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MADE at the City of Calgary, in the  
Province of Alberta, on  
2nd day of December 2011.

  
ENERGY RESOURCES CONSERVATION BOARD

IN THE MATTER of a commercial scheme of Canadian Natural Resources Limited (hereinafter called “the Operator”) for the recovery of crude bitumen from the **Wabiskaw-McMurray Deposit in the Athabasca Oil Sands Area** from wells located in the project area outlined in Appendix A<sup>1</sup> to this approval.

WHEREAS the Lieutenant Governor in Council, by Order in Council Number O.C. 298/2010 dated September 10, 2010, authorized the granting of Approval No. 11472.

WHEREAS the Energy Resources Conservation Board (ERCB) is prepared to approve an application by the Operator for an amendment to the scheme;

WHEREAS the ERCB deems it desirable for ease of reference to consolidate the amendment into the existing approval in a document to be known as Approval No. 11472B;

Therefore, pursuant to Section 13 of the *Oil Sands Conservation Act*, chapter O-7 of the Revised Statutes of Alberta, 2000, the ERCB hereby approves Amendment B to Approval No. 11472 and issues Approval No. 11472B as follows:

1) The Operator’s scheme as described in

- a) Application No. 1588718,
- b) Application No. 1693048,
- c) Proceeding No. 1708564,

is approved, subject to the *Oil Sands Conservation Regulation* and the terms and conditions herein contained.<sup>1</sup>

- 2) The preamble and clause 1 do not preclude alterations in design and equipment, provided that the ERCB is satisfied that the alterations are compatible with the outline of the scheme, are made for the better operation of the scheme, and do not result in unacceptable adverse impacts.
- 3) The recovery process approved for the project is Steam-Assisted Gravity Drainage (SAGD) utilizing only steam as the injection fluid, unless otherwise stipulated by the ERCB.
- 4) Unless otherwise stipulated by the ERCB, the production of bitumen from the project area identified in Appendix A shall not exceed 1590 cubic metres per day (m<sup>3</sup>/d) on an annual average basis.

- 5) The Operator shall conduct all operations to the satisfaction of the ERCB and in a manner that under normal operating conditions will permit:
  - a) the recovery of the practical maximum amount of crude bitumen within the project area,
  - b) the conservation of the practical maximum volume of produced gas at the well pads and central facilities,
  - c) the minimization of flaring to non-routine operations such as start-up, shutdown, emergencies, infrequent upsets, and maintenance depressuring, and
  - d) the practical maximum reuse of produced water, with the minimum recycle rate being 90 per cent on an annual basis, unless otherwise stipulated by the ERCB.
- 6) The Operator shall submit to the ERCB, for review and approval, a report on the completion or abandonment of all wells drilled within a quarter section radius of the development area and the compatibility of the wells with the proposed thermal conditions. The Operator must provide confirmation of compatibility or discuss stand-off considerations for each well. The report must be submitted at least six months prior to the commencement of steaming operations in the development area.
- 7) The Operator shall submit to the ERCB, at least one year prior to commencing construction of the facility, a report identifying all water supply sources for the project including the water quality and quantity test data from the water supply wells to be utilized. The report shall include an updated water balance and a discussion on any environmental disturbances additional to Application 1588718, for review and approval by the ERCB.
- 8) Unless otherwise stipulated by the ERCB, the Operator shall provide the ERCB with gamma ray spontaneous potential resistivity and gamma ray neutron density logs from total depth to surface casing for all vertical wells.
- 9) (1) The Operator shall ensure that sulphur recovery will be operational at the facilities before total sulphur emissions from flaring and combustion of gas containing hydrogen sulphide reach one tonne/day on a calendar quarter-year average basis, unless otherwise stipulated by the ERCB. The calendar quarter-year sulphur recovery shall not be less than set out in Table 1 of *ERCB Interim Directive (ID) 2001-03: Sulphur Recovery Guidelines for the Province of Alberta* on the basis of the calendar quarter-year daily average sulphur content of produced gas streams flared and used as fuel at each central processing facility.  
  
(2) The Operator must record daily and report calendar quarter-year average sulphur balances in the annual performance presentation to the ERCB. Daily sulphur balance information must be available for review by the ERCB.
- 10) Unless otherwise permitted by the ERCB, steam injection operations, having commenced at a well pad, shall continue until the well pad has produced a minimum of 50 per cent of the in-place volume of crude bitumen assigned to that well pad by the ERCB.
- 11) Where the Operator proposes to cease Steam Assisted Gravity Drainage (SAGD) operations at a well pad that has produced less than 50 per cent of the in-place volume of crude bitumen

and the ERCB's consent therefore is sought, the Operator shall advise the ERCB as to the following:

- a) the reason for proposing to cease SAGD operations,
- b) details of individual well workovers and recompletions attempted,
- c) detailed economics of continuing operations,
- d) the effect of ceasing SAGD operations on the bitumen recovery ultimately achievable from that part of the reservoir associated with the pad and immediately offsetting pads, and,
- e) future plans for the well pad with reference to possible follow-up recovery techniques that could be applied and other zones that could be exploited.

12)(1) A well shall not be abandoned without prior written ERCB approval.

(2) Where the Operator proposes to abandon a well and the ERCB's consent therefore is sought, the Operator shall advise the ERCB as to the following:

- a) the reason for the proposed abandonment,
- b) the effect of abandoning the well on the bitumen recovery ultimately achievable from the part of the reservoir associated with the well,
- c) plans for recovering any portion of the remaining bitumen in place, and
- d) plans for recovering bitumen from other zones penetrated by the well.

13) The Operator shall notify the ERCB of any proposed material alteration or modification of the scheme or to any equipment proposed for use therein prior to effecting the alteration or modification.

14)(1) Where, in the opinion of the ERCB, any alteration or modification to the scheme or to any equipment proposed for use therein:

- a) is not of a minor nature,
- b) is not consistent with the scheme approved herein, or
- c) may not result in an improved or more efficient scheme or operation, the alteration or modification shall not be proceeded with or effected without the further authorization of the ERCB. The Operator must provide evidence that this major alteration or modification to the scheme or to any equipment will result in a benefit to the scheme or operation and be in the public interest.

(2) Should the ERCB consider the alteration modification to be major, it may request additional information, as it deems appropriate.

15) Any plans for operations or development outside the approved development area shall be applied for to the ERCB for review. Such applications must:

- a) describe the facility and infrastructure locations and the operation of the surface facilities. Justify any changes from those described in the original application and associated



- amendments. Evaluate the potential environmental impacts in the context of these changes and contrast with impacts predicted in the original application,
- b) verify predictions and evaluate the performance of the environmental mitigation strategies proposed by the Operator in the original application and associated amendments. Discuss how the approach to various mitigation strategies might be altered based on the findings of the evaluation and incorporated into future operations,
  - c) provide a summary of the information submitted for the Environmental Protection and Enhancement Act, as well as any other environmental information related to the scheme and its amendment that may be required by an agency other than the ERCB,
  - d) provide geological and reservoir data that demonstrate that the reservoir in the proposed development area has been fully evaluated, including evaluation wells and seismic interpretation to fully understand where well pads and wells will be located. Submit updated bitumen, gas, and water mapping, reservoir properties, and reserves estimates for the existing development area, the proposed additional area, and the overall development area,
  - e) provide a detailed description of the proposed amendment, including subsurface drainage pad design, such as the number of horizontal wells per drainage pad, the lateral spacing between horizontal wells, the length and trajectory of each horizontal well, the horizontal well elevations, and the subsurface drainage area corresponding to each horizontal well. Provide cross-section profiles for each horizontal well to demonstrate that the location and design have been optimized to conserve bitumen,
  - f) provide a detailed discussion of the scheme performance to date, with specific emphasis on key factors affecting the success of the scheme, and how this experience has been incorporated into the operating of the existing scheme and the design and operation of the scheme within the proposed additional area, including but not limited to:
    - i) the impact of top gas,
    - ii) the impact of top water,
    - iii) the impact of bottom water,
    - iv) the effectiveness of the cap rocks, and
    - v) the state of the steam chamber.
  - g) provide a discussion on modeling results, including the input data, modeling runs carried out, and the latest model predictions of bitumen recovery and pad production profiles based on history matching the field performance data. This information shall include:
    - i) a description of the model used,
    - ii) the input data files for the model cases run,
    - iii) for each case run, cross-sections perpendicular to the wellbore showing the changing fluid saturations and temperature with time to illustrate the growth of the steam chamber to abandonment,
    - iv) a discussion of the history match and parameters adjusted to achieve the match obtained, and
    - v) a discussion of the prediction cases run, plots of the results for key performance predictions (e.g. rates, steam oil ratio), and how the results were used in operation of the existing scheme, in the design and operation of the proposed new area, and in the scheduling of future development of the scheme, and

h) describe the Operator's participation in regional environmental initiatives. Discuss recommendations that have been generated from these regional initiatives and how these recommendations have been incorporated into the scheme.

16) Notwithstanding any date by which any work, act, matter, or thing is by this approval required to be done, performed, or completed, the ERCB, if it considers it proper to do so, may by stipulation alter the dates specified in this approval.

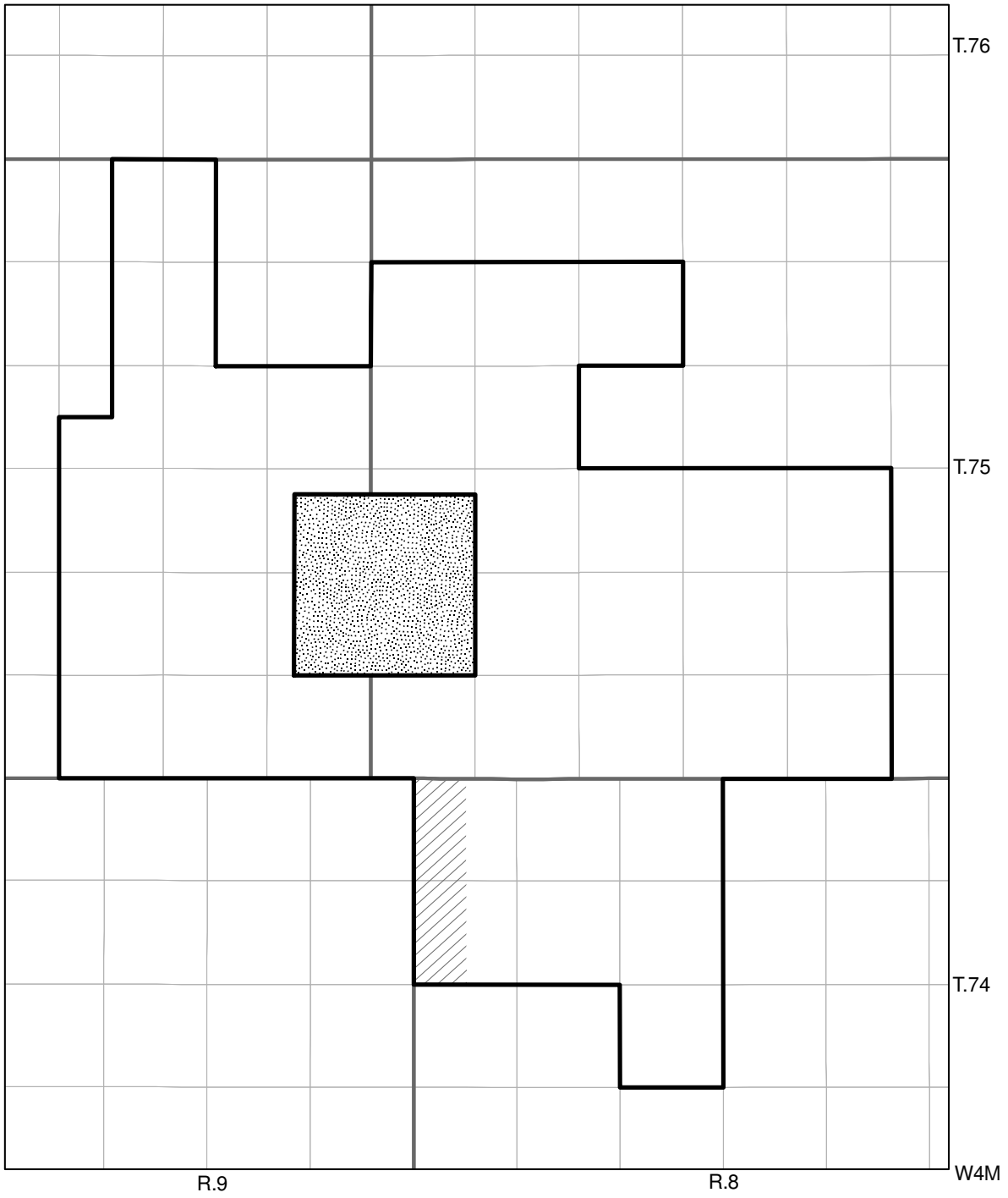
17) The ERCB may,

- a) upon its own motion, or
- b) upon the application of an interested person,

rescind or amend this approval at any time.

18) Approval No. 11472B rescinds Approval No. 11472A.

END OF DOCUMENT



**ATHABASCA OIL SANDS AREA  
APPENDIX A TO APPROVAL NO. 11472B**

**Legend**

-  Project Area
-  Development Area

**Area(s) of Change**

-  Added
-  Deleted

MADE at the City of Calgary, in the  
Province of Alberta, on  
25th day of November 2010.



ENERGY RESOURCES CONSERVATION BOARD

IN THE MATTER of a commercial scheme of Canadian Natural Resources Limited (hereinafter called "the Operator") for the recovery of crude bitumen from the **Wabiskaw-McMurray Deposit in the Athabasca Oil Sands Area** from wells located in the project area outlined in Appendix A to this approval.

WHEREAS the Lieutenant Governor in Council, by Order in Council Number O.C. 351/2010 dated September 10, 2010, authorized the granting of Approval No. 11475;

WHEREAS the Energy Resources Conservation Board (ERCB) is prepared to approve an application by the Operator for an amendment to the scheme;

WHEREAS the ERCB deems it desirable for ease of reference to consolidate the amendment into the existing approval in a document to be known as Approval No. 11475A;

Therefore, pursuant to Section 13 of the Oil Sands Conservation Act, chapter O-7 of the Revised Statutes of Alberta, 2000, the ERCB hereby approves Amendment A to Approval No. 11475 and issued Approval No. 11475A orders as follows:

1) The Operator's scheme as described in

- a) Application No. 1527354,
- b) Application No. 1662392,

is approved, subject to the Oil Sands Conservation Regulation and the terms and conditions herein contained.<sup>1</sup>

- 2) Clause 1 does not preclude alterations in design and equipment, provided that the ERCB is satisfied that the alterations are compatible with the outline of the scheme, are made for the better operation of the scheme, and do not result in unacceptable adverse impacts.
- 3) The recovery process approved for the scheme is Steam-Assisted Gravity Drainage (SAGD) utilizing only steam as the injection fluid unless otherwise stipulated by the ERCB.
- 4) Unless otherwise stipulated by the ERCB, the production of bitumen from the project area outlined in Appendix A shall not exceed 7155 cubic metres per day (m<sup>3</sup>/d) on an annual average basis.
- 5) The Operator shall conduct all operations to the satisfaction of the ERCB and in a manner that under normal operating conditions will permit:

- a) the recovery of the practical maximum amount of crude bitumen within the project area outlined in Appendix A,
  - b) the conservation of the practical maximum volume of produced gas at the well pads and central facilities,
  - c) the minimization of flaring to non-routine operations such as start-up, shutdown, emergencies, infrequent upsets, and maintenance depressuring, and
  - d) the practical maximum reuse of produced water, with the minimum recycle rate being 90 per cent on an annual basis, unless otherwise stipulated by the ERCB.
- 6) Unless otherwise stipulated by the ERCB, the Operator shall:
- a) provide the ERCB with gamma ray spontaneous potential resistivity and gamma ray neutron density logs from total depth to surface casing for all vertical wells, and
  - b) take full diameter cores of the entire bitumen-bearing interval of the Wabiskaw-McMurray Formation from not less than four evenly spaced vertical wells per section, and take full-diameter cores of bitumen-bearing intervals of other zones in the Mannville Group, if any, from at least one well per section, and at the ERCB's request
    - i) analyze portions of such cores, and
    - ii) provide suitable photographs of the clean-cut surface of each core slabbed.
- 7) The Operator shall ensure that sulphur recovery will be operational at the facilities before total sulphur emissions from flaring and combustion of gas containing hydrogen sulphide (H<sub>2</sub>S) reach one tonne/day on a calendar quarter-year average basis, unless otherwise stipulated by the ERCB. The calendar quarter-year sulphur recovery shall not be less than set out in Table 1 of ERCB *Interim Directive (ID) 2001-03: Sulphur Recovery Guidelines for the Province of Alberta* on the basis of the calendar quarter-year daily average sulphur content of produced gas streams flared and used as fuel at each central processing facility.
- 8) Unless otherwise permitted by the ERCB, steam injection operations, having commenced at a well pad, shall continue until the well pad has produced a minimum of 50 per cent of the in-place volume of crude bitumen assigned to that well pad by the ERCB.
- 9) Where the Operator proposes to cease SAGD operations at a well pad that has produced less than 50 per cent of the in-place volume of crude bitumen and the ERCB's consent therefore is sought, the Operator shall advise the ERCB as to the following:
- a) the reason for proposing to cease SAGD operations,
  - b) details of individual well workovers and recompletions attempted,
  - c) detailed economics of continuing operations,

- d) the effect of ceasing SAGD operations on the bitumen recovery ultimately achievable from that part of the reservoir associated with the pad and immediately offsetting pads, and
- e) future plans for the well pad with reference to possible follow-up recovery techniques that could be applied and other zones that could be exploited.

10)(1) A well shall not be abandoned without prior written ERCB approval.

(2) Where the Operator proposes to abandon a well and the ERCB's consent therefore is sought, the Operator shall advise the ERCB as to the following:

- a) the reason for the proposed abandonment,
- b) the effect of abandoning the well on the bitumen recovery ultimately achievable from the part of the reservoir associated with the well,
- c) plans for recovering any portion of the remaining bitumen in place, and
- d) plans for recovering bitumen from other zones penetrated by the well.

11) The Operator shall notify the ERCB of any proposed material alteration or modification of the SAGD scheme or to any equipment proposed for use therein prior to effecting the alteration or modification.

12)(1) Where, in the opinion of the ERCB, any alteration or modification to the scheme or to any equipment proposed for use therein:

- a) is not of a minor nature,
- b) is not consistent with the scheme approved herein, or
- c) may not result in an improved or more efficient scheme or operation,

the alteration or modification shall not be proceeded with or effected without the further authorization of the ERCB. The Operator must provide evidence that this major alteration or modification to the scheme or to any equipment will result in a benefit to the scheme or operation and be in the public interest.

(2) Should the ERCB consider the alteration or modification to be major, it may request additional information as it deems appropriate.

13) The Operator must provide the following submissions for ERCB review and approval:

- a) a pressure maintenance monitoring plan for the McMurray Formation by no later than September 22, 2011,
- b) an evaluation of on lease brackish water for the McMurray Formation by no later than March 22, 2012,

c) an evaluation of off lease brackish water for the Clearwater Formation by no later than March 22, 2013, and

d) a long term water use strategy for the project by no later than 20 months after the commencement of steam injection.

14) Notwithstanding any date by which any work, act, matter, or thing is by this approval required to be done, performed, or completed, the ERCB, if it considers it proper to do so, may by stipulation alter the dates specified.

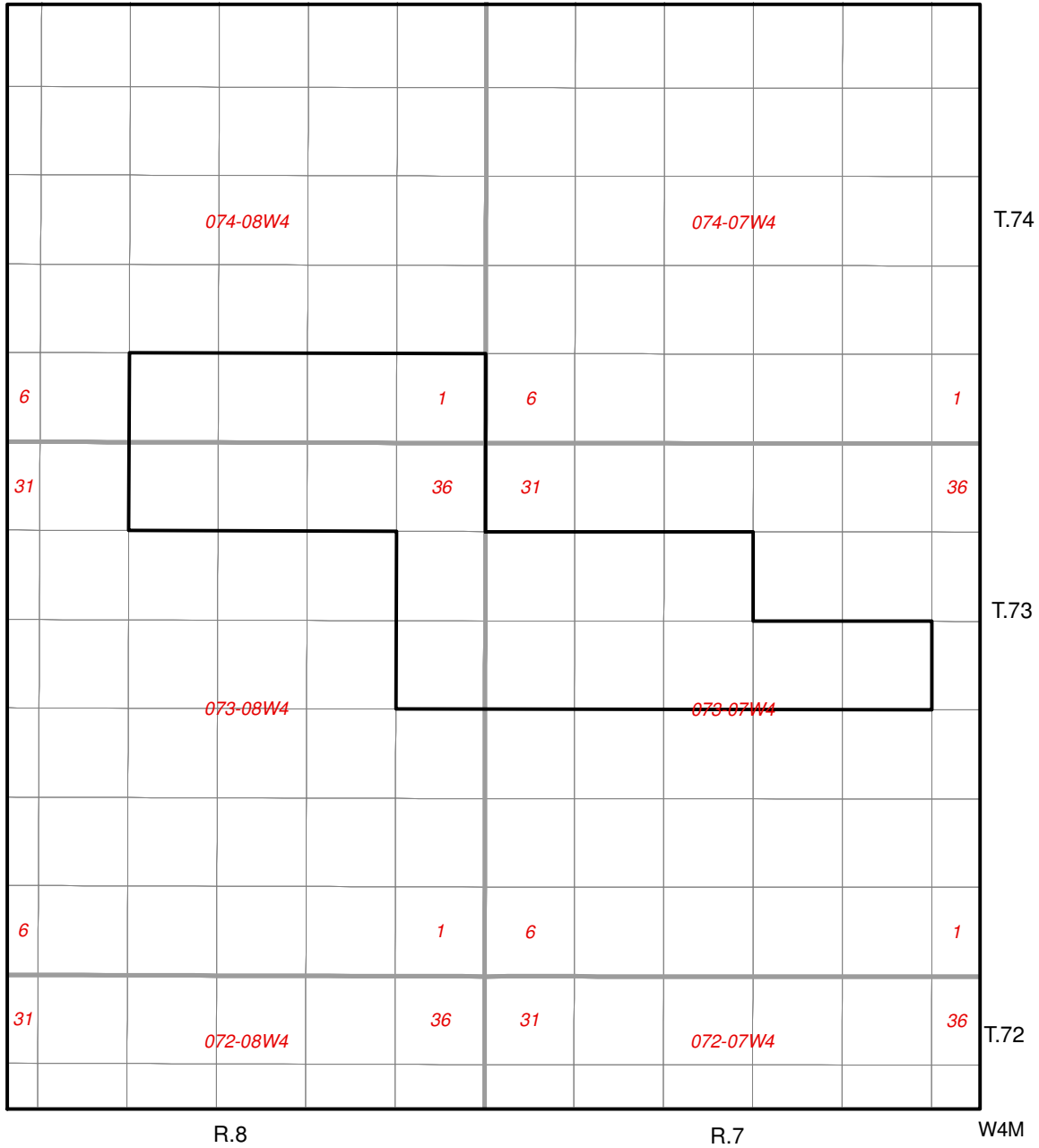
15) The ERCB may,

a) upon its own motion, or

b) upon the application of an interested person,

rescind or amend this approval at any time.

END OF DOCUMENT



**ATHABASCA OIL SANDS AREA  
APPENDIX A TO APPROVAL NO. 11475A**

**Area(s) of Change**

////// Added

////// Deleted





**Canadian Environmental  
Assessment Agency**

61 Airport Road  
Edmonton AB T5G 0W6  
780-495-2580

**Agence canadienne  
d'évaluation environnementale**

61 Airport Road  
Edmonton AB T5G 0W6  
780-495-2580

Phone: (780) 495-2580 | Fax: (780) 495-2876  
E-mail: michelle.camilleri@ceaa-acee.gc.ca

File Number: 004787

October 12, 2011

Anita Sartori  
Canadian Natural Resources Limited  
Suite 2500, 855 – 2 Street SW  
Calgary, Alberta T2P 4J8

Dear Ms. Sartori:

**Re: Canadian Natural Resources Limited Kirby In-Situ Oil Sands Expansion Project**

On May 27<sup>th</sup>, 2011 the Canadian Environmental Assessment Agency (the Agency) received a project description for Canadian Natural Resources Limited's (CNRL) proposed Kirby In-Situ Expansion Project (the Project). The Project description was referred by the Agency to appropriate federal departments on May 30<sup>th</sup>, 2011 for review.

The Agency understands that Alberta Environment has required CNRL to undertake an Environmental Assessment (EA) for the proposed Project and that the final Terms of Reference were issued on October 11, 2011.

Federal departments, Environment Canada, Health Canada, Parks Canada, Canadian Transportation Agency, Aboriginal and Northern Affairs Canada and Natural Resources Canada, have concluded that they have no requirements under the *Canadian Environmental Assessment Act* (the Act) to undertake an EA.

CNRL must provide information regarding:

- any proposed watercourse crossings (roads, pipelines, transmission lines, etc.) including approximate crossing locations, design, crossing type and method;
- potential impacts to navigation as a result of any watercourse crossings.
- listing and Navigable Waters Protection Program (NWPP) file numbers of all new works or undertakings excluded from triggering the *Navigable Waters Protection Act* (NWPA) via navigability assessment performed by the NWPP, or via the *Minor Works and Waters (Navigable Waters Protection Act) Order* as determined by the NWPP.
- listing and description of all new works or undertakings excluded from triggering the NWPA via self-assessment under the *Minor Works and Waters (Navigable Waters Protection Act) Order*, using the language of the Order.
- potential project impacts to fish and/or fish habitat as a result of any changes to surface water quantity and quality, hydrology and hydrogeology;

- groundwater/surface water interactions including wastewater re-injection and surface heave/subsidence that has the potential to impact fish habitat, and
- proposed mitigation measures to address any impacts to fish and/or fish habitat as a result of the project,

before Transport Canada and Fisheries and Oceans can make a determination as to whether one or more components of the Project will result in a section 5 trigger under the Act and a requirement for a federal environmental assessment.

If upon submission of this additional information it is determined that a federal EA is required, the Project will likely be subject to a comprehensive study type of EA (see Section Part III 10 and/or Part IV 11(b) of the *Comprehensive Study List Regulations*).

Environment Canada and Fisheries and Oceans Canada will be participating in Alberta Environment's EA process under Appendix 3 of the *Canada-Alberta Agreement for Environmental Assessment Cooperation*. As part of their participation in the provincial process the information included in Appendix A should be provided to the Agency upon submission of the Environmental Impact Assessment Report to Alberta Environment.

If a federal EA is required for the Project, more information may be required in addition to those outlined in Appendix A. These information requirements are provided for your information in Appendix B.

To conclude, a federal EA under the Act will not commence unless Fisheries and Oceans Canada and/or Transport Canada confirms a responsibility or potential responsibility under section 5 of the Act.

If you should have any questions please contact the undersigned by telephone at 780-495-2580 or by electronic mail at [michelle.camilleri@ceaa-acee.gc.ca](mailto:michelle.camilleri@ceaa-acee.gc.ca).

Yours truly,



Michelle Camilleri

Canadian Environmental Assessment Agency

Cc: Stephanie Jerred (Fisheries and Oceans Canada)  
Shelley Ball (Natural Resources Canada)  
Nicole Morin (Health Canada)  
Adam Downing (Transport Canada)  
Jo-Anne Foy (Transport Canada)  
Christi Horne (Environment Canada)  
Karen Mousseau (Major Resources Management Office)  
Melissa Styba (Alberta Environment)

**Appendix A**  
**Federal Information Requirements**  
**Federal Government Participation under Appendix 3 of the**  
**Canada-Alberta Agreement on Environmental Assessment Cooperation**

<b>Federal Information Requirements</b>	<b>Federal Guidance, where available</b>	<b>Reference to Alberta Environment's Final Terms of Reference</b>
<b>Air Emissions Management</b>		
Provide explanations for any differences between greenhouse gas emission intensities computed for this Project and those of other similar projects		Section 2.5[A]
Explain how the Proponent's Project design and overall greenhouse gas management plans have taken into account the need for continuous improvement with respect to greenhouse gas emissions.		Section 2.5[A](e)
<b>Surface Water</b>		
Provide details of watercourse crossings, including: a) Type of watercourse crossing, construction methods and anticipated flows during construction; b) Location (latitude and longitude); and c) Details on capacity of crossing to withstand extreme flood events including design flood and design criteria used for the crossing.		Section 2.6.2
<b>Wastewater Management</b>		
Describe the chemical criteria used for the release of wastewater to the environment.	A sufficient level of information on the aquifer properties should be presented in order to adequately assess the	Section 2.6.3

Federal Information Requirements	Federal Guidance, where available	Reference to Alberta Environment's Final Terms of Reference
Describe the volume and rate of wastewater to be disposed in groundwater aquifers.	<p>suitability of the re-injection sites.</p> <p>Detailed modeling of re-injection should be provided to support the predictions provided in the EIA Report.</p>	Section 2.6.3
<b>Conservation and Reclamation</b>		
Describe how the reclaimed areas will differ from existing areas with respect to wetland form and function, species diversity and occurrence of rare species and <i>Species at Risk</i> and COSEWIC listed species.		Section 2.8
Discuss uncertainties relating to the re-establishment of faunal and floral biodiversity in reclaimed areas.		Section 2.8[C]
<b>Hydrogeology</b>		
Describe the nature and significance of the potential Project impacts on groundwater as a result of steaming and recovery operations (i.e., ground heave and/or subsidence) and wastewater disposal.	For potential impacts of steaming and recovery operations (i.e., ground heave and/or subsidence) on groundwater, Proponents should support their discussions with geochemical model predictions and maps where possible.	Section 3.2.2[B]
<b>Aquatic Ecology</b>		
Describe and map the fish, fish habitat and aquatic resources (e.g., aquatic and benthic invertebrates) of the lakes, rivers, ephemeral water bodies and other waters. Describe the species composition, distribution, relative abundance, movements and general life history parameters of fish resources. Also identify any species that are: a) listed in the federal <i>Species at Risk</i>		Section 3.5.1[A](b) and (c)

Federal Information Requirements	Federal Guidance, where available	Reference to Alberta Environment's Final Terms of Reference
<p><i>Act</i> b) listed by COSEWIC</p>		
<b>Vegetation</b>		
<p>Describe and map the vegetation communities, wetlands, rare plants, old growth forests, and communities of limited distribution. Identify the occurrence, relative abundance and distribution and also identify and species that are:</p> <p>a) listed in the federal <i>Species at Risk Act</i> b) listed by COSEWIC</p>		Section 3.6.1[A](b) and (c)
Describe the current extent of habitat loss.		Section 3.6.1[B]
Identify any species listed under the federal <i>Species at Risk Act</i> and by COSEWIC used to assess the Project impacts.		Section 3.6.2[B]
<b>Wildlife</b>		
<p>Describe and map wildlife resources (amphibians, reptiles, birds, terrestrial and aquatic mammals). Describe species relative abundance, distribution and their use and potential use of habitats. Also identify any species that are:</p> <p>a) listed in the federal <i>Species at Risk Act</i> b) listed by COSEWIC</p>	<p>For migratory bird surveys, baseline information should include on the ground surveys (e.g., point count). Proponents must ensure surveys are:</p> <ul style="list-style-type: none"> <li>• Appropriately timed (i.e., time of year).</li> <li>• Performed under appropriate weather conditions.</li> <li>• Distributed across all habitat types (ecosite phases).</li> <li>• Of sufficient intensity/effort to determine presence and relative abundance of species within habitats.</li> </ul>	Section 3.7.1[A](b) and (c)
Describe and map important wildlife areas.		Section 3.7.1[B]

Federal Information Requirements	Federal Guidance, where available	Reference to Alberta Environment's Final Terms of Reference
<p>Identify wildlife species and habitats used to assess Project impacts. Wildlife species must include any species listed under the federal <i>Species at Risk Act</i> and COSEWIC that may interact with the project. Other species to consider include keystone species, umbrella species, habitat specialists, species having socio-economic importance (e.g., game and furbearer species), traditional use species, and those identified by regional stakeholder groups, such as CEMA. Discuss the rationale for their selection.</p>	<p>Proponents must assess all <i>Species and Risk Act</i> (SARA) and COSEWIC listed species that may interact with the Project. Proponents should be advised that indicator or surrogate species cannot be used as key indicator resources in lieu of any species listed in SARA or COSEWIC.</p>	<p>Section 3.7.2[B]</p>
<p>For each wildlife species assessed, use current field data and existing information to describe, at a minimum:</p> <ul style="list-style-type: none"> <li>a) occurrence, distribution, and relative abundance at the project (local) and regional scales;</li> <li>b) habitat use in the project area;</li> <li>c) habitat availability at the local and regional scales;</li> <li>d) ungulate ranges based on current data (if applicable);</li> <li>e) movement and/or dispersal patterns, if known;</li> <li>f) important wildlife areas (e.g., staging sites, wintering areas) and critical habitat (as defined in the <i>Species at Risk Act</i>);</li> </ul>	<p>When discussing how the Project will affect wildlife relative abundance, distribution, habitat availability, mortality and movement patterns, Proponents must provide a quantitative analysis of effects where possible.</p> <p>When describing Project effects, Proponents must first identify existing environmental effects and the significance of those effects on the species addressed. This provides a complete understanding of the existing environment within which the Project is proposed. Significance of effects should be based on known thresholds of disturbance (e.g., linear feature density, amount of habitat loss), where known.</p> <p>Proponents should refer to the available federal guidance documents for additional direction on completing environmental assessments for species at risk. These include: <i>Environmental Assessment Best Practice Guide for</i></p>	<p>Section 3.7.1</p>

Federal Information Requirements	Federal Guidance, where available	Reference to Alberta Environment's Final Terms of Reference
<p>g) known or potential threats, limiting factors and sensitivities to disturbance, including known thresholds of disturbance; and</p> <p>h) existing environmental effects and significance of existing effects on local and regional populations.</p>	<p><i>Wildlife at Risk in Canada (2004) and Addressing Species at Risk Act Considerations Under the Canadian Environmental Assessment Act for Species under Responsibility of the Minister Response for Environment Canada and Parks Canada (2010)..</i></p>	
<p>Describe and assess the potential impacts of the Project to wildlife and wildlife habitats considering all exploration (i.e., completed, proposed and planned), seismic, including monitoring/4D seismic and core hole activities, related to the project.</p>	<p>Resource delineation activities (e.g., seismic, well, excavations etc.) carried out prior to the submission of the Environmental Impact Assessment report should be included as part of the Application Case.</p>	<p>Section 3.7.2[A](e)</p>
<p>Discuss the impacts to wildlife habitat, wetlands and surface water quality and quantity as a result of changes to ground surface during steaming and recovery operations (i.e., ground heave and/or subsidence).</p>		<p>Section 3.9.2[B]</p>
<p><b>Monitoring</b></p>		
<p>Provide the scale and duration of any current and proposed monitoring plan.</p>		<p>Section 9[A]</p>

**Appendix B**  
**Federal Information Requirements**  
**Federal Environmental Assessment Required (Comprehensive Study)<sup>1</sup>**

<b>Federal Information Requirements</b>	<b>Federal Guidance, where available</b>	<b>Reference to Alberta Environment's Final Terms of Reference</b>
<b>Project Description</b>		
Discuss any alternative means of carrying out the Project that are technically and economically feasible and the environmental effects of any such alternative means.		Section 2.1
Discuss the effects of the environment on all stages and elements of the Project.		Section 2.1
Describe the purpose of the Project.		Section 2.1
Describe the capacity of the renewable resources that are likely to be significantly affected by the Project to meet the needs of the present and those of the future.		Section 2.1
<b>Waste Management</b>		
Provide the volume of sand generated as a result of Project activities and discuss how it will be managed (e.g., landfill, re-injection etc.)		Section 2.7
<b>Air Emissions Management</b>		
Provide an inventory of all potential contaminants and emissions from the proposed Project, including criteria air contaminants, air pollutants on the <i>List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act</i> ; diesel PM and other possible contaminants.		Section 2.5

<sup>1</sup> These requirements are in addition to those already identified in Appendix A and are subject to change.



Federal Information Requirements	Federal Guidance, where available	Reference to Alberta Environment's Final Terms of Reference
<b>Noise</b>		Section 3.1.2[C]
<p>Identify components of the Project that have the potential to increase noise levels, discuss the implications and</p> <ul style="list-style-type: none"> <li>a) identify all potential noise-sensitive receptors and their locations;</li> <li>b) identify and assess baseline noise levels for both daytime and night-time at the receptor locations;</li> <li>c) identify all potential noise sources during construction, operation and decommissioning;</li> <li>d) describe the methods used to obtain the baseline predicted noise levels;</li> <li>e) compare baseline noise levels with predicted noise levels at receptors;</li> <li>f) provide expected duration of noise to construction activities;</li> <li>g) evaluate the severity of predicted changes in noise levels that may affect human health;</li> <li>h) identify mitigation measures when health effects are predicted; and</li> <li>i) provide noise management and monitoring plans including complaint resolution if applicable.</li> </ul>		
<b>Hydrology</b>		
Describe the extent of hydrological changes as a result of the Project, include disturbances to ground cover.		Section 3.3.2[A]

Federal Information Requirements	Federal Guidance, where available	Reference to Alberta Environment's Final Terms of Reference
<p><b>Surface Water Quality</b></p> <p>Describe the potential impacts of the Project on drinking and recreational water qualities, and proposed mitigation measures to maintain those water qualities at all stages of the Project and:</p> <ul style="list-style-type: none"> <li>a) identify all sources of drinking water and water used for recreational purposes;</li> <li>b) identify potential human receptors who may be exposed to contaminants through drinking water sources and recreational waters;</li> <li>c) examine the potential impacts on the quality of drinking water sources during all phases of the project, as well as the potential for cumulative effects on the water quality of water sources;</li> <li>d) provide a discussion to determine whether the type of treatment used and/or the capacity of the facility will be able to address the predicted or possible changes in water quality;</li> <li>e) indicate the baseline levels of naturally-occurring contaminants to assess impacts on drinking water;</li> <li>f) if potential impact on drinking water is identified, describe measures to be employed to inform potentially affected treatment facilities and well owners</li> </ul>		Section 3.4.2[B]

Federal Information Requirements	Federal Guidance, where available	Reference to Alberta Environment's Final Terms of Reference
<p>and to mitigate risk; and</p> <p>g) examine the potential impact on recreational waters during all phases of the project. If any changes to recreational waters are predicted, discuss potential effects on human health. If potential impacts on recreational waters are identified, describe the measures to be employed to inform users and to mitigate any risk to human health.</p>		
<b>Health</b>		
Provide information regarding the location of the Project and the distance to all potential human receptors.	Proponents should refer to Health Canada's <i>Useful Information for Environmental Assessments</i> when discussing potential impacts to human health as a result of the Project.	Section 6.1
<p>Describe those aspects of the Project that may have implications for public health or the delivery of regional health services and provide the following:</p> <ul style="list-style-type: none"> <li>a) the data and methods used by the Proponent to assess the impacts of the Project on human health;</li> <li>b) the potential health implications of the compounds that will be released to the environment from the proposed operation in relation to exposure limits established to prevent acute and chronic adverse effects on human health;</li> <li>c) the human health impact of the potential contamination of country</li> </ul>		Section 6.1

Federal Information Requirements	Federal Guidance, where available	Reference to Alberta Environment's Final Terms of Reference
<p>foods and natural food sources talking into consideration all Project activities;</p> <p>d) the potential to increase human exposure to contaminants from changes to water quality including drinking water quality and recreational water quality, air quality, and soil quality taking into consideration all Project activities;</p> <p>e) cumulative health effects that are likely to result from the Project in combination with other existing, approved and proposed projects (projects that have been advanced to the public disclosure stage) or reasonable foreseeable activities in the region; and</p> <p>f) information on samples of selected species of vegetation known to be consumed by humans.</p>		
<p><b>Monitoring</b> Describe the monitoring programs proposed to verify the accuracy of the environmental assessment.</p>		Section 9[B]

# MINI-FRAC TESTS AT CNRL WELL: 1AB KIRBY 13-20-73-7<sup>1</sup>

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APEGGA Permit of Practice #07814

May 11, 2011

On behalf of CNRL, BitCan conducted 10 mini-frac tests on its' Well: 13-20:

- 1) Colorado (Clrd) shale at 320 m TVD,
- 2) Clrd shale at 335m,
- 3) Grand Rapids (GRPD) shale at 362 m,
- 4) Clearwater (Clwt) shale at 435 m,
- 5) Cwt shale at 455 m,
- 6) Clwt shale at 473 m,
- 7) Wabiskaw (WBSK) sands at 485 m,
- 8) McMurray (McM) shale at 506 m,
- 9) McM sands at 534 m,
- 10) McM sand at 544 m.

The test locations of well 13-20 are denoted on the well log as shown in Figure 1. Objectives of the tests were to assess the in-situ stress conditions. This report will illustrate how the in-situ minimum stress was estimated as well as include a summary of the results.

## 1. General test procedure

Our tests employ new advancements and improvements to the mini-/micro-hydraulic fracturing stress test protocol currently used in the petroleum industry. Our testing procedure contains modifications tailored specifically for use in the oil sands and heavy oil development.

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<sup>1</sup> **DISCLAIMER:** This report was prepared by BitCan Geosciences & Engineering Inc. (BitCan G&E) for the customer to whom it is addressed. It is confidential and may not be used by nor distributed among any third parties without permission from BitCan G&E.

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Before commencing testing, the target interval was perforated. Water was then injected directly down into the casing. Testing began at the lowest depth and a packer was set between two adjacent perforation intervals. Multiple injection and shut-in cycles were used during each test. The injection pressures were monitored on-site via two surface pressure sensors: one close to the pumps and the other at the wellhead.

The current mini-/micro-hydraulic fracturing tests are the most reliable method to assess the in-situ minimum stress. Via controlled well injection, it creates a fracture and propagates it to a sufficient distance from the injection well and into the formation. This ensures the fracture senses the far-field stress condition. Multiple cycles are run to verify the data consistency. The pressure data is analyzed to estimate the fracture closure pressure. The fracture closure pressure can then be equated to the in-situ minimum stress acting perpendicular to the fracture. Figures 2 - 11 plot the recorded pressure and rate history during each of the tests.

A flow-back procedure was also used during each test. For the flow-back, a certain volume of water is manually withdrawn from the injection system (wellbore plus the fracture) during the shut-in period. The fracture is thus able to close quickly and properly due to the manually reduced pressure drop. A plot of BHP vs. cumulative injected volume (called compliance plot), can be used to detect the fracture closure. It is generally agreed that a properly executed and accurately metered flow-back yields better constrained data on the minimum stress. BitCan's mini-frac test system can accurately control and meter the flow-back volume and rate. Figure 12 illustrates an example compliance plot and its interpreted fracture closure pressure.

## **2. Analysis of field data and depth profile of the in-situ minimum stress**

It is BitCan's practices to place great deal of emphasis on acquiring high quality data during testing. As shown in Figures 2 to 11, multiple injection/shut-in cycles were used in each test. In all the tests with one exception (to be explained below), obvious formation breakdown occurred in the first injection cycle (Figure 2 to 11), i.e., a fracture was formed. In the subsequent injection cycles during each test, the pressure declined or stayed relatively flat, signalling the continuous fracture propagation.

For each injection/shut-in cycle, the fracture closure pressure was interpreted by a linear flow (or  $\sqrt{t}$ ) plot. A system compliance plot was also used for the interpretations if the flow-back procedure was used. A good compliance plot, such as the one shown in Figure 12, should have two different slopes. Intersection of these two slopes denotes the fracture closure pressure. The initial slope, corresponding to before the fracture closes, is steeper while the second slope, reflecting the post-closure system compliance, is less inclined.

The fracture closure pressures, interpreted as described above, are reconciled in Figures 13 to 21 between the different cycles in each test. In general, a consistent closure pressure is seen in each test among the different cycles. Moreover, different interpretation methods,  $\sqrt{t}$  or compliance plots, all give a similar closure pressure. Combining these methods serves to enhance the interpretation accuracy. In most of the tests, the fracture closure is relatively easy to interpret with our software. Therefore, high confidence can be placed on the interpretations.

The bottom-most test at 544 m in the McM sands did not form a fracture. Due to its high initial water mobility, the injection rate was not sufficient to raise the pressure causing the formation breakdown. Porous matrix flow was seen on the pressure analysis. Therefore, no closure can and should be detected.

The interpreted in-situ minimum stresses ( $S_{min}$ ) at the tested depths of Well 13-20 are shown in Figure 1. Their specific values are summarized in the following table:

CNRL Kirby 13-20-73-7						
	Depth, m	Min. stress		Vert. stress		Stress regime
		MPa	kPa/m	MPa	kPa/m	
McM Sands	544.0	Fracture not formed.		11.43	21.01	
McM Sands	534.0	6.60	12.36	11.22	21.01	V. frac
McM Shale	506.0	6.51	12.87	10.62	20.99	V. frac
WBSK Sands	485.0	6.71	13.84	10.19	21.01	V. frac
Clwt Shale	473.0	7.67	16.22	9.94	21.01	V. frac
Clwt Shale	455.0	6.87	15.10	9.55	20.99	V. frac
Clwt Shale	435.0	7.69	17.68	9.12	20.97	V. frac
GRPD Shale	362.0	5.75	15.88	7.59	20.97	V. frac
Colorado Shale	335.0	6.08	18.15	7.01	20.93	V. frac
Colorado Shale	320.0	5.83	18.22	6.70	20.94	V. frac

The following trends can be noted:

1. All the measured depths are in the vertical fracture stress regime where the measured in-situ minimum stress ( $S_{min}$ ) is smaller than the vertical overburden stress ( $S_v$ ). The latter is independently calculated from the density log.
2. There appear 3 depth intervals over each of which,  $S_{min}$  is relatively similar. The first one from the bottom consists of 3 tests in the WBSK sands and McM formation.  $S_{min}$  stays between 6.5 to 6.7 MPa. The 2<sup>nd</sup> zone covers the 3 tests in the Clearwater formation where  $S_{min}=7.7$  MPa with an exception for the middle interval at 455 m. The latter has a  $S_{min}=6.9$  MPa. The last zone is the shallowest covering GRPD at 362 m and above in the Colorado shale. The 3 tests in this interval measured  $S_{min}$  between 5.8 to 6.1 MPa.

### 3. Discussion on the cap rock integrity

Caprock integrity is first concerned about the hydraulic integrity, i.e. no reservoir fluid should escape through the caprock into the shallow aquifers. In general, such hydraulic integrity is already safeguarded in the geological history as the caprock has prevented further hydrocarbon migrations upwards in the geological history. It is the man-induced mechanical deformation and failure of the caprock during the SAGD operations that may introduce new hydraulic conduits and thus compromise the hydraulic integrity. Therefore, the hydraulic integrity becomes a mechanical integrity issue.

