TECHNICAL MEMORANDUM

To:	**Ian McAllister, Ashleigh Crompton, Mike Champion, Jackie Boruch and Ryan Schucroft (Woodfibre LNG)**	**Date:**	**18 Oct 2024**
From:	**Cheng Kuang, Holly Pelletier and Patrick Mueller (Lorax)**	**Project #:**	**A633-8**
Subject:	**PE-111578 Weekly Discharge and Compliance Report #35 for October 6 - 12**		

Waste Discharge Authorization (WDA) Effluent Permit PE-111578 was issued by the British Columbia Energy Regulator (BCER) to Woodfibre LNG on February 9, 2024. The associated WDA discharge and compliance monitoring program 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 to Woodfibre LNG.

This technical memorandum (Report #35) was prepared by Lorax Environmental and summarizes WDA monitoring conducted the week of October 6 - 12. Monitoring data and pending results from prior monitoring periods available at the time of reporting are tabulated and included as appendices to this memorandum. Report #35 has been prepared to meet the requirements specified in Condition 4.2 of 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 and other water management figures are included in Appendix A. Monitoring results are tabulated in Appendix B through Appendix H for contact water, treated 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 foreshore areas were initiated in December 2023, and in early 2024 construction of water management infrastructure commenced and has continued through the October 6 - 12 monitoring period. The East Wastewater Treatment Plant (WWTP) and East Sedimentation Pond are commissioned for operation and discharge since April 15, 2024. Pilot testing of the West WWTP was suspended September 25. The suspension was implemented for the temporary reconfiguration of the plant to allow pilot-scale evaluation of alternative treatment processes for improving treatment outcomes. Any process modifications that may result from the pilot-scale evaluation will be submitted to BCER for approval prior to full-scale implementation. Site waters that require treatment will continue to be directed to the East WWTP while the operation of the West WWTP is suspended.

The West Sedimentation Pond is commissioned for discharge since October 8, 2024. The non-contact and contact water conveyance ditches described in PE-111578 are partially constructed or will be constructed when site preparation activities are completed (*e.g.*, site grading, bedrock excavation). Water management facilities that are completed or were under construction during the reporting period are shown in Figure 1. Established contact water collection and dewatering locations and photographs of the sedimentation ponds are shown in Appendix A, Figure 2 through Figure 5.

The non-contact water diversion ditch west of Mill Creek was upgraded and commissioned for use on April 7 and discharges to Mill Creek at station OUT-06 (Figure 1). Other pre-existing diversion ditches west of Mill Creek have been partially upgraded and discharge at station OUT-02. During heavy precipitation these ditches also convey non-contact water to station OUT-01. To facilitate the replacement of the East Creek discharge culvert, the lower reach of East Creek was temporarily diverted to the adjacent culvert, OUT-11, on September 17.

The East and West catchments conveyance ditches described in PE-111578 were designed to transport non-contaminated contact water (*i.e.*, stormwater) 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 and contaminated contact waters within the catchments are managed to remain on site using a system of sumps and baker tanks for intermediate storage and are then directed to the East WWTP for treatment. During periods of heavy precipitation, non-contaminated contact water may also be directed to the East or West Sedimentation Ponds for settling of TSS prior to discharge. A flocculant-based TSS settling system (ESC system) has been in use at the West Sedimentation

Pond since September 25. Non-contaminated contact water influent to the pond is routed through the TSS settling system (ESC system).

A revised schedule is being developed to complete the installation of the East Sedimentation Pond permanent outfall structure and construction of the West Sedimentation Pond permanent outfall is underway. A temporary discharge system (*i.e.*, pump, hosing and diffusor) is used to convey East and West Sedimentation Pond effluent to their respective authorized discharge locations when necessary for the discharge of excess water, and if the effluent water quality is compliant with the requirements of PE-111578.

Pilot testing of the East WWTP continued during the monitoring period (October 6 - 12). Contaminated and potentially contaminated contact waters from the 1100, 1200C, and 1300 Areas and the hydrovac dump were directed to the East WWTP for treatment, as well as water recirculated from the East Sedimentation Pond (Appendix A, Figure 2 and Figure 3). A total of 2,417 m^3 of treated WWTP effluent was discharged to the East Sedimentation Pond during the reporting period (October 6 - 12). Daily East WWTP effluent flows are provided in Appendix C (Table C-4). The East Sedimentation Pond intermittently discharged on October 11 and October 12 by pumping effluent to the discharge location SP-E-OUT. A total of 1,598 m^3 of effluent was discharged to Howe Sound during the reporting period.

During the monitoring period (October 6 - 12), the West Sedimentation Pond received non-contaminated contact waters from the 4100 Area that was routed through the TSS settling system (ESC system). The West Sedimentation Pond was commissioned for discharge during the monitoring period and the West Sedimentation Pond discharged 614 m^3 to Howe Sound on October 8.

The weather was variable October 6 - 12, with precipitation recorded at the Woodfibre site weather station on October 6 (0.2 mm), October 8 (7.0 mm), and October 9 (0.8 mm). The total weekly precipitation amount was 8.0 mm. 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
10-06-2024	0.2	17.3	11.0	Overcast
10-07-2024	0.0	16.9	10.9	Mix of Sun and Cloud
10-08-2024	7.0	17.3	11.8	Scattered Showers
10-09-2024	0.8	16.0	9.3	Overcast
10-10-2024	0.0	16.3	7.4	Overcast
10-11-2024	0.0	16.7	6.9	Mix of sun and cloud
10-12-2024	0.0	19.7	9.1	Overcast

Note: Data retrieved from the Stantec Woodfibre site weather station.

2. Monitoring Summary

The PE-111578 authorized works were under construction during the October 6 - 12 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 initial dilution zone (IDZ) locations (WQR1, WQR2, IDZ-E1 and IDZ-E2).
- Non-contact diversion ditch outlets (OUT-01, OUT-02, OUT-06, and OUT-11). East Creek water was temporarily diverted to OUT-11 on September 17. Therefore, samples collected at OUT-11 are entirely East Creek water that is also monitored at the inlet to the culvert (station SW-04). Station OUT-11 will not be monitored for the duration of the East Creek diversion through 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, WWTP-W-IN, WWTP-W-OUT, ESC-W-IN, SP-W-W, SP-W-E, and SP-W-OUT).

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 also been established for the West Sedimentation Pond at locations SP-W-W and SP-W-E and are used for pond water quality monitoring proximal to the influent and effluent locations. Station ESC-W-IN is the influent station located at the TSS settling system for the West Sedimentation Pond.

Water quality was monitored at stations SW-01, SW-02, SW-03, SW-04, SW-07, IDZ-E1, IDZ-E2, IDZ-W1, IDZ-W2, WQR1, WQR2, WWTP-E-IN, WWTP-E-OUT, SP-E-NE, SP-E-NW, SP-E-OUT, WWTP-W-IN, WWTP-W-OUT, SP-W-E, SP-W-W, and SP-W-OUT during the monitoring period (October 6 - 12). Sampling dates and parameters tested are summarized in Table 2.

Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (October 6 - 12) were met with the following exceptions. Daily field parameters and an analytical sample were collected at SP-E-OUT on October 11 while the East Sedimentation Pond was discharging; however, field staff were unable to collect the daily field measurements at

SP-E-OUT while the pond was discharging on October 12 due to a field probe malfunction. Daily field parameters were collected from the in-pond effluent quality station (SP-E-NE) on October 12. An analytical sample was collected at WWTP-E-OUT on October 10, however daily field parameters were not collected due to a field probe malfunction. Field parameters were not collected at WWTP-E-IN and WWTP-E-OUT on October 11 ad 12 since the East WWTP was not active at the time of monitoring. These items are tracked in Table 8.

Daily field parameters and a weekly analytical sample were not collected at influent station SP-E-IN-2 as the East Sedimentation Pond did not receive contact water inflows during the monitoring period. Daily field parameters and a weekly analytical sample were not collected at the influent and effluent stations of the West WWTP (WWTP-W-IN and WWTP-W-OUT, respectively) as the West WWTP was not active during the monitoring period.

Table 2: Summary of PE-111578 Monitoring Samples Collected October 6 - 12.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
October 6, 2024	WQR1-0.5	Reference site 1; 0.5 m below surface	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	M, W_4
	WQR1-2m	Reference site 1; 2 m below surface		
	WQR1-SF	Reference site 1; 2 m above the seafloor		
	WQR2-0.5	Reference site 2; 0.5 m below surface		
	WQR2-2m	Reference site 2; 2 m below surface		
	WQR2-SF	Reference site 2; 2 m above the seafloor		
	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	SP-W-E [1]	West Sedimentation Pond, in-pond sample, represents effluent quality		
	SP-W-W [1]	West Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
October 7, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
October 8, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	SP-W-E [1]	West Sedimentation Pond, in-pond sample, represents effluent quality	Field Parameters.	P
	SP-W-W [1]	West Sedimentation Pond, in-pond sample, represents influent quality		
	SP-W-OUT	West Sedimentation Pond effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	D, W_1, W_2
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
October 9, 2024	IDZ-W1-0.5	Howe Sound IDZ station W1; 0.5 m below surface	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	M, W_3, W_4
	IDZ-W1-2m	Howe Sound IDZ station W1; 2 m below surface		
	IDZ-W1-SF	Howe Sound IDZ station W1; 2 m above the seafloor		
	IDZ-W2-0.5	Howe Sound IDZ station W2; 0.5 m below surface		
	IDZ-W2-2m	Howe Sound IDZ station W2; 2 m below surface		
	IDZ-W2-SF	Howe Sound IDZ station W2; 2 m above the seafloor		
	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals	P
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals	D, W_1
	WWTP-E-IN	East WWTP influent		
October 10, 2024	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	M, W_3, W_4
	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		
	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals	P
	WWTP-E-OUT	East WWTP effluent	Field (WWTP-E-IN only), Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals	D, W_1
	WWTP-E-IN	East WWTP influent		
October 11, 2024	SP-E-OUT	East Sedimentation Pond effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	D, W_1, W_2
October 12, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field, Physical & General Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality	Field Parameters.	P
	SW-01	Lower Reach of Woodfibre Creek (near the mouth)	Field[2], Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	M, W_4
	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)		
	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	M, W_3, W_4
	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		

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).
W_4 – spring and fall high frequency sampling for all parameters at receiving environment stations (5 samples collected over a 30-day period).
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. Similarly, the West Sedimentation Pond in-pond stations, SP-W-W and SP-W-E are monitored for water management purposes. The monitoring of in-pond stations is not a PE-111578 requirement and is conducted at the discretion of field staff.
[2] Field parameters were not collected at SW-07 on October 12 due to a field probe malfunction. The field probe malfunction was resolved, and field parameters were collected the following day (October 13) at SW-07.

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, operational minimum discharge objectives (MDOs) that the WWTPs are currently being operated to meet, PE-111578 discharge limits, as well as Canadian, Federal and BC water quality guidelines (WQGs). The screening results are discussed in Section 3. All water quality data 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 interpretation.

Canadian, Federal and BC WQGs are not specified for dioxins and furans. The general term "dioxins and furans" refers to chlorinated dibenzo-*p*-dioxins and chlorinated dibenzofurans. A sub-set of 17 polychlorinated dibenzo-*p*-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) are typically evaluated for toxicity and the individual parameter concentrations are converted to toxic equivalent (TEQ) values that are summed and reported as a single PCDD/F TEQ parameter. To address uncertainties for results reported as not detected, two PCDD/F TEQ values are reported. A "lower-bound PCDD/F TEQ" is calculated assuming a concentration of zero for results reported as not detected, therefore, if all 17 of the individual compounds in the sub-set are not detected the lower-bound PCDD/F TEQ will equal zero. An "upper-bound PCDD/F TEQ" is calculated assuming a concentration equal to the detection limit for results reported as not detected. These two parameters span the range of possible TEQs if one or more of the sub-set of 17 individual PCDDs and PCDFs are reported as not detected.

