Canada Energy Regulator | Régie de l'énergie du Canada

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Final Audit Report

Trans Mountain Pipeline ULC

Lifecycle Transition from Construction to Operations – Environmental Protection Program

CV2425-305

5070192

27 May 2025

Executive Summary

The Canada Energy Regulator (**CER**) expects pipelines and associated facilities within the Government of Canada's jurisdiction to be constructed, operated and abandoned in a safe and secure manner that protects people, property, and the environment. To this end, the CER conducts a variety of compliance oversight activities, such as audits.

Section 103 of the *Canadian Energy Regulator Act* (S.C. 2019, c.28, s.10) (**CER Act**) authorizes inspection officers to conduct audits of regulated companies. The purpose of these audits is to assess compliance with the CER Act and its associated Regulations.

The purpose of operational audits is to ensure that regulated companies have established and implemented both a management system and its associated programs, as specified in the *Canadian Energy Regulator Onshore Pipeline Regulations* (SOR/99-294) (**OPR**).

The CER conducted a Lifecycle Transition from Construction to Operations – Environmental Protection Program operational audit of Trans Mountain Pipeline ULC (**the company**) between 3 September 2024 and 5 February 2025.

The objectives of this audit were to assess the company's transition in the lifecycle of Line 2 from construction to operations while adhering to the management system requirements outlined in the OPR. The audit focused on section 48, the Environmental Protection Program, as its test area for this audit. The audit focused on the application of management of change, leadership, resourcing, and the company's contractor oversight among other key areas.

Of 11 audit protocols; 9 were deemed "No Issues Identified". Two were deemed non-compliant. The first
non-compliant finding relates paragraph 6.5(1)(f) of the OPR (AP-06). Environmental controls are not being communicated to all field workers exposed to the risks within OPS-environment.[1] The second non-compliant finding relates to paragraph 6.5(1)(u) of the OPR (AP-11). While the company has developed methods to evaluate the adequacy and effectiveness of the environmental protection program, the presence of several errors in OPS-environment suggest that these methods may be insufficient. As it relates to
TMEP-environment, record sampling revealed gaps in the Inspection Monitoring and Measurement (**IMM**) Plan, and discrepancies between what was in the IMM Plan and what actually occurred in the field.

Within 30 calendar days of receiving the Final Audit Report, the company shall file with the CER a Corrective and Preventive Action **(CAPA)** Plan that outlines how the non-compliant findings will be resolved. The CER will monitor and assess the implementation of this CAPA Plan to confirm that it is completed in a timely manner.

Note that all findings are specific to the information assessed at the time of the audit as related to the audit scope.

While non-compliant findings exist, the CER is of the view that the company can still construct, operate, and abandon pipelines in a manner that will preserve the safety of persons, the environment, and property.

The Final Audit Report will be made public on the CER website.

[1] See appendix 2 for the definition of OPS-environment (operations-environment) and TMEP-environment (Trans Mountain Expansion Project – environment)

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1.0 Background

1.1 Introduction

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Section 103 of the CER Act authorizes inspection officers to conduct audits of regulated companies. The purpose of these audits is to assess compliance with the CER Act and its associated Regulations.

The purpose of operational audits is to ensure that regulated companies have established and implemented both a management system and its associated programs, as specified in the OPR.

The CER conducted a Lifecycle Transition from Construction to Operations – Environmental Protection Program operational audit of the company between 3 September 2024 and 5 February 2025.

1.2 Description of Audit Topic

The company has recently completed a major project to construct a pipeline (Line 2) between Strathcona County, Alberta (**AB**) and Burnaby, British Columbia (**BC**). The construction of Line 2 was a significant undertaking involving several years of construction through complex terrain. With this completion, the lifecycle phase of Line 2 has moved from construction to operations. Changing the phase of lifecycle activity for such a large project is a complex undertaking and sets the stage for the future success of the pipeline, as it relates to preventing harm to people, property, and the environment. This audit examines the approach the company employed during this transition as it relates to the company's environmental protection program. The environmental protection program was chosen to be reviewed for this audit as it is considered a key component for a successful transition between lifecycle phases and for a successful and lengthy operational timeframe.

1.3 Company Overview

Trans Mountain Pipeline ULC is the regulated company subject to this audit, authorized under the Certificate of Public Convenience and Necessity OC-065. It is one of four entities used by the Trans Mountain Corporation (a federal crown corporation). Trans Mountain Corporation is a wholly owned subsidiary of Canada TMP Finance Ltd., which in turn is a wholly owned subsidiary of the Canada Development Investment Corporation.

Since 1953, the company has been operating the Trans Mountain pipeline (Line 1). This pipeline batch transports crude oil and refined petroleum products from the company's Edmonton Terminal, located in Strathcona County, AB, to its Westridge Marine Terminal, located in Burnaby, BC.

The company has recently completed the construction on the Trans Mountain Expansion Project (**TMEP**). This project involved twinning Line 1 with a second pipeline spanning approximately 1000 kilometres, along with adding associated infrastructure (e.g., 12 new pump stations, 19 new storage tanks, and 3 new berths). Construction occurred between 2019 and 2024. On 30 April 2024, the CER approved the final leave to open application for this project, and the project assets were transitioned from construction to operations. Line 2 now transports heavy crude oil.

The map below depicts the company's CER-regulated assets.

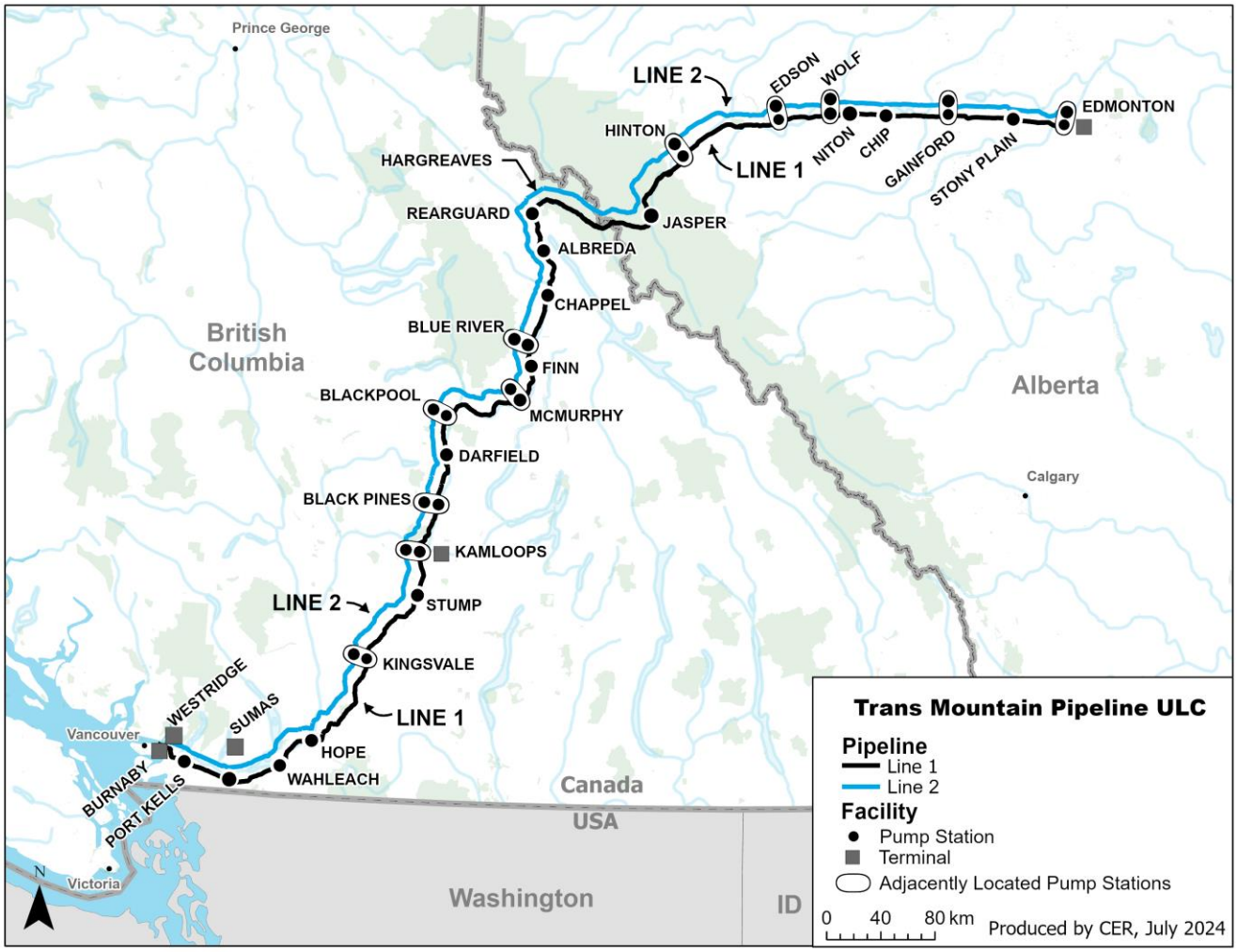

Figure 1. Map of Trans Mountain Pipeline ULC - Line 1 and Line 2

2.0 Objectives and Scope

The objectives of this audit are to assess the company's transition in the lifecycle of Line 2 from construction to operations while adhering to the management system requirements outlined in the OPR. The audit focused on section 48, the Environmental Protection Program, as its test area for this audit. The audit focused on the application of management of change, leadership, resourcing, and the company's contractor oversight among other key areas.

The table below outlines the scope selected for this audit.

Table 1. Audit Scope

Audit Scope	Details
Audit Topic	Lifecycle Transistion from Construction to Operations – Environmental Protection Program
Lifecycle Phases	☒ Construction ☒ Operations ☐ Abandonment
Section 55 Programs	☐ Emergency Management ☐ Integrity Management ☐ Safety Management ☐ Security Management ☒ Environmental Protection ☐ Damage Prevention
Time Frame	Construction of Line 2 and its transition into operations

3.0 Methodology

An audit notification letter was sent to the company on 3 September 2024 advising the company of the CER's plans to conduct an operational audit. The lead auditor provided the audit protocol and initial information request to the company on 5 September 2024 and followed up on 10 September 2024 with a meeting with the company staff to discuss the plans and schedule for the audit. Document review began on 8 October 2024 and interviews were conducted between 4 November 2024 and 12 November 2024.

The auditors assessed compliance through:

- document reviews;
- record sampling; and
- interviews.

The purpose of the document review is to identify the suite of documents that are intended to meet the requirements related to the audit protocols. This review assesses whether the process is established. The auditors reviewed approximately 200 documents.

The interviews are conducted to determine the extent to which the processes have been implemented. If the responses are consistent with what is written, the auditors assume that the staff are aware of the process, and that it is being followed. The first set of interviews was conducted primarily with management and senior staff to discuss each of the audit protocols. The second set of interviews was organized based on positions, which ranged from office staff to field staff, where the auditors asked questions relating to all the audit protocols at each interview. The auditors conducted 17 interviews.

Records are also sampled to assess whether the process is implemented. Records are outputs, or products of a process. The presence of properly completed records suggests that the process is being used. The auditors sampled approximately 70 records.
The list of documents reviewed, records sampled, and the list of interviewees are retained on file with the CER.

The lead auditor shared a pre-closeout summary of the audit results on 18 December 2024. At that time, the company was given additional time to provide any additional documents or records to help resolve the identified gaps in information or compliance. Subsequent to the pre-closeout meeting, the company provided additional information to assist the lead auditor in making their final assessment of compliance. The lead auditor conducted a final closeout meeting with the company on 5 February 2025.

4.0 Summary of Findings

The lead auditor has assigned a finding to each audit protocol. A finding can be either:

- No Issues Identified – No non-compliances were identified during the audit, based on the information provided by the company and reviewed by the auditor within the context of the audit scope; or
- Non-compliant – The company has not demonstrated that it has met the legal requirements. A CAPA Plan shall be developed and implemented to resolve the deficiency.

All findings are specific to the information assessed at the time of the audit, as related to the audit scope.

The table below summarizes the finding results. See Appendix 1: Audit Assessment for more information.

