METRO VANCOUVER
IONA ISLAND WASTEWATER TREATMENT PLANT (IIWWTP) PROJECTS
GEOTECHNICAL INVESTIGATIONS
MARINE CONSTRUCTION STAGING PLAN AND MARINE COMMUNICATION PLAN

Prepared for:

Metro Vancouver

Prepared by:

TyPlan Planning and Management
1461 Ioco Road City, BC
V3H 2X3
Tel: (604) 461-6664 Fax: (604) 461 6668
Document Number 2019-01
November 2022

AUTHORSHIP

Russ Tyson..... Project Manager

TABLE OF CONTENTS

List of Tables

List of Exhibits

1 PROJECT BACKGROUND AND PROJECT PURPOSE

1.1 Background

Metro Vancouver is upgrading the Iona Island Wastewater Treatment Plant (IIWWTP) in Richmond, BC to meet and exceed provincial and federal regulatory requirements. The design concept for the upgrade includes tertiary treatment and a range of ecological restoration projects. Part of the preliminary work being undertaken for the IIWWTP Projects requires Metro Vancouver to conduct in-water geotechnical investigations in the North Arm of the Fraser River and in McDonald Slough to inform seismic modelling. The in-water geotechnical investigations include seismic cone penetration tests and mud rotary boreholes. Eight proposed geotechnical investigation locations are sited within the North Arm of the Fraser River.

This Marine Construction Staging Plan (MCSP) and Marine Communication Plan (MCP) (collectively MCSP/MCP) has been prepared to provide a framework for communication protocols to support the geotechnical in-water investigations proposed in, on, under, over a named scheduled waterway subject to the Canadian *Navigable Waters Act*. The Navigation Protection Program of Transport Canada (administer the Canadian *Navigable Waters Act* and will require, as part of project approval, a MCSP/MCP.

1.2 Purpose

Metro Vancouver (MV) retained TyPlan Planning and Management (TyPlan) to prepare this MCSP/MCP to support the proposed in-water geotechnical investigations associated with the IIWWTP Projects. This MCSP/MCP provides a description of the:

- Location and purpose of the IIWWTP geotechnical investigations project;
- Overview of relevant legislation and requirements for this plan;
- Relationship of the proposed works to the navigational channel; and
- Description of the required marine communication protocols.

The specific aim of the MCSP/MCP is to provide a communication framework between the selected contractor, Geotech Drilling Services Ltd., the marine community, First Nations, project engineers and project owner to avoid potential interferences or obstructions to navigation during the IIWWTP geotechnical investigations.

The works require the placement of marine construction equipment abutting the domestic navigational channel and potential interferences/obstructions to navigation, are to be managed via the implementation of the MCSP/MCP.

1.3 Acknowledgments

This MCSP acknowledges the efforts made by the Vancouver Fraser Port Authority, the Navigation Protection Program and the Council of Marine Carriers in the development of this Plan. This document also recognizes that the work being undertaken occurs in the traditional territory of xʷməθkʷəyəm̓ (Musqueam).

1.4 Project Location

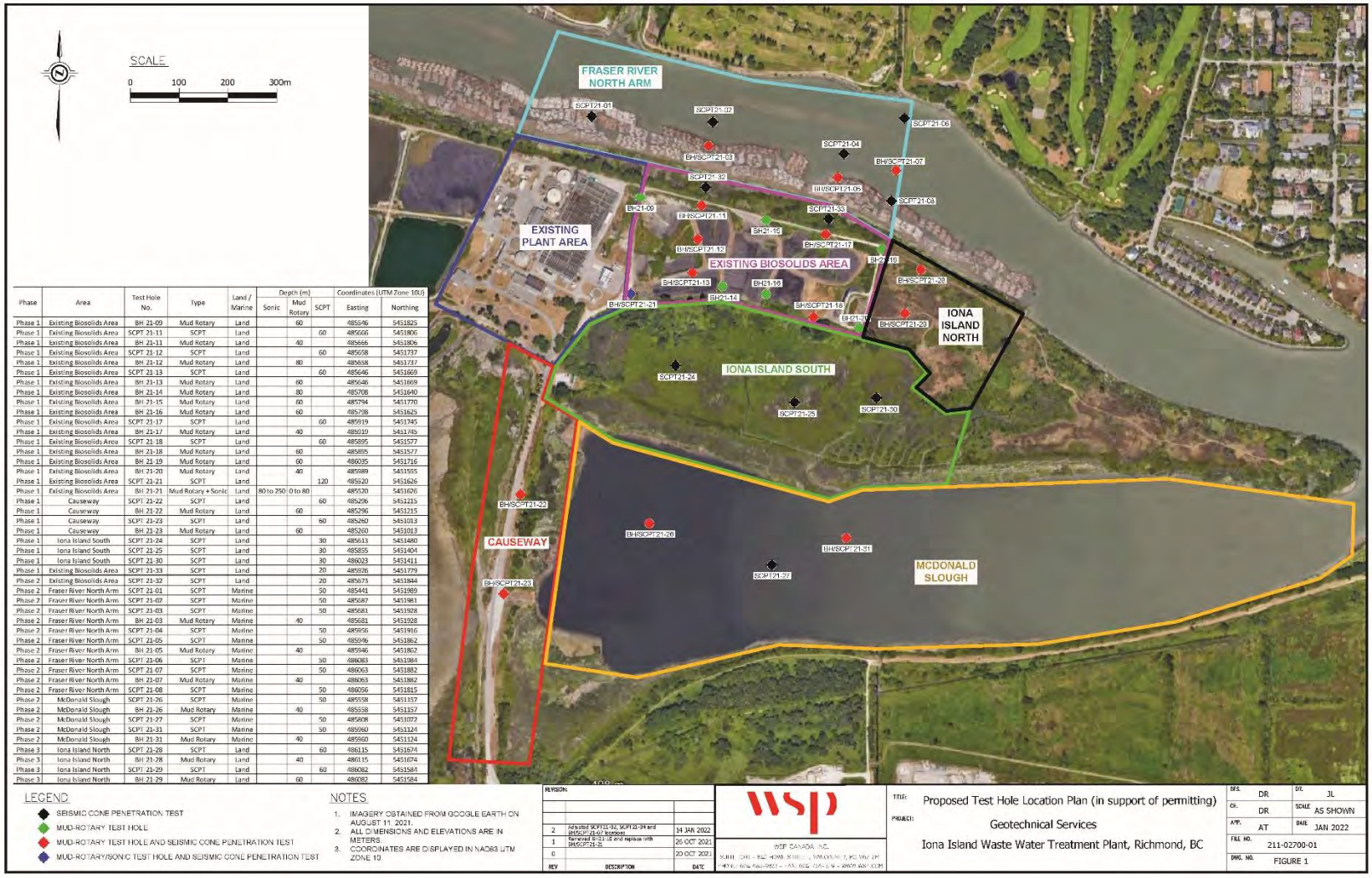
The IIWWTP in-water geotechnical drilling locations are bordered by the City of Vancouver and xʷməθkʷəyəm̓ (Musqueam) IR 2 to the north and the City of Richmond to the south. The test hole sites are located at the North Arm of the Fraser River and within McDonald Slough. The North Arm of the Fraser River is the main navigation channel that supports coastal marine navigation. The Council of Marine Carriers (CMC) and its members are dependent on this waterway for marine trade along the designated domestic channel of the North Arm.

