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Final Audit Report

Auditee: PKM Cochin ULC

Audit Topic: Contaminated Sites Management

CV2122-257

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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: Contaminated Sites Management operational audit of PKM Cochin ULC (the **auditee**) between 10 May 2021 and 1 November 2021.

The objective of this audit is to verify that the auditee manages contaminated sites as a component of its Environmental Protection Program (**EPP**) as per the requirements of the OPR.

Of 15 audit protocols; seven were deemed no issues identified. The remaining eight were deemed non-compliant. Table 1 summarizes the audit findings. Detailed assessments can be found in Appendix 1.

Non-compliant findings relate to deficiencies in the auditee's environmental hazard identification and risk assessment process, competency assessments, and hazard reporting. In general, the auditee has conducted insufficient research to reasonably negate or identify the presence of potential historically contaminated sites.

Within 30 calendar days of receiving the final audit report, the auditee shall file with the CER a Corrective and Preventative Action (**CAPA**) Plan that details 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 believes the auditee 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.

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1.0 Background

1.1 Introduction

The 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.

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: Contaminated Sites Management operational audit of the auditee between 10 May 2021 and 1 November 2021.

1.2 Description of Audit Topic

While the OPR does not have a specific requirement for contaminated sites, the CER expects the company's EPP to proactively manage contaminated and suspected contaminated sites. The protection of ecological and human health must be maintained throughout a facility's lifecycle, so the appropriate management of contaminated and potentially contaminated sites is a critical activity.

1.3 Company Overview

PKM Cochin ULC consists of 1,017 km of pipeline and 10 pump stations and is the focus of this audit. The pipeline currently moves approximately 100,000 barrels per day of condensate from Elmore Saskatchewan to Fort Saskatchewan Alberta (Figure 1).

The Cochin pipeline has been operating since 1979 under various ownership. Originally, the pipeline moved propane eastward from Fort Saskatchewan to Windsor, Ontario. In July 2014, the direction of flow was reversed to transport condensate westbound.

Pembina Pipeline Corporation acquired the Cochin pipeline in December 2019. Between December 2019 and June 2020, the pipeline was operated pursuant to a transitional services agreement. The majority of transitional services concluded 30 June 2020. Pembina Pipeline Corporation now operates the pipeline within a subsidiary named PKM Cochin ULC.

The Pembina Pipeline Corporation management system is now applicable to PKM Cochin ULC.

Currently, PKM Cochin ULC has one known contaminated site, which is a result of a release from a third party that has migrated onto the auditee's pipeline right-of-way.

The map below depicts the auditee’s CER regulated assets (Figure 1).

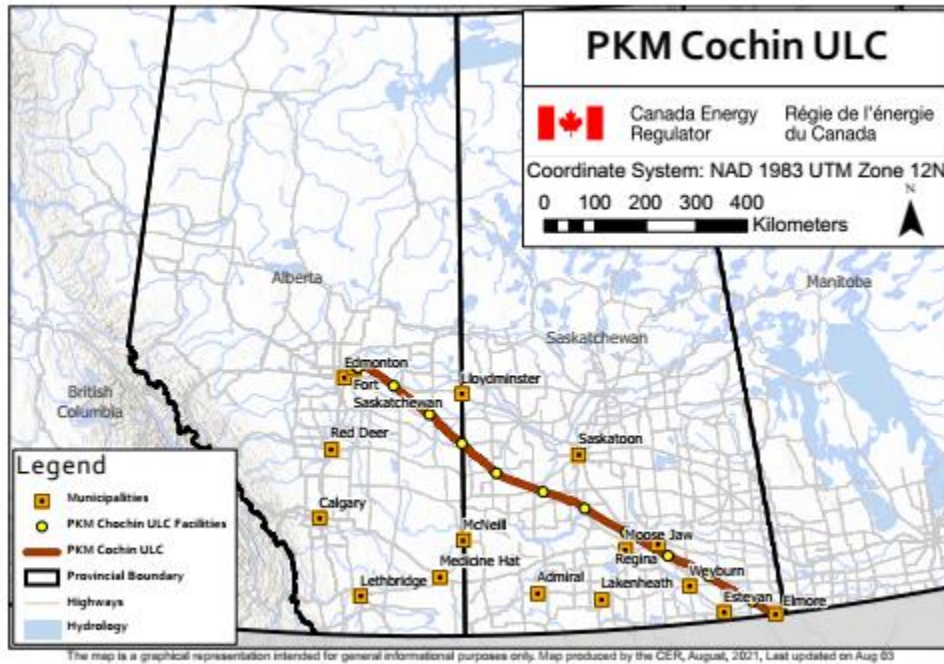


Figure 1. Map of PKM Cochin ULC Pipeline and Pump Stations

2.0 Objectives and Scope

The objective of this audit is to verify that the auditee manages contaminated sites as a component of its EPP as per the requirements of the OPR.

The table below outlines the scope selected for this audit.

Audit Scope	Details
Audit Topic	Contaminated Sites Management
Lifecycle Phases	<input checked="" type="checkbox"/> Construction <input checked="" type="checkbox"/> Operations <input checked="" type="checkbox"/> Abandonment

Audit Scope	Details
Section 55 Programs	<input type="checkbox"/> Emergency Management <input type="checkbox"/> Integrity Management <input type="checkbox"/> Safety Management <input type="checkbox"/> Security Management <input checked="" type="checkbox"/> Environmental Protection <input type="checkbox"/> Damage Prevention
Time Frame	Not Applicable

The following are scope limitations to this audit. First, this audit does not serve as a certificate or approval of any specific remediation activities. Although documents were sampled from specific sites, this audit is not a comprehensive assessment of all site-specific remediation activities. Second, this audit does not address emergency management and/or incident response practices that would either prevent the creation of a contaminated site or minimize the magnitude of a contaminated site.

3.0 Methodology

The CER auditors (**auditors**) conducted a sampling of the auditee’s management system processes, procedures, work instructions, and environmental program documentation related to contaminated sites. However, the auditors did not review and assess all management system documentation, nor did they review all environmental protection documentation. A sampling of documents and records was conducted for specific sites.

The auditors assessed compliance through:

- Document reviews;
- Record sampling; and
- Interviews.

The list of documents reviewed, records sampled, and the list of interviewees are retained on file with the CER.

An audit notification letter was sent to the auditee on 10 May 2021 advising the auditee of the CER’s plans to conduct an operational audit. The lead auditor provided the audit protocol and initial information request to the auditee on 14 May 2021 and followed up on 20 May 2021 with a meeting with the auditee staff to discuss the plans and schedule for the audit. Document review began on 29 June 2021 and interviews were conducted between 20 September 2021 and 1 October 2021. The delay between document review and interviews was as per the auditee’s request to enable auditee staff to take vacation in August. Interviews had previously been scheduled for August.

In accordance with the established CER audit process, the lead auditor shared a pre-closeout summary of the audit results on 19 October 2021. At that time, the auditee was given five business days to provide any additional documents or records to help resolve the identified gaps in information or compliance. Subsequent to the pre-closeout meeting, the auditee provided additional information to assist the lead auditor in making their final assessment of compliance. The lead auditor conducted a final close out meeting with the auditee on 1 November 2021.

This audit was conducted during the Covid pandemic. All interactions with the auditee were virtual (i.e., through Microsoft Teams). No face-to-face contact between the auditors and auditee occurred, and no field inspections were conducted.

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 auditee and reviewed by the auditor within the context of the audit scope; or
- Non-Compliant – The auditee has not demonstrated that it has met the legal requirements. A corrective and preventive action plan shall be developed and implemented to resolve the deficiency.