Table 2. Summary of Findings

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-01	OPR	6.3(1)(a)	Documented policies	No Issues Identified	The Safety and Loss Management Policy within the *Integrated Safety and Loss Management System (**ISLMS**)*, and the *Environment, Health and Safety Policy (**EHS**) Policy* together, serve as the policy to report hazards, potential hazards, incidents, and near-misses. *The Hazard Identification Reporting Procedure* outlines the conditions under which a person who makes a report will be granted immunity from disciplinary actions.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-02	OPR	6.4(c)	Annual documented evaluation of need	No Issues Identified	The *2024 Environmental Protection Human Resources Evaluation* and the *2022 TMEP Quality Assurance Annual Report* serve as the annual documented evaluation of need for OPS-environment, and TMEP-environment, respectively. The *Environmental Operations Readiness Plan* details how sufficient human resources will be secured to support the transition. Together, the *ISLMS*, the *Environmental Protection Program Management Plan*, and *Human Resources Evaluation Procedure* consider the available manpower and the anticipated workload for the current and future years. Where gaps are identified, the company has strategies to fill the gaps either on an interim or permanent basis as required.
AP-03	OPR	6.5(1)(c)	Identifying and analyzing hazards	No Issues Identified	The company uses a suite of documents to identify and analyze hazards, including the *Hazard and Risk Management Standard*, the *Hazard Identification and Reporting Procedure*, and *the Major Projects Unified Hazard and Risk Register Procedure*. The list of hazards are compiled in the *Unified Hazard and Risk Register* (**UHRR**), and are organized by protection program.
AP-04	OPR	6.5(1)(d)	Inventory of the identified hazards and potential hazards	No Issues Identified	The two subsets of the *UHRR* (*2024 Environmental Protection Program (**EPP**) UHRR* and the *TMEP EPP UHRR*) list the environmental hazards relevant for OPS-environment and TMEP-environment, respectively, and are updated at least annually.
AP-05	OPR	6.5(1)(e)	Risk assessment	No Issues Identified	The *Hazard Identification and Reporting Standard*, the *Trans Mountain Risk Matrix* and the *Major Projects Hazard Risk Register Procedure* work together to establish a process to evaluate risk. Results from interviews and record sampling indicate the process is implemented.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-06	OPR	6.5(1)(f)	Controls	Non-compliant	The company uses a suite of documents that together make up the process to develop and implement controls. Examples of key documents include the *Hazard and Risk Management Standard*, *Operations Risk Management Procedure*, *Major Projects Unified Hazard and Risk Register Procedure*, *Environmental Protection Program Management Plan*, *Environmental Protection Plans*, *C-3 Contractor Environmental Requirements*, environmental alignment sheets, and living resource specific management tables. The company has not satisfied the expected outcomes with regard to daily communication of controls to those exposed to the risks. The OPS-environment process lacks documented daily communication of the daily status of environmental hazards, risks, and controls to field personnel, and fails to account for communicating to personnel that do not participate in the kick-off meeting.
AP-07	OPR	6.5(1)(i)	Management of change	No Issues Identified	The *Management of Change Standard*, *Operational Management of Change Procedure*, the *TMEP Management of Change Procedure*, and the *Environmental Operations Readiness Plan* are the key documents that govern management of change in OPS-environment, TMEP-environment, and for the transition.
AP-08	OPR	6.5(1)(k)	Verifying worker training and competency along with supervision expectations	No Issues Identified	Documents such as the *Training Management Plan*, *Contractor Competency and Assurance Standard*, and *Procedure*, and the *TMEP Environmental Inspection Procedure*, work together to assure the training, competency, and supervision of both staff and contractors.

Audit Protocol (AP) Number	Regulation	Regulatory Reference	Topic	Finding Status	Finding Summary
AP-09	OPR	6.5(1)(q)	Coordinating and controlling operational activities	No Issues Identified	Together, documents such as the *Role Development and Communication Procedure*, *Contractor Competency and Assurance Standard* and *Procedure*, *Environmental Planning Procedure*, *Trans Mountain Expansion Project Work Authorization Procedure*, and *Trans Mountain Expansion Project C-3 Contractor Environmental Requirements* make up the process to coordinate and control operational activities.
AP-10	OPR	6.5(1)(r)	Internal reporting of hazards, potential hazards, incidents, and near-misses	No Issues Identified	Together, documents such as the *Incident Reporting and Investigation Standard*, the *Hazard Identification and Reporting Procedure*, and the *TMEP Environmental Event Management Procedure* work form the process for reporting hazards, incidents, and near-misses, and for taking corrective actions.
AP-11	OPR	6.5(1)(u)	Inspecting and Monitoring	Non-compliant	While the company has developed methods to evaluate the adequacy and effectiveness of the environmental protection program, errors in OPS-environment suggest that these methods may be insufficient. As it relates to TMEP-environment, record sampling revealed gaps in the *IMM Plan*, and descrepencies between what was in the *IMM Plan* and what actually occurred in the field.

5.0 Discussion

Transitioning a pipeline from construction to operations is a complex undertaking. It is critical to establish a solid foundation during this transition, such that operations may occur in a manner that protects people, property, and the environment from harm. This audit focuses on the environmental protection program, as it relates to transitioning from construction to operations. This transition can be high risk if not completed properly. Thus, it is an opportune time to assess whether the management system is compliant with the OPR. Line 2 is expected to be operating for decades to come. A compliant management system will support the ongoing protection of people, property, and the environment.

It is worthwhile to note that while the asset transition is completed, the transition relating to the TMEP environmental protection program is still ongoing at the time of writing. It takes longer in part due to the time required to complete reclamation work. As it relates to the environmental protection program, each construction spread will be handed over to OPS-environment on an individual basis.

The majority of this transition is anticipated to be complete by the end of 2025. TMEP-environment is overseeing work crews undertaking activities associated with final cleanup, and reclamation work. After this work, the spreads will be transitioned to OPS-environment. At the time of writing, spread one, the Edmonton terminal, and all valve sites have been handed over to the OPS-environment. The remaining spreads, from an environmental perspective, are still being managed by TMEP-environment.

It is also worthwhile to note that the CER issued three separate environmental Inspection Officer Orders[2] to the company related to TMEP activities that occurred between October 2023 and March 2024. The orders relate to several instances where the project's *Environmental Protection Plan* was not implemented as required. While these orders are outside the scope of this audit, they were a factor considered when choosing which company to audit.

As described in the methodology section, this audit consisted of a document review, interviews, and record sampling. The auditors reviewed approximately 200 documents, conducted 17 interviews, and sampled approximately 70 records. Because many of the records were assessed for more than one audit protocol, they are referenced numerous times in appendix 1.

The company uses an Integrated Safety and Loss Management System (**ISLMS**). Key components of the ISLMS include the following: a safety and loss management system policy, 14 goals, 16 programs, common elements that apply to all programs, as well as program-specific processes. This framework is summarized in a document also entitled *ISLMS*.

The environmental protection program (**EPP**) is one of the 16 programs within the ISLMS. The EPP is governed via the *Environment, Health and Safety Policy*, the *Environmental Protection Program Management Plan* (**EPP MP**), in addition to EPP-specific processes. These documents apply to the operations environment team (hereafter referred to as **OPS-environment**).

Another program relevant to the topic of this audit, is the *TMEP Quality Assurance Program*. This program contains a series of sub-programs specific to the expansion project. The sub-program relevant to this audit is the TMEP environmental protection program (represented by the *TMEP Environmental Protection Plan*). This audit report frequently references a section within the *TMEP Environmental Protection Plan*, entitled the *TMEP Environmental Compliance Management Plan*. Together, these documents apply specifically to the TMEP environment team (hereafter referred to as **TMEP-environment**).

In general, the company's management system is well designed. All programs follow a core set of management system elements within the ISLMS. Both OPS-environment and TMEP-environment have added additional requirements tailored to the nature of their respective work activities, as it relates to the phases of a pipeline's lifecycle.

Ample evidence suggests that, in most cases, the management system is being implemented as it was designed. Interview responses matched the content written in the management system processes. The auditors sampled a substantial number of records, both within TMEP-environment, and in OPS-environment, and the company was able to provide all of them in a timely manner, as proof of implementation.

The non-compliant findings are related to a few circumstances where the follow through of implementing the process to the field was lacking. In AP-06, it relates to communicating controls to those exposed to the environmental risks. In AP-11, it relates to monitoring and measuring the

[2] JJD-001-2023, DLB-001-2024, and JJD-001-2024. Issues were addressed and resolved via the Inspection Officer Order.

program for adequacy and effectiveness. OPS-environment had circumstances where the monitoring practices failed to detect and/or resolve environmental issues. TMEP-environment had circumstances where the IMM activities that occurred in the field were not depicted in the IMM plan. The details relating to these non-compliant findings are presented in Appendix 1. Resolving these non-compliant findings will improve the ability of the company to communicate environmental controls to workers in the field and to assess the adequacy and effectiveness of the relevant programs.

The plan-do-check-act nature of management systems is designed to learn from past mistakes and continually improve. The size and complexity of the TMEP increased the intensity of the management system cycles and provided ample opportunities for learnings. As a result, TMEP has adopted some innovative best practices worth highlighting.

In the safety discipline, industry has developed what are called ‘life saving rules’. These are a small set of rules, simple to understand, and easy to communicate, that are used to emphasize how workers can stay safe. These lifesaving rules are used in internal marketing campaigns to keep safety top of mind for workers. Similar to this idea, TMEP has created a set of ‘environmental rules’. These rules outline areas which pose significant risk to the environment. They are a small set of rules, simple to understand, easy to communicate, and matched with specific icons to draw the worker’s attention to environmental matters.

As part of the project, the company has collected a substantial amount of environmental data. Some of this data has been transferred to a geographic information system (**GIS**) tool that all their environmental practitioners can use. The user can select a location on a map, and the map will indicate the presence of any environmental sensitivities and required mitigations. This tool can be used to help design projects that minimize environmental impact.

The CER expects that the company’s management system will leverage these types of learnings and best practices identified and used by TMEP-environment, so that they can be adopted by OPS-environment and the company as a whole, where applicable.

6.0 Conclusion

In summary, the CER conducted an operational audit of Trans Mountain Pipeline ULC related to Lifecycle Transition from Construction to Operations – Environmental Protection Program. Out of a total of 11 audit protocols, 9 were classified as no issues identified, resulting in an audit score of 82 percent. The company’s management system, while complex, is well-designed and appropriate for the nature and scope of the company’s activities.

Trans Mountain Pipeline ULC is expected to resolve the 2 non-compliant findings through the implementation of a CAPA Plan. The CER will monitor and assess the implementation of this CAPA Plan and issue an audit closeout letter upon its completion.

7.0 Next Steps

The company is required to resolve all non-compliant findings through the implementation of a CAPA Plan. The next steps of the audit process are as follows:

- Within 30 calendar days of receiving the Final Audit Report, the company shall file with the CER, a CAPA Plan that outlines how the non-compliant findings will be resolved.
- The CER will monitor and assess the implementation of the CAPA Plan to confirm that it is completed:
    - on a timely basis; and
    - in a safe and secure manner that protects people, property, and the environment.
- Once implementation is completed, the CER will issue an audit closeout letter.

Appendix 1: Audit Assessment

AP-01 Documented Policies

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.3(1)(a)
Regulatory requirement	The company shall establish documented policies and goals to ensure that the purposes referred to in paragraphs 6(a) to (c) are achieved and that its obligations under these Regulations are met. The policies and goals shall include (a) a policy for the internal reporting of hazards, potential hazards, incidents, and near-misses that includes the conditions under which a person who makes a report will be granted immunity from disciplinary action.

Expected outcome	• The company has a policy for the internal reporting of hazards, potential hazards, incidents and near-misses as it relates to:
	  ○ the safety and security of persons;
	  ○ the safety and security of pipelines and abandoned pipelines; and
	  ○ the protection of property and the environment.
	• This policy includes the conditions under which someone who makes a report will not be subject to disciplinary action.

Relevant information provided by the company	The following key documents and records are related to this finding: • Safety and Loss Management Policy statement within the *Integrated Safety and Loss Management System (ISLMS)* • *Environment, Health and Safety Policy (EHS Policy)* • *Hazard and Risk Management Standard* • *Incident Reporting and Investigation Standard* The following interviews are related to this finding: • INT 1.2 Documented policies • INT 4.1 EHS advisors, environmental planners, environmental inspectors • INT 4.2 Environmental specialists • INT 5.1, 5.2, and 5.3 Pipeline maintenance integrity inspectors and supervisors
Finding summary	The company has satisfied the expected outcomes listed above. The Safety and Loss Management Policy within the *ISLMS*, and the *EHS Policy* together, serve as the policy to report hazards, potential hazards, incidents, and near-misses. The *Hazard Identification Reporting Procedure* outlines the conditions under which a person who makes a report will be granted immunity from disciplinary actions.

