TECHNICAL MEMORANDUM

To:	**Ian McAllister, Ashleigh Crompton, Mike Champion, Jackie Boruch and Ryan Schucroft (Woodfibre LNG)**	**Date:**	**9 Aug 2024**
From:	**Cheng Kuang, Holly Pelletier and Patrick Mueller (Lorax)**	**Project #:**	**A633-7**
Subject:	**PE-111578 Weekly Discharge and Compliance Report #25 for July 28 – August 3**		

Waste Discharge Authorization Effluent Permit PE-111578 was issued by the British Columbia Energy Regulator (BCER) to Woodfibre LNG on February 9, 2024. The permit specifies monitoring and reporting requirements that are required to be met by Woodfibre LNG during construction of the LNG Export Facility. Reporting is required on a weekly basis.

Discharge and compliance monitoring is conducted by on-site Environmental Monitors (Roe Environmental) that are sub-contracted to the civil works contractor (LB LNG). Analytical samples are submitted by Roe Environmental to ALS Environmental in Burnaby, BC, for testing. Lorax Environmental provides water quality database management and WDA compliance reporting services for Woodfibre LNG.

This technical memorandum (Report #25) was prepared by Lorax Environmental and summarizes monitoring conducted the week of July 28 – August 3 for contact waters directed to a WWTP or a sedimentation pond. Monitoring data and pending results from prior reporting periods available at the time of reporting are tabulated and included as appendices. Report #25 has been prepared to meet the requirements specified in Condition 4.2 of WDA Effluent Permit PE-111578:

> "The Permittee shall summarize the results of the discharge and compliance monitoring program in a report that shall be submitted to the BCER weekly over the term of this permit. Reports must include suitable tabulated data. The table must include any applicable regulatory limits/guidelines *e.g.* permit limits, BC Water Quality Guidelines etc. Any exceedances of respective regulatory limits/guidelines must be clearly highlighted. Any missed sampling events/missing data must be identified with an explanation provided. Reporting frequency may be reduced upon a history of compliance and by written confirmation from the BCER. These reports shall be submitted to Waste.Management@bc-er.ca. A copy of the reports shall be provided to each First Nation consulted with regarding this subject permit, and also made publicly available on the Woodfibre LNG Environmental Reporting webpage."

The site layout is shown in Figure 1 at the end of this memorandum. Sedimentation pond photographs are included in Appendix A, and monitoring results are tabulated in Appendix B through Appendix F for contact water and receiving environment samples.

1. Current Conditions

The Construction Phase of the Woodfibre LNG Export Facility commenced in October 2023. Early stage civil works are ongoing, and these include site grading, levelling, overburden and bedrock excavation, and construction of contact water management facilities. Shoring works along the shoreline and foreshore areas were initiated in December 2023, and in early 2024 construction of water management infrastructure was initiated and has continued through the July 28 – August 3 monitoring period. The East WWTP and East Sedimentation Pond are commissioned for operation and discharge since April 15, 2024. The West WWTP and West Sedimentation Pond are constructed. The PE- 111578 water management facilities that are completed or were under construction during the reporting period are shown in Figure 1.

The East and West catchments contact water conveyance ditches described in PE-111578 were designed to transport non-contaminated contact water to the East and West sedimentation ponds and will be constructed following completion of site preparation activities (*e.g.,* site grading, bedrock excavation) along the ditch lines. Until the ditches are operational, non-contaminated contact waters are managed to remain on site or are directed by pumping to the East Sedimentation Pond or East WWTP. Contaminated contact waters are contained and directed to the East WWTP.

A revised schedule is being developed to complete the installation of the East Sedimentation Pond permanent outfall structure. Until the outfall is constructed, a temporary discharge system (*i.e.,* pump, hosing and diffusor) is used to convey East Sedimentation Pond effluent to the authorized discharge location when necessary for the discharge of excess water, and if the effluent water quality meets the requirements set out in PE-111578.

The West Sedimentation Pond is complete, except for the outfall structure, and has not been commissioned for discharge. However, the pond is used, as needed, to store contact water that is subsequently directed to the East WWTP for treatment. The schedule for completion of the pond outfall structure is being revised. The West WWTP has been assembled and pilot testing of the WWTP is scheduled to begin the week of August 4.

The completed non-contact water diversion ditch west of Mill Creek was commissioned for use on April 7 and discharges to Mill Creek at station OUT-06 (Figure 1). Monitoring stations OUT-01, OUT-02, and OUT-11 at pre-existing culvert outlets have been established noting that the outlets will be upgraded and extended later in the construction schedule. Additional construction is underway for diversion ditching leading to stations OUT-02 and OUT-11.

Pilot testing of the East WWTP continued during the monitoring period (July 28 – August 3). Contaminated and potentially contaminated contact waters from the 1100 excavation, intermediate baker tanks, and small amounts of concrete wash water were directed to the East WWTP for treatment, as well as water recirculated from the East Sedimentation Pond. Contact water

collection and dewatering locations are shown in Appendix A (Figure 2 and Figure 3). of A total of 4,063 m^3 of treated WWTP effluent was discharged to the East Sedimentation Pond during the reporting period (July 28 – August 3). Daily WWTP effluent flows are provided in Appendix C (Table C-4). There were no discharges from the East and West Sedimentation Ponds during the reporting period. Photographs of the ponds are included in Appendix A (Figure 4 and Figure 5).

The weather was mostly sunny and warm during the monitoring period (July 28 – August 3). Precipitation was recorded on July 29 and July 30 at the Main Street Squamish Station (<10 mm per day). The daily weather conditions are summarized in Table 1.

Table 1:
Summary of Certified Project Area (CPA) Daily Weather Conditions.

Date	Precipitation (mm)	Max. Temp (°C)	Min. Temp (°C)	Weather Description
07-28-2024	0.0	21.7	13.2	Sun
07-29-2024	9.9	18.3	15.7	Overcast, Rain
07-30-2024	0.8	21.9	16.4	Overcast
07-31-2024	0.0	23.6	16.7	Sun
08-01-2024	0.0	29.4	15.0	Sun
08-02-2024	0.0	26.0	15.0	Sun
08-03-2024	0.0	25.2	15.6	Sun

Note: Data retrieved from the Main Street Squamish Station accessed via the Ambient Weather Network due to ongoing outage of the Woodfibre Weather Station.

2. Monitoring Summary

The PE-111578 authorized works were under construction during the July 28 – August 3 monitoring period. Compliance monitoring stations are progressively established as water management infrastructure is completed. Monitoring is conducted by the on-site Environmental Monitors (Roe Environmental). Analytical samples are submitted by Roe Environmental to ALS Environmental in Burnaby, BC, for testing.

The following monitoring stations have been established (Figure 1):

- Creek water (SW-01, SW-02, SW-03, SW-04, SW-07).
- Howe Sound reference and IDZ locations (WQR1, WQR2, IDZ-E1 and IDZ-E2).
- Non-contact diversion ditch outlets (OUT-01, OUT-02, OUT-06, and OUT-11).
- Contact water monitoring locations (WWTP-E-IN, WWTP-E-OUT, SP-E-IN-2, SP-E-OUT, SP-E-NE, SP-E-NW, SP-W-W, and SP-W-E).

East Sedimentation Pond influent and effluent stations SP-E-NW and SP-E-NE, respectively, are in-pond stations that may be monitored in place of stations SP-E-IN-2 and SP-E-OUT when there is no influent to, or discharge from the East Sedimentation Pond. In-pond monitoring stations have been established for the West Sedimentation Pond at locations SP-W-W and SP-W-E (previously named SP-W-NW and SP-W-NE).

Stations SW-01, SW-02, SW-03, SW-04, SW-07, IDZ-E1, IDZ-E2, WWTP-E-IN, WWTP-E-OUT, SP-E-NW, and SP-E-NE were monitored during the monitoring period (July 28 – August 3). Sampling dates and parameters tested are summarized in Table 2. Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (July 28 – August 3) were met. Daily field parameters and weekly analytical samples were not collected at the influent station SP-E-IN-2 and SP-E-OUT as the East Sedimentation Pond did not receive contact water inflows and did not discharge during the monitoring period. The weekly sampling requirements for WWTP-E-IN and WWTP-E-OUT were met except collection of a sub-sample for dioxins and furans testing. Follow-up investigation is underway and is being tracked in Table 5. Monthly sampling was not conducted at the clean water diversion ditch outlets (stations OUT-01, OUT-02, OUT-06, and OUT-11) as there was no water at these stations at the time of monitoring in July.

Table 2:
Summary of PE-111578 Monitoring Samples Collected July 28 – August 3.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
July 28, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field & Physical Parameters, Total, Dissolved and Speciated Metals.	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Glycols, Oil and Grease	D, W_1, P
	WWTP-E-IN	East WWTP influent		
July 29, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field & Physical Parameters, Total, Dissolved and Speciated Metals, EPHs & PAHs	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field Parameters.	D
	WWTP-E-IN	East WWTP influent		
July 30, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field & Physical Parameters, Total, Dissolved and Speciated Metals, EPHs & PAHs	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field & Physical Parameters, Total, Dissolved and Speciated Metals.	D, W_1, P
	WWTP-E-IN	East WWTP influent		
July 31, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field Parameters.	P
	WWTP-E-OUT	East WWTP effluent	Field Parameters.	D
	WWTP-E-IN	East WWTP influent		
	SW-01	Lower Reach of Woodfibre Creek (near the mouth)	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins and Furans	M
	SW-02	Upper Reach of Mill Creek (upstream of the third bridge)		
	SW-03	Lower Reach of Mill Creek (near the mouth, in the estuarine zone)		
	SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)		
	SW-07	Upstream Mill Creek (at the diversion inlet)		
August 1, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field Parameters.	P
	WWTP-E-OUT	East WWTP effluent	Field Parameters.	D
	WWTP-E-IN	East WWTP influent		
August 2, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field Parameters.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Glycols, Oil and Grease	D, W_1, P
	WWTP-E-IN	East WWTP influent		
	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	Field and Physical Parameters.	W_3
	IDZ-E1-2m	Howe Sound IDZ station E1; 2 m below surface		
	IDZ-E1-SF	Howe Sound IDZ station E1; 2 m above the seafloor		
	IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface		
	IDZ-E2-2m	Howe Sound IDZ station E2; 2 m below surface		
	IDZ-E2-SF	Howe Sound IDZ station E2; 2 m above the seafloor		
August 3, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Glycols, Oil and Grease	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Glycols, Oil and Grease	D, W_1, P
	WWTP-E-IN	East WWTP influent		

Notes:
Monitoring frequency requirements under PE-111578 are indicated as follows:
D – daily monitoring of field parameters at WWTP and sedimentation pond influent and effluent stations.
M – Monthly monitoring for all parameters at WWTP, sedimentation pond and receiving environment stations.
W_1 – initial high frequency monitoring for physical parameters at WWTP and sedimentation pond influent and effluent stations (weekly for the first 6 months of monitoring).
W_2 - initial high frequency monitoring for all parameters at WWTP and sedimentation pond influent and effluent stations (weekly for the first 5 weeks of monitoring).
W_3 – initial high frequency monitoring for physical parameters at IDZ stations (weekly for the first 5 weeks of monitoring).
P - periodic monitoring for targeted parameters that is supplementary to PE-111578 requirements.
[1] In-Pond stations SP-E-NW and SP-E-NE may be monitored in place of stations SP-E-IN-2 and SP-E-OUT, respectively, when there is no influent to, or discharge from the East Sedimentation Pond at the time of monitoring. The monitoring of in-pond stations is not a PE-111578 requirement and is conducted at the discretion of field staff.

