TECHNICAL MEMORANDUM

To:	**Ian McAllister, Ashleigh Crompton, Mike Champion, Jackie Boruch and Ryan Schucroft (Woodfibre LNG)**	**Date:**	**14 Mar 2025**
From:	**Holly Pelletier, Cheng Kuang and Patrick Mueller (Lorax)**	**Project #:**	**A633-9**
Subject:	**PE-111578 Weekly Discharge and Compliance Report #54 for March 2 – March 8**		

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 #54) was prepared by Lorax Environmental and summarizes WDA monitoring conducted for the period of March 2 – March 8. 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 #54 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."

Site layout and water management figures, and site images are included in Appendix A. Monitoring results are tabulated in Appendix B through Appendix D for contact water, treated water and receiving environment samples.

1. Current Conditions

1.1 Water Management Infrastructure

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, pouring of concrete foundations 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 March 2 – March 8, 2025 monitoring period. Land-based construction occurs within two areas east and west of Mill Creek. Non-contact water is intercepted and diverted around the construction areas to Howe Sound and Mill Creek. Contact water collected within the east and west catchment areas (7.12 and 5.92 ha, respectively) is conveyed to the East Wastewater Treatment Plant (WWTP) or the East and West Sedimentation Ponds for treatment or settling of suspended particulate.

The West WWTP has been constructed and pilot testing was conducted August and September 2024. Operation of the West WWTP was suspended September 25, 2024. The suspension was implemented for the temporary reconfiguration of the plant to conduct 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.

Non-contact water diversion ditches west of Mill Creek have been fully or partially upgraded and discharge to Mill Creek at station OUT-06, or to Howe Sound at station OUT-02 (Appendix A, Figure 1). During heavy precipitation non-contact water from the diversion ditches is also conveyed to Howe Sound via station OUT-01. East of Mill Creek, non-contact water is diverted around the East Catchment along pre-existing road ditches that flow to East Creek or Mill Creek. To facilitate the replacement of the East Creek discharge culvert at OUT-12, the lower reach of East Creek was temporarily diverted to an adjacent culvert, OUT-11, on September 17, 2024.

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, contact waters within the catchments are managed to remain on site using a system of berms, sumps, temporary ditches and baker tanks for intermediate storage, and are then directed to the East and West Sedimentation Ponds for TSS settling prior to discharge.

Flocculant-based TSS settling systems are used at the East and West Sedimentation Ponds to remove TSS from non-contaminated contact water at the time of discharge. Some of the clarified water may be recirculated back to the ponds. The first West Sedimentation Pond TSS settling system (ESC) was commissioned for use on September 25, 2024, with an 820 m^3/day installed capacity. A second TSS settling system (W500GPM) was added and commissioned for use on November 28 and provides an additional 2,725 m^3/day installed capacity for clarifying water. A TSS settling system (E500GPM) for the East Sedimentation Pond was commissioned on December 4, 2024, also with 2,725 m^3/day installed capacity.

Contaminated contact water from within the East and West Catchments, and non-contaminated contact water stored in the East Sedimentation Pond are directed to the East WWTP for treatment prior to discharge to Howe Sound. Direct discharge of East WWTP treated contact water to Howe Sound was implemented from October 28, 2024, until January 23, 2025, after which WWTP effluent was redirected to the East Sedimentation Pond and only clarified pond water was discharged to Howe Sound.

The east and west catchment permanent outfall structures have not been completed. Temporary discharge systems (*i.e.*, pumps, hosing and diffusors) are used to convey clarified or treated effluent to the discharge locations authorized for the east and west catchments. In the east catchment, treated WWTP effluent is either directed to the pond or discharge tank. Clarified E500GPM effluent is directed to the discharge tank prior to discharge at location SP-E-OUT since December 2, 2024. The west catchment discharge location, SP-W-OUT, receives the combined clarified effluents from the ESC and W500GPM TSS settling systems since November 28, 2024. Each of the authorized discharge locations has an initial dilution zone (IDZ) where discharged water mixes with Howe Sound surface waters. The IDZ is defined in PE-111578 and extends 150 m from each point of discharge into Howe Sound.

The construction phase water management layout and monitoring stations are shown in Appendix A, Figure 1. Contact water collection and dewatering locations and photographs of the sedimentation ponds are shown in Appendix A, Figure 2 through Figure 5.

1.2 Weather and Water Management

Variable weather was observed during the monitoring period (March 2 – March 8), with precipitation recorded on each day except March 2 and 6. Heavy rains on March 8 account for most (80.8 mm) of the total precipitation (97.2 mm) during the week of March 2 – March 8. 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
03-02-2025	0	11.6	4.7	Mix of sun and cloud
03-03-2025	0.2	12.0	6.3	Mix of sun and cloud
03-04-2025	15.0	8.7	5.1	Rain
03-05-2025	0.8	11.2	3.7	Overcast
03-06-2025	0	12.6	1.7	Mix of sun and cloud
03-07-2025	0.4	9.4	1.9	Mix of sun and cloud
03-08-2025	80.8	9.0	4.2	Heavy Rain

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

From March 2 – March 8, the East Sedimentation Pond received contact water from the MOF sump (Appendix A, Figure 2). Contact waters from Area 4100 Sump were directed to the West Sedimentation Pond (Appendix A, Figure 3).

Routine operation of the East WWTP continued during the monitoring period. Concrete contact waters were periodically directed to the East WWTP for treatment, as well as water stored in the East Sedimentation Pond (Appendix A, Figure 2 and Figure 3). East WWTP treated effluent was discharged to the East Sedimentation Pond each day during the monitoring period. A portion of the pond water clarified through the E500GPM TSS settling system was recirculated to the East Sedimentation Pond on March 7 and 8. A total of 1,681 m^3 of East Sedimentation Pond effluent clarified through the TSS settling system (E500GPM) was directed to the authorized discharge location SP-E-OUT on March 7 and 8. Daily water volumes processed by the East WWTP and the East TSS settling system (E500GPM), and volumes discharged to Howe Sound from the East Catchment authorized discharge location (SP-E-OUT) are provided in Appendix B (Table B-5).

West Sedimentation Pond water was clarified through the W500GPM and ESC TSS settling systems prior to discharge. The ESC system was not operational March 2 through March 6. A portion of the pond water clarified through the W500GPM settling system was recirculated to the West Sedimentation Pond on March 2, 3, 4, and 7 and a portion of the pond water clarified through the ESC system was recirculated to the West Sedimentation Pond on March 7 and 8. A total of 4,295 m^3 of effluent was clarified through the W500GPM system and directed to the SP-W-OUT discharge location on March 4 through March 8, and a total of 136 m^3 of effluent was clarified through the ESC system and directed to SP-W-OUT on March 7 and 8. Daily clarified effluent volumes from the TSS settling systems, and volumes discharged to Howe Sound from the West Catchment authorized discharge location (SP-W-OUT) are provided in Appendix C (Table C-4).

2. Monitoring Summary

The locations of the compliance and supplementary monitoring stations are shown on Figure 1. 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.

Compliance and supplementary monitoring stations have been established:

- Non-contact diversion ditch outlet monitoring stations (OUT-01, OUT-02, OUT-06, and OUT-11). East Creek water was temporarily diverted to OUT-11 on September 17 and is monitored at the inlet to temporary diversion (station SW-04), therefore OUT-11 is not currently monitored.
- Creek water monitoring stations for Woodfibre, Mill and East Creek (SW-01, SW-02, SW-03, SW-04, SW-07).
- Contact water monitoring locations (SP-E-IN, SP-E-NE, SP-E-NW, E500GPM-IN, E500GPM-OUT, WWTP-E-IN, WWTP-E-OUT, SP-W-IN, SP-W-W, SP-W-E, ESC-W-IN, ESC-W-OUT, W500GPM-IN and W500GPM-OUT).
- Effluent compliance stations (SP-E-OUT and SP-W-OUT).
- Howe Sound reference and IDZ monitoring stations (WQR1, WQR2, IDZ-E1, IDZ-E2, IDZ-W1, and IDZ-W2).

The influent culverts for East and West Sedimentation Ponds are not yet operational and the associated influent stations defined in PE-111578 (SP-E-IN-1, SP-E-IN-2, SP-W-IN-1 and SP-W-IN-2) have been replaced with temporary influent monitoring stations SP-E-IN and SP-W-IN (East and West Sedimentation Pond, respectively).