Detailed Assessment

The company has demonstrated through documentation and interviews that it has a policy and goals to ensure the reporting of hazards, potential hazards, incidents, and near-misses related to the safety and security of persons, pipelines, abandoned pipelines and the protection of property and the environment. The policy also includes a statement about the conditions under which a person who makes a report will be granted immunity from disciplinary actions.

The ISLMS begins with the *Safety and Loss Management Policy Statement*. This policy statement commits to conducting business in a safe, environmentally responsible, and sustainable manner by minimizing risks that could result from their activities. The policy statement indicates that employees and contractors will be granted immunity from disciplinary action for good faith reporting of hazards, potential hazards, incidents, and near-misses. The statement also contains an explanation of what good faith reporting means to the company.

The company also has an *Environment, Health and Safety Policy* which provides direction to all staff and contractors working for, or on behalf of the company. The guiding principles laid out in the policy state that staff and contractors shall comply with all environment, health, and safety (**EHS**) laws, rules, and regulations because it is the responsible way to conduct the company's business. The policy also states that the company will manage the exposure of employees and contractors to EHS hazards that occur during its operations.

The *Hazard Identification and Reporting Procedure* outlines the expectations of workers and contractors, which includes the obligation to communicate any hazard, or potential hazard, following the steps provided in this procedure. The procedure repeats the same non disciplinary statement for good faith reporting of hazards, and potential hazards, which is in the policy statement. The document also states that TMEP may implement additional requirements to this procedure or its governing standard.

The *Incident Reporting and Investigation Standard* also indicates that employees are responsible for reporting incidents and near-misses.

The auditors interviewed staff to determine their level of awareness of internal reporting policies and their awareness of the conditions under which they would not be disciplined. The auditors also assessed their comfort levels with reporting. Field staff responses indicate that they were aware of the policy to report hazards, potential hazards, incidents and near-misses, and the conditions under which they would not be disciplined for reporting. Staff indicated it would raise more questions if they failed to report hazards, potential hazards, and incidents than if they did report. Reporting is expected, encouraged, and seen as positive behaviour. Staff were able to discuss the relevant company policies and procedures with the auditors.

AP-02 Annual documented evaluation of need

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.4(c)
Regulatory requirement	The company must have a documented organizational structure that enables it to (c) demonstrate, based on an annual documented evaluation of need, that the human resources allocated to establishing, implementing, and maintaining the management system are sufficient to meet the requirements of the management system and to meet the company's obligations under these Regulations.
Expected outcome	• The company has completed an annual documented evaluation of need. • The annual documented evaluation of need identifies the amount of human resources allocated to establishing, implementing and maintaining the management system. • The company demonstrates how they determine the sufficient amount of human resources to inform the evaluation of need. • Conversely, the company demonstrates how they determine if the current amount of human resources are insufficient, how the evaluation of need is revised and additional human resources added. • The annual documented evaluation of need meets the company's obligations with respect to the OPR.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company wide
	  ○ *ISLMS*
	  ○ *Human Resources Evaluation Procedure*
	  ○ *Trans Mountain Organizational Chart*
	• OPS-environment
	  ○ *Environmental Protection Program Management Plan*
	  ○ *2023 Environmental Protection Human Resources Evaluation*
	  ○ *2024 Environmental Protection Human Resources Evaluation*
	  ○ Records approving the 2023 and 2024 Human Resources Evaluation (**HRE**)
	• TMEP-environment
	  ○ *2022 TMEP Quality Assurance Annual Report*
	The following interviews are related to this finding:
	• INT 2.1 Annual documented evaluation of need
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists

Finding summary	The company has satisfied the expected outcomes listed above. The 2024 *Environmental Protection Human Resources Evaluation* and the *2022 TMEP Quality Assurance Annual Report* serve as the annual documented evaluation of need for OPS-environment, and TMEP-environment, respectively. *The Environmental Operations Readiness Plan* details how sufficient human resources will be secured to support the transition. Together, the *ISLMS*, the *Environmental Protection Management Plan*, and *Human Resources Evaluation Procedure* consider the available manpower and the anticipated workload for the current and future years. Where gaps are identified, the company has strategies to fill the gaps either on an interim or permanent basis as required.

Detailed Assessment

The company completed an annual documented evaluation of need that identifies the amount of human resources required for the management system. This section will discuss the management system components that are applied company wide, to the OPS-environment, and to TMEP-environment.

Company wide

The ISLMS introduces the need for an organizational structure to be developed to ensure effective management of the program. The *Human Resources Evaluation Procedure* indicates how the company determines the sufficient amount of human resources to meet the management system requirements. The output of this procedure is the documented evaluation of need.

OPS-environment

The *Environmental Protection Program Management Plan* also references the need for an organizational structure to meet the resource requirements of the management system. OPS-environment provided the 2023 and 2024 *Environmental Protection Human Resources Evaluation* as their annual documented evaluation of need. These documents identify the human resources allocated within the Environmental Protection Program.

TMEP-environment

TMEP-environment provided the *2022 TMEP Quality Assurance Annual Report.* This report specifies the human resource evaluation projected for the project during the 2023 year, which serves as their annual documented evaluation of need. This report also discusses working with the OPS-environment group to identify synergies and retain key talent post construction.

Auditors conducted interviews to assess implementation in both OPS-environment and TMEP-environment. Interviews were conducted with environmental managers, planners, specialists, and inspectors. Responses from staff aligned with what is in the written process.

AP-03 Identifying and analyzing hazards

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.5(1)(c)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for identifying and analyzing all hazards and potential hazards.
Expected outcome	• The company has a compliant process that is established and implemented. • The methods for identification of hazards and potential hazards are appropriate for the nature, scope, scale, and complexity of the company's operations, activities and section 55 programs. • The identification of hazards and potential hazards must include the full lifecycle of the pipeline. • The company has comprehensively identified and analyzed all relevant hazards and potential hazards. • The hazards and potential hazards have been identified for the company's scope of operations through the lifecycle of the pipelines. • The identified hazards and potential hazards have been analyzed for the type and severity of their consequences.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company wide
	  ○ *ISLMS*
	  ○ *Hazard and Risk Management Standard*
	  ○ *Hazard Identification and Reporting Procedure*
	  ○ *Contingency Plans for Abnormal Events Standard*
	• OPS-environment
	  ○ *Operations Risk Management Procedure*
	  ○ *2024 EPP UHRR* (export from the company wide Unified Hazard Risk Register filtering for hazards related to operations environment)
	  ○ *Environmental Protection Program Management Plan*
	  ○ *Environmental Planning Procedure*
	  ○ *Environmental Planning Procedure for Project Managers*
	  ○ samples of records relating to safe work permits, environmental protection plans, field level hazard assessments, specific hazards listed in the operations environment 2024 EPP UHRR
	• TMEP-environment
	  ○ *Major Projects Unified Hazard and Risk Register Procedure*
	  ○ TMEP EPP UHRR (export from the company wide Unified Hazard Risk Register filtering for hazards related to TMEP environment)
	  ○ samples of records relating to work authorizations, field level hazard assessments, specific hazards listed in the TMEP EPP UHRR
	The following interviews are related to this finding:
	• INT 2.2 Identifying, analyzing and inventory of hazards
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists
	• INT 5.1, 5.2, and 5.3 Pipeline maintenance integrity inspectors and supervisors

Finding summary	The company has satisfied the expected outcomes listed above. The company uses a suite of documents to identify and analyze hazards, including the *Hazard and Risk Management Standard*, the *Hazard Identification and Reporting Procedure*, and the *Major Projects Unified Hazard and Risk Register Procedure*. The list of hazards are compiled in the *UHRR*, and are organized by protection program.

Detailed Assessment

The company has satisfied the expected outcomes listed above. It has established a compliant process and specified methods for the identification of hazards and potential hazards, that are appropriate for the nature, scope, scale, and complexity of the company's operations and activities, as they relate to environmental protection.

This section will discuss the management system components that are applied company wide, to the OPS-environment, and to the TMEP-environment.

<u>Company wide</u>
The following documents provide a framework on how hazards are identified and analyzed: *ISLMS*, *Hazard and Risk Management Standard, Hazard Identification and Reporting Procedure*, *Unified Hazards and Risk Register*, and the *Contingency Plans for Abnormal Events Standard*.

The *ISLMS* Hazard and Risk Management section summarizes the company's requirements for the identification and analysis of hazards and potential hazards. It links to the *Hazard and Risk Management Standard*. This standard requires all hazards to be reported into an internal software system. The hazards reported in this system are used as an input to establish and maintain a UHRR.

The *Hazard Identification and Reporting Procedure* describes how hazards are reported and assessed. It indicates that all employees and contractors are responsible for reporting hazards and potential hazards. It requires imminent hazards to initially be reported to the control centre who can then triage a response. All other hazards are reported directly into the software system. A hazard coordinator and associated team then reviews and triages the hazard, develops and assigns actions, and tracks the completion of these actions. Program managers also review the hazard to determine if it is applicable to their program. Hazards associated with abnormal operating conditions follow similar steps but differ in terms of the roles that review and approve the hazard. Similarly, the *Contingency Plans for Abnormal Events Standard* describes how hazards associated with abnormal operating conditions are handled.

OPS-environment

The Operations Risk Management Procedure describes how identified hazards are listed and analyzed in the UHRR, as it relates to OPS-environment. At least annually, the procedure requires a hazard and risk analysis workshop to be conducted with the environmental protection program, to analyze hazards and risks that are already on the register, and those that may need to be added.

The *Environmental Protection Program Management Plan* provides additional requirements relating to hazard identification and analysis. It points to other procedures such as the *Environmental Planning Procedure* and the *Environmental Planning Procedure for Project Managers*. At the start of a project, these procedures require an environmental planner to gather all relevant information to support the planning process, to identify environmentally related hazards and to document them in an environmental review form. These hazards, their associated risks, and controls are to be further outlined in a project-specific environmental protection plan. These hazards and risks also are considered for addition to the UHRR during the annual workshop.

Auditors conducted interviews and sampled records to assess implementation of the process within OPS-environment.

The auditors compared the hazard identification and analysis steps written in the process and procedures, with the response from the interviews. Interviews were conducted with hazard and risk specialists, environmental managers, environmental specialists, environmental planners, and pipeline maintenance integrity supervisors. During these interviews, staff responses aligned with the written process.

Records sampled include a list of environmental hazards identified during 2024, records related to two of these identified hazards, and three environmental protection plans. The company was able to provide the records, indicating the process was implemented.

TMEP-environment

TMEP-environment supplements the company wide *Hazard and Risk Management Standard* and the *Hazard Identification and Reporting Procedure* with the *Major Projects Unified Hazard and Risk Register Procedure* and the *TMEP Environmental Event Management Procedure*.

Generally speaking, contractors play a larger role in the TMEP than they do in operations. Contractors conduct the majority of the field activities, while the company conducts oversight of these activities. *Major Projects Unified Hazard and Risk Register Procedure* addresses how high-risk contractors relate to the UHRR.

This procedure requires TMEP staff to identify the scope of the project and the associated hazards and risks, which are evaluated by each regional team. This UHRR is provided to the high-risk contractors to use. This procedure is relatively new and has been in place since June 2024. Contractors with a pre-existing contract that use the old process, will continue with the old process. All new contracts with high-risk contractors will use this process. At the time of writing this report, almost all pre-existing contracts have been fulfilled.

Auditors conducted interviews and sampled records to assess implementation within TMEP-environment. Auditors triangulated the hazard identification and analysis steps written in the process and procedures, with the response from the interviews. Interviews were conducted with hazard and risk specialists, environmental managers, environmental specialists, and environmental inspectors. Staff responses aligned with the written process.

Records sampled included a list of TMEP-specific environmental hazards reported in 2024, and records related to four of the reported hazards, and 30 work authorizations. The company was able to produce the records requested, which indicated that the process was implemented.

AP-04 Inventory of the identified hazards and potential hazards

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.5(1)(d)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and maintain an inventory of the identified hazards and potential hazards.
Expected outcome	• The company has a compliant inventory that is established and maintained. • The inventory includes hazards and potential hazards associated within the company's scope of operations and activities through the lifecycle of the pipelines. • Hazards and potential hazards are identified across all section 55 programs. • The inventory has been maintained, it is current and is up to date including changes made to company operations and activities. • The inventory is being used as part of the risk evaluation and controls processes.
Relevant information provided by the company	The following key documents and records are related to this finding: • *2024 EPP UHRR* (export from the company wide Unified Hazard Risk Register filtering for hazards related to OPS-environment) • TMEP EPP UHRR (export from the company wide Unified Hazard Risk Register filtering for hazards related to TMEP-environment) The following interviews are related to this finding: • INT 2.2 Identifying, analyzing and inventory of hazards • INT 4.1 EHS advisors, environmental planners, environmental inspectors • INT 4.2 Environmental specialists
Finding summary	The company has satisfied the expected outcomes listed above. The two subsets of the UHRR (*2024 EPP UHRR* and the *TMEP EPP UHRR*) list the environmental hazards relevant for OPS-environment and TMEP-environment, respectively, and are updated at least annually.

