



Canada Energy Regulator Régie de l'énergie
du Canada

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File OF-Surv-OpAud-T241-2018-2019 01
6 February 2020

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Technical Centre, Accountable Officer
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Dear Ms. Kass:

**Canada Energy Regulator (CER) Final Audit Report
TransCanada Keystone Pipeline GP Ltd (Keystone) – Pre-Construction**

The National Energy Board (NEB or the Board) conducted a compliance audit of TransCanada Keystone Pipeline GP Ltd in accordance with subsection 49(3), of the *National Energy Board Act* (NEB Act) during the period from 8 February 2019 to 12 April 2019.

The NEB commenced this audit on 8 February 2019. It approved the Draft Audit Report on 1 August 2019. On 28 August 2019 the *Canadian Energy Regulator Act* (CER Act) replaced the *National Energy Board Act* (NEB Act). This audit was continued and finalized under section 103 of the CER Act. The wording of this audit report reflects the transition from the NEB to the Canada Energy Regulator (CER). All work done prior to 28 August 2019 is NEB Act-related work, and all work done after that date is done under the CER Act. More details regarding the transition and its effects are found on the CER [website](#).

Over the course of the audit, the CER identified that Keystone has the legal obligation for compliance as the certificate holder and TransCanada PipeLines Limited (TCPL) provides the staff and support in meeting Keystone's regulatory obligations. For purposes of this letter, the Final Audit Report and its appendices, Keystone is the name entity. In addition, this Final Audit Report continues to refer to TCPL and Keystone interchangeably for ease of reference where required.

On 1 August 2019, the NEB sent Keystone the Draft Audit Report documenting the evaluation of Keystone's pre-construction readiness for review and comment. Keystone submitted its response on 29 August 2019. The CER has considered Keystone's comments and has made changes to the Final Audit Report, where appropriate. The CER has now finalized its audit report and has attached it and its various appendices to this letter.

The CER made findings in relation to Keystone's management system and construction-related safety, emergency, environmental, and integrity programs for the construction project. These audit findings are based on the assessment of whether Keystone

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demonstrated compliance with the regulatory requirements contained within:

- the *Canadian Energy Regulator Act*;
- *National Energy Board Onshore Pipeline Regulations (SOR/99-294) (OPR)*; and
- *applicable conditions of the Keystone certificate (Certificate OC-56)*.

Many of the deficiencies noted during the audit are associated with a lack of well-defined, documented processes which are expected by the CER. There is insufficient clarity on the specifics of what is to be carried out, by whom, when, how and using what resources. A majority of the processes, programs and activities required to protect the environment and the safety of people during construction had not been fully established at the time of the audit. The CER also noted that Keystone's information indicated it had undertaken some scheduled pre-construction activities prior to the audit without the establishment of all of these requirements. Keystone cannot resume its construction activities until it has implemented all corrective and preventive actions to address the CER's Non-Compliant findings.

While all Non-Compliant findings are of concern to the CER, the CER notes the following deficiencies as representing areas of particular significance.

1. The Keystone construction activities have not been appropriately integrated into TCPL's full life-cycle management system, as required by OPR section 6.1.

The OPR requires that companies establish and implement integrated management systems with processes that are applicable to and applied across the entire life-cycle for the approved facilities. During its audit, the CER noted that certain Keystone construction project activities had not been integrated into TCPL's overall management system processes. Instead, the CER found that the project was only utilizing selected processes from TCPL's management system and was doing so on what would be described as an *ad hoc* approach.

The CER is of the view that the requirements to have a full life-cycle, management system approach to regulated facilities ensures consistent, structured oversight and management and better safety and environmental outcomes. Keystone is required to develop a Corrective and Preventive Action (CAPA) Plan in response to this Final Audit Report and must include measures to address this deficiency and ongoing measures to prevent recurrence.

2. Keystone may be attempting to shift its responsibilities regarding compliance, safety and environmental protection to its Prime Contractors.

The CER Act and OPR require companies to be responsible for establishing, implementing and providing oversight of protective programs regarding safety, security and environmental protection throughout the lifecycle of regulated facilities. This includes the construction phase. In its audit, the CER noted that documents provided by Keystone for review indicate that the company may be intending to shift some of these responsibilities to contractors working on its behalf which is not consistent with the requirements. The CER notes that regulations allows companies to contract for the provision of services in respect of the construction of pipelines, but those companies must still exercise the control and oversight required in the OPR.

The CER reminds Keystone that it is ultimately the certificate holder and that those working on Keystone's behalf are not statutorily accountable for all aspects of safety (or environmental protection and security) related to the Keystone project

construction. Therefore, as part of the Corrective and Preventive Action (CAPA) Plan developed to address the deficiencies identified in this audit, Keystone must demonstrate how it will ensure that it will align itself with these requirements. The CAPA must include how and where the company will make changes to its programs and documentation to clearly communicate its alignment with the legislation. The CER will require confirmation of the CAPA Plan's implementation.

The CER is of the view that these adjustments will promote compliance and provide certainty with respect to the identification and management of hazards and ultimately better safety and environmental outcomes.

The CER notes since the completion of its on-site audit activities, Keystone has advised the CER that it has been developing corrective actions to rectify the deficiencies noted during the audit. The CER acknowledges Keystone's efforts to mitigate the Non-Compliant findings prior to the release of the Final Audit Report. The CER will assess Keystone's corrective actions during its ongoing activities.

Corrective and Preventative Action (CAPA) Plan

Keystone is ordered to file, with the Secretary of the Commission, a CAPA Plan for approval on or before 5 March 2020 which describes the methods, timing and rationales for addressing the Non-Compliant findings identified in this audit report.

The CER will post this Final Audit Report and the approved CAPA Plan on its website. Prior to publishing the report or CAPA Plan, Keystone will be offered an opportunity to review the report and request redactions based on the *Access to Information Act* and *Privacy Act*.

The CER will monitor and assess Keystone's corrective and preventive actions until they are fully implemented to assure the safety of people and the environment. Additionally, it is ordered that, where applicable, the approved CAPA Plan requirements will be implemented on a system-wide basis to address similar deficiencies. In addition, the CER will continue to monitor the implementation and effectiveness of Keystone's management system and programs through targeted compliance verification activities as a part of its on-going regulatory approaches to oversee the Project's construction and operation.

If you require any further information or clarification, please contact Darryl Pederson, Lead Auditor, Systems Operations Business Unit at 403-461-9953 or at 1-800-899-1265 toll free.

Yours sincerely,

Darryl Pederson
Lead Auditor
Inspection Officer Number: 2541

Attachment

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**Final Audit Report
Pre-Construction Audit**

**Compliance Verification Activity: CV1819 - 452
File OF-Surv-OpAud-T241-2018-2019 01**

**TransCanada Keystone Pipeline GP Ltd.
450 1st Street SW
Calgary, AB T2P 5H1**

Date: 6 February 2020



Executive Summary

In accordance with subsection 103(3) of the *Canadian Energy Regulator Act* (CER Act), the Canada Energy Regulator (CER) conducted a compliance audit of the TransCanada Keystone Pipeline GP Ltd. project referred to herein as 'Keystone' during the period from 8 February 2019 to 12 April 2019. It is noted that Keystone is the certificate holder and TransCanada PipeLines Limited (TCPL) is providing the staff and support in meeting Keystone obligations. During the course of this audit TCPL changed its legal name to TC Energy. This Final Audit Report continues to refer to TCPL for ease of reference where required.

During the period of the audit report finalization, the federal government's *Bill C-69* came into force. On 28 August 2019, the NEB Act was replaced by the *Canadian Energy Regulator Act* (CER Act). The results of the transition are considered negligible to the substance of this compliance verification activity. The Board was replaced by the Canada Energy Regulator (CER) and NEB staff became staff of the CER. The audit was continued by the CER and its staff under the authority of subsection 103(3) of the CER Act. The wording of this audit report reflects the NEB to CER transition. More details regarding the transition and its effects are found on the CER website.

This report documents the CER's audit of the Canadian portion of the Keystone construction project. The audit was focused on Keystone's management practices and sections of the *National Energy Board Onshore Pipeline Regulations* (SOR/99-294) (OPR) which were relevant to the scope of the audit. The objective of the audit was to assure that Keystone has established the necessary oversight measures to manage construction-related safety, emergency, environmental and integrity programs for the Keystone construction activities.

The CER conducted the audit using the audit protocols, attached in Appendix 1 of this report, which are focused on safety and environmental protection as they apply to Keystone's anticipated future construction activities. The CER has assessed whether Keystone's documentation, processes, and activities complied with legal and other requirements under the CER's authority listed below.

- The *Canadian Energy Regulator Act* (CER Act);
- The *Onshore Pipeline Regulations* (SOR/99-294) (OPR); and
- Any conditions contained within applicable certificates or orders issued by the CER.

There were 23 items listed in the audit protocol attached in Appendix 1. There were five (5) in which the CER did not identify any compliance issues. The remaining 18 were found to be Non-Compliant. The CER found many of the deficiencies noted during the audit were due to a lack of integration between TCPL's existing operating management system and the Keystone construction project. This includes the lack of the development or establishment of required programs, processes, documents, etc.

The CER identified non-compliances are summarized below.

- The CER found the Keystone construction project had not been integrated into the TCPL operating management system in a manner that meets the requirements of OPR section 6.1, Audit Protocol question 1;



- Keystone's contracting documents show that Keystone is contemplating contracting out all of its safety-related responsibilities and liabilities to its Prime Contractors. The CER Act and OPR requires Keystone to be responsible for establishing, implementing and providing oversight of protective programs regarding safety, security and environmental protection throughout the lifecycle of regulated facilities, Audit Protocol question 2;
- It was found that Keystone had not developed an organizational structure or the competency and training requirements in a manner which meets the requirements of the OPR, Audit Protocol questions 2, 9, and 10;
- Keystone had not fully identified hazards and potential hazards related to the Keystone construction project and it had not completely assessed the risks in accordance with the requirements of the OPR, Audit Protocol questions 3, 5, and 6;
- Keystone had not established an inspection and monitoring plan for the project to meet the requirements of the OPR, Audit Protocol question 16; and
- At the time of the audit, certain pre-construction activities directly related to the project were underway, however Keystone had not provided a Construction Safety Manual to the CER as required by the OPR, Audit Protocol question 20.

At the time of this audit, based on the evaluation of the results, the CER has found Keystone had not yet established all of the oversight measures to manage construction-related safety and environmental protection for the construction project. Keystone cannot resume its construction activities until all corrective and preventive actions to address the CER's Non-Compliant findings have been implemented.

Keystone is ordered to file, with the Secretary of the Commission, a Corrective and Preventative Action (CAPA) Plan for approval which describes the methods and timing for addressing the non-compliances identified through this audit. The CAPA shall be filed within 30 days of the Final Audit Report being issued.

The CER will assess the implementation of Keystone's CAPA to confirm compliance. The CER will continue to monitor the overall implementation and effectiveness of Keystone's management system and construction activities through targeted compliance verification activities as a part of its ongoing regulatory mandate.



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1.0 Introduction

In accordance with subsection 103(3) of the *Canadian Energy Regulator Act* (CER Act), the Canada Energy Regulator (CER) conducted a pre-construction compliance audit of TransCanada Keystone Pipeline GP Ltd. Project (Keystone) during the period from 8 February 2019 to 12 April 2019. An overview of the audit process and an explanation of abbreviations can be found in Appendices 1 and 3 attached to this report.

The results of the audit are summarized in Table 1 in this report and explained in more detail in Appendix 1. Abbreviations used in this audit report can be found in Appendix 3.

1.1 Audit Objective

The objective of the audit was to assure that Keystone has established the necessary oversight measures to manage construction-related safety, emergency, environmental and integrity programs for the Keystone construction activities.

As the audit was focussed on the pre-construction phase, the CER only required Keystone to demonstrate it had developed the necessary processes and activities specific to the project. This audit did not test implementation as the majority of the construction activities had not yet been initiated at the time of the audit.

