Monitoring Report: SV-2021-05-20

Trans Mountain Expansion Project – Westridge Marine Terminal (WMT) Compliance Verification Activity (CVA) Report

Date	May 20, 2021	**Call start time:**	1:30 PM	**Call end time:**	3:00 PM
Format	Web-based conference call with Trans Mountain presenting photographs, documents and/or videos relevant to the expansion of the WMT.				
Fisheries and Oceans Canada (DFO) attendees	W.B. (Senior Biologist), K.J. (Biologist) and I.M. (Biologist)				
Indigenous Advisory Monitoring Committee (IAMC) attendees	Musqueam Indian Band: J.H. (Environmental Monitor), R.K. (Environmental Stewardship Coordinator) and B.G. (Environmental Monitor) Tsleil-Waututh Nation: W.G. (Environmental Monitor) IAMC – Monitoring Subcommittee: C.T. (IAMC representative – Burrard Inlet and Lower Fraser River, from Tsleil-Waututh Nation) and R.C. (IAMC representative – Alberta First Nations)				
Other attendees	Trans Mountain Corporation (TMC): K.M. (Senior Regulatory Lead), S.D. (Lead Environmental Inspector), B.J. (Chief Environmental Inspector), T.A. (Construction Manager) and L.B. (Senior Field Regulatory Advisor), G.B (Project manager for Lower Mainland Terminals), and J.S. (Summer student - Regulatory team) Kwikwetlem First Nation (KFN): M.J. (Project IM)				

On-site contractor/equipment	**Role**
Trans Mountain Corporation	Site Management
Kiewit Ledcor Trans Mountain Partnership (KLTP)	Prime construction contractor
JASCO Applied Sciences	Underwater noise monitoring during vibratory and impact pile driving.
Triton Environmental Consultants (Triton)	Marine mammal monitoring and water quality testing.
Keller	Deep soil mixing (DSM) and jet grouting works on the foreshore.

IAMC Indigenous Monitor/IMSC Representative Questions and Comments

During a discussion regarding the grout release that occurred on May 11, 2021, RC stated he is happy with the transparency provided on this occurrence. RC asked how levels of sub-lethal toxicity are monitored in fish such as juvenile salmon.

- WB said that this occurrence and water quality monitoring of pH levels at the WMT would relate to Environment and Climate Change Canada's (ECCC) jurisdiction as it relates to pollution prevention prohibitions under section 36 of the *Fisheries Act*. WB stated that death of fish or harmful alteration, disruption or destruction of fish habitat would fall under DFO's jurisdiction under section 34 or 35 of the *Fisheries Act*.

JH asked whether there is secondary containment of grout spoils loaded onto the refuse barge as overflow and whether water 'tightness' of the barge deck is a potential concern.

- SD confirmed the barge is monitored daily and any water that accumulates on the barge deck from rain events is pumped to the surface water treatment plant on foreshore (this occurred primarily during wet winter periods). The barge is not loaded to full capacity (TMC showed a photograph of a barge leaving at JH's request) and very little liquid accumulates on the barge deck, because the grout spoils are cured and are mainly solid.

CT asked about the purpose of injecting grout into the foreshore cells and how is it able to leak out of the cells into the marine environment.

- TA responded that jet grout columns are part of the ground improvement works within the expanded foreshore. The columns help to stabilize the structure of the cells and arcs so that they can support the weight of infrastructure built or equipment used on top of the cell. The cells have to be built to withstand seismic events. TA explained that the grout is in a slurry/liquid form when it is injected so that it can permeate through pores in the soil before it hardens. The sheet-pile cell walls are not water-tight and under pressure, liquid grout may escape the cell wall.

CT referred to a question WB asked regarding potentially allowing grout releases under certain circumstances to dissipate further into the water column, outside of the curtain, to allow for faster dilution of elevated pH levels. CT asked what would happen when the turbidity curtain is no longer in place, when it would be removed and whether sediment that it encompasses would disperse outwards.