Analysis of the mechanical integrity is to weigh the balance between the stress condition and material strength. The prevailing stresses include the initial condition and induced stresses. The

mini-frac tests completed here provide the initial stress condition. This is where the mini-frac tests provide important information for designing or analyzing the caprock integrity. But vigorous analysis of the mechanical integrity requires a full geomechanical model, consisting of the reservoir and the overburden rocks, to calculate the induced stresses and thus, to evaluate the balance between the stress vs. strength. The latter requires dedicated geomechanical laboratory tests to measure the mechanical strength. This task is out of the scope of the current report. The following description will focus on how the in-situ stress profile, i.e., the variation of the in-situ minimum stress ( $S_{min}$ ) across the vertical depth, generated by the multiple tests at the different depths provide a qualitative yet good guidance for a general discussion about the caprock integrity. At least, the stress profile can help us in the following 2 aspects:

Stress regime: Comparison between the measured  $S_{min}$  and independently-calculated vertical stress ( $S_v$ ) can determine if the VF or HF stress regimes are present. When  $S_{min} < S_v$ , the tested depth is within the VF stress regime and a vertical fracture is to be formed if hydraulically driven (i.e., if the high pore pressure is the major driving force such as in the hydraulic fracture stimulation). If  $S_{min} = S_v$ , the HF stress regime is present and the fracture, if formed hydraulically, will be in the horizontal plane.

In general, the VF stress regime exists at deeper depths while the HF one dominates at shallower depths. The stress profiling will tell if a transition exists from the VF stress regime in the payzone to the HF one at the shallow depths above the payzone. Such transition, if it takes place below the groundwater aquifer or other formations to be protected, is beneficial for maintaining the hydraulic integrity of the caprock. In a significant hearing held in 1999 when Imperial Oil Resources (IOR) applied to expand its CSS operation in Mahkeses, IOL's simulations showed that under such an in-situ stress regime, if a vertical fracture inadvertently propagated out of the payzone into the cap rock, it would eventually turn horizontal. This is due to the in-situ stress regime in the caprock favoring horizontal fractures. Therefore, the vertical fracture extending upwards from the payzone is arrested in the caprock and does not propagate further upwards, i.e., it cannot form the hydraulic conduit connecting the payzone and aquifers. Figure 22 illustrates such an observation.

Stress barrier: Aside from the above-described switch in the stress regimes, the mini-frac tests can also tell if the caprock or overburden above the reservoir is more horizontally stressed (even though both are all in the VF stress regime). If the  $SH_{min}^2$  measured is larger in the caprock than in the reservoir, a vertical fracture, if it is formed in the reservoir, will be stopped either temporarily or permanently from propagating upwards from the reservoir into the caprock or overburden rocks. The hydraulic fracturing stimulation in the hard rock formations relies on such a stress contrast to contain the created fracture from propagating out of the target zone. Therefore, this stress contrast, i.e., a more horizontally-stressed caprock or overburden than the reservoir, is beneficial for the caprock integrity.

On the current Kirby test well, the switch in the stress regime was not seen. All the tested depths measured the VF stress regime. However, the stress barrier was obvious. Three trends are seen in the stress profile. Clearwater formation has a higher  $S_{min}$  by about 1 MPa than the underlying McM formation.

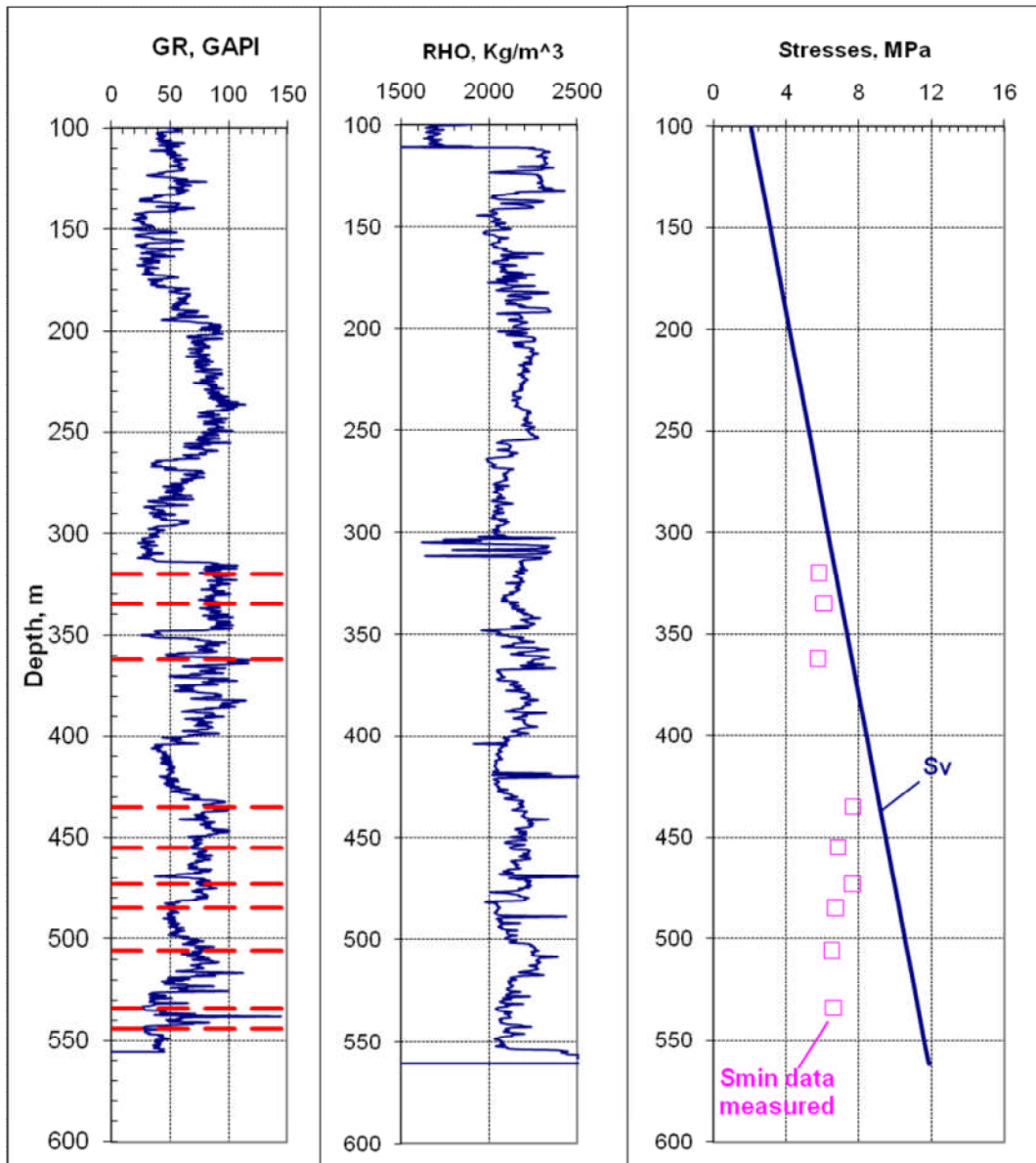
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<sup>2</sup>  $SH_{min}$  denotes minimum horizontal stress. In the VF stress regime,  $S_{min}$  is equivalent to  $SH_{min}$ .

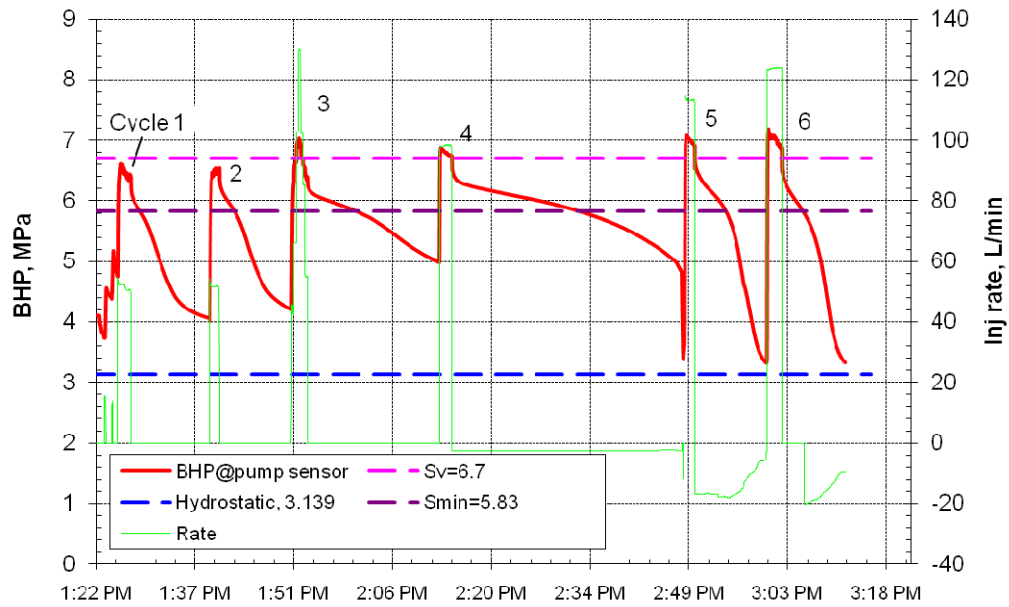


It should be noted that the fractures mentioned in the above refer to worse case scenarios. Normally, such hydraulically-driven fractures are not formed in the SAGD operations due to their low operating pressures. The above discussion tries to convey a message that even in a worst case scenario where vertical fractures may be created in the McM reservoir, it is more difficult for them to propagate upwards into the overburden rocks in Clearwater. However, the stress barrier can only slow down the fracture propagation. It does not stop the fracture propagation completely if the causing high pressure is not remedied in time.

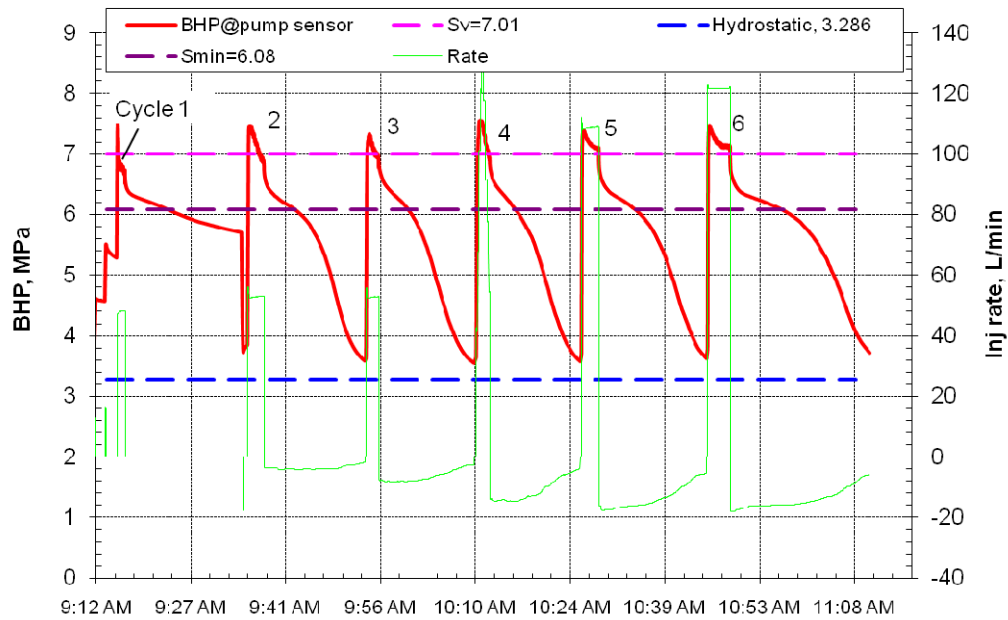
Further caution should be exercised about the complexity in the caprock integrity. Many factors contribute. The above conclusion refers to a situation involving hydraulically-driven fracture propagation controlled by high fluid pressure inside the fracture and acting against the original in-situ stresses. For example, it does not consider the additional thermal stresses. It does not account for the induced stresses in the caprock due to the reservoir deformation. It does not address the mode of shear failure. The thermal stresses and reservoir deformation may be significant during the thermal stimulations and should be considered.



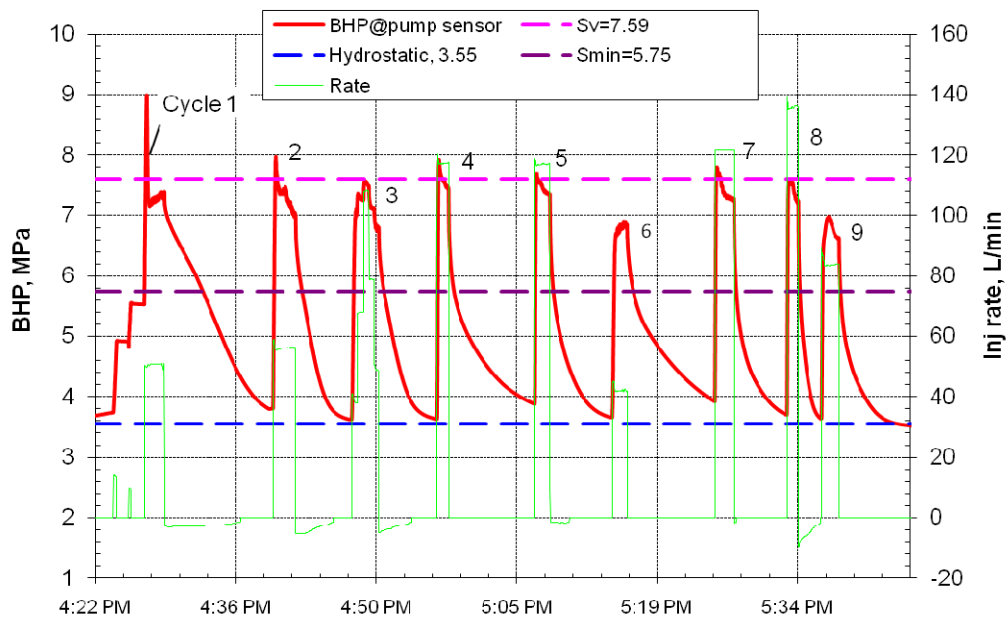
**Figure 1:** Summary of the in-situ minimum stresses measured from Well 13-20. Red dotted lines on the gamma log denote the mini-frac test intervals. “Sv” denotes the vertical overburden stress calculated from the density log. “Smin” in squares is the interpreted minimum stress from the mini-frac tests.



**Figure 2:** Recorded pressure history during the injection test in the Colorado Shale at 320 m TVD. The bottomhole pressures (“BHP”) were calculated from a surface pressure sensor at the pump plus the hydraulic head (“Hydrostatic”) from the water column weight. The overburden weight (“Sv”) was calculated from the density log. “SHmin” was the in-situ minimum horizontal stress or fracture closure pressure interpreted from the pressure data. Similar conventions are used below unless otherwise specified.



**Figure 3:** Pressure/rate history during the injection test in the Colorado Shale at 335 m TVD.



**Figure 4:** Pressure history during the injection tests in the Grand Rapids Formation at 362 m TVD.

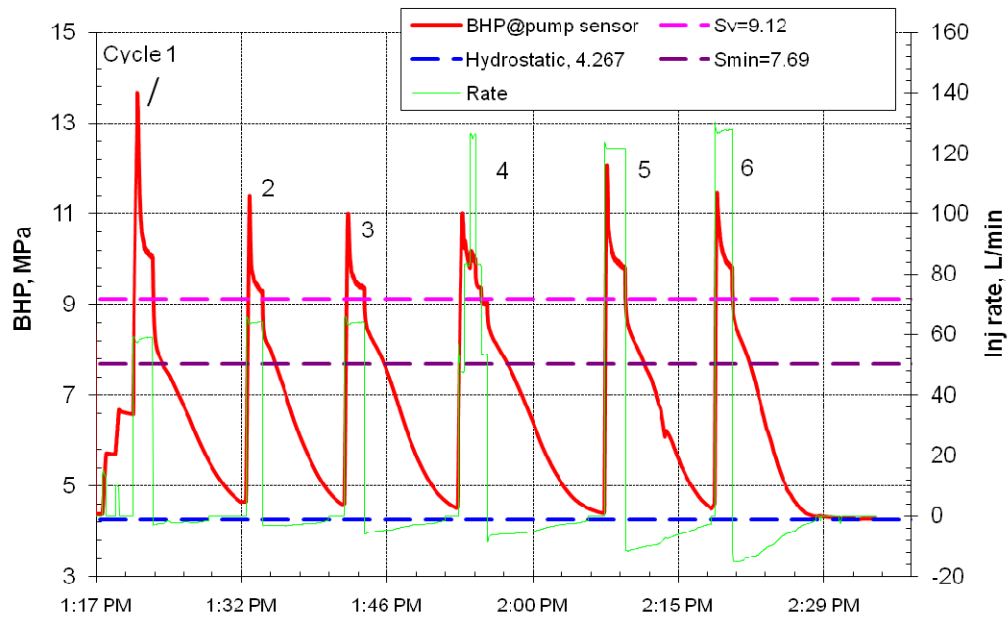


Figure 5: Pressure history during the injection tests in the Clearwater Formation at 435 m TVD.

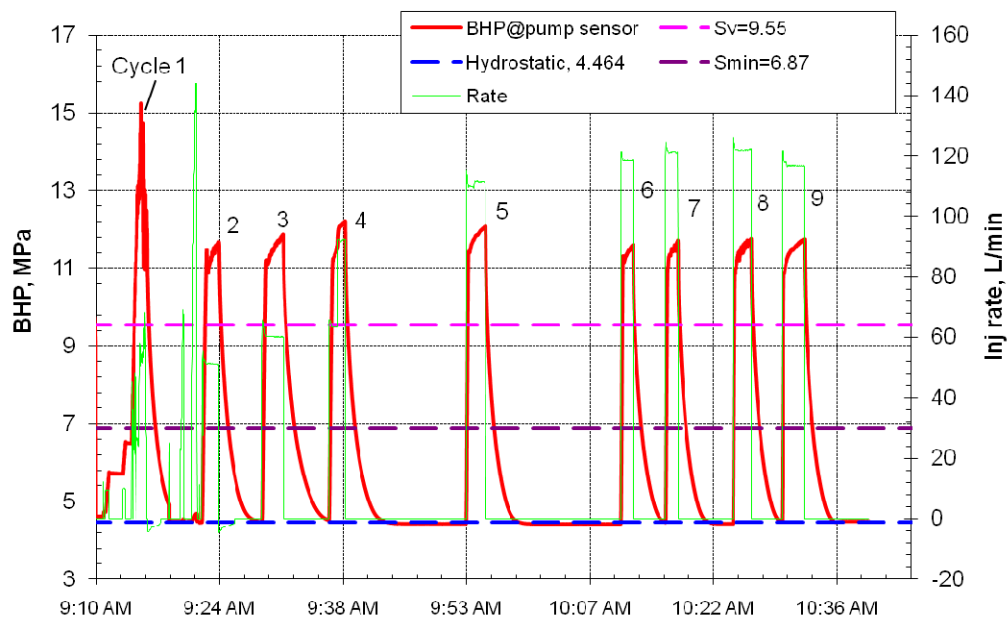


Figure 6: Pressure history during the injection tests in the Clearwater Shale Formation at 455 m TVD.

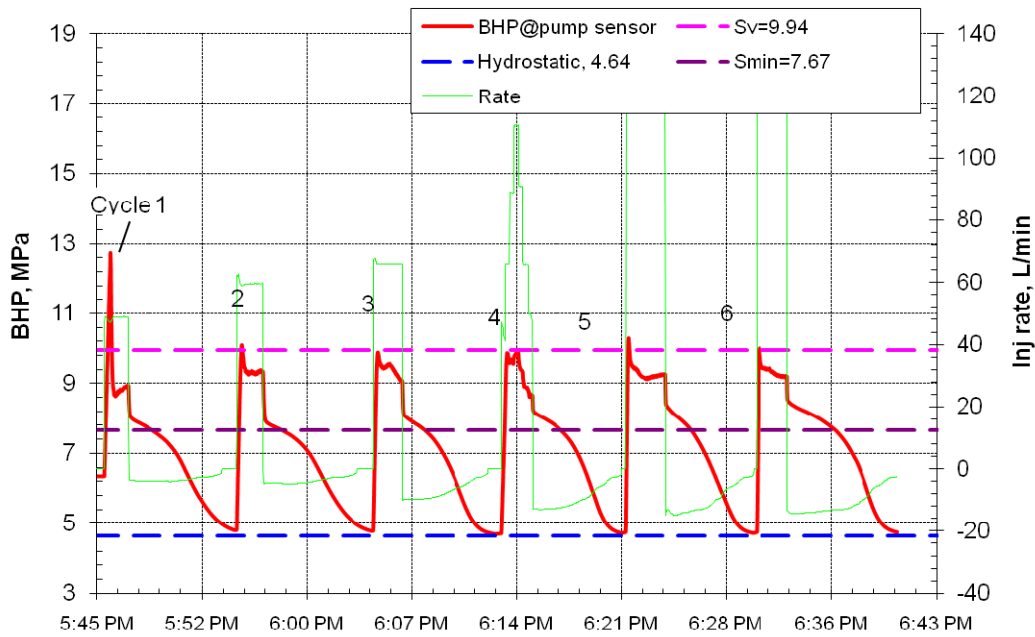


Figure 7: Pressure history during the injection tests in the Clearwater Shale Formation at 473 m TVD.

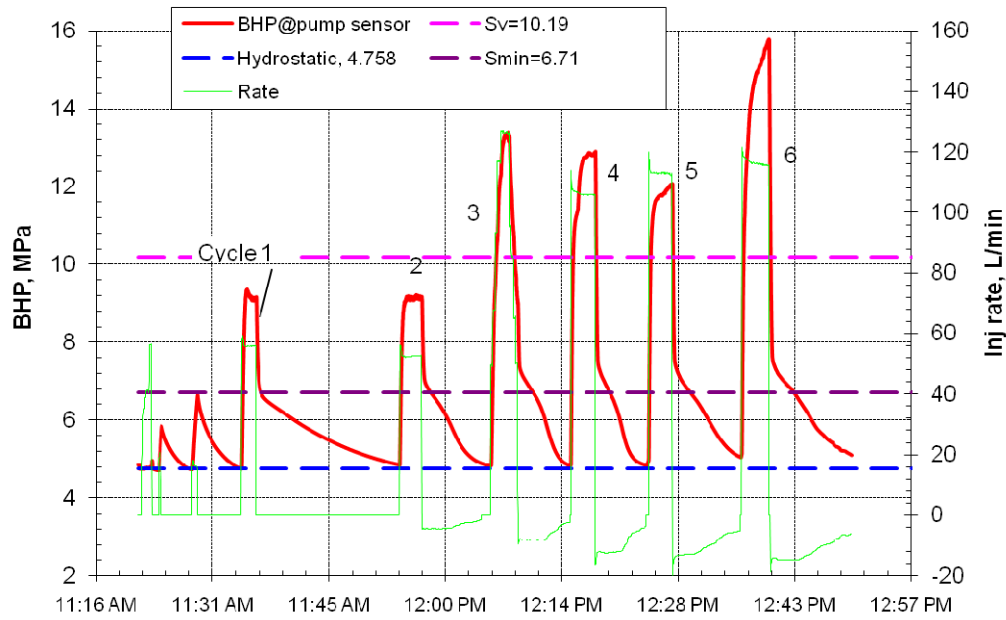


Figure 8: Pressure history during the injection tests in the Wabiskaw Formation at 485 m TVD.

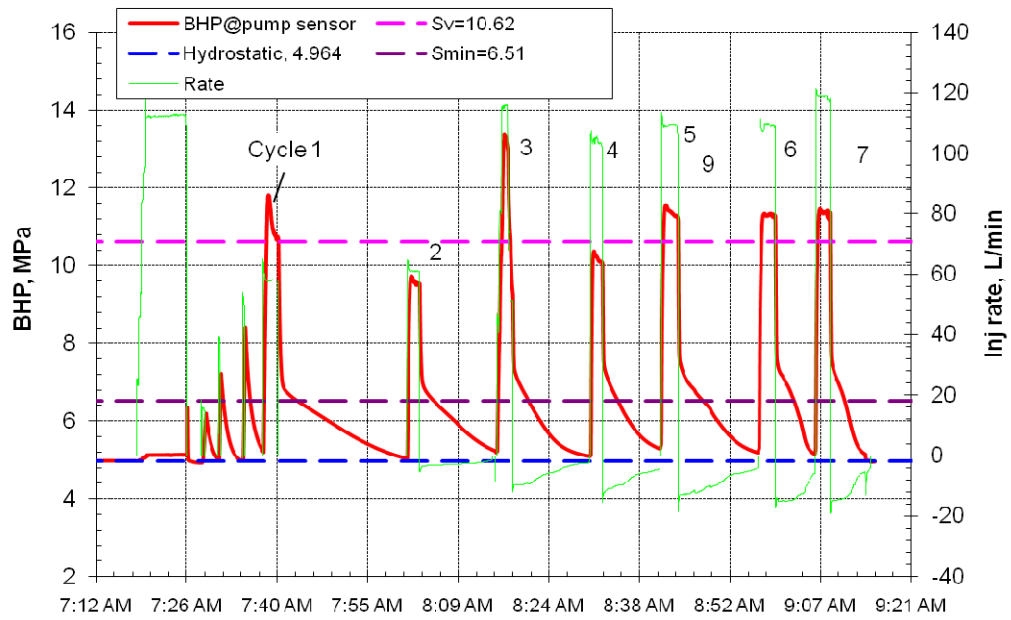


Figure 9: Pressure history during the injection tests in the McMurray Formation at 506 m TVD.

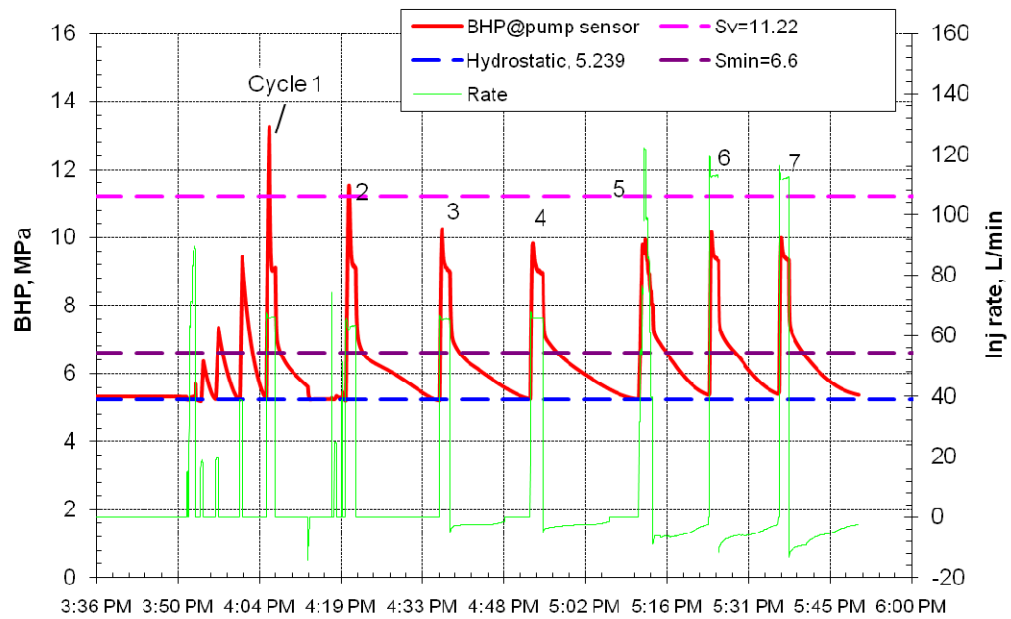
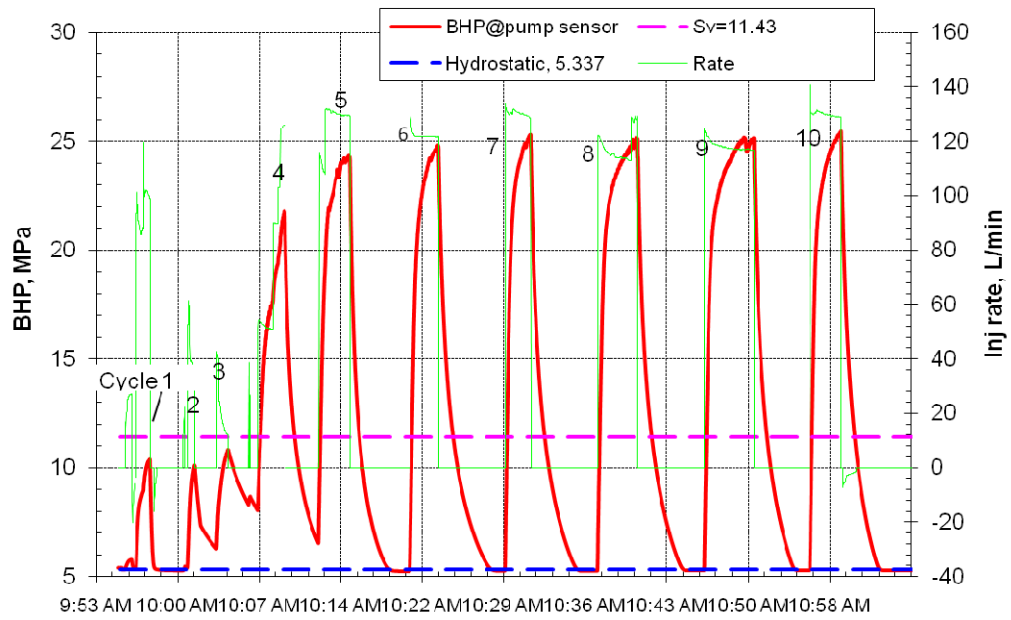
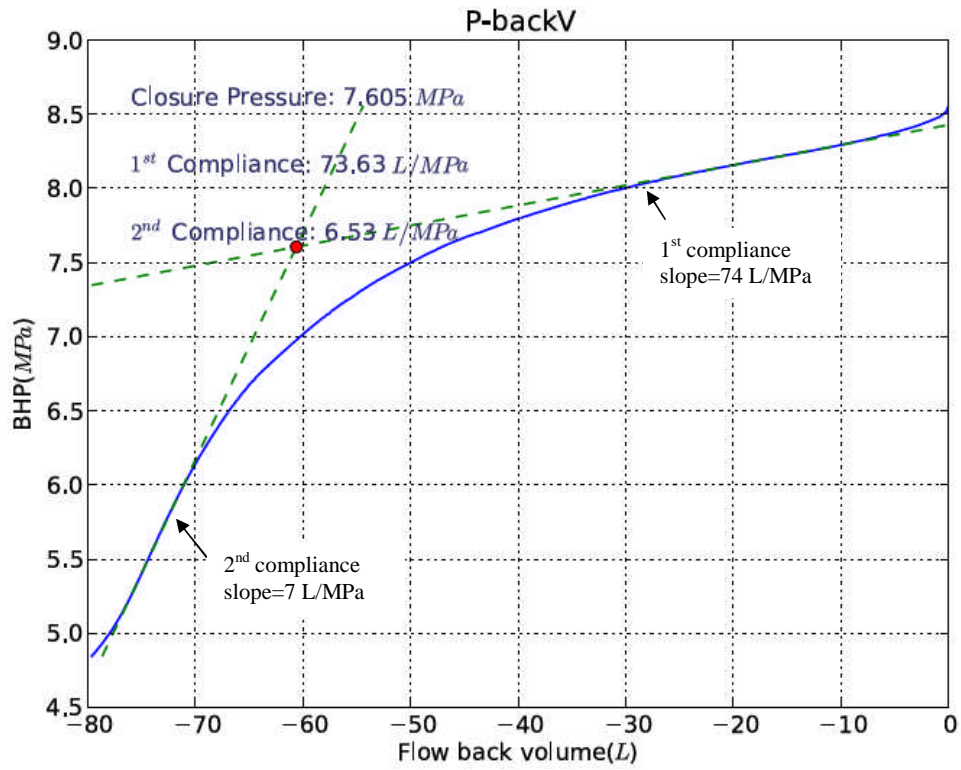


Figure 10: Pressure history during the injection tests in the McMurray Formation at 534 m TVD.

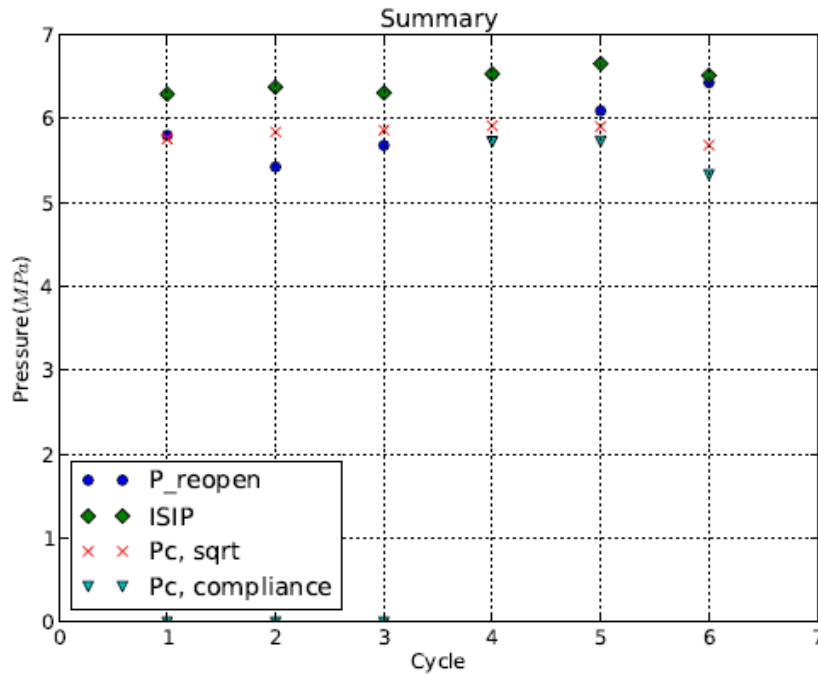


**Figure 11:** Pressure history during the injection tests in the McMurray Sand Formation at 544 m TVD.





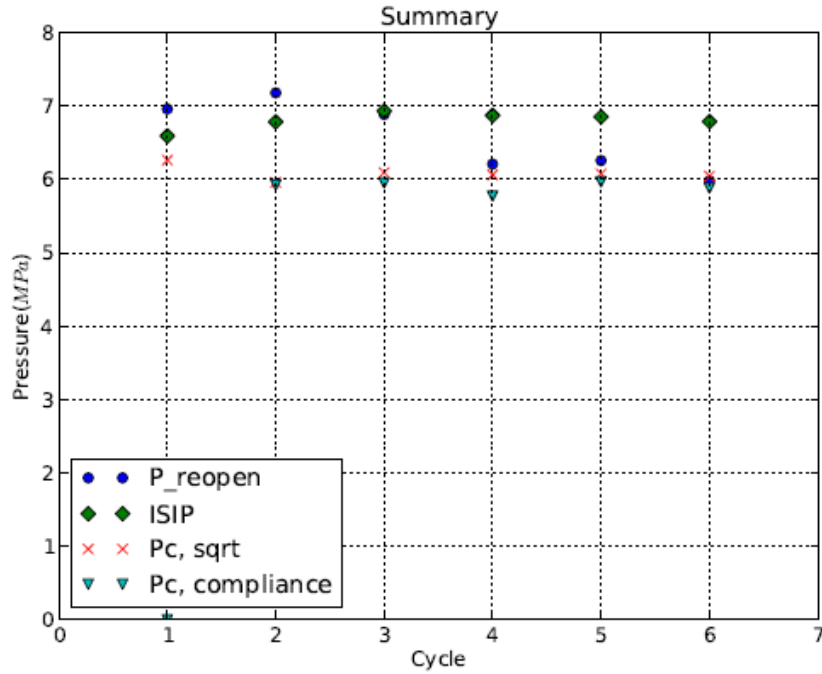
**Figure 12:** Fracture closure pressure interpreted from the compliance plot for Cycle #6 in the Clwt caprock shale test at 473 m. The negative volume on the x-axis denotes the flown-back volume.



Characteristic Pressures and Compliances

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pc, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	5.802	6.292	5.759	0.000	3.59	0.00	0.00
2	5.426	6.377	5.841	0.000	3.04	0.00	0.00
3	5.683	6.308	5.863	0.000	3.33	0.00	0.00
4	6.529	6.535	5.916	5.727	5.49	107.19	29.22
5	6.094	6.656	5.908	5.729	3.40	130.43	21.02
6	6.430	6.516	5.686	5.332	4.65	80.42	21.64

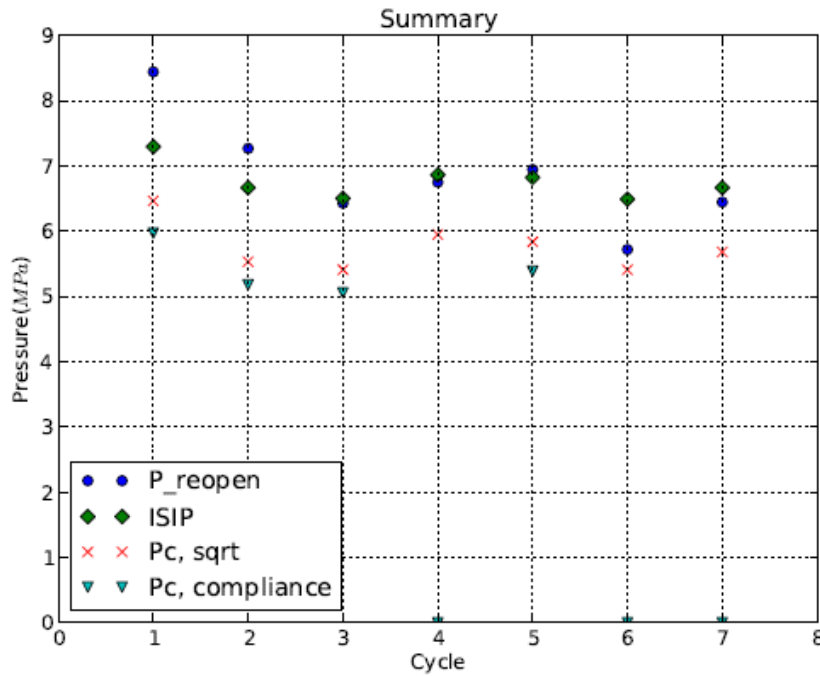
**Figure 13:** Various characteristic pressures interpreted from the test at 320 m in the Colorado Shale formation. “P\_reopen” denotes the fracture reopening pressure where the fracture starts to re-open during the subsequent injection. “ISIP” is the Instantaneous Shut-In Pressure. “Pc, sqrt” refers to the fracture closure pressure extracted by the sqrt(dt)-plot. “Pc, compliance” is the fracture closure pressure extracted by the compliance plot from the flow-back tests. “Cb, inj (Cf, back or Cb, back)” refers to the initial system compliance during the injection (the system compliance before or after the fracture closure during the flowback). Similar convention for the legends holds in this report unless otherwise specified.



Characteristic Pressures and Compliances

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pc, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	6.961	6.593	6.264	0.000	2.65	0.00	0.00
2	7.181	6.785	5.961	5.927	2.61	61.08	9.03
3	6.886	6.933	6.094	5.952	2.81	74.28	15.73
4	6.210	6.874	6.063	5.773	2.55	105.50	23.79
5	6.258	6.854	6.078	5.968	2.90	236.92	36.98
6	5.982	6.790	6.047	5.883	2.76	353.54	35.30

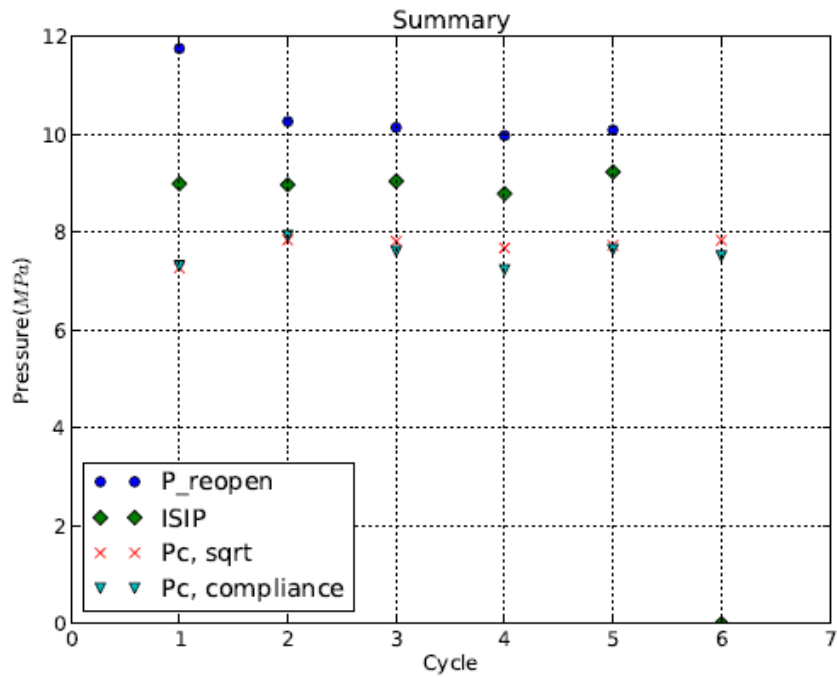
Figure 14: Various characteristic pressures interpreted from the test in the Colorado Shales at 335 m.



Characteristic Pressures and Compliances

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pc, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	8.439	7.294	6.463	5.968	2.91	8.88	6.25
2	7.266	6.666	5.531	5.176	3.16	5.84	4.88
3	6.426	6.501	5.408	5.052	3.34	4.48	3.92
4	6.749	6.863	5.949	0.000	3.35	0.00	0.00
5	6.943	6.821	5.834	5.387	3.63	0.29	3.06
6	5.717	6.491	5.408	0.000	3.31	0.00	0.00
7	6.443	6.666	5.679	0.000	3.32	0.00	0.00

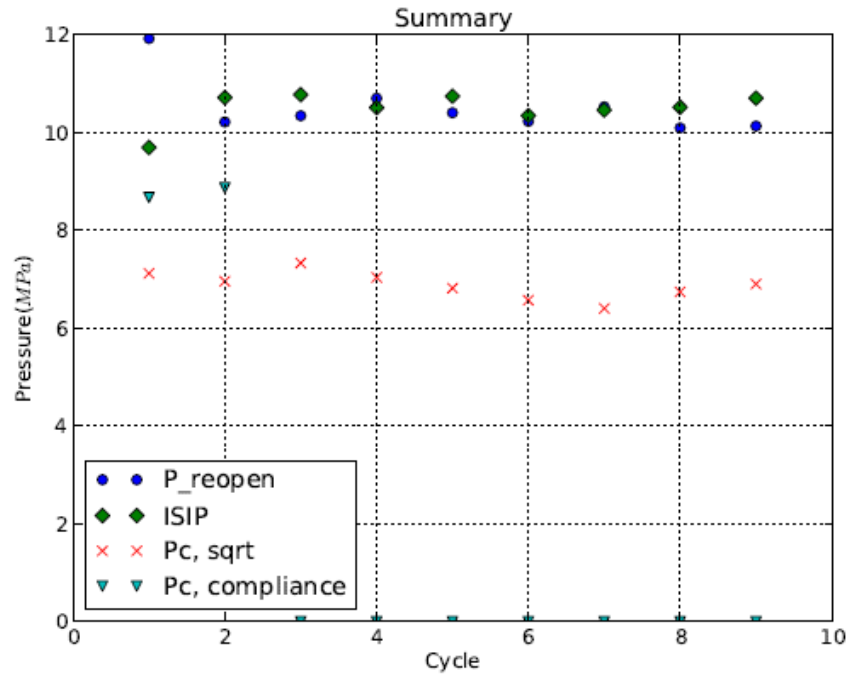
Figure 15: Various characteristic pressures interpreted from the Grand Rapids test at 362 m.



Characteristic Pressures and Compliances

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pc, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	11.750	8.988	7.267	7.311	3.38	5.35	4.12
2	10.261	8.968	7.838	7.927	3.14	7.43	4.43
3	10.137	9.041	7.816	7.612	3.09	12.78	5.44
4	9.973	8.786	7.677	7.230	3.04	15.18	8.03
5	10.088	9.231	7.730	7.646	3.04	24.71	11.82
6	0.000	0.000	7.832	7.513	0.00	26.33	11.53

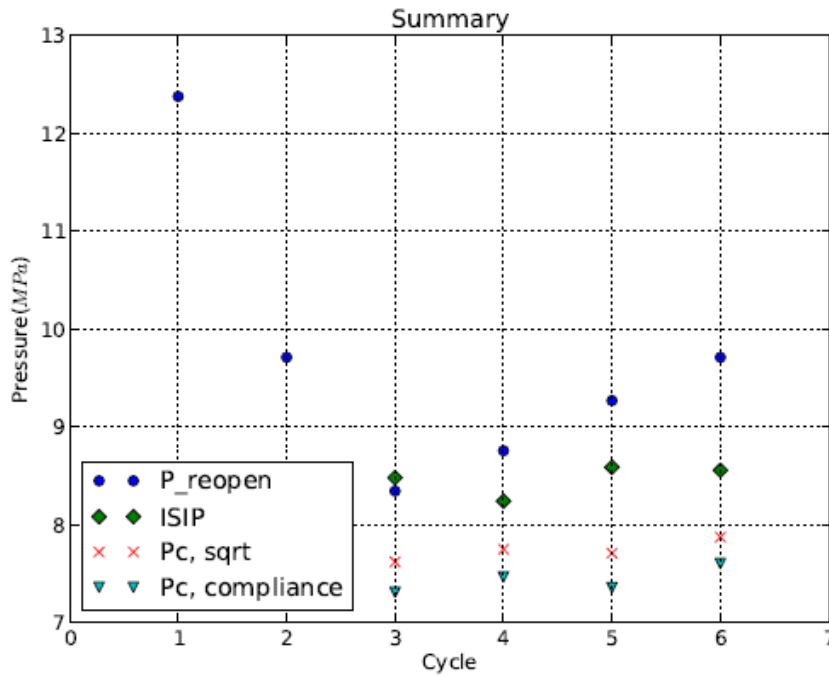
Figure 16: Various characteristic pressures interpreted from the Clearwater test at 435 m.