Note, prior to the start of the audit, Keystone had been given prior approval by the CER to complete several specific activities related to the project, namely:

- Horizontal directional drills (HDD's) completed at the Red Deer and South Saskatchewan Rivers between 2011 and 2012;
- Brushing along portions of the right of way in February and March 2019; and
- Rough grading and drainage work at several new pump station locations.

1.2 Audit Scope and Methodology

The scope of the audit included relevant sections of the *National Energy Board Onshore Pipeline Regulations* (SOR99/294) (OPR) for safety, emergency, environmental and integrity programs, several conditions from the CER issued certificate, and Keystone's management system as they apply to the construction activities. The audit did not include Keystone's Security Management Program as it will be reviewed by the CER through other compliance verification activities.

To evaluate Keystone's compliance, the CER evaluated a sample of the company's documents and records in addition to conducting interviews with company personnel.

2.0 Project Overview

The Keystone Project is a 1,947 km, 36 inch diameter pipeline starting in Hardisty, Alberta and ending in Steele City, Nebraska. Within Canada, the pipeline will have the capacity to transport 700 Kbpd of oil following construction. The Canadian portion of the project includes the construction of approximately 530 km of pipeline, with 269 km in Alberta and 261 km in Saskatchewan. The Canadian regulated portion of this project terminates at the Saskatchewan / Montana border near Monchy, Saskatchewan.



The approved project pipeline will require the construction of 7 new pump stations in Alberta and Saskatchewan, and the expansion of the existing pump station in Hardisty, Alberta.

A route map of the Canadian portion of the Keystone project is included in Appendix 3 to this report.

3.0 Assessment of Compliance

3.1 General

The CER requires its regulated companies to establish and implement management systems that meet the requirements of the OPR. OPR section 6.1(1)(c) sets out Keystone's obligation to construct its facilities applying the company's established management system to this project. In addition, the CER requires a company's management system and each OPR section 55 protection program to be deliberately developed and executed within a documented framework that meets the requirements for a management system, a program and, where required, a process. There is an expectation that these activities are conducted as part of an overall pre-determined scheme that directs, coordinates, plans and manages the company's overall management system.

To determine compliance, the CER reviewed and evaluated Keystone's documents and records made available by Keystone in its demonstration of compliance and conducted interviews with company employees on issues relevant to the audit scope and criteria.

The audit did not test implementation of the various processes, programs, procedures and activities of the project as it was still in the pre-construction stage at the time of the audit.

3.2 Assessment of Keystone Construction Project

The assessment of the Keystone construction project, and the associated management system processes selected for evaluation during this audit is summarized in Table 1 (page 10). Additional details and a full explanation are provided in Appendix 1 (page 13).

Many of the deficiencies noted during the audit are associated with a lack of well-defined, documented processes which are expected by the CER. There is insufficient clarity on the specifics of what is to be carried out, by whom, when, how and using what resources. Also missing from several of the required processes were the specific roles, responsibilities and authorities of the individuals or positions assigned the responsibility to execute the processes. It was noted many processes do not describe the outputs and inputs to/from other management system elements and the protection programs to describe how the process has been integrated into the overall management system.

At the time of the audit, Keystone did not provide an adequate established process to identify and analyze all potential hazards related to the construction project or a process to develop the necessary controls. The CER is of the opinion this is an important step to ensure the safety of workers and the public and protection of the environment. Following a management system approach, this step would lead to the development of other project specific requirements such as determining the appropriate training and competencies of the workforce or the requirements of the monitoring and inspection program.

The CER is concerned that, in the construction contract documents reviewed during the audit, Keystone was found to be out of compliance with the CER's requirements regarding



companies' responsibilities to direct, manage and provide oversight regarding safety during construction as described in OPR section 6 and sections 6.1 through 6.6. In its audit, the CER noted that documents provided by Keystone for review indicate that the company may be intending to shift some of these responsibilities to contractors working on its behalf which is not consistent with these requirements. The CER notes that regulations allow companies to contract for the provision of services in respect of the construction of pipelines, but those companies must still exercise the control and oversight required in the OPR.

The CER reminds Keystone that it is ultimately the certificate holder and that those working on Keystone's behalf are not statutorily accountable for all aspects of safety (or environmental protection and security) related to the Keystone project construction.

Keystone must demonstrate how it will ensure that it will align itself with these requirements. The Corrective and Preventative Action Plan (CAPA) must include how and where the company will make changes to its programs and documentation to clearly communicate its alignment with the legislation. The CER will require confirmation of the CAPA Plan's implementation.

3.3 List of Audit Findings

There are two possible types of audit findings which can be assigned to each audit protocol item evaluated by the CER in this audit:

- No Issues Noted – *No non-compliances were identified during the audit based on the information provided and reviewed within the context of the scope of the audit; and*
- Non-compliant - *an evaluated regulatory requirement does not meet legal requirements. The company has not demonstrated that it has developed and implemented programs, processes and procedures that meet the legal requirements. A corrective and preventative action plan must be developed and implemented.*

Below is a table that provides a generalized description of the CER's audit findings. They correspond to the Appendix 1 Summary of Findings. That Appendix provides more information regarding the review and substance of each finding.

Table 1: Summary of Findings

Audit Protocol Item	Regulatory Reference	Protocol Topic	Status	Summary of Finding
AP – 01	OPR s. 6.1	Operational Management System	Non-Compliant	Keystone did not demonstrate integration and alignment between the Keystone project documentation and its existing management system.
AP – 02	OPR s. 6.4	Organizational Structure	Non-Compliant	Keystone did not demonstrate an organizational interface between TCPL and the Keystone project. Keystone cannot contract out its safety responsibility.



AP – 03	OPR s. 6.5(1)(c)	Identifying & Analyzing all Hazards & Potential Hazards	Non-Compliant	Keystone did not demonstrate the documents provided to contractors would provide for an adequate process to identify and analyze all hazards and potential hazards.
AP – 04	OPR s. 6.5(1)(d)	Inventory of Hazards & Potential Hazards	Non-Compliant	Keystone did not demonstrate the documents provided to contractors referenced an inventory of hazards and potential hazards. The hazard list provided by Keystone was generic in nature and not specific to the project.
AP – 05	OPR s. 6.5(1)(e)	Evaluating & Managing the Risks	Non-Compliant	Keystone did not demonstrate the documents provided to contractors would provide adequate requirements for performing an evaluation of risk.
AP – 06	OPR s. 6.5(1)(f)	Developing & Implementing Controls	Non-Compliant	Keystone did not demonstrate the documents provided to contractors were adequate for the development and implementation of controls.
AP – 07	OPR s. 6.5(1)(g)	Identifying & Monitoring Compliance with Legal Requirements	Non-Compliant	Keystone's documentation did not adequately include or require a process for identifying and monitoring compliance with all legal requirements.
AP – 08	OPR s. 6.5(1)(i)	Management of Change	Non-Compliant	Keystone's EPP for the project did not link to TCPL's TOMS or the process for hazard identification and analysis.
AP – 09	OPR s. 6.5(1)(j)	Developing Competency Requirements & Training Programs	Non-Compliant	Keystone's documents did not demonstrate contractors will develop competency requirements and training programs.
AP – 10	OPR s. 6.5(1)(k)	Verifying Training & Competency	Non-Compliant	Keystone's documents did not demonstrate contractors will establish and implement a process for verifying employees are trained and competent.
AP – 11	OPR s. 6.5(1)(l)	Making Employees & Others Aware of their Responsibilities	Non-Compliant	Keystone's documents did not demonstrate contractors have a process in place to ensure that its personnel and its subcontractors are aware of their responsibilities.
AP – 12	OPR s. 6.5(1)(m)	Internal and External Communications	Non-Compliant	Keystone did not demonstrate a process which contained defined steps, roles, responsibilities and



				linkages specific to the Keystone project.
AP – 13	OPR s. 6.5(1)(q)	Coordinating & Controlling the Activities of Employees & Others	No Issues Noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no issues were noted with this process.
AP – 14	OPR s. 6.5(1)(r)	Internal Reporting of Hazards, Potential Hazards and Near-Misses	Non-Compliant	Keystone did not demonstrate how it would manage imminent hazards for the project and contractors.
AP – 15	OPR s. 6.5(1)(t)	Developing Contingency Plans	Non-Compliant	Keystone's documents are not in alignment with one another. Keystone's referenced documents for environment and integrity do not define the requirements for abnormal events during construction.
AP – 16	OPR s. 6.5(1)(u)	Inspection & Monitoring	Non-Compliant	Keystone's documents did not include the requirement for corrective and preventative actions.
AP – 17	OPR s. 6.5(1)(w)	Quality Assurance Program	Non-Compliant	Keystone's documents did not demonstrate a quality program scope which included all OPR s. 55 programs and the management system.
AP – 18	OPR s. 18	Contracting Services for Construction	Non-Compliant	Keystone did not demonstrate they took all reasonable steps to ensure construction activities were conducted in accordance to the manual developed under OPR s. 20. Keystone has not provided its health & safety inspectors with an evaluation tool for sampling and testing to demonstrate conformance with the construction safety manual.
AP – 19	OPR s. 19	Construction of a Pipeline	No Issues Noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no issues were noted with this condition at the time of the audit.
AP – 20	OPR s. 20	Construction Safety Manual	Non-Compliant	At the time of the audit, Keystone had not submitted a Construction Safety Manual to the CER, however, some



				project work had already been completed or was underway.
AP – 21	OC-56 Condition 4	Environmental Commitment Tracking Table	No Issues Noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no issues were noted with this condition at the time of the audit.
AP – 22	OC-56 Condition 16	Consultation with Aboriginal Groups	No Issues Noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no issues were noted with this condition at the time of the audit.
AP – 23	OC-56 Condition 18	Construction Consultation & Complaint Monitoring	No Issues Noted	Based on the scope of this audit, the interviews conducted and the documentation reviewed, no issues were noted with this condition at the time of the audit.

4.0 Conclusion

The CER is concerned with the number of processes, programs and activities which were Non- Compliant with the definition of established as required by the CER, taking into consideration Keystone’s already completed pre-construction work and anticipated full scale construction start date, as provided at the time of the audit. Keystone cannot resume construction activities until it has implemented all corrective and preventive actions to address the CER’s Non-Compliant findings.

Throughout the audit, the CER noted the lack of integration of the Keystone construction project with TCPL’s corporate management system. Section 6.1 of the OPR contains specific requirements for a company’s management system. The OPR explicitly requires a company to have a management system that “*applies to all the company’s activities involving the design, **construction**, operation or abandonment of a pipeline and to the programs referred to in section 55*” (emphasis added). While the audit did identify parts of TCPL’s corporate management system were being applied on the project on an *ad hoc* basis, Keystone did not demonstrate it had fully and systematically integrated this project with the TCPL’s operating management system.

The CER requires Keystone to address the deficiencies in its management system processes and construction related documentation which have been identified during this audit. Therefore, Keystone is ordered to develop and submit, to the Secretary of the Commission, a Corrective and Preventative Action (CAPA) Plan to address the CER’s findings detailed in Appendix I. The CAPA Plan must describe the company’s analysis of its deficiencies and proposed methods and timeframe(s) to resolve them. Keystone is ordered to submit the CAPA Plan for approval within 30 days of the Final Audit Report being issued by the CER.



The CER will assess the implementation of Keystone's CAPA Plan to confirm it is fully implemented in a timely manner and to ensure the necessary safety for employees, those working on behalf of the company, the public and protection for the environment.

The CER will make its Final Audit Report and the Keystone approved CAPA Plan public on the CER's website.



