious effects.
- Ensure that spill kits stocked with absorbent pads, booms, and heavy-duty poly bags are readily accessible during works within a SPEA or aquatic area.
- Use swamp pads where necessary in access and lay down areas to reduce soil/sediment disturbance and erosion, especially on soft soils.
- Clearly delineate the required extent of vegetation to be cleared in the field with a temporary exclusion fence (i.e., snow and silt fencing) along the outer perimeter of each of the SPEAs to be protected.
- Implement measures to prevent concrete, grout, or other lime-containing construction materials, or associated runoff or wash waters, from entering a SPEA or aquatic feature.

5.12 Heritage or Archeology

The Contractor will use chance-find procedures when conducting works that potentially could disturb archaeological finds (e.g., during excavation) (Appendix B). If archaeological resources are identified during Project activities, works must stop to avoid damage or disturbance. The Project Manager must be contacted immediately, and an archaeologist will be consulted to determine next steps. Work will not proceed in the area until written instruction is obtained from the Project Manager. Additional measures may be prescribed by the Projects Archaeologist. If human remains are found, the police shall be notified.

The Archeological Overview Assessment from Report from July 2022 (Terra Archeology 2022) recommends that an impact assessment should occur for land altering development activities as well as a review a review of design drawings prior to construction. Chance find strategies and spot checks may be deemed necessary following initial monitoring or testing. A review of final design and an AIA will occur prior to construction.

5.13 Sensitive Habitat Features and Species

Within the Environmental Assessment (Keystone 2022) it was identified that there is a potential for seven species at risk to occur on the Site for either breeding or foraging. They consist of the following:

- Little brown myotis – Roosting and foraging.
- Great blue heron – Foraging in channels and wetlands.
- Green heron – Potential foraging and nesting in wetlands.
- Band-tailed pigeon – Potential nesting and foraging in wetland and riparian areas.
- Barn swallow – Potential nesting on structures and foraging in riparian areas.
- Northern red-legged frog – Potential breeder in wetlands.
- Barn owl – Potential for critical habitat as identified in the Environment and Climate Change Canada (ECCC) Recovery Strategy for the Barn Owl

Mitigation measures to protect the species at risk are listed in *Section 5.8 Vegetation Management* and *Section 5.9 Wildlife Management* of this report.

6. EMERGENCY RESPONSE

6.1 Emergency Communication

Table 4 Emergency Contacts

Agency	Phone Number
Emergency Services	911
VFPA Operations Centre	604-665-9086
Surrey Non-emergency police	604-599-0502
Surrey Non-emergency fire	604-543-6700
Nearest Hospital (Surrey Memorial Hospital)	+1-604-581-2211
BC Emergency Spill Reporting Line (Emergency Management BC)	1-800-663-3456
DFO Spill Reporting (Observe, Record, Report)	1-800-465-4336

6.2 Environmental Emergency Plan

An environmental incident is defined as one that has caused, or has the potential to cause, one or more of the following:

- Environmental damage;
- An adverse effect on fish, wildlife, or other environmental resources;
- Heightened publicity associated with a negative effect on the environment; or
- Legal action with respect to environmental noncompliance and/or damage.

Environmental incident reporting will be conducted according to the following procedures:

- Immediate action must be taken to minimize environmental consequences and manage resolution of the incident.
- Gather information on the causes to facilitate prevention of future incidents and prepare updates to the Environmental Incident Reports (EIR), as necessary, and submit them to representative parties.
- Prepare a written EIR, within 24 hours of the incident regardless of whether it is a working day or not, to describe the occurrence, summarizing events, actions and recommendations for future avoidance.
- Submit the EIR to Brunswick Property Holdings Ltd and the City of Surrey.
- Any spill of a substance that is toxic, polluting, or deleterious to aquatic life of reportable quantities must be reported to the Dangerous Goods Incident Report 24-hour phone line at 1-800-663-6456.

6.3 Environmental Spill Prevention and Response Plan

6.3.1 Spill Response Plan

Under Section 1 of the provincial Spill Reporting Regulation, a "spill" is defined as a release or discharge of a substance in an amount equal or greater than that specified in the Schedule *Reportable Levels for Certain Substances* of this Regulation. The reportable quantities vary according to class of substance, ranging from any amount to 200 kg, depending on the nature of the material that has been spilled.

