



**Canadian Natural**

**APPLICATION FOR APPROVAL OF THE  
CANADIAN NATURAL RESOURCES LIMITED  
PIKE 2 PROJECT**

***VOLUME 5: SUPPLEMENTAL INFORMATION REQUEST 2***

Submitted to:

**Alberta Energy Regulator**

Submitted by:

**Canadian Natural Resources Limited**  
Calgary, Alberta

January 2020



January 24, 2020

Mr. Shay Dodds  
Alberta Energy Regulator  
Suite 1000, 250 – 5 Street SW  
Calgary, Alberta T2P 0R4

**RE: Canadian Natural Pike 2 Project Supplemental Information Request 2**

Canadian Natural Resources Limited (Canadian Natural) submitted an Integrated Application (Application) to the Alberta Energy Regulator (AER) for the regulatory approval of *Oil Sands Conservation Act* (OSCA) Application No. 1917507 and *Environmental Protection and Enhancement Act* (EPEA) Application No. 001-00426706 the Pike 2 Project (the Project).

The AER completed a review of the Application, the responses to Supplemental Information Request 1 (SIR1), and the Fort McKay Métis Nation "Initial Traditional Land Use Study CNRL Jackfish West Expansion and Pike 2 Projects" report received on November 25, 2019. On December 06, 2019 the AER issued Supplemental Information Request 2 (SIR2); this SIR2 contained one request for clarification and/or information from the AER. This document, identified as Volume 5 – Supplemental Information Request 2, forms part of the Project Application for approval of the Project.

If you have any questions regarding this application, please contact the undersigned.

Sincerely,

**CANADIAN NATURAL RESOURCES LIMITED**

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## Preamble

This document, identified as *Volume 5 – Supplemental Information Request 2*, forms part of the Project application (the Application) submitted by Canadian Natural Resources Limited (Canadian Natural) to the Alberta Energy Regulator (AER) (*Oil Sands Conservation Act (OSCA)* and *Environmental Protection and Enhancement Act (EPEA)*) Application No. 1917507 for approval of the Pike 2 Project (the Project).

The AER completed a review of the Application and the responses to Supplemental Information Request 1 (SIR1) and on 06 December 2019 issued a Supplemental Information Request 2 (SIR2). This SIR2 contains one request for clarification and/or information from the AER.

**AER Responses**  
**AER Application No. 1917507**

**1. Volume 1, Concordance Table, Environmental Protection and Enhancement Act Terms of Reference**

***As per the EPEA Terms of Reference (TOR), Section 1(b) states the proponent is required to “Describe the concerns and issues expressed by Indigenous communities and the actions taken to address those concerns and issues, including how Indigenous community input was incorporated into the Project, EIA development, mitigation, monitoring and reclamation. Describe consultation undertaken with Indigenous communities and groups with respect to Traditional Ecological Knowledge and Traditional Use of land, water, wildlife and vegetation”.***

**a) Describe the concerns expressed and actions taken to address the concerns as outlined in the Fort McKay Metis Nation “Initial Traditional Land Use Study CNRL Jackfish West Expansion and Pike 2 Projects” report.**

The Fort McKay Métis Nation (FMMN) Initial Traditional Land Use Study (TLUS) includes a list of primary “stressors”, which have been presented as “environmental, socio-cultural and economic impacts that are affecting traditional use in its traditional territory”. The stressors identified in the TLUS are:

- loss of land;
- changes in access to land;
- change in animal abundance and distribution;
- changes in water levels and fish habitat;
- increased pollution;
- increased regional population;
- sensory disturbance;
- increased participation in wage economy;
- loss of agency/power; and
- government and industry policies and approaches to engagement with FMMN.

These stressors are described by FMMN as having negative impacts on the following traditional land uses:

- travel and access (impacts on access and trails);
- hunting and trapping;
- camping and family gathering;
- gathering plants and berries; and
- fishing and water use.

Within each of these overall headings, concerns have been identified relating to the Project. The FMMN TLUS was prepared after the completion of the environmental impact assessment (EIA) and submission of the Application. A traditional ecological knowledge (TEK) and land use section was completed for the EIA and included primary traditional land use (TLU) data from local communities specific to the local study area (LSA) and publicly-available baseline TLU information. The concerns expressed by FMMN in their TLUS are generally consistent with those expressed by other stakeholders on the Project and other similar projects in the region.