3. Water Quality Results

3.1 Screening and Reporting Overview

Water quality and flow monitoring results are screened against field quality control (QC) criteria, benchmark values and PE-111578 discharge limits. The screening results are discussed in the following sections and items outside the screening criteria are also summarized in the Section 4 tracking table (Table 5). All water quality results are stored in the Woodfibre LNG environmental monitoring database. However, for brevity, a sub-set of the results are presented in the weekly report appendices. Results are reported for parameters with a freshwater, estuarine or marine water quality guideline for the protection of aquatic life, parameters with a discharge limit, parameters of potential concern (*i.e.,* dioxins and furans), as well as other parameters that are relevant for water quality characterization.

Federal and Provincial Water Quality Guidelines (WQG) are not specified for dioxins and furans. The general term "dioxins and furans" refers to a grouping of hundreds of individual compounds with similar chemical composition and properties. To simplify result presentation and interpretation, the results of individual compounds are converted to a total toxic equivalent (TEQ) value and are summed to produce single TEQ values for each sample by the laboratory. Consistent with the pre-construction baseline monitoring program, a lower-bound TEQ value is reported. The lower-bound TEQ is calculated assuming a concentration of zero for results reported as not detected, therefore, if individual compounds are not detected the TEQ will equal zero.

3.2 Summary of Reported Results

Field measurements and analytical results available at the time of reporting for samples collected during the monitoring period (July 28 – August 3) and for other samples that have not been previously reported are listed below in Table 3. Analytical results not available at the time of reporting will be included in future weekly reports when available for the following samples:

- IDZ-E1 and IDZ-E2 samples collected August 2 (only field results available)
- SP-E-NE and SP-E-NW samples collected August 3 (only field results available)
- WWTP-E-IN and WWTP-E-OUT samples collected August 3 (only field results available)

Analytical results for methylmercury, dioxins and furans were not reported for the following samples and will be included in future weekly reports when available (these tests typically require up to 4 weeks to complete):

- SW-01, SW-02, SW-03, SW-04, and SW-07 collected July 31 (dioxins and furans)
- WWTP-E-IN and WWTP-E-OUT collected August 2 (methylmercury)

Table 3:
Summary of Analytical Results Included in Weekly Discharge and Compliance Report #25.

Sample	Description	Sampling Date	Parameters Reported
SP-E-OUT	East Sedimentation Pond effluent (compliance point)	May 8, 2024	Acute Toxicity.
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface		Chronic Toxicity.
IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface		
WWTP-E-IN	East WWTP influent	July 26, 2024	Methylmercury.
WWTP-E-OUT	East WWTP effluent		
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface		Field and Physical Parameters, Total and Dissolved Metals.
IDZ-E1-2m	Howe Sound IDZ station E1; 2 m below surface		
IDZ-E1-SF	Howe Sound IDZ station E1; 2 m above the seafloor		
IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface		
IDZ-E2-2m	Howe Sound IDZ station E2; 2 m below surface		
IDZ-E2-SF	Howe Sound IDZ station E2; 2 m above the seafloor		
WWTP-E-IN	East WWTP influent	July 27, 2024	Methylmercury.
WWTP-E-OUT	East WWTP effluent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	July 28, 2024	Field and Physical Parameters, Total and Dissolved Metals, Hexavalent Chromium.
SP-E-NW	East Sedimentation Pond, in-pond sample, represents influent quality		
WWTP-E-IN	East WWTP influent		Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, Methylmercury, PAHs, and VOCs.
WWTP-E-OUT	East WWTP effluent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	July 29, 2024	Field (SP-E-NE only) and Physical Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
SP-E-NW	East Sedimentation Pond, in-pond sample, represents influent quality		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	July 30, 2024	Field and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
SP-E-NW	East Sedimentation Pond, in-pond sample, represents influent quality		
WWTP-E-IN	East WWTP influent		Field and Physical Parameters, Total and Dissolved Metals, Hexavalent Chromium.
WWTP-E-OUT	East WWTP effluent		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	July 31, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, Methylmercury, PAHs, and VOCs.
SW-02	Upper Reach of Mill Creek (upstream of the third bridge)		
SW-03	Lower Reach of Mill Creek (near the mouth, in the estuarine zone)		
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)		
SW-07	Upstream Mill Creek (at the diversion inlet)		
WWTP-E-IN	East WWTP influent	August 2, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, Methylmercury, PAHs, and VOCs.
WWTP-E-OUT	East WWTP effluent		

3.3 East Sedimentation Pond

The East Sedimentation Pond influent and effluent results are screened against PE-111578 discharge limits. Parameters without a discharge limit are screened against BC, Canadian and Federal water quality guidelines (WQGs) for the protection of marine water aquatic life. Influent water is not discharged from site, therefore only effluent water quality is assessed for exceedances. The analytical results, daily field parameters, discharge limits and WQGs are summarized in Table B-1 and Table B-2 (analytical results) and Table B-3 (field measurements) of Appendix B.

During the monitoring period (July 28 – August 3), the East Sedimentation Pond received East WWTP treated effluent each day. The sedimentation pond did not receive contact water during the monitoring period; therefore, field measurements and analytical samples at station SP-E-IN-2 were not collected. Field measurements were taken daily at the in-pond effluent quality station (SP-E-NE), and three times at the in-pond influent quality station (SP-E-NW). Analytical samples were collected at stations SP-E-NE and SP-E-NW on July 28, 29, and 30.

Field measurements and analytical results for the in-pond samples met PE-111578 discharge limits except for TSS and total zinc. The concentrations of TSS (68.9 mg/L) and total zinc (0.0196 mg/L) measured in the July 28 SP-E-NE sample were above the discharge limits of 25 mg/L and 0.0133 mg/L, respectively. However, the pond did not discharge on July 28, and therefore non-compliant effluent was not discharged to Howe Sound. The reported TSS value is inconsistent with the reported turbidity value (*i.e.,* the low turbidity value suggests the TSS concentration should be significantly lower) therefore follow-up investigation with the lab is underway and is being tracked in Table 5.

Field measurements of dissolved oxygen collected at station SP-E-NW on July 28 and 30, and at station SP-E-NE on July 31 – August 2 were lower than the WQG (≥8 mg/L). Low dissolved oxygen has been observed in sedimentation pond effluent and investigation for root cause and evaluation if mitigation options are required for low dissolved oxygen in sedimentation pond water is ongoing (Table 5).

Acute toxicity test results for the May 8 SP-E-OUT sample discussed in Weekly Report #24 were evaluated and summarized herein. Undiluted (100%) effluent was tested for acute toxicity to rainbow trout and to the invertebrate *Daphnia magna*. An effluent sample is considered to have passed if 50% or more of the test organisms survive after 96 hours of exposure for the rainbow trout test, and after 48 hours of exposure for the *Daphnia magna* test, as per the BC Laboratory Manual. Results showed 100% survival of rainbow trout and 97% survival of *Daphnia magna* after exposure to the SP-E-OUT sample, indicating the effluent passed the acute toxicity test and the East Sedimentation Pond effluent sample was not acutely toxic to these organisms.

3.4 East Wastewater Treatment Plant

The East WWTP influent and effluent results are screened against the minimum discharge objectives (MDOs) which the WWTP was designed to meet. Contaminated contact water is directed to the WWTP influent, and it is expected that influent water is unlikely to meet the design MDOs, therefore only effluent water quality is assessed against the MDOs. The analytical results, daily field measurements, and the design MDOs are summarized in Table C-1 and Table C-2 (analytical results) and Table C-3 (field measurements) of Appendix C. Screening results are summarized in Table 4 for parameter concentrations that do not meet the design MDOs.

The East WWTP received contact water and recirculated East Sedimentation Pond water each day July 28 – August 3 (Section 2). The influent waters were treated by the East WWTP and discharged to the East Sedimentation Pond. Field measurements were collected each day at the influent and effluent stations, WWTP-E-IN and WWTP-E-OUT, respectively. Field pH ranged from 6.3 to 7.4 at WWTP-E-IN during the monitoring period (July 28 – August 3), while dissolved oxygen ranged from 1.97 to 8.19 mg/L, and turbidity ranged from 0.86 to 4.93 NTU (Appendix C, Table C-4). Field pH, dissolved oxygen, and turbidity in the East WWTP effluent (WWTP-E-OUT) ranged from pH 6.2 to 7.9, 1.86 to 7.51 mg/L, and 1.09 to 5.06 NTU, respectively.

Field measurements for pH did not meet the design MDOs in the July 31 and August 1 WWTP-E-OUT samples collected during the monitoring period. However, all pH measurements met the PE-111578 discharge limits. Pilot testing of the East WWTP is underway and the deviations in pH are attributed to WWTP process adjustments during the monitoring period. A design MDO for dissolved oxygen was not specified in the WWTP design report; however, due to the frequency of low dissolved oxygen values an investigation is underway to identify root cause and if potential mitigations for low oxygen concentrations are required (Table 5).

Analytical samples were collected from East WWTP influent and effluent stations on July 28, July 30, and August 2. Effluent quality monitored at WWTP-E-OUT achieved design MDOs for all parameters except for total vanadium in the July 28 sample (0.00835 mg/L) and nitrate in the August 2 sample (5.17 mg/L) (Table 4).

Methylmercury analytical results were available at the time of reporting for the East WWTP samples collected July 26 (Weekly Report #24) and July 27 – 28 (this report). Methylmercury concentrations ranged from 0.00004 – 0.000108 mg/L at WWTP-IN, and from 0.000082 – 0.000161 mg/L at WWTP-OUT.