The IIWWTP geotechnical investigations project is located on Iona Island in Richmond BC, next to the North Arm of the Fraser River, the main navigation channel that supports coastal marine navigation. The CMC and its members are dependent on this waterway for marine trade along the designated domestic channel of the North Arm.

Metro Vancouver will conduct in-water geotechnical sampling and investigations at eight locations in the North Arm. Three additional three geotechnical investigative sites will also be conducted in Macdonald Slough.

All project geotechnical investigation locations are sited within the North Arm and McDonald Slough are illustrated on Exhibit 1.

Exhibit 1: Location Plan: Iona Island Wastewater Treatment Plant Projects: Geotechnical Investigations



Phase	Area	Test Hole No.	Type	Land / Marine	Depth (m) Sonic	Mud Rotary	SCPT	Coordinates (UTM Zone 10U) Easting	Northing
Phase 1	Existing Biosolids Area	BH 21-09	Mud Rotary	Land		60		485946	5451825
Phase 1	Existing Biosolids Area	SCPT 21-11	SCPT	Land			60	485666	5451806
Phase 1	Existing Biosolids Area	BH 21-11	Mud Rotary	Land		40		485666	5451806
Phase 1	Existing Biosolids Area	SCPT 21-12	SCPT	Land			60	485658	5451737
Phase 1	Existing Biosolids Area	BH 21-12	Mud Rotary	Land		80		485658	5451737
Phase 1	Existing Biosolids Area	SCPT 21-13	SCPT	Land			60	485646	5451669
Phase 1	Existing Biosolids Area	BH 21-13	Mud Rotary	Land		60		485646	5451669
Phase 1	Existing Biosolids Area	BH 21-14	Mud Rotary	Land		80		485708	5451690
Phase 1	Existing Biosolids Area	BH 21-15	Mud Rotary	Land		60		485794	5451770
Phase 1	Existing Biosolids Area	BH 21-16	Mud Rotary	Land		60		485758	5451625
Phase 1	Existing Biosolids Area	SCPT 21-17	SCPT	Land			60	485919	5451745
Phase 1	Existing Biosolids Area	BH 21-17	Mud Rotary	Land		40		485019	5451745
Phase 1	Existing Biosolids Area	SCPT 21-18	SCPT	Land			60	485895	5451577
Phase 1	Existing Biosolids Area	BH 21-18	Mud Rotary	Land		60		485895	5451577
Phase 1	Existing Biosolids Area	BH 21-19	Mud Rotary	Land		60		486035	5451716
Phase 1	Existing Biosolids Area	BH 21-20	Mud Rotary	Land		40		485989	5451555
Phase 1	Existing Biosolids Area	SCPT 21-21	SCPT	Land			120	485920	5451626
Phase 1	Existing Biosolids Area	BH 21-21	Mud Rotary + Sonic	Land	80 to 250	0 to 80		485920	5451626
Phase 1	Causeway	SCPT 21-22	SCPT	Land			60	485296	5451215
Phase 1	Causeway	BH 21-22	Mud Rotary	Land		60		485296	5451215
Phase 1	Causeway	SCPT 21-23	SCPT	Land			60	485260	5451013
Phase 1	Causeway	BH 21-23	Mud Rotary	Land		60		485260	5451013
Phase 1	Iona Island South	SCPT 21-24	SCPT	Land			30	485613	5451480
Phase 1	Iona Island South	SCPT 21-25	SCPT	Land			30	485855	5451404
Phase 1	Iona Island South	SCPT 21-30	SCPT	Land			30	486023	5451411
Phase 1	Existing Biosolids Area	SCPT 21-33	SCPT	Land			20	485926	5451779
Phase 2	Existing Biosolids Area	SCPT 21-32	SCPT	Land			20	485673	5451844
Phase 2	Fraser River North Arm	SCPT 21-01	SCPT	Marine			50	485441	5451989
Phase 2	Fraser River North Arm	SCPT 21-02	SCPT	Marine			50	485587	5451981
Phase 2	Fraser River North Arm	SCPT 21-03	SCPT	Marine			50	485681	5451928
Phase 2	Fraser River North Arm	BH 21-03	Mud Rotary	Marine		40		485681	5451928
Phase 2	Fraser River North Arm	SCPT 21-04	SCPT	Marine			50	485956	5451916
Phase 2	Fraser River North Arm	SCPT 21-05	SCPT	Marine			50	485946	5451862
Phase 2	Fraser River North Arm	BH 21-05	Mud Rotary	Marine		40		485946	5451802
Phase 2	Fraser River North Arm	SCPT 21-06	SCPT	Marine			50	486083	5451884
Phase 2	Fraser River North Arm	SCPT 21-07	SCPT	Marine			50	486063	5451882
Phase 2	Fraser River North Arm	BH 21-07	Mud Rotary	Marine		40		486063	5451882
Phase 2	Fraser River North Arm	SCPT 21-08	SCPT	Marine			50	486056	5451815
Phase 2	McDonald Slough	SCPT 21-26	SCPT	Marine			50	485558	5451357
Phase 2	McDonald Slough	BH 21-26	Mud Rotary	Marine		40		485558	5451357
Phase 2	McDonald Slough	SCPT 21-27	SCPT	Marine			50	485808	5451072
Phase 2	McDonald Slough	SCPT 21-31	SCPT	Marine			50	485960	5451124
Phase 2	McDonald Slough	BH 21-31	Mud Rotary	Marine		40		485960	5451124
Phase 3	Iona Island North	SCPT 21-28	SCPT	Land			60	486115	5451674
Phase 3	Iona Island North	BH 21-28	Mud Rotary	Land		40		486115	5451674
Phase 3	Iona Island North	SCPT 21-29	SCPT	Land			60	486082	5451584
Phase 3	Iona Island North	BH 21-29	Mud Rotary	Land		60		486082	5451584

LEGEND
- SEISMIC CONE PENETRATION TEST
- MUD-ROTARY TEST HOLE
- MUD-ROTARY TEST HOLE AND SEISMIC CONE PENETRATION TEST
- MUD-ROTARY/SONIC TEST HOLE AND SEISMIC CONE PENETRATION TEST

NOTES
1. IMAGERY OBTAINED FROM GOOGLE EARTH ON AUGUST 11, 2021.
2. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS.
3. COORDINATES ARE DISPLAYED IN NAD83 UTM ZONE 10

REV	DESCRIPTION	DATE
2	Activated SCPT21-02, SCPT21-04 and BH/SCPT21-07 locations	14 JAN 2022
1	Removed SI-21-10 and replace with BH/SCPT21-21	25 OCT 2021
0		20 OCT 2021

WSP CANADA INC.