Two flocculant-based TSS settling systems are used at the West Sedimentation Pond (ESC and W500GPM). Influent and effluent are monitored for each system at stations ESC-W-IN, ESC-W-OUT, W500GPM-IN and W500GPM-OUT. One TSS settling system (E500GPM) is used at the East Sedimentation Pond. The influent and effluent stations for this system are E500GPM-IN and E500GPM-OUT, respectively. The TSS settling system stations are supplemental to the PE- 111578 monitoring requirements and are monitored at the discretion of field staff.

Water quality was monitored at stations IDZ-E1, IDZ-E2, IDZ-W1, IDZ-W2, WWTP-E-IN, WWTP-E-OUT, SP-E-IN, SP-E-OUT, E500GPM-IN, E500GPM-OUT, SP-W-IN, SP-W-OUT, W500GPM-IN, W500GPM-OUT, ESC-W-IN, and ESC-W-OUT during the monitoring period (March 2 – March 8). Sampling dates and parameters tested are summarized in Table 2.

Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (March 2 – March 8) were met.

Daily field parameters were not collected at effluent station SP-W-OUT (March 4, 6, and 7) since there was no effluent discharged from the authorized discharge location at the time of monitoring. Daily field parameters were not collected on March 7 at the influent and effluent stations of the East WWTP (WWTP-E-IN and WWTP-E-OUT, respectively) since the East WWTP was off-line and undergoing maintenance at the time of monitoring. 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 operational during the monitoring period.

Table 2: Summary of PE-111578 Monitoring Samples Collected March 2 – March 8.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
March 2, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
March 3, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
March 4, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
March 5, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W_1, W_2
	SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W_1, W_2
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box	Field Parameters.	P
March 6, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field Parameters.	D
	WWTP-E-OUT	East WWTP at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	IDZ-W1-0.5	Howe Sound IDZ station W1; 0.5 m below surface	Field & Physical Parameters.	W_3
	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		
March 7, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W_1, W_2
	SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W_1, W_2
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	ESC-W-IN	Influent to the West Sedimentation Pond TSS settling system	Field Parameters.	P
	ESC-W-OUT	West TSS settling system effluent at the ESC meter box		
	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	Field & Physical Parameters.	W_3
	IDZ-E1-2m	Howe Sound IDZ station E1; 2 m below surface		
	IDZ-E1-SF	Howe Sound IDZ station E1; 2 m above the seafloor		
	IDZ-E2-0.5	Howe Sound IDZ station E2; 0.5 m below surface		
	IDZ-E2-2m	Howe Sound IDZ station E2; 2 m below surface		
	IDZ-E2-SF	Howe Sound IDZ station E2; 2 m above the seafloor		
March 8, 2025	SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	Field Parameters.	D
	WWTP-E-IN	East WWTP at the influent meter box	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans.	D, W_1, W_2
	WWTP-E-OUT	East WWTP at the effluent meter box		
	E500GPM-IN	East Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	E500GPM-OUT	East Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		

Table 2 (continued): Summary of PE-111578 Monitoring Samples Collected March 2 – March 8.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
March 8, 2025 (continued)	SP-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	Field Parameters.	D
	SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port	Field Parameters.	D
	W500GPM-IN	West Sedimentation Pond 500 GPM TSS settling system at the influent meter box	Field Parameters.	P
	W500GPM-OUT	West Sedimentation Pond 500 GPM TSS settling system at the effluent meter box		
	ESC-W-IN	Influent to the West Sedimentation Pond TSS settling system	Field Parameters.	P
	ESC-W-OUT	West TSS settling system effluent at the ESC meter box		

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.
W_2 – initial high frequency monitoring for all parameters at WWTP and sedimentation pond influent and effluent stations.
W_3 – initial high frequency monitoring for physical parameters at IDZ stations.
P – periodic monitoring for targeted parameters that is supplementary to PE-111578 requirements.

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). All water quality data are recorded 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 a total of 210 polychlorinated dibenzo-*p*-dioxin (PCDD) and polychlorinated dibenzofuran (PCDF) compounds. A sub-set of 17 of the most toxic PCDDs and PCDFs are typically evaluated for toxicity by converting the individual parameter concentrations to toxic equivalent (TEQ) values that are summed and evaluated 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 PCDDs and PCDFs are reported as not detected.

The BC WQG for total mercury is a sample-specific calculated value that is based on the concentration of methylmercury in a sample. Although an approved BC WQG for the protection of aquatic life for methylmercury has not been explicitly established, the BC Ambient Water Quality Guidelines for Mercury Overview Report indicates the total mercury WQG is derived from a methylmercury concentration threshold of 0.0001 µg/L (0.1 ng/L) that is set at a concentration that protects fish from mercury bioaccumulation to levels that could harm wildlife that consumes fish. Therefore, if methylmercury results are reported, the 0.0001 µg/L value is presented as a methylmercury WQG to support the interpretation of total mercury and methylmercury results.

3.2 Summary of Reported Results

Field measurements and analytical results available at the time of reporting for samples collected during the monitoring period (March 2 – March 8) 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. Reporting of results is pending for the following samples and parameters:

- WWTP-E-IN and WWTP-E-OUT collected February 5 (dioxins and furans)
- SP-E-IN, WWTP-E-IN, WWTP-E-OUT, and SP-W-IN collected February 15 (dioxins and furans)
- SP-W-IN and SP-W-OUT collected February 18 (dioxins and furans)
- IDZ-W1, IDZ-W2, and WQR2 collected February 18 (dioxins and furans)
- SW-02, SW-03, and SW-07 collected February 19 (field and all analytical parameters)
- SP-E-IN, SP-E-OUT, WWTP-E-IN, and WWTP-E-OUT collected February 20 (dioxins and furans)
- IDZ-E1, IDZ-E2, and WQR1 collected February 20 (dioxins and furans)
- SW-01 and SW-04 collected February 21 (dioxins and furans)
- SP-E-IN, SP-E-OUT, WWTP-E-IN, WWTP-E-OUT, SP-W-IN, and SP-W-OUT collected February 24 (dioxins and furans)
- SP-W-IN and SP-W-OUT collected March 5 (methylmercury, dioxins and furans)
- IDZ-W1 and IDZ-W2 collected March 6 (field and all analytical parameters)
- SP-E-IN and SP-E-OUT collected March 7 (methylmercury, dioxins and furans)
- WWTP-E-IN and WWTP-E-OUT collected March 8 (all analytical parameters)

Table 3: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #54.

Sample	Description	Sampling Date	Parameters Reported
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	February 20, 2025	Methylmercury.
SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
WWTP-E-IN	East WWTP at the influent meter box		
WWTP-E-OUT	East WWTP at the effluent meter box		
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface		
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		
WQR1-0.5	Reference site 1; 0.5 m below surface		
WQR1-2m	Reference site 1; 2 m below surface		
WQR1-SF	Reference site 1; 2 m above the seafloor		
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	February 25, 2025	Field and Physical Parameters.
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-W-IN	West Sedimentation Pond influent entering the pond and collected at cell 1	March 5, 2025	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
SP-W-OUT	West Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
SP-E-IN	East Sedimentation Pond influent entering the pond and collected at cell 1	March 7, 2025	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, and VOCs.
SP-E-OUT	East Sedimentation Pond clarified effluent discharge to Howe Sound, collected at sampling port		
IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface		Field and Physical Parameters.
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		

3.3 East Catchment

The East Catchment water quality monitoring results for stations at the East Sedimentation Pond, East WWTP and the authorized discharge location are discussed in this section. Results for the sedimentation pond and authorized discharge location 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. East WWTP monitoring results are screened against operational MDOs which are equivalent to the PE-111578 discharge limits and the lowest applicable WQGs for parameters without discharge limits. The screened water quality results for analytical samples available at the time of reporting and for field parameters collected during the monitoring period are presented in Appendix B. Exceedances of PE-111578 discharge limits and WQGs in samples of effluent discharged to Howe Sound and results received for methylmercury are summarized below.

