

**KENSINGTON UNION BAY PROPERTIES LTD.
CROWN LANDS MANAGEMENT PLAN
UNION BAY, COMOX VALLEY REGIONAL DISTRICT, AREA A**

Aquaparian Environmental Consulting Ltd. (Aquaparian) was retained to complete environmental services for a proposed project within Union Bay on behalf of the client, Kensington Union Bay Properties Ltd. (Kensington). As part of these services, Aquaparian is completing an application for a temporary License of Occupation on behalf of Kensington so that site investigations can be conducted. The following is a Management Plan that is required as part of the application. A site location map for the project area has been included as Figure 1. A detailed site plan can be found in the attachments to this document as Figure 2.

Consultant Team Contacts:

Name	Email	Firm	Responsibilities
Sarah Bonar	sbonar@aquaparian.com	Aquaparian Environmental Consulting Ltd	<ul style="list-style-type: none">• FLNRORD Authorizations• Habitat Assessment & Offset Requirements• Marina Impact Mitigation
Joline Widmeyer Michael Sloan	jwidmeyer@slrconsulting.com msloan@slrconsulting.com	SLR Consulting	<ul style="list-style-type: none">• Upland Environmental Assessments• ENV Authorizations• Disposal at Sea Authorization for Marina Sediments
Matt Friderichs Adam Cooper	mfriderichs@mcelhanney.com acooper@mcelhanney.com	McElhanney	<ul style="list-style-type: none">• Marina & Sheet Pile Wall Design• Site Development and Related Permitting
Kevin Bodnar Alexander Gossen	bodnar@geopacific.ca gossen@geopacific.ca	GeoPacific	<ul style="list-style-type: none">• Geotechnical Assessments and Requirements for the Sheet Pile Wall and Development Construction

1.0 BACKGROUND

1.1 Project Overview

Union Bay is located approximately 13km south of the city of Courtenay and is accessible from Highway 19A. The small bay connects to Baynes Sound. Union point is located north of Union Bay and is the location of a sizeable coal waste pile. As understood, the site was historically used as a shipping port for the Union Coal Company in Cumberland from the late 1800s until the mid 1900s.

The development plan for the Kensington lands includes mixed commercial and residential use of several upland parcels extending north of Union Point. The project proposes to also develop a marina and boardwalk within the bay. The proposed marina requires dredging most of the

basin of Union Bay to achieve a functional depth for the marina. Mechanized test drilling is required to sample and analyse the sediments to determine disposal options of the dredgate.

The area for the proposed test drilling is currently a surveyed provincial crown water lot and zoned as Mixed-Use Commercial-Residential (MUCR) by the Comox Valley Regional District. This crown water lot encompasses most of the bay and a peninsula on the east side of the bay. It is legally identified as follows:

- THAT PART OF BLOCK B, DISTRICT LOT 419, TOGETHER WITH UNSURVEYED CROWN FORESHORE OR LAND COVERED BY WATER BEING PART OF THE BED OF UNION BAY, ALL WITHIN NANAIMO DISTRICT, SHOW OUTLINED ON SKETCH BELOW, CONTAINING 2.936 HECTARES, MORE OR LESS.

The public boat ramp, the breakwater and a section along the west side of the bay, which is developed as a gravel parking area for the boat ramp, are currently under separate leases (PIN SID: 11556891 & PIN SID: 11556921) held by the non-profit organization referred to as the Union Bay Community Club Boat Launch Committee.

The upland properties including the head of the bay are parcels that are owned by Kensington Union Bay Estates (Kensington). An intertidal section of the head of the bay is included in this private ownership. A sheet pile wall that will support a boardwalk/promenade storefront for commercial business is proposed to be installed along the property line and backfilled within the intertidal area within the privately owned lands.

The marina, proposed breakwater extension and eastern peninsula boardwalk are within a crown water lot. The east side of the bay is formed by a small peninsula angled to the southeast that is comprised of anthropogenic fill and coal slag waste and was once part of the historical coal loading wharf. The opening of the bay is 150m across between the end of the rock breakwater and the end of the spit creating a sheltered embayed area that appears to have in-filled over time. The substrate in the bay is fully exposed during very low tides.

