



Report Date: April 4, 2024

Report Number: 204207

File: 3678

Trans Mountain Pipeline ULC  
Suite 2700  
300 - 5th Ave SW  
Calgary AB T2P 5J2

Dear Trans Mountain Pipeline ULC,

**Re: Warning Letter**

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On January 11, 2024, Ministry of Environment and Climate Change Strategy (Ministry) Environmental Protection Officers Michael Jeffery, Connor Fraleigh, Aman Singh and Kristan Robinson (Ministry Staff) conducted a planned, on-site inspection of the Trans Mountain Pipeline ULC (Trans Mountain) jet fuel storage and crude oil storage facilities' effluent discharge system (Facility), located in Burnaby, BC, to verify compliance with Permit #3678 (Permit). The Permit authorizes Trans Mountain to discharge effluent to Burrard Inlet from the dyked tank farm, the water treatment plants, and the foreshore CO2 bubbler, located at the Westridge Marine Terminal. The Permit was first issued on October 18, 1974, and at the time of the inspection had been most recently amended on June 30, 2023.

Present during the inspection from Trans Mountain was [REDACTED] (Environmental Inspector), [REDACTED] (Environmental Inspector), [REDACTED] (Manager, Permitting), [REDACTED] (Permitting) and [REDACTED] (Operations), (collectively referred to as 'Facility Staff'). Present from Trans Mountain during the video conferencing portion of the inspection were [REDACTED] (Permitting), [REDACTED] (Environmental Advisor), [REDACTED] and [REDACTED] (Indigenous Relations), as well as [REDACTED] (Subject Matter Expert, Stantec Environmental, Consultant for Trans Mountain). Chloe Hartley was present as an Indigenous Accompaniment for the on-site inspection representing Tsleil- Waututh Nation. Information was requested, and provided, following the on-site inspection, from [REDACTED] and [REDACTED] (collectively referred to as 'Permitting Staff').

Failure to comply with sections 1.2.1, 1.2.4, 2.2, 2.3, 2.16, 3.2.3.1, and 3.2.3.2, set out in your Permit is an offence under the *Environmental Management Act (EMA)*. *Section 120(6) of EMA* states as follows:

*120 (6) A person who, holding a permit or approval issued to the person under this Act to introduce waste into the environment, introduces waste into the environment without having complied with the requirements of the permit or approval commits an offence and is liable on conviction to a fine not exceeding \$1 000 000 or imprisonment for not more than 6 months, or both.*

Failure to comply with sections 1.2.5, 2.1, 3.2.1, 3.2.3, 3.2.3.6, 3.2.4, 3.3, 4.1, 4.2.2, 4.3, 4.4, 4.5, 4.6 and 4.8 set out in your Permit is an offence under the *EMA*. *Section 120(7) of EMA* states as follows:

*120 (7) A person who, holding a permit or approval issued under this Act to introduce waste into the environment, fails to comply with the requirements of the permit or approval commits an offence and is liable to a penalty not exceeding \$300 000 or imprisonment for not more than 6 months, or both.*

It should be noted that as an alternative to prosecution of the offence referenced above, the Ministry may initiate action to impose an administrative penalty against Trans Mountain Pipeline ULC. The Administrative Penalties Regulation (EMA) (B.C. Reg. 133/2014) (APR) was brought into force in 2014. The APR describes the prescribed provisions of EMA as well as that of specified regulations under which administrative penalties can be assigned. The applicable section(s) of the APR state(s) as follows:

*12 (5) A person who fails to comply with a requirement of a permit or approval issued or given under the Act is liable to an administrative penalty not exceeding \$40 000, unless the requirement the person failed to comply with is also a prescribed provision of the Act or the regulations that is subject to a different maximum administrative penalty.*

The Ministry requests that Trans Mountain Pipeline ULC immediately implement the necessary changes or modifications to correct the non-compliance(s) listed below. Further, the Ministry requests that Trans Mountain Pipeline ULC notify this office in writing, by email or letter within 30 days of the receipt of this letter, advising what corrective measures have been taken, and what else is being done, to prevent similar non-compliances in the future.

Please submit the response to the Ministry's Compliance Mailbox at: [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca).

As a result of this Warning, this authorization will be prioritized for follow-up inspection. The corrective measures will be reviewed by an Officer as part of the next inspection.

Finally, if you fail to take the necessary actions to restore compliance, you may be subject to escalating enforcement action. This Warning Letter and the alleged violations and circumstances to which it refers, will form part of the compliance history of Trans Mountain Pipeline ULC and will be taken into account in the event of future violations.

#### **Inspection Details:**

The inspection assessed compliance for the period between July 15, 2021, to January 11, 2024, (Inspection Period) and included a review of the following documents:

- Permit issued July 15, 2021, (July 2021 Permit);
- Permit issued March 30, 2022, (March 2022 Permit);
- Permit issued October 19, 2022, (October 2022 Permit);
- Permit issued May 5, 2023, (May 2023 Permit);
- Permit issued June 30, 2023, (June 2023 Permit);
- Trans Mountain Pipeline ULC (Trans Mountain) Westridge Marine Terminal (Phase 2 and 3) Water Quality Monitoring Plan, prepared by Stantec with revision date February 26, 2021 (WQMP);
- Contractor Drainage, Erosion and Sediment Control Plan, prepared by EDI Environmental Dynamics Inc. on February 11, 2021, (ESCP);
- Westridge Marine Terminal Phase 3 pH Plan, prepared by KLTP on June 12, 2020, (pH Plan);
- Annual Permit Compliance Report - Westridge Marine Terminal, Permit 3678, Trans Mountain Pipeline ULC, prepared by SLR Consulting (SLR), on February 28, 2022, (2021 Annual Report);
- 2022 Annual Permit Compliance Report, Westridge Marine Terminal, Permit 3678, Trans Mountain Pipeline ULC, prepared by SLR dated April 28, 2023, (2022 Annual Report);
- 2023 Annual Permit Compliance Report, Westridge Marine Terminal, Permit 3678, Trans Mountain Pipeline ULC, prepared by SLR dated March 5, 2024, (2023 Annual Report);
- Monthly Construction Reports submitted by Trans Mountain, via email from January to December 2023, (Monthly Construction Reports);
- Monthly Environmental Reports submitted by Trans Mountain, via email from January to December 2023, (Monthly Environmental Reports);
- Non-compliance reports submitted to the Ministry's reporting inbox throughout the Inspection Period (NCR's), and,
- WMT Portal WTP suspension / relocation, email from Trans Mountain to the Ministry on March 8, 2023, (Suspension Notification).

Please find below the Permit clauses that were assessed for compliance during this inspection, as well as the associated details/findings and any actions required.

# Compliance Assessment

Below are the requirements that were assessed for compliance during this inspection, as well as the associated details/findings and any actions required.

## Requirement Description:

### 1. AUTHORIZED DISCHARGES 1.1

1.1.1: This section applies to the discharges from the dyked tank farm to the discharge points given below in Section 1.1.1.

1.1.1 The characteristics of the discharge from the dyked tank farm must be equivalent or better than:

Name	East Permitted Outfall	West Permitted Outfall
Outfall Location	49.29022 -122.95226	49.28848 -122.95729
EMS Number	E213525	E331695
Pathway to Burrard Inlet	Discharge pipe that combines with discharges from the WTPs and then discharges directly into Burrard Inlet	Open channel from oil/water separator to a culvert that discharges into Burrard Inlet
Discharge Rate (m <sup>3</sup> /year) Maximum	9,490	9,490
Discharge Period	Continuous	
Total Extractable Hydrocarbons (mg/L) Maximum	5	
Toxicity, Rainbow Trout 96-hour Acute Lethality Test	Minimum 50% survival at 100% stormwater effluent concentration over 96-hours	

## Details/Findings:

Ministry Staff reviewed the annual reports and monthly monitoring data for the dyked tank farm discharge from the West and East permitted outfalls and confirmed that the characteristics of discharge met the requirements of the East Permitted Outfall and West Permitted Outfall Table for the Inspection Period.

### 2021:

**Flow:** Section 6.1.1 (East and West Discharge Sumps) of the 2021 Annual Report reported that the annual discharge for the West Discharge Sump (Tank 201) was 6,491 m<sup>3</sup> / year and for the East Discharge Sump (Tank 202) it was 6,068 m<sup>3</sup> / year, which are below the 9,490 m<sup>3</sup> / year per sump maximum allowable.

**Effluent Monitoring:** Section 6.2.1 (East and West Discharge Sumps) of the 2021 Annual Report confirms that effluent sampling in the West and East Sumps was completed monthly for Total Extractable Hydrocarbons (TEH) and annually for analysis for the rainbow trout 96-hour acute lethality for both sumps. Analytical results were summarized in Table 4 and the analytical reports were provided in Appendix A. The results were less than detection level for both the East and West Sumps for all TEH samples analyzed, which was below the 5 mg/L maximum limit specified in Section 1.1.1 of the Permit. The rainbow trout 96-hour acute lethality test had a zero percent mortality for the East and West Sumps for the annual testing completed in December 2021.

### 2022:

**Flow:** Section 6.1.1 (East and West Discharge Sumps) of the 2022 Annual Report reported that the annual discharge for the West Sump was 4,741 m<sup>3</sup> / year and for the East Sump was 4,743 m<sup>3</sup> / year, which are below the 9,490 m<sup>3</sup> / year per sump maximum allowable.

**Effluent Monitoring:** Section 6.2.1 (East and West Discharge Sumps) of the 2022 Annual Report confirms that effluent sampling in the East and West Sumps was completed monthly for TEH and annually for analysis for the rainbow trout 96-hour acute lethality for both sumps. Analytical results were summarized in Table 5 and the analytical reports were provided in Appendix A. The results were below the 5 mg/L maximum limit specified for the TEH samples analyzed in for both the West and East Sumps and the rainbow trout 96-hour acute lethality had a zero percent mortality for the East and West Sumps for the annual testing completed in November 2022.

**2023:**

**Flow:** The Monthly Environmental Reports required under Section 4.5 of the Permit were provided for January to December of 2023 and reported that, as of December 2023, the cumulated discharge for the West Sump was 5,004 m<sup>3</sup> and for the East Sump was 4.919 m<sup>3</sup>, which confirmed that the total flow volume was below the 9,490 m<sup>3</sup> / year per sump maximum allowable.

**Effluent Monitoring:** Table 1 (Tank Farm) was provided in the Monthly Environmental Reports for 2023 and reported the TEH and the rainbow trout 96-hour acute lethality for both sumps. The results of the West and East Sumps for all TEH samples analyzed, were confirmed to be below the 5 mg/L maximum limit specified in Section 1.1.1 of the Permit. The rainbow trout 96-hour acute lethality test had a zero percent mortality for the East and West Sumps for the annual testing completed in November 2023.

**Compliance:**

In

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**Requirement Description:**

**1. AUTHORIZED DISCHARGES 1.1**

1.1.2: This section applies to the discharges from the dyked tank farm to the discharge points given below in Section 1.1.1.

1.1.2 For each discharge source above, the Authorized works are a discharge sump, manually controlled discharge pump, a siphon with hydrocarbon spill detector and a siphon-break/discharge-stop device which is automatically activated in the case of a spill, an outfall and any other works required to meet the effluent characteristics in Section 1.1.1 above, and related appurtenances as approximately located on the Site Plan.

**Details/Findings:**

Ministry Staff observed the Authorized works at the time of inspection and confirmed that the Facility maintained a discharge sump and manually controlled discharge pump; however, Ministry Staff did not visually confirm the presence of a siphon with hydrocarbon spill detector and a siphon-break / discharge-stop device which automatically activates in the case of a spill. In addition, Facility Staff confirmed that a manually activated stop device was present.

Additionally, however, Section 6.1.1 of the 2022 Annual Report states that the east and west discharge sumps are "manually controlled by a pump, a siphon with hydrocarbon spill detector, and a stop device, which is manually activated in case of a spill."

In response to a request for confirmation of an automatically activated siphon-break / discharge-stop, Facility Staff provided documentation via email correspondence which confirmed the presence of the automatic stop device including the Minor Amendment TAR for Operations post construction, which states that: "The siphon system for tanks 201 and 202 contain hydrocarbon detection (agar probes); in the event hydrocarbon are present, they will automatically break siphon to prevent flow out of the tank bays". In addition, the 2019 Westridge Marine Terminal Operating Manual, Section 2.1.2 states that: "Each siphon system East and West are both protected with an AGAR probe in the event hydrocarbons are present, and will automatically break siphon to prevent any more flow out of the tank bay."

The back-up documentation provided confirms that the authorized works are in place, as described by this Section, as per the approved plans and specifications.

**Compliance:**

In

## Requirement Description:

### 1. AUTHORIZED DISCHARGES 1.2

1.2.1: This section applies to the discharges of effluent from the Water Treatment Plants (WTPs) and the Foreshore CO2 Bubbler to the discharge points given below in Section 1.2.1.

1.2.1 The characteristics of the discharge must be equivalent or better than:

WTP Name	Portal WTP	West WTP	Foreshore WTP	Foreshore CO <sub>2</sub> Bubbler
Outfall Location	49.28848 -122.95729	49.28848 -122.95729	Dependent on Work	Dependent on Work
EMS Number	E331695		E331694	N/A
Pathway to Burrard Inlet	Discharge pipe routed along northside of Canadian Pacific Railway to an outfall adjacent to the West Permitted Outfall.		Discharge pipe directly into Burrard Inlet	Discharge pipe directly into Burrard Inlet
Daily Discharge Rate (m <sup>3</sup> /day) Maximum	872	2,180	1,090	300
Annual Discharge Rate (m <sup>3</sup> /year) Maximum	159,168	397,850	198,925	54,750
Discharge Period	Continuous			
Total Suspended Solids (mg/L) Maximum	75			
Total Extractable Hydrocarbons (mg/L) Maximum	5			n/a
pH Minimum	7.0			
pH Maximum	8.7			
Chromium Cr <sup>6+</sup> (µg/L) Maximum	1.5			
Toxicity, Rainbow Trout 96-hour Acute Lethality Test	Minimum 50% survival at 100% stormwater effluent concentration over 96-hours			

### Details/Findings:

All inspection findings assess the same Permit Section 1.2.1 for the Inspection Period, separated by the year in which the discharge took place.

#### 2021 Overview:

Analysis and results for 2021 were provided in the 2021 Annual Report and included a discussion, tables and analytical reports for discharge rate and effluent quality to provide the characteristics of discharge as per this Section. Laboratory analysis was completed on Total Suspended Solids (TSS), Total Extractable Hydrocarbons (TEH), pH, total hexavalent chromium, and rainbow trout 96-hour acute lethality annually, to characterize effluent quality with respect to the effluent limits from the water treatment plants (WTPs) as specified in the table in this Section. The WTP's include the East WTP, West WTP, Foreshore WTP and Foreshore CO2 Bubbler. The Inspection Period for 2021 includes the July 2021 Permit, which required characteristics of discharge for the East WTP. All other parameters for this Section specified in the July 2021 Permit were the same as the June 2023 Permit, throughout the Inspection Period. Additionally, the Foreshore CO2 Bubbler was not commissioned in 2021; therefore, there are no discharge and no effluent quality samples from this unit for 2021.

**2021 Discharge Rate:** As reported in Section 6.1.2, 6.1.3, and 6.1.4 of the 2021 Annual Report.

**East WTP:** Daily maximum flow was below the Permit limit of 4,320 m<sup>3</sup>/day. Total discharged was 90,621 m<sup>3</sup>/year which was below the 795,700 m<sup>3</sup>/year maximum.

**West WTP:** Daily maximum flow was below the Permit limit of 2,180 m<sup>3</sup>/day. Total discharged was 48,505 m<sup>3</sup>/year which was below the 397,850 m<sup>3</sup>/year maximum.

**Foreshore WTP:** Daily maximum flow was below the Permit limit of 1,090 m<sup>3</sup>/ day. Total discharged was 17,667 m<sup>3</sup>/year which was below the 198,925 m<sup>3</sup>/year maximum.

### **2021 Effluent Quality:**

**East WTP:** Table 6-5 (East WTP (C2) - Analytical Exceedances Summary), of the 2021 Annual Report, reported that Total Hexavalent Chromium exceeded the 1.5 ug/L discharge limit on seven occasions in 2021 from the East WTP, within the Inspection Period, with the largest exceedance for Total Hexavalent Chromium on November 2, 2021, with 7.8 ug/L. Section 6.2.2 (East WTP)(C2) of the 2021 Annual Report, reports that all other characteristics of discharge met Permit requirements for this Section.