Note that 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 1: Summary of Findings

Audit Protocol (AP) Number	OPR Regulatory Reference	Topic	Finding Status	Finding Summary
AP-01	6.4(c)	Annual Documented Evaluation of Need	No issues identified	The auditee has satisfied the expected outcomes above via the <i>Operations Management System (OMS) 4.1 Roles and Responsibilities Standard</i> , the <i>ENV 7.4 ENV-MP Resource Evaluation Standard</i> , and a screenshot of the 2021 budget workforce plan.
AP-02	6.5(1)(a)	Setting Objectives and Specific Targets	No issues identified	The auditee has established and implemented a process (via <i>OMS 3.1 Goals, Objectives, and Targets Standard</i> , <i>ENV 2.3 Goals, Objectives and Targets Standard</i> , and <i>ENV 8.1 Management Review Standard</i>), where objectives and targets are set to achieve goals as per subsection 6.3(1) of the OPR. The objectives and targets are relevant to the management system and the EPP, includes an annual review of the objectives and targets, and identifies corrective actions for missed targets. This satisfies the expected outcomes.
AP-03	6.5(1)(b)	Performance Measures	No issues identified	The auditee has provided several documents that demonstrate that performance measures have been developed and implemented to measure achievement of goals, objectives, and targets. This satisfies the expected outcomes.

Audit Protocol (AP) Number	OPR Regulatory Reference	Topic	Finding Status	Finding Summary
AP-04	6.5(1)(c)	Identifying and Analyzing all Hazards and Potential Hazards	Non-compliant	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - <i>ENV 2.2 Environmental Risk Management Standard</i> outlines steps to identify hazards but does not reference management of change or incident reporting as a trigger to re-assess the hazards. - The process is not considered implemented because the <i>ENV 2.2 Cochin Hazard Identification and Risk Assessment (HIRA) v1.02 July 27 2021 (Cochin HIRA Report)</i> is still in draft form. - Methods for hazard identification are not appropriate for the nature, scope, scale, and complexity of the company's operations, activities, and section 55 programs. Absence of information does not necessarily mean absence of historically contaminated sites. - A known contaminated site does exist, and it is not referenced in the Cochin HIRA Report.
AP-05	6.5(1)(d)	Hazard Identification	Non-compliant	Because the PKM Cochin Hazard Identification and Risk Assessment Report is in draft form, it is not considered established.
AP-06	6.5(1)(e)	Risk Assessment	Non-compliant	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - <i>ENV 2.2 Cochin HIRA v1.02 July 27 2021</i> is in draft, and thus not established. - Likelihood and severity of risks related to contaminated sites depend on the source, receptor, and pathway, and thus is site specific. Assuming 1,000 km of pipeline has equal likelihood and severity of risk is not appropriate for the nature, scale, and complexity of the pipeline. - No site assessment reports were reviewed, and no site assessments were conducted to negate the potential for historical contaminated sites. - The process has not assessed risks associated with abnormal operating conditions as is required by this paragraph of the OPR.

Audit Protocol (AP) Number	OPR Regulatory Reference	Topic	Finding Status	Finding Summary
AP-07	6.5(1)(f)	Controls	Non-compliant	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - a control referenced by the process is in draft form (<i>Contaminated Site Management Guideline</i>); - Cochin HIRA Report which identifies risks and controls is in draft form; - Cochin HIRA Report identifies incomplete Environmental Site Assessments (ESA's) as a risk but provides insufficient mitigations; and - the auditee has conducted insufficient research to reasonably negate the presence of the potential for historical contaminated sites.
AP-08	6.5(1)(h)	Legal List	No issues identified	<p>The auditee has established and maintained a list of legal requirements that is communicated to appropriate personnel and that has been developed to the clause level for the environment program. This satisfies the expected outcomes.</p>
AP-09	6.5(1)(j)	Training, Competence and Evaluation	Non-compliant	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - ENV 3.2 does not satisfy the definition of a process as specified within the audit protocol; - the auditee does not define minimum competencies for relevant personnel related to historical contaminated site identification and reporting, nor how these competencies will be assessed; and - the outputs from ENV 3.2 do not evidence contractor training and competencies.
AP-10	6.5(1)(m)	Communication	Non-compliant	<p>Communication requirements are spread throughout numerous documents and processes both formally, and informally. While a communications process is not limited to one document, the documents must link together to form a cohesive logical whole. No evidence of this has been provided.</p>

Audit Protocol (AP) Number	OPR Regulatory Reference	Topic	Finding Status	Finding Summary
AP-11	6.5(1)(q)	Operational Control	Non-compliant	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - <i>Project Delivery & Governance Lifecycle Quick Reference Guide (PDGL Guide)</i> does not require any environmental deliverable; - several environmental standards exist, with deliverables and outputs, but are not reflected in the PDGL Guide; and - the tools being used in the field are specified in the safety standards, but not referenced in any of the environmental standards.
AP-12	6.5(1)(r)	Internal Reporting of Hazards, Potential Hazards, Incidents and Near-misses	Non-compliant	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - standards are unclear with respect to whether they require historical contamination to be reported via Safety Management and Recognition Tool (SMART); and - the auditee was not able to provide any examples demonstrating historical contamination that has been reported via SMART for any timeframe, in any of their CER regulated companies, including PKM Cochin ULC.
AP-13	6.5(1)(u)	Inspection and Monitoring	No issues identified	Several OMS, ENV, and DP PA standards and their outputs satisfy the expected outcomes for this AP.
AP-14	6.5(1)(x)	Conducting Annual Management Review	No issues identified	The OMS and ENV management review standards, together with their outputs, satisfy the expected outcomes.
AP-15	6.6(1)(c)	Correcting Deficiencies	No issues identified	A 2020 OMS Annual Accountable Officer Report exists, is signed by the accountable officer, discusses corrective actions, and integrates results from the quality assurance program. This satisfies the expected outcomes.

5.0 Next Steps

The auditee 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 auditee shall file with the CER, a CAPA Plan that details 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 close out letter.

6.0 Conclusion

In summary, the CER conducted an operational audit of PKM Cochin ULC related to: Contaminated Sites Management. Out of a total of 15 audit protocols, seven were deemed no issues found. The remaining eight were deemed non-compliant.

Non-compliant findings relate to deficiencies in the auditee's environmental hazard identification and risk assessment process, competency assessments, and hazard reporting. In general, the auditee has conducted insufficient research to reasonably negate or identify the presence of potential historically contaminated sites.

PKM Cochin ULC is expected to resolve these deficiencies through the implementation of a CAPA Plan. The CER will monitor and assess the implementation of this CAPA Plan, and issue an audit close-out letter upon its completion.

Appendix 1: Audit Assessment

AP-01 Annual Documented Evaluation of Need

Finding Status	No issues identified
OPR Regulatory Requirement	6.4(c) The company must have a documented organizational structure that enables it to 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	<ul style="list-style-type: none"> - The company has completed an annual documented evaluation of need. - The annual documented evaluation of need discusses the amount of human resources allocated to establishing, implementing and maintaining the management system. - The annual documented evaluation of need meets the company's obligations with respect to these Regulations.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - CV2122-257 Sept. 29 Response - OMS 4.1 Roles and Responsibilities Standard - ENV 7.4 ENV-MP Resource Evaluation Standard - 16439 Specialist, Environment - 2020 Annual Program Report presentation (excerpt) - CV2122-257 Sept. 28 Response <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 1.3 Annual Documented Evaluation of Need
Finding Summary	The auditee has satisfied the expected outcomes above via the <i>OMS 4.1 Roles and Responsibilities Standard</i> , the <i>ENV 7.4 ENV-MP Resource Evaluation Standard</i> , and a screenshot of the 2021 budget workforce plan.

