1.0 Background

1.1. Project Overview

Water Lease Application Intent

The intent of this application is to acquire a lease over an area of 10719m^2 (as per attached proposed lease boundary/site plan drawing) which encompasses the following three tenures and surrounding area:

- Lease No. 237789 (water lot fronting Winegarden Park, currently held by the Town of Gibsons)
- Lease No. 238162 (water lot currently held by the George Gibsons Development Ltd, formerly Hyak Marine Services Ltd.)
- Private Moorage Permission No. 243097 (currently held by Klaus Fuerniss)

We are requesting the incorporation of these 3 Lease areas for the primary purpose of substantiating the "New Marina at the George", which makes up the waterfront of the George Hotel and Residences Development that will be constructed on the upland area to this Water Lease. Currently, the developer, Klaus Fuerniss, has specific permission No. 243097 issued for private moorage, and his company George Gibsons Development Ltd holds tenure of lease No. 238162. The Town of Gibsons has surrendered in writing its leasehold interest of Water lot lease 237789 to Klaus Fuerniss Enterprises Inc (Parent company of the George Gibsons Development Ltd) for the proposed expanded Marina. Please see letter from the Town of Gibsons regarding surrender of lease tenure attached.

The Marina at the George

The Marina at the George incorporates and expands the former Hyak Marine Ltd marina, fuel dock, and water lease. The existing Hyak Marina will be renovated to increase moorage efficiently and improve vessel access to the gas float. The marina work will require dredging and installation of a new pier, gangway, and floats. Upon renovation, the new Marina at the George will have 2700 linear feet of moorage (Hyak Marine's existing 523 ft plus 2,138 new). Under the George Gibsons Marina Resort and Residences operation, the new marina will offer moorage and 100amp shore power to large vessels.

The new marina layout will be constructed with timber and/or composite floats. Construction of the marina includes the following:

- Removal of 989m^2 of existing float anchor poles and temporary relocation of existing floats
- Dredging 16,000m^3 of sediments over 7,157m^2 of intertidal/subtidal foreshore
- Dredging of the marina basin to improve water depth and navigation
- Installation of 1,457m^2 of new or renovated floats, piles, gangway and services, and,
- Installation of above ground fuel tanks and relocation of the gas float

The Pier at the George

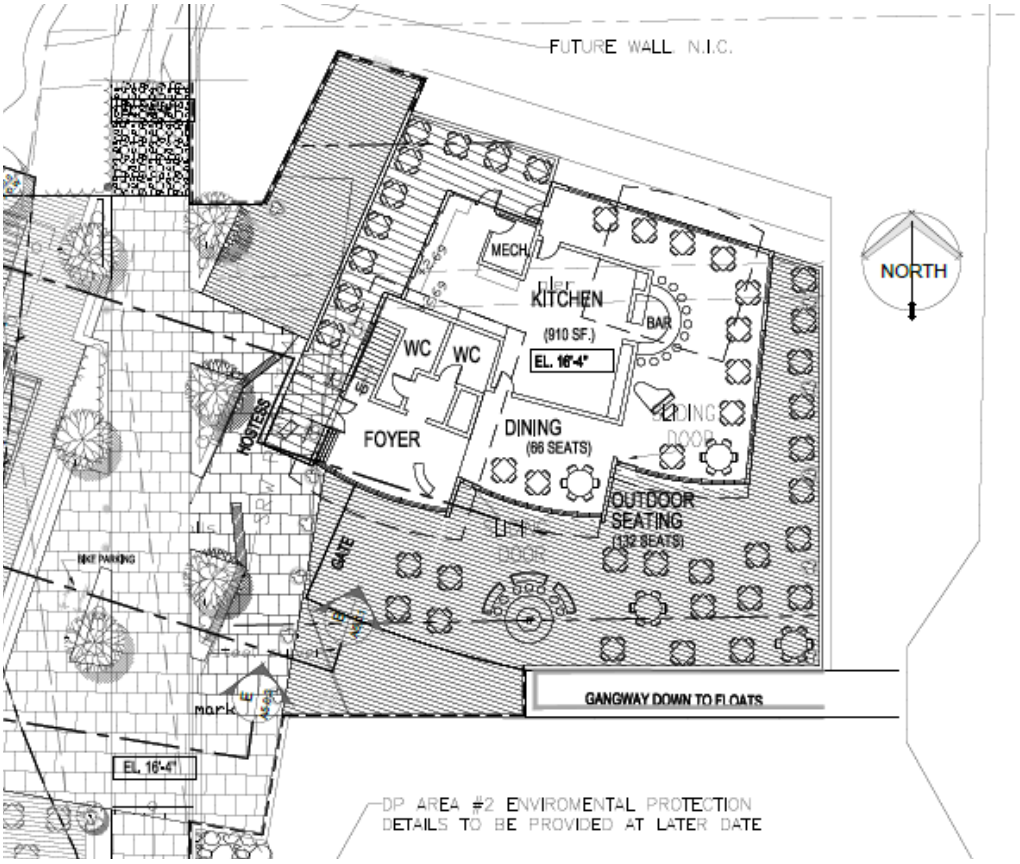
The Pier at the new Marina will be another attractive addition to the Gibsons Harbour sea walk. It will be constructed over a portion of the intertidal zone fronting the hotel and primarily within the footprint of existing marine ways. The pier will be constructed of concrete, steel and wood using standard marine construction practices. The pier will serve as a public meeting place, provide connectivity for the existing

waterfront trail on either side of the property, maintain access to the marina/gas float and provide space for a waterfront restaurant. Construction of the 1,265m^2 pier includes the following major elements:

- Removal of existing infrastructure including 247m^2 of pile-supported timber approaches, 101m^2 of existing boat grids, and 326m^2 of marina ways,
- Installation of concrete, steel or wood piles and footings where required by design,
- A restaurant located on the pier, and,
- Habitat enhancements and planting

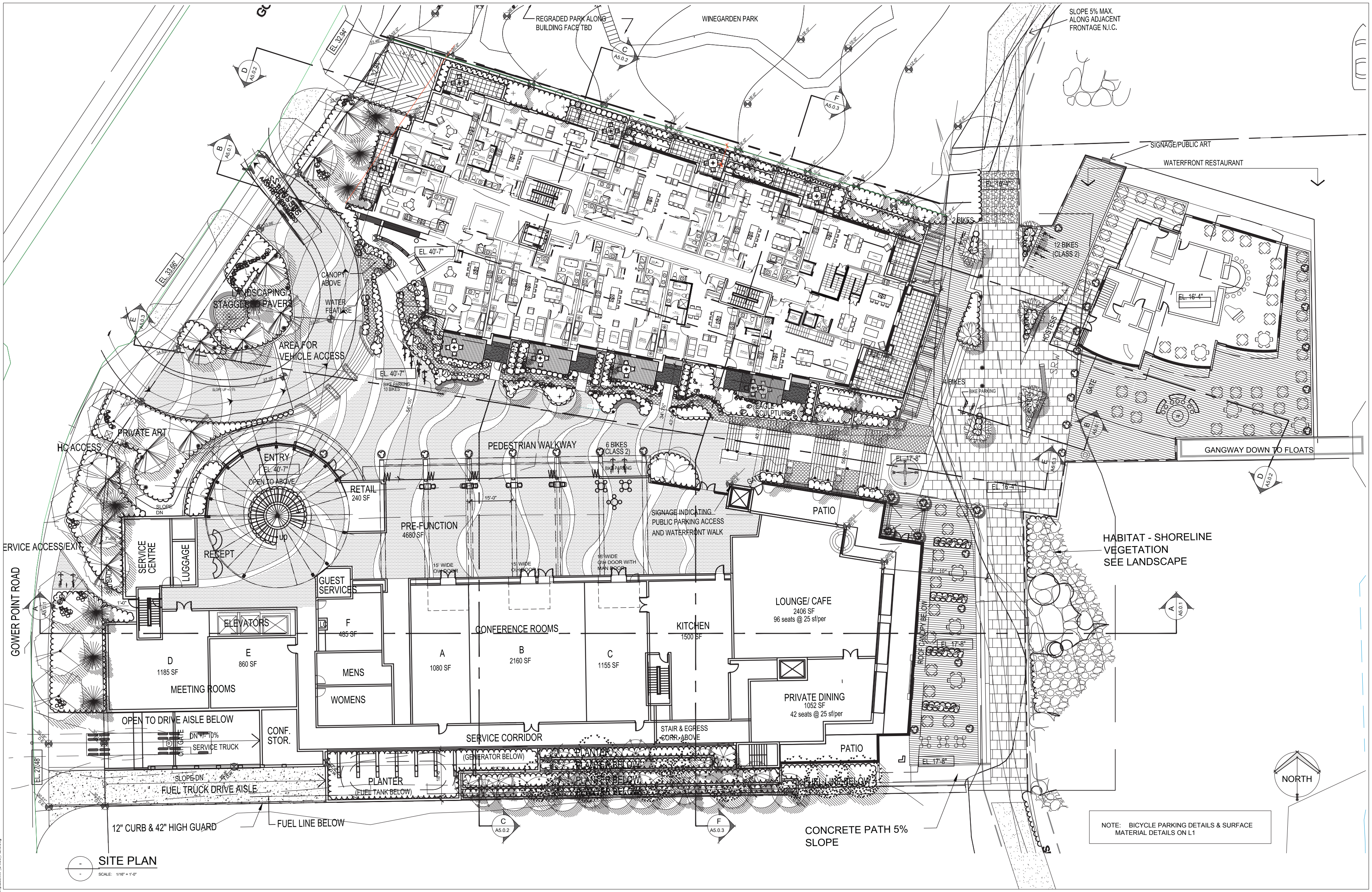
Restaurant at the George Marine Resort

The waterfront restaurant at the George Marine Resort will be a seafood based restaurant that will seat up to 198 guests - 132 on the outside patio, and 66 inside. The restaurant building will be 2 stories. The ground floor which is the indoor section of the restaurant is 3298 sq. ft, and the upper floor which is comprised of office areas is 712 sq.ft. All together, the waterfront restaurant building is 3995 sq. ft. As mentioned throughout the Management Plan, the pier which the restaurant will be built on will be 1,265m^2.



Snapshot from DP Drawings Issued for Form and Character (Omicron, 2016)

The restaurant building will have a wood frame, and will be sided with both wooden shingles and corrugated metal. The windows will be double paned and French style. Please see image below which shows exterior details of the restaurant upon completion. Also included are multiple drawings which we have of the restaurant plan at this time. As this phase of the project approaches, more detailed information on construction and materials will become available.



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9	2016.03.18	Issued for Form & Character DP - DRAFT
10	2016.04.29	Issued for Form & Character DP
11	2016.05.06	Issued for Form & Character DP

Issued for Form & Character - DP

KLAUS FUERNISS ENTERPRISES INC.

THE GEORGE HOTEL & RESIDENCES

GOWER POINT ROAD, GIBSONS, BC

Drawn:
Checked:
Project Number 10 13 075

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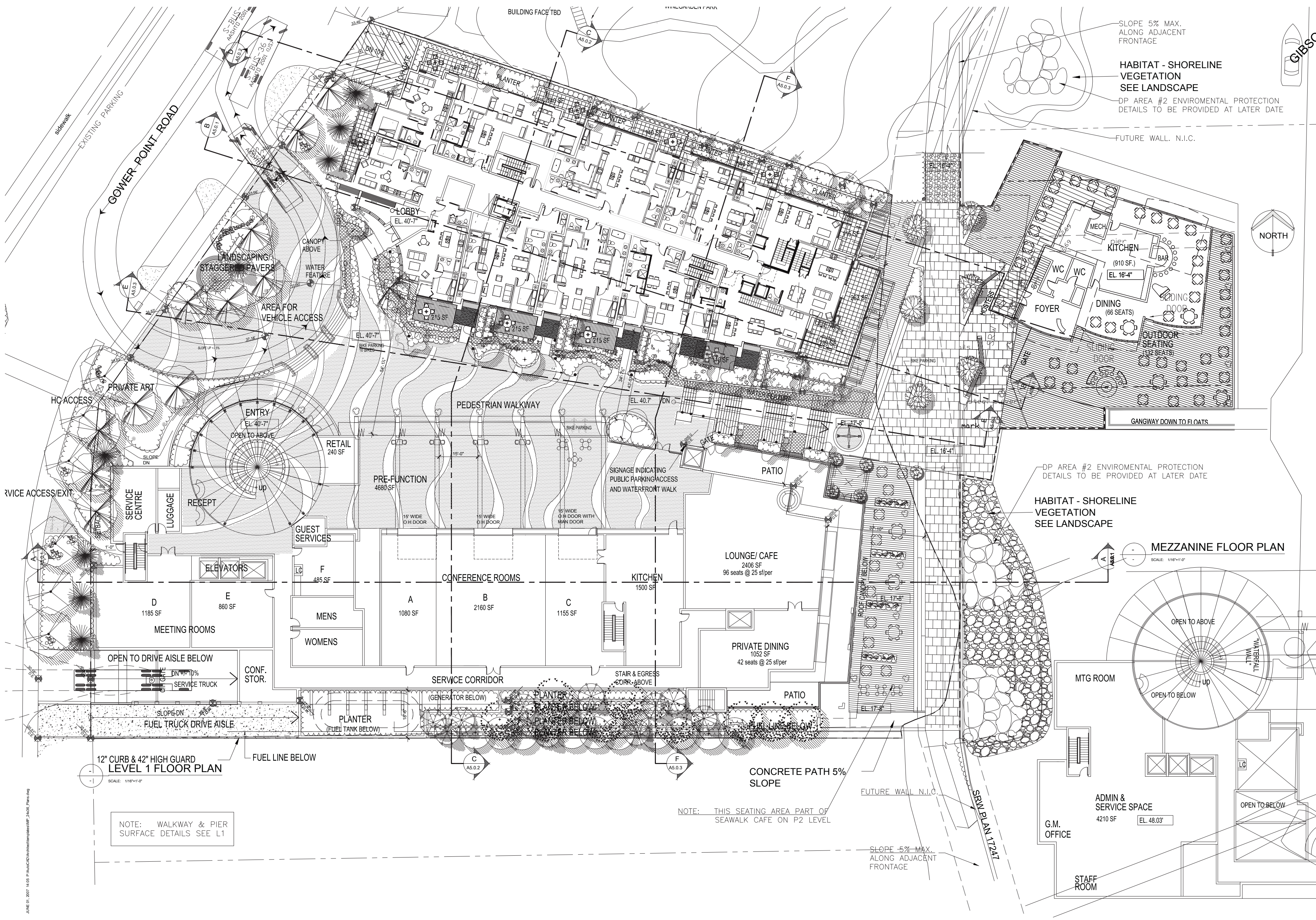
All work shall conform to the latest editions of local Building Codes, jurisdictional codes and local ordinances. Drawing sheet numbers are prefixed as follows:
A = Architectural E = Electrical
S = Structural FP = Fire Protection
M = Mechanical/HVAC L = Landscape
P = Plumbing C = Civil

NOT FOR CONSTRUCTION

SITE PLAN

A1.0.1



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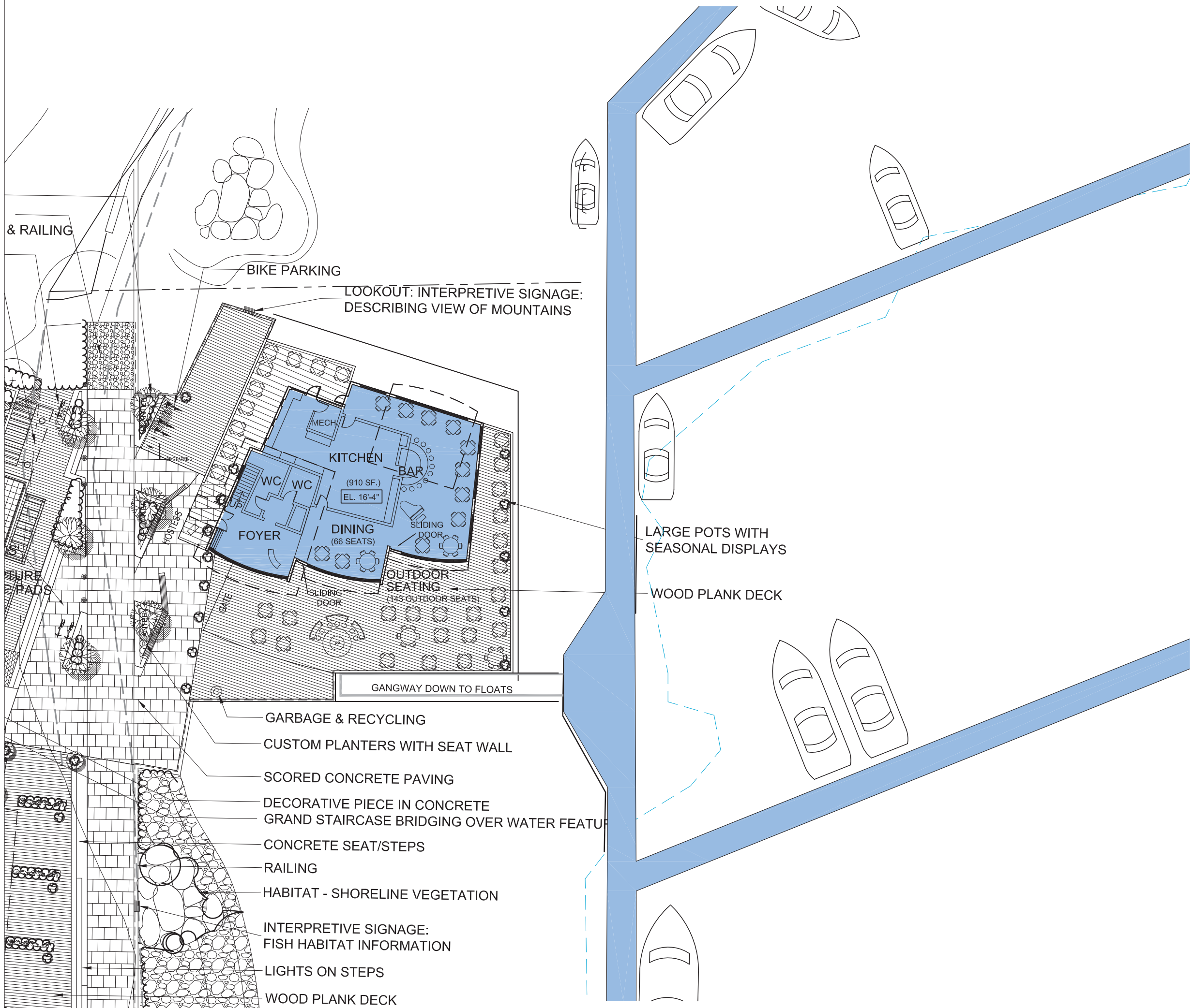
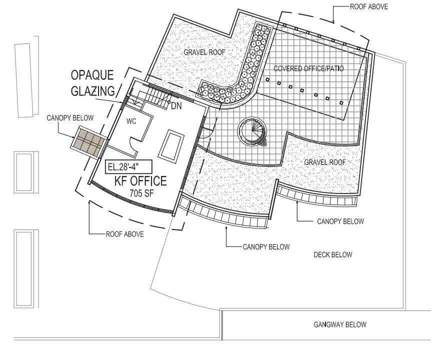
LEVEL 1 FLOOR PLAN

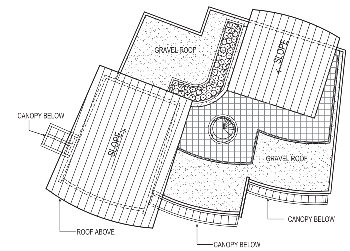
A2.0.3



WATERFRONT RESTAURANT MAIN FLOOR PLAN
SCALE: 1/16"=1'-0"



WATERFRONT RESTAURANT LEVEL 2 FLOOR PLAN
SCALE: 1/16"=1'-0"



