

**TRADITIONAL LAND USE BASELINE REPORT
FOR THE
CANADIAN NATURAL
KIRBY IN SITU OIL SANDS EXPANSION PROJECT**

**Prepared for:
Canadian Natural Resources Limited**

**Prepared by:
Golder Associates Ltd.**

December 2011

10-1346-0052

EXECUTIVE SUMMARY

Canadian Natural Resources Limited (Canadian Natural) is applying for approval of the Kirby In Situ Oil Sands Expansion Project (the Kirby Expansion Project or the Project). The submission contains the following:

- application to the Energy Resources Conservation Board (ERCB) under the *Oil Sands Conservation Act*;
- application to Alberta Environment and Water (AEW) under the *Environmental Protection and Enhancement Act* (EPEA); and
- application to AEW under the *Water Act*.

The above submissions are collectively referred to as the Application.

The Project is located in Townships 73, 74 and 75, Ranges 7, 8 and 9 West of the Fourth Meridian (W4M). The proposed development will include the use of in situ Steam Assisted Gravity Drainage (SAGD) well pairs and expansion phases of the two approved on-site steam generation and oil/water treatment plants.

The Project will be located within the traditional territories of the Heart Lake First Nation, the Chipewyan Prairie Dene First Nation, the Fort McMurray #468 First Nation, the Whitefish Lake #128 (Goodfish) First Nation, the Cold Lake First Nation and the Beaver Lake Cree Nation. The Métis of Conklin, the Métis of Chard and other Métis groups¹ also use land in the region for traditional purposes.

For the purposes of this Traditional Land Use (TLU) report, two study areas were defined: a Regional Study Area (RSA) with a total area of 18,541 km² (1,854,108 ha) and a Local Study Area (LSA) with a total area of 164 km² (16,422 ha). A TLU study was completed to summarize the potential historic and current land use within the Project RSA and LSA by Aboriginal groups. The TLU information in this report pertains to Aboriginal groups who may be potentially affected by the Project, and was identified through a review of publicly available reports commissioned by Canadian Natural and other industry proponents, and publicly available reports prepared by Aboriginal and other groups. Aboriginal traditional land users have reported land uses related to hunting and trapping, fishing, medicinal and edible plant collection, and cultural activities within the RSA and LSA, as well as a list of concerns and issues related to the Project and the cumulative effects of development in the region.

¹ Willow Lake Métis Local # 780 requested consultation for the Kirby In Situ Oil Sands Project (Canadian Natural 2009) and were represented along with Fort McMurray Métis Local #1935 and Chard Métis Local #214, by the Wood Buffalo Métis Corporation (Canadian Natural 2009a). Members of Fort McMurray Métis Local #2020 have reported traditional ecological knowledge within the Regional Study Area (CEMA 2005).

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1 INTRODUCTION

Canadian Natural Resources Limited (Canadian Natural) is applying for approval of the Kirby In Situ Oil Sands Expansion Project (the Kirby Expansion Project or the Project). The applications to the Energy Resources Conservation Board (ERCB) under the *Oil Sands Conservation Act*, and Alberta Environment and Water under *Environmental Protection and Enhancement Act* and *Water Act* as well as the Environmental Impact Assessment are herein collectively referred to as the Application.

The proposed Project will involve bitumen production from oil sands formations within a Lease Area located in Townships 73, 74 and 75, Ranges 7, 8 and 9, West of the Fourth Meridian (W4M), and within the Regional Municipality of Wood Buffalo. Minor portions of the proposed Project facilities will extend beyond the Lease Area boundary. The footprint includes water source and disposal wells, and pipelines that extend west of the Lease Area into Lac La Biche County.

The Lease Area consists of 110.75 sections (29,143 ha) of land on which Canadian Natural fully or partially holds the oil sands exploration and development rights. To facilitate description of the expansion plans and facility locations, the Lease Area has been divided into two geographic areas, referred to as the North Expansion Area and the South Expansion Area, which are generally divided by Provincial Highway 881. The Project will be accessed via an all-weather gravel road which intersects with Highway 881, at a location approximately 35 km by road south of Conklin and 110 km by road northeast of Lac La Biche.

Canadian Natural currently has ERCB commercial scheme approvals for the following two projects:

- The Canadian Natural Kirby In Situ Oil Sands Project, hereafter referred to as Kirby South 2010 (or KS1), was approved in 2010 for bitumen production of 45,000 bbl/d (7,150 m³/d) using Steam Assisted Gravity Drainage (SAGD) technology.
- The Enerplus Resources Fund (Enerplus) Kirby Oil Sands Project Phase 1, hereafter referred to as Kirby North 2010, was approved in 2010 for bitumen production of 10,000 bbl/d (1,590 m³/d), also using SAGD technology. The Kirby North 2010 oil sands leases and nearby Enerplus oil sands leases were acquired by Canadian Natural in 2010.

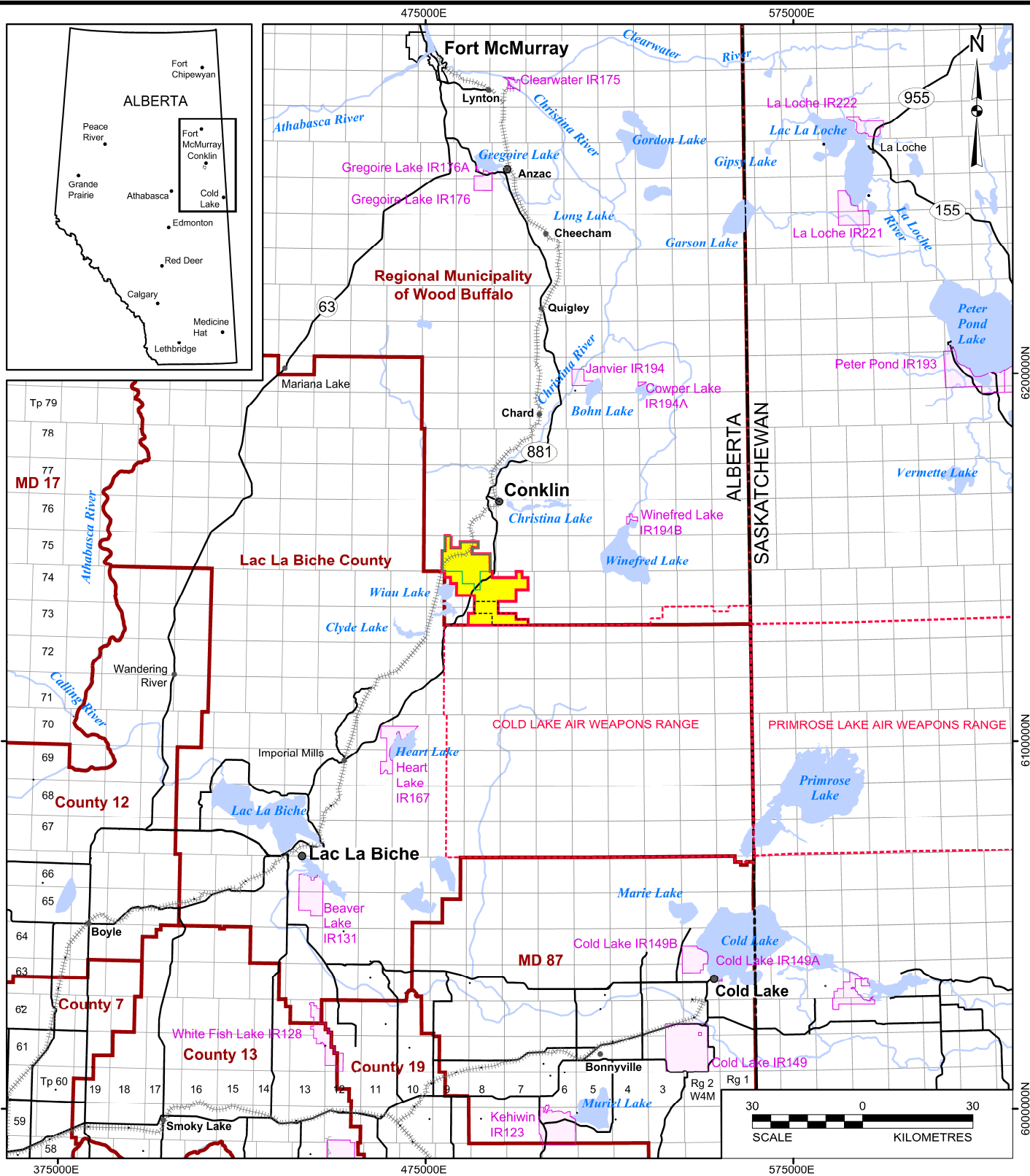
The Kirby Expansion Project will occur in three phases, as described below:

- Kirby North Phase 1 (KN1) will involve the expansion of the approved Kirby North Central Processing Facility (CPF) and development of facilities to increase bitumen production and processing capacity in the North Expansion Area from the approved 10,000 bbl/d (1,590 m³/d) to 50,000 bbl/d (7,950 m³/d);
- Kirby North Phase 2 (KN2) will further expand the Kirby North CPF, facilities, and bitumen production and processing capacity within the North Expansion Area from the 50,000 bbl/d (7,950 m³/d) to 80,000 bbl/d (12,720 m³/d); and
- Kirby South Phase 2 (KS2) will involve expansion of the approved Kirby South CPF and development of facilities to allow an increase in South Expansion Area bitumen production and processing capacity by 15,000 bbl/d (2,384 m³/d) from the approved 45,000 bbl/d (7,150 m³/d) to a total of 60,000 bbl/d (9,540 m³/d) bitumen.

As a result of the expansion, the Kirby North CPF will have a design capacity of 80,000 bbl/d (12,720 m³/d) and the Kirby South CPF will have a design capacity of 60,000 bbl/d (9,540 m³/d), for a total bitumen production capacity within the Lease Area of 140,000 bbl/d (22,260 m³/d). In addition, the Project will increase the combined life of Kirby lease developments from 20 years to approximately 30 years. The layout of surface facilities associated with the Project is shown on [Figure 1](#).

The Project will be located within the traditional territories of Heart Lake First Nation (HLFN), Chipewyan Prairie Dene First Nation (CPDFN), Fort McMurray #468 First Nation (FMFN), Whitefish Lake #128 (Goodfish) First Nation (WFL128), Cold Lake First Nation (CLFN) and Beaver Lake Cree Nation (BLCN). The boundaries of First Nations' traditional territories were compiled from publicly available documents to determine which traditional territories either partially or completely overlap the RSA, LSA and/or the Lease Area. A map of the BLCN traditional territory was not available for this report; however, it is known that KS1, situated within the same lease area as the Project, is located within the traditional territory of the BLCN (Canadian Natural 2007).

L:\2010\101346\10-1346-0052\Baseline\Fig 1_0134600523000A001 Project Location.dwg Dec 08, 2011 - 12:41pm



LEGEND

- COLD LAKE / PRIMROSE LAKE AIR WEAPONS RANGE BOUNDARY
- RAILWAY
- ROAD
- KIRBY EXPANSION PROJECT LEASE AREA*
- APPROVED KIRBY SOUTH 2010 PROJECT AREA
- APPROVED KIRBY NORTH 2010 PROJECT AREA

Note

*Includes Oil Sands Leases fully and partially held by Canadian Natural

REFERENCE

ALBERTA NTDB DATA SUPPLIED BY GEOMATICS CANADA, AUGUST 2001. NAD 83 ZONE 12. SHEETS 74D, E AND 74L IN NAD 27 ZONE 12. SASKATCHEWAN NTDB DATA SUPPLIED BY ISC, AUG. 2001. NAD 83 ZONE 13. ALL DATA CONVERTED TO NAD 83 UTM ZONE 12.

PROJECT

KIRBY IN SITU OIL SANDS EXPANSION PROJECT

TITLE

PROJECT LOCATION



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CHECK	TGC	07/12/11				
REVIEW	SM	08/12/11				

The Métis of Conklin, the Métis of Chard and other Métis groups also use land in the region for traditional purposes. Willow Lake Métis Local #780 requested consultation for KS1 (Canadian Natural 2009a) and was represented, along with Fort McMurray Métis Local #1935 and Chard Métis Local #214, by the Wood Buffalo Métis Corporation (Canadian Natural 2009a). Members of Fort McMurray Métis Local #2020 have also reported Traditional Knowledge (TK) within the regional study area of the Project (CEMA 2005).

Baseline studies were conducted to gather TK and Traditional Land Use (TLU) information in the Lease Area and in a region bounded by Fort McMurray in the north, Lac La Biche in the south, the Saskatchewan border in the east and the Athabasca River in the west. The following Baseline Report focuses on historic and current TLU within the Regional Study Area (RSA) and Local Study Area (LSA). This information will be used to prepare the TLU Assessment for the Project.

2 STUDY AREAS

For the purposes of this TLU report, two study areas were defined: an RSA with a total area of 18,541 km² (1,854,108 ha) and an LSA with a total area of 164 km² (16,422 ha). The boundaries and rationale for each area are described below.

2.1 REGIONAL STUDY AREA

The TLU RSA shown in [Figure 2](#), is the same as the terrestrial RSA and covers an area of 18,541 km² (1,854,108 ha). Typically, TLU areas include land that is used to harvest traditional resources including game and berries or medicinal plants. It may also include areas of spiritual or historic importance based on oral tradition. The RSA considers the potential effects on wildlife and vegetation which are important components of TLU activities. Traditional fishing and aquatic resources are also considered in the context of the TLU RSA. The TLU information derived from previous and publicly available reports commissioned by industry, as well as publicly available reports prepared by First Nations and other groups overlap the RSA. Therefore, this area provides an appropriate base from which to review TLU information.