3.2 Summary of Reported Results

Field measurements and analytical results available at the time of reporting for samples collected during the monitoring period (October 6 - 12) and for other samples that have not been previously reported are listed below in Table 3. Testing for methylmercury, dioxins and furans typically requires up to four weeks to complete. Analytical results not available at the time of reporting will be included in future weekly reports when testing is completed. Results are pending for the following samples and parameters that were collected during the monitoring period:

- WWTP-E-IN, WWTP-E-OUT, WWTP-W-IN, and WWTP-W-OUT collected September 19 (dioxins and furans)
- SW-01 and SW-04 collected September 28 (methylmercury, dioxins and furans)

- SW-02, SW-03, and SW-07 collected September 29 (methylmercury, dioxins and furans)
- IDZ-E1 and IDZ-E2 collected October 2 (methylmercury, dioxins and furans)
- SP-W-OUT collected October 8 (dioxins and furans)
- SP-E-OUT collected October 11 (methylmercury, dioxins and furans)
- SW-01, SW-02, SW-03, SW-04, and SW-07 collected October 12 (field parameters and all analytical parameters)
- IDZ-E1 and IDZ-E2 collected October 12 (field parameters and all analytical parameters)

Table 3: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #35.

Sample	Description	Sampling Date	Parameters Reported
WWTP-E-OUT	East WWTP effluent	September 19, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, and Methylmercury.
WWTP-E-IN	East WWTP influent		
WWTP-W-OUT	West WWTP effluent		
WWTP-W-IN	West WWTP influent		
WWTP-W-OUT	West WWTP effluent	September 21, 2024	Methylmercury
WWTP-W-IN	West WWTP influent		
WWTP-E-OUT	East WWTP effluent	September 23, 2024	Methylmercury
WWTP-E-IN	East WWTP influent		
IDZ-E2-0.5	Howe Sound IDZ station W2; 0.5 m below surface	September 25, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, and PAHs.
IDZ-E2-2m	Howe Sound IDZ station W2; 2 m below surface		
IDZ-E2-SF	Howe Sound IDZ station W2; 2 m above the seafloor		
WQR2-0.5	Reference site 2; 0.5 m below surface		
WQR2-2m	Reference site 2; 2 m below surface		
WQR2-SF	Reference site 2; 2 m above the seafloor		
SW-01	Lower Reach of Woodfibre Creek (near the mouth)	September 28, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
SW-04	Lower Reach of East Creek (near the outlet to the outfall culvert)		
SW-02	Upper Reach of Mill Creek (upstream of the third bridge)	September 29, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
SW-03	Lower Reach of Mill Creek (near the mouth, in the estuarine zone)		
SW-07	Upstream Mill Creek (at the diversion inlet)		
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	October 2, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
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		
SP-W-E	West Sedimentation Pond, in-pond sample, represents effluent quality	October 5, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
ESC-W-IN	West Sedimentation Pond influent, located at the TSS settling system		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	October 6, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
SP-W-E	West Sedimentation Pond, in-pond sample, represents effluent quality		
SP-W-W	West Sedimentation Pond, in-pond sample, represents influent quality		
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	October 7, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-W-OUT	West Sedimentation Pond effluent	October 8, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, and Methylmercury.
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality		Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	October 9, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-OUT	East Sedimentation Pond effluent	October 11, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	October 12, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, and PAHs.

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 Canadian, Federal and BC 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 to Table B-2 (analytical results) and Table B-3 (field measurements) of Appendix B. Screening results are summarized below for parameter concentrations that exceeded PE-111578 discharge limits and WQGs at the in-pond effluent quality station (Table 4 and Table 5).

During the monitoring period (October 6 - 12), 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.

The East Sedimentation Pond discharged intermittently on October 11 and 12 by pumping effluent to the discharge location SP-E-OUT. Field measurements and an analytical sample were collected at the SP-E-OUT sampling port on October 11 while the pond was discharging, and monitoring results met PE-111578 discharge limits and WQGs.

Field measurements were taken daily at the in-pond effluent quality station (SP-E-NE) during the monitoring period (October 6 - 12) except on October 11. Field pH ranged from 6.4 to 7.1 at SP-E-NE, while dissolved oxygen ranged from 7.02 to 9.95 mg/L, and turbidity ranged from 0.8 to 5.7 NTU (Appendix B, Table B-3).

Analytical results for the sample collected at SP-E-NE on October 6, 7, 8, 9, and 12 were available at the time of reporting. Analytical results met WQGs except nitrate measured at station SP-E-NE was above the WQG on October 6 and 7, while hexavalent chromium was above the WQG on October 6,7, and 8 (Table 5).

The East Sedimentation Pond discharged intermittently to Howe Sound on October 12 from 0:00 to 5:40, and from 11:40 to 14:40. While an effluent sample was not collected at the compliance location (SP-E-OUT) during the discharge intervals, an analytical sample was collected from SP-E-NE on October 12 (15:00) shortly after discharge ceased. The in-pond effluent quality met PE-111578 discharge limits except for total zinc (Table 4), suggesting that the effluent may have been non-compliant at the time of discharge on October 12. This potential non-compliance is tracked in Table 8. A notification will be submitted to BCER, and an NCR will be prepared.

Table 4:
Summary of Parameters Exceeding PE-111578 Discharge Limits at the In-Pond Effluent Quality Station SP-E-NE (October 6 - 12)

Parameter	Units	Discharge Limit	N	N > PE-111578 Discharge Limits	Commentary
Total Zinc	mg/L	0.0133	1	1	Total zinc measured at station SP-E-NE on October 12 was 1.3 times greater than the PE-111578 discharge limit.

N = number of samples.
Non-detect results are screened using the detection limit value.

Table 5:
Summary of Parameters Exceeding WQGs at the In-Pond Effluent Quality Station SP-E-NE (October 6 - 12)

Parameter	Units	WQG	N	N >WQG	Commentary
Nitrate	mg/L	3.7	5	2	Nitrate measured at station SP-E-NE on October 6 and 7 was 1.2 to 1.3 times greater than the long-term WQG. The nitrate concentrations met the short-term WQG (339 mg/L).
Hexavalent Chromium	mg/L	0.0015	5	3	Hexavalent Cr measured at station SP-E-NE on October 6, 7, and 8 was 1.6 to 4.1 times greater than the long-term WQG.

N = number of samples.
Non-detect results are screened using the detection limit value.

Acute toxicity test results for the September 9 SP-E-OUT sample were available at the time of reporting. 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 *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 operational minimum discharge objectives (MDOs) which the WWTP is currently being operated to meet. Contaminated contact water is directed to the WWTP influent, and it is expected that influent water is unlikely to meet the operational MDOs. The analytical results, daily field measurements, and the operational MDOs are summarized in Table C-1 through C-3 (analytical results) and Table C-4 (field measurements) of Appendix C. Screening results are summarized in Table 6 for parameter concentrations that do not meet the operational MDOs in WWTP effluent.

The East WWTP received contact water as well as recirculated water from the East Sedimentation Pond each day during the monitoring period (October 6 - 12) except on October 12 since the plant did not operate that day. The influent waters were treated by the East WWTP and discharged to

the East Sedimentation Pond. Daily field measurements were collected at the influent (WWTP-E-IN) and effluent (WWTP-E-OUT) stations from October 6 through 9, and at WWTP-E-IN on October 10 (Section 2). Analytical results for samples collected from the East WWTP influent and effluent stations on September 19 (as described in Weekly Report 32), October 6 through October 9 were available at the time of reporting.

Field pH ranged from 6.3 to 6.7 at WWTP-E-IN during the monitoring period (October 6 - 12), while dissolved oxygen ranged from 6.28 to 9.93 mg/L, and turbidity ranged from 0.73 to 4.29 NTU (Appendix C, Table C-4). Field pH, dissolved oxygen, and turbidity in the East WWTP effluent (WWTP-E-OUT) ranged from pH 5.9 to 9.2, 5.00 to 6.04 mg/L, and 0.37 to 4.61 NTU, respectively.

Effluent quality monitored at WWTP-E-OUT during the monitoring period (October 6 - 12) achieved operational MDOs for all parameters except for pH (October 6), total zinc (October 7 and 8), and hexavalent chromium (October 6 and 7; Table 6).

Methylmercury analytical results were available at the time of reporting for the East WWTP influent and effluent samples collected on September 19 and 23 (as discussed in Weekly Reports 32 and 33). The methylmercury concentrations varied from 0.000149 and 0.000175 µg/L at WWTP-E-IN, and from 0.000108 to 0.000174 µg/L at WWTP-E-OUT.

Table 6:
Summary of Parameters Outside Operational Minimum Discharge Objectives (MDOs) at East WWTP Effluent Station WWTP-E-OUT (October 6 - 12).

Parameter	Units	MDO	N	N >MDO	Commentary
Field pH	s.u.	5.5 – 9.0	4	1	Field pH measured in the October 6 effluent sample (pH 9.2) was above the upper limit of the operational MDO.
Total Zinc	mg/L	0.0133	4	2	The total zinc concentrations in the October 7 (0.0301 mg/L) and October 8 (0.0373 mg/L) effluent samples were 2.3 to 2.8 times the operational MDO.
Hexavalent Chromium	mg/L	0.0015	4	2	The total hexavalent chromium concentrations in the October 6 (0.0128 mg/L) and October 7 (0.00502 mg/L) effluent samples were 3.3 to 8.5 times the operational MDO.

MDO = minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.
N = number of samples.
Non-detect results are screened using the detection limit value.

3.5 West Sedimentation Pond

The West Sedimentation Pond influent and effluent results are screened against PE-111578 discharge limits. Parameters without a discharge limit are screened against Canadian, Federal and BC 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, discharge limits and WQGs are summarized in Table D-1 (in-pond and effluent analytical results),

Table D-2 (influent analytical results), Table D-3 (effluent methylmercury results), and Table D-4 (field measurements) of Appendix D.

The West Sedimentation Pond discharged on October 8 by pumping effluent to the discharge location SP-W-OUT. Field measurements and an analytical sample were collected while the pond was discharging, and monitoring results met PE-111578 discharge limits and WQGs.

Field measurements were collected at the in-pond stations (SP-W-W and SP-W-E) on October 6 and 8 (pH and turbidity only). Field pH ranged from 8.4 to 8.9, while dissolved oxygen ranged from 8.76 to 9.67 mg/L, and turbidity ranged from 4.10 to 5.36 NTU at SP-W-W and SP-W-E (Appendix D, Table D-4).

Analytical results were available at the time of reporting for samples collected at the pond influent station (ESC-W-IN) and in-pond effluent station (SP-W-E) on October 5 (as discussed in Weekly Report #34). The October 5 influent and effluent samples met PE-111578 discharge limits and long-term WQGs.

Analytical results were available at the time of reporting for samples collected at the in-pond stations (SP-W-W and SP-W-E) on October 6, and results met PE-111578 discharge limits and long-term WQGs.

3.6 West Wastewater Treatment Plant

The West WWTP influent and effluent results are screened against the operational MDOs which the WWTP is currently being operated to meet. Contaminated contact water is directed to the WWTP influent, and it is expected that influent water is unlikely to meet the operational MDOs. The analytical results and the operational MDOs for the West WWTP pilot testing are summarized in Table E-1 and E-2 (analytical results) of Appendix E.

The West WWTP was not active during the monitoring period and pilot trials are currently suspended. Field measurements and analytical samples were not collected during the monitoring period at the influent (WWTP-W-IN) and effluent (WWTP-W-OUT) stations.

Analytical results for samples collected from the East WWTP influent and effluent stations on September 19 (as described in Weekly Report #32) were available at the time of reporting. Effluent quality monitored at WWTP-W-OUT achieved operational MDOs.

3.7 Non-Contact Water Diversion Ditch Outlets

Non-contact water diversion ditch samples are screened against Canadian, Federal and BC WQGs for the protection of freshwater 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.

Water quality results were not available for the non-contact water diversion ditch outlets at the time of reporting. East Creek water was temporarily diverted to OUT-11 on September 17 to facilitate replacement of the OUT-12 culvert through which East Creek previously discharged; therefore, water quality monitored at OUT-11 should be the same East Creek water quality monitored at freshwater receiving environment station SW-04. Station OUT-11 will not be monitored while East Creek is diverted through the OUT-11 culvert.