Figure 2 is a map indicating the subject crown lot relative to the project area and the license tenures held by the non-profit organization.

PROJECT DESCRIPTION

This application is to apply for a temporary License of Occupation to conduct test drilling to determine sediment composition and to determine dredgate disposal options.

The proposed development plan for a marina will comprise approximately 80% of the bay. The proposed layout of the marina will include the following:

- Breakwater extension,
- Marina with capacity for up to 160 vessels ranging from 20' to 60',
- Float plane access, and
- A restaurant.

1.2 Investigative work

Activity: Test drilling (See Figure 3 for a Site Plan of the proposed test drilling holes)

Description: A barge-mounted sediment drilling rig will access the bay during high tide. A total of 30 test holes will be completed to investigate substrate conditions and will be concentrated around proposed structure locations including:

- Existing breakwater (3 holes) (PIN SID: 11556891),
- New breakwater/breakwater expansion (3 holes) (PIN SID: 11556891),
- Pier (5 holes),
- Mooring piers (6 holes),
- Sheet pile wall (6 holes), and
- Peninsula fill (2 holes).

Status: Proposed

1.3 Authorization, Permits, Approvals

- N/A for the test drilling phase.

1.4 First Nations

Preliminary discussions are ongoing between the local First Nations and Kensington.

2.0 LOCATION

2.1 General Description

The proposed location of the marina is within Union Bay located in Electoral Area A – Baynes Sound – Denman/Hornby Islands the Comox Valley Regional District (CVRD). Union bay is accessible from Highway 19A and presently contains a parking lot, a boat launch and a breakwater. The peninsula and most of the bay are within provincial crown lands. The bay connects to Baynes sound, a notable fishing area. The marina plan is designed to fit the shape of the bay and will require some modifications such as increasing depth and the length of the breakwater.

2.2 Location Justification

A. The subject crown lease lot is adjacent to the upland owned by Kensington.

Union bay is adjacent to a series of large parcels located within the upland area north of the bay which are owned by Kensington Properties Union Bay Ltd. As mentioned, the overall project scope is to create a waterfront neighbourhood of mixed residential and commercial development. The marina component associated with the development plan for the privately owned upland will require a crown land lease.

B. Union Bay has a long history of historical impacts and relatively limited habitat value.

The site location has a long history of historical industrial impacts from use as a coal loading and shipping port. North of the bay, Union Point is the location of a sizeable coal waste pile that is scheduled for remediation by the province. The upland around Union Bay including the peninsula is constructed from fill for the development of the coal loading and shipping facility and contains coal slag waste. The area is considered a brownfield site and has little habitat value. Likewise, the intertidal area of Union Bay was deemed to be of low quality habitat value and was found to have contamination including coal waste and heavy metals within the sediments. The detailed design will incorporate shoreline remediation along the east side of the peninsula and will aim to improve habitat quality and reduce shoreline erosion.

C. Union Bay contains the only boat ramp access to Baynes Sound in the area.

The closest alternative boat ramps are Big Rock Boat Ramp in Campbell River to the north or Qualicum Boat Launch to the south. As understood, detailed design may incorporate improvements to the existing boat ramp, which is currently only accessible at the highest tides.

2.3 Seasonal expectation of use

The temporary License of Occupation is proposed to be completed in the fall of 2020 and will be expected to be completed within a week.

3.0 INFRASTRUCTURE

3.1 New Facilities or Infrastructure

The temporary License of Occupation application only concerns the test drilling phase of the project. No “improvements” apply to this phase.

3.2 Access

The temporary License of Occupation application only concerns the test drilling phase of the project. Public access will not be impeded by this phase.

3.3 Utilities Requirements and Sources

The temporary License of Occupation application only concerns the test drilling phase of the project. No utilities are required for this phase.