#### **Total Hexavalent Chromium Exceedance (Limit 1.5 ug/L):**

October 6, 2021 – 2.2 ug/L  
October 26, 2021 – 1.6 ug/L  
November 3, 2021 – 7.8 ug/L  
November 25, 2021 – 3.8 ug/L  
December 8, 2021 – 1.8 ug/L  
December 15, 2021 – 1.7 ug/L  
December 21, 2021 – 2.0 ug/L

**West WTP:** Table 6-6 (West WTP (C1) - Analytical Exceedances Summary), of the 2021 Annual Report, reported that Total Hexavalent Chromium exceeded the 1.5 ug/L discharge limit on six occasions in 2021 from the West WTP, within the Inspection Period, with the largest exceedance for Total Hexavalent Chromium on November 25, 2021, with 5.3 ug/L. Section 6.2.3 (West WTP)(C1), of the 2021 Annual Report, reports that all other characteristics of discharge met Permit requirements for this Section.

#### **Total Hexavalent Chromium Exceedances (Limit 1.5 ug/L):**

October 6, 2021 – 2.5 ug/L  
October 22, 2021 – 2.4 ug/L  
November 25, 2021 – 5.3 ug/L  
November 30, 2021 – 3.6 ug/L  
December 8, 2021 – 1.8 ug/L  
December 15, 2021 – 1.8 ug/L

**Foreshore WTP:** Table 6-7 (Foreshore WTP - Analytical Exceedances Summary), of the 2021 Annual Report, reported that Total Hexavalent Chromium exceeded the 1.5 ug/L discharge limit on three occasions in 2021 from the Foreshore WTP, within the Inspection Period, with the largest exceedance for Total Hexavalent Chromium on December 21, 2021, with 72.3 ug/L.

#### **Total Hexavalent Chromium Exceedances (Limit 1.5 ug/L):**

September 10, 2021 – 1.7 ug/L  
September 10, 2021 – 1.9 ug/L  
December 21, 2021 – 72.3 ug/L

Additionally, Section 6.2.4 (Foreshore WTP)(C12) reported that exceedances of the total suspended solids (TSS) 75 NTU limit were identified on four occasions and the pH maximum of 8.7 was exceeded on three occasions; however, the inline pH and turbidity readings collected were within the Permit limits in this Section and exceedances for turbidity and pH were reported to have occurred during recirculation mode and the effluent did not discharge. Therefore, these exceedances were not considered to be non-compliances because they did not discharge.

### **2022 Overview:**

The 2022 time period includes the July 2021, March 2022, and October 2022, Permits which required characteristics of discharge for the East WTP. The East WTP was replaced with the Portal WTP in the October 19, 2022, Permit amendment.

Analysis and results for 2022 were provided in the 2022 Annual Report and included a discussion, tables and analytical reports for discharge rate and effluent quality to provide the characteristics of discharge as per this Section. Laboratory analysis was completed on Total Suspended Solids (TSS), Total Extractable Hydrocarbons (TEH), pH, total hexavalent chromium, and rainbow trout 96-hour acute lethality annually to characterize effluent quality with respect to the effluent limits from the water treatment plants (WTPs), as specified in the table in this Section. The WTP's include the East WTP, Portal WTP, West WTP, Foreshore WTP and Foreshore CO2 Bubbler. However, the Foreshore CO2 Bubbler was not commissioned in 2022; therefore, there are no discharge, and no effluent quality samples from this unit for 2022.

**2022 Discharge Rate:**

As reported in Section 6.1.2, 6.1.3, 6.1.4, and 6.1.5 of the 2022 Annual Report.

**East WTP:** the daily maximum flow was below the Permit limit of 4,320 m3/day. Total discharged was 53,789 m3/year which was below the 795,700 m3/year maximum. The East WTP was decommissioned on June 22, 2022.

**West WTP:** the daily maximum flow was below the Permit limit of 2,180 m3/day. Total discharged was 61,642 m3/year which was below the 397,850 m3/year maximum.

**Foreshore WTP:** the daily maximum flow was below the Permit limit of 1,090 m3/day. Total discharged was 23,937 m3/year which was below the 198,925 m3/year maximum.

**Portal WTP:** was commissioned on October 21, 2022, the daily maximum flow was below the Permit limit of 872 m3/day. Total discharged was 7,659 m3/year which was below the 159,168 m3/year maximum.

**2022 Effluent Quality:**

**East WTP:** Table 6-5 (East WTP (C2) - Analytical Exceedances Summary), in the 2022 Annual Report, reported that Total Hexavalent Chromium exceeded the 1.5 ug/L discharge limit on eight occasions in 2022 from the East WTP, with the largest exceedance on April 28, 2022, with 6.6 ug/L. Section 6.2.2 (East WTP)(C2), of the 2022 Annual Report, reports that all other characteristics of discharge met Permit requirements for this Section.

**Total Hexavalent Chromium Exceedances (Limit 1.5 ug/L)**

January 18, 2022 – 2.0 ug/L  
February 1, 2022 – 2.8 ug/L  
February 15 – 2022 – 2.3 ug/L  
February 23 – 2022 – 2.0 ug/L  
March 1, 2022 – 5.1 ug/L  
April 28, 2022 – 6.6 ug/L  
May 10, 2022 – 2.5 ug/L  
May 18, 2022 – 4.9 ug/L

**West WTP:** Table 6-6 (West WTP (C1) - Analytical Exceedances Summary) in the 2022 Annual Report, reported that Total Hexavalent Chromium exceeded the 1.5 ug/L discharge limit on sixteen occasions in 2022 from the West WTP, with the largest exceedance for Total Hexavalent Chromium on February 1, 2022, with 11.7 ug/L.

**Total Hexavalent Chromium Exceedances (Limit 1.5 ug/L)**

January 13, 2022 – 3.0 ug/L  
January 21, 2022 – 1.9 ug/L  
February 1, 2022 – 2.1 ug/L  
February 8, 2022 – 2.9 ug/L  
February 15, 2022 – 11.7 ug/L  
February 23, 2022 – 2.5 ug/L  
March 1, 2022 – 10.3 ug/L  
March 8, 2022 – 1.6 ug/L  
March 14, 2022 – 4.9 ug/L  
March 22, 2022 – 4.7 ug/L  
March 29, 2022 – 2.9 ug/L  
April 4, 2022 – 4.1 ug/L  
May 4, 2022 – 2.0 ug/L  
June 30, 2022 – 5.7 ug/L  
July 6, 2022 – 2.1 ug/L  
November 17, 2022 – 2.4 ug/L

Section 6.2.3 (West WTP)(C1), of the 2022 Annual Report, reports that the March 8, 2022, pH measurement was 6.99. The pH Minimum for this Section is 7.0, however as per the Ministry's rounding document 6.99 is rounded to 7.0 to the same significant digits; therefore, this is considered to be within the characteristics of discharge. All other characteristics of discharge were reported to have met the Permit requirements for this Section.

**Foreshore WTP:** Section 6.2.4 (Foreshore WTP (C12), of the 2022 Annual Report, reported that the pH limit was exceeded while sampling on three occasions; however, the inline pH at the time of sampling was within discharge limits for two of the occasions. The inline pH data is considered more accurate because laboratory results exceeded the 15-minute hold time. The third pH exceedance occurred while the system was in recirculation mode and the effluent did not discharge at this time; therefore, this effluent did not discharge. This Section also reported one exceedance of the total suspended solids (TSS) / Turbidity limits, and nine exceedances of pH limits, were identified in the inline pH and turbidity readings collected; however, the report confirms that these exceedances occurred during recirculation mode and the effluent did not discharge. Therefore, these exceedances were not considered to be non-compliances because they did not discharge.

Ministry Staff reviewed Table 6-7 (Foreshore WTP (C12) - Analytical Exceedances Summary) in the 2022 Annual Report and no other characteristics of discharge exceeded the requirements for this Section.

**Portal WTP:** Section 6.2.6 (Portal WTP (C17), of the 2022 Annual Report, reported that the pH limit was exceeded while sampling on one occasion; however, the inline pH at the time of sampling was within discharge limits for this occasion. As described above, the inline pH data is considered more accurate because laboratory results exceeded the 15-minute hold time. This Section also reported two exceedances of the total suspended solids (TSS) / Turbidity limits, and two exceedances of pH limits, were identified in the inline pH and turbidity readings collected; however, the report confirms that these exceedances occurred during recirculation mode and the effluent did not discharge.

Ministry Staff reviewed Table 6-8: (Portal WTP (C17) - Analytical Exceedances Summary), of the 2022 Annual Report, and confirmed it did not report any exceedances of the characteristics of discharge for the parameters listed in Table 1.2.1, in 2022.

## 2023 Overview:

The 2023 time period includes the October 2022, May 2023 and June 2023, Permits.

Analysis and results for 2023 were provided the 2023 Annual Report and included the effluent flow monitoring and the characteristics of discharge as required by this Section. Laboratory analysis was completed on Total Suspended Solids (TSS), Total Extractable Hydrocarbons (TEH), pH, total hexavalent chromium, and rainbow trout 96-hour acute lethality annually to characterize effluent quality with respect to the effluent limits from the water treatment plants (WTPs) as specified in the table in this Section. The WTP's include the Portal WTP, West WTP, Foreshore WTP and Foreshore CO2 Bubbler.

## 2023 Discharge Rate:

As reported in Section 6.1 (Flow Measurements) of the 2023 Annual Report.

**West WTP (C1):** the daily maximum flow was below the Permit limit of 2,180 m<sup>3</sup>/day. Total discharged was 31,808 m<sup>3</sup>/year which was below the 397,850 m<sup>3</sup>/year maximum.

**Foreshore WTP (C12):** the daily maximum flow was below the Permit limit of 1,090 m<sup>3</sup>/day. Total discharged was 14,412 m<sup>3</sup>/year which was below the 198,925 m<sup>3</sup>/year maximum.

**Portal WTP (C17):** the daily maximum flow was below the Permit limit of 872 m<sup>3</sup>/day. Total discharged was 24,750 m<sup>3</sup>/year which was below the 159,168 m<sup>3</sup>/year maximum.

**Foreshore CO2 Bubbler (C16):** Section 6.2.7 of the 2023 Annual Report states that the flow discharge was included in the reported discharge for (C12); therefore, compliance with the daily discharge rate and the annual discharge maximum could not be determined for 2023.



## **2023 Effluent Quality:**

As reported in Section 6.2 (Effluent Monitoring) of the 2023 Annual Report.

**West WTP (C1):** The 2023 Annual Report, reported that Total Hexavalent Chromium exceeded the 1.5 ug/L discharge limit on three occasions in 2023 from the West WTP, with the largest exceedance for Total Hexavalent Chromium on January 4, 2023, with 5.3 ug/L. The 2023 Annual Report reported that all other characteristics of discharge met Permit requirements for this Section.

### **Total Hexavalent Chromium Exceedances (Limit 1.5 ug/L)**

January 4, 2023 – 5.3 ug/L  
February 1, 2023 – 2.8 ug/L  
October 18, 2023 – 1.6 ug/L

**Foreshore WTP (C12):** The 2023 Annual Report, reported that the annual acute lethality test failed on November 15, 2023, and December 5, 2023. All other characteristics of discharge met Permit requirements for this Section

**Portal WTP (C17):** The 2023 Annual Report, reported that Total Hexavalent Chromium exceeded the 1.5 ug/L discharge limit on one occasion in 2023, on December 27, 2023, with 1.8 ug/L. The 2023 Annual Report reported that all other characteristics of discharge met Permit requirements for this Section.

### **Total Hexavalent Chromium Exceedances (Limit 1.5 ug/L)**

December 27, 2023 – 1.8 ug/L

**Foreshore CO2 Bubbler (C16):** Section 6.1.5 of the 2023 Annual Report states that C16 is only used when significant pH readings are observed and that these were not observed during the Inspection Period and therefore, effluent monitoring was not applicable for 2023.

## **Compliance:**

Out

## **Actions to be taken:**

Ensure the characteristics of the discharge are equivalent to, or better than, the discharge limits specified in the Permit.

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## **Requirement Description:**

### **1. AUTHORIZED DISCHARGES 1.2**

1.2.2: This section applies to the discharges of effluent from the Water Treatment Plants (WTPs) and the Foreshore CO2 Bubbler to the discharge points given below in Section 1.2.1.

1.2.2 In addition to Section 1.2.1, the characteristics of the discharge during the discharge of Hydrostatic Test Water must be equivalent to or better than:

<b>Parameter</b>	<b>Limit</b>
Total Residual Chlorine (mg/L) Maximum	0.003
Dissolved Iron (mg/L) Maximum	0.35
Propylene Glycol (mg/L) Maximum	500

## Details/Findings:

**2021 Annual Report** - Section 5.4 (Hydrostatic Test Water Monitoring) confirmed that no hydrostatic test water was discharged in 2021.

**2022 Annual Report** - Section 6.4 (Hydrostatic Test Water Monitoring) reported that one hydrostatic test was completed on November 28, 2022, using 30 m<sup>3</sup> of water from an on-site hydrant and no propylene glycol was used in the hydrostatic test. The effluent characteristics were reported to meet characteristics of discharge for all parameters in this Section and Section 1.2.1.

**2023** - In email correspondence, Permitting Staff provided a summary of hydrostatic test water discharges including:

- July 2023 - discharge of 3,520 m<sup>3</sup> with results provided which met the characteristics of discharge for all parameters in this Section; except for propylene glycol as it was not added to the hydrostatic test monitoring and as per Section 3.2.3.1 it was therefore not required to be tested. Section 6.4 (Hydrostatic Test Water Monitoring) of the 2023 Annual Report reported that the total hexavalent chromium exceeded the Permit limit in Table 1.2.1 of 1.5 ug/L with 1.6 ug/L on July 17, 2023; however, there was no known source of hexavalent chromium in the test water. A verification follow-up sample was completed on July 20, 2023, and the results were below detection limit (<0.5 ug/L) and met the Permit limit.
- November 27 - December 1, 2023 - discharge of 4,261 m<sup>3</sup>, of water was used on a test of new facility piping; however, no additional testing of this discharge was provided. The Permitting Staff stated that the discharge included 92m<sup>3</sup> of water used to perform the hydrostatic test inside the new piping, but that 4,169 m<sup>3</sup> of water was required to fill the tunnel piping to perform the test. Permitting Staff informed Ministry Staff that because only 92 m<sup>3</sup> of water was used in the new pipe, and no exceedance of the parameters in this Section was observed in the July 2023 discharge, the Facility operated in accordance with Sections 3.2.3.3 and 3.2.3.4 for discharges of less than 1,500 m<sup>3</sup> of water and that additional testing was not required.

As per the definition in this Permit a "Batch" means "the entire volume of water in a tank or Section of facility piping or tunnel piping that was used for hydrostatic testing". Therefore, the Ministry considers the total discharge of water used in the hydrostatic test water from the second discharge to be 4,261 m<sup>3</sup>. As such, Section 3.2.3.3 and 3.2.3.4 were not applicable, and testing of the discharge of hydrostatic test water for the November 27 - December 1, 2023, discharge was required and not completed and the characteristics of discharge for the November 27, 2023, discharge could not be determined.

## Compliance:

Not Determined

## Actions to be taken:

Ensure the hydrostatic test water is tested for each Batch, as defined in the Permit and that the characteristics of discharge meet the required criteria.

## Requirement Description:

### 1. AUTHORIZED DISCHARGES 1.2

1.2.4 : This section applies to the discharges of effluent from the Water Treatment Plants (WTPs) and the Foreshore CO2 Bubbler to the discharge points given below in Section 1.2.1.

The permittee is authorized to discharge hydrostatic test water directly into the water conveyance structures downstream of the Portal WTP, West WTP and foreshore WTP if the Hydrostatic Test Water meets the authorized limits of Section 1.2.1 and 1.2.2.

## Details/Findings:

**2021 Annual Report** - Section 5.4 (Hydrostatic Test Water Monitoring) confirmed that no hydrostatic test water was discharged in 2021.

**2022 Annual Report** - Section 6.4 (Hydrostatic Test Water Monitoring), reported that one hydrostatic test was completed on November 28, 2022, using 30 m<sup>3</sup> of water from an on-site hydrant and no propylene glycol was used in the hydrostatic test. The effluent characteristics were reported to meet characteristics of discharge for all parameters in this Section and Section 1.2.1.