Detailed Assessment
The company provided exports from their *Unified Hazard and Risk Register*, filtered for OPS-environment (*2024 EPP UHRR*) and for TMEP-environment (*TMEP EPP UHRR*), as the inventory of hazards and potential hazards. Therefore, the company has an inventory that is established and maintained. The inventory includes hazards and potential hazards associated with the company's scope of operations and activities through the lifecycle of the pipelines, and hazards for the environmental protection program. This inventory is maintained, current, and used for the risk evaluation and controls processes.

Both registers include fields such as relevant program, event, hazard, contributing cause, etc. The OPS-environment lists approximately 30 hazards, and the TMEP-environment lists approximately 15 hazards. All hazards related to TMEP-environment are also applicable to OPS-environment.

Interviews with staff verified that the UHRR is used both to consolidate the list of hazards as well as to determine risk and controls, which will be discussed in AP-05 and AP-06.

AP-05 Risk assessment

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.5(1)(e)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for evaluating the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions.
Expected outcome	• The company has a compliant process for evaluating risks that is established and implemented. • The method(s) for risk evaluation confirm that the risks associated with the identified hazards (related to normal and abnormal operating conditions) are based on referenced regulatory standards and are appropriate for the nature, scope, scale, and complexity of the company's operations, activities, and are connected to the purposes and intended outcomes of the section 55 programs. • Risks are evaluated for all hazards and potential hazards and include normal and abnormal conditions. • Risk levels are monitored on a periodic basis and as needed and re-evaluated for changing circumstances. • Risk tolerance/acceptance criteria is determined for all hazards and potential hazards.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company wide
	  ○ *ISLMS*
	  ○ *Hazard and Risk Management Standard*
	  ○ *Hazard and Risk Guideline*
	  ○ *Trans Mountain Risk Matrix*
	• OPS-environment
	  ○ *Operations Risk Management Procedure*
	  ○ *Hazard Identification and Reporting Procedure*
	  ○ *2024 EPP UHRR* (export from the company wide Unified Hazard Risk Register filtering for hazards related to operations environment)
	  ○ *Environmental Protection Program Management Plan*
	  ○ samples of records relating to safe work permits, environmental protection plans, field level hazard assessments, specific hazards listed in the operations environment 2024 EPP UHRR, and the *Operational Risk Report*
	• TMEP-environment
	  ○ *Major Projects Unified Hazard and Risk Register Procedure*
	  ○ TMEP EPP UHRR (export from the company wide Unified Hazard Risk Register filtering for hazards related to TMEP-environment)
	  ○ samples of records relating to work authorizations, field level hazard assessments, specific hazards listed in the TMEP EPP UHRR
	The following interviews are related to this finding:
	• INT 2.3 Risk assessment and controls
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists

Finding summary	The company has satisfied the expected outcomes listed above. The *Hazard Identification and Reporting Standard,* the *Trans Mountain Risk Matrix* and the *Major Projects Hazard Risk Register Procedure* work together to establish a process to evaluate risk. Results from interviews and record sampling indicate the process is implemented.

Detailed Assessment

The methods for evaluating risk are appropriate and connected to the purposes of the environmental protection program. Risks are evaluated for both normal and abnormal operating conditions, are monitored regularly, and are re-evaluated as needed.

This section will discuss the management system components that are applied company wide, to the OPS-environment, and to the TMEP-environment.

<u>Company wide</u>
After hazards are identified and analyzed (discussed in AP-03), the associated risks must be determined. The *ISLMS,* the *Hazard and Risk Management Standard*, *Hazard Identification and Reporting Procedure*, and the *Trans Mountain Risk Matrix* are applicable company wide.

The *Hazard Identification and Reporting Procedure* requires risks to be evaluated for all hazards, using the *Trans Mountain Risk Matrix*.

The *Trans Mountain Risk Matrix* determines risk using the likelihood and consequence of an undesirable event occurring. Both likelihood and consequence use a scale of 1-5. Likelihood ranges from extremely unlikely to expected. Consequence ranges from minor to extreme. Consequence is also applied to
8 different categories, including environment, legal and regulatory, health and safety, reputation, etc. The resulting risk ranges from low to very high. Risks associated with abnormal operating conditions follow the *Contingency Plans for Abnormal Events Standard.*

The *Hazard and Risk Guideline* is a well written document that provides detailed information on key concepts relating to:

- the relationship between hazards, causes, and events using a bow-tie model;
- how to construct a risk statement using hazards, causes and events;
- the hierarchy of controls for hazards, and treatments for risks;
- inherent and residual risk; and
- how to use the risk matrix to determine the level of risk.

OPS-environment

OPS-environment then uses the *Operations Risk Management Procedure* to identify, analyze, and evaluate the risk of an undesirable event. Within this procedure is a risk matrix that uses likelihood and consequence to determine the risk level. Likelihood and consequence are applied to different categories, including environment. The procedure requires risk to be determined both prior to and after the implementation of controls. It also specifies the risk tolerance levels for each residual risk rating, with minimum actions and timeframes. The procedure requires risk to be monitored and reported to the executive in an annual *Operations Risk Report*. Risks are also referenced in the Environmental Protection Program Management Plan.

To determine implementation of the process as it relates to OPS-environment, the auditors conducted interviews and sampled records.

Interview responses from risk subject matter experts, environmental managers, environmental specialists, environmental planners, EHS advisors, and pipeline maintenance integrity supervisors, align with the written process, which indicates that the process is being implemented. The auditors also reviewed records relating to outputs of this process, such as the *2024 EPP UHRR*, and an example of a risk record related to working in and about surface water. The records indicate the process is implemented.

TMEP-environment

In addition to the company-wide documents discussed above, TMEP-environment also uses the *Major Projects Hazard and Risk Register Procedure*. The inherent and residual risks in the UHRR are used to determine a contractor risk profile. The contractor risk profile informs the level and frequency of company oversight over the contractor. It also links the contractor activities to the company hazard and risk processes.

To determine implementation of the process as it relates to TMEP-environment, the auditors conducted interviews and sampled records. Interview responses from risk subject matter experts, environmental managers, environmental specialists, and environmental inspectors align with the written process, which indicates that the process is being implemented. The auditors also reviewed records relating to outputs of this process, such as the *TMEP EPP UHRR.*

AP-06 Controls

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(f)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for developing and implementing controls to prevent, manage and mitigate the identified hazards, potential hazards and the risks and for communicating those controls to anyone who is exposed to the risks.
Expected outcome	• The company has a compliant process for developing and implementing controls. • The method(s) for developing controls are appropriate for the nature, scope, scale, and complexity of the company's operations and activities and section 55 programs. • Controls are developed and implemented. • Controls are adequate to prevent, manage and mitigate the identified hazards and risks. • Controls monitored on a periodic basis and as needed and re-evaluated for changing circumstances. • Controls are communicated to those exposed to the risks.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company wide
	  ○ *ISLMS*
	  ○ *Hazard and Risk Management Standard*
	  ○ *Hazard and Risk Guidelines*
	  ○ *Contingency Plans for Abnormal Events Standard*
	  ○ *Trans Mountain Risk Matrix*
	• OPS-environment
	  ○ *Operations Risk Management Procedure*
	  ○ *2024 EPP UHRR* (export from the company wide Unified Hazard Risk Register filtering for hazards related to operations environment)
	  ○ *Environmental Protection Program Management Plan*
	  ○ *Environmental Planning Standard*
	  ○ *Environmental Planning Procedure for Project Managers*
	  ○ *Environmental Planning Procedure*
	  ○ samples of records relating to safe work permits, environmental protection plans, field level hazard assessments, specific hazards listed in the OPS-environment 2024 EPP UHRR
	• TMEP-environment
	  ○ *Major Projects Unified Hazard and Risk Register Procedure*
	  ○ *Trans Mountain Expansion Project Work Authorization Procedure*
	  ○ *Trans Mountain Expansion Project Environmental Protection Plan*
	  ○ *TMEP EPP UHRR* (export from the company wide Unified Hazard Risk Register filtering for hazards related to TMEP environment)
	  ○ *C-3 Contractor Environmental Requirements*
	  ○ samples of records relating to work authorizations, field level hazard assessments, specific hazards listed in the TMEP EPP UHRR, as built reports and inspection reports
	The following interviews are related to this finding:
	• INT 2.3 Risk assessment and controls
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists
	• INT 4.3 Data transition
	• INT 5.1, 5.2, and 5.3 Pipeline maintenance integrity inspectors and supervisors

Finding summary	The company uses a suite of documents that together make up the process to develop and implement controls. Examples of key documents include the *Hazard and Risk Management Standard*, *Operations Risk Management Procedure*, *Major Projects Unified Hazard and Risk Register Procedure*, *Environmental Protection Program Management Plan*, *Environmental Protection Plans, C-3 Contractor Environmental Requirements,* environmental alignment sheets, and living resource specific management tables. The company has not satisfied the expected outcomes listed above with regard to daily communication of controls to those exposed to the risks. The OPS-environment process lacks documented daily communication of the daily status of environmental hazards, risks, and controls to field personnel, and fails to account for communicating to personnel that do not participate in the kick-off meeting.

Detailed Assessment

This section will discuss the management system components that are applied company wide, to the OPS-environment, and to the TMEP-environment.

Company wide
As discussed in AP-03 through AP-05, the company has several documents that are applied company-wide to manage hazards and associated risks. These documents also address the controls identified to reduce and/or remove the risk.

The *UHRR* requires controls to be added to the register, so that the residual risk associated with the hazard can be determined. The *Hazard and Risk Guidelines* indicate the hierarchy of controls as it relates to hazards, which include: eliminate, substitute, isolate, re-design, minimize, rearrange, administer, train and/or supervise, and protect. The guide categorizes controls as either preventive and/or mitigative.

The *Contingency Plans for Abnormal Events Standard* requires contingency plans to be created to control for hazards associated with abnormal operating conditions. Contingency plans are to be developed for hazards with a risk ranking of medium, high, and extreme.

OPS-environment
This section first discusses the process that the OPS-environment uses and then discusses the deficiency.

As discussed in AP-05, the *Operations Risk Management Procedure* requires program managers to develop a risk response plan for risks ranked as either high or very high with medium as optional. This risk response plan is used to develop controls that aid in reducing the residual risk. The resulting controls are then added to the UHRR, and the residual risk re-examined. These controls are then leveraged for future work. For example, if the same environment hazard is encountered in an integrity dig, then environmental staff will employ the plan within the UHRR and the controls that have been identified previously.

The *Environmental Protection Program Management Plan* references the above documents as it relates to hazard and risk management. It also links to additional environmental-specific documents that must be followed, including the *Environmental Planning Standard*, *Environmental Planning Procedure*.

As discussed in AP-03, the *Environmental Planning Procedure* requires an environmental planner to identify potential environmental issues and document them on an environmental review form for each project. Based on these issues, an environmental protection plan is developed. This plan lists the environmental hazards and risks, as well as the required controls.

The bulk of operational controls to mitigate environmental risk have been consolidated into a list of standards. The *Environmental Protection Program Management Plan* references these standards, which relate to the following topics:

- air quality and emissions;
- clearing and brushing;
- contaminated sites;
- erosions management;
- groundwater monitoring;
- heritage resources;
- hydrostatic testing;
- pipeline abandonment and removal;

- reclamation;
- soil management;
- surface water;
- vegetation management;
- waste management; and
- wildlife management.

The environment protection plan developed for each project, uses the controls identified in the *UHRR* as well as the above-listed standards, to develop a suite of controls suitable for the project in question.

Auditors conducted interviews and sampled records to assess implementation. Interviews with hazard and risk subject matter specialists, as well as various positions within the company yielded responses that were consistent with what was written in the standards, plans, and procedures. Records sampled include operational risk treatment plans, and project specific environmental protection plans. The company was able to produce the records requested, indicating the processes were being used.

Thus, OPS-environment has established and implemented a process for developing and implementing controls.

However, this OPR provision also requires the process to communicate controls to those exposed to the risks, and OPS-environment does not have a defined process for daily communication of hazards.