Detailed Assessment

The auditee has satisfied the expected outcomes listed above.

The auditee has established processes relating to allocation of sufficient human resources. The auditee's OMS is composed of several standards that apply company wide. In the *OMS 4.1 Roles and Responsibilities Standard*, the accountable officer and other senior leaders are responsible for allocating resources necessary for OMS compliance, and for ensuring qualified OMS resources are available to support the business needs. Similarly, the auditee's *ENV 7.4 ENV-MP Resource Evaluation Standard* requires an evaluation of resources (human, financial, and administrative) required to deliver the Environment Management Program, which includes contaminated sites management.

Interviews with auditee staff indicate that a budget workforce plan is developed annually, which includes an assessment of human resources. Specifically, the *CV2122-257 Sept. 28 response* includes a screenshot of the 2021 budget workforce plan that specifies one FTE (full-time equivalent) environmental specialist (senior advisory, liability management). This specialist is responsible for all of Pembina subsidiaries, which includes PKM Cochin ULC. Additionally, a remediation budget is developed that includes contractor and other vendor requirements to satisfy the annual wellsite and liability management programs, that address contaminated sites. A 2021 budget plan was provided to the auditors via an excerpt from the *2020 Annual Program Report presentation*.

Thus, the auditee has completed an annual documented evaluation of need, which discusses the amount of human resources allocated to managing contaminated sites. No contamination management activities have been planned for this specific Pembina subsidiary. However, this deficiency is a function of the hazard assessment and will be addressed in AP-04.

AP-02 Setting Objectives and Specific Targets

Finding Status	No issues identified
OPR Regulatory Requirement	6.5(1)(a) A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for setting the objectives and specific targets that are required to achieve the goals established under subsection 6.3(1) and for ensuring their annual review
Expected Outcome	<ul style="list-style-type: none"> - The company has a compliant process that is established and implemented. - The company has set objectives and targets that are required to achieve the goals established under subsection 6.3(1). - All objectives are relevant to the company's management system when considering the scope of the process and their application to section 55 programs. - An annual review of the objectives and targets is performed by the company. - The review determines if the objectives were achieved or if corrective or preventive actions are needed.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - CV2122-257 Sept. 28 Response - Health, Safety, and Environment Policy 2021 - OMS 3.1 Goals, Objectives, and Targets Standard - ENV 2.3 Goals, Objectives and Targets Standard - OMS 10.1 Management Review Standard - ENV 8.1 Management Review Standard - 2020 OMS Annual Report - AP-02 and AP-03 Response - OMS Performance Tracker Tool screenshot - Q4 2020 S&E BOD Deck (Excerpts) - 2020 Annual Program Presentation Excerpt - Q4 2020 Safety & Environment Board of Directors Presentation and Minutes <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 1.1 Setting Objectives and Targets; - INT 1.2 Performance Measures; and - INT 4.3 Conducting Annual Management Review.

Finding Summary

The auditee has established and implemented a process (via *OMS 3.1 Goals, Objectives, and Targets Standard*, *ENV 2.3 Goals, Objectives and Targets Standard*, and *ENV 8.1 Management Review Standard*), where objectives and targets are set to achieve goals as per subsection 6.3(1) of the OPR. The objectives and targets are relevant to the management system and the EPP, includes an annual review of the objectives and targets, and identifies corrective actions for missed targets.

Detailed Assessment

The auditee has satisfied the expected outcomes listed above.

The auditee has established a process for setting objectives and targets to achieve goals, as evidenced by several key documents:

- *Health, Safety, and Environmental Policy 2021* requires the company to establish goals and objectives and use them to measure company performance;
- *OMS 3.1 Goals, Objectives, and Targets Standard* requires goals, objectives, and targets to be defined, reviewed, and evaluated annually. One of those goals includes the requirements of paragraph 6.3(1)(b). This standard is applicable to all programs, including the environment program;
- *ENV 2.3 Goals, Objectives, and Targets Standard* further delineates the roles and responsibilities, and other details relevant to the environment program. *OMS 10.1* and *ENV 8.1* both outline management review requirements for the OMS, as well as for the environmental program; and
- *ENV 8.1 Management Review Standard* requires these objectives and targets to be reviewed annually and corrective actions implemented to resolve any deficiencies.

The above documents have been implemented, as evidenced via the:

- *2020 OMS Annual Accountable Officer Report*;
- *OMS Performance Tracker Tool*; and
- *2020 Annual Program Report Presentation*.

The *2020 OMS Annual Accountable Officer Report* identifies two environmental program goals, which are to build a compliance culture and to ensure regulatory compliance. Several objectives and targets are associated with each goal.

An *OMS Performance Tracker Tool* lists the goals for the 2021 environment management program, which includes: continuous improvement; compliance; and safety of people, assets, and the environment. Five objectives and targets are linked to these goals related to training, reportable incidents, resolved corrective actions, and excavations restored to conditions similar to the surrounding environment. Contaminated sites management is implicit within these goals, objectives, and targets.

A *2020 Annual Program Report Presentation* provides a 2021 plan for the environmental program. This is in addition to the goals, objectives, and targets standard. This 2021 plan subdivides the environmental program into sub-programs with multiple commitments, activities,

and outcomes. Notably, the major projects sub-program identifies integration of new assets as a commitment. Associated activities include the HIRA review of the Cochin Pipeline System (Cochin HIRA Report). The targets required to achieve the goals are the completion of the specified activities.

Additionally, a Liability Management Program exists with its own 2021 plan, also provided via the *2020 Annual Program Report Presentation*. Sites have been identified for phase 2 environmental site assessments, remediation, and ground water monitoring. While the sites identified are within the scope of the Pembina Pipeline Corporation, none of these sites include the PKM Cochin ULC subsidiary. However, this particular deficiency is addressed in AP-04.

AP-03 Performance Measures

Finding Status	No issues identified
OPR Regulatory Requirement	6.5(1)(b) A company shall, as part of its management system and the programs referred to in section 55, develop performance measures for evaluating the company's success in achieving its goals, objectives and targets
Expected Outcome	<ul style="list-style-type: none"> - The company has developed performance measures that are relevant to its documented goals, objectives, and targets. - The following two items will be confirmed in connection with the company's annual report per paragraph 6.6(1)(b): <ul style="list-style-type: none"> o The performance measures support the ability to assess the achievement of the company's goals, objectives, and targets. o The company applies the performance measures to assess its success in achieving its goals, objectives and targets.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - CV2122-257 Sept. 28 Response - AP-02 and AP-03 Response - 2020 Operating Management System Annual Accountable Officer Report - OMS Performance Tracker Tool screenshot - 2020 Annual Program Report Excerpt - Q4 2020 S&E BOD Deck and Minutes (Excerpts) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 1.2 Performance Measures
Finding Summary	The auditee has provided several documents that demonstrate that performance measure have been developed and implemented to measure achievement of goals, objectives, and targets. This satisfies the expected outcomes.

Detailed Assessment

The auditee has satisfied the expected outcomes listed above.

Performance measures have been developed and implemented that are relevant to and that measure the achievement of the documented goals, objectives, and targets, as evidenced in the *2020 Operating Management System Annual Accountable Officer Report*, and the *2021 OMS Performance Tracker Tool*.