**2023** - In email correspondence, Permitting Staff provided a summary of hydrostatic test water discharges including:

- July 2023 - discharge of 3,520 m<sup>3</sup> with results provided which met the characteristics of discharge for all parameters in this Section; except for propylene glycol as it was not added to the hydrostatic test monitoring and as per Section 3.2.3.1 it was therefore not required to be tested.
- As described in the Findings section of Section 1.2.2, Trans Mountain discharged 4,261 m<sup>3</sup> of hydrostatic test water between November 27 - December 1, 2023, and **testing of the hydrostatic test water to ensure the discharge meets Section 1.2.1 and 1.2.2 was required and not completed.** In email correspondence, Permitting Staff confirmed that the July and November 2023 discharges were downstream of the water treatment plants.

## Compliance:

Out

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## Requirement Description:

### 1. AUTHORIZED DISCHARGES 1.2

1.2.5 : This section applies to the discharges of effluent from the Water Treatment Plants (WTPs) and the Foreshore CO2 Bubbler to the discharge points given below in Section 1.2.1.

The Authorized Works may be reduced or removed as specified below:

- a) The West WTP may be reduced or removed if construction within the respective catchment areas is complete, the areas draining to them are stabilized, and erosion of sediment will not occur.
- b) The Foreshore WTP may be reduced if construction within the foreshore area is complete, the foreshore area is stabilized, and erosion of sediment will not occur.
- c) The Foreshore CO2 Bubbler are required to be operational for WMT Phases 3.4 through to 3.6 at a minimum.
- d) The Portal WTP may be removed after the tunnel grout and concrete works are complete, the tunnel grout and concrete are cured, the Portal area is backfilled, the catchment areas draining to it are stabilized, and erosion of sediment will not occur.
- e) The Director must be notified 30 days in advance of these changes to the Authorized Works, with the exception of the Foreshore CO2 Bubbler. The notification must include information on the catchment areas that are complete and stabilized.

The permittee must propose and implement a confirmatory stormwater monitoring program for the complete and stabilized catchment areas. The monitoring program must be included in the notification above. The monitoring program must be acceptable to the Director.

### Details/Findings:

The March 2022 Permit maintained a similar requirement to the June 2023 Permit whereby Section 1.2.3.3, stated that “The Authorized Works at the East WTP and the West WTP may be removed after Phase 3.3, if the construction at the site is complete, the areas draining to them are stabilized, and erosion of sediment will not occur”. **The East WTP was removed prior to the completion of Phase 3.3, which was out of compliance with the requirements of Section 1.2.3.3 of the March 2022 Permit.** This was documented in a notification of planned bypass of authorized works submitted to the Ministry on June 22, 2022.

Permitting Staff provided an Authorized Works Changes Notification dated July 24, 2023, which described the series of activities Trans Mountain would implement to accommodate the progression to Phase 4 which included stabilization of the Foreshore WTP to prevent erosion or produce sediment, as required in part b) of this Section. Ministry Staff reviewed a letter submitted by Trans Mountain on October 16, 2023, for the Foreshore Water Treatment Plant to be removed. The letter established that a confirmatory stormwater monitoring plan is being implemented to provide evidence that the catchment area is stabilized. At the time of the inspection, the Ministry's Authorizations Branch was working with Trans Mountain on this amendment.

Permitting Staff confirmed in email transmission on March 4, 2024, that the construction phase status for all areas is between Phases 3.4 - 3.6 and that the Foreshore CO2 Bubbler operates continuously.

The Authorized Works Changes Notification dated July 24, 2023, confirmed that the Portal WTP will be operational until approximately April 2024.

### Compliance:

Out

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### Requirement Description:

#### 1. AUTHORIZED DISCHARGES 1.2

1.2.6 : This section applies to the discharges of effluent from the Water Treatment Plants (WTPs) and the Foreshore CO2 Bubbler to the discharge points given below in Section 1.2.1.

The Authorized Works are located as approximately shown on the Site Plan. The Authorized Works may be relocated within the site to support workflow, except for outfalls and turbidity curtains.

The permittee must not relocate outfalls and turbidity curtains, except with the prior written authorization of the Director.

### Details/Findings:

Ministry Staff observed the Authorized Works including the WTPs and the Foreshore CO2 Bubbler and confirmed that they were as described in Section 1.2.1 and Section 1.2.3, and located approximately as located on the Site Plan.

At the time of the inspection, Facility Staff informed Ministry Staff that the East Turbidity Curtain had been removed; however, Permitting Staff confirmed in email correspondence that the turbidity curtain uses orange and black oil booms for flotation with a high quality Geotech fabric extending below the surface. Photos of a recent out of water inspection of the turbidity curtain were provided as well as the purchase order for the turbidity curtain. Ministry Staff observed the orange and black oil booms at the time of the inspection.

## Compliance:

In

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### Requirement Description:

#### 1. AUTHORIZED DISCHARGES 1.3 WMT Phase 4 Discharges

1.3: The permittee must not discharge treated stormwater or effluent resulting from WMT Phase 4 activities until the permittee has received written approval from the director.

### Details/Findings:

At the time of the inspection Facility Staff confirmed that WMT Phase 4 activities have not yet been initiated; therefore, discharge of treated stormwater or effluent resulting from these activities has not occurred and this Section was not applicable for the Inspection Period.

## Compliance:

Not Applicable

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### Requirement Description:

#### 2. GENERAL REQUIREMENTS 2.1 Maintenance of Works and Emergency Procedures

2.1: The permittee must regularly inspect the Authorized Works and maintain them in good working order. If components of the Authorized Works have a manufacturers recommended maintenance schedule, then those components must, at a minimum, be maintained in accordance with that schedule.

The permittee must maintain a record of inspections, maintenance and any shut down periods of the Authorized Works for a minimum of five (5) years and make the record available to an officer upon request.

In the event of an emergency or other condition which prevents normal operation of the Authorized Works or leads to an unauthorized discharge, the permittee must take remedial action immediately to restore the normal operation of the Authorized Works and to prevent any unauthorized discharges. The permittee must immediately report the emergency or other condition and the remedial action that has and will be taken to the EnvironmentalCompliance@gov.bc.ca email address or as otherwise instructed by the director.

### Details/Findings:

In email correspondence the Permitting Staff provided confirmation that the following maintenance activities are completed on the Authorized Works:

- Seaforth Environmental provides regular inspection and maintenance activities on the turbidity curtains. Records of inspection and maintenance activities were provided for the months of September and October 2021, April, August, October, November and December 2022, and February, March, August, September, and October 2023, upon request.
- Aqua-Solve Systems uses an adaptive management approach to managing the WTP's and the effluent. Records of inspection and service logs were provided daily for the second week of: October 2021, April, August and December, 2022, and March and September 2023, for the Authorized Works throughout the Inspection Period. Ministry Staff observed the WTP's at the time of inspection and confirmed that they were maintained in good working order.

Non-compliance reports were submitted to the email address required by this Section. Ministry Staff reviewed the reports for emergencies or conditions which prevented the normal operation of the Authorized Works and to prevent any unauthorized discharge for the Inspection Period and identified the following:

**November 14 - 17, 2021:** Foreshore WTP was out of service due to electrical issues and heavy rainfall during this time

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**Ministry of Environment  
and Climate Change  
Strategy**

Compliance and  
Environmental  
Enforcement

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contributed to large pool of grout contact water that leaked through small gaps and holes in the sheet piles and entered the ocean. The notification letter was submitted to the Ministry on December 2, 2021, **which was not immediate notification of the shutdown, as required by this Section.**

**November 3, 2021:** An incident took place, which required the shutdown of the East Water Treatment Plant due to contamination with water from the Tunnel Portal Area. The East Water Treatment Plan was put back into service on November 17, 2021. This was reported as an emergency or other condition which prevents the normal operation of the Authorized Works to the Ministry on November 29, 2021; however, **it was not immediately reported, as required by this Section.**

**December 24, 2021:** An incident took place, whereby freezing temperatures required the Foreshore Treatment Plant to be shut down. This was reported as an emergency or other condition which prevents the normal operation of the Authorized Works to the Ministry on January 5, 2022; however, **it was not immediately reported, as required by this Section.**

**November 17 - December 7, 2022:** The pump that pumps water from the Substation Area sump to the Foreshore WTP was unplugged resulting in grout and concrete affected water overflowing the sump and flowing down the access road into Sump 3, which drains to the West WTP (C1). A notification was submitted to the Ministry on November 21, 2022.

**December 8, 2022:** A power failure to a three-inch pump that pumps water from a 40-foot tank to the Portal WTP resulted in an estimated 6,814 L untreated water which bypassed the Portal WTP which then discharged to the ocean via the East outfall. Notification was submitted to the Ministry on December 9, 2022.

**February 7, 2023:** Heavy rainfall exceeded the capacity of the West Water Treatment System, leading to an estimated 1,000 liter discharge to the West Outfall. Notification was submitted to the Ministry on February 8, 2023.

## Compliance:

Out

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## Requirement Description:

### 2. GENERAL REQUIREMENTS 2.2 Bypasses

2.2: The permittee must not allow any discharge authorized by this authorization to bypass the Authorized Works, except with the prior written authorization of the director.

## Details/Findings:

Ministry Staff reviewed internal electronic records, including bypass notifications and non-compliance reports as well as the 2021, 2022 and 2023 Annual Reports, and identified the following bypasses:

**October 28, 2021:** Trans Mountain provided notification that cementitious contact water entered the marine environment. **This was an unplanned bypass, and no written authorization was obtained prior to discharge and bypass of the Authorized Works.**

**November 12 - 13, 2021:** West WTP was offline due to contamination on November 9, resulting in runoff from the main road bypassing sump 3 and entering the CP Rail ditch prior to discharge to the ocean via the West Outfall. **This was an unplanned bypass, and no written authorization was obtained prior to discharge and bypass of the Authorized Works.**

**November 14 - 15, 2021:** West WTP heavy rainfall resulted in runoff bypassing Sump 3 and entering the west CP Rail ditch and discharging into the ocean via the West Outfall. The bypass occurred because the East WTP was shut down due to contamination. **This was an unplanned bypass, and no written authorization was obtained prior to discharge and bypass of the Authorized Works.**

**November 14 - 17, 2021:** Foreshore WTP was out of service due to electrical issues and heavy rainfall during this time which contributed to a large pool of grout contact water which leaked through small gaps and holes in the sheet piles and entered the ocean. **This was an unplanned bypass, and no written authorization was obtained prior to discharge and bypass of the Authorized Works.**

**On April 8, 2022:** Trans Mountain received a temporary authorization to bypass the OWS and redirect the construction contact water in sump 201 to the West WTP. Ministry Staff observed written authorization for this planned bypass.

**May 20, 2022:** Trans Mountain received a temporary authorization for an extension of the OWS bypass from May 20, 2022, to August 15, 2022.

**June 6, 2022:** Trans Mountain submitted notification of a planned bypass of the East WTP as a result of removing the East WTP from the Facility. **No permission was obtained for this bypass as required by this Section.**

**December 8, 2022:** A power failure to a three-inch pump that pumps water from a 40-foot tank to the Portal WTP resulted in an estimated 6,814 L untreated water bypass of the Portal WTP which then discharged to ocean via East outfall. **This was an unplanned bypass, and no written authorization was obtained prior to discharge and bypass of the Authorized Works.**

**December 24, 2022:** Heavy rainfall, rising temperatures, and rapid snow melt resulted in an increased volume of water entering the West WTP which resulted in an exceedance to the treatment capacity of the system. The excess flow resulted in an unplanned bypass with the overflow water entering the CP ditch and discharging to the ocean via the West Outfall and **no written authorization was obtained prior to discharge and bypass of the Authorized Works.**

**February 7, 2023:** heavy rainfall increased the volume of water entering the West WTP which exceeded the treatment system capacity leading to a bypass of the treatment system. Sump 3 located at the bottom of the main site access road and adjacent to the West WTP overflowed five times with a total estimated volume of water bypassing the West WTP of 1,000 liters and **no written authorization was obtained prior to discharge and bypass of the Authorized Works.**

## Compliance:

Out

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## Requirement Description:

### 2. GENERAL REQUIREMENTS 2.3 Oil Separator Residue

2.3: The permittee must dispose of oil and settled residue removed from the oil separators in a manner approved by the director, or at a site authorized to accept this waste under the *Environmental Management Act*. The permittee must maintain records of any disposed oil and settled residue and make them available on request. Records must be maintained for five (5) years.

## Details/Findings:

At the time of the on-site inspection, Facility Staff informed Ministry Staff that there are three sumps maintained at the Facility; two in the dyked tank farm area and one (Sump 3) which captures general erosion and sediment from the Facility. Permitting Staff provided a list of hydrovac companies used as well as the following disposal sites in BC:

- Saskay - 2650 Pitt River Rd. Port Coquitlam
- Secure - 13511 Vulcan Way, Richmond
- Summit Earthworks - 33171 2nd Avenue, Mission
- Ground X - #105-1312 Ketch Court, Coquitlam
- GFL - 7720 Anvil Way, Surrey

Ministry Staff confirmed that disposal sites which maintain an authorization with the Ministry include: Secure (RS 16412), Summit Earthworks (Permit 107108), and GFL (RS 14453).

Bill of Ladings were provided for waste taken to Secure on November 10, 2021, and December 13, 2022, and to GFL on October 16, 2023.

Ministry Staff reviewed internal electronic records and did not find any authorization under the *Environmental Management Act* for Saskay Earth Exchange (Saskay); however, the facility is located on Kwikwetlem First Nation land which is under Federal jurisdiction. It was not determined if Saskay is authorized under a Federal authority for disposal within the Inspection Period.

Ministry Staff reviewed internal electronic records and confirmed that Ground X does not maintain an authorization under the *Environmental Management Act* to accept waste. As a result, Trans Mountain has failed to dispose of oil and settled residue removed from the separators in a manner approved by the Ministry.

**Compliance:**

Out

**Actions to be taken:**

Ensure that waste produced at the Facility is disposed of at facilities that are authorized to receive waste.

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**Requirement Description:**

**2. GENERAL REQUIREMENTS 2.4 Future Upgrading of Authorized Works**

2.4: The director may require the permittee to repair, alter, remove, improve, or add to existing works, or to construct new works, and to submit plans and specifications for works specified in this authorization.

**Details/Findings:**

Ministry Staff reviewed internal electronic records and located no additional requirements issued to Trans Mountain to repair, alter, improve, or add to the existing works or construct new works as described in this Section. In addition, Permitting Staff confirmed that the Ministry did not request any repairs, alternations, removals, improvements or to adding to existing works or to construct new works and to submit plans and specifications for the Authorized works; therefore, compliance with this Section was not applicable for the Inspection Period.

**Compliance:**

Not Applicable

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**Requirement Description:**

**2. GENERAL REQUIREMENTS 2.5 Pollution Prevention**

2.5: Despite the limits imposed by this authorization, the permittee must ensure at all times that stormwater from the site does not substantially alter or impair the usefulness of the environment outside of the turbidity curtains surrounding the outfalls.

**Details/Findings:**

**The 2021 Annual Report included:**

- Section 2.3.2 (Receiving Environment) summarizes the monitoring locations and sampling parameters and frequencies that will be completed to ensure that stormwater does not alter or impair the usefulness of the environment outside of the turbidity curtains.
  - Section 5.3 (Receiving Environment Monitoring) describes the sampling completed bimonthly from within 5 meters, inside and outside the receiving environment turbidity curtain at six locations. Samples were collected and submitted for analysis as required by the Permit, and field measurements were collected for temperature and dissolved oxygen at the time of sample collection. Ministry Staff reviewed the data provided and confirmed that monitoring was provided in Table 18 (Receiving Environment - Analytical Results) with sampling being completed bi-weekly, not bi-monthly as reported in Section 5.3.
  - Section 6.3 (Receiving Environment Monitoring) provides the results of the monitoring for inside and outside the turbidity curtain surrounding the outfalls. Turbidity inside the turbidity curtain was 270 NTU on December 15, 2021, while the turbidity recorded outside the turbidity curtain was 0.31 NTU, which indicated that the turbidity curtain was operating effectively for total suspended solids and turbidity.
  - Section 7.5 (Receiving Environment Monitoring) states that analytical and field measured parameters confirmed the turbidity curtain was effective.
-



**The 2022 Annual Report included:**

- Section 2.3.2 (Receiving Environment) summarizes the monitoring locations and sampling parameters and frequencies that will be completed to ensure that stormwater does not alter or impair the usefulness of the environment outside of the turbidity curtains.
- Section 5.3 (Receiving Environment Monitoring) describes the sampling completed bi-weekly from within 5 meters, inside and outside the receiving environment turbidity curtain at four locations. Samples were collected and submitted for analysis as required by the Permit, and field measurements were collected for temperature and dissolved oxygen at the time of sample collection.
- Section 6.3 (Receiving Environment Monitoring) provides the results of the monitoring for inside and outside the turbidity curtain surrounding the outfalls. Some measurements of turbidity and TSS from outside of the turbidity curtain exceeded the measurements seen inside the turbidity curtain. However, based on this result, it could not be determined if this indicated that the stormwater from the Facility substantially altered or impaired the usefulness of the environment outside of the turbidity curtains.
- Section 7.6 (Receiving Environment Monitoring) describes the statistical analysis for the turbidity and TSS inside and outside the curtain and concludes there was no statistical difference between TSS levels inside and outside the curtains.