During the monitoring period (March 2 – March 8), clarified water from the East Sedimentation Pond TSS settling system (E500GPM) discharged to Howe Sound at the authorized discharge location (station SP-E-OUT) on March 7 and March 8. Daily discharge volumes from the East Catchment are summarized in Appendix B, Table B-5.

Field measurements were collected March 2 – March 8 at multiple influent and effluent locations, as outlined in Section 2, and are tabulated in Appendix B, Table B-4. Analytical samples collected on March 7 (stations SP-E-IN and SP-E-OUT) were available at the time of reporting. Screening results for East Catchment contact water quality are tabulated in Table B-1 and Table B-2 of Appendix B.

Field measurements and analytical results monitored at station SP-E-OUT on March 7 met PE-111578 discharge limits and WQGs except pH which exceeded the upper PE-111578 discharge limit on March 8 in three of four field measurements (Table 4).

Table 4:
Summary of Parameters Exceeding PE-111578 Discharge Limits in Effluent Discharged from SP-E-OUT for Field and Analytical Results Available at the Time of Reporting

Parameter	Units	Discharge Limit	N	N >Limit	Commentary
Field pH	s.u.	6.5-9.0	4	3	Field pH measured at station SP-E-OUT on March 8 was above the upper limit of the PE-111578 discharge limit in measurements collected at 17:10 (pH 9.4), 17:26 (pH 9.3), and 20:06 (pH 9.1). Field pH met discharge limits at 20:21 (pH 7.6) following carbon dioxide injection to reduce the pH. BCER was notified on March 11.

N = number of samples.

Methylmercury analytical results were available at the time of reporting for East WWTP influent and effluent (WWTP-E-IN and WWTP-E-OUT), East Sedimentation Pond influent (SP-E-IN),

and effluent discharged at SP-E-OUT on February 20 (as discussed in Report #52). The methylmercury concentrations in the monitoring and duplicate samples of effluent discharged at SP-E-OUT on February 20 were 0.000049 and 0.000048 µg/L, respectively, and met the WQG for methylmercury (Appendix B, Table B-3).

3.4 West Catchment

The West Catchment water quality monitoring results for stations at the West Sedimentation Pond, the TSS settling systems (ESC and W500GPM) and West WWTP monitoring stations, and the authorized discharge location are discussed in this section. Results for sedimentation pond and TSS settling system influent and effluent stations 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. The screened water quality results for analytical samples and field parameters are presented in Appendix C. Operation of the West WWTP is currently suspended (refer to Section 1.1) and monitoring results are therefore not available. Exceedances of PE-111578 discharge limits and WQGs in samples of effluent discharged to Howe Sound are summarized below.

During the monitoring period (March 2 – March 8), the TSS settling system (W500GPM) treated water stored in the West Sedimentation Pond each day and produced clarified effluent that was discharged to Howe Sound on each day, except March 2 and 3, at the authorized discharge location, SP-W-OUT. The smaller TSS settling system (ESC) was operated March 7 and 8 and produced clarified effluent that was discharged to Howe Sound on these days. Daily clarified effluent and discharge volumes from the West Catchment are summarized in Appendix C, Table C-4.

Field measurements were collected March 2 – March 8 at multiple influent and effluent locations, as outlined in Section 2, and are tabulated in Appendix C, Table C-3. Analytical samples collected on March 5 (SP-W-IN and SP-W-OUT) were available at the time of reporting. Screening results for West Catchment contact water quality are tabulated in Table C-1 and Table C-2 of Appendix C.

Field measurements and analytical results monitored at station SP-W-OUT on March 5 met PE-111578 discharge limits and WQGs.

3.5 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.

East Creek was temporarily diverted to OUT-11 on September 17 to facilitate replacement of the OUT-12 culvert through which East Creek previously discharged. Only East Creek water is

flowing through the OUT-11 culvert. East Creek is monitored at freshwater receiving environment station SW-04 and station OUT-11 is not monitored while diversion is in place.

There are no outstanding analytical results for non-contact water diversion ditch outlet stations at the time of reporting.

3.6 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 a possible indicator of project influence.

Analytical results were not available at the time of reporting.

3.7 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 or reference stations are considered to represent the natural condition of the water and not flagged as a possible indicator of project influence. Similarly, WQG exceedances at marine reference stations are considered to represent background conditions that are not influenced by the project. It is expected that samples collected within the IDZ (*i.e.*, mixing zone) defined in PE-111578 for the authorized discharge locations may have parameter concentrations above baseline or background (*i.e.*, reference station) concentrations due to project influence. The analytical results, field parameters and WQGs are summarized in Appendix D.

Analytical results and field measurements were available at the time of reporting for marine water samples collected at 0.5 and 2 m below the water surface and 2 m above the seafloor on February 25 at IDZ-E1 and IDZ-E2 (as discussed in Report #53) and on March 7 at IDZ-E1 and IDZ-E2. Only field and physical parameters were collected on February 25 and March 7. Parameter concentrations met WQGs except field turbidity in some samples (Appendix D; Tables D-1).

In the marine samples collected 2 m below the water surface and 2 m above the seafloor at IDZ-E1 on February 25, field turbidity (3.41 and 2.89 NTU) was above the calculated long-term WQGs (3.23 and 2.79 NTU, respectively). The field turbidity observed at the IDZ monitoring stations are within concentrations that have been observed in the pre-construction baseline monitoring program or within background ranges observed at marine reference stations and are therefore not attributed to project influence.

Methylmercury analytical results were available at the time of reporting for marine water samples collected at 0.5 and 2 m below the water surface and 2 m above the seafloor on February 20 at IDZ-E1, IDZ-E2, and marine reference station WQR1 (as discussed in Report #52). For all stations, methylmercury concentrations were <0.000020 µg/L and met the WQG. The corresponding total mercury results also met WQGs. Results are tabulated in Appendix D, Table D-3.

