CHRISTINA LAKE REGIONAL PROJECT

RESOURCE USE

ENVIRONMENTAL SETTING REPORT

SUBMITTED TO:
MEG ENERGY CORP.

PREPARED BY:
AXYS ENVIRONMENTAL CONSULTING LTD.
CALGARY, ALBERTA

FEBRUARY 2005
OS1205

AXYS Environmental Consulting Ltd.

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Prepared For:
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February 2005

EXECUTIVE SUMMARY

MEG Energy Corp. (MEG) is a Calgary-based, private energy company focused on the development and recovery of bitumen, shallow gas reserves and the generation of power in northeast Alberta. MEG is proposing to develop the Christina Lake Regional Project (the Project) on part of the 52 sections of oil sands leases that it holds in the area of Christina Lake, Alberta. The Project would be located within the Regional Municipality of Wood Buffalo in northeastern Alberta, approximately 15 km southeast of local Secondary Highway 881 and 20 km northeast of Conklin.

MEG is proposing to develop their oil sands lease area by building and operating the Project utilizing a steam assisted gravity drainage (SAGD) oil recovery technology. The Project would consist of a central processing facility, SAGD wells, co-generation facilities and additional infrastructure.

This report describes the existing land and resources uses in the vicinity of the Project area. Information contained in this report includes descriptions of resource management and land use policies and guidelines, existing industrial activities and dispositions and commercial and recreational pursuits.

Resource use is not as intense as in the areas around Fort McMurray or Lac La Biche. Oil and gas development is increasing in the area, with three existing oil sands developments and numerous existing pipelines, wellsites, and related infrastructure. Timber harvesting is also a prominent activity in the region. Agriculture operations in the region are limited to two wild rice operations and two grazing leases.

Access to the Project area by regular vehicle traffic is limited to SH881 and an all season gravel road. This limited access, combined with the distance from major population centres, has resulted in relatively limited use of the area for recreational activities. There are no parks or protected areas in the region. Numerous environmentally significant areas and significant natural features have been recognized within the region, several of which overlap the Project area.

Fishing is popular with residents of the area, although there are few sport fishing destinations for visitors. Preferred fishing spots in are Christina Lake, Winefred Lake (trophy fishing), Grist Lake and along the Christina River. Hunting is also a popular activity with 39 guide/outfitting operations holding hunting allocations, five of which operate in the Project area. Trapping activities and revenue have been steadily declining over the past decade. Traditional uses in the region include plant use, trapping, hunting, fishing and cultural and spiritual sites.

ACKNOWLEDGEMENTS

This Land and Resource Use Environmental Setting report was prepared for MEG Energy Corp. (MEG) by AXYS Environmental Consulting Ltd. (AXYS) as part of the Cold Lake Regional Project Environmental Impact Assessment. John Gulley was the Project Director, Tod Collard was the Project Manager and James Power was the Land and Resource Use Component Leader.

This report was prepared by Allison Peacock, with assistance from Neil Cory and Amber Ashenhurst. Paul St. Rose prepared the figures and Cindy Hubick was responsible for formatting of the document, with input from Zoë Bond. James Power, Ian Gilchrist, Tod Collard and Phil Ullman conducted reviews of the report.