**The 2023 Monthly Reports included:**

- Section 2.3.2 (Receiving Environment), summarizes the monitoring locations and sampling parameters and frequencies that will be completed to ensure that stormwater does not alter or impair the usefulness of the environment outside of the turbidity curtains.
- Section 5.3 (Receiving Environment Monitoring) describes the sampling completed bi-weekly from within 5 meters, inside and outside the receiving environment turbidity curtain at four locations C7, C8, C13 and C14; however, these locations do not reflect the locations specified in Table 3 of the Permit which are C13, C19, C14 and C20.
- Section 6.3 (Receiving Environment Monitoring) provides the results of the monitoring for inside and outside the turbidity curtain surrounding the outfalls.
- Section 7.6 (Receiving Environment Monitoring) describes the statistical analysis for the turbidity and TSS inside and outside the curtain and concludes there was no significant difference between TSS levels inside and outside the curtains.

Trans Mountain completed monitoring and sampling as outlined in the 2021, 2022, and 2023 Annual Reports throughout the Inspection Period. Analytical results from outside the turbidity curtain ranged from being lower than inside the turbidity curtain to being the same as or exceeding the results obtained inside the turbidity curtain. Trans Mountain completed statistical analysis which confirmed there was no significant difference of the TSS levels inside and outside the curtains, confirming that the stormwater discharged had not substantially altered or impaired the usefulness of the environment outside of the turbidity curtains.

**Compliance:**

In

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**Requirement Description:****2. GENERAL REQUIREMENTS 2.6 Other Agency Requirements**

2.6: This authorization does not relieve the permittee from complying with requirements of federal, provincial, regional district or municipal authorities or any agreements made with First Nations.

**Details/Findings:**

Ministry Staff assessed compliance with this Permit and did not review federal, regional district, municipal or agreements made with First Nations during this inspection; therefore, compliance with this section was not determined for this Inspection Period.

**Compliance:**

Not Determined

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**Requirement Description:****2. GENERAL REQUIREMENTS 2.7 TSS / Turbidity Curve Use**

2.7: The permittee may create a TSS/turbidity relationship to manage the effluent discharge at the WTPs. In order to apply this relationship to the effluent from the WTPs the permittee must submit, prior to use, a statistically viable TSS/turbidity curve for the discharges from the WTPs. In the absence of a statistically viable TSS/turbidity curve, the WTPs will assume a 1:1 ratio for TSS to turbidity. The director may require adjustments to the TSS/turbidity curve and its use.

**Details/Findings:**

The 1:1 ratio for TSS to turbidity was used throughout the Inspection Period, in the absence of a statistically viable TSS/turbidity curve. The 2022 Annual Report stated that "As per the Permit requirements, a 1:1 ratio for TSS to turbidity was assumed for the WTPs effluent as a statistically viable TSS-turbidity curve has not been developed". As a TSS/turbidity curve is not used, no adjustments are required by the director and this Section is not applicable for the Inspection Period.

**Compliance:**

Not Applicable

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**Requirement Description:****2. GENERAL REQUIREMENTS 2.8 Suspension of Work**

2.8: The permittee must maintain the necessary Authorized Works if construction for Phase 2 or Phase 3 at the site has been suspended for any reason. The permittee must complete required inspections and maintenance activities as per Section 2.1 to ensure that infrastructure, including access, are maintained in a safe and operable condition and conduct all monitoring in accordance with Table 1 and 3 to ensure that permit requirements are met. Prior to suspension of construction all required sediment and erosion controls and water treatment systems must be installed, operating, and maintained until construction recommences or an alternate authorization is obtained.

**Details/Findings:**

During the on-site inspection Facility Staff informed Ministry Staff that the Authorized Works have been maintained, the required inspections, access to, and monitoring in accordance with Table 1 and 3 have been maintained, and all required sediment and erosion controls and water treatment systems have been installed, operated, and maintained throughout the construction for Phase 2 and Phase 3, to ensure that permit requirements are met.

**Compliance:**

In

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## Requirement Description:

### 2. GENERAL REQUIREMENTS 2.9 Discharge Water Conveyance

2.9: The permittee must convey all effluent in the water conveyance systems in such a way as to avoid erosion and avoid the addition of sediment to the effluent after treatment. The permittee must have an agreement with CP Rail to use their ditches for effluent conveyance and infiltration to the flow levels predicted by the hydrology report.

### Details/Findings:

An ESCP was prepared to provide site-specific erosion and sediment control for Phase 3 general construction at the Facility. Section 5 (Best Management Practices) of the ESCP outlines guiding principles which apply to the construction works at the Facility. Some of the practices described in this Section were observed by Ministry Staff at the time of the inspection, including covering excavated soils with poly, limiting access points within the project area, using sandbags, coconut, topsoil, and seed for erosion control, and collecting clean (non-contact) water and keeping it clean.

Facility Staff confirmed that Trans Mountain has an agreement in place with CP Rail to use their ditches for effluent conveyance and infiltration. Ministry Staff did not review the agreement with CP Rail for this inspection; therefore, compliance with this part of this Section could not be determined for the Inspection Period.

### Compliance:

In

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## Requirement Description:

### 2. GENERAL REQUIREMENTS 2.10 Turbidity Curtain Use

2.10: The permittee must install and maintain a turbidity curtain in Burrard Inlet around the WTPs and Foreshore CO2 Bubbler outfalls when discharge is occurring.

If at any time, including during the receiving environment monitoring, it is noted that the turbidity curtains are not effectively containing turbid water, all stormwater discharges to that location must cease until the containment is re-established. The director may require changes in the use of the turbidity curtains to protect the environment. The director may require additional water quality monitoring in the receiving environment to verify the effectiveness of the turbidity curtain.

### Details/Findings:

Ministry Staff observed the turbidity curtains located at the West and Foreshore outfalls and confirmed the curtains were in place at the time of inspection.

During the on-site meeting, Facility Staff informed Ministry Staff that the turbidity curtains had been effective at containing turbid water throughout the Inspection Period. Maintenance and inspection of the turbidity curtains was performed by Seaforth Environmental throughout the Inspection Period. Records of inspection and maintenance for the months of September and October 2021, April, August, October, November and December 2022, and February, March, August, September, and October 2023, were provided upon request. Ministry Staff reviewed the records and confirmed that no records reported that the turbidity curtains were ineffective at containing turbid water.

### Compliance:

In

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**Requirement Description:****2. GENERAL REQUIREMENTS 2.11 Authorized Treatment Agents**

2.11 : The permittee must demonstrate that any change to the use of treatment agents in the WTPs, the Foreshore CO2 Bubbler or Hydrostatic Test Water will not cause acute toxicity and must provide background information to the director 30 days prior to use and conduct toxicity testing within three (3) weeks of its initial use. Test results are subject to Section 3.2.4. Results of toxicity tests must be included in the reports required under Sections 4.5 and 4.6.

**Details/Findings:**

Ministry Staff reviewed internal electronic Ministry records and did not locate any correspondence identifying any changes to the use of treatment agents in the WTPs. Upon request, Permitting Staff confirmed in email correspondence to Ministry Staff that there were no changes to the treatment agents used at the Facility within the Inspection Period; therefore, compliance with this Section was not applicable for the Inspection Period.

**Compliance:**

Not Applicable

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**Requirement Description:****2. GENERAL REQUIREMENTS 2.12 Erosion and Sediment Control Plan (ESCP)**

2.12 : To minimize and control the runoff of sediments in stormwater and to manage the treatment of stormwater, the permittee must implement, maintain, and comply with all aspects of the ESCP during WMT Phase 2 and 3. The ESCP must be prepared by a Qualified Professional. The ESCP must be submitted to the director within 30 days after the issuance of the permit. Any modifications made to the ESCP must be submitted to the director within 30 days of the modification. The director may require modifications to the ESCP as necessary.

**Details/Findings:**

The ESCP was prepared by EDI Environmental Dynamics Inc. (EDI), and the "Authorship" page confirms that Qualified Professionals with registration as professional biologists (R.P. Bio), were contributing authors and provided the senior review on the ESCP.

The ESCP has not been modified within the Inspection Period and in a review of internal electronic records, Ministry Staff did not identify any requirement issued by the Ministry for modifications to the ESCP; therefore, this Section is not applicable for the Inspection Period.

**Compliance:**

Not Applicable

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## **2. GENERAL REQUIREMENTS 2.13 Cease Work for Large Storm Events**

2.13 : WTPs have been designed to meet a 10-year 24-hour storm event. If the West Vancouver Weather Station forecasts a greater than 10-year storm event (>119 mm in a 24-hour period) in the Burnaby area, then all Phase 2 and 3 construction activities related to this authorization must cease and erosion and sediment control measures must be put into place to minimize sediment movement. Regardless of ceased construction related to the authorization, stormwater leaving areas of construction must still be treated using the Authorized Works.

### **Details/Findings:**

In email correspondence, Permitting Staff informed Ministry Staff that Environment Canada recorded one (1), 10-year 24-hour storm event between 2021 and 2023 at the West Vancouver Weather Station. This 24-hour storm event occurred between Sunday, November 14, 2021, and Monday, November 15, 2021, and no construction works occurred on site on November 14 or 15, 2021. Permitting Staff provided a daily record from November 15, 2021, which confirmed planning for staff return to work on November 16, 2021. Permitting Staff confirmed that although there was no construction works during this storm event, erosion and sediment control and treatment activities were maintained at the Facility.

### **Compliance:**

In

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### **Requirement Description:**

## **2. GENERAL REQUIREMENTS 2.14 Record Keeping**

2.14 : The permittee must ensure that all records required to be kept at the facility as per this authorization are retained for a minimum of five (5) years.

### **Details/Findings:**

Permitting Staff provided records for the Inspection Period which dated back to July 2021, as requested by Ministry Staff. Records which exceeded this time period were not requested for this inspection; therefore, compliance with this Section could not be determined.

### **Compliance:**

Not Determined

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### **Requirement Description:**

## **2. GENERAL REQUIREMENTS 2.16 Discharge of Concrete Wash Water**

2.16: The permittee must treat all Concrete Wash Water that is being discharged from the site at a water treatment plant that contains an ion exchange treatment module. Dates when Concrete Wash Water is being discharged must be recorded and included in reports for Section 4.5 and 4.6.

### **Details/Findings:**

Ministry Staff reviewed the 2021 and 2022 Annual Reports, and 2023 Monthly Reports (as required by Section 4.5 and 4.6) for the Inspection Period, and the dates when Concrete Wash Water was discharged were not recorded and included in the reports.

### **Compliance:**

Out

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## Actions to be taken:

Ensure the dates when Concrete Wash Water is being discharged are recorded and provided in the Monthly and Annual Reports.

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.1 Future Monitoring

3.1: The director may require the permittee to conduct monitoring, and may specify procedures for monitoring and analysis, and procedures or requirements respecting the handling, treatment, transportation, discharge, or storage of waste.

The director may amend any requirements under this section, including requiring increased or decreased monitoring based on data submitted by the permittee and any other data gathered in connection with this authorization.

## Details/Findings:

At the time of the inspection, Facility Staff informed Ministry Staff that no additional requirements to conduct monitoring or procedures for analysis or handling, treatment, transportation, discharge, or storage of waste had been issued by the Ministry. Ministry Staff reviewed internal electronic records and found no additional requirements issued to Trans Mountain within the Inspection Period; therefore, compliance with this Section was not applicable for the Inspection Period.

## Compliance:

Not Applicable

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2 Effluent Monitoring

3.2: This Section applies to the monitoring of the effluent discharged from the East and West Permitted Outfall, the West, Portal, and Foreshore WTPs and the Foreshore CO2 Bubbler authorized under Section 1.1 and 1.2.

When there is no discharge at a sampling location, no sampling is required. The permittee must record no discharge during periods when no discharge is occurring. The permittee must maintain the records for inspection for a minimum of five (5) years.

## Details/Findings:

Ministry Staff reviewed the 2021 and 2022 Annual Reports, and the 2023 Monthly Reports and confirmed that when there was no discharge at a sampling location, a statement that no discharge was occurring was included in the monthly and annual reports.

## Compliance:

In

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.1 Flow Measurement

3.2.1 : The permittee must maintain a flow measuring device, acceptable to the director, to measure flow from all WTPs and the Foreshore CO2 Bubbler at the frequencies specified in Table 1. The permittee must maintain a record of the effluent volume discharged under Section 1.1 monthly and under Section 1.2 daily. Daily discharges of Hydrostatic Test Water must be included in the records under Section 1.2. The permittee must report the flow (including daily Hydrostatic Test Water discharge rates) in the monthly reports.

## Details/Findings:

The contractor that services the water treatment plants on behalf of Trans Mountain (Aquasolve), confirmed that all four flow measuring devices used at the Facility were McCrometer McPropellor flow meters. Ministry Staff observed the flow measuring device at the time of the inspection.

The 2023 Monthly Reports included a record of effluent volume discharged under Section 1.1 monthly and Section 1.2 daily.

Permitting Staff informed Ministry Staff that Hydrostatic Test Water was discharged in July and November 2023; however, Ministry Staff reviewed the July, November, and December 2023 Monthly Reports and determined that no report of the flow rate of hydrostatic test water discharge was included in these reports.

## Compliance:

Out

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.2 Effluent Sampling

3.2.2 : The permittee must collect effluent samples at the locations and frequencies specified in Table 1 and 2. The permittee must take due care in collection, storage, and transportation of the samples to control temperature and avoid contamination, breakage, and any other factor or influence that may compromise the integrity of the sample.

For new works, such as the Foreshore WTP and the Foreshore CO2 Bubbler, effluent sampling must begin upon commencement of discharge.

## Details/Findings:

Ministry Staff reviewed the 2021, 2022, and 2023 Annual Reports and corresponding data, and confirmed that effluent samples were collected at frequencies specified in Table 1 and 2. The 2023 Monthly Reports included details on two occurrences of when the effluent samples were compromised, primarily due to control of temperature in transit, although care was taken to avoid any disturbance. When the laboratory received the samples and reported the temperature exceedances, Trans Mountain collected secondary samples to ensure the temperature exceedance did not compromise the sample.

The 2021 Annual Report included Section 6.2.4 (Foreshore WTP (C12)) and stated that the C12 was commissioned on September 23, 2020. As this was prior to the Inspection Period, compliance with the effluent sampling for this WTP was not reviewed as part of this inspection.

The 2021 and 2022 Annual Reports stated that the Foreshore CO2 Bubbler had not yet been commissioned. Section 6.1.5 (Foreshore CO2 Bubbler (C16)) in the 2023 Annual Report states that C16 is only used when significant pH readings are observed, and these were not observed in 2023; therefore, this Section is not applicable for the Inspection Period. Section 6.1.6 (Foreshore Water Treatment System (C21)) states that C21 was not commissioned in the Inspection Period; therefore, this Section is not applicable for the Inspection Period for C21.

## Compliance:

In

## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.3 Analysis and Measurement

3.2.3 : The permittee must sample the discharges as detailed in Table 1 below when discharge is occurring.

The permittee must compare the results from the total and dissolved metals tests to BC WQG or other applicable guidelines and comparisons included in reports for Section 4.5 and 4.6. Any exceedances must be immediately reported to the director by email at the [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca).