AP-04 Identifying and Analyzing all Hazards and Potential Hazards

Finding Status	Non-compliant
OPR Regulatory Requirement	6.5(1)(c) 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	<ul style="list-style-type: none"> - 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 life cycle 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 auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - CV2122-257 Sept. 29 Response - ENV 2.2. Environmental Risk Management Standard (ENV 2.2 standard) - ENV 4.2 Management of Change Standard - ENV 2.2. Cochin HIRA v1.02 July 27 2021 Report (Cochin HIRA Report) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 2.1 Identifying Hazards and List of Hazards - INT 6.1 HIRA Expanded - INT 6.2 Cochin Acquisition
Finding Summary	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> • <i>ENV 2.2 Environmental Risk Management Standard</i> outlines steps to identify hazards but does not reference MOC's or incident reporting as a trigger to re-assess the hazards. • The process is not considered implemented because the <i>Cochin HIRA Report</i> is still in draft form. • Methods for hazard identification are not appropriate for the nature, scope, scale, and complexity of the company's operations, activities, and section 55 programs. Absence of information does not necessarily mean absence of historically contaminated sites. • A known contaminated site does exist and it is not referenced in the Cochin HIRA Report.

Detailed Assessment

The auditee has not satisfied the expected outcomes listed above. This section first discusses how the auditee identifies hazards, and then discusses the deficiencies.

The auditee uses *ENV 2.2. Environmental Risk Management Standard (ENV 2.2 Standard)* to identify hazards. Hazard identification may be conducted at an asset, project, or segment level, depending, in part, on the diversity of the geographic areas involved. This standard requires the use of an *All Hazard Inventory* and an environmental HIRA tool.

A draft Cochin HIRA report exists that identifies the environmental hazards for the Cochin pipeline as a whole. Primary hazard types include: air, land, water, vegetation, wildlife, waste, storage, spills, historical contamination, and natural hazards. Each primary hazard type is then subdivided into more specific hazards, and a Cochin specific description is provided. The Cochin line and thus the Cochin HIRA Report spans both Canada and the US, but for the purposes of this audit, only the Canadian portions of the Cochin HIRA Report will be assessed.

Although this Cochin HIRA Report is still in draft, a more generic *OMS 1.1-REF-001 Hazard List and Risk Register (OMS Register)* lists contaminated sites as a potential hazard.

Because Pembina Pipeline Corporation acquired the Cochin line in December of 2019, two key mechanisms exist that could introduce hazards related to contaminated sites; either a spill on a go-forward basis, or pre-existing contamination that was incurred prior to acquisition and not properly remediated.

Several deficiencies exist.

First, the ENV 2.2 standard has two content-related issues. It does not require hazards to be re-assessed during management of change, or the reporting of an incident/near miss, or hazard, as specified in the audit protocol. It references a document that is no longer used (*ENV 2.2-REF-001*), and is therefore, out of date.

Second, the methods to identify the potentially contaminated sites are not appropriate for the nature, scope, scale, and complexity of the Cochin line. To develop the Cochin HIRA Report, the auditee reviewed documentation collected during the asset acquisition and integration phase, reviewed the CER website for major spill events, and conducted a series of workshops and information exchanges with internal staff. During both the acquisition and integration phase of the purchase, the auditee requested from the previous owner, environmental documentation relating to the potential for contaminated sites. However, the auditee did not receive a significant amount of information. They did receive a spill history for the last two years of operation. Based on this information, the auditee has concluded that the presence of potentially contaminated sites as a hazard is unlikely.

The auditors disagree with this conclusion. While the Cochin HIRA Report addresses the potential for spills to create new contaminated sites, the report doesn't identify the potential for pre-existing undiscovered contaminated sites. The probability of historical contamination presence/absence is determined via site specific assessments and/or reviews of accessible

historical evidence (e.g., aerial photographs, historical records, landowner complaints, etc.); none of which was collected or presented in the Cochin HIRA Report.

Factors that may increase the likelihood of historically contaminated sites being present include:

- The pipeline was constructed in the 1970's likely using practices that would have introduced contamination (e.g., flare pits, underground storage tanks, unreported spills, materials containing asbestos, lead, and polychlorinated biphenyls, improper chemical/waste handling etc.).
- The pipeline has been operating for approximately 40 years, which increases the likelihood of unreported spills, repetitive small spills below the reporting threshold, improper chemical/waste handling etc.

Third, in contrast to statements in the Cochin HIRA Report that no known contaminated sites are associated with the Cochin pipeline, the CER has notified the auditee of a contaminated site caused by a third party that has migrated onto the Cochin right of way. This known historical contamination is not identified in the Cochin HIRA Report.

Finally, the majority of operations staff, for the Cochin pipeline, were not aware of the Cochin HIRA Report as a source to identify hazards.

AP-05 Hazard Identification

Finding Status	Non-compliant
OPR Regulatory Requirement	6.5(1)(d) 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	<ul style="list-style-type: none"> - The company has a compliant inventory that is established and maintained. - The inventory includes hazards and potential hazards associated within the company 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 auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - CV2122-257 Oct. 6 Response - AP-05 Response - OMS 1.1-REF-001 Hazard List and Risk Register (OMS Register) - ENV 2.2. Cochin HIRA v1.02 July 27 2021 Report (Cochin HIRA Report) - 2019 Annual Accountable Officer Report - 2020 Annual Accountable Officer Report <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 2.1 Identifying Hazards and List of Hazards - INT 2.2 Risk Assessment and Controls - INT 5.1, 5.2, 5.3 Field Operations - INT 6.1 HIRA Expanded <p>INT 6.2 Cochin Acquisition</p>
Finding Summary	Because the PKM Cochin Hazard Identification and Risk Assessment Report is in draft form, it is not considered established.

Detailed Assessment

The auditee has not satisfied the expected outcomes listed above.

Two hazard inventories were provided:

- *OMS 1.1-REF-001 Hazard List and Register (OMS Register)*; and
- *ENV 2.2 Cochin HIRA v1.02 July 27 2021 (Cochin HIRA Report)*.

The first hazard inventory (OMS Register) is applicable to all of Pembina Pipeline Corporation assets, including the auditee. Inadequate management of contaminated sites and ineffective remediation are listed in this inventory. This OMS Register is updated annually, as demonstrated in the 2019 and 2020 Annual Accountable Officer Report. However, it has not been applied to the PKM Cochin subsidiary prior to the Cochin HIRA.

The second hazard inventory relates specifically to PKM Cochin ULC (Cochin HIRA). The auditee used the OMS Register as a starting point and then modified it to reflect Cochin specific hazards. As discussed previously in AP-04, the Cochin HIRA hazard inventory is still in draft. Thus, the inventory is not considered established.

AP-06 Risk Assessment

Finding Status	Non-compliant
OPR Regulatory Requirement	6.5(1)(e) 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 and potential hazards, including the risks related to normal and abnormal operating conditions
Expected Outcome	<ul style="list-style-type: none"> - 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 includes 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 auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - CV2122-257 Sept. 29 Reponse - CV2122-257 Oct. 6 Response - ENV 2.2 Environment Risk Management Standard - ENV 2.2. Cochin HIRA v1.02 July 27 2021 Report (Cochin HIRA Report) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 2.1 Identifying Hazards and List of Hazards - INT 2.2 Risk Assessment and Controls - INT 5.1, 5.2, 5.3 Field Operations - INT 6.1 HIRA Expanded - INT 6.2 Cochin Acquisition
Finding Summary	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> • <i>ENV 2.2 Cochin HIRA v1.02 July 27 2021</i> is in draft form, and thus not established. • Likelihood and severity of risks related to contaminated sites depend on the source, receptor, and pathway, and thus is site specific. Assuming the approximately 1,000 km of PKM Cochin pipeline has equal likelihood and severity of risk is not appropriate for the nature, scale, and complexity of the pipeline system. • No site assessment reports were reviewed, and no site assessments were conducted to negate the potential for historical contaminated sites. • The process has not assessed risks associated with abnormal operating conditions as is required by this paragraph of the OPR.