Characteristic Pressures and Compliances

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pc, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	11.916	9.690	7.118	8.667	2.59	0.51	1.12
2	10.211	10.711	6.953	8.868	3.39	0.48	1.06
3	10.338	10.770	7.328	0.000	3.47	0.00	0.00
4	10.695	10.504	7.035	0.000	3.48	0.00	0.00
5	10.399	10.738	6.814	0.000	3.40	0.00	0.00
6	10.224	10.341	6.567	0.000	3.40	0.00	0.00
7	10.520	10.454	6.401	0.000	3.42	0.00	0.00
8	10.090	10.513	6.739	0.000	3.32	0.00	0.00
9	10.127	10.700	6.902	0.000	3.49	0.00	0.00

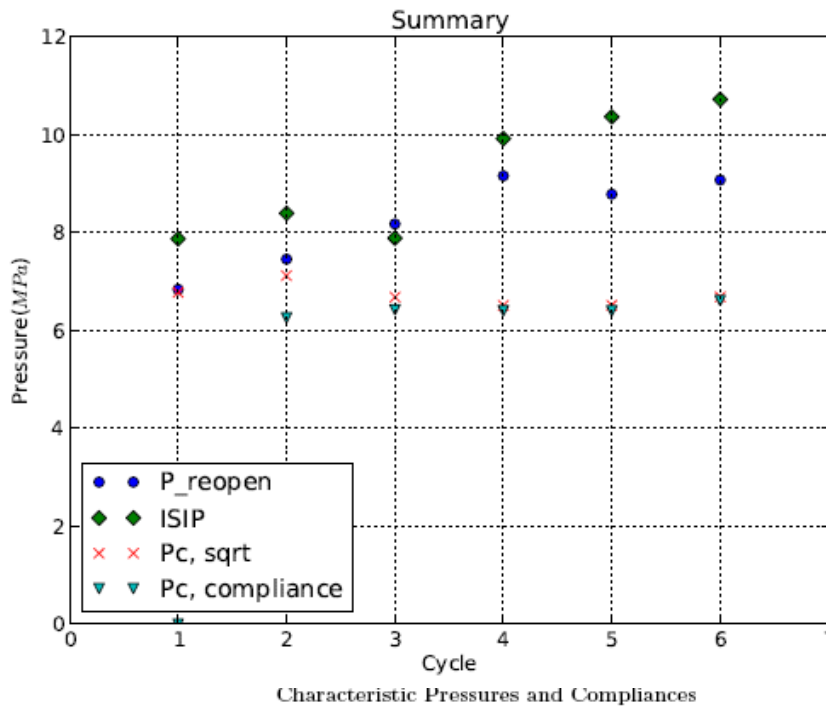
Figure 17: Various characteristic pressures interpreted from the Clearwater test at 455 m.



Characteristic Pressures and Compliances

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pc, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	12.375	8.337	7.581	7.276	3.10	15.88	3.85
2	9.711	8.422	7.504	7.275	3.46	21.73	4.16
3	8.346	8.482	7.623	7.313	3.16	33.97	5.29
4	8.757	8.245	7.752	7.469	3.18	55.85	5.59
5	9.270	8.589	7.711	7.359	3.35	41.95	6.55
6	9.711	8.557	7.876	7.605	3.49	73.63	6.53

Figure 18: Various characteristic pressures interpreted from the Clearwater test at 473 m.

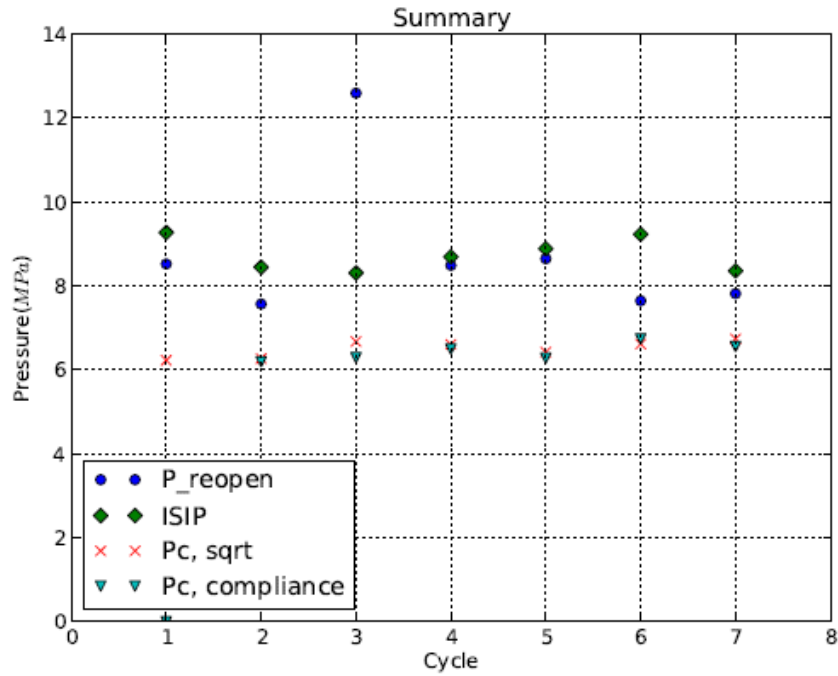


**Characteristic Pressures and Compliances**

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pc, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	6.836	7.867	6.771	0.000	4.11	0.00	0.00
2	7.454	8.391	7.117	6.255	4.26	15.10	9.07
3	8.173	7.884	6.678	6.418	4.47	24.42	9.79
4	9.155	9.914	6.509	6.399	4.81	30.16	13.22
5	8.780	10.362	6.512	6.397	4.53	47.35	26.79
6	9.071	10.717	6.683	6.608	4.42	65.60	35.09

**Figure 19:** Various characteristic pressures interpreted from the Wabiskaw test at 485 m.

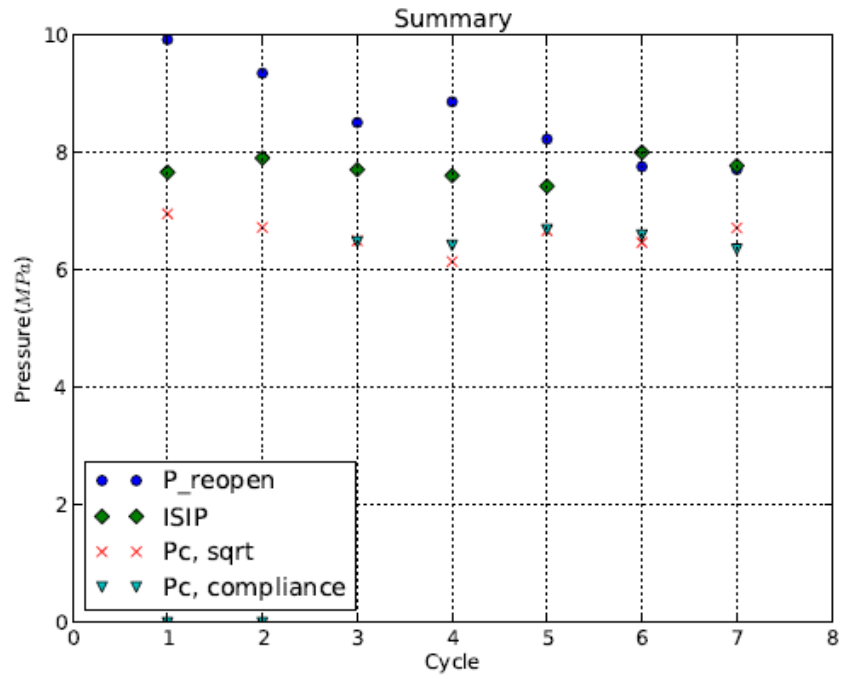




Characteristic Pressures and Compliances

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pc, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	8.525	9.275	6.228	0.000	4.49	0.00	0.00
2	7.571	8.447	6.267	6.192	4.47	18.13	18.81
3	12.594	8.313	6.679	6.292	10.78	31.84	27.31
4	8.490	8.697	6.608	6.495	4.71	29.75	32.40
5	8.649	8.884	6.426	6.279	4.93	56.81	41.64
6	7.646	9.229	6.614	6.740	4.34	57.86	24.00
7	7.818	8.361	6.738	6.556	4.28	34.92	19.36

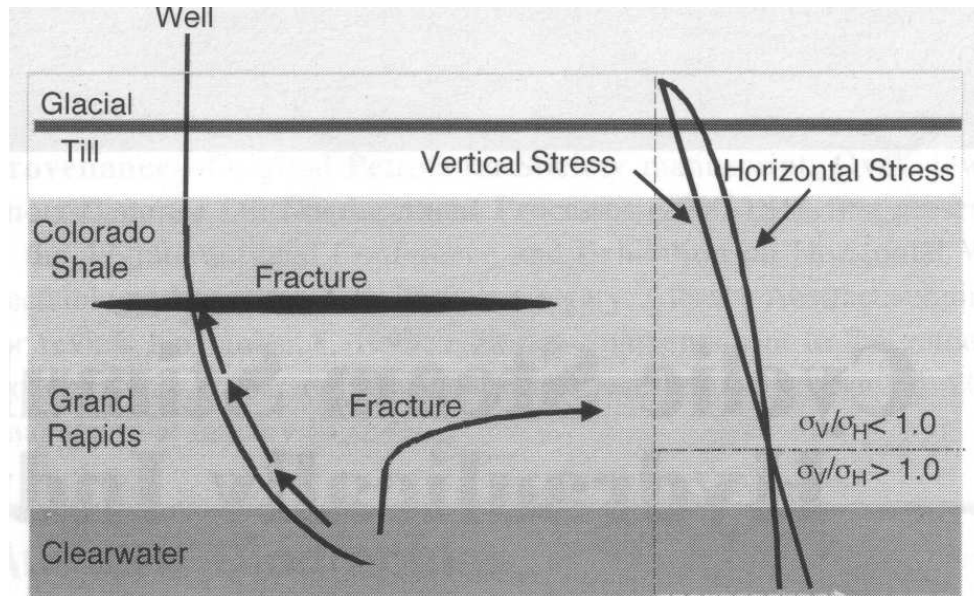
Figure 20: Various characteristic pressures interpreted from the test in the McMurray formation at 506 m.



Characteristic Pressures and Compliances

Cycle #	P_reopen (MPa)	ISIP (MPa)	Pc, sqrt (MPa)	Pe, compliance (MPa)	Cb, inj (L/MPa)	Cf, back (L/MPa)	Cb, back (L/MPa)
1	9.922	7.664	6.958	0.000	3.88	0.00	0.00
2	9.350	7.907	6.725	0.000	4.43	0.00	0.00
3	8.509	7.709	6.497	6.479	4.31	8.71	21.70
4	8.864	7.605	6.144	6.417	4.67	16.26	23.58
5	8.227	7.426	6.670	6.687	5.25	28.85	28.13
6	7.759	8.003	6.468	6.593	4.61	32.88	29.21
7	7.711	7.775	6.716	6.352	4.84	39.53	37.98

Figure 21: Various characteristic pressures interpreted from the test in the McMurray formation at 534 m.



**Figure 22:** An illustration from Smith et. al (2004)<sup>3</sup> supporting IOL's claim on the cap rock integrity in its cyclic steam stimulation operations, Cold Lake based on the stress profile measured by mini-frac tests. In-situ stress tests showed a horizontal fracture stress regime ( $\sigma_v/\sigma_H < 1$ ) in the overburden and a vertical fracture stress regime in the oilsands payzone ( $\sigma_v/\sigma_H > 1$ ). IOL's simulations further demonstrated that a vertical fracture, if it propagated out of the payzone upwards, would eventually turn to horizontal in the cap rock and therefore, no hydraulic conduit can be formed, causing fluid migration from the payzone to the surface aquifers.

<sup>3</sup> Smith, R. J., Bacon, R. M., Boone, T. J. and P. R. Kry, 2004, Cyclic steam stimulation below a known hydraulically induced shale fracture, Can. J. of Petroleum Technology, 43(2), 39-46.

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Corporate Emergency Flowchart  
Corporate Mission Statement  
Corporate Statement on Health and Safety  
Corporate Statement on Environmental Protection  
Amendment Record  
Exercise Tracking

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## Canadian Natural

May 20, 2011

Address

**RE: Proposed Kirby In Situ Oil Sands Expansion Project**

Dear Contact,

Canadian Natural Resources Limited (Canadian Natural) is preparing an integrated application and environmental impact assessment (EIA) for the Kirby In Situ Oil Sands Expansion Project (Kirby Expansion Project), located approximately 75 km northeast of Lac La Biche, and primarily within the Regional Municipality of Wood Buffalo.

Canadian Natural is providing the following documents for your review and consideration:

- Plain Language Project Summary;
- Project Summary Table and Project Location Map; and
- Proposed EIA Terms of Reference for the Kirby Expansion Project.

We welcome your input on the Proposed EIA Terms of Reference. Any comments or feedback can be provided to Alberta Environment at the following address before the end of day on July 22, 2011.

Director, Environmental Assessment, Regional Integration  
Alberta Environment  
111, Twin Atria Building  
4999 - 98th Avenue  
Edmonton, Alberta T6B 2X3  
Fax: (780) 427-9102, E-mail: [environmental.assessment@gov.ab.ca](mailto:environmental.assessment@gov.ab.ca)

**Canadian Natural Resources Limited**

Suite 2500, 855 – 2 Street SW Calgary, Alberta, Canada T2P 4J8 T 403.517.6700 F 403.517.7350 [www.cnrl.com](http://www.cnrl.com)



If you have any questions or comments on our proposed Kirby Expansion Project, or any aspect of our operations, please call the Project Information Line: 780-714-6161 (please call collect if long distance). We look forward to your input on our proposed plans and to meeting with you in the near future.

Sincerely,

**CANADIAN NATURAL RESOURCES LIMITED**

Anita Sartori  
Manager, Projects & Approvals

Attachments – Plain Language Project Summary, Proposed EIA Terms of Reference,  
Project Summary Table and Project Location Map

**Canadian Natural Resources Limited**

Suite 2500, 855 – 2 Street SW Calgary, Alberta, Canada T2P 4J8 T 403.517.6700 F 403.517.7350 [www.cnrl.com](http://www.cnrl.com)

<b>Kirby In Situ Oil Sands Expansion Project - Project Summary Table</b>			
Proponent Name:	Canadian Natural Resources Limited	Date:	May 17, 2011
Project Name:	Kirby In Situ Oil Sands Expansion Project	Company Contact Name and Information:	Jon Gareau Regulatory Coordinator Email: <a href="mailto:jon.gareau@cnrl.com">jon.gareau@cnrl.com</a> Phone: (403) 517-7153
Name of Company that will hold Approval:	Canadian Natural Resources Limited	Company Website:	www.cnrl.com
Type of Project (e.g., in-situ, mine, quarry, upgrader, etc.):	In Situ	New Project, Expansion, Additional Phase or Modification	Expansion (3 phases)*
Projected Construction Start (Month/Year):	January 2014	Projected Operation Start (Month/Year):	January 2016 (Steam In)
Life of Project (# years, YYYY - YYYY):	2013 - 2043 (30 Yr.)	Project Location (Legal Land Description) and Municipality:	<ul style="list-style-type: none"> <li>•Part Twp.73, Rges. 7 and 8, W4M</li> <li>•Twp. 74, Rges. 7, 8 and part 9, W4M</li> <li>•Part Twp. 75, Rges. 7, 8 and 9, W4M</li> <li>•Part Twp. 76, Rge. 9, W4M</li> <li>•Regional Municipality of Wood Buffalo and minor areas of Lac La Biche County</li> </ul>
Total Project Area (ha):	47,935 ha	Private or Public Land:	Public
Nearest Residence (km):	Conklin (10 km from Project Area)	Nearest First Nation Reserve(s) (name and km [to Project Area]):	IR 167 Heart Lake (30 km) IR 194B Winefred Lake (28 km)
Types of Activity (major project processes):	SAGD, Central Processing Facility includes steam generation and bitumen and water treating, tankage, water source wells, disposal wells, product line, power line	Power Source (If on site power generation describe quantity (MW) and facilities):	Third party electrical utility company
Project Products:	Diluted bitumen	Average Production Capacity per Year (specify units):	<u>Expansion in three phases:</u> <u>Kirby North Phase 1</u> - additional 14,600,000 barrels / year (40,000 barrels / calendar day); <u>Kirby South Phase 2</u> - additional 5,475,000 barrels / year (15,000 barrels / calendar day);

			Kirby North Phase 2 - additional 10,950,000 barrels / year (30,000 barrels / calendar day).
Method of Product Transport (e.g., pipeline, rail, truck):	Pipeline	Location of End Market:	Currently USA but this may evolve as Alberta develops upgrading capacity.
Infrastructure Requirements (roads, pipelines, water intake, storage, tankage):	Central Processing Facility, roads, well pads, pipelines (steam and emulsion, fuel gas, produced gas, diluent, diluted bitumen sales, saline water source, non-saline water source, disposal) salt cavern, electrical power lines, water wells, camps	Project By-Products:	Sulfur cake to go to a third party landfill for future project phases if the ERCB sulphur recovery threshold is reached (i.e., 1 tonne per day on a quarterly basis).
Expected Types of Air Emissions (e.g., SO <sub>2</sub> , NO <sub>x</sub> , CO <sub>2</sub> ):	SO <sub>2</sub> , NO <sub>x</sub> , CO <sub>2</sub>	Expected Types of Effluent Releases (note the water bodies the effluent will be released to):	Potentially treated domestic waste water effluent – released overland.
Types of Wastes Generated:	Brine from the evaporative water purification, drilling wastes, domestic garbage.	Waste Management Facilities (i.e., Disposal Well, Salt Caverns, Landfill, or Third-Party):	Deep disposal wells, salt cavern, drilling sumps, and third party landfill
Nearest Waterway/Waterbody (name and km):	Named waterbodies are within the Project Area (Edwards Lake, Glover Lake and a small portion of Wiau Lake)  Named waterways are within the Project Area (Birch Creek, Sunday Creek)	Watercourse Crossings (type of crossing, any Class A to C waterbodies):	Class C (April 16 to July 15 Restricted Activity Period)
EPEA Approval Required (Y/N/Unknown):	Yes	Regulatory Board(s) (ERCB/NRCB/AUC):	ERCB

Water Act License Required (Y/N/Unknown. If yes: purpose, source and estimated volumes):	Yes – non-saline water required for utility purposes and for make-up water for steam generation. Sources and estimated volumes have not been determined, however, saline water use for steam generation will be maximized to the extent possible	Water Act Approval Required (Y/N/Unknown. If yes, purpose):	Yes - for utility water and make up water for steam generation.
Fisheries Act Authorization Required (Y/N/Unknown):	No – watercourse crossings to be conducted according to operational statement	Navigable Waters Protection Act Authorization Required (Y/N/Unknown):	Unknown
Waterbodies Required (Y/N/Unknown/NA. If yes, # and ha):	No	Nearest Water Well (km) (Domestic and Commercial):	Nearest domestic water well is in Conklin, 10 km from the Project Area  Nearest non-Canadian Natural commercial water well is in 7-21-73-6 W4M, approximately 4 km from the Project Area (to be confirmed)**
Nearest Provincial Highway (# and distance):	Highway 881 (extends through the Project Area)	Access Improvements to Provincial Highway:	Access improvement requirements will be determined upon completion of a traffic impact assessment.
Traffic Impact Assessment Required (Yes/No/Unknown):	Yes	Total Area to be Disturbed (ha):	1,500 ha (to be confirmed) **
Existing Land Use(s):	Forest	Post-reclamation Land Use(s):	Forest
Reclamation Start and End (YYYY - YYYY):	Estimated 2023-2045 for pads; for buried pipelines expected to be within 2 years of the start of project construction.	Unique Environmental or Social Considerations (Describe or None):	Caribou zone, registered Fur Management Areas, First Nation traditional land use, partial overlap of Project Area with Winefred-Grist Environmentally Significant Area and the Wiau Lake Caribou Environmentally Significant Area.



Historic Resources Impact Assessment Required (Y/N/Unknown):	Yes	Estimated Construction Person-Years (PY) of Employment	<u>According to three expansion phases:</u> <u>Kirby North Phase 1</u> - 1,550 additional PY; <u>Kirby South Phase 2</u> - 585 additional PY; <u>Kirby North Phase 2</u> - 1,167 additional PY. (to be confirmed) **
Estimated Operation Persons-Years (PY) of Employment:	<u>According to three expansion phases:</u> <u>Kirby North Phase 1</u> - 1,431 additional PY; <u>Kirby South Phase 2</u> - 440 additional PY; <u>Kirby North Phase 2</u> - 1,000 additional PY. (to be confirmed) **	Construction or Operation Camp Required (Y/N/Unknown. If yes, on-site or off-site):	Yes - on-site operations camp is required. Existing nearby Kirby Project construction camp is expected to be used for Kirby Expansion Project construction personnel.
Method of Transport of Employees to Site (Construction and Operation):	Workers will primarily reside in camp while on site. When workers are off shift, they will likely commute to their home destinations. Worker transportation will primarily occur by buses but will also be by personal vehicle.	Date Stakeholder Engagement Started (Public/Aboriginal):	To start in May 2011
Aboriginal Groups Involved in Stakeholder Engagement:	Beaver Lake Cree Nation; Chard Métis Local #214 ; Chipewyan Prairie Dene First Nation ; Conklin Métis Local #193 ; Cold Lake First Nations; Fort McMurray #468 First Nation; Heart Lake First Nation; Saddle Lake First Nation; Whitefish (Goodfish) Lake First Nation #128; Willow Lake Métis Local #780		

\* The proposed Kirby In Situ Oil Sands Expansion Project (“Kirby Expansion Project”) involves the expansion of two approved in situ oil sands projects:

- Kirby In Situ Oil Sands Project - ERCB Commercial Scheme Approval No. 11475 to develop and produce 45,000 bbl/d of bitumen (“Kirby South”).
- Kirby Oil Sands Project Phase 1 - ERCB Commercial Scheme Approval No. 11472 to develop and produce 10,000 bbl/d of bitumen (“Kirby North”).

The proposed Kirby Expansion project will increase the combined, approved 55 000 bbl/d Kirby North and Kirby South bitumen production by 85,000 bbl/d to a total of 140,000 bbl/d of bitumen production.

\*\*These are preliminary estimates and are subject to change upon filing of the integrated application/EIA

**TERMS OF REFERENCE  
ENVIRONMENTAL IMPACT ASSESSMENT REPORT  
FOR CANADIAN NATURAL RESOURCES LIMITED  
KIRBY IN SITU OIL SANDS EXPANSION PROJECT**

*Approximately 75 km from Lac La Biche, Alberta*

**ISSUED BY:** Canadian Natural Resources Limited

**DATE:** MAY 17, 2011

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## **PURPOSE OF THE TERMS OF REFERENCE**

The purpose of this document is to identify for Canadian Natural Resources Limited (Canadian Natural), aboriginal communities and relevant stakeholders the information required by government agencies for an Environmental Impact Assessment (EIA) report prepared under the *Environmental Protection and Enhancement Act* (EPEA) for the proposed Kirby In-Situ Oil Sands Expansion Project (the Project).

The proposed Project will involve the following:

- An increase in the bitumen processing capacity of Canadian Natural's approved Kirby In Situ Oil Sands Project ("Kirby South") from 45,000 barrels per day (bbl/d), to 60,000 bbl/d. This expansion will occur in one phase ("Kirby South Phase 2").
- An increase in the bitumen processing capacity of the approved Kirby Oil Sands Project Phase I ("Kirby North") from 10,000 bbl/d to 80,000 bbl/d. (acquired by Canadian Natural from Enerplus Resources Fund). This expansion will occur in two phases: "Kirby North Phase 1" (expansion of the approved 10,000 bbl/d production to 50,000 bbl/d); and "Kirby North Phase 2" (expansion of the 50,000 bbl/d production to 80,000 bbl/d).
- In summary, the expansion will involve an increase in the total combined bitumen capacity from the approved 55,000 bbl/d (8,745 m<sup>3</sup>/d) by 85,000 bbl/d (13,515 m<sup>3</sup>/d) to 140,000 bbl/d (22,260 m<sup>3</sup>/d).

The proposed Project will include additional steam generation, bitumen processing and water treatment capacity at the two Central Processing Facilities proposed in the applications for the previously approved projects, and possibly pipeline connections and/or infrastructure between the two facilities. The Project will also include the construction and drilling of additional well pads and the use of Steam Assisted Gravity Drainage (SAGD) technology for the recovery of bitumen from McMurray and Wabiskaw oil sands formations. The proposed Project will increase the combined life of the two previously approved projects from 20 years to approximately 30 years.

The Project is planned to occur within a Project Area located primarily in Townships 73, 74 and 75, Ranges 7 and 8 and 9, west of the 4th Meridian. The Project Area is approximately 75 km northeast of Lac La Biche and 10 km south of Conklin, primarily within the Regional Municipality of Wood Buffalo and in small portions of Lac la Biche County.

Pending regulatory approval, it is Canadian Natural's intention to begin construction in the first quarter of 2014 with subsequent start-up in the first quarter of 2016.

## **SCOPE OF THE EIA REPORT**

The Proponent shall prepare and submit an EIA report that examines the environmental and socio-economic effects of the Project.

The EIA report shall be prepared considering all applicable provincial and federal legislation, codes of practice, guidelines, standards and directives.

The EIA report shall be prepared in accordance with these Terms of Reference and the environmental information requirements prescribed under EPEA and associated regulations, and the *Canadian Environmental Assessment Act* if applicable. The EIA report will form part of the

Proponent's application to the Energy Resources Conservation Board (ERCB). An EIA report summary will also be included as part of the ERCB Application.

The Proponent shall refer to the *Guide to Preparing Environmental Impact Assessment Reports for In-Situ Projects in Alberta* published by Alberta Environment (the In-Situ Guide) and these Terms of Reference when preparing the Environmental Impact Assessment report. In any case where there is a difference in requirements between the Guide and these Terms of Reference, the Terms of Reference shall take precedence.

## **CONTENT OF THE EIA REPORT**

### **1 PUBLIC ENGAGEMENT AND ABORIGINAL CONSULTATION**

- [A] Describe the concerns and issues expressed by the public and the actions taken to address those concerns and issues, including how public input was incorporated into the Project development, impact mitigation and monitoring.
- [B] Describe the concerns and issues expressed by aboriginal communities and the actions taken to address those concerns and issues, including how aboriginal community input was incorporated into the Project development, impact mitigation and monitoring. Describe consultation undertaken with aboriginal communities and groups with respect to traditional ecological knowledge and traditional use of land.
- [C] Describe plans to maintain the public engagement and aboriginal consultation process following completion of the EIA report to ensure that the public and aboriginal peoples will have an appropriate forum for expressing their views on the ongoing development, operation and reclamation of the Project.

### **2 PROJECT DESCRIPTION**

#### **2.1 Overview**

- [A] Provide a brief project description in sufficient detail to provide context for the EIA, including:
  - a) proponent information;
  - b) proposed extraction and bitumen processing technology;
  - c) amount and source of energy required for the Project;
  - d) water supply and disposal requirements, including process water and potable water requirements;
  - e) proposed method to transport product to markets; and
  - f) development plan and schedule.
- [B] Provide maps and/or drawings of the Project components and activities including:
  - a) existing infrastructure, leases and clearings, including exploration clearings;
  - b) proposed central processing/treatment and field facilities;
  - c) other buildings and infrastructure (pipelines and utilities);
  - d) temporary structures;
  - e) transportation and access routes;
  - f) on-site hydrocarbon storage;
  - g) containment structures such as retention ponds and storage ponds (e.g., stormwater runoff, boiler blow-down);
  - h) water wells/intakes, pipelines, and storage structures;

- i) sources of aggregate resources, borrow material and other construction material and locations of any stockpiles that will be developed; and
  - j) waste storage area and disposal sites.
- [C] Discuss the implications of a delay in proceeding with the Project, or any phase of the Project, or not going ahead with the Project.
- [D] Describe the benefits of the project, including jobs created, local training, employment and business opportunities, and royalties and taxes generated that accrue to:
- a) the Proponent;
  - b) local and regional communities, including Aboriginal communities;
  - c) the local authority;
  - d) Alberta; and
  - e) Canada.
- [E] Provide the adaptive management approach that will be implemented throughout the life of the Project. Include how monitoring, mitigation and evaluation will be incorporated.

## **2.2 Constraints**

- [A] Discuss the process and criteria used to identify constraints to development, and how the Project has been designed to accommodate those constraints. Include the following:
- a) any applicable ALSA Regional Plan;
  - b) land use policies and resource management initiatives that pertain to the Project;
  - c) aboriginal traditional land use;
  - d) all known traplines;
  - e) the environmental setting;
  - f) cumulative environmental impacts in the region;
  - g) cumulative social impacts in the region;
  - h) results of Project-specific or regional monitoring;
  - i) potential for new or additional technology to increase resource recovery at later times; and
  - j) potential for changes in the regulatory regime.
- [B] Discuss the selection criteria used, options considered, and rationale for selecting:
- a) location of facilities and infrastructure;
  - b) thermal energy and electric power required for the Project;
  - c) water supply sources;
  - d) wastewater treatment, management and disposal;
  - e) air emission and air quality management; and
  - f) waste disposal.
- [C] Provide a list of facilities for which locations will be determined later. Discuss the selection criteria that will be used to determine the specific location of these facilities.

## **2.3 Regional and Cooperative Efforts**

- [A] Discuss the Proponent's involvement in regional and cooperative efforts to address environmental and socio-economic issues associated with regional development.

- [B] Describe opportunities for sharing infrastructure (e.g., access roads, utility corridors, water infrastructure) with other resource development stakeholders. Provide rationale where these opportunities will not be implemented.

## **2.4 Transportation Infrastructure**

- [A] Provide a summary of the traffic impact assessment study carried out for the Project. Where no traffic impact assessment study has been prepared, describe the anticipated changes to traffic (e.g., type, volume) on highways during all stages (construction, operation and shutdown) of the Project and assess its negative impact, considering other existing and planned uses of the same highways.

## **2.5 Air Emissions Management**

- [A] Provide emission profiles (type, rate and source) for the Project's operating and construction emissions including point and non-point sources and fugitive emissions. Consider both normal and upset conditions. Discuss:
- a) odorous or visible emissions from the proposed facilities;
  - b) annual and total greenhouse gas emissions during all stages of the Project. Identify the primary sources and provide examples of calculations;
  - c) the intensity of greenhouse gas emissions per unit of bitumen produced;
  - d) the Project's contribution to total provincial and national greenhouse gas emissions on an annual basis;
  - e) the Proponent's overall greenhouse gas management plans;
  - f) amount and nature of Criteria Air Contaminants emissions;
  - g) the amount and nature of acidifying emissions, probable deposition patterns and rates;
  - h) control technologies used to minimize air emissions;
  - i) emergency flaring scenarios (e.g., frequency and duration) and proposed measures to ensure flaring events are minimized;
  - j) upset condition scenarios (e.g., frequency and duration) and proposed measures to ensure upset conditions are minimized;
  - k) gas collection and conservation, and the applicability of vapour recovery technology;
  - l) applicability of sulphur recovery, acid gas re-injection or flue gas desulphurization to reduce sulphur emissions; and
  - m) fugitive emissions control technology to detect, measure and control emissions and odours from equipment leaks.

## **2.6 Water Management**

### **2.6.1 Water Supply**

- [A] Describe the water supply requirements for the Project, including:
- a) the expected water balance during all stages of the Project. Discuss assumptions made or methods chosen to arrive at the water balances;
  - b) the process water, potable water, and non-potable water requirements and sources for construction (including but not limited to road construction, winter road construction, lease construction, production well drilling and dust suppression), start-up, normal and emergency operating situations, decommissioning and reclamation.

- Identify the volume of water to be withdrawn from each source, considering plans for wastewater reuse;
- c) the location of sources/intakes and associated infrastructure (e.g., pipelines for water supply);
  - d) the variability in the amount of water required on an annual and seasonal basis as the Project is implemented;
  - e) the expected cumulative effects on water losses/gains resulting from the Project operations;
  - f) potable water treatment systems for all stages of the Project;
  - g) type and quantity of potable water treatment chemicals used; and
  - h) measures for ensuring efficient use of water including alternatives to reduce the consumption of non-saline water such as water use minimization, recycling, conservation, and technological improvements.

### **2.6.2 Surface Water**

- [A] Describe the surface water management strategy for all stages of the Project, including:
  - a) design factors considered; and
  - b) permanent or temporary alterations of watercourses, wetlands and other waterbodies.
- [B] Provide details of watercourse crossings including:
  - a) type of water course crossing, construction methods and anticipated flows during construction;
  - b) location; and
  - c) details on capacity of crossing to withstand extreme flood events including design flood and design criteria used for the crossing.
- [C] Provide a description of navigable waterways and the results of any navigability assessment(s) conducted for waterways that may be affected by the Project, or a schedule for when the assessments may be completed.
- [D] Describe crossings of watercourses or waterbodies (including bridges, culverts and pipelines) required and provide example diagrams of each type of crossing.

### **2.6.3 Wastewater Management**

- [A] Describe the wastewater management strategy, including:
  - d) the source, quantity and composition of each wastewater stream from each component of the proposed operation (e.g., bitumen extraction and associated facilities) for all Project conditions, including normal, start-up, worst-case and upset conditions;
  - e) the proposed disposal locations and methods for each wastewater stream;
  - f) formations for the disposal of wastewaters;
  - g) design of facilities that will collect, treat, store and release wastewater streams;
  - h) type and quantity of chemicals used in wastewater treatment; and
  - i) sewage treatment and disposal.

## **2.7 Waste Management**

- [A] Characterize and quantify the anticipated dangerous goods, and hazardous, non-hazardous, and recyclable wastes generated by the Project, and:
- a) describe the composition and volume of specific waste streams and discuss how each stream will be managed;
  - b) describe how the disposal sites and sumps will be constructed; and
  - c) describe plans for pollution prevention, waste minimization, recycling, and management to reduce waste quantities for all stages of the Project.

## **2.8 Conservation and Reclamation**

- [A] Provide a conceptual conservation and reclamation plan for the Project. Describe and map as applicable:
- a) current land use and capability and proposed post-development land use and capability;
  - b) anticipated timeframes for completion of reclamation stages and release of lands back to the Crown including an outline of the key milestone dates for reclamation and how progress to achieve these targets will be measured;
  - c) constraints to reclamation such as timing of activities, availability of reclamation materials and influence of natural processes and cycles including natural disturbance regimes;
  - d) a revegetation plan for the disturbed terrestrial and aquatic areas;
  - e) reclamation material salvage, storage areas and handling procedures; and
  - f) existing and final reclaimed site drainage plans.
- [B] Discuss, from an ecological perspective, the expected timelines for establishment and recovery of vegetative communities and wildlife habitat, the expected success of establishment and recovery, and the expected differences in the resulting communities.
- [C] Discuss uncertainties related to the conceptual reclamation plan.

# **3 ENVIRONMENTAL ASSESSMENT**

## **3.1 Air Quality, Climate and Noise**

### **3.1.1 Baseline Information**

- [A] Discuss the baseline climatic and air quality conditions including:
- a) the type and frequency of meteorological conditions that may result in poor air quality; and
  - b) appropriate ambient air quality parameters.

### **3.1.2 Impact Assessment**

- [A] Identify components of the Project that will affect air quality, and:
- a) describe the potential for reduced air quality (including odours and visibility) resulting from the Project and discuss any implications of the expected air quality for environmental protection and public health;
  - b) estimate ground-level concentrations of appropriate air quality parameters;
  - c) discuss any expected changes to particulate deposition, nitrogen deposition or acidic deposition patterns;

- d) identify areas that are predicted to exceed Potential Acid Input (PAI) critical loading criteria; and
  - e) discuss interactive effects that may occur resulting from co-exposure of a receptor to all emissions.
- [B] Identify stages or elements of the Project that are sensitive to changes or variability in climate parameters, including frequency and severity of extreme weather events. Discuss what impacts the change to climate parameters may have on elements of the Project that are sensitive to climate parameters.
- [C] Summarize the results of the noise assessment conducted for the ERCB, and:
- a) identify the nearest receptor used in the assessment; and
  - b) discuss the design, construction and operational factors to be incorporated into the Project to comply with the ERCB's Directive 38: Noise Control.
- [D] Discuss mitigation strategies to minimize the potential impact of the Project on air quality and noise.

## **3.2 Hydrogeology**

### **3.2.1 Baseline Information**

- [A] Provide an overview of the existing geologic and hydrogeologic setting from the ground surface down to, and including, the oil producing zones and disposal zones, and:
- a) present regional and Project Area geology to illustrate depth, thickness and spatial extent of lithology, stratigraphic units and structural features; and
  - b) present regional and Project Area hydrogeology describing:
    - i) the major aquifers, aquitards and aquicludes (Quaternary and bedrock), their spatial distribution, properties, hydraulic connections between aquifers, hydraulic heads, gradients, groundwater flow directions and velocities. Include maps and cross sections,
    - ii) the chemistry of groundwater aquifers including baseline concentrations of major ions, metals and hydrocarbon indicators,
    - iii) the potential discharge zones, potential recharge zones and sources, areas of groundwater-surface water interaction and areas of Quaternary aquifer-bedrock groundwater interaction,
    - iv) water well development and groundwater use, including an inventory of groundwater users,
    - v) the recharge potential for Quaternary aquifers,
    - vi) potential hydraulic connection between bitumen production zones, deep disposal formations and other aquifers resulting from Project operations,
    - vii) the characterization of formations chosen for deep well disposal, including chemical compatibility and containment potential, injection capacity, hydrodynamic flow regime, and water quality assessments, and
    - viii) the locations of major facilities associated with the Project including facilities for waste storage, treatment and disposal (e.g., deep well disposal) and describe site-specific aquifer and shallow groundwater conditions beneath these proposed facilities. Provide supporting geological information.

### **3.2.2 Impact Assessment**

- [A] Describe Project components and activities that have the potential to affect groundwater resource quantity and quality at all stages of the Project.
- [B] Describe the nature and significance of the potential Project impacts on groundwater with respect to:
  - a) inter-relationship between groundwater and surface water in terms of surface water quantity and quality;
  - b) implications for terrestrial or riparian vegetation, wildlife and aquatic resources including wetlands;
  - c) changes in groundwater quality and quantity;
  - d) conflicts with other groundwater users, and proposed resolutions to these conflicts;
  - e) potential implications of seasonal variations; and
  - f) groundwater withdrawal for Project operations, including any expected alterations in the groundwater flow regime during and following Project operations.
- [C] Discuss mitigation strategies to minimize the potential impact of the Project on hydrogeology.

## **3.3 Hydrology**

### **3.3.1 Baseline Information**

- [A] Describe and map the surface hydrology in the Project Area.
- [B] Identify any surface water users who have existing approvals, permits or licenses.

### **3.3.2 Impact Assessment**

- [A] Describe the extent of hydrological changes that will result from disturbances to groundwater and surface water movement:
  - a) include changes to the quantity of surface flow, water levels and channel regime in watercourses (during minimum, average and peak flows) and water levels in waterbodies;
  - b) assess the potential impact of any alterations in flow on the hydrology and identify all temporary and permanent alterations, or disturbances or surface water withdrawals;
  - c) discuss the effect of these changes on hydrology (e.g., timing, volume, peak and minimum flow rates, river regime and lake levels), including the significance of effects for downstream watercourses; and
  - d) identify any potential erosion problems in watercourses resulting from the Project.
- [B] Describe impacts on other surface water users resulting from the Project. Identify any potential water use conflicts.
- [C] Discuss the impact of low flow conditions and in-stream flow needs on water supply and water and wastewater management strategies.
- [D] Discuss mitigation strategies to minimize the potential impact of the Project on hydrology.



### **3.4 Surface Water Quality**

- [A] Describe the potential impacts of the Project on surface water quality and proposed mitigation measures to maintain surface water quality at all stages of the Project.

### **3.5 Aquatic Ecology**

#### **3.5.1 Baseline Information**

- [A] Describe and map the fish, fish habitat and aquatic resources (e.g., aquatic and benthic invertebrates) of the lakes, rivers, ephemeral water bodies and other waters. Describe the species composition, distribution, relative abundance, movements and general life history parameters of fish resources. Also identify any species that are:
  - a) listed as “at Risk, May be at Risk and Sensitive” in The Status of Alberta Species (Alberta Sustainable Resource Development);
  - b) listed in Schedule 1 of the federal Species at Risk Act; and
  - c) listed as “at risk” by COSEWIC.
- [B] Describe and map existing critical or sensitive areas such as spawning, rearing, and overwintering habitats, seasonal habitat use including migration and spawning routes.
- [C] Describe the current and potential use of the fish resources by aboriginal, sport or commercial fisheries.
- [D] Identify the key aquatic indicators that the Proponent used to assess project impacts. Discuss the rationale for their selection.

#### **3.5.2 Impact Assessment**

- [A] Describe and assess the potential impacts of the Project to fish, fish habitat, and other aquatic resources, considering:
  - a) potential habitat loss and alteration;
  - b) potential increased fishing pressures in the region that could arise from the increased workforce and improved access from the Project; and
  - c) potential increased habitat fragmentation; and
  - d) potential entrapment and entrainment of fish at water intakes.
- [B] Discuss mitigation measures to minimize potential impacts of the Project on fish, fish habitat and other aquatic resources. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection.
- [C] Identify plans proposed to offset any loss in the productivity of fish habitat. Indicate how environmental protection plans address applicable provincial and federal policies on fish habitat including the development of a “No Net Loss” fish habitat objective.

### **3.6 Vegetation**

#### **3.6.1 Baseline Information**

- [A] Describe and map the vegetation communities, wetlands, rare plants, old growth forests, and communities of limited distribution. Also identify any species that are:
  - a) listed as “at Risk, May be at Risk and Sensitive” in The Status of Alberta Species (Alberta Sustainable Resource Development);
  - b) listed in Schedule 1 of the federal Species at Risk Act; and

- c) listed as “at risk” by COSEWIC.
- [B] Describe the current extent of habitat fragmentation.
- [C] Identify key vegetation indicators used to assess the Project impacts. Discuss the rationale for their selection.

### **3.6.2 Impact Assessment**

- [A] Describe and assess the potential impacts of the Project on vegetation communities, wetlands, rare plants, old growth forests and communities of limited distribution considering:
  - a) both temporary (include timeframe) and permanent impacts;
  - b) the potential for introduction and colonization of weeds and non-native invasive species;
  - c) potential increased fragmentation of upland, riparian and wetland habitats; and
  - d) implications of vegetation changes for other environmental resources (e.g., terrestrial and aquatic habitat diversity and quantity, water quality and quantity, erosion potential).
- [B] Discuss the mitigation measures to minimize impacts on vegetation communities, wetlands, rare plants, old growth forests and communities of limited distribution. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection.

## **3.7 Wildlife**

### **3.7.1 Baseline Information**

- [A] Describe and map the wildlife resources (amphibians, reptiles, birds, and terrestrial and aquatic mammals) and their use and potential use of habitats. Also identify any species that are:
  - a) listed as “at Risk, May be at Risk and Sensitive” in The Status of Alberta Species (Alberta Sustainable Resource Development);
  - b) listed in Schedule 1 of the federal *Species at Risk Act*; and
  - c) listed as “at risk” by COSEWIC.
- [B] Describe and map existing wildlife habitat and habitat disturbance (including exploration activities). Identify those habitat disturbances that are related to existing and approved Project operations.
- [C] Identify the key wildlife and habitat indicators used to assess Project impacts. Discuss the rationale for their selection.

### **3.7.2 Impact Assessment**

- [A] Describe and assess the potential impacts of the Project to wildlife and wildlife habitats, considering:
  - a) how the Project will affect wildlife relative abundance, movement patterns, and distribution for all stages of the Project;
  - b) how improved or altered access may affect wildlife;
  - c) how increased habitat fragmentation may affect wildlife considering edge effects and the influence of linear features and infrastructure on wildlife movements;

- d) potential effects on wildlife resulting from changes to air and water quality, including both acute and chronic effects to animal health; and
  - e) potential effects on wildlife from the Proponent's proposed and planned exploration, seismic and core hole activities, including monitoring/4D seismic.
- [B] Discuss mitigation measures to minimize the potential impact of the Project on wildlife and wildlife habitat. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection.

### **3.8 Biodiversity**

#### **3.8.1 Baseline Information**

- [A] Describe and map the existing biodiversity.
- [B] Identify the biodiversity metrics, biotic and abiotic indicators that are used to characterize the baseline biodiversity and to assess project impacts. Discuss the rationale for their selection.

#### **3.8.2 Impact Assessment**

- [A] Describe and assess the potential impacts of the Project to biodiversity considering:
- a) the effects of fragmentation on biodiversity potential;
  - b) the contribution of the Project to any anticipated changes in regional biodiversity and the potential impact to local and regional ecosystems; and
  - c) effects during construction, operations and post-reclamation and the significance of these changes in a local and regional context.
- [B] Discuss mitigation measures to minimize the potential impact of the Project on biodiversity. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection.

### **3.9 Terrain and Soils**

#### **3.9.1 Baseline Information**

- [A] Describe and map the terrain and soils conditions in the Project Area.
- [B] Describe and map soil types in the areas that are predicted in 3.1.2[A]d) to exceed Potential Acid Input (PAI) critical loading criteria.

#### **3.9.2 Impact Assessment**

- [A] Describe Project activities and other related issues that could affect soil quality (e.g., compaction, contaminants) and:
- a) indicate the amount (ha) of surface disturbance from plant, field (pads, pipelines, access roads), aggregate and borrow sites, construction camps, drilling waste disposal and other infrastructure-related construction activities;
  - b) discuss the relevance of any changes for the local and regional landscapes, biodiversity, productivity, ecological integrity, aesthetics and future use;
  - c) identify the potential acidification impact on soils and discuss the significance of predicted impacts by acidifying emissions; and
  - d) describe potential sources of soil contamination.

- [B] Discuss:
  - a) the environmental effects of proposed drilling methods on the landscape and surficial and bedrock geology;
  - b) the potential for changes in the ground surface during steaming and recovery operations (e.g., ground heave and/or subsidence) and their environmental implications; and
  - c) the potential impacts caused by the mulching and storage of woody debris considering, but not limited to vulnerability to fire, degradation of soil quality, increased footprint, etc.
- [C] Discuss mitigation strategies to minimize the potential impact of the Project on soils or terrain.

### **3.10 Land Use and Management**

#### **3.10.1 Baseline Information**

- [A] Describe and map the current land uses in the Project Area, including all Crown land and Crown Reservations (Holding Reservation, Protective Notation, Consultative Notation).
- [B] Indicate where Crown land dispositions may be needed for roads or other infrastructure for the Project.
- [C] Identify and map unique sites or special features in the Project Area and Local Study Area such as Parks and Protected Areas, Heritage Rivers, Historic Sites, Environmentally Significant Areas, culturally significant sites and other designations (World Heritage Sites, Ramsar Sites, Internationally Important Bird Areas, etc).
- [D] Describe and map land clearing activities, showing the timing of the activities.
- [E] Describe the status of timber harvesting arrangements, including species and timing.
- [F] Describe access control measures proposed for the Project Area.