**Table 1. Effluent Monitoring**

Monitoring Locations as shown in Site Plan A, B and C	Parameters and Tests	Methods	Frequency	
			Rainfall ≤ 30 mm As forecasted at the West Vancouver Weather Station	Rainfall > 30 mm As forecasted at the West Vancouver Weather Station
East Permitted Outfall West Permitted Outfall	Flow	Inline Instrument	Monthly	
	TEH	Grab	Monthly	
	Rainbow trout 96-hour Acute Lethality Test (50%)	Grab	Annually	
C1 – Outlet of the West WTP  C17 – Outlet of the Portal WTP C12 – Outlet of the Foreshore WTP	Flow, turbidity, pH	Inline Instrument	Continuous (15 minute increments)	
	TSS, TEH, pH, turbidity	Grab	Weekly	Daily
	PAH	Grab	Once in the first two months of WTP operation	
	Chromium Cr <sup>6+</sup>	Grab	Discharges containing Concrete Wash Water: weekly. Discharges containing Concrete Curing Water: weekly until three consecutive samples are reported below the authorized limit.	
	Rainbow trout 96-hour Acute Lethality Test (50%)	Grab	Annually	
	Chitosan residual (detection limit ≤ 0.2 mg/L)	Grab	Weekly	
	<i>Daphnia magna</i> 48-hour Acute Lethality Test (50%)	Grab	One time during the third week of commissioning a new WTP operation	
Rainbow trout 96-hour Acute Lethality Test (20%) <sup>1</sup>	Grab	One time in the third week of commissioning a new WTP		
Metals, total and dissolved	Grab	Once per month when discharging from WTP		
C16 – Outlet of the Foreshore CO <sub>2</sub> Bubbler	Flow, pH, turbidity	Inline Instrument	Continuous (15 minute increments)	
	TSS, pH, turbidity	Grab	Weekly	
	Chromium Cr <sup>6+</sup>	Grab	Discharges containing Concrete Wash Water: weekly. Discharges containing Concrete Curing Water: weekly until three consecutive samples are reported below the authorized limit.	
	Rainbow trout 96-hour Acute Lethality Test (50%)	Grab	Annually	
	<i>Daphnia magna</i> 48 hour acute lethality test (50%)	Grab	One time during the third week of the Foreshore CO <sub>2</sub> Bubbler commissioning	
	Rainbow trout 96-hour Acute Lethality Test (20%) <sup>1</sup>	Grab	One time in the third week of the Foreshore CO <sub>2</sub> Bubbler commissioning	
	Metals, total and dissolved	Grab	Once per month when discharging from WTP	
C3 – CP Rail ditch west of foreshore access road prior to outfall	Metals (total and dissolved), pH, TSS, turbidity	Grab	Monthly when there is standing or flowing water.	

<sup>1</sup> Considered a pass if no more than 20% mortality.



## Details/Findings:

The following reports of exceedances of the BC water quality guidelines (BC WQG) were reviewed in the 2021, 2022, and 2023 Monthly and Annual Reports, as required in Section 4.5 and 4.6.

### 2021

Ministry Staff reviewed the 2021 Annual Report and 2021 Monthly Reports required under Section 4.5 and 4.6 and determined that exceedance reports were provided to the Ministry with total and dissolved metals tests compared to the BC WQG and other applicable guidelines for exceedances for 2021. In addition, the exceedance reports were submitted to the email address listed in this Section typically within three weeks of the exceedance, when the analytical results were received by Trans Mountain. However, some exceedances occurred on **November 9, 25 and December 8, 2021, which were not reported until January 5, 2022**. This was stated to be due to a data breach with the laboratory which delayed the sample results being received by Trans Mountain prior to reporting the exceedance to the Ministry.

### 2022

Ministry Staff reviewed the 2022 Annual Report and 2022 Monthly Reports and determined that exceedance reports were provided to the Ministry for total and dissolved metals tests compared to the BC WQG and other applicable guidelines for exceedances for 2022. In addition, the exceedance reports were submitted to the email address listed in this Section typically within three weeks of the exceedance, when the analytical results were received by Trans Mountain. However, one exceedance at the East WTP (C2) occurred on **January 4, 2022, which was not reported until February 18, 2022**, and no reason for the delay in immediate reporting was provided. Additionally, exceedances at the CP Rail Ditch (C3) were observed on **April 4, May 4, June 1, July 6, August 3, September 7, October 4, November 2, and November 17, 2022, which were not reported to the Ministry until April 20, 2023**. It was noted in the 2022 Annual Report that this was due to database errors.

### 2023

Ministry Staff reviewed the 2023 Annual Report and 2023 Monthly Reports and determined that exceedance reports were provided to the Ministry for total and dissolved metals tests compared to the BC WQG and other applicable guidelines for exceedances for 2023. In addition, the exceedance reports were submitted to the email address listed in this Section typically within one month of the exceedance, when the analytical results were received by Trans Mountain. However, Trans Mountain exceeded the BC WQG and other applicable standards on **January 4, 2023, for Total Copper (C1), Total Nickel (C1) and (C12), Dissolved Arsenic (C3), and Total Copper (C3) but these were not reported to the Ministry until February 26, 2023**. Trans Mountain explained that the exceedance was detected late due to a database error, and they were reported immediately following the identification of the error. Trans Mountain exceeded the BC WQG and other applicable standards on **May 3, 2023, for Total Mercury (C1) and (C12), Total and Dissolved Copper (C12), and Total Zinc (C12), the results were received on May 29, 2023; however, these exceedances were not reported until June 9, 2023**, and no reason for the delay in immediate reporting was provided. Trans Mountain exceeded the BC WQG and other applicable standards on **October 4, 2023, for Total Copper (C1), Total and Dissolved Nickel (C12), and Dissolved Zinc (C12), the results were received on October 13, 2023; however, these exceedances were not reported until November 23, 2023**, and no reason for the delay in immediate reporting was provided.

## Compliance:

Out

## Actions to be taken:

Ensure that any exceedance of the BC WQG is immediately reported to the email specified in this section at: [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca).

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.3.1 Initial Monitoring of Hydrostatic Test Water from the Tunnel and Facility Piping

3.2.3.1 : The permittee must take a representative sample prior to releasing Hydrostatic Test Water from a tunnel piping Batch or from the first Batch from the facility piping. The permittee must sample the discharges as detailed in Table 2.

Sampling must occur after dechlorination is complete and prior to the release of hydrostatic test water. Monitoring for propylene glycol is only required when it has been added to the Hydrostatic Test Water. Monitoring for total residual chlorine is only required when municipal water has been used for hydrostatic testing.

If the results of the monitoring indicate that the parameters are equal to or below the limits in Section 1.2, then no further testing as outlined in Table 2 is required for that Batch of Hydrostatic Test Water. If the results indicate that chlorine, propylene glycol or dissolved iron exceed the Section 1.2 limits, then testing as per 3.2.3.4 is required.

The permittee must compare the results from the total and dissolved metals tests to BC WQG or other applicable guidelines and include comparisons in reports for Section 4.5 and 4.6. Any exceedances must be immediately reported to the director by email at the [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca).

## Details/Findings:

### 2021

2021 Annual Report - Section 5.4 (Hydrostatic Test Water Monitoring) confirmed that no hydrostatic test water was discharged in 2021.

### 2022

2022 Annual Report - Section 6.4 (Hydrostatic Test Water Monitoring), reported that one hydrostatic test was completed on November 28, 2022, using 30 m3 of water from an on-site hydrant and no propylene glycol was used in the hydrostatic test. The municipal water used was dechlorinated and post-hydrostatic chlorine test results met the Permit limit in Section 1.2.2. The effluent characteristics were reported to meet characteristics of discharge for all parameters in Section 1.2.1.

Section 6.4 of the 2022 Annual Report reported that total copper exceeded the Burrard Inlet WQOs, and total zinc exceeded the BC WQG, as required by Section 4.6 of the Permit. Ministry Staff confirmed that the total copper exceedance was immediately reported to the reporting email address included in this Section. However, Ministry Staff reviewed the November 2022 Monthly report required by Section 4.5 of the Permit and the BC WQG exceedance for total zinc was not included in the Monthly Report, as required by this Section and nor was a report of immediate notification of the exceedance.

Ministry Staff confirmed the characteristics of discharge as provided in Table 2.

### 2023

In email correspondence, Permitting Staff provided a summary of hydrostatic test water discharges including:

- July 2023 - discharge of 3,520 m3 with results provided which met the characteristics of discharge for all parameters in this Section; with the exception of propylene glycol, as it was not added to the hydrostatic test monitoring and as per Section 3.2.3.1 it was therefore not required to be tested. In addition, Permitting Staff provided analytical for the July, 2023 hydrostatic test effluent in email correspondence and Ministry Staff confirmed that the characteristics of discharge required by Section 1.2.1, were met.
- November 27 - December 1, 2023 - As described in the findings for Section 1.2.2, a discharge of 4,261 m3 of hydrostatic test water occurred. The Permitting Staff stated that the discharge included 92 m3 of water used to perform the hydrostatic test inside the new piping, but that 4,169 m3 of water was required to fill the tunnel piping to perform the test. Permitting Staff informed Ministry Staff that because only 92 m3 of water was used in the new pipe, and no exceedance of the parameters in this Section was observed in the July 2023 discharge, the Facility operated in accordance with Sections 3.2.3.3 and 3.2.3.4 for discharges of less than 1,500 m3 of water and that additional testing was not required.

As per the definition in this Permit a "Batch" means "the entire volume of water in a tank or Section of facility piping or tunnel piping that was used for hydrostatic testing". The Ministry considers the total discharge of water used in the hydrostatic test water to be 4,261 m<sup>3</sup>; therefore, Section 3.2.3.3 and 3.2.3.4 were not applicable, and testing of the discharge of hydrostatic test water for the November 27 - December 1, 2023, discharge, was required and not completed. Trans Mountain failed to take a representative sample prior to releasing Hydrostatic Test Water from a tunnel piping Batch for the November 27, 2023, discharge as required by this Section.

## Compliance:

Out

## Actions to be taken:

Ensure a representative sample is collected and that the parameters are equal to or below the limits in Section 1.2, for each Batch of Hydrostatic Test Water prior to discharge.

## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.3.2 Review of Acute Lethality Sampling of Hydrostatic Test Water

3.2.3.2 : The permittee must review the results of the acute lethality test before the release of any Hydrostatic Test Water. If the Hydrostatic Test Water fails the acute lethality test then, the permittee is required to hold any releases of the Hydrostatic Test Water. The permittee must take corrective actions and retest until a subsequent acute lethality test shows that the water quality has improved to the point that test is passed.

## Details/Findings:

### 2021

2021 Annual Report - Section 5.4 (Hydrostatic Test Water Monitoring) confirmed that no hydrostatic test water was discharged in 2021.

### 2022

2022 Annual Report - Section 6.4 (Hydrostatic Test Water Monitoring), reported that one hydrostatic test completed on November 28, 2022, and the rainbow trout 96-hour acute lethality test passed with 100% survival. Ministry Staff confirmed this by observing the laboratory certificate of analysis provided for this test.

### 2023

2023 Annual Report - Section 6.4 (Hydrostatic Test Monitoring) in the 2023 Annual Report states that the 96-hour acute lethality test passed with 100% survival. Table 20 in the 2023 Annual Report includes analytical data for the July 2023 hydrostatic discharge; however, the acute lethality data was not included in this Section of the 2023 Annual Report for confirmation.

As described in the findings for Section 1.2.2 and 3.2.3.1, a discharge of 4,261 m<sup>3</sup> of hydrostatic test water occurred between November 27 - December 1, 2023, and no acute lethality testing was completed prior to discharge. **Trans Mountain failed to obtain and review the results of the acute lethality test before the release of the November 27, 2023, hydrostatic test water.**

## Compliance:

Out

## Actions to be taken:

Ensure a representative sample is collected and that the acute lethality test is completed and meets the requirements of Section 1.2, for each Batch of Hydrostatic Test Water prior to discharge.

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.3.3 Hydrostatic Test Water from Facility Piping

3.2.3.3 : For Hydrostatic Test Water from facility piping that has a volume less than 1,500 m<sup>3</sup>, the permittee must monitor for all parameters in Table 2 for the first Batch. If the results of the monitoring indicate that the parameters are equal to or below the Section 1.2 limits, then no further monitoring as outlined in Table 2 is required and all subsequent Batches of less than 1,500 m<sup>3</sup> from facility piping can be discharged without monitoring.

If the Hydrostatic Test Water fails the acute lethality test, then re- testing must occur as stated in 3.2.3.2 and the director must be notified. The director may require acute lethality testing on subsequent Batches.

If chlorine, propylene glycol or dissolved iron exceed the Section 1.2 limits then all Batches from facility piping of less than 1,500 m<sup>3</sup> must then be sampled at the outlet of the WTP as per Section 3.2.3.4.

## Details/Findings:

### 2021

2021 Annual Report - Section 5.4 (Hydrostatic Test Water Monitoring) confirmed that no hydrostatic test water was discharged in 2021.

### 2022

2022 Annual Report - Section 6.4 (Hydrostatic Test Water Monitoring), reported that one hydrostatic test was completed on November 28, 2022. The effluent characteristics were confirmed to meet characteristics of discharge for all applicable parameters in Section 1.2.1 and 1.2.2.

### 2023

In email correspondence, Permitting Staff provided a summary of hydrostatic test water discharges including:

- July 2023 - effluent characteristics were confirmed to meet characteristics of discharge for all applicable parameters in Section 1.2.1 and 1.2.2.
- November 27 - December 1, 2023 - total Batch volume was 4,169 m<sup>3</sup>, as per the definition of "Batch" in the Permit which exceeded the 1,500 m<sup>3</sup> threshold for discharging without further monitoring as described in this Section; therefore, the exemption from monitoring this Batch was not applicable; however, as described in Section 1.2.2 and 3.2.3.1, Trans Mountain did not conduct further monitoring on this Batch and the characteristics of discharge for the November 27, 2023, discharge could not be determined.

## Compliance:

Not Determined

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.3.4 Hydrostatic Test Water Monitoring Frequency

3.2.3.4 : Monitoring of effluent as specified in Table 2 must be completed on the release of each Batch of Hydrostatic Test Water for the parameters dissolved iron and/or propylene glycol if they exceeded the Section 1.2 limits during the initial monitoring of the tunnel and/or during the monitoring of the facility piping described in Section 3.2.3.1 and 3.2.3.3. Once three consecutive samples of each parameter are equal to or below the limits, then monitoring for that parameter can cease.

**Table 2. Hydrostatic Test Water Monitoring**

Test Parameter or Measurement	Initial monitoring of tunnel piping Batches and the first Batch of facility piping	Effluent Monitoring as per Section 3.2.3.4 (for parameters that exceeded the permit limit during initial monitoring)
Total Residual Chlorine	Field sample	n/a
Dissolved Iron	Grab sample	2 times per month
Propylene Glycol	Grab sample	Every other day
Total and Dissolved Metals	Grab sample	n/a
Rainbow trout 96-hour Acute Lethality Test (20%)	Grab sample	n/a

**Details/Findings:**

**2021**

2021 Annual Report - Section 5.4 (Hydrostatic Test Water Monitoring) confirmed that no hydrostatic test water was discharged in 2021.

**2022**

2022 Annual Report - Section 6.4 (Hydrostatic Test Water Monitoring), reported that one hydrostatic test was completed on November 28, 2022. The effluent characteristics were confirmed to meet characteristics of discharge for all applicable parameters in Section 1.2.1 and 1.2.2.

**2023**

In email correspondence, Permitting Staff provided a summary of hydrostatic test water discharges including:

- July 2023 - effluent characteristics were confirmed to meet characteristics of discharge for all applicable parameters in Section 1.2.1 and 1.2.2.
- November 27 - December 1, 2023 - as described in Section 1.2.2 and 3.2.3.1, Trans Mountain did not conduct further monitoring on this Batch and the characteristics of discharge for the November 27, 2023, discharge could not be determined.

**Compliance:**

Not Determined

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.3.5 Total Residual Chlorine

3.2.3.5: Total residual chlorine must be measured in the field with an instrument suitable to the director.

## Details/Findings:

Residual chlorine measurement is only required when municipal water is used for hydrostatic testing. No hydrostatic test water was discharged in 2021, however municipal water was used in testing in 2022 and 2023.

