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RE: Fort McKay First Nation Comments on Canada Energy Regulator Pipeline Regulations Review - Discussion Paper

Fort McKay First Nation Overview & Context

Fort McKay First Nation (Fort McKay) is a First Nation band with Treaty and Aboriginal rights. The Fort McKay First Nation has nearly 900 band members of which about 500 reside in the community of Fort McKay— located approximately 60 kilometres north of Fort McMurray on the shores of the Athabasca River. Fort McKay has reserves at the Hamlet of Fort McKay, the Moose Lake Area (designated by Fort McKay for cultural use), and in the Muskeg River area (one of these designated for potential future oil sands development). Fort McKay First Nation is composed of members who are of Cree and Dene heritage.

Fort McKay is a signatory to Treaty 8. Treaty 8 guarantees Fort McKay the meaningful right to hunt, fish, trap and gather culturally important natural resources for food, spiritual, cultural and social purposes and all reasonably incidental rights, such as building shelters. Fort McKay's Treaty rights also constitutionally protect its use and enjoyment of its Reserves. The continued ability to exercise these rights, especially within a reasonable proximity of Reserve land is important.

Fort McKay is the most impacted community by project specific and cumulative industrial development in the Lower Athabasca Region; the mineable and portions of the in situ oil sands zones are in the heart of Fort McKay's Traditional Territory. Numerous types of development including oil sands mines, oil sands in situ, oil and gas, forestry, quarries, transmission lines and pipelines have affected Fort McKay's Treaty and Aboriginal rights. Major pipelines transport diluent, natural gas and water to project sites, wastewater to disposal wells and various oil sands products (heated bitumen, dil-bit, synthetic crude oil) from oil sands sites to upgraders near Fort McKay or near Edmonton and to other markets, across provincial borders.



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The Canadian Energy Regulator (CER) uses the Onshore Pipeline Regulations (OPR) with the intent to ensure companies build and operate safe pipelines. The OPR has been in place since 1999 and is currently under review by CER. The objective of the CER review is to deliver a regulation that supports the highest level of safety, security and environmental protection, advances Reconciliation with Indigenous peoples, addresses transparency and inclusive participation, provides for predictable and timely oversight, and encourages innovation. CER has requested input on the OPR by Fort McKay First Nation.

The following are Fort McKay's detailed comments on the CER Pipeline Regulations Review Discussion Paper. As suggested by CER we have responded to the discussion questions with our detailed and pragmatic suggestions. We are available to discuss any of our input. Fort McKay has had extensive experience with industrial developments, pipelines, policy and regulations within our traditional lands and their implications for the environment, safety and risk, mitigation, and effects on the implementation of our Treaty and Aboriginal rights. Further, we offer our experience to assist CER as it progresses in updating the Onshore Pipeline Regulations (OSR) and other regulatory instruments in the modernization of the regulations and the overall Regulatory Framework Plan¹ in ensuring the updates address Treaty and Aboriginal rights and Reconciliation.

DISCUSSION QUESTIONS

1. What's working well in relation to the OPR, and its implementation, and what could be improved?

a) Safety culture, incidents and pipeline failures

As CER states:

"The OPR requires regulated companies to establish, implement and maintain management systems and protection programs in order to anticipate, prevent, manage and mitigate conditions that may adversely affect the safety and security of the company's pipelines, employees, the public, as well as property and the environment. A management system is a systematic approach designed to effectively manage and reduce risk.

The OPR requires that a management system:

- be clear;*
- have good documentation and be understood by all employees, at all levels;*
- apply to all areas of work and include every regulated activity conducted by the company;*
- and*
- be proactive, able to anticipate issues and adjust course.*

With this performance-based approach, the goal is for companies to strive to do better than a minimum requirement. A carefully designed and well-implemented management system supports a strong culture of safety, and is fundamental to keeping people safe and protecting the environment."

¹ <https://www.cer-rec.gc.ca/en/about/how-we-regulate/regulatory-framework-plan/regulatory-framework-plan-2022-2025/regulatory-framework-plan-2022-2025.pdf>



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This approach is not producing the anticipated outcome of “strong culture of safety” and “better than minimum”. For example, we cite several recent pipeline failures by regulated companies.

- 1961-current: Trans Mountain pipeline (Kinder Morgan) had 84 reportable leaks, 70% at compressor stations and terminals and 20 along the line itself². This rate of 1.35 spills per year is indicative of, at minimum, maintenance gaps.
- 2013: Enbridge Line 037 Cheecham area release following rain event. Slope failure, line rupture and bitumen release. Less than 100% clean up.
- 2010-current: ongoing TransCanada Energy Keystone pipeline in US, numerous leaks (21 documented in USA) within the first decade of operations despite TC hearing process forecasts “...TransCanada’s spill risk assessment estimated that the chance of a leak of more than 50 barrels to be “not more than once every seven to 11 years over the entire length of the pipeline in the United States” or a correspondence of five to seven leaks anticipated over a 50 year timeline. **The current rate is about 14 to 20 times the TC forecast.** As the pipeline is quite young we suspect design, construction and operational issues have all contributed³.
- 2010: Pacific Gas & Electric (California, US) 30 inch gas line rupture and explosion killing 8 people, attributed to construction (welding) flaws, poor asset integrity program and lack of automatic or remote control shut-off valves⁴.
- 2015: CNOOC (Nexen) Long Lake had prolonged leaks of 5,000,000 litres attributed to poor design and undetected over one month because of computer failing to activate an alarm⁵.
- 2016: Husky Oil leak to North Saskatchewan River⁶ caused by slumping riverbank, failure to act because of inadequate leak detection alarms.
- 2018: Enbridge major gas line explosion in central B.C. caused by stress corrosion while line was last inspected 10 years earlier.⁷

While we are not privy to detailed incident investigations for these failures, we are generally aware of the publicly reported facts. Notably, other than the TMX and Keystone lines, these line failures are not on cross-jurisdictional pipelines however these are all major operators and the failures demonstrate that “culture” has not been achieved. Having worked with several operating companies, we believe the lack of prescriptive standards for design, operations and maintenance and the loose directive “management system” is not working well: instead, a prescriptive and externally audited Process Safety Management (PSM) system would be well served.

The current practice of “suggested” references and “guidelines” is simply not driving better performance. Sadly, under the current oversight system (essentially Operator proposed systems

² <https://www.transmountain.com/spill-history>

³ <https://www.ecowatch.com/keystone-oil-spills-2512913573.html>

⁴ <https://www.nts.gov/investigations/Pages/DCA10MP008.aspx>

⁵ <https://www.cbc.ca/news/canada/edmonton/nexen-pipeline-spill-long-lake-1.4746739>

⁶ <https://www.cbc.ca/news/canada/saskatchewan/husky-energy-pipeline-oil-spill-court-hearing-1.5171779>

⁷ <https://www.reuters.com/article/us-canada-pipeline-enbridge-inc-idCAKBN20R2M3>



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under limited federal and provincial vigilance), as pipelines age, resource quality and economics decline and GHG reduction increases (leading to less product transported), we anticipate there will be increasingly little effort in maintenance with consequently increased incidents, leaks and explosions.

The CER Discussion Paper states that the CER uses a performance-based approach with a goal of companies striving to do better than a minimum requirement. It is FMFN experience that companies follow rules but rarely exceed minimum requirements. Clear direction and specific requirements for companies in the new OPR that are protective of environmental components are needed.

b) Environment

The language of the current OPR is inconsistent. For example, the OPR provides a clear definition of a significant injury with a specific description such as amputation, loss of sight, or third-degree burns, as examples. This language is precise and accurate, and it is clear if a person has a serious injury or not and this works well. However, the OPR definition of “environment” is far too broad. The definition uses terms like “all organic and inorganic matter and living organisms,” which becomes meaningless as it virtually means everything. The updated OPR should refine the meaning environment by describing its components such water quality, flora, fauna, wildlife, fish, and people.

The CER currently focuses its compliance verification on those things that pose the highest risk of harm to people and the environment. Protecting people is critical but as previously discussed the term environment may be too vague to allow focused protection. For example, the new OPR should include protection of wildlife species and their habitat.

c) Toxic substances

The OPR defines “toxic substance” as a substance harmful to the environment and humans. The CER should consider the addition of a Schedule of “toxic substances” that require reporting and remediation to the new OPR. For example, the *Canadian Environmental Protection Act (1999)(CEPA)* has Schedule 1, a list of toxic substance (<https://laws-lois.justice.gc.ca/eng/acts/C-15.31/page-31.html#h-67259>), which could be added to the new OPR.

d) Habitat restoration

The OPR requires after a pipeline is constructed, the right-of-way and temporary work areas of the pipeline shall be restored to a condition similar to the surrounding environment and consistent with the current land use. Restoring land is an important and positive direction in the OPR. However, the requirement to restore is undermined because of the term “similar to the surrounding environment.” The new OPR should clearly define “restoration” in terms of ecological equivalency and the ability to support healthy viable populations of flora and fauna. Ray (2014) provides a discussion boreal caribou habitat restoration that can be applied to other wild species and ecosystems⁸. Any instream

⁸ Ray, J.C. 2014. Defining habitat restoration for boreal caribou in the context of national recovery: a discussion paper. 54 pp. www.registrelep-



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work should require restoration of fish and aquatic habitat at the watercourse crossing or wetland and downstream.