- SD responded that WB was contemplating the pros and cons of having a turbidity curtain in place if grout is released from the cells and juvenile salmon are within the curtain. SD confirmed there is a requirement under TMC's waste discharge permit for the use of a turbidity curtain around the outfall pipes, but the main turbidity curtain around the arcs and cells will be removed following construction.
- WB said that the earlier question related to the potential short term exposure of fish to elevated pH levels following a grout release, rather than there being any long term concern for water quality.

CT asked if the hardened grout will be removed prior to covering it with rock.

- SD responded that now that the grout is hardened, there is no risk to fish, so in their opinion the best way to enhance the area would be with the addition of cobble and gravel substrate.

CT asked for clarification on what moving a jet grout column entails.

- TA explained that some jet grout columns have been installed farther away from the outside of the cell than initially planned to help reduce the possibility of any grout releases to the sea; however, some columns are still needed close to the outside of the cells for structural stability. TA said that columns within the cell form a 'pac man' shape rather than a perfect circle and water is poured into the pre-drilled column to see if there are areas of leaks before injecting the grout at pressure.

RC asked how to best follow-up with DFO and ECCC regarding the grout release from the foreshore arc and how the IAMC could be informed of this or be included in that discussion?

- WB suggested this may be accomplished through the Indigenous Monitoring Sub Committee meetings (IMSC) or other communication.

On behalf of all monitors on the call, KJ asked whether Trans Mountain has any updates regarding live streaming video from Westridge as an additional way to conduct monitoring during the COVID-19 pandemic while compliance verification activities remain virtual.

- KM stated Trans Mountain has discussed this internally and the legal department had advised that it violates privacy policies to have livestream video of personnel on the worksite. TMC stated they are happy to return to in-person inspections and welcomes the IAMC and DFO monitors back to site when they are able to do so and noted other government agencies, such as the Canadian Energy Regulator, have conducted recent in-person site visits.
- RK asked if longer video recordings are possible.
- KM stated that additional video recordings may be requested.

In response to KM's question on whether DFO and IAMC Monitors are comfortable returning to Westridge for in-person site visits, CT stated that she appreciates that other monitors (e.g., CER monitors) may be

going to site, but that TWN has strict protocols to keep their most vulnerable people safe and don't want to take that chance at this time. WB added that DFO's decision to return to in-person site visits will depend on provincial health orders as they evolve.

Call Overview

- Introductions
- CT opened the meeting in both Hən̓q̓əmin̓əm̓ (Halkomelem, downriver dialect) and English.
- Agenda
    - Recent construction activities

Works undertaken at Westridge

SD provided an overview of construction activities:

- **Foreshore** – Continued ground improvement works involving deep soil mixing and jet grouting and new solid separation unit for grout management.
- **Marine** – vibratory and impact pile driving, concrete girder installation, and building of the trestle towards shore.
    - WB asked for the diameters of the piles being driven.
    - SD clarified that Junction Platform and Loading Platform piles are 1.55 m in diameter and Breasting Dolphin piles are 1.981 m in diameter.

SD showed photos and videos of foreshore works and provided details regarding mitigation measures associated with them:

- Deep soil mixing works within the expanded foreshore are now complete.
- Pre-drilling holes for jet grout columns within the foreshore area is ongoing.
- Implemented new jet grouting spoils management involving a water/grout separation unit that separates water from grout, allowing it to cure faster and resulting in less cured grout spoils being transported offsite for disposal. The liquid component is treated by the foreshore water treatment plant. Two large grout curing pits are no longer in use and have been filled in.
- TMC described the grout release that occurred on May 11, 2021:
    - Release occurred during jet grouting works adjacent to the sheet-pile wall of Arc 10A when the substrate at the base of the wall was submerged by the tide. Water quality samples were taken inside and outside the turbidity curtain. Within 2.5 hours water quality parameters were within the guidelines. The next day, cured grout was observed in the intertidal zone at the foot of the arc resulting in approximately 4 m^2 in total coverage. TMC noted that the grout is within the area authorized for riprap removal within the *Fisheries Act* authorization and new cobbles and gravels will be placed over the hardened grout within the next least risk window for nearshore works.
    - WB stated DFO has shared the report provided by TMC with the IAMC IM's, the IMSC, and DFO's Observe, Record, and Report (ORR) line. The ORR line identifies whose jurisdiction this event falls under (DFO and/or Environment and Climate Change Canada). WB asked what could be done to prevent similar events.
    - SD and TA reviewed avoidance and mitigation measures in place:
        - Reduction of amount of jet grouting columns (50 %) along sheet-pile walls adjacent to the marine environment and reduction in the column length.
        - Attempted to install grout columns via a low pressure grouting system; however, necessary column strength was not possible.
        - Columns installed in a 'pac man' shape within the circular cells to avoid grout being ejected at pressure in close proximity to sheets adjacent to marine environment.