Appendix D (Dechlorination Results) of the 2022 Annual Report reported that a Hanna - Free and Total Chlorine Detector was used for the field measurement. This instrument is suitable for a total residual chlorine field measurement.

Appendix B (Dechlorination Results) did not provide the specifications of the field instrument used, nor did any other section of the 2023 Annual Report specify the field instrument used to measure the chlorine; therefore, compliance with the requirements of this Section could not be determined for 2023.

## Compliance:

In

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.3.6 Dechlorination

3.2.3.6: The permittee must provide background information on the treatment agent for dechlorination as per Section 2.11 to the director a minimum of 30 days prior to use. Incoming municipal water that will be used for hydrostatic testing must be sampled for total residual chlorine levels prior to dechlorination.

Records must be kept on the results including the following:

- All total residual chlorine sampling (including pre and post treatment and any intermediate sampling results);
- timing of dechlorination;
- amount of municipal water and treatment agent used in the process;
- calculations used to determine the total residual chlorine concentrations. Any calculated exceedance of the Section 1.2 limits must be reported as a non-compliance as per Sections 4.2 and 4.3. These records must be included in the reports required under Section 4.5 and 4.6.

## Details/Findings:

Dechlorination is required when municipal water is used for hydrostatic testing. No hydrostatic test water was discharged in 2021, however municipal water was used in testing in 2022 and 2023. Ministry Staff located an email from June 4, 2021, which listed preferred dechlorination agent options, as well as an email on November 15, 2022, which notified the Ministry that a hydrostatic test would be conducted; however, **no additional correspondence regarding the treatment agent for dechlorination, a minimum of 30 days prior to dechlorination was provided to the Ministry.**

Appendix D (Dechlorination Result) of the 2022 Annual Report reported that 30 m<sup>3</sup> of water was treated on November 28, 2022, at 1:34pm, with 0.03 L of 30% calcium thiosulphate. Pre and post treatment testing was completed for free and total residual chlorine and the results were included in the summary. Calculations used to determine total residual chlorine concentrations were included and the calculated chlorine did not exceed Section 1.2 limits. This record met the reporting requirements in Section 4.6, as required by this Section; however, the November 2022 Monthly Report, required under Section 4.6, failed to include the records required by this Section.

Appendix B (Dechlorination Result) of the 2023 Annual Report did not include the records required by this Section, nor did the July 2023 Monthly Report. Therefore, Trans Mountain failed to include records of the dechlorination as required by this Section in the reports required under Section 4.5 and 4.6.

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## Compliance:

Out

## Actions to be taken:

Ensure all of the requirements under this Section are met and records are provided in the Monthly and Annual Reports for the dechlorination of the hydrostatic test water.

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.2.4 Effluent Monitoring Results - Notification and Additional Sampling and Testing

3.2.4 : Specific effluent monitoring results trigger notification and additional sampling and testing as follows:

#### a) Acute Lethality Failures

If a 48-hour *Daphnia magna* and/or a 96-hour rainbow trout acute lethality test fails then the permittee must immediately notify the director, take corrective actions, and follow the conditions of Section 4.2. Upon failure, a LC50 lethality test must be conducted immediately and weekly thereafter, if discharging, until two consecutive toxicity tests are passed, after which testing can revert to the frequency specified in Table 1. Note: This section does not apply to acute lethality failures in Hydrostatic Test Water as per Section 3.2.3.2.

b) Chitosan Residual Detection and Follow-up Toxicity Testing The permittee must immediately notify the director or designate by email at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca), or as otherwise instructed by the director if the chitosan residual test shows concentrations greater than the detection limit.

If the chitosan residual test shows concentrations greater than the detection limit, the permittee must sample the discharge within 24 hours and test for toxicity with a rainbow trout 96-hour acute lethality test. Requirements of Section 3.2.4 (a) apply to these toxicity tests.

## Details/Findings:

### Acute Lethality Failures

**Foreshore WTP (C12)** - Acute lethality failure occurred with a 90% mortality for the 96-hour rainbow trout test conducted on November 15, 2023. The sample results were received by Trans Mountain on November 29, 2023, and a report was submitted to the Ministry on November 30, 2023.

Trans Mountain collected a follow-up toxicity sample on December 1, 2023, and results passed Permit limits.

Trans Mountain collected a second follow-up toxicity sample on December 5, 2023, and results failed to meet Permit limits. A follow-up toxicity sample was submitted for analysis on December 7, 2023, and results passed Permit limits on December 11, 2023.

A follow-up toxicity sample was submitted for analysis on December 13, 2023, and results passed Permit limits on December 20, 2023.

### Chitosan Residual Detection and Follow-up Toxicity Testing

**West WTP (C1)** - Residual Chitosan exceeded Permit limit at C1 on January 21, 2022, notification was submitted to the reporting email inbox as required by this Section on January 21, 2022. The effluent was sampled within 24 hours and a 96-hour acute lethality test was completed. The toxicity test passed, and the results were provided to the Ministry on February 11, 2022.

**Portal WTP (C17)** - Residual Chitosan exceeded Permit limit at C17 on March 15, 2023. Notification was submitted to the reporting inbox as required by this Section on April 15, 2023. Trans Mountain **failed to immediately report this failure due to a "communication lapse in the field"**. The effluent was sampled within 24 hours and a 96-hour acute lethality test was completed. Trans Mounted stated that the toxicity test passed, but in a review of correspondence the analytical data was not provided, and a closure report was not submitted.

**Foreshore WTP (C12)** - Residual Chitosan exceeded Permit limit at C12 on April 26, 2023. Notification was submitted to the reporting inbox as required by this Section on May 2, 2023. The effluent was sampled within 24 hours and a 96-hour acute lethality test was completed. The toxicity test passed and the results were provided to the Ministry on February 16, 2023.

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**Foreshore WTP (C12)** - Residual Chitosan exceeded Permit limit at C12 on November 1, 2023. Notification was submitted to the reporting inbox as required by this Section on November 1, 2023. The effluent was sampled within 24 hours and a 96-hour acute lethality test was completed. The toxicity test passed and the results were provided to the Ministry on December 12, 2023.

**Foreshore WTP (C12)** - Residual Chitosan exceeded Permit limit at C12 on December 5, 2023. Notification was submitted to the reporting inbox as required by this Section on November 1, 2023. The effluent was sampled within 24 hours and a 96-hour acute lethality test was completed. The toxicity test passed and the results were provided to the Ministry on December 13, 2023.

**Trans Mountain failed to submit immediate notification for the March 15, 2023, chitosan residual exceedance at the Portal WTP as required by this Section.**

**Compliance:**

Out

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**Requirement Description:**

**3. MONITORING REQUIREMENTS 3.2.5 pH Plan**

3.2.5 : A pH Plan that includes procedures on how to identify the cause of the increase in pH and actions to treat the effluent to reduce or maintain the pH to 8.7 or below must be submitted to the director 60 days after the issuance of the permit. The director may require changes to this plan.

If pH shows an increasing trend of greater than 8.5 at the WTPs measurements exceed 8.7 then the pH Plan must be implemented.

**Details/Findings:**

In email correspondence, Permitting Staff informed Ministry Staff that the pH Plan was prepared on June 12, 2020, and that this was the plan that was in use throughout the Inspection Period. Ministry Staff reviewed the internal electronic records, Ministry Staff did not identify any requirement issued by the Ministry for modifications to the pH Plan; therefore, this Section is not applicable for the Inspection Period.

The pH Plan states that if an exceedance of upper or lower pH setpoints is observed, the PLC system alerts operators, displays an alarm, and switches the system to recirculation mode by closing the discharge valve and opening the recirculation valve to return the treated water to the feed tanks for additional treatment.

**Compliance:**

Not Applicable



## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.3 Receiving Environment Monitoring

3.3: The permittee must carry out the receiving environment monitoring program as shown in Table 3. All TSS and turbidity measurements are grab samples that must be analyzed in the laboratory. Temperature and Dissolved Oxygen (DO) measurements are field samples that must be taken with a field instrument that is calibrated as per the manufacturer's instructions. The director may require adjustments to the sampling locations. The samples both inside and outside the turbidity curtains must be completed on the same day.

**Table 3 Receiving Environment Monitoring**

Monitoring Locations	For initial 10 samples		If 10 samples show turbidity curtain is effective	
	Parameter	Frequency	Parameter	Frequency
C13, C19 - Within the turbidity curtains around the outfall locations identified in Site Plan	TSS, turbidity, temperature, DO	Daily when discharging from the respective WTP	TSS and turbidity, temperature, DO	2 times per month when discharging from the respective WTP
C14, C20 - Outside the turbidity curtains for the outfall locations identified in Plans B. Samples must be taken within 5 meters of the curtain edge	TSS, turbidity, temperature, DO	Daily when discharging from the respective WTP	TSS and turbidity, temperature, DO	2 times per month when discharging from the respective WTP

## Details/Findings:

Section 5.3 (Receiving Environment Monitoring) of the 2021, 2022 and 2023 Annual Reports confirm that grab samples were obtained for turbidity and submitted to Bureau Veritas Laboratory for analysis. Samples for temperature and DO were measured in the field using a handheld Hannah Instruments multimeter (HI 98196) or YSI equivalent, calibrated as per the manufacturer's instructions.

Section 6.3 (Receiving Environment Monitoring) of the 2021 Annual Report confirms that sampling of the receiving environment was completed on C7, C8, C9, C10, C13 and C14, biweekly, as required by the July 2021 Permit, the March 2022 Permit, and the October 2022 Permit.

Section 6.3 (Receiving Environment Monitoring) of the 2022 Annual Report confirms sampling of the receiving environment was completed on C7, C8, C13 and C14, biweekly, as required by the July 2021 Permit, the March 2022 Permit, and the October 2022 Permit.

Figure 6-68 (Receiving Environment (C7/C8) - TSS and Turbidity) provides a graphical representation of sampling inside and outside the turbidity curtains which confirmed that samples were completed on the same day.

Section 6.3 (Receiving Environment Monitoring) of the 2023 Annual Report confirms sampling of the receiving environment was completed on C7, C8, C13 and C14, biweekly, as required, until adjustments to the sampling locations were reflected in the May 2023 Permit. Table 3 of the May 2023 Permit and the June 2023 Permit specified monitoring locations of C13, C19, C14 and C20. The 2023 Annual Report did not reference the monitoring locations C19 and C20, required from May 2023 to the end of 2023; therefore, the monitoring program was not carried out as per Table 3.

## Compliance:

Out

## Actions to be taken:

Ensure the receiving environment monitoring is carried out as required by Table 3.

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**Requirement Description:****3. MONITORING REQUIREMENTS 3.4.1 Sampling Procedures**

3.4.1 : The permittee must carry out sampling in accordance with the procedures described in the "British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples, 2013 Edition", or most recent edition, or by alternative procedures as approved by the director.

A copy of the above manual is available on the Ministry web page at <https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-field-sampling-manual>.

**Details/Findings:**

Effluent and receiving environment monitoring was completed by SLR and Section 5.0 (Sampling Methodology) of the 2021, 2022, and 2023 Annual Reports confirmed that sampling was conducted in accordance with the BC Field Sampling Manual as required by this Section.

**Compliance:**

In

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**Requirement Description:****3. MONITORING REQUIREMENTS 3.4.2 Analytical Procedures**

3.4.2 : The permittee must carry out analyses in accordance with procedures described in the "British Columbia Environmental Laboratory Manual (2020 Permittee Edition)", or the most recent edition, or by alternative procedures as approved by the director.

A copy of the above manual is available on the Ministry web page at <https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/laboratory-standards-quality-assurance/bc-environmental-laboratory-manual>

**Details/Findings:**

Section 9.1.1 (Laboratory QA / QC) of the 2021 and 2022 Annual Reports and Section 10.1 (Laboratory QA / QC) of the 2023 Annual Report included statements that "Samples were submitted to [Bureau Veritas Laboratories] BVL in Burnaby, BC for analysis. BVL is a CALA accredited laboratory that use BC ENV recognized methods to conduct laboratory analyses".

**Compliance:**

In

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.4.3 Quality Assurance

3.4.3 : All the following procedures apply to all effluent and receiving environment monitoring.

- a) The permittee must obtain from the analytical laboratory (ies) their precision, accuracy and blank data for each sample set submitted by the permittee and an evaluation of the data acceptability, based on the criteria set by the laboratory.
- b) The permittee must submit samples to analytical laboratory (ies) that meet the definition of a qualified laboratory under the Environmental Data Quality Assurance Regulation.
- c) The permittee must collect, prepare, and submit for analysis by the analytical laboratory(ies) quality control (QC) samples for each parameter. As a minimum, the number of QC samples should be 10% of all samples collected (environmental + QC samples) within 48 hours of each other. QC samples must include duplicate, field, and trip blank samples for each parameter.

## Details/Findings:

Section 9.1.1 (Laboratory QA / QC) and Section 9.1.2 (Field QA / QC) of the 2021 and 2022 Annual Reports and Section 10.1 (Laboratory QA / QC) and Section 10.2 (Field QA / QC) of the 2023 Annual Report, confirm the following in relation to this Section:

- a) All Annual Reports state that the laboratory used BVL, conveyed that their QA/QC program obtains precision, accuracy and blank data for each sample set submitted and an evaluation of the data acceptability is completed before reporting the results.
- b) BVL is accredited under the Canadian Association for Laboratory Accreditation (CALA) which uses the Ministry's recognized methods to conduct laboratory analyses, under the Environmental Data Quality Assurance Regulation.
- c) All Annual Reports confirm that the field QA / QC program duplicate samples were collected by SLR, at the rate of one per ten analyzed samples. Field blanks and trip blanks were also utilized, and the results were provided in Sections 9.1.2 / 10.2. Appendix F in the 2021 and 2022 Annual Report and in Appendix G in the 2023 Annual Report, includes field and trip blank analytical results.

## Compliance:

In

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## Requirement Description:

### 3. MONITORING REQUIREMENTS 3.5 Water Quality Monitoring Program

3.5: The permittee must develop and implement a Water Quality Monitoring Plan which includes the effluent monitoring and receiving environment monitoring programs as described in Sections 3.2 and 3.3. The Plan must be submitted within 30 days of issuance of this authorization. The director may require modifications to the Water Quality Monitoring Plan as necessary.

The permittee must carry out the construction water quality monitoring program while work is being completed on WMT Phase 2 and 3. The monitoring must include the daily visual inspection for integrity of the turbidity curtains that surround the discharge outfalls when discharge from the water treatment plant(s) is taking place.

The Water Quality Monitoring Plan for the program must include methods, monitoring equipment and QA/QC procedures which meet the requirements in Sections 3.4.

The permittee must compare all total and dissolved metals collected for analysis for Table 1 and 2 to the Burrard Inlet Water Quality Objectives for the Central Harbour as the parameters are updated. As of February 13, 2020, the only updated metals parameter is Cadmium.

## Details/Findings:

Ministry Staff observed the WQMP which was last revised on February 26, 2021. In a review of internal Ministry electronic records, Ministry Staff did not identify any requirement issued by the Ministry for modifications to the WQMP; therefore, this requirement in this Section is not applicable for the Inspection Period.

In email correspondence, Permitting Staff informed Ministry Staff that Trans Mountain inspectors observe the turbidity curtains during regular site inspections and take corrective action if something is amiss; however, **no formal daily inspection is completed as required by this Section.**

Section 6.0 (Methods) of the WQMP includes the methods, monitoring equipment, and QA/QC procedures. This Section states that QA/QC samples will be collected at a frequency to meet the requirements in the Permit, which requires replicate and blank samples representing 10% of all samples collected.

Section 7.0 (Discussion) in the 2021, 2022, and 2023 Annual Reports includes a discussion on total and dissolved metals compared to the Burrard Inlet Water Quality Objectives (WQO) exceedances for the BC WQG.

## Compliance:

Out

## Actions to be taken:

Ensure visual inspections for integrity of turbidity curtains is completed daily when discharge from the water treatment plants is taking place.

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## Requirement Description:

### 4. REPORTING REQUIREMENTS 4.1 Authorship and Declarations

4.1 : All documents including, but not limited to, designs, information, data, reports, and plans submitted to the director, must be signed by the author. All Reports required to be prepared by a Qualified Professional or reports where an opinion or recommendation is expressed regarding data analysis, interpretation, assessment and/or design must also be certified by the Qualified Professional. All reports certified by Qualified Professionals must include a declaration of professional competency and a conflict of interest disclosure statement.