The Contractor will develop and implement Site-specific environmental response plans for operations based on the type and amount of equipment, and the activities using potentially deleterious substances. The purpose of these environmental spill response plans is to identify potential risks at, or in proximity to, the Site and ancillary facilities. These plans will contain the procedures to facilitate rapid deployment of resources in the event of a spill and to avoid or reduce potential effects to the environment, the public, and personnel on-Site. The Contractor will be familiar with regulatory requirements and be adequately prepared to respond within the shortest possible time. Equipment operators and spill responders will review the Spill Response Plan regularly to keep it up to date, which must include an inventory of all required materials.

Spill contingency procedures will be posted in visible locations within the Contractor's work Site offices and trailers, and at strategic locations. Emergency preparedness must also be covered under the Contractor's own Occupational Health & Safety Program.

The Spill Response Plan will be posted on-Site, and all personnel made aware of its content and the location of response materials, emergency contact names, and numbers. Fire extinguishers and other emergency spill response equipment and supplies must be kept in known and visible locations. Access to them will not be blocked by other materials or equipment. The locations of such equipment are to be made known during Site safety orientations, as locations may vary or change as the Project progresses. Spills of any size will be reported to the Project Manager and the Environmental Monitor, regardless of its location within the construction zone.

The Project Manager must immediately report any spill that exceeds the provincial spill reporting criteria to Emergency Management BC (EMBC) at 1-800-663-3456 and/or EC at the 24-hour emergency telephone number 604-666-6100. EMBC will notify all concerned provincial and federal agencies. Spill response advice can be obtained from both ECCC and EMBC, as well as from Transport Canada's Chemical Accident Emergency Advisory Service at 1-800-613-9966.

6.4 Fuel Management/ Spill Prevention Plan

The following general fuel management and spill prevention measures are included to avoid or reduce potential effects to environmentally valuable resources in the event of an accidental release:

- Fuel storage enclosures are to be sufficient to contain total stored volume plus precipitation products (minimum 120%).
- Waste containers will be appropriately labelled, stored in a secure location, and protected from weather until removal and disposal can be arranged.
- Drip pans and fuel containment areas will be used to avoid spills and/or leaks during refuelling or when equipment is parked or stored while not in use. All machinery will be equipped with appropriate drip trays and absorbent pads, when stored or left stationary.
- Portable generators and pumps must be located within secondary containment to prevent inadvertent releases of fuels and oils to the environment.
- Spill response kits will be available on-Site and in sufficient quantities to mitigate any volume of spill with potential to occur as a result of the works. Smaller, portable spill response kits will be accessible in construction areas where equipment or machinery is working. Trained personnel will be available to properly deploy.
- Used spill response materials will be bagged in heavy-duty polyethylene bags and any waste oil or other spill materials will be removed from Site, the same day, in accordance with *Transportation of Dangerous*

Goods Act requirements and the BC Hazardous Waste Regulation. If spill martial cannot be removed from the Site immediately it is to be contained in a secured area on Site where the contaminant is unable to spread to other areas of the Site.

- Equipment will not be fueled within 30 m of a waterbody. If possible, one area will be designated for fuel transfer. Refueling will occur on a flat surface to minimize potential off-site runoff.
- All fuels, oils, lubricants and other petrochemical products will not be stored within 30 m of any waterbody.
- Refuelling equipment and tanks will be clean and in good working order. Fuel tanks will be situated within appropriate secondary containment (an impermeable containment facility capable of holding 110% of the storage tank contents). This may be achieved through the use of double-walled storage tanks or sit-in containers constructed out of impermeable material, such as aluminium or plastic.

6.5 Waste Management

The Contractor will comply with all applicable laws, regulations, permit conditions and requirements of the contract when disposing of waste including, but not limited to, garbage, hazardous wastes (e.g., used paint, epoxies, or waste batteries), waste oil, or other materials not authorized for on-Site disposal. Waste material must not be allowed to enter any watercourse, ditch, wetland, or municipal drainage system (either directly or by introduction from off-Site discharge). The Contractor will be responsible for the implementation of all reasonable efforts to eliminate or reduce waste production. Disposal must occur at an approved facility.

The Contractor will follow the mitigation measures in the following subsections to avoid or reduce potential adverse effects to environmentally valuable resources as a result of waste materials.

If feasible due to Site layout, waste management areas will be grouped together in one area of the Site where refuelling, equipment maintenance, and waste material hazardousness and non-hazardous sorting is to take place. allowing for potentially harmful materials to be contained to one area of the Site.