3.8 Freshwater and Estuarine Water Receiving Environment

Freshwater and estuarine water receiving environment samples are screened against Canadian, Federal and BC WQGs for the protection of freshwater and estuarine 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 and G.

Analytical results were available at the time of reporting for the September 28 and 29 freshwater and estuarine water samples (as discussed in Weekly Report #33 and #34, respectively) collected near the mouth of Woodfibre Creek (station SW-01) and East Creek on September 28 (SW-04), and Mill Creek (station SW-02 and SW-07) and the Mill Creek Estuary (station SW-03) on September 29. These samples reflect the first samples of the high-frequency (5-in-30) monitoring program for fall 2024.

Parameter concentrations met WQGs except pH, total aluminum, total iron, and dissolved copper in one or more samples. Field pH was below the lower limit of the applicable WQG at SW-01 (pH 5.5), SW-03 (pH 6.9), and SW-07 (pH 5.9). Total aluminum was above the calculated WQG in samples collected from SW-01 (0.126 mg/L) and SW-07 (0.0506 mg/L) and total iron was above the WQG in the sample collected from SW-04 (0.345 mg/L). Dissolved copper was above the calculated guideline at Woodfibre Creek, East Creek and Mill Creek stations, ranging from 0.00024 to 0.00071 mg/L.

The observed pH and concentrations of total aluminum and dissolved copper were within concentration ranges observed in the pre-construction baseline monitoring program for the freshwater and estuarine water receiving environment stations. The total iron concentration observed at the East Creek station (SW-04) on September 28 was 1.3 times greater than the maximum concentration observed in the pre-construction baseline monitoring program at East Creek (0.273 mg/L; Table 7). A reanalysis for total iron has been requested with the laboratory. This item is tracked in Table 8.

Table 7:
Summary of Parameters Exceeding WQGs at Freshwater Receiving Environment Locations and Outside of Values Observed in the Pre-Construction Baseline Monitoring Program

Parameter	Units	WQG	N	N >WQG	Commentary
T-Fe	mg/L	0.3	4	1	The total iron concentration measured in East Creek (SW-04) on September 28 was 1.2 times greater than the WQG and the total iron concentration at SW-04 was 1.3 times greater than the maximum concentration observed in the pre-construction baseline monitoring program (0.273 mg/L).

N = number of samples.
Non-detect results are screened using the detection limit value.

3.9 Marine Water Receiving Environment

Marine water receiving environment samples are screened against Canadian, Federal and BC 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 H.

Analytical results were available at the time of reporting for the September 25 marine receiving environment samples collected at IDZ-W2 and WQR2 (as discussed in Weekly Report #33) and the October 2 samples collected at IDZ-E1 and IDZ-E2 (as discussed in Weekly Report #34) at 0.5 and 2 m below the water surface and 2 m above the seafloor. Samples were not collected at IDZ-E2 at 2 m above the seafloor on October 2 due to equipment malfunction on that day. Parameter concentrations met WQGs except pH, dissolved oxygen, total boron, and total copper in one or more samples. Field pH was below the lower limit of the WQG (pH 7.0) in the marine reference station WQR2 sample collected 0.5 m below the surface (pH 6.3) and dissolved oxygen was below the lower limit of the WQG (>8 mg/L) in the IDZ-W2, WQR2, and IDZ-E1 samples collected at 2 m above the seafloor. The total copper concentration measured in the IDZ-W2 sample collected at 2 m below the surface (0.00237 mg/L) was above the long-term WQG (0.0020 mg/L). The observed pH, dissolved oxygen and total copper concentrations were within the concentration ranges observed in the pre-construction baseline monitoring program for the marine reference stations.

Methylmercury analytical results were available at the time of reporting for the marine water receiving environment reference stations WQR1 and WQR2 collected on August 26 (as discussed in Weekly Report #29). The original reported methylmercury results were reported with raised detection limits above the typically reported detection limit for methylmercury (<0.000020 µg/L) due to method blank contamination. A follow-up investigation and reanalysis were conducted with the laboratory. This item is tracked in Table 8. Although resolution was achieved to correct the

method blank contamination, upon reanalysis, the samples collected at WQR1, and the sample collected at 2 m above the seafloor were reported to have matrix interferences that required the detection limit to be raised (<0.000080 µg/L) above the typically reported detection limit for methylmercury. The methylmercury concentrations were reported with a raised detection limit (<0.000080 µg/L) for all WQR1 samples, and the sample collected 2 m above the seafloor at WQR2. The methylmercury concentration in samples collected at WQR2 at 0.5 m and 2 m below the surface were 0.000022 µg/L and <0.000020 µg/L, respectively. The methylmercury concentration of a sample is used to calculate the total mercury long-term WQG and the total mercury met the WQG in the WQR1 and WQR2 samples collected August 26. The methylmercury concentrations were within the concentration ranges observed in the pre-construction baseline monitoring program for the marine reference stations.

4. Quality Control

This section presents the results of the quality control (QC) evaluation for the PE-111578 weekly report (Table 8). 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 Section 3 are also tracked in Table 8. Any items flagged for follow-up are carried forward to future reports until they are closed.

Table 8: Weekly Report QC Evaluations and Ongoing Items

QC Procedure	Observation	Investigation/Resolution
Reporting Period (October 6 - 12, Report #35)		
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 pilot testing is currently suspended. The West Sedimentation Pond is commissioned for discharge as of October 8. 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. The lower reach of East Creek is temporarily diverted through OUT-11 outfall since September 17 to facilitate replacement of the East Creek outfall culvert (OUT-12). This item remains open.
Monitoring Program Evaluation	Sampling was not conducted as prescribed in PE-111578 on occasion.	Field measurements were not collected as per the monitoring requirements in PE 111578 at the West WWTP effluent station (WWTP-E-OUT; October 10) and at SP-E-OUT (October 12) during the monitoring period. An analytical sample was collected at WWTP-E-OUT on October 10; however, daily field parameters were not collected due to a field probe malfunction. Field parameters and an analytical sample were collected at SP-E-OUT on October 11; however, field staff were unable to collect the daily field measurements at SP-E-OUT prior to ceasing discharge on October 12 due to a field probe malfunction. Daily field parameters were collected from the in-pond effluent quality station (SP-E-NE). A resolution for the field probe malfunction is being investigated by field staff. This item remains open.
Potential Non-Compliant Effluent	Potentially non-compliant effluent was discharged from the East Sedimentation Pond on October 12.	Discharge occurred on October 11 from 13:20 and ceased at 5:40 on October 12. Discharge was restarted from 11:40 to 14:40 on October 12. An analytical sample collected on October 11 from SP-E-OUT at 14:30 met PE-111578 discharge limits and WQGs. An analytical sample was collected from the in-pond effluent quality station SP-E-NE on October 12 at 15:00, after the October 12 discharge had ceased and met PE-111578 discharge limits and WQGs except for T-Zn at 1.3 times the discharge limit, suggesting effluent may have been non-complaint at the time of discharge on October 12. A notification of potential non-compliance will be submitted to the BCER, and a non-compliance report (NCR) will be prepared.
Data QC	Weekly Report #32 indicated that total mercury was above the calculated long-term WQG in the sample collected September 8 and 17 at SP-E-OUT.	The total mercury long-term WQG is calculated using the methylmercury result for the sample. Weekly Report #32 (Table 4) indicated that total mercury was not detected; however, after receipt of the methylmercury result from which the sample specific T-Hg WQG is calculated, it was determined that the detection limit was above the calculated long-term WQG for total mercury. The true total mercury concentration was not known and therefore, comparison to the long-term WQG could not be completed. This is considered a quality control issue. Follow-up with the lab indicates a specialized testing for a lower detection limit can be provided though it will take longer to complete this testing compared to the routine test method. The monitoring program is being revised to utilize a more sensitive test method for T-Hg. This item remains open.
Potential Project Influence on Receiving Environment	Total iron reported for East Creek freshwater receiving environment station SW-04 was above concentration ranges observed in the pre-construction baseline program.	The total iron concentration observed at the East Creek station (SW-04) on September 28 was 1.3 times the maximum concentration observed in the pre-construction baseline monitoring program at East Creek. A reanalysis for total iron has been requested with the laboratory. A further investigation is underway with the QEP. This item remains open.
Pending Data	Analytical results for samples collected October 12 were not reported. Methylmercury, dioxins and furans results for samples collected October 8 and 11 were not reported.	Analytical results for samples collected October 12 were not complete at the time of Report #35 preparation. Methylmercury, dioxins and furans results for samples collected October 8 (dioxins and furans only) and October 11 were not complete at the time of Report #35 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Ongoing Items from Previous Weekly Reports		
Report #29: Pending Data	Analytical results for samples collected at marine reference stations on August 26 and the estuarine receiving environment on August 28 were not reported.	Available analytical results for samples collected from the marine reference stations on August 26 and the estuarine receiving environment station on August 28 are discussed in Sections 3.9 and 3.8 of Report #31, respectively. Dioxins and furans results are discussed in Sections 3.8 and 3.9 of Report #33. Methylmercury results for the sample collected August 28 are discussed in Section 3.8 of Report #34 and results for samples collected August 26 are discussed in Section 3.9 of Report #35. This item is closed.
Report #32: Pending Data	Analytical results were not reported for samples collected September 18, 19 and 21.	Available analytical results for samples collected September 18 and 21 are discussed in Sections 3.9 and 3.6 of Report #33, respectively. Analytical results for samples collected September 19 and methylmercury results are discussed in Sections 3.4 and 3.6 of Report #35. Analytical results for dioxins and furans were not complete at the time of Report #35 preparation. Testing of dioxins and furans 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 #33: Pending Data	Analytical results for samples collected September 24, 27 and 28 were not reported.	Analytical results for samples collected September 24, 27, and 28 are discussed in Sections 3.3, 3.4, 3.5 and 3.9 of Report #34. Analytical results for samples collected September 28 from freshwater receiving environment stations (SW-01 and SW-04) are discussed in Section 3.8 of Report #35. Analytical results for methylmercury, dioxins and furans were not complete at the time of Report #35 preparation. Testing of methylmercury, dioxins and furans typically requires up to 4 weeks to complete. The pending results will be included in future weekly reports when available. This item remains open.
	Methylmercury, dioxins and furans results were not reported for samples collected September 23.	Methylmercury results are discussed in Section 3.4 of Report #35. Analytical results for dioxins and furans were not complete at the time of Report #35 preparation for samples collected September 23. Testing of dioxins and furans 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 #33: Data QC	Raised detection limits for methylmercury have been reported due to method blank contamination observed during analytical testing.	The reported detection limit for methylmercury has been raised above the routine detection limit in some samples due to method blank contamination observed during the analytical testing. Reanalysis of samples that were affected by the raised detection limits have been completed. Upon reanalysis, samples collected from reference station WQR1 and WQR2 on August 26 were reported to have matrix interferences that resulted in raised detection limits above the typically reported detection limit for methylmercury (<0.000020 µg/L). This item is closed.
Report #34: Pending Data	Analytical results for samples collected September 29, October 2, 3, and 4 were not reported. Dioxins and furans results for samples collected October 1 were not reported.	Available analytical results for samples collected September 29 and IDZ samples collected October 2 are discussed in Sections 3.8 and 3.9, respectively, of Report #35. Analytical results for samples collected October 2, 3, and 4 were not complete at the time of Report #35 preparation. Methylmercury, dioxin and furan results for samples collected September 29, October 1, 2, 3, and 4 were not complete at the time of Report #35 preparation. Testing of methylmercury, dioxins and furans typically requires up to 4 weeks to complete. The pending results will be included in future weekly reports when available. This item remains open.

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 operational MDOs.
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.

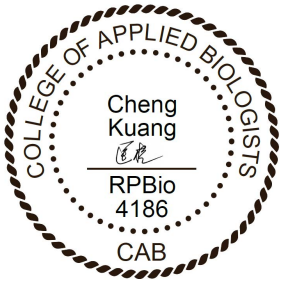
5. Closure

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.