2.2 LOCAL STUDY AREA

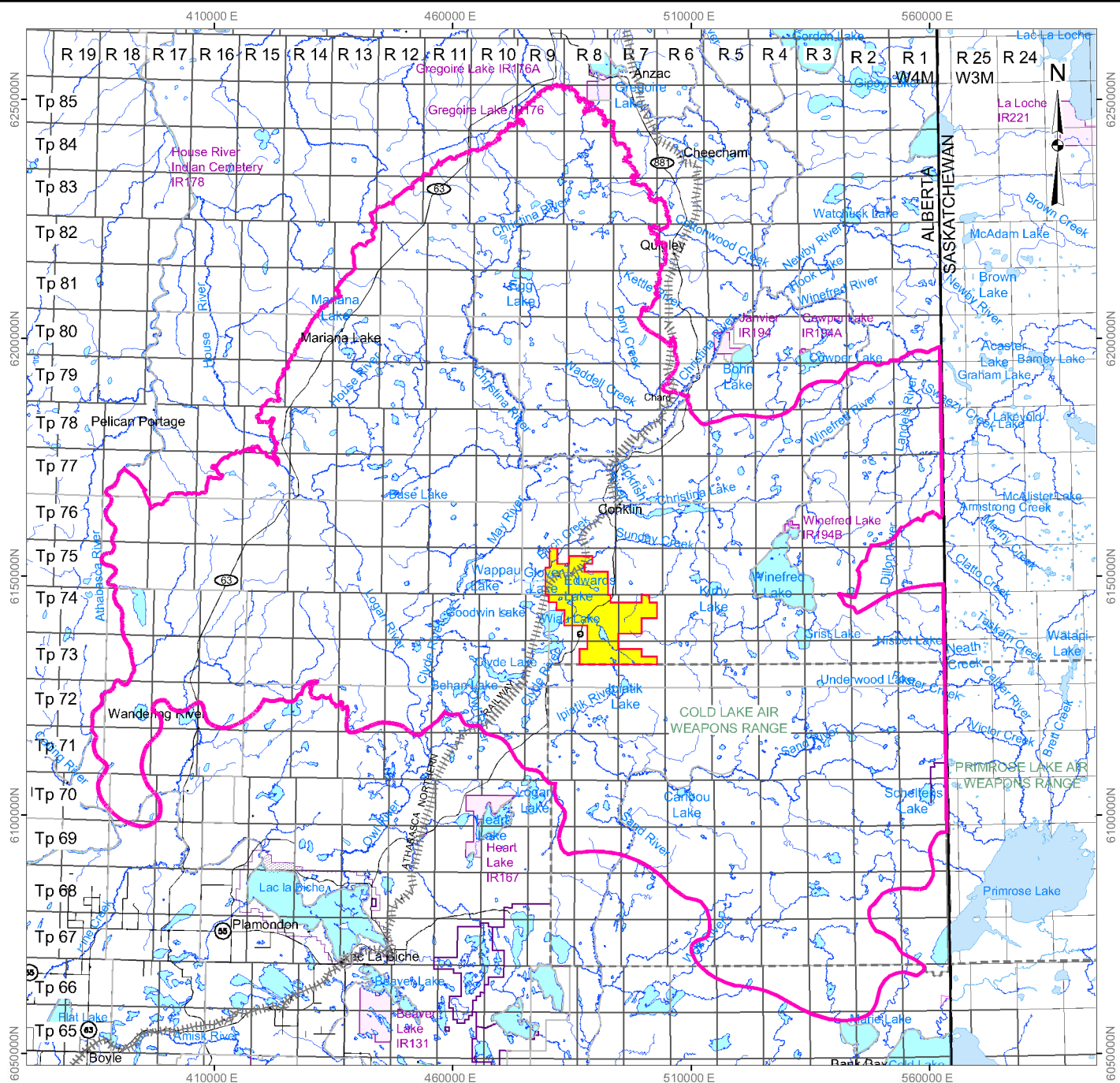
The TLU LSA, shown in [Figure 3](#), is the same as the terrestrial LSA. The LSA represents a 500 m buffer around the proposed footprint of the Project surface facilities and covers an area of 164 km² (16,422 ha). The LSA is located to the north of the Cold Lake Air Weapons Range (CLAWR) and extends north past Edwards Lake and Unnamed Lake #1. Unnamed Lake #1 is known to the HLFN as Big Muskeg Lake (Canadian Natural 2007), and to the WFL128 as Muskeg Lake (Canadian Natural 2009a). The LSA partially overlaps the previously approved Kirby North 2010 and KS1 Lease Areas ([Figure 1](#)). The LSA also partially overlaps a portion of the Canadian National Railway line and Highway 881.

2.3 TRADITIONAL FIRST NATIONS TERRITORIES

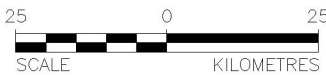
The traditional territories of several First Nations partially or completely overlap the Project RSA, LSA and/or Lease Area. The traditional territories of HLFN, CDPFN, FMFN, WFL128 and CLFN are shown in [Figures 4 through 8](#).

The HLFN traditional territory as depicted in the TLU Assessment from the *Application for Approval* of the KS1 Project (Canadian Natural 2007 and 2009a) is shown in [Figure 4](#). The CPDFN traditional territory, as depicted in the *Baseline Report* for the Rio Alto Kirby Project (Golder 2002a and Canadian Natural 2009a), is shown in [Figure 5](#). The FMFN traditional territory as depicted in the FMFN TLU study, *Nistawayaw "Where Three Rivers Meet"* (FMFN 2006), is shown in [Figure 6](#). The WFL128 traditional territory as depicted in the *WFL128 Traditional Lands and Treaty Relations Office Report to Chief and Council TUS Assessment Canadian Natural Resources Limited Canadian Natural Kirby In Situ Project* (WFL128 2011), is shown in [Figure 7](#). The CLFN traditional territory, as depicted in *Primrose and Wolf Lake In Situ Oil Sands Expansion Project Application for Approval* (Golder 2000), is shown in [Figure 8](#). A map of the BLCN traditional territory was not available for this baseline report.

It has also been noted that Métis of Conklin may hunt in an area which extends to a 160 km radius around the community of Conklin; and that the Lease Area is approximately 35 km from Conklin, suggesting that the Project is located on lands which may be used for traditional activities by the Conklin Métis (Conklin 2008).



- LEGEND**
- AIR WEAPONS RANGE
 - KIRBY EXPANSION PROJECT LEASE AREA*
 - TRADITIONAL LAND USE REGIONAL STUDY AREA (RSA)
 - RAILWAY
 - ROADS AND HIGHWAYS

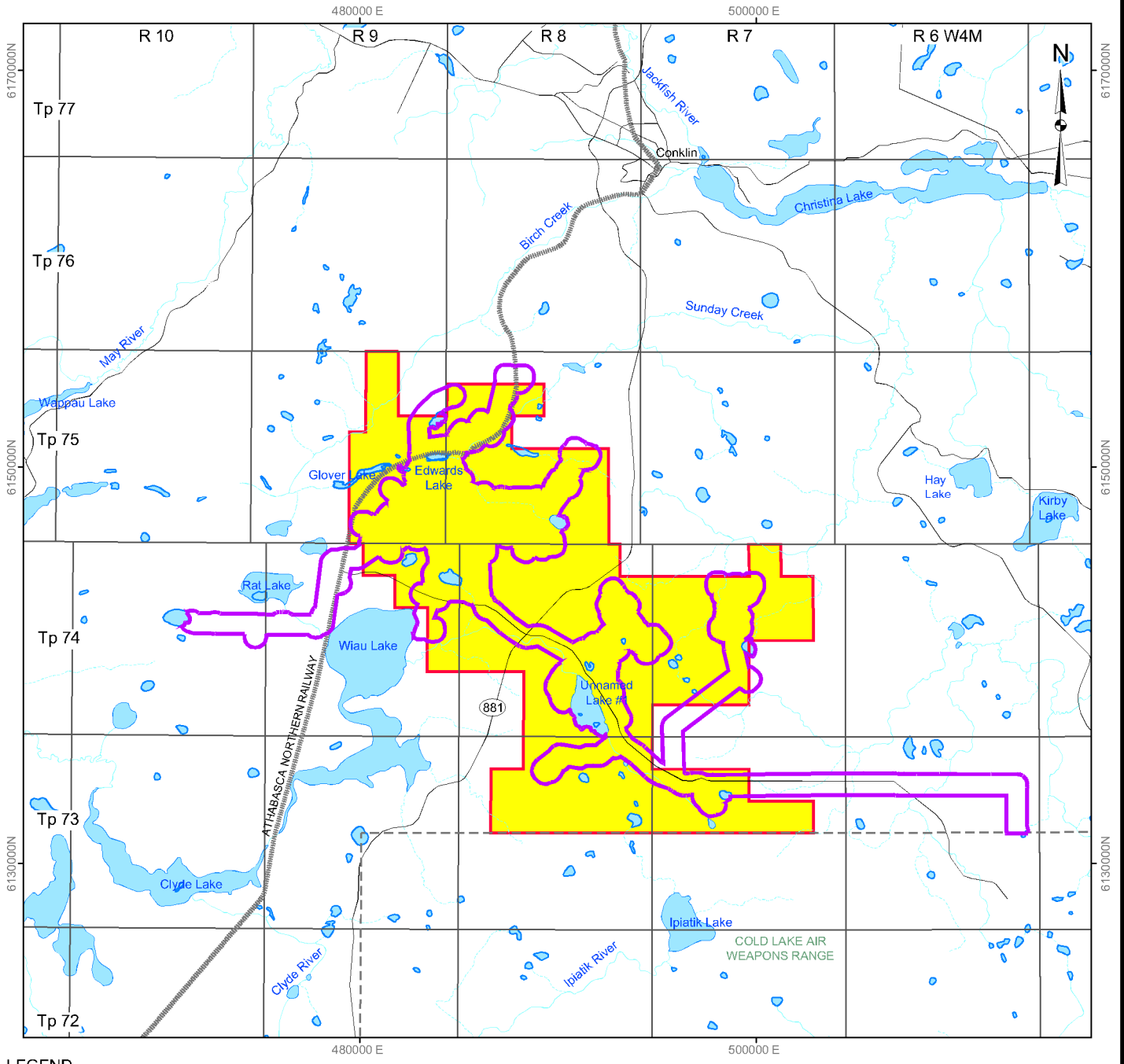


Note
*Includes Oil Sands Leases fully and partially held by Canadian Natural

REFERENCE
ALBERTA AND SASKATCHEWAN MAP DATA OBTAINED FROM IHS ENERGY INC. CONVERTED TO NAD 83 UTM ZONE 12.

PROJECT																									
KIRBY IN SITU OIL SANDS EXPANSION PROJECT																									
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LEGEND

- AIR WEAPONS RANGE
- TRADITIONAL LAND USE LOCAL STUDY AREA (LSA)
- KIRBY EXPANSION PROJECT LEASE AREA*
- RAILWAY
- ROADS AND HIGHWAYS



NOTES

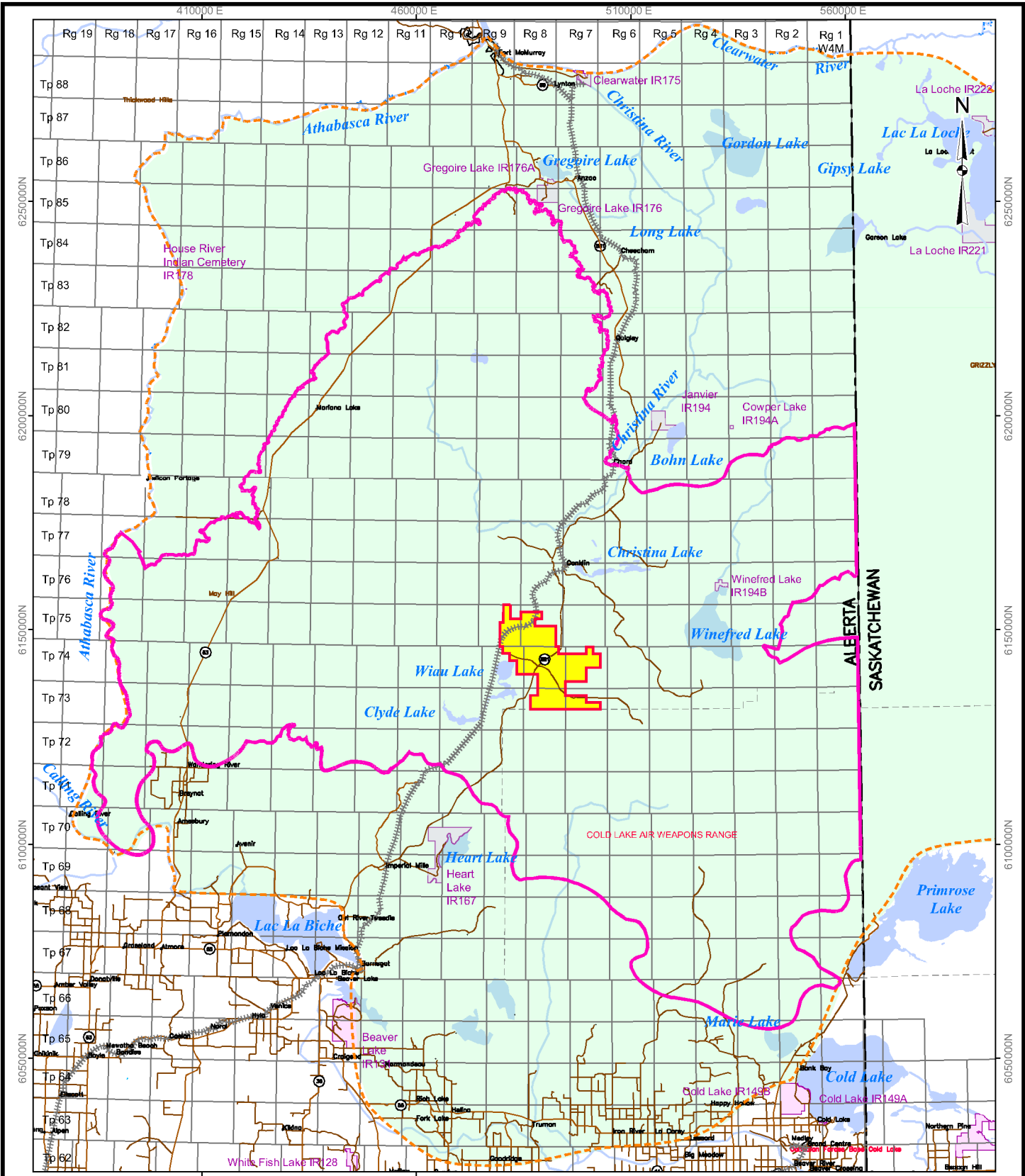
Unnamed Lake #1 (BIG MUSKEG LAKE)
 *Includes Oil Sands Leases fully and partially held by Canadian Natural

REFERENCE





ALBERTA AND SASKATCHEWAN MAP DATA OBTAINED FROM IHS ENERGY INC. CONVERTED TO NAD 83 UTM ZONE 12.