    - Using water to test permeability of the cell wall prior to installing columns. If air bubbles or water is found leaving the cell/arc then the column's location is reassessed under the guidance of engineers.
    - Full-time water quality monitors are on site.
    - Turbidity curtain encompassing foreshore.
- WB asked if juvenile salmon have been observed within the turbidity curtain. SD confirmed they have, but are primarily observed outside of the curtain. WB asked whether TMC has considered the ability of the pH levels to be reduced through allowing some dispersal outside of the curtain, if the fish are behind the curtain and it restricts their movement away from the elevated pH levels. TA said this would be taken into consideration.
- A video of the cured grout spoils being loaded onto the barge was shown, as requested by CT during the previous CVA. SD highlighted the containment (e.g., fitted tarp) below the THOR conveyor that extends over the water.

SD showed photos and videos of offshore works and provided details regarding mitigation measures associated with them:

- Piles being tripped (lifted upright) and stabbed (being installed using the weight of the pile)
- Videos of vibratory pile driving shown with vibratory driver clamped onto pile top and vibrating the pile slowly downwards into the ground
- Videos of impact pile driving. Fish acoustic deterrents are lifted out of the water prior to impacting. A noise shroud is deployed for atmospheric noise, and primary and secondary bubble curtains are in use. Hose gauges that supply air to the bubble curtains are monitored during use.
- Underwater noise monitoring is conducted during all pile driving activities and marine mammal monitoring is conducted prior to and during all impact pile driving.
- Superstructure works: piles driven to refusal and cut to design elevation, welding in preparation for concrete pile caps, splicing (joining) piles, welding shear lugs to connect piles to dolphin jackets, installation of large pre-cast concrete girders on trestles and smaller pre-cast deck panels, rebar installed prior to large concrete pours, and pipe rack modules installed on Loading Platforms 1 and 2.

Further Questions:

KJ asked if there have been any marine mammal sightings and related work stoppages.

- SD confirmed harbour seals sightings have occurred and have delayed starts to pile driving and may have resulted in a couple of shutdowns during pile driving. A Steller sea lion was also observed last month.

KJ asked how often the secondary bubble curtain has been used and whether Trans Mountain is considering using it for impact pile driving larger diameter piles.

- SD confirmed it has been used during impacting of three piles and it has been successful at reducing the noise levels by 6-7 dB. SD stated there will be a break in impact pile driving for the next five weeks as the DB General barge requires maintenance.

KM stated that the slides for this presentation will be posted to the Firmex website for viewing and Trans Mountain will seek to provide a written response to the question regarding livestream videos.

GENERAL AND MISCELLANEOUS MITIGATION MEASURES

Measures specified within the Westridge Marine Terminal Fisheries Act Authorization Conditions:

Schedule			
2.2.6 All nearshore in-water Project construction activities (within a 50-m horizontal distance seaward of the higher high water large tide level) at the Westridge Marine Terminal shall only be carried out during a work timing window from August 16 to March 15 each year.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
Comments			
TMC will wait until the applicable timing window to add cobble and gravel substrate to cover the hardened grout in the nearshore area where the grout release occurred.			
Action Items			
None.			