Appendix I: Audit Assessment Tables

AP-01: Management System

<p>OPR s. 6.1: A company shall establish, implement and maintain a management system that</p> <ul style="list-style-type: none"> a) is systematic, explicit, comprehensive and proactive; b) integrates the company's operational activities and technical systems with its management of human and financial resources to enable the company to meet its obligations under section 6; c) applies to all the company's activities involving the design, construction operation or abandonment of a pipeline and to the programs referred to in section 55; d) ensures coordination between the programs referred to in section 55; and e) corresponds to the size of the company, to the scope, nature and complexity of its activities and to the hazards and risks associated with those activities. 	
	Assessment
Accountabilities	<p>To demonstrate it has established and documented accountabilities, Keystone referenced the TransCanada Pipelines Ltd. (TCPL) company level TransCanada Operational Management System (TOMS) which is TCPL's operational management system. The management system is comprised of mandated programs and processes as required under the OPR section 6.1. The CER related TOMS mandated programs include: safety, environment, emergency management, integrity, damage prevention, and security. TCPL developed TOMS to create a framework to enable its business activities to be conducted in an integrated and scalable manner.</p> <p>Each mandated program is required to conform to TOMS and the governance structure which it contains. TOMS has documented the roles, responsibilities and authorities that are part of the management system. Through various project documents, such as the Environmental Management Plan (EMP) and the Health, Safety, Security, and Emergency Management Plan (HSSEM) the CER identified various roles and responsibilities TCPL employees would have as part of the Keystone project.</p>
Process	<p>To demonstrate that it has established and documented the required process, TCPL referenced the TOMS which is its operational management system. It is comprised of elements, program standards, specifications, and procedures.</p> <p>TOMS applies to TCPL's overall company operations that includes a number of business units and project or construction activities which are all part of the overall life cycle of its pipelines. At the business unit level additional requirements are included within playbooks, work management plans, procedures and activities. TOMS has mandated program requirements for the Project Governance Program, Safety Program, Environment Program, Integrity Program and Emergency Program to name a few.</p> <p>Project Governance Program</p>



TCPL has an established a **Project Delivery Standard (PDS)** which supports decision making and defines the required project governance to confirm that project planning and development are sufficiently in place and how Keystone plans, executes and assures delivery of projects. Keystone has developed a project specific roadmap which defines the PDS deliverables that apply to each phase of the project and is used to guide the development of the Keystone (KXL or project) specific **Project Execution Plan (PEP)**.

KXL does not directly connect with or integrate with TOMS. The linkage is through the PDS document. The PDS document takes its guidance from TOMS, however the contractors will not directly interact with the TOMS or its documents. TCPL's Technical Center reviews all projects, including KXL, to ensure the company's internal requirements are met. TCPL indicated the required outcome is to have consistent delivery of its projects, with all projects following the same program.

Safety and Emergency

TCPL has a documented Safety Program which is a TOMS mandated program and provides the systematic and organized approach to occupational safety risk management, injury prevention and safety governance. The Safety Program includes a requirement for a Contractor Safety Management Practice that establishes and communicates minimum requirements to the contractors. Additionally, TCPL referenced the document **Occupational Health & Safety Standards for Prime/General Contractors (OHS Standard)** that outlines requirements for contractors to follow in the development of their own project specific safety documentation. The standards outline TCPL's requirements for contractors to provide an emergency preparedness and response plan for the work and work site with specific content requirements such as:

- personnel;
- equipment inspection procedures; and
- notification and reporting procedures and emergency checklists.

The CER has found that the Safety Program and Contractor Management practice, as described above, and associated documents do not adequately translate TOMS required process(es). For example, the **Contractor Safety Management Practice (CSMP)** does not align risk management requirements in TOMS through the Safety Program into the contractor program and requirements for contractors. Keystone was unable to demonstrate how TOMS elements link to the KXL and CSMP to demonstrate an explicit connectedness to be systematic, explicit, comprehensive, and proactive.

Environment

TCPL referenced an Environment Program Framework which is a TOMS mandated program. This describes the governance framework for the Environment Program, demonstrates alignment with TOMS and identifies requirements that apply to TCPL business units. Environment program requirements are defined and must be achieved throughout the various phases of project development.



TCPL referenced the KXL **Environmental Protection Plan (EPP)** that outlines environmental protection measures required to avoid or reduce potential adverse effects during construction and post-construction reclamation phases of the project. TCPL indicated the EPP is based on:

- TCPL's Health, Safety and Environment (HSE) Commitment;
- TCPL's HSE Management System;
- feedback obtained through consultation and ongoing engagement; and
- commitments made in project-specific environmental documents (e.g., ESA, permits and approvals).

Keystone referenced a documented **Environmental Implementation Plan (EIP)**, also known as its **EMP**. The purpose of this document is to ensure construction is carried out in compliance with all corporate policies and procedures including TCPL's Environment Program, project specific environmental commitments, including regulatory conditions of approvals and KXL's EPP. The EIP outlines an environmental organizational structure, project environmental team roles and responsibilities, pre-construction support including orientation/training, review of construction contractor documentation/programs, surveys, consultation, permitting, and post-construction environmental support. The EMP includes requirements for review of construction contractor documentation and programs and to approve the construction contractor project **Site Specific Environment Plan** as required in the contract.

Keystone referenced an **Environmental Design Standard (EDS)** with a purpose to outline decision-making processes during the environmental design, implementation and monitoring phases of a project. This document is referenced during the development of a projects EPP.

Through the combination of the TOMS, Environment Program Framework, the EDS, and KXL's EPP, Keystone did not demonstrate how all of the documentation is integrated to ensure they are systematic. The integration ensures the management system is integrated to the environment program at the construction activities.

Integrity / Quality

Keystone referenced the **Project Quality Plan (PQP)** which ensures work during design, procurement, fabrication, construction, and post-construction is performed according to project and regulatory requirements. The PQP describes how project quality requirements are extended contractually to ensure that supplier and contractor quality objectives, capabilities, tools and practices are aligned. The purpose of this PQP is to define how TOMS, PDS and QMP are implemented on the project. The PQP contains descriptions of the:

- quality management organization;
- hierarchy and relationships of the PQP to the Project Quality Team; and
- contractor quality plans and supporting documentation for all KXL delivery elements.



	The PQP demonstrates the use of a systematic, process-oriented, comprehensive approach to quality management as part of the project's overall project management system.
Supporting Procedures	N/A
Integration and Application	N/A
FINDING: Non-Compliant Keystone did not demonstrate the linkages and line of sight between the TOMS, mandated programs, and KXL specific documentation for the safety, environment, integrity and emergency program areas. TOMS has established requirements for risk management, operational controls, management of change, etc. However, Keystone has not demonstrated the requirements have been translated and applied into the project documentation for the above noted program areas.	



AP-02: Organizational Structure

<p>OPR s. 6.4: The company must have a documented organizational structure that enables it to</p> <ul style="list-style-type: none"> a) meet the requirements of the management system and meet its obligations under section 6; b) determine and communicate the roles, responsibilities and authority of the officers and employees at all levels of the company; and 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 section 6. 	
	<p>Assessment</p>
Accountabilities	<p>The project organization consists of a core project execution team and 3 support teams with each reporting to the KXL Senior Vice President. The Project Manager is accountable for the project outcomes which includes areas such as safety and quality. Keystone stated the project does not fit within the TOMS management system governance structure.</p> <p>Keystone has an Integrated Project Management Team which provides the organizational structure along with roles and responsibilities for the project and provide the necessary leadership structure.</p> <p>Keystone referenced the HSSEM which outlines the approach the project will use for contractors and defines specific roles, responsibilities and requirements for project personnel and contractors. As an example, the project HSSEM has established defined roles and responsibilities for the position of health & safety inspectors which include identification of potential hazards, hazardous work, etc. that would normally be associated with such a position.</p>
Requirement	<p>Keystone has an established project governance structure and organization chart for the project. Project governance documentation demonstrated roles and responsibilities for the project have been defined including a PQP which outlines the provision of resources for the project team. Resources required for construction are identified by the Construction Managers with validation from the Quality Manager.</p> <p>Organizational structure, roles and responsibilities are further described in program documentation including the HSSEM, the EPP, and Quality (Integrity) Plans.</p> <p>Keystone stated the Evaluation of Need was still being developed at the time of the audit and indicated it started work on this requirement by first reviewing past projects and the resources required to complete past work. As the project advances through various stage gates in its development and execution Keystone indicated the resources are continually refined. At the time of the audit, full project authorization had not been approved. Resource estimates were to be further refined as one of the final steps prior to the project being fully implemented. This stage requires the approval and sign-off from the TCPL Technical Center and the project's overall sponsor.</p>



	<p>Keystone referenced TOMS and contractual documents for ensuring the pipeline is constructed to its requirements. A review of the contractual agreement terms indicates Keystone plans to contract out its responsibility for compliance with regulations and indicates Keystone will not manage or control any of the safety at its worksites. The Board's analysis is supported by the language used in the general contract terms and conditions section on safety for construction. This section includes wording such as:</p> <ul style="list-style-type: none"> • [REDACTED] <p>The CER reminds Keystone that it is ultimately the certificate holder and that those working on Keystone's behalf are not statutorily accountable for all aspects of safety (or environmental protection and security) related to the Keystone project construction. While companies can clearly contract for construction related services, as demonstrated in various sections of the OPR, the regulated company must still provide appropriate direction, approval, management and oversight of activities occurring on its facilities and at its projects. This practice is therefore Non-Compliant and Keystone will need to develop a corrective and preventive action plan to address this deficiency.</p> <p>Review of the Keystone referenced organization chart for the project indicates third party "general inspection" reports to the Keystone construction manager. The reporting structure does not align between the organization chart and the roles and responsibilities outlined in CCMS 2016 Role Descriptions document (CCMS). Additionally, the organization chart indicates the contractor is reporting dotted line to the General Inspection. The roles and responsibilities are not clear to demonstrate how the project is meeting OPR section 54 and has not established adequate roles, responsibilities and authorities.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>Keystone did not demonstrate an organizational structure linkage between the project and contractors as related to each program area: safety, environmental, emergency and integrity (quality). Keystone program plans and documentation did not demonstrate an organizational linkage between specific roles / positions within the Keystone project team and contractor personnel. As a result, it is not clear how the organizational structure and reporting interface between Keystone and contractors is documented.</p>	



AP-03: Identifying and Analyzing all Hazards and Potential Hazards

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, OPR s. 6.5(1)(c) establish and implement a process for identifying and analyzing all hazards and potential hazards.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone referenced the TOMS Element on Risk as establishing the requirements to manage operational risk through the asset life cycle of design, construction, operation and decommissioning. This element of TOMS provides a framework for identifying hazards and potential hazards and through the risk management standard the individual mandated programs (safety, environment, integrity, and emergency) apply the risk management requirements using their own approach.</p> <p>Safety and Emergency Keystone has a requirement for contractors to perform a Project Hazard Assessment (PHA) as part of their Project Specific Site Safety Plans (P/SSSP). As part of developing the PHA, during the bidding stage of the project, all bidders are provided with the general bid documents and are required to conduct a “<i>Thoughtful Exercise</i>” of what they anticipate to encounter during the project based on their site visits, bid analysis, and clarification meetings with Keystone prior to bids being submitted. In addition to the PHA, Keystone referenced a PHA Procedure as a systematic method to identify and evaluate potential process hazards related to managing the integrity of hazardous operating systems and processes and provide recommendations. Keystone referenced a PHA Report as a summary of all PHA work completed during the design phases of the facilities on the project.</p> <p>The OHS Standard outlines Keystone’s minimum performance expectations with respect to OHS aspects of the work including references to identify, evaluate and safely control hazardous conditions associated with the work, the work site, and requirements for the contractor to identify how and when Job Safety Analysis (JSA) and/or hazard assessment(s) for specific activities will be developed.</p> <p>The HSSEM requirements, and the requirements outlined in the OHS Standard do not appear to be adequate to describe Keystone roles, responsibilities, steps and integration with its contractors in identifying and analyzing hazards. Based on CER analysis, the HSSEM has defined roles for the Project Management Team, Health & Safety Manager, Health & Safety Lead, Health & Safety Advisor, and Health & Safety Analyst but there is no specific requirements for their role, responsibility and steps to perform in identifying hazards and potential hazards and analysis of hazards within active control or as oversight or review of the contractors and is non-compliant.</p>



The TOMS risk Element, the HSSEM, and the OHS Standard for contractors are not adequate to ensure contractors will establish and implement a process for identifying and analyzing all hazards and potential hazards, and be compliant with the CER applied definitions. The contractor's role and responsibilities do not specifically include requirements to establish and implement a process for identifying and analyzing hazards and potential hazards and is therefore non-compliant.