TITLE: Proposed Test Hole Location Plan (in support of permitting)
PROJECT: Geotechnical Services
Iona Island Waste Water Treatment Plant, Richmond, BC

DES.	DR	DT.	JL
CK.	DR	SCALE	AS SHOWN
APP.	AT	DATE	JAN 2022
FILE NO.	211-02700-01		
DWG. NO.	FIGURE 1		

1.4.1 LEGISLATIVE CONTEXT

The IIWWTP geotechnical investigations are sited within a named scheduled waterway as identified by the Canadian *Navigable Waters Act* List of Scheduled Waterways as administered by the Navigation Protection Plan of Transport Canada. The site is also within the Provincial Headlease as managed by the Ministry of Forests.

The Navigation Protection Program of Transport Canada is responsible for protecting the public's right to navigation under the common law right to navigation and is the named regulatory approving agency. The VFPA has a navigation jurisdictional role in regard to the safe and efficient movement of marine traffic along this corridor. The Ministry of Forests manage the provincial head lease associated with this waterway.

An application is required to be submitted to the Navigation Protection Program (i.e. Notice of Work) and VFPA for consideration and review.

1.5 Navigation Protection Plan Requirements

The Navigation Protection Plan will issue Terms and Conditions associated with the IIWWTP geotechnical investigations approvals.

1.5.1 Marine Communication Plan and Marine Communication Group

Prior to the commencement of a vessel-related activities, the permit holder must convene a Marine Communication Group for the purpose of Marine Communication Planning (MCP) and contact the appropriate Canadian Coast Guard Marine Communications and Traffic Services regarding the issuance of NAVWARNS, to advise the marine community of potential hazards associated with the project.

1.5.2 Marine Construction Staging Plan

The Permit Holder must submit a Marine Construction and Staging Plan (MCSP) including the following for review and approval:

- Identification of navigational related hazards and risk mitigation measures;
- construction staging areas;
- Dates of hours of operation;
- Description of activities taking place;
- Description of equipment and vessels (dimensions must be included);
- Method of preferred communication with marine users; and
- Special requests and /or additional information.

1.6 Navigation Protection

This MCSP/MCP acknowledges that Metro Vancouver and its selected contractor must adhere to legislation and regulations governing navigation in Canada, inclusive of those stipulated by the Navigation Protection Program of Transport Canada who administer the Canadian *Navigable Waters Act* as well as comply with the VFPA requirements under the Canada *Marine Act.*

2 NAVIGATION AND NAVIGATIONAL CHANNELS

The North Arm of the Fraser River represents the key marine transportation corridor supporting coastal Marine Trade in British Columbia. Coastal Tug and Tow Operators are members of the CMC who manage tug and tow transportation on behalf of its membership.

The North Arm as a main provincial marine highway for commercial trade is responsible for more than $735 million dollars of economic benefits derived to the provincial economy of British Columbia.[1]

Actual operations in the North Arm include tug and tow operators consisting of tug and tow operators moving log booms (up to 56 boom sections measuring 22 m by 22m)[2], gravel barges, chip barges, and marine equipment.

In general, the membership of CMC is concerned about any potential impacts or effects of marine construction staging equipment on the ability of the CMC membership to continue to facilitate coastal trade.

As a number of water lot leases are held along the North Arm, that are managed by the Ministry of Forests, they are concerned about the potential implications on their lease holders.

The Navigation Protection Program of Transport Canada is specifically concerned with keeping commercial marine operations safe, as well as project construction works that are proposed that have the potential to create an obstruction to navigation. [3]

It is noted that care must be taken regardless of the works location as navigation considers the entire wetted area of the river from high water mark to high water mark.

2.1 Navigation Channel

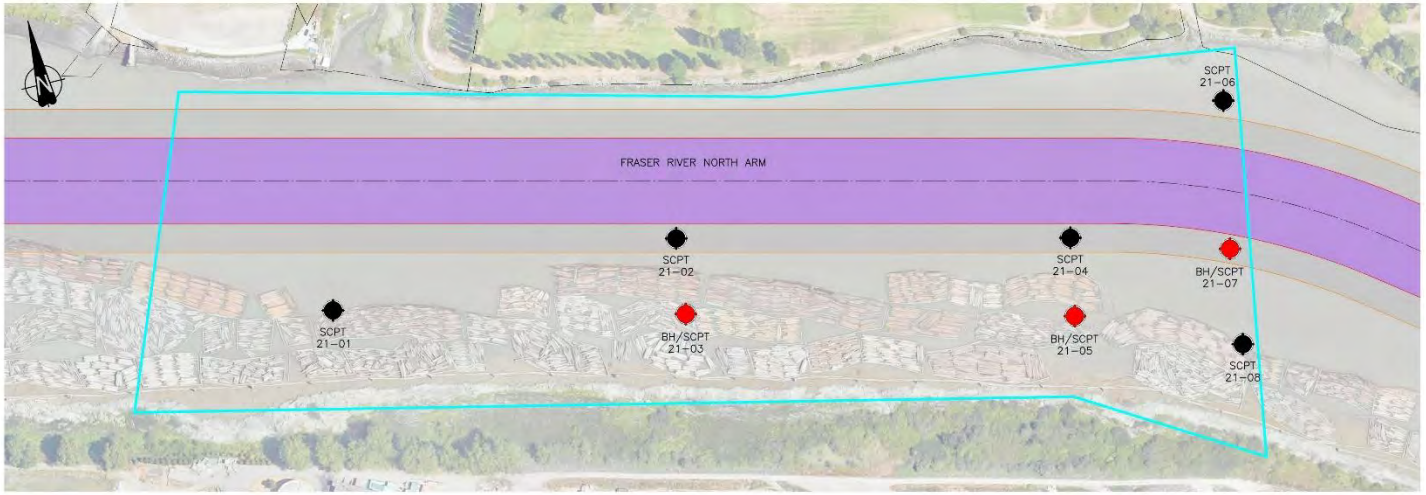
The location of the domestic navigation channel in relation to the extent of the project is presented on the exhibit below.

[1] Economic Impact Assessment of the Coastal Tug and Tow Industry in BC (TyPlan 2021)

[2] Port Information Guide VFPA

[3] An obstruction to navigation is any human-made thing that makes traveling on a waterway more difficult or dangerous. A wreck or a ship left anchored, moored or adrift, can also be an obstruction.

Exhibit 2: Domestic Navigational Channel and Seismic Cone Penetration Tests and Borehole Locations



Legend

Seismic Penetration Cone Tests (SCPT)

Seismic Penetration Cone Tests and Boreholes

Source: Domestic Navigation Channel provided by Vancouver Fraser Port Authority (VFPA)

3 CONSTRUCTION METHODOLOGY AND SCHEDULE

3.1 Construction Method

To undertake the IIWWTP geotechnical investigations, a spudded derrick barge will be used at the project site supported by a small skiff vessel to support the investigations.