[Table SIR2-1](#) shows a summary of the concerns (i.e., stressors) identified by FMMN in their TLUS, and provides a description of the manner in which FMMN concerns were identified, assessed, and/or mitigated as part of the EIA. References to applicable sections of the Application are also provided for reference. Based on a review of the stressors and the Application, none of the conclusions of the EIA are expected to change as a result of the information provided in the TLUS.

**Table SIR2-1: Summary of Concerns Expressed in the Fort McKay Métis Nation Traditional Land Use Study and Concordance to the Project’s Environmental Impact Assessment**

Concern Expressed	Response	EIA Discipline	EIA Location Reference
<b>Loss of Land</b>			
<ul style="list-style-type: none"> <li>The Project is expected to result in the additional loss of almost 476 ha of FMMN traditional territory because of land disturbance from direct footprint. FMMN considers almost 7,000 ha disturbed based on a 1.5 km buffer around the footprint (FMMN 2019).</li> </ul>	<ul style="list-style-type: none"> <li>The EIA assesses the regional study area (RSA) and LSA surrounding the total Project footprint of 476 ha. For each discipline component in the EIA, the boundaries of the LSA and RSA vary. Boundaries are defined based on the distribution of specific receptors or key resources that are of importance to each discipline, and that have the potential to be affected by the Project.</li> <li>Mitigation includes integrated land management practices to minimize footprint and disturbance, including fragmentation.</li> </ul>	<ul style="list-style-type: none"> <li>Traditional Ecological Knowledge and Land Use</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 3.4</li> <li>Volume 2, Section 15.7</li> <li>Volume 2, Table 15.7-1</li> <li>Volume 3, Appendix K2</li> </ul>
<ul style="list-style-type: none"> <li>Impacts from the Project are of particular concern when considered cumulatively with disturbance from other anthropogenic sources as well as forest fires.</li> </ul>	<ul style="list-style-type: none"> <li>Cumulative impacts including loss of harvesting areas, traditional use sites, aesthetic experience and species availability are assessed as part of the Application.</li> <li>All proposed Project activities are within the allowable land use.</li> </ul>	<ul style="list-style-type: none"> <li>Traditional Ecological Knowledge and Land Use</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 15.8</li> <li>Volume 2, Section 4.7</li> <li>Volume 2, Section 9.7</li> <li>Volume 2, Section 11.7</li> <li>Volume 2, Section 12.7</li> <li>Volume 2, Section 14.7</li> <li>Volume 2, Section 16.6</li> </ul>
<ul style="list-style-type: none"> <li>A constraints planning process was used to make decisions on the impacts of potential facility locations, however no input from FMMN was included.</li> </ul>	<ul style="list-style-type: none"> <li>Constraints planning selection criteria includes cultural, traditional use and stakeholder priority areas, including publicly-available baseline TLU information.</li> </ul>	<ul style="list-style-type: none"> <li>Scope of Environmental Impact Assessment</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 3.5</li> </ul>