Restoration should include Indigenous-defined restoration objectives and be appropriate for exercise of Treaty and Aboriginal rights (s. 35).

2. How can the OPR contribute to the advancement of Reconciliation with Indigenous peoples?

The CER states it is committed to “advancing the Truth and Reconciliation Commission of Canada’s Calls to Actions 43, 44, and 92.” The Calls to Action are provided below:

43. We call upon federal, provincial, territorial, and municipal governments to fully adopt and implement the United Nations Declaration on the Rights of Indigenous Peoples as the framework for reconciliation.

44. We call upon the Government of Canada to develop a national action plan, strategies, and other concrete measures to achieve the goals of the United Nations Declaration on the Rights of Indigenous Peoples.

92. We call upon the corporate sector in Canada to adopt the United Nations Declaration on the Rights of Indigenous Peoples as a reconciliation framework and to apply its principles, norms, and standards to corporate policy and core operational activities involving Indigenous peoples and their lands and resources. This would include, but not be limited to, the following:

i. Commit to meaningful consultation, building respectful relationships, and obtaining the free, prior, and informed consent of Indigenous peoples before proceeding with economic development projects.

ii. Ensure that Aboriginal peoples have equitable access to jobs, training, and education opportunities in the corporate sector, and that Aboriginal communities gain long-term sustainable benefits from economic development projects.

iii. Provide education for management and staff on the history of Aboriginal peoples, including the history and legacy of residential schools, the United Nations Declaration on the Rights of Indigenous Peoples, Treaties and Aboriginal rights, Indigenous law, and Aboriginal–Crown relations. This will require skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism.

We believe the new OPR must go beyond “advancing” the Calls to Action and must fully “implement and adopt” them. Calls to Action 43 and 44 require the adoption of UNDRIP and Calls to Action 92 requires meaningful Indigenous involvement in the project decisions, permitting, construction, and operations of energy projects in Canada. In addition, adoption of Calls to Action 92 will require free, prior, and informed consent from Indigenous peoples prior to starting projects. If the Calls to Action are not fulfilled in the new OPR, reconciliation cannot occur. We note that the *Canadian Energy Regulator Act (July 1, 2020 s. 67)* has provision (s. 76) for the Regulator to

sararegistry.gc.ca/virtual_sara/files/Boreal%20caribou%20habitat%20restoration%20discussion%20paper_dec2014.pdf



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“enter into arrangements with any government or Indigenous organization to establish collaborative processes.” While the *Act* references Reconciliation, UNDRIP, and the Rights of Indigenous Peoples, the OPR do not. These commitments need to be enshrined in regulations and guidance as well as the governing act.

Obtaining informed consent is a critical component of the new OPR if reconciliation will be achieved. The CER must develop a definition of “informed consent” and include it in the new OPR. The concept of informed consent is a critical component of research on humans. Although designed to guide research on humans there is valuable guidance on informed consent in the Tri-Council Policy: Ethical Conduct for Research Involving Humans -TCPS 2 (2018)⁹.

The Tri-Council document provides well thought out discussion on informed consent. In addition, the TCPS 2 provides guidance for collaborating with Indigenous communities (see Chapter 9). A new OPR will need a clear definition and description of informed consent. A key component of informed consent is the ability for a participant to withdraw consent. The new OPR should acknowledge the ability for project consent to be withdrawn by Indigenous peoples.

The CER and OPR must commit to adopting UNDRIP and the Calls to Action 43, 44, and 92. This would require the OPR to direct the corporate sectors to complete meaningful consultation and obtain free and informed consent from Indigenous prior to proceeding with development. Informed consent means the Indigenous communities have full knowledge of the possible risks and benefits and the ability to withdraw consent. The new OPR requiring the free and informed consent of Indigenous peoples for projects will advance reconciliation.

There are numerous opportunities for Reconciliation. We recommend the following specific actions.

a) Removing apparent bias against Indigenous lands in class location area decisions

A first step is that the standard approach for risk-based design needs to change.

Currently large expanses of “nature” are typically designated as lower risk in class location area decisions by virtue of being “less populated” and lower levels of protective design (e.g. isolation valve spacing for instance) are applied compared to, for instance, major centres. Class location area guidance in CSA Z662 is neatly summarized in the following diagram¹⁰ and is linked solely to presence of occupied buildings.

⁹ https://ethics.gc.ca/eng/nr-cp_2019-06-05.html

¹⁰ from https://dynamicrisk.net/wp-content/uploads/2020/03/DynamicRisk_WhitePaper-The-Impacts-of-CSA-Z662-Regulations-for-Canadian-Pipeline-Operators-WEB.pdf



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Class 1	Class 2	Class 3	Class 4
<ul style="list-style-type: none">• 10 or fewer dwelling units	<ul style="list-style-type: none">• 11 – 45 dwelling units• Building occupied by 20 - 120 people during normal use• Playground, rec area• Industrial Installation	<ul style="list-style-type: none">• 46 or more dwelling units• Building occupied by more than 120 people during normal use• Hospitals, prisons, day-cares, nursing homes	<ul style="list-style-type: none">• A prevalence of buildings intended for human occupancy with 4 or more stories above ground

By understanding the intrinsic and cultural importance of the landscape and local water resources to Indigenous peoples it becomes apparent that fouling the “nature” lands is not truly a “less risky” thing. We recommend pipelines in Indigenous territories be designed at higher level of risk in general (e.g. Class 2 at least instead of Class 1) and at the most protective level (Class 4) where release from a line could impact important ecological or cultural areas or drinking water supplies.

There are several implications to changing class locations that CER should ensure Operators review for pipelines adjacent or within Indigenous territories. From CSA Z662-15, Section 7, we present some main points:

- “10.7.1
Where class locations change, the pipeline system in such locations shall be subject to the following requirements for the new class location:
- a) design factor or location factor, as applicable;*
 - b) valve spacing;*
 - c) depth of cover and clearance;*
 - d) pressure testing; and*
 - e) evaluation and repair of imperfections as specified in Clause 10.10 and Clause 10.11.”*

Class locations should be changed retroactively for pipelines in Indigenous territories reflecting the general upgrade to at least Class 2 and the specific identification of Class 4 areas of most importance to Indigenous communities, in partnership with those communities. Operating companies should have plans in place for retrofits by June 30, 2023 with mitigations completed by December 31, 2024.

b) Involving Indigenous communities in risk assessment

We recommend Indigenous communities be involved during the risk assessment process to foster a complete and transparent understanding of the risks, to provide input into implications of risk / failure events and to help shape project mitigations and response plans. This approach is part of building reconciliation and establishing true “social license” for projects.

c) More effort toward incident investigation in Indigenous territories

We have searched the TSB website for incident investigation using the search term “Enbridge” (<https://www.tsb.gc.ca/eng/rappports-reports/pipeline/index.html>). Neither the Line 37 spill nor the BC main gas line explosion is listed as being investigated. These were both major incidents that



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likely have root causes and lessons to learn across the industry. Similarly, search terms “CNOOC”, “Nexen” and “Long Lake” return nothing although the month long spill at the Long Lake site is noteworthy in its magnitude (5,000,000 litres) and duration, indicating that “something” useful could be learned and shared.

Notably all these events occurred in “natural” areas close to or within Indigenous territories. We recommend CER encourage its sister Crown Corporation to investigate such major spills. *If TSB does not accommodate this request, we recommend CER pursue such investigations through its own mandate, or perhaps via a new body to investigate incidents in natural and Indigenous territories, which appear, from this cursory analysis, to get less focus for investigation.*

d) Involving Indigenous communities in pipeline governance

Finally, there is a trend for industrial firms to have Indigenous representatives in major business regions sit as members of the Board of Directors. Providing this link between local Indigenous communities and the Boardroom can help maintain perspective when the Board is making decisions. Further, this can lead to meaningful discussion and understanding of asymmetrical risk-reward constructs. CER can strongly recommend this governance structure.

3. How can the OPR contribute to the protection of heritage resources on a pipeline right-of-way during construction, and operations and maintenance activities?

The protection of heritage resource would be helped by adopting Call to Action 92 (i) and require meaningful consultation. Consulting with Indigenous communities about the risk and benefits of a project, building trust, and sharing information will provide Indigenous communities the opportunity to share information about heritage resources.

The new OPR will need to direct project proponents to complete meaningful Indigenous-led traditional land use studies. Many Indigenous communities have developed extensive databases that contain information about cultural resources requiring protection. Project proponents need to consult with Indigenous communities to build trust, increasing opportunities for information sharing and informing pipeline routing, safety and mitigation.

We observe that, once approved, pipeline construction is a very repeatable and fast process. Pipeline contractors may also be paid bonuses for early completion or suffer penalties for delays. This fast pace contracting approach does not accommodate discussions regarding protection of individual resources and certainly does not invite constructive dialogue regarding re-routing of approved projects once construction starts.

