TECHNICAL MEMORANDUM

To:	**Ian McAllister, Ashleigh Crompton, Mike Champion, Jackie Boruch and Ryan Schucroft (Woodfibre LNG)**	**Date: 27 Sept 2024**
From:	**Cheng Kuang, Holly Pelletier (Lorax)**	**Project #: A633-8**
Subject:	**PE-111578 Weekly Discharge and Compliance Report #32 for September 15 – 21**	

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

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

This technical memorandum (Report #32) was prepared by Lorax Environmental and summarizes monitoring conducted the week of (September 15 – 21) for contact waters directed to a Wastewater Treatment Plant (WWTP) or a sedimentation pond. 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 #32 has been prepared to meet the requirements specified in Condition 4.2 of WDA Effluent Permit PE-111578:

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

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

1. Current Conditions

The Construction Phase of the Woodfibre LNG Export Facility commenced in October 2023. Early stage civil works are ongoing, and these include site grading, levelling, overburden and bedrock excavation, and construction of contact water management facilities. Shoring works along the shoreline and foreshore areas were initiated in December 2023, and in early 2024 construction of water management infrastructure commenced and has continued through the September 15 – 21 monitoring period. The East WWTP and East Sedimentation Pond are commissioned for operation and discharge since April 15, 2024. The West WWTP and West Sedimentation Pond are constructed. The 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). The PE-111578 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. Temporary diversion of East Creek through OUT-11 started on September 17.

The East and West catchments conveyance ditches described in PE-111578 were designed to transport non-contaminated contact water to the East and West sedimentation ponds and will be constructed following completion of site preparation activities (*e.g.*, site grading, bedrock excavation) along the ditch lines. Until the ditches are operational, non-contaminated 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 (East Pond) or for storage (West Pond).

A revised schedule is being developed to complete the installation of the East and West Sedimentation Pond permanent outfall structures. A temporary discharge system (*i.e.*, pump, hosing and diffusor) is used to convey East Sedimentation Pond effluent to the authorized discharge location when necessary for the discharge of excess water, and if the effluent water quality meets the requirements set out in PE-111578. The West Sedimentation Pond is not commissioned for discharge. Surplus water in the West Sedimentation Pond is pumped to the East WWTP for treatment prior to discharge through the East Sedimentation Pond.

Pilot testing of the East WWTP continued during the monitoring period (September 15 – 21). Contaminated and potentially contaminated contact waters from the 1100 Area 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 4,113 m^3 of treated WWTP effluent was discharged to the East Sedimentation Pond during the reporting period (September 15 – 21). Daily East WWTP effluent flows are provided in Appendix C (Table C-4). The East Sedimentation Pond intermittently discharged on September 17 by pumping effluent to the discharge location SP-E-OUT. A total of 974 m^3 of effluent was discharged to Howe Sound during the reporting period.

The West WWTP is undergoing pilot trials. During the monitoring period (September 15 – 21), the West WWTP received water from the West Sedimentation Pond each day except September 17 since the plant was not operational that day. A total of 152 m^3 of treated WWTP effluent was discharged to the West Sedimentation Pond as part of pilot testing. Daily West WWTP effluent flows are provided in Appendix D (Table D-3). The West Sedimentation Pond is complete, except for the outfall structure, and has not been commissioned for discharge. There were no discharges from the West Sedimentation Pond to Howe Sound during the monitoring period.

The weather was generally warm and sunny during the monitoring period (September 15 – 21), with no precipitation recorded at the Woodfibre site weather station. 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
09-15-2024	0.0	19.0	11.8	Sun
09-16-2024	0.0	20.4	11.0	Sun
09-17-2024	0.0	17.4	11.6	Overcast
09-18-2024	0.0	20.5	12.8	Sun
09-19-2024	0.0	19.9	12.4	Sun
09-20-2024	0.0	18.5	11.8	Sun
09-21-2024	0.0	18.8	11.0	Sun

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

2. Monitoring Summary

The PE-111578 authorized works were under construction during the September 15 – 21 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.
- 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, SP-W-W, and SP-W-E).

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

Water quality was monitored at stations IDZ-E1, IDZ-E2, WWTP-E-IN, WWTP-E-OUT, SP-E-NE, SP-E-NW, SP-E-OUT, WWTP-W-IN, and WWTP-W-OUT during the monitoring period (September 15 – 21). Sampling dates and parameters tested are summarized in Table 2. 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 an analytical sample were collected at effluent station SP-E-OUT as the East Sedimentation Pond discharged on September 17.

Overall, the PE-111578 monitoring requirements that were applicable during the monitoring period (September 15 – 21) were met. Field measurements were collected each day at both WWTP-W-IN and WWTP-W-OUT except on September 15 – 17 as the West WWTP was not active at the time of monitoring.

Table 2: Summary of PE-111578 Monitoring Samples Collected September 15 – 21.

Sampling Date	Sample	Description	Parameters Tested	Monitoring Frequency
September 15, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field & Physical Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field & Physical Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
September 16, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field & Physical Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field & Physical Parameters, EPHs & PAHs, Total, Dissolved and Speciated Metals.	D, W_1
	WWTP-E-IN	East WWTP influent		
September 17, 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
	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field Parameters.	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field Parameters.	D
	WWTP-E-IN	East WWTP influent		
September 18, 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		
	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		
	WWTP-W-OUT	West WWTP effluent	Field Parameters.	D
	WWTP-W-IN	West WWTP influent		
	IDZ-E1-0.5	Howe Sound IDZ station E1; 0.5 m below surface	Field and Physical Parameters.	W_3, P
	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		
September 19, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field Parameters.	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field, Physical & General Parameters, VH & BTEX, EPHs & PAHs, Total, Dissolved and Speciated Metals, VOCs, Methylmercury, Dioxins & Furans, Glycols, Oil and Grease.	D, W_1, W_2
	WWTP-E-IN	East WWTP influent		
	WWTP-W-OUT	West WWTP effluent		
	WWTP-W-IN	West WWTP influent		
September 20, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field Parameters.	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field Parameters.	D
	WWTP-E-IN	East WWTP influent		
	WWTP-W-OUT	West WWTP effluent		
	WWTP-W-IN	West WWTP influent		
September 21, 2024	SP-E-NE [1]	East Sedimentation Pond, in-pond sample, represents effluent quality	Field Parameters.	P
	SP-E-NW [1]	East Sedimentation Pond, in-pond sample, represents influent quality		
	WWTP-E-OUT	East WWTP effluent	Field Parameters.	D
	WWTP-E-IN	East WWTP influent		
	WWTP-W-OUT	West WWTP 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-W-IN	West WWTP influent		

Notes:
Monitoring frequency requirements under PE-111578 are indicated as follows:
D – daily monitoring of field parameters at WWTP and sedimentation pond influent and effluent stations.
M – Monthly monitoring for all parameters at WWTP, sedimentation pond and receiving environment stations.
W_1 – initial high frequency monitoring for physical parameters at WWTP and sedimentation pond influent and effluent stations (weekly for the first 6 months of monitoring).
W_2 - initial high frequency monitoring for all parameters at WWTP and sedimentation pond influent and effluent stations (weekly for the first 5 weeks of monitoring).
W_3 – initial high frequency monitoring for physical parameters at IDZ stations (weekly for the first 5 weeks of monitoring).
P - periodic monitoring for targeted parameters that is supplementary to PE-111578 requirements.
[1] In-Pond stations SP-E-NW and SP-E-NE may be monitored in place of stations SP-E-IN-2 and SP-E-OUT, respectively, when there is no influent to, or discharge from the East Sedimentation Pond at the time of monitoring. 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.