Table 4:
Summary of Parameters Outside Design Minimum Discharge Objectives (MDOs) at East WWTP Effluent Station WWTP-E-OUT.

Parameter	Units	MDO	N	N >MDO	Commentary
Field pH	s.u.	7.0-8.7	7	2	Field pH was below the lower limit of the design MDO for two samples collected during the monitoring period (July 28 – August 3). Process adjustments are underway and occasional deviations from the design MDOs may occur during the pilot period.
Total Vanadium	mg/L	0.005	3	1	The total vanadium concentration in the July 28 sample (0.00835 mg/L) was 1.7 times above the design MDO. Process adjustments are under development to improve the removal of vanadium.
Nitrate-N	mg/L	3.7	3	1	The nitrate concentration in the August 2 sample (5.17 mg/L) was 1.4 times above the design MDO. An investigation is underway to identify root cause.

MDO = Minimum discharge objective which the East WWTP was designed to meet.
N = number of samples.
Non-detect results are screened using the detection limit value.

3.5 Non-Contact Water Diversion Ditch Outlets

There are no water quality results available for the non-contact water diversion ditch outlets at the time of reporting.

3.6 Freshwater and Estuarine Water Receiving Environment

Freshwater and estuarine water receiving environment samples are screened against BC, Canadian and Federal WQGs for the protection of freshwater or estuarine water aquatic life. The analytical results, field parameters and WQGs are summarized in Appendix D and Appendix E for freshwater and estuarine water, respectively.

Analytical results were available for the July 31 freshwater and estuarine water receiving environment samples collected at Woodfibre Creek (station SW-01), Mill Creek (stations SW-02, SW-03 and SW-07) and East Creek (station SW-04). All stations are freshwater except the estuarine water sample collected near the mouth of Mill Creek (station SW-03).

Parameter concentrations met WQGs at all Mill Creek stations (SW-02, SW-03, and SW-07). Dissolved copper concentrations were above WQGs at the Woodfibre Creek (SW-01) and East Creek (SW-04) stations. Total aluminum concentration was above WQG at station SW-01 only. The dissolved copper and total aluminum concentrations measured in the Woodfibre Creek and East Creek samples were within the concentration ranges observed in the pre-construction baseline monitoring program and are therefore not considered to be exceedances of baseline conditions.

Methylmercury analytical results were available for the July 31 freshwater and estuarine water receiving environment stations. Methylmercury concentrations were <0.000020 µg/L in

Woodfibre Creek (SW-01) and upstream Mill Creek (SW-07). Detectable levels of methylmercury were measured in the mid reach of Mill Creek (0.000022 µg/L; SW-02), Mill Creek estuary (0.000026 µg/L; SW-03) and East Creek (0.000063 µg/L; SW-04). Methylmercury concentrations were within the ranges observed in the pre-construction baseline monitoring program.

3.7 Marine Water Receiving Environment

Marine water receiving environment samples are screened against BC, Canadian and Federal WQGs for the protection of marine water aquatic life. Parameter concentrations above a WQG value, but within the range of values observed in the baseline monitoring program are considered to represent the natural condition of the water and are not flagged as exceedances. The analytical results, field parameters and WQGs are summarized in Appendix F.

Analytical results were available for the July 26 marine receiving environment samples collected at stations IDZ-E1 and IDZ-E2 at 0.5 and 2 m below the water surface and 2 m above the seafloor. Parameter concentrations met WQGs except for total boron in samples collected at 2 m above the seafloor at both stations, as well as the IDZ-E2 sample collected at 2 m below surface. Total boron concentrations varied from <0.3 to 3.26 mg/L in the July 26 marine samples, which were within the concentration ranges observed in the pre-construction baseline monitoring program and are therefore not considered to be exceedances.

Chronic toxicity test results for the May 8 marine receiving environment samples as discussed in Weekly Report #24 were evaluated and summarized herein. Marine water samples were tested for chronic toxicity to Pacific topsmelt (fish) and echinoderm (invertebrate). All chronic toxicity tests were conducted using 100% (undiluted) marine water collected from 0.5 m below the surface at stations IDZ-E1 and IDZ-E2 in the receiving environment of Howe Sound. The salinity of the May 8 samples (8.8 – 9.9 ppt) was below the acceptable range for marine toxicity tests; therefore, salinity was adjusted to 30 ±2 ppt prior to testing as per standard test protocol.

Chronic toxicity test results showed no statistically significant differences between the marine samples (IDZ-E1 and IDZ-E2) and laboratory controls (natural seawater control and salt control) for any of the endpoints tested for Pacific topsmelt. For the echinoderm test, a statistically significant difference in fertilization rate was observed in the IDZ-E1 sample (81 ± 2.6%) relative to the laboratory controls (90 ± 2.7%), but not in the IDZ-E2 sample (90 ± 1.6%).

Analytical water samples were collected at IDZ-E1 and IDZ-E2 (0.5 m below surface) on May 8 in tandem with toxicity sampling, and results were presented in Weekly Report #14. Water quality results showed similar conditions between the two samples, and parameter concentrations met WQGs except for total boron in the IDZ-E2 sample. Hence the water quality data do not explain the observed chronic effect on echinoderm fertilization rate in the IDZ-E1 sample, compared to the no effect observed in the IDZ-E2 sample. The different toxicity results for the two IDZ samples

may reflect test method variability in Howe Sound surface water, or an unquantified difference in water quality between the two sampling locations. Given this uncertainty, enhanced sampling (*i.e.,* monthly for three months) for chronic toxicity testing is being scheduled for stations IDZ-E1, IDZ-E2 and reference station WQR1 to obtain additional monitoring data needed to assess if there is natural variability of echinoderm chronic toxicity in the Howe Sound receiving environment.

4. Quality Control

This section presents the results of the quality control (QC) evaluation for the PE-111578 weekly report (Table 5). The evaluation includes a review of field and lab QC, completeness of the weekly report (*e.g.,* pending data), completeness of the monitoring program, confirmation of recordkeeping, evaluation of compliance and review of water management activities. Items flagged for follow-up in the exceedance tables in Section 3 are transferred to Table 5. Any items flagged for follow-up in Table 5 are carried forward to future reports until they are closed.

Table 5:
Weekly Report QC Evaluations and Ongoing Items

QC Procedure	Observation	Investigation/Resolution
Reporting Period (July 28 – August 3, Report #25)		
Monitoring Program Evaluation	PE-111578 contact water, non-contact water and initial dilution zone monitoring stations have not been fully established.	The PE-111578 authorized works were under construction during the reporting period. Monitoring stations are progressively established as water management infrastructure is completed. The East Sedimentation Pond and East WWTP are completed, and pilot testing of the East WWTP is ongoing. The East Sedimentation Pond was commissioned for discharge on April 15. The West Sedimentation Pond is complete, except the outfall structure and West WWTP is under construction. The West Sedimentation Pond is not commissioned for discharge and did not discharge. The non-contact water diversion ditch that discharges at station OUT-06 has been commissioned, and stations for pre-existing outfalls OUT-01, OUT-02, and OUT-11 have also been established.
Pending Data	Analytical results for samples collected August 2 and 3 were not reported.	Analytical results for IDZ-E1 and IDZ-E2 samples collected August 2 and samples collected on August 3 were not complete at the time of reporting. The pending results will be included in future weekly reports when available. This item remains open.
Pending Data	Methyl mercury, dioxin and furan results for samples collected July 31 and August 2 were not reported.	Methylmercury results for samples collected August 2 and dioxin and furan results for samples collected July 31 were not complete at the time of reporting. Testing of these parameters typically requires up to 4 weeks to complete. The pending results are expected in late August. This item remains open.
Monitoring Program Evaluation	Incomplete monitoring of parameters at East WWTP	Weekly analytical samples collected for the July 7 – 13 and July 28 – August 3 monitoring periods at WWTP-E-IN and WWTP-E-OUT did not include sub-samples for all parameters specified in PE-111578. This has been reviewed with the site QEP for water management and further investigation is underway. This item remains open.
Data Review	Elevated TSS at SP-E-NE in July 28 sample	TSS was elevated (68.9 mg/L) in the July 28 SP-E-NE sample and is suspected to be erroneous given the low field turbidity (6.38 NTU) measured in the sample, and low level of TSS (< 3 mg/L) measured at the other in-pond station (SP-E-NW). Further investigation with the laboratory will be conducted. This item remains open.
Data Review	Chronic toxicity at IDZ-E1 in the May 8 sample	Chronic toxicity test results show a decrease in echinoderm fertilization rate in the May 8 IDZ-E1 sample collected at 0.5 m below the surface compared to control samples, whereas the May 8 sample collected at station IDZ-E2 showed no chronic effect. Water quality results (as presented in Weekly Report #14) indicate parameter concentrations in the IDZ-E1 and IDZ-E2 samples are similar and do not explain the chronic toxicity effect observed in the IDZ-E1 sample. Enhanced sampling (*i.e.,* monthly for three months) for chronic toxicity testing is being scheduled for stations IDZ-E1 and IDZ-E2, and reference station WQR1to assess if there is natural variation of echinoderm chronic toxicity in the Howe Sound marine receiving environment. This item remains open.
Ongoing Items from Previous Weekly Reports		
Report #13: WWTP Performance Evaluation	The May 6 monitoring results for East WWTP indicate dissolved vanadium was not being removed by the treatment process.	Sampling conducted since May 6 indicates vanadium in treated WWTP effluent is almost entirely in soluble form, suggesting this form of vanadium is only partially treated, resulting in residual vanadium concentrations in the treated effluent that are generally below, but often in the vicinity of the Federal WQG (0.005 mg/L) but generally below the PE-111578 discharge limit for total vanadium (0.0081 mg/L). Process adjustments are underway to improve vanadium removal as part of the WWTP pilot trials. This item remains open.
Report #20: Pending Data	Dioxin and furan results for East WWTP samples collected June 25 were not reported.	Dioxins and furans results for the June 25 WWTP influent and effluent samples were presented in Section 3.4 and Appendix C of Report #24. This item is closed.
Report #21: WWTP Performance Evaluation	Dissolved oxygen is frequently outside the treatment MDO	Previous weekly reports have indicated there was a design MDO for dissolved oxygen, this was incorrect, rather the marine WQG for dissolved oxygen water was evaluated as an MDO. This has been clarified in Appendix C, Table C-1 beginning with Report #24. However, low dissolved oxygen has been observed in sedimentation pond effluent and investigation for root cause is ongoing. As of August 3, a field investigation is being scheduled to confirm that East Sedimentation Pond effluent with low dissolved oxygen concentrations will mix with Howe Sound surface waters and meet WQG for dissolved oxygen within the initial dilution zone defined in PE-111578.
Report #22: Pending Data	Analytical results for samples collected July 9 and July 13 were not reported.	Available analytical results for marine receiving environment samples collected July 9 and 13 are discussed in Section 3.7 of Report #24. Dioxin and furans results were not complete at the time of Report #25 preparation. Testing of these parameters typically requires up to 4 weeks to complete. The pending results are expected in late August. This item remains open.
Report #22: Monitoring Program Evaluation	Site temperature and precipitation data are not available since July 12 due to malfunction of the Woodfibre Weather Station	Ongoing Woodfibre Weather Station outage. It is uncertain when the station will be back to normal operation. In the interim, weather data are obtained from the Main Street Squamish Station. This item remains open.
Report #23: Pending Data	Analytical results for samples collected July 17, 19, and 20 were not reported.	Available analytical results for marine receiving environment samples collected July 17 are discussed in Section 3.7 of Report #24. Analytical results for samples collected July 19 and 20 were not complete at the time of Report #25 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #23: Pending Data	Methyl mercury, dioxin and furan results for samples collected July 16 and July 18 were not reported.	The methylmercury result for July 18 SP-E-OUT sample is discussed in Section 3.3 of Report #24. Dioxins and furans results for samples collected July 16 and July 18 were not complete at the time of Report #25 preparation. Testing of these parameters typically requires up to 4 weeks to complete. The pending results will be included in future weekly reports when available. This item remains open.
Report #24: Pending Data	Analytical results for IDZ samples collected July 26 were not reported.	Analytical results for IDZ-E1 and IDZ-E2 samples collected July 26 are discussed in Section 3.7 of Report #25. This item is closed.
Report #24: Pending Data	Methyl mercury, dioxin and furan results for samples collected July 24, 26, and 27 were not reported.	Methylmercury results for samples collected July 26 and 27 are discussed in Section 3.4 of Report #25. Methylmercury results for samples collected July 24 and dioxin and furan results for samples collected July 24, 26, and 27 were not complete at the time of Report #25 preparation. Testing of these parameters typically requires up to 4 weeks to complete. This item remains open.
Report #24: Pending Data	Toxicity test results for samples collected May 8 were not reported	Quarterly toxicity testing was conducted using an effluent sample collected at SP-E-OUT and two marine water samples collected at IDZ-E1 and IDZ-E2 on May 8, 2024. Lab reports for the May 8 toxicity tests (acute and chronic) were received by July 26. Results are discussed in Report #25. This item is closed.