4. Quality Control

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

Table 5: Weekly Report QC Evaluations and Ongoing Items

QC Procedure	Observation	Investigation/Resolution
Reporting Period (March 2 – March 8, Report #54)		
Authorized Works and Monitoring Program Evaluation	The authorized works and monitoring stations have not been established as described in PE-111578.	The PE-111578 authorized works were under construction during the reporting period. The East and West Sedimentation Ponds and WWTPs have been constructed. The sedimentation pond conveyance ditches have not been constructed, and influent culverts have not been activated, and the associated influent monitoring stations have not been established. A temporary outfall is used for the East authorized discharge locations until the permanent structure is completed. West Sediment Pond clarified water has been pumped through temporary hoses to the permanent outfall structure since December 2024. Operation of the West WWTP has been suspended since September 25, 2024, and the plant has been repurposed to evaluate alternative treatment processes. The lower reach of East Creek has been temporarily diverted through OUT-11 outfall since September 17, 2024, to facilitate replacement of the East Creek outfall culvert (OUT-12). East Creek is monitored at SW-04 therefore monitoring at OUT-11 has been suspended. As communicated to BCER, the East Catchment discharge pathway for authorized discharge location SP-E-OUT was reconfigured from October 28, 2024, through January 24, 2025, to direct sedimentation pond water to the East WWTP and to discharge East WWTP treated effluent. From January 24, 2025 onwards the East WWTP discharge is directed to the East Sedimentation Pond. On November 28 and December 4, 2024, TSS settling systems were commissioned for use at the West and East Sedimentation Ponds, respectively, and are configured to discharge the clarified sediment pond water to Howe Sound. This item remains open.
Non-Compliant Effluent	East Sedimentation Pond effluent pH above upper discharge limit.	Field pH measured at station SP-E-OUT on March 8 was above the upper PE-111578 discharge limit. BCER was notified on March 11. Review of the non-compliance is underway, and outcomes will be communicated to BCER. This item remains open.
Pending Data	Analytical results not reported.	Analytical results for receiving environment samples collected March 6 and contact water samples collected March 8 were not complete at the time of Report #54 preparation. Methylmercury, dioxins and furans results for contact water samples collected March 7 were not complete at the time of Report #54 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Ongoing Items from Previous Weekly Reports		
Report #50: Pending Data	Analytical results not reported.	Dioxin and furans results for samples collected February 5 were not complete at the time of Report #54 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #51: Pending Data	Analytical results not reported.	Dioxins and furans results for contact water samples collected February 15 were not complete at the time of Report #54 preparation. The pending results will be included in future weekly reports when available. This item remains open.
Report #52: Data QC	D-Cu and D-Zn greater than T- Cu and T-Zn	This item was first noted in Report #49 (January 31 samples) and has been updated with February 15 and February 18 results (Report #53). The dissolved copper and zinc concentrations were 2.2 to 2.5 times greater than the total copper concentration and 1.5 to 1.8 times the total zinc concentrations in two of four replicate samples collected at SP-E-OUT on January 31. The dissolved zinc concentrations were 3.6 and 5.5 times greater than the total zinc concentrations in the samples collected from WWTP-E-IN on February 15 and from SP-W-OUT on February 18, respectively. It is suspected that the dissolved metal sample bottles were contaminated during sample processing. Enhanced sampling and testing for copper and zinc is ongoing to identify specific sources of contamination. Enhanced monitoring results received at the time of reporting are inconclusive and a root cause has not yet been identified. This item remains open.
Report #52: Pending Data	Analytical results not reported.	Methylmercury results for contact water and receiving environment samples collected February 20 are discussed in Sections 3.3 and 3.7 of Report #54. Analytical results for receiving environment samples collected February 19 were not complete at the time of Report #54 preparation. Dioxins and furans results for contact water and receiving environment samples collected February 18, 20, and 21 were not complete at the time of Report #54 preparation. The pending results will be included in future weekly reports when available. This item remains open.
WWTP Performance Evaluation	Field pH, T-Cu, T-Hg, T-Zn, and hexavalent Cr above the MDO	This item was first noted in Report #46 (January 8 sample) and has been updated with January 14 results (Report #47), January 24 and January 28 results (Report #49), February 5 and 6 results (Report #50), February 10 results (Report #51), February 15 and 20 results (Report #52), and February 24 results (this report). The total copper concentrations were 0.00809, 0.00595, 0.00895, 0.00518 and 0.00542 mg/L in samples collected at WWTP-E-OUT on January 8, 14, 24, 28 and February 24, respectively, and ranged from 0.00613 to 0.0108 mg/L in four replicate samples collected on February 15. The total mercury concentrations were 0.0000355, 0.000185, 0.000223, and 0.0000882 mg/L in samples collected on January 24, 30, February 20 and 24, respectively, and were 0.0000615 and 0.0000644 mg/L in two replicate samples collected February 15. The total zinc concentrations were 0.0137, 0.0152, and 0.0156 mg/L in the samples collected on January 24, February 20 and 24, and were 0.0223 and 0.0234 mg/L in two of four replicate samples collected February 15. Hexavalent chromium concentrations were 0.00197 and 0.00166 mg/L in samples collected January 24 and 28 at WWTP- E-OUT. Field pH was 9.1, 9.2, and 9.6 in samples collected at WWTP-E-OUT on February 5, 6 and 10, respectively. Review of possible causes is ongoing. The effluent discharged to Howe Sound at SP-E-OUT met the discharge limits on January 8. East WWTP effluent was routed to the pre-discharge holding tank and did not discharge to Howe Sound on January 14. East WWTP effluent has been directed to the East Sedimentation Pond since January 24. This item remains open.
Potential Project Influence	Total aluminum, total chromium, total iron, and dissolved copper at East Creek were above concentration ranges observed in the pre-construction baseline program.	Total aluminum, total chromium, total iron, and dissolved copper concentrations observed at the East Creek station (SW-04) on February 21 were 6.4, 4.5, 5.6, and 1.5 times greater than the maximum concentrations observed in the pre-construction baseline monitoring program at East Creek, respectively. Elevated turbidity (26.05 NTU) and TSS (32.5 mg/L) were observed in the East Creek sample collected February 21 and total metal exceedances are attributable to particulate-bound forms of the metals. Potential influences to East Creek water quality at station SW-04 are being reviewed. This item remains open.
Pending Data	Analytical results not reported.	Analytical results for receiving environment samples collected February 25 are discussed in Section 3.7 of Report #54. Dioxins and furans results for contact water samples collected February 24 were not complete at the time of Report #54 preparation. The pending results will be included in future weekly reports when available. This item remains open.

Notes:

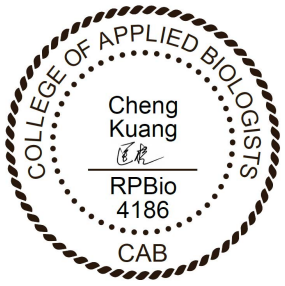
Result QA/QC screening includes the evaluation of field and lab QC results, comparison of total and dissolved metal results and review for modified detection limits.
Pending data are outstanding results from monitoring samples reported in the current or previous weekly reports.
Authorized works and monitoring program evaluation is an assessment of the completeness of the authorized works and 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 QC 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.
Non-compliant discharge indicates exceedance of a discharge limit or a discharge that bypasses the sedimentation pond discharge location.
Potential project influence is an assessment that water quality at creek and Howe Sound baseline stations are above the baseline concentration range and may indicate project influence at these stations.

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.

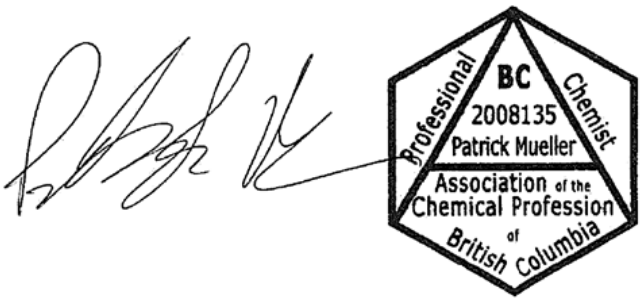
Regards,

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

Appendix A: Figures and Site Images

LEGEND

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

DATE SAVED:	Mar 14, 2025
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 (March 8, 2025)

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

Figure 2: East Catchment contact water management facilities (March 2 – March 8).

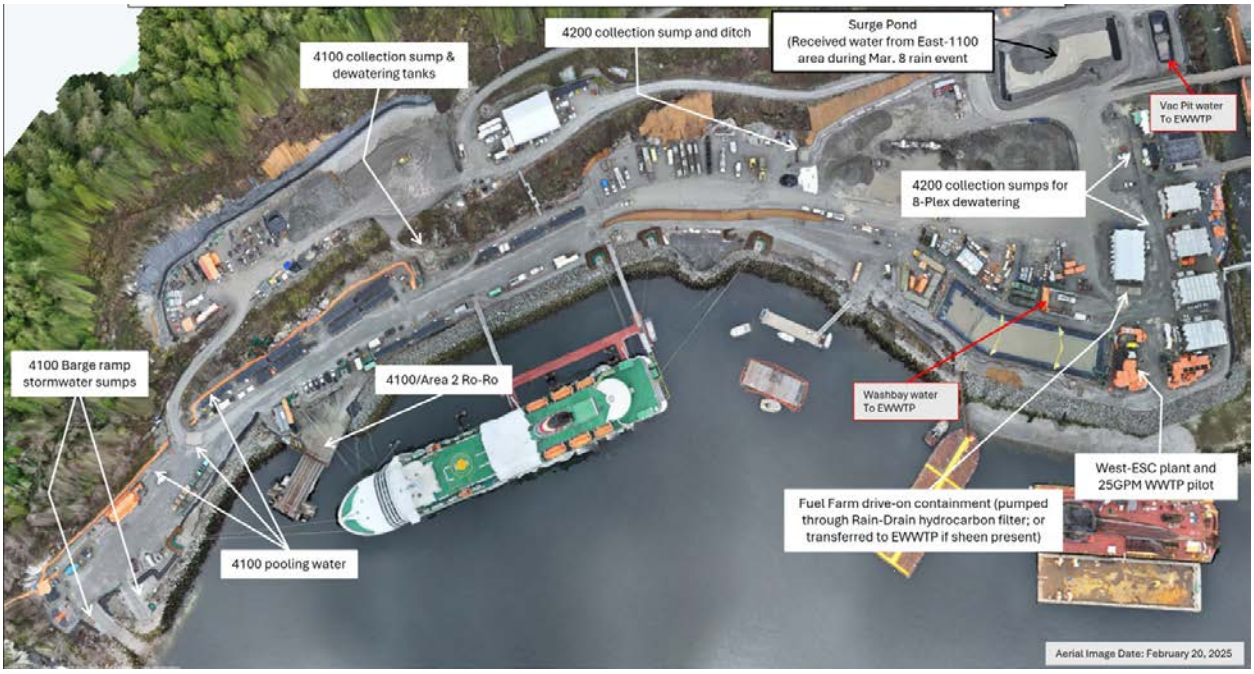


Figure 3: West Catchment contact water management facilities (March 2 – March 8).