Monitoring			
3.1 A qualified environmental professional must be on-site during the carrying on of in-water works, undertakings and activities, and shall monitor the works, undertakings or activities on a systematic and on-going basis to ensure that standards and avoidance measures to avoid impacts to fish and fish habitat are effective, and that unauthorized impacts to fish and fish habitat are avoided.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
Comments			
The Lead Environmental Inspector spoke throughout the meeting about their experiences at the WMT during construction since the last compliance verification meeting on April 22. Qualified environmental professionals are conducting monitoring of construction activities at the WMT and erosion and sediment control measures were monitored and maintained during this reporting period.			
Action Items			
None.			

Marine Mammal Observations			
2.2.7 In-water construction activities must cease if any marine mammal is observed adjacent to or within the project area such that there is risk of direct physical harm to the marine mammal. Construction activities may only resume once the marine mammal has been confirmed to have left the immediate area or has not been sighted for 30 minutes.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
Comments			
TMC noted that harbour seals were observed within and around the 150 m exclusion zone prior to commencement of impact pile driving. This condition was adhered to.			
Action Items			
None.			

Temporary Structures and Decommissioning of Existing Structures			
The application for a *Fisheries Act* authorization states that a floating debris boom will be secured around the work area to collect drifting debris during demolition of the existing utility dock (page 3.1).			
Discussed: ☐ Yes	Issue(s) ☐ Yes	Issue(s) ☐ Yes	Not applicable ☒

	☒ No	identified:	☐ No	unresolved:	☐ No		
2.2.5 Temporary structures installed below the high-water mark shall be decommissioned and removed when they are no longer being used for construction purposes.							
Discussed/ observed:	☐ Yes ☒ No	Issue(s) identified:	☐ Yes ☐ No	Issue(s) unresolved:	☐ Yes ☐ No	Not applicable ☒	
Comments							
No structures are currently being decommissioned.							
Action Items							
None.							
Pump Intake Screening							
2.2.2 Water intakes of any pumps shall be designed and screened in accordance with specifications outlined in the Addendum, Fisheries and Oceans Canada's *Freshwater Intake End-of-Pipe Fish Screen Guidelines* (Fisheries and Oceans Canada 1995), and Fisheries and Oceans Canada's *Guidelines for Minimizing Entrainment and Impingement of Aquatic Organisms at Marine Intakes in British Columbia* (Fisheries and Oceans Canada 1991).							
Discussed/ observed:	☐ Yes ☒ No	Issue(s) identified:	☐ Yes ☐ No	Issue(s) unresolved:	☐ Yes ☐ No	Not applicable ☒	
Comments							
Screens for known water intakes have been discussed during previous site inspections. No issues were reported.							
Action Items							
None.							
Fish Salvage							
2.2.3 Fish salvage and relocation shall be conducted, as appropriate, prior to the start of construction activities so as to avoid and minimize adverse impacts to fish.							
Discussed/ observed:	☐ Yes ☒ No	Issue(s) identified:	☐ Yes ☐ No	Issue(s) unresolved:	☐ Yes ☐ No	Not applicable ☒	
Comments							
No further fish salvage has occurred since the compliance verification activity call on January 26, 2021.							
Action Items							
None.							
Integrity of Habitat Offsets							
4.7 The Proponent shall not carry on any works, undertakings or activities that will adversely disturb or impact the offsetting measures.							
Discussed/ observed:	☐ Yes ☒ No	Issue(s) identified:	☐ Yes ☒ No	Issue(s) unresolved:	☐ Yes ☐ No	Not applicable ☒	
Comments							
Offsetting measures have yet to be installed. Offsetting construction cannot occur until the foreshore expansion is complete.							
Action Items							
None.							