PROJECT			
KIRBY IN SITU OIL SANDS EXPANSION PROJECT			
TITLE			
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			FIGURE: 3

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LEGEND

-  KIRBY EXPANSION PROJECT LEASE AREA
-  TRADITIONAL LAND USE REGIONAL STUDY AREA (RSA)
-  HEART LAKE FIRST NATION TRADITIONAL TERRITORY
-  AIR WEAPONS RANGE



Note

*Includes Oil Sands Leases fully and partially held by Canadian Natural

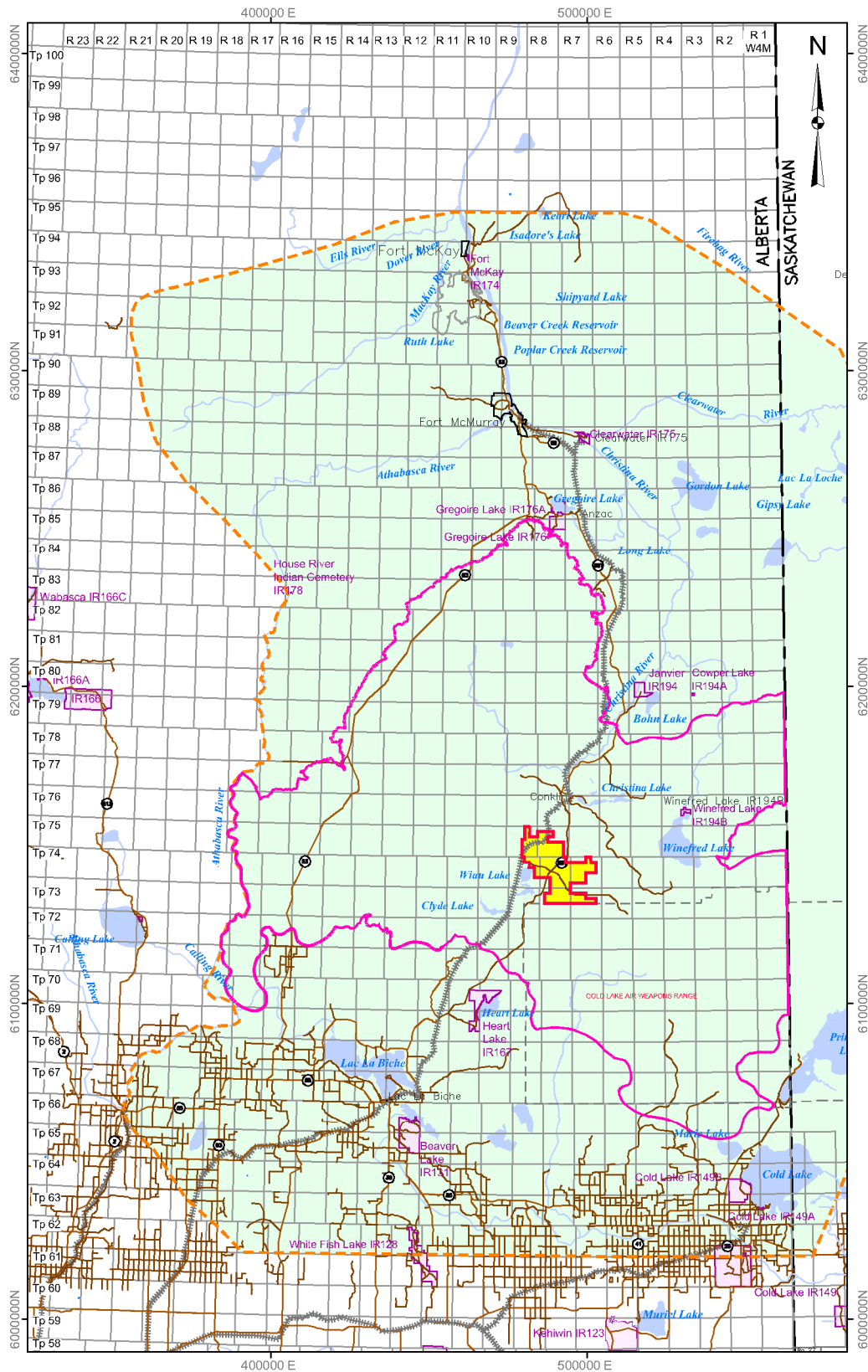
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ALBERTA NTDB DATA SUPPLIED BY GEOMATICS CANADA, AUGUST 2001. NAD 83 ZONE 12. SHEETS 74D, E AND 74L IN NAD 27 ZONE 12. SASKATCHEWAN NTDB DATA SUPPLIED BY ISC, AUG. 2001. NAD 83 ZONE 13. ALL DATA CONVERTED TO NAD 83 UTM ZONE 12. OIL & GAS AND ENVIRONMENTAL DATA PROVIDED BY VERITAS GeoSERVICES LTD., CURRENT AS OF MAY 2001. TRADITIONAL LAND AREA PROVIDED BY HEART LAKE FIRST NATION, MAY, 2007.







 Canadian Natural		KIRBY IN SITU OIL SANDS EXPANSION PROJECT	
HEART LAKE FIRST NATION TRADITIONAL TERRITORY			
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		FIGURE: 4	

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LEGEND

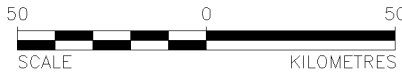
-  KIRBY EXPANSION PROJECT LEASE AREA*
-  TRADITIONAL LAND USE REGIONAL STUDY AREA (RSA)
-  CHIPEWYAN PRAIRIE DENE FIRST NATION TRADITIONAL TERRITORY
-  AIR WEAPONS RANGE



Note

*Includes Oil Sands Leases fully and partially held by Canadian Natural

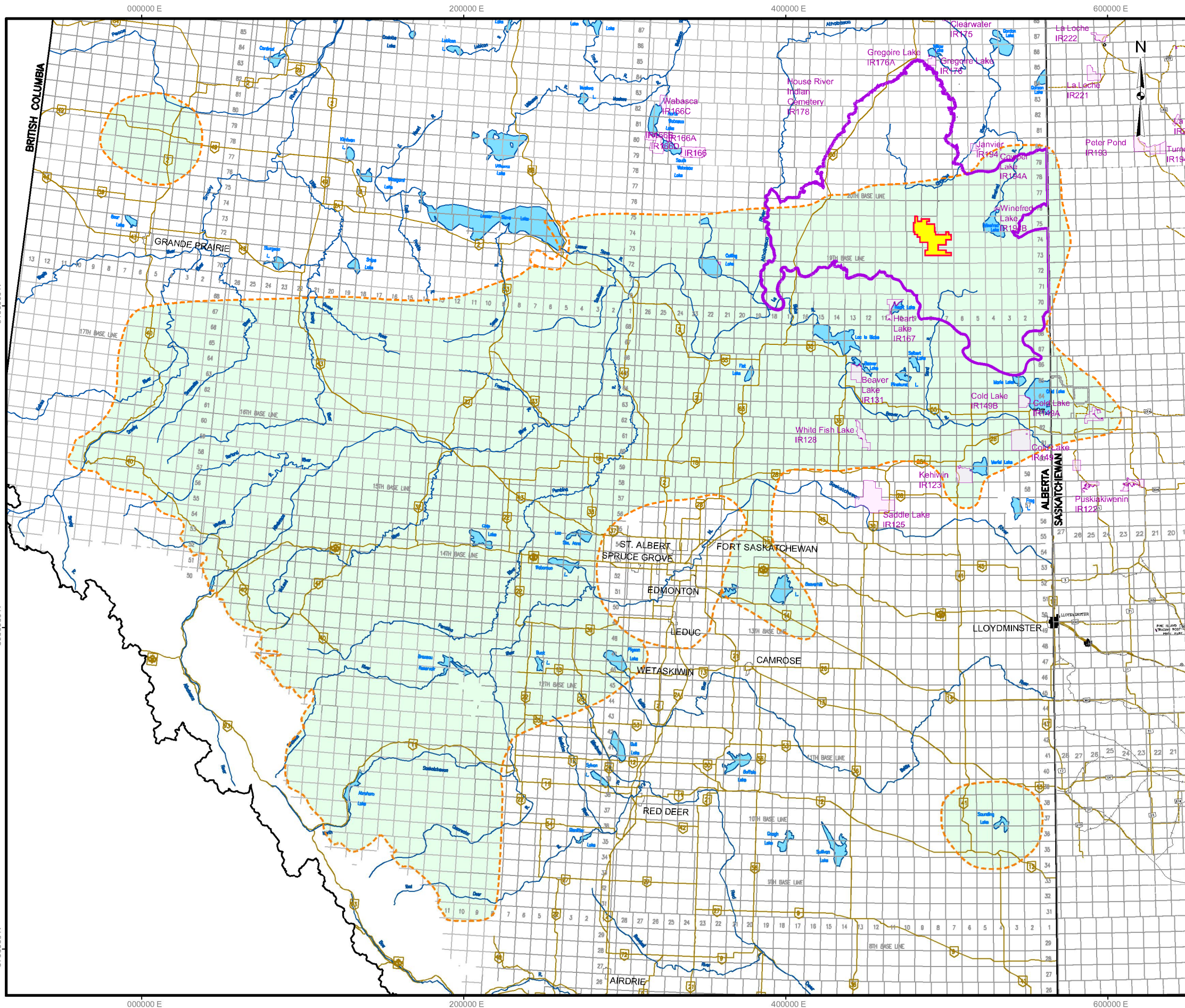
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ALBERTA NTDB DATA SUPPLIED BY GEOMATICS CANADA, AUGUST 2001. NAD 83 ZONE 12. SHEETS 74D, E AND 74L IN NAD 27 ZONE 12. SASKATCHEWAN NTDB DATA SUPPLIED BY ISC, AUG. 2001. NAD 83 ZONE 13. ALL DATA CONVERTED TO NAD 83 UTM ZONE 12. OIL & GAS AND ENVIRONMENTAL DATA PROVIDED BY VERITAS GeoSERVICES LTD., CURRENT AS OF MAY 2001. TRADITIONAL LAND AREA PROVIDED BY HEART LAKE FIRST NATION, MAY, 2007.



 Canadian Natural		KIRBY IN SITU OIL SANDS EXPANSION PROJECT	
<p>TITLE</p> <h2 style="text-align: center;">CHIPEWYAN PRAIRIE DENE FIRST NATION TRADITIONAL TERRITORY</h2>			
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			FIGURE: 5

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LEGEND

- KIRBY EXPANSION PROJECT LEASE AREA*
- TRADITIONAL LAND USE REGIONAL STUDY AREA (RSA)
- WHITEFISH (GOODFISH) LAKE FIRST NATION #128 TRADITIONAL TERRITORY

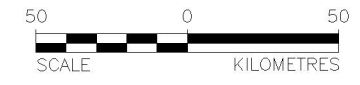
Note
*Includes Oil Sands Leases fully and partially held by Canadian Natural

REFERENCE
DATUM: NAD83 PROJECTION UTM ZONE 12

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*Source: Information Services Corporation of Saskatchewan, (1:2,000,000 Base Data); Reproduced with the permission of Information Services Corporation of Saskatchewan



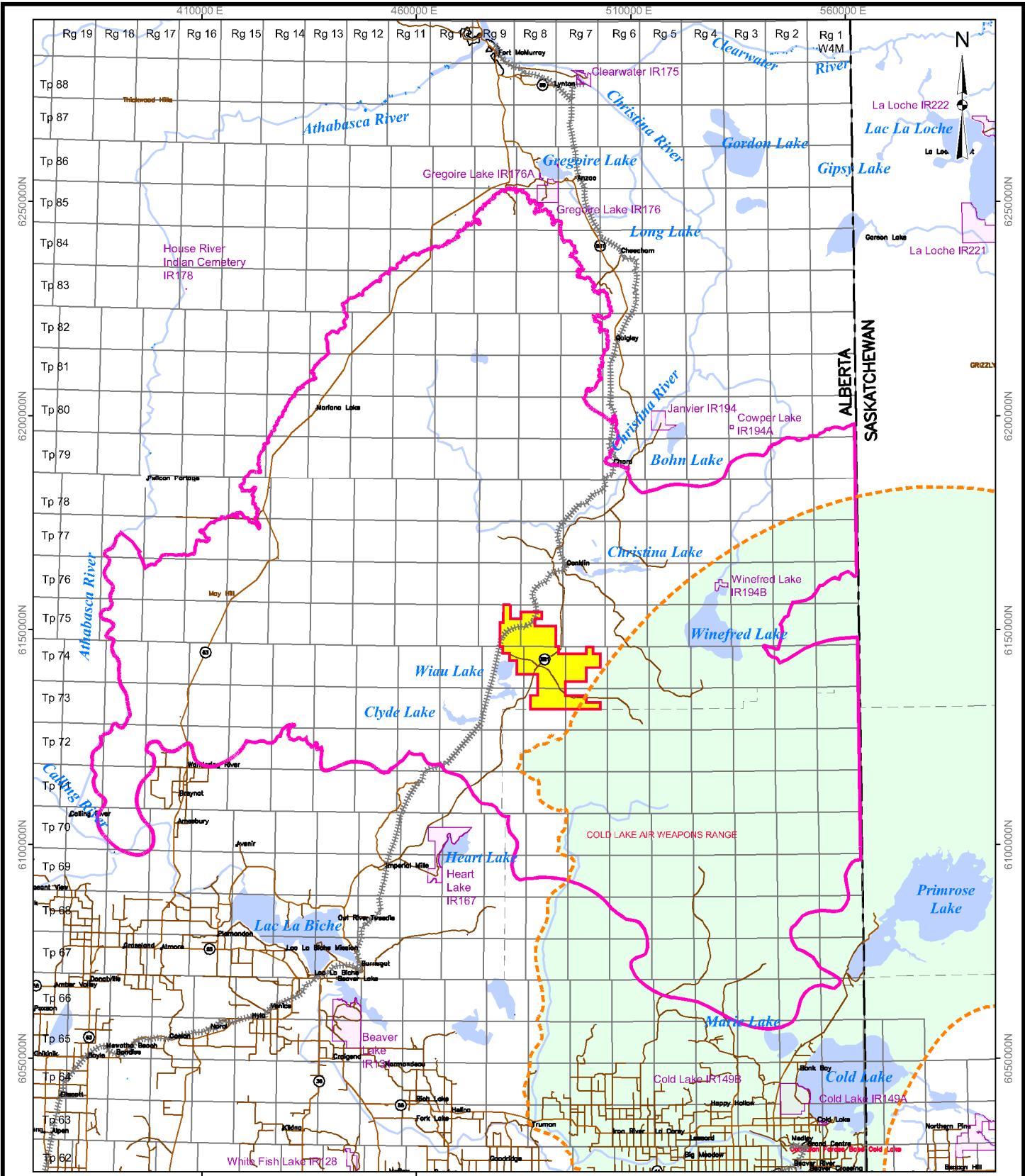
PROJECT **KIRBY IN SITU OIL SANDS EXPANSION PROJECT**

TITLE **WHITEFISH LAKE FIRST NATION #128 TRADITIONAL TERRITORY**





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FIGURE: 7

L:\2010\1346\10-1346-0052\8600\Report A\Fig 8 10134600528600A008 Cold Lake First Nations Traditional Territory.dwg Dec 11, 2011 - 4:06pm

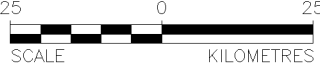


LEGEND

-  KIRBY EXPANSION PROJECT LEASE AREA*
-  TRADITIONAL LAND USE REGIONAL STUDY AREA (RSA)
-  TRADITIONAL TERRITORY OF THE COLD LAKE FIRST NATIONS
-  AIR WEAPONS RANGE



Note

*Includes Oil Sands Leases fully and partially held by Canadian Natural



REFERENCE

ALBERTA NTDB DATA SUPPLIED BY GEOMATICS CANADA, AUGUST 2001. NAD 83 ZONE 12. SHEETS 74D, E AND 74L IN NAD 27 ZONE 12. SASKATCHEWAN NTDB DATA SUPPLIED BY ISC, AUG. 2001. NAD 83 ZONE 13. ALL DATA CONVERTED TO NAD 83 UTM ZONE 12. OIL & GAS AND ENVIRONMENTAL DATA PROVIDED BY VERITAS GeoSERVICES LTD., CURRENT AS OF MAY 2001. TRADITIONAL LAND AREA PROVIDED BY HEART LAKE FIRST NATION, MAY, 2007.