Figure 4: Aerial view of the East Sedimentation Pond (March 13, 2025). The East WWTP is located on the left side and the E500GPM TSS settling system is situated along the bottom edge of the pond.

Figure 5: Aerial view of the West Sedimentation Pond (March 7, 2025). The TSS settling systems are located to the left (W500GPM) and right (ESC) of the pond.

Appendix B: East Catchment Monitoring Results

Table B-1: East Catchment Contact Water Influent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station SP-E-IN
					Influent
					SP-E-IN
					VA25A5111-004
		Long Term	Short Term		2025-03-07 12:13
General Parameters					
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.2
Conductivity - Field	µS/cm	-	-	-	582
Temperature - Field	°C	-	-	-	9.3
Salinity - Field	ppt	-	-	-	0.41
Turbidity - Field	NTU	-	-	-	74.24
TSS	mg/L	-	-	25 [6]	60.2
Dissolved Oxygen - Field	mg/L	≥8	-	-	10.33
Anions and Nutrients					
Sulphate	mg/L	-	-	-	261
Chloride	mg/L	-	-	-	16.8
Fluoride	mg/L	-	1.5	-	0.29
Ammonia ($N\text{-}NH_3$)	mg/L	18 [3]	121 [3]	-	0.0439
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	0.107
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	0.722
Total Metals					
Aluminum, total (T-Al)	mg/L	-	-	-	4.81
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00182
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.0049
Barium, total (T-Ba)	mg/L	-	-	-	0.0661
Beryllium, total (T-Be)	mg/L	0.1	-	-	0.000099
Boron, total (T-B)	mg/L	1.2	-	-	0.141
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	***0.000137***
Chromium, total (T-Cr)	mg/L	-	-	-	0.00421
Cobalt, total (T-Co)	mg/L	-	-	-	0.00125
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00962
Iron, total (T-Fe)	mg/L	-	-	-	3.26
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.00605
Manganese, total (T-Mn)	mg/L	-	-	-	0.144
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	***0.0000434***
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0768
Nickel, total (T-Ni)	mg/L	0.0083	-	-	0.00146
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000331
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	0.000035
Thallium, total (T-Tl)	mg/L	-	-	-	0.000052
Uranium, total (T-U)	mg/L	-	-	-	0.0328
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.0113
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0355
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00104
Dissolved Metals					
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000750
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00338
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.056
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000122
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.0643
Nickel, dissolved (D-Ni)	mg/L	-	-	-	0.00061
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.198
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00527
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0116
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene	mg/L	0.006	-	-	0.000023
Acridine	mg/L	-	-	-	<0.000010
Anthracene	mg/L	-	-	-	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	0.0000073
Chrysene	mg/L	0.0001	-	-	<0.000010
Fluoranthene	mg/L	-	-	-	0.000027
Fluorene	mg/L	0.012	-	-	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020
Pyrene	mg/L	-	-	-	0.000026
Quinoline	mg/L	-	-	-	0.000054
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-111578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond discharged during the monitoring period (March 2 – March 8) on March 7 and 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 27E and 27F 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.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions applied March 8.

Table B-2: East Catchment Effluent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station SP-E-OUT	Station SP-E-OUT
					Effluent	Effluent
					SP-E-Out	SP-E-Out-Dup
					VA25A5111-001	VA25A5111-002
		Long Term	Short Term		2025-03-07 11:21	2025-03-07 11:00
General Parameters						
pH - Field	pH units	- [2]	-	5.5 - 9.0	8.1	8.1
Conductivity - Field	µS/cm	-	-	-	16	16
Temperature - Field	°C	-	-	-	8.2	8.2
Salinity - Field	ppt	-	-	-	0.01	0.01
Turbidity - Field	NTU	-	-	-	2.45	2.45
TSS	mg/L	-	-	25 [6]	<3.0	<3.0
Dissolved Oxygen - Field	mg/L	≥8	-	-	11.15	11.15
Anions and Nutrients						
Sulphate	mg/L	-	-	-	433	432
Chloride	mg/L	-	-	-	9.04	8.97
Fluoride	mg/L	-	1.5	-	0.217	0.211
Ammonia ($N\text{-}NH_3$)	mg/L	2.9 [3]	19 [3]	-	0.189	0.198
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	0.38	0.375
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	2.14	2.13
Total Metals						
Aluminum, total (T-Al)	mg/L	-	-	-	0.173	0.171
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00145	0.00143
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00288	0.00287
Barium, total (T-Ba)	mg/L	-	-	-	0.00385	0.00376
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	0.020	0.019
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000300	<0.0000250
Chromium, total (T-Cr)	mg/L	-	-	-	0.00125	0.00120
Cobalt, total (T-Co)	mg/L	-	-	-	0.00022	0.00023
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00324	0.0031
Iron, total (T-Fe)	mg/L	-	-	-	0.107	0.107
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000168	0.000155
Manganese, total (T-Mn)	mg/L	-	-	-	0.0301	0.0301
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.00000787	0.00000771
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0693	0.0703
Nickel, total (T-Ni)	mg/L	0.0083	-	-	0.00073	0.00075
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000248	0.000242
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	0.000021	0.000021
Uranium, total (T-U)	mg/L	-	-	-	0.0242	0.0244
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00608	0.00607
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	<0.0030	<0.0030
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00110	0.00117
Dissolved Metals						
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000250	<0.0000250
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00252	0.00238
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.025	0.033
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.0496	0.0448
Nickel, dissolved (D-Ni)	mg/L	-	-	-	0.00092	0.00086
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.239	0.233
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00369	0.0038
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0032	0.0029
Polycyclic Aromatic Hydrocarbons (PAHs)						
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<0.000050	<0.000050
Volatile Organic Compounds (VOCs)						
Benzene	mg/L	0.11	-	-	<0.00050	<0.00050
Ethylbenzene	mg/L	0.25	-	-	<0.00050	<0.00050
Methyl-tert-butyl-ether	mg/L	5	0.44	-	<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	0.025	-	-	<0.00050	<0.00050
1,2-Dichlorobenzene	mg/L	0.042	-	-	<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.
Results in orange text exceeded the PE-111578 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond discharged during the monitoring period (March 2 – March 8) on March 7 and 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 27E and 27F 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.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions applied March 8.

Table B-3: East Catchment Methylmercury and Corresponding Total Mercury Results Received at the Time of Reporting.

Parameter					**Total Methylmercury**	**Total Mercury**
Unit					**µg/L**	**µg/L**
Lowest Applicable Guideline[1]					0.0001 [2]	0.020 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
Influent						
SP-E-IN	Influent	SP-E-IN	VA25A3676-004	2025-02-20	***0.000252***	***0.358***
WWTP-E-IN	Influent	WWTP-E-IN	VA25A3676-005	2025-02-20	0.000068	***0.0571***
Effluent						
SP-E-OUT	Effluent	SP-E-OUT	VA25A3676-001	2025-02-20	0.000049	***0.0268***
SP-E-OUT	Effluent	SP-E-OUT-DUP	VA25A3676-002	2025-02-20	0.000048	***0.0294***
WWTP-E-OUT	Effluent	WWTP-E-OUT	VA25A3676-006	2025-02-20	0.000059	***0.223*** [5]

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine aquatic life.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] From BC Ambient Water Quality Guidelines for Mercury Overview Report. The methylmercury concentration threshold of 0.0001 µg/L (0.1 ng/L) is indicated as a WQG for the protection of wildlife and is set at a concentration that protects fish from mercury bioaccumulation to a level that may harm wildlife that consume fish.
[3] CCME guideline for total mercury = 0.016 µg/L.
[4] When MeHg ≤ 0.5% of total Hg, BC WQG = 0.02 µg/L. When MeHg > 0.5% of total Hg, BC WQG = 0.0001/(MeHg/Total Hg). Detection limit values are used to calculate the WQG for result reported as not detected.
[5] East WWTP treated effluent was directed to the East Sedimentation Pond on February 20.
Non-detect results are screened using the detection limit value.