The proposed MCSP/MCP following (Exhibits 3-11) illustrate each geotechnical investigative location in relation to:

1. the North Arm,
2. the domestic navigation channel,
3. existing water lots (log booming grounds).

The details of each geotechnical investigative location are presented along with the expected duration that the marine construction staging equipment will be in place.

3.2 Construction Schedule

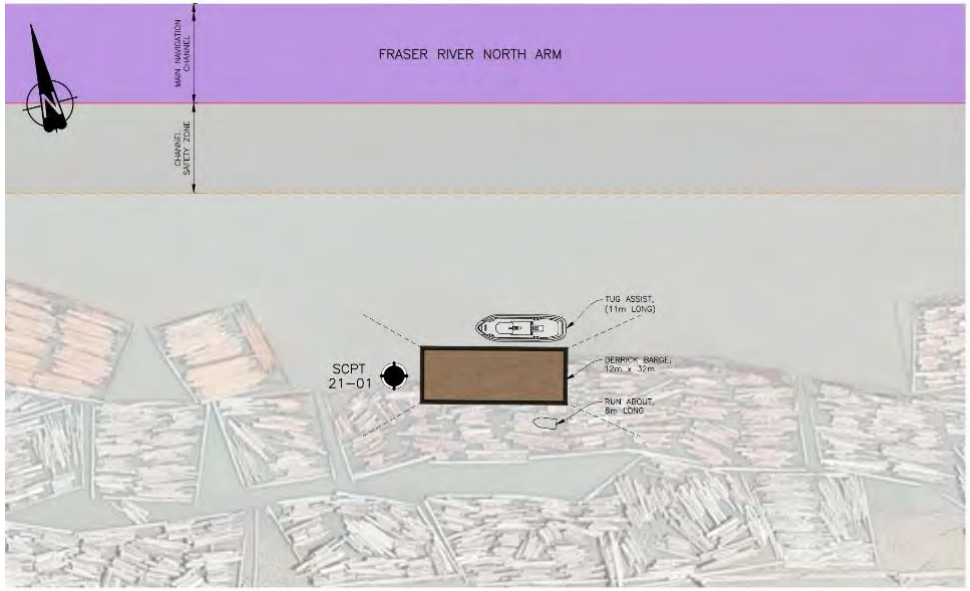
A proposed schedule for the project is included below:

Proposed Construction Schedule

Iona Island Wastewater Treatment Plant: In-Water Geotechnical Investigations												
Schedule	22-Nov	23-Nov	24-Nov	25-Nov	26-Nov	27-Nov	28-Nov	29-Nov	30-Nov	1-Dec	2-Dec	3-Dec
Borehole/Activity												
SCPT 21-01												
SCPT 21-02												
SCPT 21-03												
SCPT 21-04												
SCPT 21-05												
SCPT 21-06												
SCPT 21-07												
SCPT 21-08												
BH 21-03												
BH 21-05												
BH 21-07												
Assit Tug Available												
Notes: Works to Occur 24 hours a day including Weekends												
BH: Borehole Test												
SCPT Siesmic Cone Penetration Test												

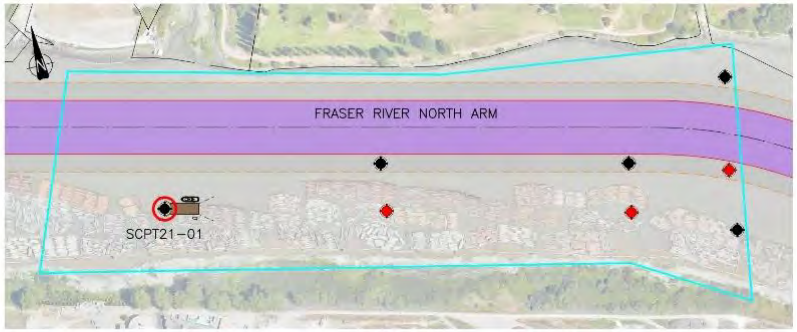
Exhibit 3: Seismic Cone Penetration Test 21-01

Start date: November 22, 2022



PLAN – SCPT21-01 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21-01	SCPT	–	50	485441	5451989



LOCATION PLAN
1:2500

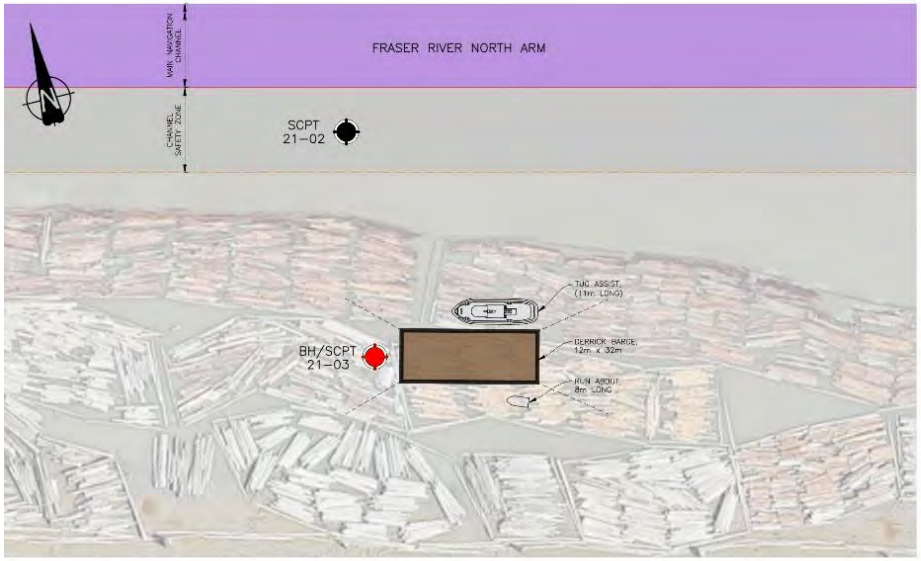
PHOTO – TYPICAL CONFIGURATION
N.T.S.

m 0 5 10 15 20 25 m
1:500

m 0 50 100 150 m
1:2500

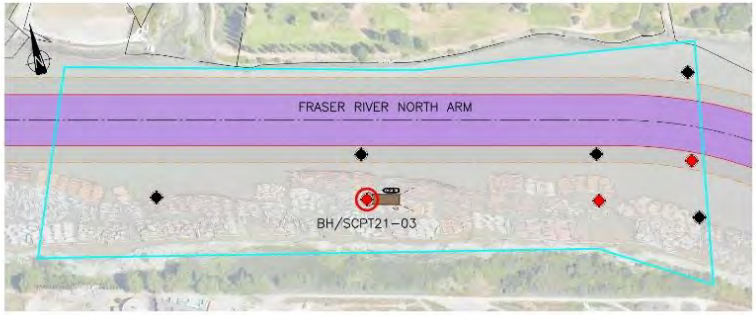
Exhibit 4: Seismic Cone Penetration Test 21-03

Start date: November 22, 2022



PLAN – BH/SCPT21-03 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21-03	SCPT	–	50	485681	5451928
BH 21-03	MUD ROTARY	40	–	485681	5451928



LOCATION PLAN
1:2500

PHOTO – TYPICAL CONFIGURATION
N.T.S.