Field personnel are a key group that need to be informed of the controls to the identified environmental hazards and risks. The *Environmental Planning Procedure for Project Managers* requires a kick-off meeting to review and discuss the environmental protection plan with the project manager, inspector, environmental planner, field personnel, contractors, and environmental consultants.

However, no step is required to ensure that all field staff that show up after the kick-off meeting are informed of and understand the environmental hazards and controls. The same field staff that attend the kick-off meeting are not necessarily the same field staff that will be working on the project in subsequent days.

Also, no step is required to inform field personnel of the daily status of environmental hazards and controls. For safety-related hazards and controls, a field level hazard assessment form must be completed prior to every job, every day of that job, and must be signed by all personnel on-site. No environmental equivalent exists.

The company has provided records demonstrating daily emails between the environmental consultant, the environmental planner, and the on-site inspector when bird sweeps have identified nests. These records demonstrate that ad-hoc activities do occur, at least some of the time, for some of the field personnel. However, this step is not yet built into the process.

Finally, the wording currently used in the safe work permit form might cause some confusion. A safe work permit is issued under certain conditions to communicate safety hazards and controls to workers. Safe work permits have a section header entitled ‘hazard / environmental impact’. This is where hazards related to the work are to be listed. According to the company, it is supposed to identify safety concerns caused by a component of the ecosystem (e.g., the presence of bees that could cause a medical emergency for those allergic – harm to people), rather than to identify environmental hazards that may cause an environmental impact (e.g., clearing activities damaging a migratory bird’s nest – harm to the environment). The misleading section header may cause the

reader to erroneously assume that a lack of environmentally related hazards listed on the permit might mean none exist onsite.

TMEP-Environment

General Construction Contractors play a large role in constructing a pipeline. As such, the company uses the *Major Projects Unified Hazard and Risk Register Procedure* and resulting *TMEP UHRR* to create a contractor risk profile. This procedure requires contractors to be categorized according to the types of activities and services they provide. High risk contractors must indicate the controls they will use to reduce risk and/or remove the hazard. A senior advisor for hazard and risk management then evaluates the contractor's controls for meeting the company's minimum requirements and may require additional actions for the contractor. The level of risk in the contractor risk profile determines the level of oversight the company will have over the contractor, and the reporting frequency for the contractor.

The *TMEP Environmental Protection Plan* also contains the construction activities and associated environmental controls that the company has committed to implementing. Examples of relevant sections within the plan include: Section 4 Environmental Compliance, Section 10 Topsoil Material Handling and Grading, Section 14 Water Crossings, etc.

TMEP-environment has created tools to communicate the controls to those exposed to the risk. Examples of tools used to communicate the controls to workers in the field include: environmental alignment sheets, environmental notes, and living resource specific management tables. *C-3 Contractor Environmental Requirements* also provides a list of environmental requirements and corresponding contractor expectations. Environmental hazards and controls are included in this list.

TMEP-environment also communicates environmental hazards, risks, and controls to contractors, via a work authorization form. The *Trans Mountain Expansion Project Work Authorization Procedure* applies to all areas where company oversight is provided for construction activities. It requires a daily work authorization permit to be signed by both the issuer (i.e., company representative) and the receiver (i.e., contractor representative). This permit documents work activities, conditions, precautions, risk and mitigations. Signing the form indicates the parties agree to its terms. The receiver must indicate which environmental risk applies to the work being performed, as well as the site-specific mitigations required. Examples of environmental risk include those related to watercourses & wetlands, biosecurity, traditional land use, etc. The issuer must provide oversight during work activities to ensure the requirements within the form are adhered to. A work authorization permit is valid for one 12-hour day.

Auditors conducted interviews and sampled records to assess implementation. Interviews with hazard and risk subject matter specialists, environmental managers, and environmental inspectors yielded responses that were consistent with what was written in the standards, plans, and procedures.

Records sampled include 30 work authorizations, one as-built report, and one post construction environmental monitoring (**PCEM**) inspection report. The company was able to produce the records requested, indicating the processes were being used.

It is worthwhile to note that TMEP-environment staff indicated that they used to have a safe work permit procedure to authorize contractor work, where only safety-related hazards, risks and controls were listed. TMEP-environment built upon the safe work permit to create the work authorization form, which also requires environmental hazards, risks, and controls to be listed. The evolution of this form was a product of continual improvement within the management system, as previous incidents had occurred where communication of environmental hazards, risks, and controls to field personnel were lacking.

In addition, TMEP-environment has created an environmental equivalent of the safety-related lifesaving rules. Lifesaving rules have been an effective tool used in industry to simplify and communicate key safety controls to all workers. The TMEP-environment equivalent is called ‘environmental rules’ and serve to communicate key environmental controls to all workers. These environmental rules are listed on the form and must be checked off accordingly. They include rules related to:

- watercourses and wetlands;
- biosecurity;
- fish and wildlife;
- heritage resources;
- traditional land use;
- spills;
- air and noise;
- land and soil;
- trespass; and
- migratory birds.

AP-07 Management of change

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.5(1)(i)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for identifying and managing any change that could affect safety, security or the protection of the environment, including any new hazard or risk, any change in a design, specification, standard or procedure and any change in the company's organizational structure or the legal requirements applicable to the company.
Expected outcome	• The company has a compliant process for identifying and managing change. • Methods are defined to identify and manage change. • Impacts to the company management system and section 55 programs are identified and assessed.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company wide
	  ○ *Management of Change Standard*
	• OPS-environment
	  ○ *Operational Management of Change Procedure*
	  ○ Operations environment Management of Change (**MOC**) records relating to waste management, heritage resources and traditional land use
	• TMEP-environment
	  ○ *Trans Mountain Expansion Project Management of Change Procedure*
	  ○ *TMEP Environmental Compliance Management Plan*
	• Transition
	  ○ MOC for the Business Readiness Project Plan
	  ○ TMEP-environment MOC records relating to temporary workspace modification
	  ○ *Asset Transition to Operations Procedure*
	  ○ *Business Readiness Project Plan*
	  ○ *Environmental Operations Readiness Plan*
	  ○ *Environmental Commitment Tracking List*
	  ○ *Environmental Post Construction Transition Checklist*
	  ○ *As-Built Report for Spread 1*
	  ○ *Living Resource Specific Monitoring Tables* **(LRSMT)**
	The following interviews are related to this finding:
	• INT 1.3 Management of change
	• INT 3.4 Business readiness
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists
	• INT 4.3 Data transition
	• INT 5.1, 5.2, and 5.3 Pipeline maintenance integrity inspectors and supervisors

Finding summary	The company has satisfied the expected outcomes listed above. The *Management of Change Standard*, *Operational Management of Change Procedure*, the *TMEP Management of Change Procedure*, and the *Environmental Operations Readiness Plan* are the key documents that govern management of change in OPS-environment, TMEP-environment, and for the transition.

Detailed Assessment

The company has a process for identifying and managing change. Methods have been defined to identify and manage change and impacts to the management system and environmental protection program have been identified and assessed.

This section will discuss the management system components that are applied company wide, to the OPS-environment, to the TMEP-environment, and to the transition from construction to operations.

<u>Company wide</u>
The *ISLMS* and the *Management of Change Standard* sets the framework related to management of change requirements. They require all programs to have a management of change procedure that indicates how risk assessments will be conducted, how approval authorities are delineated, and how

approval and implementation of changes are documented and communicated. Different management of change procedures exist for changes related to operations, TMEP, organizational structure, and legal requirements. This section will focus on the first two procedures.

OPS-environment

OPS-environment uses the *Operational Management of Change Procedure*. This procedure is organized into six stages: preparation and planning, initiating a change request, verifying and validating, approval, implementation, and close out. The output of this procedure is a management of change record.

Auditors conducted interviews and sampled records to assess implementation within operations environment. Interviews with hazard and risk subject matter specialists, as well as various positions within the company yielded responses that were consistent with what was written in the standards, plans, and procedures. Records sampled include MOCs and associated records relating to waste management, heritage resources and traditional land use, demonstrating the implementation of this process.

TMEP-environment

The *Environmental Compliance Management Plan* governs how the project manages change. It references the *Trans Mountain Expansion Project Management of Change Procedure*. The scope of this procedure includes changes with the potential to impact safety, security of people and the pipeline system, protection of the environment, or quality. Similar to OPS-environment, outputs of this procedure are a management of change record.

The *Environmental Compliance Management Plan* also references field-level environmental change management. This enables environmental field change requests to be issued to address minor modification to specifications for environmental mitigations that have been previously approved and that do not pose a significant risk to safety, security, or protection of the environment.

Auditors conducted interviews and sampled records to assess implementation within TMEP-environment. Interviews with hazard and risk subject matter specialists, as well as various positions within the company yielded responses that were consistent with what was written in the standards, plans, and procedures. Records sampled include MOCs related to modification of temporary workspace, demonstrating the implementation of this process.

Environmental Transition

The above two subsections discuss management of change as it occurs within OPS-environment, and TMEP-environment, respectively. However, the transition of TMEP assets into operations was exponentially larger than the typical types of changes seen in an organization.

The *Asset Transition to Operations Procedure* describes the various stages that the TMEP assets passed through. The *Management of Change Procedure* discussed in the previous section was used to create a MOC for the *Business Readiness Project Plan*. This plan governed the specifics of how TMEP assets were transitioned from construction to operations. A business readiness team moved the project through to operations. Key components of the *Business Readiness Project Plan* included:

- workforce acquisition;
- workspaces & work equipment;
- business processes & applications;
- operations interface;
- commissioning & start up;
- regulatory permissions; and
- closeout & records turnover.

This audit is focused on the transition of environmental governance from TMEP program to the OPS-environment program, as opposed to the asset transition referenced in the previous paragraph. This environmental transition is in progress but not yet complete. At the time of writing, one spread has been fully transitioned to OPS-environment. The remaining spreads are in progress. Environmental transition is also complete for all valves.

As part of the *Business Readiness Project Plan*, the *Environmental Operations Readiness Plan* was formed to govern the environmental transition between programs. It defines the major components shared between OPS-environment and TMEP-environment and identifies the leading group, guiding principles, roles and responsibilities, data management requirements, and schedule relating to the environmental transition. This plan also lists the following supplemental readiness plans:

- Transition Readiness Plan;
- Spread Specific Transition Plans;
- Access Deactivation Plans;
- Post Construction Environmental Monitoring;
- Indigenous Monitoring; and
- Environmental Data & Records Management Resource Planning.

The *Environmental Operations Readiness Plan* indicates that transition-related tasks started as early as 2021. Some of the transition strategies included purposefully overlapping work between TMEP-environmental staff and OPS-environment staff. For example, the plan required this overlap to occur in development and submission of environmental conditions related to post-construction mitigation, and monitoring. The plan also required TMEP-environment to develop and share an *Environmental Commitment Tracking List* **(ECTL**). This list includes items such as mutual benefit agreements, landowner agreements, CER commitments related to CER Condition 6, as well as environmental permits. The plan required
OPS-environment to conduct a gap analysis between the OPS-environment program and the TMEP Environmental Protection Program, including the commitments and conditions within the ECTL. Workplans were to be developed to close identified gaps related to environmental components including:

- air and noise;
- archaeology & cultural;
- contaminated sites (remediation);
- emergency response;
- fish and aquatic habitat;
- groundwater;
- post construction environmental monitoring;
- reclamation;
- soil;
- surface water;
- vegetation;
- waste; and
- wildlife.

The *Environmental Operational Readiness Plan* also discusses how TMEP-environment and OPS-environment will coordinate progressive reclamation activities, interim monitoring and transition, as well as post construction environmental monitoring. The plan discusses how environmental data and records are to be transitioned, which includes: baseline data, construction field data (including LRSMTs as well as
as-built trackers), and project records. Portions of this plan discuss how the company will identify and retain resources in OPS-environment to support Line 2. A new PCEM group has been added to the
OPS-environment team, which has retained key environmental personnel who were involved in

TMEP-environment. Additional roles have been hired to support items such as vegetation management, commitment tracking, reclamation, etc.

Auditors conducted interviews and sampled records to assess implementation of this larger environmental transition from TMEP-environment to OPS-environment. All of the interviews during this audit discussed topics related to management of change. Roles interviewed included the Vice President of Major Projects who oversaw the asset transition, leadership from OPS-environment and TMEP-environment, environmental specialists, as well as roles that are largely field-based including environmental inspectors, environmental planners, EHS advisors, and pipeline maintenance inspectors. Responses from these interviews were consistent with what was written in the standards, plans, and procedures.