Table B-4: East Catchment Field Measurements Collected During the Monitoring Period (March 2 – March 8).

Parameter			Temp.	Dissolved Oxygen (DO)	Salinity	Turbidity	Estimated TSS [3]	pH	Conductivity	Visibility of Sheen
Unit			**°C**	**mg/L**	**ppt**	**NTU**	**mg/L**	**s.u.**	**µS/cm**	
PE-111578 Discharge Limit			-	-	-	-	25 or 75 [6]	5.5 - 9.0	-	-
Lowest Applicable Guideline [1]			-	≥8	-	-	- [2]	- [2]	-	-
Station ID	**Water Type**	**Date**								
Influent [4]										
SP-E-IN	Influent	2025-03-02 10:06	11.3	11.71	0.69	9.66	10.2	8.3	1008	No
SP-E-IN	Influent	2025-03-03 10:10	11.7	10.52	0.78	16.19	15.1	5.8	1152	No
SP-E-IN	Influent	2025-03-04 10:17	11.7	11.29	0.88	10.05	10.5	7.9	1290	No
SP-E-IN	Influent	2025-03-05 11:12	10.7	10.98	1.08	21.55	19.1	6.4	1526	No
SP-E-IN	Influent	2025-03-06 15:33	11.2	11.43	1.18	30.78	26.0	6.6	1680	No
SP-E-IN	Influent	2025-03-07 12:13	9.3	10.33	0.41	74.24	58.4	7.2	582	No
SP-E-IN	Influent	2025-03-08 10:59	8.0	12.08	0.72	305.86	231.1	9.2	970	No
WWTP-E-IN	Influent	2025-03-02 9:52	10.0	11.16	0.68	5.24	6.9	8.2	967	No
WWTP-E-IN	Influent	2025-03-03 9:57	10.4	10.93	0.74	5.22	6.9	7.0	1059	No
WWTP-E-IN	Influent	2025-03-04 14:48	10.6	11.67	0.90	6.17	7.6	6.9	1282	No
WWTP-E-IN	Influent	2025-03-05 11:00	10.6	11.47	0.91	4.67	6.5	7.1	1287	No
WWTP-E-IN	Influent	2025-03-06 15:26	11.2	11.84	1.03	4.10	6.1	7.2	1477	No
WWTP-E-IN	Influent	2025-03-08 10:31	7.9	11.37	0.77	31.11	26.2	10.4	1033	No
E500GPM-IN	Influent	2025-03-07 9:49	9.0	12.59	1.08	12.25	12.1	- [7]	1460	No
Effluent [5]										
SP-E-OUT	Effluent	2025-03-07 11:21	8.2	11.15	0.01	2.45	4.8	8.1	16	No
SP-E-OUT	Effluent	2025-03-08 17:10	7.8	12.16	0.68	2.66	5.0	9.4	916	No
SP-E-OUT	Effluent	2025-03-08 17:26	7.7	12.23	0.67	4.12	6.1	9.3	894	No
SP-E-OUT	Effluent	2025-03-08 20:06	7.1	10.92	0.61	8.23	9.1	9.1	803	No
SP-E-OUT	Effluent	2025-03-08 20:21	7.7	12.06	0.61	1.35	4.0	7.6	820	No
WWTP-E-OUT	Effluent	2025-03-02 10:02	10.9	9.98	0.69	1.03	3.8	8.1	996	No
WWTP-E-OUT	Effluent	2025-03-03 10:01	11.4	10.52	0.79	2.02	4.5	7.2	1152	No
WWTP-E-OUT	Effluent	2025-03-04 15:00	11.3	10.07	0.96	0.64	3.5	7.1	1389	No
WWTP-E-OUT	Effluent	2025-03-05 11:06	10.2	9.84	1.1	1.04	3.8	6.9	1542	No
WWTP-E-OUT	Effluent	2025-03-06 15:30	10.6	9.51	1.21	0.34	3.3	7.2	1692	No
WWTP-E-OUT	Effluent	2025-03-08 10:43	8.6	11.9	0.89	0.89	3.7	7.3	1205	No
E500GPM-OUT	Effluent	2025-03-07 9:56	7.4	10.65	0.54	0.98	3.7	7.5	717	No
E500GPM-OUT	Effluent	2025-03-08 16:58	8.3	12.20	0.70	2.71	5.0	9.0	953	No
E500GPM-OUT	Effluent	2025-03-08 18:12	7.5	12.64	0.63	9.51	10.1	9.3	842	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-111578 East Sedimentation Pond Discharge Limit.
[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] TSS concentration is estimated from field turbidity measurements using a site-specific relationship TSS = 0.7458 * [turbidity as NTU] + 3.
[4] Daily field measurements for station SP-E-IN were collected from cell 1 of the East Sedimentation Pond. There was no influent to the East WWTP at the time of monitoring on March 7, therefore daily field measurements for WWTP-E-IN were not collected on this day.
[5] There was no discharge March 2 through March 6, therefore daily measurements for SP-E-OUT were not collected on those days. There was no effluent discharged from the East WWTP at the time of monitoring on March 7, therefore daily field measurements for WWTP-E-OUT were not collected on this day.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for Wet Conditions. Wet Conditions applied on March 8.
[7] The field pH measurement for E500GPM-IN collected on March 7 (pH 3.5) is suspected to be erroneous and was not reported.

Table B-5: East Catchment Daily Discharge Volumes for the Monitoring Period (March 2 – March 8).

	East Sedimentation Pond Effluent	East TSS Settling System (E500GPM) Clarified Effluent (Station E500GPM-OUT)	East WWTP Treated Effluent (Station WWTP-E-OUT)	Discharge to Howe Sound (Station SP-E-OUT)
Unit	**m^3**	**m^3**	**m^3**	**m^3**
PE-111578 Discharge Limit	- [1]	- [1]	1100	- [1]
Date				
2025-03-02	0	0	558 [3]	0
2025-03-03	0	0	569 [3]	0
2025-03-04	0	0	521 [3]	0
2025-03-05	0	0	547 [3]	0
2025-03-06	0	0	425 [3]	0
2025-03-07	0	1,521 [2]	274 [3]	1,141
2025-03-08	0	1,009 [2]	608 [3]	540

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-111578 East Sedimentation Pond Discharge Limit.
[1] 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.
[2] A total of 1,141 m^3 of clarified effluent from the E500GPM TSS Settling System were discharged to Howe Sound at SP-E-OUT and a total of 379 m^3 were recirculated to the East Sedimentation Pond on March 7. A total of 540 m^3 of clarified effluent from the E500GPM system were discharged to Howe Sound at SP-E-OUT and a total of 470 m^3 were recirculated to the East Sedimentation Pond on March 8.
[3] East WWTP treated effluent was recirculated to the East Sedimentation Pond.

Appendix C: West Catchment Monitoring Results

Table C-1: West Catchment Contact Water Influent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station SP-W-IN Influent SP-W-IN VA25A4991-001 2025-03-05 17:28
		Long Term	Short Term		
General Parameters					
pH - Field	pH units	- [2]	-	5.5 - 9.0	8.4
Conductivity - Field	µS/cm	-	-	-	100
Temperature - Field	°C	-	-	-	10.5
Salinity - Field	ppt	-	-	-	0.07
Turbidity - Field	NTU	-	-	-	18.5
TSS	mg/L	-	-	25 [6]	17.7
Dissolved Oxygen - Field	mg/L	≥8	-	-	11.72
Anions and Nutrients					
Sulphate	mg/L	-	-	-	12.6
Chloride	mg/L	-	-	-	3.39
Fluoride	mg/L	-	1.5	-	0.071
Ammonia (N-NH_3)	mg/L	0.81 [3]	5.4 [3]	-	0.0154
Nitrite (N-NO_2)	mg/L	-	-	-	0.0072
Nitrate (N-NO_3)	mg/L	3.7	339	-	0.579
Total Metals					
Aluminum, total (T-Al)	mg/L	-	-	-	0.864
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00098
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00164
Barium, total (T-Ba)	mg/L	-	-	-	0.0103
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	0.016
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	0.00002
Chromium, total (T-Cr)	mg/L	-	-	-	0.00082
Cobalt, total (T-Co)	mg/L	-	-	-	0.0003
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00222
Iron, total (T-Fe)	mg/L	-	-	-	0.719
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.00136
Manganese, total (T-Mn)	mg/L	-	-	-	0.0266
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.00000408
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0165
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000161
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	0.000023
Uranium, total (T-U)	mg/L	-	-	-	0.00446
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00266
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0058
Hexavalent Chromium, total	mg/L	0.0015	-	-	0.00058
Dissolved Metals					
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000100
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00096
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.019
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000068
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00575
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0492
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.0017
Zinc, dissolved (D-Zn)	mg/L	-	-	-	<0.0010
Polycyclic Aromatic Hydrocarbons (PAHs)					
Acenaphthene	mg/L	0.006	-	-	0.000015
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	-	-	-	0.000015
Fluorene	mg/L	0.012	-	-	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010
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	-	-	<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-111578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond discharged during the monitoring period (March 2 – March 8) on March 4, 5, 6, 7, and 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 27E and 27F 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.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions applied March 8.