Declaration forms are available on the Ministry's Professional Accountability Policy webpage:  
<https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/laws-policies-standards-guidance/environmental-guidance-and-policy/professional-accountability>

## Details/Findings:

The 2021 Annual Report included signatures of the authors from SLR. and confirmed that one signature was for a Professional Agrologist, as the Qualified Professional (QP) on the report. **However, the report did not include a declaration of professional competency and a conflict of interest disclosure statement as per the requirements of this Section.**

Section 10 (Closure), of the 2022 Annual Report included signatures of the four authors from SLR who prepared the report; which included one signature for a Professional Agrologist, as the QP on the report. **However, the report did not include a declaration of professional competency and a conflict of interest disclosure statement as per the requirements of this Section.**

The ESCP included the names of three authors from EDI, who prepared the report. Two of the authors listed were Registered Professional Biologists as the QP's on the report; however, signatures were not included. The revision number 4 included signatures; however, the authors designations were not included. **The report did not include a declaration of professional competency and a conflict of interest disclosure statement as per the requirements of this Section.**

## Compliance:

Out

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## Requirement Description:

### 4. REPORTING REQUIREMENTS 4.2 Non-compliance Notification

4.2.1 : For all parameters with the exception of hexavalent chromium (Cr6+), the permittee must immediately notify the director or designate by email at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca) or as otherwise instructed by the director, of any non-compliance with the requirements of this authorization. The permittee must immediately take remedial action to remedy any effects of such non-compliance.

## Details/Findings:

### 2021

Section 6.2 (Effluent Monitoring) in the 2021 Annual Report provided a summary of the East and West Discharge Sumps, the East WTP (C2), and West WTP (C1), along with a summary of parameters compared to the discharge criteria required by the Permit and corresponding analytical reports. The effluent discharged was reported to meet the Permit requirements for all parameters, except for hexavalent chromium which is discussed in Section 4.2.2 and Acute Lethality Failures and Chitosan Residual Detection which are summarized in Section 3.2.4 of this report.

**Foreshore WTP (C12)** - November 12, 2021, the inline data, pH, and turbidity exceeded Permit limits on seven occurrences; however, Trans Mountain stated that the inline data flow was captured during the transition from discharge to recirculation mode and effluent was not discharged.

**West WTP (C1)** - On November 12, 2021, an effluent bypass of the West WTP entered into the CP Rail ditch and exceeded the TSS Permit limit. A letter of non-compliance was reported to the Ministry on December 2, 2021.

### 2022

Section 6.2 (Effluent Monitoring) in the 2022 Annual Report provided a summary of the East and West Discharge Sumps and the East WTP (C2), along with a summary of parameters compared to the discharge criteria required by the Permit and corresponding analytical reports. The effluent discharged was reported to meet the Permit requirements for all parameters, except for hexavalent chromium which is discussed in Section 4.2.2 and Acute Lethality Failures and Chitosan Residual Detection which are summarized in Section 3.2.4 of this report.

**Foreshore WTP (C12)** - the laboratory pH measurement exceeded the Permit limit on three occasions; however, the inline pH reading was within discharge limits for two of these occasions and on the third occasion, the effluent was in recirculation mode and did not discharge. Trans Mountain stated that the inline pH readings are considered more accurate because the laboratory pH results exceeded the 15-minute hold time.

The inline data for pH and turbidity exceeded Permits limit on ten occurrences; however, the inline data was captured during the transition from discharge to recirculation mode and effluent was not discharged.

**West WTP (C1)** - March 8, 2022, the laboratory pH measurement exceeded the Permit limit; however, the inline pH reading was within discharge limits. Trans Mountain stated that the inline pH reading is considered more accurate because the laboratory pH results exceeded the 15-minute hold time.

**Portal WTP (C17)** - October 21, 2022, the laboratory pH measurement exceeded the Permit limit; however, the inline pH reading was within discharge limits. The inline pH readings are considered more accurate because the laboratory pH results exceeded the 15-minute hold time.

The inline data, pH, and turbidity exceeded Permits limit on seven occurrences; however, the inline data was captured during the transition from discharge to recirculation mode and effluent was not discharged.

### 2023

Section 6.2 (Effluent Monitoring) in the 2023 Annual Report provided a summary of the East and West Discharge Sumps, along with a summary of parameters compared to the discharge criteria required by the Permit and corresponding analytical reports. The effluent discharged met the Permit limits for all parameters, except for hexavalent chromium which is discussed Section 4.2.2 and Acute Lethality Failures and Chitosan Residual Detection which are summarized in Section 3.2.4 of this report.

**West WTP (C1)** - June 18, 2023, the inline data for pH and turbidity exceeded the Permit limit with pH 8.8 however the inline data was captured during the transition from discharge to recirculation mode and are not considered non-compliances.

**Foreshore WTP (C12)** - the laboratory pH measurement exceeded the Permit limit on six occasions; the high reading occurred during recirculation mode and did not discharge.

Turbidity measurements exceeded the Permit limit of 75 NTU on February 19, 2023, with 92 NTU, and October 18, 2023, with 103 NTU, 84 NTU and 89 NTU. Trans Mountain reports that these turbidity exceedances were captured during the transition from discharge to recirculation mode due to the high turbidity reading and effluent was not discharged during this time.

**Portal WTP (C17)** - the laboratory pH measurement exceeded the Permit limit on March 1, 2023, with pH 8.7 and October 25, 2023, with 8.7; however, the inline pH reading was within discharge limits.

Ministry Staff reviewed the non-compliance notifications in the internal electronic records and confirmed that pH and Turbidity exceedances were not immediately reported for all of the exceedances identified by this Section. Trans Mountain stated that the laboratory exceedances were not found to be exceedances in the inline detection system and any exceedances identified in the inline detection system directs the discharge to the recirculation mode which does not discharge to the environment. **The Permit does not specifically address these situations for the pH and Turbidity readings; therefore, compliance with the notification requirements for pH and Turbidity exceedances could not be determined for the Inspection Period.**

## Compliance:

Not Determined

## Actions to be taken:

It is recommended that Trans Mountain discuss the laboratory and inline exceedances and the recirculation mode with the Ministry's Authorizations Section in the next Permit amendment to get clarification regarding notification requirements for this Section.

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## Requirement Description:

### 4. REPORTING REQUIREMENTS 4.2 Non-compliance Notification

4.2.2 : For the parameter of hexavalent chromium (Cr6+), the permittee must immediately notify the director or designate by email at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca) or as otherwise instructed by the director, of the first non-compliance event. Successive non-compliance notification updates must be provided to the director on a bi-weekly basis until the effluent is in compliance for three successive grab samples.

## Details/Findings:

### 2021

The July 2021 Permit did not include this Section and the immediate notification of hexavalent chromium non-compliance events was not required; however, it did require non-compliance notification for any non-compliance with the Permit to the reporting inbox listed above. It did not require bi-weekly updates, or three successive grab samples as required by this Section. The following non-compliances were reported within the Inspection Period for hexavalent chromium to the reporting inbox in 2021.

**East WTP (C2)** - June 2, 2021, a hexavalent chromium exceedance triggered a non-compliance report to be submitted to the Ministry reporting inbox listed in this Section on June 23, 2021. The follow-up sampling on June 11, 2021, for hexavalent chromium met the Permit limit.

**East WTP (C2) and West WTP (C1)** - October 6, 2021, hexavalent chromium exceedances were observed at both locations and notification to the reporting email inbox listed in this Section was provided on October 18, 2021. Successive non-compliance notifications were received on November 9, December 2, December 17, and December 21, 2021. Additional testing and reporting was conducted in 2022.

**Foreshore WTP (C12)** - September 10, 2021, hexavalent chromium exceedance was observed and notification to the reporting email inbox listed in this Section was provided on September 21, 2021. December 21, 2021, hexavalent chromium exceedance was observed and notification to the reporting email inbox in listed in this Section was provided on January 4, 2022.

**Foreshore WTP (C12)** - December 21, 2021, hexavalent chromium exceedance observed and notification to the reporting email inbox was received on January 4, 2022. Three successive grab samples were achieved on January 13, January 18, and January 25, 2022.

## **2022**

Section 4.2.2 was updated to the requirement seen in this Permit in the March 2022 Permit.

**East WTP (C2) and West WTP (C1)** –The hexavalent chromium exceedances first reported in the NCR on October 6, 2021 continued on January 11, February 1, February 28, March 11, March 25, April 22, May 6, May 9, and May 20, 2022. Three successive grab samples were achieved for C2 on March 8, 14 and 22, 2022 and for C1 on May 10, 18, and 25, 2022. A closure letter was submitted to the Ministry on June 3, 2022.

**East WTP (C2)** - April 28, 2022, hexavalent chromium exceedance was observed and reported on May 5, 2022. Updates were provided on May 18, June 3, and June 21, 2022. A closure letter was issued June 30, 2022. **The June 21, 2022, update exceeded the bi-weekly notification requirement.**

**West WTP (C1)** - June 30, 2022, hexavalent chromium exceedance observed and reported on July 8, 2022. Updates were provided on July 18 and August 3, 2022. A closure letter was provided August 11, 2022. **The August 3, 2022, update exceeded the bi-weekly notification requirement.**

**West WTP (C1)** - November 17, 2022, hexavalent chromium exceedance observed and reported on November 21, 2022. Updates were provided on November 21, and December 9, 2022. A closure letter was provided December 17, 2022. **The December 9, 2022, update exceeded the bi-weekly notification requirement.**

## **2023**

**West WTP (C1)** - January 4, 2023, hexavalent chromium exceedance observed and reported on January 11, 2023. Updates were provided on January 11, January 18, and January 25, 2023. A closure letter was provided February 17, 2023.

**West WTP (C1)** - February 1, 2023, hexavalent chromium exceedance observed and reported on February 4, 2023. Updates were provided on February 8, February 15, and February 22, 2023. A closure letter was provided March 2, 2023.

**West WTP (C1)** - October 18, 2023, hexavalent chromium exceedance observed and reported on October 24, 2023. Updates were completed weekly until three consecutive samples met the Permit limits which occurred on October 25, November 1, and November 8, 2023. A closure letter was provided on November 9, 2023.

**Portal WTP (C17)** - December 27, 2023, hexavalent chromium exceedance observed and reported on January 5, 2024. Weekly samples and updates following the exceedance continue outside of the Inspection Period and are therefore not included in this inspection record.

**CP Rail Ditch (C3)** - January 4, 2023, hexavalent chromium exceedance observed and reported on January 11, 2024. Weekly samples and updates following the exceedance continue outside of the Inspection Period and are therefore not included in this inspection record.

## **Compliance:**

Out

## **Actions to be taken:**

Ensure hexavalent chromium exceedances are reported immediately and updates are submitted bi-weekly until three successive grab samples are in compliance with Permit requirements.

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## Requirement Description:

### 4. REPORTING REQUIREMENTS 4.3 Non-Compliance Reporting

4.3: If the permittee fails to comply with any of the requirements of this authorization, the permittee must, within 30 days of such non-compliance, submit to the director a written report that and includes, but is not necessarily limited to, the following:

- a) all relevant test results obtained by the permittee related to the noncompliance,
- b) an explanation of the most probable cause(s) of the noncompliance, and
- c) a description of remedial action planned and/or taken by the permittee to prevent similar noncompliance(s) in the future.

The permittee must submit all non-compliance reporting required to be submitted under this Section by email at [EnvironmentalCompliance@gov.bc.ca](mailto:EnvironmentalCompliance@gov.bc.ca) or as otherwise instructed by the director.

For guidelines on how to report a non-compliance or for more information visit the Ministry website:

<https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/compliance-reporting-mailbox>.

### Details/Findings:

Section 4.3 has continued to be the same requirement in all of the Permit versions reviewed throughout the Inspection Period.

#### 2021

**East WTP (C2)** - June 2, 2021, a hexavalent chromium exceedance triggered a non-compliance report (NCR) to be submitted to the Ministry reporting inbox listed in this Section on June 23, 2021. The follow-up sampling on June 11, 2021, for hexavalent chromium met the Permit limit. The NCR included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required.

**Foreshore WTP (C12)** - September 10, 2021, a hexavalent chromium exceedance was observed and notification to the reporting email inbox listed in this Section was provided on September 21, 2021. A non-compliance closure letter was submitted to the Ministry on November 1, 2021. The closure letter included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address, as required.

**East WTP (C2) and West WTP (C1)** - October 6, 2021, hexavalent chromium exceedances were observed at both locations and notification to the reporting email inbox listed in this Section was provided on October 18, 2021. Successive non-compliance notifications were received on November 9, December 2, December 17, and December 21, 2021. Additional testing and reporting was conducted in 2022.

**Foreshore WTP (C12)** - December 21, 2021, a hexavalent chromium exceedance was observed and notification to the reporting email inbox was received on January 4, 2022. The update report was submitted on January 11, 2022; however, all relevant test results were not included in this update. The required in a) - c) of this Section and was submitted to the non-compliance reporting email address on January 31, 2022; however, January 31 is greater than 30 days after the incident occurrence on December 21, 2021. Because part a) of this Section was not submitted within 30 days of December 21, 2021, **Trans Mountain failed to meet the 30-day reporting requirements in this Section.**

**Maintenance of Works** - On January 3, 2022, a notification to the reporting email inbox was received for a non-compliance of the West Water Treatment Plan ceasing to function due to frozen pipes on December 29, 2021. Test results were not applicable to this non-compliance and the report included the cause of the non-compliance as well as preventative actions taken.



## 2022

**East WTP (C2) and West WTP (C1)** - The hexavalent chromium exceedances first reported in the NCR on October 6, 2021, continued on January 11, February 1, February 28, March 11, March 25, April 22, May 6, May 9, and May 20, 2022. Three successive grab samples were achieved for C2 on March 8, 14 and 22, 2022 and for C1 on May 10, 18, and 25, 2022. Trans Mountain met the 30-day reporting requirement in this Section for this non-compliance in 2022. A closure letter was submitted to the Ministry on June 5, 2022.

**West WTP (C1)** - January 21, 2022, notification was submitted to the reporting email inbox as required by this Section on January 21, 2022, for a Residual Chitosan exceedance of Permit limit. The effluent was sampled within 24 hours and a 96-hour acute lethality test was completed. The toxicity test passed, and the results were provided to the Ministry on February 11, 2022; however, **the most probable cause of the non-compliance nor were corrective and preventative actions taken included, as required by part b) and c).**

**East WTP (C2)** - April 28, 2022, hexavalent chromium exceedance was observed and reported on May 5, 2022. A written update was provided on May 21, 2022, which included relevant test results and the most probable cause of the non-compliance as well as corrective and preventative actions taken. A closure letter was submitted to the Ministry on June 30, 2022.

**West WTP (C1)** - June 30, 2022, hexavalent chromium exceedance observed and reported on July 8, 2022. Updates were provided on July 18 and August 3, 2022, and included the information required in a) - c) of this Section and were submitted to the non-compliance reporting email address as required. A closure letter was provided August 11, 2022.

**West WTP (C1)** - November 17, 2022, a pump that pumps water from the Substation Area sump to the Foreshore WTP was unplugged resulting in grout and concrete-affected water overflowing the sump and flowing down the access road into Sump 3, which drains to the West WTP (C1). A notification was submitted to the Ministry on November 21, 2022, and included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required. A closure letter was provided December 17, 2022.

**Portal WTP (C17) Bypass** - December 8, 2022 - power failure to the three-inch pump that pumps water from the 40-foot tank to the Portal WTP resulted in an estimated 6,814 L untreated water bypassed of the Portal WTP which then discharged to the ocean via the East outfall. Notification was submitted to the Ministry on December 9, 2022, and a closure letter, which included the information required in a) - c) of this Section, was submitted to the non-compliance reporting email address on December 19, 2022.

**West WTP (C1)** - December 24, 2022, heavy rainfall overwhelmed Sump 3 and the volume of water entering C1 exceeded its capacity resulting in an overflow of Sump 3 and discharge to the ocean via the CP Rail ditch and West Outfall. A NCR was submitted to the Ministry on December 31, 2022, and a non-compliance closure letter, which included the information required in a) - c) of this Section was submitted on January 25, 2023, to the non-compliance reporting email address as required.