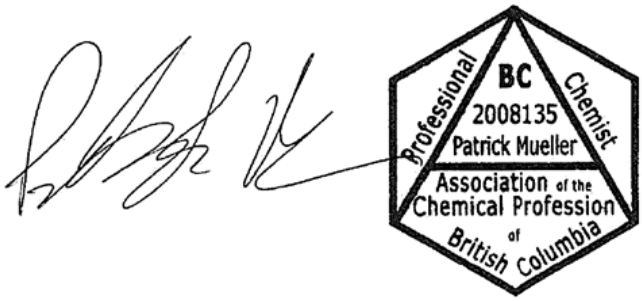
Regards,

LORAX ENVIRONMENTAL SERVICES LTD.

Holly Pelletier, B.Sc., GIT.
Environmental Geoscientist



Cheng Kuang, M.Sc., RPBio.
Environmental Scientist



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

LEGEND

- Freshwater Monitoring Station
- Marine Water Monitoring Station
- Certified Project Area
- Watercourse
- Non Contact Ditch (Under Construction)
- Outfall
- Clean Water Diversion Discharge Station
- Sedimentation Pond Monitoring Stations (Water Quality)
- Wastewater Treatment Plant (WWTP)

DATE SAVED:	Oct 18, 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 (October 12, 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

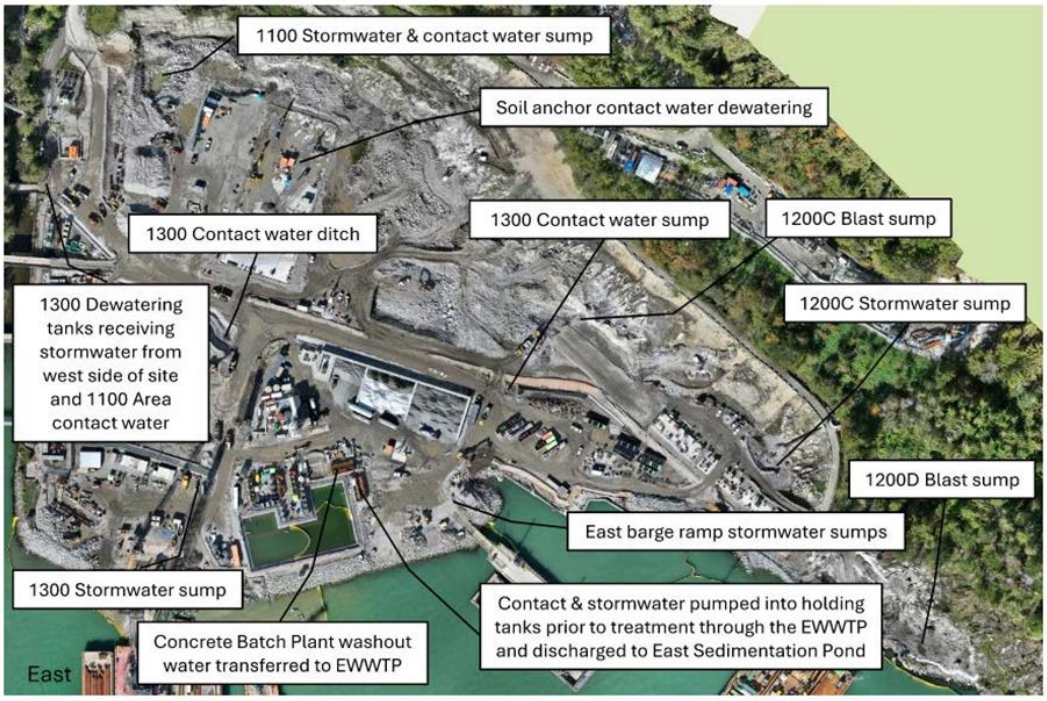


Figure 2: East Catchment dewatering areas. Contact water from the 1100, 1200C, and 1300 Areas and the hydrovac dump was directed to the East WWTP during the monitoring period (October 6 - 12).

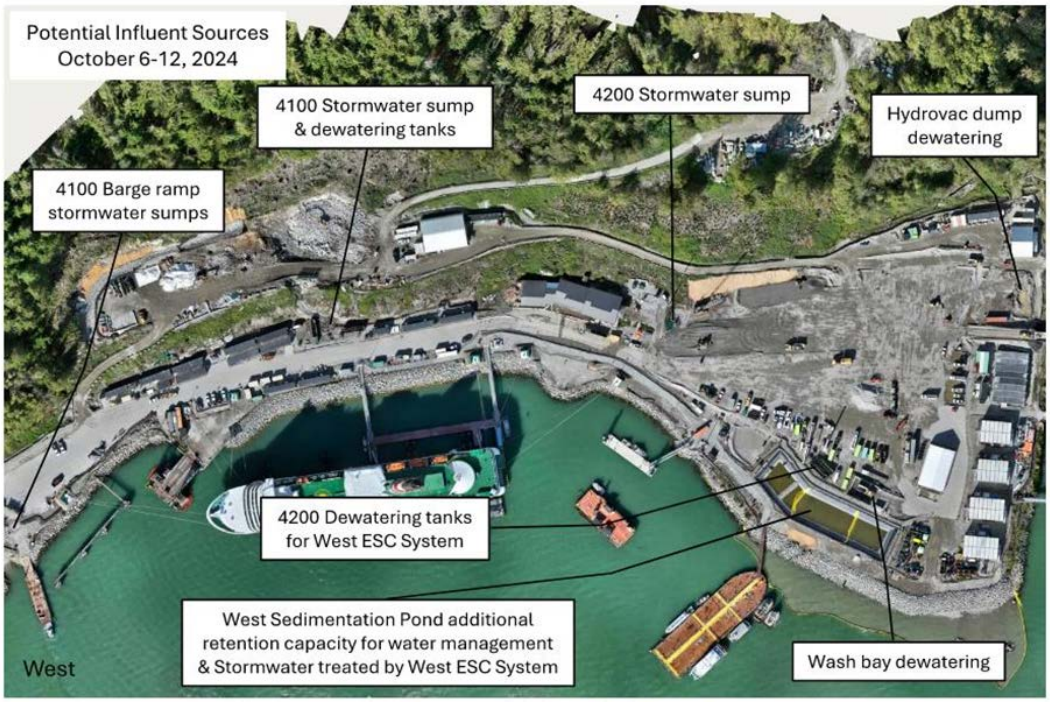


Figure 3: West Catchment dewatering areas. Non-contaminated contact water from the 4100 Area was directed to the West Sedimentation Pond during the monitoring period (October 6 - 12).

Figure 4: Aerial view of the East Sedimentation Pond showing the placement of two sediment curtains (October 11, 2024). The East WWTP is located on the left side of the pond.

Figure 5: Aerial view of the West Sedimentation Pond showing the placement of two sediment curtains (October 11, 2024). The West WWTP is located on the right side of the pond.

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]		PE-111578 Discharge Limit	East Sedimentation Pond			
					In-Pond at Effluent Location	In-Pond at Effluent Location	In-Pond at Effluent Location	In-Pond at Effluent Location
					SP-E-NE	SP-E-NE	SP-E-NE	SP-E-NE
					VA24C6597-001	VA24C6674-003	VA24C6834-003	VA24C6990-001
		Long Term	Short Term		10/6/2024 9:42	10/7/2024 15:19	10/8/2024 16:24	10/9/2024 15:59
General Parameters								
pH - Field	pH units	- [2]	-	5.5 - 9.0	6.5	6.4	6.4	6.6
Conductivity - Field	µS/cm	-	-	-	1331	1363	1302	1464
Temperature - Field	℃	-	-	-	13.6	15.4	15.6	15.4
Salinity - Field	ppt	-	-	-	0.87	0.85	0.81	0.92
Turbidity - Field	NTU	-	-	-	3.56	0.8	5.31	3.88
TSS	mg/L	-	-	25	<3.0	<3.0	<3.0	3.4
Dissolved Oxygen - Field	mg/L	>=8	-	-	8.29	8.85	***7.74***	***7.02***
Anions and Nutrients								
Sulphate	mg/L	-	-	-	499	450	336	588
Chloride	mg/L	-	-	-	24.2	22.7	25.1	24.8
Fluoride	mg/L	-	1.5	-	<0.200	<0.200	<0.200	<0.200
Ammonia (N-NH_3)	mg/L	Variable [3]	Variable [3]	-	0.118	0.0376	0.0352	0.0169
Nitrite (N-NO_2)	mg/L	-	-	-	0.646	0.536	0.359	0.244
Nitrate (N-NO_3)	mg/L	3.7	339	-	***4.74***	***4.53***	3.27	3.26
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	-	0.841	0.347	0.445	0.721
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00309	0.00309	0.00315	0.00278
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00211	0.00167	0.00201	0.00211
Barium, total (T-Ba)	mg/L	-	-	-	0.00803	0.00663	0.00576	0.00671
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.047	0.036	0.064	0.070
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000350	<0.0000450	<0.0000300	<0.0000350
Chromium, total (T-Cr)	mg/L	-	-	-	0.00634	0.00516	0.00376	0.00226
Cobalt, total (T-Co)	mg/L	-	-	-	0.00082	0.0007	0.00057	0.00056
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00306	0.00168	0.00189	0.00283
Iron, total (T-Fe)	mg/L	-	-	-	0.117	0.049	0.118	0.172
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000569	0.000212	0.000401	0.000783
Manganese, total (T-Mn)	mg/L	-	-	-	0.0196	0.00614	0.00698	0.0098
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	<0.0000050	<0.0000050	<0.0000050	0.0000062
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0968	0.0994	0.0900	0.0707
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00100	<0.00100	<0.00100	<0.00100
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000521	0.000682	0.000512	0.000481
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000020	<0.000020	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000020	<0.000020	<0.000020	<0.000020
Uranium, total (T-U)	mg/L	-	-	-	0.0267	0.0251	0.0223	0.0236
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00762	0.00640	0.00693	0.00672
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0094	<0.0060	0.0063	0.0097
Hexavalent Chromium, total	mg/L	0.0015	-	-	***0.00611***	***0.00422***	***0.00238***	0.00080
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000350	<0.0000300	<0.0000200	<0.0000250
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00181	0.00132	0.00157	0.00166
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.021	<0.020	<0.020	<0.020
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000100	<0.000100	<0.000100	<0.000100
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.018	0.00525	0.00456	0.0059
Nickel, dissolved (D-Ni)	mg/L	-	-	-	0.00231	<0.00100	<0.00100	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0753	0.0804	0.0648	0.0712
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00718	0.00592	0.00645	0.00589
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0080	0.0038	0.0045	0.0062
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<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	0.0001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050	<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 PE-11578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond discharged during the monitoring period (October 6 - 12) on October 11 and October 12.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.
[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, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

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

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	East Sedimentation Pond	
					Effluent	In-Pond at Effluent Location
					SP-E-Out	SP-E-NE
					VA24C7317-001	VA24C7382-001
		Long Term	Short Term		10/11/2024 14:30	10/12/2024 15:00
General Parameters						
pH - Field	pH units	- [2]	-	5.5 - 9.0	6.6	7.1
Conductivity - Field	µS/cm	-	-	-	1161	1138
Temperature - Field	°C	-	-	-	14.3	12.7
Salinity - Field	ppt	-	-	-	0.74	0.75
Turbidity - Field	NTU	-	-	-	3.19	3.15
TSS	mg/L	-	-	25	<3.0	4.7
Dissolved Oxygen - Field	mg/L	>=8	-	-	12.78	9.95
Anions and Nutrients						
Sulphate	mg/L	-	-	-	833	217
Chloride	mg/L	-	-	-	27.8	44.4
Fluoride	mg/L	-	1.5	-	<0.400	0.185
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	0.0238	0.0904
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	0.116	0.0926
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	2.59	1.12
Total Metals						
Aluminum, total (T-Al)	mg/L	-	-	-	0.462	0.399
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.0027	0.00219
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00161	0.00237
Barium, total (T-Ba)	mg/L	-	-	-	0.0189	0.0137
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.083	0.059
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000350	0.0000233
Chromium, total (T-Cr)	mg/L	-	-	-	0.00144	0.00137
Cobalt, total (T-Co)	mg/L	-	-	-	0.00048	0.00036
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00225	0.0029
Iron, total (T-Fe)	mg/L	-	-	-	0.25	0.249
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000988	0.000903
Manganese, total (T-Mn)	mg/L	-	-	-	0.028	0.024
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0621	0.0579
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00100	0.00055
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000425	0.000293
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000020	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000020	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.022	0.0282
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00414	0.00488
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0132	0.0171
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00059	0.0006
Dissolved Metals						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000325	<0.0000200
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00132	0.00198
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.020	0.034
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000131	0.000208
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.0256	0.0140
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00100	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.201	0.102
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00319	0.00429
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0120	0.0111
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	-
Ethylbenzene	mg/L	0.25	-	-	<0.00050	-
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<0.00050	-
Styrene	mg/L	-	-	-	<0.00050	-
Toluene	mg/L	0.215	-	-	<0.00040	-
Total Xylenes	mg/L	-	-	-	<0.00050	-
Chlorobenzene	mg/L	0.025	-	-	<0.00050	-
1,2-Dichlorobenzene	mg/L	0.042	-	-	<0.00050	-

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 PE-11578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond discharged during the monitoring period (October 6 - 12) on October 11 and October 12.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.
[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, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

Table B-3: Summary of East Sedimentation Pond Daily Field Parameters October 6 - 12.