#### **3.10.2 Impact Assessment**

- [A] Identify the potential impact of the Project on land uses, including:
  - a) impacts to unique sites or special features;
  - b) impacts caused by changes in public access arising from linear development, including secondary effects related to increased hunter, angler and other recreational access and facilitated predator movement;
  - c) potential impacts to aggregate reserves that may be located on land under the Proponent's control and reserves in the region;
  - d) the impact of development and reclamation on commercial forest harvesting and fire management in the Project Area;
  - e) the amount of commercial and non-commercial forest land base that will be disturbed by the Project, including the Timber Productivity Ratings for the Project Area. Compare the pre-disturbance and reclaimed percentages and distribution of all forested communities in the Project Area;
  - f) how the Project impacts Annual Allowable Cuts and quotas within the Forest Management Agreement area;

- g) the potential impact on existing land uses of anticipated changes (type and extent) to the pre-disturbance topography, elevation and drainage pattern within the Project Area; and
  - h) impacts of the Project on public access, regional recreational activities, aboriginal land use and other land uses during and after development activities.
- [B] Provide a fire control plan highlighting:
- a) measures taken to ensure continued access for firefighters to adjacent wildland areas;
  - b) forest fire prevention, detection, reporting, and suppression measures, including proposed fire equipment;
  - c) measures for determining the clearing width of power line rights-of-way; and
  - d) required mitigative measures for areas adjacent to the Project Area based on the FireSmart Wildfire Assessment System.
- [C] Discuss mitigation strategies to minimize the potential impact of the Project on land uses.

#### **4 HISTORIC RESOURCES**

- [A] Describe the Historic Resource Impact Assessment (HRIA) work done to date for the Project, and provide a schedule for any future work.
- [B] Describe the impacts of the findings of the HRIA work on Project design and scheduling.
- [C] Describe any Project uncertainties arising from the need for future HRIA work.

#### **5 TRADITIONAL ECOLOGICAL KNOWLEDGE AND LAND USE**

- [A] Provide:
- a) a map and description of traditional land use areas including fishing, hunting, trapping and nutritional, medicinal or cultural plant harvesting by affected aboriginal peoples (if the aboriginal community or group is willing to have these locations disclosed);
  - b) a map of cabin sites, spiritual sites, cultural sites, graves and other traditional use sites considered historic resources under the *Historical Resources Act* (if the aboriginal community or group is willing to have these locations disclosed), as well as traditional trails and resource activity patterns; and
  - c) a discussion of:
    - i) the availability of vegetation, fish and wildlife species for food, traditional, medicinal and cultural purposes in the identified traditional land use areas considering all Project related impacts,
    - ii) access to traditional lands in the Project Area during all stages of the Project, and
    - iii) aboriginal views on land reclamation.
- [B] Determine the impact of the Project on traditional, medicinal and cultural purposes and identify possible mitigation strategies.

## **6 PUBLIC HEALTH AND SAFETY**

### **6.1 Public Health**

- [A] Describe those aspects of the Project that may have implications for public health or the delivery of regional health services. Determine quantitatively whether there may be implications for public health arising from the Project.
- [B] Document any health concerns raised by stakeholders during consultation on the Project.
- [C] Document any health concerns identified by aboriginal communities or groups resulting from impacts of existing development and of the Project specifically on their traditional lifestyle and include an aboriginal receptor type in the assessment.
- [D] Describe the potential health impacts resulting from higher regional traffic volumes and the increased risk of accidental leaks and spills.
- [E] Discuss mitigation strategies to minimize the potential impact of the Project on human health.

### **6.2 Public Safety**

- [A] Describe those aspects of the Project that may have implications for public safety. Determine whether there may be implications for public safety arising from the Project. Specifically:
  - a) describe the Proponent's emergency response plan, including public notification protocol and safety procedures, to minimize adverse environmental effects, including emergency reporting procedures for spill containment and management;
  - b) document any safety concerns raised by stakeholders during consultation on the Project;
  - c) describe how local residents will be contacted during an emergency and the type of information that will be communicated to them;
  - d) describe the existing agreements with area municipalities or industry groups such as safety cooperatives, emergency response associations, regional mutual aid programs and municipal emergency response agencies; and
  - e) describe the potential safety impacts resulting from higher regional traffic volumes.

## **7 SOCIO-ECONOMIC ASSESSMENT**

### **7.1 Baseline Information**

- [A] Describe the existing socio-economic conditions in the region and in the communities in the region.
- [B] Describe factors that may affect existing socio-economic conditions including:
  - a) population changes;
  - b) workforce requirements for the Project, including a description of when peak activity periods will occur;
  - c) planned accommodations for the workforce for all stages of the Project;
  - d) the Proponent's policies and programs regarding the use of regional and Alberta goods and services;
  - e) the project schedule; and
  - f) the overall engineering and contracting plan for the Project.

## **7.2 Impact Assessment**

- [A] Describe the effects of construction and operation of the Project on:
  - a) housing;
  - b) availability and quality of health care services;
  - c) local and regional infrastructure and community services;
  - d) recreational activities;
  - e) hunting, fishing, trapping and gathering; and
  - f) First Nations and Métis (e.g., traditional land use and social and cultural implications).
- [B] Describe the socio-economic effects of any construction camp required for the Project and identify:
  - a) its location;
  - b) the number of workers it is intended to house;
  - c) whether the camp will service the Project only or other clients;
  - d) the length of time the camp will be in service; and
  - e) describe what services will be provided in the camp (e.g., security, recreation and leisure, medical services).
- [C] Describe the need for additional Crown land to manage the effects in [A] and [B].
- [D] Provide the estimated total Project cost, including a breakdown for engineering and project management, equipment and materials, and labour for both construction and operation stages. Indicate the percentage of expenditures expected to occur in the region, Alberta, Canada outside of Alberta, and outside of Canada.
- [E] Discuss mitigation strategies to minimize the potential impact of the Project on socio-economic conditions in the region and communities in the region.

## **8 RESIDUAL IMPACTS**

- [A] Describe the residual impacts of the Project following implementation of the Proponent's mitigation measures and the Proponent's plans to manage those residual impacts.

## **9 MONITORING**

- [A] Describe the Proponent's current and proposed monitoring programs.
- [B] Describe the monitoring programs proposed to assess any Project impacts and to measure the effectiveness of mitigation plans.
- [C] Discuss the Proponent's regional monitoring activities including:
  - a) monitoring that will be undertaken to assist in managing environmental effects, confirm performance of mitigation measures and improve environmental protection strategies;
  - b) monitoring done independently by the Proponent;
  - c) monitoring performed in conjunction with other stakeholders, including aboriginal communities and groups; and
  - d) new monitoring initiatives that may be required as a result of the Project.

[D] Discuss:

- a) how monitoring data will be disseminated to the public or other interested parties;  
and
- b) how the results of monitoring programs and publicly available monitoring information will be integrated with the Proponent's environmental management system.



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**Canadian Natural**

Proposed Development Plan

**KIRBY IN SITU OIL SANDS  
EXPANSION PROJECT**

Plain Language Project Summary

# ABOUT CANADIAN NATURAL

## WHO WE ARE

Canadian Natural Resources Limited (Canadian Natural) is a senior independent oil and natural gas exploration, development and production company based in Calgary, Alberta. Our operations are focused in Western Canada, the North Sea and Offshore West Africa. We have more than 4,600 employees worldwide and approximately 4,000 permanent employees in Alberta. We have a strong, diversified asset base with balanced production of natural gas, natural gas liquids and heavy, light and synthetic crude oil.

Canadian Natural has significant thermal (non-mineable) oil sands assets in Western Canada. We acquired our first thermal in situ asset at North Tangleflags in 1996. Subsequently in 1999, we acquired the thermal assets for the Primrose and Wolf Lake project. Since these acquisitions, Canadian Natural has gained extensive experience in successfully developing and operating these thermal projects in a safe and responsible manner.



*Canadian Natural's Areas of Operation*

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## OUR VISION

### HEALTH AND SAFETY

### INFRASTRUCTURE INTEGRITY

### ENVIRONMENT

### COMMUNITY

Canadian Natural Resources Limited is committed to conducting our operations in a manner that will protect the environment, and the health and safety of our employees, contractors and the public.

- We integrate health and safety, environmental management, integrity, and community planning into all aspects of our operations.
- We comply with government regulations, industry guidelines, and company policies and procedures in the planning, design, and operation of Canadian Natural wells, facilities and equipment.
- We work together with community and industry groups to ensure a better, sustainable energy industry.

# INTRODUCTION AND PURPOSE OF THIS DOCUMENT

## BACKGROUND

The Kirby In Situ Oil Sands Expansion Project (“Kirby Expansion Project”) involves the expansion of two recently approved in situ oil sands projects. On September 22, 2010, Canadian Natural received Commercial Scheme Approval No. 11475 from the Energy Resources Conservation Board (ERCB) for the Kirby In Situ Oil Sands Project. This approval authorized Canadian Natural to develop and produce 45,000 bbl/d (7,155 cubic metres per day (m<sup>3</sup>/d)) of bitumen. In this summary we refer to this project as Kirby South.

Enerplus Resources Fund (Enerplus) received ERCB Commercial Scheme Approval No. 11472 on September 22, 2010 to develop and produce 10,000 bbl/d (1,590 m<sup>3</sup>/d) of bitumen. In this summary, we refer to this project as Kirby North. The locations of Kirby South and Kirby North are shown regionally in Figure 1.

Canadian Natural subsequently acquired Enerplus’ oil sands assets in the Kirby area, including those associated with the ERCB approved project. As a result of this acquisition Canadian Natural’s development plans for the area have evolved, resulting in the proposed Kirby Expansion Project.

## PROPOSED PROJECT AND STAKEHOLDER ENGAGEMENT

Canadian Natural will be preparing an integrated application and Environmental Impact Assessment (EIA) for the Kirby Expansion Project. This project will increase the combined, approved 55,000 bbl/d Kirby North and South bitumen production by 85,000 bbl/d (13,515 m<sup>3</sup>/d) to a total of 140,000 bbl/d (22,260 m<sup>3</sup>/d) of bitumen production.

The purpose of this document is to provide information about the Kirby Expansion Project to all parties who may wish to learn more about the project, including the following:

- First Nations;
- Métis groups;
- nearby communities;
- regulatory agencies;
- provincial, federal and municipal government representatives;
- holders of Registered Fur Management Areas;
- industry; and
- other interested stakeholders.

This Plain Language Project Summary is the first step in providing information to all parties who wish to learn more about our plans for the Kirby Expansion Project and specific opportunities for stakeholder feedback.

Canadian Natural is committed to consulting with stakeholders regarding our development plans so we can respond to potential concerns, as well as identify opportunities related to the proposed project. This approach is consistent with Canadian Natural’s consultation process for other developments in this region, including our Kirby South project, already under construction. We continue to make ourselves accessible to stakeholders on any aspect of our operations. As more detailed design information is completed for the Kirby Expansion Project, we will make relevant information available to stakeholders.

We are planning to submit the integrated application and EIA for the Kirby Expansion Project to the ERCB, Alberta Environment (AENV) and other relevant regulatory agencies in December 2011. These regulatory documents will include the specifics of how we considered stakeholder input with regards to the Kirby Expansion Project. Opportunities for stakeholder input to the regulatory process for the Kirby Expansion Project are explained in this document.

# PROJECT OVERVIEW

## PROJECT LOCATION

The Kirby Expansion Project Area (“Project Area”) will primarily be located in Townships 73, 74, and 75, Ranges 7 and 8, and 9, West of the 4th Meridian, approximately 20 km east of our proposed Grouse Project (Figures 1 and 2). The Project Area includes Canadian Natural’s fully and partially held oil sands leases where the recovery of bitumen resources is proposed, plus a buffer for potential development of surface facilities (see Figure 2 for details). The Project Area is approximately 75 km northeast of Lac La Biche and 10 km south of Conklin, primarily in the Regional Municipality of Wood Buffalo and with small portions in Lac La Biche County.

The leases within the Project Area contain oil sands reserves. These reserves are too deep to be surface mined and will be recovered by in situ, thermal methods.

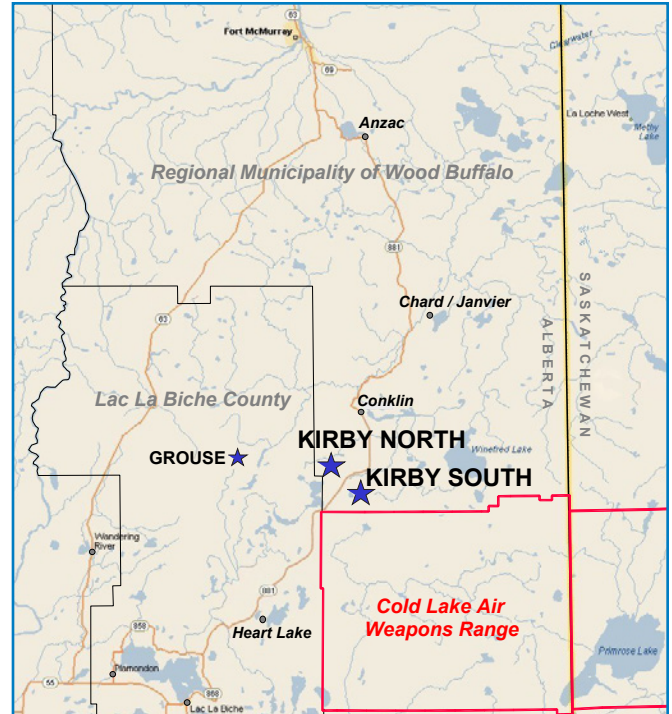


Figure 1: Kirby Expansion Project Location

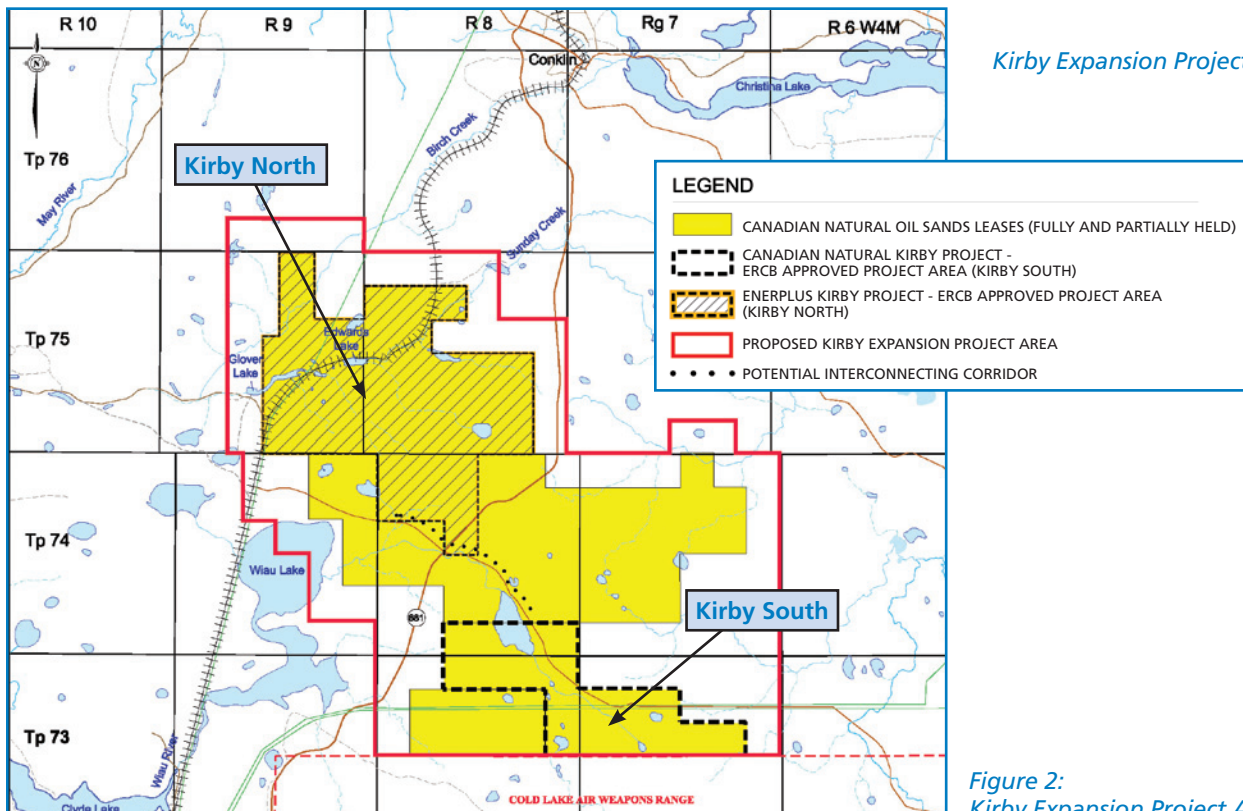


Figure 2: Kirby Expansion Project Area

## PROPOSED PRODUCTION VOLUMES

Kirby South Phase 1 (45,000 bbl/d) is currently under construction. The proposed Kirby Expansion Project will occur in three phases, as follows:

1. Kirby North Phase 1—Expansion of the approved 10,000 bbl/d production to 50,000 bbl/d (7,949 m<sup>3</sup>/d);
2. Kirby South Phase 2—Expansion of the approved 45,000 bbl/d production to 60,000 bbl/d (9,539 m<sup>3</sup>/d);
3. Kirby North Phase 2—Expansion of the 50,000 bbl/d production to 80,000 bbl/d (12,719 m<sup>3</sup>/d).

The Kirby Expansion Project will result in a total bitumen production of 140,000 bbl/d over approximately 30 years.

## PRELIMINARY DEVELOPMENT PLANS FOR THE KIRBY EXPANSION PROJECT INCLUDE:

- Use of Steam Assisted Gravity Drainage (SAGD) technology for the recovery of bitumen from oil sands in the McMurray and Wabiskaw formations (see SAGD overview on pages 6 and 7). The Kirby Expansion Project will require the construction and drilling of additional SAGD well pads.
- The Kirby Expansion Project will include additional steam generation, bitumen processing and water treatment capacity at the two previously approved Central Processing Facilities (CPFs).
- Steam generators with appropriate air emissions control technology to ensure Alberta Ambient Air Quality Objectives are met for all regulated parameters. Natural gas purchased from a third party will be mixed with produced natural gas and used as the fuel for steam generation.
- Canadian Natural is committed to meeting the ERCB's required produced water recycle rate of 90% in order to minimize the overall requirement for make-up water. The majority of the water for steam generation will therefore come from produced water that is recycled. The remaining volume (make-up) will come from a combination of saline and non-saline groundwater. Evaporator technology will be used to improve recycle rates and to eliminate the need for lime sludge ponds. Non-saline groundwater will be used for utility water.
- Development and/or improvement of associated infrastructure, including access roads, and non-saline groundwater supply wells, wastewater disposal wells, electrical power distribution lines and borrow areas. Above-ground pipelines will be used to transport steam, bitumen/water emulsion, and natural gas between the well pads and the CPFs. Third party infrastructure will include: electrical power supply; and pipelines to deliver natural gas and diluent to the plant, and to transport the diluted bitumen to upgrading facilities and markets.
- Over the life of the Kirby Expansion Project, on-going exploration activities are expected within the Project Area to improve mapping of the bitumen resource.

Saline water has a concentration of Total Dissolved Solids (TDS) greater than 4,000 milligrams/litre, while non-saline water has a TDS less than 4,000 milligrams/litre.

Non-saline water may not be directly suitable for human consumption.



## PROCESS OVERVIEW AND TECHNOLOGY

The SAGD process involves the drilling of well pairs into the McMurray and Wabiskaw oil sands formations which are 450 to 500 m below the surface. Several well pairs will be drilled from each well pad location. Each well pair will consist of a horizontal steam injector well underlain by a horizontal producer well (Figure 3).

SAGD is the most appropriate process for producing bitumen from the McMurray and Wabiskaw formations in the Kirby area. Consistent with other SAGD operations, the bitumen needs to be heated by steam to become mobile. Steam generated at the plant site and injected into the upper wells heats the bitumen to allow it to flow within the reservoir. The bitumen then drains by gravity with the condensed steam (water) to the lower producer well and is pumped to the surface. The produced natural gas and the bitumen/water emulsion are sent to the CPF in separate pipelines.

Once the bitumen/water emulsion reaches the CPF, they are separated from each other and from the remaining produced natural gas in several stages. The produced natural gas is conserved and used together with purchased natural gas as a fuel for the steam generators. The majority of the produced water is treated and reused.

As discussed above, a small portion of the water from the water treatment system will be unsuitable for further recycling or use in the process and will be injected into the McMurray Formation. This formation is below a layer of shale rock which acts as a seal and will protect shallower groundwater and surface water.

The produced bitumen is mixed with a diluent (lighter density hydrocarbon liquid) and further treated in the CPF to create a product that can be sold. The bitumen is then transported to the market via pipeline.

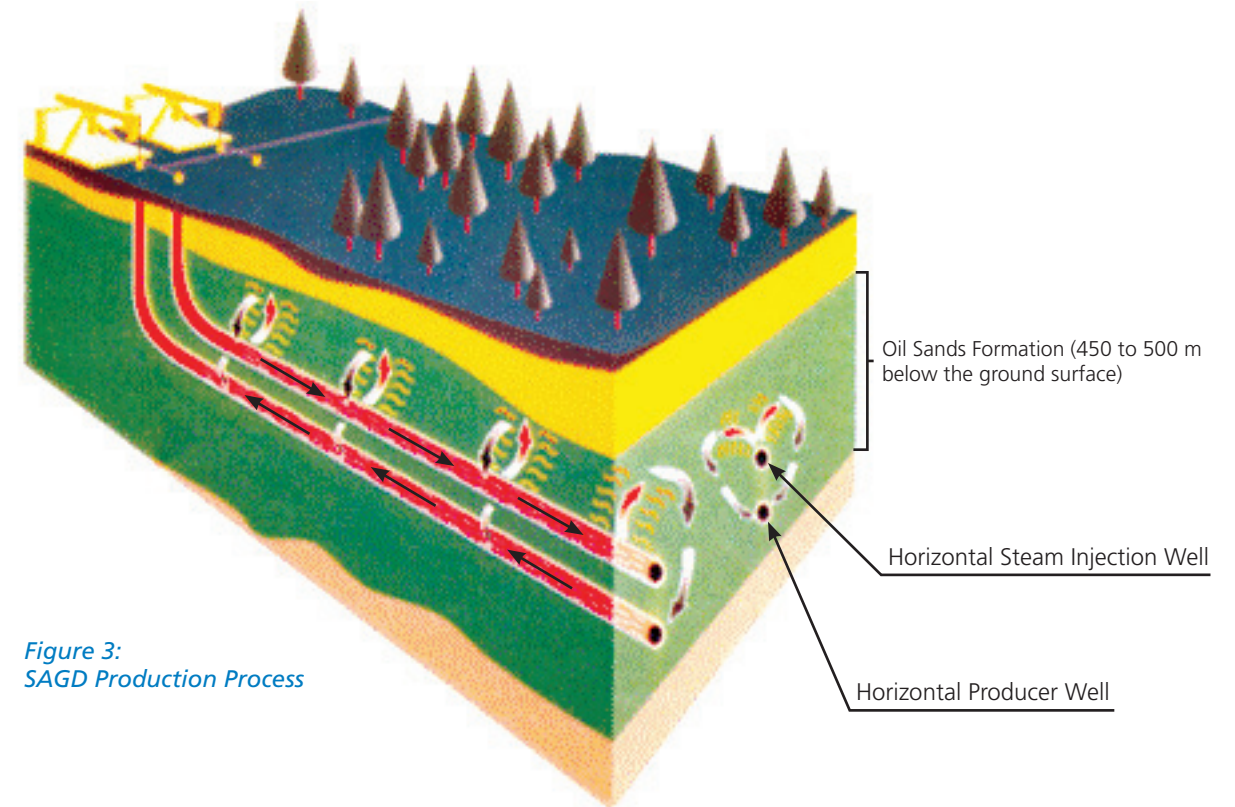


Figure 3:  
SAGD Production Process

## PROPOSED KIRBY EXPANSION PROJECT SCHEDULE

Description	2010				2011				2012				2013				2014				2015				2016			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Public Disclosure of Proposed Project						◆																						
Prepare Regulatory Applications/EIA																												
Submit Integrated Application/EIA to Regulators												◆																
Regulatory Review Process																												
Anticipated Regulatory Approvals																												
Scoping/Engineering Design for Application																												
Detailed Engineering																												
Project Construction																												
Drilling of SAGD Well Pairs																												
Commissioning and Start-Up																												
Start Commercial Production																												◆

# ENVIRONMENTAL AND OTHER CONSIDERATIONS

## ENVIRONMENTAL PRINCIPLES

As with all our operations, Canadian Natural will strive to mitigate potential environmental impacts associated with the Kirby Expansion Project by committing to the following principles:

- maximize water recycling for steam generation and thereby minimize the use of makeup water;
- ensure protection of the groundwater and surface water quality;
- minimize air emissions;
- improve energy efficiencies; and
- minimize the project footprint

## ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

As part of the Kirby Expansion Project regulatory process, Canadian Natural will prepare an integrated application and an EIA which will consider all aspects of the proposed development plans. These will be submitted to the ERCB, AENV and other regulatory agencies in December 2011.

The EIA will assess the potential impacts of the project on surface water, aquatic resources, groundwater, air, soil, wildlife, vegetation, biodiversity, historical resources, resource use and traditional land use, and will outline Canadian Natural's proposed mitigation measures as required. Baseline studies have been initiated and will continue through 2011. Canadian Natural will also utilize the considerable amount of recent baseline environmental information that was collected previously for the Kirby In Situ Oil Sands Project (2007) and the Kirby Oil Sands Project Phase 1 (2008) applications.

## WATER SOURCES

Canadian Natural is currently investigating various underground water sources in the area, including saline and non-saline groundwater aquifers. Prior to submission of the integrated application, Canadian Natural will undertake a tiered, risk-based environmental, technical and economic evaluation of the sources for the project, consistent with the requirements of the Alberta Government *Water Conservation and Allocation Guideline for Oilfield Injection* (2006). The evaluation process and outcome will be described in the integrated application.



Surface Water Quality Sampling

## LAND DISTURBANCE

The use of common well pads for several well pairs minimizes surface disturbance. In addition, the drilling pads, CPF, gathering pipeline systems, and associated infrastructure such as roads will be located and designed to optimize surface area usage wherever possible. The ability to directionally drill the horizontal wells also allows greater flexibility in well pad location, which allows for further mitigation of surface impacts. Existing clearings will be used to the extent possible to minimize the amount of new clearing required.

## TRADITIONAL USE

Canadian Natural will continue to work with Aboriginal groups to gather traditional knowledge, identify areas of cultural importance and further understand the extent of traditional land use within the Project Area. As a result of Canadian Natural's and Enerplus' recent Aboriginal engagement activities for the previous Kirby In Situ Oil Sands Project (2007) and the Kirby Oil Sands Project Phase 1 (2008) applications, Canadian Natural has acquired a good understanding of traditional uses of the area by Aboriginal groups. Canadian Natural will build on that information base to better understand traditional land uses within the Project Area and to work with Aboriginal groups to identify and respond to concerns that may arise related to the Kirby Expansion Project.

## TRAFFIC

We acknowledge that traffic volume, safety and road infrastructure considerations are important to area communities. Traffic, along with other social and economic impacts of the Kirby Expansion Project, will be assessed during the EIA. This will include recommendations to mitigate traffic impacts of the Kirby Expansion Project whenever possible.

## REGIONAL INITIATIVES

Canadian Natural will continue to play a leadership role in a number of stakeholder forums that address environmental issues and cumulative impacts of developments in the Regional Municipality of Wood Buffalo and Lac La Biche County. We are active participants in:

- Cumulative Environmental Management Association (CEMA);
- Wood Buffalo Environmental Association (WBEA);
- Oil Sands Developers Group (OSDG);
- Regional Aquatics Monitoring Program (RAMP); and
- Lac La Biche Region Industry Consultation Committee.



*Moose Using Crossing Structure Over Above-Ground Pipeline*



# REGULATORY PROCESS AND OPPORTUNITIES FOR STAKEHOLDER INPUT

For the proposed Kirby Expansion Project, Canadian Natural will submit an integrated application and an EIA to the ERCB and AENV under Alberta's *Oil Sands Conservation Act*, *Environmental Protection and Enhancement Act*, and the *Water Act*. The integrated application and EIA will also be submitted to other relevant regulatory agencies to address their

respective application needs for the proposed Kirby Expansion Project.

The following table identifies the main elements of the regulatory process and the key opportunities for stakeholder input and dialogue.

Project Activity/ Regulatory Process Step	Activity Details and Opportunity for Stakeholder Input	Anticipated Timing
<b>Project Disclosure/Announcement</b>	Canadian Natural will inform stakeholders and regulators about the proposed Kirby Expansion Project.  Canadian Natural will schedule meetings/discussions with stakeholders.	May 2011
<b>Notice of Proposed Terms of Reference for Environmental Impact Assessment</b>	Stakeholders will have an opportunity to provide written input on the EIA Proposed Terms of Reference directly to Alberta Environment:  Director, Environmental Assessment, Regional Integration, Alberta Environment 111 Twin Atria Bldg, 4999 – 98 Avenue Edmonton, Alberta, T6B 2X3 Fax: 780-427-9102 E-mail: environmental.assessment@gov.ab.ca	May 2011 – July 2011
<b>Stakeholder Consultation for Integrated Application</b>	Canadian Natural will provide stakeholders with opportunities to discuss the proposed development plans and the integrated application. Canadian Natural will document feedback from stakeholders and will respond to their concerns.	May 2011 – Project Approval
<b>Project Updates</b>	As engineering design progresses for the proposed project and more information becomes available, Canadian Natural will advise stakeholders through: <ul style="list-style-type: none"> <li>■ Open houses/workshops</li> <li>■ Presentations/discussions with stakeholder groups</li> <li>■ Web site updates</li> <li>■ Newsletters and mail outs</li> </ul>	Q2 2011 to end Q4 2013
<b>Submission of Integrated Application and Environmental Impact Assessment</b>	Canadian Natural will file the integrated application and EIA with regulatory agencies and will distribute them to stakeholders for review.	Q4 2011
<b>ERCB/AENV Joint Notice of Application</b>	Following submission of the integrated application to the ERCB and AENV, stakeholders will have the opportunity to review the integrated application and file written submissions, including statements of concern related to the application, with the ERCB and AENV. Minimum notice of application period is 30 days.	Q1 2012



*Canadian Natural Community Workshop*

## GLOSSARY OF TERMS

<b>AENV</b>	Alberta Environment.
<b>bbl/d</b>	Barrels per day.
<b>CPF</b>	Central processing facility - The central plant for the proposed project. Typically includes equipment for treating water, generating steam, and separating the bitumen/water emulsion.
<b>Diluent</b>	Light hydrocarbons added to bitumen to allow the bitumen to flow and be transported more easily.
<b>ERCB</b>	Energy Resources Conservation Board.
<b>EIA</b>	Environmental Impact Assessment.
<b>In situ</b>	In place. In situ operations recover bitumen that is buried too deeply underground to be surface mined.
<b>m<sup>3</sup>/d</b>	cubic metres per day.
<b>Make-up water</b>	The water for steam generation that is required to replace water lost in the recycling process through injection in the oil sands formation, evaporation and disposal of wastewater.
<b>Produced natural gas</b>	Natural gas produced during the SAGD process which can be used as fuel source.
<b>Produced water</b>	Water which is pumped to the surface in the bitumen/water emulsion by the producer wells. This water is a combination of water found in the oil sands deposit plus injected water (condensed steam) from the SAGD process.
<b>SAGD</b>	Steam Assisted Gravity Drainage.

Canadian Natural understands that communities in the region are very interested in the pace and extent of oil sands development. Canadian Natural encourages interested parties to explore other sources of information on oil sands development in Alberta. Some sources of additional information include the following:

- The Canadian Association of Petroleum Producers (CAPP) website [www.capp.ca/upstreamdialogue](http://www.capp.ca/upstreamdialogue);
- [www.canadasoilsands.ca](http://www.canadasoilsands.ca), a website sponsored by the companies currently operating in the Athabasca oil sands region.

## CANADIAN NATURAL CONTACT INFORMATION

Please contact us for more information or  
to provide us your views or input:

**Project Information Line:** 780-714-6161  
Please call collect if you are outside this calling area

**E-mail:** [kirbyproject@cnrl.com](mailto:kirbyproject@cnrl.com)

**[www.cnrl.com/kirby-project](http://www.cnrl.com/kirby-project)**



**Canadian Natural**

### Mission Statement

To develop people  
to work together  
to create value  
for the Company's  
shareholders  
by doing it right  
with fun and integrity.

## Melanie Daneluk

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**From:** Sarah K Chileen [skbf89@hotmail.com]  
**Sent:** Wednesday, July 20, 2011 4:46 PM  
**To:** AENV Environmental Assessment  
**Cc:** bonnie.evans@sasktel.net; Bill McElhanney; bm@summit-environmental.com; anita.sartori@cnrl.com; jon.gareau@cnrl.com  
**Subject:** CNRL Kirby Expansion PTOR Comments from Conklin  
**Attachments:** PTOR Review for CNRL Kirby - july2011 final.pdf; CNRL Kirby Expansion PTOR Conklin Tracked Changes.pdf

Director of Environmental Assessment,  
The Conklin Metis Local #193, as represented by the Conklin Resource Development Advisory Committee (CRDAC), have completed a review of the Proposed Terms of Reference Review for the CNRL Kirby Expansion Project. Please find attached two documents:

1. PTOR Review for the CNRL Kirby Project
2. CNRL Kirby Expansion PTOR Conklin Tracked Changes

The first document is a broad written review of the PTOR with recommendations. The second document is the PTOR with specific tracked changes. The CRDAC respectfully request that AENV provide a response to each of our recommendations and suggested tracked changes explaining why they are or are not accepted and your reasons for doing so.

To be open and transparent, CNRL has been cc'd on this email. CNRL was provided a copy of our review prior to this submission and is working with the CRDAC to provide a response to our review.

If you have any questions, please contact Sarah Chileen in the interim at 780-201-4700. Bonnie Evans, the Interim Advisor for the CRDAC, will be available after August 1st at 306-446-2580.

Please confirm receipt of this email to confirm that our review has been received by the July 22, 2010 due date.

Thank you,

Sarah Chileen on behalf of the CRDAC

**PREPARED BY FOURTH MERIDIAN CONSULTING GROUP LTD.  
July/2011**

**Review of the Proposed Terms of Reference for  
CANADIAN NATURAL RESOURCES LIMITED  
KIRBY IN SITU OIL SANDS EXPANSION PROJECT**

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For the CONKLIN METIS LOCAL #193  
represented by the Conklin Resource Development Advisory Committee

**Disclaimer: These comments, provided by Fourth Meridian Consulting Group Ltd., are based upon the information provided for review of this project and do not constitute legal advice.**

## INTRODUCTION

The community of Conklin is faced with uncertainty with respect to the rapid rate of regional development. Pressures from industrial developments continue to increase on the lands that support the traditional activities of the Métis peoples of Conklin. The effects of development are already permeating the community and challenging its ability to survive as an aboriginal community. Because of existing adverse effects (and their lack of mitigation), cumulative impacts of all regional developments have been identified as the primary environmental issue that they, as stewards of those lands, must address.

The objective of this review was to identify significant gaps in the proposed Terms of Reference (PTOR) that are relevant to the concerns of the Conklin Métis Local #193 (CML #193) and to make recommendations to the Government of Alberta (GOA), Government of Canada (GOC), Canadian Natural Resources Ltd. (CNRL) and the CML #193 on filling those gaps. The documents reviewed by Fourth Meridian Consulting Group Ltd. and Summit Environmental Consultants Inc. included the following:

- *Proposed Terms of Reference: CNRL Kirby Expansion*
- *CNRL Kirby Expansion, Public Project Summary Document* (December 2009)
- *Conklin as an Aboriginal Community* (N. Reddekopp, 2009)
- Selected provincial legislation, directives, and guidance documents.

In the attached tracked changes version of the PTOR specific edits and comments are made with the intent of improving the standardized document to suit this project and to meet the needs of our community and technical experts. We understand that the PTOR has been standardized and abbreviated from previous forms and that certain criteria for preparing the EIA are now contained in a guidance document. Page 4 of the PTOR states that the proponent shall refer to the *Guide to Preparing Environmental Impact Assessment Reports for In-Situ Projects in Alberta*. We were unable to locate this document. The most recent guidance document that we were able to obtain is called *Guide to Preparing Environmental Impact Assessment Reports in Alberta – Updated February 9, 2011*. This document is referenced in the tracked changes version of the PTOR. CML #193 is concerned with the enforcement of a guidance document and would prefer that the TOR contain more detail to ensure that the Environmental Impact Assessment (EIA) includes all the required information.

In the following sections, further observations and recommendations are made with the intent of engaging CNRL and the regulators and placing this PTOR in a context. This

written review of the PTOR is provided to encourage the company, the regulators, and the Governments of Alberta and Canada to consider the broader social context. The PTOR with tracked changes represents immediate specific requested changes to the final TOR.

### **PURPOSE OF THIS REVIEW**

While the content in this report does not contain, necessarily, the views held by the CML #193, this report should be viewed as a communications tool for all parties, to set the stage for the EIA and the proposed project, if approved. The CML #193 and CNRL, GOA, and GOC may choose to adopt these observations and recommendations to improve the EIA and approvals process, to verify theoretical predictions through monitoring and to proactively engage the community in the management of actual (measurable) environmental impacts associated with the overall CNRL Kirby Expansion Project.

### **SCOPE OF THIS REVIEW**

While reviewing the PTOR, three kinds of recommendations were made. The first group, operator-specific commitments, is mostly within the scope of CNRL's authority to make decisions, and to implement. The second category of recommendations, EIA and approval process improvements, falls mainly within the realm of AENV and the ERCB, although individual applicants may be able to raise the bar in a small number of instances. The third category of recommendations, constitutional and related matters, falls mainly within the realm of governments (Alberta and Canada) and their judiciary. The common feature among these three categories is the absence or inadequate treatment of the various issues that need to be raised (and documented).

### **OPERATOR-SPECIFIC COMMITMENTS**

In the past, oil sands company commitments made during company-community consultation and/or hearings have not always been documented and/or fulfilled. So the Conklin community is decidedly cautious about engaging in a dialogue that lacks documented company commitment. This set of recommendations is assembled to overcome that skepticism.

**Recommendation #1:** Solvent Use - CML #193 recognizes that CNRL does not currently plan to use solvents, however, should CNRL decide to use solvents in the future, CML #193 recommend that CNRL set out the research and consultation process, for the use of any solvents in a transparent manner, informing the community about potential issues, pros and cons of options, and the solutions. This process should

include measures of success, and any associated environmental and economic benefits and risks.

**Recommendation #2:** Environmental Management Plans (EMP) - CML #193 recommend that CNRL prepare specific environmental management plans for each phase of development in consultation with the community.

**Recommendation #3:** Corporate Social Responsibility (CSR) - CML #193 recommend that CNRL document any commitments to CSR, as outlined by Industry Canada, made within the EIA and the subsequent application process. CML #193 recommend that CSR-type commitments be tracked through specific community benefit agreements and a related database.

**Recommendation #4:** Health and Safety - CML #193 recommend that CNRL document its commitment to safety and security provisions, including traffic management, helicopter usage, substance abuse policies, restrictions on firearms, emergency procedures, etc.

**Recommendation #5:** Outperforming regulatory expectations - CML #193 recommend that CNRL document its commitment to specific environmental, social or economic themes where the company expects to exceed regulatory requirements by outperforming approval conditions. By looking beyond the compliance mentality, CNRL can embrace the management ethic that performance adds economic value to the company, protects key features of the environment, strengthens the social fabric of the community and improves relationships with its aboriginal neighbours.

**Recommendation #6:** Best practices commitments - CML #193 recommend that CNRL lead by example and document its commitment to incorporate new regulatory standards, when first passed, and best practices, when first demonstrated, as viable by other operators, without being forced to adapt them, and to willingly share its “lessons learned” with other operators, so as to contribute to a growing knowledge base of best practices.

**Recommendation #7:** Best Available Technology Economically Achievable (BATEA) - CML #193 recommend that CNRL document its commitment to improve the scientific and economic basis of operational practices, e.g., better reclamation processes, reduced carbon intensity of production, water management, waste disposal, and adaptive management, in the face of poor predictive methods. CML #193 challenges



CNRL to raise the bar and adopt the use of best available technology regardless of the economic cost.

**Recommendation #8:** Water management planning - CML #193 recommend that CNRL should proactively work towards a regional Integrated Water Management Plan (IWMP) with existing SAGD operators, with the key goal being to minimize environmental impacts while creating a secure operational water supply. The IWMP should address maintenance of the quality and quantity of surface and groundwater systems as well as wastewater management options.

### **EIA AND APPROVALS PROCESS IMPROVEMENTS**

This category of recommendations is mostly directed to the lead regulators (Alberta Environment (AENV) and the Energy Resources Conservation Board (ERCB)).

The PTOR, in theory, gives the public the opportunity to review and provide input into the content and scope of the EIA. This input should shape or at least influence what is required in the final TOR and the EIA report – including what environmental and social information is gathered and how it is applied, over time. Typically, while regulators have not addressed concerns or incorporated edits brought forward in previous PTOR reviews, certain companies have voluntarily made changes to their TOR. CNRL has the option to provide a meaningful response to this review of this PTOR and to ensure that changes are made to meet and/or to exceed current standards and best practices for an EIA and associated AENV and ERCB approval requirements. CML #193 is interested in further discussion and involvement with CNRL about incorporating our suggested changes.

To effectively participate, input early in the regulatory process is required. The capacity to understand the process and the resources from government to secure and manage competent technical and sound legal advice has not been available to the CML #193 to date. We have instead, worked with CNRL to secure resources to hire third party technical experts to complete a track-change version of the PTOR (attached). The hope is that the recommendation changes will be viewed as value-added by the applicant and the regulators and incorporated into the final TOR. As an indication of corporate integrity and goodwill, we would ask CNRL to recommend the adoption of as many of the recommended changes as possible. This PTOR review is just one of the steps necessary for the CML #193 to engage with the regulators and provide a basis for future meaningful consultation.

The PTOR reviewers noted several EIA process-specific topics that warrant comparison against best practices, including, but not limited to:

- requirements to conduct cumulative effects assessment (CEA) of the proposed project in the context of other regional projects;
- definition of baseline for the CEA;
- standard interagency data requirements, within the application process;
- standard protocol for assessing environmental, economic and social impacts;
- definition of significance of impacts; and
- general weakness of the social and economic aspects in the EIA framework.

**Recommendation #9:** Cumulative Environmental Assessment (CEA) – detail with respect to Cumulative effects appears to be removed from the standardized TOR to the guidance document. CML #193 is very concerned that a guidance document may be optional direction rather than a mandated requirement of the TOR. CML #193 recommend that CNRL pick two or three key components in each of environmental and social impacts sections and conduct a combined and comprehensive CEA that includes these components. This approach is preferable to attempting to briefly cover individual components in isolation. In essence, CML #193 are asking CNRL to combine and utilize a body of relevant cross-disciplinary knowledge from the EIA, within a defined scope. CML #193 are willing to recommend to CNRL which topics warrant priority treatment from the community's perspective.

**Recommendation #10:** Baseline conditions - The GOA has defined baseline conditions as conditions existing prior to project development. Despite expert witness opinions to the contrary, e.g., Dr. Karen McDonald or Dr. David Schindler, GOA has continued to support this approach. CML #193 recommend that CNRL assess the potential impacts of their project against both pre-development conditions (prior to any development), as well as current conditions (pre-project conditions). This would require assembling pre-development condition environmental data in addition to current condition data, wherever feasible to do so.

**Recommendation #11:** Terrestrial Ecosystem Management Framework (TEMF) and Christina Lake Management Plan - CML #193 recommend that the GOA establish an explicit protocol for the assessment of cumulative effects against the land use assumptions and predictions of the CEMA TEMF, the Christina Lake Management Plan, as well as the land use standards of the (unapproved) Lower Athabasca Regional Plan (LARP). In other words, CML #193 recommend that the GOA use the TEMF, the

Christina Lake Management Plan and the LARP as the comparative references for environmental predictions for acceptable land use.

**Recommendation #12:** Pre-existing dataset quality - One concern is the lack of transparency and availability of data sets that are used by proponents. Current and past EIAs have re-presented data sets that have not been updated or subjected to quality assurance/quality control protocols. CML #193 recommend that the GOA adopt a new standard for data collection and presentation, including the requirement for each proponent to update one or two specific topics, and to give each proponent the right to rely on the remaining data package, once it has been developed and vetted. CML #193 further recommend the data sets be attached to applications or be publically available. These data sets being in the public domain would ensure that there is transparency and accountability of all parties and would create a level of comfort for stakeholders.

**Recommendation #13:** AENV guidance documents are incorrectly referenced – It appears that the GOA (AENV) has recently updated its guidance document with respect to the preparation of EIAs<sup>1</sup>. The PTOR however, references a document that our reviewer could not locate: *Guide to Preparing Environmental Impact Assessment Reports for In-Situ Projects in Alberta* published by Alberta Environment (the In-Situ Guide). The fundamental concern with the above guidance document(s) is the lack of clarity about the requirement to follow the EIA guidance document given that much of the detail is no longer stipulated in PTORs. Is it simply optional guidance, or is it required information that must be produced in the EIA?

CML #193 recommend that Alberta or CNRL provide:

- an explanation of the intent and implications of moving details from TORs to the guidance document;
- the correct guidance document for use on SAGD project EIAs; and
- whether it is a requirement for proponents follow the specific guidance in preparing EIAs and if it is not a requirement, further explanation of why.

**Recommendation #14:** ERCB guidance documents are outdated - The ERCB continues to rely Directive 023 that was last issued as Draft 9, in 1991. As well, the ERCB IL 96-07, a Memorandum of Understanding between the GOA and ERCB, does

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<sup>1</sup> Alberta Environment, 2011. *Guide to Preparing Environmental Impact Assessment Reports in Alberta* – Updated February 9, 2011. Alberta Environment, Environmental Assessment Team, Edmonton, Alberta. EA Guide 2009-2. 26 pp.

not serve the current circumstances or regulatory reality. CML #193 recommend that these two ERCB/GOA instruments be updated to current standards before their further application. Consideration should also be given to requiring the ERCB to undertake definition of basic principles and parameters necessary to the Public Interest Test.

**Recommendation #15:** Significant impacts not defined - CML #193 recommend that the GOA adopt a more explicit definition of significance, e.g., based on the factors listed by William Ross and Dixon Thompson (*Tools for Environmental Management*, 2002, p. 235) or more simply by assessing the public values that would require an impact to be mitigated.