Detailed Assessment

The auditee has not satisfied the expected outcomes listed above. This section first discusses how the auditee evaluates risks, and then discusses the deficiencies.

The *ENV 2.2 Environmental Risk Management Standard (ENV 2.2)* is the process used to evaluate risks associated with environmental hazards, and partially satisfies the expected outcomes listed above. Risks are evaluated for all hazards, and risk tolerance/acceptance criteria are documented.

Several deficiencies exist.

First, as discussed in previous sections, the output of ENV 2.2 is the Cochin HIRA Report, which contains hazard identification, evaluation, as well as risk assessment. Because the document is in draft form, the risk assessment process is not considered implemented.

Second, the resolution in which this risk assessment is being conducted is insufficient. The auditee assessed the risks associated with each hazard (the likelihood and severity of impact) at a low level of resolution; one risk ranking was conducted per hazard, for the entirety of the pipeline. The Cochin pipeline is approximately 1,000 km long spanning across Alberta and Saskatchewan, and has many site-specific variations. For example, it has 10 pump stations, and runs near/through a variety of water bodies, historic resources, agricultural land, and various sensitive habitats/species. The likelihood and severity of risks related to contaminated sites will vary depending on the site-specific context of the source, pathway, and receptor. Environmental risk assessments need to be conducted at a resolution that reflects these inherent site-specific variations.

Third, the information gathered to conduct risk assessments of undiscovered historical contaminated sites is insufficient, given the 40 years of operation, and historical practices, as discussed in AP-04. No environmental site assessments were acquired or conducted to assess the possible presence of undiscovered historical contaminated sites.

Finally, the risk assessment was not conducted for both normal and abnormal operating conditions as is required by this paragraph of the OPR.

AP-07 Controls

Finding Status	Non-compliant
OPR Regulatory Requirement	6.5(1)(f) 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 risks and for communicating those controls to anyone who is exposed to the risks
Expected Outcome	<ul style="list-style-type: none"> - 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 auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - CV2122-257 Sept. 29 Reponse - ENV 2.2 Environment Risk Management Standard - ENV 2.2. Cochin HIRA v1.02 July 27 2021 Report (Cochin HIRA Report) - DP PA 5.7 Ground Disturbance Standard - DP PA 5.4 Patrol Standard - Example of Patrol Standard implementation: Patrol Plan, Patrol Checklist, Patrol Conflict, Patrol Ticket <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 2.1 Identifying Hazards and List of Hazards - INT 2.2 Risk Assessment and Controls - INT 5.1, 5.2, 5.3 Field Operations - INT 6.1 HIRA Expanded - INT 6.2 Cochin Acquisition
Finding Summary	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> • a control referenced by the process is in draft form (<i>Contaminated Site Management Guideline</i>); • Cochin HIRA Report which identifies risks and controls is in draft form; • Cochin HIRA identifies incomplete ESAs as a risk but provides insufficient mitigations; and • the auditee has conducted insufficient research to reasonably negate the presence of the potential for historical contaminated sites.

Detailed Assessment

The auditee has not satisfied the expected outcomes listed above. This section first discusses how the auditee identifies hazards, and then discusses the deficiencies. The section concludes with recognizing monitoring-related controls that positively contribute to detection of contaminated sites.

The ENV 2.2. standard is the process used to develop and implement controls to manage the environmental risks related to the pipeline. The output is the Cochin HIRA Report. The Cochin HIRA Report does list controls currently in place for each hazard and risk. According to the Cochin HIRA Report, all residual risks have been assessed as low or medium; no high residual risks are present. Interviews with auditee staff have confirmed the controls listed in the Cochin HIRA Report have been implemented.

Several deficiencies exist.

First, key control measures are in draft form. One of those control measures is the Contaminated Site Management Guideline (**ENV 5.2-GUID-011**) as referenced in the ENV 2.2 standard. This guideline is still in draft form. The ENV 2.2 standard was last updated in 2018, so this guideline document has been in draft for approximately 3 years. Consequently, this specific control is not considered developed or implemented.

Second, as discussed in previous sections, the Cochin HIRA Report, which does list controls associated with the risks and hazards, is still in draft and not considered implemented.

Third, insufficient controls have been applied to specific risks. The Cochin HIRA Report identifies incomplete phase 1 and 2 ESA's with a "failure to identify potential sources of contamination, resulting in increased impacts to the environment or regulatory non-compliance". The document reads "a Phase 1 ESA was not completed during the acquisition of the Cochin pipeline as no environmental events were identified during the due diligence review". The associated control states "environmental due diligence process when acquiring new assets". This control doesn't address the risk of being unaware of historically contaminated sites.

Fourth, the control sections of HIRA repeatedly state that there are no known contaminated sites associated with the Cochin pipeline. First, this is statement is untrue as the CER has notified PKM Cochin of a third-party spill that has migrated onto their pipeline right of way. Furthermore, the auditee has conducted insufficient research to reasonably negate the presence of the potential for historical contaminated sites.

The auditors discovered some monitoring-related controls are in place, even though they aren't listed for this particular risk in the Cochin HIRA. These controls positively contribute to detecting contaminated sites. All field staff and earthworks contractors must be trained in the *Damage Prevention and Public Awareness Ground Disturbance Standard*. This standard indicates what to do if contamination is encountered but does not describe the signs that indicate a site is contaminated. Both aerial and ground patrols are conducted regularly, as per the *Damage Prevention and Public Awareness Patrol Standard*. Aerial patrols are conducted once a week. A checklist exists when conducting aerial patrols where the observer must indicate whether they

have observed the presence or absence of particular items. These items include evidence of leaks, and subsidence. If an item of concern is observed, a series of steps are taken to notify the operators on the ground, who then conduct a follow-up. The roles and timing of notifications depend on the severity and type of issue observed. The auditors sampled documents that proved that: these aerial patrols are occurring; the operators do conduct follow-ups to address the issue; and all issues are tracked and closed out. The aerial patrol training discusses signs of contamination and provides photographs as an example.

AP-08 Legal List

Finding Status	No issues identified
OPR Regulatory Requirement	6.5(1)(h) A company shall, as part of its management system and the programs referred to in section 55, establish and maintain a list of those legal requirements
Expected Outcome	<ul style="list-style-type: none"> - The company has established and maintained a list of legal requirements. - The list has been communicated to appropriate personnel. - The list has been maintained and is up-to-date based on the company scope of operations, its activities, including new and existing legal requirements. - The list includes all legal requirements for all section 55 programs. - The legal list has been developed to the clause level of the applicable regulation and standards.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - OMS 2.1 Legal and Other Requirements Standard - Excerpt of Legal Register - LR Q1 2020 Program Summary Report - LR Q4 2020 Program Summary Report <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 2.3 Legal List.
Finding Summary	The auditee has established and maintained a list of legal requirements, that is communicated to appropriate personnel, and that has been developed to the clause level for the environment program. This satisfies the expected outcomes.

Detailed Assessment

The auditee has satisfied the expected outcomes listed above.

The auditee has established and maintained an up-to-date list of legal requirements. Excerpts of the *Legal Register* were reviewed by the auditors. The register contained excerpts at the clause level and had included the *CER Remediation Guidelines*, which the CER released October 2020.