WATERFRONT RESTAURANT ROOF PLAN
SCALE: 1/16"=1'-0"

NORTH

KEY NOTES:

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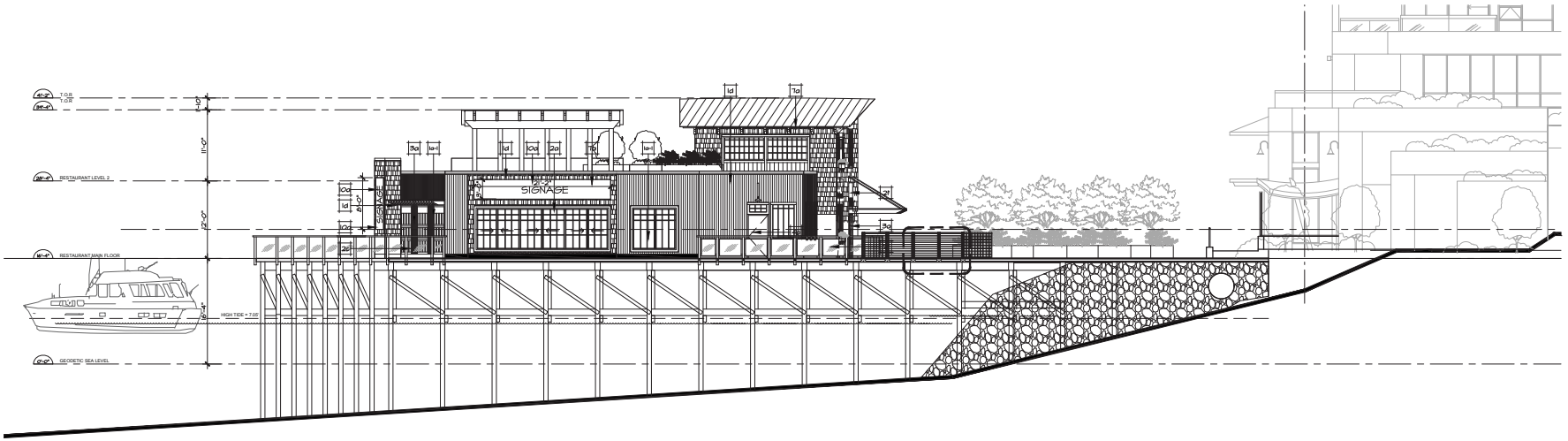
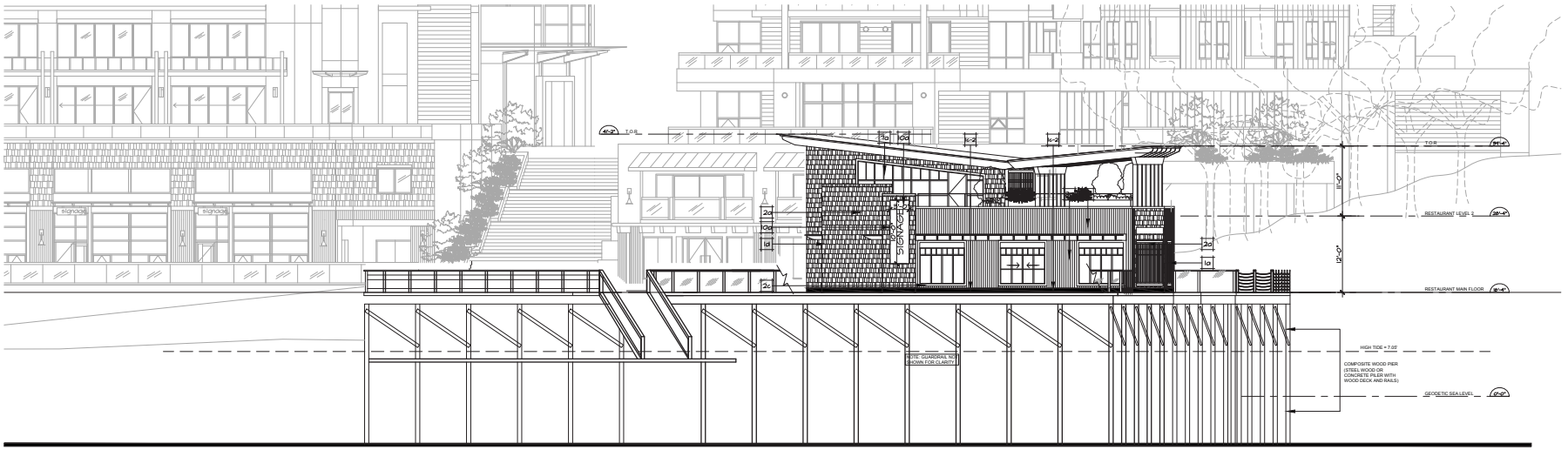
WATERFRONT RESTAURANT PLAN

A2.10



1 NORTH ELEVATION
SCALE: 1/8"=1'-0"



2 WEST ELEVATION
SCALE: 1/8"=1'-0"

- 2a METAL FIN DETAIL Colour: Warm Tan (Cedar Colour)
- 2b METAL SCREEN DETAIL Colour: Warm Brown
- 4a EXTERIOR LIGHTING
- 10a SIGNAGE (UNDER SEPERATE SIGN PERMIT SUBMITTAL)
- 11a GAS VENT
- 12a TIMBER
- 4b PAINTED METAL DOORS Colour: Charcoal Grey
- 4c OVERHEAD SECURITY GRILLE METAL Colour: BRONZE
- 5a CONCRETE Colour: Integrally WP
- 6a SOFFITS WOOD Colour: CEDAR COLOUR
- 7a STANDING SEAM METAL ROOFING- Colour: Charcoal Grey
- 2f PUNCHED WINDOWS - BRONZE METAL FRAMES & CLEAR GLASS
- 2g FRITTED GLASS W/ WAVE PATTERN Colour: Blues/Greens
- 3a WOOD, METAL & GLASS CANOPY
- 3b PAINTED METAL & GLASS CANOPY Colour: Charcoal Grey & Clear Glass
- 4a WOOD ENTRY DOORS
- 2a WINDOW WALL - BRONZE METAL FRAMES & CLEAR GLASS
- 2b CURTAIN WALL - BRONZE METAL FRAMES & CLEAR GLASS
- 2c OVERHEAD GLAZED DOOR - BRONZE METAL FRAMES & CLEAR GLASS
- 2d GLAZED SLIDING PARTITION - BRONZE METAL FRAMES & CLEAR GLASS
- 2e GLASS GUARDS W/ BRONZE METAL SUPPORT- CLEAR GLASS
- 1c-1 FIBRE CEMENT BOARD Profile: Board w/ reveals Colour: BM HC-87 Ashley Gray
- 1c-2 FIBRE CEMENT BOARD Profile: Board w/ reveals Colour: BM HC-84 Elmira White
- 1d FIBRE CEMENT BOARD Profile: Shingles Colour: Warm Tan (Cedar Colour)
- 1e FIBRE CEMENT BOARD Profile: Vertical T & G Colour: Warm Tan (Cedar Colour)
- 1f FIBRE CEMENT BOARD Profile: Horiz. Lap Colour: Warm Tan (Cedar Colour)

KEY NOTES:

- 1a CORRUGATED METAL CLADDING Colour: BM 2125-30 Gray Shower
- 1b CORRUGATED METAL CLADDING Colour: BM 2136-40 Aegean Teal
- 1b FIBRE CEMENT BOARD Profile: Board & Batten Colour: BM 2136-40 Aegean Teal
- 1c-1 FIBRE CEMENT BOARD Profile: Board w/ reveals Colour: BM HC-75 Marqville Brown
- 1c-3 FIBRE CEMENT BOARD Profile: Board w/ reveals Colour: BM CC-340 Rusty Nail

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THE GEORGE HOTEL & RESIDENCES
GOWER POINT ROAD, GIBSONS, BC

Drawn: Checked:

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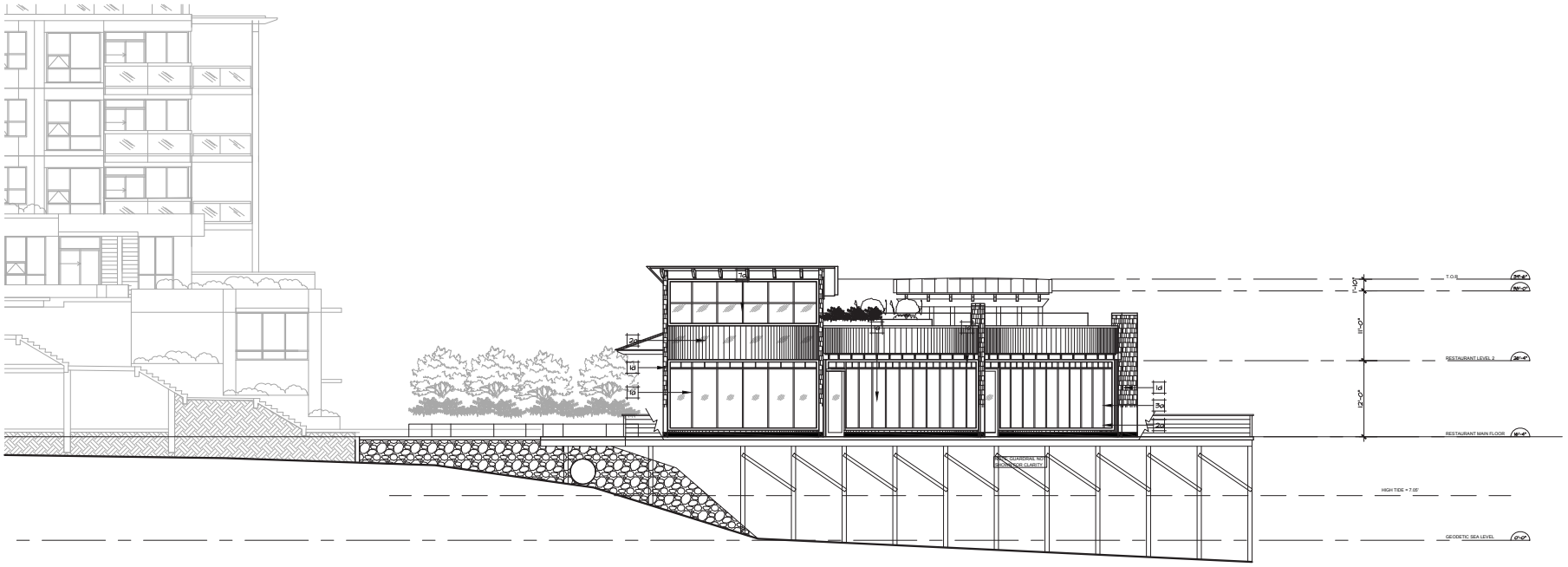
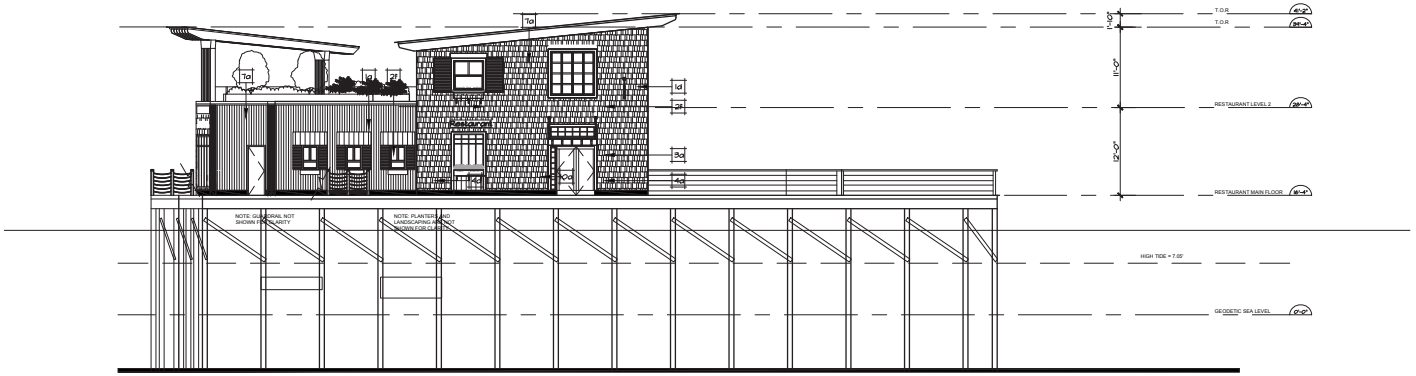
WATERFRONT RESTAURANT
BUILDING ELEVATIONS

A4.0.5



1 SOUTH ELEVATION
SCALE: 1/8"=1'-0"



2 EAST ELEVATION
SCALE: 1/8"=1'-0"

- 1a METAL FIN DETAIL Colour: Warm Tan (Cedar Colour)
- 1b METAL SCREEN DETAIL Colour: Warm Brown
- 1c EXTERIOR LIGHTING
- 1d SIGNAGE (UNDER SEPERATE SIGN PERMIT SUBMITTAL)
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- 1f TIMBER
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GOWER POINT ROAD, GIBSONS, BC

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NOT FOR CONSTRUCTION

WATERFRONT RESTAURANT
BUILDING ELEVATIONS

A4.0.6

Marina at the George – Updated Construction Timeline

Project Description (Will take place in the following order)	Construction Time Period	Start	Finish
(1) Deconstruction of existing infrastructure	1 week	November 2018	Completed
(2) Dredging	2 weeks	June 2020	June 2020
(3) Construction of pier	6 months **concurrent with marina construction*	January 2021	July 2021
(4) Marina	1-2 months **concurrent with pier construction* ** marina access maintained during construction*	January 2021	March 2021
(5) Shoreline enhancements and pedestrian walk way improvements	2 weeks ** walk way will remain open for public access at all time during construction*	June 2020	June 2020
(6) Waterfront Restaurant on the Pier	6 months	May 2021	November 2021
(7) Fuel Tanks and pipes	2 months	November 2020	December 2020

**** start and end dates subject to contractor schedules***

****any construction which takes place in water will take place primarily between August and February in order to minimize risk to marine habitat and species***

1.2 Investigative work

Many years of Due Diligence and investigative work has been done for the George Marine Resort, Residences and Marina. The scope of the George project requires both upland and foreshore investigative work. There has been 14 years of investigative reports carried out by many consultants – Geotechnical, Environmental, Landscape, Architectural, etc. The majority of the primary research findings in regard to the foreshore (water lease) aspect of the project can be found in the Balanced Environmental, "Environmental Assessment" (December 2012) which was provided to the MFLNRO along with the initial Management Plan. Furthermore, much of the information included in this Management Plan comes from Keystone Environmental's report "George Hotel Marine Residences Foreshore Remediation Construction Environmental Management Plan" (July 2017). Other aspects of the foreshore investigations and scope of work were also carried out in the Geotechnical and Environmental reports over the years. The reports outlined in the Investigative Work chart (see next page) were the key documents supporting the approval of all the development permits for the George Project.

It should be noted here that the George Gibsons Resort, Residences and Marina is a phased development project. The main reason why most of the investigative work to this date has been primarily focused on the upland properties is due the fact that the Hotel and Residences will be constructed prior to the Marina, sea walk, gangway and pier. At this stage, the project is planned to be developed in phases. The Residences will be Phase 1 of the Development, the Hotel being Phase 2, and the Marina being part of Phase 3. This sequence may change based on the contractors' recommendations. While we do have a substantial amount of information pertaining to the Marina and fuel dock expansion, much of this investigative information remains primary and will develop further as the development progresses. More detailed reports on the new Marina will become more readily available as we get closer to that phase of the development at which time we will submit to the MFLNRO.

The most recent reports which supported the approval of all development permits in relation to the George Development Project are highlighted in the following chart.

1.2 Investigative Work (cont.)

Activity	Brief Description of Activity	Status	Comments/Milestones
Development Plans by Omicron (2016); Landscape Plans by PMG Landscape Architects (2013) -2016; Parking provision outlined by Creative Transport Solutions (Sept 2015)	- Each of these plans (development, landscape and parking) are designs which were issued for the form and character Development Permit - the form and character of the development is required to conform to these plans	On-going	Approval of Form and Character Development Permit
Keystone Environmental Report - George Hotel Marine Residences Foreshore Remediation Construction Environmental Management Plan (July 2017); Balanced Environmental Assessment (Dec 2012) and Drawing 5765-D-02.1 (June 2017); PMG Landscape plans	Scope of work Permits: demolition of existing structures; excavation and removal of contaminated soils and sediments; construction of a walkway and berm along the shore line, combined with re-placement of an existing sanitary sewer pope and shoreline and storm water channel habitat improvements north of the building site; excavation, shoring and deep mixing on the lands west of the natural boundary and construction of parkade, hotel and residences; dredging, piledriving and construction of a pier (with restaurant and fuel dock), Marina	On-going	Approval of Environmental Development Permit
Geosystems Summary (May 2017); Isherwood Geostructural Deep Mixing Design Basis Memorandum (July 2017); Horizon Geotech Proposed Drilling Program (Aug 2017)	Scope of work permits: remediation of contaminated materials; cone penetration tests; installations of piezometers; test trenching; field verification trial; deep mixing; replacement of existing sanitary sewer construction of storm water channel north of the site; ancillary works associated with the above	On-going	Approval of Aquifer Protection Development Permit
Northwest Hydraulic Consultants Ltd – Gibsons Flood Construction Level Assessment (Jan 2017); Horizon Geotech Investigation Report (July 2017)	Scope of work permits: remediation of contaminated soils (on the “lands”) and sediments (in the adjacent foreshore area); construction of a walkway and berm along the shoreline; replacement of a sanitary sewer pipes and shoreline habitat improvements; excavation, shoring and deep mixing on the lands west of the natural boundary and construction of a parkade, hotel and residences	On-going	Approval of Geotechnical Development Permit
Horizon Engineering – Geotechnical Investigation Report (July 27th, 2017)	- remediation of contaminated soils (on the “lands” and sediments (in the adjacent foreshore area)) - construction of a walkway and berm along the shoreline replacement of a sanitary sewer pipe; and shoreline habitat improvements - excavation, shoring and Deep Mixing on the lands west of the natural boundary and construction of a parkade, hotel and residences.	On-going	Approval of Geotechnical Development Permit

1.3 Confirmation of Safety Plan

The George Gibsons Marine Resort and Residences project meets the criteria of the Occupational Health and Safety (OHS) set out by WorkSafe BC.

2.0 Location

2.1. Description

The water lot area is located below Gower Point Road, adjacent to Winegarden Park in lower Gibsons, BC. There are three water lot leases which the George Gibsons Development Ltd would like to amalgamate – 243097, 238162, and 237789. Water lot lease 237789 is the foreshore in front of Winegarden Park (District lots DL 5327 & DL 7011); Water lot lease 238162 is the foreshore where the current Hyak Marine Services Fel Dock currently resides (District Lot 7005); and Water lot lease 243097 is the small private moorage area which lies in front of the sea walk between Hyak Marine and Gibsons Marina.

The George Marine Resort and Residences (upland to the applicable water lease application) are located at 377, 385, 397 and 407-409 Gower Point Rd and 689 Winn Rd, Gibsons BC, on the west foreshore of the Shoal Channel in the Straight of Georgia. The project is located along the marina foreshore and includes upland, intertidal, and subtidal components. The site is located in a wave-protected harbour, which contains several high-traffic marinas. There are storm water discharges located in the upper intertidal zone or above the high water mark, and a storm water outfall which discharges into the harbour. The majority of the existing subtidal and upland areas are highly developed and have historically primarily been used for residential purposes.