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MITIGATION MEASURES SPECIFIC TO PILE DRIVING

Measures specified within the Westridge Marine Terminal Fisheries Act Authorization Conditions:

Underwater Sound Pressure Level Reduction			
2.2.8 A vibratory hammer will be used for pile driving where practical and feasible, and all in-water pile driving activities will be monitored via hydrophone to ensure underwater peak pressures do not result in adverse impacts to fish.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
2.2.9.1 To avoid death of fish, mitigation measures (e.g., bubble curtain around the full wetted length of the pile, fish exclusion, etc.) must be implemented.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
Comments			
Mitigation measures used to deter fish from the area prior to pile driving were described (e.g., noise monitoring via hydrophones, pre-drive inspection of bubble curtain, flow monitoring for hoses, and fish acoustic deterrent deployed). A secondary bubble curtain was used while impacting three piles in addition to other mitigation measures. The secondary bubble curtain was successful at further reducing underwater noise levels.			
Action Items			
None.			
Underwater Sound Pressure Level Monitoring			
2.2.9.2 Monitoring via underwater noise recordings must be conducted continuously and within 10 meters of the pile being driven to verify that underwater sounds do not exceed the 30 kPa (209.5 dB re: 1 µPa) threshold for injury to finfish.			
Discussed/ observed: ☐ Yes ☒ No	Issue(s) identified: ☐ Yes ☐ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☒
2.2.9.3. Outside of the least risk window for Burrard Inlet (August 16 – February 28), a more conservative underwater sound threshold of 22.5 kPa (207 dB re: 1 µPa) will be adhered to, and monitored, to prevent injury to finfish. If sound levels exceed this threshold, or a fish kill is observed despite mitigation measures being in place, pile driving activities are to cease immediately and mitigation methods are to be reviewed and modified in consultation with DFO.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
2.2.9.4 If underwater noise recordings indicate that sound levels are likely to exceed the applicable threshold defined in conditions 2.2.9.2 or 2.2.9.3, the Proponent will take appropriate action with the goal of preventing the exceedance from occurring. These actions may include adjusting the force of the hammer, adjusting the mitigation measures already in place to increase their effectiveness, or implementing additional mitigation measures.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
2.2.9.5 Upon commencement of pile driving, or recommencement after a delay of 30 minutes or more, pile installation shall ramp-up by starting with less frequent impact strikes of lower force. This ramp-up period is designed to enable any fish that may be in the area time to leave the area prior to the generation of peak pressure and noise levels for pile installation.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
Comments			

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TMC described mitigation measures employed during impact pile driving and stated noise levels stayed below the threshold described in condition 2.2.9.3.			
Action Items			
None.			
Marine Mammal Monitoring			
2.2.9.6 Prior to commencement of pile driving, or recommencement after a delay of 30 minutes or more, visual monitoring must be conducted to determine if marine mammals are present within an exclusion zone of 1 km (except for harbor seals, which will have an exclusion zone of 150 m).			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
2.2.9.7 Work may only commence if marine mammals and harbour seals are not observed in their respective exclusion zones for 30 minutes.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
2.2.9.8 Exclusion zones must be monitored continuously during impact pile driving. If a marine mammal or marine mammals are observed within their respective exclusion zone, pile driving activities must cease until all marine mammals leave their respective exclusion zone or they have not been sighted for 30 minutes within their respective exclusion zone.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
2.2.9.9 If underwater noise recordings reveal that the threshold of 160 dB is exceeded at the 1 km exclusion zone boundary, the exclusion zone radius must be widened to a new outer limit, where sound recordings demonstrate that the 160 dB threshold is not exceeded. Conditions 2.2.9.6 to 2.2.9.8 will need to be complied with within this new exclusion zone.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
2.2.9.10 Pile driving may only be carried out during daylight hours to enable effective visual monitoring of marine mammal exclusion zones.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
Comments			
Prior and during impact pile driving, and only when needed, TMC is using four seal acoustic deterrents within the 150 m seal-specific exclusion zone as a mitigation measure to avoid adverse impacts (e.g., auditory injury) to 'fish' (which includes marine mammals such as seal) (Condition 2.2.8 of the *Fisheries Act* Authorization). Since completing the Seal Deterrent Sound Source Characterization Study Report produced by JASCO Applied Sciences, TMC is now monitoring a larger marine mammal exclusion zone (1,700 m radius) prior to and during the deployment of four seal acoustic deterrent devices. Harbour seals and a single Steller sea lion have been observed since the previous CVA on April 22, 2021. TMC confirmed harbour seals sightings have delayed starts to pile driving and may have resulted in a couple of shutdowns during pile driving.			
Action Items			
None.			