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 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 (September 15 – 21) and for other samples that have not been previously reported are listed below in Table 3. Analytical results not available at the time of reporting will be included in future weekly reports when testing is completed. Testing for methylmercury, dioxins and furans typically requires up to four weeks to complete. Results are pending for the following samples and parameters:

- SP-E-OUT collected September 17 (dioxins and furans)
- IDZ-E1 and IDZ-E2 collected September 18 (field measurements and all analytical parameters)

- WWTP-E-IN, WWTP-E-OUT, WWTP-W-IN and WWTP-W-OUT collected September 19 (all analytical parameters)
- WWTP-W-IN and WWTP-W-OUT collected September 21 (all analytical parameters)

Table 3: Summary of Analytical Results Included in Weekly Discharge and Compliance Report #32.

Sample	Description	Sampling Date	Parameters Reported
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	August 13, 2024	Dioxins and Furans.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
WWTP-E-OUT	East WWTP effluent	August 17, 2024	Dioxins and Furans.
WWTP-E-IN	East WWTP influent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	August 21, 2024	Dioxins and Furans.
SP-E-NW	East Sedimentation Pond, in-pond sample, represents influent quality		
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-OUT	East Sedimentation Pond effluent	September 8, 2024	Methylmercury.
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
WWTP-E-OUT	East WWTP effluent	September 11, 2024	Methylmercury.
WWTP-E-IN	East WWTP influent		
WWTP-W-OUT	West WWTP effluent		
WWTP-W-IN	West WWTP influent		
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	September 15, 2024	Field and Physical Parameters, Total and Dissolved Metals, PAHs.
SP-E-NW	East 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	September 16, 2024	Field and Physical Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs.
SP-E-NW	East Sedimentation Pond, in-pond sample, represents influent quality		
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		
SP-E-OUT	East Sedimentation Pond effluent	September 17, 2024	Field, Physical and General Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs, VOCs, Methylmercury.
SP-E-NE	East Sedimentation Pond, in-pond sample, represents effluent quality	September 18, 2024	Field and Physical Parameters, Total and Dissolved Metals, Hexavalent Chromium, PAHs.
SP-E-NW	East Sedimentation Pond, in-pond sample, represents influent quality		
WWTP-E-OUT	East WWTP effluent		
WWTP-E-IN	East WWTP influent		

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 B-4 (analytical results) and Table B-5 (field measurements) of Appendix B. Screening results are summarized below for parameter concentrations that exceeded WQGs at the effluent compliance location (Table 4) and at the in-pond effluent quality station (Table 5).

During the monitoring period (September 15 – 21), 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 intermittently discharged on September 17 by pumping effluent to the discharge location SP-E-OUT. Field measurements and an analytical sample were collected at SP-E-OUT on September 17 while the pond was discharging. Field measurements and analytical results for the September 17 effluent sample met PE-111578 discharge limits.

Field measurements were taken daily at the in-pond influent quality station (SP-E-NW) and the effluent quality station (SP-E-NE) during the monitoring period (September 15 – 21). Analytical samples were collected at SP-E-NE and SP-E-NW on September 15, 16, and 18, and results met PE-111578 discharge limits.

Field pH ranged from 6.6 to 7.2 at SP-E-NE during the monitoring period (September 15 – 21), while dissolved oxygen ranged from 6.98 to 8.44 mg/L, and turbidity ranged from 2.12 to 8.35 NTU (Appendix B, Table B-5). Dissolved oxygen measured at station SP-E-NE on September 15 (7.74 mg/L), September 16 (7.64 mg/L), September 18 (7.64 mg/L), September 20 (7.81 mg/L), and September 21 (6.98 mg/L) was below the lower limit of the WQG (≥8 mg/L; Table 5).

Field pH ranged from 8.0 to 8.5 at SP-E-NW during the monitoring period (September 15 – 21), while dissolved oxygen ranged from 6.91 to 9.82 mg/L, and turbidity ranged from 4.19 to 8.21 NTU (Appendix B, Table B-5). Dissolved oxygen measured at station SP-E-NW on September 16 (7.80 mg/L) and September 20 (6.91 mg/L) was below the lower limit of the WQG (≥8 mg/L).

Methylmercury analytical results were available at the time of reporting for the effluent sample (SP-E-OUT) collected on September 8 (as discussed in Weekly Report #31) and on September 17. The methylmercury concentration was 0.000123 µg/L at SP-E-OUT on September 8, which translates to a total mercury (T-Hg) WQG of 0.0041 µg/L. The methylmercury concentration was

0.000348 µg/L at SP-E-OUT on September 17, which translates to a T-Hg WQG of 0.0014 µg/L. Non-detect T-Hg results are screened using the lowest method detection limit (0.0050 µg/L), which is above the calculated WQGs for T-Hg in the September 8 and 17 SP-E-OUT samples.

Dioxins and furans analytical results were available at the time of reporting for the SP-E-NE sample collected on August 13 (as discussed in Weekly Report #27) and for the SP-E-NE and SP-E-NW samples collected on August 21 (as discussed in Weekly Report #28). The lower and upper bound PCDD/F TEQ concentrations were 0.0805 and 1.19 pg/L, respectively in the SP-E-NE sample collected on August 13. The lower and upper bound PCDD/F TEQ concentrations were 0.00234 and 0.569 pg/L, respectively, in the SP-E-NW sample and 0.0989 and 0.0.934 pg/L, respectively, in the SP-E-NE sample collected on August 21.

Table 4:
Summary of WQG Exceedances for the East Sedimentation Pond at the Effluent Compliance Station SP-E-OUT during the Monitoring Period (September 15 – 21)

Parameter	Units	WQG	N	N >WQG	Commentary
Total Mercury	mg/L	0.0000014	1	1	Non-detect T-Hg results are screened using the lowest method detection limit (0.0050 µg/L), which is above the calculated WQG for T-Hg in the September 17 SP-E-OUT sample.