## 2023

**West WTP (C1)** - January 4, 2023, hexavalent chromium exceedance observed and reported on January 11, 2023. The information required by a) - c) of this Section was included in the February 17, 2023, closure report which was submitted to the non-compliance reporting email address as required. However, February 17 is greater than 30 days after the incident occurrence on January 4, 2023; therefore, **Trans Mountain failed to meet the 30-day reporting requirement in this Section.**

**West WTP (C1)** - February 1, 2023, hexavalent chromium exceedance observed and reported on February 4, 2023, and included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required. A closure letter was provided March 2, 2023.

**West WTP (C1)** - February 7, 2023, heavy rainfall exceeded WTP capacity causing a bypass. The bypass was reported on February 8, 2023, and included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required. A closure letter was provided March 9, 2023.

**Portal WTP (C17)** - March 15, 2023, residual chitosan exceeded Permit limit. Notification was submitted on April 25, 2023. **The notification exceeded the 30-day reporting requirement in this Section and did not include information required in a) - c) of this Section.**

**Foreshore WTP (C12)** - April 26, 2023, residual chitosan exceeded Permit limit. Notification was submitted on May 2, 2023; **however, it did not include the information required in a) - c) of this Section.** The notification was submitted to the non-compliance reporting email address as required. No additional closure letter was identified for this NCR.

**West WTP (C1)** - October 18, 2023, hexavalent chromium exceedance observed and reported on October 24, 2023, and the November 9, 2023, closure letter included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required.

**Foreshore WTP (C12)** - November 1, 2023, residual chitosan exceeded Permit limit. Notification was submitted on November 1, 2023, and included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required.

**Foreshore WTP (C12)** - November 15, 2023, 96-hour Acute Lethality (LC50) test resulted in an exceedance of the percent mortality as stated in the Permit and reported on November 30 and December 5, 2023, and included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required. A closure letter was provided December 21, 2023.

**Foreshore WTP (C12)** - December 5, 2023, residual chitosan exceeded Permit limit. Notification was submitted to the reporting inbox as required by this Section on December 7, 2023. The December 18, 2023, update included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required. **The December 18 notification exceeded the 30-day reporting requirement in this Section.** A closure letter was provided on December 21, 2023.

**Portal WTP (C17)** - December 27, 2023, hexavalent chromium exceedance observed and reported on January 5, 2024, and a closure letter was provided on January 24, 2024, which included the information required in a) - c) of this Section and was submitted to the non-compliance reporting email address as required.

## Compliance:

Out

## Actions to be taken:

Ensure updates to any non-compliance reports are provided within 30 days of the occurrence and include the information required in a) - c) of this Section.

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## Requirement Description:

### 4. REPORTING REQUIREMENTS 4.4 Suspension of Works Notification

4.4: The permittee must notify the director in writing as soon as they are aware of a suspension of work via [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca).

## Details/Findings:

Ministry Staff reviewed internal electronic records and located a **Suspension Notification issued by Trans Mountain on March 8, 2023, which was provided to three internal Ministry Staff, but not to the reporting inbox as listed in this Section.** This requirement was the same as Section 4.4 in the October 2022 Permit which was in place when the notification was issued.

It was observed that the return to operation email was submitted to the reporting inbox as listed in this Section on January 27, 2023.

## Compliance:

Out

## Actions to be taken:

Ensure notifications are provided to the Ministry via email to [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca), as required by the Permit.

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## Requirement Description:

### 4. REPORTING REQUIREMENTS 4.5 Monthly Reporting

4.5: The permittee must collect and maintain data and analyses of monitoring including flow measurements required under Section 3 of this authorization. This data must be available for inspection when requested by Ministry staff. The permittee must make submissions of monthly monitoring data before the end of the following month to the Ministry's Routine Environmental Reporting Submission Mailbox at [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca) or as otherwise instructed by the director. For guidelines on how to properly name the files and email subject lines or for more information visit the Ministry website:

<http://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/routine-environmental-reporting-submission-mailbox>.

The permittee must include in the monthly submission a highlight of any non-compliance(s), and a reference to the follow-up report(s) submitted to address the non-compliance(s) required by Section 4.3.

Monthly reporting must occur unless a notice of change in reporting is issued by the director.

### Details/Findings:

Monthly reports for 2021, 2022 and 2023 were reviewed and Ministry Staff confirmed that data and analysis of monitoring and flow measurements under Section 3 were provided. Ministry Staff confirmed that the Monthly Reports included the non-compliances required by Section 4.3.

Monthly reports are required by this Section to be submitted to the Routine Environmental Reporting Submission Mailbox. Trans Mountain submitted the reports to the correct reporting inbox; however, **six reports were submitted after the deadline of the end of the following months within the Inspection Period:**

- 3678 2021 M08 Monthly Rpt – Submitted on October 1, 2021
- 3678 2022 M04 Monthly Rpt - Submitted on June 2, 2022
- 3678 2022 M10 Monthly Rpt - Submitted on December 1, 2022
- 3678 2023 M07 Monthly Rpt - Submitted on September 5, 2023
- 3678 2023 M11 Monthly Rpt - Submitted on January 4, 2023
- 3678 2023 M12 Monthly Rpt - Submitted on February 5, 2024

### Compliance:

Out

### Actions to be taken:

Ensure the reporting requirements outlined in this Section are met for the Monthly reports and submissions are provided to the Ministry before the end of the following month.

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## Requirement Description:

### 4. REPORTING REQUIREMENTS 4.6 Annual Reporting

4.6: The permittee must collect and maintain data of analyses and flow measurements required under Section 3 of this authorization for inspection when requested by Ministry staff and submit the data for the previous year to the director in a form satisfactory to the director. The permittee must make data submissions in respect of each year within 60 days of the end of the calendar year.

The permittee must submit all data required to be submitted under this section by email to the Ministry's Routine Environmental Reporting Submission Mailbox at [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca) or as otherwise instructed by the director. For guidelines on how to properly name the files and email subject lines or for more information visit the Ministry website: <https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/data-and-report-submissions/routine-environmental-reporting-submission-mailbox>.

The Annual Report must include the following:

- A summary outlining all the exceedances of permitted discharges that occurred during the reporting period, including date(s) of occurrences and reference(s) to the non-compliance report(s) required by Section 4.3. If no exceedances occurred over the reporting period, a statement may be used to identify that no exceedance of the permitted discharges occurred.
- All data collected as required in Section 3, as well as stormwater effluent TSS/turbidity data collected for the purposes of developing TSS/turbidity relationships and any additional data collected for verification purposes. The data should be suitably tabulated, summarized with statistics, graphed if appropriate, and interpreted for review.
- Graphs showing all data for each of the following parameters from Table 1, Section 3.2.3 at each of the monitoring locations: flow, TEH, TSS, turbidity, pH, Cr6+, Chitosan residual and any metals exceeding BC Water Quality Guidelines. TSS and Turbidity should be graphed together.
- Graphs comparing results from inside and outside the turbidity curtain for the each paired location for each of the parameters in Table 3, Section 3.3.
- All data collected during the testing of Hydrostatic Test Water in Table 2.
- A summary of the data collection as required under Section 3 including the average daily or monthly flow depending on the discharge and the annual flow for all discharges with comparison to limits in Section 1.1 and 1.2.
- A summary of significant storm events and monthly precipitation and a discussion on the effects of these events on the operation of the Authorized Works and the related discharges.
- A review of the receiving environment monitoring data and analysis of any exceedances of the BC Water Quality Guidelines, the probable causes and taken or planned corrective actions. Include any actions taken regarding the turbidity curtains.
- A review of the results of the QA/QC program.
- A summary and review of the operation of the Authorized Works, and any improvements planned or taken; and
- A record of the calibrations completed for the probes and meters.

## Details/Findings:

The 2021 Annual Report was required within 60 days of the end of the calendar year as required by Section 4.7 of the July 2021 Permit. The report was provided on March 1, 2022, which is within the 60-day submission requirement.

- Section 6.2 (Effluent Monitoring) provides tables for all discharges and outlines analytical exceedances for the year.
- The data collected as required by Section 3 was provided; however, **the data was not summarized with statistics, and interpreted for review.**
- **The graphs for the data required by Table 1, and the graphs comparing results from inside and outside the turbidity curtains as required by Table 3, were not included.**
- Section 5.4 (Hydrostatic Test Water Monitoring) was included.
- A summary of flow data collected as required under Section 3 and in comparison to Section 1.1 and 1.2 was included.
- Table 3-1 (Significant Rainfall Events) and Table 3-2 (Monthly Precipitation) were included; however, **the report did not include a discussion on the effects of these events on operation of the Authorized Works and related discharges.**
- Section 6.3 (Receiving Environment Monitoring) and Table 18 provided the analytical results, and Section 7.4.1 (WQG and WQO Exceedances) was included.
- Section 9.1.1 (Laboratory QA/QC) and 9.1.2 (Field QA/QC) included a review of the results of the QA/QC program.
- Section 4.0 (Summary of Operations) outlined improvements for the Authorized Works.
- Calibration records were included in Appendix C.

The 2022 Annual Report was provided on April 30, 2023, which exceeds the 60-day submission requirement; however, the Ministry issued a one-time extension on February 16, 2023, of the deadline for the Annual Report from being required in 60 days to 90 days. However, April 30, 2023, exceeds 90 days after the end of the calendar year extension; therefore, **Trans Mountain failed to provide the report within the extended 90-day deadline.**

- Section 6.2 (Effluent Monitoring) provides tables for all discharges and outlines analytical exceedances for the year.
- The data collected as required by Section 3 was provided and summarized with statistics and interpreted for review.
- The graphs for the data required by Table 1, and the graphs comparing results from inside and outside the turbidity curtains as required by Table 3, were included in Section 6.3 (Receiving Environment Monitoring).
- Section 6.4 (Hydrostatic Test Water Monitoring) was included.
- A summary of flow data collected as required under Section 3 and in comparison to Section 1.1 and 1.2 was included in Table 24.
- Table 3-1 (Significant Rainfall Events) and Table 3-2 (Daily Precipitation at West Vancouver Weather Station) were included; however, **the report did not include a discussion on the effects of these events on operation of the Authorized Works and related discharges.**

- Section 6.3 (Receiving Environment Monitoring) and Table 23 provided the analytical results, and Section 7.1.2 (WQG and WQO Exceedances) was included.
- Section 9.1.1 (Laboratory QA/QC) and 9.1.2 (Field QA/QC) included a review of the results of the QA/QC program.
- Section 4.0 (Summary of Operations) outlined improvements for the Authorized Works.
- Calibration records were included in Appendix C.

The 2023 Annual Report was submitted on March 6, 2023, **which exceeds the 60-day submission requirement.**

- Section 6.2 (Effluent Monitoring) provides tables for all discharges and outlines analytical exceedances for the year.
- The data collected as required by Section 3 was provided and summarized with statistics and interpreted for review.
- The graphs for the data required by Table 1, and the graphs comparing results from inside and outside the turbidity curtains as required by Table 3, were included in Section 6.3 (Receiving Environment Monitoring).
- Section 6.4 (Hydrostatic Test Water Monitoring) was included, and a summary of flow data collected as required under Section 3 and in comparison to Section 1.1 and 1.2 was included in Table 20.
- Table 3-1 (Significant Rainfall Events) and Table 3-2 (Daily Precipitation at West Vancouver Weather Station) were included; however, **the report did not include a discussion on the effects of these events on operation of the Authorized Works and related discharges.**
- Section 6.3 (Receiving Environment Monitoring) and Table 23 provided the analytical results, and Section 7.1.2 (WQG and WQO Exceedances) was included.
- Section 10.1 (Laboratory QA/QC) and 10.2 (Field QA/QC) included a review of the results of the QA/QC program.
- Section 4.0 (Summary of Operations) was included for the Authorized Works and no improvements were identified.
- Calibration records were included in Appendix F.

### Compliance:

Out

### Actions to be taken:

Ensure all information required by this Section is included in the Annual Reports and that reports are submitted within 60 days of the end of the calendar year.

### Requirement Description:

#### 4. REPORTING REQUIREMENTS 4.7 Reporting to Indigenous Groups

4.7 : The Director may require the permittee to submit copies of reports and notifications required under Section 4.3, 4.5 and 4.6, within timelines identified in those Sections, by electronic means to specified Indigenous Groups. At this time, the permittee must provide reports and notifications to the Musqueam Indian Band, the People of the River Referrals Office and the Tsleil-Waututh Nation. The permittee may exclude proprietary information that may be exempt from disclosure if the report were disclosed pursuant to a request under Section 5 of the *Freedom of Information and Protection of Privacy Act*.

### Details/Findings:

At the time of the on-site inspection, Facility Staff confirmed that non-compliance reports under Section 4.3 and links to notifications were provided to the Musqueam Indian Band, the People of the River Referrals Office, and the Tsleil-Waututh Nation monthly. Upon request, Permitting Staff provided Ministry Staff with a copy of submissions to all three Indigenous Groups identified by this Section, dated December 28, 2023.

Ministry Staff did not request copies of reports required under Section 4.5 (Monthly Reporting) or 4.6 (Annual Reporting) for the Inspection Period; therefore, compliance with this part of the requirement could not be determined for the Inspection Period.

### Compliance:

In

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## Requirement Description:

### 4. REPORTING REQUIREMENTS 4.8 Progress Reports

4.8: The permittee must provide a copy of the monthly Condition 106 Progress Report to EnvAuthorizationsReporting@gov.bc.ca at the same time that it is sent to the Canadian Energy Regulator.

## Details/Findings:

In 2021, the Condition 106 Progress Report was required to be submitted to the Ministry at the same time as it is sent to the Canadian Energy Regulator as per Section 4.9 of the July 2021 Permit. On August 24, 2021, Trans Mountain provided January through June 2021 reports in one email to the Ministry. The August, September, and October 2021 reports were provided to the Ministry on October 19, 2021.

In 2022, Ministry Authorizations Staff had not received the January 2022 Condition 106 Progress Report as per Section 4.9 of the October 2022 Permit and sent a reminder to Trans Mountain to provide the report by February 25, 2022. However, the January 2022 report was not provided to the Ministry until March 18, 2022.

**Trans Mountain failed to provide the Ministry with Condition 106 Progress Reports at the same time as it is sent to the Canadian Energy Regulator within the Inspection Period.**

## Compliance:

Out

## Actions to be taken:

Ensure that a copy of the monthly Condition 106 Progress Report is provided to EnvAuthorizationsReporting@gov.bc.ca at the same time that it is sent to the Canadian Energy Regulator.

Compliance History:

2018-03-19 IR 73550 Notice: Reissued as: 2023-12-13 IR 101221 Advisory: Data Reporting 5.1  
2017-03-29 IR 49284 Notice:  
2017-03-29 IR 49345 Notice:

The Ministry of Environment Compliance and Enforcement Policy and Procedure (C&E Policy) prescribes common requirements and procedures for all Ministry staff to ensure consistent and risk-based assessment and response to non-compliance. Using the Non-Compliance Decision Matrix, the compliance determination for this inspection has been assessed as **Level 2, Category B, Warning Codes and Regs.**

More information about Environmental Compliance, the Non-Compliance Decision Matrix, and reporting and data submission requirements can be found at the links below:

General compliance information:

[www.gov.bc.ca/environmentalcompliance](http://www.gov.bc.ca/environmentalcompliance)

Non-Compliance Decision Matrix information:

[www.gov.bc.ca/environment/how-compliance-is-assessed](http://www.gov.bc.ca/environment/how-compliance-is-assessed)

Reporting and data submission requirements (to be sent to [EnvAuthorizationsReporting@gov.bc.ca](mailto:EnvAuthorizationsReporting@gov.bc.ca)):

<https://www2.gov.bc.ca/gov/content/environment/waste-management/waste-discharge-authorization/comply>

Please be advised that this inspection report may be published on the provincial government website within 7 days.

Below are attachments related to this inspection.

If you have any questions about this warning, please contact the undersigned.

Yours truly,

Kristan Robinson  
Environmental Protection Officer

cc:

**Attachments: None**

**Deliver via:**

Email:  Fax:  Mail:   
Registered Mail:  Hand Delivery:

**DISCLAIMER:**

Please note that sections of the permit, regulation or code of practice referenced in this inspection record are for guidance and are not the official version. Please refer to the original permit, regulation or code of practice.

To see the most up to date version of the regulations and codes of practices please visit

<http://www.bclaws.ca>

If you require a copy of the original permit, please contact the inspector noted on this inspection record.

It is also important to note that this inspection record does not necessarily reflect each requirement or condition of the authorization therefore compliance is noted only for the requirements or conditions listed in the inspection record.