This register is communicated to appropriate personnel and is maintained regularly. The register is managed via license with a third-party software provider. As part of that license, the software company monitors regulatory changes at the gazette level. Notifications of regulatory change are sent to auditee staff, who triages the change, and 'accepts' it into the PKM Cochin register. PKM Cochin has built in a distribution list, where relevant personnel are emailed when a regulatory change relevant to their program occurs. For environment, the senior advisor for the environmental management program (subject matter expert) and the manager of ESG and Environmental Governance are part of the distribution list for regulations related to environmental management. The environmental program lead is then responsible for assessing

and concurring the regulatory change, which may include consultation with the senior advisor for the liability management program. Quarterly reporting indicates the progress of concurring the PKM Cochin standards to new/changes in regulation. *OMS 2.1 Legal and other Requirements Standard* governs this process.

AP-09 Training, Competence and Evaluation

Finding Status	Non-compliant
OPR Regulatory Requirement	6.5(1)(j) A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for developing competency requirements and training programs that provide employees and other persons working with or on behalf of the company with the training 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	<ul style="list-style-type: none"> - The company has a compliant process for developing competency requirements and training programs. - The company has defined what competency requirements are required. - Training programs are traceable and trackable to the defined competency requirements and effective at achieving the desired competencies. - Employees and those working on behalf of the company are competent to carry out their assigned work. - Provide persons working with or on behalf of the company with adequate training applicable to section 55 programs and the management system.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - CV2122-257 Audit Protocol Information Request Response June 29 2021 - Sept. 30 Response - AP-09 Response - ENV 3.2 Training and Competency Standard (ENV 3.2) - Environment Regulatory Training Plan June 2021 - 2021 Environment & Regulatory Training & Development Plan Meeting - Employee qualification status, required and optional safety - Damage Prevention and Public Awareness Ground Disturbance Standard - Damage Prevention and Public Awareness Pipeline Monitoring Patrol Training Module (excerpt) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 3.1 Training Competence and Evaluation - INT 5.1, 5.2, and 5.3 Field Operations
Finding Summary	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - ENV 3.2 does not satisfy the definition of a process as specified within the audit protocol; - the auditee does not define minimum competencies for relevant personnel related to historical contaminated site identification and reporting, nor how these competencies will be assessed; and - the outputs from ENV 3.2 do not demonstrate contractor training and competencies.

Detailed Assessment

The auditee has not satisfied all the expected outcomes listed above. This section first discusses the auditee's process relating to environmental training and competencies, and then discusses the deficiencies.

The purpose of the *ENV 3.2 Training and Competency Standard (ENV 3.2)* is to outline training and competency expectations relating to the environment management program. This standard defines training and competency as follows:

- training – “organized activity aimed at imparting information or instructions to improve the recipient’s performance and attain a required level of knowledge or skill that relate to specific useful competencies”; and
- competency – “a structured guide enabling the identification and evaluation of the education knowledge, skills, experience and proficiency levels required to perform a specific task”.

The *Environment Regulatory Training Plan* is an output from this standard applicable to PKM Cochin employees. This plan lists the environmental courses provided to targeted audiences in 2020, and the environmental courses that will be deployed to targeted audiences in 2021. Notes from the 2021 Environment & Regulatory Training & Development Plan Meeting indicates that Cochin employees (i.e., field employees that used to work for the previous owner but were transferred to PKM Cochin ULC as part of the acquisition) were to complete a suite of courses related to PKM Cochin’s environmental program. The auditors sampled the training taken by the field-operation interviewees, and confirmed that they have taken this suite of courses since the acquisition. These courses include such things as incident response (i.e., how to respond to a spill). Thus, employee training as set forth in ENV 3.2 has been implemented.

The auditee references ISNetworld tools as to how they qualify contractors. ISNetworld asks questions for each contractor organization and scores the results. The auditee also uses ISNetworld to determine the written processes required by the contractor organization, based on its work type.

Several deficiencies exist.

First, ENV 3.2 does not satisfy the definition of a process as specified within the audit protocol. It does not indicate:

- the inputs that must be considered prior to developing the training and competency plans, such as:
 - controls to manage risks as per paragraph 6.5(1)(f) of the OPR;
 - legal requirements as per paragraph 6.5(1)(g) of the OPR;
- how training and competencies will be verified as per paragraph 6.5(1)(k) of the OPR;
- how to ensure all workers are aware of their responsibilities as per paragraph 6.5(1)(l) of the OPR.

Second, the auditee does not define minimum competencies for relevant personnel related to historical contaminated site identification and reporting, nor how these competencies will be assessed. As discussed in AP-04, two key mechanisms exist that could introduce hazards related to contaminated sites; either a spill on a go-forward basis, or pre-existing contamination

that was incurred prior to acquisition and not properly remediated. Training and competencies addressed the first mechanism but not the second.

Third, while the scope of ENV 3.2 applies to both employees and contractors, the outputs do not demonstrate contractor training and competencies. The auditee references the use of ISN services to demonstrate training and competency assessment of contractors and the contractor's workers. However, based on the information provided in the audit, the auditee is using ISN to screen the contractor organization. Inputs to this screening include written processes authored by the contractor organization, and other organizational characteristics such as the number of significant incidents the contractor has had over a period of time. ISN assigns a score to the organization, based on a formula approved by the auditee. Screening of an organization is not the same as assessing training and competency of individuals working for a contractor organization.

Despite these deficiencies, when field operations staff were asked how to identify a historically contaminated site, they all responded with correct answers, such as odour, soil staining, vegetation disruption etc. When asked how they know, they referenced ground disturbance and aerial patrol training (in addition to senior staff mentoring junior staff). As referenced in AP-07, all field staff and earthworks contractors must be trained in their *Damage Prevention and Public Awareness Ground Disturbance Standard*. This standard indicates what to do if contamination is encountered but does not describe the signs that indicate a site is contaminated. The aerial patrol training discusses signs of contamination and provides photographs as an example. Neither of these documents are referenced in the environmental training documents.

AP-10 Communication

Finding Status	Non-compliant
OPR Regulatory Requirement	6.5(1)(m) 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 and external communication of information relating to safety, security and protection of the environment
Expected Outcome	<ul style="list-style-type: none"> - The company has a compliant process that is established and implemented. - The methods for both internal communication and external communication are defined. - The company is communicating internally and externally related to safety, security and protection of the environment. - Internal and external communication is occurring and it is adequate for the management system and section 55 program implementation.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - OMS 8.1 Communications Standard - 2020 Environment Campaign - ENV 6.1 Environment Incident Management Standard (ENV 6.1) - ENV 2.2. Standard - EPP Appendix 5 Contingency Plans - SP27 Incident Reporting, Investigation, and Analysis Standard (SP27) - Pembina Learning System (PLS) CER Event Reporting Module - ERP <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 3.2 Communication - INT 5.1, 5.2, 5.3 Field Operations
Finding Summary	Communication requirements are spread throughout numerous documents and processes both formally, and informally. While a communications process is not limited to one document, the documents must link together to form a cohesive logical whole. No evidence of this has been provided.

Detailed Assessment

The auditee has not satisfied the expected outcomes listed above. This section first discusses the auditee’s process relating to internal and external communication, and then discusses the deficiencies.

The *OMS 8.1 Communications Standard* applies to all programs, including the environmental management program, and sets the process for internal and external communication of information relating to the OMS and its programs. The output of this standard are communications plans, which “outline communication activities to achieve goals and objectives and support the development, implementation, and sustainment of the OMS”.

The above standard uses a 3-tiered system based on audience, impact, and regulatory requirements. Tier 3 has the most requirements and requires a full-scale communication plan. The targeted audiences could be internal and/or external.

The *2020 Environment Campaign Communications Plan* was provided as an example of an output from the OMS 8.1 Standard. This plan celebrates positive examples of environmental initiatives to generic internal and external audiences.