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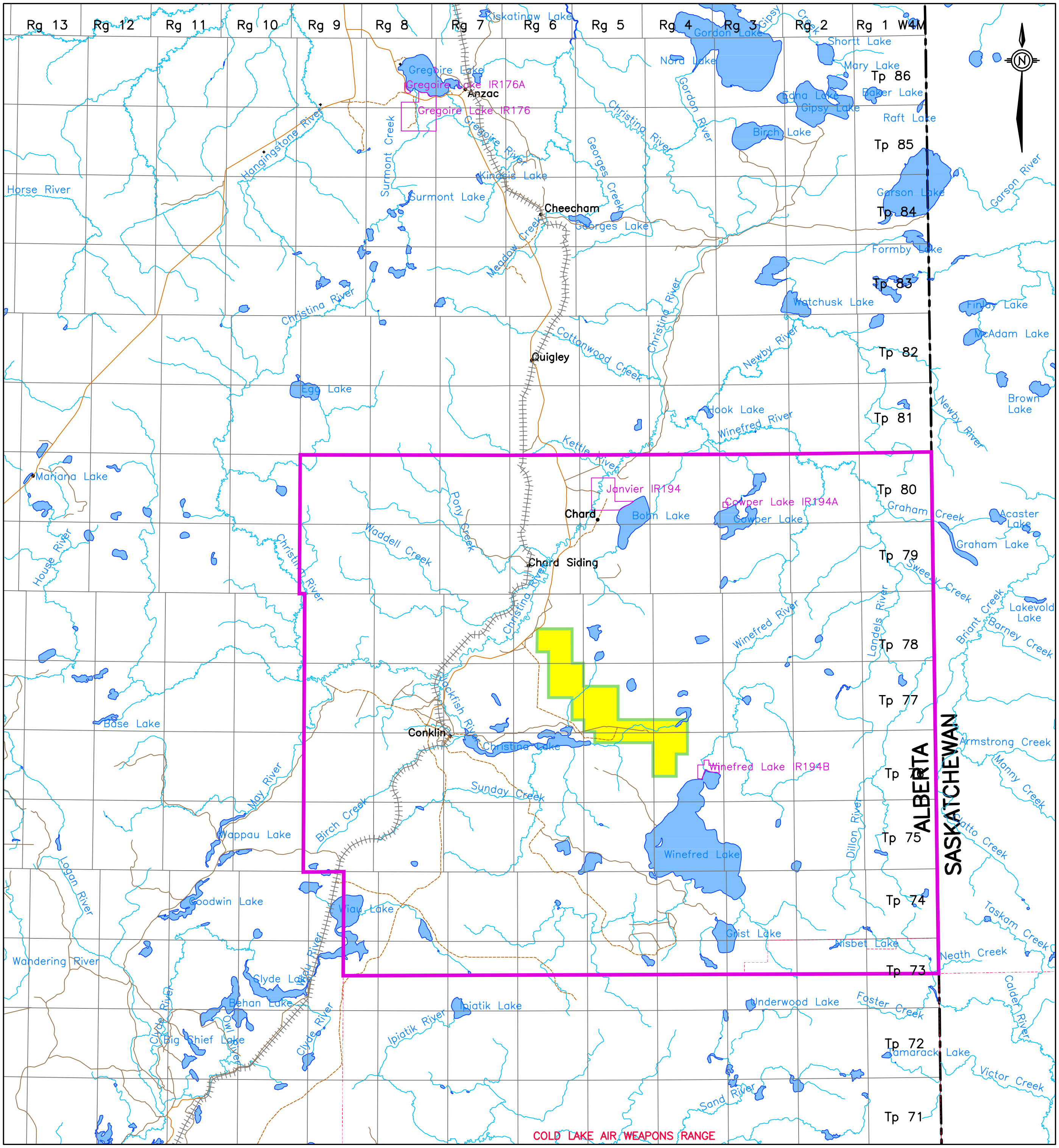
1 INTRODUCTION

MEG Energy Corp. (MEG) is a Calgary-based, private energy company focused on the development and recovery of bitumen, shallow gas reserves and the generation of power in northeast Alberta. MEG is proposing to develop the Christina Lake Regional Project (the Project) on part of the 52 sections of oil sands leases (lease area) that it holds in the area of Christina Lake, Alberta. The Project would be located within the Regional Municipality of Wood Buffalo (RMWB) in northeastern Alberta, approximately 15 km southeast of local Secondary Highway 881 and 20 km northeast of Conklin (Figure 1-1).

MEG is proposing to develop their oil sands lease area by building and operating the Project utilizing a steam assisted gravity drainage (SAGD) oil recovery technology. The Project would consist of a central processing facility, SAGD wells, co-generation facilities and additional infrastructure. The proposed central processing facility and the co-generation unit would be located adjacent to MEG's Pilot facilities located in NE¼ 9 and SE¼ 16, Township 77, Range 5, W4M. The Project would be designed and built to produce 22,000 barrels per day of bitumen (approximately 3,500 cubic metres per day). This production, which would be in addition to the 3,000 barrels of bitumen per day from the pilot operation, would result in a total production of 25,000 barrels of bitumen per day (approximately 4,000 cubic metres per day).