Table C-2: West Catchment Contact Water Effluent Analytical Results Received at the Time of Reporting.

Parameter	Unit	Lowest Applicable Guideline [1]		PE-111578 Discharge Limit	Station SP-W-OUT
					Influent
					SP-W-OUT
					VA25A4991-002
		Long Term	Short Term		2025-03-05 16:11
General Parameters					
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.8
Conductivity - Field	µS/cm	-	-	-	91
Temperature - Field	°C	-	-	-	9.1
Salinity - Field	ppt	-	-	-	0.06
Turbidity - Field	NTU	-	-	-	1.72
TSS	mg/L	-	-	25 [6]	<3.0
Dissolved Oxygen - Field	mg/L	≥8	-	-	13.05
Anions and Nutrients					
Sulphate	mg/L	-	-	-	10.7
Chloride	mg/L	-	-	-	2.78
Fluoride	mg/L	-	1.5	-	0.066
Ammonia ($N\text{-}NH_3$)	mg/L	4.7 [3]	31 [3]	-	0.018
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	0.0056
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	0.513
Total Metals					
Aluminum, total (T-Al)	mg/L	-	-	-	0.0639
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00083
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00131
Barium, total (T-Ba)	mg/L	-	-	-	0.00191
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000020
Boron, total (T-B)	mg/L	1.2	-	-	0.012
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000100
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00099
Iron, total (T-Fe)	mg/L	-	-	-	0.032
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000158
Manganese, total (T-Mn)	mg/L	-	-	-	0.00624
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	0.00000093
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0131
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000094
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	0.000011
Uranium, total (T-U)	mg/L	-	-	-	0.00326
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00113
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0036
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050
Dissolved Metals					
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000050
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.0008
Iron, dissolved (D-Fe)	mg/L	-	-	-	0.015
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000055
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00618
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.0434
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00112
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0016
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	-	-	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010
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	-	-	<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-111578 West Sedimentation Pond Discharge Limit.
The West Sedimentation Pond discharged during the monitoring period (March 2 – March 8) on March 4, 5, 6, 7, and 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 27E and 27F 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.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions applied on March 8.

Table C-3: West Catchment Field Measurements Collected During the Monitoring Period (March 2 – March 8).

Parameter			**Temperature**	**Dissolved Oxygen (DO)**	**Salinity**	**Turbidity**	**Estimated TSS [3]**	**pH**	**Conductivity**	**Visibility of Sheen**
Unit			**°C**	**mg/L**	**ppt**	**NTU**	**mg/L**	**s.u.**	**µS/cm**	
PE-111578 Discharge Limit			-	-	-	-	25 or 75 [6]	5.5 - 9.0	-	-
Lowest Applicable Guideline [1]			-	≥8	-	-	- [2]	- [2]	-	-
Station ID	**Water Type**	**Date**								
Influent [4]										
SP-W-IN	Influent	2025-03-02 10:25	8.5	12.46	0.07	3.54	5.6	8.1	102	No
SP-W-IN	Influent	2025-03-03 10:22	9.4	12.03	0.07	2.01	4.5	7.6	100	No
SP-W-IN	Influent	2025-03-04 10:54	9.3	11.9	0.07	2.05	4.5	8.3	99	No
SP-W-IN	Influent	2025-03-05 11:31	9.4	11.72	0.07	35.04	29.1	8.2	109	No
SP-W-IN	Influent	2025-03-05 17:28	10.5	11.72	0.07	18.50	16.8	8.4	100	No
SP-W-IN	Influent	2025-03-06 12:06	8.2	12.62	0.07	27.76	23.7	8.9	94	No
SP-W-IN	Influent	2025-03-07 16:40	8.4	12.43	0.06	17.10	15.8	8.4	93	No
SP-W-IN	Influent	2025-03-08 11:17	7.0	12.94	0.06	22.31	19.6	8.2	82	No
W500GPM-IN	Influent	2025-03-02 10:34	8.8	12.95	0.07	4.92	6.7	8.1	102	No
W500GPM-IN	Influent	2025-03-03 10:35	9.8	12.44	0.07	5.38	7.0	7.9	100	No
W500GPM-IN	Influent	2025-03-08 11:24	6.9	12.34	0.06	36.38	30.1	8.4	81	No
ESC-W-IN	Influent	2025-03-07 16:49	8.8	12.44	0.07	10.00	10.5	8.9	99	No
ESC-W-IN	Influent	2025-03-08 11:14	6.9	12.43	0.06	45.39	36.9	8.4	81	No
Effluent [5]										
SP-W-OUT	Effluent	2025-03-04	11.1 [5]	- [5]	- [5]	-0.90 [5]	2.3	7.2 [5]	- [5]	- [5]
SP-W-OUT	Effluent	2025-03-05 16:11	9.1	13.05	0.06	1.72	4.3	7.8	91	No
SP-W-OUT	Effluent	2025-03-06	10.4 [5]	- [5]	- [5]	2.31 [5]	4.7	7.3 [5]	- [5]	- [5]
SP-W-OUT	Effluent	2025-03-07	9.6 [5]	- [5]	- [5]	0.34 [5]	3.3	7.2 [5]	- [5]	- [5]
SP-W-OUT	Effluent	2025-03-08 14:31	7.0	12.5	0.03	4.46	6.3	8.1	40	No
W500GPM-OUT	Effluent	2025-03-03 10:32	10.4	12.23	0.07	1.11	3.8	7.7	104	No
W500GPM-OUT	Effluent	2025-03-05 17:46	9.7	12.56	0.06	1.12	3.8	7.8	92	No
W500GPM-OUT	Effluent	2025-03-08 11:21	6.9	12.98	0.06	3.82	5.8	8.2	82	No
ESC-W-OUT	Effluent	2025-03-07 16:46	8.6	10.51	0.09	1.74	4.3	8.4	129	No
ESC-W-OUT	Effluent	2025-03-08 11:10	7.0	13.03	0.09	6.42	7.8	8.3	128	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-111578 West Sedimentation Pond Discharge Limit.
[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] TSS concentration is estimated from field turbidity measurements using a site-specific relationship TSS = 0.7458 * [turbidity as NTU] + 3.
[4] Daily field measurements for station SP-W-IN were collected from cell 1 of the West Sedimentation Pond.
[5] There was no discharge at the authorized discharge location (SP-W-OUT) at the time of monitoring on March 4, 6, and 7, therefore daily field measurements for SP-W-OUT were not collected on those days. Average temperature, turbidity and pH measurements logged at the W500GPM-OUT meter box during the discharge period are reported for March 4, 6, and 7. No discharge occurred March 2 and 3 from the West Catchment.
[6] The PE-111578 discharge limit for TSS is 25 mg/L under dry conditions and 75 mg/L for each day of Wet Conditions. Wet Conditions applied on March 8.

Table C-4: West Catchment Daily Discharge Volumes for the Monitoring Period (March 2 – March 8).