6.5.1 Garbage and General Waste

Garbage is to be cleaned up daily. All non-hazardous and non-toxic garbage, such as paper, paper products, wood, plastic, glass, and discarded food items, shall be stored in closed, leak-proof storage bins that are secure against wildlife. Recyclable materials, such as paper and cardboard products, glass bottles and plastic and metal containers, will be sorted and recycled appropriately. The Contractor is responsible for the proper collection and transportation of garbage and recyclable waste to disposal facilities (i.e., sanitary landfill or appropriate recycling facilities, where available) on a regular basis.

6.5.2 Concrete

Refer to section 5.10.

6.5.3 Solid Waste

It is anticipated that solid waste will include general construction debris, garbage, recyclables, and non-hazardous equipment waste materials. The Contractor will determine the appropriate measures to dispose of general solid wastes throughout project works as follows:

- Non-hazardous paper, paper products, wood, plastic, glass, and discarded food items, will be stored in closed, leak-proof storage bins that are secure against wildlife. The Contractor is responsible for the

proper collection and transportation of garbage and recyclable waste to disposal facilities (e.g., sanitary landfill or appropriate recycling facilities where available).

- Used oil filters and antifreeze must be drained into a waste oil container and drained filters placed in an appropriate trash container before disposal at a recycling or other approved facility.
- Used acid-lead batteries must be stored on an impervious surface, under cover, and disposed of at an approved recycling facility.
- The Contractor will provide appropriate secure storage bins at pre-approved locations throughout the construction site for the appropriate disposal of non-hazardous waste.
- Disposal facilities must be coordinated in advance by the Contractor.

6.5.4 Sanitary Wastes

The Contractor is required to provide sanitary facilities throughout the duration of the Project work. To manage sewage and sanitary disposal for the duration of the Project, the sanitary facilities must be:

- Fastened to the ground within the work zone and at any staging Sites.
- Serviced on a regular basis and the waste disposed of at permitted treatment facilities.
- Located at least 30 m away from drainages, watercourse, wetlands, or ditches, as previously identified on-Site.
- Removed from the Site upon completion of the Project.

6.5.5 Hazardous Wastes

It is the Contractor's responsibility to determine whether any waste generated by the Project has hazardous or toxic characteristics or is considered "Hazardous Waste" by the Ministry of Environment, ECCC, Transport Canada, or any other authority having jurisdiction, and to manage it accordingly. The proper handling of hazardous wastes will also be included in the Contractor's own Occupational Health & Safety Program.

6.6 Fire Prevention

Open fires or burning will not be permitted at any time. Adequate fire suppression equipment, including pumps and hoses, will be available on-Site and will be maintained in good working condition. Fire extinguishers and other emergency response equipment and supplies must be kept in known, visible and accessible locations. Gas- or diesel-powered equipment must have a fire extinguisher attached or inside the cab. Fire extinguishers are to be routinely inspected and certified, as are other fire-suppressant equipment and materials.

The fire department should be engaged for any fire observed on Site regardless of size, as fire conditions can change rapidly (e.g., from wind). If on-Site personnel determine that a fire can reasonably be fought with the equipment and personnel on hand (e.g., a small, contained fire during wet conditions with no wind), the crew can provide fire control measures while waiting for the fire department, provided it remains safe to do so.

7. ENVIRONMENTAL MONITORING PROGRAM

The Environmental Monitor will conduct routine water quality monitoring during dewatering activities. Water quality monitoring will occur weekly during regular monitoring visits and additionally following greater than 25.0 mm of rain. Additional inspections will be conducted during vegetation clearing, dewatering activities, in water works, works in and around the SPEA and at Project start-up. The water quality results will be compared against the BCWQG. The Environmental Monitor will have the authority to stop works in the event of non-compliance issues until the appropriate mitigations are successfully implemented and water quality returns to acceptable levels.

7.1 Environmental Monitoring

The environmental monitoring program will be implemented prior to and during construction activities. The Project Environmental Monitor will provide an Environmental Orientation for contractors to discuss environmental issues, proposed environmental protection strategies, and mitigation measures required for their specific construction scope. The Environmental Monitor will maintain a record of contractor Environmental Orientations and each new contractor starting work at the Site will be appropriately briefed about their responsibilities with respect to this CEMP.