 Canadian Natural		KIRBY IN SITU OIL SANDS EXPANSION PROJECT	
<p>TITLE</p> <p align="center">COLD LAKE FIRST NATIONS TRADITIONAL TERRITORY</p>			
 Golder Associates Calgary, Alberta		PROJECT 10.1346.0052.8600 DESIGN RS 05/08/11 CADD IPG 14/11/11 CHECK RS 09/12/11 REVIEW SM 09/12/11	FILE No. 10134600528600A008 SCALE 1:1,250,000 REV. 0
			<p>FIGURE: 8</p>

3 METHODS

3.1 OBJECTIVES

The objective of the TLU baseline study was to summarize the potential historic and current use of land within the Project RSA and LSA by Aboriginal groups.

3.2 INFORMATION SOURCES

The TLU information in this report pertains to Aboriginal groups who may be affected by the Project. This information was identified through reviews of publicly available reports commissioned by Canadian Natural and other industry proponents, and publicly available reports prepared by Aboriginal and other groups.

3.2.1 Studies Commissioned for Canadian Natural Projects

The following studies were commissioned in support of applications for Canadian Natural projects, and were reviewed for TLU information within the Project RSA and LSA:

- WFL128. *Whitefish Lake #128 First Nation Traditional Lands and Treaty Relations Office Report to Chief and Council. Traditional Land Use Assessment: Canadian Natural Limited Kirby In Situ Project.* June 2011. (WFL128 2011);
- Fort McMurray #468 First Nation. *Canadian Natural Resources Limited Kirby In Situ Oil Sands Project Traditional Knowledge Meeting and Site Visit with the Fort McMurray #468 First Nation.* June 2010. (Golder 2010);
- Canadian Natural. Supplemental Information Request. Attachment 6-I. *Kirby In Situ Oil Sands Project Traditional Land Use Assessment Update.* January 2009 (Canadian Natural 2009a);
- Canadian Natural *Cold Lake First Nations Summary Report of Kirby In-Situ Oil Sands Workshop Held 28 October 2009.* (Canadian Natural 2009b);
- Enermark (Enermark Inc.). 2008. *Application for the Approval of the Enerplus Resources Fund Kirby Oils Sands Project Phase 1.* Submitted to Alberta Environment and Energy Resources Conservation Board. Appendix C: Chipewyan Prairie Dené First Nation Traditional Land use. September 2008. (Enermark 2008);

- Heart Lake First Nation Consultation Office. *Community Report: Elder's Considerations and Traditional Environmental – Ecological Knowledge Report* (HLFN 2007);
- Canadian Natural Volume 6 Social Aspects. *Kirby In Situ Oil Sands Project Application for Approval* (Canadian Natural 2007);
- Rio Alto Exploration Limited. *Report on Traditional Land Use by the Chipewyan Prairie Dené First Nation* (Golder 2002a); and
- Canadian Natural Primrose and Wolf Lake In Situ Oil Sands Expansion Project Application for Approval (Golder 2000).

3.2.2 Existing Studies From Other Oil Sands Operators

The following TLU documents commissioned by other oil sands operators were reviewed for information about TLU activities and traditional resources within the Project RSA and LSA:

- Cenovus FCCL Limited (Cenovus) Narrows Lake Project – *Traditional Land Use Baseline Report* (Cenovus 2010);
- Connacher Oil and Gas Limited Great Divide SAGD Expansion Project. Appendix 7-1 Traditional Ecological Knowledge and Traditional Land Use. May 2010 (Connacher 2010);
- Cenovus Christina Lake Thermal Expansion Project, Phases 1E, 1F and 1G – *Traditional Land Use Baseline Report* (EnCana 2009);
- MEG Energy Corp. (MEG) Christina Lake Regional Project, Phase 3 – *Traditional Land Use Baseline Update* (MEG 2009);
- MEG Christina Lake Regional Project – Phase 3 *Traditional Land Use Assessment* (MEG 2008);
- Cenovus Christina Lake Thermal Project Phase C and D Disposal Wells *Pre-Disturbance Assessment* (Golder 2008);
- North American Oil Sands Corporation *Application for the Approval of Kai Kos Dehseh Project* (North American 2007);
- Devon Canada Corporation Jackfish SAGD Project 2 (Devon 2006);
- EnCana Corporation Foster Creek Thermal Project Pre-Disturbance Assessment: Traditional Knowledge Study Cold Lake First Nations (NuNenne-AXYS 2006);
- OPTI Canada Inc./Nexen Canada Limited Long Lake South Project (OPTI/Nexen 2006);
- MEG Christina Lake Regional Project (MEG 2005);
- Devon Canada Corporation Jackfish SAGD Project (Devon 2003);

- Petro-Canada Meadow Creek Project. Traditional Land Use: Chipewyan Prairie Dené First Nation (Golder 2002b);
- OPTI Canada Inc./Nexen Canada Limited Long Lake SAGD Project (AXYS 2000);
- ConocoPhillips Canada Surmont Pilot and Commercial SAGD (AXYS 1999);
- Cenovus Christina Lake Thermal Project (PanCanadian 1998a); and
- Cenovus Christina Lake Thermal Project Supplemental Land Use Report (PanCanadian 1998b).

3.2.3 Studies Prepared by Aboriginal and Other Groups

The following studies were commissioned by Aboriginal and other groups, and were reviewed for TLU information within the Project RSA and LSA:

- Métis of Conklin *Conklin Resource Use Areas Overview* (Conklin 2008, cited as Figure 1 in MEG 2009).
- Chipewyan Prairie Dene First Nation *Kai' Kos' Dehseh Dene The Red Willow River (Christina River) People: A Traditional Land Use Study of the Chipewyan Prairie First Nation* (CPDFN 2007).
- Fort McMurray #468 First Nation *Nistawayaw "Where Three Rivers Meet": Fort McMurray #468 First Nation Traditional Land Use Study* (FMFN 2006).
- Cumulative Environmental Management Association (CEMA) *Wildlife Movement Traditional Environmental Knowledge Workshops: Wildlife Movement in the Regional Municipality of Wood Buffalo* (CEMA 2005).

3.2.4 Interviews With Aboriginal Groups

Traditional Knowledge consists of knowledge and understanding of traditional resource and land use, harvesting and special places, while TLU activities involve the harvesting of traditional resources, such as hunting and trapping, fishing, gathering medicinal plants and travelling to engage in these activities. Land use maps document locations where the activities occur.

The TK information contained in this report pertains to specific Aboriginal groups that may be affected by the Project. Canadian Natural is in the process of actively consulting with Aboriginal communities in the region to understand if they have specific TLU information for the Lease Area and the LSA. At the time of filing, Canadian Natural was engaged in discussions with the following Aboriginal

groups to coordinate the collection and submission of TLU information: HLFN, Conklin Métis, Chard Métis, CPDFN, WFL128 and Saddle Lake First Nation (SLFN).

A number of Aboriginal groups committed to provide a preliminary overview report which would have documented TLU information as it pertains to the Lease Area and the LSA. However, a number of factors has delayed the submission of the preliminary overview reports. Canadian Natural will continue to work on gathering this information with the communities. When this TLU information becomes available, it will be reviewed with the community to develop mitigation measures, and it will be considered in Project planning.

Information reported from previous TK interviews, which has been incorporated into this report, was typically derived from a standardized set of questions which included the following categories:

- plant harvesting (location and species);
- fishing (location and species);
- hunting and trapping (location and species);
- cabins, trails and access routes (location and types);
- burials, and cultural or historic sites (location and types);
- plant and animal health;
- views on reclamation; and
- issues and concerns related to previous and proposed development.

4 TRADITIONAL KNOWLEDGE AND LAND USE, CONCERNS AND ISSUES WITHIN THE REGIONAL AND LOCAL STUDY AREAS

4.1 TRADITIONAL LAND USE STUDIES

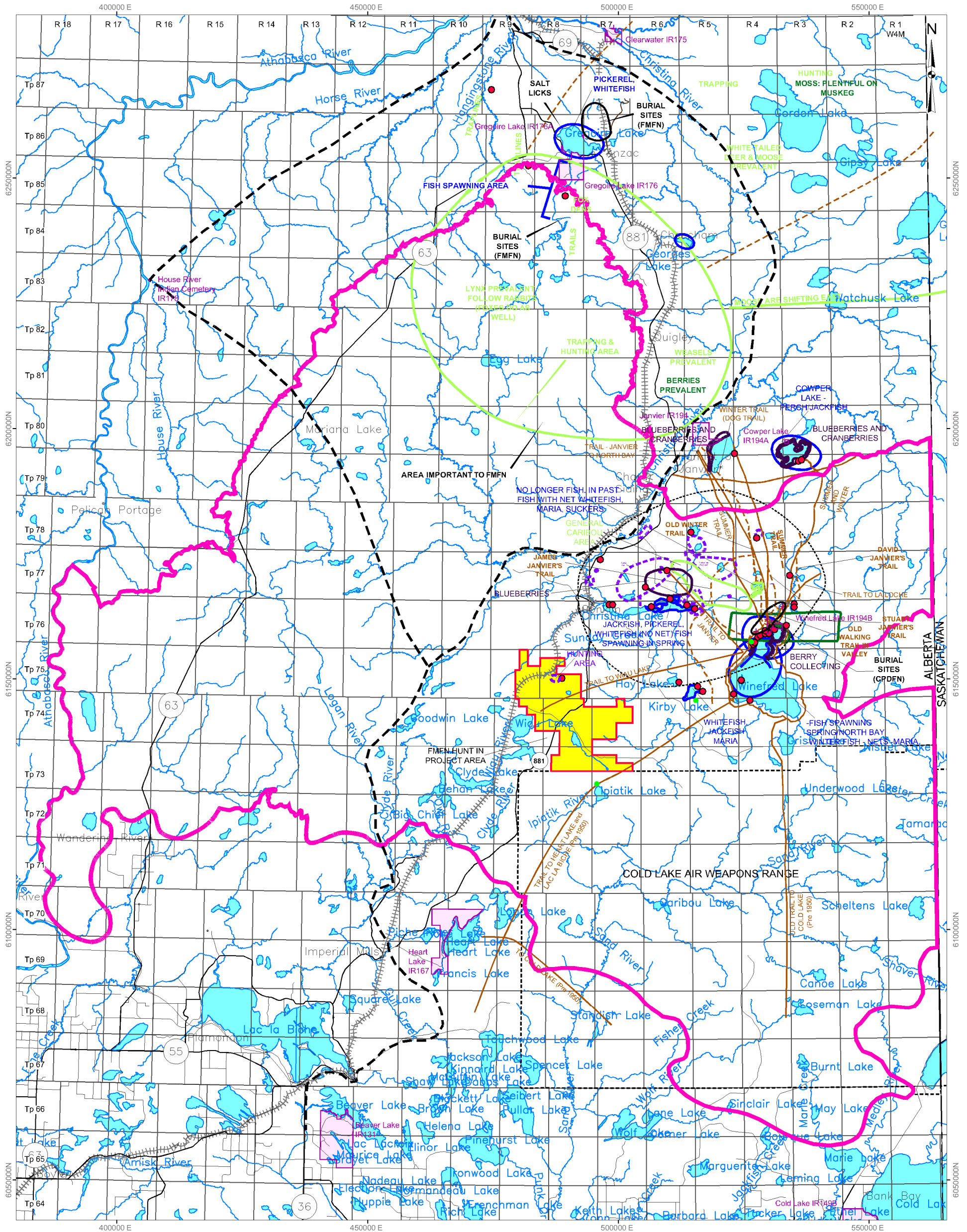
The following section summarizes the major themes of TLU studies which have been done in support of Canadian Natural projects, other oil sands projects and research carried out by Aboriginal and other groups in the vicinity of the Project. Available spatial data were compiled from multiple sources (WFL128 2011; Canadian Natural 2009a; EnCana 2009; MEG 2009 and 2008; and Golder 2002a) and was used to create maps showing the locations of TLU activities and resources within the RSA and LSA. The mapped TLU data for the RSA and LSA are shown in [Figures 9 and 10](#), respectively.

4.1.1 Traditional Land Use Information From Canadian Natural Studies

The TLU information obtained through the studies commissioned for Canadian Natural projects (WFL128 2011; Golder 2010, 2002a and 2000; Canadian Natural 2009a, 2009b and 2007; Enermark 2008; and HLFN 2007) is presented in a summarized format in [Tables 1 and 2](#), for the Project RSA and LSA, respectively. Traditional land use information was contributed by WFL128, HLFN, FMFN, CLFN and CPDFN. Traditional land use information for BLCN was not available for this section of the Baseline Report.

The lakes and rivers within the Project RSA are used by Aboriginal traditional land users ([Table 1](#)) because of the nearby wildlife, fish and plant resources.

The specific locations for TLU activities related to hunting and trapping, plant harvesting, fishing and cultural importance, which were identified by First Nations and Métis groups within the regional study area for Canadian Natural studies, are summarized in [Table 1](#).