CER could include conditions in approvals requiring funding Indigenous “spotters” for heritage resources at active work sites, enforcing “stop work” orders if heritage resources are found, and stipulating processes to identify and accommodate (including regulatory fast-tracking) in-field re-



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routing to avoid significant heritage resources.

4. How can the OPR contribute to the protection of traditional land and resource use, and sites of significance for Indigenous peoples on a pipeline right-of-way, during construction, and operations and maintenance activities?

a) Design to minimize risk

As in #2, risk levels for design should be taken at higher levels.

b) Water management

High water flows will occur and they should be managed properly, not just allowed to occur at the weakest points of the right of way. Intentional and designed flow paths to accommodate high-flow hydrology events should be incorporated into designs and approval requirements. This is similar to providing a spillway for a dam to ensure the water goes where we want it.

c) Require environmental assessment

The new OPR should require environmental assessment to identify the land and resources required by Indigenous peoples using both Indigenous Knowledge and western methods that are scientifically sound. Western science methods may include validated wildlife habitat models and wildlife populations survey methods that generate confidence limits. Habitat models are valuable for planning and wildlife population data will provide baseline data for comparison of monitoring results. For example, Alberta has developed the Master Schedule of Standards and Conditions (GOA 2021)¹¹ and Sensitive Species Inventory Guidelines (GOA 2013)¹² to protect and survey wildlife species.

d) Protection of land, water & resources

The new OPR can contribute to protection of land and resources requiring the avoidance of important areas for Indigenous communities. Important areas may contain, for example, valuable resources like moose and beaver populations, or key fish and aquatic habitats or wetland habitat. As in the previous question, the identification of important areas will require meaningful consultation, trust building, and providing Indigenous people an opportunity to share information and inform routing, safety and mitigation.

The protection of land for traditional land and resource use will require a blending of Indigenous Knowledge and western science. The protection of significant and important areas to Indigenous

¹¹ Government of Alberta (GOA). 2013. *Sensitive Species Inventory Guidelines*. Retrieved from http://aep.alberta.ca/fish-wildlife/wildlife-management/documents/SensitiveSpeciesInventory_Guidelines-Apr18-2013.pdf

¹² Government of Alberta (GOA). 2021. *Master Schedule of Standards and Conditions*. Government of Alberta, Edmonton, AB. 118pp. [Master schedule of standards and conditions - Open Government \(alberta.ca\)](https://www.alberta.ca/master-schedule-of-standards-and-conditions-open-government-alberta-ca)



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peoples can be aided using existing government and western science tools. The new OPR should require the protection of critical habitat as defined under the *Species at Risk Act (SARA)*. For example, the protection of boreal caribou critical habitat will contribute to the conservation of caribou but also include important areas for Indigenous communities that occur in the same areas. The protection of critical caribou habitat will also protect coexisting wildlife species.

5. How can the use of Indigenous knowledge be addressed in the OPR?

Indigenous Knowledge (IK) covers many disciplines and facets of knowledge. It is interconnected, based on long and protracted observation of nature, and is locally specific.

A meaningful step to address the use and incorporation of Indigenous Knowledge is to adopt the Calls to Action 92i (see above). Requiring meaningful consultation will help develop respectful relationships with Indigenous communities and will encourage the exchange of knowledge. Meaningful consultation with Indigenous communities will provide opportunities for the sharing of Indigenous Knowledge, with protocols in place regarding informed consent, ownership of the IK, protection, and appropriate use. IK could be shared through appropriate mechanisms determined by Operators and an Indigenous community. IK could be very useful in general to an Operator but also specifically in terms of sharing knowledge about terrain, soils, watercourses and water bodies, access, flooding, etc. and in collaborating with Indigenous communities in determining appropriate routing and mitigation.

The new OPR should require project proponents to include Indigenous-led environmental assessment studies as well as environmental monitoring during construction, operation, and post closure. The National Boreal Caribou Knowledge Consortium (NBCKC) Indigenous Knowledge Circle has developed guidance for Indigenous-led research available on their data portal (<https://www.cclmportal.ca>).

6. How can the OPR address the participation of Indigenous peoples in pipeline oversight?

Implement the Call to Action 92 (i), which will help ensure Indigenous people are working with or for pipeline companies and this will provide some oversight of pipelines. Further the Calls to Action will require meaningful consultation, which will encourage participation. The OPR will need to direct companies to provide resources to Indigenous communities to facilitate participation. Increased participation of Indigenous peoples in pipeline planning will increase oversight.

Indigenous concerns about pipelines include the long-term impact to the wildlife community and food security. In northern Alberta habitat alteration, including pipelines, is contributing to the



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northward migration of white-tailed deer (Latham et al. 2011)¹³. The expanding deer population is altering the predator prey balance (more wolves), which is having an adverse effect on boreal caribou and moose and beaver (Latham et al. 2011). Pipeline oversight must extend beyond construction and include Indigenous-led baseline surveys and monitoring through construction, operation, and post closure.

7. How can the OPR support collaborative interaction between companies and those who live and work near pipelines?

Through the OPR, the CER can escalate engagement from being a suggested activity to engagement and consultation being mandatory for Operators. CER can, with Indigenous communities, establish essential and minimum requirements for collaborative interaction that go beyond cursory engagement that sometimes occurs.

The CER should develop a database that lists Indigenous peoples that require consultation regarding planned projects. The new OPR should require that companies make the information communities want easily accessible (e.g., websites or mail). Companies should be prepared to provide the information that Indigenous communities request, which could include risk assessment, design criteria, safety and mitigation practices, monitoring results, spill reports, adaptive management measures, and wildlife sightings.

8. How could communication and engagement requirements in the OPR be improved?

The Offshore Pipeline Regulations (OPR) currently contains no reference to Indigenous peoples and no reference to communication, notification, engagement or consultation with Indigenous peoples or the public. Bill C-69 (Impact Assessment Act) does apply to the CER and energy and pipeline projects and it does have requirements for consultation with Indigenous peoples and the public. However, the pipeline regulations should have some explicit requirements regarding communication, engagement, and consultation.

The OPR should be updated or a separate regulation or guidance could be prepared. At minimum the following should be included:

- Acknowledge, UNDRIP, Treaty and Aboriginal rights and include specific clauses to adequately address Indigenous involvement and engagement and consultation.
- Requirement to work with self-identified affected Indigenous communities to assess and report on the public interest, including net contribution of the pipeline project in the near and long term to the sustainability of environment (at minimum air, water, land, wildlife, fish, vegetation biodiversity, historical resources, climate change), local economy, culture

¹³ Latham, A.D.M., M.C. Latham, N.A. McCutchen and S. Boutin. 2011. Invading white-tailed deer change wolf-caribou dynamics in northeastern Alberta. *Journal of Wildlife Management* 75 (1): 204-212.



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and the well-being of local communities.

- Differentiate requirements between the wider public and those who believe they may be directly and adversely affected by the pipeline.
- Include definitions for, at minimum, the following: Indigenous territory, Indian Reserves, Métis Settlements, Indigenous communities, Treaty and Aboriginal rights, and registered traplines. Acknowledge that Indigenous territories may overlap and that pipelines are likely to intersect numerous Indigenous territories.
- Require engagement and consultation with, at minimum, each Indigenous community or peoples whose traditional territory is potentially affected by a pipeline project.
- A requirement for a summary of potential impacts to Treaty and Aboriginal rights and mitigation developed in collaboration with affected Indigenous peoples.
- A requirement for an application information package that provides sufficient detail to reasonably enable Indigenous peoples to assess whether the proposed pipeline or associated infrastructure may affect them, their lands and/or their rights.
- A requirement for maps that include preliminary and final routing, traditional territories, Indigenous and other communities, sensitive or culturally important areas and habitat (including as determined in traditional use and IK studies or information shared, with appropriate protections in place for sensitive or confidential information).
- A requirement for immediate direct notification of Indigenous peoples whose traditional territories, reserves, settlements and/or communities are crossed by the pipeline, and land users and local communities of any incidents, spills, venting or failures, including priority notification and emergency response plans. Consultation is required if the incident has potential impacts on the environment, acute or chronic health, safety or Treaty and Aboriginal rights. Consultation should include specific details regarding the incident, emergency response, clean-up approach and standards, data sharing upon request, and results of incident investigations and lessons-learned.
- As discussed elsewhere in this submission, require the Operator to involve Indigenous communities in project planning, mitigation, and monitoring (as appropriate during construction, operations, reclamation), and reclamation/restoration.

9. How could the CER improve transparency through the OPR?

CER can improve transparency by offering detailed rationale why projects are considered “in the public interest” despite concerns, objections and evidence from Canadians or “not in the public interest”. Each piece of evidence provided could be addressed explicitly in terms of being considered relevant or not, and, if relevant, elaboration provided how exactly the project merits outbalance the concerns and evidence.