**Recommendation #16:** Net Social Benefit Assessment (NSBA) – We note that this and previous TORs have been weak with respect to social and economic aspects. The advice to CNRL and the GOA is to not attempt to fix it all at once. CML #193 recommend that the PTOR be amended to require this applicant and all subsequent applicants to undertake a NSBA and subject that NSBA to an independent third party review. CML #193 also recommends that the assumptions for this assessment (e.g., basis for discount rate) and limits to the analysis (e.g., consequence of errors in the assumptions) be made explicit.

**Recommendation #17:** Application of Traditional Knowledge - CML #193 recommend that CNRL address a few areas of the EIA very thoroughly with respect to inclusion of Traditional Knowledge (e.g. vegetation, wildlife, historic resources, etc.). As always, the CML #193 are willing to propose which key areas would be suitable test topics to pursue traditional knowledge integration. If CNRL can achieve success in these key tasks, AENV could then adaptively broaden the integration of traditional knowledge further, step-by-step, with subsequent applicants.

**Recommendation #18:** Standardization of data sets - Despite the ERCB's public interest test and other checks and balances, the community's perception is that it is a foregone conclusion that all projects will be approved and developed. Of necessity, CML #193 recognize the need to anticipate this outcome and to plan for its consequences. The CML #193 recommend that the data sets required post-approval be standardized across all regulators and then publicly posted, including information on their last update.

**Recommendation #19:** Approval Action Plans - CML #193 recommend that all approvals, from all regulators, require operator-specific action plans within 90 days of any approval being issued, and that these be publicly posted.

**Recommendation #20:** Availability of government information - CML #193 recommend that all regulators be required to jointly prepare and present a summary of their compliance assessments, annual inspections, audit, enforcements and any other related oversight documentation on an operator-specific basis, to stakeholders within the first quarter of the next calendar year. CML #193 recognize that files under legal review or in the hearing process will not be discussed in detail. These meetings may have the effect, however, of reducing the number of files that require enforcement or hearings; that is the intent.

**Recommendation #21:** Availability of project specific reports - CML #193 recommend that all regional operators be required to prepare and present their annual compliance and performance reports jointly to regulators and stakeholders including CML #193 at the same forum as above.

**Recommendation #22:** Streamlining SAGD regulatory process - We understand that the GOA is streamlining the regulatory process for SAGD projects without input from stakeholders or any formal communication of the matter. CML #193 recommend the GOA provide information with regards to streamlining the regulatory process for SAGD projects.

## **CONSTITUTIONAL AND REGULATORY CONTEXT**

By necessity, all government-mandated activity is governed by our constitutional framework and its application, e.g., the rule of law, the rules of natural justice, the fiduciary duty to consult and accommodate with respect to potential infringement on aboriginal rights. While the PTOR does not have the explicit requirement to speak to these at-times acrimonious historical, societal and legal expectations, the applicant (CNRL in this instance) would be duly diligent to consider the risk of the EIA and application process not being compliant within these broad parameters.

Due to the general lack of capacity within the CML #193 to understand, to engage and to influence regulatory processes, there is potential for future risk for all parties. In *Conklin as an Aboriginal Community*, Reddekopp's (2009), the expert legal analysis plainly concludes that Conklin satisfies all the necessary parameters to be considered

under Section 35 of Canada's Constitution (See especially pp. 74-75.) And yet, these same rights arising from the Constitution have not been formally acknowledged in the PTOR / EIA process, or in any oil sands regulatory approval to date in Alberta. This unresolved problem adds "salt to the wounds" of having already suffered loss of land base and reduced ability to enjoy an aboriginal lifestyle.

CML #193 and CNRL both understand that the duty to *meaningfully* consult with aboriginal peoples cannot be satisfied solely by company-to-community engagement. CML #193 also assert that the GOA and GOC each have a fiduciary duty to ensure that aboriginal communities have the necessary capacity to understand, to engage and to manage regulatory process *before* allowing development to proceed. That duty has not yet been addressed nor fulfilled.

Given efforts being considered by CNRL to engage the community, these broader issues of aboriginal rights are set aside, without prejudice as to whether CML #193 will decide to revisit these issues at a later date. The following four recommendations apply to regulatory context and aboriginal rights and do not explicitly address the PTOR.

**Recommendation #23:** Capacity assessment - Within or without the EIA process, CNRL should undertake an assessment of the capacity, including financial and technical capacity, within the Conklin community to comprehend, critique or respond to the impacts of the Project-specific and overall regional development.

**Recommendation #24:** Process risk assessment - CNRL also should undertake an assessment of the risk of the process if the community does not have sufficient capacity, including financial and technical capacity, to engage. CNRL should share that assessment with the GOA, GOC and CML #193. Aboriginal communities can engage in consultation processes only if they have the capacity to understand the impacts of the proposed developments.

**Recommendation #25:** ERCB should provide a duty-to-consult assessment - Before any ERCB approval or hearing process, the CML #193 requests that the ERCB conduct an assessment whether the federal and provincial government's constitutional and fiduciary duty to consult with aboriginal communities has been satisfied (as per Alberta Regulation 69/2006, under the Administrative Procedures and Jurisdictions Act). The criteria for this assessment should be explicit and public in advance of the assessment being conducted.

**Recommendation #26:** Alberta should explain project regulatory context - The GOA should undertake to explain the relationship of this proposed project with any requirements arising from the *Alberta Land Stewardship Act* (ALSA), the LARP, CEMA's TEMF, the Christina Lake Management Plan and any other relevant regulatory context.

## **CONCLUSIONS**

The Conklin Métis Local #193 (CML #193) community members are faced with uncertainty with respect to the rapid rate of regional development and increased pressures from industrial developments on their community, culture and traditional land use. The cumulative impacts of existing and proposed development are unknown, but they clearly will have implications that the Conklin Métis people will have to live with in the immediate and far future. It impacts them now. The Conklin Métis people will soon be essentially surrounded by oil sands projects, similar to the Métis and First Nation people in Fort McKay, AB.

The way of life of the Conklin Métis people has changed drastically in a short time. Maintaining traditional lifestyles has become increasingly difficult with the rapid rate of industrial development. The Métis people have been displaced and lost in cultural transition, while being forced to try and adapt into a western society that has been imposed upon them. Yes, education and training are needed to ensure that CML #193 members can participate and benefit from oil sands development; but it is also paramount that support and processes are put in place to ensure the Métis culture survives the impacts of regional development, if forced economic assimilation is to be avoided. The socio-economic impact of development on the Conklin Métis peoples is significant and steps need to be taken to ensure that the Métis people of Conklin will benefit from the impact of regional development while keeping their identity and culture intact.

There is an urgent need to build capacity for the Conklin people to understand the process and implications of proposed CNRL project in relation to the other types of development occurring in the region. The CML #193 are concerned about the incremental approval of projects, and the environmental and social implications at the regional level. Cumulative effects assessment is often isolated within each component assessment as a separate issue in most EIA reports, implying that cumulative effects assessment is a separate discipline with its own merits. Cumulative effects need to be treated as an essential part of any EIA report and should warrant greater focus, given the ongoing and rapid development of the oil sands region.

For a realistic evaluation of changes to the environment, a cumulative effects assessment should take into account all historical changes due to anthropogenic activities, presumably from the beginning of European settlement. If environmental impacts are assessed starting from existing conditions, by definition, historical changes have no measurable influence. The lack of a pre-development assessment scenario in the EIA guidance document and PTOR confounds this issue.

Under the 'current=baseline' designation, projects approved in the near future would be integrated into baseline cases of the far future, contributing nothing to the cumulative effects assessments of those yet to come. The TOR should specifically state that the environmental conditions since European settlement be estimated as a baseline from which to evaluate cumulative effects of planned and existing projects and activities. Moreover, analysis of cumulative effects should also include assessments of the potential impacts on the environment during every phase of the Project.

Applicants need to make verifiable predictions, as the accuracy of these predictions is of paramount importance to the Conklin Métis people. These predictions need to be monitored throughout the project, so as to refine our collective predictive capability. Mitigation needs to consider all options (avoidance, reduction and offsets of impacts), not just green paint. No amount of mitigation will address the past impact (from resource development) on the CML #193 members, their community and their protected rights to their traditional lands. To be meaningful in its efforts, CNRL will need to look past the approvals process and "begin with the end in mind". By engaging the community at this early stage and by sincere effort to find solutions to real problems and to acknowledge the community's priorities, CNRL has the opportunity to demonstrate its sincere commitment to working with the community and to improving its development plans.

There are always areas to improve TOR so as to ensure that the majority of stakeholder concerns are adequately addressed. Many general and specific points are outlined above. Our hope is that these are taken as constructive criticism, enabling those with decision-making authority to fill at least some gaps. However, given that much of the environmental information has already been collected for the project EIA, presumably to meet the regulatory submission goal, we must question whether the community's concerns can be meaningfully addressed and incorporated at this stage. Given the increased frequency of such projects in the region, better methods of communicating, early and often, are needed. For example, we understand that the GOA is streamlining the regulatory process for SAGD projects without input from stakeholders or any formal



communication of the matter. CML #193 request that AENV and CNRL provide a response to each of our recommendations and suggested tracked changes explaining why they are or are not accepted and your reasons for doing so. As an indication of corporate integrity and goodwill, we would also ask CNRL to recommend the adoption of as many of the recommended changes as possible.

**We welcome the regulators and CNRL's response to this review and look forward to our subsequent and ongoing dialogue.**

**PROPOSED TERMS OF REFERENCE  
ENVIRONMENTAL IMPACT ASSESSMENT REPORT  
FOR CANADIAN NATURAL RESOURCES LIMITED  
KIRBY IN SITU OIL SANDS EXPANSION PROJECT**

**Approximately 75 km from Lac La Biche, Alberta**

**ISSUED BY: Canadian Natural Resources Limited**

**DATE: MAY 17, 2011**

Note: Includes comments from Conklin Métis Local 193 received July 20, 2011.

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## PURPOSE OF THE TERMS OF REFERENCE

The purpose of this document is to identify for Canadian Natural Resources Limited (Canadian Natural), aboriginal communities and relevant stakeholders the information required by government agencies for an Environmental Impact Assessment (EIA) report prepared under the *Environmental Protection and Enhancement Act* (EPEA) for the proposed Kirby In-Situ Oil Sands Expansion Project (the Project).

The proposed Project will involve the following:

- An increase in the bitumen processing capacity of Canadian Natural's approved Kirby In Situ Oil Sands Project ("Kirby South") from 45,000 barrels per day (bbl/d), to 60,000 bbl/d. This expansion will occur in one phase ("Kirby South Phase 2").
- An increase in the bitumen processing capacity of the approved Kirby Oil Sands Project Phase I ("Kirby North") from 10,000 bbl/d to 80,000 bbl/d. (acquired by Canadian Natural from Enerplus Resources Fund). This expansion will occur in two phases: "Kirby North Phase 1" (expansion of the approved 10,000 bbl/d production to 50,000 bbl/d); and "Kirby North Phase 2" (expansion of the 50,000 bbl/d production to 80,000 bbl/d).
- In summary, the expansion will involve an increase in the total combined bitumen capacity from the approved 55,000 bbl/d (8,745 m<sup>3</sup>/d) by 85,000 bbl/d (13,515 m<sup>3</sup>/d) to 140,000 bbl/d (22,260 m<sup>3</sup>/d).

The proposed Project will include additional steam generation, bitumen processing and water treatment capacity at the two Central Processing Facilities proposed in the applications for the previously approved projects, and possibly pipeline connections and/or infrastructure between the two facilities. The Project will also include the construction and drilling of additional well pads and the use of Steam Assisted Gravity Drainage (SAGD) technology for the recovery of bitumen from McMurray and Wabiskaw oil sands formations. The proposed Project will increase the combined life of the two previously approved projects from 20 years to approximately 30 years.

The Project is planned to occur within a Project Area located primarily in Townships 73, 74 and 75, Ranges 7 and 8 and 9, west of the 4th Meridian. The Project Area is approximately 75 km northeast of Lac La Biche and 10 km south of Conklin, primarily within the Regional Municipality of Wood Buffalo and in small portions of Lac la Biche County.

Pending regulatory approval, it is Canadian Natural's intention to begin construction in the first quarter of 2014 with subsequent start-up in the first quarter of 2016.

## SCOPE OF THE EIA REPORT

The Proponent shall prepare and submit an EIA report that examines the environmental and socio-economic effects of the [construction, operation and reclamation of the](#) Project.

The EIA report shall be prepared considering all applicable provincial and federal legislation, codes of practice, guidelines, standards and directives.

The EIA report shall be prepared in accordance with these Terms of Reference and the environmental information requirements prescribed under EPEA and associated regulations, and the *Canadian Environmental Assessment Act* if applicable. The EIA report will form part of the

Proponent's application to the Energy Resources Conservation Board (ERCB). An EIA report summary will also be included as part of the ERCB Application.

The Proponent shall refer to the *Guide to Preparing Environmental Impact Assessment Reports for In-Situ Projects in Alberta* published by Alberta Environment (the In-Situ Guide) and these Terms of Reference when preparing the Environmental Impact Assessment report. In any case where there is a difference in requirements between the Guide and these Terms of Reference, the Terms of Reference shall take precedence.

## CONTENT OF THE EIA REPORT

### 1 PUBLIC ENGAGEMENT AND ABORIGINAL CONSULTATION

- [A] Describe the concerns and issues expressed by the public and the actions taken to address those concerns and issues, including how public input was incorporated into the Project development, impact mitigation and monitoring.
- [B] Describe the concerns and issues expressed by aboriginal communities and the actions taken to address those concerns and issues, including how aboriginal community input was incorporated into these [Terms of Reference](#), the Project development, impact mitigation and monitoring. Describe consultation undertaken with aboriginal communities and groups with respect to traditional ecological knowledge and traditional use of land [and water, in accordance with community consultation protocols](#).
- [C] Describe plans to maintain the public engagement and aboriginal consultation process following completion of the EIA report to ensure that the public and aboriginal peoples will have an appropriate forum for expressing their views on the ongoing development, operation and reclamation of the Project.
- [D] [Describe the proponent's assessment of the effectiveness of its aboriginal consultation process.](#)

### 2 PROJECT DESCRIPTION

#### 2.1 Overview

- [A] Provide a brief project description in sufficient detail to provide context for the EIA, including:
  - a) proponent information;
  - b) proposed extraction and bitumen processing technology;
  - c) amount and source of energy required for the Project;
  - d) water supply and disposal requirements, including process water and potable water requirements;
  - e) proposed method to transport product to markets; and
  - f) development plan and schedule.
- [B] Provide maps and/or drawings of the Project components and activities including:
  - a) existing infrastructure, leases and clearings, including exploration clearings;
  - b) proposed central processing/treatment and field facilities;
  - c) other buildings and infrastructure (pipelines and utilities);
  - d) temporary structures;
  - e) transportation and access routes;

Brenda Miskimmin 11-7-13 12:10 PM

Comment: The Summary is defined in S. 4.2 of EIA guide, p. 15.

Sarah and Mark Chileen 11-7-14 3:42 PM

Comment: Reviewer could not locate this document. Found and referred to Alberta Environment, 2011. *Guide to Preparing Environmental Impact Assessment Reports in Alberta* – Updated February 9, 2011. Alberta Environment, Environmental Assessment Team, Edmonton, Alberta. EA Guide 2009-2. 26 pp. **Is this the correct reference? Could this document or a link to this document be provided with the PTOR?**

- f) on-site hydrocarbon storage;
  - g) containment structures such as retention ponds and storage ponds (e.g., stormwater runoff, boiler blow-down);
  - h) water wells/intakes, pipelines, and storage structures;
  - i) sources of aggregate resources, borrow material and other construction material and locations of any stockpiles that will be developed; and
  - j) waste storage area and disposal sites.
- [C] Discuss the implications of a delay in proceeding with the Project, or any phase of the Project, or not going ahead with the Project.
- [D] Describe the benefits of the project, including jobs created, local training, employment and business opportunities, and royalties and taxes generated that accrue to:
- a) the Proponent;
  - b) local and regional communities, including Aboriginal communities;
  - c) the local authority;
  - d) Alberta; and
  - e) Canada.
- [E] Provide the adaptive management approach that will be implemented throughout the life of the Project. Include how monitoring, mitigation and evaluation will be incorporated.

## 2.2 Constraints

- [A] Discuss the process and criteria used to identify constraints to development, and how the Project has been designed to accommodate those constraints [using constraints mapping, where appropriate](#). Include the following:
- a) any applicable *Alberta Land Stewardship Act (ALSA)* Regional Plan;
  - b) land use policies and resource management initiatives that pertain to the Project;
  - c) aboriginal traditional land [and water](#) use;
  - d) all known traplines;
  - e) the environmental setting;
  - f) cumulative environmental impacts [that consider all existing and approved developments](#) in the region [in addition to the Project](#);
  - g) cumulative social impacts;
  - h) results of Project-specific [and](#) regional monitoring;
  - i) potential for new or additional technology to increase resource recovery at later times;
  - j) [Use constraints mapping for the siting of facilities, wellpads and infrastructure. Report on involvement/input of Aboriginal communities in the constraints mapping process; and](#)
  - k) potential for changes in the regulatory regime.
- [B] [Considering the constraints mapping information,](#) discuss the selection criteria used, options considered, and rationale for selecting:
- a) location of facilities and infrastructure ([including pipelines, roads and utilities](#));
  - b) thermal energy and electric power required for the Project;
  - c) water supply sources;
  - d) wastewater treatment, management and disposal;
  - e) air emission and air quality management; and

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f) waste disposal.

- [C] Provide a list of facilities for which locations will be determined later. Discuss the selection criteria that will be used to determine the specific location of these facilities.

### 2.3 Regional and Cooperative Efforts

- [A] Discuss the Proponent's involvement in regional and cooperative efforts to address environmental and socio-economic issues associated with regional [oil sands](#) development.
- [B] Describe opportunities for sharing infrastructure (e.g., access roads, utility corridors, water infrastructure) with other resource development stakeholders. Provide rationale where these opportunities will not be implemented.
- [C] [Describe Proponent's plans for facilitating aboriginal group regional access to traditionally used lands and waters where TLU areas overlap with Proponent's lease areas. Provide rationale where these opportunities will not be implemented.](#)

### 2.4 Transportation Infrastructure

- [A] [Describe and locate on maps of appropriate scale the transportation infrastructure requirements for the Project and how they relate to local communities;](#)
- [B] Provide a summary of the traffic impact assessment study carried out for the Project. Where no traffic impact assessment study has been prepared, describe the anticipated changes to traffic (e.g., type, volume) on highways during all stages (construction, operation and shutdown) of the Project and assess its negative [environmental and social](#) impact, considering other existing and planned uses of the same highways.

### 2.5 Air Emissions Management

- [A] Provide emission profiles (type, rate and source) for the Project's operating and construction emissions including point and non-point sources and fugitive emissions. Consider both normal and upset conditions. Discuss:
- odorous or visible emissions from the proposed facilities;
  - annual and total greenhouse gas emissions during all stages of the Project. Identify the primary sources and provide examples of calculations;
  - the intensity of greenhouse gas emissions per unit of bitumen produced;
  - the Project's contribution to total provincial and national greenhouse gas emissions on an annual basis;
  - the Proponent's overall greenhouse gas management plans;
  - amount and nature of Criteria Air Contaminants emissions;
  - the amount and nature of acidifying emissions [and potentially eutrophying emissions](#), probable deposition patterns and rates;
  - [technical details on the control technologies used to minimize air emissions;](#)
  - [how air emission and air quality issues were incorporated into the evaluation and selection of process equipment and operating procedures;](#)
  - [for each emission source identify all available emission prevention or control options and technologies and the basis for determining that the proposed emission control](#)



option or technology for that source represents best available technology economically achievable (BATEA);

- k) emergency flaring scenarios (e.g., frequency and duration) and proposed measures to ensure flaring events are minimized having regard for ERCB Directive 60 and design criteria to ensure that flares operate at high efficiency;
- l) upset condition scenarios (i.e., frequency and duration) and proposed measures to ensure upset conditions are minimized;
- m) gas collection and conservation, and the applicability of vapour recovery technology;
- n) applicability of sulphur recovery, acid gas re-injection or flue gas desulphurization to reduce sulphur emissions;
- o) fugitive emissions control technology to detect, measure and control emissions and odours from equipment leaks having regard for the CCME Code of Practice for Measurement and Control of Fugitive VOC Emissions; and
- p) plans for the salvage and storage of slash materials for use in future reclamation and to eliminate the need for slash burning.

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## 2.6 Water Management

### 2.6.1 Water Supply

- [A] Describe the water supply requirements for the Project, including:
- a) the expected water balance during all stages of the Project. Discuss assumptions made or methods chosen to arrive at the water balances;
  - b) the process water, potable water, and non-potable water requirements and sources for construction (including but not limited to road construction, winter road construction, lease construction, production well drilling and dust suppression), start-up, normal and emergency operating situations, decommissioning and reclamation. Identify the volume of water to be withdrawn from each source, considering plans for wastewater reuse, and the use of saline water;
  - c) the location of sources/intakes and associated infrastructure (e.g., water wells, pipelines for water supply);
  - d) the variability in the amount of water required on an annual and seasonal basis as the Project is implemented;
  - e) the expected cumulative effects on water losses/gains resulting from the Project operations;
  - f) describe contingency plans in the event of restrictions on water withdrawal due to license conditions or conditions created by climate change and/or cumulative impact water deficits;
  - g) potable water treatment systems for all stages of the Project;
  - h) type and quantity of potable water treatment chemicals used; and
  - i) measures for ensuring efficient use of water including alternatives to reduce the consumption of non-saline water such as water use minimization, recycling, conservation, and technological improvements.

### 2.6.2 Surface Water

- [A] Describe the surface water management strategy for all stages of the Project, including:
- a) design factors considered (site drainage, runoff, erosion control, containment, flood prevention); and

- b) permanent or temporary alterations of watercourses, wetlands and other waterbodies.
- [B] Provide details of watercourse crossings including:
  - a) type of water course crossing, construction methods and anticipated flows during construction;
  - b) location; and
  - c) details on capacity of crossing to withstand extreme flood events including design flood and design criteria used for the crossing.
- [C] Provide a description of navigable waterways and the results of any navigability assessment(s) conducted for waterways that may be affected by the Project, or a schedule for when the assessments may be completed.
- [D] Describe [and map](#) crossings of watercourses or waterbodies (including bridges, culverts and pipelines) required and provide example diagrams of each type of crossing.

### 2.6.3 Wastewater Management

- [A] Describe the wastewater management strategy, including:
  - d) the source, quantity and composition of each wastewater stream from each component of the proposed operation (e.g., bitumen extraction and associated facilities) for all Project conditions, including normal, start-up, worst-case and upset conditions;
  - e) the proposed disposal locations and methods for each wastewater stream;
  - f) [geologic](#) formations for the disposal of wastewaters;
  - g) design of facilities that will collect, treat, store and release wastewater streams;
  - h) type and quantity of chemicals used in wastewater treatment; and
  - i) sewage treatment [including discussion of on- or off-site disposal plans](#).

### 2.7 Waste Management

- [A] Characterize and quantify the anticipated dangerous goods, and hazardous, non-hazardous, and recyclable wastes generated by the Project, and:
  - a) describe the composition and volume of specific waste streams and discuss how each stream will be managed;\_
  - b) describe how the disposal sites and sumps will be constructed;
  - c) [describe the location of on- or off-site disposal, including landfills, if any are in the Regional Municipality of Wood Buffalo;](#) and
  - d) describe plans for pollution prevention, waste minimization, recycling, and management to reduce waste quantities for all stages of the Project.

### 2.8 Conservation and Reclamation

- [A] Provide a conceptual conservation and reclamation plan for the Project. Describe and map as applicable:
  - a) current land use and capability and proposed post-development land use and capability;
  - b) anticipated timeframes for completion of reclamation stages and release of lands back to the Crown including an outline of the key milestone dates for reclamation and how progress to achieve these targets will be measured;

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- c) constraints to reclamation such as timing of activities, availability of reclamation materials and influence of natural processes and cycles including natural disturbance regimes;
- d) a revegetation plan for the disturbed terrestrial, wetland and aquatic areas;
- e) reclamation material salvage, storage areas and handling procedures; and
- f) existing and final reclaimed site drainage plans.

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Comment: S. 3.3.4 of the EIA guidance document describes details required here.

- [B] Discuss, from an ecological perspective, the expected timelines for establishment and recovery of vegetative communities and wildlife habitat, the expected success of establishment and recovery, and the expected differences in the resulting communities.
- [C] Discuss uncertainties related to the conceptual reclamation plan, including climate change;
- [D] Discuss the proponent's participation in CEMA's reclamation working group and any planned in-situ reclamation initiatives; and
- [E] Discuss how the proponent will involve aboriginal communities in reclamation planning.

### 3 ENVIRONMENTAL ASSESSMENT

#### 3.1 Air Quality, Climate and Noise

##### 3.1.1 Baseline Information

- [A] Discuss the baseline climatic and air quality conditions including:
  - a) the type and frequency of meteorological conditions that may result in poor air quality; and
  - b) appropriate ambient air quality parameters.

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Comment: This section previously was introduced with defining assessment scenarios, study areas (LSA, RSA), cumulative effects, information requirements/sources, modeling, climate extremes. These are now described in the guidance document so are a blanket requirement for EIAs, not in each TOR. **Is the Guidance document a mandated requirement like the TOR or is it a optional direction for the proponent?**

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Comment: **Baseline, Application and Planned Development Case** are defined in the guidance document (Feb 11).

##### 3.1.2 Impact Assessment

- [A] Identify components of the Project that will affect air quality, and:
  - a) describe the potential for reduced air quality (including odours and visibility) resulting from the Project and discuss any implications of the expected air quality for environmental protection and public health, including for the nearby community of Conklin and any cabins located near the Project;
  - b) estimate ground-level concentrations of appropriate air quality parameters at sites on the project area and at any nearby communities, including Conklin;
  - c) discuss any expected changes to particulate deposition, nitrogen deposition or acidic deposition patterns;
  - d) identify areas that are predicted to exceed Potential Acid Input (PAI) critical loading criteria;
  - e) discuss predicted air quality concentration changes relative to the concept of keeping clean areas clean and the application of BATEA; and
  - f) discuss interactive effects that may occur resulting from co-exposure of a receptor to all emissions.
- [B] Identify stages or elements of the Project that are sensitive to changes or variability in climate parameters, including frequency and severity of extreme weather events. Discuss what impacts the change to climate parameters may have on elements of the Project that are sensitive to climate parameters.

- [C] Summarize the results of the noise assessment conducted for the ERCB, and:
- a) identify the nearest and furthest receptors used in the assessment;
  - b) describe the results of a noise assessment for the nearby community of Conklin, including areas used for traditional activities; and
  - c) discuss the design, construction and operational factors to be incorporated into the Project to comply with the ERCB's Directive 38: Noise Control.
- [D] Discuss mitigation strategies to minimize the potential impact of the Project on air quality and noise.
- [E] Describe monitoring plans to validate predictions about the potential impact of the Project on air quality and noise.

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 Comment: This should be included because, while wildlife are mentioned in the Guideline requirements, local residents are not.

### 3.2 Hydrogeology

#### 3.2.1 Baseline Information

- [A] Provide an overview of the existing geologic and hydrogeologic setting from the ground surface down to, and including, the oil producing zones and disposal zones, and:
- a) present regional and Project Area geology to illustrate depth, thickness and spatial extent of lithology, stratigraphic units and structural features; and
  - b) present regional and Project Area hydrogeology describing:
    - i) the major aquifers, aquitards and aquicludes (Quaternary and bedrock), their spatial distribution, properties, hydraulic connections between aquifers, hydraulic heads, gradients, groundwater flow directions and velocities. Include maps and cross sections,
    - ii) the chemistry of groundwater aquifers including baseline concentrations of major ions, metals and hydrocarbon indicators,
    - iii) the potential discharge zones, potential recharge zones and sources, areas of groundwater-surface water interaction and areas of Quaternary aquifer-bedrock groundwater interaction,
    - iv) water well development and groundwater use, including an inventory of groundwater users,
    - v) the recharge potential for Quaternary aquifers,
    - vi) potential hydraulic connection between bitumen production zones, deep disposal formations and other aquifers resulting from Project operations,
    - vii) the characterization of formations chosen for deep well disposal, including chemical compatibility and containment potential, injection capacity, hydrodynamic flow regime, and water quality assessments, and
    - viii) the locations of major facilities associated with the Project including facilities for waste storage, treatment and disposal (e.g., deep well disposal) and describe site-specific aquifer and shallow groundwater conditions beneath these proposed facilities. Provide supporting geological information.

#### 3.2.2 Impact Assessment

- [A] Describe Project components and activities that have the potential to affect groundwater resource quantity and quality at all stages of the Project.

- [B] Describe the nature and significance of the potential Project impacts on groundwater with respect to:
  - a) inter-relationship between groundwater and surface water in terms of surface water quantity and quality;
  - b) implications for terrestrial or riparian vegetation, wildlife and aquatic resources including wetlands;
  - c) changes in groundwater quality and quantity;
  - d) conflicts with other groundwater users, and proposed resolutions to these conflicts;
  - e) potential implications of seasonal variations; and
  - f) groundwater withdrawal for Project operations, including any expected alterations in the groundwater flow regime during and following Project operations.
- [C] [Discuss groundwater issues with Aboriginal people: review existing relevant TEK to inform the assessment, indicate how this influenced the assessment process, and describe how concerns will be addressed. Cross-reference with other sections of the EIA \(e.g., vegetation and wetlands; surface water; land use and management section 3.10\), as appropriate.](#)
- [D] Discuss mitigation strategies to minimize the potential impact of the Project on hydrogeology.

### 3.3 Hydrology

#### 3.3.1 Baseline Information

- [A] Describe and map the surface hydrology in the Project Area.
- [B] Identify any surface water users who have existing approvals, permits or licenses, [or who indicate traditional uses of project area surface water.](#)

#### 3.3.2 Impact Assessment

- [A] Describe the extent of hydrological changes that will result from disturbances to groundwater and surface water movement:
  - a) include changes to the quantity of surface flow, water levels and channel regime in watercourses (during minimum, average and peak flows) and water levels in waterbodies;
  - b) assess the potential impact of any alterations in flow on the hydrology and identify all temporary and permanent alterations, or disturbances or surface water withdrawals;
  - c) discuss the effect of these changes on hydrology (e.g., timing, volume, peak and minimum flow rates, river regime and lake levels), including the significance of effects for downstream watercourses;
  - d) [quantify the potential rate, volume and timing of any releases of stored stormwater to local surface waters;](#) and
  - e) identify any potential erosion problems in watercourses resulting from the Project.
- [B] Describe impacts on other surface water users resulting from the Project. Identify any potential water use conflicts.
- [C] Discuss the impact of low flow conditions and in-stream flow needs on water supply and water and wastewater management strategies.

[D] Discuss mitigation strategies to minimize the potential impact of the Project on hydrology.

[E] [Describe any water recycle, use of saline water and any other water conservation and minimization strategies including on-site or off-site storage \(may be cross-referenced with hydrogeology section\).](#)

### 3.4 Surface Water Quality

[A] Describe the potential impacts of the Project on surface water quality, [sediment quality](#) and proposed mitigation measures to maintain surface water [and sediment](#) quality at all stages of the Project.

[B] [discuss the effect of changes in surface runoff or groundwater discharge on water and sediment quality in surface watercourses and water bodies.](#)

### 3.5 Aquatic Ecology

#### 3.5.1 Baseline Information

[A] Describe and map the fish, fish habitat and aquatic resources (e.g., aquatic and benthic invertebrates) of the lakes, rivers, ephemeral water bodies and other waters. Describe the species composition, distribution, relative abundance, movements and general life history parameters of fish resources. [Describe TEK, as appropriate, such as fishing practices and associated ecosystem knowledge \(gathered through existing reports as well as community consultation\).](#)

Also identify any species that are:

- a) listed as “at Risk, May be at Risk and Sensitive” in The Status of Alberta Species (Alberta Sustainable Resource Development);
- b) listed in Schedule 1 of the federal Species at Risk Act; and
- c) listed as “at risk” by COSEWIC.

[B] Describe and map existing critical or sensitive areas such as spawning, rearing, and over-wintering habitats, seasonal habitat use including migration and spawning routes.

[C] Describe the current and potential use of the fish resources by aboriginal, sport or commercial fisheries.

[D] Identify the key aquatic indicators that the Proponent used to assess project impacts. Discuss the rationale for their selection.

#### 3.5.2 Impact Assessment

[A] Describe and assess the potential impacts of the Project to fish, fish habitat, and other aquatic resources, considering:

- a) [potential habitat loss, alteration, or water quantity and quality changes;](#)
- b) potential increased fishing pressures in the region that could arise from the increased workforce and improved access from the Project; and
- c) potential increased habitat fragmentation; and
- d) potential entrapment and entrainment of fish at water intakes.

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- [B] Discuss mitigation measures to minimize potential impacts of the Project on fish, fish habitat and other aquatic resources. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection.
- [C] [Describe any potential short- or long-term loss of fishing opportunities caused by the Project, and identify plans to minimize the impacts to aboriginal people. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection selection \(Cross reference with relevant Land Use and Management sections 3.10\).](#)
- [D] Identify plans proposed to offset any loss in the productivity of fish habitat. Indicate how environmental protection plans address applicable provincial and federal policies on fish habitat including the development of a “No Net Loss” fish habitat objective.

### **3.6 Vegetation**

#### **3.6.1 Baseline Information**

- [A] Describe and map the vegetation communities, wetlands, rare plants, old growth forests, and communities of limited distribution. Also identify any species that are:
  - a) listed as “at Risk, May be at Risk and Sensitive” in The Status of Alberta Species (Alberta Sustainable Resource Development);
  - b) listed in Schedule 1 of the federal Species at Risk Act; and
  - c) listed as “at risk’ by COSEWIC.
- [B] Describe the current extent of habitat fragmentation, [including a summary of the timeline for key fragmentation occurrences.](#)
- [C] [Document consultation with Aboriginal peoples to establish relevant and meaningful Study Areas and to document TEK regarding vegetation, wetlands and traditionally used species.](#)
- [D] Identify key vegetation indicators used to assess the Project impacts. Discuss the rationale for their selection.

#### **3.6.2 Impact Assessment**

- [A] Describe and assess the potential impacts of the Project on vegetation communities, wetlands, rare plants, old growth forests and communities of limited distribution considering:
  - a) both temporary (include timeframe) and permanent impacts;
  - b) the potential for introduction and colonization of weeds and non-native invasive species;
  - c) potential increased fragmentation of upland, riparian and wetland habitats; and
  - d) implications of vegetation changes for other environmental resources (e.g., terrestrial and aquatic habitat diversity and quantity, water quality and quantity, erosion potential).
- [B] Discuss the mitigation measures to minimize impacts on vegetation communities, wetlands, rare plants, old growth forests and communities of limited distribution. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection.

- [C] [Describe any potential short- or long-term loss of traditional plant gathering opportunities caused by the Project, and identify plans to minimize the impacts to aboriginal people. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection selection \(Cross reference with relevant Land Use and Management sections 3.10\).](#)

### 3.7 Wildlife

#### 3.7.1 Baseline Information

- [A] Describe and map the wildlife resources (amphibians, reptiles, birds, and terrestrial and aquatic mammals) and their use and potential use of habitats. Also identify any species that are:
- listed as “at Risk, May be at Risk and Sensitive” in The Status of Alberta Species (Alberta Sustainable Resource Development);
  - listed in Schedule 1 of the federal *Species at Risk Act*; and
  - listed as “at risk” by COSEWIC.
- [B] Describe and map existing wildlife habitat and habitat disturbance (including exploration activities). Identify those habitat disturbances that are related to existing and approved [commercial or industrial](#) operations.
- [C] Identify the key wildlife and habitat indicators used to assess Project impacts. Discuss the rationale for their selection.

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#### 3.7.2 Impact Assessment

- [A] Describe and assess the potential impacts of the Project to wildlife and wildlife habitats, considering:
- how the Project will affect wildlife relative abundance, movement patterns, and distribution for all stages of the Project;
  - how improved or altered access may affect wildlife;
  - how increased habitat fragmentation may affect wildlife considering edge effects and the influence of linear features and infrastructure on wildlife movements;
  - potential effects on wildlife resulting from changes to air and water quality, including both acute and chronic effects to animal health; and
  - potential effects on wildlife from the Proponent’s proposed and planned exploration, seismic and core hole activities, including monitoring/4D seismic.
- [B] Discuss mitigation measures to minimize the potential impact of the Project on wildlife and wildlife habitat. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection.
- [C] [Describe any potential short- or long-term loss of wildlife hunting and trapping opportunities caused by the Project, and identify plans to minimize the impacts to aboriginal people. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection \(Cross reference with relevant Land Use and Management sections 3.10\).](#)



### 3.8 Biodiversity

#### 3.8.1 Baseline Information

- [A] Describe and map the existing biodiversity [in terrestrial and aquatic ecosystems](#).
- [B] Identify the biodiversity metrics, biotic and abiotic indicators that are used to characterize the baseline biodiversity and to assess project impacts. Discuss the rationale for their selection.
- [C] [Include TEK \(including but not limited to traditional plant and animal species lists and identified sites of cultural significance\) as appropriate in the selection of biotic and abiotic indicators and discuss how TEK contributed to the assessment.](#)

#### 3.8.2 Impact Assessment

- [A] Describe and assess the potential impacts of the Project to biodiversity considering:
  - a) the effects of fragmentation on biodiversity potential;
  - b) the contribution of the Project to any anticipated changes in regional biodiversity and the potential impact to local and regional ecosystems; and
  - c) effects during construction, operations and post-reclamation and the significance of these changes in a local and regional context.
- [B] Discuss mitigation measures to minimize the potential impact of the Project on biodiversity. Clearly identify those mitigation measures that will be implemented and provide the rationale for their selection.
- [C] [Discuss biodiversity on proposed reclamation ecosites and the project's potential effects on biodiversity due to differences in reclamation habitats compared to the baseline scenario.](#)

### 3.9 Terrain and Soils

#### 3.9.1 Baseline Information

- [A] Describe and map the terrain and soils conditions in the Project Area.
- [B] Describe and map soil types in the areas that are predicted in 3.1.2[A]d) to exceed Potential Acid Input (PAI) critical loading criteria.

#### 3.9.2 Impact Assessment

- [A] Describe Project activities and other related issues that could affect soil quality (e.g., compaction, contaminants) and:
  - a) indicate the amount (ha) of surface disturbance from plant, field (pads, pipelines, access roads), aggregate and borrow sites, construction camps, drilling waste disposal and other infrastructure-related construction activities;
  - b) discuss the relevance of any changes for the local and regional landscapes, biodiversity, productivity, ecological integrity, aesthetics and future use;
  - c) identify the potential acidification [or eutrophication](#) impact on soils and discuss the significance of predicted impacts by acidifying [or nitrifying](#) emissions; and
  - d) describe potential sources of soil contamination.

- [B] Discuss:
  - a) the environmental effects of proposed drilling methods on the landscape and surficial and bedrock geology;
  - b) the potential for changes in the ground surface during steaming and recovery operations (e.g., ground heave and/or subsidence) and their environmental, [social and traditional use](#) implications; and
  - c) the potential impacts caused by the mulching and storage of woody debris considering, but not limited to vulnerability to fire, degradation of soil quality, increased footprint, etc.
- [C] Discuss mitigation strategies to minimize the potential impact of the Project on soils or terrain.

### 3.10 Land Use and Management

#### 3.10.1 Baseline Information

- [A] Describe and map the current land uses in the Project Area, including all Crown land and Crown Reservations (Holding Reservation, Protective Notation, Consultative Notation).
- [B] Indicate where Crown land dispositions may be needed for roads or other infrastructure for the Project.
- [C] Identify and map unique sites or special features in the Project Area and Local Study Area such as Parks and Protected Areas, Heritage Rivers, Historic Sites, Environmentally Significant Areas, culturally significant sites and other designations (World Heritage Sites, Ramsar Sites, Internationally Important Bird Areas, etc).
- [D] Describe and map land clearing activities, showing the timing of the activities.
- [E] Describe the status of timber harvesting arrangements, including species and timing.
- [F] Describe access control measures proposed for the Project Area, [including how access for traditional users will be maintained.](#)

#### 3.10.2 Impact Assessment

- [A] Identify the potential impact of the Project on land uses, including:
  - a) impacts to unique sites or special features, [as listed above](#);
  - b) impacts caused by changes in public access arising from linear development, including secondary effects related to increased hunter, angler and other recreational access and facilitated predator movement;
  - c) potential impacts to aggregate reserves that may be located on land under the Proponent's control and reserves in the region;
  - d) the impact of development and reclamation on commercial forest harvesting and fire management in the Project Area;
  - e) the amount of commercial and non-commercial forest land base that will be disturbed by the Project, including the Timber Productivity Ratings for the Project Area. Compare the pre-disturbance and reclaimed percentages and distribution of all forested communities in the Project Area;
  - f) how the Project impacts Annual Allowable Cuts and quotas within the Forest Management Agreement area;

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 Comment: Note: EIA Guidance doc: 3.4.10 Land Use Discussion of access management should indicate how access for traditional users will be maintained. Proponents should also describe programs they will implement to control access and resource use (e.g., fishing, hunting, recreation) by their workers.

- g) the potential impact on existing traditional and other land uses of anticipated changes (type and extent) to the pre-disturbance topography, elevation and drainage pattern within the Project Area; and
  - h) impacts of the Project on public access, regional recreational activities, aboriginal land use (e.g. hunting, trapping, fishing, gathering) and other land uses during and after development activities.
- [B] Provide a fire control plan highlighting:
- a) measures taken to ensure continued access for firefighters to adjacent wildland areas;
  - b) forest fire prevention, detection, reporting, and suppression measures, including proposed fire equipment;
  - c) measures for determining the clearing width of power line rights-of-way; and
  - d) required mitigative measures for areas adjacent to the Project Area based on the FireSmart Wildfire Assessment System.
- [C] Discuss mitigation strategies to minimize the potential impact of the Project on land uses.

#### **4 HISTORIC RESOURCES**

- [A] Describe the Historic Resource Impact Assessment (HRIA) work done to date for the Project, and provide a schedule for any future work.
- [B] Describe the impacts of the findings of the HRIA work on Project design and scheduling.
- [C] Describe any Project uncertainties arising from the need for future HRIA work.

#### **5 TRADITIONAL ECOLOGICAL KNOWLEDGE AND LAND USE**

- [A] Provide:
- a) a map and description of traditional land use areas including fishing, hunting, trapping and nutritional, medicinal or cultural plant harvesting by affected aboriginal peoples (if the aboriginal community or group is willing to have these locations disclosed);
  - b) a map of cabin sites, spiritual sites, cultural sites, graves and other traditional use sites considered historic resources under the *Historical Resources Act* (if the aboriginal community or group is willing to have these locations disclosed), as well as traditional trails and resource activity patterns; and
  - c) a discussion of:
    - i) the availability of vegetation, fish and wildlife species for food, traditional, medicinal and cultural purposes in the identified traditional land use areas considering all Project related impacts,
    - ii) access to traditional lands in the Project Area during all stages of the Project, and
    - iii) aboriginal views on land reclamation.
- [B] Determine the impact of the Project on traditional, medicinal and cultural purposes, quantify potential lost opportunities to pursue aboriginal traditional activities, and identify possible mitigation strategies. (Cross reference with other relevant EIA sections).

## 6 PUBLIC HEALTH AND SAFETY

### 6.1 Public Health

- [A] Describe those aspects of the Project that may have implications for public health or the delivery of regional health services. Determine quantitatively whether there may be implications for public health arising from the Project.
- [B] Document any health concerns raised by stakeholders during consultation on the Project including individual aboriginal communities and groups.
- [C] Document any health concerns identified by aboriginal communities or groups resulting from impacts of existing development and of the Project specifically on their traditional lifestyle and include an aboriginal receptor type in the assessment.  
Specifically:  
a) identify the potential human health impact of the potential contamination of country foods and natural food sources taking into consideration all Project activities and the impact that this may have on opportunities and desire (resulting from perceptions of health and safety) for traditional activities; and  
b) potential for contamination of fish tissue relative to fish consumption guidelines (e.g., mercury and other contaminants) as well as the potential for off flavours (tainting) and how this may affect opportunities and desire (resulting from perceptions of health and safety) for traditional activities.
- [D] Describe the potential health impacts resulting from higher regional traffic volumes and the increased risk of accidental leaks and spills.
- [E] Discuss mitigation strategies to minimize the potential impact of the Project on human health.

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Comment: The EIA guidance document specifically mentions implications for "individual aboriginal communities and groups".

### 6.2 Public Safety

- [A] Describe those aspects of the Project that may have implications for public safety. Determine whether there may be implications for public safety arising from the Project. Specifically:
- describe the Proponent's emergency response plan, including public notification protocol and safety procedures, to minimize adverse environmental effects, including emergency reporting procedures for spill containment and management;
  - document any safety concerns raised by stakeholders during consultation on the Project;
  - describe how local residents will be contacted during an emergency and the type of information that will be communicated to them;
  - describe the existing agreements with area municipalities or industry groups such as safety cooperatives, emergency response associations, regional mutual aid programs and municipal emergency response agencies; and
  - describe the potential safety impacts resulting from higher regional traffic volumes.

## 7 SOCIO-ECONOMIC ASSESSMENT

### 7.1 Baseline Information

- [A] Describe the existing socio-economic conditions in the region and in the communities in the region.

- [B] Describe factors that may affect existing socio-economic conditions including:
  - a) population changes;
  - b) workforce requirements for the Project, including a description of when peak activity periods will occur;
  - c) planned accommodations for the workforce for all stages of the Project;
  - d) the Proponent's policies and programs regarding the use of [local](#), regional and Alberta goods and services;
  - e) the project schedule; and
  - f) the overall engineering and contracting plan for the Project.

**7.2 Impact Assessment**

- [A] Describe the effects of construction and operation of the Project on:
  - a) housing;
  - b) availability and quality of health care services;
  - c) local and regional infrastructure and community services;
  - d) recreational activities;
  - e) hunting, fishing, trapping and gathering; and
  - f) First Nations and Métis (e.g., traditional land use and social and cultural implications, [Cross reference with other relevant EIA sections](#)).
- [B] Describe the socio-economic effects of any construction camp required for the Project and identify:
  - a) its location;
  - b) the number of workers it is intended to house;
  - c) whether the camp will service the Project only or other clients;
  - d) the length of time the camp will be in service; and
  - e) describe what services will be provided in the camp (e.g., security, recreation and leisure, medical services).
- [C] Describe the need for additional Crown land to manage the effects in [A] and [B].
- [D] Provide the estimated total Project cost, including a breakdown for engineering and project management, equipment and materials, and labour for both construction and operation stages. Indicate the percentage of expenditures expected to occur in the region, Alberta, Canada outside of Alberta, and outside of Canada.
- [E] Discuss mitigation strategies to minimize the potential impact of the Project on socio-economic conditions in the region and communities in the region.