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 during the Monitoring Period (September 15 – 21)

Parameter	Units	WQG	N	N >WQG	Commentary
Field Dissolved Oxygen	mg/L	≥8	6	5	Dissolved oxygen measured at station SP-E-NE on September 15 (7.74 mg/L), September 16 (7.64 mg/L), September 18 (7.64 mg/L), September 20 (7.81 mg/L), and September 21 (6.98 mg/L) was below the lower limit of the WQG.

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

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. For previous reports (up to Report #30) the WWTP results were screened against design MDOs which are the same as the operational MDOs, except for parameters with sedimentation pond discharge limits (pH, TSS, total copper, total lead, total vanadium and total zinc). For these parameters, the design MDOs are equal to the lowest WQG values for these parameters whereas the operational MDOs are set to the sedimentation pond discharge limits. Therefore, the weekly report screening criteria have been updated to align with the operational MDOs.

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 to 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. The influent waters were treated by the East WWTP and discharged to the East Sedimentation Pond. Field measurements were collected each day at the influent (WWTP-E-IN) and effluent (WWTP-E-OUT) stations.

Field pH ranged from 6.8 to 7.5 at WWTP-E-IN during the monitoring period (September 15 – 21), while dissolved oxygen ranged from 6.50 to 8.89 mg/L, and turbidity ranged from 2.23 to 5.72 NTU (Appendix C, Table C-2). Field pH, dissolved oxygen, and turbidity in the East WWTP effluent (WWTP-E-OUT) ranged from pH 6.2 to 8.8, 4.95 to 8.31 mg/L, and 0.72 to 4.30 NTU, respectively.

Analytical samples collected from the East WWTP influent and effluent stations on September 15, 16, and 18 were available at the time of reporting. Effluent quality monitored at WWTP-E-OUT achieved operational MDOs for all parameters except for total zinc in the September 18 sample (Table 5).

Methylmercury analytical results were available at the time of reporting for the East WWTP influent and effluent samples collected on September 8 and 11 (as discussed in Weekly Report #31). Methylmercury concentrations ranged from 0.000146 to 0.000225 µg/L at WWTP-E-IN, and from 0.000157 to 0.000192 µg/L at WWTP-E-OUT.

Dioxins and furans analytical results were available at the time of reporting for the WWTP-E-IN and WWTP-E-OUT samples collected on August 13 and 17 (as discussed in Weekly Report #27) and on August 21 (as discussed in Weekly Report #28). The lower and upper bound PCDD/F TEQ concentrations ranged from 0.00240 to 0.0328 pg/L and 0.844 to 1.82 pg/L, respectively, in the influent samples. In the effluent samples, the lower and upper bound PCDD/F TEQ concentrations ranged from 0.00237 to 0.0485 pg/L and 0.792 to 1.83 pg/L, respectively.

Table 6:
Summary of Parameters Outside Operational Minimum Discharge Objectives (MDOs) at East WWTP Effluent Station WWTP-E-OUT during September 15 – 21.

Parameter	Units	MDO	N	N >MDO	Commentary
Total Zinc	mg/L	0.0133	3	1	The total zinc concentration in the September 18 (0.0176 mg/L) effluent sample was 1.3 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

Water quality results were not available for the West Sedimentation Pond at the time of reporting.

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. For previous reports (up to Report #30) the WWTP results were screened against design MDOs which are the same as the operational MDOs, except for parameters with sedimentation pond discharge limits (pH, TSS, total copper, total lead, total vanadium and total zinc). For these parameters, the design MDOs are equal to the lowest WQG values for these parameters whereas the operational MDOs are set to the sedimentation pond discharge limits. Therefore, the weekly report screening criteria have been updated to align with the operational MDOs.

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 D-1 and D-2 (analytical results) and Table D-3 (field measurements) of Appendix D.

The West WWTP received recirculated water from the West Sedimentation Pond each day during the monitoring period (September 15 – 21) except September 17 as the plant was not operational. Field measurements were collected each day at the influent (WWTP-W-IN) and effluent (WWTP-W-OUT) stations except on September 15 – 17 since the West WWTP was not active at the time of monitoring (Section 2).

Field pH ranged from 6.7 to 7.3 at WWTP-W-IN, while dissolved oxygen ranged from 6.43 to 7.25 mg/L, and turbidity ranged from 5.69 to 9.46 NTU (Appendix D, Table D-3). Field pH, dissolved oxygen, and turbidity in the West WWTP effluent (WWTP-W-OUT) ranged from pH 6.7 to 8.0, 5.46 to 6.84 mg/L, and 1.53 to 7.17 NTU, respectively.

Analytical samples collected from the West WWTP influent and effluent stations on September 19 and 21 were not available at the time of reporting and will be included in future weekly reports when available. The West WWTP is undergoing early-stage pilot trials.

Methylmercury analytical results were available at the time of reporting for the West WWTP influent and effluent samples collected on September 11 (as discussed in Weekly Report #31). Methylmercury concentrations were 0.000055 µg/L at WWTP-W-IN and 0.000067 µg/L at WWTP-W-OUT.

Dioxins and furans analytical results were available at the time of reporting for the WWTP-W-IN and WWTP-W-OUT samples collected on August 16 (as discussed in Weekly Report #27). The lower and upper bound PCDD/F TEQ concentrations were 0.100 and 1.53 pg/L in the influent sample, respectively. In the effluent sample, the lower and upper bound PCDD/F TEQ concentrations were 0.00742 and 1.16 pg/L, respectively.

3.7 Non-Contact Water Diversion Ditch Outlets

Water quality results were not available for the non-contact water diversion ditch outlets at the time of reporting. There are no outstanding results for diversion ditch stations.

3.8 Freshwater and Estuarine Water Receiving Environment

Water quality results were not available for the freshwater and estuarine water receiving environment at the time of reporting.

3.9 Marine Water Receiving Environment

Water quality results were not available for the marine water receiving environment at the time of reporting.

4. Quality Control

This section presents the results of the quality control (QC) evaluation for the PE-111578 weekly report (Table 7). 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 7. Any items flagged for follow-up are carried forward to future reports until they are closed.