Keystone references the HSSEM as describing the requirements for performing a review of the contractor P/SSSP. During the audit, an evaluation form was provided which shows what reviewers review as part of the content for this evaluation. After evaluating the form, it was found it did not provide adequate content to ensure the contractor has an adequate process for hazard identification and analysis of hazards and is non-compliant.

Environment

With respect to environmental protection, Keystone indicated environmental hazards are defined as "activity/concern" in the EPP and they were identified from the initial studies and the **Environmental Site Assessment (ESA)** which were part of the original KXL application and permitting process. The ESA collected and provided all identified risks and issues to the EPP where they are to be addressed or monitored. Based on the collected environment data, the integrity program assesses the identified risk areas to determine if the route alignment can be adjusted to avoid them. Keystone indicated any new environmental hazards or risks identified during the project follow the management of change (MOC) process.

The EMP and EPP do not contain a process for the ongoing continual assessment of environmental hazard identification as part of the construction activities. The EPP does not link to the TOMS processes for hazard identification and analysis. Keystone has defined responsibilities for the environmental inspector to bring concerns to the environmental advisor, however; no other specific responsibilities are defined for project environmental staff related to hazard identification and analysis.

Integrity

Keystone referenced the **Canadian Liquids Integrity Management Program (IMP)** which includes a section on threat identification (which Keystone indicated is the same as identification of hazards) consequences and risks. The section outlines a purpose of 'operational risk management' and includes consideration of threats in design and construction from an integrity perspective. Keystone indicated the company's existing engineering standards and specifications are brought into the project through the design stage and the PDS. For process safety, Keystone indicated that a PHA Procedure approach is applied. This approach includes information on which type of hazard analysis is most appropriate, an example being Haz-Ops. Once complete, the process safety analysis is added to the overall project PHA close out report.

Keystone indicated where project work is required at its existing operational sites, they will use 'active control' over all contractors and sub-contractors. Keystone demonstrated that active control includes directing and providing many of the project hazards, potential hazards, and the required analysis.



	<p>The PQP includes a section on quality risks and outlines requirements for quality risks to be identified, monitored and controlled by the project team. The Quality Manager works with project stakeholders to identify and quantify risks and enter them into the Project Risk Register. Applicable barriers are defined (operational controls) to develop strategies to mitigate the risk(s). These risks are to be quality specific, such as industry recognized defects from a supplier or past quality issues with a specific design firm. The PQP section, Quality Risks, does not reference a process and / or procedures for hazard and potential hazard identification and it did not reference the PHA Procedure. The PHA closeout report referenced by the project does not conform to the reporting structure requirements contained in Appendix A of the corporate PHA Procedure.</p> <p>The Keystone IMP was developed based on operational risks and although it includes design and construction threats they have been framed as part of risk to be included during operational risk assessment. The identification of hazards (threats) during design and construction is not outlined in the IMP and does not meet the requirement for a process that includes roles, responsibilities and steps.</p> <p>Keystone did not demonstrate a hazard identification and analysis process as part of engineering quality and supply chain quality within the overall integrity program as applied to the project.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>Keystone did not demonstrate an established and implemented process for identifying and analyzing all hazards and potential hazards as related to the safety, emergency, environment and integrity programs for this project.</p>	



AP-04: Inventory of hazards and potential hazards

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55, OPR s. 6.5(1)(d) establish and maintain an inventory of the identified hazards and potential hazards.</p>	
	<p>Assessment</p>
Accountabilities	Refer to AP-01 and AP-02.
	<p>Keystone identified TOMS risk element as establishing the requirements to manage operational risk through the asset life cycle of design, construction, operation and decommissioning. This element provides a framework for identifying hazards and potential hazards, and references the Risk Management Standard. Keystone did not demonstrate that they met the requirements for a hazard and potential hazard inventory as related to each program: safety, emergency, environment and integrity.</p> <p>Keystone referenced a PQP containing a section on risks as its inventory. The CER found the PQP section Quality Risks does not reference an inventory of hazards and potential hazards. The PQP references a risk register, however no specific information is provided which demonstrates hazard and potential hazards are to be compiled into an inventory for the KXL construction.</p> <p>Safety and Emergency Keystone demonstrated a documented HSSEM which describes requirements for performing a hazard assessment and provides a high-level risk identification and control outline in the appendix of the document to aid contractors.</p> <p>Keystone demonstrated a list of generic hazards associated with construction activities in the appendix of the HSSEM. The list of high-level hazards in the HSSEM document do not outline hazards which would be considered emergencies and the hazards identified may not all be applicable to the EM program and require preparedness activities and implementation of emergency response plans. For example, slips and falls are identified and typically would not involve implementation of the emergency response plan, however, contact with underground utilities and release would require emergency response including notification, evacuation etc. as outlined in emergency response plans.</p> <p>Environment Keystone demonstrated a comprehensive and documented EPP that outlines environmental protection measures to avoid or reduce potential adverse effects during construction and post-construction reclamation phases of the Canadian portion of the KXL project. Keystone indicated that environmental hazards are defined as “activity/concern” in the EPP and were generated from the projects initial studies and assessments and were part of the application and permitting process.</p>



	<p>Integrity Keystone referenced the IMP which includes a section on Threat Identification, Consequences and Risks. The IMP includes a listing of threats and considerations including: stress corrosion, manufacturing related defects, welding/fabrication related, and third party damage/mechanical damage to name a few.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>The CER has found that Keystone did not demonstrate an established and maintained hazard inventory for the safety and emergency program as related to the project. Based on the CER's analysis, the TOMS risk Element, HSSEM requirements and the requirements outlined in the OHS Standard for contractors are not adequate to describe Keystone roles, responsibilities, steps and integration with the contractors to establish and maintain an inventory of hazards. Keystone did not specify the role of contractors, sub-contractors or Keystone active control in the establishment and maintenance of an inventory of hazards and potential hazards. Keystone did not adequately demonstrate requirements for a hazard and potential hazard inventory in safety documentation and requirements of contractors.</p> <p>Based on the information provided and reviewed, the CER has not identified any deficiencies with the Environment program inventory of hazards and potential hazards.</p> <p>The CER has found that Keystone has not demonstrated an established and maintained hazard inventory for the integrity program as related to the project and is non-compliant.</p>	



AP-05: Evaluating and Managing Risks

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(e) establish and implement a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone demonstrated a Risk Management Standard and the Risk Management Procedure which set requirements to implement the TOMS risk management Element across Keystone and provides methods to evaluate risks.</p> <p>Keystone stated that inspection and monitoring is conducted to verify the controls which are to be implemented are being implemented as designed and working as intended. Training also acts as control, as do tail gate meetings, especially for environmental issues for a specific work area such as working around Burrowing Owls.</p> <p>Safety and Emergency Keystone demonstrated the HSSEM has a requirement for the contractor to perform a PHA as part of its P/SSSP. The CER has found that the HSSEM does not provide adequate requirements for performing an evaluation of risk associated with the identified hazards, including risk related to normal and abnormal operating conditions. The HSSEM provides no specific direction to contractors on performing a risk assessment including evaluating risks related to normal and abnormal operating conditions.</p> <p>Keystone demonstrated a list of generic hazard categories in the HSSEM. The CER has found that the generic hazard categories are not based on risk nor do they represent a risk evaluation specific to the project. Additionally, Keystone did not demonstrate risk evaluation requirements in the OHS Standard provided to contractors and they have not specified the role of contractors or Keystone active control sites in the evaluation of risk. The roles and responsibilities do not refer to establishing and implementing a process for risk evaluation for the project.</p> <p>Environment Keystone referenced the EPP which outlines environmental protection measures which will be used to avoid or reduce potential adverse effects during construction and post-construction reclamation phases of the project. The EPP does provide site specific plans for various environmental requirements such as soil stripping methods. Keystone indicated that the EPP acts like more of an active control to provide a higher level of direction for the contractors. If environmental</p>



	<p>inspectors identify something that is not working, they have the ability to shut down the work and review the procedure to determine if changes are required. The EPP did not demonstrate an adequate process for risk evaluation.</p> <p>Integrity Keystone referenced the IMP which includes a section on Threat Identification, Consequences and Risks. The section outlines a purpose of 'operational risk management' and includes consideration of threats in design and construction.</p> <p>The Quality Manager works with project stakeholders to identify and quantify risks and enter them into the project risk register and applicable barriers are defined (operational controls) to develop strategies to mitigate the risk. These risks are to be quality specific, such as industry recognized defects from a supplier or past quality issues with a specific design firm. The Keystone referenced documents do not meet the requirements for a process including roles, responsibilities and steps.</p>
Supporting Procedures	N/A
Integration and Application	N/A

FINDING: Non-Compliant

Keystone did not demonstrate that it has established and implemented a process for evaluating and managing the risks associated with the identified hazards, including the risks related to normal and abnormal operating conditions for the safety, emergency, environment and integrity program for the KXL project.



AP-06: Developing and Implementing Controls

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(f) establish and implement a process for developing and implementing controls to prevent, manage, and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks.</p>	
	<p>Assessment</p>
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone demonstrated a Risk Management Standard and the Risk Management Procedure which establishes requirements to implement the TOMS risk management element across Keystone and provides requirements for developing and implementing controls.</p> <p>Safety and Emergency Keystone demonstrated the HSSEM has a requirement for the contractor to perform a PHA as part of its P/SSSP and the CER has found that the HSSEM does not provide adequate requirements for developing and implementing controls.</p> <p>Keystone indicated it used its company level Risk Management Procedure which includes the identification of hazards and barriers, one of its existing controls, for this project and it is used as part of the Safety Program. However, Keystone did not demonstrate application of the program to the KXL project.</p> <p>Keystone stated the PHA and the JSA procedures are communicated during the onboarding process to ensure everyone has the same level of awareness of controls that have been put in place.</p> <p>The HSSEM includes emergency management and includes requirements for contractors and Keystone active control sites to develop site specific emergency response plans that include controls for emergency related hazards.</p> <p>After reviewing the HSSEM requirements and the requirements outlined in the OHS Standard for contractors the CER found the requirements are not adequate to describe Keystone roles, responsibilities, steps and integration with the contractors to develop and implement controls.</p> <p>Keystone did not specify the role of contractors, and this includes Keystone active control sites, in the establishing and implementing a process for developing controls. The roles and responsibilities do not refer to establishing and implementing controls to prevent, manage and mitigate the identified hazards and risks.</p>



	<p>Environment</p> <p>Keystone referenced the EPP which outlines environmental protection measures which will be used to avoid or reduce potential adverse effects during construction and post-construction reclamation phases of the project. The EPP does provide site specific plans for various environmental requirements such as soil stripping methods. Keystone indicated the EPP acts like more of an active control to provide a higher level of direction for the contractors. If environmental inspectors identify something is not working, they have the ability to shut down the work and review the procedure to determine if changes are required.</p> <p>Keystone's demonstrated the EPP outlines the environmental protection measures to be applied to avoid or reduce potential adverse effects during construction and post-construction reclamation phases of the Project. Keystone stated the environmental alignment sheets are given to the contractors early in the development of the project. The alignment sheets are one of the main communication tools used to communicate controls needed to prevent, manage, and mitigate the identified hazards and risks along the pipeline right of way.</p> <p>Integrity</p> <p>Keystone referenced the IMP which includes a section on Threat Identification, Consequences and Risks. The section outlines a purpose of 'operational risk management' and includes consideration of threats in design and construction. Keystone did not demonstrate the application of controls to the hazards and risks for the project.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>Keystone did not demonstrate an established and implemented process for developing and implementing controls to prevent, manage, and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks as related to the safety and emergency program. The safety documentation provided does not provide adequate requirements for developing controls to prevent, manage and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks. Additionally, the HSSEM provides no specific direction on developing, implementing and communicating controls to ensure a process is established.</p> <p>The CER has found no identified issues with the environment program as related to this project at the time of the audit.</p> <p>Keystone did not demonstrate an established and implemented process for developing and implementing controls to prevent, manage, and mitigate the identified hazards and the risks and for communicating those controls to anyone who is exposed to the risks as related to the integrity program.</p>	