3.4 Water Supply

The temporary License of Occupation application only concerns the test drilling phase of the project. No water requirements are expected.

3.5 Waste Collection, Treatment and Disposal

The temporary License of Occupation application only concerns the test drilling phase of the project. No waste management is necessary for this phase.

4.0 ENVIRONMENTAL

4.1 Land Impacts

4.1.1 Vegetation Removal – No vegetation removal is required for the test drilling phase.

4.1.2 Soil Disturbance – Soil disturbance will be limited to test drilling. Disturbed substrates within the intertidal area are expected to sort and resettle after a tide cycle. The small amount of sediment excavated from the test pits will be taken as sediment core samples and analyzed in a laboratory.

4.1.3 Riparian Encroachment – Not applicable for this project as it is marine and will not include work within or near freshwater.

4.1.4 Pesticides and Herbicides – N/A

4.1.5 Visual Impacts – The visual quality of the Crown Lot will not be impeded by the test drilling.

4.1.6 Archaeological Sites – An archaeological consultant has been retained by Kensington Properties Ltd. for this project.

4.1.7 Construction Methods/Materials- A barge mounted with a drilling rig will be transported from deeper waters into the bay during high tide. The Barge will be positioned by a small tug boat into place to complete test pits that are indicated by the attached site plan. The rig will use a core sample drilling piece to drill down into the intertidal substrate to collect core samples of the sediment. The test drilling is expected to be completed in one to two days.

Environmental Impacts and mitigations in place for the project include the following:

1. Accidental release of hydrocarbons into the marine environment

- Full-sized fully stocked spill kits will be on board the barge and an emergency spill response plan will be prepared prior to drilling activities.

2. Potential turbidity to the marine environment from the drilling activity and barge spuds

- Turbidity created as a result of the drilling activity is expected to be temporary and minor. If excessive turbidity is observed, water quality monitoring will be completed by a Qualified Environmental Professional.

4.2 Atmospheric Impacts

4.2.1 Sound, Odor, Gas or Fuel Emissions – Sound/odor/gas or fuel emissions will not have a deleterious impact on wildlife or disrupt residents in the surrounding area. The drilling activities have minor emissions and will be temporary.

4.3 Aquatic Lands

4.3.1 Drainage Effect – The project will not affect drainage.

4.3.2 Public Access – Public access will not be altered for this activity. The equipment will be imported to the site by barge from deeper waters.

4.3.3 Flood Potential – No flooding risks will result from the proposed test drilling.

4.4 Fish and Wildlife Habitat

4.4.1 Disturbance to Wildlife or Wildlife Habitat - Aquaparian has documented the intertidal habitat within the bay and around the peninsula and the breakwater through a combination of intertidal and subtidal surveys for Environmental Assessments completed for Kensington for various aspects of the proposed project including breakwater expansion and marina dredging. It is Aquaparian's professional opinion that Union Bay is highly impacted by historical human activity and is comprised of eroding or modified shorelines with a high occurrence of coal waste visible in the substrate. Despite the industrial impacts, there is an abundance of shellfish in the mudflat (low intertidal). It is dominated by Pacific oysters, manila clams and introduced varnish clams. The diversity within the intertidal zone is deemed to be low. Sensitive habitat is limited to some moderately dense eelgrass beds confined to the end of and the south side of the breakwater. The eelgrass bed is to be avoided during test drilling. The proposed test drilling will result in a minor and temporary disturbance to substrate conditions within the bay.

5.0 SOCIO-COMMUNITY

5.1 Land Use

5.1.1 Land Management Plans and Regional Growth Strategies

The embayed area is a surveyed provincial crown water lot (DL 149) and zoned as Mixed-Use Commercial-Residential (MUCR) by the Comox Valley Regional District.

5.2 Socio-Community Conditions

5.2.1 Adjacent Users or Communities – The beach areas and boat launch ramp within Union Bay are used by the public recreationally. The proposed test drilling will not have an impact on public use. If it is required that the area must be secured for the safety of the public (i.e. test drilling near boat ramp may limit boat launching temporarily), it will be a very short duration of time that access is impeded (e.g. several hours/a couple days) and will be correlated with favourable tide cycles for test drilling.