- LEGEND**
- ROADS
 - RAILWAY
 - RIVER
 - OPEN WATER
 - KIRBY EXPANSION PROJECT LEASE AREA *
 - TRADITIONAL LAND USE REGIONAL STUDY AREA (RSA)
 - AREAS OF TRADITIONAL LAND USE ACTIVITIES (ABORIGINAL TRAPLINE HOLDERS)
 - AREA USED FOR CAMPING WHEN HARVESTING (FMFN)
 - BERRIES (CHARD MÉTIS)
 - FISHING (CHARD MÉTIS, CPDFN, FMFN)
 - PLANTS (CPDFN)
 - WILDLIFE (CHARD MÉTIS, FMFN)
 - OLD TRAIL (CPDFN)
 - TRAIL (ABORIGINAL TRAPLINE HOLDERS, CHARD MÉTIS, CPDFN, FMFN)
 - WAGON TRAIL (WFL128)
 - CABIN(S) (ABORIGINAL TRAPLINE HOLDERS, CHARD MÉTIS, CPDFN)
 - SALT LICK

NOTES
 FORT McMURRAY #468 FIRST NATION ELDERS INTERVIEWED BY S. OLMOS AND M. TURNEY AT GREGOIRE LAKE RESERVE #176 ON JUNE 18, 2009.
 * LOCALLY KNOWN AS CHARD.
 * Includes Oil Sands Leases fully and partially held by Canadian Natural

REFERENCE
 ALBERTA NTDB DIGITAL DATA OBTAINED FROM GEOMATICS CANADA, AUGUST 2001. DATUM: NAD 83 PROJECTION: UTM ZONE 12

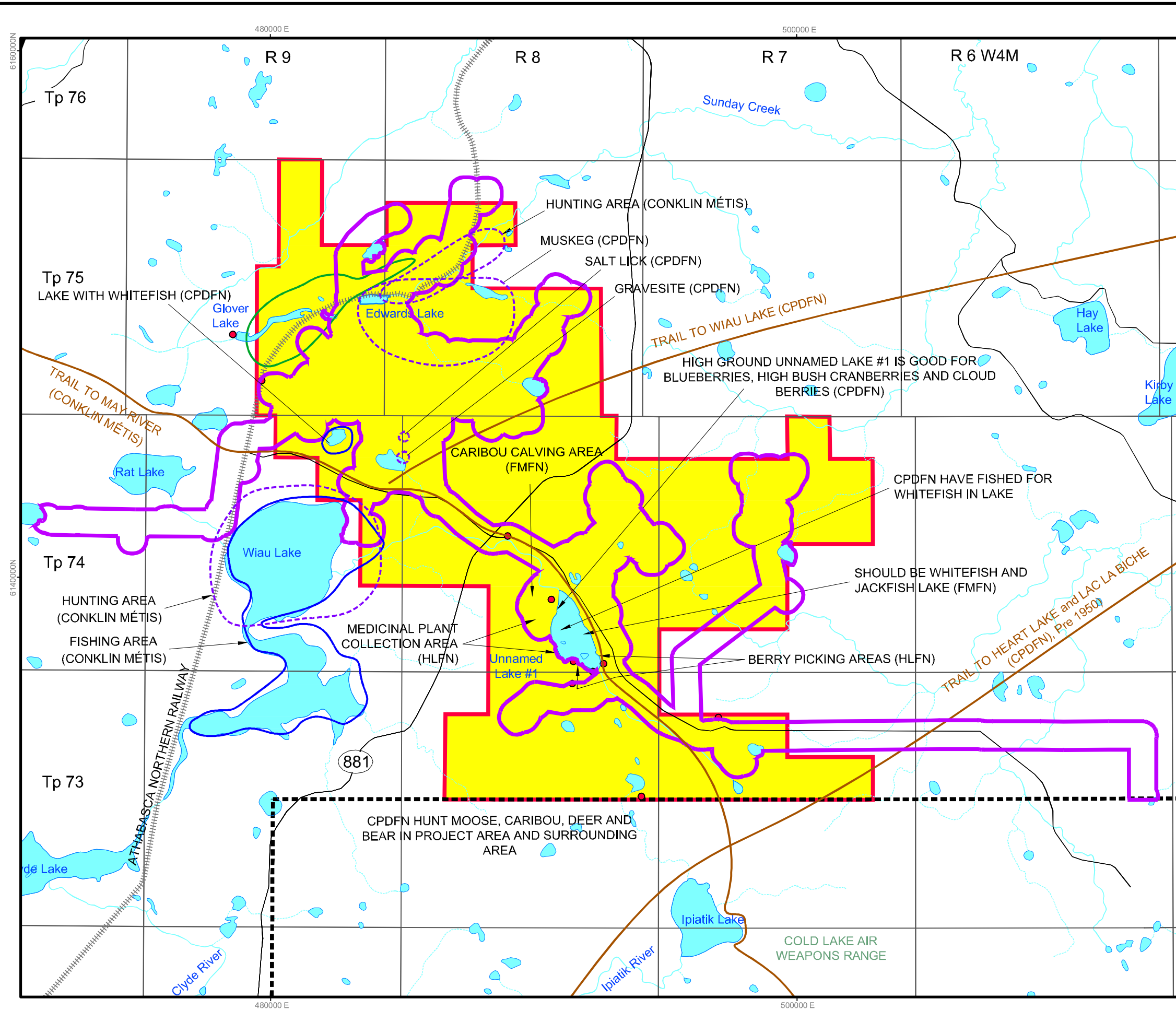
PROJECT
KIRBY IN SITU OIL SANDS EXPANSION PROJECT

TITLE
TRADITIONAL LAND USE WITHIN THE REGIONAL STUDY AREA

PROJECT	10.1346.0052.8600	FILE No.	10134600528600A009			
DESIGN	RS	07/10/11	SCALE	1:750,000	REV.	0
CADD	IPG	25/11/11				
CHECK	RS	09/12/11				
REVIEW	SM	09/12/11				

FIGURE: 9

L:\2010\1346\10-1346-0052\8600\Report A\Fig 10_10134600528600A010 TLU Within LSA.dwg Dec 11, 2011 - 4:28pm

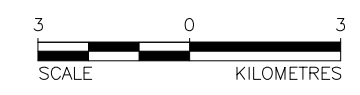


LEGEND

- AIR WEAPONS RANGE
- TRADITIONAL LAND USE LOCAL STUDY AREA (LSA)
- KIRBY EXPANSION PROJECT LEASE AREA*
- RAILWAY
- ROADS AND HIGHWAYS
- AREA OF TRADITIONAL LAND USE ACTIVITIES
- FISHING
- PLANTS
- TRAIL
- CABIN(S)

NOTES
 Unnamed Lake #1 (BIG MUSKEG LAKE)
 *Includes Oil Sands Leases fully and partially held by Canadian Natural

REFERENCE
 ALBERTA AND SASKATCHEWAN MAP DATA OBTAINED FROM IHS ENERGY INC. CONVERTED TO NAD 83 UTM ZONE 12.



PROJECT
KIRBY IN SITU OIL SANDS EXPANSION PROJECT

TITLE
TRADITIONAL LAND USE WITHIN THE LOCAL STUDY AREA

PROJECT	10.1346.0052.8600	FILE No.10134600528600A010
DESIGN	GD 14/10/11	SCALE 1:150,000 REV. 0
CADD	IPG 25/11/11	
CHECK	RS 09/12/11	
REVIEW	SM 09/12/11	

FIGURE: 10

**Table 1 Traditional Land Use Information Within the Regional Study Area
From the Canadian Natural Studies**

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
HLFN	From Wiau Lake along the Wiau River to Clyde Lake	H: moose, deer, other game	Berry and plant harvesting	Traditional fishing	–	Canadian Natural (2007); HLFN (2007)	Not mapped
	From the south edge of the RSA (Logan Lake), to Clyde River, Wiau Lake and the Lease Area	–	Plant harvesting region	–	–	Canadian Natural (2007)	Not mapped
	Kirby Expansion Project RSA	Hunting and trapping routes	Berry and plant harvesting zones	Fishing locations: whitefish, pickerel, jackfish	Abandoned cabins; cultural activities	HLFN (2007)	Some cabin locations are shown in Figures 9 to 11 ; other: Not mapped
	CLAWR and Ipiatik Lake	Traditional hunting and trapping	–	Traditional fishing	Ceremonial sites, trails and cabins	HLFN (2007)	Some cabin locations are shown in Figures 9 to 11 ; other: Not mapped
CPDFN	Grist Lake	–	Edible and medicinal plants	Fishing: pike, lake trout	–	Canadian Natural (2007)	Not mapped
	Christina and Winefred rivers	–	Edible and medicinal plants	–	–	Canadian Natural (2007)	Not mapped
	Sunday River	–	–	Fishing	–	Canadian Natural (2009a)	Not mapped
	Winfred Lake	H: caribou (at north end); salt lick on northwest shore T: various species ^[a] (at south end)	Edible and medicinal plants, especially berries	Fishing: whitefish, pike, pickerel, suckers, maria; fish spawning area at north end	Burials, cabins and cultural sites (north shore); cabins on west shore; trail to Wiau Lake, trail around Winefred Lake	Canadian Natural (2007 and 2009a); Golder (2002a)	Figure 9 (H/T not mapped)
	Kirby Lake	Moose and caribou towards southwest limit of RSA	–	Fishing: whitefish, jackfish, suckers	–	Canadian Natural (2007)	Fishing at Kirby Lake shown in Figure 9
	Christina Lake	–	–	Fishing	–	Canadian Natural (2009a)	Fishing identified at Christina Lake in Figure 9
	CLAWR	H: moose, caribou, deer and bear T: various species	–	–	–	Canadian Natural (2007)	Figure 10

**Table 1 Traditional Land Use Information Within the Regional Study Area
From the Canadian Natural Studies (continued)**

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
CPDFN	Throughout the Kirby Expansion Project RSA	H: salt licks Salt lick locations within the RSA identified at: Ipiatik Lake, Kirby lake and Winefred Lake	-	-	-	Golder (2002a); Canadian Natural (2007 and 2009a)	Figure 9
	Along the railroad	-	-	-	Traditional trails and camps	Enermark (2008)	Railroad shown in Figures 9, 10 and 11
	10 to 20 miles (16 to 32 km) south of Conklin	Sensitive area				Enermark (2008)	Not mapped
WFL128	From the Athabasca River south past Lac La Biche	-	-	-	Historic wagon trail	WFL128 (2011)	Figure 9
	Winefred Lake	Traditional hunting and trapping extends west to the Project LSA	Traditional berry-harvesting locations east of the Project	Traditional fishing: pickerel, jackfish, whitefish; trout at Grist Lake	Network of historic wagon-roads and pack-horse trails	WFL128 (2011); Canadian Natural (2009a)	Not mapped
	Grist Lake	-				WFL128 (2011); Canadian Natural (2009a)	Not mapped
	Kirby Lake to Grist Lake and Winefred Lake	-	-	Winter road linking these lakes is preferred access route for fishing (January to February)	-	Canadian Natural (2009a)	Not mapped
	Ipiatik Lake	-	-	Fishing takes place in the vicinity	-	WFL128 (2011)	Not mapped
	Conklin and surrounding area	-	Berry harvesting	-	-	Canadian Natural (2009a)	Not mapped
CLFN	CLAWR	Traditional hunting and trapping	Traditional plant and berry harvesting	Traditional fishing	Cultural sites	Canadian Natural (2009a); Golder (2000)	Not mapped
	Ipiatik Lake	-	-	-	Cabins	Canadian Natural (2009a)	Not mapped

**Table 1 Traditional Land Use Information Within the Regional Study Area
From the Canadian Natural Studies (continued)**

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
FMFN	From Janvier to Christina River	Hunting on horseback	–	–	–	Canadian Natural (2009a)	Not mapped
	Winefred Lake	Hunting to the north	–	Fishing	–	Golder (2010)	Fishing: Figure 9 ; Other: Not mapped
	Northern portion of RSA	Hunting and trapping; caribou habitat	–	Fishing	Trails	Golder (2010)	Not mapped
	North of the Project Lease Area	Hunting	Berry collecting	–	Trails	Golder (2010)	Not mapped

^(a) Trapped species include: rabbit, squirrel, porcupine, fox, fisher, coyote, weasel and lynx.

– = Not applicable.

Heart Lake First Nations Elders and CPDFN Elders have indicated that there are salt licks situated within the RSA and LSA (Tables 1 and 2, respectively). Although the exact locations of all salt licks have not been verified with ground-truthing, the Elders believe that salt licks may be located within the Lease Area and the surrounding area (Canadian Natural 2009a). Salt licks have been identified by CPDFN traditional land users at Winefred Lake, Kirby Lake and Ipiatik Lake (Figure 9). The Elders are concerned that if natural salt licks are disturbed, then moose may try to lick the salt off roads or try to lick the salt off pieces of equipment (Canadian Natural 2009a). Canadian Natural will work with HLFN to verify this information as part of upcoming TLU work for the Project.

It was also indicated by CPDFN Elders that there are trails running through the Project RSA and LSA. Specifically there is a trail from Winefred Lake to Wiau Lake (shown in Figures 9 and 10); and trails from Wiau River and Wiau Lake to Wappau Lake; and a trail from Conklin to Cold Lake that is used by Elders to hunt moose, bear, deer and caribou (Canadian Natural 2009a). Trails have also been identified by FMFN traditional land users within the RSA (Figure 9).

The specific locations for traditional land use activities related to hunting and trapping, plant harvesting, fishing and cultural activities, which were identified by First Nations groups within the LSA for Canadian Natural studies, are summarized in Table 2.

Table 2 Traditional Land Use Information Within the Local Study Area From the Canadian Natural Studies

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
HLFN	North of CLAWR	H: moose, caribou, white-tailed deer; traditional hunting and trapping	-	Traditional fishing	Ceremonial sites and trails	Canadian Natural (2007 and 2009a)	Not mapped
	Unnamed Lake #1 (Big Muskeg Lake)	H: moose, deer, other game (general vicinity)	Berry-picking, root plants and herbal medicines (high-ground area, west shore)	Traditional fishing	Abandoned cabins and camps	Canadian Natural (2007); HLFN (2007)	Medicinal plant collecting area shown in Figure 10
	Wiau Lake	H: moose, deer, other game	-	-	-	Canadian Natural (2007)	Not mapped
CPDFN	The area between Kirby Lake and the southwest limit of the RSA	H: moose, caribou	-	-	-	Canadian Natural (2007)	Not mapped
	General vicinity of Project LSA(a)	Muskeg: provides food for caribou; calving grounds for caribou and elk; salt licks known to be in the area	Muskeg: medicinal plant habitat, plants include rat root, lily pads and frog box	Lake with whitefish to the north of Wiau Lake	Muskeg: source of life; one CPDFN grave has been identified and mapped in the LSA	Enermark (2008); Canadian Natural (2009a)	Muskeg, gravesite, lake with fish and salt lick: Figure 10
	Unnamed Lake #1/Big Muskeg Lake	Traditional hunting: moose, caribou, deer and bear	Berry-picking, root plants and herbal medicines (high-ground area, west shore)	Traditional fishing: whitefish	Camping: access via an old road or airstrip; possible burial	Canadian Natural (2009a)	Plants, fish and hunting: Figure 10 ; other: not mapped
WFL128	between Unnamed Lake #1/Muskeg Lake and Winefred Lake	Traditional hunting and trapping T: beaver muskrat, weasel, squirrel at Muskeg Lake	-	General fishing area	Traditional camping area	WFL128 (2011); Canadian Natural (2009a)	Not mapped

Table 2 Traditional Land Use Information Within the Local Study Area From the Canadian Natural Studies (continued)

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
WFL128	Kirby Expansion Project LSA	H: LSA may be situated within a boreal caribou range described by WFL128 (2011 (page 9); General hunting area; moose and caribou tracks have been observed	-	-	-	WFL128 (2011); Canadian Natural (2009a)	Not mapped
	Kirby South (KS1) LSA: 4km to 5 km north and south of the road that traverses east-west	H: bear, wolves, deer, moose, caribou observed moving through the area in spring; deer and caribou in fall	-	-	-	WFL128 (2011)	Not mapped
CLFN	Unnamed Lake #1/Big Muskeg Lake	H; Unnamed Lake #1 used to be home to thousands of ducks but no longer is.	-	-	-	Canadian Natural (2009)	Not mapped
FMFN	Unnamed Lake #1/Big Muskeg Lake	-	Blueberries, raspberries, chokecherries	Whitefish and jackfish	-	Canadian Natural (2009)	Fish: Figure 10
	The Lease Area and LSA	H: moose, partridge, white-tailed deer, mule deer; caribou calving area identified within LSA	-	-	Trails passing by Edwards Lake, and from Wiau Lake to Winefred Lake	Canadian Natural (2009); Golder (2010)	Caribou calving area: Figure 10

^(a) Township 74, Range 8; and Township 75, Ranges 8 to 9 (Enermark 2008).