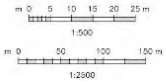
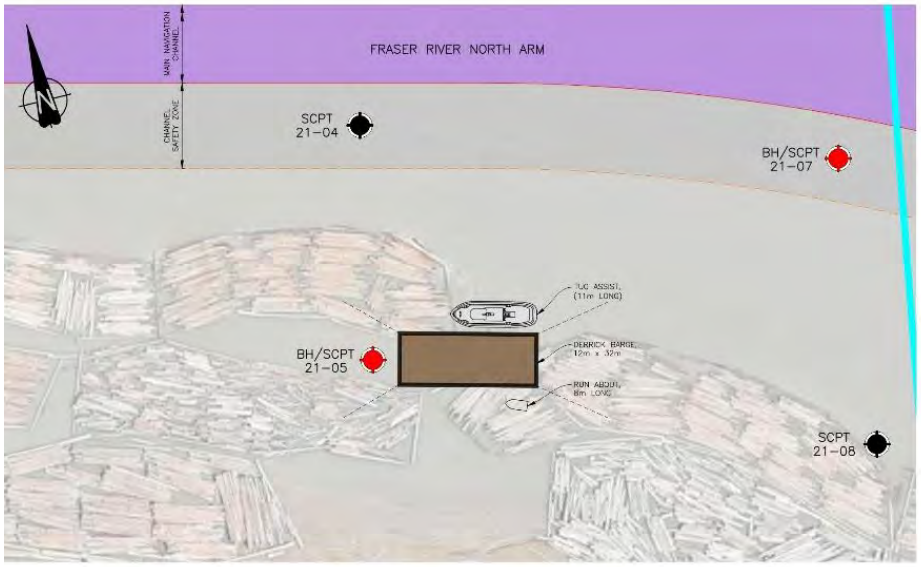


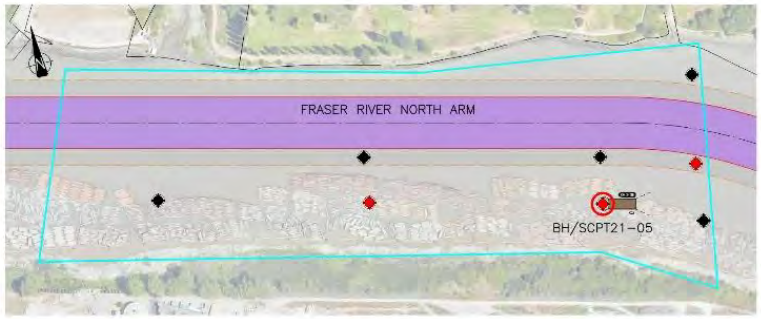
Exhibit 5: Seismic Cone Penetration Test 21-05

Start date: November 23, 2022



PLAN – BH/SCPT21–05 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21–05	SCPT	–	50	465946	5451862
BH 21–05	MUD ROTARY	40	–	465946	5451862



LOCATION PLAN
1:2500

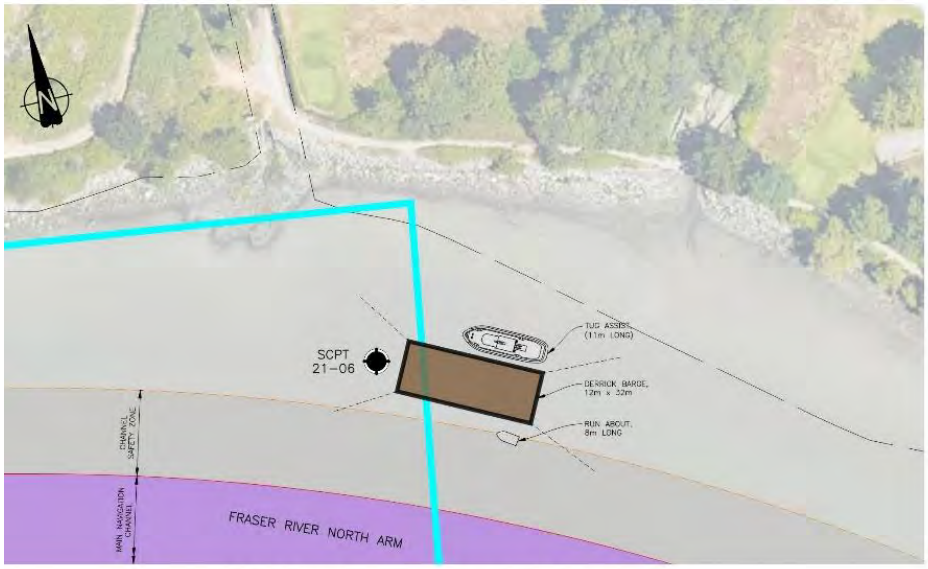
PHOTO – TYPICAL CONFIGURATION
N.T.S.

m 0 5 10 15 20 25 m
1:500

m 0 50 100 150 m
1:2500

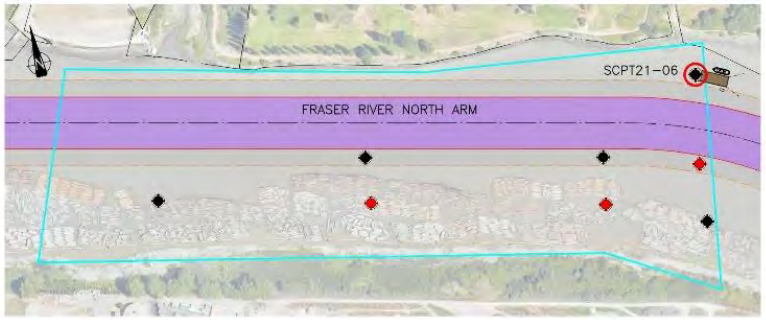
Exhibit 6: Seismic Cone Penetration Test 21-06

Start date: November 23, 2022



PLAN – SCPT21–06 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21–06	SCPT	–	50	486083	5451984



LOCATION PLAN
1:2500

PHOTO – TYPICAL CONFIGURATION
N.T.S.