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		-	-	-	-	5.5 - 9.0	-	-	-[3]
Lowest Applicable Guideline [1]		-	>=8	-	-	-[2]	-	-	-
Station ID [4]	**Date**								
SP-E-NE	10/6/2024 9:42	13.6	8.29	0.87	3.56	6.5	1331	No	0
SP-E-NE	10/7/2024 15:19	15.4	8.85	0.85	0.80	6.4	1363	No	0
SP-E-NE	10/8/2024 16:24	15.6	***7.74***	0.81	5.31	6.4	1302	No	0
SP-E-NE	10/9/2024 15:59	15.4	***7.02***	0.92	3.88	6.6	1464	No	0
SP-E-NE	10/10/2024 17:02	15.2	8.86	1.14	5.70	6.4	1791	No	0
SP-E-OUT	10/11/2024 15:19	14.3	12.78	0.74	3.19	6.6	1161	No	899
SP-E-NE	10/12/2024 9:16	12.7	9.95	0.75	3.15	7.1	1138	No	699
SP-E-NW	10/12/2024 9:24	12.2	***7.14***	0.72	6.89	7.4	1077	No	

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 PE-11578 East Sedimentation Pond Discharge Limit.
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.
The East Sedimentation Pond discharged during the monitoring period (October 6 - 12) on October 11 and October 12.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] 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.
[4] The sedimentation pond did not receive non-contaminated contact water influent October 6 – October 11, therefore daily measurements for station SP-E-IN-2 were not collected. The East Sedimentation Pond discharged on October 11 from 13:20 to 05:40 on October 12 and resumed at 11:40 to 14:40 on October 12. Daily field measurements, and an analytical sample were collected on October 11. Daily field measurements were not collected from SP-E-OUT on October 12 as field staff was not able to collect field measurements before discharge ceased on October 12 due to a field probe malfunction; however, field measurements were collected from the in-pond effluent quality station SP-E-NE on October 12. The East Sedimentation Pond did not discharge October 6 - 10, 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.

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	Operational Minimum Discharge Objective [1]	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
			VA24C4921-004	VA24C4921-003	VA24C6597-002	VA24C6597-003	VA24C6674-001	VA24C6674-002
			2024-09-19 9:45	2024-09-19 10:15	2024-10-06 9:44	2024-10-06 10:37	2024-10-07 15:29	2024-10-07 15:35
General Parameters								
pH - Field	pH units	5.5 – 9.0	7.1	6.8	6.7	***9.2***	6.3	6.4
Conductivity - Field	µS/cm	-	1272	1212	1337	1246	1365	1475
Temperature - Field	℃	-	20.3	20	13	14	15.5	15.5
Salinity - Field	ppt	-	0.64	0.67	0.87	0.8	0.85	0.92
Turbidity - Field	NTU	-	3.4	3.25	4.29	0.37	0.82	0.4
TSS	mg/L	-	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	-	8.04	6.94	8.96	5.00	8.76	-[2]
Anions and Nutrients								
Sulphate	mg/L	-	72.1	71.7	533	502	451	468
Chloride	mg/L	-	80.6	85.8	23.1	20.5	22.7	22.3
Fluoride	mg/L	-	0.24	0.24	<0.200	<0.200	<0.200	<0.200
Ammonia ($N\text{-}NH_3$)	mg/L	-	<0.0050	0.0065	0.126	0.0555	0.0375	0.0247
Nitrite ($N\text{-}NO_2$)	mg/L	-	<0.0050	<0.0050	0.682	0.596	0.531	0.535
Nitrate ($N\text{-}NO_3$)	mg/L	-	<0.0250	<0.0250	4.96	4.56	4.53	4.78
Total Metals								
Aluminum, total (T-Al)	mg/L	-	0.212	0.243	0.892	0.65	0.347	0.344
Antimony, total (T-Sb)	mg/L	-	0.00193	0.00201	0.00311	0.00305	0.00322	0.00305
Arsenic, total (T-As)	mg/L	0.0125	0.00217	0.00227	0.00193	0.00151	0.00175	0.00152
Barium, total (T-Ba)	mg/L	-	0.00594	0.00537	0.00761	0.00382	0.00672	0.00561
Beryllium, total (T-Be)	mg/L	0.1	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	0.104	0.105	0.048	0.033	0.036	0.032
Cadmium, total (T-Cd)	mg/L	0.00012	<0.0000200	<0.0000200	<0.0000250	<0.0000300	<0.0000500	<0.0000550
Chromium, total (T-Cr)	mg/L	-	0.0009	0.00083	0.00673	0.0126	0.00523	0.00517
Cobalt, total (T-Co)	mg/L	-	<0.00010	<0.00010	0.00085	0.00071	0.00068	0.00065
Copper, total (T-Cu)	mg/L	0.0043	0.0017	0.00207	0.00304	0.0025	0.00294	0.00327
Iron, total (T-Fe)	mg/L	-	0.082	0.073	0.113	0.037	0.046	0.027
Lead, total (T-Pb)	mg/L	0.0035	0.0004	0.000293	0.000855	0.000284	0.000653	0.00029
Manganese, total (T-Mn)	mg/L	-	0.00426	0.00245	0.021	0.00346	0.00575	0.00156
Mercury, total (T-Hg)	mg/L	0.000016	0.0000058	<0.0000050	0.0000058	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	0.0674	0.0699	0.1	0.14	0.105	0.103
Nickel, total (T-Ni)	mg/L	0.0083	<0.00050	<0.00050	<0.00100	<0.00100	<0.00100	<0.00100
Selenium, total (T-Se)	mg/L		0.00026	0.00021	0.000656	0.000678	0.000608	0.000592
Silver, total (T-Ag)	mg/L	0.0015	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020
Uranium, total (T-U)	mg/L	-	0.0532	0.0573	0.0264	0.0244	0.025	0.0247
Vanadium, total (T-V)	mg/L	0.0081	0.00435	0.00517	0.0078	0.00574	0.00641	0.00654
Zinc, total (T-Zn)	mg/L	0.0133	0.0044	0.0098	***0.0143***	0.0130	0.0116	***0.0301***
Hexavalent Chromium, total	mg/L	0.0015	<0.00050	<0.00050	***0.00621***	***0.0128***	***0.00427***	***0.00502***
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	0.00012	0.0000156	0.0000156	<0.0000300	<0.0000300	<0.0000300	<0.0000200
Copper, dissolved (D-Cu)	mg/L	-	0.00136	0.00108	0.0022	0.00162	0.0019	0.00135
Iron, dissolved (D-Fe)	mg/L	-	0.013	0.013	<0.020	<0.020	<0.020	<0.020
Lead, dissolved (D-Pb)	mg/L	-	0.000168	0.000055	0.00014	<0.000100	0.000239	<0.000100
Manganese, dissolved (D-Mn)	mg/L	-	0.0022	0.00056	0.017	0.00183	0.00476	0.00123
Nickel, dissolved (D-Ni)	mg/L	-	<0.00050	<0.00050	<0.00100	<0.00100	<0.00100	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	0.0839	0.0838	0.0714	0.042	0.0809	0.0677
Vanadium, dissolved (D-V)	mg/L	-	0.00357	0.00454	0.0071	0.00578	0.00593	0.00621
Zinc, dissolved (D-Zn)	mg/L	-	0.005	0.0053	0.0090	0.0055	0.0064	0.0073
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Naphthalene	mg/L	0.001	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050	<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	0.44	<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	-	<0.00050	<0.00050	-	-	-	-
1,2-Dichlorobenzene	mg/L	-	<0.00050	<0.00050	-	-	-	-

Notes:
[1] Operational minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.
[2] Field measurement for dissolved oxygen was not recorded due to a field probe malfunction.
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	Operational Minimum Discharge Objective [1]	East WWTP			
			Influent	Effluent	Influent	Effluent
			WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
			VA24C6834-004	VA24C6834-005	VA24C6990-002	VA24C6990-003
			2024-10-08 16:46	2024-10-08 16:59	2024-10-09 16:18	2024-10-09 16:40
General Parameters						
pH - Field	pH units	5.5 – 9.0	6.4	6.3	6.5	5.9
Conductivity - Field	µS/cm	-	1306	1444	1527	1817
Temperature - Field	℃	-	15.7	15.8	15.8	15.5
Salinity - Field	ppt	-	0.8	0.89	0.95	1.14
Turbidity - Field	NTU	-	3.39	4.61	3.07	0.69
TSS	mg/L	-	<3.0	<3.0	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	-	6.28	6.04	8.94	5.77
Anions and Nutrients						
Sulphate	mg/L	-	382	566	604	877
Chloride	mg/L	-	23.5	20.4	24.7	22.6
Fluoride	mg/L	-	<0.200	<0.200	<0.200	<0.400
Ammonia ($N\text{-}NH_3$)	mg/L	-	0.0312	0.0203	0.0249	0.0103
Nitrite ($N\text{-}NO_2$)	mg/L	-	0.378	0.354	0.244	<0.0200
Nitrate ($N\text{-}NO_3$)	mg/L	-	3.47	2.77	3.31	3.01
Total Metals						
Aluminum, total (T-Al)	mg/L	-	0.398	0.583	0.771	0.361
Antimony, total (T-Sb)	mg/L	-	0.00307	0.00289	0.00288	0.00271
Arsenic, total (T-As)	mg/L	0.0125	0.00194	0.00189	0.00221	0.00107
Barium, total (T-Ba)	mg/L	-	0.00533	0.00539	0.00685	0.00781
Beryllium, total (T-Be)	mg/L	0.1	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	0.065	0.068	0.075	0.058
Cadmium, total (T-Cd)	mg/L	0.00012	<0.0000300	<0.0000250	<0.0000250	<0.0000200
Chromium, total (T-Cr)	mg/L	-	0.00382	0.0036	0.00228	<0.00100
Cobalt, total (T-Co)	mg/L	-	0.00059	0.0006	0.00058	0.00044
Copper, total (T-Cu)	mg/L	0.0043	0.00269	0.00368	0.00364	0.00121
Iron, total (T-Fe)	mg/L	-	0.074	0.22	0.155	0.054
Lead, total (T-Pb)	mg/L	0.0035	0.000604	0.00127	0.000856	0.000238
Manganese, total (T-Mn)	mg/L	-	0.00551	0.00814	0.00986	0.00241
Mercury, total (T-Hg)	mg/L	0.000016	0.0000058	0.0000064	0.0000065	0.000006
Molybdenum, total (T-Mo)	mg/L	-	0.0904	0.0832	0.0742	0.0701
Nickel, total (T-Ni)	mg/L	0.0083	<0.00100	<0.00100	<0.00100	<0.00100
Selenium, total (T-Se)	mg/L		0.00061	0.00055	0.000523	0.000546
Silver, total (T-Ag)	mg/L	0.0015	<0.000020	<0.000020	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	<0.000020	<0.000020	<0.000020	<0.000020
Uranium, total (T-U)	mg/L	-	0.0217	0.0225	0.0253	0.024
Vanadium, total (T-V)	mg/L	0.0081	0.00685	0.00569	0.00728	0.00289
Zinc, total (T-Zn)	mg/L	0.0133	0.0099	***0.0373***	0.0120	0.0084
Hexavalent Chromium, total	mg/L	0.0015	***0.00258***	0.00087	0.00088	<0.00050
Dissolved Metals						
Cadmium, dissolved (D-Cd)	mg/L	0.00012	<0.0000200	<0.0000250	<0.0000250	<0.0000200
Copper, dissolved (D-Cu)	mg/L	-	0.00208	0.00505	0.00206	0.00103
Iron, dissolved (D-Fe)	mg/L	-	<0.020	0.111	<0.020	<0.020
Lead, dissolved (D-Pb)	mg/L	-	0.000195	0.000666	<0.000100	<0.000100
Manganese, dissolved (D-Mn)	mg/L	-	0.00415	0.00502	0.00682	0.0017
Nickel, dissolved (D-Ni)	mg/L	-	<0.00100	<0.00100	<0.00100	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	0.0658	0.0637	0.0783	0.106
Vanadium, dissolved (D-V)	mg/L	-	0.00649	0.00515	0.00644	0.00282
Zinc, dissolved (D-Zn)	mg/L	-	0.0073	0.299	0.0078	0.0068
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	<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	0.0001	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	<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	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)						
Benzene	mg/L	0.11	-	-	-	-
Ethylbenzene	mg/L	0.25	-	-	-	-
Methyl-tert-butyl-ether	mg/L	0.44	-	-	-	-
Styrene	mg/L	-	-	-	-	-
Toluene	mg/L	0.215	-	-	-	-
Total Xylenes	mg/L	-	-	-	-	-
Chlorobenzene	mg/L	-	-	-	-	-
1,2-Dichlorobenzene	mg/L	-	-	-	-	-