2.2 Location Justification

This foreshore area is located along the Gibsons Harbour. The harbour is already highly developed with several private structures, marinas, a Federal Government wharf and an existing fuel dock. The addition of the new Marina at the George will be simply that, an addition. The location is suitable and prepared for such an expansion. The harbour, as it stands today, is protected by two rubble mound breakwaters and the Federal-Government pile-supported wharf. The new Marina will be safely and comfortably situated in the waters between Gibsons Marina which was established in 1983 and the Gibsons Landing Government wharf which has existed since the early 1900's. For these reasons, this location from a historical and geographical perspective, is certainly justifiable for the George Marina expansion.

There is also an economical advantage to having this expanded Marina in the Gibsons Harbour. The Town of Gibsons has been looking at expanding the marine business sector for some time now to bolster the economy of Lower Gibsons ("Gibsons Harbour Area Economic Development Strategy"). The Gibsons landing Retail and restaurant operations are highly dependent on tourism revenue. The expansion of recreational moorage space, and the creation of a new Marina (as well as the Hotel which is also apart of the upland development) would certainly be key factors in increasing the number of travellers to support the tourism-oriented retail and restaurant economy of Gibsons Landing.

2.3. Seasonal Expectations of Use

In regard to the construction of the new Marina, once this phase of the development becomes active, it will not necessarily be seasonally focused. The construction at the Marina will carry on year-round and will not require use of the upland adjoining properties. The new docks and gangway will be built somewhere else and brought over to the site by float. While the construction of the Marina will not be seasonally specific, the contractors will be aware certain potential impacts during wildlife breading season (Mid March to Mid August); as well as passerine nesting season between March 1st and August 31st.

3.0 Infrastructure and Improvements

Updated Timeline

3.1 New Facilities and Infrastructure

Facility/Infrastructure	Construction Methods/Materials	Construction Schedule
Pier	- Newly constructed Pier will be 1,265m^2 - Pier will be constructed using standard marine construction practices - Removal of existing infrastructure including 247m^2 of pile-supported timber approaches, 101m^2 of existing boat grids, and 326m^2 of marine ways, - Installation of concrete, steel or wood piles and footings where required by design, - A restaurant located on the pier, and, - Habitat enhancements and planting	May take place in Phase 3 of the Development Project; most likely during year 2021
Gangway	- material used may be 6061 marine grade aluminum - ½ inch gauge and gripspan decking - Industry standard kingpost design walk way - Gangway will be constructed of aluminum using standard marine construction practices	May take place in Phase 3 of the Development Project; most likely during year 2021
Marina	- Removal of 989m^2 of existing float anchor poles and temporary relocation of existing floats - Dredging 16,000m^3 of sediments over 7,157m^2 of intertidal/subtidal foreshore - Dredging of the marina basin to improve water depth and navigation - Installation of 1,457m^2 of new or renovated floats, piles, gangway and services, and, - Installation of above ground fuel tanks and relocation of the gas float	May take place in Phase 3 of the Development Project; most likely during year 2021
Ancillary Uses – Gas Bar	- The existing Gas Dock (Hyak Marine Services Ltd) which has operated very profitably for many years will be esthetically improved and renovated. - Installation of above ground fuel tanks and relocation of the gas float	May take place in Phase 3 of the Development Project; most likely during year 2021

3.2 Access

There will be full access to the water lot lease area from both the water, as well as, the upland area. The upland property will no longer have road access leading to the new Marina (closure of Winn Rd for development purposes), however, there will be a public plaza area constructed providing pedestrian access between Gower Point Rd, and the new pier/marina. The marina renovations, gas dock relocation and other marine updates will be geared towards making this water lot area greatly accessible from the water and land

As mentioned prior, in Section 2.3, during the construction phase of the new marina and its components the site will be accessed by boats and/or floats.

3.3. Utility Requirements and Sources

The site, including the existing Hyak Marine fuel bar and moorage docks, has 3-phase power. These existing utilities will be upgraded to accommodate 100 amp, 50 amp and 30 amp services via standard shore power and marine receptacle. Other than this proposed upgrade to utilities, the site of the George Marina has full access to the necessary utility requirements and sources.

3.4. Water Supply

The water requirements for the proposed use of the new Marina will exceed the already existing water requirements at the Hyak Marine dock based on increase moorage capacity. The supply source will be part of the Development plans of the Condo and Hotel development.

3.5. Waste Collection Treatment and Disposal

Waste Management Plan (from Keystone Environment CEMP Report July 2017)

The Contractor shall comply with applicable laws, regulations, permit conditions and requirements when disposing of wastes generated by this Project, including but not limited to general garbage and trash, hazardous wastes (such as used paint or waste batteries), waste oil, or other materials not authorized for on-site disposal. At no time shall any waste material be allowed to enter the marine environment or be discarded or abandoned on land. The Contractor shall be responsible for assuring that all reasonable efforts are implemented to eliminate or minimize waste production. In addition, only facilities approved by the authorities having jurisdiction may be used for disposal or recycling of any waste (garbage, trash, hazardous material, etc.). Potential impacts related to waste management have been identified during the construction phase:

- Waste generated on the Project site could potentially attract wildlife, creating nuisance wildlife;
- Release of Hazardous Waste could potentially contaminate soil, groundwater or a watercourse; and
- Spread of contamination within soil and groundwater via contaminated soil and groundwater movement.

The Contractor shall follow the mitigation measures in the following subsections.

Garbage and General Waste (from Keystone Environment CEMP Report July 2017)

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 nuisance wildlife. The Contractor is responsible for the proper collection and transportation of garbage to disposal facilities (i.e., sanitary landfill).

Recyclable Materials (from Keystone Environment CEMP Report July 2017)

Materials which can be recycled, such as paper and cardboard products, glass bottles and plastic and metal containers, will be sorted and recycled at all times. Recoverable recyclable construction materials (i.e., metals and associated construction wastes) will be taken to an appropriate recycling facility, where available, for handling where it will be recycled and re-used in other products, if feasible. The Contractor is responsible for the proper collection and transportation of material to appropriate recycling facilities. Debris and other garbage will not be deposited in the ocean.

Sanitary Wastes (from Keystone Environment CEMP Report July 2017)

Sanitary facilities will be required during Project works. These facilities must be serviced on a regular basis and the waste disposed of at permitted treatment facilities. The Contractor will supply and service chemical toilets in its work areas. Portable sanitary facilities will be located at least 15 m from the HWM if possible and must be tied down or anchored, such that they cannot be blown or tipped over, under reasonable conditions.

Equipment-related Wastes (from Keystone Environment CEMP Report July 2017)

For equipment related waste, the following measures should be adhered to:

- Used oil filters must be drained into a waste oil container and drained filters placed in an appropriate labelled container (i.e., drum) before disposal at a recycling facility or other approved facility;
- Waste-oil and antifreeze must be collected and recycled/disposed of at an approved facility; and
- Used acid-lead batteries must be stored on an impervious surface, under cover, and disposed of at an approved recycling facility.

Hazardous Wastes (from Keystone Environment CEMP Report July 2017)

It is the Contractor's responsibility to determine whether any waste generated pursuant to the execution of the work has any hazardous or toxic characteristics, or is identified as a "Hazardous Waste" by the Ministry of Environment (MoE), Environment Canada (EC), or any other authority having jurisdiction, and to treat this material appropriately. The Contractor must implement the following measures:

- The Contractor shall review the lists of Hazardous Wastes, as defined by MoE and EC to determine if any waste generated during construction is hazardous;
- If the waste item cannot be found in published Hazardous Waste lists, the Contractor shall determine if the waste displays a characteristic which would make it hazardous;
- The Contractor will review and comply with the Standards Applicable to Transporters of Hazardous Waste as defined by MoE and EC; and

- Hazardous Waste shall be treated/ disposed of in authorized facilities, permitted under regulations as defined by MoE and EC. The Contractor shall identify potential facilities for waste disposal and evaluate each facility's legitimacy, compliance with regulatory requirements and capacity. After selecting a facility, the Contractor shall periodically check and verify that the facility is properly handling and disposing of the Hazardous Waste.

Application for Authorization to Discharge Waste under the Environmental Management Act, has been submitted by Keystone Environmental to the Ministry of Environment.

4.0. Environmental

Balanced Environmental Services Inc, and Keystone Environmental have conducted environmental assessments of the impacts related to the development of the former Hyak Marina into a hotel with a new pier and Marina layout. The assessment included several site investigations by qualified environmental professionals to identify the environmental conditions present in the marine environment and riparian zones located within 15 metres from the High Water Mark, and to assess the potential for site contamination of soils and Sediments as identified in the Official Community Plan for Gibsons.

Results from the environmental investigations indicate that no critical habitat is located on site. The amount of vegetation located on the foreshore is primarily limited to a few upper intertidal plants and middle intertidal rockweed. Riparian vegetation is limited on the site and is primarily located in Winegarden Park and the Dunegrass area found between the existing public trail and the natural boundary of the sea. The project is expected to result in the net shading of 248m^2 of intertidal vegetation and a loss of 50m^2 of riparian vegetation. Temporary impacts associated with the dredging of approximately 16,000m^3 can be minimized through monitoring and mitigation. Potential impacts to an adjacent Heron nest can also be mitigated by enhancement feature is planned for the undeveloped mouth of storm water outfall.

In summary, the project can be managed and mitigated to ensure there are no adverse environmental effects. The proponent will be required to obtain the necessary approvals prior to construction that may include, but not limited to, a Fisheries Act Authorization, Navigable Waters Permit, Disposal at Sea permit, and of course, Water Lot approvals.

Please see the following subsections for further details.

4.1. Land Impacts

4.1.1 Vegetation Removal

There is no timber removal required from the water lot lease area for which the George Development Ltd is applying for. There are also no other areas of vegetation to be cleared. See section 4.1.2 (Riparian Encroachment) for riparian vegetation management plan.

4.1.2 Soil Disturbance

Soil and Sediment Management Plan

Works may require temporary soil stockpiling but will ultimately be required to be removed of contaminated soil and sediment on-site. When required, the Contractor will also be responsible for providing documentation that any imported soils meet applicable provincial and environmental regulations and standards (BC Contaminated Sites Regulations 2014).

The following mitigation measures are included to minimize potential impacts to soil and sediment during construction activities:

- For the remediation all material removed during the remedial works may be required to temporarily be deposited into a bermed area. The location will be determined by the contractor such that the requirements of this EMP are met;
- During the works, all equipment operators must minimize movements, swing paths, distances travelled, etc., in order to avoid spreading contamination;
- Equipment used during contaminated soil excavation or loading must be swept off prior to moving it out of the immediate work zone, or be left parked in the same area;
- Sides, bumpers, wheels, etc., must be swept off and any soils spilled around the truck by the loader swept back into a stockpile;
- Any temporarily stockpiled material must be covered with poly-sheeting or other suitable impermeable covering that extends over the berm walls to prevent precipitation from contacting the stockpiled soil. Surface run-off must be directed away from any stockpile to avoid contact with the contaminated soil. Polyethylene sheeting must be weighted down in order to not be blown away by wind;
- Any excavated soil or sediment suspected or identified to contain contaminants must be managed on-site so as to prevent discharge impacts to human health and the environment (i.e., stockpiled on poly tarping and covered);
- Soil and sediment quality must be sampled appropriately if required to be removed or transported off-site to characterize soil for potential contaminants (soil quality is to be compared to BC Contaminated Sites Regulation Schedule 7 column II or column III standards, as appropriate);
- During excavation and/or loading of haul trucks with contaminated soils and sediment, all equipment operators must minimize movements, swing paths, distances travelled, etc., in order to avoid spreading contamination;
- All haul trucks must be equipped with load covers prior to leaving the site;
- When immediate removal and disposal is not feasible, contaminated soil may be temporarily stockpiled in an area of 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 prevent the spread of materials. There will be one access point which can be closed off at end of shift;
- Any temporary stockpiles of contaminated soil and potentially contaminated material must be covered with poly-sheeting or other suitable impermeable covering that extends over the containment cell walls or berms to prevent precipitation from contacting the stockpiled soil. Surface run-off must be directed away from the stockpile to avoid contact with the contaminated soil and sediment. Polyethylene sheeting must be weighted down in order to not be blown away by wind; and

- Where on-site treatment may not be appropriate or feasible, vacuum trucks may be used to transport contaminated water to an appropriate off-site facility for treatment and disposal.

4.1.3. Riparian Encroachment

Riparian vegetation (vegetation within 15m of the HWM) is primarily contained to adjacent properties with the exception of Dune grass located in the riprap just below the public trail. The remaining areas on Site are composed of cultivated hedges, lawn, buildings, roads or paths. The following potential impacts to vegetation have been identified during the construction works:

- Increased opportunity for establishment and spread of invasive plant species on newly disturbed lands; and
- Destruction or disturbance of vegetative communities outside of the necessary construction work area

In order to protect vegetation, the Contractor shall:

- Not destroy, remove or clear vegetation to any extent greater than is absolutely necessary for the performance of the work, or to any greater extent than has been authorized;
  If necessary, conduct planting of native vegetation as required under provincial regulatory requirements; and
- In order to prevent the introduction of invasive or non-native species, equipment working on this project should be kept clean and will be regularly monitored/checked by the Environmental Monitor. Any invasive or non-native plan species or materials encountered will be bagged to prevent spread or disbursement and removed from site for disposal at an approved facility

4.1.4 Pesticides and Herbicides

There will be no use of any pesticides or herbicides during construction, operations and/or maintenance.

4.1.5. Visual Impacts

Since time immemorial, Gibsons Landing and Harbour has been desired for its charming, seaside beauty. This area offers an eclectic experience for visitors and residents – galleries, boutiques, restaurants, bistros, gourmet markets, live entertainment and almost weekly festivals during the summer months. Guests may stroll the Seawalk and enjoy the waterside restaurants, the unique log architecture of the Wharfinger building on the government dock, or experience the sunset (or sunrise) from the gazebo overlooking the harbour. Expect the unexpected in this seaside gem of a town - endorsed by the United Nations in 2009 as the world's 'most liveable community – population 10,000 or less.' With its year-round mild climate, pure water from the Town's artesian aquifer and beautiful setting Gibsons is waiting to welcome the world.

Marine and coastal tourism is widely regarded as one of the fastest-growing sectors of a rapidly-expanding industry. Situated on a protected seaside shore of Howe Sound just 16km from Vancouver, The Town of Gibsons' well-established, convenient, accessible harbour is a favourite destination for boating tourists from Canada and the US. Gibsons is an easy day's sail from Vancouver, the Gulf Islands and eastern Vancouver Island. Its popularity continues to grow, and there is a demand for larger yacht moorage accommodation, which The Marina at the George will be offering in this area.

The expanded Marina at the George, nestled in between two long standing Marinas, will be nothing other than a grand addition to the already serene marine landscape which has embodied the Gibsons landing for so long. The pier and the updated Marina is just the addition that this vibrant village town has been waiting for. Needless to say, this water body where the new marina and pier will be located is the only area along Lower Gibsons Sea walk that requires this sort of aesthetic boost. The addition of the pier, the added seawall path, and the renovated Marina will intensify the beauty of the Gibsons Landing harbour to its fullest potential. The visual impact of this portion of the project will undoubtedly set the landscape for B.C.s growing tourism industry and the theme "Super Natural British Columbia"

4.1.6. Archaeological Sites

The site has been occupied by Hyak Marine Services Ltd and single-family homes and is not a greenfield site. If, during excavation, material of archaeological value is found, an archaeologist, will be called upon.

4.1.7 Construction Methods and Materials

Construction materials used for the Marina, pier, and gangway will include primarily concrete, steel, wood, and aluminum which will be transported by boat and/or float from the neighbouring Gibsons Marina. The project will be completed with primarily temporary impacts to the environment and will result in improved habitat values.

4.2 Atmospheric Impacts

4.2.1. Sound, Odor, Gas or Fuel Emissions

Noise Abatement Strategy (Sound)

Project activities can pose a concern to health or hearing (e.g., emissions, noise, etc.). The following strategies are provided in order to limit unnecessary disturbance:

- The use of back-up beepers should be minimized, particularly during twilight and dark hours, as long as compliance with regulatory requirements is maintained;
- Any idling equipment should be turned off when not in use and in compliance with emission-reduction strategies;
- Equipment should be operated at the minimum engine speeds that still provide for effective operation;
- Equipment or processes should be employed that have additional noise control features, such as better mufflers and enclosures on diesel- or gas-powered equipment or exhaust silencers on air tools;
- Machinery should be in good condition prior to construction and that contractors should not utilize excessively noisy equipment. Regular maintenance must be undertaken on all equipment, including lubrication and replacement of worn parts, especially exhaust systems;
- The quietest piece of equipment that is available should be used to conduct a task where feasible (i.e., utilize hydraulic-powered rather than pneumatic-powered equipment); and
- All on-site workers should be trained to be aware of noise issues and how to minimize noise emissions where possible.

The applicable Village of Gibsons Anti-Noise Bylaw 364, 1980, restricts work to daytime during the hours of 0700 hours to 2200 hours on any day. Remediating the area outside of these hours may be

required to coincide with lower tides to reduce effects on the aquatic environment. Should there be the need for continuous noise outside of these hours the Contractor will be required to obtain written approval through the Municipal Inspector to carry on the work that is found to be necessary at designated hours.

Air Quality Management Plan (Odor, Gas/Fuel Emissions)
Idle Reduction Strategies

The Contractor will reduce idling of vehicles, boats, and equipment whenever possible. The following idle reduction strategies to improve air quality and to reduce greenhouse gas exhaust emissions include:

- Operational equipment that is not yet required to meet emission standards in Canada must be fitted with catalyzed particulate traps, to filter out particulate matter emissions and to reduce diesel odour emissions;
- Diesel vehicles shall use ultra-low sulphur diesel fuel, when and where available; and
- Restrict idling times of cranes and vessels during periods of inactivity. The Contractor shall reinforce the idle reduction initiative through signage and during toolbox, health and safety, and other meetings.

4.3 Water or Land Covered by Water Impacts

4.3.1 Drainage Effects

Several freshwater drainages discharge into the harbour through storm water culverts, creeks and groundwater seepage.

In addition to ground water seepage out onto the intertidal beach during periods of lower tides there are two main drainages on the development site: one drainage location consists of two 150mm diameter PVC pipes located at the north end of the site at an elevation near the High Water mark and; a centrally located drainage where a 700mm diameter steel culvert empties on to the middle to upper intertidal zone.

Long term impacts associated with site drainage will be addressed by implementing Best Management Practices (BMPs), monitoring such activities will be addressed trhough the relocation and redesign of storm water drainages to utilize the water and suspended sediments in an enhanced habitat feature**.**

4.3.2 Public Access

Public access along the waterfront and shoreline will be greatly improved as the seawalk will be expanded through this area. To this date, there is a small break in the sea walk between Hyak Marine and the neighbouring Winegarden Park. With the acquisition of this full water lease and the accompanying projects – pier, expanded marina, updated fuel dock – the sea walk will be updated and expanded to provide a elegant path from the Gibsons Marina to the furthest northern point of Gibsons Landing.

Furthermore, despite the closure of Winn Rd, the Form and Character of the development includes a significant open space between the two upland buildings (Hotel and residences) which provides an enhanced experience and access through the site to the waterfront. The continuous waterfront access and completion of this public amenity on the waterfront upholds the tenents of the Official Community Plan.

4.3.3. Flood Potential

The project itself will not result in the potential for flooding, however, based on the sites proximity to the ocean, it is envisaged that the proposed development is subject to flood hazard. However, many years of Geotechnical due diligence and investigative work has been done in order to mitigate these hazards.

A Flood Construction Level (FCL) assessment was carried out by Northwest Hydraulic Consultants ltd in January 2016 to assess the coastal flood hazard and resulting Flood Construction Level (FCL) previously determined by Horizon Engineering Inc. and adjust if necessary for the proposed mixed use development (The George). The purpose of NHC's assessment was to define appropriate flood construction level as mitigation to the hazard. NHC concluded that FCL geodetic datums of 4.97 m, 5.37 m, and 4.97 m should be used for the sea walk crest, pile supported restaurant, and the shoreline sea walk, respectively. The findings of this report aided in the Town of Gibsons approval of the Geotechnical Development Permit for the George Development Project. Furthermore, the George Gibsons Development and the Town of Gibsons have finalized a Section 219 Covenant (Flood Hazard) Agreement.