AP-07: Identifying Legal Requirements

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(g) establish and implement a process for identifying, and monitoring compliance with, all legal requirements that are applicable to the company in matters of safety, security and protection of the environment.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone demonstrated that TOMS contains a Compliance Element with a legal requirements monitoring process. At the TOMS element level, the legal requirements move to the mandated programs, such as Safety and Environment to name a few.</p> <p>Keystone provided the Keystone XL Compliance Management Program Document which includes a Compliance Tracking System (CTS) for Canada and the U.S. The tracking system captures all project related conditions and commitments, along with the assignment of responsibility for the implementation of each condition and commitment.</p> <p>Keystone referenced the PDS Commitment and Compliance Procedure that defines the activities, and roles and responsibilities for managing and tracking the commitment and compliance component of a Keystone project. It describes how the project manager, regulatory project manager and Keystone functional leads work together to identify, manage, monitor, and close or transition project commitments to ensure stakeholder satisfaction and regulatory compliance. Completion of activities described in this procedure ensures commitments and conditions are followed through, and external stakeholder requirements are met and completed as per the established timeframe.</p> <p>Keystone referenced the HSSEM for the project which outlines the approach to the project for the use of contractors and Keystone active control. The CER has found that the HSSEM, OHS Standard and contractual requirements do not adequately include or require a process for identifying and monitoring compliance with all legal requirements.</p>
Supporting Procedures	N/A
Integration and Application	N/A



FINDING: Non-Compliant

The CER has found no identified issues with the commitment compliance process as established for regulatory requirements as related to approvals such as conditions of a certificate, permit etc. at the time of the audit.

Keystone did not demonstrate to the CER an established and implemented process for identifying and monitoring compliance with all legal requirements as related to the safety, emergency, environment and integrity programs of the project.



AP-08: Management of Change

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(i) 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.</p>	
	<p>Assessment</p>
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone referenced TOMS and the Management of Change Element of the management system. Keystone stated that this element establishes the requirements to manage change through a framework that includes the asset life cycle of design, construction, operation and decommissioning. The Management of Change Element establishes the requirements to identify, document, evaluate and implement approved changes and a management of change element framework which outlines the process steps to identify, document, evaluate and implement approved changes at Keystone.</p> <p>Keystone referenced its contract provisions to allow it to direct changes at any time if changes are required to the project as a result of adjustments to the Keystone's management systems and apply to the safety, emergency, environment and integrity programs.</p> <p>Keystone will issue a contemplated change notice or a change directive to the contractor. The contractor would then be required to update its work plans to accommodate the changes and submit to Keystone for review and acceptance. The contractor would then be required to manage change with its subcontractors in same manner.</p> <p>Keystone referenced the PDS for establishing requirements for variances when a material deviation from the mandatory requirements is requested by the project. Variances must be approved through the project management structure and justification for the variance and the need for additional controls such as risk mitigation, must be addressed.</p> <p>The PQP is to define the overall Project Quality Management System (PQMS) for the project and define how TOMS, PDS and the QMP are implemented on the project. Keystone also indicated the PQP ensures that work during design, procurement, fabrication, construction and post-construction is performed according to project and regulatory requirements, and results in a pipeline system that is safe to operate and fit for its intended purpose. The PQP includes a section on the management of change and outlines that Keystone's management of change framework is to be followed. The PQP indicates change control can be based on customer requests, project review and verification, inspections, field change requests and information from suppliers to name a few.</p>



	<p>Safety and Emergency Keystone provided a documented HSSEM for the KXL project which outlines the approach of the project for the use of contractors and active control (Keystone responsibility) specific to safety and emergency. The HSSEM includes requirements if a contractor is unable to fully implement a requirement outlined in its P/SSSP prior to mobilization, they may submit a written mitigation plan to Keystone for review and acceptance. The HSSEM also includes a requirement that the contractor is not permitted to engage in any work until its P/SSSP has been updated, reviewed and accepted by Keystone. The CER has found the TOMS management of change processes does not link to the Safety and Emergency HSSEM.</p> <p>Environment Keystone referenced the EMP which includes requirements for establishing alignment with the project management and construction management team to establish consistent procedures for identification, initiation, processing and approval of variance requests associated with mitigation plans. The CER has found that Keystone's EMP and the PDS addresses variances and is focused on mitigations associated with the conditions in the EPP. The CER has found that the EPP does not link to the corporate management system, TOMS, processes for hazard identification and analysis.</p> <p>Integrity Keystone indicated the PQP is used to ensure that work during design, procurement, fabrication, construction and post-construction is performed according to project and regulatory requirements, and results in a pipeline system that is safe to operate and fit for its intended purpose. The purpose of this PQP is to: define the overall PQMS for the project and define how TOMS, PDS and QMP are implemented on the project. The PQP includes a section on the management of change and outlines that Keystone's MOC is to be followed. The PQP indicates change control can be based on customer requests, project review and verification, inspections, field change requests and information from suppliers etc.</p> <p>Keystone demonstrated the IMP includes a section on MOC. It outlines that the MOC process ensures changes are technically reviewed, impacts are considered, communicated to affected parties, documented, justified and approved before being implemented.</p> <p>Keystone referenced the project governance program which includes a section on MOC that requires that changes to project governance program or PDS will be managed according to Keystone's MOC framework.</p> <p>The CER has found that the TOMS management of change processes do not integrate with the project level safety, emergency, environment and integrity programs.</p>
Supporting Procedures	N/A



Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>Keystone did not demonstrate to the CER a process for identifying and managing 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 project. Keystone was unable to demonstrate a connection between the TOMS MOC process and the project change requirements as related to safety, emergency and environment program of the project.</p>	



AP-09: Competency Requirements and Training Programs

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(j) establish and implement a process for developing competency requirements and training programs that provide employees and other person 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 security of the pipeline and protects the environment.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone referenced its TOMS Element on Roles, Responsibilities and Competency which establishes the requirements to identify and develop competency requirements and training materials as appropriate. Mandatory training materials and competency requirements, based on role, are managed through a Learning Management System (LMS) for mandated programs. The Technical Learning and Development team is responsible to ensure that minimum competency requirements and training materials are established and available, as required for mandated programs. Keystone indicated project specific training requirements may be identified by project leadership and assigned through various methods such as LMS, formal training (by third party services) and the onboarding process found in the PEP.</p> <p>Safety and Emergency</p> <p>Keystone referenced the OHS Standard which outlines the expectations that contractors review and train all workers to carry out the duties within their scope of work as per the requirements contained in all the applicable contract documents. Additionally, it outlines the requirement that supervisors receive specific training for their duties and have proven competency regarding the execution of their duties.</p> <p>Keystone referenced the HSSEM for the project which outlines the approach for the use of contractors and Keystone active control. The HSSEM includes required training for Keystone employees, and project employees (contingent workforce). Contractors are required to ensure employees and sub-contractors working under their direction have sufficient training to meet legislative requirements and effectively manage risk. Contractors are to establish a training matrix that addresses all training and orientation requirements as per their P/SSSP. Contractors and sub-contractors are to ensure proof of the completion of any required training is readily available for review.</p> <p>The CER has found that the TOMS, HSSEM and the OHS Standard do not adequately include or require a process for developing competency requirements and training programs for personnel working on behalf of the company. The documentation Keystone provided outlines the requirements for its personnel and contractors; however, the process requirements have not been demonstrated to ensure contractors develop competency requirements and training programs.</p>



	<p>Environment Keystone referenced the EMP which includes an environmental orientation and training section that outlines requirements for all employees and contractors whose activities could have an impact on the environment receive appropriate training. The environmental training program for the project has been developed to target various levels of the organization (management and workforce) and has been customized to fit the specific responsibilities of the participants. All project environmental training will be conducted by a representative from the Environmental Team and require Keystone environmental inspection staff, Keystone management and construction inspection personnel, contractor supervisory staff (Superintendent, Assistant Superintendent, and Foremen) and all visitors to the project to attend.</p> <p>Integrity Keystone referenced the CCMS that outlines the key roles on the project (Chief Inspector, Welding Inspector, Senior Construction Site Manager etc.) and defines the roles, responsibilities and qualifications.</p> <p>Keystone referenced a Project Quality Plan that includes an appendix and steps to conduct quality orientation and training with roles for engineering, design team and project quality manager.</p> <p>Keystone referenced a Canadian Pipeline Construction Management Plan that includes an onboarding section that outlines requirements for timelines and content of the onboarding.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>Keystone did not demonstrate an established and implemented process for developing competency requirements and training programs which will enable persons working with or on behalf of the company to perform their duties in a manner that is safe, ensures the security of the pipeline and protects the environment related to the project as related to the safety and emergency programs. Keystone has not demonstrated specific requirements for contractors to establish and implement a process for developing competency requirements and training programs.</p>	



AP-10: Verify Training and Competency Requirements

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(k) 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 security of the pipeline and protects the environment.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone referenced its TOMS Element on Roles, Responsibilities and Competency. This element establishes the requirements to identify and develop competency requirements and training materials as appropriate.</p> <p>Safety and Emergency Keystone referenced the OHS Standard for contractors which outlines the expectations that contractors review and train all workers to carry out the duties within their scope of work. This is to be completed as per the requirements contained in all the documents applicable to that scope of work and applicable contracts if required.</p> <p>Keystone referenced the documented HSSEM which outlines the approach to the project for the use of contractors and Keystone active control. The HSSEM includes required training for Keystone employees, and project employees (contingent workforce). All contractors are required to ensure employees and sub-contractors working under their direction have sufficient training to meet legislative requirements and effectively manage risk. The contractors are to ensure proof of the completion of any required training is readily available for review.</p> <p>The CER has found that the referenced OHS Standard and HSSEM documents do not adequately include or require contractors to establish and implement a process for verifying employees and other persons with or on behalf of the company are trained and competent.</p> <p>Environment Keystone referenced the EMP which includes an environmental orientation and training section outlining requirements for all employees and contractors, whose activities could have an impact on the environment, require appropriate training. The EMP outlines training that will be communicated prior to the start of any work. An Environmental Handbook will also be issued and is required to be understood. Tailgate training is also a component that will be employed during construction and environmental inspectors will also deliver brief tailgate training sessions to select crews prior to starting work in sensitive areas. The CER has found that Keystone did not demonstrate a process for verification of competency related to the training and orientation.</p>



	<p>Integrity Keystone referenced a PQP which includes a step to conduct quality orientation and training with roles for engineering, design team and project quality manager. Additionally, Keystone referenced a CCMS, PEP, and Canadian Pipeline Construction Management Plan that includes roles, responsibilities, reporting structure for execution of the project including supervision. The CER has found Keystone did not demonstrate a process for verification of competency related to the training and orientation.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>Keystone did not demonstrate to the CER a process for verification of competency requirements and training programs for 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 security of the pipeline and protects the environment as it applies to the safety, emergency, environment and integrity programs of the project.</p>	



AP-11: Awareness of Responsibilities for Employees and those working on the Company's behalf