Notes:
Result QA/QC screening includes the evaluation of field and lab QC results, comparison of total and dissolved metal results and review for modified detection limits.
Pending data are outstanding results from monitoring samples reported in the current or previous weekly reports.
Monitoring program evaluation is an assessment of the completeness of the monitoring program compared to PE-111578 specified or implied requirements.
WWTP performance evaluation is an assessment of WWTP effluent quality compared to design MDO's and WQG (for dissolved oxygen and total vanadium only).
Data review under QC Procedure indicates an evaluation of data trends or inter-parameter relationships that suggest a test result may not be representative of water quality at the time of monitoring.

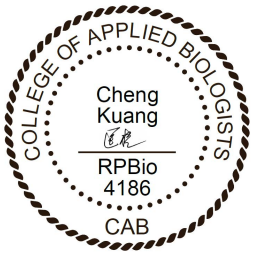
5. Closure

This weekly report is a desktop review by Lorax of the PE-111578 discharge and compliance monitoring program records, reports and results provided by Woodfibre LNG and prime contractor McDermott International and their sub-contractors. The records reviewed and analyzed by Lorax include ALS Environmental laboratory test reports and site reports (from Roe Environmental, LB LNG, McDermott and Woodfibre LNG). Verbal or electronic communications between Lorax, and Roe Environmental, LB LNG, McDermott, and Woodfibre LNG staff are conducted as needed to confirm the information presented in this report.

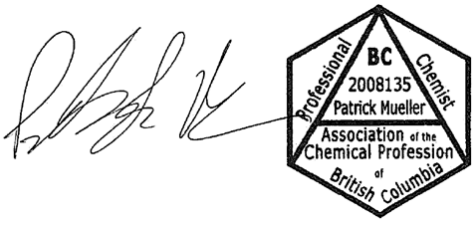
Regards,

LORAX ENVIRONMENTAL SERVICES LTD.

Holly Pelletier, B.Sc., GIT
Environmental Geoscientist



Cheng Kuang, M.Sc., RPBio



Patrick Mueller, B.Sc., P.Chem.
Environmental Chemist

LEGEND

- Freshwater Monitoring Station
- Marine Water Monitoring Station
- Certified Project Area
- Waterbody
- Watercourse
- Non-Contact Diversion Ditch
- Outfall
- Culvert Pipe
- Clean Water Diversion Discharge Station
- Sediment Pond Monitoring Stations (Water Quality)
- Wastewater Treatment Plant (WWTP)

DATE SAVED:	Aug 09, 2024
DRAWN BY:	DM
REVIEWED:	PM
VERSION:	1

Coordinate System: *NAD 1983 UTM Zone 10N*
Projection: *Transverse Mercator*
Datum: *North American 1983*
Units: *Metre*

1:6,000

0 50 100 150 Metres

CLIENT: Woodfibre LNG

LORAX ENVIRONMENTAL

PROJECT:

Woodfibre LNG Project Construction Phase

TITLE: Completed or Under Construction Water Management Facilities and Established PE-111578 Monitoring Stations (August 3, 2024)

PROJECT #: A633-7

FIGURE: 1

P:\@Drafting\Woodfibre\Drafting Figures\APRX\WLNG Construction Phase 2024\WLNG Construction Phase 2024 - Weekly Reporting.aprx Figure 1 Monitoring and Compliance Locations

Appendix A: East and West Catchment Photographs

Figure 2: East Catchment Areas Dewatered to the East WWTP July 28 – August 3, 2024.

Figure 3: West Catchment dewatering areas. Dewatering of the West Catchment did not occur during the July 28 – August 3, 2024 monitoring period.

Figure 4: Aerial view of the East Sedimentation Pond showing the placement of two sediment curtains (August 2, 2024). The East WWTP is located on the left side of the pond.

Figure 5: Aerial view showing the West Sedimentation Pond and West WWTP (located to the right of the pond) on August 2, 2024.

Appendix B: East Sedimentation Pond Results

Table B-1:
Summary of East Sedimentation Pond Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1, 2]		PE-111578 Discharge Limit *	East Sedimentation Pond			
					In-Pond Location	In-Pond at Effluent Location	In-Pond at Effluent Location	In-Pond Location
					SP-E-NW	SP-E-NE	SP-E-NE	SP-E-NW
					VA24B8599-004	VA24B8599-003	VA24B8655-001	VA24B8655-002
		Long Term	Short Term		7/28/24 16:05	7/28/24 16:20	7/29/24 12:13	7/29/24 16:30
General Parameters								
pH - Field	pH units	- [6]	-	5.5 - 9.0	6.6	6.9	6.8	-
Conductivity - Field	µS/cm	-	-	-	1451	1334	1293	-
Temperature - Field	°C	-	-	-	24.4	25.5	22.6	-
Salinity - Field	ppt	-	-	-	0.74	0.71	0.68	-
Turbidity - Field	NTU	-	-	-	4.3	6.38	5.54	-
TSS	mg/L	-	-	25	8.1	68.9	6.2	<3.0
Dissolved Oxygen - Field	mg/L	>=8	-	-	***4.46***	9.43	8.31	-
Anions and Nutrients								
Sulphate	mg/L	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-
Fluoride	mg/L	-	1.5	-	-	-	-	-
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	-	-	-	-
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	-	-	-	-
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	-	-	-	-
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	-	0.142	0.586	0.114	0.0604
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00125	0.00127	0.00124	0.00118
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00324	0.00289	0.00253	0.00231
Barium, total (T-Ba)	mg/L	-	-	-	0.00617	0.0142	0.0098	0.00798
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.185	0.235	0.238	0.267
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000200	<0.0000500	<0.0000250	<0.0000200
Chromium, total (T-Cr)	mg/L	-	-	-	0.00111	0.0018	0.0009	<0.00100
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	0.00029	<0.00010	<0.00020
Copper, total (T-Cu)	mg/L	- [6]	- [6]	0.0043	0.00163	0.00287	0.00166	0.00149
Iron, total (T-Fe)	mg/L	-	-	-	0.036	0.526	0.058	0.031
Lead, total (T-Pb)	mg/L	- [6]	- [6]	0.0035	0.000137	0.0017	0.000298	0.000312
Manganese, total (T-Mn)	mg/L	-	-	-	0.00121	0.0269	0.00787	0.00143
Mercury, total (T-Hg) [5]	mg/L	0.000016	-	-	<0.0000050	0.0000074	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0883	0.0811	0.0807	0.0806
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	0.0008	<0.00050	<0.00100
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000235	0.000265	0.000198	0.00019
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010	<0.000010	<0.000020
Thallium, total (T-Tl)	mg/L	-	-	-	0.000028	0.000026	0.000025	0.00002
Uranium, total (T-U)	mg/L	-	-	-	0.0581	0.0471	0.0466	0.0516
Vanadium, total (T-V)	mg/L	- [6]	-	0.0081	0.00706	0.00532	0.00425	0.00343
Zinc, total (T-Zn)	mg/L	- [6]	- [6]	0.0133	<0.0030	0.0196	0.0086	<0.0060
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00065	0.00066	0.00062	0.00069
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000200	<0.0000300	<0.0000250	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00146	0.00136	0.00133	0.00107
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.011	<0.010	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000059	0.000088	0.000069	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00076	0.00873	0.00586	0.00081
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.134	0.193	0.163	0.154
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00644	0.004	0.00392	0.00321
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0025	0.0099	0.0087	0.0017
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	0.006	-	-	-	-	<0.000010	<0.000010
Acridine	mg/L	-	-	-	-	-	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	-	-	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	-	-	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	-	-	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	-	-	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	-	-	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	-	-	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	-	-	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	-	-	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	-	-	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	-	-	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	-	-	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	-	-	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	-	-	-	-	-
Ethylbenzene	mg/L	0.25	-	-	-	-	-	-
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-
Toluene	mg/L	0.215	-	-	-	-	-	-
Total Xylenes	mg/L	-	-	-	-	-	-	-
Chlorobenzene	mg/L	0.025	-	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-	-	-

Notes: Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE11578 East Sedimentation Pond Discharge Limit.
* The PE111578 East Sedimentation Pond Discharge Limit applies only to the point of discharge from the East Sedimentation Pond (SP-E-Out). A sample port for SP-E-OUT was installed on the temporary discharge hose on May 23 and first sampled during pond discharge on May 27. All SP-E-OUT samples collected from May 27 to the time of writing were taken from the sample port which is located near the inlet end of the temporary discharge hose.
[1] Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied.
[2] Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021).
[3] The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document (BC ENV, 2021).
[4] The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.
[5] When MeHg ⩽ 0.5% of total Hg, BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.
[6]The water quality guideline was not evaluated for parameters with discharge limits
The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.