Brenda Miskimmin 11-7-13 12:10 PM  
 Comment: These cross references are critical so that experts in each of the disciplines (hunting/trapping, fishing, vegetation use) are involved.

**8 RESIDUAL IMPACTS**

- [A] Describe the residual impacts of the Project following implementation of the Proponent's mitigation measures and the Proponent's plans to manage those residual impacts.

**9 MONITORING**

- [A] Describe the Proponent's current and proposed monitoring programs.
- [B] Describe the monitoring programs proposed to assess any Project impacts and to measure the effectiveness of mitigation plans.

- [C] Discuss the Proponent's local and regional monitoring activities including:
- a) monitoring that will be undertaken to assist in managing environmental effects, confirm performance of mitigation measures, validate project EIA predictions, and improve environmental protection strategies;
  - b) monitoring done independently by the Proponent;
  - c) monitoring performed in conjunction with other stakeholders, including aboriginal communities and groups; and
  - d) new monitoring initiatives that may be required as a result of the Project.

Brenda Miskimmin 11-7-14 3:46 PM

Comment: How is this different from a)?

- [D] Discuss:
- a) how monitoring data will be disseminated to the public, including aboriginal communities, or other interested parties; and
  - b) how the results of monitoring programs and publicly available monitoring information will be integrated with the Proponent's environmental management system.

## Melanie Daneluk

---

**From:** Drew M. Lafond [dlafond@mlt.com]  
**Sent:** Friday, July 22, 2011 4:21 PM  
**To:** AENV Environmental Assessment  
**Cc:** Clayton D. Leonard; G. Rangi Jeerakathil; Ryan V. Rodier  
**Subject:** Re Kirby In Situ Oil Sands Expansion Project  
**Attachments:** Kirby In Situ Expansion Project.PDF

To Whom it May Concern:

Please find attached a letter relating to the Proposed Terms of Reference for the Environmental Impact Assessment for the Kirby In Situ Oil Sands Expansion Project.

**Drew M. Lafond**  
Direct Line: 403.693.4336

**MacPherson Leslie & Tyerman LLP**  
**Regina | Saskatoon | Calgary | Edmonton**  
1600 Centennial Place  
520 - 3<sup>rd</sup> Avenue S.W.  
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July 22, 2011

Clayton D. Leonard  
Direct Line: (403)693.4319  
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*Delivered via Email:* [environmental.assessment@gov.ab.ca](mailto:environmental.assessment@gov.ab.ca)

**Director, Environmental Assessment  
Regional Integration, Alberta Environment  
111 Twin Atria Bldg  
4999 – 98 Avenue  
Edmonton, AB, T6B 2X3**

Dear Sir/Madam:

**Re: Whitefish Lake First Nation Review of Proposed Environmental Assessment Terms of Reference for the Canadian Natural Resources Ltd. Proposed Kirby In Situ Oil Sands Expansion Project**

We act on behalf of the Whitefish (Goodfish) Lake First Nation #128 (“WLFN”) in respect of the environmental impact assessment (“EIA”) report proposed Term of Reference (the “PTOR”) for Canadian Natural Resources Limited’s (“CNRL”) proposed Kirby In Situ Oil Sands Expansion Project (the “Project”). We are writing to provide the following comments regarding WLFN’s concerns regarding the PTOR and Project so they can be addressed during the EIA process for the Project. We are also writing this letter to advise Alberta Environment and CNRL that the Project may directly and adversely affect WLFN’s ability to practice their constitutionally protected Aboriginal and Treaty rights.

**Introduction and Interests Affected by the Project**

For the centuries prior to signing Treaty 6 and predating the creation of Canada and Alberta, WLFN had Aboriginal title over its traditional territories. WLFN is a party to Treaty 6 made in 1876 and received rights under that Treaty. Treaty 6 provides that WLFN members “shall have right to pursue their avocations of hunting and fishing throughout the tract surrendered”. The *Natural Resources Transfer Agreement, 1930* (the “NRTA”) expanded the scope of the Treaty 6 rights to include trapping in addition to hunting and fishing and enlarged the right to hunt, fish, gather and trap under Treaties 6 to all unoccupied Crown lands or lands to which the Indians may have a right of access.<sup>1</sup>

WLFN has a registered population of approximately 2,278 with approximately 1,278 people residing on Indian Reserve No. 128, comprising approximately 4542.70 hectares (the “Reserve”). WLFN members exercise Treaty rights to hunt, fish, trap and gather within and on its reserve lands; however, WLFN’s traditional territories also include a large area in central eastern Alberta. Indeed, WLFN members have and continue to exercise their Treaty rights to

<sup>1</sup> NRTA, 1930 para. 12 Schedule 2 (Alberta)



hunt, fish, gather and trap throughout their traditional territories which includes areas within and surrounding the lands legally described as Townships 74 and 75, Range 12 and Townships 74 and 75, Range 11 (hereinafter collectively referred to as, the “Project Area”).

The Crown in Right of Alberta and the Minister (Alberta Environment) (collectively, the “Crown”), have a legally enforceable constitutional duty to consult with and accommodate WLFN when the Crown contemplates conduct that may potentially adversely impact the Nation’s rights to hunt, fish, trap and gather under Treaty No. 6 and the *NRTA*. Based on the information provided by CNRL, the Project will result in the increase of bitumen processing capacity within CNRL’s existing Steam Assisted Gravity Drainage (“SAGD”) Kirby In Situ Oil Sands facilities. WLFN’s position is that the increased production of bitumen and the expansion of CNRL’s existing Kirby facilities have the potential to adversely impact WLFN members’ ability to carry out their Aboriginal and Treaty rights to hunt, fish, gather and trap on lands situated within their traditional territories.

Any adverse impacts of the Project must be viewed in light of the fact that following the signing of Treaty No. 6, a significant portion of WLFN’s traditional territories have been taken up for agricultural, settlement, and other purposes. The cumulative dispositions by the Crown of lands falling within WLFN’s traditional territories by way of sale, lease or otherwise, and the short and long term environmental impacts arising therefrom, have considerably hindered WLFN members’ ability to exercise their Aboriginal and Treaty right to harvest wildlife. Due to ongoing resource development within WLFN’s traditional territories, there are very few remaining lands upon which WLFN’s members can exercise their preferred means of hunting, fishing, trapping and gathering. WLFN submits that these circumstances have reached a point where continued meaningful rights to hunt, fish, trap and gather are being threatened by ongoing environmental impacts arising from resource development in their traditional territories. The only way that further harm can be avoided is through meaningful consultation with WLFN and appropriate accommodation of WLFN’s rights.

Moreover, in a letter dated July 13, 2010 and January 10, 2011 (enclosed), the Alberta Environment and Alberta Justice, confirmed that members of the WLFN have utilized, and continue to utilize the Conklin area, and in particular both of the Winefred and Kirby Lakes to exercise Aboriginal and Treaty fishing rights. Alberta Justice in that case advised the proponent with regards to Cenovus’ Narrows Lake Project which is near the above captioned Project, that any resource development activities in the Conklin region might adversely impact WLFN members’ ability to carry out their fishing activities. Accordingly, it is highly likely that any additional resource development will also adversely affect WLFN’s members’ ability continue to use the Project Area to pursue their preferred means of hunting, fishing, gathering and trapping.

This view is supported by extensive affidavit evidence WLFN has submitted in other Alberta regulatory proceedings and provided to the Government of Alberta demonstrating that over 150 domestic net fishing licenses have been issued to WLFN members on four lakes in and near the Project, including Winefred Lake, Grist Lake, Kirby Lake and Christina Lake. The Affidavit of Darryl Steinhauer (enclosed) noted that WLFN has had a tradition use “Sundown” cabin on the shore of Winefred Lake. Given this, it is clear that WLFN members have a significant presence in the Project Area which is manifested by historic and current land use by WLFN members to



exercise their Aboriginal and Treaty rights to fish, harvest wildlife and other traditional activities.

**Specific Comments on the PTOR.**

**1. PROJECT DESCRIPTION**

The Project description should identify the specific federal, provincial and municipal permits and approvals which will be required in order for the Project to move forward. WLFN is entitled to full disclosure and to understand the administrative and regulatory frameworks within which the EIA is being conducted, and in particular so that WLFN can understand when the Crown’s duty to consult and accommodate WLFN will be engaged concerning the Project.

In relation to Project constraints, section 2.2[A] of the PTOR provides that as part of the EIA, CNRL will be required to discuss “*the process and criteria used to identify constraints to development, and how the Project has been designed to accommodate those constraints.*” Although Aboriginal traditional land use (“TLU”) is listed as a potential constraint in subsection (b), CNRL should also articulate how WLFN’s TLU operates as a constraint and how this factor influenced or contributed, if at all, to Project design and the selection of the Project Area.

**2. PUBLIC ENGAGEMENT AND ABORIGINAL CONSULTATION**

Courts have clearly held that the duty to consult lies with the Crown and that this duty cannot be delegated to third parties. However, due to practical considerations, the Crown has engaged industry proponents such as CNRL to carry out consultation activities. Notwithstanding the fact that the Crown bears the ultimate duty to consult and accommodate, industry parties have a vested interest in ensuring that the duty to consult is discharged in order to secure timely project development. This unique relationship between the Crown, CNRL and WLFN should be defined within the EIA to avoid any confusion or misconceptions between the parties.

Section 1[B] of the PTOR requires CNRL to do the following:

*Describe the concerns and issues expressed by aboriginal communities and the actions taken to address those concerns and issues, including how aboriginal community input was incorporated into the Project development, impact mitigation and monitoring. Describe consultation undertaken with aboriginal communities and groups with respect to traditional ecological knowledge and traditional use of land.*

It is important to note that, to date, no meaningful consultation has occurred with WLFN by either the Crown or CNRL regarding the Project. The Crown and CNRL has failed to ensure that WLFN members understand the nature of the Project and its potential impacts. This has severely hindered the consultation process in many respects, namely:

- (i) The current language in the PTOR is too ambiguous and fails to specifically acknowledge the need to protect Aboriginal and Treaty rights to hunt, fish, gather and trap. Wording used in the PTOR will ultimately inform the consultation process, particularly in relation to the EIA. This lack of specificity may facilitate CNRL’s flawed consultation process which will undermine WLFN’s expectations concerning consultation and accommodation.

- (ii) The failure to engage WLFN during the development, drafting and approval of the language pertaining to Aboriginal consultation in the PTOR may significantly reduce WLFN's ability to communicate its concerns to CNRL during the EIA. The PTOR does not set out a comprehensive action plan as to how it intends to engage WLFN and how it will communicate with WLFN. A process must be established with the participation of WLFN which will enable WLFN to review Project information and proposals and to meaningfully respond to the same during the EIA. This should also include the provision of resources or capacity funding to WLFN to meaningfully review the EIA, including by way of engaging third-party expert review and advice.
- (iii) To date, all of the preliminary preparations for the Project have been carried out without any baseline assessments of WLFN's rights and TLU activities in the Project Area. CNRL must consider the extent of WLFN's hunting, fishing, gathering and trapping activities within the Project Area and must include WLFN in any discussions as to how such rights will be treated during Project development. The EIA should also mandate WLFN participation in other decisions such as project plans and design, impact monitoring and mitigation, and emergency response planning. To date WLFN has not been consulted on any of these aspects concerning the Project.

WLFN also submits that the PTOR should require CNRL to facilitate WLFN's preparation of an independent, third-party WLFN-specific environmental assessment study concerning the Project. The purpose of this assessment would be to fully and meaningfully identify and evaluate the potential adverse impacts that the Project would impose upon WLFN members' ability to exercise their Aboriginal and Treaty rights to hunt, fish, gather and trap. WLFN understands that there is precedent for a community-specific environmental assessment for other oil sands projects in northern Alberta.

### 3. TRADITIONAL ECOLOGICAL KNOWLEDGE

To date, TLU studies have not been carried out in relation to WLFN and questions such as capacity funding for these studies remain unanswered. WLFN acknowledges that section 5 of the PTOR provides that a map and description of TLU areas of affected Aboriginal peoples will be produced by CNRL. However, WLFN submits that the PTOR should also address the following with respect to TLU studies:

- (i) The establishment of a forum to facilitate the involvement of community elders and leaders in the TLU studies.
- (ii) A description of the personnel and resources required to carry out any TLU studies.
- (iii) A process for identifying all mitigation strategies proposed by WLFN members and how each of these strategies have been considered or implemented by CNRL. Currently, the PTOR requires CNRL to "*describe plans to maintain... aboriginal consultation process following completion of the EIA report to ensure that... aboriginal peoples will have an appropriate forum for expressing their view on the ongoing development and operation and reclamation of the Project.*" Following the collection of information from WLFN's members, it is incumbent upon CNRL to



report any findings in respect of WLFN's use of the Project area and how WLFN's concerns have been incorporated into the Project's design and EIA. This must form part of the EIA to ensure that WLFN's impacts and concerns have been considered and to demonstrate how they have been accommodated.

- (iv) The assessment of traditional, medicinal and cultural purposes mandated by the PTOR is too narrow to address the full scope of Aboriginal and Treaty rights. To illustrate, section 5[B] provides that CNRL shall "*determine the impact of the Project on traditional, medicinal and cultural purposes and identify possible mitigation strategies*". The EIA must examine the impact of the Project on all cultural and traditional activities, as opposed to merely traditional, medicinal and cultural "purposes". Where mitigation strategies are identified by TLU studies, CNRL should work with WLFN to develop mechanisms for implementing and monitoring the effectiveness of mitigation measures. In its current form the PTOR does not address the need for ongoing participation of CNRL to ensure mitigation strategies are properly executed and effective.
- (v) The law respecting Aboriginal and Treaty rights is clear that absent conservation concerns or some other compelling objective, WLFN members have a priority right to harvest wildlife for food and ceremonial purposes. The EIA should take into account this priority.
- (vi) CNRL should provide WLFN with an assessment of the effectiveness of its consultation process as part of the EIA. Moreover, CNRL should state whether WLFN's expectations with respect to consultation and accommodation have been satisfied and what areas may require further consultation

#### 4. WATER MANAGEMENT

The PTOR briefly addresses water supply requirements for the Project, such as expected water balances, location of sources of water and the management strategies for certain types of surface water. However, there is no meaningful provision for discussion of the management and monitoring of local and regional sources of groundwater. The comments within the water management section relate primarily to the management of surface water (navigable waterways etc.) and do not adequately address the unique concerns associated with the use and management of groundwater or the interface of groundwater and surface water. Groundwater is an integral component of the ecosystem and it is incumbent upon CNRL to provide an in-depth review as to how it will maintain sustainable levels and quality of groundwater in the Project Area.

Section 2.6.1 (b) of the PTOR provides that the EIA will describe the "*process water, potable water, and non-potable water requirements and sources for construction... start-up, normal and emergency operating situations, decommissioning and reclamation.*" This section goes on to provide that the EIA will identify the volume of water to be drawn from each source. WLFN submits that CNRL should produce the criteria and rationale underlying the utilization of certain water sources. CNRL should also outline a contingency plan, if any, in the event that restrictions on certain water supplies arise pursuant to license conditions, climate change or water deficits.

## 5. CONSERVATION AND RECLAMATION

Section 2.8[A](b) of the PTOR provides that CNRL must set out “*anticipated timeframes for completion of reclamation stages and release of lands back to the Crown including an outline of the key milestone dates for reclamation and how progress to achieve these targets will be measured...*”.

While this section establishes a requirement to implement timelines for reclamation, it does not impose specific timelines for all forms of reclamation. Rather, it only imposes general targets for reclamation. WLFN submits that in order to establish a conceptual reclamation plan, and one that also includes the concept of progressive reclamation, key milestones and dates for specific targets such as the revegetation and recolonization of disturbed lands and waters are required. Also, the EIA must implement comprehensive monitoring plans and structures to ensure that all reclamation targets and benchmarks are being met.

Under section 2.8[B] of the PTOR, CNRL is required to “*Discuss, from an ecological perspective, the expected timelines for establishment and recovery of vegetative communities and wildlife habitat, the expected success of establishment and recovery, and the expected differences in the resulting communities.*” The term “expected success” does not provide WLFN with any comfort. This provision gives CNRL and the Crown too much flexibility in defining their own expectations for the recovery of the Project area. Comprehensive models for reclamation should be presented to the WLFN with specific guidelines that set out the following:

- (i) a table or graph that shows cumulatively, for each year and for the entire project life, the land disturbed by the Project through clearing, drainage alterations and soil removal or contamination;
- (ii) discuss how CNRL plans to monitor and measure land capability for factors other than soil capability for forest production; and
- (iii) a discussion as to how proposed reclamation strategies have performed in similar situations, including the re-establishment and re-population of ecosites, with a specific emphasis on animal species and vegetation identified as culturally significant by the WLFN.

## 6. WILDLIFE

Pursuant to section 3.7.1.[B] of the PTOR, CNRL is required to “*Describe and map existing wildlife habitat and habitat disturbance... Identify those habitat disturbances that are related to existing and approved Project operations.*” This presumably relates to the cumulative impacts that existing and previous projects have had and continue to have on the environment. Yet, the PTOR does not specify which disturbances and what areas are to be discussed, or the geographic region of the Project Area for assessment purposes. WLFN submits that any discussion of wildlife impacts should not be limited to the Project facilities or Project footprint and direct effects of its construction or operation. A study of the long-term effect on the regional, as opposed to the local, study area is required.



Another concern with respect to the cumulative Project impacts is the date on which baseline data will be established. The EIA should involve a discussion of the “pre-industrial” or “pre-disturbance” data in the context of the cumulative effects for the Project. This form of baseline data was adopted in the *Total Joselyn Joint Review Panel Process* (“Total JRP”). For example, WLFN does not believe it is appropriate to evaluate wildlife habitat loss by merely considering an incremental reduction in wildlife habitat in the context of current baseline conditions. In order to fully conceptualize the potential damages to wildlife habitat and resulting restriction and erosion of WLFN rights, as well as the corresponding mitigation steps that will need to be taken, adverse impacts should be measured in relation to the “pre-industrial” or “pre-disturbance” conditions. All historical wildlife conditions and data must also take into account the traditional knowledge of WLFN members.

WLFN recommends that the EIA specifically require CNRL to establish, in consultation with WLFN members, a regional wildlife plan for the management and recovery of wildlife populations within or near the Project area. WLFN has serious concerns that, if left to CNRL, a regional wildlife plan will not be established at all. When developing a regional wildlife plan, the perspectives of WLFN members are vital to ensure that restoration and wildlife management is carried out in a way that respect TLU. For example, loss of TLU cannot be measured by merely analyzing species absence or migration. All aspects of the Project’s impact on traditional wildlife use must be scrutinized.

In relation to species at risk, section 3.7.2 of the PTOR requires CNRL to identify all species listed in Schedule 1 of the *Species at Risk Act* and those listed as “at risk” by COSEWIC and to assess the Projects impacts to such species and their respective habitats. WLFN submits that CNRL should be required address species at risk in the regional wildlife plan, as was required in the Total JRP, wherein the proponent was required to provide the Crown with a wildlife mitigation plan prior to the clearing of any vegetation. The wildlife mitigation plan in that case needed to produce a no-net significant adverse effect on species at risk. The Total JRP also recommended that Alberta Sustainable Resource Development should consult with Environment Canada and the proponent to ensure that mitigation measures (including using offsite offsets and avoiding high quality habitat) be identified to avoid any significant adverse effects on species at risk. These mitigation measures would be provided to the Crown for inclusion in any *Environmental Protection and Enhancement Act* approval. It is the WLFN’s position that similar processes should be imposed for the Project EIA.

## 7. LAND USE

Section 3.10 of the PTOR identifies several areas where disturbances with existing forms of land use must be identified, yet this section fails to adequately explore TLU by Aboriginal groups such as WLFN and the need for Aboriginal involvement in the identification and assessment process. Moreover, there is no requirement to establish and define access control measures. Access control measures must be implemented to ensure the regulation of non-Aboriginal harvesters and increased predation arising from the Project. The ability of WLFN members to continue to exercise their Aboriginal and Treaty rights to hunt, fish, gather and trap is contingent on their ability to access lands which they have maintained or actively managed in accordance with their traditional practices for generations.



Aboriginal land use is referenced throughout section 3.10 and section 5 of the PTOR, however, CNRL should be specifically required to examine and use any of the traditional knowledge provided by Aboriginal communities during the EIA. The information collected from community members represents generations of traditional knowledge regarding land use and sustainability in or near the Project area. Procedures must be established whereby CNRL will be required to disclose to WLFN how TLU information was considered, and how it influenced CNRL's decision-making process concerning Project design and execution, and specifically in relation to monitoring and mitigation measures.

## 8. PUBLIC HEALTH AND SAFETY

A specific human health risk assessment should be conducted for the WLFN community. Currently, section 6.1[C] of the PTOR provides that CNRL must “[d]ocument any health concerns identified by aboriginal communities or groups resulting from impacts of existing development and of the Project specifically on their traditional lifestyle and include an aboriginal receptor type in the assessment.” WLFN submits that this is wholly inadequate and that a comprehensive human health risk assessment is needed in order to accurately document the cumulative adverse health impacts experienced by WLFN members as a result of aggressive oil sands and other industrial development throughout their traditional territories.

Additionally, the PTOR does not provide for any discussion of how CNRL intends to alleviate or mitigate adverse health impacts of the Project on WLFN's members if such risks are identified. CNRL should provide details during the EIA process about information it has acquired concerning WLFN health concerns and how it intends to mitigate these risks. The EIA should discuss what resources CNRL is prepared to provide to combat health risks, as well as whether WLFN be primarily responsible for administering programs or funding required to minimize health risks associated with the Project.

## 9. SOCIO-ECONOMIC ASSESSMENT

The socio-economic analysis should focus specifically on the Project impacts on specific communities including that of WLFN, and particularly whether the Project will contribute to the proliferation of different forms of abuse such as drug and alcohol abuse. As part of the EIA, CNRL should also be required to assess the social and cultural breakdowns that may arise in the event that the ability of WLFN members to pursue their traditional vocations of hunting, fishing, gathering and trapping is reduced or significantly hampered.

### Conclusion

The WLFN submits that the PTOR should be amended to reflect the foregoing recommendations. The basis for these recommendations is that the Project will disturb hunting, fishing, traditional plants and wildlife populations, including identified species of concern that are already in decline and species that are culturally important to the WLFN. Thus, the Project will likely have an adverse and negative impact on WLFN Treaty and NRTA harvesting rights. Only after implementing the above recommendations will WLFN, CNRL and the Crown fully appreciate the impacts of the Project on WLFN and be able to identify appropriate accommodation.



We trust the above to be satisfactory.

Yours truly,

**MacPherson Leslie & Tyerman LLP**

Per:

A handwritten signature in blue ink, appearing to read 'Clayton D. Leonard', written over a light blue horizontal line.

Clayton D. Leonard

CDL

- Encl. (i) Letter dated July 13, 2010 from Mark Calliou, Manager, Aboriginal Relations, Alberta Environment
- (ii) Letter dated January 10, 2011 from James Mallet, Barrister and Solicitor for the Government of Alberta, Department of Justice.
- (iii) Affidavit of Darryl Steinhauer, sworn November 27, 2010.



Government of Alberta  
Environment

Environmental Stewardship  
Environmental Relations  
111 Twin Atria Building  
4999-88 Avenue  
Edmonton, Alberta T6B 2C3  
Canada  
Telephone: 780-644-6365  
[www.alberta.ca](http://www.alberta.ca)

July 13, 2010

Ms. Aimee Kassam  
Team Lead, Stakeholder Relations  
Cenovus Energy Inc.  
421-7<sup>th</sup> Ave SW  
Calgary AB T2P 0M5

Dear Ms. Kassam:

**Re: Cenovus' Narrows Lake Project and First Nation Consultation Requirements**

In the *Government of Alberta's First Nations Consultation Policy on Land Management and Resource Development*, Alberta recognizes it has a duty to consult with First Nations where land management and resource development have the potential to adversely impact First Nations' *Rights and Traditional Uses of Crown lands*.

To better understand First Nations' use of provincial Crown land, Alberta has initiated the First Nations Geodata Mapping Project which will compile First Nations specific geographic information from a variety of sources. This compilation is intended to help promote consistency, efficiency and due diligence with respect to Alberta's obligations to manage the First Nations consultation process. To date, the project has entailed the internal compilation of data available to the Government for the creation of draft maps outlining geographic areas potentially relevant to First Nations consultation. Currently, Alberta is seeking First Nations' input on the mapped geographic areas by meeting with each First Nation and presenting Alberta's draft map.

As a result of this mapping project, Alberta has learned that Saddle Lake First Nation and Whitefish Goodfish Lake First Nation may be affected by resource development near Conklin Alberta. In order to determine if either community has an interest in understanding more about project development in this area, Alberta Environment plans to send a letter to both Saddle Lake and Whitefish Goodfish Lake First Nations indicating that their community may need to be consulted on the above noted project. This letter will provide contact information for both Cenovus and Alberta Environment and encourage the community to contact either party at their earliest convenience. Should either community respond with any project specific issues or concerns, Cenovus will attempt to engage with them in order to address and manage those concerns.

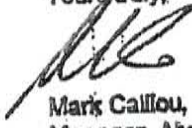
Feel free to contact me with any further questions or concerns on this issue.

...2

  
Prouder To Create. Smarter To Achieve.


Ms. Almas Kassam  
Page 2  
July 13, 2010

Yours truly,



Mark Callou,  
Manager, Aboriginal Relations  
Alberta Environment

cc : Shannon Flint, Director, Northern Region  
Pat Marriott, Acting Regional Approvals Manager, Alberta Environment  
Michèle Camilleri, Alberta Environment  
Danyli Babiyko, Cenovus Energy Inc.  
Drea Cufan, Alberta Environment

 **Government of Alberta** □  
Justice and Attorney General

Aboriginal Law  
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[www.alberta.ca](http://www.alberta.ca)  
File No.: 7900-4-31

January 10, 2011

VIA EMAIL: [Jennifer.eisenberg@cenovus.com](mailto:Jennifer.eisenberg@cenovus.com)

Cenovus FCCL Ltd. as operator for FCCL Partnership  
421-7 Ave SW  
PO Box 766  
Calgary AB T2P 0M5

Attention: Jennifer Eisenberg

Dear Madam:

**Subject: Cenovus FCCL Ltd. – Narrows Lake Applications ("Project")**  
**Consultation with Whitefish (Goodfish) First Nation**

Dear Madam:

This is in response to your letter of December 22, 2010, to the Director, Northern Region, Alberta Environment ("AENV"). My office acts for Alberta Environment in this matter.

AENV advises that Cenovus FCCL Ltd. ("Cenovus") was directed to engage with Whitefish (Goodfish) First Nation ("WGFN") in July, 2010. The timing of this direction was related to Alberta's Geodata Mapping Project, through which Alberta learned that WGFN may be affected by resource development in the Conklin area. Data compiled by Alberta Sustainable Resource Development indicates that WGFN members were making use of both Winefred and Kirby Lakes to exercise treaty fishing rights.

AENV is encouraged that discussions between Cenovus and WGFN are ongoing, and that the materials filed by WGFN with AENV and the Energy Resources Conservation Board are part of those discussions. Alberta encourages Cenovus to keep WGFN informed of the Project's potential impacts on Rights and Traditional Uses and the status of the Project application. Pursuant to Alberta's First Nations Consultation Policy and Guidelines, Alberta will continue to advise and make information available to Cenovus, as able, regarding potential adverse impacts to the Rights and Traditional Uses of WGFN and other potentially affected First Nations.

AENV encourages Cenovus to follow up with WGFN directly regarding any further information the company may require to understand and take reasonable steps to address any concerns raised regarding Project-related impacts to Rights and Traditional Uses.

If Cenovus has specific questions related to the above, AENV encourages Cenovus' regulatory staff to contact Drea Wonnacott directly at 780-422-7028.

  
Freedom To Create. Spirit To Achieve.

I am turning over responsibility for this matter to Stephanie Latimer and Sandra Folkins of my office. Please direct any future correspondence from your office to their attention.

Sincerely,



James Mallet  
Barrister and Solicitor

cc: Al Reid, Cenovus  
Clayton Leonard, MacPherson Leslie Tyerman LLP  
Drea Wonnacott, AENV  
Stephanie Latimer, Alberta Justice  
Sandra Folkins, Alberta Justice

Deponent: Darryl Steinhauer  
Date Sworn: November 27, 2010

**IN THE MATTER OF** the *Energy Resources Conservation Act*, Ch. E-10, RSA  
2000

-and-

**IN THE MATTER OF** Cenovus FCCLL Ltd.'s application to the Alberta  
Energy Resources Conservation Board for authorization to construct and operate  
the Narrows Lake Project (the "**Project**"), Athabasca Oil Sands Area –  
Application No. 1656516, *Environmental Protection and Enhancement Act*,  
Application 001-265959 and Environmental Impact Assessment Report

**AFFIDAVIT**


I, **DARRYL STEINHAUER**, of the Whitefish Lake First Nation #128 in the Province of  
Alberta, MAKE OATH AND SAY AS FOLLOWS:

1. I am a member of the Whitefish Lake First Nation #128 ("**Whitefish**") and I am  
the Consultation Coordinator for Whitefish and I am also a hunter, fisherman,  
gatherer and trapper within Whitefish's traditional territory and as such I have  
personal knowledge of the matters in this Affidavit, except where stated to be  
based on information and belief and where so stated I verily believe the same to  
be true.
2. On April 12, 2010, Whitefish Consultation and Traditional Use staff, including  
myself, met with representatives of the Government of Alberta – Shane Gauthier,  
Ryan Tew, Neil Brad, John Belanger, Valerie Knaga, Drea Wonnacott, and its  
consultant, Ryan Brown of PACTeam Canada – from 10:30 am to approximately  
12:30 pm at the Whitefish Lake First Nation Day Care Centre at Goodfish Lake,  
Alberta, regarding the Government of Alberta's Geodata Mapping Project.



3. At the meeting, I was informed by Neil Brad with the Government of Alberta and believe it to be true, that over the past 10 years the Government of Alberta has issued 151 domestic net fishing licenses to Whitefish members on four lakes in and near to the Project, as follows:
- a. 97 domestic net fishing licenses to Whitefish members for Winefred Lake;
  - b. 7 domestic net fishing licenses to Whitefish members for Grist Lake;
  - c. 39 domestic net fishing licenses to Whitefish members for Kirby Lake;  
and
  - d. 8 domestic net fishing licenses to Whitefish members for Christina Lake.
4. A Whitefish member, Wilfred Favel, constructed a traditional use cabin about 20 years ago on the southeast shore of Winefred Lake at the approximate location of 55\*27'13.10" N 110\*26'19.05" W. The cabin has and continues to be used by Whitefish members during trips to the Project area for hunting, fishing, and trapping.
5. I make this Affidavit in support of the position of Whitefish in this matter.

SWORN BEFORE ME at the City of  
Edmonton, in the Province of Alberta this 27<sup>th</sup>  
day of November, 2010.

  
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A Commissioner for Oaths in and for the  
Province of Alberta  
Being a Solicitor

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**DARRYL STEINHAUER**

**Nonnie J. Jackson**  
Barrister & Solicitor  
**MACPHERSON LESLIE & TYERMAN LLP**  
2200, 10235 - 101 Street  
Edmonton, Alberta T5J 3G1

## Melanie Daneluk

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**From:** Peter Whitehead - Cape Ecology Ltd [mossbod@hotmail.com]

**Sent:** Saturday, May 28, 2011 11:20 AM

**To:** AENV Environmental Assessment

**Subject:** Suggested changes to Terms of Reference

Attn: Director, Environmental  
Assessment

Alberta Environment  
4999 – 98 Avenue NW  
Edmonton, Alberta  
T6B 2X3

I would like to propose an amendment to the Terms of Reference document (Sections 3.6.1 A, 3.6.2 A and 3.6.2 B):

**Proposed Terms of Reference for Canadian Natural Resources Limited's Grouse In-Situ Oil Sands Project**

and the Terms of Reference document (Section 3.6.1 A, 3.6.2 A and 3.6.2 B);

**Proposed Terms of Reference for Canadian Natural Resources Limited's Kirby In-Situ Oil Sands Expansion Project**

The change I would like to propose eliminates ambiguity regarding searches for rare plants in environmental assessments in general. I will be proposing this amendment for all terms of reference in the future, until it is generally adopted.

Most habitats in Alberta can potentially support rare vascular plants, rare bryophytes and rare lichens included in the ACIMS tracking and watch lists and in Schedule 1 of Species of Risk Act . Peatlands and uplands in the Boreal Forest Natural Region of Alberta and particularly rich in bryophytes and lichens. In the sections quoted above, the Terms of Reference use the term "rare plants" which strictly speaking does not include rare lichens because lichens comprise a symbiotic relationship between an alga and fungi. Historically searches for rare lichens have not been adequate, possibly because of the ambiguity suggested. Although I believe things are changing for the better, I would like this potential loophole to be closed to ensure that lichens are included in environmental assessments.

Also, the term "rare plants" could be interpreted as meaning rare vascular plants. Historically rare bryophytes have not been searched for adequately when searches for rare plants are conducted. Once again I believe that this is changing for the better, but I would like rare bryophytes to be mentioned in the Terms of Reference to ensure that they are included in environmental assessments.

The amendment I propose in all the sections mentioned above, is that the term "**rare plants**" becomes "**rare vascular plants, rare bryophytes, rare lichens**". The effect of this change will be to ensure that surveys include ALL vegetation identified on the ACIMS tracking and watch lists and in Schedule 1 of Species of Risk Act . This is something that can only be of benefit to the Province.

The newly formed Alberta Bryophyte and Lichen Interest Group ( [www.ablig.com](http://www.ablig.com) ), is working to ensure that the interests of bryophytes and lichens are not ignored in Alberta.

If you have any questions regarding my suggested amendment please do not hesitate to contact me.

I would be grateful if you could confirm receipt of this suggested change.

Regards  
**Peter Whitehead Ph.D., P.Biol.**

6/22/2011

Ecologist, Bryologist

**Cape Ecology Ltd**

264 Woodbriar Circle SW, Calgary, Alberta, T2W 6B4

Tel: (403) 984 3981 Mob: (403) 671 1900

<http://www.capeecology.ca>

<http://www.ablig.com>

 Please consider the environment before printing this email.



## PUBLIC NOTICE

### FINAL TERMS OF REFERENCE FOR CANADIAN NATURAL RESOURCES LIMITED'S PROPOSED KIRBY IN SITU OIL SANDS EXPANSION PROJECT ENVIRONMENTAL IMPACT ASSESSMENT

ALBERTA ENVIRONMENT AND WATER

On October 11, 2011, Alberta Environment and Water issued final Terms of Reference for the Environmental Impact Assessment report for Canadian Natural Resources Limited's proposed Kirby In Situ Oil Sands Expansion Project. The company is proposing the expansion of two recently-approved projects, Canadian Natural's 45,000 bbl/d (7,155 m3/d) Kirby In-Situ Oil Sands Project; and Enerplus Resources Fund's 10,000 bbl/d (1,590 m3/d) Kirby Oil Sands Project Phase 1 (recently acquired by Canadian Natural). The Kirby Expansion Project will increase the combined, approved 55,000 bbl/d bitumen production by 85,000 bbl/d (13,515 m3/d) to a total of 140,000 bbl/d (22,260 m3/d). The proposed project is located primarily within the Regional Municipality of Wood Buffalo, with small portions in Lac La Biche County, approximately 75 km northeast of Lac La Biche and 10 km south of Conklin, in Townships 73-75, Ranges 7-9, W4M.

Copies of the Terms of Reference are available from:

Jon Gareau  
Regulatory Coordinator  
Canadian Natural Resources Limited  
2500, 855 - 2nd Street SW  
Calgary, Alberta T2P 4J8  
Phone: (403) 517-7153  
Email: kirbyproject@cnrl.com

Melanie Daneluk  
Registrar of Environmental Assessment Information  
Alberta Environment and Water  
111, 4999 – 98th Avenue  
Edmonton, Alberta T6B 2X3  
Phone: (780) 427-5828, Toll Free: 310-0000  
Email: environmental.assessment@gov.ab.ca

Terms of Reference are also accessible on the following websites:

Canadian Natural Resources Limited: <http://www.cnrl.com/grouse-project>

Alberta Environment and Water: <http://www.environment.alberta.ca/02313.html>

**Government of Alberta** ■



## Canadian Natural

### Public Notice

#### Canadian Natural Resources Limited

#### Kirby In Situ Oil Sands Expansion Project

#### Proposed Terms of Reference for Environmental Impact Assessment

Canadian Natural Resources Limited (Canadian Natural) is proposing the Kirby In Situ Oil Sands Expansion Project (Kirby Expansion Project). The proposed Kirby Expansion Project will see the expansion of the following two recently-approved and nearby in situ oil sands projects:

- Canadian Natural's 45,000 bbl/d (7,155 m<sup>3</sup>/d) Kirby In-Situ Oil Sands Project; and
- Enerplus Resources Fund's 10,000 bbl/d (1,590 m<sup>3</sup>/d) Kirby Oil Sands Project Phase 1 (recently acquired by Canadian Natural).

The Kirby Expansion Project will increase the combined, approved 55,000 bbl/d bitumen production by 85,000 bbl/d (13,515 m<sup>3</sup>/d) to a total of 140,000 bbl/d (22,260 m<sup>3</sup>/d). This proposed expansion will occur in three phases and will extend the overall life of the approved projects from 20 years to approximately 30 years.

The Kirby Expansion Project will include the following:

- construction and drilling of additional well pads and the use of Steam Assisted Gravity Drainage (SAGD) technology for the recovery of bitumen from the McMurray and Wabiskaw oil sands formations;
- additional steam production, bitumen processing and water treatment capacity at the two Central Processing Facilities in the two previously approved projects; and
- required infrastructure and facilities such as access roads, groundwater supply wells, wastewater disposal wells and associated buried groundwater / wastewater pipelines, electrical power distribution lines, above-ground pipelines, and borrow areas.

The proposed Kirby Expansion Project Area ("Project Area") is located primarily within Townships 73, 74 and 75, Ranges 7, 8, and 9, West of the 4th Meridian. The proposed Project Area is approximately 75 km northeast of Lac La Biche and 10 km south of Conklin. The proposed Project Area is located primarily within the Regional Municipality of Wood Buffalo, with small portions in Lac La Biche County. Pending regulatory approval, Canadian Natural is planning to start construction of the Kirby Expansion Project in late Q4 2013, and steam-in is planned for Q1 2016.

The Director responsible for Environmental Assessment has directed that an Environmental Impact Assessment Report be prepared for the proposed Kirby Expansion Project. Canadian Natural has prepared a Proposed Terms of Reference for this Environmental Impact Assessment, and through this public notice, invites the public to review this document. Any comments filed concerning the Proposed Terms of Reference will be accessible to the public.

The proposed Terms of Reference and associated project information can be viewed at the following locations:

- Canadian Natural Resources Limited, 2500, 855-2<sup>nd</sup> Street SW, Calgary, AB T2P 4J8  
Website: <http://www.cnrl.com/kirby-project>
- Alberta Environment's Register of Environmental Assessment, 111 Twin Atria Bldg., 4999 – 98 Avenue, Edmonton, Alberta, Attn: Melanie Daneluk;  
Website: <http://environment.alberta.ca/02313.html>

- Bonnyville Municipal Library
- Stuart MacPherson Public Library (Lac La Biche)
- Plamondon Public Library
- Fort McMurray Public Library
- Conklin Municipal Office

For further information on the Kirby Expansion Project or to receive a copy of the Proposed Terms of Reference and associated project information please contact:

Attn: Jon Gareau

Regulatory Coordinator  
Canadian Natural Resources Limited  
2500, 855-2<sup>nd</sup> Street SW  
Calgary, AB T2P 4J8  
Phone: (403) 517-7153  
Fax: (403) 386-5594  
E-mail: kirbyproject@cnrl.com

Individuals wishing to provide written comments on the proposed Terms of Reference must submit them by July 22, 2011 to:

Director, Environmental Assessment,  
Regional Integration  
Alberta Environment  
111 Twin Atria Bldg.  
4999 – 98 Avenue  
Edmonton, Alberta T6B 2X3  
Fax: (780) 427-9102

E-mail:  
environmental.assessment@gov.ab.ca

## PUBLIC NOTICE

### FINAL TERMS OF REFERENCE FOR CANADIAN NATURAL RESOURCES LIMITED'S PROPOSED KIRBY IN SITU OIL SANDS EXPANSION PROJECT ENVIRONMENTAL IMPACT ASSESSMENT

ALBERTA ENVIRONMENT AND WATER

On October 11, 2011, Alberta Environment and Water issued final Terms of Reference for the Environmental Impact Assessment report for Canadian Natural Resources Limited's proposed Kirby In Situ Oil Sands Expansion Project. The company is proposing the expansion of two recently-approved projects, Canadian Natural's 45,000 bbl/d (7,155 m3/d) Kirby In-Situ Oil Sands Project; and Enerplus Resources Fund's 10,000 bbl/d (1,590 m3/d) Kirby Oil Sands Project Phase 1 (recently acquired by Canadian Natural). The Kirby Expansion Project will increase the combined, approved 55,000 bbl/d bitumen production by 85,000 bbl/d (13,515 m3/d) to a total of 140,000 bbl/d (22,260 m3/d). The proposed project is located primarily within the Regional Municipality of Wood Buffalo, with small portions in Lac La Biche County, approximately 75 km northeast of Lac La Biche and 10 km south of Conklin, in Townships 73-75, Ranges 7-9, W4M.

Copies of the Terms of Reference are available from:

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Edmonton, Alberta T6B 2X3  
Phone: (780) 427-5828, Toll Free: 310-0000  
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Alberta Environment and Water: <http://www.environment.alberta.ca/02313.html>

**Government of Alberta** ■



#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
<b>Beaver Lake Cree Nation</b>						
<b>May 15 to July 15 2011</b>						
1	19-May-2011	Phone Call	Patrick Caldwell, Canadian Natural	Robert Gillis, Executive Director		Phone call from Canadian Natural (Patrick Caldwell) to Beaver Lake Cree Nation (Robert Gillis) to inform him of Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Discussion included BLCN's requirement for CNRL to sign a Negotiation Agreement.
2	19-May-2011	Letter	Robert Gillis, Executive Director	Patrick Caldwell, Canadian Natural		Letter sent from Beaver Lake Cree Nation (Robert Gillis) to Canadian Natural (Patrick Caldwell) which included a copy of BLCN's Negotiation Agreement. Patrick Caldwell was asked to review and respond accordingly if CNRL wishes to move forward with consultation on the Kirby Expansion Project.
3	20-May-2011	Letter	Anita Sartori, Canadian Natural	Chief Alphonse Lameman		Letter sent from Canadian Natural (Anita Sartori) to Beaver Lake Cree Nation (Chief Alphonse Lameman) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on the Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
4	20-May-2011	Letter	Anita Sartori, Canadian Natural	Robert Gillis, Executive Director		Letter sent from Canadian Natural (Anita Sartori) to Beaver Lake Cree Nation (Robert Gillis) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
5	24-May-2011	Email	Patrick Caldwell, Canadian Natural	Robert Gillis, Executive Director		Email from Canadian Natural (Patrick Caldwell) to Beaver Lake Cree Nation (Robert Gillis) to attempt to coordinate a meeting next week to discuss upcoming projects. Patrick offered to meet Wednesday or Friday.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
6	25-May-2011	Phone Call	Patrick Caldwell, Canadian Natural	Robert Gillis, Executive Director		Phone call from Canadian Natural (Patrick Caldwell) to Beaver Lake Cree Nation (Robert Gillis) to inform him of Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Patrick Caldwell requested an opportunity to hand deliver the disclosure documents which included a Notification Letter and the following attachments: Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Robert Gillis declined to meet with Patrick Caldwell until a formal negotiation agreement was in place.
7	27-May-2011	Email	Patrick Caldwell, Canadian Natural	Robert Gillis, Executive Director		Email from Canadian Natural (Patrick Caldwell) to Beaver Lake Cree Nation (Robert Gillis) to update BLCN on the status of the Negotiation Agreement. Patrick Caldwell indicated that the local manager was occupied with the Forest Fires in Slave Lake and was not able to review the proposal at this time. Patrick Caldwell also indicated that Kirby Expansion Project Disclosure Documents had been couriered.
8	1-Jun-2011	Phone Call	Patrick Caldwell, Canadian Natural	Robert Gillis, Executive Director		Phone call from Canadian Natural (Patrick Caldwell) to Beaver Lake Cree Nation (Robert Gillis) to discuss Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Robert Gillis indicated that Beaver Lake Cree Nation was still not willing to discuss the proposed Kirby Expansion Project without a signed Negotiation Agreement in place. Patrick Caldwell will follow up with Canadian Natural's senior management regarding Negotiation Agreement.
#	<b>July 16 to Sept 16 2011</b>					
9	19-Jul-2011	Email	Robert Gillis, Executive Director	Patrick Caldwell, Canadian Natural		Email from Beaver Lake Cree Nation (Robert Gillis) to Canadian Natural (Patrick Caldwell) to indicate that CNRL would be receiving correspondence from BLCN no later than July 26, 2011 to provide specific concerns related to the current state of consultation on the Winter Program and the Kirby Expansion Project. Robert Gillis requested a few tentative dates to meet and discuss further.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
10	26-Jul-2011	Email	Robert Gillis, Executive Director	Patrick Caldwell, Canadian Natural		Email with letter enclosed and attachments from Beaver Lake Cree Nation (Robert Gillis) to Canadian Natural (Patrick Caldwell) <i>Re: Beaver Lake Cree Nation - Kirby In-Situ Oil Sands Expansion Project</i> . Attachments included a revised copy of the Negotiation Agreement to address consultation activities specific to the Kirby Expansion Project, and a copy of a letter that was sent to the Honourable Mel Knight, Minister of Sustainable Resource Development - <i>Re: Canadian Natural Resources Limited - Kirby In-situ Oil Sands Project - Crown Obligation to Consult</i>
11	13-Aug-2011	Email	Robert Gillis, Executive Director	Patrick Caldwell, Canadian Natural		Email with letter enclosed from Beaver Lake Cree Nation (Robert Gillis) to Canadian Natural (Patrick Caldwell) <i>Re: Beaver Lake Cree Nation - Kirby In-Situ Oil Sands Expansion Project</i> .
12	15-Aug-2011	Email	Patrick Caldwell, Canadian Natural	Robert Gillis, Executive Director		Email from Canadian Natural (Patrick Caldwell) to Beaver Lake Cree Nation (Robert Gillis) to confirm receipt of the August 13, 2011 email and July 26th, 2011 letter <i>Re: Beaver Lake Cree Nation - Kirby In-Situ Oil Sands Expansion Project</i> .
#	<b>Sept 17 to Nov 17 2011</b>					
13	20-Oct-2011	Meeting	Steve Lepp, Canadian Natural	Robert Gillis, Executive Director	Mel Benson, Consultant, BLCN	Meeting with Canadian Natural (Steve Lepp) and Beaver Lake Cree Nation (Robert Gillis and Mel Benson) to establish the lines of communication between the two parties and to discuss the draft Kirby Project Negotiation Agreement which outlines a process for project-related consultation. Canadian Natural agreed to review and provide a response. Next meeting proposed for November 2, 2011.
14	23-Oct-2011	Email	Robert Gillis, Executive Director	Steve Lepp, Canadian Natural		Email from Beaver Lake Cree Nation (Robert Gillis) to Canadian Natural (Steve Lepp) which included a copy of the draft Kirby Project Negotiation Agreement to review in advance of the next meeting proposed for November 2, 2011.
15	24-Oct-2011	Email	Steve Lepp, Canadian Natural	Robert Gillis, Executive Director		Email from Canadian Natural (Steve Lepp) to Beaver Lake Cree Nation (Robert Gillis) to seek a clarification of the intent for the draft Kirby Project Negotiation Agreement. Steve Lepp indicated that during the October 20, 2011 meeting BLCN made reference to a Confidentiality Agreement. Want to confirm that Canadian Natural has the correct document. Steve Lepp also noted that the Kirby Project Negotiation Agreement does not address the broader relationship which was an important element of their discussion. Beaver Lake Cree Nation to respond accordingly.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
16	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Chief Alphonse Lameman		Letter sent from Canadian Natural (Ryan McFadden) to BLCN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
17	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Robert Gillis, Executive Director		Letter sent from Canadian Natural (Ryan McFadden) to BLCN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
18	25-Oct-2011	Email	Robert Gillis, Executive Director	Steve Lepp, Canadian Natural		Email with attachment from Beaver Lake Cree Nation (Robert Gillis) to Canadian Natural (Steve Lepp) which indicated that the draft Kirby Project Negotiation Agreement sent on October 23, 2011 was originally sent to Canadian Natural in August 2011. Robert Gillis stated that a broader draft Negotiation Agreement was previously sent to Canadian Natural back in May 2011 following public disclosure of the Kirby Expansion Project; however, BLCN did not receive a response from Canadian Natural. BLCN decided to draft a more specific consultation agreement (the "Kirby Project Negotiation Agreement"). Robert Gillis resent the May 2011 "global" Negotiation Agreement and indicated BLCN would prefer to use this version for future discussions.