4.4 Fish and Wildlife Habitat Impacts

4.4.1. Disturbance to Wildlife and Wildlife Habitat

Fisheries and Marine Mammals Management Plan

A biophysical survey of the marine habitat on-site was completed to assess the marine biophysical conditions. Fish, marine mammals, and aquatic habitat have the potential to be negatively impacted during the in-water construction remediation works.

The following potential impacts to fish, marine mammals and aquatic habitat have been identified:

Temporary

- Changes to water quality as a result of sedimentation or spills;
- Sensory disturbance to marine mammals, which may frequent the area;
- Fish gill abrasion due to sediment-laden water;
- Accidental spills; and
- Disruption to migrating fish populations.

Permanent

- Marine habitat loss or disruption

In order to protect aquatic species, the Contractor shall:

- Perform the works only in a low tide window and outside of the water;
- Perform the work in strict compliance with timing restrictions outlined in the permits, regulatory obligations, and approvals;
- Complete the works during the Least Risk Window for the protection of fish and fish habitat - Howe Sound (August 16 - January 31);

- Employ site isolation measures around the area as depicted in Figure 1 to comply with Water Quality Criteria. There will be no dispersal of sediments outside the construction zone;
- Perform intertidal/shallow subtidal work when favorable weather conditions prevail and in absence of water;
- Contractor is to ensure that an aquatic life salvage permit is obtained and that an aquatic salvage is completed in the works area after each high tide event in accordance with the requirements of the federal Fisheries Act
- Use low sulphur diesel, where available;
- If the Environmental Monitor or the Contractor observe herring spawning during construction works, all works will be stopped. No equipment that was affected by the spawn will be allowed to move. The Environmental Monitor must provide an inspection to document that all eggs have hatched prior to works resuming.
- The project will adhere to DFO's measures to avoid causing harm to fish and fish habitat including aquatic species at risk (http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html);
- Water-based equipment (i.e., boats and barges) shall be prevented at all times from grounding onto the intertidal foreshore; and
- Adhere to this CEMP's Water Quality Management Plan (Section 3.10).

Specific BMPs, legislation and regulations, and guides that the Contractor is responsible to have implemented for the proposed works can be found at:

- BC Fish Protection Act. (1997). http://www.qp.gov.bc.ca/statreg/reg/F/FishProtect/89_2000.htm.
- DFO. Measures to Avoid Causing Harm to Fish and Fish Habitat. http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html.
- Ministry of Environment (MoE) & DFO. (1992). Land Development Guidelines for the Protection of Aquatic Habitat. http://www.dfo-mpo.gc.ca/Library/165353.pdf.
- Fisheries Act (2012) http://laws-lois.justice.gc.ca/eng/acts/F-14/.
- Ministry of Water, Land and Air Protection. (2004). Standards and Best Practices for Instream Works. http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf.
- DFO. (2003). Guidelines and Best Management Practices for Pile Driving and Related Operations (BC Marine and Pile Driving Contractors Association, November 2003). http://a100.gov.bc.ca/appsdata/epic/documents/p351/d32211/1273516310337_a8f9af96262d9ff325e4452109b72a5c6e2c4828796e47dd8ed0c732bc322dfb.pdf
- **B**C Approved and Working Water Quality Guidelines for Freshwater, Marine and Estuarine Life.

Wildlife Management Plan

The Site is located in an area that largely consists of residential land and public use areas such as parks and trails. As such, most of the vegetation is primarily limited to adjacent properties with the exception of dunegrass (Elymus sp. or Leymus sp.) located in the riprap below the public trail that is not anticipated to be affected. This area has the potential to be frequented by Harbour Seals and River Otters; in addition, heron and heron nests have been observed in the areas surrounding the site, but not within the project area.

The following potential impacts to wildlife and their habitat have been identified during the construction works:

- Mortality and injury (e.g., as a result of vehicle/wildlife collision, ingestion of hazardous materials, feeding or harassment of wildlife by construction personnel);
- Adverse physiological or behavioural effects (e.g., increased noise levels to wildlife frequenting the area or attraction to works – river otters and seals often exhibit curiosity); and
- Interruptions during the breeding season (i.e., March 15–August 15).

In order to protect wildlife and wildlife habitat, the Contractor shall:

- Minimize construction related disturbance (e.g., fugitive dust, etc.) to wildlife;
- Ban all firearms from the work site;
- Report any apparent aggregation areas or migration routes that are occupied to the EM immediately upon encountering them within the work zone or its environs;
- Use low toxicity antifreeze/coolants in equipment on land sites in order to minimize the potential for poisoning wildlife and domestic animals that stray onto the site in the event of a malfunction or leak. In the event low-toxicity antifreeze is not in use, the following management should be in place to reduce potential of contact with wildlife outside working hours;
- Household waste or any other waste that may be considered an animal attractant must be stored in a lidded, lockable container; household waste should not be left on-site overnight;
- Spills and leaks should be cleaned up at the end of the day to prevent pooling overnight. Immediate repairs are to be conducted for equipment experiencing leaks to avoid pooling of antifreeze and unattended spill pads outside working hours. Appropriate spill pads and secure disposal containers are to be present to immediately clean potential spills/drips as they occur;
- Antifreeze containers or other potentially harmful substances should be stored securely on site; the site trailer is acceptable;
- Dispose of garbage in secure bins and ensure that staging areas/vessels are clean and free of food items to deter the attraction of nuisance pests (such as raccoons, seagulls, and ravens). Organic/household waste should be disposed of in lidded and lockable containers;
- Contact the Environmental Monitor in the event a wild animal is found trapped on-site or has taken up residence therein, and will not leave “willingly” (depending on the type of animal trapped, a professional animal control officer or company may be brought in to capture the animal and release it at an appropriate location outside of the work area);
- Implement a noise reduction strategy as outlined in Section 3.7 to decrease sensory disturbance; and
- Conduct nest surveys if vegetation clearing is scheduled to occur during the passerine nesting season between March 1 and August 31.

Specific BMPs, legislation and regulations, and guides can be found at:

- Migratory Birds Convention Act. (1994). http://laws.justice.gc.ca/en/M-7.01.
- Ministry of Environment. Develop with Care guidelines. (2014). http://www.env.gov.bc.ca/wld/documents/bmp/devwithcare/.
- Ministry of Water, Land and Air Protection. (2004). Best Management Practices for Amphibians and Reptiles in Urban and Rural Environments in British Columbia. http://www.env.gov.bc.ca/wld/BMP/herptile/HerptileBMP_final.pdf.

- Species at Risk Act. (2002). http://laws-lois.justice.gc.ca/eng/acts/s-15.3/

Streams/Creeks

There are no creeks present within the site; the nearest creek is Charman Creek located 170 meters south of the site.

DFO Approval

The Fisheries Protection Program (The Program) of Fisheries and Oceans Canada (DFO) has received Keystone Environmental's proposal for foreshore remediation including Request For Review and Aquatic Effects Assessment Report at the George Gibsons Development site. The Foreshore remediation plan includes:

- Removal of 1,681 m2 of intertidal habitat using an excavator in the dry during low tide and the top 0.1m to 0.5m of contaminated sediment will be removed;
- Transport the contaminated sediment to upland location (to be determined); and
- Armour two storm water drainages located in the vicinity of the proposed works by placing materials along the pathway of surface water flow will prevent erosion and maintain existing conditions

According to the DFO, provided that the remediation plans implemented in the manner outlined in the Aquatic Effects Assessment and Construction Environmental Management Plan provided by Keystone Environmental, and during the timeframe described, the Program has determined that the proposal will not result in serious harm to fish or prohibited effects on listed aquatic spcies at risk. As such, no formal approval is required from the Program under the Fisheries Act of the Species at Risk Act in order to proceed with the proposal.

5.0 Socio-Community

5.1 Land Use

As has been mentioned throughout other sections of this report, the Gibsons Landing waterfront and harbour area is one which thrives on the idea of community. Lower Gibsons has always been known for its seaside charm, local artesian shops and businesses, and unique locally owned and operated restaurants. The area of land and water body which the George Resort, Residences and Marina will comprise, is the only area of the harbour that requires a little bit of TLC. The new harbour at the George will be the jewel of this Lower Gibsons area which will really set the stage and make the Gibsons harbour even more exceptional than it already is.

Gibsons Landing community has been harbour-esque in character ever since its discovery by George Gibson and sons in 1886. A warm out going and generous man, Gibson, encouraged many of his friends (many of whom were also named George!) to settle in the area. The farming, logging and fishing community grew into the village of Gibsons landing. Gibsons Landing became an international landmark when it became the setting for the long-running CBC comedy, The Beachcombers (filmed on site in the town, just down the street from the George location). Its iconic Molly's reach still stands and continues to draw visitors.

Now know simply as Gibsons, the community has grown into a bustling town serving an area population of 8,500 and a larger population of 30,000 on Canada's Sunshine Coast. The George Resort and Marina intends to carry on the old-time feel of Gibsons landing and harbour, with a contemporary touch of modern culture, art, and design. The new Marina will simply be an addition to an eternal harbour community.

There are no particular aboriginal communities directly surrounding this land and water body, however, it should be mentioned that aboriginal art and culture will be celebrated and featured throughout the George Resort, as is so often seen throughout the Lower Gibsons landscape.

5.1.1 Land Management Plans and Regional Growth Strategies

Sustainability

Sustainability is an overarching goal of The George project; strategies have been developed which are specific to the Harbour Area (HA). As per the HA plan policy, stormwater management and erosion will be mitigated. A habitat compensation project will be established in consultation with the Department of Fisheries and Oceans (DFO) and the Town of Gibsons, including benched vegetated rip rap along the seawalk to promote marine life. In addition, we have accounted for sea-rise by creating our base slab elevation to 1m above king tide. We will work with the Town of Gibsons and consult and ongoing study referencing sea-rise and storm surge where practical. The project takes heed of the HA plan's green design strategy for a set of guidelines to ensure the project's sustainability. The architecture and public realm will combine ecological performance with active, accessible, responsible, beautiful, people-oriented design. The project incorporates extensive natural and man-made green features, such as operable windows, landscaped planters and water features, roof gardens and patios, and daylighting skylights, in creative ways to maintain connections with nature and mitigate greenhouse gases. The social planning and development strategy includes the following:

- Opportunities of art, culture and creativity will be incorporated in the hotel (i.e. art feature in glass or other site specific work).
- Crime Prevention through Environmental Design principles will be applied throughout the project to promote safety and comfort of guests, residents and the public. By virtue of the increased number of 'eyes on the street', site lighting and residents living full time on the site, the park, waterfront walk and surrounding community will be a safe place to be during non-daylight hours.
- Opportunities for social engagement are created through public spaces such as the waterfront seawalk, interior pedestrian plaza and the boardwalk pier and linear park.
- Local neighbourhood values, context, character and identity will be applied to the project.

Materials for the project were carefully selected with sustainability in mind. Regionally extracted and manufactured materials such as concrete and timber elements support local economies and reduce the environmental impact of transportation. The total life-cycle of products takes into account the materials' regionality, embodied energy, durability and replacement impacts, and disposal, recycling, or re-use potential. Construction waste for the project will be responsibly managed to divert materials from landfills and into recycling facilities or reuse opportunities. Careful consideration of site-specific features—such as the interface between the seawalk and the water line, the site's stormwater management and the underground natural aquifer—have all been given careful attention and further

coordination with authorities will be upheld. Alternate transportation is encouraged on the site through provision of cycling and pedestrian infrastructure, a reduced number of vehicle spaces due to an overlap of uses and a bicycle-sharing program at the hotel. It is anticipated that many users will arrive by foot, bicycle, public or chartered bus, shuttle service or boat. The majority of Hotel users will arrive via water transportation.

Economic Benefits

The proposed development fits many objectives outlined in the Town of Gibsons Smartplan in regards to bringing a mix of tourists, commercial, higher-density residential and marine facilities for boaters. The newly-proposed George Hotel and Residences fits with the intent of the OCP to bring multi-family units and services to town centers, thereby creating active pedestrian-oriented neighbourhoods with walkable access to services. The intent with the George Hotel and Residences is to create opportunity for local economic growth through construction and employment, provide a much-needed range of housing types in existing centers, and contribute to the natural and cultural life of the village through built form, the waterfront walkway and the provision of services.

In 2008, G.P. Rollo & Associates Land Economists prepared a Project Overview entitled “Tug Boat Landing, 2008 Project Overview”. This report provided the basis of analysis for The George Hotel & Residences. Those that have been identified by the design team, the hotel proponent, consultants and the business community include the following:

- Diversifies and stabilizes Gibsons’ economy through increased taxes, retail / wholesale sales, increased visitors to the area and increased spending in the local community f Provides housing in the core of Lower Gibsons generating property taxes and resident spending in the area
- Provides retail and cultural opportunities generating increased sales revenues, taxes and exposure in a central location
- Increases employment on the Sunshine Coast by direct hires for the hotel, convention centre, spa / wellness centre, marina, food / beverage and indirect employment through our many suppliers required to meet the operational needs f Major contributor to stimulate the economy through new development, increased tourism, convention business, local resident support and supplier usage f Focal point in the community, a new community hub socially, culturally for local artisans and meeting place for the spa, health and wellness sector
- Opens up and improves the waterfront with continuing the Seawalk, adding value to other businesses in the area
- Supports major upgrade of waterfront amenities including new marina and docks
- Marine tourism will increase as boaters stop over at the hotel and marine facilities
- Marine tourism will support nearby marine industries
- Development cost charges will go towards Town infrastructure works and improvements

In addition to the above-noted items, the financial benefits have been estimated as follows:

- Annual Property Tax (at build out) approximately $1 million over 50 years over $87 million
- Number of employees approximately 157 f Annualized salaried wages over $6.2 million, averaging annual income of $39,298 projection (without gratuities)
- Construction employment benefits 245 man years over $23,800,000

- Annual conference and tourism $7.9 million related spending in Gibsons f All of the above will result in benefits to the residents of the Sunshine Coast and can be considered to be beneficial not only in the short term, but more importantly to the longterm wellbeing of the community.

The Hotel / Conference Centre, Spa / Wellness Centre, Marina, and food and beverage facilities will have a significant impact on employment in the local area as well as provide for the right conditions for growth in the Health and Wellness arena through promotion of events both within the conference centre. The scale and size of the conference facility including prefunction areas for buffets and luncheons (approximately 14,000 sq.ft.) is an offering that does not exist in the Gibsons area. The facility will attract convention partners and events that, in the past, could not have chosen Gibsons as a destination. This will benefit existing accommodation facilities through an increase in the business community awareness and spill-over business.

Community Support

- Donations
- Sponsorship funding for community events and organizations
- Scholarships/bursaries
- Health and wellness initiatives
- Ferry shuttle service
- Winegarden Park and Bandshell upgrade through $200,000 contribution

The project meets economic development goals by creating jobs that contribute to clean industries such as eco and cultural tourism. From inception of the design, the project has always considered its important place in the economic and cultural landscape of Gibsons. The legacy of this building project as a tourist and cultural landmark will spur off-shoot economic and cultural enterprises such as potential for hospitality training and venues for arts and culture festivals that benefit the town as a whole. In addition, the Owner will make a $200,000 contribution towards the replacement of the Bandshell and improvements to Winegarden Park. This contribution will benefit the town from a community culture point of view in that the current set up for Bandshell location is less than optimal for festivals and events.

Convention Centre Economic and Community Benefits

- Meetings and convention business has a significant economic impact in revenues but also other benefits to the community through increases in employment, sales and taxes
- Convention events attract visitors that would not otherwise travel to our town
- Non-resident delegates typically spend more than four times what tourists do daily and many extend their stay with pre-and-post-conference travel f Recent surveys reveal that more than 40% of non-resident delegates intend to return within a year
- Events require a wide range of services and supplies, providing business for local companies
- Visiting delegates boost spending in transportation, accommodation, retail, restaurants, entertainment and attractions. This in turn helps fuel tax revenues used for local schools, roads and hospitals

The size of the conference and spa facilities is larger in capacity than the 116 room hotel could accommodate thereby providing off-shoot potential visitor occupancy to the Town of Gibsons' B & Bs,

Motels and other housing options. In addition, the plaza, waterfront walk and pier area will provide varied spaces to hold festivals, displays, art fairs and other summer festivals that bolster the reputation of the Town of Gibsons and the Sunshine Coast for arts, culture and agri-tourism. Other range of services included in the list below, promote overflow business, employment and a healthy lifestyle that is a hallmark of Sunshine Coast living.

5.2. Socio-community Conditions

5.2.1 Adjacent Users or Communities

The project will not affect public access for adjacent land owners and/or Tenure Holders as "George Gibsons Development Ltd" owns all of the upland properties to the amalgamated water lease area for which we are applying for. The properties owned by George Gibsons Development Ltd are as follows:

- 377 Gower Point Rd
- 385 Gower Point Rd
- 397 Gower Point Rd
- 407 & 409 Gower Point Rd, and
- 689 Winn Rd

The only upland property which is not owned by George Gibsons Development Ltd is Winegarden Park, which is owned by the Town of Gibsons. As can be seen in the supporting documents from the Town of Gibsons, they are committed to surrendering Water Lease area 237789 to George Gibsons Development Ltd for the expansion of the new Marina.

5.2.2 Existing Services

To the best of our knowledge, the project does not induce any increased demand on existing fire/health or emergency services.

5.2.3. First Nations Consultation

The George Gibsons Development Ltd and consultants, Keystone Environmental Ltd are currently in the process of consulting with local first nations, Squamish and Sechelt.

Remediation Plan
Addendum to Management Plan July 12th, 2018

The proposed remediation plan includes capping of contaminated soils and excavated marine sediments on the upland area of the Site under the proposed building, completion of a human health and ecological risk assessment (HHERA), and obtaining a risk based CofC for the Site and a numerical CofC for this crown lands offsite-properties. Groundwater contamination was not identified at the Site and vapour contamination of the upland is anticipated to be addressed by regrading of the site and risk assessment.

Contaminated sediments on these crown lands are primarily located in the intertidal area in shallow sediments less than 0.3 m to 0.5 m deep. Remediation of theses sediments is planned as a phased approach, depending on their location relative to the low-tide mark. Sediments within the intertidal area, above the low-water mark, exceeding the applicable CSR standards and criteria will be excavated and removed from the crown land area and placed on the upland area of our Site under a Waste Approval Authorization from BC ENV. Based on the geotechnical cross sections, the excavation of sediments will be at elevations too shallow to impact the underlying Gibsons aquifer. These sediments within the intertidal portion of the water lot will be excavated at low-tide using a tracked excavator.

An Approval in Principle (AiP) will be sought to address the limited volume of TBT contaminated sediments located below the low water mark, as the sediments are not accessible during low tide using a tracked excavator and will need to be dredged using appropriate environmental dredging equipment. The AiP will be based on a Remedial Plan that includes remedial dredging for that area that has been deferred to coincide with bulk dredging operations already planned for the marina expansion. As part of the AiP, during the marina expansion dredging this contaminated material will be spot dredged and segregated for disposal. Dredged contaminated sediments will be encapsulated.

Upon completion of the excavation of contaminated sediments, Keystone Environmental will collect confirmatory sediment samples in accordance with MOE guidances document: *Technical Guidance 1: Site Characterization and Confirmation Testing,* dated January 2009. One confirmatory sediment sample will be collected for each 10x10m grid (100m^2 area) in the foreshore sediments. If confirmatory sediment samples exceed the applicable remedial criteria then an additional 0.1 m to 0.2 m of sediment will be excavated from that grid and a second confirmatory sample will be collected. the process will be repeated until a clean confirmatory sample is collected.