Notes:
[1] Operational minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.
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
		WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
		VA24C4921-004	VA24C4921-003	VA24C5123-002	VA24C5123-001
		2024-09-19	2024-09-19	2024-09-23	2024-09-23
Methylmercury	**µg/L**	0.000175	0.000174	0.000149	0.000108

Table C-4: Summary of East Wastewater Treatment Plant Daily Field Parameters October 6 - 12.

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]		-	-	-	-	5.5 – 9.0	-	-	-
Station ID	**Date**								
WWTP-E-IN	10/6/2024 9:44	13.0	8.96	0.87	4.29	6.7	1337	No	-
WWTP-E-OUT	10/6/2024 10:37	14.0	5.00	0.80	0.37	***9.2***	1246	No	378
WWTP-E-IN	10/7/2024 15:29	15.5	8.76	0.85	0.82	6.3	1365	No	-
WWTP-E-OUT	10/7/2024 15:35	15.5	-[3]	0.92	0.40	6.4	1475	No	444
WWTP-E-IN	10/8/2024 16:46	15.7	6.28	0.80	3.39	6.4	1306	No	-
WWTP-E-OUT	10/8/2024 16:59	15.8	6.04	0.89	4.61	6.3	1444	No	404
WWTP-E-IN	10/9/2024 16:18	15.8	8.94	0.95	3.07	6.5	1527	No	-
WWTP-E-OUT	10/9/2024 16:40	15.5	5.77	1.14	0.69	5.9	1817	No	414
WWTP-E-IN	10/10/2024 17:06	15.4	9.93	1.15	0.73	6.4	1823	No	-
WWTP-E-OUT	10/10/2024	-[4]	-[4]	-[4]	-[4]	-[4]	-[4]	-[4]	453
WWTP-E-IN	10/11/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-
WWTP-E-OUT	10/11/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	324
WWTP-E-IN	10/12/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-
WWTP-E-OUT	10/12/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0

Notes:
[1] PE-111578 East WWTP Discharge Limit is applied to effluent compliance station WWTP-E-OUT.
[2] Operational minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.
Results ***underlined in bold italics*** do not meet the applicable minimum discharge objective (except DO).
[3] Field measurements for DO at the effluent station on October 7 was not recorded due to a field equipment malfunction.
[4] Field measurements were not recorded at the effluent station on October 10 due to a field probe malfunction.
[5] Field measurements were not collected from the influent and effluent stations on October 11 and 12 as the East WWTP was not active at the time of monitoring due to sludge hydrovac activities.

Appendix D: West Sedimentation Pond Results

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

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	West Sedimentation Pond			
					In-Pond at Effluent Location	In-Pond at Influent Location	In-Pond at Effluent Location	Effluent
					SP-W-E	SP-W-W	SP-W-E	SP-W-OUT
					VA24C6613-003	VA24C6597-004	VA24C6597-005	VA24C6834-001
		Long Term	Short Term		2024-10-05 14:30	2024-10-06 12:57	2024-10-06 13:08	2024-10-08 13:30
General Parameters								
pH - Field	pH units	- [2]	-	5.5 - 9.0		8.6	8.9	8.8
Conductivity - Field	µS/cm	-	-	-		289	1108	709
Temperature - Field	°C	-	-	-		18.9	14.4	14.8
Salinity - Field	ppt	-	-	-		0.18	0.70	0.44
Turbidity - Field	NTU	-	-	-				10.84
TSS	mg/L	-	-	25	<3.0	<3.0	3.5	6.8
Dissolved Oxygen - Field	mg/L	>=8	-	-		9.67	8.76	12.75
Anions and Nutrients								
Sulphate	mg/L	-	-	-	33.3	26.3	36.0	31.5
Chloride	mg/L	-	-	-	98.1	22.2	103	66.9
Fluoride	mg/L	-	1.5	-	<0.100	0.107	0.11	0.134
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	<0.0050	0.0076	<0.0050	<0.0050
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	<0.0050	0.0439	<0.0050	0.0052
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	<0.0250	0.0769	<0.0250	<0.0250
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	-	0.375	0.375	0.467	0.653
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00154	0.00294	0.00186	0.00236
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00161	0.00202	0.0018	0.00204
Barium, total (T-Ba)	mg/L	-	-	-	0.00667	0.00888	0.00755	0.00967
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.011	<0.010	<0.020	<0.010
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.0000272	0.0000115	0.0000273	<0.0000250
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00050	0.00076	<0.00100	0.00069
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	0.00014	<0.00020	0.00016
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00161	0.00144	0.00183	0.00209
Iron, total (T-Fe)	mg/L	-	-	-	0.111	0.158	0.154	0.293
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000497	0.000597	0.000588	0.00115
Manganese, total (T-Mn)	mg/L	-	-	-	0.00401	0.00427	0.00483	0.00749
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.0000069	<0.0000050	0.0000071	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.017	0.0219	0.0187	0.0222
Nickel, total (T-Ni)	mg/L	0.0083	-	-	0.00099	0.00122	<0.00100	0.00106
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000117	0.000204	0.000107	0.000157
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010	<0.000020	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	<0.000010	<0.000020	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.00859	0.00749	0.00963	0.0100
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00254	0.00133	0.00278	0.00294
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0061	<0.0030	0.0066	0.0039
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050	0.00052	<0.00050	<0.00050
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000150	<0.0000050	<0.0000100	<0.0000100
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00087	0.00097	0.001	0.00135
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010	<0.010	<0.020	0.012
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000055	<0.000050	<0.000100	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00038	0.00042	0.00035	0.00122
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	0.00095	<0.00100	0.00083
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0149	0.0719	0.0181	0.0477
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00205	0.00094	0.00226	0.00199
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0012	<0.0010	<0.0020	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	0.006	-	-	0.000026	<0.000010	0.000026	0.000024
Acridine	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<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	0.0001	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	0.000028	<0.000010	0.000023	0.00002
1-methylnaphthalene	mg/L	0.001	-	-	0.000016	<0.000010	0.000012	0.000011
2-methylnaphthalene	mg/L	0.001	-	-	0.000024	<0.000010	0.000018	0.000017
Naphthalene	mg/L	0.001	-	-	0.000084	<0.000050	0.000067	0.000055
Phenanthrene	mg/L	-	-	-	0.000029	<0.000020	0.000023	0.00002
Pyrene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	-	-	-	-	<0.00050
Ethylbenzene	mg/L	0.25	-	-	-	-	-	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	-	-	-	<0.00050
Styrene	mg/L	-	-	-	-	-	-	<0.00050
Toluene	mg/L	0.215	-	-	-	-	-	<0.00040
Total Xylenes	mg/L	-	-	-	-	-	-	<0.00050
Chlorobenzene	mg/L	0.025	-	-	-	-	-	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	-	-	-	<0.00050

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 PE-11578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond discharged during the monitoring period (October 6 - 12) on October 8.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.
[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, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

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

Parameter	Unit	Lowest Applicable Guideline [1, 2]		PE-111578 Discharge Limit *	West Sedimentation Pond
					Influent
					ESC-W-IN
					VA24C6613-001
		Long Term	Short Term		2024-10-05 13:40
General Parameters					
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.7
Conductivity - Field	µS/cm	-	-	-	182
Temperature - Field	°C	-	-	-	12.9
Salinity - Field	ppt	-	-	-	0.11
Turbidity - Field	NTU	-	-	-	3.65
TSS	mg/L	-	-	25	<3.0
Dissolved Oxygen - Field	mg/L	>=8	-	-	10.09
Anions and Nutrients					
Sulphate	mg/L	-	-	-	27.5
Chloride	mg/L	-	-	-	9.8
Fluoride	mg/L	-	1.5	-	0.096
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	0.0071
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	0.076
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	0.128
Total Metals					
Aluminum, total (T-Al)	mg/L	-	-	-	0.192
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.0028
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00218
Barium, total (T-Ba)	mg/L	-	-	-	0.00701
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	<0.010
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000100
Chromium, total (T-Cr)	mg/L	-	-	-	0.00078
Cobalt, total (T-Co)	mg/L	-	-	-	0.00012
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.0014
Iron, total (T-Fe)	mg/L	-	-	-	0.051
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000268
Manganese, total (T-Mn)	mg/L	-	-	-	0.00131
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.023
Nickel, total (T-Ni)	mg/L	0.0083	-	-	0.00114
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000227
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	-	-	-	0.0057
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00079
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	<0.0030
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00073
Dissolved Metals					
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000100
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00158
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000055
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00056
Nickel, dissolved (D-Ni)	mg/L	-	-	-	0.00106
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0831
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00062
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0011
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene	mg/L	0.006	-	-	<0.000010
Acridine	mg/L	-	-	-	<0.000010
Anthracene	mg/L	-	-	-	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	0.000013
2-methylnaphthalene	mg/L	0.001	-	-	0.000020
Naphthalene	mg/L	0.001	-	-	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020
Pyrene	mg/L	-	-	-	<0.000010
Quinoline	mg/L	-	-	-	<0.000050
Volatile Organic Compounds (VOCs)					
Benzene	mg/L	0.11	-	-	-
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 PE-11578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond discharged during the monitoring period (October 6 - 12) on October 8.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The BC WQG for total ammonia is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.
[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, the BC WQG = 0.00002 mg/L. The Canadian WQG = 0.000016 mg/L.

Table D-3: Summary of West Sedimentation Pond Water Quality Results for Methylmercury Received at the Time of Reporting.

Parameter	Unit	West Sedimentation Pond
		Effluent
		SP-W-OUT
		VA24C6834-001
		2024-10-08
Methylmercury	**µg/L**	0.000061

Table D-4: Summary of West Sedimentation Pond Daily Field Parameters October 6 - 12.