Concern Expressed	Response	EIA Discipline	EIA Location Reference
<b>Changes in Access to Land</b>			
<ul style="list-style-type: none"> <li>The Project will add 52.1 km of new linear development, including 23.4 km of new access.</li> </ul>	<ul style="list-style-type: none"> <li>The Project layout has been designed to minimize effects by reducing the disturbance footprint and using constraints mapping during planning to locate facilities away from known and potential environmental constraints.</li> <li>The use of existing development and shared infrastructure locations will reduce the size of disturbance incurred as a result of the Project footprint. Linear developments (i.e., roads, pipelines and transmission lines) will be constructed within a single right-of-way.</li> </ul>	<ul style="list-style-type: none"> <li>Vegetation and Wetlands</li> <li>Soils, Terrain and Surficial Geology</li> <li>Land and Resource Use</li> </ul>	<ul style="list-style-type: none"> <li>Volume 3, Appendix K2</li> <li>Volume 2, Section 10.6.8</li> <li>Volume 2, Section 11.6.1</li> <li>Volume 2, Section 14.0</li> <li>Volume 1, Table 5.5-1</li> </ul>
<ul style="list-style-type: none"> <li>The Project will introduce the area to non-Indigenous workers who may not otherwise be aware of the access to hunting, camping, fishing and berry gathering areas. This may result in additional consumptive and non-consumptive use of resources, as well as increased vandalism and conflict with Indigenous land users.</li> </ul>	<ul style="list-style-type: none"> <li>This concern is consistent with concerns identified by other First Nation communities. Canadian Natural policies prohibit staff from hunting while on duty. An access management plan will ensure the safety of Canadian Natural personnel and sites, while supporting TLU. Additionally, the plan will provide opportunities for those exercising traditional activities, access to safety personnel in the event of an emergency.</li> </ul>	<ul style="list-style-type: none"> <li>Traditional Ecological Knowledge and Land Use</li> <li>Land and Resource Use</li> </ul>	<ul style="list-style-type: none"> <li>Volume 3, Appendix K2</li> <li>Volume 2, Section 14.6</li> <li>Volume 1, Table 5.5-1</li> </ul>
<b>Change in Animal Abundance and Distribution</b>			
<ul style="list-style-type: none"> <li>The Project will adversely affect animal abundance and distribution because of sensory and land disturbance</li> </ul>	<ul style="list-style-type: none"> <li>The potential impacts to wildlife as a result of sensory and land disturbance are assessed for all wildlife populations and habitats. Mitigation measures are outlined for each effect pathway. The cumulative effects of sensory disturbance of the Project, combined with existing and planned projects in the terrestrial RSA, are rated as low for all valued environmental components.</li> </ul>	<ul style="list-style-type: none"> <li>Wildlife and Wildlife Habitat</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 12.6.2</li> <li>Volume 2, Table 12.6-1</li> </ul>



Concern Expressed	Response	EIA Discipline	EIA Location Reference
<ul style="list-style-type: none"> <li>Project construction and operation activities may negatively affect Moose, Caribou and Lynx, as the Project would directly alter high suitability habitat for those species.</li> </ul>	<ul style="list-style-type: none"> <li>This concern is consistent with those expressed by other First Nation communities and addressed in the Application.</li> <li>Mitigations for direct habitat loss and alteration would be employed to reduce potential effects.</li> <li>Canadian Natural will continue the well-established monitoring program for wildlife in the region that has been operating since 2002, as well as participation in planning initiatives such as the Canada’s Oil Sands Innovation Alliance.</li> </ul>	<ul style="list-style-type: none"> <li>Wildlife and Wildlife Habitat</li> </ul>	<ul style="list-style-type: none"> <li>Volume 3, Appendix K2</li> <li>Volume 2, Section 12.6.2</li> <li>Volume 2, Table 12.6-1</li> <li>Volume 2, Section 12.6.3</li> <li>Volume 2, Section 12.8</li> <li>Volume 1, Table 5.5-1</li> </ul>
<b><i>Changes in Water Levels and Fish Habitat</i></b>			
<ul style="list-style-type: none"> <li>The Project may have negative effects on surface water quality as a result of subsurface thermal plumes.</li> </ul>	<ul style="list-style-type: none"> <li>This concern is consistent with those expressed by other First Nation communities in the region.</li> <li>Mitigation of thermally-mobilized constituents would be implemented, if necessary, to prevent unacceptable impacts to potential receptors, in accordance with the Alberta Environment and Parks Directive <i>Assessment of Thermally-Mobilized Constituents in Groundwater for Thermal In Situ Operations</i>.</li> </ul>	<ul style="list-style-type: none"> <li>Hydrology</li> <li>Fish and Fish Habitat</li> </ul>	<ul style="list-style-type: none"> <li>Volume 3, Appendix K2</li> <li>Volume 2, Section 8.6</li> </ul>