All remedial works at the Site will be completed in accordance with the requirements of the Environmental Management Plan including works in the foreshore intertidal and/or subtidal areas. With the source material removed, and the plan for the site to include changes to the on-site drainage and partial capping by the parkade and paved surfaces, the potential to re-contaminate the water lots and foreshore areas will be mitigated. The remedial excavation extents, soil volumes and confirmatory sediment and vapour analytical results will be documented in a Confirmation of Remediation report that meets the MOE requirements for submission in a support of a CofC application

Keystone Environmental will prepare a copy of the draft CofC and Approval-in-Principle (AiP) instruments for the crown land property, which will indicate that the identified intertidal sediment contamination on crown lands has been remediated to numerical standards, with conditions on the AiP regarding post-dredging confirmation sampling anticipated. Upon completion of the remedial dredging as specified in the AiP, an application for a CofC will be submitted to MOE for the AiP portion of the crown lands.

It should also be noted that Department of Fisheries and Oceans (DFO) has reviewed the above-mentioned remedial plan proposed by Keystone Environmental and has determined that the remediation proposal set forth by Keystone Environmental, on behalf of the George Gibsons Development Ltd, will not result in serious harm to fish or prohibited effects on listed aquatic species.

Summary of Investigation Work Completed Since 2016 and Revised Remedial Plan

The George Gibsons Development, Gibsons, BC

As a result of the November 1, 2017 Stage 11 and 12 Amendments to the Contaminated Sites Regulation (CSR), tributyltin (TBT) became a regulated parameter in soil and the soil standards for several metals parameters were lowered. As a result, it was necessary to complete additional upland investigation in the summer of 2019 at the site to sample and test for TBT and metals in soil to determine if TBT concentrations in soils exceeded the CSR standard and to delineate existing metals exceedances to the new more stringent standards. TBT was also investigated in the upland groundwater. Additional sampling and analysis for LEPHs, HEPHs, PAH, VOC, VPHs in soil and VOC, VPHw in groundwater was also completed at that time to provide additional delineation data. Sediments were not investigated in 2019 as they had previously been investigated and delineated during work completed in 2012, 2015, 2016, and 2017.

The findings of the 2019 investigation indicated that there were no exceedances of the CSR soil or groundwater standards for TBT in the upland portions of the Site.

Metals, LEPHs, HEPHs, PAH, VOC and VPHs contamination was delineated in upland soils to the current CSR soil standards. Concentrations of VOC and VPHw in groundwater samples did not exceed the CSR water standards.

Contamination in sediment was delineated based on results of the previous investigations conducted by Keystone Environmental in 2003, 2004, 2015, 2016, and 2017 and Balanced Environmental in 2012.

The soil contamination appears to be related to past on-site activities and is concentrated within fill materials and the underlying organic silts. These contaminants are present in the shallow soils and extend to a depth of approximately 1.8 metres (m) below ground surface. Sediment contamination is limited primarily to the upper 0.3 m to 0.5 m of the sand and gravel sediment in the intertidal zone with some minor TBT contamination present in the subtidal zone.

As the sand and gravel sediments are considered suitable for geotechnical use, the recommended remedial plan for the sediments is to excavate the upper 0.3 m to 0.5 m of sediment where contamination is present and use it as structural fill upland for the building construction. This will reduce the need to transport the sediments off-site and import the equivalent volume of fill material onto the site reducing truck traffic and the associated greenhouse gas emissions of the project.

Deep soil mixing has been proposed for ground stabilization and reinforcement as part of the building foundation design. Deep soil mixing involves mixing cement in with the soil to produce a firmer substrate. Where deep soil mixing occurs in areas with soil contamination, the contaminants will be stabilized/immobilized and thereby isolated from human and ecological receptors by being bound up with the cement. Soil contamination located outside of the deep soil mixing areas along with the sediments excavated from the intertidal zone, will also be isolated from potential human and ecological receptors by being capped by the proposed George Gibsons Development building.

A preliminary evaluation of human health and ecological risks associated with the site has indicated that the recommended remedial plan to risk manage the contamination using deep soil mixing and capping the site with the building would meet the requirements of the CSR for risk-based remediation. The evaluation of the risk management measures would be documented in a human health and ecological risk assessment (HHERA) report.

Keystone Environmental
Knowledge-Driven Results

George Hotel Marine Residences Foreshore Remediation Project Construction Environmental Management Plan (Revision 3)

377 and 385 Gower Point Road
Gibsons, BC

Prepared for: Klaus Fuerniss Enterprises Inc.

Project No. 12845
December 2019

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PREFACE

This Construction Environmental Management Plan has been prepared for the George Hotel Marina Residences Foreshore Remediation Project proposed by Klaus Fuerniss Enterprises Inc.

This document is intended to provide guidance to the contractor(s) and operator(s) working on the project when working on-site and around the marine environment to protect environmental resources that could be potentially impacted during the project works. Key measures and standards to achieve these objectives include the following:

- The contractor will develop an Environmental Protection Plan (EPP) detailing how they will address the requirements of this CEMP.
- A full-height silt curtain will be used to contain sediment-laden water within the marine work area and the high water mark. The silt curtain will be secured to the substrate with chains or equivalent weights to prevent the release of sediment-laden water from the Project area.
- A generalized example of the location of containment measures is shown in Figure 1. The Contractor will determine the most effective location for the silt curtain and/or equivalent measures. Measures will be taken to isolate works from freshwater drainages located at the north and south ends of the Project (Figure 1). These measures will be detailed in the contractor's EPP and confirmed by the Environmental Monitor to be sufficient.
- Works will be conducted where possible using land-based equipment during periods of low tide so as to work in the dry to reduce the potential for sediment mobilization.
- Intertidal excavation works will be conducted in the dry during low tide; where practicable, these works will be conducted using land-based equipment during the least-risk fisheries work window for Howe Sound (August 16 – January 31).
- Where excavation works are required to be conducted in areas of tidal inundation, they will be conducted during the Howe Sound least-risk fisheries work window.
- An environmental monitor will observe the project works below the high water mark full-time to document the effectiveness of measures and standards employed by the contractor performing the works. For works outside the least-risk fisheries work window, the environmental monitor and contractor will watch for potential risks for harmful effects to fish including herring spawn/eggs, schools of juvenile salmonids and other potential issues throughout the course of works. If issues arise, works will be stopped until the risk for harmful effects is determined to be sufficiently low to proceed.
- Upland staging and stockpile areas will be located at least 30 m from the high water mark of watercourses and drainages.
- Environmental permits and approvals must be in place prior to the start of work and the contractor must comply with the conditions of environmental permits and approvals throughout the project works.
- The limits of disturbance and environmental protection measures must be clearly defined prior to the start of construction activities, and sediment and erosion control devices (e.g., silt curtains or equivalent) must be installed around the perimeter of the construction zone(s) prior to start up, where applicable.
- All equipment used on-site must be clean and free of leaks.

- There is to be no discharge of sediment, sediment-laden water, sanitary wastes, garbage or other contaminants into water bodies or outside areas of upland containment.

Site-specific requirements and restrictions are identified within the body of this document and its appendices, based on the requirements listed in the environmental assessment document(s) and agency approvals, authorizations(s) and/or letters of advice received for the site-specific Project components and tasks. This document is a living document and may be modified based on site conditions.

This version of the CEMP has been updated from the July 27, 2018 version to update mitigation measures and standards that address recent changes to environmental legislation.

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.

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LIST OF ABBREVIATIONS AND ACRONYMS

BC ENV	BRITISH COLUMBIA MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE STRATEGY
BCWQG	BRITISH COLUMBIA WATER QUALITY GUIDELINES (APPROVED AND WORKING)
BERC	BURRARD ENVIRONMENTAL REVIEW COMMITTEE
CCG	CANADIAN COAST GUARD
CEMP	CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN
DFO	FISHERIES AND OCEANS CANADA
ECC	EMERGENCY COORDINATION CENTRE
ECCC	ENVIRONMENT AND CLIMATE CHANGE CANADA
EIR	ENVIRONMENTAL INCIDENT REPORT
EM	ENVIRONMENTAL MONITOR
EMS	ENVIRONMENTAL MANAGEMENT SYSTEM
EPP	ENVIRONMENTAL PROTECTION PLAN
ESC	EROSION AND SEDIMENT CONTROL PLAN
HWM	HIGH WATER MARK
MCTS	MARINE COMMUNICATIONS AND TRAFFIC SERVICES
NTU	NEPHELOMETRIC TURBIDITY UNITS
TC	TRANSPORT CANADA

1. INTRODUCTION

This Construction Environmental Management Plan (CEMP) describes mitigation measures and standards that are to be implemented to prevent harmful impacts to fish and fish habitat that have potential to occur during remedial excavation of contaminated sediments along the foreshore area (the Project). The Project is located along the foreshore at 377 and 385 Gower Point Road in Gibsons, BC (the Site). The Site is shown in Figure 1 (attached).

The intent of this CEMP is to provide the prime contractor and the associated sub-contractor(s) performing the Project works (the Contractor) with mitigation measures environmental protection planning and best management practices. This plan is intended to be adaptive and will flexible to accommodate changes to Project design, more effective mitigation measures and standards or construction methods that may be required.

The Proponent (Klaus Fuerniss Enterprises Inc.) and the Contractor will be responsible for maintaining compliance with the mitigation measures and standards outlined in this CEMP and environmental permits and approvals for the Project.

1.1 Project Location and Remediation Activities

The Site is located in Gibsons, BC on the west foreshore of the Shoal Channel in the Strait of Georgia. The Site is located in a wave-protected harbour, which contains several high-traffic marinas. There are storm water discharges located in the upper intertidal zone or above the high-water mark, and a storm water outfall which discharges into the harbour (Figure 1). The majority of the surrounding existing subtidal and upland areas are highly developed and have historically primarily been used for residential purposes.

The Project works will occur within the boundaries of the Site and involve the excavation of contaminated sediments below the high water mark (HWM). The top 0.3 m to 0.5 m of sediments in the intertidal foreshore area will be excavated, stockpiled in an upland containment area and used as structural fill through deep soil mixing during future Site development works.

The Project is tentatively scheduled to take place in 2020 during periods of suitable low tides such that the work can be conducted in the dry. Where possible, excavation of intertidal sediments during period of low tide will be conducted during the least risk fisheries work window for the protection of fish and fish habitat for Howe Sound (August 16 – January 31). Works requiring removal of sediment from areas inundated by tidal waters will be conducted within this least-risk work window. A full-height silt curtain will be required to be installed around the Project area to contain excavation areas up to the high water mark. The silt curtain will be secured to the substrate with weights to prevent release of sediments and/or contaminants from the Project area.

An Environmental Monitor will be on-Site full time during remedial works below the high water mark to confirm that measures and standards contained in this CEMP and employed by the Contractor are performing as intended. Water quality sampling will be conducted by the Environmental Monitor to confirm performance objectives are being met and determine if alternative measures are required to prevent harmful impacts to fish and fish habitat.

1.2 Applicable Legislation, Permits and Approvals

A list of potentially applicable environmental legislation, permits and approvals for the Project works is provided in Table 1.

Table 1 Environmental Permits and Approvals

Legislation; Agency	Permits, Approvals and Procedures	Comments
Fisheries Act; Fisheries and Oceans Canada (DFO)	Letter of advice from the Fisheries Protection Program (DFO File No. 18-HPAC-00153, dated March 25, 2018) Additional Written Confirmation	The *Fisheries Act* changes came into effect in August 2019. As a result, the letter of advice prepared under the former version of the *Fisheries Act* did not include the harmful alteration, disruption or disturbance to fish habitat (i.e., temporary effects). Additional written confirmation from DFO is required confirming the Project may still proceed.
	Scientific Collection Permit	Required for salvage of marine organisms within remedial excavation areas.
Impact Assessment Act, DFO internal process	Internal environmental effects evaluation	Triggered if Authorization is required under the *Fisheries Act*.
British Columbia *Environmental Management Act*; Ministry of Environment and Climate Change Strategy (BC ENV)	Approval in Principle	Grants approval to undertake environmental remediation in pursuit of a Certificate of Compliance under the *Environmental Management Act*.
British Columbia *Heritage Conservation Act*	Chance Find Procedures	Required to stop work and implement chance find procedures if archeological materials are encountered during works.
British Columbia *Water Sustainability Act*; Ministry of Forests, Lands, Natural Resource Operations and Rural Development	Application for Notification	There are two watercourses within the area of the Project that may be regulated under the *Water Sustainability Act*.
	Riparian Setback Assessment	The watercourses present at the Site may be subject to the Riparian Areas Protection Act and may require setback determinations that could affect upland stockpile and staging area locations or other Project works.
Town of Gibsons	OCP Schedule D Environmentally Sensitive Development Permit No. 2	A development permit to conduct works on the foreshore in Gibsons Harbour.
	OCP Schedule F Gibsons Aquifer	A development permit for protection of the Gibsons Aquifer

The Contractor will be responsible for securing any additional permits and approvals needed to carry out their portion of the Project works and maintaining records of permits and approvals for the Project on-Site.

1.3 Remediation of Contaminated Sediment

Foreshore sediments are contaminated with metals including tributyltin (TBT) and polycyclic aromatic hydrocarbons (PAHs). The extent of existing contamination of foreshore sediments, the remediation method and avoidance of impacts to the underlying aquifer are discussed in Keystone Environmental's Remedial Plan[1] and are summarized below.

1.3.1 Sediment Contamination

Sediment metals contamination includes arsenic, copper, lead, mercury, zinc and tributyl tin. Paint chips were found throughout sediments in areas of metals contamination and it is therefore likely that metals contamination is due to marine anti-fouling hull paints associated with the former Hyak Marine Services operations. Sediment metals contamination has been delineated to within the upper 0.3 m to 0.5 m of surficial sand and gravel sediments in the intertidal zone. Some minor TBT contamination was present in the subtidal zone.

The area of sediment PAH contamination is centred around the access wharf and walkway to the floats of the existing marina. The source of PAH contamination is likely attributed to existing and historic creosote timber pilings that have been used to support these structures. PAH contamination has been delineated to within the upper 0.3 m to 0.5 m of surficial sand and gravel sediments.

1.3.2 Remediation Methodology

The proposed remediation plan involves excavation and off-Site disposal of contaminated sediments within an area of approximately 1,681 m^2. Sediments will be excavated in the dry at low tide using a tracked excavator and will be loaded into trucks, which will transfer the material to the uplands for re-use as fill material under a BC ENV Waste Approval Authorization.

Prior to commencement of environmental remediation works on the foreshore, the proposed remediation area (Figure 1) will be isolated by the Contractor such that water quality criteria (Section 3.5) are met. In order to meet these criteria, the Contractor will be required to install site isolation measures around the remediation area to contain sediment laden waters to the Site. The methods and type of site isolation measures will be determined by the Contractor in their Environmental Protection Plan (EPP) to be prepared for the Project that addresses the requirements detailed in this CEMP. It is anticipated that the measures will include a full height silt curtain secured to fully enclose the Site. There are two drainages located at the north and south ends of the Project (Figure 1). The drainage at the north end follows the edge of the adjacent

[1] Keystone Environmental Ltd. 2017. Re: Remedial Plan – 377, 385, 397 and 407 Gower Point Road and 689 Winn Road and Winn Road Right-of-Way, Gibsons, BC. Project No. 12845. Letter to Mr. Vince Hanemayer, Ministry of Environment, Land Remediation, dated June 29, 2017.

park and enters the foreshore near the existing pier at 377 Gower Point Road. The drainage at the south end comes out of a large culvert located along the shoreline just south of the 385 Gower Point road property line.

The Contractor will be required to install additional containment measures where required to comply with the water quality criteria. The Contractor's EPP will include an erosion sediment control (ESC) plan that indicates where any spoil is to be temporarily placed on the upland area for loading onto trucks for off-Site disposal.

Upon completion of excavation of contaminated sediments, confirmatory sediment samples will be collected as per the following methodology:

- One confirmatory sample will be collected for each 10 m by 10 m grid within the remediation area.
- If confirmatory samples exceed the applicable remedial criteria, then an additional 0.1 m to 0.2 m of sediment will be excavated from that grid, followed by another confirmatory sample being collected.
- This process will be repeated until a clean confirmatory sample is collected for each 10 m by 10 m grid within the remediation area.

1.3.3 Avoidance of Impacts to Aquifer

Metals contamination is due to particulate matter (paint chips, sand blasting grit) from boat servicing operations settling into underlying sediments. Deep contamination of sediments is not anticipated as particulate contamination does not migrate vertically. This is confirmed by sediment sampling results, which have delineated metals contamination to within the top 0.3 m to 0.5 m of the existing seabed.

PAH contamination from creosote timber piles is typically due to abrasion with settlement in a halo in sediments. This contamination is typically limited to the same vertical depths as the metals contamination as supported by sediment sampling data to date, which has delineated the PAH contamination to the top 0.3 m to 0.5 m of the existing seabed.

The remedial foreshore excavation area is underlain by the Gibsons Aquifer, which is a confined aquifer comprising sand and gravel that provides drinking water for the Town of Gibsons. Based on geotechnical cross section drawings[2] and the planned remedial excavation depth of approximately 0.5 m, excavation of contaminated sediments will not penetrate the dense till-like soils that protect the Gibsons aquifer and will therefore not negatively impact the aquifer.

[2] Horizon Engineering Inc. Geotechnical Investigation Report (Revised) for the Proposed "The George" Mixed Use Development at 377, 385 and 407 Gower Point Road and 397 and 689 Winn Road and Winn Road Right of Way, Gibsons, BC, dated April 7, 2015.

2. ROLES AND RESPONSIBILITIES

This CEMP involves numerous stakeholders and staff that will contribute to its successful implementation. Communication between the Project Team members (Table 2) is essential for the success of the Project. The following section outlines the roles and responsibilities of the Contractor, the Environmental Manager/Qualified Environmental Professional (QEP) and the Environmental Monitor for achieving environmental compliance with applicable legislation, permits, licenses, or approvals during construction of the Project, including basic conformance to Klaus Fuerniss Enterprises Inc. Environmental Management System (EMS).

Table 2 Project Team Roles and Responsibilities

Team Member	Role	Contact	Contact Information
Owner			
Klaus Fuerniss Enterprises Inc.	Project Manager / Proponent / Owner	Mr. Klaus Fuerniss	604-970-2318
Government			
Town of Gibsons	Director of Engineering Town of Gibsons	Mr. Dave Newman	604-886-2274 ext 212
Consultants			
Keystone Environmental Ltd.	Environmental Manager	Mr. Warren Appleton	604-430-0671
	Environmental Monitor	TBD	604-430-0671
Contractor			
TBD	TBD	TBD	TBD

2.1 Contractor

The Contractor is responsible for being familiar with this CEMP, implementing the mitigation measures listed, and for ensuring their activities are in compliance with the requirements of the CEMP and applicable legislation and permits issued for the Project. The Contractor is responsible for maintaining compliance with the requirements set out in this CEMP, in Project permits and approvals and in relevant environmental legislation. Additionally; the Contractor is responsible for the following:

- The Contractor will prepare an EPP that explains how the environmental constraints identified in the CEMP will be implemented during construction. As part of the EPP, a site-specific ESC plan will be designed by a qualified professional (e.g., P.Eng. or equivalent). The ESC plan will be specific to the Project schedules and activities proposed by the Contractor. It will address the Contractor's schedule and cover the entire Site including upland areas. The ESC plan will include, but not be limited to, measures such as protected site access / wheel wash, boundary control, grading/ditches to direct surface water to temporary sumps, storage tank locations for sedimentation and water treatment, where discharged water will be directed off-site, it will address off-site catch basin protection and the specifics of ESC monitoring. Before the Project can commence the EPP and ESC plan must be reviewed and accepted by the Environmental Manager/QEP.