10. Gender and other intersecting identity factors may influence how people experience policies and initiatives. What should the CER consider with respect to:

a. those people implementing the OPR; or



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b. those people who are impacted by the operational activities addressed in the OPR?

a) Those implementing the OPR

People implementing the OPR should be required, at minimum, to take training in Gender Based Analysis Plus, the free online GBAPlus course developed by Women and Gender Equality Canada¹⁴, which is available to the public and all public servants. Indigenous Awareness and Cultural Sensitivity Training should be mandatory. People implementing the OPR should be required to read and acknowledge via signatures (on permanent file) the Final Reports of the Truth and Reconciliation Commission¹⁵ and the National Inquiry into Missing and Murdered Indigenous Women and Girls¹⁶ and The UN Declaration on the Rights of Indigenous Peoples¹⁷. Operators should be encouraged to do all the above, in particular the Board and Executive Teams, again with a requirement to read and acknowledge via signatures (on permanent file).

b. Those people who are impacted by the operational activities addressed in the OPR

Specific groups within Indigenous communities that may experience differentially the direct and indirect impacts of pipeline policy, regulations and projects include: women, children, youth, Elders, LGBTQ2S+, and people with pre-existing health conditions. There may be other subgroups and it will be important for CER to direct Operators to be aware of differential experiences when consulting and working with communities to develop the scope of consultation and mitigation.

11. How can the OPR support a predictable and timely regulatory system that contributes to Canada's global competitiveness?

CER states

*"The Preamble of the CER Act states that the Government of Canada is **committed to enhancing Canada's global competitiveness** by building a system that **enables decisions** to be made in a **predictable and timely manner**, providing **certainty to investors and stakeholders**, driving innovation and enabling the **implementation of sound projects** that create jobs for Canadians. The CER's objective is to provide regulatory clarity and efficiency with clear, transparent expectations and processes." [emphasis added]*

We offer consideration of three recent major pipeline projects that faced opposition and their outcomes:

- Enbridge Northern Gateway project¹⁸ was opposed by multiple parties, including the Province of BC.¹⁹ The 2014 NEB Approval was contested in court by 8 First Nations, 4

¹⁴ https://women-gender-equality.canada.ca/gbaplus-course-cours-acplus/eng/mod00/mod00_01_01.html

¹⁵ <https://nctr.ca/records/reports/>

¹⁶ <https://www.mmiwg-ffada.ca/final-report/>

¹⁷ <https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html>

¹⁸ <https://www.nrcan.gc.ca/our-natural-resources/energy-sources-distribution/fossil-fuels/pipelines/energy-pipeline-projects/northern-gateway-pipelines-project/19184>

¹⁹ <https://www.theglobeandmail.com/news/british-columbia/bc-to-northern-gateway-no/article19213866/>



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environmental groups and Unifor²⁰. In June 2016 the Federal Court of Appeal ruled that the Federal Government had failed to consult First Nations and quashed the approval sending the Joint Review Panel's recommendation back to Government for further review. The Federal Government determined significant adverse effects were not justified and directed NEB to dismiss the project. Enbridge formally withdrew the project from BC approvals processes in early 2017²¹.

- TransCanada Energy East pipeline project was faced opposition in Quebec, Ontario and amongst First Nations and the project was withdrawn by the proponent²²; and
- KinderMorgan TMX Expansion, project opposed by BC and the City of Burnaby and some Indigenous groups where the project terminates, project ultimately purchased by Federal Government and being built.

Each of these projects required extensive feasibility, engineering, economic studies and environmental assessment over a period of several years each. Prior to formal application, each was subject to local / provincial criticism and lack of support. Yet, each continued to progress into the formal assessment process, during which proponents and opponents entrenched themselves and initiated media wars and legal actions.

Ultimately two projects were shelved and the third imploded to the extent the Federal Government took over. The City of Burnaby has continued to try to stop or slow the TMX project citing local impacts with the CER having to rule on Burnaby's opposition to proposed fire lane widths as recently as March 2022²³. The Province of BC has continued expressing displeasure with the Approval including as recent as March 2022²⁴

British Columbia has amended the conditions of its environmental assessment certificate for the Trans Mountain pipeline expansion and told the federal government it still has concerns about its response to potential marine oil spills.

Three Indigenous nations filed legal actions²⁵. From a thirty-thousand foot perspective, these are not good outcomes nor are they leading to “enhancing Canada’s global competitiveness...predictable and timely manner... implementation of sound projects...”.

It appears that were early indications of strong opposition to the projects. It also appears that opposition was rooted in the principle of “asymmetric risk” wherein Operators would gain revenue and profits and “corridor communities” who would be subject to potential mishaps, including

²⁰ <https://ecojustice.ca/case/challenging-the-northern-gateway-pipeline/>

²¹ <https://vancouver.sun.com/business/energy/enbridge-removes-already-dead-northern-gateway-from-b-c-environmental-assessment/>

²² <https://www.cbc.ca/news/business/transcanada-energy-east-1.4338227>

²³ <https://burnabybeacon.com/article/fire-lane-cer-tmx-by-law-decision/>

²⁴ <https://www.cbc.ca/news/canada/british-columbia/trans-mountain-conditions-1.6376895>

²⁵ <https://canadians.org/analysis/it-our-standing-rock-three-first-nations-announce-lawsuit-against-kinder-morgan-and-feds>



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impacts to local resources and economies, would have little to nothing to gain. We propose that projects facing such opposition are premature to file applications if they wish certainty - - the Operators in these three cases had not achieved “social license” and had more work to do. CER could institute a preliminary “temperature test” for projects to pass before they actually apply for their projects - - this would include an assessment (by the Operator, and perhaps by CER and an external auditor) whether social benefits and risks are being shared, whether all jurisdictions (including municipal and Indigenous) support the project, and whether environmental organizations are supportive of the proposal. If this process is not implemented, similar “delays” and “withdrawals” of projects may become the norm. ***Canada “may” be painted as not providing certainty, but in fact many recent project proposals themselves are at issue and were simply not advanced enough (not “ready”) for a societal review - - the work clearly had not been done to assemble and prepare projects of acceptable benefit to society.***

The adoption of the Calls to Action will require consultation with Indigenous peoples and informed consent from Indigenous communities. A good consultation process and reliable methods to obtain informed consent will provide a more predictable regulatory process. This will reduce the likelihood of legal challenges and civil protest.

12. How can the OPR support innovation, and the development and use of new technologies or best practices?

The best practice CER can adopt and demonstrate to the world is carefully managed and thoughtful decommissioning of soon to be unneeded pipelines. CER needs to become knowledgeable about the implications of Canada’s 2030 and 2050 GHG commitments and the implications for need for existing or new fossil fuel pipelines and any need for other commodity pipelines. CER can then determine an orderly wind-down process for existing pipelines considering age of oil/natural gas fields and proximity to existing lines, goals of retiring aged or poor performing (under capacity, incident prone) pipelines and those in Indigenous territories, in sensitive ecological landscapes or near critical water supplies.

Hydrology failures (line scour, line washout, riverbank incising/cutting/failure, slumping / slope failure, floating lines, flooded pumps/equipment, containment dyke siltation/wall failure/overtopping) are common causes of pipeline incidents. CER can mandate the best practice resistance to hydrology impacts. This includes applying prescriptive design criteria to provide a suitably low probabilistic failure rate from hydrology events for a pipeline over its project lifespan.

For example, a 50-year project designed for a 100-year return period flow has a 1% probability of being exceeded each year, amounting to an aggregate probability risk of 39% in the 50 years: this is simply not very protective. In contrast, protecting against a 200-year or 500-year flow drops the risk to 22% and 9.5% respectively over the project life. ***More protective criteria should be used for pipelines near Indigenous communities and in Indigenous territories (reconciliation) and in /***



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near water sources and sensitive ecology.

When determining return flood flows, climate change should be considered regarding potential for large storms to become even larger in the future. Also, CER should consider that projects often exceed their planned lifespan - - 50 year lines are seldom decommissioned in 50 years and often continue operating for decades: each additional year increases the risk of hydrology failure. Designing for larger return periods can also help buffer the impacts of land use change (logging, urbanisation, industry) that often occur in watersheds over time but were not accounted for in hydrology estimates.

CER can also mandate a step change in incident performance across the industry from what appears to often be a “spill or two per year” for major pipelines (e.g. TMX, Keystone) down to a “spill per decade”. This can be achieved for existing pipelines by mandating (with strict timelines and penalties):

- Re-validation of risk due to hydrology events in light of frequent failures from water or water-soil interactions (e.g. the design criteria was simply inadequate);
- Inclusion of advanced instrumentation and remote monitoring; better detection, alarming and shut down processes;
- Regular and increased (e.g. monthly) ground-based physical surveillance;
- Higher Operator commitment to maintenance and pipeline integrity including review of maintenance plans by Indigenous communities;
- Better incident communication; and better planning and availability of more incident response equipment at more locations along pipeline routes.

Finally, CER can take and actively demonstrate leadership in requiring complete removal, cleaning and reuse (for example in building components) or recycling of decommissioned pipelines, tanks and equipment to demonstrate the “closed loop” economy Canada is advocating, and in many cases contribute to “reconciliation” with Indigenous communities. This provides an opportunity to access and remediate any leaks that have occurred from the pipeline during its service life.

While this may entail a change to approvals in place, any extra and necessary costs can be allocated within toll structures while the lines operate.

13. What company-specific or industry-wide performance metrics could the CER consider to support enhanced oversight and transparency for CER-regulated facilities?