5.2.2 Existing Services – Use of the lease for test drilling will not increase demand on existing services (i.e. fire, ambulance, etc.).

6.0 RECLAMATION PROGRAM

6.1 Proposed Land Use After Reclamation – N/A


6.2 Description of Reclamation Procedures – N/A

Any questions regarding information provided in this document, please contact the undersigned at (250) 591-2258.

Respectfully submitted,

AQUAPARIAN ENVIRONMENTAL CONSULTING LTD.

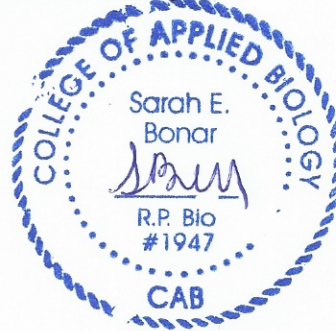
Prepared by:



Jeni Rowell, B.Sc.
Junior Biologist

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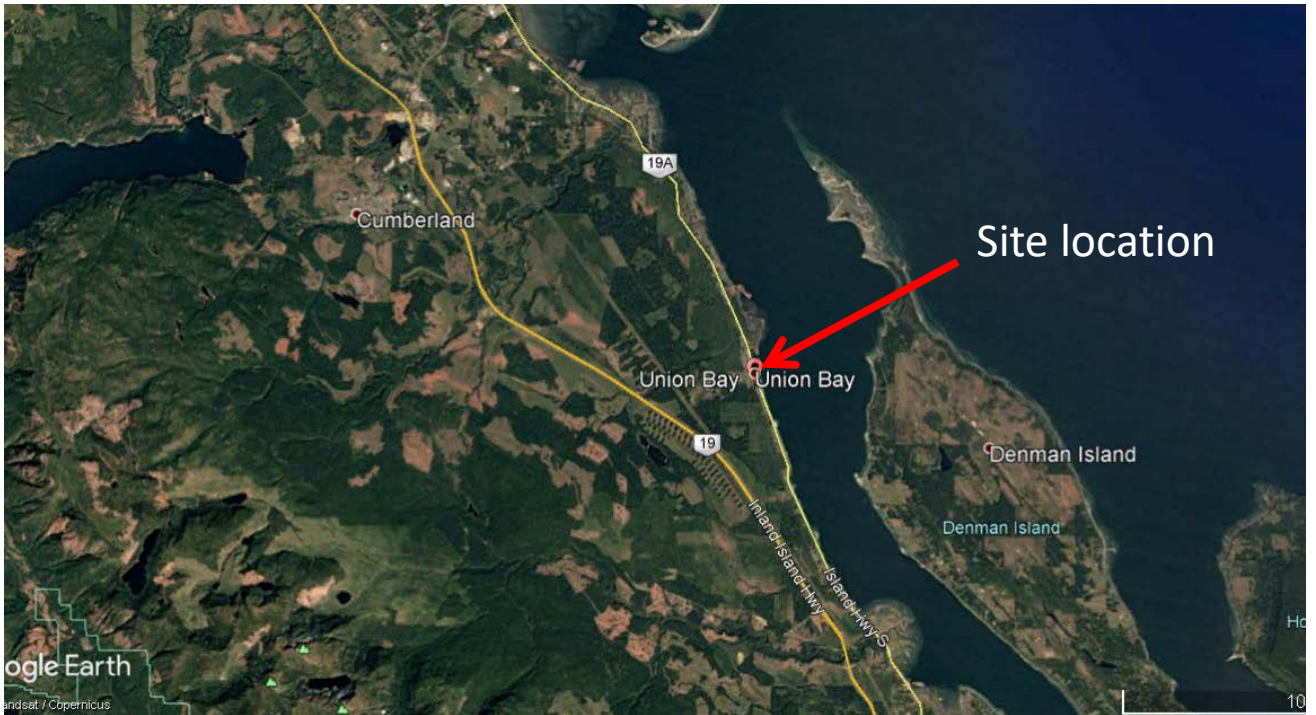
Reviewed by:



Sarah Bonar, B.Sc. R.P.Bio
Biologist/Principal

FIGURE 1
LOCATION MAP

**SITE LOCATION MAP
FIGURE 1A**



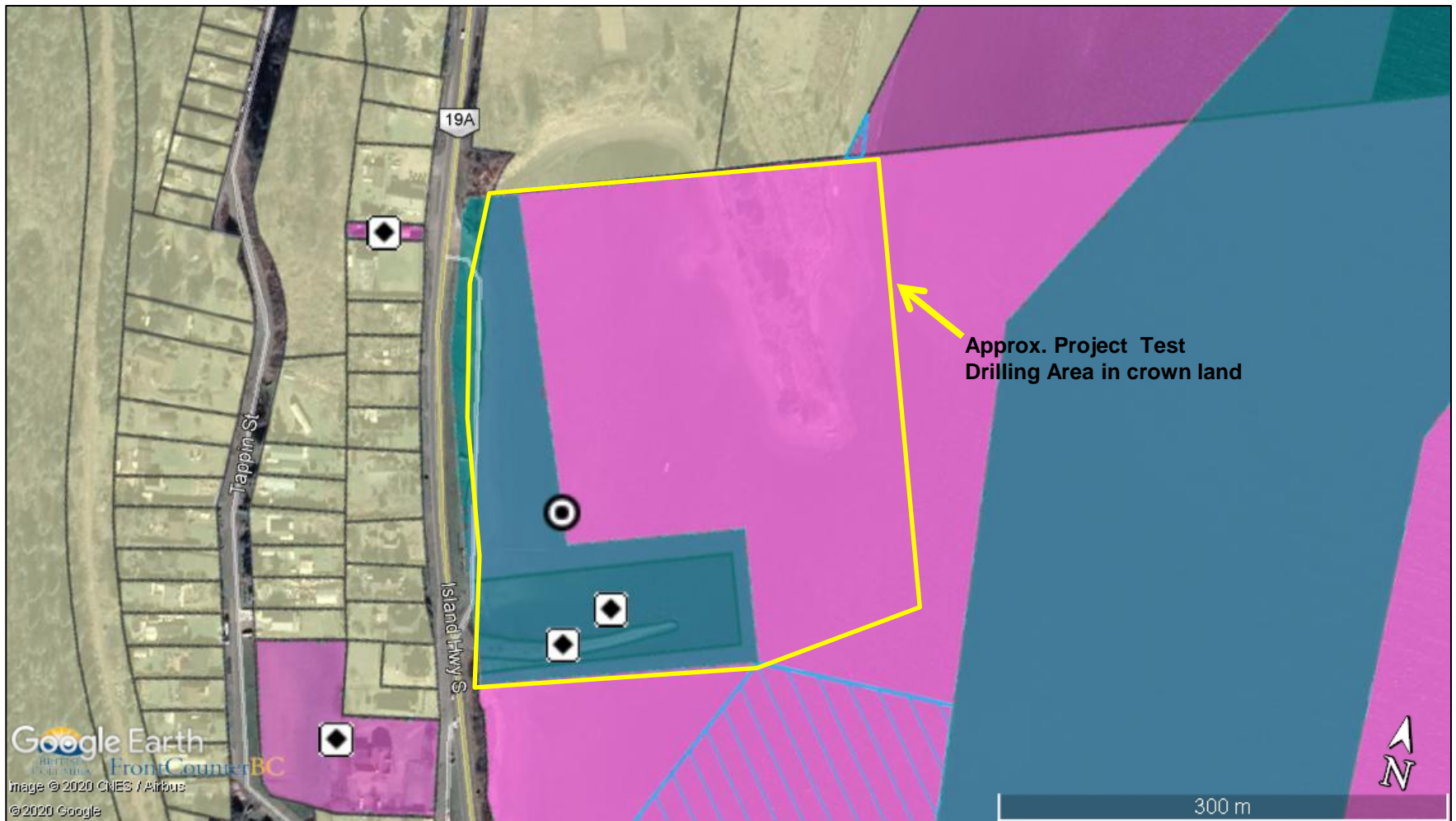
**PROJECT AREA
FIGURE 1B**



FIGURE 2

CROWN LANDS MAP

FIGURE 2 – CROWN LANDS MAP



Legend:

Crown Ownership



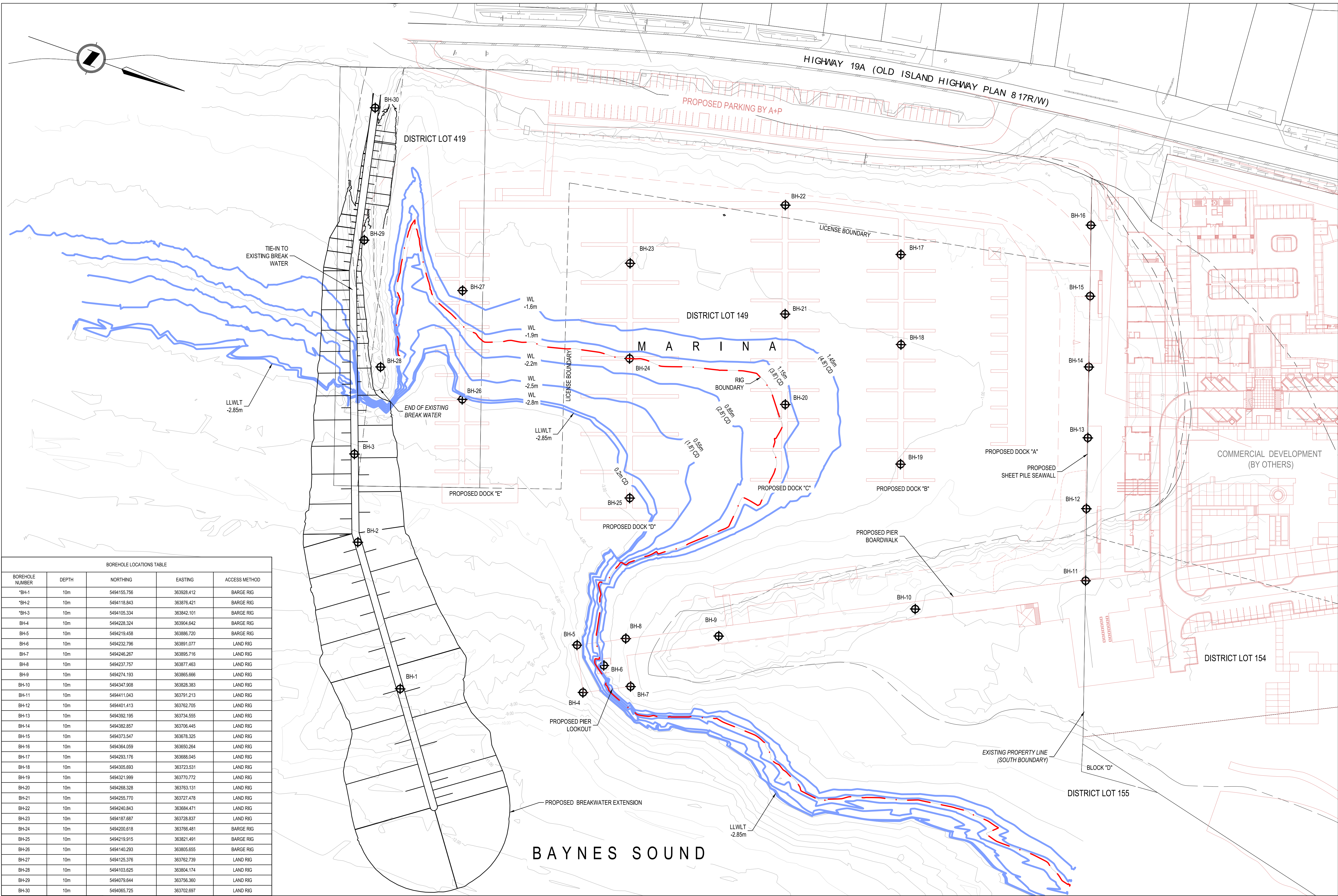
Tenure Applications



FIGURE 3

SITE PLAN

DATE: 2020-05-25, 14:45 FILE: X:\21\147390_Union Bay Estates\10.0 Drawings\10.1 Structural\10.1.2 Soundings\1230_SK08.dwg



BOREHOLE LOCATIONS TABLE				
BOREHOLE NUMBER	DEPTH	NORTHING	EASTING	ACCESS METHOD
BH-1	10m	5494155.756	363928.412	BARGE RIG
BH-2	10m	5494118.843	363876.421	BARGE RIG
BH-3	10m	5494105.334	363842.101	BARGE RIG
BH-4	10m	5494228.324	363904.642	BARGE RIG
BH-5	10m	5494219.458	363886.720	BARGE RIG
BH-6	10m	5494232.796	363891.077	LAND RIG
BH-7	10m	5494246.267	363895.716	LAND RIG
BH-8	10m	5494237.757	363877.453	LAND RIG
BH-9	10m	5494274.193	363865.666	LAND RIG
BH-10	10m	5494347.308	363828.383	LAND RIG
BH-11	10m	5494411.043	363791.213	LAND RIG
BH-12	10m	5494401.413	363762.705	LAND RIG
BH-13	10m	5494392.195	363734.555	LAND RIG
BH-14	10m	5494382.857	363706.445	LAND RIG
BH-15	10m	5494373.547	363678.325	LAND RIG
BH-16	10m	5494364.059	363650.264	LAND RIG
BH-17	10m	5494293.176	363688.045	LAND RIG
BH-18	10m	5494305.693	363723.531	LAND RIG
BH-19	10m	5494321.999	363770.772	LAND RIG
BH-20	10m	5494268.328	363763.131	LAND RIG
BH-21	10m	5494255.770	363727.478	LAND RIG