Table 7: Weekly Report QC Evaluations and Ongoing Items

QC Procedure	Observation	Investigation/Resolution
Reporting Period (September 15 – 21, Report #32)		
Monitoring Program Evaluation	PE-111578 contact water, non-contact water and initial dilution zone monitoring stations have not been fully established.	The PE-111578 authorized works were under construction during the reporting period. Monitoring stations are progressively established as water management infrastructure is completed. The East Sedimentation Pond and East WWTP are completed, and pilot testing of the East WWTP is ongoing. The East Sedimentation Pond was commissioned for discharge on April 15. The West Sedimentation Pond is complete, except the outfall structure and West WWTP is undergoing pilot testing. The West Sedimentation Pond is not commissioned for discharge. The non-contact water diversion ditch that discharges at station OUT-06 has been commissioned, and stations for pre-existing outfalls OUT-01, OUT-02, and OUT-11 have also been established. This item remains open.
Pending Data	Analytical results were not reported for samples collected September 19 and 21.	Analytical results for samples collected September 19 and 21 were not complete at the time of Report #32 preparation. The pending results will be included in future weekly reports when available. This item remains open.
	Dioxins and furans for the sample collected September 17 were not reported.	Analytical results for dioxins and furans for the SP-E-OUT sample collected September 17 was not complete at the time of Report #32 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.
Ongoing Items from Previous Weekly Reports		
Report #27: Pending Data	Analytical results for samples collected August 12, 16, and 17 and dioxins and furans results for samples collected August 13 were not reported.	Analytical results for samples collected August 12, 16, and 17 are discussed in Sections 3.5, 3.6, and 3.9 of Report #28. Dioxin and furan results are discussed in Sections 3.5 and 3.6 of Report #28 for samples collected August 12 and in Sections 3.3, 3.4, and 3.5 of Report #32 for samples collected August 13, 16 and 17. This item is closed.
Report #27: Sample Integrity	Dioxin and furans could not be tested in the July 19 IDZ-E1 sample from 2 m below surface.	The laboratory reports that the sample bottles for dioxin and furans were broken during trans-shipment between testing facilities while the sample was under laboratory custody, therefore results for this sample are not available. Root cause investigation by the laboratory is underway. This item remains open.
Report #28: Pending Data	Analytical results for samples collected August 21 and 23 were not reported.	Available analytical results for samples collected August 21 are discussed in Sections 3.3 and 3.4 of Report #29 and dioxins and furans results are discussed in Sections 3.3 and 3.4 of Report #32. Available analytical results for samples collected August 23 are discussed in Section 3.9 of Report #30. Analytical results for methylmercury, dioxins and furans were not complete at the time of Report #32 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.
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. Analytical results for methylmercury, dioxins and furans were not complete at the time of Report #32 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.
Report #29: Pending Data	Methylmercury, dioxins and furans results for samples collected August 26 – 29 were not reported.	Methylmercury results are discussed in Sections 3.4 and 3.6 of Report #30. Analytical results for dioxins and furans were not complete at the time of Report #31 preparation for samples collected August 26, 27, 28, and 29. 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 #30: Pending Data	Dioxins and furans results for samples collected September 2 and 4 were not reported.	Analytical results for dioxins and furans were not complete at the time of Report #31 preparation for samples collected September 2 and 4. 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 #31: Pending Data	Methylmercury, dioxins and furans results for samples collected September 8, 11, and 13 were not reported.	Methylmercury results for samples collected September 8 and 11 are discussed in Sections 3.3, 3.4, and 3.6 of Report #32. Analytical results for methylmercury for samples collected September 13 and results for dioxins and furans for samples collected September 8, 11, and 13 were not complete at the time of Report #32 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.
Report #31: Data Evaluation	Several PAHs were detected in the sample collected August 28 from the Mill Creek estuary (station SW-03)	Several PAHs were detected in the sample collected from SW-03 on August 28 at concentrations above those reported during the pre-construction baseline monitoring program. PAHs were not detected in the samples collected upstream on Mill Creek on August 27 (stations SW-02 and SW 07, Weekly Report #30). Follow-up with the laboratory was completed and confirmed the analytical results. This item is closed.
	TSS is elevated in the sample collected September 12 from SP-E-NE	TSS was elevated in the sample collected September 12 from the East Sedimentation Pond at the in-pond station SP-E-NE. Laboratory re-analysis has been completed and confirmed the analytical result. This item is closed.

Notes:

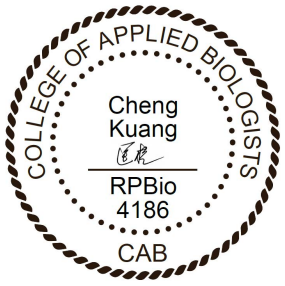
Result QA/QC screening includes the evaluation of field and lab QC results, comparison of total and dissolved metal results and review for modified detection limits.
Pending data are outstanding results from monitoring samples reported in the current or previous weekly reports.
Monitoring program evaluation is an assessment of the completeness of the monitoring program compared to PE-111578 specified or implied requirements.
WWTP performance evaluation is an assessment of WWTP effluent quality compared to 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.



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LEGEND

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

DATE SAVED:	Sep 26, 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 (September 21, 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 Area was directed to the East WWTP during the monitoring period (September 15 – 21).

Figure 3: West Catchment dewatering areas. Contact water was not directed to the West WWTP during the monitoring period (September 15 – 21).