CER could track observations, input and complaints (e.g. odours, vegetation conditions, soil markings, erosion protection failures, potential washouts, beaver damming, actual obvious leaks, etc.) by number, type and location raised by land users and Indigenous communities. This may provide insight to areas the Operators are not visiting frequently enough, both on specific pipelines and also through analysis of trend data (e.g. it is possible that land users are noting problems



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consistently in one type of landform, for instance wetlands, because of large numbers of observations) that CER can then use to require higher vigilance by Operators.

14. Are there opportunities within the OPR for data and digital innovation that could be used by the CER and by companies regulated by the CER?

The CER could establish a website, or leverage existing resources such as Canada’s open data portal, where there is already some energy and pipeline related data²⁶. Types of data that could be included are interactive maps of all pipelines with information on size, length, products and owners and local terrain and watercourse / waterbody data. This data should be easy to export (e.g. as KML or shape files). Data on spills, incidents, and investigations should be included and easily accessible.

15. How can the OPR be improved to address changing pipeline use and pipeline status?

[a] Change Management

Any pipeline changing service, whether that be flow direction reversal or transporting a different commodity, needs to be assessed in all measures, similar to the review process for a new pipeline. At minimum the following needs to be assessed:

- Alternatives to the pipeline (e.g. electric vehicles instead of liquid fuels), especially considering viable project lifespan in light of federal and global movement to decarbonize / reduce GHGs which implies 40% reduction of fossil fuel combustion, market and product transport by 2030 ramping to essentially 100% reduction in fossil fuel combustion, market and product transport by 2050. In reality, very few fossil pipelines approved during 2022 would be built in time to have a meaningful project lifecycle in the context of the 40% GHG reduction target in 2030.
- Route, considering proximity to Indigenous communities, traditional territories and historical resources. Full “modern” consultation would be expected.

In addition, the following need to be considered, reviewed and approved by CER through a formal review / hearing process, particularly considering that reuse of piping implies that piping is already old and subject to a certain degree of historical stress, corrosion and may contain previous repairs:

- Age of existing pipe and appropriate de-rating of pressure, throughput and expected service life;
- Third-party assessment of sufficiency and adequacy of piping, valves, tankage and prime drivers to safely transport any new commodity including robust assessment of stress, corrosion, commodity / equipment compatibility. Special attention is needed for small molecule / volatile commodities (hydrogen, methane) to assess suitability and integrity of pipeline systems;

²⁶ <https://open.canada.ca/en/open-data>



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- Detailed evaluation including third-party assessment of any previous repairs to ensure condition and adequacy of repairs, compatibility of repairs to original pipeline and to proposed commodity;
- Enhanced systems of additional isolation valves;
- Plans to thoroughly remove and clean existing product to remove potential chemical interactions;
- Enhanced physical monitoring systems including wall condition and thickness gauging, external on the ground monitoring / surveillance for leaks; and
- Enhanced remote (instrumented) monitoring complete with new and fast-acting leak detection, alarming and shut down equipment and operational plans.

[b] Alternate commodities

As Canada embraces the re-imagining of energy systems, various entrepreneurs will undoubtedly propose transport of emerging products. While we are not validating nor endorsing any of these, we can foresee applications to convert existing pipelines or to build new pipelines for hydrogen, carbon dioxide, freshwater, saline water, wastewater, ethanol, methanol, sulphur, fertilizers, biomass slurry, metal-rich oil sands tailings, glycol, etc. Each new commodity will bring special handling requirements, operational issues and possible environmental consequences. CER must be prepared for a high level of technical and environmental review and should develop (or refine if existing) its understanding of various commodities and risks involved.

If a large number of varied proposals are received, CER must also expect a relatively high failure (technical, economic, etc.) and abandonment rate. CER needs to establish a robust approach to financial security for existing and new pipelines to assure the public does not bear cleanup and closure costs.

16. What further clarification, in either the OPR (e.g. structure or content), or in guidance, would support company interpretation and implementation of management system requirements?

The CER states

*“The CER’s objective for this review is to deliver a regulation that supports the **highest level of safety, security and environmental protection, advances Reconciliation with Indigenous peoples, addresses transparency and inclusive participation, provides for predictable and timely oversight and encourages innovation.**” [emphasis added].*

With this support for the **highest** level of safety, security and environmental protection, we offer several improvement opportunities for CER and Canada’s pipelines.

A major disconnect is apparent in pipeline project routing and operations in terms of Risk



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Management. Risk assessment has historically been the purview of project developers, who invariably assess risks according to their internal corporate risk matrices, determine that project rewards are attractive, risks are generally “remote or unlikely” or “low impact” and then proceed with their projects. When no failures occur, there is no problem. When failures do occur, history shows failures lead to injuries or fatalities, an inability to fully remediate sites and pollution of lands and water, often in Indigenous lands. In short, in good times, the Proponents prosper while after upsets or failures local communities, customers and nature deal with the problems. The current risk approach does not address this issue of asymmetric risk. Asymmetric risk has led to vigorous opposition to many major pipeline proposals.

We recommend Indigenous and local communities be involved during the risk assessment process to foster a complete and transparent understanding of the risks, to provide input into implications of risk / failure events and to help shape project mitigations and response plans. This approach also contributes toward building reconciliation and establishing true “social license” for projects.

17. How should information about human and organizational factors, including how they can be integrated into a company’s management system, for both employees and contractors, be provided in the OPR, and/or described in related guidance?

Operator Executive Management Teams (EMT) are responsible for alignment of Corporate Policy with on the ground performance. EMTs are well compensated and Operators are proud to portray their leaders’ skills and capabilities when applying for new projects. The EMTs must be held responsible for alignment and implementation within their companies. The EMTs (specifically EVPs of Operations, Projects, Safety and the COO and CEO) must be held personally and financially liable for incidents. If the EMTs can illustrate they were refused funding for safety at the Board level, then all Board members must be held personally and financially liable for incidents.

Borrowing from the EU, there is a trend for industrial firms to have current “line” workers sit as members of the Board of Directors. Providing this link from “the field” to the Boardroom can help escalate issues to meaningful action. CER can strongly recommend this governance structure.

18. How can the OPR improve the connection between company safety manuals and the overarching Safety Management Program, for both employees and contractors?

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19. How can respect and personal workplace safety be assured at CER regulated sites?

Lack of respect and workplace safety is a complex issue that is prevalent in many businesses, but especially in resource extraction and pipelining industries. As with any corporate culture problems, the issue starts at the top. Management needs to provide training to all employees with employee acknowledgment that incidents may lead to dismissal. Employees and stakeholders (the public, CER and Indigenous observers, etc) need to have a confidential, speedy and accessible way of reporting incidents. Investigation needs to be immediate, and early cases need to have substantive and high profile impact (e.g. firing of perpetrators, regardless of position in the Operating Company).

CER and Indigenous observers need safe and protective physical places to retreat to in the immediate moment. They may also need security escort out of difficult situations. Work sites need to “stand down” if an incident is reported to permit Management to address the scene, take immediate action (including reassignment or termination of personnel) to restore a respectful workplace and establish that the site is safe for the observers to return to. All costs would be borne by the Operator.

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20. How should the CER be more explicit about requirements for contractor management?

This is a relatively straightforward issue. The Operator should be designated as the Prime Contractor. Legally they would then be 100% responsible for execution of the project including the actions taken by any sub-contractors. This provides one single point of responsibility, communication and accountability for CER.

The Operators are large companies that have access to legal advice, procurement experts and safety



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personnel and can certainly establish their projects under a Prime Contractor structure. Operators can choose from developing an in-house system or using an “off the shelf” contractor prequalification system to screen contractor qualifications and their systems. If contractors do not meet their commitment to the Prime Contractor, then the contracts in place between them will handle any issues.

21. How should the OPR include more explicit requirements for process safety?

In the United States, OSHA (Occupational Health and Safety Authority) mandates and audits robust PSM (Process Safety Management Systems) for the process industries.

While CER may not have historically considered pipelines as “process industry”, they certainly do meet many hallmarks of processing: use of highly hazardous chemicals, high pressure, changes in temperature, in-vessel mixing (in tanks and along pipelines), changes to chemistry (again, in tanks, at straddle plants, at blending points and along pipe profiles), etc.

We recommend establishing a strong regulatory system based upon Operators establishing and using PSM systems in a structured manner similar to the US OSHA requirements. Audits should be regular and quite intrusive. Penalties for PSM system failures should be large. Penalties for actual incidents should be very large. Over time (hopefully quickly), there will be noticeable improvement in terms of leaks, spills, explosions, injuries and fatalities.

As a starting point we recommend applying a similar system to the one OSHA applies to the “refinery” sector in the US (we recognize there will be operator pushback, but with lines having reportable incident rates in the range of 1 per year per line, the current practices are not “best” practices).

In addition to requiring robust PSM from Operators, CER should initiate an advisory committee including Indigenous communities, environmental organizations, the insurance industry and the public to rigorously review past incidents, identify additional lessons learned and then have CER drive these lessons into Operating companies, requiring closure of any similar gaps within a one-year timeline from when reports are issued.