Concern Expressed	Response	EIA Discipline	EIA Location Reference
<ul style="list-style-type: none"> <li>Potential impacts resulting from the diversion of surface water under temporary diversion licences for construction and drilling</li> </ul>	<ul style="list-style-type: none"> <li>Canadian Natural will use water from borrow sources or runoff collection areas before applying for diversion licences from natural waterbodies.</li> <li>Within the aquatic LSA, all Project effects will not have a measurable effect on water levels, channel regime or on other surface water users.</li> <li>All withdrawals are expected to be infrequent and within allowable limits.</li> <li>The aquatic LSA is wholly contained within the Lower Athabasca Region and, as such, is subject to the Lower Athabasca Region Surface Water Quantity Management Framework for the Lower Athabasca River.</li> </ul>	<ul style="list-style-type: none"> <li>Hydrology</li> <li>Fish and Fish Habitat</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 7.3</li> <li>Volume 2, Section 7.6</li> <li>Volume 2, Section 8.6.5</li> </ul>
<b>Increased Pollution</b>			
<ul style="list-style-type: none"> <li>Potential impacts of pollution at close proximity to areas the members identified as country food extraction sources, and that the health of Indigenous peoples may not be well represented by the general populations</li> </ul>	<ul style="list-style-type: none"> <li>Specific Indigenous receptors are employed for the assessment, and a different lifestyle is considered for Indigenous peoples, which assumes a greater consumption of country foods.</li> </ul>	<ul style="list-style-type: none"> <li>Air Quality</li> <li>Human Health Risk</li> </ul>	<ul style="list-style-type: none"> <li>Volume 3, Appendix K2</li> <li>Volume 2, Section 4.3.1</li> <li>Volume 2, Section 4.9</li> <li>Volume 2, Section 17.6.2</li> </ul>
<ul style="list-style-type: none"> <li>Predicted exceedances of the AAAQO during construction near the CPF are near several traditional land use areas with prime subsistence resource extraction capacity.</li> </ul>	<ul style="list-style-type: none"> <li>Construction emission estimates incorporate significant conservatism and assume simultaneous, continuous emission from all potential sources. Additionally, the exceedances are all predicted within 50 m of the fence line where the model is most likely to over-predict emissions from area sources. Consequently, actual ground-level concentrations are predicted to be much lower.</li> </ul>	<ul style="list-style-type: none"> <li>Air Quality</li> <li>Human Health Risk</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 4.6</li> <li>Volume 2, Section 17.6</li> </ul>

Concern Expressed	Response	EIA Discipline	EIA Location Reference
<b>Increased Regional Population</b>			
<ul style="list-style-type: none"> <li>The Project will average 500 workers per year for five years during construction and 276 workers full-time during operation, 95% of which will be from outside the region. This contribution to regional population growth places greater demand on health and social services</li> </ul>	<ul style="list-style-type: none"> <li>Canadian Natural will implement plans to reduce the use of regional health and emergency services and will have licenced Health Care Professionals in place during construction and operation.</li> <li>Construction workforce will be mainly temporary without their families. During operations, the anticipated in-migration of up to 69 people from outside the socio-economic study area is not expected to create additional pressure as the region has capacity to accommodate moderate population growth.</li> </ul>	<ul style="list-style-type: none"> <li>Socio-economics</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 18.6</li> </ul>
<b>Sensory Disturbance</b>			
<ul style="list-style-type: none"> <li>The Project will contribute to sensory disturbance (e.g., sights, sounds, dust and smells), in areas of the bush that are used by FMMN members. Sensory disturbances that FMMN are already exposed to and may worsen include: <ul style="list-style-type: none"> <li>dust during construction</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Emissions of particulate matter (i.e., dust) are assessed for both construction and operations.</li> <li>Particulate deposition (i.e., dustfall) is also assessed.</li> <li>Road dust mitigation measures, such as road watering, will be used to minimize the overall combined effect of road dust in the terrestrial LSA.</li> <li>The residual impact of Project odourous emissions are predicted to be low.</li> </ul>	<ul style="list-style-type: none"> <li>Air Quality</li> <li>Vegetation</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 4.6.6</li> <li>Volume 2, Section 4.6.9</li> <li>Volume 2, Section 4.6.10</li> <li>Volume 2, Section 11.6.3</li> <li>Volume 2, Section 17.7</li> </ul>
<ul style="list-style-type: none"> <li>noise disturbance from periodic sources such as backup horns or impact noise that may impact traditional users as well as wildlife</li> </ul>	<ul style="list-style-type: none"> <li>Noise from traffic sources are not covered by regulations.</li> <li>Construction noise is not specifically regulated by AER Directive 038: <i>Noise Control</i>, however, construction noise mitigations are presented in the Application, and are within allowable limits.</li> </ul>	<ul style="list-style-type: none"> <li>Noise</li> <li>Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 5.8.3</li> <li>Volume 2, Section 12.6.2</li> </ul>