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(l) establish and implement a process for making employees and other persons working with or on behalf of the company aware of their responsibilities in relation to the process and procedures required by this section.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone referenced its TOMS Element on Roles, Responsibilities and Competency. This element establishes the requirements to, document and communicate roles, responsibilities and authorities for manuals, standards, specifications and procedures. Additionally, Keystone referenced the TOMS Element on Operational Controls, outlining the requirements to establish controls for the design, construction, operation and maintenance activities. Keystone also referenced the PDS to provide guidance on how projects will be executed in alignment with TOMS through the development of plans that are linked to the requirements of the TOMS mandated programs.</p> <p>Safety and Emergency Keystone referenced the HSSEM for the project which outlines the approach to the project for the use of contractors, and Keystone active control. The HSSEM includes required training for Keystone employees, and project employees (contingent workforce) and does not meet the requirements of a process including roles, responsibilities and steps.</p> <p>Environment Keystone referenced the EMP which includes an environmental orientation and training section which outlines requirements for all employees and contractors whose activities could have an impact on the environment take the appropriate training. The environmental training program for the project has been developed to target various levels of the organization (management and workforce) and has been customized to fit the specific responsibilities of the participants. All project environmental training will be conducted by a representative from the Environmental Team and requires Keystone environmental inspection staff, Keystone management and construction inspection personnel, contractor supervisory staff (Superintendent, Assistant Superintendent, and Foremen) and all visitors to the project to participate.</p> <p>The CER has found that Keystone has not established and implemented a process for communication of responsibilities to employees and other persons as related to this project. A review of the EMP did not indicate defined specific roles, responsibilities or procedures for communication of responsibilities.</p>



	<p>Integrity Keystone referenced the PEP which outlines that prior to commencing construction activities, a pre-construction kick-off meeting is held with the KXL project team and its contractors to review the detailed construction execution plans and scope specific work details. The PEP also outlines that all construction management and inspection staff will participate in an onboarding program to understand Keystone and project specific expectations. The CER has found the PEP did not contain a process for making personnel aware of their responsibilities as related to the integrity program.</p> <p>The CER has found that Keystone has not demonstrated expectation and requirements for contractors to have a process to ensure its personnel and subcontractors are aware of their responsibilities.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>The CER has found that the referenced documents do not adequately establish a process for making employees and other persons working with or on behalf of the company aware of their responsibilities as required by this section.</p>	



AP-12: Internal and External Communication

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(m) establish and implement a process for the internal and external communication of information relating to safety, security and protection of the environment.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone indicated that for internal communication the process is outlined in the PEP that it considers contractors as part of its internal stakeholders. Keystone indicated the safety, emergency, environment and integrity programs have additional specific requirements for internal communication.</p> <p>Safety and Emergency Keystone referenced the HSSEM which outlines examples of internal communication that will occur throughout the project, and when safety and emergency related communication and consultation are required. Keystone also referenced the OHS Standard for contractors which outlines the requirements for the contractor's project specific safety plans to define communication methods regarding OHS matters.</p> <p>Environment Keystone referenced the EPP which includes an environmental compliance section which outlines requirements for information sharing between the environmental inspector(s), the environmental advisor, and all field personnel and the contractors. The EPP includes a requirement for a complete set of environmental alignment sheets and other environmental documents to be available at the construction site. Keystone indicated the alignment sheets provide construction personnel with the necessary information to implement the required mitigation measures. Controlled copies of the EPP and associated environmental documents are provided to key project construction personnel and contractors prior to the start of construction for their review and preparation for the project.</p> <p>The CER's analysis has found that the EPP provides communication of environmental requirements and information, but does not include roles, responsibilities and steps.</p> <p>Integrity Keystone referenced a Canadian Pump Station Construction Management Plan which outlines the requirement to conduct ongoing site meetings to review important relevant information. The project team holds weekly project execution meetings with key representatives from each functional team. Issues that impact cross functional teams are shared and actioned as appropriate.</p>



	<p>The CER reviewed the PEP and above-noted referenced program requirements and has found that a process with defined steps, roles, responsibilities and linkages to other relevant elements in the management system has not been established. The PEP and specific program requirements do not meet the requirement for a process. The CER has found that the referenced documents do not adequately define steps for internal communication from project management through each program including: safety, emergency, environmental and integrity programs.</p> <p>External Communication Keystone indicated the assigned position, Director of Stakeholder Relations, has accountability for the communication plan with external parties including landowners, communities and the public as related to all program areas. Keystone indicated for external communication the PEP outlines requirements for external communication with contractors. The PDS and the Canadian Pump Station Construction Management Plan are also referenced by Keystone for the external communications process. This includes all external stakeholders such as landowners, indigenous groups, the public to name a few, with the documentation tracked differently for each group.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>Keystone did not demonstrate to the CER an established and implemented process for the internal communication of information relating to safety, security and protection of the environment as related to the project.</p>	



AP-13: Coordinating and Controlling the Operational Activities of Employees and Other People Working on Behalf of the Company

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(q) 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 security of the pipeline and protects the environment.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone demonstrated its TOMS element on Roles, Responsibilities and Competency establishes the requirements to, document and communicate roles, responsibilities and authorities for manuals, standards, specifications and procedures. Additionally, Keystone referenced its PDS that outlines how roles and responsibilities are to be assigned related to the specific project. Keystone referenced the PEP that outlines accountabilities and responsibilities for each program area including engineering, health & safety, security and environment.</p> <p>Keystone referenced a PEP, PDS and a CMP that outlines project organizational structure and reporting.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Compliant</p> <p>The CER did not identify any deficiencies with the referenced TOMS, PDS and PEP that comprise an established and implemented process for controlling the operational activities of employees and others working with or on behalf of Keystone at the time of the audit.</p> <p>The CER did not find any issues with the referenced process for the coordinating and controlling the operational activities of employees and other people working with or on behalf of Keystone 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 security of the pipeline and protects the environment as related to the project.</p>	



AP-14: Internal Reporting of Hazards, Potential Hazards, Incidents, and Near Misses

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(r) establish and implement a process for the internal reporting of hazards, potential hazards, incidents and near-misses and for taking corrective and preventative actions, including the steps to manage imminent hazards.</p>	
	<p>Assessment</p>
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone demonstrated the TOMS element Incident and Non-conformance Management includes an Incident Management Program (IMP). Keystone's IMP goal is to capture all incidents, including near-misses, and use key learnings to reduce the number and severity of future incidents. The IMP defines incidents to include near-hits and impacts on health, safety, environment, asset (damage by contact), and/or security, and a secondary impact on business reputation, community, and/or operations.</p> <p>Keystone indicated a hazard is entered into the system at the same as an incident but the classification is different. This step also includes the requirement to classify the potential and actual severity of the hazard and to focus on the potential severity when entering a hazard into the system. The Keystone system captures all hazards, potential hazards, and incidents for all programs, including the quality program.</p> <p>Keystone referenced the Health Safety and Environment Commitment Statement which outlines the expectation that all personnel will report and communicate risks and hazards. The project has adopted the above commitment and documented this as part of the HSSEM and it is communicated through project safety orientation. Interviews indicated a strong awareness of reporting incidents that include near-misses.</p> <p>Safety and Emergency Keystone referenced the OHS Standard for contractors which outlines requirements for health and safety management including incident management. The OHS Standard includes incident management and requires contractors to integrate its system for incident management with the Keystone IMP. This requires contractor information to be transferable and translatable to the IMP. Additional contractor requirements include reporting timelines and requires the contractor to outline reporting requirements for daily, weekly and monthly reports.</p> <p>Environment Keystone referenced the EMP which includes a compliance section that requires incident reporting, including near-hits, within a specified time to be reported, and participation in the investigation if required. Additional requirements include active involvement and participation in environmental issue resolution process and environmental non-</p>



	<p>conformance or non-compliance process including escalation procedures. However, environmental hazard reporting is not included as part of the EMP.</p> <p>Integrity Keystone referenced a PQP that outlines requirements for non-conformances (non-fulfillment of a state, implied or obligatory requirements) which are related to work product and can include incorrect engineering, incorrect procurement deliverables, improper dimensions, incorrect installations or incorrect use of fabricating procedures or processes. The PQP ensures non-conformances are identified, tracked, with disposition controlled to prevent unintended use, and a database for tracking and management needs.</p> <p>Keystone referenced the PQP for corrective and preventive actions (corrective action is identified as the action to eliminate the cause of a detected nonconformance or other undesirable situation) and corrective action requests are process-related and can include non-adherence to contract requirements or approved plans, processes, procedures or work instructions. Preventive action requests are identified as actions to eliminate the cause of a potential nonconformance or other undesirable potential situation.</p> <p>The CER has found that Keystone referenced documents do not reference to or provide requirements for contractors to have a process for corrective and preventive actions related to hazards, potential hazards, incidents and near-misses as related to the safety, emergency, environment and integrity programs.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>The CER has found that Keystone did not demonstrate steps for environmental hazard reporting and is non-compliant.</p> <p>The CER did not find any issues with the process for internal reporting of incidents and near-misses as related to the safety, emergency, and integrity programs.</p> <p>The CER has found that the Keystone did not demonstrate steps to take, or requirements for managing 'imminent' hazards for the project and contractors as related to safety, emergency, environment and integrity programs.</p>	



The CER has found that Keystone referenced documents do not reference to, or provide requirements, for contractors to have a process for corrective and preventive actions related to environmental hazards, potential hazards, incidents and near-misses as related to the safety, emergency, environment and integrity programs, and is non-compliant.



AP-15: Developing Contingency Plans

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(t) establish and implement a process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment or emergency situations.</p>	
	<p>Assessment</p>
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone demonstrated a company level Emergency Management Program and at the project level the HSSEM includes requirements for emergency planning and response plans that address incidents related to safety, environmental and integrity programs. The CER has found Keystone has not defined the requirements to align contingency plans between Keystone, the project, and the contractors and subcontractors. The structure of required emergency plans and the emergency organizations is not defined for the interfaces of Keystone, the project, contractors, and subcontractors.</p> <p>Safety and Emergency</p> <p>Keystone referenced the HSSEM which includes expectations for emergency preparedness and response for projects directed by contractors and for those under Keystone active control. For contractors, it sets the requirement an emergency response plan will be developed applicable to their scope of work on the project. The HSSEM sets minimal content and requires submission to Keystone for review and acceptance. For Keystone active control work sites, it requires the project team to develop a site-specific emergency response plan and provides an additional level of content.</p> <p>Keystone stated the Emergency Management Program (EM), as related to the project is part of the HSSEM Plan. During the project development work, Keystone stated the contractor and Keystone consider and plan for possible EM scenarios. Keystone indicated as the project commences, communication with various groups along the pipeline right of way will be taking place to verify what level of mutual aid is possibly available.</p> <p>The CER has found the HSSEM sets requirements for emergency response plans but they are not aligned to the requirements of the OHS Standard. For example, the HSSEM requires emergency response plans and the OHS Standard requires emergency preparedness and response plans.</p> <p>The CER has found that the HSSEM and referenced documents do not describe roles, responsibilities or steps for developing contingency plans for abnormal events within their EM and HSSEM.</p>



	<p>Environment Keystone referenced the EPP which outlines environmental protection measures and commitments to be carried out by itself, its contractor(s), and subcontractor(s) during the construction to avoid or reduce potential adverse environmental effects of the project. The EPP includes a number of contingency plans that identifies the appropriate measures to be employed. Examples of contingency plans include adverse weather, flood and excessive flow, wet soils, fire suppression, soil handling, soil erosion, and contaminated soils, to name a few.</p> <p>The CER has found the referenced EPP does not describe roles, responsibilities, or steps for developing contingency plans for abnormal events. The Keystone referenced OHS Standard does not specifically define requirements for developing contingency plans for abnormal events occurring during construction as related to environmental events.</p> <p>Integrity Keystone referenced the HSSEM which includes expectations for emergency preparedness and response for contractors and active control sites. The CER has found that the HSSEM does not specifically define requirements for the development of contingency plans for abnormal events occurring during construction, as related to integrity events.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>The CER has found that Keystone did not demonstrate an established and implemented process for developing contingency plans for abnormal events that may occur during construction, operation, maintenance, abandonment, or emergency situations.</p> <p>Keystone did not demonstrate to the CER an established and implemented process for developing contingency plans within the Emergency Management Program and HSSEM for abnormal events that may occur during construction, as related to the project.</p>	