- Documenting and reporting 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 Environmental Manager/QEP and EM;
- Correcting deficiencies and non-compliance upon direction from the Environmental Manager/QEP and EM;
- 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; and
- Responding to environmental incidents, such as spills, using personnel that are appropriately trained and equipped.

2.2 Environmental Manager/QEP

Keystone Environmental will provide an Environmental Manager/QEP that will report directly to the Owner. The Environmental Manager/QEP will be responsible for providing overall environmental management and coordination; roles will include environmental compliance tracking and reporting, managing the Environmental Monitor, management of required qualified environmental specialists, and coordinating and communicating on progress with the Owner. The Environmental Manager/QEP will liaise with regulatory agencies and other authorities in accordance with the CEMP. Additional responsibilities of the Environmental Manager/QEP include:

- Providing input into the preparation of the EPP and ESC and other environmental submittals (e.g., notifications or permits) prepared by the Contractor;
- Reviewing environmental monitoring reports, identification of appropriate environmental performance indicators;
- Overseeing and directing qualified environmental professionals, and reviewing the deliverables (including erosion and sediment control plans); and
- The Environmental Manager/QEP will liaise with the Contractor and applicable regulatory agencies, as required.

2.3 Environmental Monitor

The Environmental Monitor will liaise with the Environmental Manager/QEP, Contractor and applicable regulatory agencies, as required. The Environmental Monitor will be appropriately trained and demonstrate relevant environmental monitoring experience. The Environmental Monitor will measure key environmental indicators during routine monitoring to determine if work being conducted is in accordance with the CEMP. The Environmental Monitor will have the authority to halt works if an activity is considered to be causing, or likely to cause, unacceptable environmental damage or risk, until an appropriate solution has been developed. The Environmental Monitor will be on-site during relevant periods of increased potential environmental impacts to ensure appropriate mitigation efforts are in place. The Environmental Monitor will have the following responsibilities and authorities:

- Conduct environmental monitoring full-time during Project works below the high water mark to confirm the requirements of this CEMP are being met. The frequency of the monitoring activities would be influenced by the type of construction activities and weather conditions;
- Completing inspections of erosion and sediment control measures (including water quality tests) to determine that they are working properly and effectively;
- Monitoring hazardous material containment, storage, transportation, and disposal to comply with applicable legislation and regulation;
- Monitoring whether the Contractor and Project works comply with federal and provincial permits, approvals, guidelines and regulations relating to environmental protection;
- Liaising with the Contractor and Environmental Manager/QEP to assist in planning (i.e., identify potential environmental issues and the appropriate mitigation measures);
- Attending site meetings, as required, to maintain environmental communications between the Project Team;
- Conducting ad-hoc site visits to address concerns raised by the Project Team;
- Informing the Contractor and Environmental Manager/QEP immediately of construction activities that fail to meet the environmental requirements as described in the CEMP or that present an unacceptable risk to the local environment;
- Promote timely correction of environmental deficiencies by working directly with the Contractor; and
- Additional responsibilities are also defined within specific environmental management plans.

3. ENVIRONMENTAL MANAGEMENT PLANS

3.1 Sediment Remediation Contamination Management Plan

The Contractor is responsible to determine the appropriate equipment type to complete the work in accordance with the requirements of this CEMP. Sediment will be excavated using land-based equipment in the dry at low tide. The material will be removed from the Site. The collected material will be placed on land behind a berm that will prevent runoff and resuspension of material in the water. Then the collected sediment material will later be removed from the Site in accordance with applicable standards.

While sediment remediation is proposed for the low tide period for environmental protection, site isolation measures are required. The effectiveness of the site isolation measures will be determined by compliance with water quality criteria identified in Section 3.5. The Contractor will be responsible for developing in their EPP suitable site isolation measures to comply with these requirements. It is anticipated this may involve a full height silt curtain connected above the high-water mark on both sides of the excavation area to completely encapsulate the site. If a single curtain is not sufficient to meet the water quality criteria, the Contractor may need to consider installation of a second curtain. The Contractor will be permitted to use floats that are in place to hang curtains if requested. Anchors will be permitted to hold curtains in place provided they are removed upon Project completion. The Contractor should consider having extra curtains on hand in case of breakage. The Contractor should inspect the site isolation measures daily as they will be responsible for maintaining the measures such that they comply with the water quality criteria.

The effectiveness of the site isolation measures will be inspected by the Environmental Monitor. Inspections by the Environmental Monitor may occur daily. In the event that water quality criteria are in exceedance of those identified in Section 3.5, the Environmental Monitor will issue a stop work order to the Contractor. Works will not be allowed to resume until site isolation measures are sufficiently containing sediment laden waters such that water quality criteria are being met. The Contractor will be responsible for the design, implementation, maintenance and decommissioning of all site isolation measures throughout the Project.

3.2 Aquifer Protection Plan

Horizon Engineering Inc. provided information on the physical characteristics of the Gibsons Aquifer in their assessment report stating that the proposed works are unlikely to have a negative effect on the aquifer if excavation does not exceed a depth of 5.0 m geodetic elevation at the northwest portion of the Site. Zero geodetic is equal to 3.02 m above Chart Datum (average lower low tide) in Gibsons. In the southwest, and southeast portions of the Site they recommend that any proposed excavation does not exceed deeper than 0.5 m below existing grades.

3.3 Erosion and Sediment Control Plan

The Contractor's ESC Plan will detail the Project-specific measures and standards to be implemented that will provide both short and long-term sediment and drainage management measures essential to the protection of aquatic resources and to intercept storm water on this Project. It is important to intercept and manage stormwater that occurs on-site in order to limit the potential for soils or sediments to become eroded and for sediment-laden surface runoff to enter any drainage.

Erosion and sediment control measures required for this Project may vary greatly depending upon local site conditions and weather at the time the work is undertaken (i.e., not all measures will work in every given situation and during all seasons of the year). The following general sediment and erosion control plans are meant to be flexible in order to react to spatial and temporal requirements and conditions in the marine and upland environment and to minimize the risk of spread of contamination to adjacent clean soils if the ESC plan not implemented properly. The Contractor's ESC plan will address the following requirements:

- A full-height silt curtain will be used to contain sediment-laden water within the marine work area and the high water mark. The silt curtain will be secured to the substrate with chains or equivalent weights to prevent the release of sediment-laden water from the Project area.
- A generalized example of the location of containment measures is shown in Figure 1. The Contractor will determine the most effective location for the silt curtain and/or equivalent measures. Measures will be taken to isolate works from freshwater drainages located at the north and south ends of the Project (Figure 1). These measures will be detailed in the Contractor's EPP and confirmed by the Environmental Monitor to be sufficient.
- Works will be conducted where possible using land-based equipment during periods of low tide so as to work in the dry to reduce the potential for sediment mobilization.
- Upland staging and stockpile areas will be located at least 30 m from the high water mark of watercourses and drainages.
- All necessary supplies and equipment for implementing ESC measures will be kept on-site and utilized as required to maintain environmental compliance.
- Vessel movements in shallow waters will be minimized to reduce disturbance of foreshore sediments through propeller wash effect.
- Minimize disturbance of vegetation when possible as a first defense in the control of erosion and sediment release.
- Use swamp pads where required to minimize soil/sediment disturbance and erosion, especially on soft soils in the remediation area.
- Employ sediment and erosion controls as required to minimize the generation of sediment-laden water within the work site (i.e., by staging work and/or only undertaking that portion that can be reasonably completed within a work shift).
- Manage stormwater and surface runoff to prevent the release of sediment or sediment laden water in excess of the requirements identified in the Water Quality Management Plan (Section 3.5).

- Restrict construction during periods of heavy precipitation and runoff to minimize soil erosion and potential off-site sedimentation.
- Cover temporary stockpiles with polyethylene sheeting or tarps.
- Temporary stockpiles will be located away from any drainages or the foreshore area as identified in Figure 1.
- Containment berms or equivalent measures will be constructed around upland stockpiles to reduce the potential for runoff into aquatic environments.
- Intercept up gradient water sources and divert water around the site.
- Divert water through the site via subsurface piping, channels or ditches that have been constructed to reduce erosion.
- Line outflow areas of the drainage ditches on either side of the proposed works area (Figure 1) with erosion resistant material and place check dams at regular intervals to reduce the erosive energy of runoff.
- Exposed soils and seabed sediments (stockpiled upland) will be tarped at the end of each workday and during inclement weather to prevent erosion.

3.4 Fisheries and Marine Mammals Management Plan

In order to protect marine aquatic species, the Contractor shall:

- Project works will comply with the requirements of the *Fisheries Act.*
- Where possible, remedial excavation works from the intertidal foreshore will be conducted using land-based equipment in the dry during periods of low tide during the least-risk fisheries work window for the Howe Sound area (August 16 - January 31);
- Works conducted in areas inundated by tidal waters will be conducted during the least-risk fisheries work window (August16 – January 31).
- The Environmental Monitor will observe the project works below the high water mark full-time to document the effectiveness of measures and standards employed by the contractor performing the works. For works outside the least-risk fisheries work window and/or for works conducted in areas of tidal inundation, the Environmental Monitor and Contractor will watch for potential risks for harmful effects to fish including herring spawn/eggs, schools of juvenile salmonids and other potential issues throughout the course of works. If issues arise, works will be stopped until the risk for harmful effects is determined to be sufficiently low to proceed.
- If the Environmental Monitor or the Contractor observe herring eggs or spawn or schools of juvenile salmonids during Project works, works below the high water mark will be stopped. If herring eggs are observed on equipment, the equipment will be stop works and remain in place below the high water mark until the eggs have hatched. The Environmental Monitor will provide an inspection to document that eggs have hatched prior to works resuming.
- Fish passage will be maintained during Project works to prevent the entrapment of fish within the Project area during falling tides. The Contractor is to ensure that an aquatic life salvage permit is obtained from DFO if salvages for aquatic organisms are completed in the works area after each high tide event in accordance with the requirements of the federal *Fisheries Act.*

- Construction activities will be ceased if any marine mammal is observed immediately adjacent to a construction activity such that there is a risk of physical harm from direct contact and only resume once the animal has left the immediate area or has not been re-sighted for 30 minutes.
- At no time will any intentional interactions, such as petting or feeding marine mammals be allowed.
- Perform the work in strict compliance with timing restrictions outlined in the permits, regulatory obligations, and approvals.
- Employ site isolation measures around the area such as those depicted in Figure 1 to comply with water quality criteria (Section 3.5).
- Perform intertidal work when favorable weather conditions prevail and in absence of water;
- Use low sulphur diesel, where available.
- Water-based equipment (i.e., boats and barges) will not be permitted to ground onto the intertidal or subtidal foreshore, with the exception of spuds to maintain position.

3.5 Water Quality Management Plan

Project works are required to meet the following British Columbia Water Quality Guidelines for marine aquatic life:

- Change from background of 8 Nephelometric Turbidity Units (NTU) at any one time for a duration of 24 h in all waters during clear flows or in clear waters;
- Change from background of 2 NTU at any one time for a duration of 30 days in all waters during clear flows or in clear waters;
- Change from background of 5 NTU at any time when background is 8 NTU–50 NTU during high flows or in turbid waters; and
- Change from background of 10% when background is >50 NTU at any time during high flows or in turbid waters.

Should generated sediment-laden water not meet legislated criteria, where applicable, activity will cease until the water clears, whether by dispersal of sediments by currents or by resettling (flocculants or equivalent treatments will not be used).

The Environmental Monitor will determine the frequency that they collect water quality samples. The Contractor should assume the Environmental Monitor will conduct daily sampling. Water quality samples will only be collected 30 m outside of the actual silt curtain location for the purposes of testing for compliance with the above criteria. The Contractor will be responsible for installing and maintaining the silt curtain and other measures required to isolate the works from drainages and tidal waters. A generalized location of the silt curtain is shown in Figure 1.

The monitor may also collect measurements at other distances from the silt curtain or other measures to determine the extent of compliance issues or to confirm compliance.

While the remediation is taking place, the Environmental Monitor will collect water quality data every few hours during active excavation. The Environmental Monitor may also collect samples within the site isolation measures for reporting purposes.

To protect water quality for the area, the following will be implemented:

- Isolation measures (e.g., silt curtain) will be erected around the active excavation area to aid in the containment re-suspended sediments.
- Measures will be also taken to isolate works from freshwater drainages located at the north and south ends of the Project (Figure 1). These measures will be detailed in the Contractor's EPP and confirmed by the Environmental Monitor to be sufficient.
- A generalized example of the location of containment measures is shown in Figure 1. The Contractor will determine the most effective location for the silt curtain and/or equivalent measures and detail the location and methods of these measures in their EPP.
- The Environmental Monitor will review the proposed isolation methods prior to the start of works and inspect the conditions of these measures to determine if they are adequate or require modification.
- Upland staging and stockpile areas will be located at least 30 m from the high water mark of watercourses and drainages.
- The isolation measures will be sized to conform to the Site dimensions and function effectively.
- The Contractor shall inspect the isolation measures between every tide cycle until the work is complete. The isolation measures will be inspected for tears, openings, connectivity to shore and the floats, or any visual deficiency that is resulting in the remediation area not being fully enclosed.
- The Contractor will be required to stop the works and fix any deficiencies with the site isolation measures immediately upon notification from the Environmental Monitor.

3.6 Wildlife Management Plan

The Site area has the potential to be frequented by harbour seals and river otters; in addition, heron and heron nests have been observed in the areas surrounding the site, but not within the Project footprint. In order to protect wildlife and wildlife habitat, the Contractor shall:

- Minimize construction related disturbance (e.g., fugitive dust, etc.) to wildlife;
- Report wildlife encounters to the EM, immediately in the case of distressed or dead wildlife;
- Use low toxicity antifreeze/coolants in equipment on land sites in order to minimize the potential for poisoning wildlife and domestic animals that stray onto the site in the event of a malfunction or leak.
- Antifreeze containers or other potentially harmful substances should be stored securely on site; the site trailer is acceptable.

- Dispose of garbage in secure bins and ensure that staging areas/vessels are clean and free of food items to deter the attraction of nuisance pests (such as raccoons, seagulls, and ravens). Organic/household waste should be disposed of in lidded and lockable containers.
- Contact the Environmental Monitor in the event a wild animal is found trapped on-site or has taken up residence therein, and will not leave "willingly" (depending on the type of animal trapped, a professional animal control officer or company may be brought in to capture the animal and release it at an appropriate location outside of the work area).
- Implement a noise reduction strategy as outlined in Section 3.7 to decrease sensory disturbance.

3.7 Spill Prevention and Emergency Spill Response Plan

The following measures are provided for spill prevention, spill response and reporting of spills.

3.7.1 Spill Prevention

The Contractor will implement the following spill prevention measures to prevent the deposit of deleterious substances in water at the Site:

- The Contractor will maintain spill response kits in marine- and land-based equipment with sufficient supplies to address typical spills of fuels, oils, greases, antifreeze and other deleterious substances.
- Spill containment as trays or equivalent measures will be used to contain spills of fuels, oils, greases, antifreeze and other deleterious substances during fuel transfer, repairs to equipment and other activities.
- The Contractor shall service or refuel vehicles and equipment in such a way that contaminants do not enter any waterbody and are not released to land. Refuelling of land-based equipment will be conducted at least 30 m from the high water mark; for marine-based equipment.
- All machinery shall be free of excess oil and grease, and shall be in good mechanical order so that no leaks occur.
- Equipment is to be inspected daily to ensure that it is leak-free or repaired prior to deployment;
- Servicing of land-based equipment is to be done within bermed containment areas and greater than 30 m from the high-water mark.
- All vehicles utilized for refuelling will be equipped with automatic back-pressure shut-off valves, and nozzles should be kept locked at all times, except during refuelling. Spigots should be metal to prevent them being accidentally or intentionally damaged. A crew member is to remain in attendance at all times while refuelling is being carried out. (Designated suppliers for any land-based fuelling operations use tanker trucks that conform to all specifications listed and the driver stays with the pump during fuelling activities).
- Drip trays should be placed under vehicles and equipment being refuelled.

- All grease and oil required for maintenance will be properly applied. Any excess shall be cleaned up and disposed of in an environmentally appropriate manner, as shall all containers, lids, and contaminated cloths and applicators.
- Any required portable generators and pumps shall be located within bermed and lined containment frames to prevent inadvertent releases of fuels and oils to the environment.
- Refuelling of machinery, including portable generators, pumps and outboard motor tanks, must occur away from roadside and Site drainages, or be contained within a suitable pan.
- Each machine working on-Site should have a spill kit containing, as a minimum: 24 oil absorbent sheets; two 1.2 m absorbent socks, and a disposal bag.
- If a spill barrel is also used on-Site, it should contain, as a minimum: 100 oil absorbent sheets; five 2.4 m absorbent socks; two 1.2 m absorbent socks, and two disposable bags.
- Effluent generated during the works on the Project will be contained and disposed of in such a manner as to ensure that the effluent is not released into the marine environment or surficial drainages, unless properly treated and approved by the Environmental Manager/QEP.
- All stationary equipment must have a drip tray placed underneath.
- Oil spill response materials and equipment, such as absorbent pads, booms and leak proof containers, will be kept on-Site in sufficient quantities and in an easily accessible location to contain and clean up the amount of fuel, oil or other petroleum hydrocarbons stored on-Site (land- or marine-based). A detailed inventory list shall be located with the supplies.
- Each machine will be equipped with an appropriate spill kit (with inventory).
- Used spill response materials will be bagged in heavy-duty polyethylene bags, labelled, and disposed of appropriately.
- Vessels will be fuelled at approved marine facilities in accordance with standard safe fuelling regulations and practices (i.e., the port authority has specific requirements and schedules that must be followed during marine-based fuel transfers); land-based equipment will be refuelled from mini-tankers or tidy tanks.
- Waste containers will be appropriately labelled and stored in a secure location, protected from weather until removal and disposal can be arranged.
- Waste oil or materials will be removed from Site for appropriate disposal in accordance with Transportation of Dangerous Good requirements and the BC Hazardous Waste Regulation.
- Equipment operators and personnel responsible for spill response will review the Contractor's spill response plan regularly to ensure that it is up to date and all required materials are on Site and easily accessible. The EM will regularly remind the Contractor of this requirement during progress meetings.
- Machinery employed will be inspected for leaks, worn hoses or fittings, and appropriate repairs will be completed prior to mobilization.

- As part of the Contractor's EPP they will provide procedures to be implemented if equipment is on the beach and breaks down (i.e., a plan to pull out machinery from the works area prior to tide coming in).

3.7.2 Spill Response

The Contractor must be familiar with regulatory requirements and be adequately prepared to respond to a spill condition within the shortest possible time. Spill Response Team(s) will be assembled from suitably qualified members of the workforce at the Site. Spill contingency procedures will be posted in visible locations within the Contractor's Site offices and trailers, and at strategic locations on the Site work platform. All spills (of any volume) will be reported to the Environmental Monitor and Environmental Manager/QEP, regardless of its location within the work areas. The Contractor will also implement the following measures and procedures to ensure adequate protection of the natural resources.

- Sorbent material will be on hand at the work areas as a means of containing and soaking up any spill substance before it reaches the groundwater table or open water;
- Empty drums will be provided on-Site by the Contractor for pre-disposal storage of spillable substances and for disposal of used absorbents, contaminated soil, etc.; and
- Each vehicle, machine or piece of equipment will be inspected on a daily basis for leaks, and worn hoses will be repaired, if needed, prior to use.

3.7.3 Spill Reporting

Under Section 2 of the Spill Reporting Regulation in the *Environmental Management Act*, spills of listed substances that have entered or are likely to enter into a body of water and/or spills of quantities greater than those listed in the regulation are required to be reported to Emergency Management British Columbia (EMBC). Spills to marine (tidal) waters are to be reported to Canadian Coast Guard (CCG).

The Contractor will be required to develop an environmental spill procedure applicable to the types of materials being utilized on the Project and be familiar with the reportable spill quantities applicable to these materials. The Environmental Manager/QEP will document and follow up on internal and external spill response actions to ensure that they comply with internal and external reporting requirements.