Parameter		**Temperature**	**Dissolved Oxygen (DO)**	**Salinity**	**Turbidity**	**pH**	**Conductivity**	**Visibility of Sheen**	**Total Daily Discharge from the West Sedimentation Pond to Howe Sound**
Unit		**°C**	**mg/L**	**ppt**	**NTU**	**s.u.**	**µS/cm**		**m^3**
PE-111578 Discharge Limit		-	-	-	-	5.5 - 9.0	-	-	-[3]
Lowest Applicable Guideline [1]		-	>=8	-	-	-[2]	-	-	-
Station ID [4]	**Date**								
SP-W-W	10/6/2024 12:57	18.9	9.67	0.18	-[6]	8.6	289	No	0
SP-W-E	10/6/2024 13:08	14.4	8.76	0.7	-[6]	8.9	1108	No	
-[5]	10/7/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
SP-W-W	10/8/2024	-[7]	-[7]	-[7]	5.36	8.4	-[7]	No	614
SP-W-E	10/8/2024	-[7]	-[7]	-[7]	4.10	8.8	-[7]	No	
SP-W-OUT	10/8/2024	14.8	12.75	0.44	10.84	8.8	709	No	
-[5]	10/9/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
-[5]	10/10/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
-[5]	10/11/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0
-[5]	10/12/2024	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	-[5]	0

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 PE-11578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond discharged during the monitoring period (October 6 - 12) on October 11.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] The WQG was not evaluated for parameters with discharge limits.
[3] The annual average authorized discharge rate from the West Sedimentation Pond is 310 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.
[4] In-pond monitoring stations have been established for the West Sedimentation Pond at locations SP-W-W and SP-W-E and are used for pond water quality monitoring. ESC-W-IN is the influent station located at the TSS settling system used for the pond.
[5] The pond did not discharge on October 7 nor October 9-12; therefore, daily monitoring of field parameters was not conducted.
[6] Field measurements for turbidity were not recorded for the in-pond stations on October 6 due to a field probe malfunction.
[7] Only field turbidity and pH were recorded for the in-pond stations on October 8 as the daily monitoring requirement of field parameters was met at the effluent compliance station SP-W-OUT on October 8.

Appendix E: West Wastewater Treatment Plant Results

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

Parameter	Unit	Operational Minimum Discharge Objective [1]	West WWTP	
			Influent	Effluent
			WWTP-W-IN	WWTP-W-OUT
			VA24C4921-002	VA24C4921-001
			2024-09-19 10:45	2024-09-19 11:00
General Parameters				
pH - Field	pH units	5.5 – 9.0	6.7	8.0
Conductivity - Field	µS/cm	-	1537	1679
Temperature - Field	℃	-	20.5	23.2
Salinity - Field	ppt	-	0.85	0.88
Turbidity - Field	NTU	-	5.9	5.17
TSS	mg/L	-	7.0	7.4
Dissolved Oxygen - Field	mg/L	-	7.25	6.43
Anions and Nutrients				
Sulphate	mg/L	-	60.3	56.8
Chloride	mg/L	-	173	169
Fluoride	mg/L	-	0.12	<0.200
Ammonia ($N\text{-}NH_3$)	mg/L	-	<0.0050	<0.0050
Nitrite ($N\text{-}NO_2$)	mg/L	-	<0.0050	0.0244
Nitrate ($N\text{-}NO_3$)	mg/L	-	<0.0250	<0.0500
Total Metals				
Aluminum, total (T-Al)	mg/L	-	0.339	0.159
Antimony, total (T-Sb)	mg/L	-	0.0025	0.0024
Arsenic, total (T-As)	mg/L	0.0125	0.00144	0.00134
Barium, total (T-Ba)	mg/L	-	0.0188	0.00595
Beryllium, total (T-Be)	mg/L	0.1	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	0.032	0.023
Cadmium, total (T-Cd)	mg/L	0.00012	0.0000447	0.0000162
Chromium, total (T-Cr)	mg/L	-	<0.00100	<0.00100
Cobalt, total (T-Co)	mg/L	-	<0.00020	<0.00020
Copper, total (T-Cu)	mg/L	0.0043	***0.00953***	0.00178
Iron, total (T-Fe)	mg/L	-	0.124	0.076
Lead, total (T-Pb)	mg/L	0.0035	0.0012	0.000324
Manganese, total (T-Mn)	mg/L	-	0.0104	0.00184
Mercury, total (T-Hg)	mg/L	0.000016	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	0.0163	0.0219
Nickel, total (T-Ni)	mg/L	0.0083	0.00248	0.00268
Selenium, total (T-Se)	mg/L		0.000138	0.000143
Silver, total (T-Ag)	mg/L	0.0015	<0.000020	<0.000020
Thallium, total (T-Tl)	mg/L	-	<0.000020	<0.000020
Uranium, total (T-U)	mg/L	-	0.00737	0.00923
Vanadium, total (T-V)	mg/L	0.0081	0.00286	0.00184
Zinc, total (T-Zn)	mg/L	0.0133	***0.0225***	0.0068
Hexavalent Chromium, total	mg/L	0.0015	<0.00050	<0.00050
Dissolved Metals				
Cadmium, dissolved (D-Cd)	mg/L	0.00012	0.0000278	0.0000106
Copper, dissolved (D-Cu)	mg/L	-	0.00097	0.00183
Iron, dissolved (D-Fe)	mg/L	-	<0.020	1.26
Lead, dissolved (D-Pb)	mg/L	-	0.00014	0.000175
Manganese, dissolved (D-Mn)	mg/L	-	0.00677	0.00452
Nickel, dissolved (D-Ni)	mg/L	-	0.002	0.00262
Strontium, dissolved (D-Sr)	mg/L	-	0.0893	0.0362
Vanadium, dissolved (D-V)	mg/L	-	0.00157	<0.00100
Zinc, dissolved (D-Zn)	mg/L	-	0.0077	0.0162
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	mg/L	-	0.000012	<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	0.000014	<0.000010
1-methylnaphthalene	mg/L	-	<0.000010	0.000012
2-methylnaphthalene	mg/L	-	<0.000010	0.000013
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	0.44	<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	-	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	-	<0.00050	<0.00050

Notes:

[1] Operational minimum discharge objectives (MDOs) for WWTP effluent that are listed in Appendix B of the Construction Wastewater Treatment Plant Operations Environmental Protection Plan dated February 7, 2024.

Results ***underlined in bold italics*** exceed the applicable minimum discharge objective.

Table E-2: Summary of West Wastewater Treatment Plant Water Quality Results for Methylmercury Received at the Time of Reporting.

Parameter	Unit	West WWTP			
		Influent	Effluent	Influent	Effluent
		WWTP-W-IN	WWTP-W-OUT	WWTP-W-IN	WWTP-W-OUT
		VA24C4921-002	VA24C4921-001	VA24C5087-002	VA24C5087-001
		2024-09-19	2024-09-19	2024-09-21	2024-09-21
Methylmercury	**µg/L**	0.000050	0.000036	0.000046	0.000029

Appendix F: Freshwater Receiving Environment Results

Table F-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
				VA24C5909-001	VA24C5953-001	VA24C5909-002	VA24C5953-004
		Long Term	Short Term	9/28/2024 15:45	9/29/2024 16:45	9/28/2024 16:40	9/29/2024 14:30
General Parameters							
pH - Field	pH units	6.5 - 9.0	-	***5.5***	6.8	7.0	***5.9***
Specific Conductivity - Field	µS/cm	-	-	8	15	133	13
Temperature - Field	℃	-	-	11.7	10.8	18.5	10.5
Salinity - Field	ppt	-	-	0	0.01	0.08	0.01
Turbidity - Field	NTU	-	-	0	0	2.93	0
TSS	mg/L	-	-	<3.0	<3.0	3.0	<3.0
Dissolved Oxygen - Field	mg/L	>=8	>=5	11.06	11.34	9.09	11.09
Anions and Nutrients							
Sulphate [3]	mg/L	128-218	-	0.38	2.48	17.8	2.14
Chloride	mg/L	120	600	0.59	1.12	3.93	1.03
Fluoride [3]	mg/L	-	0.400-1.15	<0.020	<0.020	0.087	<0.020
Ammonia ($N\text{-}NH_3$) [3]	mg/L	0.464-102	2.41-25.5	<0.0050	<0.0050	0.007	0.0093
Nitrite ($N\text{-}NO_2$) [3]	mg/L	0.0200-0.0400	0.06-0.12	<0.0010	<0.0010	0.0016	<0.0010
Nitrate ($N\text{-}NO_3$)	mg/L	3	32.8	0.0460	0.119	0.385	0.105
Total Metals							
Aluminum, total (T-Al) [3]	mg/L	0.0362-0.611	-	***0.126***	0.0501	0.163	***0.0506***
Antimony, total (T-Sb)	mg/L	0.074	-	<0.00010	<0.00010	0.00024	<0.00010
Arsenic, total (T-As)	mg/L	0.005	-	0.00014	<0.00010	0.00055	<0.00010
Barium, total (T-Ba)	mg/L	1	-	0.00201	0.00313	0.0146	0.00284
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	0.014	0.014	0.014
Cadmium, total (T-Cd) [3]	mg/L	0.0000364-0.000107	0.000106-0.00130	<0.0000050	0.0000055	0.0000179	0.0000089
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	0.0001	<0.00010
Copper, total (T-Cu)	mg/L	-	-	0.00062	<0.00050	0.00135	0.00054
Iron, total (T-Fe)	mg/L	0.3	1	0.038	<0.010	***0.345***	<0.010
Lead, total (T-Pb) [3]	mg/L	0.00344-0.00506	0.00300-0.0450	0.00007	<0.000050	0.000212	<0.000050
Manganese, total (T-Mn) [3]	mg/L	0.768-0.880	0.816-1.23	0.00122	0.00027	0.0336	0.00038
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	0.000372	0.000689	0.00658	0.000589
Nickel, total (T-Ni) [3]	mg/L	0.0250-0.0669	-	<0.00050	<0.00050	0.00079	<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	0.000648	0.000154	0.00134	0.000136
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	0.0045	<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	0.0000176-0.000150	0.0000380-0.000363	<0.0000050	0.0000072	0.000010	0.0000059
Copper, dissolved (D-Cu) [3]	mg/L	0.000200-0.00118	0.000200-0.00544	***0.00030***	***0.00024***	***0.00071***	***0.00029***
Iron, dissolved (D-Fe)	mg/L	-	0.35	0.024	<0.010	0.020	<0.010
Lead, dissolved (D-Pb) [3]	mg/L	0.00196-0.00549	-	<0.000050	<0.000050	<0.000050	<0.000050
Manganese, dissolved (D-Mn) [3]	mg/L	0.200-0.500	1.97-4.41	0.00053	0.00016	0.0179	0.00036
Nickel, dissolved (D-Ni) [3]	mg/L	0.000600-0.00170	0.00860-0.0246	<0.00050	<0.00050	0.00065	<0.00050
Strontium, dissolved (D-Sr)	mg/L	2.5	-	0.00357	0.00811	0.059	0.00715
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Zinc, dissolved (D-Zn)	mg/L	0.000983-0.0229	0.00714-0.0641	<0.0010	<0.0010	0.0028	<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	-	<0.000050	<0.000050	<0.000050	<0.000050
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.

Appendix G: Estuarine Water Receiving Environment Results

Table G-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 VA24C5953-003 2024-09-29 16:11
		Long Term	Short Term	
General Parameters				
pH - Field	pH units	7.0 - 8.7	-	***6.9***
Specific Conductivity - Field	µS/cm	-	-	1434
Temperature - Field	°C	-	-	11.2
Salinity - Field	ppt	-	-	1.0
Turbidity - Field	NTU	-	-	0.68
TSS	mg/L	-	-	<3.0
Dissolved Oxygen - Field	mg/L	-	-	11.33
Anions and Nutrients				
Sulphate	mg/L	-	-	44.8
Chloride	mg/L	-	-	311
Fluoride	mg/L	-	-	<0.100
Ammonia (N-NH_3)	mg/L	-	-	<0.0050
Nitrite (N-NO_2)	mg/L	-	-	<0.0050
Nitrate (N-NO_3)	mg/L	-	-	0.106
Total Metals				
Aluminum, total (T-Al)	mg/L	-	-	0.134
Antimony, total (T-Sb)	mg/L	-	-	<0.00010
Arsenic, total (T-As)	mg/L	-	-	0.00013
Barium, total (T-Ba)	mg/L	-	-	0.00477
Beryllium, total (T-Be)	mg/L	-	-	<0.000100
Boron, total (T-B)	mg/L	-	-	0.089
Cadmium, total (T-Cd)	mg/L	-	-	0.0000088
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	0.00067
Iron, total (T-Fe)	mg/L	-	-	0.073
Lead, total (T-Pb)	mg/L	0.002	0.14	0.000242
Manganese, total (T-Mn)	mg/L	-	-	0.00316
Mercury, total (T-Hg) [3]	mg/L	0.00002	-	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	0.000918
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	-	-	0.00022
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	-	-	0.0000065
Copper, dissolved (D-Cu)	mg/L	-	-	0.00032
Iron, dissolved (D-Fe)	mg/L	-	-	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00164
Nickel, dissolved (D-Ni)	mg/L	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	0.131
Vanadium, dissolved (D-V)	mg/L	-	-	<0.00050
Zinc, dissolved (D-Zn)	mg/L	-	-	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)				
Acenaphthene	mg/L	-	-	0.000013
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	-	-	0.000018
Fluorene	mg/L	-	-	0.000013
1-methylnaphthalene	mg/L	-	-	0.000012
2-methylnaphthalene	mg/L	-	-	0.000021
Naphthalene	mg/L	-	-	<0.000050
Phenanthrene	mg/L	-	-	0.000024
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.