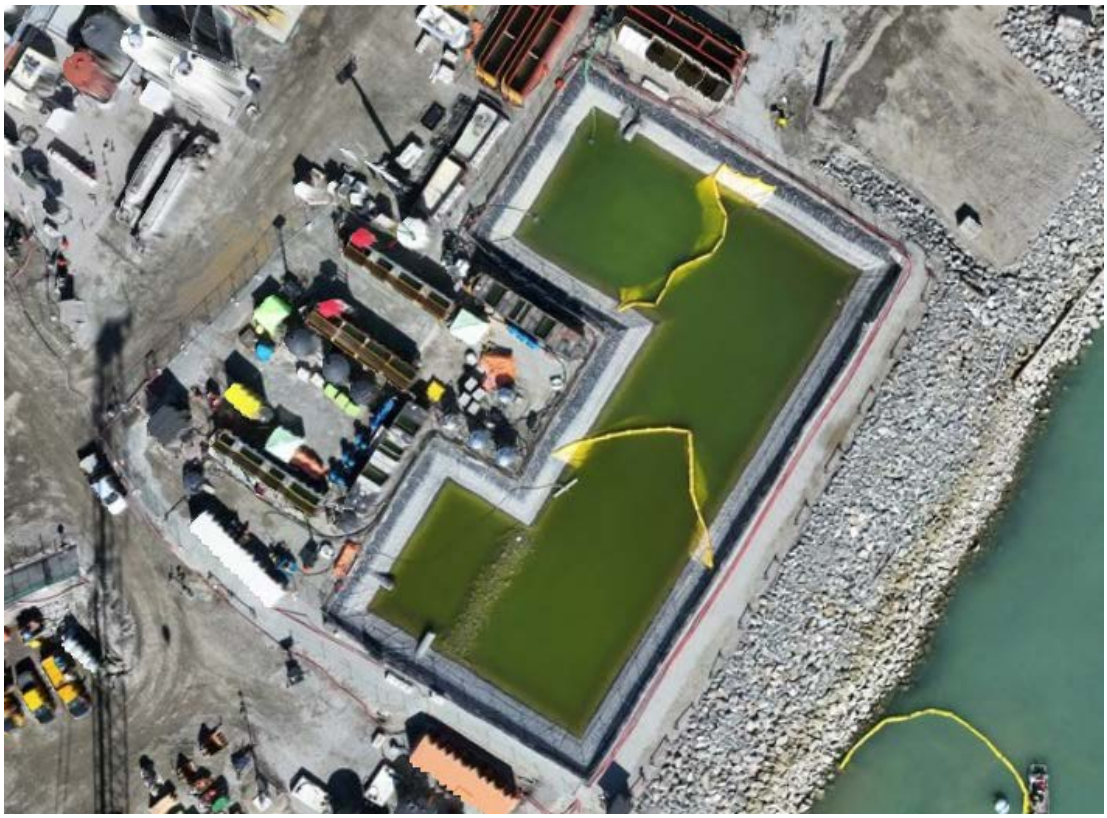

Figure 4: Aerial view of the East Sedimentation Pond showing the placement of two sediment curtains (September 16, 2024). The East WWTP is located on the left side of the pond.

Figure 5: Aerial view of the West Sedimentation Pond showing the placement of two sediment curtains (September 16, 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 Influent Location	In-Pond at Effluent Location	In-Pond at Influent Location	In-Pond at Effluent Location
					SP-E-NW	SP-E-NE	SP-E-NW	SP-E-NE
					VA24C4211-004	VA24C4211-003	VA24C4304-005	VA24C4304-004
		Long Term	Short Term		2024-09-15 15:58	2024-09-15 15:19	2024-09-16 15:36	2024-09-16 14:27
General Parameters								
pH - Field	pH units	- [2]	-	5.5 - 9.0	8.2	7.1	8.5	7.2
Conductivity - Field	µS/cm	-	-	-	1167	1205	1150	1232
Temperature - Field	°C	-	-	-	21.3	20.4	21.0	20.1
Salinity - Field	ppt	-	-	-	0.63	0.66	0.62	0.68
Turbidity - Field	NTU	-	-	-	4.19	5.78	4.62	5.7
TSS	mg/L	-	-	25	9.2	7.4	4.5	5.7
Dissolved Oxygen - Field	mg/L	>=8	-	-	8.53	***7.74***	***7.80***	***7.64***
Anions and Nutrients								
Sulphate	mg/L	-	-	-	-	-	-	-
Chloride	mg/L	-	-	-	-	-	-	-
Fluoride	mg/L	-	1.5	-	-	-	-	-
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	-	-	-	-
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	-	-	-	-
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	-	-	-	-
Total Metals								
Aluminum, total (T-Al)	mg/L	-	-	-	0.124	0.292	0.118	0.277
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00188	0.00199	0.00178	0.00202
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.00262	0.00186	0.00264	0.00194
Barium, total (T-Ba)	mg/L	-	-	-	0.0114	0.00753	0.0115	0.00689
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.089	0.07	0.087	0.071
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000350	<0.0000350	<0.0000300	<0.0000250
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	<0.00010	<0.00010	<0.00010
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00204	0.00186	0.00187	0.00134
Iron, total (T-Fe)	mg/L	-	-	-	0.063	0.088	0.046	0.079
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000227	0.000275	0.000175	0.000258
Manganese, total (T-Mn)	mg/L	-	-	-	0.00901	0.00482	0.0092	0.00446
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0681	0.0472	0.0677	0.0526
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	0.00055	0.00056	0.00063
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000202	0.00017	0.000202	0.000174
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	<0.000010	<0.000010	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.031	0.0665	0.0295	0.0629
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00448	0.00312	0.00457	0.00342
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0117	0.0044	0.0106	0.0050
Hexavalent Chromium, total	mg/L	0.0015	-	-	-	-	<0.00050	<0.00050
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000350	<0.0000250	<0.0000050	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00139	0.00072	0.00124	0.00066
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010	<0.010	<0.010	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	<0.000050	<0.000050	<0.000050	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00219	0.00168	0.00187	0.00157
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.103	0.0942	0.103	0.0865
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.00206	0.0022	0.0021	0.0026
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0066	0.0023	0.0048	0.0027
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 (September 15 – 21) on September 17.
[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 Influent Location	In-Pond at Effluent Location
					SP-E-OUT	SP-E-NW	SP-E-NE
					VA24C4445-001	VA24C4692-004	VA24C4692-003
		Long Term	Short Term		9/17/2024 16:08	9/18/2024 10:05	9/18/2024 10:10
General Parameters							
pH - Field	pH units	- [2]	-	5.5 - 9.0	7.4	8.2	7.2
Conductivity - Field	µS/cm	-	-	-	697	1026	1320
Temperature - Field	°C	-	-	-	19.6	18.8	18.9
Salinity - Field	ppt	-	-	-	0.36	0.58	0.74
Turbidity - Field	NTU	-	-	-	2.28	- [6]	8.35
TSS	mg/L	-	-	25	9.6	10.9	4.3
Dissolved Oxygen - Field	mg/L	>=8	-	-	10.85	- [6]	***7.64***
Anions and Nutrients							
Sulphate	mg/L	-	-	-	49.3	49.2	46.9
Chloride	mg/L	-	-	-	113	87.3	104
Fluoride	mg/L	-	1.5	-	0.212	0.313	0.252
Ammonia ($N\text{-}NH_3$)	mg/L	Variable [3]	Variable [3]	-	<0.0050	<0.0050	<0.0050
Nitrite ($N\text{-}NO_2$)	mg/L	-	-	-	<0.0050	<0.0050	<0.0050
Nitrate ($N\text{-}NO_3$)	mg/L	3.7	339	-	<0.0250	<0.0250	<0.0250
Total Metals							
Aluminum, total (T-Al)	mg/L	-	-	-	0.134	0.826	0.248
Antimony, total (T-Sb)	mg/L	-	0.27 [4]	-	0.00195	0.00179	0.00196
Arsenic, total (T-As)	mg/L	0.0125	0.0125	-	0.002	0.00332	0.00205
Barium, total (T-Ba)	mg/L	-	-	-	0.0097	0.0165	0.00613
Beryllium, total (T-Be)	mg/L	0.1	-	-	<0.000100	<0.000100	<0.000100
Boron, total (T-B)	mg/L	1.2	-	-	0.073	0.095	0.073
Cadmium, total (T-Cd)	mg/L	0.00012	-	-	<0.0000200	<0.0000300	<0.0000200
Chromium, total (T-Cr)	mg/L	-	-	-	<0.00050	0.00086	0.00051
Cobalt, total (T-Co)	mg/L	-	-	-	<0.00010	0.00026	<0.00010
Copper, total (T-Cu)	mg/L	- [2]	- [2]	0.0043	0.00134	0.00366	0.00208
Iron, total (T-Fe)	mg/L	-	-	-	0.038	0.602	0.082
Lead, total (T-Pb)	mg/L	- [2]	- [2]	0.0035	0.000394	0.00165	0.000296
Manganese, total (T-Mn)	mg/L	-	-	-	0.00884	0.0269	0.00437
Mercury, total (T-Hg)	mg/L	0.000016 [5]	-	-	***<0.0000050*** [5]	0.0000154	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	-	-	0.0564	0.0658	0.0575
Nickel, total (T-Ni)	mg/L	0.0083	-	-	<0.00050	0.00074	0.00051
Selenium, total (T-Se)	mg/L	0.002	-	-	0.000153	0.00023	0.00016
Silver, total (T-Ag)	mg/L	0.0015	0.003	-	<0.000010	<0.000010	<0.000010
Thallium, total (T-Tl)	mg/L	-	-	-	<0.000010	0.000011	<0.000010
Uranium, total (T-U)	mg/L	-	-	-	0.0468	0.0301	0.0514
Vanadium, total (T-V)	mg/L	- [2]	-	0.0081	0.00360	0.00655	0.00398
Zinc, total (T-Zn)	mg/L	- [2]	- [2]	0.0133	0.0082	0.0121	0.0040
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050	<0.00050	<0.00050
Dissolved Metals							
Cadmium, dissolved (D-Cd)	mg/L	-	-	-	<0.0000150	<0.0000150	<0.0000150
Copper, dissolved (D-Cu)	mg/L	-	-	-	0.00097	0.0015	0.00092
Iron, dissolved (D-Fe)	mg/L	-	-	-	<0.010	0.017	<0.010
Lead, dissolved (D-Pb)	mg/L	-	-	-	0.000161	0.000186	<0.000050
Manganese, dissolved (D-Mn)	mg/L	-	-	-	0.00459	0.00636	0.00101
Nickel, dissolved (D-Ni)	mg/L	-	-	-	<0.00050	<0.00050	<0.00050
Strontium, dissolved (D-Sr)	mg/L	-	-	-	0.116	0.111	0.0772
Vanadium, dissolved (D-V)	mg/L	-	-	-	0.0024	0.00393	0.00320
Zinc, dissolved (D-Zn)	mg/L	-	-	-	0.0062	0.0029	0.0013
Polycyclic Aromatic Hydrocarbons (PAHs)							
Acenaphthene	mg/L	0.006	-	-	<0.000010	<0.000010	<0.000010
Acridine	mg/L	-	-	-	<0.000010	<0.000010	<0.000010
Anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010
Benz(a)anthracene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010
Benzo(a)pyrene	mg/L	0.00001	-	-	<0.0000050	<0.0000050	<0.0000050
Chrysene	mg/L	0.0001	-	-	<0.000010	<0.000010	<0.000010
Fluoranthene	mg/L	-	-	-	<0.000010	0.000014	<0.000010
Fluorene	mg/L	0.012	-	-	<0.000010	<0.000010	<0.000010
1-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010	<0.000010
2-methylnaphthalene	mg/L	0.001	-	-	<0.000010	<0.000010	<0.000010
Naphthalene	mg/L	0.001	-	-	<0.000050	<0.000050	<0.000050
Phenanthrene	mg/L	-	-	-	<0.000020	<0.000020	<0.000020
Pyrene	mg/L	-	-	-	<0.000010	<0.000010	<0.000010
Quinoline	mg/L	-	-	-	<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 East Sedimentation Pond Discharge Limit.
The East Sedimentation Pond discharged during the monitoring period (September 15 – 21) on September 17.