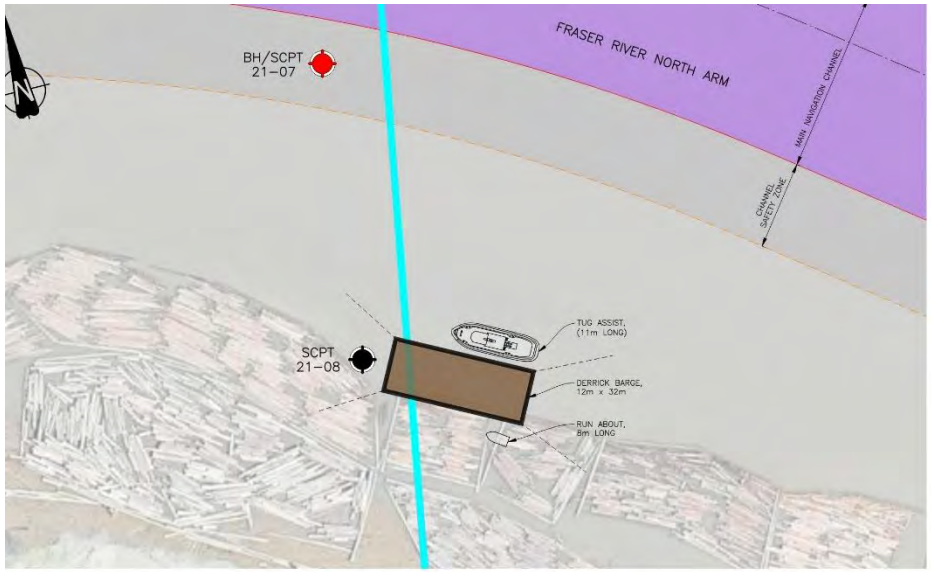
m 0 5 10 15 20 25 m
1:500

m 0 50 100 150 m
1:2500

*Assist tug available

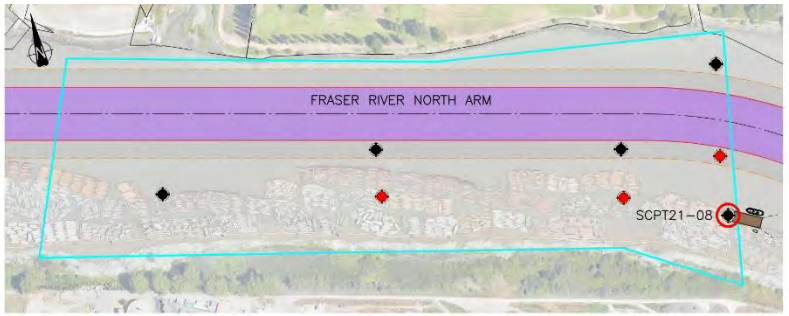
Exhibit 7: Seismic Cone Penetration Test Exhibit 21-08

Start date: November 24, 2022



PLAN – SCPT21-08 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

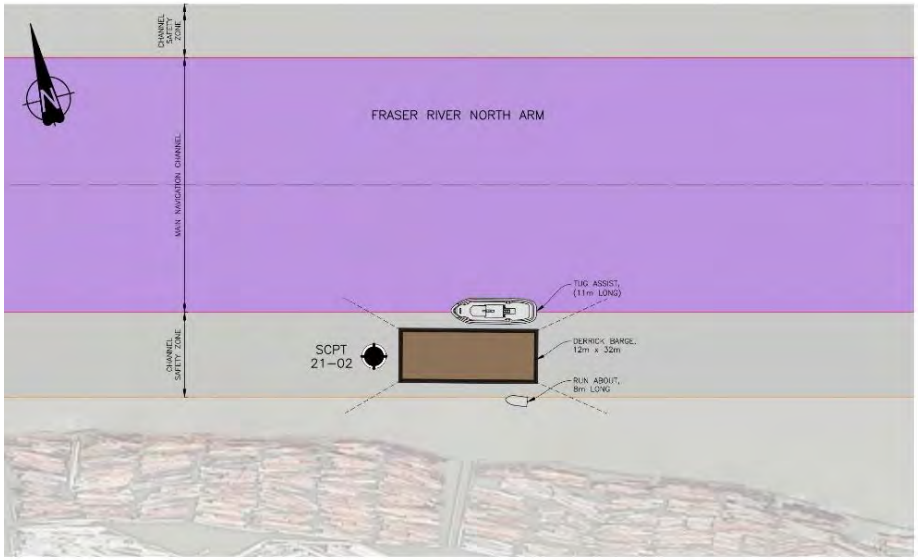
PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21-08	SCPT	–	50	486056	5451815



LOCATION PLAN
1:2500

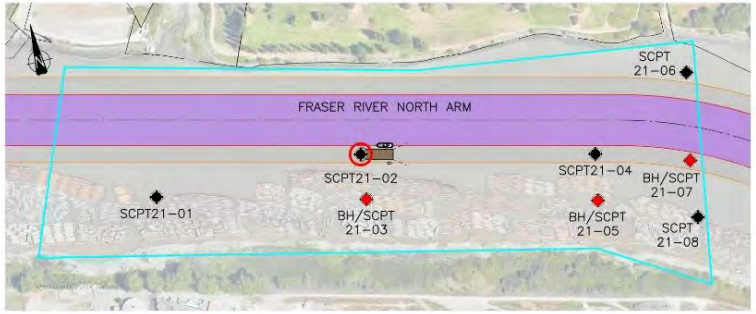
Exhibit 8: Seismic Cone Penetration Test 21-02

Start date: November 24, 2022



PLAN – TYPICAL MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM			
TEST HOLE NO.	TYPE	DEPTH (m)	COORDINATES (UTM ZONE 10)

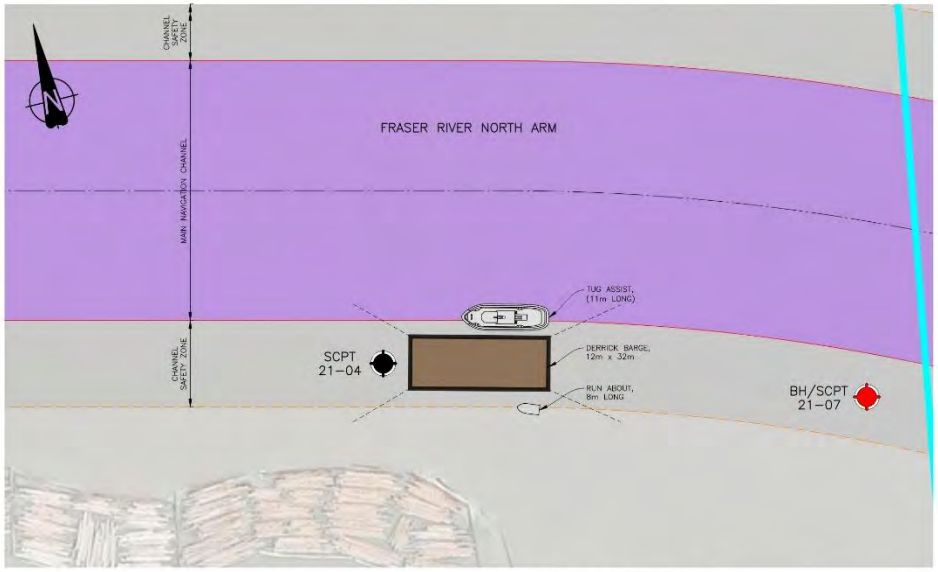


LOCATION PLAN
1:2500

*Assist tug available

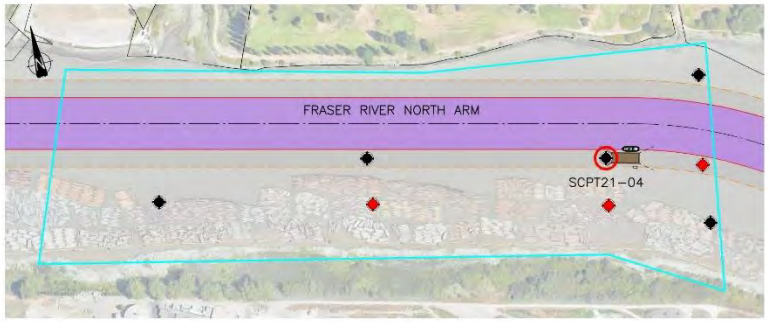
Exhibit 9: Seismic Cone Penetration Test 21-04