AP-16: Inspecting and Monitoring a Company's Activities

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(u) 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.</p>	
	<p>Assessment</p>
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Safety and Emergency</p> <p>Keystone referenced the CSMP which provides the structure to anticipate, prevent, manage and mitigate the occupational health and safety risks and exposures associated with the use of contracted services on Keystone projects. The CSMP requires: inspection and monitoring, safety audits, updates to safety management plan and P/SSSP, and review of contractor safety metrics.</p> <p>Keystone demonstrated the project construction specifications found in the contracts include inspection and monitoring requirements.</p> <p>Keystone referenced the HSSEM requirements for contractor's inspection activities which are conducted to ensure the respective requirements are followed. Examples of requirements for contractors include daily pre-use inspection tools and equipment, daily documented pre-use inspections of vehicles, weekly documented field work site, and monthly office or non-field work site. In addition, the HSSEM requires copies of all documented inspections to be retained.</p> <p>The CER has found the CSMP outlines requirements from the project to the inspectors based on set criteria. However, a review of the HSSEM did not indicate a process to perform inspections including roles, responsibilities and steps to be taken.</p> <p>The CER has found that the CSMP, HSSEM and the OHS Standard do not include a process or requirements for corrective and preventive actions based on inspection and audits. The CSMP does not define or have specific contractor's requirements for roles, responsibilities, and steps to be taken for corrective and preventive actions.</p> <p>Environment</p> <p>Keystone referenced the EMP as defining the resource requirements for internal environmental personnel and third party resource requirements for inspection. The EMP contains some defined roles and responsibility for select project personnel to ensure project compliance and ensure the contractor complies with all environmental commitments and</p>



	<p>permit conditions. The EPP provides a description of environmental inspection responsibilities including preparing daily reports, organize onsite meetings, collecting environmental information among others.</p> <p>The CER has found the EMP and EPP do not provide or reference process that includes taking corrective and preventive actions for identified deficiencies found during inspection and monitoring.</p> <p>Integrity Keystone referenced the PQP as outlining the primary objective of Keystone’s engineering quality assurance to ensure that engineering activities are performed to specified requirements. The PQP includes requirements for inspection, and test plans for contractors and suppliers. The project team monitors engineering contractors to ensure the contractor’s PQP is adhered to, and that quality control mechanisms are in place to meet project result and performance expectations. The contractor is responsible for quality control and to develop project and engineering discipline specific procedures based upon its QMS, and customized to the requirements of its own project-specific quality plan.</p> <p>The PQP includes a section on inspection, and outlines that project quality assurance inspectors will conduct verification assessment activities to monitor contractors, fabricators, suppliers and subcontractors in accordance with the applicable Keystone requirements processes and specifications. Results of assessments and verifications are documented so any deficiencies or quality issues are identified and promptly resolved. Inspection activities include initial assessment of plans, procedures, verification of work products to confirm that deliverables conform to construction drawings and specs, construction quality, inspection and oversight, and supplier/manufacturing quality inspection and oversight, and material receiving inspections.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>The CER has found that Keystone did not demonstrate an established and implemented 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. The CER has found that the roles, responsibilities, and steps are not adequately defined.</p>	



AP-17: Quality Assurance Program

<p>OPR s. 6.5(1) A company shall, as part of its management system and the programs referred to in section 55,</p> <p>OPR s. 6.5(1)(w) establish and implement a quality assurance program for the management system and for each program referred to in section 55, including a process for conducting audits in accordance with section 53 and for taking corrective and preventive actions if deficiencies are identified.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>TOMS is an integrated management system which incorporates requirements from applicable standards and regulations, including safety (both occupational and process), quality, risk, security, and environmental protection. Keystone referenced the TOMS element on Performance Monitoring, Assurance and Management Review. This establishes the requirement to conduct assurance activities that evaluate the adequacy and effectiveness of Keystone processes and procedures as part of the Management Review. Keystone indicated the Management Review is included in the Accountable Officer annual report.</p> <p>PDS is a component of TOMS and demonstrates how Keystone plans, executes and assures delivery of projects. In PDS, projects are developed in phases, based on an industry standard stage gate process, each ending in a key management decision point (gate) before proceeding to the next phase.</p> <p>The QMP establishes the minimum mandatory requirements for quality assurance during the design, procurement, construction, and commissioning phases of an asset. The QMP is the program used by Keystone to: identify roles and responsibilities used to manage quality assurance and quality control process activities, ensure deliverables are in compliance with standards, requirements and specifications, and continually improve quality within processes and procedures.</p> <p>Keystone referenced the PQMS that consists of TOMS, PDS, and QMP processes as applicable to the project. The PQMS reflects the extent and complexity of the project scope of work and results in project-specific documentation, including a set of procedures and work instructions, and inspection and test plans, to meet the requirements of the project. The PQMS is based on the PQP, and quality procedures and requirements.</p> <p>Keystone referenced a PEP that includes a section on quality management and outlines how quality is managed for the KXL project through the PQP. The PQP describes the project quality management system to achieve the project's quality objectives. The PQP outlines the commitments, objectives, organization and responsibilities, resources, document, data</p>



	<p>and record control, engineering quality, supply chain quality, communication with regulators, construction and inspection, control of nonconformance, monitoring and measurement, audits, etc.</p> <p>The PQP includes a section on Quality audits and outlines requirements for the Quality Manager to arrange for internal audits to determine if the PQMS conforms to planned arrangements including conformance to Keystone policies and procedures and the management system requirements established in the PQMS documentation. The PQP outlines audits are conducted on major activities including: project management, engineering, project controls, construction, materials management etc. The audits are required to be conducted by competent personnel who are independent of the activities being audited.</p> <p>Keystone referenced an Engineering Project Quality Plan as outlining the primary objective of Keystone Engineering quality assurance to ensure that engineering activities are performed to adequately specified requirements resulting in a safe and reliable operating asset conforming to Keystone, regulatory, and jurisdictional authority requirements, and governing codes and standards. The Project Team monitors engineering contractors to ensure the contractor's PQP is adhered to and that quality control mechanisms are in place to meet project result and performance expectations. The contractor is responsible for quality control, and to develop project and engineering discipline specific procedures based upon its quality management system customized to the requirements of its own project-specific quality plan.</p> <p>The CER has found that the referenced quality documentation for the safety, emergency and environment program did not demonstrate an adequate quality assurance program. The referenced documentation did not include defined purpose, scope, roles, responsibilities, steps, procedures, and quality metrics.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>Keystone did not demonstrate an established and implemented quality assurance program for the management system, and for each program referred to in section 55, per the scope of the audit, including a process for conducting audits in accordance with section 53, and for taking corrective and preventive actions if deficiencies are identified. Keystone was unable to demonstrate a quality program scope that includes the management system and programs for: safety, emergency, and environment programs.</p>	



AP-18: Pipeline Construction

<p>(18)(1) If a company contracts for the provision of services in respect of the construction of a pipeline, the company shall</p> <ul style="list-style-type: none"> a) inform the contractor of all special conditions associated with the construction; b) inform the contractor of all special safety practices and procedures necessitated by the conditions or features specific to the construction; <ul style="list-style-type: none"> (b.1) inform the contractor of the contractor’s responsibilities referred to in paragraph 6.5(1)(l); c) take all reasonable steps to ensure that construction activities are conducted in accordance with the manual developed under section 20; and d) authorize a person to halt a construction activity in circumstances where; in the person’s judgement; the construction activity is not being conducted in accordance with the manual developed under section 20 or is creating a hazard to anyone at the construction site. <p>(2) The person referred to paragraph (1)(d) must have sufficient expertise, knowledge and training to competently carry out the obligations set out in that paragraph.</p>	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone contracts service providers to perform construction activities and uses “contractual terms and conditions” to establish the agreed-upon scope of work and requirements. Keystone indicated specific content in its contractual terms and conditions are the special conditions associated with the construction. Keystone indicated they only consider those conditions that are part of the CER’s Certificate for the project special conditions. Keystone demonstrated its conditions include requirements for contractors to maintain records demonstrating they have made its sub-contractors aware of the conditions.</p> <p>Safety and Emergency</p> <p>Keystone indicated the special safety practices and procedures associated with the construction reside within the contract terms and conditions including the HSSEM and OHS Standard. The contract terms and conditions included requirements for complying with all laws and other requirements. This was previously discussed in AP-07.</p> <p>Keystone referenced a CSMP that provides a structure to anticipate, prevent, manage, and mitigate the occupational health and safety risks and exposures associated with the use of contracted services on Keystone projects. The practice outlines five steps including: delegate prime contractor, select contractor, develop safety plans, verify work site safety activities, and complete project close out.</p> <p>Keystone referenced a documented HSSEM for the KXL project that outlines the key roles, responsibilities and requirements regarding safety management and applies to all scope of work on the project that are performed on behalf of the company. The HSSEM outlines the approach to the project for the use of contractors and active control (Keystone responsibility), and safety roles and responsibilities for KXL personnel.</p>



	<p>Keystone demonstrated the special conditions associated with the construction reside within the contract terms and conditions including referenced Keystone HSSEM and OHS Standard.</p> <p>Keystone referenced the CSMP for the overall steps for acquiring, managing and oversight of contractors, the OHS Standard for the special conditions, practices and procedures for the project and a P/SSSP requirements checklist. The CSMP requires Keystone verify the contractor's P/SSSP is in accordance with the safety requirements within the contract documents prior to executing any in-scope work. Keystone referenced the P/SSSP requirements checklist and the CER has found that the checklist contains 'high-level' content and there is no specific evaluation criteria to determine if the P/SSSP is conformant to Keystone requirements. The CER has found the checklist provides a content or presence check versus a check to determine if the content conforms to a specific set of criteria. The CER has found the checklist is not adequate to ensure that the Keystone requirements are being met and a record retained of the evaluation.</p> <p>Keystone referenced the HSSEM for the project which outlines the key roles, responsibilities and requirements regarding safety management, and applies to all scopes of work on the project which are performed on behalf of Keystone. Safety roles and responsibilities for all personnel are outlined, and include the requirement to immediately stop the work activity and notify supervision of unsafe conditions and/or acts.</p> <p>The CER has found a review of a Keystone mainline construction project site-specific orientation, related to right of way brushing and clearing, did not include stop work or halting work related to not following the construction safety manual.</p> <p>The CER has found that Keystone's HSSEM did not provide any reference to sufficient expertise, knowledge, and training, to competently carry out the obligations to halt work.</p> <p>Environment Keystone referenced the EMP, whose purposes include ensuring construction is carried out in compliance with all corporate policies and procedures, including the Keystone's Environment Program, project-specific environmental commitments, including regulatory conditions of approvals, and the EPP.</p> <p>Integrity Keystone referenced its TOMS and contractual agreements for ensuring the pipeline is constructed to its specified requirements.</p>
Supporting Procedures	N/A



Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>The CER has not found any deficiencies associated with the special conditions associated with the safety, emergency, environment and integrity programs.</p> <p>The CER has found Keystone did not demonstrate they have taken all reasonable steps to ensure construction activities are conducted in accordance with the manual developed under section 20. The CER has found Keystone was not able to demonstrate an adequate evaluation of the contractors P/SSSP's to ensure that they are in accordance with the manual developed under OPR section 20. Additionally, the CER has found health and safety inspectors are not provided with an evaluation tool to enable demonstration of sampling and testing of the construction activities' conformance to the construction safety manual.</p> <p>The CER found Keystone did not demonstrate they authorized a person to halt construction activity in circumstances where, in the person's judgement, the construction activity is not being conducted in accordance with the manual developed under section 20, or is creating a hazard to anyone at the construction site. Additionally, Keystone did not demonstrate the identified authorized person must have sufficient expertise, knowledge, and training, to competently carry out the obligations.</p>	