The Environmental Monitor will conduct regular Site inspections to document compliance with the CEMP and provide advice on adaptive management measures or maintenance, as necessary. The Environmental Monitor will liaise the Project Manager and report details of Site visits or any environmental concerns to the Project team. The Environmental Monitor will remain on call during working periods to respond to any environmental emergencies that may arise.

At a minimum, the following field reviews will be conducted during construction:

- Part-time environmental monitoring for each phase of the Project to demonstrate compliance with the CEMP, ESC Plan, and applicable environmental regulatory requirements. The Environmental Monitor will advise on adaptive management measures when conditions on-site may be approaching, or are in a state of, non-compliance.
- Part-time environmental monitoring will include weekly visits and following rainfall events of greater than 25.0 mm within 24 hours, changes to the scope of works they may impact areas of environmental concern, construction methods, or environmental conditions, or during periods of non-compliance. Typical monitoring events will last approximately an hour during periods of compliance, or longer if additional mitigation measures and monitoring are required to achieve compliance.
- Full-time monitoring will be conducted during works involving changes in and about a stream or other sensitive works.
- The Environmental Monitor will collect the following information at a minimum:
    - Condition of erosion and sediment control structures, e.g., catch basin inserts, silt fencing, check dams, sediment ponds.
    - Water quality parameters (pH, turbidity) at all points of discharge and downstream and upstream locations, as necessary (Section 7.1.1). This may include sampling for laboratory analysis of other

constituents (i.e., total suspended solids [TSS]) that may be required for treatment prior to discharge into City of Surrey storm drains.

- Photo-documentation of the site activities and mitigation measures will be collected.

7.1.1 Water Quality Monitoring

The Environmental Monitor will conduct routine water quality monitoring of Site run-off. Water quality will be compared to values from the for reference. Table 5 summarizes the water quality criteria that will be used as guidelines.

Table 5 Water Quality Criteria

Criterion	BCWQG
Turbidity in all waters during clear flows or in clear waters and normal weather (less than 25 mm of rain in a 24hr time period)	Change of 8 Nephelometric Turbidity Units (NTU) from any one background measure for a period of 24 h
	Change of 2 NTU from any one background measure for a duration of 30 days
Turbidity in all waters during high flows or in turbid waters and during significant rainfall (greater than 25 mm of rain in a 24hr time period)	Change of 5 NTU at any time when background ranges from 8 NTU to 50 NTU
	Change of 10% when background is >50 NTU
pH	Between 6.5 and 9.0

The turbidity levels will be measured with a LaMotte 2020e Turbidimeter or equivalent and the field pH measurements will be collected with an Oakton pH Testr30 or equivalent. When additional data required or when field readings are not possible, samples will be collected from the field and submitted to the lab for additional analysis.

In the event of non-compliance issues, Project activities (i.e., discharge, vegetation clearing or excavation) in relation to the non-compliant issue will cease until the appropriate mitigation measures are implemented and the Environmental Monitor confirms that water quality parameters have returned to acceptable levels. Where necessary, temporary detention facilities (i.e., sediment ponds, tanks, or treatment systems), water treatment systems, or vacuum truck may be required to maintain appropriate water quality.

7.1.2 Environmental Compliance Tracking

The Environmental Monitor will keep field notes, photographs, and logs and will document Site conditions and compliance with a Site-specific checklist. These records will form the basis of the formal monitoring reports, as well as provide records for quality management control. During the Site visits, the Environmental Monitor will:

- Meet with the Contractor's on-Site supervisor to discuss recent and pending work, as well as potential environmental issues and appropriate mitigation measures to be considered.
- Provide technical assistance and recommendations for adaptive management on environmental issues to construction staff and regulatory personnel.

- Conduct regular Site visits taking notes of construction activities and the potential for adverse environmental effects.
- Provide recommendations on the effectiveness of environmental protection measures.
- If applicable, collect samples and report water quality data collected during Site visits, as well as laboratory analyses as they become available.

An environmental monitoring report will be prepared after each Site visit to summarize on-Site conditions and recommended action items. The environmental monitoring reports will be submitted on a weekly basis to the Project Manager. The Project team may then disseminate the reports to other stakeholders, as deemed appropriate, or request that the Environmental Monitor include them on the transmittal list.