Start date: November 25, 2022



PLAN – SCPT21–04 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21–04	SCPT	–	50	485956	5451916



LOCATION PLAN
1:2500

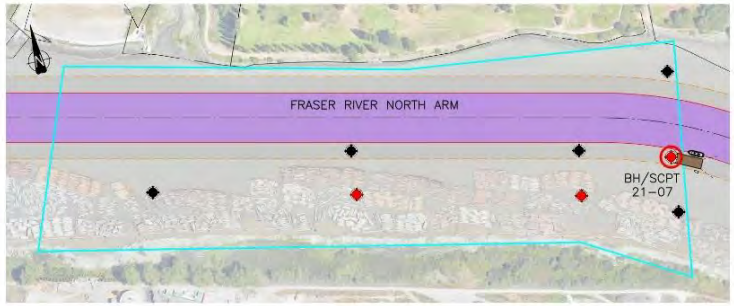
*Assist tug available

Exhibit 10: Seismic Cone Penetration Test 21-07

Start date: November 25, 2022

PLAN – BH/SCPT21-07 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21-07	SCPT	–	50	486063	5451882

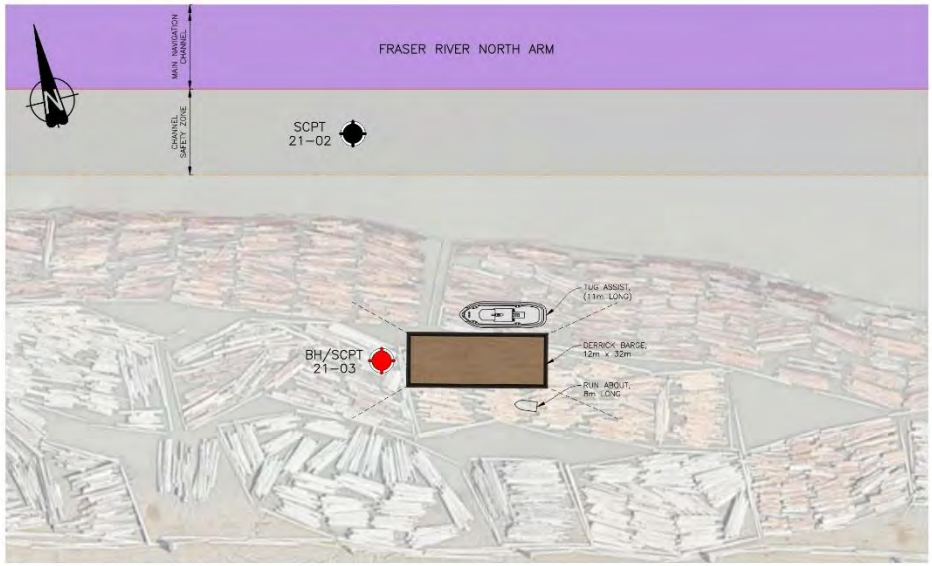


LOCATION PLAN
1:2500

*Assist tug available

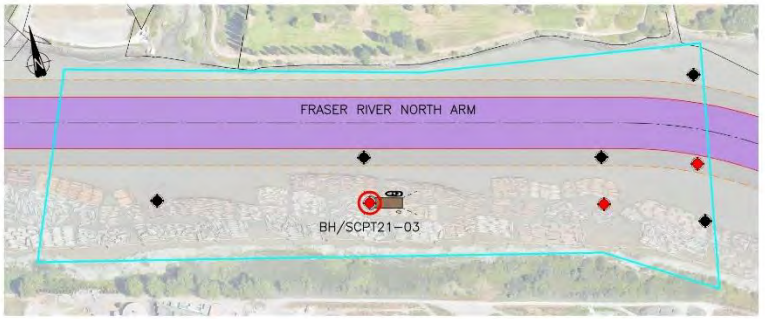
Exhibit 11: Borehole 21-03

Start date: November 28, 2022



PLAN – BH/SCPT21–03 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

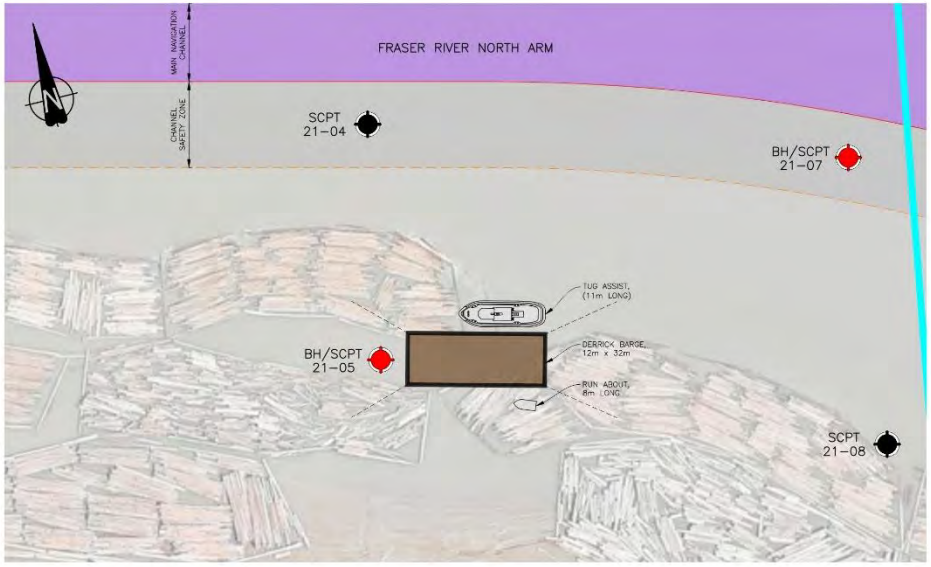
PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21–03	SCPT	–	50	485681	5451928



LOCATION PLAN
1:2500

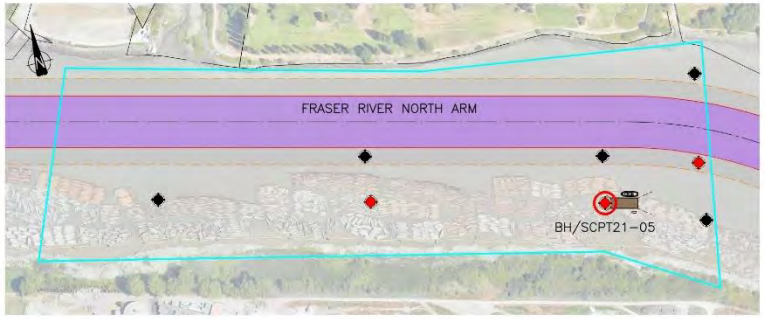
Exhibit 12: Borehole 21-05

Start date: November 30, 2022



PLAN – BH/SCPT21-05 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21-05	SCPT	–	50	485946	5451862