During interviews, staff indicated that the environmental issues related to TMEP-environment are similar to those that OPS-environment already manage. The difference relates to the scale of the issue. Some exceptions to this comparison include matters pertaining to acid rock and traditional land use, which is requiring additional work to prepare operations for these two items. OPS-environment have been working closely with TMEP-environment staff to understand the work ahead. Key staff that used to work in
TMEP-environment have been transitioned to the OPS-environment team, in order to support continuity.

In addition to the *Business Readiness Plan MOC*, other records sampled included the *Environmental Post Construction Transition Checklist* for Spread 1, and the *As-Built Report for Spread 1*. The checklist indicates the status of the spread at the time of transition and is the formal mechanism to complete the environmental transition of the spread to OPS-environment. This checklist covers the following categories:

- resources and training;
- environmental walkthrough;
- outstanding scope and tasks;
- data transition (valued component, RSMT, turnover, Environmental Inspection, Resource Specialists, spatial data);
- post construction commitments (e.g., mutual benefit agreements, landowner); and
- federal and provincial conditions.

The *As-Built Report for Spread-1* provides information related to environmental issues identified during construction. It includes information on environmental mitigation measures both already implemented, and those that will need to be implemented in the future.

The company also provided the auditors a demonstration on how the data in the LRSMTs has been transferred into a GIS tool that OPS-environment now uses to identify location-specific environmental issues and sensitivities, and their associated mitigations.

AP-08 Verifying worker training and competency along with supervision expectations

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.5(1)(k)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for verifying that employees and other persons working with or on behalf of the company are trained and competent and for supervising them to ensure that they perform their duties in a manner that is safe, ensures the safety and security of the pipeline and protects the environment.
Expected outcome	• The company has a compliant process for verifying employees and other persons working with or on behalf of the company are trained and competent. • Records are maintained demonstrating employees and other persons working on behalf of the company are trained and competent as applicable to section 55 programs. • The company has a compliant process for supervising employees and other persons working on behalf of the company. • Supervision of employees and other persons working with or on behalf of the company is adequate to ensure they perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company wide
	  ○ *ISLMS*
	  ○ *Training Management Plan*
	  ○ *Contractor Competency Assurance Standard*
	  ○ *Contractor Competency Assurance Procedure*
	  ○ *Standard for Supervising Personnel*
	• OPS-environment
	  ○ *Environmental Protection Program Management Plan* (**EPP MP**)
	  ○ records related to training, role descriptions, and the Contractor Qualifications Specification **(CQS)** matrix
	• TMEP-environment
	  ○ *Environmental Compliance Management Plan*
	  ○ *TMEP Environmental Inspection Procedure*
	  ○ Records related to training, contractor competency assessment forms, role descriptions, and CQS matrix
	The following interviews are related to this finding:
	• INT 3.1 Verifying working training and competency along with supervision expectations
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists
	• INT 5.1, 5.2, and 5.3 Pipeline maintenance integrity inspectors and supervisors

Finding summary	The company has satisfied the expected outcomes listed above. Documents such as the *Training Management Plan*, *Contractor Competency and Assurance Standard*, and *Procedure*, and the *TMEP Environmental Inspection Procedure*, work together to assure the training, competency, and supervision of both staff and contractors.

Detailed Assessment

The company has a process for verifying the training and competency of staff, which is supported by records. The company also has a process for supervising all workers, to ensure they are performing their duties in a manner that protects people, property, and the environment.

This section will discuss the management system components that are applied company wide, to the OPS-environment, and to the TMEP-environment.

Company wide

The *ISLMS* provides a framework related to training competency and evaluation, as well as supervisory functions. It references the *Training Management Plan* and the *Contractor Competency Assurance Procedure*.

The *Training Management Plan* provides the process for training and qualifying employees and internal contractors to perform their assigned roles and responsibilities. The *Training Management Plan* provides a series of methods through which a competent workforce is achieved, such as:

- Developing each employee's skills based on current and future needs of the business;
- Focussing training and development resources on those areas that have the greatest impact on the company's goals; and
- Maximizing the effectiveness of job assignments by allowing multi-skilling, while taking qualification requirements and business needs into account.

These methods, among others, have been identified by the company as its approach to achieve a competent workforce. The evaluation of the training is based on overall performance and the ability to meet specified evaluation criteria. The three main evaluation criteria are:

- Informal evaluations during performance of the tasks;
- Formal performance evaluations; and
- Formal knowledge evaluations.

The *Training Management Plan* is the governing document for the training program which provides the requirements and policies necessary to ensure effective management of training and qualification for employees as well as assuring the competency of its contractors. The training program is designed to apply to all company staff and to interact with all of the ISLMS Programs.

The *Contractor Competency Assurance Standard* and *Procedure* together establish requirements for verifying training, qualification and competency of contractors. *Contractor Qualifications Specification* are developed for the various work tasks that contractors perform on the company's behalf. These specifications identify required training and qualifications. The company uses a register in ISNetworld to track contractor organizations, CQS requirements and assignments, as well as training and qualification records of relevant contractor staff. A contractor qualification monitor verifies that all contractor personnel meet company requirements prior to being authorized to work and monitors the qualification status of contractor personnel throughout the project.

The *Contractor Competency Assurance Procedure* also links to the *Standard for Supervising Personnel*.

The *Standard for Supervising Personnel* applies to all supervisors, from the front line to senior management. The document defines what supervision is and to whom it applies, which is both employees and contractors. The document goes on to state that the person who is performing the supervisory function will also be familiar with the job requirements and related standards and procedures to confirm that the workers under their control are appropriately qualified. The supervisory staff will also be responsible for ensuring that workers are aware of, and following, all applicable environmental requirements. The document states, the person performing the supervisory duties is to ensure workers are competent to perform any assigned task. In addition, people in these roles are also responsible to ensure job hazard assessments are properly completed for all work.

OPS-environment

The *Environmental Protection Program Management Plan (EPP MP)* links to the above *Training Management Plan*. Additionally, the EPP MP identifies the specific competencies and training needs for employees with EPP responsibilities. The EPP Subject Matter Experts are responsible to keep the training up to date by conducting a periodic review of the material on a frequency not to exceed three years.

Auditors conducted interviews and sampled records to assess implementation. Interviews were conducted with environmental managers, environmental specialists, environmental planners, EHS advisors, and pipeline integrity maintenance supervisors. Staff indicated that they receive environmental awareness training along with more specific training provided through the internal company training system. They also indicated additional field training takes place with more senior staff while actively working on field sites. Operational and maintenance work completed by contractors at facilities and rights of way are either supervised by OPS-environment staff, or third-party field inspectors. For these third-party field inspectors, the company offers a two-part training and evaluation system for EHS orientation. The first part is online and includes a knowledge evaluation. The second part involves one-on-one sessions with a regional EHS Advisor. Interviews with staff yielded responses that were consistent with what was written in the standards, plans, and procedures.

Approximately 10 records were sampled across OPS-environment relating to competency assessment, role descriptions, training records, and CQS matrices. Examples of roles sampled include environmental planners and EHS advisors. The company was able to provide all records. No gaps or deficiencies were identified during this document review.

TMEP-environment

In addition to the company wide requirements discussed earlier, the *Environmental Compliance Management Plan* specifies training requirements for project personnel. The levels of training include: site orientation, basic environmental awareness, intermediate environmental compliance, advanced environmental inspection, and facilities/Westridge Marine Terminal. Personnel are assigned a level of training based on their role.

The *TMEP Environmental Inspection Procedure* was revised in May 2024 to support environmental inspectors in their roles. It is an extensive document that provides the inspectors with direction on the learnings that have occurred over the life of the project.

Auditors conducted interviews and sampled records to assess implementation. Interviews were conducted with environmental managers, environmental specialists, environmental inspectors, as well as staff specialised in contractor qualification.

During interviews, company staff indicated they are now starting to use ISNetworld to permit individual workers from a contractor to a specific site. The permit system tracks a contractor's workforce and each employee's specific qualifications. Only qualified workers can be listed on a site permit based on their individual completion of their contractor qualification specifications (**CQS**). This

system includes a company's supervisors and inspectors and can be used for specialized scenarios such as an H_2S work environment. As this ISNetworld function is still new to field staff, they will still supplement what ISNetworld does by also checking contractor's tickets and certifications onsite. TMEP-environment staff indicate that they have full access to all contractors training records through ISNetworld. General contractors and craft inspectors are examples of contractors that are subject to this process. TMEP-environment staff indicate that CQS have been developed that specifically address supervisory roles, and these CQS are different than the rest of the contractor's staff. Interviews with staff yielded responses that were consistent with what was written in the standards, plans, and procedures.

Approximately 10 records were sampled across TMEP-environment relating to competency assessment, role descriptions, training records, and CQS matrices. Examples of roles sampled include environmental inspectors, and EHS advisors. Trans Mountain was able to provide all records. No gaps or deficiencies were identified during this document review.

AP-09 Coordinating and controlling operational activities

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.5(1)(q)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for coordinating and controlling the operational activities of employees and other people working with or on behalf of the company so that each person is aware of the activities of others and has the information that will enable them to perform their duties in a manner that is safe, ensures the safety and security of the pipeline and protects the environment.

Expected outcome	• The company has a compliant process that is established and implemented.
	• The methods for coordinating and controlling operational activities are defined.
	• Employees and other people working with or on behalf of the company are aware of the activities of others.
	• Employee's operational activities are planned, coordinated, controlled, and managed.
	• People working for or on behalf of the company:
	  ○ are pre-qualified for their assigned duties to ensure safety, the security of the pipeline and to protect the environment;
	  ○ are assigned work plans that have been reviewed by the company and are assessed for the interoperation with the work to be performed by other people working on behalf of the company; and
	  ○ have adequate oversight performed by company representatives for their assigned tasks to ensure safety, security of the pipeline and the protection of the environment.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company wide
	  ○ *Integrated Safety and Loss Management System*
	  ○ *Role Development and Communication Procedure*
	  ○ *Contractor Competency and Assurance Standard*
	  ○ *Contractor Competency and Assurance Procedure*
	• OPS-environment
	  ○ *Environmental Protection Program Management Plan*
	  ○ *Environmental Manual*
	  ○ *Environmental Planning Procedure*
	  ○ *Environmental Planning Procedure for Project Managers*
	  ○ *Safe Work Permit*
	  ○ *TMPL Operations Access Requirements to TMEP Work Locations – Guideline*
	  ○ records relating to environmental protection plans
	• TMEP-environment
	  ○ *Environmental Compliance Management Plan*
	  ○ *Trans Mountain Expansion Project Work Authorization Procedure*
	  ○ *Trans Mountain Expansion Project C-3 Contractor Environmental Requirements*
	  ○ records relating to work authorizations
	The following interviews are related to this finding:
	• INT 3.2 Coordinating and controlling operational activities
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists
	• INT 4.3 Data transition
	• INT 5.1, 5.2, and 5.3 Pipeline maintenance integrity inspectors and supervisors

Finding summary	The company has satisfied the expected outcomes listed above. Together, documents such as the *Role Development and Communication Procedure*, *Contractor Competency and Assurance Standard* and *Procedure*, *Environmental Planning Procedure*, *Trans Mountain Expansion Project Work Authorization Procedure, and Trans Mountain Expansion Project C-3 Contractor Environmental Requirements* make up the process to coordinate and control operational activities.

Detailed Assessment

Through a combination of processes, procedures, work instructions, and permitting, the company has the tools needed for coordinating and controlling the work activities at its facilities and along its rights-of-way. Similar but slightly different tools are in use between OPS-environment and TMEP-environment. Inspection and monitoring completed by company staff and approved representatives plays a key role for the company in ensuring the work being done is done safely and protects the environment.

This section will discuss the management system components that are applied company wide, to the OPS-environment, and to the TMEP-environment.

<u>Company wide</u>
The *Role Development and Communication Procedure* indicates how roles, responsibilities, and authorities are determined, documented, validated, and communicated across the company. This applies to all employees. Managers and directors are to complete a job description questionnaire (**JDQ**) for all positions that report to them. The questionnaire provides information on job

components such as job details, key deliverables, qualification requirements, etc. Once approved by Human Resources, the JDQ can be applied to specific positions. If a change or update needs to be made to a JDQ, it goes through a series of steps in Human Resources for review and approval. When an individual assumes a new position, both they and their manager must sign the associated JDQ, indicating that they have reviewed, acknowledged, and accepted the JDQ. Approval recurs annually.

The *Contractor Competency and Assurance Standard* and *Procedure* describes how contractors are pre-qualified for their assigned tasks to ensure the protection of the environment. Through the various permitting processes, employees and contractors need to have specific training and competencies in place before they can access a worksite. This is discussed in more detail in AP-08.