8. CONCLUSION

The proposed development will directly affect terrestrial, aquatic, and riparian habitat values. Avoidance of some potential effects was completed through multiple reiterations of the Project design. Mitigation measures outlined in this CEMP were designed to reduce potential effects to environmentally valuable resources where avoidance was prohibitive to development of the Site. Mitigations designed for the Project and Project activities will be conducted according to federal legislation through implementation of the BMPs, guidelines, and legislation described in this CEMP to avoid or reduce potential effects to environmentally valuable resources.

9. STATEMENT OF LIMITATIONS

Findings presented in this CEMP are based on (i) a review of available documentation and records, (ii) discussions with available personnel and regulatory representatives, (iii) review of the terms and conditions for planned construction, and (iv) observations of the Site and surrounding lands. Consequently, while conclusions and recommendations documented in this report have been prepared in a manner consistent with that level of care and skill normally exercised by other members of the environmental science and engineering profession practising under similar circumstances in the area at the time of the performance of the work, this CEMP is intended to provide information and to suggest mitigative strategies to reduce, but not necessarily eliminate, the potential for environmental impacts to occur as a result of planned construction activities at the Site. This CEMP is meant to be a living and flexible document that can be used to provide guidance in environmental protection measures that can be implemented during routine Project activities, as well as unanticipated events or requirements that may arise during the course of construction.

This report has been prepared solely for the internal use of Brunswick Property Holdings Ltd. and their contractor(s) pursuant to the agreement between Keystone Environmental Ltd. and Brunswick Property Holdings Ltd.. Any use which other parties make of this report, or any reliance on or decisions made based on it, are the responsibility of such parties. Keystone Environmental Ltd. accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report.

10. PROFESSIONAL STATEMENT

This report titled Construction Environmental Management Plan, 10566, 10582, and 10620/10626 Scott Road Surrey, BC was prepared by the following QEP:

May 17, 2023
Date

Keystone Environmental Ltd.

Jeremy Nilson, B.Sc., R.P.Bio.
Project Manager

11. REFERENCES

Keystone Environmental Ltd. 2022. *Environmental Impact Assessment* 10566, 10582, 10620/10626 Scott Road Surrey, BC

FLNRORD. 2022.*Requirements and Best Management Practices for Making Changes In and About A Stream in British Columbia, 2022*. Available at: wsa-cias-requirements-bmps.pdf (gov.bc.ca)

Terra Archeology. 2022. Archaeological Overview Assessment Report Scott Road Logistics Park.

APPENDIX A

FISHERIES AND OCEANS CANADA LETTER OF ADVICE

Fisheries and Oceans Canada
Pêches et Océans Canada

Pacific Region
Ecosystem Management Branch
200 – 401 Burrard Street
Vancouver, BC
V6C 3S4

Région du Pacifique
Direction de la gestion des écosystèmes
Pièce 200 – 401 rue Burrard
Vancouver (C.-B.)
V6C 3S4

October 4, 2022

Our file *Notre référence*
21-HPAC-01433

Brunswick Property Holdings Ltd.
ATTENTION: John Robertshaw
2960 Altamont Crescent
West Vancouver, BC V7V 3C1

Via email: john@jrobertshaw.com

Dear John Robertshaw:

Subject: Watercourse Infill, Manson Canal, Surrey – Implementation of Measures to Avoid and Mitigate the Potential for Prohibited Effects to Fish and Fish Habitat

The Fish and Fish Habitat Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on December 2, 2021. We understand that you propose to:

- Develop an industrial business park at 10566, 10582 and 10620/10626 Scott Road, Surrey which requires infilling of 1,434 m^2 aquatic habitat and permanent loss of 4,105 m^2 riparian habitat at the project site.
- Wetlands A, B, C, and D, along with their connecting watercourses, are to be retained at the site.

Our review considered the following information:

- Request for Review package received via email from Jamie Slogan of Keystone Environmental Ltd. (Keystone) on December 2, 2021, including:
  - *Environmental Impact Assessment: 10566, 10582, 10620/10626 Scott Road, Surrey, BC*, prepared by Keystone, dated November 9, 2021.
- Additional information provided via email from Jeremy Nilson of Keystone on February 7, 2022, including:
  - *Environmental Impact Assessment: 10566, 10582, 10620/10626 Scott Road, Surrey, BC*, prepared by Keystone, dated February 4, 2022.
- Additional information observed by a Program Biologist on February 24, 2021 during a site visit; and
- Additional information provided via email from Jamie Slogan of Keystone on April 22, 2022, including:
  - *Environmental Impact Assessment: 10566, 10582, 10620/10626 Scott Road, Surrey, BC*, prepared by Keystone, dated April 22, 2022.