External communications related to emergencies are outlined in the auditee's Emergency Response Plans (**ERP**), which are posted on Pembina Pipeline Corporation's external website. This website also provides contact information for members of the public to report a pipeline related incident to Pembina, Safety Data Sheets for substances commonly used at site, and an Emergency Management Factsheet.

Several deficiencies exist.

First, the OMS 8.1 standard is focused on communicating program changes and updates. It does not set minimum requirements regarding what type of information relating to the safety, security, and protection of the environment must be communicated internally and/or externally.

Second, interviews with auditee staff indicate several other mechanisms are used to communicate environmentally relevant information, that is not referenced in the OMS 8.1 standard or the communication plan provided. Examples of these mechanisms noted during interviews include:

- incident reporting to internal staff via the ENV 6.1 and SP27 and SMART software;
- informal communications between the liability management specialist, the land department, and operations;
- landowner complaint register/software;
- ERP posted on the website;
- Environmental Protection Plan (which is required for large projects);
- permits (ground disturbance permit, site release form);
- Monday operations meetings;
- monthly safety operation meetings;
- field level hazard assessments;
- safe work permits; and
- Utilisphere software to communicate aerial patrol findings.

Communications is spread throughout numerous documents and processes both formally, and informally. While a communications process is not limited to one document, the documents must link together to form a cohesive logical whole. No evidence of this has been provided. Therefore, a compliant process has not been established and/or implemented; and the methods for both internal and external communications are not defined.

With respect to information related to contaminated sites, interviews with field staff indicated they were aware of assessments that others did not mention, such as past asbestos assessments, and lead studies. Conversely, field staff did not mention the presence of a contaminated site on the Cochin right of way, that was caused by a third party, and of which other PKM Cochin employees were aware. These examples demonstrate that not all information related to contaminated sites and hazardous materials is being communicated between the different departments, and internal communication is not adequate.

AP-11 Operational Control

Finding Status	Non-compliant
OPR Regulatory Requirement	6.5(1)(q) 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	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> o are pre-qualified for their assigned duties to ensure safety, the security of the pipeline and to protect the environment; o 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 o 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 auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - Project Delivery & Governance Lifecycle Framework Table of Contents Excerpt (PDGL TOC) - PDGL Guide - ENV 2.2 Environmental Risk Management Standard; - SP33 Safety Communication Standard; - SP03 Safe Work Permit Standard; - SP26 Contractor Safety Management Standard; - SP02 Hazard Identification Standard; - SP27 Incident, Reporting, Investigation and Analysis Standard; and - SP01 Safety Program (SP) Standard - SP03-FRM-001 Safe Work Permit - SP03-FRM-002 Worksite Release - DP PA Ground Disturbance Standard <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 3.3 Operational Control - INT 5.1, 5.2, 5.3 Field Operations
Finding Summary	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - <i>Project Delivery & Governance Lifecycle</i> quick reference guide does not require any environmental deliverable; - several environmental standards exist, with deliverables and outputs, but are not reflected in the PDGL Guide; and - the tools being used in the field are specified in the safety standards, but not referenced in any of the environmental standards.

Detailed Assessment

The auditee has not satisfied the expected outcomes listed above. This section first discusses the auditee’s process, and then discusses the deficiencies.

The *Project Delivery & Governance Lifecycle Framework (PDGL)* outlines methodology and minimum expectations for project and program governance and delivery, respectively. Thus, a process is established. Seven project stage gates exist, from project screening to project close out. As an example, the PDGL indicates the deliverables and stage gates for projects between \$200,000 and \$1 million. For these types of projects, a project safety plan is required only under specific circumstances and no environmental protection plan is required.

Several other documents were referenced in both the response to information requests, and during interviews:

- *ENV 2.2 Environmental Risk Management Standard;*
- *SP33 Safety Communication Standard;*
- *SP03 Safe Work Permit Standard;*
- *SP26 Contractor Safety Management Standard;*
- *SP02 Hazard Identification Standard;*
- *SP27 Incident, Reporting, Investigation and Analysis Standard;* and
- *SP01 Safety Program Standard.*

The project safety plan, when required, folds in the requirements from the above SP standards. Interviewees indicated that several of the safety tools are also used to capture environmental issues.

Some of these tools that are currently being used in the field, for all activities regardless of cost, include: Field Level Hazard Assessment and Tailgate Meeting form, Pre-job Meeting form, Safe Work Permit, the Worksite Release form, and the Ground Disturbance Permit. Interviews with field operations staff confirmed that these tools are understood and are being used as required for operational activities, with respect to safety issues. In other words, employees and other people working with or on behalf of the company are aware of the activities of others.

However, several deficiencies exist. These deficiencies are associated with the defining the methods for controlling and coordinating activities.

A stage gate process is a common tool to begin the process of coordinating and controlling operational activities by requiring specific deliverables before the project can pass a particular gate. As referenced above, the *Project Delivery & Governance Lifecycle* quick reference guide does not require any environmental deliverables, and requires a safety plan only in certain circumstances. An absence of an environmental deliverable would indicate that a project can move forward without evaluating and controlling environmental issues. As environmental issues, such as pre-existing contaminated sites and/or the potential to contaminate a site in the future, may exist regardless of the project cost, they need to be included in the stage gate process.

Second, the *PDGL* must reflect the requirements within all OPR section 55 programs, including the environmental program. Several environmental standards exist, with deliverables and outputs, but are not reflected in the *PDGL* Guide. Similarly, the *PDGL* Framework is not referenced in the environmental standards.

Third, the tools being used in the field are specified in the safety standards listed above, but not referenced in any of the environmental standards. If they are to be used for environmental purposes, the environmental standards must reference these tools, and the environmental specialists need to be involved in the tool design, implementation, and review.

These deficiencies apply to the environment program as a whole, which includes but is not limited to contaminated site management.

AP-12 Internal Reporting of Hazards, Potential Hazards, Incidents and Near-misses

Finding Status	Non-compliant
OPR Regulatory Requirement	6.5(1)(r) 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	<ul style="list-style-type: none"> - 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 auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - ENV 6.1 Environment Incident Management Standard (ENV 6.1) - SP27 Incident Reporting, Investigation and Analysis Standard - ENV-20216-2612 (Environmental Incident Report) - ENV-20216-2614 (Environmental Incident Report) - ENV-202011-2391 (Environmental Incident Report) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 4.2 Internal Reporting of Hazards, Potential Hazards, Incidents, and Near Misses - INT 5.1, 5.2, 5.3 Field Operations
Finding Summary	<p>Several deficiencies exist:</p> <ul style="list-style-type: none"> - standards are unclear with respect to whether they require historical contamination to be reported via SMART; and - Pembina Pipeline Corporation was not able to provide any examples demonstrating historical contamination that has been reported via SMART for any timeframe, in any of their CER regulated companies, including PKM Cochin ULC.

Detailed Assessment

The auditee did not satisfy the expected outcomes listed above. This section first discusses the auditee's process, and then discusses the deficiencies.

ENV 6.1 Environment Incident Management Standard defines the requirements with respect to internal reporting of environmental incidents, as well as their investigation and associated corrective actions. This standard specifies that incidents may include any adverse effect on the environment, as well as an uncontained release, and that identification of a hazard, something with the potential to cause damage to the environment, can be considered a near miss. During interviews, auditee staff indicated that if a historical contaminated site was discovered, it would be reported using the SMART system. However, this scenario has not occurred in the last one and a half years of operating the Cochin line.