Table B-2:
Summary of East Sedimentation Pond Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1, 2]		PE-111578 Discharge Limit *	East Sedimentation Pond	
					In-Pond Location	In-Pond at Effluent Location
					SP-E-NW	SP-E-NE
					VA24B8805-002	VA24B8805-001
		Long Term	Short Term		7/30/24 17:13	7/30/24 17:40
General Parameters						
pH - Field	pH units	- [6]	-	5.5 - 9.0	6.7	7.3
Conductivity - Field	µS/cm	-	-	-	1476	1271
Temperature - Field	°C	-	-	-	22.8	22.9
Salinity - Field	ppt	-	-	-	0.78	0.66
Turbidity - Field	NTU	-	-	-	4.44	2.64
TSS	mg/L	-	-	25	5.9	21.9
Dissolved Oxygen - Field	mg/L	>=8	-	-	***6.81***	9.35
Anions and Nutrients						
Sulphate	mg/L	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-
Fluoride	mg/L	-	1.5	-	-	-
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	-	-
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	-	-
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	-	-
Total Metals						
Aluminum, total (T-Al)	mg/L	-	-	-	0.139	0.117
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.0012	0.00122
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00221	0.00233
Barium, total (T-Ba)	mg/L	-	-	-	0.0144	0.00983
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.251	0.287
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000250	<0.0000200
Chromium, total (T-Cr)	mg/L	-	-	-	0.00075	0.00084
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	<0.00010
Copper, total (T-Cu)	mg/L	- [6]	- [6]	0.0043	0.00144	0.00167
Iron, total (T-Fe)	mg/L	-	-	-	0.104	0.06
Lead, total (T-Pb)	mg/L	- [6]	- [6]	0.0035	0.000303	0.00026
Manganese, total (T-Mn)	mg/L	-	-	-	0.00608	0.00433
Mercury, total (T-Hg) [5]	mg/L	0.000016	-	-	<0.0000050	0.0000053
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.074	0.0823
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000211	0.000149
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	0.000029	0.000025
Uranium, total (T-U)	mg/L	-	-	-	0.031	0.0519
Vanadium, total (T-V)	mg/L	- [6]	-	0.0081	0.00304	0.00366
Zinc, total (T-Zn)	mg/L	- [6]	- [6]	0.0133	0.0041	0.0062
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050	0.00059
Dissolved Metals						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000200	<0.0000200
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00105	0.00129
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.00006	0.00008
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.0037	0.00273
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.328	0.173
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.0027	0.00333
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0024	0.0046
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)						
Benzene	mg/L	0.11	-	-	-	-
Ethylbenzene	mg/L	0.25	-	-	-	-
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-	-
Styrene	mg/L	-	-	-	-	-
Toluene	mg/L	0.215	-	-	-	-
Total Xylenes	mg/L	-	-	-	-	-
Chlorobenzene	mg/L	0.025	-	-	-	-
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-

Notes: Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE11578 East Sedimentation Pond Discharge Limit.
* The PE111578 East Sedimentation Pond Discharge Limit applies only to the point of discharge from the East Sedimentation Pond (SP-E-Out).
A sample port for SP-E-OUT was installed on the temporary discharge hose on May 23 and first sampled during pond discharge on May 27. All SP-E-OUT samples collected from May 27 to the time of writing were taken from the sample port which is located near the inlet end of the temporary discharge hose.
[1] Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied.
[2] Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021).
[3] The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document (BC ENV, 2021).
[4] The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.
[5] When MeHg ⩽ 0.5% of total Hg, BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.
[6] The water quality guideline was not evaluated for parameters with discharge limits.
The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines

Table B-3:
Summary of East Sedimentation Pond Daily Field Parameters July 28 – August 3.

Parameter		Temperature	Dissolved Oxygen (DO)	Salinity	Turbidity	pH	Conductivity	Visibility of Sheen	Total Daily Discharge from the East Sedimentation Pond to Howe Sound
Unit		**°C**	**mg/L**	**ppt**	**NTU**	**s.u.**	**µS/cm**		**m^3**
PE-111578 Discharge Limit [1]		-	-	-	-	5.5 - 9.0	-	-	-[2]
Lowest Applicable Guideline [3,4]		-	>=8	-	-	-[5]	-	-	-
Station ID [6]	**Date**								
SP-E-NW	7/28/2024 16:05	24.4	***4.46***	0.74	4.3	6.6	1451	No	0
SP-E-NE	7/28/2024 16:20	25.5	9.43	0.71	6.38	6.9	1334	No	
SP-E-NE	7/29/2024 12:13	22.6	8.31	0.68	5.54	6.8	1293	No	0
SP-E-NW	7/30/2024 17:13	22.8	***6.81***	0.78	4.44	6.7	1476	No	0
SP-E-NE	7/30/2024 17:40	22.9	9.35	0.66	2.64	7.3	1271	No	
SP-E-NE	7/31/2024 14:04	25.8	***7.25***	0.7	4.53	7.0	1416	No	0
SP-E-NE	8/1/2024 11:05	24.9	***7.28***	0.73	4.9	6.7	1447	No	0
SP-E-NE	8/2/2024 17:07	27.3	***7.95***	0.73	19.8	6.9	1527	No	0
SP-E-NE	8/3/2024 17:57	28.8	-[7]	-[7]	9.57	6.7	-[7]	No	0
SP-E-NW	8/3/2024 18:01	28.6	-[7]	-[7]	8.08	6.7	-[7]	No	

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Results in orange text exceeded the PE- 11578 East Sedimentation Pond Discharge Limit.
[1] PE-111578 East Sedimentation Pond Discharge Limit applies only to the point of discharge from the East Sedimentation Pond (SP-E-OUT).
A sample port for SP-E-OUT was installed on the temporary discharge hose on May 23 and first sampled during pond discharge on May 27. All SP-E-OUT samples collected from May 27 to the time of writing were taken from the sample port which is located near the inlet end of the temporary discharge hose.
[2] The annual average authorized discharge rate from the East Sedimentation Pond is 650 m^3/day. As noted in PE-111578 Condition 2.1.4, the actual discharge rate may deviate from the annual average rate due to annual variations in precipitation amounts within the catchment area. Therefore, the annual average authorized discharge rate is not evaluated as a discharge limit.
[3] Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied.
[4] Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021).
[5] Discharge limit applies therefore the water quality guideline was not evaluated.
[6] The sedimentation pond did not receive non-contaminated contact water influent July 28 – August 3, therefore daily measurements for station SP-E-IN-2 were not collected. The East Sedimentation Pond did not discharge July 28 – August 3, therefore daily measurements for station SP-E-OUT were not collected. In-Pond stations SP-E-NW and SP-E-NE may be monitored in place of stations SP-E-IN-2 and SP-E-OUT, respectively when there is no influent to, or discharge from the East Sedimentation Pond at the time of monitoring.
[7] Measurements for dissolved oxygen (DO), salinity and conductivity were not collected from the in-pond stations on August 3 due to field equipment malfunction. The equipment was serviced and operated normally the following day (August 4).