OPS-environment

The *Environmental Protection Program Management Plan* defines how the program interacts with the other ISLMS programs, the roles and responsibilities of key personnel within the program (i.e., EHS director, environmental manager, environmental specialists, environmental planners, and EHS advisors), contractor requirements, as well as the operational controls and associated processes that must be followed (listed in AP-06). The *Environment Manual* provides more details on operational controls.

Coordination of activities to protect the environment is governed primarily via the *Environmental Planning Procedure*, and *the Environmental Planning Procedure for Project Managers*. These procedures require environmentally specific information to be communicated to relevant staff via a project-specific environmental protection plan. The environmental planner is responsible for:

- communicating the requirements of the environmental protection plan to project personnel during project kick-off;
- working with the project manager to ensure the requirements are upheld during on-site work activities; and
- conducting environmental inspections.

The *TMPL Operations Personnel Access Requirements on TMEP Work Locations Guideline* is used to inform how OPS-environment personnel are to conduct work on a TMEP-environment work location.

Auditors conducted interviews and sampled records to assess implementation. Interviews were conducted with environmental managers, environmental specialists, environmental planners, EHS advisors, and pipeline integrity maintenance supervisors. Interviews yielded responses that were consistent with what was written in the standards, plans, and procedures. Field staff interviews indicated, as inspectors of various field activities, they do coordinate the activities of different groups and contractors on an almost daily basis. Field staff referred to the field EPPs as one of the tools used to ensure coordination during the opening and field kick-off meetings. Field staff also indicated they commonly coordinate between civil work contractors and environment contractors while completing integrity digs. Field staff also indicated they help to ensure the competencies of contractors hired to complete the company's work are complete and up to date.

Records sampled include 3 environmental protection plans, and examples of environmental inspections. The company was able to produce the records requested, indicating the processes were being used.

TMEP-environment

Section 4 of the *Environmental Compliance Management Plan* sets a framework for the roles and responsibilities relating to environmental compliance.

The *Trans Mountain Expansion Project Work Authorization Procedure* builds upon this framework. This procedure is discussed in more detail in AP-06. It requires a work authorization form to list, among other things, work activities, environmental risks and controls. Both the company and the contractor must sign it prior to starting work. Signing the form indicates the parties agree to its terms. The company must provide oversight during work activities to ensure the requirements within the form are adhered to. A work authorization is valid for one 12-hour day.
The *Trans Mountain Expansion Project C-3 Contractor Environmental Requirements* lists the requirements that contractors are to follow. This document is included in the contracts between the company and the respective contractors. It lists the various requirements, as well as the process that must be followed. Examples of requirements include those relating to water pump off, environmental incident reporting, spill prevention and refuelling practices, nesting birds, drainage, erosion and sediment control, wet weather / extreme weather conditions, and others.

Auditors conducted interviews and sampled records to assess implementation.

Interviews with managers, environmental inspectors, and non-environmental field staff yielded responses that were consistent with what was written in the standards, plans, and procedures. Staff indicated that contractor(s) complete the work authorization for the work area. A site walkthrough with the contractor(s) and inspector is completed to ensure everyone has the same understanding as to what's to be done and if there are any special features that need to be highlighted prior to the start of work. Interviews yielded responses that were consistent with what was written in the standards, plans, and procedures.

Auditors sampled 30 work authorization records from specific spreads and specified time frames. The company was able to provide all records requested, indicating the processes were being used.

AP-10 Internal reporting of hazards, potential hazards, incidents, and near-misses

Finding status	No issues identified
Regulation	OPR
Regulatory reference	6.5(1)(r)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for the internal reporting of hazards, potential hazards, incidents and near-misses and for taking corrective and preventive actions, including the steps to manage imminent hazards.
Expected outcome	• The company has a compliant process that is established and implemented. • The company has defined its methods for internal reporting of hazards, potential hazards, incidents and near-misses. • Hazards and potential hazards are being reported as required by the company's process. • Incidents and near-misses are being reported as required by the company's process. • The company has defined how it will manage imminent hazards. • The company is performing incident and near-miss investigations. • The company's investigation methodologies are consistent and appropriate for the scope and scale of the actual and potential consequences of the incidents or near- misses to be investigated. • The company has defined the methods for taking corrective and preventive actions. • The company can demonstrate through records that all corrective and preventative actions can be tracked to closure.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company wide
	  ○ *Incident Reporting and Investigation Standard*
	  ○ *Incident Notification and Initial Entry Procedure*
	  ○ *Incident Investigation and Corrective Actions Procedure*
	  ○ *Hazard Identification and Reporting Procedure*
	• OPS-environment
	  ○ *Environmental Protection Program Management Plan*
	  ○ records relating to a list of environmental hazards and incidents reported in 2024, records associated with two of these environmental hazard reports, and two of these incident reports
	• TMEP-environment
	  ○ *TMEP Environmental Compliance Management Plan*
	  ○ *TMEP Environmental Event Management Procedure*
	  ○ records relating to a list of environmental hazards and incidents reported in 2024, records associated with three of these environmental incident reports, and four of these environmental hazard reports
	The following interviews are related to this finding:
	• INT 2.4 Internal reporting of hazards, potential hazards, incidents and near-misses
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists
	• INT 5.1, 5.2, and 5.3 Pipeline maintenance integrity inspectors and supervisors

Finding summary	The company has satisfied the expected outcomes listed above. Together, documents such as the *Incident Reporting and Investigation Standard*, the *Hazard Identification and Reporting Procedure*, and the *TMEP Environmental Event Management Procedure* work together to form the process for reporting hazards, incidents, and near-misses, and for taking corrective actions.

Detailed Assessment
The company has internal processes and procedures for the internal reporting of hazards, incidents, and near-misses for both OPS-environment and TMEP-environment. This includes how to manage imminent hazards, should they be identified. Investigations are completed on incidents and CAPAs are identified where necessary to mitigate and hopefully prevent similar re-occurrences.

This section will discuss the management system components that are applied company wide, to the OPS-environment, and to the TMEP-environment.

<u>Company wide</u>
The company provided its *Incident Reporting and Investigation Standard* to demonstrate that it has a process in place for this management system requirement. The standard is to be applied in a consistent manner across all of the company's ISLMS Programs. A severity matrix is used to determine the actual and potential severity of the event. The document lays out the roles and responsibilities for various company staff that may become involved in an incident investigation. The document also defines what an incident and a near-miss is, how they are reported internally and externally, and at what severity level an incident will require a follow-up investigation. The standard also provides:

- Direction on the company's investigative methodologies;
- The difference between formal and informal investigations;
- Trending requirements for each ISLMS Program that conducts investigations;

- Training required to be an investigator or a lead investigator; and
- Information on how CAPAs are assigned and tracked to completion.

In the *Hazard Identification and Reporting Procedure*, the company has defined what a hazard, potential hazard, and imminent hazard are. The procedure also provides the authority to any employee or contractor who identifies a hazard or potential hazard to communicate this issue using the company's internal reporting software. If the employee or contractor believes, using their best judgement, the hazard is imminent in nature they are to report the situation to the Control Centre immediately who will start the required notification and response procedures. For non-emergent issues, hazard identification and reporting are through a software system. This software system allows the user to input the location of the hazard, the time of observation, whether it is an abnormal operating condition, a description of the hazard, and to attach any other relevant documentation among other things. The software system will track the hazard through all of the reporting, investigation, and follow-up steps including requiring a program representative to ensure that all completed actions taken will fully address the identified hazard. As an oversight step, an action owner has the ability to reject the details of the assigned work, the target completion date, or they can work with the program representative to make additional changes.

OPS-environment

Section 16 of the *Environmental Protection Program Management Plan* provides a framework relating to incident reporting and investigation. It links to the company wide documents listed above, provides additional environmental context regarding how to define an environmental incident, and requires that these incidents be analyzed for trends.

To determine implementation of the process as it relates to OPS-environment, the auditors conducted interviews and sampled records.

Interviews were conducted with environmental managers, environmental specialists, environmental planners, EHS advisors, and pipeline integrity maintenance supervisors. Their responses aligned with what is written in the procedures.

Field staff indicated that while they do not focus on only identifying environmental hazards, it does occur from time to time. Pipeline maintenance staff will call upon environmental planners, who are specialized field staff, to assist them with this task.

Records sampled included a list of environmental hazards and incidents reported in 2024, records relating to two of the reported hazards, and records relating to two of the reported incidents. The company was able to provide all records.

TMEP-environment

The *TMEP Environmental Compliance Management Plan* provides a framework relating to hazard and incident reporting, as well as incident investigation. It provides links to additional TMEP-specific procedures.

The *TMEP Environmental Event Management Procedure* identifies the following 5 phases of the environmental event management:

- Incident and notification;
- Initial CAPAs;
- Documentation and communication;
- Investigation and additional CAPA as required; and
- Continual improvement.

This procedure states it provides a structured approach to identify, report, investigate, and follow-up on environmental incidents and significant environmental deficiencies, which are defined as taking longer than one day to correct. As part of this procedure, implementing CAPAs is a requirement

where environmental deficiencies or environmental events have been identified. The document also lays out the roles and responsibilities of staff from the director of environment to field level environmental inspectors and Indigenous monitors. The procedure requires that any hazard(s) identified during any stage of the incident management procedure be reported to the TMEP unified hazard and risk register. For imminent hazards or risks identified during the initial action phase of a response that might lead to a significant adverse impact on the environment, actions may be taken in consultation with the environment inspector, project manager, and construction manager. Similar to OPS-environment, all environment events are to be reported using the internal software system.

Under the following conditions a joint Trans Mountain operations / TMEP investigation may be held:

- A significant violation of the facility environmental practice rules;
- An in-service operating asset or property is damaged as a result of TMEP construction execution; and
- Any other incident where TMEP senior management decides that a joint investigation is required.

In addition to the above joint investigations, TMEP-environment will bring in an outside investigator for larger environmental incidents to ensure objectivity. By doing this, TMEP-environment staff are not placed in the middle of the investigation and the results should be more objective in nature.

During interviews, company staff indicated that internal quality assurance activities look at:

- How long it takes for investigations or CAPAs to be completed;
- The investigators severity rankings of incidents to determine if they've been reasonably assessed; and
- Hazard assessments to determine if they are adequate or need to be sent back for additional work.

As part of the audit, the auditors sampled a list of environmental incidents and environmental hazards reported in 2024, records related to three of the incident reports, and records relating to four of the hazard reports. The company was able to provide the records, indicating the process has been implemented.

AP-11 Inspecting and monitoring

Finding status	Non-compliant
Regulation	OPR
Regulatory reference	6.5(1)(u)
Regulatory requirement	A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for inspecting and monitoring the company's activities and facilities to evaluate the adequacy and effectiveness of the programs referred to in section 55 and for taking corrective and preventive actions if deficiencies are identified.
Expected outcome	• The company has a compliant process that is established and implemented. • The company has developed methods for inspecting and monitoring their activities and facilities. • The company has developed methods to evaluate the adequacy and effectiveness of the programs referred to in section 55. • The company has developed methods for taking corrective and preventive actions when deficiencies are identified. • The company is completing inspections and monitoring activities as per the company's process. • The company retains records of inspections, monitoring activities, and corrective and preventive actions implemented by the company.

Relevant information provided by the company	The following key documents and records are related to this finding:
	• Company Wide
	  ○ *ISLMS*
	  ○ *Inspection, Measurement and Monitoring Standard*
	  ○ *Inspection Measurement and Monitoring Procedure*
	  ○ *Continual Improvement Standard*
	  ○ *Quality Assurance Management Plan*
	  ○ *Compliance Audit Standard*
	  ○ *Effectiveness Review Procedure*
	• OPS-environment
	  ○ *Environmental Protection Program Management Plan*
	  ○ *Environmental Inspection Procedure*
	  ○ *Environmental Inspection Form*
	  ○ Records: *2024 EPP IMM Plan*, EHS facility inspection reports and monthly environmental inspection reports, safe work permits, list of environmental hazards and incidents reported in 2024, records associated with two environmental hazards reports and two environmental incident reports
	• TMEP-environment
	  ○ *TMEP Environmental Compliance Plan*
	  ○ *TMEP Environmental Inspection Procedures Manual*
	  ○ Records: *2024 TMEP EPP IMM Plan,* work authorizations, and focused inspections
	The following interviews are related to this finding:
	• INT 3.3 Inspecting and monitoring
	• INT 4.1 EHS advisors, environmental planners, environmental inspectors
	• INT 4.2 Environmental specialists
	• INT 5.1, 5.2, and 5.3 Pipeline maintenance integrity inspectors and supervisors

Finding summary	The company did not satisfy the expected outcomes listed above. While the company has developed methods to evaluate the adequacy and effectiveness of the environmental protection program, errors in OPS-environment suggest that their methods may be insufficient. As it relates to TMEP-environment, record sampling revealed gaps in the IMM Plan, and descrepencies between what was in the IMM plan and what actually occurred in the field.