[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. The MeHg concentration of the SP-E-OUT sample collected on September 17 (0.000348 µg/L) was >0.5% of total Hg (<0.0000050 mg/L), and the calculated BC WQG was 0.0000014 mg/L for this sample.
[6] Suspected erroneous field turbidity (70.9 NTU) and dissolved oxygen (0.16 mg/L) measurements collected September 18 at SP-E-NW were removed from the table.

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

Parameter	Unit	East Sedimentation Pond	
		Effluent	**Effluent**
		SP-E-OUT	**SP-E-OUT**
		VA24C3555-006	**VA24C4445-001**
		2024-09-08	**2024-09-17**
Methylmercury	**µg/L**	0.000123	0.000348

Table B-4: Summary of East Sedimentation Pond Water Quality Results for Dioxins and Furans Received at the Time of Reporting.

Parameter	Unit	East Sedimentation Pond		
		In-Pond at Effluent Location	**In-Pond at Effluent Location**	**In-Pond at Influent Location**
		SP-E-NE	**SP-E-NE**	**SP-E-NW**
		L2757049-3	**L2757152-3**	**L2757152-4**
		2024-08-13	**2024-08-21**	**2024-08-21**
Lower Bound PCDD/F TEQ	**pg/L**	0.0805	0.0989	0.00234
Upper Bound PCDD/F TEQ	**pg/L**	1.19	0.934	0.569

Notes:
PCDD = polychlorinated dibenzodioxins (dioxins)
PCDF = polychlorinated dibenzofurans (furans)
TEQ = toxic equivalency
Lower bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned a value of zero (0).
Upper bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned the value of the detection limit.

Table B-5: Summary of East Sedimentation Pond Daily Field Parameters September 15 – 21.