	West Sedimentation Pond Effluent	**West TSS Settling System (W500GPM) Clarified Effluent (Station W500GPM-OUT)**	**West TSS Settling System (ESC) Clarified Effluent (Station ESC-W-OUT)**	**West WWTP Treated Effluent [1] (Station WWTP-W-OUT)**	**Discharge to Howe Sound (Station SP-W-OUT)**
Unit	**m^3**	**m^3**	**m^3**	**m^3**	**m^3**
PE-111578 Discharge Limit	- [2]	- [2]	- [2]	120	- [2]
Date					
2025-03-02	0	1,284 [3]	0	0	0
2025-03-03	0	1,754 [3]	0	0	0
2025-03-04	0	592 [3]	0	0	467
2025-03-05	0	1,039 [3]	0	0	1,039
2025-03-06	0	297 [3]	0	0	297
2025-03-07	0	312 [3]	130 [4]	0	319
2025-03-08	0	2,206 [3]	245 [4]	0	2,308

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-111578 West Sedimentation Pond Discharge Limit.
[1] The West WWTP is not being operated, therefore discharges are not expected from this facility.
[2] 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.
[3] All of the volumes clarified through the W500GPM TSS Settling System were discharged to Howe Sound on March 5, 6, and 8. On March 2 and 3, all of the volumes clarified through the W500GPM TSS Settling System were directed to the West Sedimentation Pond. A total of 467 m^3 were discharged to Howe Sound at SP-W-OUT and a total of 125 m^3 were recirculated to the West Sedimentation Pond on March 4. A total of 285 m^3 were discharged to Howe Sound at SP-W-OUT and a total of 27 m^3 were recirculated to the West Sedimentation Pond on March 7.
[4] Clarified effluent from the West 150GPM (ESC) TSS Settling System was recirculated to the West Sedimentation Pond and discharged to Howe Sound on March 7 and 8. A total of 34 m^3 were discharged to Howe Sound at SP-W-OUT and a total of 96 m^3 were recirculated to the West Sedimentation Pond on March 7. A total of 102 m^3 were discharged to Howe Sound at SP-W-OUT and a total of 443 m^3 were recirculated to the West Sedimentation Pond on March 8.

Appendix D: Marine Water Receiving Environment Results

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

Parameter	Unit	Lowest Applicable Guideline [1]		Station IDZ-E1			Station IDZ-E2		
				0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor
				IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF
				VA25A4102-001	VA25A4102-002	VA25A4102-003	VA25A4102-004	VA25A4102-005	VA25A4102-006
		Long Term	Short Term	2025-02-25 10:13	2025-02-25 10:14	2025-02-25 10:20	2025-02-25 10:27	2025-02-25 10:26	2025-02-25 10:25
General Parameters									
pH - Field	pH units	7.0 - 8.7	-	7.84	7.85	7.83	7.89	7.89	7.85
Specific Conductivity - Field	µS/cm	-	-	10187	20505	29622	10032	20134	29134
Temperature - Field	℃	-	-	5.5	6.1	7.1	5.6	6.2	7.0
Salinity - Field	ppt	Narrative [2]	-	9.42	19.81	28.75	9.23	19.30	28.29
Turbidity - Field	NTU	2.79-3.25 [2]	8.79-9.25 [2]	0.51	***3.41***	***2.89***	2.45	1.82	1.27
TSS	mg/L	7.0-8.5 [2]	27.0-29.5 [2]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Oxygen - Field	mg/L	≥8	-	12.26	11.63	10.43	11.93	11.61	10.64

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. Salinity WQG was not evaluated. The water quality data presented in the table were collected when the site was discharging, therefore the turbidity and TSS WQGs were evaluated. Background values used to evaluate the February 24 IDZ-W1 and IDZ-W2 samples are the maximum values measured in the February 18 WQR2 and February 20 WQR1 reference station samples at 0.5 and 2 m below the surface and 2 m above the seafloor (Report #52 and #53, respectively).

Table D-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		
				0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor	0.5 m Below Surface	2 m Below Surface	2 m Above Seafloor
				IDZ-E1-0.5	IDZ-E1-2m	IDZ-E1-SF	IDZ-E2-0.5	IDZ-E2-2m	IDZ-E2-SF
				VA25A5112-001	VA25A5112-002	VA25A5112-003	VA25A5112-004	VA25A5112-005	VA25A5112-006
		Long Term	Short Term	2025-03-07 12:15	2025-03-07 12:15	2025-03-07 12:17	2025-03-07 13:03	2025-03-07 13:04	2025-03-07 13:08
General Parameters									
pH - Field	pH units	7.0 - 8.7	-	8.07	7.93	7.83	8.11	7.98	7.73
Specific Conductivity - Field	µS/cm	-	-	19551	26465	28713	20294	27415	29619
Temperature - Field	℃	-	-	6.8	7.1	7.2	6.9	7.2	7.3
Salinity - Field	ppt	Narrative [2]	-	18.38	25.37	27.71	19.09	26.34	28.56
Turbidity - Field	NTU	2.79-3.25 [2]	8.79-9.25 [2]	1.16	1.03	0.78	2.59	2.66	2.43
TSS	mg/L	7.0-8.5 [2]	27.0-29.5 [2]	<2.0	<2.0	2.3	2.1	2.1	<2.0
Dissolved Oxygen - Field	mg/L	≥8	-	12.24	11.83	10.96	12.13	11.71	9.32

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. Salinity WQG was not evaluated. The water quality data presented in the table were collected when the site was discharging, therefore the turbidity and TSS WQGs were evaluated. Background values used to evaluate the February 24 IDZ-W1 and IDZ-W2 samples are the maximum values measured in the February 18 WQR2 and February 20 WQR1 reference station samples at 0.5 and 2 m below the surface and 2 m above the seafloor (Report #52 and #53, respectively).

Table D-3: Marine Water Methylmercury and Corresponding Total Mercury Results Received at the Time of Reporting.

Parameter					**Total Methylmercury**	**Total Mercury**
Unit					**µg/L**	**µg/L**
Lowest Applicable Guideline[1]					0.0001 [2]	0.02 [3,4]
Station	**Water Type**	**Sample ID**	**Lab ID**	**Sampling Date**		
Station IDZ-E1						
IDZ-E1	0.5 m Below Surface	IDZ-E1-0.5	VA25A3677-001	2025-02-20	<0.000020	<0.0050
IDZ-E1	2 m Below Surface	IDZ-E1-2m	VA25A3677-002	2025-02-20	<0.000020	<0.0050
IDZ-E1	2 m Above Seafloor	IDZ-E1-SF	VA25A3677-003	2025-02-20	<0.000020	<0.0050
Station IDZ-E2						
IDZ-E2	0.5 m Below Surface	IDZ-E2-0.5	VA25A3677-004	2025-02-20	<0.000020	<0.0050
IDZ-E2	2 m Below Surface	IDZ-E2-2m	VA25A3677-005	2025-02-20	<0.000020	<0.0050
IDZ-E2	2 m Above Seafloor	IDZ-E2-SF	VA25A3677-006	2025-02-20	<0.000020	<0.0050
Reference Station WQR1						
WQR1	0.5 m Below Surface	WQR1-0.5	VA25A3677-007	2025-02-20	<0.000020	<0.0050
WQR1	2 m Below Surface	WQR1-2m	VA25A3677-008	2025-02-20	<0.000020	<0.0050
WQR1	2 m Above Seafloor	WQR1-SF	VA25A3677-009	2025-02-20	<0.000020	<0.0050

Notes:
Results ***underlined in bold italics*** exceed the applicable long-term water quality guideline for the protection of marine aquatic life.
[1] The lowest applicable guidelines from approved or working BC WQGs, Canadian (CCME) WQGs and Federal WQGs.
[2] From BC Ambient Water Quality Guidelines for Mercury Overview Report. The methylmercury concentration threshold of 0.0001 µg/L (0.1 ng/L) is indicated as a WQG for the protection of wildlife and is set at a concentration that protects fish from mercury bioaccumulation to a level that may harm wildlife that consume fish.
[3] CCME guideline for total mercury = 0.016 µg/L.
[4] When MeHg ≤ 0.5% of total Hg, BC WQG = 0.02 µg/L. When MeHg > 0.5% of total Hg, BC WQG = 0.0001/(MeHg/Total Hg). Detection limit values are used to calculate the WQG for result reported as not detected. Non-detect results are screened using the detection limit value.