Concern Expressed	Response	EIA Discipline	EIA Location Reference
<ul style="list-style-type: none"> <li>– light, specifically around the CPF during construction and operation may affect wildlife and cause animals to move further away, thereby forcing members to travel further to hunt</li> </ul>	<ul style="list-style-type: none"> <li>• Potential effects of sensory disturbance on wildlife is assessed and mitigation measures presented.</li> </ul>	<ul style="list-style-type: none"> <li>• Wildlife</li> </ul>	<ul style="list-style-type: none"> <li>• Volume 2, Section 12.6.2</li> </ul>
<b>Increased Participation in Wage Economy</b>			
<ul style="list-style-type: none"> <li>• The Project will create economic opportunities for local businesses to provide services during construction and operation phases. Canadian Natural indicates they work to support Indigenous business opportunities, although the Project has not signed any contracting, procurement, employment or benefits agreement with FMMN.</li> </ul>	<ul style="list-style-type: none"> <li>• The economic benefits will be local, regional, provincial, and national in extent. During the construction phase, 2,527 person-years of direct employment, 3,517 person-years of indirect employment and up to 1,299 person-years of induced employment would be created. During the operational phase, 276 direct long-term jobs would be created with an additional 204 indirect jobs and up to 94 induced jobs annually.</li> <li>• The Project is not in the procurement stage of development.</li> </ul>	<ul style="list-style-type: none"> <li>• Socio-Economic</li> </ul>	<ul style="list-style-type: none"> <li>• Volume 1, Section 1.3</li> <li>• Volume 2, 18.6.3</li> </ul>
<ul style="list-style-type: none"> <li>• The Project lists mitigations, including supporting Indigenous Business development, however, there are no specific details about which communities this would involve.</li> </ul>	<ul style="list-style-type: none"> <li>• The Project is not in the procurement stage of development. If the Project receives regulatory approval and corporate sanction, Canadian Natural will seek to understand the capacity of Indigenous business, including FMMN. Specific details are not listed in the EIA as business opportunities are available to all local communities. All local business and individual entrepreneurs must be pre-qualified through ISNetwork and meet Canadian Natural bidding and contracting requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Socio-Economic</li> </ul>	<ul style="list-style-type: none"> <li>• Volume 2, 18.6.3</li> </ul>

Concern Expressed	Response	EIA Discipline	EIA Location Reference
<b><i>Loss of Agency/Power</i></b>			
<ul style="list-style-type: none"> <li>Project applications were submitted without FMMN input. The previous proponent (Devon Canada) did not include input from FMMN nor assessed impacts on FMMC.</li> </ul>	<ul style="list-style-type: none"> <li>The Alberta Aboriginal Consultation Office (ACO) determines who the Proponent must consult with for any given project. FMMN is not identified by the ACO as a group that is required to be consulted on the Project. A Traditional Ecological Knowledge and Land Use section was completed for the EIA and included primary TLU data from local communities specific to the LSA and publicly-available baseline TLU information. The concerns expressed by FMMN in their TLUS are generally consistent with those expressed by other stakeholders on this Project and other similar projects in the region. Canadian Natural believes information in the EIA accurately reflects the potential impact of the Project on TLUs.</li> </ul>	<ul style="list-style-type: none"> <li>Traditional Ecological Knowledge and Land Use</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 15.1.2</li> <li>Volume 2, Section 15.4.1</li> </ul>

Concern Expressed	Response	EIA Discipline	EIA Location Reference
<b><i>Government and Industry Policies and Approaches to Engagement with Fort McKay Métis</i></b>			
<ul style="list-style-type: none"> <li>Pike 2 Terms of Reference mandates a study of affected indigenous communities' traditional land use areas. Despite this, no project-specific FMMN traditional land use study was supported by Canadian Natural.</li> </ul>	<ul style="list-style-type: none"> <li>The ACO determines who the Proponent must consult with for any given Project. A Traditional Ecological Knowledge and Land Use section was completed for the EIA and included primary TLU data from local communities specific to the LSA and publicly-available baseline TLU information. The concerns expressed by FMMN in their TLUS are generally consistent with those expressed by other stakeholders on the Project and other similar projects in the region. Canadian Natural believes information in the EIA accurately reflects the potential impacts of the Project on TLUs. As a result, Canadian Natural believes that the information presented in the Application EIA meets the requirements of the Terms of Reference (TOR).</li> </ul>	<ul style="list-style-type: none"> <li>Traditional Ecological Knowledge and Land Use</li> </ul>	<ul style="list-style-type: none"> <li>Volume 2, Section 15.0</li> </ul>