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	9/15/2024 15:19	20.4	***7.74***	0.66	5.78	7.1	1205	No	0
SP-E-NW	9/15/2024 15:58	21.3	8.53	0.63	4.19	8.2	1167	No	
SP-E-NE	9/16/2024 14:27	20.1	***7.64***	0.68	5.70	7.2	1232	No	0
SP-E-NW	9/16/2024 15:36	21.0	***7.80***	0.62	4.62	8.5	1150	No	
SP-E-NW	9/17/2024 9:05	-[5]	-[5]	-[5]	4.80	8.0	-[5]	No	974
SP-E-NE	9/17/2024 9:15	-[5]	-[5]	-[5]	2.12	6.9	-[5]	No	
SP-E-OUT	9/17/2024 16:08	19.6	10.85	0.36	2.28	7.4	697	No	
SP-E-NW	9/18/2024 10:05	18.8	-[6]	0.58	-[6]	8.2	1026	No	0
SP-E-NE	9/18/2024 10:10	18.9	***7.64***	0.74	8.35	7.2	1320	No	
SP-E-NW	9/19/2024 17:00	21.9	9.82	0.63	7.16	8.1	1188	No	0
SP-E-NE	9/19/2024 17:04	21.4	8.44	0.65	3.87	6.9	1300	No	
SP-E-NE	9/20/2024 13:10	20.0	***7.81***	0.60	7.25	7.0	1093	No	0
SP-E-NW	9/20/2024 13:14	21.2	***6.91***	0.62	-[7]	8.2	1154	No	
SP-E-NE	9/21/2024 14:35	19.9	***6.98***	0.67	4.15	6.6	1212	No	0
SP-E-NW	9/21/2024 14:44	20.2	8.01	0.63	8.21	8.4	1148	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 (September 15 – 21) on September 17.
[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 September 15 – 21, therefore daily measurements for station SP-E-IN-2 were not collected. The East Sedimentation Pond discharged on September 17. The East Sedimentation Pond did not discharge September 15 – 16 and 18 – 21, 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.
[5] Only field measurements for turbidity and pH were recorded for in-pond stations SP-E-NW and SP-E-NE on September 17.
[6] Suspected erroneous field turbidity (70.9 NTU) and dissolved oxygen (0.16 mg/L) measurements collected September 18 at SP-E-NW were removed from the table.
[7] The field measurement for turbidity at the in-pond station SP-E-NW on September 20 was not available due to a field probe malfunction.

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
			VA24C4211-001	VA24C4211-002	VA24C4304-001	VA24C4304-003	VA24C4692-001	VA24C4692-002
			2024-09-15 15:29	2024-09-15 15:41	2024-09-16 14:31	2024-09-16 15:16	2024-09-18 9:24	2024-09-18 10:01
General Parameters								
pH - Field	pH units	5.5 – 9.0	7.2	6.7	7.4	7.3	6.9	6.9
Conductivity - Field	µS/cm	-	1209	1194	1233	668	1316	1278
Temperature - Field	℃	-	20.8	19.9	20.2	20.4	19.6	19.5
Salinity - Field	ppt	-	0.66	0.66	0.68	0.36	0.74	0.72
Turbidity - Field	NTU	-	5.23	4.3	5.67	3.46	2.92	2.22
TSS	mg/L	-	7.8	6.8	5.3	<3.0	3.5	<3.0
Dissolved Oxygen - Field	mg/L	-	6.50	6.82	6.52	8.31	6.87	6.34
Anions and Nutrients								
Sulphate	mg/L	-	-	-	-	-	46.9	46.3
Chloride	mg/L	-	-	-	-	-	103	103
Fluoride	mg/L	-	-	-	-	-	0.258	0.229
Ammonia (N-NH_3)	mg/L	-	-	-	-	-	<0.0050	<0.0050
Nitrite (N-NO_2)	mg/L	-	-	-	-	-	<0.0050	<0.0050
Nitrate (N-NO_3)	mg/L	-	-	-	-	-	<0.0250	<0.0250
Total Metals								
Aluminum, total (T-Al)	mg/L	-	0.250	0.211	0.237	0.237	0.179	0.165
Antimony, total (T-Sb)	mg/L	-	0.00207	0.00194	0.00199	0.00198	0.00202	0.00204
Arsenic, total (T-As)	mg/L	0.0125	0.00186	0.00177	0.0019	0.00189	0.00198	0.0021
Barium, total (T-Ba)	mg/L	-	0.0074	0.00731	0.00644	0.00567	0.00532	0.00506
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	0.069	0.088	0.072	0.081	0.068	0.073
Cadmium, total (T-Cd)	mg/L	0.00012	<0.0000300	<0.0000300	<0.0000300	<0.0000300	<0.0000150	<0.0000150
Chromium, total (T-Cr)	mg/L	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00100
Cobalt, total (T-Co)	mg/L	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020
Copper, total (T-Cu)	mg/L	0.0043	0.00211	0.00191	0.00266	0.00127	0.00291	0.00163
Iron, total (T-Fe)	mg/L	-	0.055	0.046	0.043	0.046	0.03	0.024
Lead, total (T-Pb)	mg/L	0.0035	0.000245	0.00022	0.00134	0.000205	0.00129	0.000224
Manganese, total (T-Mn)	mg/L	-	0.00391	0.00244	0.00366	0.00286	0.00294	0.00233
Mercury, total (T-Hg)	mg/L	0.000016	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Molybdenum, total (T-Mo)	mg/L	-	0.0489	0.0476	0.0511	0.0546	0.0604	0.0582
Nickel, total (T-Ni)	mg/L	0.0083	0.00056	<0.00050	0.0006	0.00059	0.00054	<0.00100
Selenium, total (T-Se)	mg/L		0.000189	0.000186	0.000173	0.000197	0.000212	0.000195
Silver, total (T-Ag)	mg/L	0.0015	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020
Thallium, total (T-Tl)	mg/L	-	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000020
Uranium, total (T-U)	mg/L	-	0.0663	0.0637	0.0623	0.0631	0.0507	0.0641
Vanadium, total (T-V)	mg/L	0.0081	0.00307	0.00275	0.0034	0.00362	0.00392	0.004
Zinc, total (T-Zn)	mg/L	0.0133	0.0079	0.0073	0.0087	0.0105	0.0130	***0.0176***
Hexavalent Chromium, total	mg/L	0.0015	-	-	<0.00050	<0.00050	<0.00050	<0.00050
Dissolved Metals								
Cadmium, dissolved (D-Cd)	mg/L	0.00012	<0.0000250	<0.0000200	<0.0000050	<0.0000050	<0.0000150	<0.0000100
Copper, dissolved (D-Cu)	mg/L	-	0.00082	0.00082	0.00165	0.00072	0.00236	0.001
Iron, dissolved (D-Fe)	mg/L	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020
Lead, dissolved (D-Pb)	mg/L	-	<0.000050	0.000105	0.000978	<0.000050	0.00114	0.000114
Manganese, dissolved (D-Mn)	mg/L	-	0.00147	0.00026	0.00145	0.0007	0.00118	0.0005
Nickel, dissolved (D-Ni)	mg/L	-	<0.00050	<0.00050	<0.00050	0.0013	<0.00050	<0.00100
Strontium, dissolved (D-Sr)	mg/L	-	0.0972	0.106	0.0864	0.0782	0.0756	0.0747
Vanadium, dissolved (D-V)	mg/L	-	0.00215	0.00223	0.00263	0.00291	0.00314	0.00312
Zinc, dissolved (D-Zn)	mg/L	-	0.0043	0.0277	0.0079	0.0085	0.0148	0.0226
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	-	-	-	-	-	-
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-2: 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
		VA24C3555-001	VA24C3555-002	VA24C3834-007	VA24C3834-006
		2024-09-08	2024-09-08	2024-09-11	2024-09-11
Methylmercury	**µg/L**	0.000225	0.000157	0.000146	0.000192