22. How can the OPR drive further improvement to the environmental performance of regulated companies?

We are not convinced the OPR can improve the overall performance of the regulated companies per se, but OPR can drive improvement at several touch points in the pipeline life cycle. We focus primarily on reduction of spills/failures/releases and on carbon footprint.

a) Project identification / project basis scrutiny and validation



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[i] Fossil fuels

Canada, and the entire global community, is in the early stages of replacing energy systems and infrastructure as a result of declining fossil energy grade, increasing fossil energy costs and greenhouse gas (GHG) considerations. Canada has committed to substantial reductions (40%) in GHG emission within eight years (2030) and to be “carbon neutral” in twenty-two years (2050), which implies essentially zero fossil fuel combustion.

Canada needs better pipeline performance: this does not stop with federally regulated lines. Pipelines are part of Canada’s utility (i.e. “usefulness”) network. Failures erode that utility. Repeated failures, in conjunction with environmental harm and increased commodity / utility costs may drive Canadians (and foreign customers) to find alternate sources for the utility products (e.g. fuel switching from oil products to electric vehicles, from natural gas to locally available electricity for heating). In contrast, safe and well-run pipelines will contribute to lower utility costs and help maintain the need for the pipelined products. A step-change in improving safety and reliability is in the best interest of the pipeline industry and Canada.

As CER notes, there are currently 760,000 km of fossil fuel pipelines in Canada. It is hard to imagine underserved areas of the country. It is also hard to imagine new incremental (not replacement) fossil fuel supplies entering the transport system unless they are carbon neutral. After 2030, all replacement supplies would have to be 40% “cleaner” to avoid increasing overall GHG emissions. At that date, there should be available pipeline space as “carbon-heavy” supplies are throttled back or shuttered. Proposals for new incremental fossil fuel pipelines therefore have a very high hurdle to clear in terms of proving a valid and sustaining social purpose, including illustrating how exactly the proposals can stay within Canada’s commitments. In many cases, the proposed “energy” projects will be better met through end-use demand destruction or fuel switching to clean electricity.

CER needs to begin, today, very careful scrutiny of proposed projects to ensure they will be viable in a reduced-carbon and in a carbon-neutral context. This is necessary to prevent stranding scarce capital.

[ii] Alternate commodities

As Canada embraces the replacement of energy systems, various entrepreneurs will undoubtedly propose transport of emerging products. While we are not validating nor endorsing any of these, we can foresee applications to convert existing pipelines or to build new pipelines for hydrogen, carbon dioxide, freshwater, saline water, wastewater, ethanol, methanol, sulphur, fertilizers, biomass slurry, metal-rich oil sands tailings, glycol, etc. Each new commodity will bring special handling requirements, operational issues and possible environmental consequences. CER must be prepared for a high level of technical and environmental review and should develop (or refine if existing) its understanding of various commodities and risks involved.



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If a large number of varied proposals are received, CER must also expect a relatively high failure (technical, economic, etc.) and abandonment rate. CER needs to establish a robust approach to financial security for existing and new pipelines to assure the public does not bear clean-up and closure costs.

b) Design

[i] Design for net zero

We are now only 7.5 years from Canada's 2030 commitment of 40% to 45% GHG reduction across the economy. Certain aspects of the economy are harder to decarbonise. These include aviation, long haul ships and CO2 emitting industry including cement, steel and aluminum refining. Pipelines are not in these "hard to mitigate" sectors. Technical mitigations are available today and include electric drive / compression, advanced methane detection and control and selected electric fleet / construction equipment.

Any proposed pipeline plan should be carbon neutral. All existing pipelines should submit plans by the end of 2022 to reduce gross GHG 40% by 2030 and 100% by 2040

(acknowledging pipelines are not technically impossible to decarbonize). CER needs to demand net zero pipelines now. This will demonstrate leadership. There are no technical obstacles – there may be financing requirements; however, these can be met via toll structures.

[ii] Hydrology criteria

Canada / CER / CSA Z662 appear to have no stringent and effective design criteria for pipelines (if it did, lines would not fail as frequently) whereas other jurisdictions have imposed criteria. As a prime example, hydrologic design criteria imposed in Alaska for the Eastern North Slope Gas Pipeline (2006)²⁷ includes.

...for final design the pipeline will be required to have a separate hydrology study and be designed to withstand flood return periods of a minimum of two hundred (200) years.

Canada meanwhile stipulates no minimum hydrologic criteria.

Hydrologic events lead to numerous incidents and failures (washouts, slope failures, slumps, etc.) along Canadian pipelines every year. These lead to operational outages, throughput de-ratings, releases, clean-up and equipment repair and replacement costs. The losses to operators, the environment, Indigenous land users and commodity users are large. Knock-on costs of outages and associated stress (physical, emotional and economic) to broader society are even larger.

Whatever design level is used is often immediately compromised as upstream watersheds are cleared and developed (logging, urbanisation, industry, roads) changing the watershed response and generally increasing runoff volumes and often timing of peak flows. In effect, the pipes become less and less protected the minute the design is done. Design criteria should consider this land use factor.

²⁷ <https://dog.dnr.alaska.gov/Documents/SPCS/EasternNorthSlope/AttachmentC-GasDesign.pdf>



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Hydrologic criteria must also include best estimates of increased future storms as affected by climate change over the pipeline's lifespan (e.g. over 50 to 100 years).

For existing pipelines planned to still be operating in 2025, CER should require Operators to review and report by the end of 2022 design criteria used initially for general line installation and for each creek and river crossing; compare current land use with assumed land use; account for climate change increases to flood flows; and re-validate actual flood protection over the remaining project life. If protection provided is less than 95% then remedial plans should be presented, reviewed by CER and implemented within one year.

[iii] Seismic criteria

Seismic concerns are applicable across Canada with higher magnitudes of earthquakes generally in B.C. and in prairie regions near hydraulic fracturing activities. We recommend use of 1 in 1,000 year design criteria for seismic resistance for 50 year pipelines. This 1,000-year design criteria limits risk to a 4.9% chance of exceedance over 50 years of operations. For pipelines with 100 year service life, seismic design criteria should be increased to 1 in 2,000 years to limit risk below 5%. As with hydrologic design, other jurisdictions lead through best practices - - review Alaska, California, Japan, Greece and Turkey for better practices. For an example near Canada, the Aleysaka pipeline built in Alaska in the 1970's has been designed to withstand seismic events between 5.5 and 8.5 Richter and has successfully withstood the 7.9 Richter event along the Denali Fault on November 3, 2002.²⁸

Operators need to account for earthquake-induced landslides in addition to direct earthquake action on pipelines.

For existing pipelines planned to still be operating in 2025, CER should require Operators to review and report by the end of 2022 seismic resistance design criteria used initially for general line installation and for potential landslide areas, and re-validate seismic protection over the remaining project life. If protection provided is less than 95% then remedial plans should be presented, reviewed by CER and implemented within one year.

[iv] Isolation valve spacing

The standard approach for risk-based design needs to change regarding isolation valve spacing. Currently large expanses of "nature" are often designated as lower risk and lower levels of protective design (e.g. isolation valve spacing for instance) are applied compared to, for instance, major centres. By understanding the importance of the landscape and local water resources to Indigenous peoples it becomes apparent that fouling the "nature" lands is not truly a "less risky" thing. We recommend pipelines in Indigenous territories be designed to address the highest level of

²⁸ <https://alyeska.wpengine.com/wp-content/uploads/2021/03/FactBookMarch2021.pdf>



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risk.

We recommend pipelines in Indigenous territories be designed to address a higher level of risk in general (e.g. Class 2 at least instead of Class 1) and at the most protective level (Class 4) where release from a line could impact important ecological or cultural areas or drinking water supplies. This will drive valve location spacing.

[vi] Detection and Automated shut off systems

Limiting spill frequency and size

Operators include isolation valves (sometimes automated or remote controlled), instrumentation for detection of anomalies, controls rooms, operators, algorithms, SCADA (supervisory control and data acquisition) systems and alarms, all within the context of Management Systems and SOPs (Standard Operating Procedures).

Yet, spills still occur and failures in essentially every aspect of these systems. CER has been relying on “doing the same things and expecting different results”. This is not working and has potential to lead to widespread distrust of the pipeline industry and CER.

CER needs to take a deep and wide look, not a cursory survey or series of open houses, into why the Operators’ lines fail. This needs serious and funded input, likely in terms of a public committee, from Indigenous, environmental, municipal, engineering and insurance sectors. New approaches must be tried.

Earthquake early warning (EEW)

There are two principal reasons for using EEW systems, firstly to minimize the possibility of release resulting from very remote/infrequent seismic events and secondly, to ensure that the line will remain operational and provide its product after “reasonably expected” earthquakes during its life. CER should ensure Operators have appropriate EEW in place, including seismic detection and automated shut down isolation valves, suitable to seismic hazard areas (principally in BC and where hydraulic fracturing occurs). CER should require Operators to provide by the end of 2022, details of existing EW for all pipelines at risk of seismic activity, revised analysis of seismic protection, and plans to mitigate any areas where protection is less than 95% over the remaining project life.

Note that pipelines that were built under the assumption of minimal seismic risk may no longer be so given Canada’s increasing understanding of seismicity (reflected in increased seismic factors in the building code circa 2004) and the encroachment of hydraulic fracturing into territories near existing pipelines.