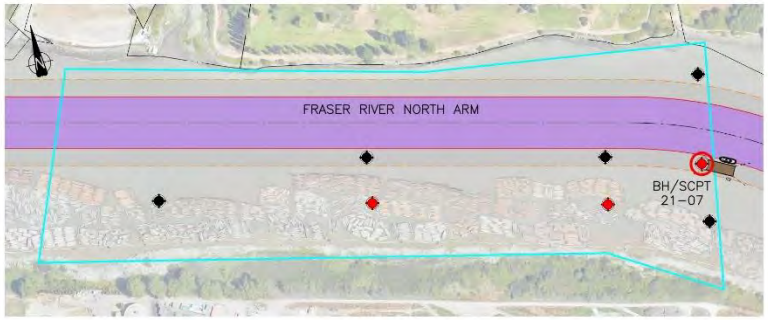
LOCATION PLAN
1:2500

Exhibit 13: Borehole 21-07

Start date: Dec. 1, 2022

PLAN – BH/SCPT21-07 MARINE CONSTRUCTION EQUIPMENT POSITIONING
1:500

PHASE 2 – FRASER RIVER NORTH ARM					
TEST HOLE NO.	TYPE	DEPTH (m)		COORDINATES (UTM ZONE 10)	
		MUD ROTARY	SCPT	EASTING	NORTHING
SCPT 21-07	SCPT	–	50	486063	5451882



LOCATION PLAN
1:2500

*Assist tug available

4 MARINE COMMUNICATION PLAN

4.1 ASSIST TUG

The need to set up tug assist during the project work activities to maintain navigation has been identified by the Council of Marine Carriers for the following activities:

- Seismic Cone Penetration Test 21-02
- Seismic Cone Penetration Test 21-04
- Seismic Cone Penetration Test 21-06
- Seismic Cone Penetration Test / Borehole 21-07

According to the Council of Marine Carriers a tug assist of adequate size and power would be 1000 hp twin screw tug and should be available to marine users during the project.

4.2 NAVWARNS

Ongoing marine communications with marine users is a requirement. The selected contractor is to issue weekly NAVWARNS to the Marine Communications and Traffic Services of the Canadian Coast Guard. This should include an exhibit similar to what is referenced herewith in this MCSP/MCP of the location and of the marine construction staging equipment in relation to the domestic navigation channel.

The NAVWARNS supplies notice of specific Project related construction activities. Correspondingly, throughout the project a NAVWARN will be advertised weekly. It will be imperative that the contractor has direct communication links with the VFPA, marine users (via the Council of Marine Carriers to deal with marine construction and marine vessel traffic daily). In this case, a direct line of communication with Marine Communications and Traffic Services is critical.

The Contractor should also consider arrangements to have NAVWARNS posted on the Council of Marine Carriers website.

The table of key contacts is presented below.

Table 1: Key Contacts Marine Communications

Stakeholder	Key contact	Phone Number	Mobile	Email
Metro Vancouver	Daniel LeBlond	604-451-6030	604-306-9507	Daniel.Leblond@metrovancouver .org
Port Authority	Sarah Bidner Nathan Smith	604 461-6664 604 665-9246	604 219 9421	Sarah.Bidner@portvancouver.com Nathan.Smith@portvancouver.com Navigation.review@portvancouver.com
Navigation Protection Program/Transport Canada	Conal Kavanaugh	Tel: 604-418-0337		conal.kavanagh@tc.gc.ca
Council of Marine Carriers	Paul Hilder	604 687-9678	604 315-1603	Philder@comc.cc
Marine Communications and Traffic Systems	TBD	604 775-8919	TBD	http://www.ccg-gcc.gc.ca/Marine-Communications/Home
Geotech Drilling	John Cameron	604 946-4244	604 970-3103	john.cameron@geotechdrilling.com
Harken Towing	Harken Dispatch		604 942-8511	dispatch@harkentowing.com
Howe Sound Pulp & Paper	Ed Evans	604-301-3311	604-803-5403	Ed.Evans@hspp.ca
Hodder Tugboat	Devin MacLeod	604 273 2821	604 876 6969	devin@hoddertug.com
xʷməθkʷəyəm̓ (Musqueam) Indian Band	Morgan Guerin		604-551-3044	Mguerin@musqueam.bc.ca cc: kphillips@musqueam.bc.ca

4.3 RECREATIONAL USER POSTING REQUIREMENTS

The Contractor will be responsible for posting construction notices at public wharfs and marinas within the north Arm of the Fraser River. Metro Vancouver will be responsible for contacting First Nations groups (as identified by the Navigation Protection Plan) to inform them of marine construction activities.

4.4 MARINE CONSTRUCTION CONTRACTOR

The Contractor must make the marine users aware of key Contractor team contacts and those contacts must be presented as part of the first startup meeting (refer to schedule). Contacts should be confirmed in the MCSP, as well as being posted at work sites (refer to Table 1 above).

4.5 RADIO COMMUNICATIONS

VHF marine radios will be checked on Channel 74 by the Port Metro Vancouver Harbour Masters office. All marine radio communication frequencies should also be noted to enable direct communication to occur between the Contractor, marine users and the tug aid provider.

The Contractor should list such radio communications in the MCP that reflect the requirement of the port information guide, specifically TCZ 4, which includes Channel 16 as an emergency channel.

4.6 AIDS TO NAVIGATION

The Contractor will handle establishing navigational aids on the marine construction equipment identified by either Navigation Projection Plan or Vancouver Fraser Port Authority during discussions. During periods of construction, on, under, within or over the navigational channels' placement of "No Wake" signs will be mandatory on all construction equipment. The Contractor requires marine traffic to keep a minimum distance of 20m from their barge.

4.7 MARINE COMMUNICATIONS GROUP

A Marine Users Working group meeting will be held one week in advance of the proposed works. As the scheduled works is expected to last approximately two weeks only one meeting with mariners will be held to provide a format for communications and the identification key contacts and the issuance of NAVWARNS via introduction of the selected contactor. The group should consist of:

- Metro Vancouver/Owners Engineer
- Vancouver Fraser Port Authority
- Navigation Protection Program
- Representative from the selected Contractor
- CMC (and designated members)
- First Nations

5 CLOSURE

This document was prepared as an open document for the selected contractor, intended to ease an understanding the requirements of communication protocols for the project.

The MCP document is to be given and accepted by Navigation Protection Program and Vancouver Fraser Port Authority. As more site-specific information about local marine conditions, related response procedures, this MCP will be updated.