This section describes various land and resource uses within the Project area and the surrounding region. There are multiple land uses within the region, including industrial developments, commercial activities, protected areas, recreational pursuits, population centres, transportation infrastructure and traditional use.



16 0 16 32

SCALE KM

LEGEND

- ROADWAY
- RAILWAY
- MEG OIL SANDS LEASE AND LOCAL STUDY AREA
- REGIONAL STUDY AREA

REFERENCE

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

PROJECT

CHRISTINA LAKE REGIONAL PROJECT

TITLE

LAND AND RESOURCE USE LOCAL AND REGIONAL STUDY AREAS

MEG ENERGY CORP.

PROJECT 04-1334-001.8510			FILE No. Res Use-LSA_RSA	
DESIGN	AP	14/01/05	SCALE AS SHOWN	REV. 0
CADD	PSR	25/01/05		
CHECK	AP	25/01/05	**FIGURE: 1-1**	
REVIEW	TC	25/01/05		

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1.1 OBJECTIVES OF ENVIRONMENTAL SETTING REPORT

The objectives of the land and resource use environmental setting report are to:

- identify existing land uses and resource users in the region;
- establish land and resource use trends and, where possible, indicate possible future uses; and
- summarize the regulatory and policy framework in which resources are to be developed.

1.2 ENVIRONMENTAL SETTING REPORT INVESTIGATIONS

The goal of environmental setting data collection is to provide sufficient information on which to base an Environmental Impact Assessment (EIA). The data has been collected for the Land and Resource Use Local Study Area (LSA) and Regional Study Area (RSA) (Figure 1-1).

Environmental setting information on land and resource use was collected through a combination of:

- reviewing and incorporating the findings of past studies performed within the Project area and the surrounding region; and
- collecting additional environmental setting information as necessary to address data gaps.

Information sources include:

- existing literature, such as government publications, past EIAs, resource use surveys, and regional studies and management plans;
- known resource requirements of other disclosed projects;
- Alberta-Pacific Forest Industries Inc. (Al-Pac) harvesting plans;
- government data bases (e.g., Land Status Automated System) and digital data sets;
- hunting and trapping records;
- websites for government and non-government agencies and organizations; and
- personal communications with key individuals (e.g., resource users, tourism operator, government agency representatives).

1.3 LAND AND RESOURCE USE STUDY AREAS

As part of the scoping process for the Project, the following resources were selected as Key Indicator Resources (KIR) on which the Land and Resource Use (Resource Use) component of the EIA will be conducted:

- aggregate and other surface minerals;
- agriculture;
- berry picking;
- forestry;
- fishing;
- hunting and trapping;
- non-consumptive recreation;
- protected areas and environmentally significant areas (ESAs); and
- traditional resource use.

Study areas have been delineated for each KIR and vary depending on the resource in question. Use of a single Local Study Area (LSA) and Regional Study Area (RSA) is not feasible given the variable nature of each resource included in the assessment. Wherever applicable, study areas from other EIA components were used to facilitate the transfer of data for environmental setting and analysis purposes. The Resource Use LSA encompasses the lease area, located within Township 76, Range 4 and 5, W4M, Township 77, Ranges 4 to 6, W4M and Township 78, Range 6, W4M. The Resource Use RSA is bounded on the south and west by the Lakeland County and Regional Municipality of Wood Buffalo (RMWB) boundary, in the east by the Saskatchewan/Alberta border and along the northern boundary of Township 80 in the north. Table 1-1 summarizes the study areas used for the Resource Use component of the EIA and Figure 1-1 depicts these study areas in relation to the proposed Project.