Detailed Assessment

This section will first discuss the company's process and then will discuss the deficiencies.

<u>Company wide</u>
The *ISLMS* discusses the requirements for programs to plan, execute, and evaluate their inspection, measurement, and monitoring activities. It also references the *Inspection Measurement and Monitoring Standard*, and its associated *Procedure.* The standard describes the steps for planning and executing inspection, measurement, and monitoring activities to evaluate the adequacy and effectiveness of the company's ISLMS programs, including the environment and TMEP program. It requires each program to develop an annual monitoring plan. The IMM Procedure provides more detail on specifics relating to the annual monitoring plan. This monitoring plan is to include, for each monitoring activity:

- The scope, frequency, methodology, role responsible, and timeline to be applied;
- The company standard(s), procedures, or industry standards for conducting the activity; and

- The criteria used to evaluate findings and to analyze results of the activity.

The *IMM Procedure* also requires the monitoring plan to be reviewed to determine:

- the completion status of each monitoring activity; and
- any significant findings or trends that were observed from the analysis of the monitoring activities completed.

If any significant findings are identified, a summary of the findings and the resulting CAPAs is to be added to the review.

Also linked to the IMM standard and procedure, is the *Continual Improvement Standard*. This standard sets the framework for the review of *ISLMS* programs (such as the Environmental Protection Program related to OPS-environment, and the TMEP program relating to TMEP-environment), and any resulting CAPAs.

OPS-environment

The *Environmental Protection Program Management Plan* links to the company-wide *IMM Standard* and the *IMM Procedure* and describes the different types of inspection and monitoring required to be conducted by the OPS-environment team. An annual monitoring plan is to be developed and updated, which details the types of monitoring that will occur throughout the year. Monitoring activities include both environmental inspections and EHS Facility inspections. Corrective and preventive actions are to be implemented to resolve deficiencies identified via IMM activities.

The *Environmental Inspection Procedure* outlines the requirements associated with completing environmental inspections. The procedure states environmental inspections are conducted to evaluate the implementation of environmental requirements and mitigation measures, confirm compliance with
site-specific environmental protection plans, and to identify and communicate areas for improvement. For longer duration projects, multiple inspections shall be carried out at different stages of the project. Both internal and third-party environmental consultants can complete these environmental inspections.

Thus, OPS-environment has established a process that includes methods for inspecting and monitoring their activities and facilities, and methods for evaluating adequacy and effectiveness. The process requires corrective and preventive actions to occur when deficiencies are identified.

Auditors conducted interviews and sampled records to assess implementation.

Interviews with environmental managers, environmental specialists, environmental planners and EHS advisors yielded responses that were consistent with what was written in the standards, plans, and procedures. For example, staff indicated that they complete environmental inspections on all integrity digs that take place in the lower mainland. As part of the environmental inspections, checks are done on the contractor's construction reports. Field staff attempt to time their site-specific visits when contractors are doing their highest risk or most sensitive work, such as stream work. Staff also indicated that weather events can and do have an impact on the inspection schedule. Company operations have a list of natural hazards which may be checked at specific locations if a weather event takes place. Part of this is done through aerial surveillance which helps to determine where to go and when it's required. Field staff stated they have been involved in TMEP construction spread walkthroughs with multidisciplinary teams where any deficiencies are identified prior to the hand-over from construction to operations. Plans are then made to address the deficiencies over the winter for spring implementation. Staff also indicated they work with the pipeline maintenance teams to address deficiencies identified in areas that have already been transferred to OPS-environment.

Records sampled included the *2024 EPP IMM Plan* and inspection reports. The *2024 EPP IMM Plan* listed 16 different monitoring activities. Each monitoring activity has additional information such as the associated hazard and risk, procedure to use, frequency of activity, role responsible, etc. Types of monitoring activities include EHS facility inspections, environmental inspections, post-construction environmental monitoring, etc. Based on this *EPP IMM Plan*, the auditors sampled four EHS facility inspection reports and four monthly environmental inspection reports. The company was able to produce the records requested, indicating the processes were being implemented.

However, sampling of other records uncovered some implementation-related deficiencies. Through the sampling of 15 safe work permits, a list of environmental incidents and hazards reported in 2024, and records relating to four of these reports, the auditors have uncovered several issues. These either had not been identified by the company's inspection, measurement and monitoring process, or were not assessed with the same level of environmental concern as the auditors had expected. Issues were identified during the sampling of a list of environmental events and hazards reported in 2024, and records relating to four hazard/event reports within this list.

The first deficiency relates to the classification of an environmental incident. One of the incidents was classified as a near-miss, even though environmental damage occurred. The list of environmental incidents reported in 2024 included an event involving a riparian area. Vegetation within a riparian buffer zone was accidentally mowed. The company indicated there was no resulting environmental impact. However, the removal of vegetation in a riparian zone may negatively impact the environment, as it relates to the resulting erosion, sedimentation, and the loss of habitat for wildlife that depends on these areas for food and shelter.

The second set of deficiencies relate to environmental incident and hazard identification reports. They contained issues relating to the required corrective actions.

The first record relates to an environmental event report where an exposed pipeline possibly impeded fish passage. The deadline for the action items was overdue by approximately two months. The company indicated that the hazard and risk monitoring team flagged the overdue action and reported it to management on 1 November 2024. However, no action was taken until the CER asked for the records during the audit (on 3 December 2024). Two days after the CER request was made, the action was closed. When prompted, the company did provide evidence that the overdue action item was flagged and reported to directors. The company did not provide an explanation as to why the directors allowed the overdue action to persist.

The other record involved a hazard identification report where an amphibian breeding pond complex did not have an appropriate access crossing in place. Unsanctioned use of the crossing had the potential for incidental take of amphibians. The hazard was identified in September 2024, entered into the system one month later in October 2024, reviewed by OPS-environment in late November 2024 and changed to closed the same day. No action item was added to mitigate the environmental hazard. The company indicated that the time discrepancies related to staff becoming familiar with a new process. This situation involved OPS-environment assessing the report and TMEP-environment reviewing and assigning corrective actions. When asked, the company indicated that the assigned corrective action in the record is just a means to initiate the transfer between programs and does not apply to the corrective actions to be completed in the field to address the hazard, which is inconsistent with the hazard and event reporting process, discussed more in AP-10. The record initially provided to the CER indicated that the action plan deadline was 'over 1 week left'. The company provided a subsequent screenshot that indicated some milestone was started on 27 November 2024, due on 17 December 2024, and completed on 11 December 2024. Several discrepancies exist in this record, and it is unclear what action was required and if it was done. This is an example of an activity where the transition between OPS-environment and TMEP-environment is in progress and the two groups may not have been sufficiently prepared to synchronize efforts.

This audit report is not focusing on the deficiencies related to following the hazard and incident reporting process. Instead, it is focusing on the failure of the IMM process to identify and resolve these deficiencies. The audit sample is small; thus, it is not possible to determine how well it represents the remaining
OPS-environment records not assessed, and to what degree this issue persists.
The auditors do not believe there is a wholescale problem with all of OPS-environment established IMM processes. Instead, the implementation of these IMM processes appears to be insufficient to detect and resolve at least some of the issues, some of the time.

TMEP-environment
Section 6 of the *TMEP Environmental Compliance Management Plan* links to the company-wide *IMM Standard* and *Procedure* and details the requirements for inspection and monitoring. It requires the development of an annual IMM plan that details the type of IMM activities that are to occur during the year. It also requires daily environmental inspection reports and monthly environmental inspection reports to document environmentally related information. Deficiencies are to be resolved via corrective and preventive actions.

The *TMEP Environmental Inspection Procedures Manual* is an extensive document that details how it ensures that the quality of work performed conforms to the requirements of the ISLMS and meets all regulatory requirements and stakeholder commitments. This manual provides environmental inspectors with expectations on:

- Addressing environmental events and deficiencies;
- Field inspection, documentation, and internal reporting requirements;
- The roles and responsibilities of the environmental inspection team; and
- Regulatory reporting and site visits to name a few.

This manual lists a total of 28 different environmental focus inspections that can be carried out depending on the nature and location of the work being completed. Examples include:

- Drainage, erosion, and sediment control;
- Watercourse crossings;
- Biosecurity – Whirling disease;
- Hydrostatic testing;
- Refuelling, etc.

The appendix of this document outlines:

- contractor environmental requirements and reference documents;
- environmental inspection requirements;
- environmental monitoring risk management framework that outlines the frequency of monitoring for low, medium and high-risk areas during the construction phase;
- interim environmental monitoring risk management framework that outlines the frequency of monitoring for low, medium, and high-risk areas during post construction phase prior to the transition to operations; and
- environmental deficiency risk management framework, which outlines acceptable timelines for resolving environmental deficiencies tagged as low, medium, and high risk.

Thus, TMEP-environment has established a process that includes methods for inspecting and monitoring their activities and facilities, and methods for evaluating adequacy and effectiveness. The process requires corrective and preventive actions to occur when deficiencies are identified.

Auditors conducted interviews and sampled records to assess implementation. Interviews with environmental managers, environmental specialists, and environmental inspectors, yielded responses that were consistent with what was written in the standards, plans, and procedures.

Records sampled included the 2024 *TMEP EPP IMM*, 30 work authorizations, and approximately 10 focused inspections. Some implementation related deficiencies were identified when reviewing these records.

The *2024 TMEP EPP IMM* listed 22 different monitoring activities. Similar to OPS-environment, each monitoring activity has additional information such as associated hazard and risk, procedure to use, frequency of activity, role responsible, etc. However, for the majority of monitoring activities, the frequency was tagged ‘as needed’, and the associated procedure field was blank. Therefore, the requirements set forth in the *IMM Standard* and *Procedure* were not met.

The auditors then sampled approximately 10 focused inspections related to erosion & sediment controls, pump-off, culturally modified trees, clean-up and reclamation, and refuelling for each of the spreads. The company was able to produce at least one of each focused inspection requested, but not for each of the spreads, as requested. The company indicated that the inspections were tailored to the type of activity occurring on the site. For example, the spreads with the first phase of reclamation activities underway were monitored via substantial completion forms. These forms are used to confirm final clean up and reclamation measures have been completed as per specifications. The company indicated it completed 700 substantial completion forms. For spreads where the first phase of reclamation was complete, the company conducted pre-PCEM inspections. The company indicated that it completed 3,300 pre-PCEM inspections. However, neither substantial completion forms nor pre-PCEM inspections were listed as a monitoring activity in the *2024 TMEP EPP IMM*. The IMM plan shall both depict and drive the IMM activities implemented, which does not appear to have occurred in this case. The sampling revealed discrepancies between what was in the plan and what actually occurred in the field.

Appendix 2: Terms and Abbreviations

For a set of general definitions applicable to all operational audits, please see Appendix I of the CER Management System Requirements and CER Management System Audit Guide found on www.cer-rec.gc.ca.

Term or Abbreviation	Definition
CAPA	Corrective and Preventative Action Plan
CER	Canada Energy Regulator
CER Act	*Canadian Energy Regulator Act* (S.C. 2019, c.28, s.10)
CQ	Contractor Qualification
GIS	Geographic Information Systems
ECTL	Enviroi.enmental Commitment Tracking List
EHS	Environment, Health and Safety
EPP	Environmental Protection Program
IMM	Inspection, Measurement, and Monitoring
ISLMS	Integrated Safety and Loss Management System
JDQ	Job Description Qualification
LRSMT	Living Resource Specific Management Tables
OPR	*Canadian Energy Regulator Onshore Pipeline Regulations* (SOR/99-294)
PCEM	Post Construction Environmental Monitoring
PLM	Pipeline Integrity Maintenance
OPS-environment	Department within Trans Mountain that governs environmentally-related work in the operations group. This department works within the Environmental Protection Program.
SME	Subject Matter Expert
The company	Trans Mountain Pipeline ULC
TMEP or ‘the project’	Trans Mountain Expansion Project
TMEP-environment	Department within Trans Mountain that governs environmentally-related work as it relates to TMEP. This department works within the TMEP Quality Assurance Program.
UHRR	*Unified Hazard and Risk Register*