- = Not applicable.

The high ground area of the west shore of Unnamed Lake #1/Big Muskeg Lake/Muskeg Lake, has been identified by HLFN Elders and CPDFN Elders as a plant harvesting site (Canadian Natural 2009a). This location has been described for the HLFN in the *Application for Approval* of the KS1 project as: “The high ground areas on the west side of Big Muskeg Lake, situated within the [KS1 Lease Area], is currently a good location for harvesting cranberries, blueberries, wild strawberries, saskatoon berries and traditional root plants and herbal plants for medicines. This specific area is located within a larger plant harvesting region that extends from the south shore of Logan Lake, east along the shores of Clyde River and Wiau Lake and north around the proposed [Lease Area]” (Canadian Natural 2007: 13).

Traditional land use by Aboriginal people has been documented for Canadian Natural projects and is summarized in [Tables 1 and 2](#), and mapped in [Figures 9 and 10](#), above. In addition to the TLU information above, historic resources were also identified for the Kirby North 2010 (Enermark 2008) and KS1 (Canadian Natural 2007) projects. For reasons of confidentiality historic resource locations have not been mapped. Additional information about historic resources is found in the Historic Resources Assessment (Volume 6, Section 4).

4.1.2 Traditional Land Use Information From Other Oil Sands Studies

The TLU information obtained through the studies commissioned by other oil sands operators is summarized in [Table 3](#) for the Project RSA. The Aboriginal groups included in these studies are: CLFN, CPDFN, FMFN and the Métis of Chard. Where possible, the TLU information described in these studies was mapped within the context of the Project RSA ([Figure 9](#)).

Winefred Lake is important to Aboriginal traditional land users, because it is a site for nesting birds, spawning fish, medicinal and edible plants and cultural activities, as shown in [Table 3](#). Christina Lake is another important waterbody within the RSA, known to be preferred habitat for caribou and to have culturally important plant species and spawning fish, as well as sites for cultural activities. Major lakes and rivers within the RSA were noted to be important for the wildlife, plant and fish species available there, and for their aesthetic and cultural value.

Table 3 Traditional Land Use Information Within the Regional Study Area From Studies Commissioned by Other Oil Sands Operators

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
CPDFN	Winefred Lake	H: nesting birds; historic hunting area "Buffalo Head"; T: muskrat, mink and beaver to north	Medicinal plants in North Bay area and north of Winefred Lake, including IR194B	Fish spawning in North Bay area; fishing at narrows ^(b)	Cabins on north and east shores of lake; old stone building; trails to north and west	EnCana (2009); Golder (2008)	H/T: Not mapped other: Figure 9
	Winefred River	H: caribou trail crosses river; salt lick to east T: otter, lynx, muskrat	Medicinal plants near Winefred Lake	-	Multiple burials north of Winefred Lake; cabins	EnCana (2009); Golder (2008)	Plants and cabins: Figure 9
	Christina Lake	-	-	-	Camping at east end	EnCana (2009)	Figure 9
	Hay Lake and Kirby Lake	-	-	Kirby Lake one of the most important for fishing	Cabins	EnCana (2009)	Figure 9
	Horseshoe Lake and Chip Lake (north of Winefred Lake)	T: beaver; traditional trapping area	Medicinal plants: rat root	-	Trails; historic and TLU activities	EnCana (2009)	Figure 9
FMFN	North portion of RSA, to the north and east of Egg Lake	H: bear T: fox, lynx, weasel, rabbit	Berry-harvesting east of Egg Lake	Pickereel and whitefish spawning in creek south of Gregoire Lake	Trails, cabins, burial sites	EnCana (2009)	Figure 9
	Winefred Lake and Christina Lake	-	-	Whitefish, pickereel, pike and catfish	-	EnCana (2009)	Figure 9
	Winefred Lake: north shore and bay area	-	-	Fish nets	Cabins	MEG (2009)	Figure 9
	Christina Lake	H: caribou in the area year-round, caribou crossings to the north and east; other ungulates throughout area	Harvesting around lake: berries, Labrador tea, rat root, peppermint, fiddleheads, round fungus, puff balls and mint	Spawning area near northeast shore and up Sawbones Creek; fishing: pike, suckers and walleye	Trail around lake; possibly graves at northeast shore; camping throughout the area	MEG (2009)	H: Figure 9 ; Fish and camp: Figure 9 ; Other: N/M
	Cowper Lake	-	-	Fishing	-	EnCana 2009	Figure 9

Table 3 Traditional Land Use Information Within the Regional Study Area From Studies Commissioned by Other Oil Sands Operators (continued)

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
Chard Métis	Christina Lake	H: caribou area to the northeast of the lake	Large blueberry-harvesting area to the north	Spawning in spring; fishing: pike, pickerel and whitefish	Trails to the east	MEG (2009)	Figure 9
	Kirby Lake	–	–	Fishing: whitefish, pike, maria	–	MEG (2009)	Figure 9
	Winefred Lake: north shore and bay area	–	Berry-harvesting	Fish spawning in spring; fishing: maria (burbot)	Cabins; burials	MEG (2009)	Figure 9
Aboriginal trapline holders	Christina Lake	H: caribou habitat to north and northeast; deer area on east shore T: beaver, wolf; muskrat and lynx at small lakes to north	Cranberries, blueberries, “honey”, “oyster” and “pines” mushrooms on northeast shore; spugamont medicine and berry area on east shore	Walleye spawning at northeast end of lake; fishing in smaller lakes and creeks nearby (pike and whitefish)	Cabins and sweat lodge on north shore; Janvier ceremonial camp on northeast shore	MEG (2008)	Figure 9
	Jackfish River	T: otter and beaver	–	–	–	MEG (2008)	Not mapped
	Christina River	T: wolf	–	–	–	MEG (2008)	Not mapped
CLFN	Township 69-70, Range 3-4 (south end of RSA)	H: moose, bear and caribou habitat	Berry- harvesting; pitcher plants	–	Historic use site with aesthetic value	NuNenne-AXYS (2006)	Not mapped

^(a) Fishing at the narrows of Winefred Lake: pike, pickerel, sucker, catfish and whitefish (EnCana 2009).

– = Not applicable.

4.1.3 Traditional Land Use Information From Studies Commissioned by Aboriginal and Other Groups

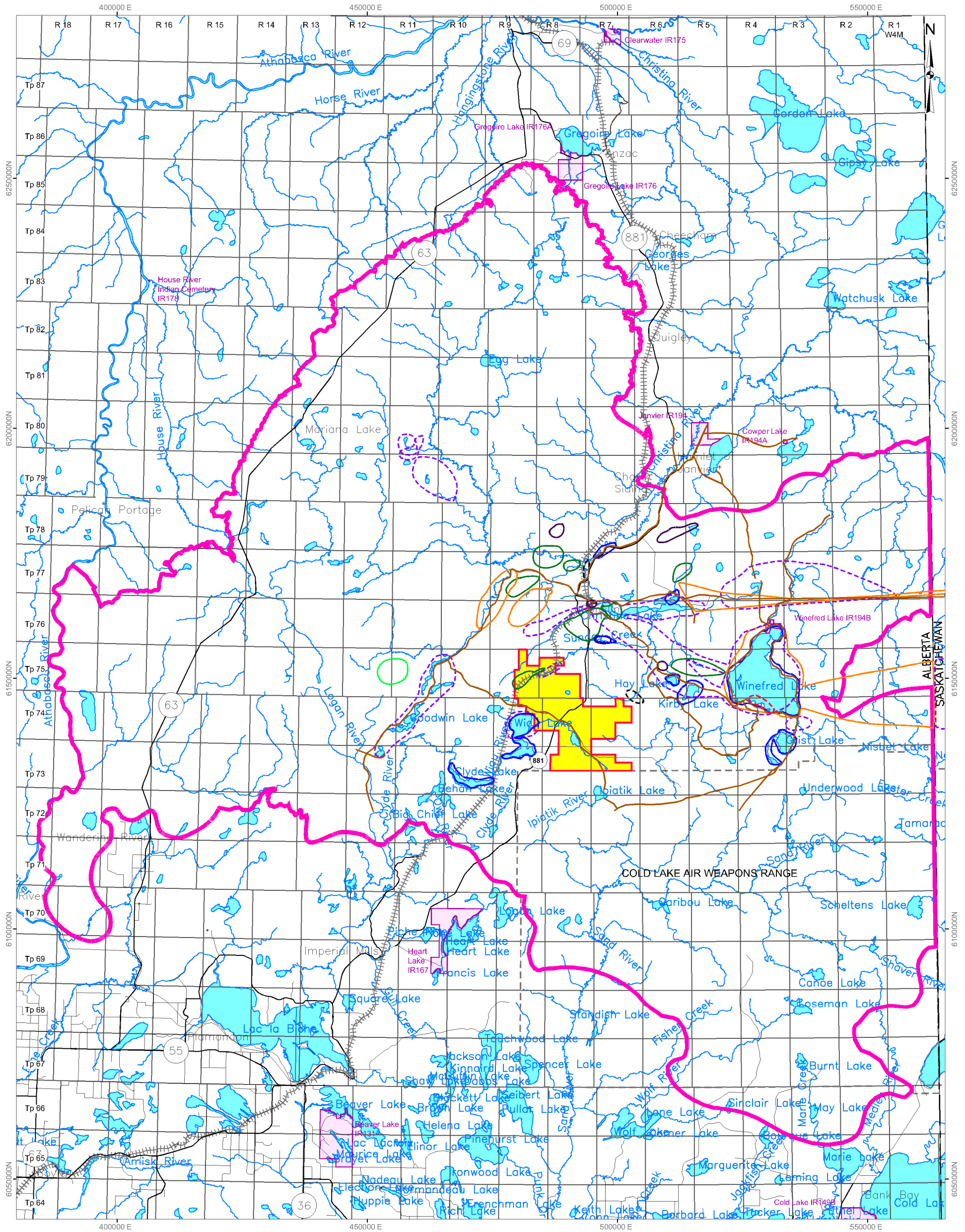
Studies commissioned by Aboriginal and other groups were reviewed (CEMA 2005; CPDFN 2007; Conklin 2008; and FMFN 2006) to determine if any TLU activities overlap the Project RSA or LSA. The TLU data from these studies are summarized in [Tables 4](#) and [5](#), for the Project RSA and LSA, respectively. According to these studies, the Aboriginal groups which reported TLU activities and resources within the RSA were: CPDFN, Conklin Métis, FMFN, Willow Lake Métis, Fort McMurray Métis and Chard Métis. The available spatial data for TLU within the RSA is shown in [Figure 9](#) and [Figure 11](#).

The Aboriginal groups which reported TLU activities and resources within the Project LSA were: CPDFN, Conklin Métis and FMFN. The available spatial data for TLU within the LSA is shown in [Figure 10](#).

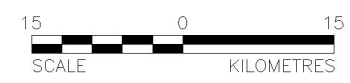
Areas within the LSA are reported to have been used for hunting large game near Edwards Lake and Wiau Lake ([Table 5](#)). Traditional land users from the FMFN have also reported using areas within the LSA for trapping furbearers, also shown in [Table 5](#). A medicinal plant harvesting area has been identified to the north of Wiau Lake, possibly overlapping the Project LSA. As noted in [Table 5](#), a traditional trail, which runs from Ipiatik Lake in the CLAWR northwest towards May River, appears to pass through the Project LSA to the north of Wiau Lake and Edwards Lake. Woodland caribou and moose may also be found in the LSA.

Lakes and rivers within the RSA are important to the survival of traditionally hunted and trapped species, as well as medicinal and edible plants and berries ([Table 4](#)). Winefred Lake, Winefred River, Christina Lake, Christina River, Jackfish River, Clyde Lake and Wiau Lake have been noted to be of particular importance for TLU activities and resources by multiple Aboriginal groups.

A series of traditional trails was identified by Métis traditional land users from Conklin, connecting various lakes within the RSA: Winefred Lake, Kirby Lake, Hay Lake, Grist Lake, Jumbo Lake, Wapow Lake, Horseshoe Lake and Christina Lake (Conklin 2008). Multiple Métis hunting and trapping areas are found within the RSA, including areas around Winefred Lake, Horseshoe Lake, Christina Lake, Wiau Lake, Wapow Lake, Steep Bank, Goodwin Lake and Sandy Lake, and along the May, Sand and Sunday Rivers (Conklin 2008). The traditional land use of Conklin Métis within the RSA is shown in [Figure 11](#).



- LEGEND**
- ROADS
 - RAILWAY
 - RIVER
 - OPEN WATER
 - KIRBY EXPANSION PROJECT LEASE AREA
 - TRADITIONAL LAND USE REGIONAL STUDY AREA (RSA)
 - BERRIES
 - FISHING
 - HUNTING AREA
 - MEDICINAL PLANTS
 - NESTING AREA
 - SALT LICK
 - TRAPPING AREA
 - WATER SOURCE
 - TRAIL



NOTE
 FORT McMURRAY #468 FIRST NATION ELDERS INTERVIEWED BY S. OLMOS AND M. TURNEY AT GREGOIRE LAKE RESERVE #176 ON JUNE 18, 2009.
 * LOCALLY KNOWN AS CHARD.