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

Parameter	Unit	East WWTP					
		Influent	Effluent	Influent	Effluent	Influent	Effluent
		WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT	WWTP-E-IN	WWTP-E-OUT
		L2757049-2	L2757049-1	L2757093-1	L2757093-2	L2757152-2	L2757152-1
		2024-08-13	2024-08-13	2024-08-17	2024-08-17	2024-08-21	2024-08-21
Lower Bound PCDD/F TEQ	**pg/L**	0.0328	0.00237	0.0208	0.0267	0.00240	0.0485
Upper Bound PCDD/F TEQ	**pg/L**	1.82	1.23	1.32	1.83	0.844	0.792

Notes:
PCDD = polychlorinated dibenzodioxins (dioxins)
PCDF = polychlorinated dibenzofurans (furans)
TEQ = toxic equivalency
Lower bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned a value of zero (0).
Upper bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned the value of the detection limit.

Table C-4: Summary of East Wastewater Treatment Plant Daily Field Parameters September 15 – 21.

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	9/15/2024 15:29	20.8	6.50	0.66	5.23	7.2	1209	No	-
WWTP-E-OUT	9/15/2024 15:41	19.9	6.82	0.66	4.30	6.7	1194	No	634
WWTP-E-IN	9/16/2024 14:31	20.2	6.52	0.68	5.67	7.4	1233	No	-
WWTP-E-OUT	9/16/2024 15:16	20.4	8.31	0.36	3.46	7.3	668	No	565
WWTP-E-IN	9/17/2024 16:17	20.5	8.89	0.65	5.72	7.5	1194	No	-
WWTP-E-OUT	9/17/2024 16:22	19.1	5.62	0.77	0.72	6.8	697	No	661
WWTP-E-IN	9/18/2024 9:24	19.6	6.87	0.74	2.92	6.9	1316	No	-
WWTP-E-OUT	9/18/2024 10:01	19.5	6.34	0.72	2.22	6.9	1278	No	641
WWTP-E-IN	9/19/2024 12:44	20.3	8.04	0.64	3.40	7.1	1272	No	-
WWTP-E-OUT	9/19/2024 12:40	20.0	6.94	0.67	3.25	6.8	1212	No	529
WWTP-E-IN	9/20/2024 13:20	20.0	6.82	0.61	3.61	7.1	1098	No	-
WWTP-E-OUT	9/20/2024 13:23	20.4	4.95	0.57	3.99	8.8	1052	No	485
WWTP-E-IN	9/21/2024 14:40	20.4	7.43	0.67	2.23	6.8	1228	No	-
WWTP-E-OUT	9/21/2024 14:51	19.8	5.40	0.68	1.62	6.2	1228	No	598

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).

Appendix D: West Wastewater Treatment Plant Results

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

Parameter	Unit	West WWTP	
		Influent	Effluent
		WWTP-W-IN	WWTP-W-OUT
		VA24C3834-002	VA24C3834-001
		2024-09-11	2024-09-11
Methylmercury	**µg/L**	0.000055	0.000067

Table D-2: Summary of West Wastewater Treatment Plant Water Quality Results for Dioxins and Furans Received at the Time of Reporting.

Parameter	Unit	West WWTP	
		Influent	Effluent
		WWTP-W-IN	WWTP-W-OUT
		L2757091-1	L2757091-2
		2024-08-16	2024-08-16
Lower Bound PCDD/F TEQ	**pg/L**	0.100	0.00742
Upper Bound PCDD/F TEQ	**pg/L**	1.53	1.16

Notes:
PCDD = polychlorinated dibenzodioxins (dioxins)
PCDF = polychlorinated dibenzofurans (furans)
TEQ = toxic equivalency
Lower bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned a value of zero (0).
Upper bound PCDD/F TEQ is the sum of the toxic equivalency results for the individual PCDD/F parameters. Non-detectable parameters are assigned the value of the detection limit.

Table D-3: Summary of West Wastewater Treatment Plant Daily Field Parameters September 15 – 21.

Parameter		**Temperature**	**Dissolved Oxygen (DO)**	**Salinity**	**Turbidity**	**pH**	**Conductivity**	**Visibility of Sheen**	**Total Daily Discharge from the West WWTP**
Unit		**°C**	**mg/L**	**ppt**	**NTU**	**s.u.**	**µS/cm**		**m^3**
PE-111578 Discharge Limit [1]		-	-	-	-	-	-	-	120
Minimum Discharge Objective [2]		-	-	-	-	5.5 – 9.0	-	-	-
Station ID	**Date**								
WWTP-W-IN	2024-09-15	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-
WWTP-W-OUT	2024-09-15	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	24.8
WWTP-W-IN	2024-09-16	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-
WWTP-W-OUT	2024-09-16	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	18.8
WWTP-W-IN	2024-09-17	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-
WWTP-W-OUT	2024-09-17	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	-[3]	0
WWTP-W-IN	9/18/2024 10:39	19.9	6.48	0.77	9.46	7.1	1528	No	-
WWTP-W-OUT	9/18/2024 10:44	19.9	6.84	0.84	7.17	6.7	1497	No	28.4
WWTP-W-IN	9/19/2024 12:27	20.5	7.25	0.85	5.90	6.7	1537	No	-
WWTP-W-OUT	9/19/2024 12:31	23.2	6.43	0.88	5.17	8.0	1679	No	30.9
WWTP-W-IN	9/20/2024 12:58	19.6	6.43	0.91	5.69	6.9	1597	No	-
WWTP-W-OUT	9/20/2024 13:01	19.7	6.78	1.05	1.53	7.3	1843	No	24.6
WWTP-W-IN	9/21/2024 16:14	21.8	6.73	0.97	8.30	7.3	1796	No	-
WWTP-W-OUT	9/21/2024 17:26	20.3	5.46	1.17	-[4]	7.0	2068	No	24.4

Notes:
[1] PE-111578 West WWTP Discharge Limit is applied to effluent compliance station WWTP-W-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.
[3] Field measurements were collected each day during the monitoring period at the influent (WWTP-W-IN) and effluent (WWTP-W-OUT) stations except on September 15 – 17 as the West WWTP was not active at the time of monitoring.
[4] The field measurement for turbidity at WWTP-E-OUT on September 21 was not recorded.
Results ***underlined in bold italics*** do not meet the applicable minimum discharge objective (except DO).