AP-19: During Pipeline Construction

<p>(19) A company shall, during the construction of a pipeline, take all reasonable steps to ensure that</p> <ul style="list-style-type: none"> (a) the construction activities do not create a hazard for the public or the environment; and (b) all persons at the construction site who are not involved in the construction of the pipeline are informed of the practices and procedures that are to be followed for their safety. 	
	Assessment
Accountabilities	Refer to AP-01 and AP-02.
Process	<p>Keystone provided a CSMP which provides a structure to anticipate, prevent, manage, and mitigate the occupational health and safety risks and exposures associated with the use of contracted services on Keystone projects. Additionally, Keystone referenced a documented HSSEM for the KXL project outlining the key roles, responsibilities and requirements regarding safety management, and applies to all scope of work on the project that is performed on behalf of the company. The HSSEM outlines the approach to the project for the use of prime contractors, non-prime contractors, and active control (Keystone responsibility) and safety roles and responsibilities for KXL personnel.</p> <p>Keystone demonstrated its Environmental Principles are communicated to all personnel, and that all employees and contractors, whose activities could have an impact on the environment require appropriate training. The environmental training program for the project has been developed to target various levels of the organization including the environmental team, inspectors, and all visitors to the project.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Compliant</p> <p>The CER has not found any deficiencies with Keystone response to section 19.</p>	



AP-20: During Pipeline Construction

<p>(20)(1) A company shall develop a construction safety manual and shall submit it to the Board.</p> <p>(1.1) If a company contracts for the provision of services in respect of the construction of a pipeline, the construction of a pipeline, the construction safety manual shall set out the contractor's responsibilities referred to in paragraph 6.5(1)(l); and</p> <p>(2) A company shall keep a copy of the construction safety manual or the relevant parts of it at each construction site of the pipeline, in a location where it is accessible to every person engaged in construction at the site.</p>	
	Assessment
Accountabilities	N/A
Requirements	<p>Keystone stated its HSSEM is the Construction Safety Manual for this project. Keystone demonstrated the HSSEM outlines the key roles, responsibilities and requirements regarding safety management and it applies to the scope of work on the project that is performed on behalf of Keystone. Additionally, the CER found the HSSEM includes roles and responsibilities for contractors, worksites with multiple contractors, and Keystone active control sites.</p> <p>Keystone indicated it had not submitted a Construction Safety Manual to the CER at the time of the audit. Keystone indicated that construction activities were initiated in mid-2018 and included clearing and site preparation.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Non-Compliant</p> <p>The CER has found that, at the time of the audit, Keystone had not submitted a Construction Safety Manual to the CER.</p>	



AP-21: Condition 4

4. Keystone shall maintain at its construction office(s):

- a) an updated Environmental Commitments Tracking Table listing all regulatory commitments, including but not be limited to all commitments resulting from:
 - i. the NEB application and subsequent filings;
 - ii. undertakings made during the OH-1-2009 proceedings; and
 - iii. conditions from permits, authorizations and approvals.

Keystone shall also file the updated Environmental Commitments Tracking Table, with the Board 15 days prior to construction.

- b) copies of any permits, approvals or authorizations for the applied-for facilities issued by the federal, provincial or other permitting agencies, which include environmental conditions or site-specific mitigative or monitoring measures; and
- c) any subsequent variances to any permits, approvals or authorizations.

	Assessment
Accountabilities	N/A
Process	<p>The Compliance and Commitments Tracking List (CCTL) combines all commitments and conditions for all program areas. Keystone stated various functional groups are the owners of individual commitments, and through a workflow program the owners can assign various staff to complete the required actions. Some of the commitments are contractual in nature, such as the EPP and water extraction. Also, some of the commitments are interwoven into some documents, such as the EPP, and provided to the contractors.</p> <p>Keystone indicated proof of compliance is built into the system, such as requiring photos to be taken of attestation letters being signed by landowners.</p> <p>As the major construction activities have not been initiated at the time of the audit, this condition will remain open and other NEB compliance verification activities will verify compliance.</p>
Supporting Procedures	N/A
Integration and Application	N/A



FINDING: Compliant

The CER has found no identified deficiencies associated with this condition at the time of the audit.



AP-22: Condition 16

<p>16. Keystone shall continue to consult with Aboriginal groups [Indigenous peoples] who have expressed interest in the Project regarding the details of construction phase of the project as well as its plan for monitoring procedures for the protection of Aboriginal heritage and traditional resources.</p> <p>Keystone shall file with the Board, at least 60 days prior to the commencement of construction, an update of its consultations with Aboriginal people, including:</p> <ul style="list-style-type: none"> a) concerns raised by Aboriginal people; b) a summary indicating how Keystone will address any concerns raised during these consultations; and c) its plan describing monitoring procedures for the protection of Aboriginal heritage and traditional resources during construction. 	
	Assessment
Accountabilities	N/A
Process	<p>Keystone staff stated the project suspended its engagement activities with Indigenous people following the completion of minor construction work in 2012. Keystone staff indicated that in 2018 the project resumed its engagement activities with the Indigenous people that had originally been involved in the 2008/09 Traditional Knowledge field studies. Keystone indicated they are still providing project information to any Indigenous people who expresses interest.</p> <p>Keystone indicated that the protection of heritage and Indigenous Traditional Knowledge resources are part of the project's EPP.</p> <p>It should be noted that Keystone has been filing ongoing updates to the CER with respect to Indigenous engagement outside the scope of this audit.</p> <p>As the major construction activities have not been initiated at the time of the audit, this condition will remain open and other NEB compliance verification activities will verify compliance.</p>
Supporting Procedures	N/A
Integration and Application	N/A
<p>FINDING: Compliant</p> <p>The CER has found no identified deficiencies with this condition at the time of the audit.</p>	

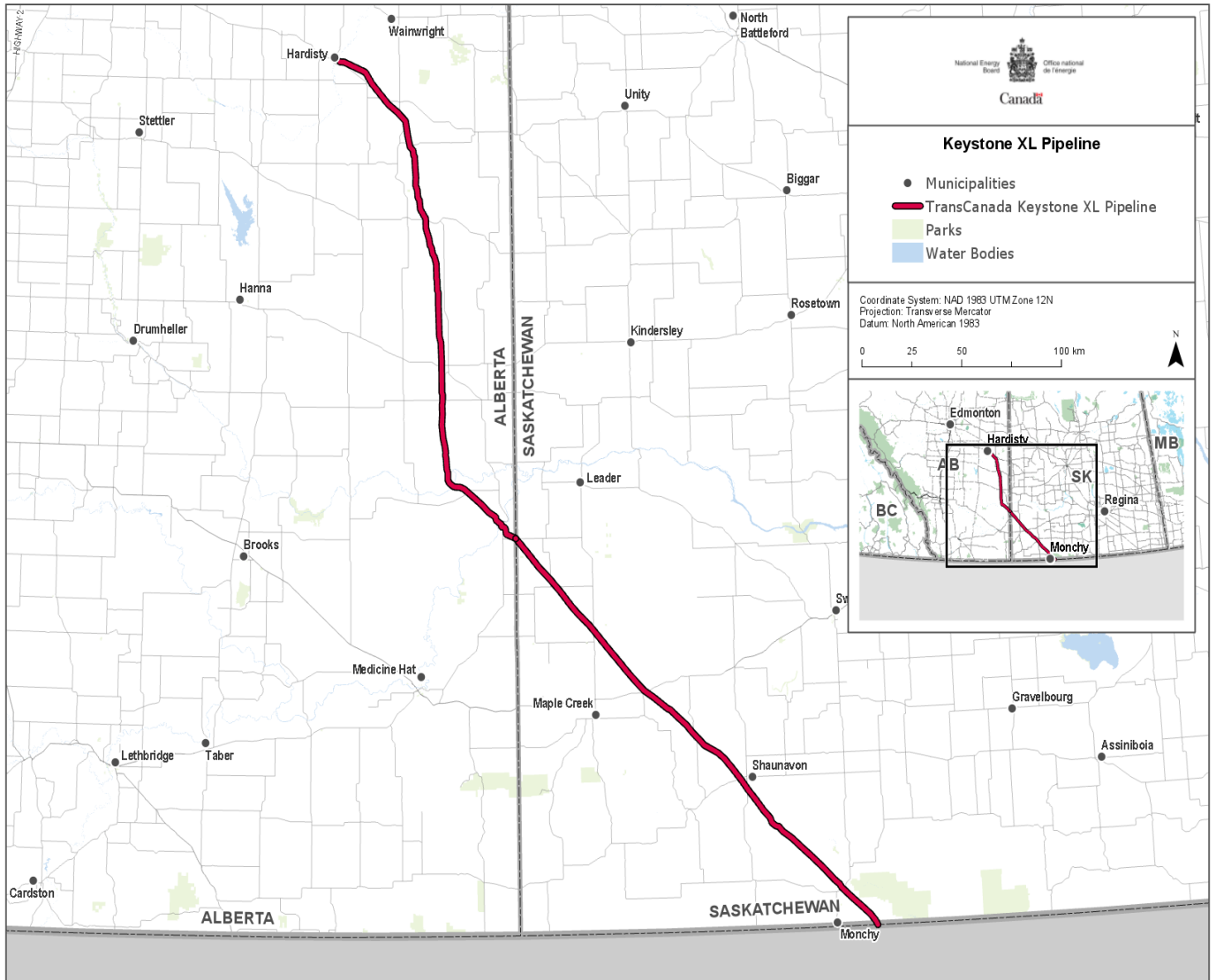


AP-23: Condition 18

<p>18. For the duration of construction and for a period of at least 5 years following leave to open, Keystone shall maintain and upon request file with the Board a construction consultation and complaint monitoring report that provides a Landowner Consultation Tracking Table that will include but not be limited to:</p> <ul style="list-style-type: none"> a) a description of any landowner consultations undertaken including the method of consultation, dates, and a summary of any comments or concerns raised by landowners or potentially affected person or groups; b) a summary of actions undertaken by Keystone to address each of the comments or concerns raised by potentially affected persons or groups; and c) a description of how Keystone intends to measure whether and to what extent it is achieving its stated objectives regarding consultation. 	
	Assessment
Accountabilities	Keystone stated that its <i>Land Commitment Tracking Procedure</i> was created to ensure consistency and that all obligations committed to for landowners, third parties, and regulatory agencies are met.
Process	<p>Keystone staff stated all engagement and attempted engagement with landowners is documented and kept on file for the project.</p> <p>Keystone staff indicated land acquisition, consultation, and third party activities is documented within the project execution files by each functional team. When the project moves to the execution phase, all of the individual functional team lists are combined into the master CCTL. The CCTL is maintained and kept up to date during the execution of the project. Also, some of the commitments are interwoven into some documents, such as the EPP, and provided to the contractors for implementation during project execution.</p> <p>As the major construction activities have not been initiated at the time of the audit, this condition will remain open and other NEB compliance verification activities will verify compliance.</p>
Supporting Procedures	N/A
Integration and Application	N/A
FINDING: Compliant	
The CER has found no identified deficiencies with this condition at the time of the audit.	



Appendix 2 – Keystone XL Planned Route





Appendix 3 - Abbreviations

The following abbreviations were used in this report:

AO: Accountable officer

CAPA: Corrective and Preventative Action Plan

CER: Canada Energy Regulator

CCMS: CCMS 2016 Role Descriptions Document

CSMP: Contractor Safety Management Practice

CCTS: Compliance and Commitments Tracking List

CTS: Compliance Tracking System

EDS: Environmental Design Standard

EIP: Environmental Implementation Plan

EM: Emergency Management

EMP: Environmental Management Plan

EPQP: Engineering Project Quality Plan

EPP: Environmental Protection Plan

ESA: Environmental Site Assessment

HSSEM: Health, Safety, Security, and Emergency Management

IMP: Canadian Liquids Integrity Management Program

IPMT: Integrated Project Management Team

IR: Information Request

JSA: Job Safety Analysis

LMS: Learning Management System

MOC: Management of change

NEB: National Energy Board

OPR: *National Energy Board Onshore Pipeline Regulations*

OHS Standard: Occupational Health & Safety Standards

PDS: Project Delivery Standard

PEP: Project Execution Plan

PHA: Project Hazard Analysis

PQMS: Project Quality Management System

PQP: Project Quality Plan

P/SSP: Project Site Specific Safety Plan

SSEP: Site Specific Environment Plan

TOMS: TCPL Operational Management System



Appendix 4: Company Staff Interviewed and Documents Reviewed

The lists of company staff interviewed and documents reviewed are maintained on file at the Canada Energy Regulator.