Appendix C: East Wastewater Treatment Plant Results

Table C-1:
Summary of East Wastewater Treatment Plant Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Minimum Discharge Objective [1]	East WWTP			
			Influent	Effluent	Influent	Effluent
			WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
			VA24B8599-001	VA24B8599-002	VA24B8805-003	VA24B8805-004
			7/28/2024 16:40	7/28/2024 15:50	7/30/2024 17:30	7/30/2024 17:15
General Parameters						
pH - Field	pH units	7.0 - 8.7	7.3	***6.3***	7.6	***6.4***
Conductivity - Field	µS/cm	-	1463	1378	1284	1489
Temperature - Field	°C	-	26.4	24	23.2	22.1
Salinity - Field	ppt	-	0.71	0.7	0.67	0.8
Turbidity - Field	NTU	-	5.06	2.68	2.46	0.86
TSS	mg/L	-	<3.0	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	>=8 [2]	***5.88***	***1.97***	***7.39***	***3.58***
Anions and Nutrients						
Sulphate	mg/L	-	56.4	53.8	-	-
Chloride	mg/L	-	133	132	-	-
Fluoride	mg/L	-	0.263	0.287	-	-
Ammonia (N-NH_3)	mg/L	Variable	0.756	1.11	-	-
Nitrite (N-NO_2)	mg/L	-	0.216	0.731	-	-
Nitrate (N-NO_3)	mg/L	3.7	0.64	1.11	-	-
Total Metals						
Aluminum, total (T-Al)	mg/L	-	0.168	0.149	0.0992	0.0231
Antimony, total (T-Sb)	mg/L	-	0.00123	0.00126	0.00128	0.00126
Arsenic, total (T-As)	mg/L	0.0125	0.00267	0.00356	0.00234	0.00227
Barium, total (T-Ba)	mg/L	-	0.0114	0.00532	0.00933	0.0147
Beryllium, total (T-Be)	mg/L	0.1	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	0.247	0.175	0.245	0.25
Cadmium, total (T-Cd)	mg/L	0.00012	<0.0000350	<0.0000250	<0.0000250	<0.0000250
Chromium, total (T-Cr)	mg/L	-	0.00108	0.00113	0.00073	0.00064
Cobalt, total (T-Co)	mg/L	-	0.00011	<0.00010	<0.00010	<0.00010
Copper, total (T-Cu)	mg/L	0.002	***0.00444***	0.00177	***0.00256***	0.00146
Iron, total (T-Fe)	mg/L	-	0.113	0.018	0.045	0.01
Lead, total (T-Pb)	mg/L	0.002	0.000596	0.000082	0.000243	<0.000050
Manganese, total (T-Mn)	mg/L	-	0.0107	0.00061	0.00369	0.00619
Mercury, total (T-Hg)	mg/L	0.000016	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	0.0802	0.0923	0.0827	0.0823
Nickel, total (T-Ni)	mg/L	0.0083	<0.00050	<0.00050	<0.00050	0.00062
Selenium, total (T-Se)	mg/L	0.002	0.000196	0.000189	0.00021	0.00018
Silver, total (T-Ag)	mg/L	0.0015	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	0.000027	0.000028	0.000023	0.000034
Uranium, total (T-U)	mg/L	-	0.0479	0.0611	0.0522	0.0248
Vanadium, total (T-V)	mg/L	0.005	0.00433	***0.00835***	0.00357	0.00267
Zinc, total (T-Zn)	mg/L	0.01	***0.0196***	<0.0030	0.0098	0.003
Hexavalent Chromium, total	mg/L	0.0015	0.00068	0.00085	0.00058	0.00053
Dissolved Metals						
Cadmium, dissolved (D-Cd)	mg/L	-	<0.0000250	<0.0000200	<0.0000200	<0.0000200
Copper, dissolved (D-Cu)	mg/L	-	0.00164	0.00147	0.00159	0.00118
Iron, dissolved (D-Fe)	mg/L	-	0.01	<0.020	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	0.00011	<0.000100	0.00007	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	0.00863	0.00043	0.00263	0.00554
Nickel, dissolved (D-Ni)	mg/L	-	<0.00050	<0.00100	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	0.188	0.106	0.183	0.303
Vanadium, dissolved (D-V)	mg/L	-	0.00392	0.00781	0.0033	0.00259
Zinc, dissolved (D-Zn)	mg/L	-	0.0114	<0.0020	0.0076	0.0029
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthene	mg/L	0.006	<0.000010	<0.000010	-	-
Acridine	mg/L	-	<0.000010	<0.000010	-	-
Anthracene	mg/L	-	<0.000010	<0.000010	-	-
Benz(a)anthracene	mg/L	-	<0.000010	<0.000010	-	-
Benzo(a)pyrene	mg/L	0.00001	<0.0000050	<0.0000050	-	-
Chrysene	mg/L	0.0001	<0.000010	<0.000010	-	-
Fluoranthene	mg/L	-	<0.000010	<0.000010	-	-
Fluorene	mg/L	0.012	<0.000010	<0.000010	-	-
1-methylnaphthalene	mg/L	0.001	<0.000010	<0.000010	-	-
2-methylnaphthalene	mg/L	0.001	<0.000010	<0.000010	-	-
Naphthalene	mg/L	0.001	<0.000050	<0.000050	-	-
Phenanthrene	mg/L	-	<0.000020	<0.000020	-	-
Pyrene	mg/L	-	<0.000010	<0.000010	-	-
Quinoline	mg/L	-	<0.000050	<0.000050	-	-
Volatile Organic Compounds (VOCs)						
Benzene	mg/L	0.11	<0.00050	<0.00050	-	-
Ethylbenzene	mg/L	0.25	<0.00050	<0.00050	-	-
Methyl-tert-butyl-ether	mg/L	5	<0.00050	<0.00050	-	-
Styrene	mg/L	-	<0.00050	<0.00050	-	-
Toluene	mg/L	0.215	<0.00040	<0.00040	-	-
Total Xylenes	mg/L	-	<0.00050	<0.00050	-	-
Chlorobenzene	mg/L	0.025	<0.00050	<0.00050	-	-
1,2-Dichlorobenzene	mg/L	0.042	<0.00050	<0.00050	-	-

Notes:
[1] Design minimum discharge objectives (MDOs) for WWTP effluent that are listed in the WWTP design report.
[2] A design MDO for dissolved oxygen was not specified in the WWTP design report. The water quality guideline is provided in place of an MDO for reference purposes only.
Results ***underlined in bold italics*** exceed the applicable minimum discharge objective.

Table C-2:
Summary of East Wastewater Treatment Plant Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Minimum Discharge Objective [1]	East WWTP	
			Influent	Effluent
			WWTP-E-IN	WWTP-E-OUT
			VA24B9290-001	VA24B9290-002
			8/2/2024 17:15	8/2/2024 16:40
General Parameters				
pH - Field	pH units	7.0 - 8.7	7.1	***6.3***
Conductivity - Field	µS/cm	-	1522	1462
Temperature - Field	°C	-	27.6	26.2
Salinity - Field	ppt	-	0.72	0.71
Turbidity - Field	NTU	-	4.61	4.85
TSS	mg/L	-	7.2	5.2
Dissolved Oxygen - Field	mg/L	>=8 [2]	***7.51***	***3.54***
Anions and Nutrients				
Sulphate	mg/L	-	53.8	54
Chloride	mg/L	-	124	123
Fluoride	mg/L	-	0.234	0.213
Ammonia (N-NH_3)	mg/L	Variable	0.484	0.256
Nitrite (N-NO_2)	mg/L	-	3.57	3.62
Nitrate (N-NO_3)	mg/L	3.7	***4.11***	***5.17***
Total Metals				
Aluminum, total (T-Al)	mg/L	-	0.0733	0.0166
Antimony, total (T-Sb)	mg/L	-	0.00136	0.0013
Arsenic, total (T-As)	mg/L	0.0125	0.00203	0.00202
Barium, total (T-Ba)	mg/L	-	0.0144	0.011
Beryllium, total (T-Be)	mg/L	0.1	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	0.34	0.335
Cadmium, total (T-Cd)	mg/L	0.00012	<0.0000400	<0.0000250
Chromium, total (T-Cr)	mg/L	-	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	-	<0.00010	<0.00010
Copper, total (T-Cu)	mg/L	0.002	***0.00402***	0.00174
Iron, total (T-Fe)	mg/L	-	0.048	<0.010
Lead, total (T-Pb)	mg/L	0.002	0.000318	<0.000050
Manganese, total (T-Mn)	mg/L	-	0.0178	0.00956
Mercury, total (T-Hg)	mg/L	0.000016	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	0.0816	0.0803
Nickel, total (T-Ni)	mg/L	0.0083	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.002	0.00017	0.000164
Silver, total (T-Ag)	mg/L	0.0015	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	0.000036	0.000037
Uranium, total (T-U)	mg/L	-	0.038	0.0254
Vanadium, total (T-V)	mg/L	0.005	0.00321	0.00285
Zinc, total (T-Zn)	mg/L	0.01	***0.0193***	0.005
Hexavalent Chromium, total	mg/L	0.0015	<0.00050	<0.00050
Dissolved Metals				
Cadmium, dissolved (D-Cd)	mg/L	-	<0.0000300	<0.0000200
Copper, dissolved (D-Cu)	mg/L	-	0.00164	0.00113
Iron, dissolved (D-Fe)	mg/L	-	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	0.000081	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	0.0163	0.00898
Nickel, dissolved (D-Ni)	mg/L	-	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	0.248	0.234
Vanadium, dissolved (D-V)	mg/L	-	0.0024	0.00223
Zinc, dissolved (D-Zn)	mg/L	-	0.0122	0.0038
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	mg/L	0.006	<0.000010	<0.000010
Acridine	mg/L	-	<0.000010	<0.000010
Anthracene	mg/L	-	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	<0.000010	<0.000010
Fluoranthene	mg/L	-	<0.000010	<0.000010
Fluorene	mg/L	0.012	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	<0.000010	<0.000010
Naphthalene	mg/L	0.001	<0.000050	<0.000050
Phenanthrene	mg/L	-	<0.000020	<0.000020
Pyrene	mg/L	-	<0.000010	<0.000010
Quinoline	mg/L	-	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)				
Benzene	mg/L	0.11	<0.00050	<0.00050
Ethylbenzene	mg/L	0.25	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	5	<0.00050	<0.00050
Styrene	mg/L	-	<0.00050	<0.00050
Toluene	mg/L	0.215	<0.00040	<0.00040
Total Xylenes	mg/L	-	<0.00050	<0.00050
Chlorobenzene	mg/L	0.025	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	<0.00050	<0.00050

Notes:
[1] Design minimum discharge objectives (MDOs) for WWTP effluent that are listed in the WWTP design report.
[2] A design MDO for dissolved oxygen was not specified in the WWTP design report. The water quality guideline is provided in place of an MDO for reference purposes only.
Results ***underlined in bold italics*** exceed the applicable minimum discharge objective.

Table C-3:
Summary of East Wastewater Treatment Plant Water Quality Results for Methylmercury Received at the Time of Reporting.

Parameter	Unit	East WWTP					
		Influent	Effluent	Influent	Effluent	Influent	Effluent
		WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
		VA24B8505-001	VA24B8505-002	VA24B8550-001	VA24B8550-002	VA24B8599-001	VA24B8599-002
		2024-07-26 17:00	2024-07-26 16:30	2024-07-27 9:40	2024-07-27 10:10	2024-07-28 16:40	2024-07-28 15:50
Methylmercury	**µg/L**	0.000108	0.000096	0.000079	0.000082	0.000040	0.000161

Table C-4:
Summary of East Wastewater Treatment Plant Daily Field Parameters July 28 – August 3.

Parameter		Temperature	Dissolved Oxygen (DO)	Salinity	Turbidity	pH	Conductivity	Visibility of Sheen	Total Daily Discharge from the East WWTP
Unit		**°C**	**mg/L**	**ppt**	**NTU**	**s.u.**	**µS/cm**		**m^3**
PE-111578 Discharge Limit [1]		-	-	-	-	-	-	-	1,100
Minimum Discharge Objective [2]		-	>=8 [3]	-	-	7.0 - 8.7	-	-	-
Station ID	**Date**								
WWTP-E-IN	7/28/2024 15:50	24.0	***1.97***	0.70	2.68	***6.3***	1378	No	-
WWTP-E-OUT	7/28/2024 16:40	26.4	***5.88***	0.71	5.06	7.3	1463	No	589
WWTP-E-IN	7/29/2024 14:17	23.1	***2.34***	0.71	4.93	***6.4***	1374	No	-
WWTP-E-OUT	7/29/2024 14:23	22.9	***5.69***	0.68	4.17	7.9	1297	No	578
WWTP-E-IN	7/30/2024 17:28	22.1	***3.58***	0.80	0.86	***6.4***	1489	No	-
WWTP-E-OUT	7/30/2024 17:36	23.2	***7.39***	0.67	2.46	7.6	1284	No	544
WWTP-E-IN	7/31/2024 14:10	25.9	***6.70***	0.70	2.87	7.4	1426	No	-
WWTP-E-OUT	7/31/2024 14:14	24.6	***2.04***	0.73	1.61	***6.2***	1446	No	602
WWTP-E-IN	8/1/2024 11:11	24.8	8.19	0.38	4.06	7.0	768	No	-
WWTP-E-OUT	8/1/2024 11:16	25.5	***1.86***	0.71	1.09	***6.4***	1443	No	590
WWTP-E-IN	8/2/2024 16:54	26.2	***3.54***	0.71	4.85	***6.3***	1462	No	-
WWTP-E-OUT	8/2/2024 17:34	27.6	***7.51***	0.72	4.61	7.1	1522	No	587
WWTP-E-IN	8/3/2024 17:53	27.6	-[4]	-[4]	2.84	7.0	-[4]	No	-
WWTP-E-OUT	8/3/2024 17:59	29.0	-[4]	-[4]	3.61	7.0	-[4]	No	573

Notes:
[1] PE-111578 East WWTP Discharge Limit is applied to effluent compliance station WWTP-E-OUT.
[2] Design minimum discharge objectives (MDOs) for WWTP effluent that are listed in the WWTP design report.
[3] A design MDO for dissolved oxygen was not specified in the WWTP design report. The water quality guideline is provided in place of an MDO for reference purposes only.
[4] Measurements for DO, salinity and conductivity were not collected for the WWTP influent and effluent stations due to field equipment malfunction. The equipment was serviced and operated normally the following day (August 4).
Results ***underlined in bold italics*** do not meet the applicable minimum discharge objective (except DO).