Table 1-1 Study areas for the Resource Use component of EIA

Key Indicator Resources	Local Study Area	Regional Study Area
aggregate	Resource Use	Resource Use
agriculture	Terrestrial Resources	Terrestrial Resources
berry picking	Terrestrial Resources	Terrestrial Resources
forestry	Terrestrial Resources	Terrestrial Resources
fishing	Aquatic Resources	Aquatic Resources
hunting and trapping	Terrestrial Resources	Terrestrial Resources
non-consumptive recreation	Resource Use	Resource Use
protected areas and ESAs	Resource Use	Resource Use
traditional resource use	Terrestrial Resources	Terrestrial Resources

2 SETTING

2.1 EXISTING RESOURCE USE

Resource use in the Regional Municipality of Wood Buffalo (RMWB) can be divided into renewable and non-renewable resource uses (Table 2-1). High industrial growth in the municipality has placed increasing demands on resources, such as aggregate and forestry products, as well as access to hunting, trapping and fishing resources.

Table 2-1 Renewable and Non-Renewable Resource Use in the Regional Municipality of Wood Buffalo

Renewable Resources	Non-Renewable Resources
agriculture	aggregate resource and surface minerals
berry picking, medicinal plant use	conventional oil and gas
commercial fisheries; sport fishing	oil sands mining and in-situ operations
forestry	
guiding and outfitting; sport hunting	
non-consumptive recreation (e.g., tourism, camping, canoeing, wildlife viewing, photography, off road vehicle use, etc.)	
trapping	

2.2 ZONING

Public land is owned by the government of Alberta and its use and allocation are outlined in the *Public Lands Act*. Public land is found in both the White and Green areas of Alberta (ASRD 2004).

The White Area, or settled portion, consists of the populated central, southern, and Peace River areas of the province. In the White Area, public land is part of the agricultural landscape. It is managed for various uses including agriculture, recreation, soil and water conservation and fish and wildlife habitat.

The Green Area, or the forested portion, comprises most of northern Alberta as well as the mountain and foothill areas along the province's western boundary, covering approximately 51% of the province. The primary land use in this area is timber production, with Forest Management Agreements (FMAs) taking up a large proportion of the land base. Other land uses that take place on Green Area public lands include recreation, livestock grazing, sand and gravel extraction, and

industrial development. Agricultural use is limited to grazing where it's compatible with other uses (ASRD 2004). The Project is located entirely within the Green Area.

2.3 RESOURCE MANAGEMENT POLICIES AND GUIDELINES

2.3.1 Integrated Resource Plans

Integrated Resource Plans (IRPs) were developed by the Alberta government to provide a framework for both industry and government to manage resources on provincial Crown land. No IRPs exists for the project area.

2.3.2 Regional Sustainable Development Strategy

In partnership with regional stakeholders and regulators, Alberta Environment (AENV) developed the Regional Sustainable Development Strategy (RSDS) in response to anticipated oil sands development. Partners included First Nations, industry, environmental interest groups, and provincial, municipal and federal government agencies (AENV 1999).

This strategy supports the AENV's commitment to sustainable development and environmental management. The RSDS sets policy direction for resource use in the region and is designed to balance development with environmental protection. Core principles of the RSDS include:

- environmental protection;
- effective resource management;
- environmental understanding; and
- land and resource stewardship.

The RSDS principals for effective resource management state:

- renewable resources will be managed to ensure their long-term viability and future use potential;
- nonrenewable resources will be managed to maximize benefits to Albertans;
- renewable resources will be managed for traditional, recreational and resource development uses;

- resources will continue to be developed within the requirements of provincial legislation and policies and guidelines; and
- all resource management will occur in an orderly manner that considers and preserves environmental quality not only in Alberta, but also in neighbouring jurisdictions.

2.4 REGIONAL MUNICIPALITY OF WOOD BUFFALO MUNICIPAL DEVELOPMENT PLAN

The Project lies in the south portion of the RMWB. The municipality has no direct decision-making authority for energy project dispositions. However, it does have within its authority the right to grant development permits. Energy operators must comply with the municipality's land use orders and bylaws.

The Municipal Development Plan for the RMWB was prepared under the legislative framework of the *Municipal Government Act*. This plan is the primary land use policy document that influences and directs development in the RMWB (RMWB 2000). Within the plan, both environmental management and resource management goals have been set.