Your proposal has been reviewed to determine whether it is likely to result in:

- the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat which are prohibited under subsections 34.4(1) and 35(1) of the *Fisheries Act*; and
- effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*.

The aforementioned outcomes are prohibited unless authorized under their respective legislation and regulations.

To avoid and mitigate the potential for the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat, it is important that all proposed measures are implemented as set out in the information that was submitted to the Program in relation to your project. In addition, we recommend implementing the measures listed below to avoid and mitigate the potential for the death of fish by means other than fishing and the harmful alteration, disruption or destruction of fish habitat. If there is a conflict between the proposed measures as set out in the information that was submitted to the Program and the following measures, the following measures shall prevail.

- Works should be monitored full-time during start-up and any instream works or sensitive activity. The environmental monitor must be an appropriately qualified professional and ensure mitigation measures are implemented for the protection of fish and fish habitat.
- The removal of or disturbance to riparian vegetation should be kept to a minimum during the works.
- Works are to be conducted when the watercourse/waterbody is dry.
- If works cannot be conducted in the dry, works are to be conducted in isolation of flow in accordance with DFO's interim code of practice for Temporary Cofferdams and Diversion Channels (https://www.dfo-mpo.gc.ca/pnw-ppe/codes/cofferdams-batardeaux-eng.html).
- Appropriate depth, flow, and water quality in fish-bearing waters downstream of the works (i.e., Manson Canal) is to be maintained during and upon completion of the works.
- Complete the works as quickly as possible once they are started.
- Undertake works during dry weather and low water conditions.
- Equipment is to be situated in the dry stream channel within the footprint of the works or operated from the top of the bank.
- Ensure that material such as rock, riprap, or other materials placed on the banks or within the active channel or floodplain of the watercourse is inert and free of silt, overburden, debris, or other substances deleterious to aquatic life.
- Develop and implement an erosion and sediment control plan to avoid and minimize the introduction of sediment into or induced sedimentation in the watercourse.
- Monitor for signs of sedimentation during all phases of the project and take appropriate corrective actions.

- Do not deposit any substances deleterious to fish or fish habitat directly or indirectly into the watercourse or downstream reaches of the watercourse.
- Develop and implement a response plan to avoid a spill of deleterious substances into the watercourse.

Provided that you incorporate these measures into your plans, the Program is of the view that your proposal is not likely to result in the contravention of the above mentioned prohibitions and requirements.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to remain in compliance with the *Fisheries Act*, the *Species at Risk Act* and the *Aquatic Invasive Species Regulations.*

It is also your Duty to Notify DFO if you have caused, or are about to cause, the death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to the DFO-Pacific Observe, Record and Report phone line at 1-800-465-4336 or by email at DFO.ORR-ONS.MPO@dfo-mpo.gc.ca.

Please notify the Program by email at Courtney.tiechko@dfo-mpo.gc.ca at least 10 days before starting your project, ensuring your file number and appropriate on-site contact information is included. We recommend that a copy of this letter be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

Please note that this Letter of Advice does not provide relief from the obligations set out in the government of British Columbia's Riparian Areas Protection Regulations (RAPR), and cannot be construed to provide authorization pursuant to section 3(2) of the RAPR, for any work, undertaking or activity within the Riparian Assessment Area. For more information on the RAPR, including contacts, please visit: https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/aquatic-habitat-management/riparian-areas-regulation.

Please note that the advice provided in this letter will remain valid for a period of 1 year from the date of issuance. If you plan to execute your proposal after the expiry of this letter, we recommend that you contact the Program to ensure that the advice remains up-to-date and accurate. Furthermore, the validity of the advice is also subject to there being no change in the relevant aquatic environment, including any legal protection orders or designations, during the 1 year period.

If you have any questions with the content of this letter, please contact Courtney Tiechko at our Vancouver office at 236-330-0925 or by email at Courtney.Tiechko@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Sincerely,

Rebecca Seifert, for

Arainn McKenzie
A/Senior Biologist
Fish and Fish Habitat Protection Program

c.c.: Jamie Slogan, Keystone Environmental Ltd., jslogan@keystoneenvironmental.ca

APPENDIX B

ARCHAEOLOGICAL CHANCE FIND PROCEDURES (FORTHCOMING)