#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
<b>Chard Métis Settlement Local #214</b>						
<b>May 15 to July 15 2011</b>						
1	19-May-2011	Meeting	Patrick Caldwell	Raoul Montgrand, President	Patrick Caldwell, Karyn Hobbs, Raoul Montgrand	Meeting between Canadian Natural (Patrick Caldwell and Karyn Hobbs) and Chard Métis (Raoul Montgrand) to discuss public disclosure of Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Chard Métis indicated they are seeking funding for a new office, to put community members through safety training courses, and to hold a celebration event for a community member that is turning 100. Patrick Caldwell suggested that Chard Métis submit a written request. Chard Métis have a cultural camp near the Cowpar facility and would like to have the road repaired.
2	20-May-2011	Letter	Anita Sartori, Canadian Natural	Raoul Montgrand, President		Letter sent from Canadian Natural (Anita Sartori) to Chard Métis (Raoul Montgrand) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
<b># July 16 to Sept 16 2011</b>						
	September	No entries				

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
#	<b>Sept 17 to Nov 17 2011</b>					
3	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Raoul Montgrand, President		Letter sent from Canadian Natural (Ryan McFadden) to Chard to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
4	26-Oct-2011	Phone call	Patrick Caldwell	Raoul Montgrand, President		Phone call from Canadian Natural (Patrick Caldwell) to Chard (Raoul Montgrand) to determine Chard's interest in project-related consultation and to collect and submit traditional use information for Kirby Expansion Project area. Raoul Montgrand confirmed Chard's interest and suggested we meet to discuss further.
5	17-Nov-2011	Meeting	Patrick Caldwell	Raoul Montgrand, President		Meeting between Canadian Natural (Patrick Caldwell and Ryan McFadden) and Chard Métis (Raoul Montgrand) to discuss project and explore opportunities to collect and submit traditional use information for Kirby Expansion Project area. Chard failed to show and the meeting was cancelled.
<b>Chipewyan Prairie Dene First Nation</b>						
	<b>May 15 to July 15 2011</b>					
1	19-May-2011	Phone Call	Patrick Caldwell, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Phone call from Canadian Natural (Patrick Caldwell) to Chipewyan Prairie Dene First Nation (Shaun Janvier) regarding public disclosure documents. Patrick Caldwell left a voicemail message to indicate that a letter was sent on May 18, 2011 regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR).

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
2	19-May-2011	Phone Call	Kyle Gladue, Special Project Coordinator	Patrick Caldwell, Canadian Natural		Phone call from Chipewyan Prairie Dene First Nation (Kyle Gladue on behalf of Shaun Janvier) regarding public disclosure documents. Patrick Caldwell indicated that a letter was sent on May 18, 2011 regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Kyle Gladue would look for the letter and attachments in the mail over the next few days.
3	20-May-2011	Letter	Anita Sartori, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Letter sent from Canadian Natural (Anita Sartori) to Chipewyan Prairie Dene First Nation (Shaun Janvier) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
4	20-May-2011	Letter	Anita Sartori, Canadian Natural	Chief Vern Janvier		Letter sent from Canadian Natural (Anita Sartori) to Chipewyan Prairie Dene First Nation (Chief Vern Janvier) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
5	20-Jun-2011	Voicemail	Karyn Hobbs, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Phone call from Canadian Natural (Karyn Hobbs) to Chipewyan Prairie Dene First Nation (Shaun Janvier) to confirm receipt of the Kirby Expansion Project disclosure documents, and to determine if CPDFN had a chance to review and/or had any questions.
6	23-Jun-2011	Voicemail	Karyn Hobbs, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Phone call from Canadian Natural (Karyn Hobbs) to Chipewyan Prairie Dene First Nation (Shaun Janvier) to confirm that Karyn Hobbs was informed that CPDFN had not yet seen the Kirby Expansion Project disclosure documents. Karyn Hobbs indicated that she would drop off copies of the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR) at the CPDFN band office in Janvier at around 2PM today.
7	23-Jun-2011	In-Person	Karyn Hobbs, Canadian Natural	Kevin Coueslan, Executive Assistant to Chief Vern Janvier		Karyn Hobbs presented herself at the CPDFN Band Office in Janvier and requested to meet with Shaun Janvier to deliver copies of the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR) for the Kirby Expansion Project. The receptionist indicated that Shaun Janvier was not in. Karyn Hobbs met with Kevin Coueslan and provided copies of the disclosure documents with the he receptionist to be provided to Shaun Janvier and Chief Vern Janvier.
8	23-Jun-2011	Voicemail	Karyn Hobbs, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Voicemail from Canadian Natural (Karyn Hobbs) to Chipewyan Prairie Dene First Nation (Shaun Janvier) to confirm that Karyn Hobbs had delivered to Kevin Coueslan copies of the Kirby Expansion Project Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR) for Shaun Janvier and Chief Vern Janvier at the CPDFN band office in Janvier. Shaun Janvier was asked to contact Karyn Hobbs if there were any questions or concerns.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
9	23-Jun-2011	Voicemail	Karyn Hobbs, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Voicemail from Canadian Natural (Karyn Hobbs) to Chipewyan Prairie Dene First Nation (Shaun Janvier) to confirm that Karyn Hobbs had delivered copies of the Kirby Expansion Project Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR) for Shaun Janvier and Chief Vern Janvier at the CPDFN band office in Janvier. Shaun Janvier was asked to contact Karyn Hobbs if there were any questions or concerns.
10	23-Jun-2011	Phone Call	Karyn Hobbs, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Phone call from Canadian Natural (Karyn Hobbs) to Chipewyan Prairie Dene First Nation (Stacey Mouille) to indicate that copies of the Kirby Expansion Project Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR) for Shaun Janvier and Chief Vern Janvier at the CPDFN band office in Janvier on June 23, 2011.
11	5-Jul-2011	Email	Karyn Hobbs, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Email with attachments from Canadian Natural (Karyn Hobbs) to CPDFN IRC (Stacey Mouille). Attachments included copies of the Kirby Expansion Project Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR).
12	5-Jul-2011	In-Person	Karyn Hobbs, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Karyn Hobbs presented herself at the CPDFN IRC Office in Fort McMurray and delivered business cards and copies of the Kirby Expansion Project Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR) to Stacey Mouille.
#	<b>July 16 to Sept 16 2011</b>					
13	29-Aug-2011	In-Person	Karyn Hobbs, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Karyn Hobbs presented herself at the CPDFN IRC Office in Fort McMurray to hand-deliver copies of the Kirby Expansion Project Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR) to Stacey Mouille. Karyn Hobbs spoke to Shaun Janvier's assistant and requested a meeting ASAP. Karyn Hobbs also requested assistance from Stacey Mouille to coordinate schedules.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
14	29-Aug-2011	Email	Karyn Hobbs, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Email from Canadian Natural (Karyn Hobbs) to Chipewyan Prairie Dene First Nation (Shaun Janvier and Stacey Mouille) to inform them that she had dropped by the IRC office to leave Canadian Natural's quarterly payment for consultation and to deliver the letter of <i>August 5th, 2011 - Re: Kirby Expansion Project: Meeting Dates and Traditional Use Studies</i> . Karyn Hobbs indicated that Canadian Natural had previously sent the letters as registered mail from Calgary, but they were returned undelivered by Canada Post. Karyn Hobbs requested a meeting between Canadian Natural and CPDFN to discuss the Kirby Expansion Project, to answer questions or concerns, and to discuss setting up a consultation process.
15	30-Aug-2011	Email	Stacey Mouille, Industry Relations Corporation	Karyn Hobbs, Canadian Natural		Email from Chipewyan Prairie Dene First Nation (Stacey Mouille) to Canadian Natural (Karyn Hobbs) to propose a meeting on August 28, 2011 to discuss the Kirby Expansion Project.
16	30-Aug-2011	Email	Karyn Hobbs, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Email from Canadian Natural (Karyn Hobbs) to Chipewyan Prairie Dene First Nation (Stacey Mouille) to confirm the meeting on August 28, 2011 to discuss the Kirby Expansion Project.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
#	Sept 17 to Nov 17 2011					
17	28-Sep-2011	Meeting	Karyn Hobbs, Canadian Natural	Stacey Mouille, Industry Relations Corporation	Canadian Natural: Ryan McFadden Karyn Hobbs Bob Dunn Marc Scrimshaw  CPDFN Stacey Mouille Shaun Janvier Kyle Gladue	Meeting with Canadian Natural and CPDFN to discuss the Kirby Expansion Project. CPDFN agreed to provide a consultation plan and Traditional Use study proposal and budget together to support their participation and submission of information for the EIA. CPDFN expressed concern with Kirby Expansion Project timelines as they have extensive commitments with many industry organizations and will be involved in forthcoming hearings for MEG and Petrobank. CPDFN requested that we work together on developing a community consultation process and will be looking to engage in negotiations towards a benefit agreement to mitigate or accommodate for project-related impacts. CPDFN indicated it would be several weeks before we may see a proposal due to their current workload.
18	29-Sep-2011	Email	Ryan McFadden, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Email from Canadian Natural (Ryan McFadden) to Chipewyan Prairie Dene First Nation (Shaun Janvier and Stacey Mouille) to thank CPDFN for meeting on September 28, 2011 and to indicate CNRL was looking forward to receiving the work plan and budget for a TU/TLU Study and consultation process.
19	29-Sep-2011	Email	Stacey Mouille, Industry Relations Corporation	Ryan McFadden, Canadian Natural		Email from Chipewyan Prairie Dene First Nation (Stacey Mouille) to Canadian Natural (Ryan McFadden) to confirm CPDFN will be working on a work plan and budget for a TLU/TK study and Consultation Process; however, CPDFN indicated this could take some time as the TLU/TK Contractor is currently working on a number of projects for several other companies. CPDFN acknowledged that although CNRL would like to include TLU/TK information from CPDFN prior to submission of the application, it is unlikely that this will occur given the time constraints. CPDFN will be speaking with their TLU/TK Consultant to provide a more detailed time-line. CPDFN indicated that further internal discussion was required to define a community consultation process for the Kirby Expansion Project and community benefit negotiation process.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
20	21-Oct-2011	Email	Ryan McFadden, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Email from Canadian Natural (Ryan McFadden) to Chipewyan Prairie Dene First Nation (Stacey Mouille and Shaun Janvier) to check in on how CPDFN was progressing with developing a work plan and budget for the TLU/TK study and project-specific consultation process. Ryan McFadden indicated that CNRL had an internal meeting and reviewed the details of the September 28, 2011 meeting and confirmed CNRL would be willing to meet with Shaun Janvier at a future date to discuss CPDFN's community priorities and interests.
21	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Shaun Janvier, Industry Relations Corporation Director		Letter sent from Canadian Natural (Ryan McFadden) to CPDFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.



#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
22	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Chief Vern Janvier		Letter sent from Canadian Natural (Ryan McFadden) to CPDFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
23	3-Nov-2011	Email	Stacey Mouille, Industry Relations Corporation	Ryan McFadden, Canadian Natural		Email from Chipewyan Prairie Dene First Nation (Stacey Mouille) to Canadian Natural (Ryan McFadden) to indicate that upon review of recent emails, it appears that CPDFN had not yet received shape files from CNRL for project. Stacey Mouille requested CNRL send shape files along so CPDFN could develop maps to determine whether they have concerns in relation to traditional resources. CPDFN confirmed that the TLU Consultant had not yet started on a statement of work for TLU/TK but were hoping to get it underway to support CNRL's timeline for submission. Requested an update on submission timeline if any. Indicated CPDFN was meeting with Heritage Consultant early next week to discuss timelines.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
24	4-Nov-2011	Email	Ryan McFadden, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Email with shape file attachments from Canadian Natural (Ryan McFadden) to Chipewyan Prairie Dene First Nation (Stacey Mouille). In recognition of the approaching deadline to file the application, CNRL offered to provide Golder to help coordinate with CPDFN's TLU/TK consultant to develop statement of work or organize interviews. CNRL offered that upon completion of the maps using the shape files provided by CNRL, that a fly-over of Kirby Expansion Project area could be arranged to help identify or confirm areas of interest. The results could be then presented to elders or community representatives for confirmation. If approved, the results would then form a preliminary report which would be submitted with the application. CNRL proposed a draft schedule to complete the work.
25	7-Nov-2011	Email	Stacey Mouille, Industry Relations Corporation	Ryan McFadden, Canadian Natural		Email from Chipewyan Prairie Dene First Nation (Stacey Mouille) to Canadian Natural (Ryan McFadden) to confirm that the shape files and email of November 4, 2011 were forwarded to the TLU/TK Consultant to review. Stacey Mouille indicated that a discussion was scheduled for later that day. CPDFN confirmed that a flyover would be a good idea both for the TLU/TK Consultant and the Industry Relations Corporation (IRC) to familiarize themselves with the location and scale of Kirby Expansion Project and potential related impacts.
26	9-Nov-2011	Email	Ryan McFadden, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Email from Canadian Natural (Ryan McFadden) to Chipewyan Prairie Dene First Nation (Stacey Mouille) to inquire on the status of meeting with TLU/TK Consultant. CNRL suggested it might be preferable to complete the flyover before it snows. CNRL offered to discuss further.
27	10-Nov-2011	Email	Stacey Mouille, Industry Relations Corporation	Ryan McFadden, Canadian Natural		Email from Chipewyan Prairie Dene First Nation (Stacey Mouille) to Canadian Natural (Ryan McFadden) to confirm that a meeting with TLU/TK consultant was completed; however, given their previous commitments on other projects and workload, the TLU/TK team could not commit to working on the CNRL projects until February 2012. The IRC would be able to do a flyover nonetheless.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
28	10-Nov-2011	Email	Ryan McFadden, Canadian Natural	Stacey Mouille, Industry Relations Corporation		Email from Canadian Natural (Ryan McFadden) to Chipewyan Prairie Dene First Nation (Stacey Mouille) to confirm the name of the TLU/TK Consultant. Ryan McFadden stated that there were two other issues also worth following up on from the September 28, 2011 meeting: CPDFN was going to develop a Consultation Plan including a budget, and Shaun Janvier wanted to explore benefit agreement discussion with our senior management. CNRL inquired if CPDFN had some time over the next two weeks to meet and discuss how we could coordinate a fly-over, discuss the consultation plan/budget which should include setting aside some dates in February/March 2012 for an open house, and the path forward on benefit agreement or community investment discussions. CNRL offered to meet in Fort McMurray.
<b>Cold Lake First Nation</b>						
<b>May 15 to July 15 2011</b>						
1	20-May-2011	Letter	Anita Sartori, Canadian Natural	Chief Cecil Janvier		Letter sent from Canadian Natural (Anita Sartori) to Cold Lake First Nation (Chief Cecil Janvier) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
2	20-May-2011	Letter	Anita Sartori, Canadian Natural	Christine Chalifoux, Liaison		Letter sent from Canadian Natural (Anita Sartori) to Cold Lake First Nation (Christine Chalifoux) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
3	24-May-2011	Meeting	Patrick Dale, Canadian Natural	Chief Cecil Janvier	Canadian Natural: Bill Clapperton Anita Sartori Chris Cross Dean Halewich Patrick Dale  Cold Lake First Nation: Cameron Janvier Judy Nest Roger Marten Kyle Janvier Dean Janvier Christine Chalifoux Bernice Martial	Annual General Assembly between Canadian Natural (Bill Clapperton, Anita Sartori, Chris Cross, Dean Halewich, and Patrick Dale) and Cold Lake First Nation (Cameron Janvier, Judy Nest, Roger Marten, Kyle Janvier, Dean Janvier, Christine Chalifoux, and Bernice Martial). Public disclosure of the Kirby Expansion Project was included as an agenda item. Patrick Dale hand delivered a copy of the Notification Letter, Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR).

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
4	25-May-2011	Phone Call	Marge Rooke, Executive Assistant to Chief Cecil Janvier	Patrick Dale, Canadian Natural		Phone call from Cold Lake First Nation (Marge Rooke) to Canadian Natural (Patrick Dale) to confirm that the Kirby Expansion Project public disclosure documents had been received and provided directly to Chief Cecil Janvier.
#	<b>July 16 to Sept 16 2011</b>					
	September	No entries				
#	<b>Sept 17 to Nov 17 2011</b>					
5	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Marge Rooke, Executive Assistant to Chief Cecil Janvier		Letter sent from Canadian Natural (Ryan McFadden) to CLFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
6	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Melinda Campbell, Witten LLP		Letter sent from Canadian Natural (Ryan McFadden) to CLFN c/o Witten LLP to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
7	1-Nov-2011	Letter	Ryan McFadden, Canadian Natural	Marge Rooke, Executive Assistant to Chief Cecil Janvier		Letter sent from Canadian Natural (Ryan McFadden) to CLFN to indicate that on May 20, 2011 CLFN was sent copies of the public disclosure documents and was invited to provide comments to AEW. Following the conclusion of the public comment period, AEW issued the final Terms of Reference on October 11, 2011. A link was provided to view the final Terms of Reference on CNRL's project website. Letter further indicated that CNRL recently undertook a review of CLFN's traditional territory and concluded that the Kirby Expansion Project is on the border of CLFN's traditional territory. This observation was confirmed in recent correspondence received from Witten on January 7, 2011 in regards to Kirby South borrow pit notification letters in which CLFN declined to be involved in consultations because the areas were identified by CLFN as on the border of their traditional territory. CNRL offered to provide further information or to meet and discuss the Kirby Expansion Project.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
8	1-Nov-2011	Letter	Ryan McFadden, Canadian Natural	Melinda Campbell, Witten LLP		Letter sent from Canadian Natural (Ryan McFadden) to CLFN to indicate that on May 20, 2011 CLFN was sent copies of the public disclosure documents and was invited to provide comments to AEW. Following the conclusion of the public comment period, AEW issued the final Terms of Reference on October 11, 2011. A link was provided to view the final Terms of Reference on CNRL's project website. Letter further indicated that CNRL recently undertook a review of CLFN's traditional territory and concluded that the Kirby Expansion Project is on the border of CLFN's traditional territory. This observation was confirmed in recent correspondence received from Witten on January 7, 2011 in regards to Kirby South borrow pit notification letters in which CLFN declined to be involved in consultations because the areas were identified by CLFN as on the border of their traditional territory. CNRL offered to provide further information or to meet and discuss the Kirby Expansion Project.
9	5-Nov-2011	Email	Melinda Campbell, Witten LLP	Patrick Dale, Canadian Natural		Email from CLFN c/o Witten LLP (Melinda Campbell) to Canadian Natural (Patrick Dale) to confirm receipt of October 24, 2011 letter and to indicate that CLFN would appreciate the opportunity to meet with CNRL regarding Kirby Expansion Project. Melinda Campbell confirmed that a meeting with Chief and Council will be necessary prior to scheduling a meeting with community members in order to develop a consultation plan regarding Kirby Expansion Project. CLFN requested CNRL's preferred meeting dates.
10	7-Nov-2011	Email	Patrick Dale, Canadian Natural	Melinda Campbell, Witten LLP		Email from Canadian Natural (Patrick Dale) to CLFN c/o Witten (Melinda Campbell) to confirm receipt of November 5, 2011 email and to indicate CNRL would respond shortly with preferred meeting dates.
11	9-Nov-2011	Email	Patrick Dale, Canadian Natural	Melinda Campbell, Witten LLP		Email from Canadian Natural (Patrick Dale) to CLFN c/o Witten (Melinda Campbell) to request a meeting ASAP and would welcome any available upcoming dates to meet with Chief and Council.
12	12-Nov-2011	Email	Melinda Campbell, Witten LLP	Patrick Dale, Canadian Natural		Email from CLFN c/o Witten LLP (Melinda Campbell) to Canadian Natural (Patrick Dale) to indicate that Chief and Council are available for a meeting with CNRL and ASRD on December 2, 8, and 13. CLFN will await its advice.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
<b>Conklin Métis Local #193</b>						
<b>May 15 to July 15 2011</b>						
1	18-May-2011	Email	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Email from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans) requesting to have a phone call on May 19th, 2011.
2	18-May-2011	Phone Call	Bonnie Evans, Conklin Métis	Anita Sartori, Canadian Natural		Phone call from Conklin Regional Development Advisory Committee (Bonnie Evans) to Canadian Natural (Anita Sartori) to confirm a discussion on May 19th, 2001 at 3PM over the phone.
3	19-May-2011	Phone Call	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Phone call from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans) to discuss Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Anita Sartori advised Bonnie Evans that a disclosure package would be sent shortly and would include: Notification Letter, Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Anita Sartori indicated that the deadline for PTOR comments would be July 22, 2011. Bonnie Evans advised that once the disclosure package was received by CRDAC an "Action Plan" would be developed by Sarah Chileen to support CRDAC's review and comment on the PTOR, and the integrated EIA application once filed. Both parties also discussed the importance of engaging Alberta Environment for the purposes of developing a consultation and EIA review process which may include a workshop with representatives from CRDAC, AENV and Canadian Natural.
4	20-May-2011	Letter	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Letter sent from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR).



#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
5	20-May-2011	Letter	Anita Sartori, Canadian Natural	Bill McElhanney Ackroyd Law		Letter sent from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee Legal Counsel (Bill McElhanney, Ackroyd Law) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR).
6	27-May-2011	Voicemail	Bonnie Evans, Conklin Métis	Anita Sartori, Canadian Natural		Phone call from Conklin Regional Development Advisory Committee (Bonnie Evans) to Canadian Natural (Anita Sartori) to inform her that the disclosure package for the Kirby Expansion Project had not yet been received. Anita Sartori was unavailable so Bonnie Evans left a voicemail.
7	27-May-2011	Phone Call	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Phone call from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans) to explain that due to the forest fires north of Ft. McMurray, near Canadian Natural's Horizon Project, Karyn Hobbs (Canadian Natural Stakeholder Relations Advisor) was providing emergency response and communication support to Horizon and was unable to leave the site and hand deliver the disclosure package as originally planned. Anita Sartori advised Bonnie Evans that information would be provided electronically and printed copies would be provided on May 30, 2011 for Bonnie Evans to pick up when she was in Calgary for an industry meeting.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
8	27-May-2011	Email	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Email with letter and attachments sent from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans) regarding the proposed Kirby Expansion Project. Attached letter dated May 20, 2011, indicated Canadian Natural had publicly disclosed the proposed Kirby Expansion Project and was seeking to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, Proposed EIA Terms of Reference (PTOR), and PTOR Public Notices. Anita Sartori confirmed both in the email and the letter, that the deadline for comments on the PTOR was July 22, 2011. Anita Sartori also advised Bonnie Evans that a meeting could be arranged either on June 10 or June 17, 2011 with representatives from Canadian Natural and subject to Conklin Métis' preference for meeting time and location.
9	30-May-2011	Conference Call	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		During an industry meeting with Conklin Regional Development Advisory Committee representatives, Bonnie Evans advised Anita Sartori to forward the May 27, 2011 email with attachments to Bill McElhanney (Ackroyd Law). Due to health issues Bonnie Evans was unable to travel to Calgary and requested that printed copies of the disclosure package be mailed to her in North Battleford, SK.
10	30-May-2011	Email	Anita Sartori, Canadian Natural	Bill McElhanney, Ackroyd Law		Email with letter and attachments sent from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee Legal Counsel (Bill McElhanney, Ackroyd Law) regarding the proposed Kirby Expansion Project. Attached letter dated May 20, 2011, indicated Canadian Natural had publicly disclosed the proposed Kirby Expansion Project and was seeking to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, Proposed EIA Terms of Reference (PTOR), and PTOR Public Notices.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
11	30-May-2011	Letter	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Letter sent from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans) dated May 30, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR).
12	8-Jun-2011	Email	Sarah Chileen, Conklin Métis	Anita Sartori, Canadian Natural		Email from Conklin Regional Development Advisory Committee (Sarah Chileen) confirming her availability to develop an Action Plan for the Kirby Expansion Project. Sarah Chileen confirmed that representatives from the CRDAC would be available to meet on June 17, 2011 in Edmonton.
13	10-Jun-2011	Email	Anita Sartori, Canadian Natural	Sarah Chileen, Conklin Métis		Email to Conklin Regional Development Advisory Committee (Sarah Chileen) confirming meeting on June 17, 2011 at the Ramada Inn in Edmonton.
14	17-Jun-2011	Meeting	Anita Sartori, Canadian Natural	Sarah Chileen, Conklin Métis	Canadian Natural: Anita Sartori, Jon Gareau, Marc Scrimshaw, Patrick Caldwell  Conklin Regional Development Advisory Committee: Bonnie Evans, Sarah Chileen and Ashley Stanbridge	Conklin Regional Development Advisory Committee (CRDAC) confirmed that it represents Conklin Community Association (CCA), the Conklin Métis Local, and advised that the mandate for CRDAC is to enter into a long-term agreement with project developers. Bonnie Evans advised that Chipewyan Prairie Dene First Nation (CPDFN) may be interested in combining efforts on the review of the EIA PTORs, the Application/EIA, as well as developing business opportunities. Anita Sartori requested written confirmation from Conklin Métis as well as CPDFN on any collective approach. Bonnie Evans indicated that communities see limited value of Traditional Land Use (TLU) and alternatively, will develop methodology and scope of work for a current use approach. Pending discussion between CRDAC and CPDFN, a combined TLU workshop may be arranged to confirm scope in August/September 2011. Reviewed draft Action Plan and associated budget. Budget for EIA review would be agreed to when scope is finalized. Bonnie Evans indicated the need to work with AENV and encourage AENV representatives to present outcome of EIA review.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
15	20-Jun-2011	Email	Sarah Chileen, Conklin Métis	Anita Sartori, Canadian Natural		Email with attachments from Conklin Regional Development Advisory Committee (Sarah Chileen) summarizing key action items from meeting on June 17, 2011. Attachments included Draft Action Plan for Canadian Natural's review. The following Action Items were outlined: Canadian Natural to follow up with AENV regarding scope of Third Party Contractor (3PC) Review of EIA; Canadian Natural committed to provide funds for review of LARP; CRDAC to contact CPDFN regarding a collective approach for regulatory review; CRDAC to follow up with FMA regarding the TLU workshops for August; and conference call requested for June 22, 2011 with Canadian Natural.
16	20-Jun-2011	Email	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Email with conference call information for meeting with representatives from Canadian Natural and Conklin Regional Development Advisory Committee to discuss Kirby Expansion Project.
17	22-Jun-2011	Conference Call	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis	Canadian Natural: Anita Sartori Jon Gareau Marc Scrimshaw  Conklin Métis: Bonnie Evans	Conference call between Canadian Natural (Anita Sartori, Jon Gareau, and Marc Scrimshaw) and Conklin Regional Development Advisory Committee (Bonnie Evans). Discussion included: efforts to engage CPDFN in a collective approach to review PTOR and EIA Application – meeting scheduled for August 8/9; CRDAC meeting with Summit Environmental to discuss PTOR review and scope of TLU report/workshop (November 1 target date for TLU Report); internal meeting with Shirley Tremblay (President, Conklin Métis Local) and Ernie Desjarlais (President, Conklin Community Association) on July 9 to ensure CRDAC understands the documents that will be submitted in response to EIA PTOR; reviewed Draft Action Plan and budget details; Canadian Natural clarified that they are not proposing to use solvent injection as a bitumen recovery method and that there is no development proposed in proximity or beneath Christina Lake; comments of PTOR expected by July 11, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
18	26-Jun-2011	Email	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis Sarah Chileen, CRDAC		Email with attachments from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans and Sarah Chileen) to indicate support for the draft Action Plan (including costs defined to date) and the proposed regulatory review process for the Kirby Expansion Project. Canadian Natural provided comments to revise the Draft Action Plan. For tasks where the scope of work and costs were undefined, Canadian Natural indicated it will need to approve costs prior to any work commencing.
19	7-Jul-2011	Email	Sarah Chileen, Conklin Métis	Anita Sartori, Canadian Natural		Email from Conklin Regional Development Advisory Committee (Sarah Chileen) to Canadian Natural (Anita Sartori) to advise that Canadian Natural's edits to Action Plan were acceptable.
20	15-Jul-2011	Email	Sarah Chileen, Conklin Métis	Anita Sartori, Canadian Natural		Email with two attachments from Conklin Regional Development Advisory Committee (Sarah Chileen) to Canadian Natural (Anita Sartori). The first attachment is a written review ("Report") of the PTOR for the Kirby Expansion Project. The second attachment is the original document with specific tracked changes and comments for review. Sarah Chileen provided these documents for Canadian Natural to review and comment in advance of sending them to the regulators.
#	<b>July 16 to Sept 16 2011</b>					
21	19-Jul-2011	Email	Anita Sartori, Canadian Natural	Sarah Chileen, Conklin Métis		Email with attachments from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans and Sarah Chileen). Documents included Canadian Natural's response to the recommendations and comments provided by the CRDAC on the PTOR for the Kirby Expansion Project. Anita Sartori indicated that Canadian Natural will be providing Alberta Environment with a copy of the response. CRDAC was asked to please advise if they had any concerns with CNRL forwarding the letter to AENV.
22	20-Jul-2011	Email	Sarah Chileen, Conklin Métis	Anita Sartori, Canadian Natural		Email from Conklin Regional Development Advisory Committee (Sarah Chileen) to Canadian Natural (Anita Sartori) to confirm receipt of email and to indicate a response would be forthcoming following their review of the documents.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
23	20-Jul-2011	Phone call	Anita Sartori, Canadian Natural	Sarah Chileen, Conklin Métis		Phone call from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans) to discuss Canadian Natural's response to CRDAC's comments on the PTOR.
24	20-Jul-2011	Email	Sarah Chileen, Conklin Métis	Anita Sartori, Canadian Natural		Email from Conklin Regional Development Advisory Committee (Sarah Chileen) to Canadian Natural (Anita Sartori) to summarize phone call. Sarah Chileen indicated their reviewer at Summit Environmental is out of town and would like to wait until Bonnie Evans has returned to review CNRL's response and provide Canadian Natural with some feedback. However, to meet the July 22nd due date for comments, CRDAC will submit the responses for the Kirby Expansion Project and advise AENV that CNRL and CRDAC are continuing to work together to review and finalize the PTOR comments. Sarah Chileen confirmed that CRDAC and Conklin will be meeting on August 9th, 2011 to discuss opportunities for collaboration through the consultation process.
25	20-Jul-2011	Email	Anita Sartori, Canadian Natural	Sarah Chileen, Conklin Métis		Email with attachments from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Sarah Chileen) to confirm that Sarah Chileen had accurately captured the July 20, 2011 phone call discussion. Anita Sartori confirmed that Canadian Natural's response will not be forwarded to AENV until it hears from CRDAC.
26	9-Aug-2011	Email	Brad Calihoo, Conklin Métis	Karyn Hobbs, Canadian Natural		Email from Conklin Métis (Brad Calihoo) to Canadian Natural (Karyn Hobbs) inviting Canadian Natural to the Fall Trade Show in Conklin being held on September 15th, 2011.
27	9-Aug-2011	Email	Les Diachinsky, Canadian Natural	Brad Calihoo, Conklin Métis		Email from Canadian Natural (Les Diachinsky) to Conklin Métis (Brad Calihoo) to request a listing of contractors in the community.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
28	16-Aug-2011	Email	c	Anita Sartori, Canadian Natural		Email from Conklin Regional Development Advisory Committee (Sarah Chileen) to Canadian Natural (Anita Sartori) to express CRDAC's dissatisfaction with Canadian Natural's response to the proposed PTOR comments. CRDAC stated that although it seems that CNRL is recommending that AENV not accept their majority of their recommendations, the CRDAC remains firm and committed to the recommendations and suggestions made in our submissions. CRDAC would like the opportunity to reaffirm their position with AENV and plan to respond accordingly when CNRL submits the letter to AENV. Sarah Chileen indicated that CRDAC leadership met with CPDFN leadership on August 9th. The CRDAC and CPDFN are attempting to work together on regulatory elements with respect to ERCB hearings. Although the process of sharing information has begun, there are some challenges and capacity restrictions associated with working together on all files.
29	6-Sep-2011	Email	Brad Calihoo, Conklin Métis	Les Diachinsky, Canadian Natural		Email from Conklin Métis (Brad Calihoo) to Canadian Natural (Les Diachinsky) to indicate that Conklin has a process for collecting contractor information for economic opportunities. Specifically, through the Fall Trade Show. Conklin requested Canadian Natural to attend in engage in dialogue with potential contractors at the meeting.
30	13-Sep-2011	Phone call	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Phone call from Canadian Natural (Anita Sartori) to Conklin Regional Development Advisory Committee (Bonnie Evans) to coordinate conference call for the following day.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
31	15-Sep-2011	Conference Call	Anita Sartori, Canadian Natural	Bonnie Evans, CRDAC	Canadian Natural: Anita Sartori Ryan McFadden  CRDAC: Bonnie Evans Sarah Chileen	Conference call discussion which included a review of PTOR comments. Both parties intend to stand firm on comments but are committed to ongoing dialogue to resolve some of the specific issues that were raised. CRDAC interested in exploring water issues, cap-rock integrity, wildlife corridors, and bio-diversity. CRDAC believes regulatory process is divisive and is only intended to lay out the evidentiary record. Prefer to work on an agreement that will address community's concerns and needs for accommodation. CRDAC have initiated TLU interviews with eight families on current use. Looking to develop a collective workshop to meet all of industry's needs. Working on scope of work and work plan for TLU. Wish to schedule monthly meeting for ongoing discussions.
#	<b>Sept 17 to Nov 17 2011</b>					
32	26-Sep-2011	Email	Sarah Chileen, Conklin Métis	Anita Sartori, Canadian Natural		Email with attachment from Conklin Regional Development Advisory Committee (Sarah Chileen) to Canadian Natural (Anita Sartori) regarding process for invoicing against Kirby Expansion Project for completed Action Plan tasks which to date have included: Review of Regulatory Application (1) develop and agree to scope of work and action plan; (2) review PTOR and plain language document by Summit.
33	28-Sep-2011	Email	Anita Sartori, Canadian Natural	Sarah Chileen, Conklin Métis		Phone call from Canadian Natural (Anita Sartori) to CRDAC (Sarah Chileen) to confirm invoicing process. Anita Sartori requested CNRL be updated when CRDAC had further details on the workshop to gather Traditional Use information.
34	30-Sep-2011	Email	Sarah Chileen, Conklin Métis	Ryan McFadden, Canadian Natural		Email with attachment from CRDAC (Sarah Chileen) to Canadian Natural (Ryan McFadden). Email included invoice for tasks completed from the Action plan for Kirby Expansion Project as per the direction of CNRL.



#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
35	7-Oct-2011	Email	Sarah Chileen, Conklin Métis	Anita Sartori, Canadian Natural		Email from CRDAC (Sarah Chileen) to Alberta Environment (Melissa Styba) cc'd to Canadian Natural (Anita Sartori and Ryan McFadden). CRDAC stated that although CNRL is recommending that AENV not accept the majority of their recommendations, the CRDAC remains firm and committed to the recommendations and suggestions made in their submission with respect to the PTOR for Kirby Expansion Project. CRDAC further stated that it is unfortunate that CNRL has chosen not to incorporate most of their suggested changes. They do, however, understand CNRL's need to respond the AENV. CRDAC stated it will continue to work with CNRL in an open and transparent manner moving forward through the regulatory process.
36	7-Oct-2011	Email	Ryan McFadden, Canadian Natural	Sarah Chileen, Conklin Métis		Email from Canadian Natural (Ryan McFadden) to CRDAC (Sarah Chileen). Ryan McFadden requested an opportunity to catch up next week to touch base on how things are going with the Action Plan milestones (work plan and TUS). Ryan McFadden indicated he was able to accommodate a few dates and would welcome Bonnie Evan's participation.
37	13-Oct-2011	Email	Sarah Chileen, Conklin Métis	Ryan McFadden, Canadian Natural		Email with attachment from CRDAC (Sarah Chileen) to Canadian Natural (Ryan McFadden) to indicate that Bonnie Evans was not available this week or the next two weeks due to the Annual Planning Retreat in Calgary. Sarah Chileen proposed the first week of November 2011.
38	13-Oct-2011	Email	Ryan McFadden, Canadian Natural	Sarah Chileen, Conklin Métis		Email from Canadian Natural (Ryan McFadden) to CRDAC (Sarah Chileen) to confirm that CNRL was available the first week of November 2011. Ryan McFadden further requested a progress update as per the Action Plan. The Action Plan indicated that as per Activity A, point 3 a Statement of Work for the TLU and Current Use information was expected to be provided to CNRL at this point. Ryan McFadden inquired as to whether CRDAC would be providing any outcomes of the TLU and Current Use workshop or if that would be included in the TLU and Current Use Report that is scheduled to be delivered in November 2011. Ryan McFadden suggested that it would be helpful to start planning some dates for Activity B in the Action Plan as CNRL is starting to prepare project information to present during the Application Review phase.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
39	14-Oct-2011	Email	Bonnie Evans, Conklin Métis	Anita Sartori, Canadian Natural		Email from CRDAC (Sarah Chileen) to Canadian Natural (Anita Sartori and Ryan McFadden). Bonnie Evans indicated that CRDAC is dealing with a significant workload and had limited resources. Bonnie Evans requested a conference call on November 7, 2011 to update everyone on the Action plan and the file generally.
40	14-Oct-2011	Email	Anita Sartori, Canadian Natural	Bonnie Evans, Conklin Métis		Email from Canadian Natural (Anita Sartori) to CRDAC (Bonnie Evans) to thank her for the update and to confirm that CNRL would touch base following their retreat in Calgary.
41	20-Oct-2011	Email	Ryan McFadden, Canadian Natural	Sarah Chileen, Conklin Métis		Email from Canadian Natural (Ryan McFadden) to CRDAC (Sarah Chileen) to follow up again on the Action Plan deliverables. Ryan McFadden indicated that CNRL was in the process of finalizing materials for the integrated application and EIA and it would be preferable to submit Conklin's information within the application as opposed to submitting it as a supplementary item during the application review phase. Ryan McFadden stated that Bonnie Evans had indicated that the interviews were complete. Ryan McFadden offered to provide the services of Golder Associates to assist with collating information and coordinating interviews on behalf of the CRDAC. CNRL could organize a site visit to show CRDAC's TLU the proposed Central Plant site, borrow pits, proposed well pad site locations, access roads, water or disposal well Right-of-Ways, lay-down areas, possible camps site location...etc. CNRL could also arrange a visit to the Kirby South project site to view facilities as they are under construction to get a better idea of the layout for Kirby Expansion Project.
42	20-Oct-2011	Email	Sarah Chileen, Conklin Métis	Ryan McFadden, Canadian Natural		Email with attachment from CRDAC (Sarah Chileen) to Canadian Natural (Ryan McFadden) which stated CRDAC empathized with wanting to get information into the application prior to submission. Sarah Chileen indicated that their TLU Consultant was very ill and that these unforeseen events had delayed the Action Plan. Sarah Chileen appreciated that offer to provide Golder Associates and would speak to Bonnie Evans with respect to the offer.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
43	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Bonnie Evans, Conklin Métis		Letter sent from Canadian Natural (Ryan McFadden) to CRDAC to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
44	7-Nov-2011	Email	Bonnie Evans, Conklin Métis	Ryan McFadden, Canadian Natural		Email from CRDAC (Bonnie Evans) to Canadian Natural (Ryan McFadden) requesting a new date and time for a meeting with CNRL from November 7, 2011 to November 10, 2011.
45	7-Nov-2011	Email	Ryan McFadden, Canadian Natural	Bonnie Evans, Conklin Métis		Email from Canadian Natural (Ryan McFadden) to CRDAC (Bonnie Evans) to decline to meet at the alternate date and time.
46	7-Nov-2011	Email	Ryan McFadden, Canadian Natural	Bonnie Evans, Conklin Métis		Email from Canadian Natural (Ryan McFadden) to CRDAC (Bonnie Evans) to confirm that the scheduled meeting for November 7, 2011 was cancelled. CNRL proposed three alternate dates and times.
47	9-Nov-2011	Email	Ryan McFadden, Canadian Natural	Bonnie Evans, Conklin Métis		Email from Canadian Natural (Ryan McFadden) to CRDAC (Bonnie Evans) to confirm that CRDAC had received the email with alternate dates and times for a meeting as one of the proposed alternatives was for today. CRDAC was asked to respond.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
48	9-Nov-2011	Email	Bonnie Evans, Conklin Métis	Ryan McFadden, Canadian Natural		Email from CRDAC (Bonnie Evans) to Canadian Natural (Ryan McFadden) confirming CRDAC was available to meet on November 14, 2011.
49	14-Nov-2011	Email	Ryan McFadden, Canadian Natural	Bonnie Evans, Conklin Métis		Email from Canadian Natural (Ryan McFadden) to CRDAC (Bonnie Evans) with proposed agenda for meeting. Topics included: 1. Update on activities last week (Bonnie re: conversation regarding MEG and CRDAC Board meeting); 2. CNRL to provide update on regulatory process; 3. Status of the Action Plan (TUS deliverable proposed for November 1, 2011, ongoing activities, outstanding TBD items (i.e., TUS budget); 4. Upcoming events; and 5. Application Review Process
50	14-Nov-2011	Meeting	Ryan McFadden, Canadian Natural	Bonnie Evans, Conklin Métis	Canadian Natural: Anita Sartori Ryan McFadden Steve Lepp Bob Dunn Patrick Caldwell  CRDAC: Bonnie Evans Karyn Hobbs	Summary of Meeting • CRDAC indicated that given recent events CRDAC would not be able to meet the agreed-to milestones outlined in the Action Plan and would be delegating consultation activities to Ackroyd LLP• CRDAC has no choice but to proceed with the regulatory process and that a 3rd party review of the application would be required• CRDAC indicated that any potential Statement of Concern filed against the proposed project will only be removed upon completion of a long term Community Benefits Agreement• CRDAC is seeking to have regulators involved throughout the consultation process• CRDAC requires "Complex Consultation" process to adequately assess the potential impacts related to the proposed project which will require significant resources• CRDAC/Ackroyd will send a draft Negotiations Protocol Agreement to CNRL for review• Ackroyd has done recent work on Current Use for other projects and will provide to CNRL• CRDAC will not be able to provide any TLU information prior to submission of the Application.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
<b>Fort McMurray First Nation</b>						
<b>May 15 to July 15 2011</b>						
1	19-May-2011	Phone Call	Patrick Caldwell, Canadian Natural	Robert Cree, Industry Relations Corporation Director		Phone call from Canadian Natural (Patrick Caldwell) to Fort McMurray First Nation (Robert Cree) to discuss Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA).
2	20-May-2011	Letter	Anita Sartori, Canadian Natural	Robert Cree, Industry Relations Corporation Director		Letter sent from Canadian Natural (Anita Sartori) to Fort McMurray First Nation (Robert Cree) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
3	20-May-2011	Letter	Anita Sartori, Canadian Natural	Chief Albert Cree		Letter sent from Canadian Natural (Anita Sartori) to Fort McMurray First Nation (Chief Albert Cree) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
#	July 16 to Sept 16 2011					
	September	No entries				
#	Sept 17 to Nov 17 2011					
4	12-Oct-2011	Meeting	Patrick Caldwell, Canadian Natural	Harry Cheecham, IRC Director	Canadian Natural: Patrick Caldwell, Karyn Hobbs, Bob Dunn  FMFN: Harry Cheecham	Meeting with Canadian Natural (CNRL) and Fort McMurray First Nation (FMFN) to meet new IRC Director, Harry Cheecham. CNRL provided an overview of Kirby Expansion Project and presented copies of the public disclosure documents which were previously sent to FMFN in May 2011. Discussions also included IRC funding arrangements.
5	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Chief Ron Kreutzer		Letter sent from Canadian Natural (Ryan McFadden) to FMFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
6	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Harry Cheecham, IRC Director		Letter sent from Canadian Natural (Ryan McFadden) to FMFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
7	1-Nov-2011	Letter	Ryan McFadden, Canadian Natural	Chief Ron Kreutzer		Letter sent from Canadian Natural (Ryan McFadden) to FMFN to acknowledge positive meeting on October 12, 2011. Letter indicated that on May 20, 2011 FMFN was sent copies of the public disclosure documents and was invited to provide comments to AEW. Following the conclusion of the public comment period, AEW issued the final Terms of Reference on October 11, 2011. A link was provided to view the final Terms of Reference on CNRL's project website. Letter further indicated that CNRL had not yet received a response to indicate an interest in discussing Kirby Expansion Project. In support of the regulatory timelines, CNRL offered to provide the in-kind services of Golder Associates to help with the traditional use data collection process. CNRL confirmed their availability to meet and discuss these issues at the earliest convenience.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
8	1-Nov-2011	Letter	Ryan McFadden, Canadian Natural	Harry Cheecham, IRC Director		Letter sent from Canadian Natural (Ryan McFadden) to FMFN to acknowledge positive meeting on October 12, 2011. Letter indicated that on May 20, 2011 FMFN was sent copies of the public disclosure documents and was invited to provide comments to AEW. Following the conclusion of the public comment period, AEW issued the final Terms of Reference on October 11, 2011. A link was provided to view the final Terms of Reference on CNRL's project website. Letter further indicated that CNRL had not yet received a response to indicate an interest in discussing Kirby Expansion Project. In support of the regulatory timelines, CNRL offered to provide the in-kind services of Golder Associates to help with the traditional use data collection process. CNRL confirmed their availability to meet and discuss these issues at the earliest convenience.
9	16-Nov-2011	Email	Brad Callihoo, Advisor to Chief and Council	Bob Dunn, Canadian Natural		Email sent from Fort McMurray (Brad Callihoo) to Canadian Natural (Bob Dunn) to indicate he has taken on a position with Fort McMurray #468 First Nation as Advisor to Chief and Council.
10	16-Nov-2011	Email	Bob Dunn, Canadian Natural	Brad Callihoo, Advisor to Chief and Council		Email from Canadian Natural (Bob Dunn) to FMFN (Brad Callihoo) to extend an offer to meet with Brad Callihoo and Harry Cheecham to talk about TLU in relation to Kirby Expansion Project. Offered a couple of possible meeting dates in November and December.
<b>Heart Lake First Nation</b>						
<b>May 15 to July 15 2011</b>						
1	19-May-2011	Phone Call	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Phone call from Canadian Natural (Patrick Caldwell) to Heart Lake First Nation (John Fleming) regarding public disclosure documents. Patrick Caldwell indicated that a letter will be sent on May 20, 2011 regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR).