[vii] Elevated pipelines

CER should seriously consider mandating elevated (i.e. not buried) construction for pipelines.



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While admittedly, this does present a visual impact upon the landscape, there are numerous advantages:

- Spills can be visibly detected;
- Construction should be quicker and likely less expensive; and
- Removal of pipeline and spill remediation at end of life is dramatically easier.

For reference, the Alyeska pipeline system 1,288 km long with capacity of over 2.1 million barrels per day²⁹) is largely elevated and pipelines for water, steam and produced bitumen are very often elevated in SAGD operations. Elevated pipelines can be designed to permit wildlife passage.

c) Construction

[i] Electrify fleet

All light vehicles can be electrified now. Electric heavy construction equipment is becoming more and more available. CER must require Operators to use this equipment, whether directly, from suppliers or through subcontractors. CER can allow electric heavy equipment use to be phased in between now and 2029, at increasing tranches of for example, 16.5% per year (i.e. 2023, minimum 16.5%, 2024 minimum 33%, 2026 minimum 66%, 2028 minimum 99%) as an easy way to again show leadership. CER can audit performance by reviewing fuel purchased and delivered to site on a physical basis or via an accounting audit. Requiring Operators to assume Prime Contractor responsibility will provide this alignment. An associated co-benefit will be rapid reductions in fuel and fueling management costs, spills, investigations, clean-ups and damage to ecosystems.

[ii] Hydrotesting wastewater release

In relatively remote areas, hydrostatic test waters may be given cursory testing then released as large amounts of water to local watersheds. Anecdotally, we are aware of less than ideal management of hydrotest fluids. Of course, Operators have permit requirements to ensure water management and Management Systems in place, but, as evidenced by many pipeline failures, not all requirements are met in the field all the time.

Indigenous use of the landscape includes the use of local waters from wetlands and watercourses for drinking water, especially while pursuing traditional activities throughout the landscape. Indigenous land users are not expecting that hydrostatic wastewaters will be present. Hydrostatic wastewaters have been characterized as having rust (metals), pH, temperature, oxygen levels and occasionally antifreeze components that differ from natural waters. These differences may impact local drinking water characteristics and also (temperature, oxygen levels) fisheries.

Current regulatory practice is of moderate stringency. For example, we cite from Enbridge's Waste Management Plan³⁰ for CER regulated Line 21 the requirements regarding hydrotesting:

²⁹ <https://www.alyeska-pipe.com/trans-alaska-pipeline-system-taps-overview/>

³⁰

https://registry.mvlwb.ca/Documents/MV2017P0013/MV2017P0013%20-%20Enbridge%20Pipelines%20-%20Waste%20Management%20Plan%20V1.2%20-%20Feb%202022_18.pdf



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“Prior to any discharge of spent water to the environment, water shall be tested to meet Canadian Counsel of Ministers of the Environment Canadian Environmental Quality Guidelines (CCME Guidelines). If water quality parameters do not meet guidelines onsite water treatment options may be considered in order to accommodate surface discharge”

This is the field instruction for people doing the work. It is quite vague, referring to CCME guidelines, but not listing *which* specific guideline (protection of aquatic life, agriculture, groundwater, etc.) or parameters are of interest. This raises important questions:

- How would field personnel know what to test for and what levels are acceptable?
- Who is doing the testing and where?
- If the project is remote it can take several days to get results. What happens to the water in the pipeline in the meantime? Could the water freeze?

Further, if parameters “do not meet guidelines”, then treatment “may” be considered. Again, this raises numerous questions:

- Might treatment “not be considered”?
- Who would make this decision? How?
- As the time of making the decision, would treatment equipment be available nearby?
- Would the equipment be able to target and remove the constituents of concern?
- What happens to the pipeline water in the interval while treatment equipment is being assembled? Would it be heated? What are the greenhouse gas implications of this? What consideration would be given to fuel management and spill management in such hasty decision-making processes?

Given the vagaries of the field instructions example, it is understandable that field personnel may not know what to do, may have a problem to manage in terms of many cubic metres of dirty water about to freeze and crack the pipeline while equipment is ordered and delivered to site, or may simply make a “field judgment call” and release the water anyway. *Although it is understandable, the outcomes may be poor. This is not world leading practice, nor is it good for the pipeline industry or CER.*

CER could provide more stringent and clear regulation (requirements to treat before release, specific contaminants of concern), oversight (i.e. review of Operator project field instructions, review of Operator plans to treat water, site review and audit requirements) and enforcement (requirements to remove and treat all contaminants, large penalties/ fines).

Indigenous knowledge can inform suitable locations for water sourcing and suitable or preferable locations for water release. CER should mandate that Indigenous communities be actively engaged in water source and release selection and identification of mitigation.

d) Management of Change



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Any pipeline changing service, whether that be flow direction reversal or transporting a different commodity, needs to be assessed in all measures, similar to the review process for a new pipeline.

At minimum the following needs to be assessed:

- Alternatives to the pipeline (e.g. electric vehicles instead of liquid fuels), especially considering viable project lifespan in light of federal and global movement to decarbonize / reduce GHGs which implies 40% to 45% reduction of fossil fuel combustion, market and product transport by 2030 ramping to essentially 100% reduction in fossil fuel combustion, market and product transport by 2050. In reality, very few fossil pipelines approved during 2022 would be built in time to have a meaningful project lifecycle in the context of the national 40% to 45% GHG reduction commitment by 2030.
- Route, considering proximity to Indigenous communities, traditional territories and historical resources. Full “modern” consultation would be expected.

In addition, the following need to be considered, reviewed and approved by CER through a formal review / hearing process, particularly considering that reuse of piping implies that piping is already old and subject to a certain degree of historical stress, corrosion and may contain previous repairs:

- Age of existing pipe and appropriate de-rating of pressure, throughput and expected service life;
- Third-party assessment of sufficiency and adequacy of piping, valves, tankage and prime drivers to safely transport any new commodity including robust assessment of stress, corrosion, commodity / equipment compatibility. Special attention is needed for small molecule / volatile commodities (hydrogen, methane) to assess suitability and integrity of pipeline systems;
- Detailed evaluation including third party assessment of any previous repairs to ensure condition and adequacy of repairs, compatibility of repairs to original pipeline and to proposed commodity;
- Enhanced systems of additional isolation valves;
- plans to thoroughly remove and clean existing product to remove potential chemical interactions;
- Enhanced physical monitoring systems including wall condition and thickness gauging, external on the ground monitoring / surveillance for leaks; and
- Enhanced remote (instrumented) monitoring complete with new and fast-acting leak detection, alarming and shut down equipment and operational plans.

e) More effort toward incident investigation in remote territories

The Transportation Safety Board of Canada (TSB) investigates a fraction of pipeline incidents. We have searched the TSB website for incident investigation using the search term “Enbridge” (<https://www.tsb.gc.ca/eng/rappports-reports/pipeline/index.html>). Neither the Line 37 spill nor the BC main gas line explosion is listed as being investigated. These were both major incidents that likely have root causes and lessons to learn across the industry. Similarly, search terms “CNOOC”, “Nexen” and “Long Lake” return nothing although the month long spill at the Long Lake site is



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noteworthy in its magnitude (5,000,000 litres) and duration, indicating that “something” useful could be learned and shared.

Notably all these events occurred in “natural” areas within to Indigenous territories. We recommend CER encourage its sister Crown Corporation to investigate such major spills. *If TSB does not accommodate this request, we recommend CER pursue such investigations through its own mandate, or perhaps via a new body to investigate incidents in natural and Indigenous territories, which appear, from this cursory analysis, to get less focus for investigation.*

e) Environmental Performance & Protection of Wildlife and Fish

Environmental performance should begin early in a project development. The OPR should require environmental assessment to identify project impacts requiring mitigation. The new OPR should require mitigation of impacts to “species at risk” but also impacts to fish and wildlife species important to Indigenous communities. For example, moose and beaver are cultural keystone species for Fort McKay (Garibaldi 2006)³¹ but have less protection because they are not “species at risk”.

The OPR should require the protection of wildlife species and their habitat. Regulations like the Migratory Bird Convention Act prohibit harassing, killing, or destroying nest and dens. However, this has led to habitat destruction when birds are not present and breeding (e.g., in winter). The new OPR should require the protection of wildlife, nests, and dens but also habitat. Further, companies should restore habitat removed by projects.

Improved environmental performance should include good planning, environmental assessment, mitigation, and restoration of habitat.

23. How can the connection between the Environmental Protection Plan, specific to an individual pipeline, and the company’s Environmental Protection Program, designed for a company’s pipeline system, be improved?

The Environmental Protection Plan should be based on issues identified through environmental assessment baseline studies (e.g., wildlife surveys, fish and fish habitat surveys) and Indigenous consultation. These baseline data from surveys and consultation should specify the requirements (e.g., species present and population parameters) of a company’s Environmental Protection Plan and Program. Baseline studies, Environmental Protection Plans and Environment Protection Program should all use scientifically sound survey and monitoring methods that incorporate Indigenous Knowledge. The Environmental Protection Program should maintain or restore environmental equivalency.