REFERENCE
 ALBERTA NTDB DIGITAL DATA OBTAINED FROM GEOMATICS CANADA, AUGUST 2001.
 DATUM: NAD 83 PROJECTION: UTM ZONE 12

PROJECT
KIRBY IN SITU OIL SANDS EXPANSION PROJECT

TITLE
TRADITIONAL LAND USE OF THE CONKLIN MÉTIS WITHIN THE REGIONAL STUDY AREA

PROJECT	10.1346.0052.8600	FILE No.	10134600528600B005			
DESIGN	RS	07/10/11	SCALE	1:750,000	REV.	0
CADD	IPG	25/11/11				
CHECK	RS	09/12/11				
REVIEW	SM	09/12/11				

FIGURE: 11

Table 4 Traditional Land Use Information Within the Regional Study Area From Studies by Aboriginal and Other Groups

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
CPDFN	Winefred Lake and Winefred River	H: large ungulates, black bear and cougar; duck and loon T: multiple furbearing species	–	Grayling, jackfish, pickerel, sucker, trout and whitefish	Cabins, burials, cultural sites and trails	CPDFN (2007)	Some CPDFN cabins and trails are shown in Figure 9 ; other: Not mapped
	Christina Lake	H: large ungulates at west end T: multiple furbearing species	–	–	Cabins, trails and one burial at east end	CPDFN (2007)	Not mapped
	Jackfish River and Christina River	H: large ungulates	–	Grayling, jackfish, pickerel, sucker, trout and whitefish	–	CPDFN (2007)	Not mapped
Conklin Métis	Winefred Lake	H/T: general hunting and trapping area; nesting birds on south shore	Medicinal plants to the west	General fishing area	Trails around the lake	Conklin (2008)	Figure 11
	Wiau Lake	H: general hunting area around lake	Medicinal plant harvesting to the north in the Project Lease Area	General fishing area	Trail to the north of Wiau Lake, runs from Ipiatik Lake to May River	Conklin (2008)	Figure 11
	Kirby Lake	H: general hunting area	Medicinal plants to the north	General fishing area	Trails on north and south side	Conklin (2008)	Figure 11
	Hay Lake	H: general hunting area	Medicinal plants and berries to the north	General fishing area	Trails	Conklin (2008)	Figure 11
	Christina Lake	H: general hunting area	Medicinal plants and berries	General fishing area	Trails	Conklin (2008)	Figure 11
	Wapow Lake and Goodwin Lake	H: general hunting area; salt licks to the west	–	General fishing area	Trails	Conklin (2008)	Figure 11
	Sunday Creek	H: general hunting area	Medicinal plants and berries	General fishing area	Trails to the north	Conklin (2008)	Figure 11
	Horseshoe Lake	H/T: general hunting and trapping area	–	–	Trails	Conklin (2008)	Figure 11
	Clyde Lake	–	–	General fishing area	–	Conklin (2008)	Figure 11

Table 4 Traditional Land Use Information Within the Regional Study Area From Studies by Aboriginal and Other Groups (continued)

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
Conklin Métis	Christina Lake	H: woodland caribou and moose habitat and movement corridors	Survival area for traditional plants between Christina Lake and Winefred Lake	–	Survival area for TLU activities between Christina Lake and Winefred Lake	CEMA (2005)	Not mapped
	Winefred Lake	H: woodland caribou and moose habitat and movement corridors		–		CEMA (2005)	Not mapped
	North of Wiau Lake, east of Christina Lake	Survival area for hunted and trapped species	Survival area for traditional plants	–	Survival area for TLU activities	CEMA (2005)	Not mapped
FMFN	Christina Lake	H: large ungulates to the north and west T: multiple furbearing species to the north and west	Berries	–	Trails	FMFN (2006)	Some FMFN trails are shown in Figure 9 ; other: Not mapped
	Wiau Lake and Clyde Lake	H: birds, large ungulates	Medicinal plants and berries	–	–	FMFN (2006)	Not mapped
	Winefred Lake	H: large ungulates	–	–	–	FMFN (2006)	Not mapped
FMFN, Fort McMurray Métis and Willow Lake Métis	Northern portion of RSA including Stony Mountain	H: woodland caribou and moose T: marten	Survival area for traditional plants	–	Survival area for TLU activities	CEMA (2005)	Not mapped
Chard Métis	Winefred Lake	H: moose habitat and movement corridors extending from east shore; woodland caribou to the north	Survival area for traditional plants extending to the east	–	Survival area for TLU activities extending to the east	CEMA (2005)	Not mapped

– = Not applicable.

Table 5 Traditional Land Use Information Within the Local Study Area From Studies by Aboriginal and Other Groups

Aboriginal Group	Location	Traditional Activity				Reference	Figure Number
		Hunting (H) and Trapping (T)	Plant Harvesting	Fishing	Cultural		
CPDFN	Edwards Lake	H: moose	–	–	–	CPDFN (2007)	Not mapped
Conklin Métis	North of Wiau Lake and Edwards Lake	H: general hunting area along railroad track	Medicinal plants to the north along railroad track	–	Trail: Ipiatik Lake to May River	Conklin (2008)	Figure 10
	North of Wiau Lake, near Edwards Lake	H: woodland caribou habitat and moose movement corridors	–	–	–	CEMA (2005)	Not mapped
FMFN	North of Wiau Lake, near Edwards Lake	H: large game around Wiau Lake T: multiple furbearing species	Medicinal plants	–	–	FMFN (2006)	Not mapped

– = Not applicable.

4.1.4 Traditional Resources Used by Aboriginal Groups

A list of traditionally used species of plants and wildlife was compiled, based on information gathered by a review of published sources (CPDFN 2007; Canadian Natural 2007; Connacher 2010; EnCana 2009; Enermark 2008; FMFN 2006; Golder 2002a; MEG 2009, 2008 and 2005; and NuNenne-AXYS 2006). The traditional resources found within the RSA, and used by First Nations and Métis groups are listed in [Tables 6](#) through [11](#).

4.1.4.1 Trapping Furbearers

The furbearing mammals listed in [Table 6](#) may be found within the RSA, and are trapped by Aboriginal trappers.

Table 6 Traditional Trapping Resources Within the Regional Study Area Reported by Aboriginal Groups

Traditional Resources	Common Name	Scientific Name
Furbearers	badger	<i>Taxidea taxus</i>
	beaver	<i>Castor canadensis</i>
	cougar	<i>Puma concolor</i>
	coyote	<i>Canis latrans</i>
	fisher	<i>Martes pennanti</i>
	lynx	<i>Lynx canadensis</i>
	marten	<i>Martes americana</i>
	mink	<i>Mustela vison</i>
	muskrat	<i>Ondatra zibethicus</i>
	otter	<i>Lutra canadensis</i>
	porcupine	<i>Erethizon dorsatum</i>
	rabbit/hare	<i>Lepus americanus</i>
	red fox	<i>Vulpes vulpes</i>
	skunk	<i>Mephitis mephitis</i>
	squirrel	<i>Tamiasciurus hudsonicus</i>
	weasel	<i>Mustela erminea</i>
	wolf	<i>Canis lupus</i>
wolverine	<i>Gulo gulo</i>	

Sources: CPDFN (2007); Canadian Natural (2007); Connacher (2010); EnCana (2009); Enermark (2008); FMFN (2006); Golder (2002a); MEG (2009, 2008 and 2005); NuNenne-AXYS (2006).

4.1.4.2 Hunting Large Game

Large ungulates, especially moose, woodland caribou and deer, have historically provided a main food staple for traditional hunters and their families. Hunting is considered to be a culturally important activity by Aboriginal groups, and large game, especially moose, continue to be hunted for food. Predators such as black bear and cougar are also hunted. Hunted species which may be found within the Project RSA are listed in [Table 7](#).

Table 7 Traditional Hunting Resources Within the Regional Study Area Reported by Aboriginal Groups

Traditional Resource	Common Name	Scientific Name
Large Game	bison	<i>Bison bison</i>
	black bear	<i>Ursus americanus</i>
	cougar	<i>Felis concolor</i>
	elk	<i>Cervus canadensis</i>
	moose	<i>Alces alces</i>
	mule deer	<i>Odocoileus hemionus</i>
	whitetail deer	<i>Odocoileus virginianus</i>
	woodland caribou	<i>Rangifer tarandus</i>

Note: Barren ground caribou are listed in FMFN (2006).

Sources: CPDFN (2007); Canadian Natural (2007); EnCana (2009); Enermark (2008); FMFN (2006); Golder (2002a); MEG (2009, 2008 and 2005); NuNenne-AXYS (2006).

4.1.4.3 Bird Species

A wide variety of bird species are known to occur in the RSA, and those species identified by Aboriginal land users are listed in Table 8. Traditional land users identified an important nesting site within the RSA, located at the south end of Winefred Lake (Conklin 2008). The Heart Lake First Nation has described duck and partridge as “common food staples” (HLFN 2007).

Table 8 Traditional Bird Resources Within the Regional Study Area Reported by Aboriginal Groups

Traditional Resource	Common Name	Scientific Name
Birds	pelican [white?]	<i>Pelecanus erythrorhynchos</i> [?]
	bald eagle	<i>Haliaeetus leucocephalus</i>
	Canada goose	<i>Branta canadensis</i>
	Crow [common ?]	<i>Corvus brachyrhynchos</i> [?]
	grouse	[Specific species not identified]
	curlew [long-billed?]	<i>Numenius americanus</i> [?]
	Loon [common?]	<i>gavia immer</i>
	duck	[Specific species not identified]
	owl	[Specific species not identified]
	ptarmigan	[Specific species not identified]
	sandhill crane	<i>Grus canadensis</i>
	seagull	[Specific species not identified]
	partridge	[Specific species not identified]

Note: Common name in square brackets represents probable species where specifics not indicated by Aboriginal groups. Scientific names include names of probable species.

Sources: CPDFN (2007); Canadian Natural (2007); EnCana (2009); Enermark (2008); FMFN (2006); Golder (2002a); MEG (2009, 2008 and 2005); NuNenne-AXYS (2006).

4.1.4.4 Fishing

Fishing has been an important cultural and subsistence activity in the past, and continues to be important for many Aboriginal people today. Frequently

mentioned species that are harvested include: grayling, pike, pickerel, whitefish and sucker. Traditionally fished species are listed in [Table 9](#).

Table 9 Traditional Fish Resources Within the Regional Study Area Reported by Aboriginal Groups

Traditional Resource	Common Name	Scientific Name
Fish	Arctic grayling (grayling)	<i>Thymallus arcticus</i>
	bull trout (lake trout)	<i>Salvelinus confluentus</i>
	burbot (mariah, catfish, lingcod)	<i>Lota lota</i>
	cisco (tulaby, tullibee)	<i>Coregonus artedi</i>
	goldeye	<i>Hiodon alosoides</i>
	lake chub	<i>Couesius plumbeus</i>
	lake whitefish (whitefish)	<i>Coregonus clupeaformis</i>
	northern pike (jackfish)	<i>Esox lucius</i>
	sucker	<i>Catostomus</i>
	walleye (pickerel)	<i>Sander vitreus</i>
yellow perch (perch)	<i>Perca flavescens</i>	

Sources: CPDFN (2007); Canadian Natural (2007); EnCana (2009); Enermark (2008); FMFN (2006); Golder (2002a); MEG (2009, 2008 and 2005).

4.1.4.5 Collecting Berries

Collecting berries has been a nutritional mainstay for many Aboriginal groups over multiple generations, spanning hundreds of years. Families often gather large quantities of berries in summer and can freeze or dry them to last through winter. Popular varieties of berries include blueberries and cranberries, but an array of edible species exists within the Project RSA, as identified in [Table 10](#).

Table 10 Traditional Berry Resources Within the Regional Study Area Reported by Aboriginal Groups

Traditional Resource	Common Name	Scientific Name
Berries	blackberry	<i>Rubus fruticosus</i>
	black currant	<i>R. hudsonianum, R. Americanum</i>
	blueberry	<i>Vaccinium myrtilloides</i>
	bog cranberry	<i>Vaccinium vitis-idea</i>
	bunchberry	<i>Cornus canadensis</i>
	chokecherry	<i>Prunus virginiana</i>
	gooseberry	<i>Ribes lacustre, Ribes oxycanthoides, R. hirtellum</i>
	hazelnut	<i>Corylus cornuta</i>
	high bush cranberry	<i>Virburnum opulus</i>
	kinnickinnik (bearberry)	<i>Arctostaphylos uva-ursi</i>
	logan berries	<i>Rubus x loganobaccus</i>
	low bush cranberry(moose berries)	<i>Viburnum edule</i>
	miniature bog cranberry	<i>Oxycoccus microcarpus</i>
	moose berry	<i>Cornus stolonifera</i>
	pin cherry	<i>Prunus pensylvanica</i>
	raspberry	<i>Rubus idaeus</i>
	rosehip	<i>Rosa acicularis, R. woodsii</i>
saskatoon berry	<i>Amelanchier alnifolia</i>	
strawberry	<i>Fragaria vesca, F. virginiana</i>	

Sources: CPDFN (2007); Canadian Natural (2007); EnCana (2009); Enermark (2008); FMFN (2006); Golder (2002a); MEG (2009, 2008 and 2005); NuNenne-AXYS (2006).

4.1.4.6 Harvesting Medicinal and Edible Plants

Traditional knowledge about the healing, spiritual and nutritional properties of plants in the region has been passed down through the generations in many Aboriginal groups. This information can be sensitive and locations of medicinal plants are not usually mapped. Traditional-use plant species that may be found within the Project RSA are listed in [Table 11](#).

Table 11 Traditional Plant Resources Within the Regional Study Area Reported by Aboriginal Groups

Traditional Resource	Common Name	Scientific Name
Fungus	honey mushrooms	<i>Armillariella mellea</i>
	morel mushrooms	<i>Morchella esculenta</i>
	oyster mushrooms	<i>Pleurotus</i> species
	pinus mushrooms	<i>Lactarius deliciosus</i>
	willow fungus (diamond willow fungus)	<i>Trametes suaveolens</i>
Trees and Shrubs	acorns	[Species not identified]
	aspen poplar	<i>Populus tremuloides</i>
	balsam fir	<i>Abies balsamea</i>
	black poplar	<i>Populus balsamifera</i>
	black spruce	<i>Picea mariana</i>
	jackpine	<i>Pinus banksiana</i>
	mountain ash	<i>Sorbus scopulina</i>
	pine	<i>Pinus</i>
	red willow	<i>Salix laevigata</i>
	white birch	<i>Betula papyrifera</i>
	white spruce	<i>Picea glauca</i>
	willow	<i>Salix</i> spp.
Other Plants	arrow-leaved coltsfoot (moose ears)	<i>Petasites frigidus</i>
	common cattail	<i>Typha latifolia</i>
	dandelion	<i>Taraxacum officinale</i>
	fiddleheads (ostrich fern)	<i>Pteridium aquilinum</i>
	fireweed	<i>Epilobium angustifolium</i> L.
	frog box	unavailable
	harebell (bluebell)	<i>Campanula rotundifolia</i>
	horsetail	<i>Equisetum</i> spp.
	Labrador tea (muskeg tea)	<i>Ledum groenlandicum</i>
	lichen (caribou lichen)	<i>Cladina</i> spp
	lily pad	<i>Nymphaea odorata</i>
	mint (wild)	<i>Mentha arvensis</i>
	pitcher plants	<i>Sarracenia purpurea</i>
	puff balls	<i>Lycoperdon</i> spp.
	raspberry root	<i>Rubus idaeus</i>
	rat root (sweet flag)	<i>Acorus americanus</i>
	saskatoon	<i>Amelanchier alnifolia</i>
	sweetgrass	<i>Hierochloe odorata</i>
	valerian	<i>Valeriana dioica</i>
	white yarrow (whiteflower whitestern flower)	<i>Achillea millefolium</i>
wild rose (prickly rose)	<i>Rosa acicularis</i>	

Sources: CPDFN (2007); Canadian Natural (2007); EnCana (2009); Enermark (2008); FMFN (2006); Golder (2002a); MEG (2009, 2008 and 2005); NuNenne-AXYS (2006).