Appendix D: Freshwater Receiving Environment Results

Table D-1:
Summary of Freshwater Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1, 2]		Station SW-01	Station SW-02	Station SW-04	Station SW-07
				Woodfibre Creek Lower Reach	Mill Creek Mid-Reach	East Creek Lower Reach	Mill Creek Background
				SW-01	SW-02	SW-04	SW-07
				VA24B8974-001	VA24B8974-002	VA24B8974-004	VA24B8974-005
		Long Term	Short Term	7/31/2024 10:30	7/31/2024 16:07	7/31/2024 14:25	7/31/2024 11:50
General Parameters							
pH - Field	pH units	6.5 - 9.0	-	6.5	7.0	8.0	7.0
Specific Conductivity - Field	µS/cm	-	-	22	16	144	16
Temperature - Field	°C	-	-	12.2	15.3	18.6	15
Salinity - Field	ppt	-	-	0.02	0.01	0.08	0.01
Turbidity - Field	NTU	-	-	0.5	1.18	2.01	0.07
TSS	mg/L	-	-	<3.0	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	>=8	>=5	9.50	9.65	8.13	9.52
Anions and Nutrients							
Sulphate [3]	mg/L	128-218	-	0.31	1.79	3.06	1.79
Chloride	mg/L	120	600	0.56	0.93	1.18	0.91
Fluoride [3]	mg/L	-	0.400-1.17	<0.020	<0.020	0.04	<0.020
Ammonia ($N\text{-}NH_3$) [3]	mg/L	0.239-10.3	5.61-25.0	<0.0050	<0.0050	<0.0050	<0.0050
Nitrite ($N\text{-}NO_2$) [3]	mg/L	0.0200	0.1	<0.0010	<0.0010	<0.0010	<0.0010
Nitrate ($N\text{-}NO_3$)	mg/L	3	32.8	0.0276	0.0434	0.0779	0.0457
Total Metals							
Aluminum, total (T-Al) [3]	mg/L	0.0942-0.539	-	***0.115***	0.0372	0.0326	0.0344
Antimony, total (T-Sb)	mg/L	0.074	-	<0.00010	<0.00010	0.00011	<0.00010
Arsenic, total (T-As)	mg/L	0.005	-	0.0001	<0.00010	<0.00010	<0.00010
Barium, total (T-Ba)	mg/L	1	-	0.00171	0.00268	0.013	0.00235
Beryllium, total (T-Be)	mg/L	0.00013	-	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	29	<0.010	0.013	0.016	0.013
Cadmium, total (T-Cd) [3]	mg/L	0.0000364-0.000114	0.000106-0.00140	<0.0000050	<0.0000050	0.0000066	0.0000059
Chromium, total (T-Cr) [5]	mg/L	0.001	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	0.001	0.11	<0.00010	<0.00010	<0.00010	<0.00010
Copper, total (T-Cu)	mg/L	-	-	<0.00050	0.00052	0.00081	<0.00050
Iron, total (T-Fe)	mg/L	0.3	1	0.033	<0.010	0.109	<0.010
Lead, total (T-Pb) [3]	mg/L	-	-	<0.000051	<0.000050	0.000051	<0.000050
Manganese, total (T-Mn) [3]	mg/L	0.768-0.900	0.816-1.28	0.0009	0.00043	0.00675	0.00026
Mercury, total (T-Hg) [4]	mg/L	0.00002	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	0.073	46	0.000261	0.000595	0.00127	0.000548
Nickel, total (T-Ni) [3]	mg/L	0.0250-0.0706	-	<0.00050	<0.00050	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.001	-	<0.000050	<0.000050	<0.000050	<0.000050
Silver, total (T-Ag) [3]	mg/L	0.0000500	0.000100	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	0.0008	-	<0.000010	<0.000010	<0.000010	<0.000010
Uranium, total (T-U)	mg/L	0.0085	0.033	0.000535	0.000126	0.000096	0.00011
Vanadium, total (T-V)	mg/L	0.12	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, total (T-Zn)	mg/L	-	-	<0.0030	<0.0030	<0.0030	<0.0030
Hexavalent Chromium, total	mg/L	0.001	-	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals							
Cadmium, dissolved (D-Cd) [3]	mg/L	0.0000176-0.000158	0.0000380-0.000390	<0.0000050	<0.0000050	0.0000074	<0.0000050
Copper, dissolved (D-Cu) [3]	mg/L	0.000200-2.20	0.000200-0.00616	***0.00023***	<0.00020	***0.00058***	<0.00020
Iron, dissolved (D-Fe)	mg/L	-	0.35	0.21	<0.010	0.017	<0.010
Lead, dissolved (D-Pb) [3]	mg/L	0.00189-0.00473	-	<0.000050	<0.000050	<0.000050	<0.000050
Manganese, dissolved (D-Mn) [3]	mg/L	0.320-0.380	1.97-4.69	0.00108	0.00025	0.00396	0.00031
Nickel, dissolved (D-Ni) [3]	mg/L	0.600-1.20	9.10-19.6	<0.00050	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	2.5	-	0.00313	0.00641	0.0729	0.00616
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, dissolved (D-Zn)	mg/L	0.00309-0.0149	0.00716-0.0629	<0.0010	<0.0010	<0.0010	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	mg/L	0.0058	-	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	0.003	-	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	0.000012	-	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	0.000018	-	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	0.00004	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.003	-	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Naphthalene	mg/L	0.001	0.001	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	0.0003	-	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	0.00002	-	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	0.0034	-	<0.00005	<0.00005	<0.00005	<0.00005
Volatile Organic Compounds (VOCs)							
Benzene	mg/L	0.04	-	<0.00050	<0.00050	<0.00050	<0.00050
Ethylbenzene	mg/L	0.09	-	<0.00050	<0.00050	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	10	3.4	<0.00050	<0.00050	<0.00050	<0.00050
Styrene	mg/L	0.072	-	<0.00050	<0.00050	<0.00050	<0.00050
Toluene	mg/L	0.0005	-	<0.00040	<0.00040	<0.00040	<0.00040
Total Xylenes	mg/L	0.03	-	<0.00050	<0.00050	<0.00050	<0.00050
Chlorobenzene	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of freshwater aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of freshwater aquatic life.
[1] Approved British Columbia Water Quality Guidelines for the protection of freshwater aquatic life (BC ENV, 2023). Where an approved guideline is not established, the working guideline is applied.
[2] Canadian Water Quality Guideline for the protection of freshwater aquatic life (CCME, 2021). Federal Water Quality Guidelines (FWQG) are used for total Al, Co, and V, and for dissolved Cu, Sr, and Pb (Environment and Climate Change Canada).
[3] BC WQG or CWQG indicated to be variable are calculated from sample-specific measurements for temperature, field pH, total hardness and dissolved organic carbon (DOC) content.
[4] When MeHg $\leqslant$ 0.5% of total Hg, BC WQG = 0.00002 mg/L.
[5] The approved BC WQG for hexavalent chromium [Cr(VI)] is 0.001 mg/L and 0.0089 mg/L for trivalent chromium [Cr(III)]. The more conservative criteria for Cr(VI) is applied to total chromium results.
The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.

Table D-2:
Summary of Freshwater Quality Results for Methylmercury Results Received at the Time of Reporting.

Parameter	Unit	Station SW-01	Station SW-02	Station SW-07	Station SW-04
		Woodfibre Creek Lower Reach	Mill Creek Mid-Reach	Mill Creek Background	East Creek Lower Reach
		SW-01	SW-02	SW-07	SW-04
		VA24B8974-001	VA24B8974-002	VA24B8974-005	VA24B8974-004
		7/31/2024 10:30	7/31/2024 16:07	7/31/2024 11:50	2024-07-31 14:25
Methylmercury	**µg/L**	<0.000020	0.000022	<0.000020	0.000063