#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
2	20-May-2011	Letter	Anita Sartori, Canadian Natural	Chief Morris Monias		Letter sent from Canadian Natural (Anita Sartori) to Heart Lake First Nation (Chief Morris Monias) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
3	20-May-2011	Letter	Anita Sartori, Canadian Natural	John Fleming, Regulatory Director		Letter sent from Canadian Natural (Anita Sartori) to Heart Lake First Nation (John Fleming) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
4	25-May-2011	Phone Call	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Phone call from Canadian Natural (Patrick Caldwell) to Heart Lake First Nation (John Fleming) to arrange a time to drop off public disclosure documents for proposed Kirby Expansion Project which included the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). John Fleming was not available and so Patrick Caldwell left a voicemail message to return his call.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
#	July 16 to Sept 16 2011					
5	19-Aug-2011	Email	Denise Fleming, Finance and Administration	Patrick Caldwell, Canadian Natural		Email from Heart Lake (Denise Fleming) to Canadian Natural (Patrick Caldwell) which included quarterly invoice for Kirby Expansion Project related consultation fees and expenses.
6	24-Aug-2011	Email	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (John Fleming) to propose a date and time for a meeting on August 31, 2011.
7	25-Aug-2011	Email	John Fleming, Regulatory Director	Patrick Caldwell, Canadian Natural		Email from Heart Lake (John Fleming) to Canadian Natural (Patrick Caldwell) to confirm August 31, 2011 meeting time and location. John Fleming indicated that Cameron Knutson would lead the meeting and will expect to discuss TLU opportunities for the Kirby Expansion.
8	26-Aug-2011	Email	Cameron Knutson, Regulatory Technician	Patrick Caldwell, Canadian Natural		Email from Heart Lake (Cameron Knutson) to Canadian Natural (Patrick Caldwell) to propose a number of preliminary questions and agenda items for the August 31, 2011 meeting.
9	29-Aug-2011	Email	Patrick Caldwell, Canadian Natural	Cameron Knutson, Regulatory Technician		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (Cameron Knutson) to confirm receipt of the August 26, 2011 email and a commitment to answer the list of questions during the August 31, 2011 meeting.
10	31-Aug-2011	Meeting	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director	Canadian Natural: Patrick Caldwell Ryan McFadden Les Diachinsky Heart Lake First Nation: Cameron Knutson Frank Cardinal	Meeting between Canadian Natural (Patrick Caldwell, Ryan McFadden, and Les Diachinsky) and Heart Lake First Nation to discuss Kirby Expansion Project. Discussion included a review of the Kirby Expansion Project schedule, regulatory process and timelines, consultation process and opportunities to collect and submit Traditional Use information. It was agreed that representatives of Canadian Natural and Heart Lake would schedule another meeting to develop a plan for the Kirby Expansion Project.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
					Edward Obichon Shawn Monias Freddie Gregoire Delphine Cardinal Maria Monias Sarah Cardinal Alvina Lundgren Eugene Monias Mike Monias Ronald Francis Denis Boostrom Donna Monias Algina Monias Mary Mitchell Georgina Boucher	
11	6-Sep-2011	Email	Cameron Knutson, Regulatory Technician	Patrick Caldwell, Canadian Natural		Email from Heart Lake (Cameron Knutson) to Canadian Natural (Patrick Caldwell) thanking CNRL for attending and presenting information at the August 31, 2011 meeting with Elders and to request copies of the maps that were shared to be sent in digital format. As per the action item of the Elders meeting, Cameron requested a new meeting time and date to discuss TU/TEK opportunities for the Kirby Expansion Project.
12	6-Sep-2011	Email	Patrick Caldwell, Canadian Natural	Cameron Knutson, Regulatory Technician		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (Cameron Knutson) to commit to sending along shape files.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
13	8-Sep-2011	Email	Patrick Caldwell, Canadian Natural	Cameron Knutson, Regulatory Technician		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (Cameron Knutson) to propose meeting on September 16th, 2011.
14	8-Sep-2011	Email	Cameron Knutson, Regulatory Technician	Patrick Caldwell, Canadian Natural		Email from Heart Lake (Cameron Knutson) to Canadian Natural (Patrick Caldwell) to suggest meeting on September 19th, 2011 as they were not available on September 16th, 2011.
15	8-Sep-2011	Email	Patrick Caldwell, Canadian Natural	Cameron Knutson, Regulatory Technician		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (Cameron Knutson) to confirm meeting date of September 19th, 2011.
16	13-Sep-2011	Email	Denise Fleming, Finance and Administration	Patrick Caldwell, Canadian Natural		Email from Heart Lake (Denise Fleming) to Canadian Natural (Patrick Caldwell) which included an invoice for the August 31, 2011 Elders meeting.
17	13-Sep-2011	Email	Cameron Knutson, Regulatory Technician	Patrick Caldwell, Canadian Natural		Email from Heart Lake (Cameron Knutson) to Canadian Natural (Patrick Caldwell) requesting shape files for the Kirby Expansion Project.
18	13-Sep-2011	Email	Patrick Caldwell, Canadian Natural	Cameron Knutson, Regulatory Technician		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (Cameron Knutson) which included shape files for Kirby Expansion Project.
19	14-Sep-2011	Email	John Fleming, Regulatory Director	Patrick Caldwell, Canadian Natural		Email from Heart Lake (John Fleming) to Canadian Natural (Patrick Caldwell) to invite representatives to the HFLNCO Annual Meeting in Calgary. The meeting is intended to review consultation funding, community social priorities, and Traditional Land Use/Traditional Environmental Knowledge projects.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
#	Sept 17 to Nov 17 2011					
20	19-Sep-2011	Meeting	Patrick Caldwell, Canadian Natural	Cameron Knutson, Regulatory Technician	Canadian Natural: Patrick Caldwell Ryan McFadden  Heart Lake: John Fleming Cameron Knutson Carly Reirson	Meeting between Canadian Natural (Patrick Caldwell, Ryan McFadden) and Heart Lake First Nation to discuss the Kirby Expansion Project. Discussion included an overview of Kirby Expansion Project, opportunities to collect and submit TU/TEK information, the EIA review process and support, and the development of a technical workshop during the EIA review period to assist the communities understanding of Kirby Expansion Project. HLFN committed to providing a work plan for the TU/TEK program and has agreed to prepare a preliminary desktop overview report for inclusion in the EIA as they already have a good general database of information for the proposed areas. This will include a site visit to some of the key sites. A comprehensive report will be completed following submission of the EIA. Canadian Natural will provide all project-related shape files to initiate the data collection process. HLFN are interested in pursuing economic opportunities for Kirby Expansion Project. Les Diachinsky has made contact and efforts are underway.
21	7-Oct-2011	Email	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (John Fleming) following up from the meeting on September 19, 2011. Patrick Caldwell inquired as to when CNRL would receive the proposed TLU work plan for Kirby Expansion Project.
22	7-Oct-2011	Email	John Fleming, Regulatory Director	Patrick Caldwell, Canadian Natural		Email from Heart Lake (John Fleming) to Canadian Natural (Patrick Caldwell) to confirm that HLFN was working on the TLU work plan today and indicated CNRL would receive a draft on October 7, 2011 or the following week.
23	21-Oct-2011	Email	Ryan McFadden, Canadian Natural	John Fleming, Regulatory Director		Email from Canadian Natural (Ryan McFadden) to Heart Lake (John Fleming) to follow up on John Fleming's email of October 7, 2011 which indicated HLFN would send along the TLU work plan (scope of work and budget). Ryan McFadden requested HLFN contact CNRL on October 24, 2011 to discuss further.
24	21-Oct-2011	Email	John Fleming, Regulatory Director	Ryan McFadden, Canadian Natural		Email from Heart Lake (John Fleming) to Canadian Natural (Ryan McFadden) to acknowledge receipt of October 21, 2011 email and to confirm HLFN would contact CNRL on October 24, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
25	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Chief Morris Monias		Letter sent from Canadian Natural (Ryan McFadden) to HLFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
26	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	John Fleming, Regulatory Director		Letter sent from Canadian Natural (Ryan McFadden) to HLFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
27	26-Oct-2011	Phone Call	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Phone call from Canadian Natural (Patrick Caldwell) to HLFN (John Fleming) to follow up on the TLU work plan and budget. John Fleming indicated that HLFN has been working on it but they have been very busy with other issues. HLFN confirmed that CNRL would receive a draft next week. John Fleming noted that Chief Morris Monias is becoming concerned about the relationship HLFN has with industry. HLFN would like to explore long term benefit agreements as they are concerned that once the construction is done then the benefit to the community will disappear. John Fleming indicated that HLFN would be delivering a similar message to each of their industry partners who are working within their traditional territory. HLFN requested confirmation of the approach from CNRL.
28	2-Nov-2011	Email	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Email from Canadian Natural (Patrick Caldwell) to HLFN (John Fleming) to follow up on October 26, 2011 phone call. Patrick Caldwell inquired as to when CNRL would receive the TLU work plan for Kirby Expansion Project. Patrick Caldwell acknowledged HLFN may be very busy at the moment and offered to provide the services of Golder Associates to assist with the preparation of the TLU work plan.
29	2-Nov-2011	Email	John Fleming, Regulatory Director	Patrick Caldwell, Canadian Natural		Email from Heart Lake (John Fleming) to Canadian Natural (Patrick Caldwell) to indicate that HLFN have completed a document which contains the work plan and budget for the TLU project. However, HLFN have delayed providing it to CNRL to have further internal discussions as to whether they would proceed as per their regular process, or if HLFN would require CNRL to enter into a larger agreement which would include TLU sharing as a component. Chief Monias has requested that we attempt to do both concurrently. HLFN will provide CNRL with the work plan and initiate TLU discussions with the community and Elders as long as CNRL provides assurance that it will commit to drafting a longer-term agreement which would be more inclusive of all aspects of the relationship.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
30	4-Nov-2011	Voice mail	John Fleming, Regulatory Director	Patrick Caldwell, Canadian Natural		Voice mail from Heart Lake (John Fleming) to Canadian Natural (Patrick Caldwell) to indicate that HLFN will forward the TLU work plan; however, John Fleming wanted an indication of CNRL's intentions to negotiate a long term relationship agreement on Kirby Expansion Project. John Fleming would like to work with CNRL to understand Kirby Expansion Project and develop a more thorough consultation work plan which would include the TLU component, but there needs to be a clear connection to the larger agreement. Would be available for further discussion.
31	7-Nov-2011	Phone Call	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Phone call from Canadian Natural (Patrick Caldwell) to Heart Lake (John Fleming) to request a meeting with Chief Monias to discuss the TLU work plan and how we can move forward with the other consultation activities. CNRL would also like to have further discussions with respect to a number of other issues, including HLFN's request to negotiate a long term agreement. John Fleming agreed it would be a great idea to meet and would check with Chief Monias and get back to CNRL. A tentative date was set for November 17, 2011.
32	9-Nov-2011	Email	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (John Fleming) to confirm CNRL's availability for a meeting with Chief Monias on November 17, 2011. Patrick Caldwell reminded John Fleming that he was going to check Chief Monias' schedule and get back to CNRL.
33	9-Nov-2011	Phone Call	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Phone call from Canadian Natural (Patrick Caldwell) to Heart Lake (John Fleming) to confirm tentatively scheduled meeting with Chief Monias on November 17. John Fleming confirmed that November 17, 2011 is not a good day for Chief Monias but would like to propose November 29, 2011 as an alternative. Patrick Caldwell inquired as to the status of the work plan. John Fleming indicated that a meeting was scheduled today with the elders today to review how they want to go about handling the TLU work. John Fleming indicated that they recently did a flyover of the Devon project and he wants to get some feedback from them to see if it was useful. Once they have their discussion we can move forward.



#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
34	16-Nov-2011	Voice mail	John Fleming, Regulatory Director	Patrick Caldwell, Canadian Natural		Voice mail from Heart Lake (John Fleming) to Canadian Natural (Patrick Caldwell) to confirm November 29, 2011 was going to work for CNRL to meet with Chief Monias.
35	16-Nov-2011	Email	Patrick Caldwell, Canadian Natural	John Fleming, Regulatory Director		Email from Canadian Natural (Patrick Caldwell) to Heart Lake (John Fleming) to confirm CNRL's availability for a meeting with Chief Monias on November 29, 2011.
<b>Saddle Lake Cree Nation</b>						
<b>May 15 to July 15 2011</b>						
1	19-May-2011	Phone Call	Patrick Caldwell, Canadian Natural	Frank Cardinal, Consultation Coordinator		Phone call from Canadian Natural (Patrick Caldwell) to Saddle Lake Cree Nation (Frank Cardinal) to discuss Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Frank Cardinal was not available and so Patrick Caldwell left a voicemail to return his phone call.
2	20-May-2011	Letter	Anita Sartori, Canadian Natural	Chief Eddy Makokis		Letter sent from Canadian Natural (Anita Sartori) to Saddle Lake Cree Nation (Chief Eddy Makokis) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
3	20-May-2011	Letter	Anita Sartori, Canadian Natural	Frank Cardinal, Consultation Coordinator		Letter sent from Canadian Natural (Anita Sartori) to Saddle Lake Cree Nation (Frank Cardinal) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
4	26-May-2011	Meeting	Patrick Caldwell, Canadian Natural	Frank Cardinal, Consultation Coordinator	Canadian Natural: Patrick Caldwell, Darcy Harty Saddle Lake Cree Nation: Frank Cardinal	Meeting between Canadian Natural (Patrick Caldwell) and Saddle Lake Cree Nation (Frank Cardinal) to discuss public disclosure of Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Frank Cardinal indicated he is responsible for the Industry Relations Council office. Saddle Lake is interested in hosting an open house with Canadian Natural to provide an overview of Kirby Expansion Project to the community and would appreciate a site visit for interested individuals. Canadian Natural agreed to work with Saddle Lake on both elements.
#	<b>July 16 to Sept 16 2011</b>					
	September	No entries				

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
#	Sept 17 to Nov 17 2011					
5	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Frank Cardinal, Consultation Coordinator		Letter sent from Canadian Natural (Ryan McFadden) to SLFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
6	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Chief Eddy Makokis		Letter sent from Canadian Natural (Ryan McFadden) to SLFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
7	1-Nov-2011	Letter	Ryan McFadden, Canadian Natural	Frank Cardinal, Consultation Coordinator		Letter sent from Canadian Natural (Ryan McFadden) to SLFN to indicate that on May 20, 2011 SLFN was sent copies of the public disclosure documents and was invited to provide comments to AEW. Following the conclusion of the public comment period, AEW issued the final Terms of Reference on October 11, 2011. A link was provided to view the final Terms of Reference on CNRL's project website. Letter further indicated that CNRL had not yet received a response to indicate an interest in discussing Kirby Expansion Project. In support of the regulatory timelines, CNRL offered to provide the in-kind services of Golder Associates to help with the traditional use data collection process. CNRL confirmed their availability to meet and discuss these issues at the earliest convenience.
8	1-Nov-2011	Letter	Ryan McFadden, Canadian Natural	Chief Eddy Makokis		Letter sent from Canadian Natural (Ryan McFadden) to SLFN to indicate that on May 20, 2011 SLFN was sent copies of the public disclosure documents and was invited to provide comments to AEW. Following the conclusion of the public comment period, AEW issued the final Terms of Reference on October 11, 2011. A link was provided to view the final Terms of Reference on CNRL's project website. Letter further indicated that CNRL had not yet received a response to indicate an interest in discussing Kirby Expansion Project. In support of the regulatory timelines, CNRL offered to provide the in-kind services of Golder Associates to help with the traditional use data collection process. CNRL confirmed their availability to meet and discuss these issues at the earliest convenience.
9	10-Nov-2011	Phone call	Frank Cardinal, Consultation Coordinator	Patrick Caldwell, Canadian Natural		Phone call from SLFN (Frank Cardinal) to Canadian Natural (Patrick Caldwell) to request a meeting to discuss participation in consultation process and to explore opportunities to document traditional use of Kirby Expansion Project area. CNRL and SLFN will meet in Calgary on November 15, 2011 to discuss further.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
10	15-Nov-2011	Meeting	Patrick Caldwell, Canadian Natural	Frank Cardinal, Consultation Coordinator	Canadian Natural: Patrick Caldwell Ryan McFadden  Saddle Lake First Nation: Frank Cardinal	Meeting with Canadian Natural (Patrick Caldwell and Ryan McFadden) and SLFN (Frank Cardinal). CNRL provided copies of the public disclosure for Kirby Expansion Project. Frank Cardinal acknowledged receipt of the disclosure documents back in May 2011 and the letter of October 24, 2011 which included copies of the Final Terms of Reference. Frank Cardinal confirmed interest in developing a consultation process for Kirby Expansion Project and to undertake a Traditional Land Use study. SLFN indicated they are currently working with Stantec on a number of other applications and would prefer to continue their partnership as opposed to working with Golder. CNRL agreed. Frank Cardinal indicated that SLFN would propose an agreement with CNRL to cover information sharing, consultation process, traditional use scope of work and budget and community investment opportunities. SLFN will forward draft agreement for CNRL to review. CNRL will provide shape files of the Kirby Expansion Project layout to SLFN. CNRL proposed to meet with Chief and Council before Christmas.
<b>Whitefish Lake First Nation</b>						
<b>May 15 to July 15 2011</b>						
1	20-May-2011	Letter	Anita Sartori, Canadian Natural	Chief James Jackson Jr.		Letter sent from Canadian Natural (Anita Sartori) to Whitefish Lake First Nation (Chief James Jackson Jr.) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
2	20-May-2011	Letter	Anita Sartori, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Letter sent from Canadian Natural (Anita Sartori) to Whitefish Lake First Nation (Darryl Steinhauer) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.
3	10-Jun-2011	Letter	Chief James Jackson Jr.	Bill Clapperton, Canadian Natural		Letter sent from Whitefish Lake First Nation (Chief James Jackson Jr.) to Canadian Natural (Bill Clapperton) <i>Re: Consultation with Whitefish Lake First Nation with Respect to Canadian Natural's Proposed Kirby In Situ Oil Sands Expansion Project and Grouse In Situ Oil Sands Project.</i> Chief Jackson Jr. indicated his desire to start consultation on the Kirby Expansion Project and requested that Canadian Natural provide a few possible dates to meet in Calgary.
4	22-Jun-2011	Phone Call	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Phone call from Canadian Natural (Patrick Caldwell) to Whitefish Lake First Nation (Darryl Steinhauer) to confirm meeting date of July 12, 2011 to discuss Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA).
5	23-Jun-2011	Phone Call	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Phone call from Canadian Natural (Patrick Caldwell) to Whitefish Lake First Nation (Darryl Steinhauer) to confirm meeting date of July 12, 2011 to discuss Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA).

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
6	4-Jul-2011	Phone Call	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Phone call from Canadian Natural (Patrick Caldwell) to Whitefish Lake First Nation (Darryl Steinhauer) to confirm meeting date of July 12, 2011 to discuss Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA).
7	5-Jul-2011	Phone Call	Darryl Steinhauer, Consultation Coordinator	Patrick Caldwell, Canadian Natural		Phone call from Whitefish Lake First Nation (Darryl Steinhauer) to Canadian Natural (Patrick Caldwell) to advise that the meeting date of July 12, 2011 was no longer feasible and would like to reschedule.
8	21-Jul-2011	Meeting	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator	Canadian Natural: Anita Sartori, Bill Clapperton, Patrick Caldwell, Ryan McFadden  Whitefish Lake: Darryl Steinhauer, Sandy Jackson, Ben Houle	Meeting between Canadian Natural (Anita Sartori, Patrick Caldwell, Bill Clapperton, and Ryan McFadden) and Whitefish Lake (Darryl Steinhauer, Sandy Jackson, and Ben Houle) to discuss Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Darryl Steinhauer hand delivered the final TUS Assessment Report for the 2007 Kirby South Project EIA Application. Whitefish Lake expressed an interest in developing consultation process to support further TUS research for 2011 EIA Application, to understand Kirby Expansion Project, and to explore business opportunities.

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
#	<b>July 16 to Sept 16 2011</b>					
9	18-Aug-2011	Email	Ryan McFadden, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Email including a letter from Canadian Natural (Ryan McFadden) to WFLFN (Darryl Steinhauer) <i>Re: Kirby Expansion Project and Grouse Project In Situ Oil Sands Project</i> which summarized the action items from the July 21, 2011 meeting and requested another meeting to coordinate TU-TEK specific activities.
10	29-Aug-2011	Voicemail	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Voicemail from Canadian Natural (Patrick Caldwell) to WFLFN (Darryl Steinhauer) to arrange a meeting as per the request of August 18, 2011.
11	6-Sep-2011	Voicemail	Darryl Steinhauer, Consultation Coordinator	Patrick Caldwell, Canadian Natural		Voicemail from WFLFN (Darryl Steinhauer) to Canadian Natural (Patrick Caldwell) to enquire if Canadian Natural was working on a TU/TLU proposal for the Kirby Expansion Project.
12	8-Sep-2011	Voicemail	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Voicemail from Canadian Natural (Patrick Caldwell) to WFLFN (Darryl Steinhauer) to propose a meeting as per the request of August 18, 2011.
13	9-Sep-2011	Phone call	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Phone call from Canadian Natural (Patrick Caldwell) to WFLFN (Darryl Steinhauer) to confirm a meeting on September 20, 2011 in St. Albert to discuss the Kirby Expansion Project.
#	<b>Sept 17 to Nov 17 2011</b>					
14	20-Sep-2011	Meeting	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator	Canadian Natural: Patrick Caldwell Ryan McFadden  WFLFN: Darryl Steinhauer	Meeting to discuss the Kirby Expansion Project. Discussed letter to AENV regarding PTOR comments. Darryl Steinhauer provided an overview of business capacity of the community, discussed TU/TEK opportunities and provided draft scope of work and budget for a TU/TEK project. CNRL will review and provide a response to proposal. WFLFN identified several lakes and areas of importance that would be included in TU/TEK study. WFLFN will table a Letter of Intent to support consultation and negotiations process. WFLFN want to host an open house following submission of the Application and do not require a technical workshop.



#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
15	30-Sep-2011	Email	Darryl Steinhauer, Consultation Coordinator	Ryan McFadden, Canadian Natural		Email with attachments from WFLFN (Darryl Steinhauer) to Canadian Natural (Ryan McFadden). Attachments included draft Relationship Agreement and TLU Study Agreement for review. CNRL to respond accordingly.
16	18-Oct-2011	Voicemail	Darryl Steinhauer, Consultation Coordinator	Ryan McFadden, Canadian Natural		Voicemail from WFLFN (Darryl Steinhauer) to Canadian Natural (Ryan McFadden) wanting CNRL to return his call to discuss the TUS proposal that was presented on September 20, 2011.
17	20-Oct-2011	Email	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Email from Canadian Natural (Patrick Caldwell) to WFLFN (Darryl Steinhauer) to apologize for not yet providing a response letter to the TU/TEK proposal but would ensure a copy is provided ASAP.
18	20-Oct-2011	Phone Call	Darryl Steinhauer, Consultation Coordinator	Ryan McFadden, Canadian Natural		Phone call from WFLFN (Darryl Steinhauer) to Canadian Natural (Ryan McFadden) to get an update on CNRL's TUS response. Darryl Steinhauer acknowledged that he had spoken to Patrick Caldwell yesterday and understands that CNRL have not yet received internal approval to table a response. Darryl Steinhauer indicated that WFLFN wants to move things forward but has indicated that while they were waiting for us over the past month, most of the TUS staff have moved on to other projects for Devon and MEG which will impact the timeline to receive information. Darryl Steinhauer would like a response today or tomorrow at the latest as there is a Chief and Council meeting next Tuesday October 25th where he would table our counter-offer. CNRL agreed to have a response as requested.
19	20-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Letter from Canadian Natural (Ryan McFadden) to WFLFN (Darryl Steinhauer) which outlined CNRL's response and counter-offer to WFLFN's TUS proposal.
20	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Letter sent from Canadian Natural (Ryan McFadden) to WFLFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
						on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
21	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Chief James Jackson Jr.		Letter sent from Canadian Natural (Ryan McFadden) to WFLFN to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
22	26-Oct-2011	Phone call	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Phone call from Canadian Natural (Patrick Caldwell) to WFLFN (Darryl Steinhauer) to discuss CNRL's counter proposal which was sent on October 20, 2011. Darryl Steinhauer indicated that the counter-offer was not yet presented to Chief and Council as WFLFN was hoping that they would get a response from CNRL on the Relationship Agreement at the same time. Patrick Caldwell explained that the Relationship Agreement was extensive and covers many different areas for discussion and it would be impossible to get everything addressed without further discussion. Patrick Caldwell asked if Chief and Council would be willing to allow the TLU work to get started and at the same time CNRL would work on an interim measure to support their requests. Darryl Steinhauer said it was a start and he would discuss it with Chief and Council.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
23	2-Nov-2011	Voicemail	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Voicemail from Canadian Natural (Patrick Caldwell) to WFLFN (Darryl Steinhauer) to inquire if Chief and Council had given direction as to whether or not we could proceed with TUS work. Patrick Caldwell also offered the services of Golder Associates to assist with the TUS process.
24	8-Nov-2011	Phone Call	Patrick Caldwell, Canadian Natural	Darryl Steinhauer, Consultation Coordinator		Phone call from Canadian Natural (Patrick Caldwell) to WFLFN (Darryl Steinhauer) to get an update on discussions with Chief and Council regarding CNRL's counter-proposal for WFLFN to undertake a TUS. Darryl Steinhauer indicated that he had not yet presented CNRL's proposal to Chief and Council because their meetings have been suspended until after the upcoming election. Nominations are this Thursday with the election taking place November 24. The new Council will select their Chief on December 1, 2011. Darryl Steinhauer indicated that all of WFLFN's TUS people are working on a TUS for MEG and resources are stretched. Patrick Caldwell reminded Darryl Steinhauer that we could provide Golder Associates to assist with the work. Darryl Steinhauer asked about the Relationship Agreement to which CNRL responded it was continuing to work on a response.
<b>Willow Lake Métis Local #780</b>						
<b>May 15 to July 15 2011</b>						
1	20-May-2011	Letter	Anita Sartori, Canadian Natural	Elaine Hurley, President		Letter sent from Canadian Natural (Anita Sartori) to Willow Lake Métis (Elaine Hurley) dated May 20, 2011, regarding Canadian Natural's public disclosure of the proposed Kirby Expansion Project and notice of intent to file an integrated application and environmental impact assessment (EIA). Attached to the letter were the Plain Language Summary, Project Summary Table and Project Location Map, and Proposed EIA Terms of Reference (PTOR). Letter indicated that input was welcome and that any comments on Kirby Expansion Project or the proposed EIA PTOR should be provided to Alberta Environment before the end of day on July 22, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
#	<b>July 16 to Sept 16 2011</b>					
	September	No entries				
#	<b>Sept 17 to Nov 17 2011</b>					
2	24-Oct-2011	Letter	Ryan McFadden, Canadian Natural	Elaine Hurley, President		Letter sent from Canadian Natural (Ryan McFadden) to Willow Lake to indicate that on October 11, 2011, Alberta Environment (AEW) issued the final Terms of Reference. Confirmed that CNRL was still intending to file the application in December 2011 and once AEW confirms administrative completeness, the formal regulatory process will begin. CNRL stated it intended to work with the recipient community or group on how best to review and share information that is contained in the application. CNRL would consider several options: community based workshops, information bulletins, technical workshops or other mutually agreeable considerations. CNRL indicated it was targeting January to early March 2012 for community meetings. CNRL further offered to meet and discuss Kirby Expansion Project or regulatory process, to identify project related issues, or explore opportunities to document traditional use of Kirby Expansion Project area.
3	1-Nov-2011	Letter	Ryan McFadden, Canadian Natural	Elaine Hurley, President		Letter sent from Canadian Natural (Ryan McFadden) to Willow Lake to indicate that on May 20, 2011 Willow Lake was sent copies of the public disclosure documents and was invited to provide comments to AEW. Following the conclusion of the public comment period, AEW issued the final Terms of Reference on October 11, 2011. A link was provided to view the final Terms of Reference on CNRL's project website. Letter further indicated that CNRL had not yet received a response to indicate an interest in discussing Kirby Expansion Project. In support of the regulatory timelines, CNRL offered to provide the in-kind services of Golder Associates to help with the traditional use data collection process. CNRL confirmed their availability to meet and discuss these issues at the earliest convenience.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
<b>Municipal, Government, and Public Stakeholders</b>						
<b>May 15 to July 15 2011</b>						
1	19-May-2011	Letter	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Letter from AENV (Melissa Styba) to Canadian Natural (Jon Gareau) which confirmed the approval of CNRL's First Nation Consultation Plan submitted on DATE for the proposed Kirby Expansion Project. AENV confirmed that the First Nation Consultation Plan is consistent with the requirements outlined in the Alberta Environment's section (Part III) of Alberta's First Nations Consultation Guidelines on Land Management and Resource Development.
<b># July 16 to Sept 16 2011</b>						
2	28-Jul-2011	Email	Ryan McFadden, Canadian Natural	Drea Wonnacott, AENV		Email with attachments from Canadian Natural (Ryan McFadden) to AENV (Drea Wonnacott). Attachment included the Kirby Expansion Project Bi-Monthly Stakeholder Consultation Report for the period of May 15 to July 15, 2011
3	5-Aug-2011	Email	Drea Wonnacott, AENV	Ryan McFadden, Canadian Natural		Email from AENV (Drea Wonnacott) to Canadian Natural (Ryan McFadden). AENV confirmed that the Bi-Monthly Stakeholder Consultation Report was reviewed and that there were no questions at this time.
4	31-Aug-2011	Email	Melissa Styba, AENV	Marc Scrimshaw, Canadian Natural		Email with attachments from AENV (Melissa Styba) to Canadian Natural (Marc Scrimshaw). Attachments included the DRAFT Final Terms of Reference for the Kirby Expansion Project which includes comments that AENV is considering from government (federal and provincial) and those received during the public comment period. Public comments were received from Whitefish Lake First Nation, Conklin Métis Local #193, and Peter Whitehead. Melissa Styba indicated that AENV will be finalizing the Terms of Reference shortly, therefore, if you have any comments or questions please let AENV know by early next week.

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5	31-Aug-2011	Email	Anita Sartori, Canadian Natural	Melissa Styba, AENV		Email from Canadian Natural (Anita Sartori) to AENV (Melissa Styba) to request the comments that were submitted by Whitefish Lake First Nation to be forwarded to Canadian Natural as it had not received any notification from Whitefish Lake First Nation. Anita Sartori also indicated that Canadian Natural had prepared a response for the comments that were provided by Conklin; however, they have not been submitted as Canadian Natural wanted to first have a discussion with Bonnie Evans. Anita Sartori indicated that Canadian Natural would review the Draft Final Terms of Reference and respond accordingly.
6	31-Aug-2011	Email	Melissa Styba, AENV	Anita Sartori, Canadian Natural		Email with attachments from AENV (Melissa Styba) to Canadian Natural (Anita Sartori). Attachments included comments from Whitefish Lake First Nation on the PTOR.
7	14-Sep-2011	Email	Marc Scrimshaw, Canadian Natural	Melissa Styba, AENV		Email from Canadian Natural (Marc Scrimshaw) to AENV (Melissa Styba) to indicate that Canadian Natural had carefully reviewed the changes to the Kirby Expansion Project Proposed Terms of Reference (PTOR) provided by Alberta Environment on August 31, 2011, and had a number of comments (listed within the email). Marc Scrimshaw noted that in February 2011 Alberta Environment had published a standardized terms of reference and that there appeared to be nothing unusual about the proposed projects that would warrant a significant change. However, if Alberta Environment decided to incorporate changes into the standardized TOR, Canadian Natural requests that Alberta Environment consider incorporating the comments provided by CNRL.
8	15-Sep-2011	Email	Anita Sartori, Canadian Natural	Melissa Styba, AENV		Email with attachments from Canadian Natural (Anita Sartori) to AENV (Melissa Styba) to indicate that on July 15, 2011 Canadian Natural received submissions from the Conklin Resource Development Advisory Committee (CRDAC) on behalf of the Conklin Métis Local #193 regarding the Proposed Terms of Reference (PTOR) for the Kirby Expansion Project. Canadian Natural completed a review of the

#	Date of Stakeholder Contact (DD-MMM-YYYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
						feedback and provided a response to the CRDAC on July 19, 2011. In addition, on September 15, 2011, each party had an opportunity to discuss the responses provided on behalf of their respective organizations. Canadian Natural's response is provided to Alberta Environment for your consideration. Canadian Natural and the CRDAC will continue to work together in an open and transparent manner through the regulatory process associated with the Kirby Expansion Projects.
9	16-Sep-2011	Email	Melissa Styba, AENV	Anita Sartori, Canadian Natural		Email from AENV (Melissa Styba) to Canadian Natural (Anita Sartori) to confirm receipt of email and to indicate that AENV will be reviewing the comments next week and can set aside time to discuss them after the meeting on Sept. 27, 2011.
#	<b>Sept 17 to Nov 17 2011</b>					
10	21-Sep-2011	Email	Melissa Styba, AENV	Anita Sartori, Canadian Natural		Email from AENV (Melissa Styba) to Canadian Natural (Anita Sartori) to please note that a new Consultation Advisor with the SREM Aboriginal Affairs Branch based in Lac La Biche has been assigned to the Kirby Expansion Project. Melissa Styba indicated that Rae Lett will be invited to attend the meeting on September 27 in order to meet AENV and CNRL contacts for Kirby Expansion Project.
11	22-Sep-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email from SREM (Rae Lett) to Canadian Natural (Ryan McFadden) to provide contact information and to offer to meet in Lac La Biche at earliest convenience.
12	28-Sep-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email with attachments from SREM (Rae Lett) to Canadian Natural (Ryan McFadden). Attachments included AENV project notification letters which were sent to Heart Lake First Nation, Cold Lake First Nation, Saddle Lake First Nation, and Fort McMurray First Nation to inform the First Nations of the proposed Kirby Expansion Project and indicated that consultation may be required.
13	30-Sep-2011	Email	Ryan McFadden, Canadian Natural	Rae Lett, SREM		Email with attachments from Canadian Natural (Ryan McFadden) to SREM (Rae Lett). Attachments included the Kirby Expansion Project Bi-Monthly Stakeholder Consultation Report for the period of July 16 to September 16, 2011.



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14	30-Sep-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email from SREM (Rae Lett) to Canadian Natural (Ryan McFadden) to confirm receipt of Bi-Monthly Consultation Report. Rae Lett indicated comments, questions or concerns would be provided no later than October 21, 2011.
15	11-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email with attachments from AENV (Melissa Styba) to Canadian Natural (Jon Gareau). Attachments included the Final Terms of Reference that have been issued for the Kirby Expansion Project.
16	11-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email with attachment from AENV (Melissa Styba) to Canadian Natural (Jon Gareau). Attachment included the draft Final Terms of Reference public notice. Comments from CNRL are to be provided by October 13, 2011.
17	12-Oct-2011	Email	Jon Gareau, Canadian Natural	Melissa Styba, AENV		Email from Canadian Natural (Jon Gareau) to AENV (Melissa Styba) to confirm that CNRL did not have any comments on the draft Final Terms of Reference Public Notice.
18	12-Oct-2011	Email	Michelle Camilleri, CEAA	Anita Sartori, Canadian Natural		Email with attachment from CEAA (Michelle Camilleri) to Canadian Natural (Anita Sartori). Attachment included a letter regarding the federal participation in the environmental review of the proposed Kirby Expansion Project.
19	13-Oct-2011	Email	Jon Gareau, Canadian Natural	Melissa Styba, AENV		Email from Canadian Natural (Jon Gareau) to AENV (Melissa Styba) to confirm if AENV will be running the public notice for the Final Terms of Reference and will invoice CNRL. Jon Gareau requested confirmation of which newspapers the notice would appear in.
20	14-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email from AENV (Melissa Styba) to Canadian Natural (Jon Gareau) to confirm that AENV is responsible for publishing and paying for the Final Terms of Reference public notice. The public notices will be advertised in the Lac La Biche Post and Alberta Sweetgrass. AENV advised that CNRL should ensure that the Final Terms of Reference are posted on CNRL's website as this is referenced in the notices.



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21	13-Oct-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email with attachment from SREM (Rae Lett) to Canadian Natural (Ryan McFadden). Attachment included AENV's project notification letter which was sent to Beaver Lake Cree Nation. AENV confirmed it would forward the remaining letter that was sent to Chipewyan Prairie Dene First Nation shortly.
22	13-Oct-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email from SREM (Rae Lett) to Canadian Natural (Ryan McFadden). Rae Lett requested a meeting to discuss SREM's comments on the Bi-Monthly Stakeholder Consultation Report. Proposed a meeting during October 24 to October 28, 2011 to discuss the consultation process for the Kirby Expansion Project.
23	13-Oct-2011	Email	Ryan McFadden, Canadian Natural	Rae Lett, SREM		Email from Canadian Natural (Ryan McFadden) to SREM (Rae Lett) to propose a meeting on October 25, 2011.
24	20-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email with attachments from AENV (Melissa Styba) to Canadian Natural (Jon Gareau). Jon Gareau was cc'd on an email to Sarah Chileen which included Alberta Environment's response to the proposed Terms of Reference comments from Conklin Métis Local #193 and the Final Terms of Reference issued for Canadian Natural Resources Ltd's proposed Kirby Expansion Project.
25	20-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email with attachments from AENV (Melissa Styba) to Canadian Natural (Jon Gareau). Jon Gareau was cc'd on an email to Clayton Leonard which included Alberta Environment's response to the proposed Terms of Reference comments from Whitefish Lake First Nation and the Final Terms of Reference issued for Canadian Natural Resources Ltd's proposed Kirby Expansion Project.
26	20-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email with attachments from AENV (Melissa Styba) to Canadian Natural (Jon Gareau). Jon Gareau was cc'd on an email to Peter Whitehead which included Alberta Environment's response to his comments on the proposed Terms of Reference and the Final Terms of Reference issued for Canadian Natural Resources Ltd's proposed Kirby Expansion Project.
27	21-Oct-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email from SREM (Rae Lett) to Canadian Natural (Ryan McFadden) to indicate comments, questions or concerns for the Bi-Monthly Stakeholder Consultation Report would follow next week.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
28	13-Oct-2011	Email	Ryan McFadden, Canadian Natural	Rae Lett, SREM		Email from Canadian Natural (Ryan McFadden) to SREM (Rae Lett) to propose an alternate date to meet on October 27, 2011.
29	20-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email with attachments from AENV (Melissa Styba) to Canadian Natural (Jon Gareau). Attachments included the Final Terms of Reference public notice that will be published in the Lac La Biche Post on October 25 and in the November 14th Issue of the Alberta Sweetgrass.
30	24-Oct-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email with attachments from SREM (Rae Lett) to Canadian Natural (Ryan McFadden). Attachments included comments and questions with respect to the Bi-Monthly Stakeholder Consultation Report.
31	24-Oct-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email from SREM (Rae Lett) to Canadian Natural (Ryan McFadden) to confirm that Tim Burggraaff and Lisa Fairweather would join the meeting on October 27, 2011 to discuss the consultation process for Kirby Expansion Project.
32	26-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email with from AENV (Melissa Styba) to Canadian Natural (Jon Gareau) to indicate that AENV received a call from a local resident who is concerned with the reference to the Kirby Expansion Project being "approximately 75 km northeast of Lac La Biche". The individual is concerned on how this distance was determined as depending on how the distance was measured from Lac La Biche there will be different economic benefits to the town. Their main concern is that if it is further than the 75km it may be misleading as a true economic benefit to the town. Melissa Styba requested CNRL to provide clarification on how this distance was determined (i.e., from Kirby Expansion Project site, northern or southern boundary edge).
33	26-Oct-2011	Email	Jon Gareau, Canadian Natural	Melissa Styba, AENV		Email from Canadian Natural (Jon Gareau) to AENV (Melissa Styba) which indicated that the distance was measured from Lac La Biche town centre generally to the SW corner of Kirby Expansion Project Area shown CNRL's plain language disclosure document. Jon Gareau stated the potential economics benefits to the town would not change if the distance was approximately 80 km and measured to the centre of Kirby Expansion Project Area.

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34	26-Oct-2011	Email	Melissa Styba, AENV	Jon Gareau, Canadian Natural		Email with from AENV (Melissa Styba) to Canadian Natural (Jon Gareau) to confirm that the individual who was inquiring is concerned with driving distance as he lives in Lac La Biche and depending on the true distance is wondering how long it would take to get to work. He would also like to know if workers will be brought in and live in a camp which he feels would limit the economic benefit to Lac La Biche. Melissa indicated that the individual is interested in talking with CNRL further.
35	26-Oct-2011	Email	Jon Gareau, Canadian Natural	Melissa Styba, AENV		Email from Canadian Natural (Jon Gareau) to AENV (Melissa Styba) to confirm that CNRL contacted the individual and had a discussion with him about the driving distance. Jon Gareau indicated that he brings up a valid point about how the distance is represented. The 75 km is a straight line distance. By road, the Kirby Expansion Project site turnoff on Highway 881 is 110 km from Lac la Biche. CNRL will ensure our application is clear on this point.
36	26-Oct-2011	Email	Ryan McFadden, Canadian Natural	Rae Lett, SREM		Email from Canadian Natural (Ryan McFadden) which outlined a number of questions to discuss during the meeting on October 27, 2011. Questions included the following: For major project consultation, what level of communication will occur between SREM and ERCB? - Given that SREM represents Energy, is there any reporting and working relationship with the ERCB as well? - Role of SREM with respect to consultation for major projects. - What does SREM see as their role for major projects? - Is there any mandate for SREM representatives to engage/consult directly with the community. - Clarification on the expectations for Métis consultation? - Path forward: schedule bimonthly or quarterly updates with Rae to review consultation efforts through the regulatory process.
37	26-Oct-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		Email from SREM (Rae Lett) to Canadian Natural (Ryan McFadden) to respond to the list of questions provided by CNRL on October 26, 2011.

#	Date of Stakeholder Contact (DD-MMM-YYY)	Contact or Activity	Initiator	Recipient	Participants	Summary of Discussion
38	31-Oct-2011	Email	Rae Lett, SREM	Ryan McFadden, Canadian Natural		<p>Email from SREM (Rae Lett) to Canadian Natural (Ryan McFadden) to follow up on discussion. Rae Lett stated the following:</p> <ul style="list-style-type: none"> <li>• SAAB strongly encourages CNRL to share their Consultation Plan for the Kirby Expansion Project with each of the First Nation groups AENV has advised CNRL to consult with. Please let me know if this is what CNRL will be doing or any alternative routes to this.</li> <li>• Also, SAAB encourages CNRL to share their bi-monthly reports for the Kirby Expansion Projects with the First Nation groups AENV has advised CNRL to consult with. Please let me know if CNRL plans to do this.</li> <li>• Provide the initial notification letters for the CNRL Kirby Expansion project that were sent to the First Nation communities to me via email.</li> <li>• Please amend your bi-monthly reports to reflect the comments and concerns I addressed in the October 27, 2011 email and bi-monthly report review for both the Kirby Expansion project. Please send the revised documents via email.</li> </ul>

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39	2-Nov-2011	Meeting	Anita Sartori, Canadian Natural	Michelle Camilleri, CEAA	CEAA Michelle Camilleri  Transport Canada: Gregory Black Holly Poklitar  Canadian Natural: Anita Sartori Jon Gareau Marc Scrimshaw	Meeting between Canadian Natural, CEAA and Transport Canada (TC) to review the proposed watercourse crossings for the Kirby Expansion Project. Based on preliminary feedback, it is our understanding the proposed pipeline or bridge crossings will likely not trigger a need for a federal environmental impact assessment (EA). Majority of our crossings will be proposed in "minor waters" therefore not only is an EA not required but an application will also not be required. However, some watercourses (4 for Kirby) may be deemed navigable which will require the submission of an application to TC for approval. This will only require approval not an EA. Furthermore CEAA and TC were pleased with the watercourse assessments that were completed this fall by Matrix and Golder therefore the only additional information we will need to provide is the crossing design (from engineering). Given that approval is likely required from TC for a few of our crossings, we were advised that we will need to complete consultation that meets the federal regulators expectation.
40	15-Nov-2011	Email	Ken Scullion, Portage College	Ryan McFadden, Canadian Natural		Email from Portage College (Ken Scullion) to Canadian Natural (Ryan McFadden) to request a copy of the Terms of Reference.