In the event of a spill occurring that triggers the Spill Reporting Regulation, this incident must be immediately reported to EMBC at 1-800-663-3456 or to CCG at 1-800-889-8852 for marine spills. For spills that trigger the Spill Reporting Regulation, an Environmental Incident Report (EIR) will be completed by the spill observer or in conjunction with Keystone Environmental that addresses the following:

1. The contact information for

a. the individual making the report,
b. the responsible person in relation to the spill, and
c. the owner of the substance spilled;

2. The date and time of the spill;
3. The location of the spill site;
4. A description of the spill site and the surrounding area;
5. A description of the source of the spill;
6. The type and quantity of the substance spilled;
7. A description of the circumstances, cause and adverse effects of the spill;
8. Details of action taken or proposed to comply with section 91.2 (2) [responsible persons — spill response] of the *Environmental Management Act*;
9. The names of the government, federal government, local government and first nation government agencies at the spill site;
10. The names of other persons or government, federal government, local government or first nation government agencies advised about the spill.

EMBC will notify concerned provincial and federal agencies. Spill response advice can be obtained from both EMBC and CCG.

The following process will be followed to record and report all spills externally:

- Spill observer contacts the Environmental Manager/QEP immediately, completes an EIR and sends to the Environmental Manager/QEP;
- The Environmental Monitor will complete the EIR in conjunction with the spill observer if on-site at the time of the spill;
- The Environmental Manager/QEP provides immediate notification to the Project Team and follows up with the completed EIR; and
- The Environmental Manager/QEP will contact EMBC and/or CCG and other agencies as applicable.

The following require consideration when addressing measures to mitigate impacts associated with accidents and malfunctions:

- Accidents and malfunctions generally involve deleterious substances such as petroleum products and others regulated under the *Canadian Environmental Protection Act* that are released into the environment;
- Release of these substances may impact soil and water quality, and affect the general health of flora and fauna that comes in contact with the substances;

- Vegetation and soil may need to be removed as part of the clean-up effort. If the spill occurs into water, fauna that comes in contact with the substance may be killed or injured (physiological effects are “acute” in that the occurrence is temporary and not continuous, in which case the animal will recover); and
- The greater the spill into the environment, the more difficult it is to contain; therefore, the risk is greater that some longer-term impact may occur.

Where a physical impact occurs, property damage or habitat destruction may occur (i.e., intertidal zones may be negatively impacted). Potential impacts would be short-term in that the damage would be repaired where possible or the impact removed and the habitat allowed to recover on its own.

The Contractor shall implement the following mitigation measures to reduce the potential for spills of deleterious substances:

- During construction, only limited quantities of oils, greases, fuels, and other deleterious substances (i.e., paints, epoxies, wood preservatives, etc.) are brought to site;
- Emergency response and contingency plans are reviewed annually or as per legal requirements;
- Ensure employees are appropriately trained to respond to identified emergencies;
- The Contractor will have an appropriate spill kit equipped with the required clean-up products (e.g., absorbent pillows/pads, booms, disposal bags) on-site at all times;
- All Contractor staff will have to be thoroughly informed of the restrictions of this particular Project location and will be required to act accordingly; and to be vigilant in ensuring petroleum products and any potentially harmful substances are handled with extreme caution;
- Fire extinguishers and other emergency response equipment and supplies must be kept in known and visible locations and access to them shall not be blocked by other materials or equipment; and
- A list of emergency contacts must be posted at predetermined, accessible and visible locations, as well as kept with the emergency response equipment. By law, fire extinguishers are routinely inspected and certified, as is other fire-suppressant equipment and materials. Emergency preparedness must also be covered in the Contractor’s Health and Safety Program. Locations vary by type of activity and whether land- or marine-based and the locations of fire-fighting equipment are made known to personnel during site orientations; moreover, gas- or diesel-powered equipment must have a fire extinguisher attached or inside the cab).

3.7.4 Generic Emergency Spill Response Plan and Contact List

The following Generic Emergency Spill Response Plan is provided as a basic guide for developing plans for marine and land locations and activities.

GENERIC EMERGENCY SPILL RESPONSE PLAN

INCIDENT

If a spill of fuel, oils, lubricants or other harmful substances occurs at the site, the following procedures will be implemented. ALL spills must be reported internally immediately regardless of the amount, and especially if released to a water body.

SPILL RESPONSE STEPS

1. ENSURE SAFETY
2. STOP THE FLOW (when possible)
3. SECURE THE AREA
4. CONTAIN THE SPILL
5. NOTIFY/REPORT (EMBC 1-800-663-3456)
6. CLEAN-UP
   (Circumstances may dictate another sequence of events)

ENSURE SAFETY

- Ensure Personal, Public and Environmental Safety
- Wear appropriate Personal Protective Equipment (PPE)
- Never rush in, always identify the product spilled before taking action
- Warn people in immediate vicinity
- Ensure no ignition sources if spill is of a flammable material

STOP THE FLOW (when possible)

- Act quickly to reduce the risk of environmental impacts
- Close valves, shut off pumps or plug holes/leaks, set containers upright
- Stop the flow of the spill at its source

SECURE THE AREA

- Limit access to spill area
- Prevent unauthorized entry onto site

CONTAIN THE SPILL

- Block off and protect drains and culverts
- Prevent spilled material from entering drainage structures (ditches, culverts, drains)
- Use spill sorbent material to contain spill
- If necessary, use a dike, berm or any other method to prevent any discharge off site
- Make every effort to minimize contamination
- Contain as close to the source as possible

NOTIFY/REPORT

- Notify the Environmental Manager/QEP or Owner of incident for any volume (provide spill details). When necessary the first external call should be made to (see spill reporting requirements): EMBC 1-800-663-3456 (24 hours)
- Provide necessary spill details to other external agencies (see spill reporting requirements)

SPILL REPORTING REQUIREMENTS
EMBC 1-800-663-3456

SUBSTANCE:	AMOUNT	REPORTABLE TO:
Oils	> 100 litres	EMBC
	Any spill amount into water	EMBC, DFO & BC ENV
Special Wastes:		
PCB Oil	any amount > 2 ppm PCB	EMBC
Corrosive	> 5 kilograms	EMBC
Hazardous, e.g., pesticides/Herbicides	> 5 litres	EMBC

Note: If in doubt regarding spill size, affected environment, materials involved and whether reportable, err on the side of caution and report the spill to the external body (i.e., EMBC).

The list of emergency contacts will be posted in strategic locations, on land and on each marine rig along with the Spill Response Plan (contacts will be updated as required for each site-specific location).

CLEAN-UP

- Technical assistance is available from the Environmental Monitor on clean-up procedures and residue sampling
- All equipment and material used in clean-up (e.g., used sorbents, oil containment materials, etc.) must be disposed of in accordance with BC ENV requirements in approved locations. The Environmental Monitor will assist in compliance with BC ENV regulations
- Accidental spills may produce special wastes (*e.g.*, material with > 3% oil) and contaminated soil. All waste disposals must comply with the BC Hazardous Waste Regulations and the *Waste Management Act.* The Environmental Monitor will assist in compliance with BC ENV regulations.
- Waste sorbent material may not be disposed of in a landfill without prior approval from BC ENV.
- If contaminated soil is encountered it must be treated and dealt with as required on a site-specific basis and must comply with the requirements of the BC Contaminated Sites Regulations.

SPILL REPORT

The spill report should include the following information:

- Name and phone number of person reporting the spill
- Name and phone number of person involved with the spill
- Location and time of the spill
- Type and quantity of material spilled
- Cause and effect of spill
- Details of action taken or proposed to contain the spill and minimize its effect
- Names of other persons or agencies advised

3.8 Noise Abatement Strategy

Project activities can pose a concern to health or hearing (e.g., emissions, noise, etc.). The following strategies are provided in order to limit unnecessary disturbance:

- The use of back-up beepers should be minimized, particularly during twilight and dark hours, as long as compliance with regulatory requirements is maintained;
- Any idling equipment should be turned off when not in use and in compliance with emission-reduction strategies;
- Equipment should be operated at the minimum engine speeds that still provide for effective operation;
- Equipment or processes should be employed that have additional noise control features, such as better mufflers and enclosures on diesel- or gas-powered equipment or exhaust silencers on air tools;
- Machinery should be in good condition prior to construction and will not be excessively noisy. Regular maintenance must be undertaken on all equipment, including lubrication and replacement of worn parts, especially exhaust systems;
- The quietest piece of equipment that is available should be used to conduct a task where feasible (i.e., utilize hydraulic-powered rather than pneumatic-powered equipment); and
- All on-site workers should be trained to be aware of noise issues and how to minimize noise emissions where possible.

The applicable Village of Gibsons Anti-Noise Bylaw 364, 1980, restricts work to daytime during the hours of 0700 hours to 2200 hours on any day. Remediating the area outside of these hours may be required to coincide with lower tides to reduce effects on the aquatic environment. Should there be the need for continuous noise outside of these hours the Contractor will be required to obtain written approval through the Municipal Inspector to carry on the work that is found to be necessary at designated hours.

3.9 Air Quality Management Plan

The Contractor will reduce idling of vehicles and equipment whenever possible. The following idle reduction strategies to improve air quality and to reduce greenhouse gas exhaust emissions include:

- Operational equipment that is not yet required to meet emission standards in Canada must be fitted with catalyzed particulate traps, to filter out particulate matter emissions and to reduce diesel odour emissions;
- Diesel vehicles shall use ultra-low sulphur diesel fuel, when and where available; and
- Restrict idling times of cranes and vessels during periods of inactivity. The Contractor shall reinforce the idle reduction initiative through signage and during toolbox, health and safety, and other meetings.

3.10 Vegetation Management Plan

Riparian vegetation (vegetation within 15 m of the HWM) is primarily contained to adjacent properties with the exception of dunegrass located in the riprap just below the public trail. In order to protect vegetation, the Contractor shall:

- Not destroy, remove or clear riparian vegetation to any extent greater than is absolutely necessary for the performance of the work, or to any greater extent than has been authorized through environmental permits and approvals;
- In order to prevent the introduction of invasive or non-native species, equipment working on this Project should be kept clean and will be regularly monitored/checked by the Environmental Monitor.

3.11 Soil and Sediment Management Plan

Works may require temporary sediment stockpiling prior to use on or removal from Site. The following mitigation measures are included to minimize potential impacts to soil and sediment during construction activities:

- For the remediation all material removed during the remedial works may be required to temporarily be deposited into a bermed containment area. The location will be determined by the Contractor such that the requirements of this CEMP are met;
- During the works, all equipment operators must minimize movements, swing paths, distances travelled, etc., in order to avoid spreading contamination;
- Equipment used during contaminated soil excavation or loading must be swept off prior to moving it out of the immediate work zone, or be left parked in the same area;
- Sides, bumpers, wheels, etc., must be swept off and any soils spilled around the truck by the loader swept back into a stockpile;
- Roadways will be regularly swept to prevent sediment tracking;
- When immediate removal and disposal of excavated sediment is not feasible, contaminated soil may be temporarily stockpiled in an area of 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 prevent the spread of materials. There will be one access point which can be closed off at end of shift;
- Any temporary stockpiles of contaminated sediment and potentially contaminated material must be covered with poly-sheeting or other suitable impermeable covering that extends over the containment cell walls or berms to prevent precipitation from contacting the stockpiled soil. Surface run-off must be directed away from the stockpile to avoid contact with the contaminated soil and sediment. Polyethylene sheeting must be weighted down in order to not be blown away by wind; and
- Any excavated soil or sediment suspected or identified to contain contaminants must be managed on-site so as to prevent discharge impacts to human health and the environment (i.e., stockpiled on poly tarping and covered);

- Soil and sediment quality must be sampled appropriately if required to be removed or transported off-site to characterize soil for potential contaminants (soil quality is to be compared to BC Contaminated Sites Regulation Schedule 7 column II or column III standards, as appropriate);
- All haul trucks must be equipped with load covers prior to leaving the site; and
- Where on-site treatment may not be appropriate or feasible, vacuum trucks may be used to transport contaminated water to an appropriate off-site facility for treatment and disposal.

3.12 Waste Management Plan

The Contractor shall comply with applicable laws, regulations, permit conditions and requirements when disposing of wastes generated by this Project, including but not limited to general garbage and trash, hazardous wastes (such as used paint or waste batteries), waste oil, or other materials not authorized for on-site disposal.

The following measures will be implemented for waste management during the Project:

- At no time shall any waste material be allowed to enter the marine environment or be discarded or abandoned on land. The Contractor will disposal of waste and/or recycling materials at permitted facilities.
- 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 nuisance wildlife.
- The Contractor is responsible for the proper collection and transportation of garbage to disposal facilities (i.e., sanitary landfill).
- Materials which can be recycled, such as paper and cardboard products, glass bottles and plastic and metal containers, will be sorted and recycled at all times.
- Recoverable recyclable construction materials (i.e., metals and associated construction wastes) will be taken to an appropriate recycling facility, where available, for handling where it will be recycled and re-used in other products, if feasible.
- The Contractor is responsible for the proper collection and transportation of material to appropriate recycling facilities. Debris and other garbage will not be deposited in the ocean;
- Sanitary facilities will be required during Project works and these facilities will be serviced on a regular basis with the waste disposed of at permitted treatment facilities.
- The Contractor will supply and service chemical toilets in its work areas. Portable sanitary facilities will be located at least 15 m from the HWM if possible and must be tied down or anchored, such that they cannot be blown or tipped over, under reasonable conditions.
- Used oil filters must be drained into a waste oil container and drained filters placed in an appropriate labelled container (i.e., drum) before disposal at a recycling facility or other approved facility.
- Waste-oil and antifreeze must be collected and recycled/disposed of at an approved facility.

- Used acid-lead batteries must be stored on an impervious surface, under cover, and disposed of at an approved recycling facility.
- It is the Contractor's responsibility to determine whether any waste generated pursuant to the execution of the work has any hazardous or toxic characteristics or is identified as a "Hazardous Waste" by the Ministry of Environment and Climate Change Canada (BC ENV), ECCC, or any other authority having jurisdiction, and to treat this material appropriately.
- The Contractor shall review the lists of Hazardous Wastes, as defined by BC ENV and EC to determine if any waste generated during construction is hazardous.
- If the waste item cannot be found in published Hazardous Waste lists, the Contractor shall determine if the waste displays a characteristic which would make it hazardous.
- The Contractor will review and comply with the *Standards Applicable to Transporters of Hazardous Waste* as defined by BC ENV and ECCC.
- Hazardous Waste shall be treated/ disposed of in authorized facilities, permitted under regulations as defined by BC ENV and ECCC.

3.13 Archeological Resources Management Plan

In the event that potential archaeological materials or remains are found during the Project works, the Contractor will employ chance find procedures including the following:

- Project works in the vicinity of the remains will be stopped.
- The find location will be recorded, and all remains/materials will be left in place.
- The Archaeology Branch of the British Columbia Ministry of Forests Lands Natural Resource Operations and Rural Development will be contacted to discuss the find.
- Potential significance of the remains will be assessed and mitigative options will be identified by a qualified professional.
- If the significance of the remains is judged to be sufficient to warrant further action and they cannot be avoided, then the qualified professional and representatives of local First Nation communities will determine the appropriate course of action.
- In the case of human remains, if the remains are assessed to be archaeological, then the Archaeology Branch and local First Nations will be consulted to determine how to handle them. Options could include avoidance or respectful removal and reburial. The RCMP and/or coroner will also be notified of find.
- If human remains are encountered and they are not archaeological, then the RCMP will be contacted immediately.

3.14 Environmental Monitoring and Reporting Plan

The Environmental Monitor will report directly to the Environmental Manager/QEP and to ensure the effectiveness of mitigation and compensation measurements during construction activities. The following activity specific environmental monitoring plan has been developed for the Project.

3.14.1 Water Quality Monitoring

Water quality monitoring will be conducted, if required by the site-specific conditions and activities. *In situ* parameter measurements, such as dissolved oxygen, pH and turbidity, are commonly used to evaluate potential localized effects on water quality. Marine water quality will be monitored during in water works. Water quality results will be compared to background measurements recorded at an area not influenced by construction. Water quality criteria will adhere to the Water Quality Management Plan (Section 3.5). If water quality outside of the silt curtain exceeds the acceptable water quality criteria, additional mitigation measures will be implemented. These may include deployment of additional silt curtains or reducing the speed of the work to reduce sediment disturbance.

Sampling in and around any marine operations will be limited to a safe distance, such that sudden drops/breaks in machinery will not endanger monitoring personnel. The Environmental Monitor will inspect the site on a minimum weekly basis during active construction, at start-up of an activity that has the potential to affect water quality, and more often during periods of inclement weather (i.e., when rainfall exceeds 25 mm in a 24-hour period) to ensure that erosion and sediment control measures are functioning as intended or remediated as necessary. Monitoring will be conducted during the entire tenure of works below the HWM.

When water quality measurements, such as turbidity, are taken in order to determine the zone of construction influence and whether activities are compliant with environmental regulatory guidelines, the direction of flows/currents must be considered. In the marine environment, tidal changes can be extreme and prevailing winds and submarine topography influence longshore current directions. Background turbidity will also vary with the season and depending on algal blooms (turbidity measurements do not distinguish between re-suspended inorganic particulate matter and naturally-occurring planktonic organisms or other organic particles). Background or reference measurements are taken outside or up current of the work zone and will depend on the tide/current direction during the sampling event. The zone of construction influence (“halo”) is determined by the configuration of marine structures and equipment, and shoreline/current barriers. The halo size and acceptability of increased turbidity within the immediate construction zone will vary depending on the site and its designated usage.

When and where applicable and appropriate, the BC Approved and Working Water Quality Guidelines for Freshwater, Marine and Estuarine Life will be used for comparison to in situ measurements.

3.14.2 Environmental Incident Reporting

An environmental incident is 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; and
- Legal action with respect to environmental noncompliance and/or damage.

In addition to the above points, all spills (regardless of volume) are considered to be environmental incidents in the context of this Project. In the event of an environmental incident, as defined above, the following procedures shall be undertaken by the Contractor:

- Take immediate action to minimize environmental consequences and manage resolution of the incident;
- Gather information for the assessment of causes so that prevention of future incidents can be planned;
- Prepare a written Environmental Incident Report (EIR) as soon as possible (within one working day of the occurrence) summarizing events, actions and recommendations for future avoidance;
- Submit EIR to the Environmental Manager/QEP; and
- Prepare updates to the EIR as necessary and submit them to the Environmental Manager/QEP.

3.14.3 Environmental Training and Orientation

As part of Project requirements, the Environmental Monitor will fulfil the following tasks:

- Attend meetings where environmental issues or concerns may arise or may ask for a meeting to discuss such issues with the various stakeholders involved;
- Give an environmental orientation to the Contractor's employees, including other monitors or observers that may not necessarily be aware of the environmental issues or concerns that are part of the activities being undertaken;
- Discuss discipline or activity-specific environmental issues/concerns and mitigative strategies with crews or individuals as the need arises, such that they are aware of the environmental protection measures that should or could be implemented under the conditions at the time the work is undertaken; and
- Be available for meetings (whether in person or via telephone) should the need arise and will respond to messages or written communications as required by the circumstances.

The Contractor shall implement an education and training system as part of the Site orientation.

3.14.4 Environmental Monitoring and Compliance Tracking

Environmental monitoring will be conducted throughout the remediation works. The Environmental Monitor will keep field notes and logs of site visits conducted and will document site conditions/compliance with a site-specific checklist and will keep a photographic record of activities and site conditions as work progresses. These records will form the basis of the formal monitoring reports (prepared following site visits), as well as provide records for quality management control.

The presence of marine mammals observed in or about the works will be documented as to type and number. Identifying features will be noted, where such identifications of individuals may be of interest to other stakeholders or agencies. This information will be included in environmental monitoring reports.