Measures specified within the Westridge Marine Terminal Environmental Protection Plan:

Fish Salvage

35. Immediately following the installation of each sheet pile cell, and prior to excavation and infilling of that cell, conduct a salvage of commercial, recreational and Aboriginal (CRA) fishery species via crab and fish trapping/netting and seines (where appropriate). Release captured CRA fishery species in a suitable habitat at least 500 m away from marine construction activities.			
Discussed/ observed: ☐ Yes ☒ No	Issue(s) identified: ☐ Yes ☐ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☒
Comments			
No further fish salvage has occurred since the compliance verification activity call on January 26, 2021.			
Action Items			
None.			
Turbidity Monitoring			
43. Should visual monitoring during in-water pile installation indicate concern regarding turbidity levels, the Environmental Inspector will arrange for in situ sampling of turbidity (nephelometric turbidity units). Should turbidity levels exceed specified thresholds, pile driving will temporarily be halted.			
Discussed/ observed: ☐ Yes ☒ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
Comments			
No water quality issues were reported during in-water pile installation.			
Action Items			
None.			

MITIGATION MEASURES SPECIFIC TO FORESHORE CONSTRUCTION

Riparian Planting and Material Handling			
Westridge Marine Terminal Fisheries Act Authorization Conditions			
2.2.4 Disturbed riparian areas shall be replanted as appropriate, with native non-invasive species of vegetation.			
Discussed/ observed: ☐ Yes ☒ No	Issue(s) identified: ☐ Yes ☐ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☒
Westridge Marine Terminal Environmental Protection Plan Commitments			
30. Unless otherwise approved by DFO, retain all excavated [marine] material and dispose at a land-based facility in accordance with applicable regulations.			
Discussed/ observed: ☐ Yes ☒ No	Issue(s) identified: ☐ Yes ☐ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☒
Comments			
Not applicable.			
Action Items			
None.			

Water Quality Maintenance and Monitoring
Westridge Marine Terminal Fisheries Act Authorization Conditions
2.2.1 Effective sediment and erosion control measures (e.g., a turbidity curtain, etc.) shall be implemented before starting construction and shall be maintained during construction activities, as appropriate, to avoid the deposit and dispersion of sediment into the marine environment.

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Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
2.2.10 A turbidity curtain must be used to isolate the work area during the excavation of riprap in order to contain marine sediment suspended in the water column and limit the extent of sediment dispersion. During severe weather conditions that may reduce the effectiveness of, or impede the visual monitoring of, the turbidity curtain (e.g., > 70 km/h winds, or dense fog), works, undertakings or activities that may increase suspended sediment concentrations within the turbidity curtain or adversely affect the integrity of the turbidity curtain, must be suspended.			
Discussed/ observed: ☐ Yes ☒ No	Issue(s) identified: ☐ Yes ☐ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☒
Westridge Marine Terminal Environmental Protection Plan Commitments			
29. During in-water excavation or rip rap, conduct water quality monitoring (WQM) as per the Water Quality Management Plan during Rip Rap Removal (Appendix H of this EPP). Conduct WQM to assess the effectiveness of the turbidity curtain and modify turbidity curtain deployment, if required.			
Discussed/ observed: ☐ Yes ☒ No	Issue(s) identified: ☐ Yes ☐ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☒
Westridge Marine Terminal Sediment and Erosion Control Plan Commitments			
The in-water sediment curtain will remain intact during Foreshore construction activities to ensure sediment laden water is not discharged into Burrard inlet.			
Discussed/ observed: ☒ Yes ☐ No	Issue(s) identified: ☐ Yes ☒ No	Issue(s) unresolved: ☐ Yes ☐ No	Not applicable ☐
Comments			
A turbidity curtain remains in place around the sheet-pile cells encompassing the foreshore.			
Action Items			
None.			

Additional comments or action items
• TMC to provide written response to the question regarding livestream videos.