The *ENV 6.1 Environment Incident Management Standard* indicates that all releases are to be reported via SMART. In addition to recording the incident, this tool also initiates the investigation process and tracks completion of corrective actions. *SP27 Incident Reporting, Investigation and Analysis Standard*, discusses the specifics of managing the lifecycle of an incident. The auditee has established a process to report releases which could result in contaminated sites. The auditee also provided several environmental release reports as an output to this standard. Thus, the auditee has implemented a process.

The auditors assessed this process against both the reporting of releases that could cause contamination, as well as historical contamination that might be discovered during other activities.

Several deficiencies exist.

First, standards are unclear with respect to whether they require *historical contamination* to be reported via SMART. The ENV 6.1 standard specifies that *releases* are to be reported via SMART, which excludes other adverse environmental impacts such as historical contamination. In contrast, document SP27 does include contamination in the severity assessment of incidents. Interviewees confirm that SMART would be used to report historical contamination, but that no known contamination exists in PKM Cochin, and thus no SMART reports are available. In other words, the auditee has not sufficiently defined its methods for internal reporting of historical contaminated sites.

Second, Pembina Pipeline Corporation was not able to provide any example demonstrating historical contamination that has been reported via SMART for any timeframe, in any of their CER regulated companies, including PKM Cochin ULC. To accommodate for the relatively short time frame that PKM Cochin has been operating as a subsidiary of Pembina Pipeline Corporation, the auditors extended their request for examples of SMART reports relating to historical contamination for any timeframe, in any CER regulated entity within Pembina Pipeline Corporation. No examples were provided. In the auditor's opinion, historical contaminated sites are not being reported as required by the company's process.

AP-13 Inspection and Monitoring

Finding Status	No issues identified
OPR Regulatory Requirement	6.5(1)(u) 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	<ul style="list-style-type: none"> - 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 auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - OMS 9.1 Assurance Standard and Quality Assurance Program - ENV 7.1 Environment Audit and Inspection Standard - ENV 7.2 Corrective Actions and Program Improvement Standard - ENV 7.3 Performance Measurement and Evaluation Standard - ENV 8.1 Management Review Standard - 2019 Compliance Env MP Audit Finding Example - 2019 Compliance Env MP Audit Finding Closure - Damage Prevention & Public Awareness (DA PA) 5.4 Patrol Standard <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 4.2 Inspection and Monitoring - INT 5.1, 5.2, and 5.3 Field Operations
Finding Summary	Several OMS, ENV, and DP PA standards and their outputs satisfy the expected outcomes for this AP.

Detailed Assessment

The auditee has satisfied the expected outcomes listed above.

The auditee has established a process to: inspect and monitor their assets; evaluate the adequacy and effectiveness of the programs; and to take corrective and preventive actions to resolve deficiencies.

The *OMS 9.1 Assurance Standard* outlines the requirements for managing assurance activities across all OPR section 55 programs. The auditee uses a 3-tier model: Tier-1 involves inspections; Tier-2 involves internal audits and maturity assessments conducted by the OMS program; and Tier-3 involves internal audits of the OMS program conducted by the quality assurance program.

To fulfil these requirements in OMS 9.1, the environment program has implemented *ENV 7.1 Environment Audit and Inspection Standard*, and *ENV 7.2 Corrective Actions and Program Improvement Standard*.

Adequacy and effectiveness are assessed via the *ENV 7.3 Performance Measurement and Evaluation Standard*, and *ENV 8.1 Management Review Standard*.

The auditee has provided examples of Tier 1 inspections and of findings from Tier 3 audits of the environmental program. These examples indicate this process has been implemented as designed.

Additionally, the *DA PA 5.4 Patrol Standard* sets requirements for the frequency of ground and aerial patrols, as well as the checklists that are completed and submitted to the designated operations staff.

The auditors sampled an incident where aerial patrol identified activity observed near the pipeline, logged the issue in the relevant software, and notified the field operations personnel. The operator confirmed that the work is covered under a one-call ticket, and that PKM Cochin were aware of the activity, and closed out the incident. This example indicates the patrol standard has been implemented as designed.

AP-14 Conducting Annual Management Review

Finding Status	No issues identified
OPR Regulatory Requirement	6.5(1)(x) A company shall, as part of its management system and the programs referred to in section 55, establish and implement a process for conducting an annual management review of the management system and each program referred to in section 55 and for ensuring continual improvement in meeting the company's obligations under these Regulations
Expected Outcome	<ul style="list-style-type: none"> - The company has a compliant process that is established and implemented. - The company's methods for conducting the management review are defined. - The company has defined methods for reviewing the management system and each section 55 program. - The company has maintained records to demonstrate the achievement of meeting obligations under these Regulations is continually improved; - The company has identified, developed, and implemented corrective actions as part of its continual improvement.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - OMS 10.1 Management Review Standard - ENV 8.1 Management Review Standard - 2020 OMS Annual Report - 2020 Annual Program Report Presentation (excerpt) <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 4.3 Conducting Annual Management Review
Finding Summary	The OMS and ENV management review standards, together with their outputs, satisfy the expected outcomes for this AP.

Detailed Assessment

The auditee has satisfied the expected outcomes listed above.

OMS 10.1 Management Review Standard sets the steps for developing and implementing an annual management review of the OMS and its programs, including the methods to review the management system and each section 55 program. Records demonstrate that corrective actions have been implemented to resolve identified deficiencies. The *2020 OMS Annual Report* is an output of this standard and indicates that the process has been implemented.

Additionally, the environment program uses *ENV 8.1 Management Review Standard* to support the OMS 10.1 standard in evaluating the performance of the environment program. An excerpt of the *2020 Annual Program Report Presentation* was provided to demonstrate that this standard has been implemented.

AP-15 Correcting Deficiencies

Finding Status	No issues identified
OPR Regulatory Requirement	6.6(1)(c) A company shall complete an annual report for the previous calendar year, signed by the accountable officer, that describes the actions taken during that year to correct any deficiencies identified by the quality assurance program established under paragraph 6.5(1)(w) of the OPR.
Expected Outcome	<ul style="list-style-type: none"> - The company has completed an annual report for the previous calendar year that is signed by the accountable officer. - The annual report discusses the actions taken to correct identified deficiencies. - The discussion of quality assurance of the management system is based on the program established and implemented in accordance with the requirements paragraph 6.5(1)(w) of the OPR.
Relevant Information Provided by the auditee	<p>The following key documents and records are related to this finding:</p> <ul style="list-style-type: none"> - 2020 Operating Management System Annual Accountable Officer Report <p>The following interviews are related to this finding:</p> <ul style="list-style-type: none"> - INT 4.3 Correcting Deficiencies
Finding Summary	A 2020 OMS Annual Accountable Officer Report exists, is signed by the accountable officer, discusses corrective actions, and integrates results from the quality assurance program. This satisfies the expected outcomes.

Detailed Assessment

The auditee has satisfied the expected outcomes listed above by providing a *2020 OMS Annual Accountable Officer Report*, signed by the accountable officer. The document summarizes the status of corrective actions and/or continuous improvement initiatives for both the OMS and OPR section 55 programs, including the environmental program. Results from the quality assurance program were integrated into this report.

Appendix 2: Terms and Abbreviations

Abbreviation	Details
DP PA	Damage Prevention and Public Awareness Program
ENV	Environment Program
EPP	Environmental Protection Program
ERP	Emergency Response Plan
ESA	Environmental Site Assessment
ESG	Environmental and Social Governance
FTE	Full Time Equivalent
HIRA	Hazard Identification Risk Assessment
MOC	Management of Change
OMS	Operating Management System
PDGL	Project Development Guideline
PLS	Pembina Learning System
SMART	Safety Management and Recognition Tool
SP	Safety Program