BH-22	10m	5494240.843	363684.471	LAND RIG
BH-23	10m	5494187.687	363728.837	LAND RIG
BH-24	10m	5494200.618	363766.481	BARGE RIG
BH-25	10m	5494219.915	363821.491	BARGE RIG
BH-26	10m	5494140.293	363805.655	BARGE RIG
BH-27	10m	5494125.376	363762.739	LAND RIG
BH-28	10m	5494103.625	363804.174	LAND RIG
BH-29	10m	5494079.644	363756.380	LAND RIG
BH-30	10m	5494065.725	363702.697	LAND RIG

LEGEND	
	BH-X
	BOREHOLE

ORIGINAL GRADE CONTOURS SHOWN AT 1m INTERVALS
TOPOGRAPHICAL LIDAR SURVEY DEC 2018
BATHYMETRIC SOUNDINGS SURVEY JUNE 2019

MARINA SITE PLAN
SCALE 1:750

NOTE: PRELIMINARY DESIGN CONCEPT PROPOSED BY
P+A LANDSCAPE ARCHITECTS RECEIVED MARCH 27,
2020 (SHOWN IN RED)

PB	2020-05-05	ISSUED FOR INFORMATION	GC	N/A	MF
PA	2020-03-31	ISSUED FOR COMMENT	GC	N/A	MF
Rev	Date	Description	Drawn	Design	App'd

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ORIGINAL DWG SIZE: A1 (841 x 841mm)



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KENSINGTON UNION BAY PROPERTIES LTD.
UNION BAY, BRITISH COLUMBIA

UNION BAY ESTATES
MARINA
TEST HOLE LOCATIONS SKETCH

Drawing No.

SK08

Project Number
2211-47390-00

Rev.
PB

LEGEND ALL PRINTS BEARING PREVIOUS REVISION