Where required by the conditions of an authorization, letter of advice or other permits issued for the Project, reports will be submitted as specified to the regulatory agencies and stakeholders listed in the conditions, by the Environmental Monitor or through a designated Owner representative. The Project authorities may then disseminate the reports to other stakeholders, as deemed appropriate, or request that the Environmental Monitor include them on the transmittal list.

Formal monitoring reports will include a list of construction activities, water quality monitoring results and environmental protection measures implemented or mitigative strategies employed, as well as photographs where appropriate. A discussion of the effectiveness of the environmental protection measures will be included. Special provisions will be detailed and any post-construction monitoring requirements outlined, especially where a potential impact may not be realized immediately. Reporting will also include any deficiencies, correction measures implemented and subsequent compliance with the environmental protection plan. Non-compliance will be documented and the measures taken to correct such deficiencies will be tracked.

A formal monitoring report will be prepared by Keystone Environmental following the proposed works. The report will be sent to the Owner and other Project stakeholders as determined by the Owner.

3.15 Contractor Awareness and Education Plan

The construction Contractor shall develop an awareness and education plan which will include an orientation session for each new worker. Training will include Site-specific guidance on environmental regulatory requirements and best management construction and protection practices around sensitive areas (drainages and marine waters, vegetation and wildlife habitats) and the protection approaches to be taken for each type. The Contractor will ensure that individuals requiring specialized training due to their responsibilities within the Project, or employees new to this type of work, receive additional training on their work functions, impacts and roles for achieving environmental compliance. Emergency response and waste management will be discussed and appropriate sites for contingency supplies and disposal areas identified as well.

Daily tailgate meetings are required for the Contractor staff to ensure they are appropriately aware and prepared for the day's activities and associated health, safety and environmental risks. Tailgate meetings will be documented, signed by each employee involved and retained at the start of each Project activity. Only if the Project activity, environmental conditions, or employees change, will an updated tailgate meeting document be required for employee sign-off and retained as record. On days that are scheduled to be near or associated with environmentally sensitive areas or impact environmental values, the Environmental Monitor will attend to outline mitigative strategies for site-specific environmental requirements.

All training sessions with the names of the Contractor staff members and company names, and other attendees will be documented. Environmental monitoring reports will include compliance reporting, how effective the mitigative strategies were, and opportunities for activity and training improvement.

4. STATEMENT OF LIMITATIONS

Findings presented in this CEMP are based upon (i) reviews of available documentation and discussions with available personnel, (ii) review of available records and the terms and conditions for the planned construction, and (iii) observations of the sites 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, practicing 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 Project 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 construction activities, as well as unanticipated events or requirements that may arise during the course of construction.

This report has been prepared for Klaus Fuerniss Enterprises Inc. pursuant to the agreement between Keystone Environmental Ltd. and Klaus Fuerniss Enterprises Inc. By using this report, Klaus Fuerniss Enterprises Inc. agrees that they will review and use the report in its entirety. 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.

5. PROFESSIONAL STATEMENT

This report titled *George Hotel Marine Residences Foreshore Remediation Project Construction Environmental Management Plan, 377 and 385 Gower Point Road, Gibsons, BC* has been prepared by Libor Michalak, R.P.Bio, and reviewed the professionals below.

December 6, 2019
Date

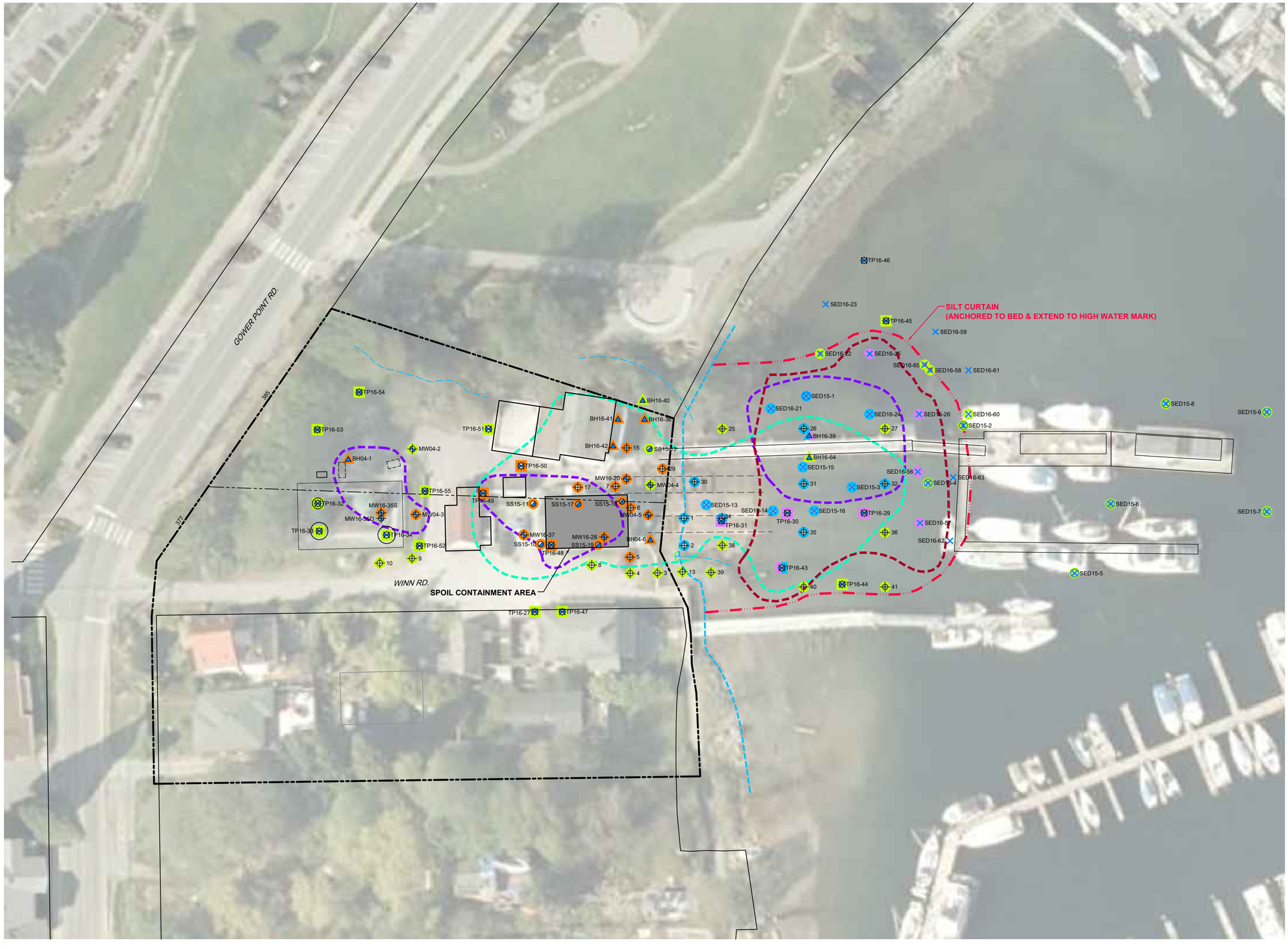
Warren Appleton, B.Sc., R.P.Bio.
Project Manager

Keystone Environmental Ltd.

Dave Langill, B.Sc.
Project Coordinator

Michael Geraghty, M.Sc., P.Geo, PMP
Senior Technical Manager

FIGURE



LEGEND

- SITE
- PROPERTY LINE
- BUILDING OUTLINE
- FORMER BUILDING/STRUCTURES
- FENCE LINE
- CULVERT
- DRAINAGE (APPROXIMATE)
- HIGH WATER MARK (APPROXIMATE)
- KEYSTONE BOREHOLE (2004 & 2016)
- KEYSTONE MONITORING WELL (2004 & 2016)
- SOIL OR SEDIMENT SAMPLE (BY OTHERS)
- KEYSTONE SURFICIAL SOIL SAMPLE (2015)
- KEYSTONE SEDIMENT CORE SAMPLE (2015 & 2016)
- KEYSTONE SEDIMENT PONAR SAMPLE (2015)
- KEYSTONE TESTPIT (2016)
- SOIL/SEDIMENT CONCENTRATION(S) LESS THAN CSR STANDARDS
- SOIL CONCENTRATION(S) GREATER THAN CSR STANDARDS (RL)
- SEDIMENT CONCENTRATION(S) GREATER THAN CSR STANDARDS (SedQC$_{15}$)
- SEDIMENT CONCENTRATION(S) GREATER THAN PSDDA (SL)
- INFERRED EXTENT OF METALS CONTAMINATION IN SOIL & SEDIMENT EXCEEDING CSR STANDARDS
- INFERRED EXTENT OF TRIBUTYLTIN CONTAMINATION IN SOIL & SEDIMENT EXCEEDING CSR STANDARDS
- INFERRED EXTENT OF LEPH, HEPH & PAH CONTAMINATION IN SOIL & SEDIMENT EXCEEDING CSR STANDARDS
- SILT CURTAIN
- SPOIL CONTAINMENT AREA

Keystone Environmental

NOTES:
1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY. LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.
2. DATE OF AERIAL PHOTO IS 2014 FROM GOOGLE MAPS.
3. LOCATION OF SILT CURTAIN IS GENERALIZED, TO BE DETERMINED BY CONTRACTOR.

5m 0 25m

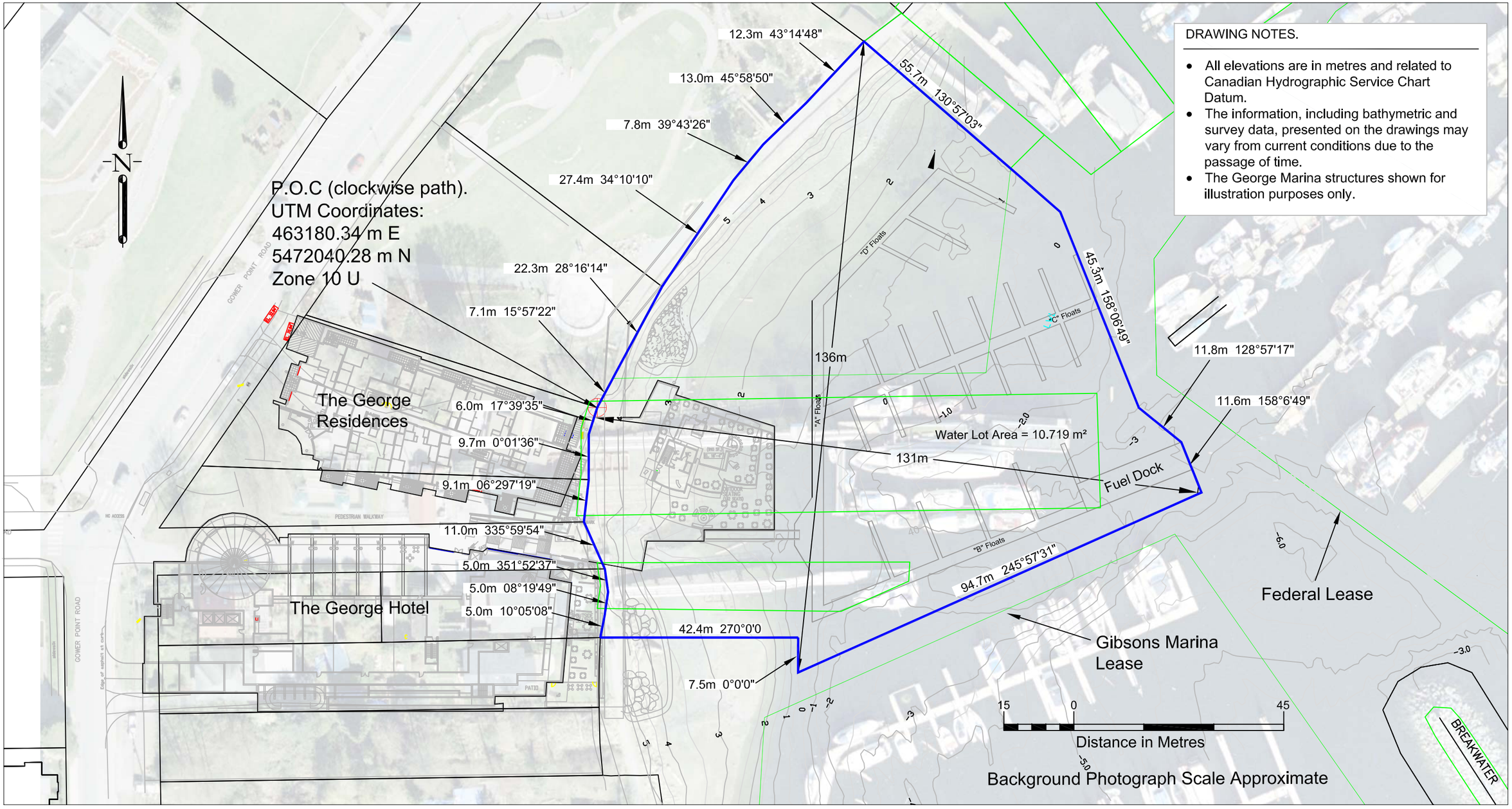
SCALE: 1:500(approx.)

377, 385, 397 & 407 Gower Point Rd.
& 689 Winn Rd., Gibsons, B C
Klaus Fuerniss Enterprises Inc.

REVISION No.	DATE	PROJECT No.
01	Dec. 2019	12845-04

Figure 1
Remediation Project

PLOT SCALE: 1:1 DRAWN BY: TL CADD FILE No. \\key-fs2012\Common\12800-12899\12845\Figs\Sept. 2016\Remediation Letter\July 2017\R1\Fig1-Remediation Project-R1.dwg



Drawing L1	PMG Landscape Architects
504A-1504	Penonzek Land Surveyors
Online GIS Map	SCRD Parcel Boundaries
Ref. No.	REFERENCE

Client:

Klaus Fuerniss Enterprises Inc.

Author:

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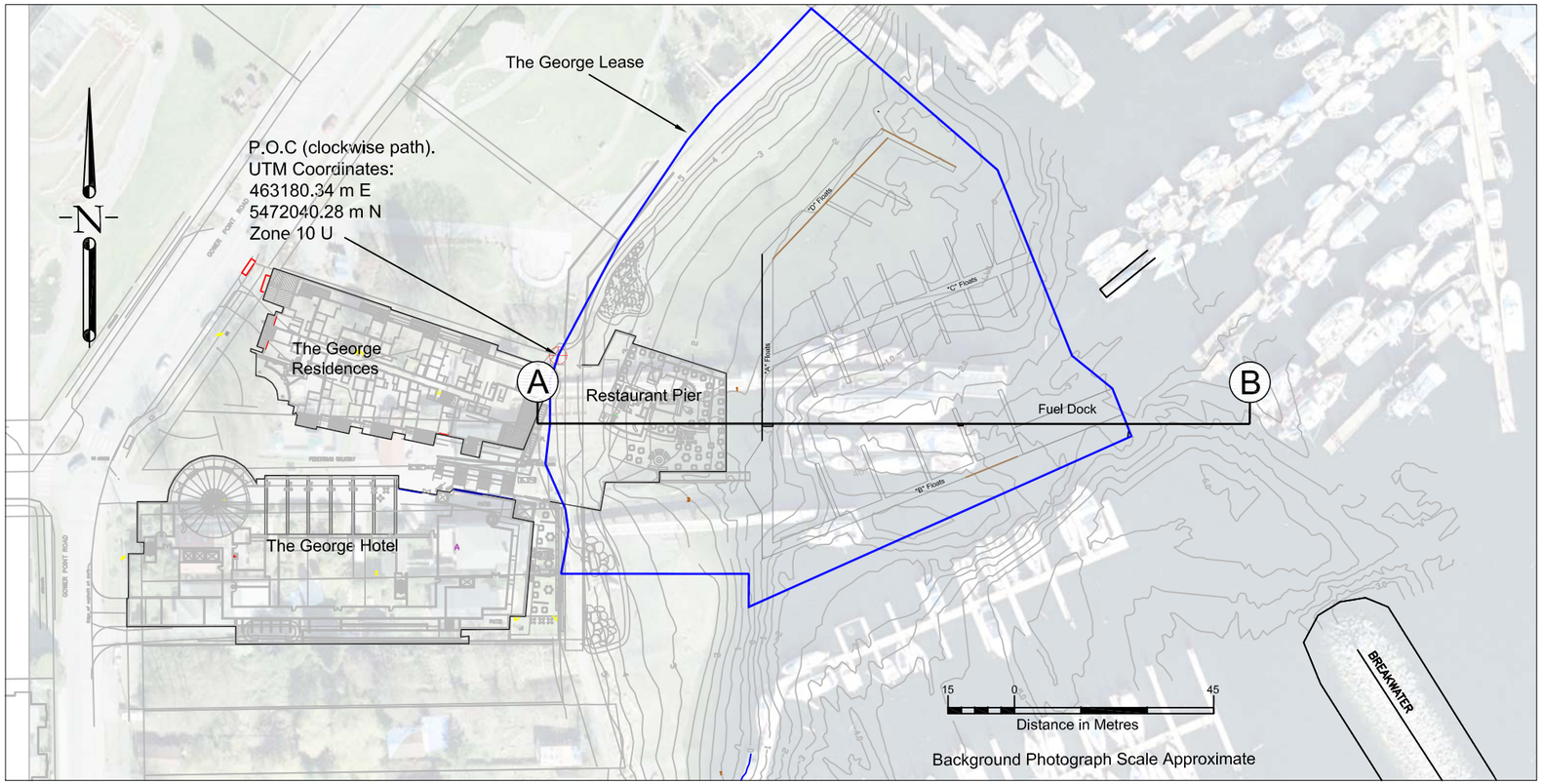
Checked by	SC
Drawn by	xie
Date	Nov. 10, 2017
Scale	See Barscale
Inspectors	
Paper	11 x 17

PROJECT

THE GEORGE WATER LOT LEASE,
TOWN OF GIBSONS BRITISH COLUMBIA

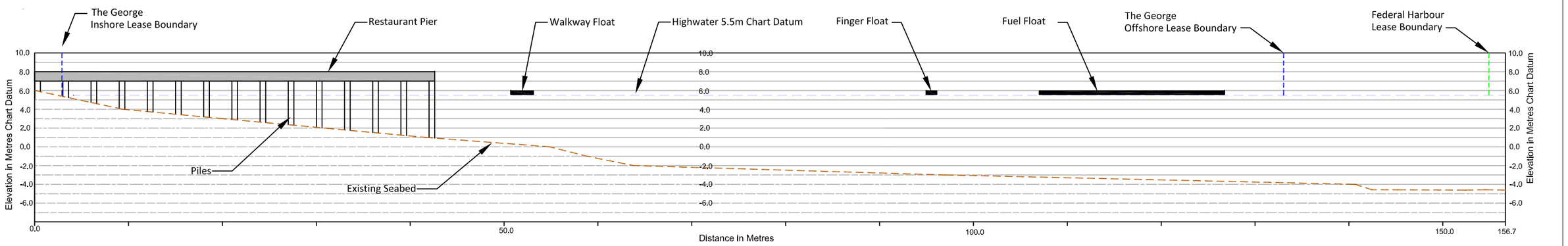
DWG. No. 5813-D-01.2 WATER LOT



DRAWING NOTES.

- All elevations are in metres and related to Canadian Hydrographic Service Chart Datum.
- The information, including bathymetric and survey data, presented on the drawings may vary from current conditions due to the passage of time.
- The George Marina structures shown for illustration purposes only.

SECTION A - B



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Checked by	SC
Drawn by	xie
Date	Nov. 29, 2017
Scale	AsShown
Inspectors	
Paper	11 x 17

PROJECT

THE GEORGE WATER LOT LEASE,
TOWN OF GIBSONS BRITISH COLUMBIA

DWG. No. 5813-D-02.1 SECTION