4.2 CONCERNS AND ISSUES

In addition to identifying TLU activities and resources used by First Nations and other Métis groups within the RSA, the literature review also identified concerns related to existing development in the region, and to the Lease Area (Canadian Natural 2009a; HLFN 2007; WFL128 2011). Generally, the concerns relate to water quality and quantity, fish and fish habitat, availability and health of traditional resources, access issues, and the cumulative effects of resource development in the region. The following sections summarize the concerns and issues raised by First Nations and other Aboriginal communities.

Water Quality and Quantity

The potentially affected Aboriginal groups have expressed concern about water loss due to extraction for oilfield activities, especially from aquifers. For similar projects in the past, communities have stated that they would like more information about where the water for development projects will come from, how much water will be used, and how water levels and water quality will be monitored by oil industry proponents and government bodies.

Aquatic Ecology

Fish resources are of great importance to Aboriginal people. Traditionally used species of fish in the region are listed in [Table 9](#). Lower fish stocks in local water sources are perceived by many Aboriginal people to have been caused by decreased water levels brought on by industrial development.

Traditionally Used Species of Wildlife

Aboriginal groups believe that the movement of large ungulates on the land is important for the survival and reproduction of these animals. In the past, traditional land users have expressed concern that infrastructure from development, including parallel, above-ground pipelines, may impede the movement of animals and negatively affect their health. Concern has also been expressed about the influx of non-Aboriginal hunters into the region in recent years. The preservation of local caribou herds is a priority for the potentially affected Aboriginal groups considered in this Baseline Report, including the consideration of calving grounds in project planning. For similar projects in the Oil Sands Region, Aboriginal groups have stated that they are concerned about the effects of air and noise pollution on mammals and birds. Elders interviewed within the Lease Area (Canadian Natural 2009a) have requested the opportunity to locate and map salt licks.

Plant Harvesting

The potentially affected Aboriginal groups for the Project have stated in previous studies that they believe the quality and health of traditionally used species of plants have declined in recent years. Many traditional land users perceive that today it is more difficult to find peaceful and isolated harvesting locations than in the past. Concern has also been expressed about the introduction of new plants/weeds to the region which may be unintentionally transported by industry vehicles.

Health Concerns Related to Development

Concern has been expressed by Aboriginal groups in the region about increased health problems for humans and animals, which they believe may be linked to development projects. Elders are concerned about toxins from air and water emissions entering into the food chain and contaminating their country foods. For past projects, Aboriginal community members have stated that they perceive an increase in health problems, especially lung problems, skin irritations and stomach problems within their communities; people are concerned about the potential cumulative effects of development on human health.

Traffic, Roads and Access

There is community concern that increased development will lead to increased traffic on roads in the vicinity of development projects. It has also been noted by traditional land users for previous projects that it is important to protect against erosion along roadways; and that increased access (i.e., roads and cutlines) to remote areas can facilitate vandalism and theft on traplines, and lead to resource depletion. Aboriginal groups have expressed concern regarding the impacts of seismic and cut-lines on large ungulates, and indicated the importance of maintaining access to TLU areas for Aboriginal traditional land users.

Habitat Fragmentation and Alteration

Many Aboriginal groups believe that wide, straight rights-of-way are problematic for animals due to lack of vegetative cover, making it easier for natural predators such as wolves to prey on large ungulates such as boreal caribou, moose and deer. Many groups are concerned about habitat fragmentation and believe that proposed developments should use existing rights-of-way rather than to further dissect the landscape. Concern has been expressed that new cut lines and seismic lines have created increased access for natural predators as well as non-Aboriginal hunters. Aboriginal traditional land users have indicated in previous studies that they would like to be involved in wildlife and habitat monitoring.

Cumulative Effects of Development

As indicated in studies for previous projects, Elders from potentially affected Aboriginal groups believe that each successive development project removes more traditional use lands, resulting in cumulative impacts on the ability of the community to practice a traditional way of life. Concern has also been expressed about the potential for arsenic and other toxins to accumulate in country foods. Previous studies have indicated that Aboriginal groups would like to be informed about long-term plans for development and sustainability in the region.

Communication and Future Development

Some First Nations groups have expressed the desire to have “Chief-to-Chief” meetings between industry proponents and First Nations. Interviewed groups of Aboriginal traditional land users for previous projects have requested the opportunity to conduct site visits for the purpose of locating, ground-truthing and mapping TLU areas in the region.

Cultural Continuity and Community Life

The Elders from many Aboriginal groups have stated that they have plans to continue using their territory for traditional activities and hope to sustain the community and culture for future generations. Concern has been expressed in the past that fewer youth in Aboriginal communities are interested in learning the traditional way of life. It has been suggested for previously approved projects that developers should sponsor community programs and cultural centres in affected First Nations communities. People have also reported that they are interested in training and employment opportunities and post-secondary education available in local communities.

According to the Treaty Impact Assessment prepared for the *Report to Chief and Council* of the WFL128, Treaty rights to hunt, fish and gather are collective in nature, and the rights of the collective are best-represented by the Chief and Council (WFL128 2011). They point out that Treaty rights are protected by law and that each Aboriginal community has a unique perspective on their relationship to the land (WFL128 2011). A main priority of WFL128 is to ensure “the sustainability of the collective rights of Treaty” (WFL128 2011).

Views on Conservation and Reclamation Held by First Nations and Other Aboriginal Communities

Many Aboriginal groups have stated that they are not confident in the ability of industry to reclaim disturbed landscapes to pre-development conditions. Traditional land users interviewed for previous projects have stated that they would like to conserve undisturbed lands for TLU, where possible.

5 CONCLUSION

Aboriginal communities and trappers have used areas within the RSA for traditional activities in the past, continue to do so in the present, and plan to do so in the future. The results of the literature review and Canadian Natural's consultation efforts with Aboriginal groups show that areas within the RSA have been used for traditional hunting, fishing, trapping, plant harvesting and cultural uses. The TLU baseline studies also indicated that Aboriginal groups have general concerns about the effects of existing developments on traditional activities as well as the effects that existing developments have on the environment. Canadian Natural is endeavouring to collect TK and TLU information from directly affected Aboriginal groups. This information will be incorporated into Project planning when available.

Traditional land use areas within the Project LSA have been identified in the literature review, and are summarized in [Tables 2](#) and [5](#) of this Baseline Report, and shown in [Figure 10](#). Traditional activities that may occur in the LSA include hunting for moose, traditional plant and berry harvesting, and fishing. Many Aboriginal groups have reported TLU activities in the area to the north of the CLAWR and in the area surrounding Unnamed Lake #1, known to the HLFN as Big Muskeg Lake, and to the WFL128 as Muskeg Lake. Caribou and other animals of traditional importance may be found within the Project LSA.

The baseline studies indicated that potentially affected Aboriginal communities have concerns about existing and future development, particularly a potential decrease in water and air quality, negative impacts to water quantity, decrease in the number and quality of fish and wildlife, disruption of animal movements, increased health problems, and cumulative effects of projects in the region. They also have expressed requests for open communication, education and employment opportunities, and involvement in land and resource planning.

Throughout the regulatory process, Canadian Natural will continue to consult with potentially affected Aboriginal communities and will look to identify specific issues and to understand traditional land use in the area. This is an ongoing process in which TLU information and concerns will be documented and considered throughout the regulatory process. Canadian Natural believes consultation and co-operation is only successful when it is integrated into the decision-making process. Canadian Natural has and will continue to consult, and to identify and respond to potential Project-related TLU issues, as well as applicable regional concerns.

Aboriginal communities have raised concerns about the cumulative effects of multiple developments in the Oil Sands Region on TLU. Canadian Natural recognizes the potential effects of regional development on TLU and has initiated consultation with local Aboriginal groups regarding the Project. Canadian Natural's objective is to identify potential Project-related issues, address their concerns as may be appropriate, and to mitigate where possible the potential effects of the Project on traditional land use.

In addition to working directly with Aboriginal communities, Canadian Natural participates in regional initiatives that focus on coordinating and monitoring development activities, and in part to address concerns expressed by Aboriginal groups. These committees include the Cumulative Environmental Management Association, the Wood Buffalo Environmental Association, the Oil Sands Developers Group and the Regional Aquatics Monitoring Program.

It is Canadian Natural's intent that its development activities proceed in a manner that is sensitive to, and addresses the concerns of the Aboriginal groups potentially affected by the Project. Among these concerns is the desire to sustain TLU within the region in conjunction with oil sands developments. It is Canadian Natural's belief that Project-related and long term regional effects of industrial developments can be effectively offset or minimized through active engagement with its stakeholders, recognition of their concerns, and consideration of their input to Project planning.

6 CLOSURE

We trust the above meets your present requirements. If you have any questions or require additional details, please contact the undersigned.

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8 ABBREVIATIONS

bbl/d	barrels per day
BLCN	Beaver Lake Cree Nation
Canadian Natural	Canadian Natural Resources Limited
CEMA	Cumulative Environmental Management Association
Cenovus	Cenovus FCCL Ltd.
CLAWR	Cold Lake Air Weapons Range
CLFN	Cold Lake First Nation
CPDFN	Chipewyan Prairie Dene First Nation
CPF	Central Processing Facility
Devon	Devon Canada Corporation
EnCana	EnCana FCCL Ltd.
ERCB	Energy Resources Conservation Board
FMFN	Fort McMurray #468 First Nation
Golder	Golder Associates Ltd.
HLFN	Heart Lake First Nation
i.e.	That is
IR	Indian Reserve
KN1	Kirby North Phase 1
KN2	Kirby North Phase 2
KS1	Kirby South 2010
KS2	Kirby South Phase 2
km	Kilometre
Lease Area	Kirby Expansion Project Lease Area
LSA	Local Study Area
m	metre
m ³ /d	Cubic metres per day
MEG	MEG Energy Corp.
RSA	Regional Study Area
SAGD	Steam Assisted Gravity Drainage
SLFN	Saddle Lake First Nation
the Project	Kirby In Situ Oil Sands Expansion Project
TK	Traditional Knowledge
TLU	Traditional Land Use
W4M	West of the Fourth Meridian
WFL128	Whitefish Lake #128 First Nation

9 GLOSSARY

Country Foods	Dietary items from the local region which are used for sustenance. Country food items include: fruit, vegetables, herbs, medicinal plants, fish and game.
First Nation	A term that came into common usage in the 1970s to replace the word Indian, which some people found offensive. Although the term First Nation is widely used, no legal definition of it exists. The term has generally come to refer to Aboriginal groups that have status under the <i>Indian Act</i> . Some Aboriginal groups have also adopted the term First Nation to replace the word band in the name of their community.
Footprint	The proposed development area that directly affects the soil and vegetation components of the landscape.
Furbearer	Mammals that have traditionally been trapped or hunted for their fur.
Habitat	The place or environment where a plant or animal naturally or normally lives or occurs.
Habitat Fragmentation	Occurs when extensive, continuous tracts of habitat are reduced by habitat loss to dispersed and usually smaller patches of habitat. Generally reduces the total amount of available habitat and reduces remaining habitat into smaller, more isolated patches.
In Situ	Also known as “in place”. Refers to methods of extracting deep deposits of oil sands without removing the groundcover. The in situ technology in oil sands uses underground wells to recover the resources with less impact to the land, air and water than for oil sands mining.
Local Study Area (LSA)	Defines the spatial extent directly or indirectly affected by the Project.
Métis	People of mixed Aboriginal and European ancestry who identify themselves as Métis, as distinct from First Nations people, Inuit or non-Aboriginal people. The Métis have a unique culture that draws on their diverse Aboriginal and European ancestral origins, such as Scottish, French, Ojibway and Cree.

Movement Corridor	Travel way used by wildlife for daily, seasonal, annual and/or dispersal movements from one area or habitat to another.
Muskeg	A soil type comprised primarily of organic matter. Also known as bog peat.
Oil Sands	A sand deposit containing a heavy hydrocarbon (bitumen) in the intergranular pore space of sands and fine grained particles. Typical oil sands comprise approximately 10 wt% bitumen, 85% coarse sand (>44 µm) and a fines (<44 µm) fraction, consisting of silts and clays.
Oil Sands Region	The Oil Sands Region includes the Fort McMurray – Athabasca Oil Sands Subregional Integrated Resource Plan (IRP), the Lakeland Subregional IRP and the Cold Lake – Beaver River Subregional IRP.
Regional Study Area (RSA)	Represents the area of study for the assessment of cumulative (combined) effects of the Project and other past, existing or planned developments.
Steam Assisted Gravity Drainage (SAGD)	An in situ oil sands recovery technique that involves the use of two horizontal wells, one to inject steam and a second to produce the bitumen.
Traditional Knowledge	Knowledge and understanding of traditional resource and land use, harvesting and special places.
Traditional Land Use (TLU)	Activities involving the harvest of traditional resources such as hunting and trapping, fishing, gathering medicinal plants and travelling to engage in these activities. Land use maps document locations where the activities occur or are occurring.
Traditional Use Plants	Plants used by aboriginal people of a region as part of their traditional lifestyle for food, ceremonial, medicinal and other purposes.
Ungulate	Belonging to the former order Ungulata, now divided into the orders Perissodactyla and Artiodactyla, and composed of the hoofed mammals such as horses, cattle, deer, swine and elephants.
Waterbody	Any location where water flows or is present, whether or not the flow or presence of water is continuous seasonal, intermittent, or occurs only during a flood.

Wildlife

Under the *Species at Risk Act*, wildlife is defined as a species, subspecies, variety or geographically or genetically distinct population of animal, plant or other organism, other than a bacterium or virus that is wild by nature and is native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years.