Appendix E: Estuarine Receiving Environment Results

Table E-1:
Summary of Mill Creek Estuary Water Quality Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1, 2]		Station SW-03 Mill Creek Estuary SW-03 VA24B8974-003
		Long Term	Short Term	7/31/2024 13:24
General Parameters				
pH - Field	pH units	7.0 - 8.7	-	7.1
Specific Conductivity - Field	µS/cm	-	-	17
Temperature - Field	°C	-	-	15.9
Salinity - Field	ppt	-	-	0.0
Turbidity - Field	NTU	-	-	1.52
TSS	mg/L	-	-	<3.0
Dissolved Oxygen - Field	mg/L	-	-	10.38
Anions and Nutrients				
Sulphate	mg/L	-	-	1.99
Chloride	mg/L	-	-	2.15
Fluoride	mg/L	-	-	<0.020
Ammonia (N-NH_3)	mg/L	-	-	<0.0050
Nitrite (N-NO_2)	mg/L	-	-	<0.0010
Nitrate (N-NO_3)	mg/L	-	-	0.0448
Total Metals				
Aluminum, total (T-Al)	mg/L	-	-	0.0432
Antimony, total (T-Sb)	mg/L	-	-	<0.00010
Arsenic, total (T-As)	mg/L	-	-	<0.00010
Barium, total (T-Ba)	mg/L	-	-	0.00257
Beryllium, total (T-Be)	mg/L	-	-	<0.000100
Boron, total (T-B)	mg/L	-	-	0.013
Cadmium, total (T-Cd)	mg/L	-	-	<0.0000050
Chromium, total (T-Cr)	mg/L	-	-	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	<0.00010
Copper, total (T-Cu)	mg/L	0.002	0.003	<0.00050
Iron, total (T-Fe)	mg/L	-	-	0.011
Lead, total (T-Pb)	mg/L	0.002	0.14	<0.000050
Manganese, total (T-Mn)	mg/L	-	-	0.00046
Mercury, total (T-Hg) [3]	mg/L	0.00002	-	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	0.000623
Nickel, total (T-Ni)	mg/L	-	-	<0.00050
Selenium, total (T-Se)	mg/L	-	-	<0.000050
Silver, total (T-Ag)	mg/L	0.0015	0.003	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	<0.000010
Uranium, total (T-U)	mg/L	-	-	0.000129
Vanadium, total (T-V)	mg/L	-	-	<0.00050
Zinc, total (T-Zn)	mg/L	-	-	<0.0030
Hexavalent Chromium, total	mg/L	-	-	<0.00050
Dissolved Metals				
Cadmium, dissolved (D-Cd)	mg/L	-	-	<0.0000050
Copper, dissolved (D-Cu)	mg/L	-	-	<0.00020
Iron, dissolved (D-Fe)	mg/L	-	-	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00065
Nickel, dissolved (D-Ni)	mg/L	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	0.00681
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050
Zinc, dissolved (D-Zn)	mg/L	-	-	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	mg/L	-	-	<0.000010
Acridine	mg/L	-	-	<0.000010
Anthracene	mg/L	-	-	<0.000010
Benz(a)anthracene	mg/L	-	-	<0.000010
Benzo(a)pyrene	mg/L	-	-	<0.0000050
Chrysene	mg/L	-	-	<0.000010
Fluoranthene	mg/L	-	-	<0.000010
Fluorene	mg/L	-	-	<0.000010
1-methylnaphthalene	mg/L	-	-	<0.000010
2-methylnaphthalene	mg/L	-	-	<0.000010
Naphthalene	mg/L	-	-	<0.000050
Phenanthrene	mg/L	-	-	<0.000020
Pyrene	mg/L	-	-	<0.000010
Quinoline	mg/L	-	-	<0.000050
Volatile Organic Compounds (VOCs)				
Benzene	mg/L	-	-	<0.00050
Ethylbenzene	mg/L	-	-	<0.00050
Methyl-tert-butyl-ether	mg/L	-	-	<0.00050
Styrene	mg/L	-	-	<0.00050
Toluene	mg/L	-	-	<0.00040
Total Xylenes	mg/L	-	-	<0.00050
Chlorobenzene	mg/L	-	-	<0.00050
1,2-Dichlorobenzene	mg/L	-	-	<0.00050

Notes:
Results in ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of estuarine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of estuarine water aquatic life.
[1] Approved British Columbia Water Quality Guidelines for the protection of estuarine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied.
[2] Canadian Water Quality Guideline for the protection of estuarine aquatic life (CCME, 2021).
[3] When MeHg ⩽ 0.5% of total Hg, BC WQG = 0.00002 mg/L.

Table E-2:
Summary of Mill Creek Estuary Water Quality Results for Methylmercury Results Received at the Time of Reporting.

Parameter	Unit	Station SW-03
		Mill Creek Estuary
		SW-03
		VA24B8974-003
		2024-07-31 13:24
Methylmercury	**µg/L**	0.000026

Appendix F: Marine Water Receiving Environment Results

Table F-1:
Summary of Marine Water Quality Results Received at the Time of Reporting

Parameter	Unit	Lowest Applicable Guideline [1, 2]		Station IDZ-E1			Station IDZ-E2		
				0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor
				IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF
				VA24B8554-001	VA24B8554-002	VA24B8554-003	VA24B8554-004	VA24B8554-005	VA24B8554-006
		Long Term	Short Term	7/26/2024	7/26/2024	7/26/2024	7/26/2024	7/26/2024	7/26/2024
General Parameters									
pH - Field	pH units	7.0 - 8.7	-	7.8	7.4	7.7	7.9	7.5	7.7
Specific Conductivity - Field	µS/cm	-	-	2287	2733	31961	1967	2329	31941
Temperature - Field	°C	-	-	13.4	13.6	11.7	13.3	13.3	11.7
Salinity - Field	ppt	Narrative[3]	-	1.54	1.85	27.48	1.32	1.59	27.45
Turbidity - Field	NTU	Narrative[3]	Narrative[3]	16.19	15.22	0.67	17.63	16.00	0.23
TSS	mg/L	Narrative[3]	Narrative[3]	16.5	14.5	<2.0	15.3	<2.0	<2.0
Dissolved Oxygen - Field	mg/L	>=8	-	10.55	10.55	8.53	10.61	10.60	8.48
Anions and Nutrients									
Sulphate	mg/L	-	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-	-
Fluoride	mg/L	-	1.5	-	-	-	-	-	-
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [4]	Variable [4]	-	-	-	-	-	-
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	-	-	-	-	-
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	-	-	-	-	-
Total Metals									
Aluminum, total (T-Al)	mg/L	-	-	0.763	0.562	0.044	0.702	0.0856	0.025
Antimony, total (T-Sb)	mg/L	-	0.27 [5]	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic, total (T-As)	mg/L	0.0125	0.0125	0.00042	<0.00040	0.00353	<0.00040	0.00283	0.00354
Barium, total (T-Ba)	mg/L	-	-	0.0188	0.0173	0.0119	0.0186	0.0123	0.0119
Beryllium, total (T-Be)	mg/L	0.1	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron, total (T-B)	mg/L	1.2	-	<0.30	0.32	***2.87***	<0.30	***2.62***	***3.26***
Cadmium, total (T-Cd)	mg/L	0.00012	-	<0.000020	<0.000020	0.000054	<0.000020	0.000047	0.000068
Chromium, total (T-Cr)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	0.000338	0.000273	0.000093	0.000317	0.000105	0.000072
Copper, total (T-Cu)	mg/L	0.002	0.003	0.00198	0.00148	0.0006	0.0018	0.0007	0.00051
Iron, total (T-Fe)	mg/L	-	-	0.627	0.500	0.040	0.597	0.081	0.023
Lead, total (T-Pb)	mg/L	0.002	0.14	<0.00010	0.00014	0.00029	<0.00010	0.00016	0.00023
Manganese, total (T-Mn)	mg/L	-	-	0.0206	0.0178	0.00264	0.0197	0.00468	0.00198
Mercury, total (T-Hg)	mg/L	0.000016	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	0.00067	0.00079	0.00875	0.00068	0.00735	0.00885
Nickel, total (T-Ni)	mg/L	0.0083	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Silver, total (T-Ag)	mg/L	0.0015	0.003	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Thallium, total (T-Tl)	mg/L	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Uranium, total (T-U)	mg/L	-	-	0.000198	0.000228	0.00247	0.00018	0.00204	0.00246
Vanadium, total (T-V)	mg/L	0.005 [7]	-	0.00185	0.00156	0.00128	0.00178	0.00124	0.00124
Zinc, total (T-Zn)	mg/L	0.01	0.055	0.0050	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Hexavalent Chromium, total	mg/L	0.0015	-	-	-	-	-	-	-
Dissolved Metals									
Cadmium, dissolved (D-Cd)	mg/L	-	-	<0.000020	<0.000020	0.000061	<0.000020	<0.000020	0.00006
Copper, dissolved (D-Cu)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Iron, dissolved (D-Fe)	mg/L	-	-	0.011	<0.010	<0.010	<0.010	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	<0.00010	<0.00010	0.00023	<0.00010	<0.00010	0.0003
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00779	0.00645	0.00128	0.0069	0.00606	0.0011
Nickel, dissolved (D-Ni)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	0.354	0.393	5.77	0.302	1.06	5.7
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050	<0.00050	0.00115	<0.00050	0.00051	0.00114
Zinc, dissolved (D-Zn)	mg/L	-	-	0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)									
Acenaphthene	mg/L	0.006	-	-	-	-	-	-	-
Acridine	mg/L	-	-	-	-	-	-	-	-
Anthracene	mg/L	-	-	-	-	-	-	-	-
Benz(a)anthracene	mg/L	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/L	0.00001	-	-	-	-	-	-	-
Chrysene	mg/L	0.0001	-	-	-	-	-	-	-
Fluoranthene	mg/L	-	-	-	-	-	-	-	-
Fluorene	mg/L	0.012	-	-	-	-	-	-	-
1-methylnaphthalene	mg/L	0.001	-	-	-	-	-	-	-
2-methylnaphthalene	mg/L	0.001	-	-	-	-	-	-	-
Naphthalene	mg/L	0.001	-	-	-	-	-	-	-
Phenanthrene	mg/L	-	-	-	-	-	-	-	-
Pyrene	mg/L	-	-	-	-	-	-	-	-
Quinoline	mg/L	-	-	-	-	-	-	-	-
Volatile Organic Compounds (VOCs)									
Benzene	mg/L	0.11	-	-	-	-	-	-	-
Ethylbenzene	mg/L	0.25	-	-	-	-	-	-	-
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-	-	-	-	-
Styrene	mg/L	-	-	-	-	-	-	-	-
Toluene	mg/L	0.215	-	-	-	-	-	-	-
Total Xylenes	mg/L	-	-	-	-	-	-	-	-
Chlorobenzene	mg/L	0.025	-	-	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-	-	-	-

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine water aquatic life.
Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.
[1] Approved British Columbia Water Quality Guidelines for the protection of marine aquatic life (BC ENV, 2021). Where an approved guideline is not established, the working guideline is applied.
[2] Canadian Water Quality Guideline for the protection of marine aquatic life (CCME, 2021).
[3] Narrative guideline for the evaluation of change from background conditions arising from discharges to the aquatic environment. The water quality data presented in the table were collected when the site was discharging, therefore the guidelines were evaluated.
[4] The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document (BC ENV, 2021).
[5] The working BC WQG for trivalent antimony [SB(III)] is 0.27 mg/L and is applied to total antimony results.
[6] When MeHg $\leqslant$ 0.5% of total Hg, BC WQG = 0.00002 mg/L.
[7] Federal Water Quality Guideline for Vanadium (Environment and Climate Change Canada).
The lowest applicable guidelines are shown in the table; however, water quality data was screened to all applicable guidelines.