Appendix H: Marine Water Receiving Environment Results

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

Parameter	Unit	Lowest Applicable Guideline [1]		Station IDZ-W2			Station WQR2		
				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-W2-0.5	IDZ-W2-2m	IDZ-W2-SF	WQR2-0.5	WQR2-2m	WQR2-SF
				VA24C5557-004	VA24C5557-005	VA24C5557-006	VA24C5557-001	VA24C5557-002	VA24C5557-003
		Long Term	Short Term	2024-09-25 13:34	2024-09-25 13:35	2024-09-25 13:37	2024-09-25 12:13	2024-09-25 12:14	2024-09-25 12:20
General Parameters									
pH - Field	pH units	7.0 - 8.7	-	7.9	7.8	7.5	***6.3***	7.7	7.4
Specific Conductivity - Field	µS/cm	-	-	18756	31252	31961	20732	28854	32015
Temperature - Field	℃	-	-	12.9	12.9	10.2	12.8	13.2	10.3
Salinity - Field	ppt	Narrative[2]	-	14.84	26.01	28.64	16.62	23.59	28.58
Turbidity - Field	NTU	Narrative[2]	Narrative[2]	8.37	4.15	2.25	3.9	4.77	2.64
TSS	mg/L	Narrative[2]	Narrative[2]	11	10.7	4.4	11	5.7	7.0
Dissolved Oxygen - Field	mg/L	>=8	-	9.8	8.25	***5.25***	9.51	9.01	***5.24***
Anions and Nutrients									
Sulphate	mg/L	-	-	1300	724	2200	553	1830	2070
Chloride	mg/L	-	-	9350	5240	15800	4200	13400	15300
Fluoride	mg/L	-	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Ammonia (N-NH_3)	mg/L	Variable [3]	Variable [3]	0.0081	0.0092	<0.0050	0.0124	<0.0050	<0.0050
Nitrite (N-NO_2)	mg/L	-	-	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate (N-NO_3)	mg/L	3.7	339	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Total Metals									
Aluminum, total (T-Al)	mg/L	-	-	0.274	0.345	0.030	0.263	0.0769	0.028
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic, total (T-As)	mg/L	0.0125	0.0125	0.00322	0.00208	0.00605	0.00306	0.00569	0.00606
Barium, total (T-Ba)	mg/L	-	-	0.0169	0.0168	0.012	0.0156	0.0145	0.0125
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	-	***2.04***	***1.22***	***4.14***	***1.82***	***3.92***	***4.06***
Cadmium, total (T-Cd)	mg/L	0.00012	-	0.000052	0.000034	0.000068	0.000047	0.000059	0.000086
Chromium, total (T-Cr)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	0.000148	0.000168	0.000074	0.000145	0.00009	0.000074
Copper, total (T-Cu)	mg/L	0.002	0.003	0.00195	***0.00237***	0.00056	0.00104	0.00072	0.00083
Iron, total (T-Fe)	mg/L	-	-	0.288	0.34	0.035	0.268	0.075	0.031
Lead, total (T-Pb)	mg/L	0.002	0.14	0.00049	0.00024	<0.00010	<0.00010	<0.00010	<0.00010
Manganese, total (T-Mn)	mg/L	-	-	0.0163	0.0173	0.00401	0.0124	0.00542	0.00484
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	0.00448	0.00314	0.00852	0.00428	0.00743	0.00996
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	-	-	0.00133	0.000919	0.00264	0.00138	0.00253	0.00262
Vanadium, total (T-V)	mg/L	0.005	-	0.00133	0.00138	0.00118	0.00129	0.00118	0.00111
Zinc, total (T-Zn)	mg/L	0.01	0.055	0.0030	<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	-	-	0.000036	0.000038	0.000072	0.000034	0.000059	0.00007
Copper, dissolved (D-Cu)	mg/L	-	-	0.00090	0.00075	0.00376	<0.00050	0.00051	<0.00050
Iron, dissolved (D-Fe)	mg/L	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00766	0.00754	0.00248	0.00446	0.00255	0.00298
Nickel, dissolved (D-Ni)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	2.92	1.99	5.68	2.86	5.03	6.17
Vanadium, dissolved (D-V)	mg/L	-	-	0.00075	0.00056	0.00107	0.00072	0.00098	0.00112
Zinc, dissolved (D-Zn)	mg/L	-	-	0.0017	0.0013	0.0012	<0.0010	<0.0010	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)									
Acenaphthene	mg/L	0.006	-	0.000133	0.000054	0.000011	<0.000010	0.000018	<0.000010
Acridine	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	0.000013	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	0.000084	0.000051	0.000014	<0.000010	0.000014	<0.000010
Fluorene	mg/L	0.012	-	0.000114	0.000094	<0.000010	<0.000010	0.000019	<0.000010
1-methylnaphthalene	mg/L	0.001	-	0.00007	0.000047	<0.000010	<0.000010	0.000012	<0.000010
2-methylnaphthalene	mg/L	0.001	-	0.000076	0.000053	0.00001	0.000013	0.000017	<0.000010
Naphthalene	mg/L	0.001	-	0.000223	0.000155	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	0.00016	0.000098	<0.000020	<0.000020	0.000031	<0.000020
Pyrene	mg/L	-	-	0.000049	0.000033	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<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.

[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

[2] 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 not discharging, therefore the guidelines were not evaluated.

[3] The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.

[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.

Table H-2: Summary of Marine Water Quality Results Received at the Time of Reporting

Parameter	Unit	Lowest Applicable Guideline [1]		Station IDZ-E1			Station IDZ-E2[6]	
				0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor	0.5 m Below Surface	2 m Below Surface
				IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m
				VA24C6561-001	VA24C6561-002	VA24C6561-003	VA24C6561-004	VA24C6561-005
		Long Term	Short Term	2024-10-02 14:00	2024-10-02 15:55	2024-10-02 16:15	2024-10-02 16:57	2024-10-02 17:20
General Parameters								
pH - Field	pH units	7.0 - 8.7	-	7.9	7.9	7.5	7.9	7.8
Specific Conductivity - Field	µS/cm	-	-	19650	22467	32467	22369	24058
Temperature - Field	℃	-	-	12.2	12.3	11.4	12.3	12.3
Salinity - Field	ppt	Narrative[2]	-	15.92	18.39	28.24	18.3	19.8
Turbidity - Field	NTU	Narrative[2]	Narrative[2]	3.58	2.86	2.3	2.73	2.72
TSS	mg/L	Narrative[2]	Narrative[2]	2.3	2.9	3.3	2.4	<2.0
Dissolved Oxygen - Field	mg/L	>=8	-	9.85	9.52	***5.82***	9.45	9.25
Anions and Nutrients								
Sulphate	mg/L	-	-	1010	<30	1650	902	958
Chloride	mg/L	-	-	7350	<50	12000	6660	7020
Fluoride	mg/L	-	1.5	<1.0	<1.0	<1.0	<1.0	<1.0
Ammonia (N-NH_3)	mg/L	Variable [3]	Variable [3]	0.0205	0.0136	0.0135	0.0164	0.0162
Nitrite (N-NO_2)	mg/L	-	-	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate (N-NO_3)	mg/L	3.7	339	<0.50	<0.50	<0.50	<0.50	<0.50
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	0.0811	0.0859	0.0513	0.0799	0.0688
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic, total (T-As)	mg/L	0.0125	0.0125	0.00198	<0.00040	0.00267	0.00169	0.00185
Barium, total (T-Ba)	mg/L	-	-	0.0115	0.0115	0.0116	0.0116	0.0113
Beryllium, total (T-Be)	mg/L	0.1	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Boron, total (T-B)	mg/L	1.2	-	***1.54***	***1.55***	***2.25***	***1.46***	***1.62***
Cadmium, total (T-Cd)	mg/L	0.00012	-	0.000044	0.000032	0.000053	0.000031	0.000036
Chromium, total (T-Cr)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	0.0001	0.000112	0.000076	0.000098	0.000088
Copper, total (T-Cu)	mg/L	0.002	0.003	0.00114	0.00081	0.00112	0.00087	0.00128
Iron, total (T-Fe)	mg/L	-	-	0.096	0.102	0.059	0.092	0.079
Lead, total (T-Pb)	mg/L	0.002	0.14	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Manganese, total (T-Mn)	mg/L	-	-	0.0112	0.0113	0.00756	0.0113	0.0102
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	0.00444	0.00422	0.00612	0.00381	0.00442
Nickel, total (T-Ni)	mg/L	0.0083	-	<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
Silver, total (T-Ag)	mg/L	0.0015	0.003	<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
Uranium, total (T-U)	mg/L	-	-	0.00119	0.00118	0.00172	0.0011	0.00122
Vanadium, total (T-V)	mg/L	0.005	-	0.00094	0.00106	0.00104	0.00091	0.00094
Zinc, total (T-Zn)	mg/L	0.01	0.055	0.003	0.0035	<0.0030	0.0032	0.0086
Hexavalent Chromium, total	mg/L	0.0015	-	<0.00150	<0.00150	<0.00150	<0.00150	<0.00150
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	0.00004	0.000028	0.000059	0.000028	0.000032
Copper, dissolved (D-Cu)	mg/L	-	-	<0.00050	0.00072	<0.00050	<0.00050	0.00052
Iron, dissolved (D-Fe)	mg/L	-	-	<0.010	<0.010	<0.010	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Manganese, dissolved (D-Mn)	mg/L	-	-	0.00866	0.00854	0.00598	0.0105	0.00994
Nickel, dissolved (D-Ni)	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	3.06	3.08	4.35	2.09	2.29
Vanadium, dissolved (D-V)	mg/L	-	-	0.00076	0.00071	0.0009	0.00063	0.00064
Zinc, dissolved (D-Zn)	mg/L	-	-	0.0030	0.0026	0.0010	0.0016	0.0030
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	mg/L	0.006	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	<0.000010	<0.000010	<0.000010	<0.000010	0.000015
Naphthalene	mg/L	0.001	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)								
Benzene	mg/L	0.11	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Ethylbenzene	mg/L	0.25	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Styrene	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Toluene	mg/L	0.215	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Total Xylenes	mg/L	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Chlorobenzene	mg/L	0.025	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	<0.00050	<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 marine water aquatic life.

Shaded results exceed the applicable short-term water quality guideline for the protection of marine water aquatic life.

[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.

[2] 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 not discharging, therefore the guidelines were not evaluated.

[3] The approved total ammonia nitrogen BC WQG is salinity, pH and temperature dependent; see Tables 26E and 26F in BC WQG guidance document.

[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] Complete records of field measurements and analytical data for station IDZ-E2-SF are not available due to a field probe malfunction on October 2.

Table H-3: Summary of Marine Water Quality Results for Methylmercury Received at the Time of Reporting.

Parameter	Unit	Reference Station WQR1			Reference Station WQR2		
		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
		WQR1-0.5	WQR1-2m	WQR1-SF	WQR2-0.5	WQR2-2m	WQR2-SF
		VA24C2208-001	VA24C2208-002	VA24C2208-003	VA24C2208-004	VA24C2208-005	VA24C2208-006
		2024-08-26	2024-08-26	2024-08-26	2024-08-26	2024-08-26	2024-08-26
Methylmercury	**µg/L**	<0.000080	<0.000080	<0.000080	0.000022	<0.000020	<0.000080