³¹ Garibaldi, A. 2006. Fort McKay – Albian Sands Energy Inc. TEK Project. Integration of Traditional Environmental Knowledge in Land Reclamation. Prepared for Fort McKay IRC and Albian Sands Energy Inc.



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24. How can contaminated site management requirements be further clarified, in the OPR or in guidance?

The new OPR should direct companies to work with local communities to determine the level of remediation and contaminated site management methods. The Alberta Soil and Groundwater Remediation Guidelines (AEP 2019)³² can provide criteria in Alberta. As a default the new OPR should refer to the Canadian Council of Ministers of Environment (CCME) environmental guidelines. Further, Indigenous communities may also want a risk-based approach to ensure that wildlife and vegetation consumed and used are safe.

The Fort McKay First Nation has adopted a “keep clean areas clean” approach. This concept could guide the level of remediation required. For example, “clean” areas should be cleaned to the most rigorous criteria. As with restoration guidance for Right-of-Way, remediation levels in contaminated areas should be the same as surrounding areas (i.e., chemical concentrations).

25. Are there any matters related to the Emergency Management Program in the OPR that require clarification? If so, what are they? Are there any matters for which further guidance is required?

The Emergency Management Program (s. 32-35) described in the OPR is very general and leaves all the details to the Operator. It does not mention Indigenous peoples. Indigenous peoples and their rights are highly likely to be adversely affected by any emergency, and therefore MUST be consulted regarding the development of pipeline safety and risk management as we discuss elsewhere in this document and in the development of the Emergency Management Program. The OPR needs to explicitly indicate Indigenous peoples. For example, see our proposed additions in bold to the following clauses in the OPR:

*32 (1) A company shall develop, implement and maintain an emergency management program that anticipates, prevents, manages and mitigates conditions during an emergency that could adversely affect property, the environment, **Indigenous rights (including Treaty and s. 35 rights),** or the safety of workers or the public **including land-users exercising rights.***

*(1.1) The company shall develop an emergency procedures manual, review it regularly, **consult with Indigenous peoples at each revision process** and update it as required.*

1.2 The company shall consult with Indigenous peoples and the public potentially affected by the pipeline and emergencies, in the development, implementation and

³² Alberta Environment and Parks (AEP). 2019. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Land Policy Branch, Policy, and Planning Division. 198 pp.



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maintenance of an emergency management program and an emergency procedures manual, and reviews and updates of the program and manual.

(2) A company shall submit the emergency procedures manual and any updates that are made to it to the Regulator.

*33 A company shall establish and maintain liaison with the agencies that may be involved in an emergency response **originating with, associated with or impacting the pipeline** and shall consult with them in developing and updating the emergency procedures manual.*

*34 A company shall take all reasonable steps to inform all persons **and Indigenous communities, including land-users exercising rights** who may be associated with **or impacted by** an emergency response activity on the pipeline, of the practices and procedures to be followed and make available to them the relevant information consistent with the emergency procedures manual.*

*35 A company shall develop a continuing education program for the police, fire departments, medical facilities, **Indigenous communities whose traditional territories are intersected by the pipeline and/or its facilities**, other appropriate organizations and agencies and the public residing adjacent to the pipeline to inform them of the location of the pipeline, potential emergency situations involving the pipeline and the safety procedures to be followed in the case of an emergency*

Since Emergency Management and Response is essential to the safety of the environment, people and protection of Treaty and Aboriginal rights, ***we highly recommend that the CER develop specific and detailed guidance on Emergency Management.*** In 2012, Fort McKay reviewed and commented on the Alberta Energy Conservation Board (now the Alberta Energy Regulator) Directive 71 Emergency Preparedness and Response Requirements. Many of our comments are directly relevant to the OPR's Emergency Management Program, and we include suggestions here based on our experience with multiple industrial developments and pipelines on our traditional territory. Suggested additions to the Emergency Management Program include the following requirements:

- Risk assessments including “maximum” or “worst-case” scenarios; Risk Register complete with current status of each risk; Quality records including NCR (non conformance) data; MOC or “change management” registry; incident register; “technical deviations or variances” approved from original engineering;
- Consult with Indigenous communities and the public regarding risk management and mitigations and emergency responses, including participation in risk assessment processes or at minimum, validation or risk events, plausibility and consequences;
- A summary of the Indigenous and public consultation that occurred as part of development of the plan, the concerns and issues that were raised and how the plan does or doesn't address these concerns and issues.
- A process for contacting trappers and harvesters and other traditional land users who may



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be out on the land during an emergency to be included in the emergency communications plan.

- Consultation on emergency evacuation routes or modes, shelter-in-place locations and preparedness, intentional and planned refuges for people;
- To develop a specific communication plan with affected communities and Indigenous authorities. The plan needs be developed with the appropriate departments and representatives from the affected Communities. Contact lists need to be updated regularly and to ensure they have details on who to contact in the community for specific types or locations of emergencies and who the backup contacts are etc. and for the community to have contacts for the Operator and contractors; and
- To provide the appropriate resources (i.e. funding, technical assistance, supplies) to affected communities to develop and implement a communications and emergency response plan.
- To strongly consider contracting local communities as first responders to spills given proximity and knowledge of local terrain and watercourses.

26. How could the requirement for a Quality Assurance Program be improved or clarified in the OPR?

Firstly, it is extremely concerning to learn that Operators have not, on their own as part of due diligence and protection of the public, been fully and adequately managing the quality aspects of the equipment they are buying, installing and placing in service to transport toxic and flammable products. This diminishes the overall belief of the level of safety of all existing pipelines.

We recommend CER place orders for all active and planned pipelines to provide by the end of 2022, documents sealed by the Operators' Permit Holder and the ABSA designers / installers of all equipment, certifying:

- Type, origin (mill), chain of custody, storage locations in transit to site;
- Storage conditions (open, covered, outside, inside, etc), temperatures, precipitation during storage;
- Exposure to any incidents or conditions that may impact material characteristics including such as exposure to ocean/sea water, fire, forest fire, electrical current, being jostled or spilled from conveyance, etc.;
- A third party assessment of any necessary de-rating of the materials to account for known issues from particular mills, long storage, environmental conditions, shipping conditions, etc.;
- A list of materials for which Operators do not have 100% confidence in their chain of custody from manufacture to installation in the pipeline system; and
- A plan from the Operator to perform increased surveillance (of both the line materials and along the route), apply preventative or restorative measures (coatings, linings, etc), de-rate the line for pressure and/or throughput or to replace line sections.



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27. How can the OPR incorporate the key issues identified in the Safety Advisory regarding the strength of steel and the relative strength of the weld area?

Again, it is extremely concerning to learn that Operators have not, on their own as part of due diligence and protection of the public, been fully and adequately managing the quality aspects of the equipment they are buying, installing and placing in service to transport toxic and flammable products. This diminishes the overall belief of the level of safety of all existing pipelines.

CER can require every Operator to provide within six months documents sealed by the Operator's APEGA Permit Holder and ABSA Permit Holder(s) responsible for the pipeline components complete with data identifying any relevant welds, origin and characteristics of the steel, appropriate de-rating (pressure or capacity) for those pipe sections.

28. What are your recommendations for compliance promotion at the CER?

In addition to existing CER activities, Operators should fund CER and Indigenous observers for full time vigilance at work sites for new pipelines. Costs to Operators will be trivial relative to project costs. Observers should be given the right to stop work progress.

29. How do you want to be engaged by the CER in the development of technical guidance?

CER should include FMFN in any technical guidance activities including sending out information or guidance updates, and involvement in development of standards and best practices. This is normal practice for other regulators (e.g. AER, Alberta Environment, etc.) and should be by CER as well.

Summary

In summary, Fort McKay has provided extensive comments regarding the CER Onshore Pipeline Regulations Review Discussion Paper, based on our experience and input from our technical advisors. We trust the CER will use this input to improve the OPR and associated regulatory tools and guidance, particularly with respect to addressing Reconciliation with Indigenous peoples, Treaty and Aboriginal rights, and protecting health, safety, and the environment, which we rely on to exercise our rights.

Due to the high level of industrial development and pipelines in our traditional territory, Fort McKay has had extensive experience with industrial developments, pipelines, policy and regulations and their implications for the environment, safety and risk, mitigation, and effects on the implementation of our Treaty and Aboriginal rights. Further, we offer our experience to assist CER as it progresses in updating the Onshore Pipeline Regulations (OSR) as it progresses in updating the Onshore Pipeline Regulations (OSR) and other regulatory instruments in the modernization of the



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regulations and the overall Regulatory Framework Plan³³ in ensuring the updates address Treaty and Aboriginal rights and Reconciliation.

Contact information

Please direct all communications regarding this submission to:

██████████ Director, Director of Sustainability,
Fort McKay First Nation

██

██████████ Senior Manager, Environmental & Regulatory Affairs
Fort McKay First Nation

██

Sincerely,

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██
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Senior Manager, Environmental & Regulatory Affairs
Fort McKay First Nation

³³ <https://www.cer-rec.gc.ca/en/about/how-we-regulate/regulatory-framework-plan/regulatory-framework-plan-2022-2025/regulatory-framework-plan-2022-2025.pdf>