2.4.1 Environmental Management

The environmental management goal for the Municipal Development Plan is to conserve and protect the region's natural, historical and archaeological resources. It will also accommodate development that serves the community and the greater public interest (RMWB 2000).

For oil sands development, the plan commits the RMWB to work with industry and government to rationalize environmental protection approval and planning processes by:

- periodically reviewing cumulative effects of development;
- consulting stakeholders and citizens of the RMWB; and
- continuing membership in the Athabasca Oil Sands Reclamation Advisory Committee to determine a suitable end land use for reclaimed oil sands sites.

2.4.2 Resource Management

The Municipal Development Plan recognizes the need to coordinate with the provincial government to achieve the orderly exploration and development of natural resources. The plan also recognizes that Crown land should be used in a manner compatible with the environmental and social considerations of the region (RMWB 2000). To achieve that goal, the plan sets directions for specific resource activities:

- timber harvesting
  - encouraging the coordination of timber harvest planning in conjunction with other surface disturbances
  - encouraging discussion between leasees and the provincial government on ways to return land to a predisturbed state
  - supporting timber harvesting activities that retain the aesthetics of the area
- oil sands expansion
  - maintaining ongoing communication with the oil sands industry concerning plans for expansion, timing and resulting impacts on the municipality
  - supporting opportunities for the orderly exploration and development of mineral resources in previously unexplored areas or formations where not in conflict with adjacent development
  - encouraging development of new mineral recovery and reclamation techniques that are more efficient, economical and reduce the impact on the environment and other resources
  - supporting opportunities for industry to develop mineral resources where proven reserves exist, if those resources are not in conflict with adjacent development
  - supporting the objectives of the Athabasca Oil Sands Reclamation Advisory Committee
  - encouraging new developments to locate in areas that will not negatively affect existing or announced oil sands developments
- aggregate extraction
  - working with the province and industry to manage the limited supplies of sand, gravel and topsoil to ensure their availability at reasonable cost for infrastructure and construction activities in the area

– opposing subdivision or development that would compromise the future recovery of significant deposits of sand and gravel until an opportunity is provided for their extraction

2.5 EXISTING DEVELOPMENTS

Existing developments in the Resource Use RSA include various oil and gas developments, population centres and transportation infrastructure.

2.5.1 Industrial Developments

Various types of industrial projects exist in the Resource Use RSA, including oil sands projects, conventional oil and gas operations, pipelines and aggregate pits.

2.5.1.1 Oil Sands

There are four approved oil sands development projects and one proposed project in the vicinity of the Project (Figure 2-1):

- **EnCana: Christina Lake Thermal Project (approved).** EnCana received approval in 2000 for the SAGD project and started production in 2002. The first phase of the three-phase project is designed to produce 10,000 barrels per day (EnCana 2005).
- **Orion: Whitesands Pilot Project (approved**). Petrobank Energy and Resources Ltd. received approval to conduct a field pilot of the THAI™ (Toe-to-Heel-Air-Injection) in situ heavy oil recovery technology through its subsidiary Orion Oil Canada Ltd. (Orion). Pilot delineation drilling and site preparation are underway (Petrobank Energy and Resources Ltd. 2005). The pilot will have three vertical/horizontal well pairs plus several temperature and pressure observation wells. Peak production from the three wells is estimated at 1,800 barrels per day (Petrobank Energy and Resources Ltd. 2005b).
- **Canadian Natural Resources Ltd.: Kirby Thermal Pilot (approved).** The Kirby Thermal Pilot was originally owned and operated by Rio Alto prior to its purchase by Canadian Natural Resources Ltd. A recent announcement by CNRL indicates that they do not plan on proceeding with the Kirby Thermal Project and that the Pilot will be decommissioned.
- **Canadian Natural Resources Ltd.: Kirby Thermal Project (proposed).** The proposed Kirby Project will be developed in four phases and is designed to produce up to 30, 000 barrels per day. The life of the project will be approximately 20 years, with start-up and initial production scheduled for 2004. A recent announcement by CNRL

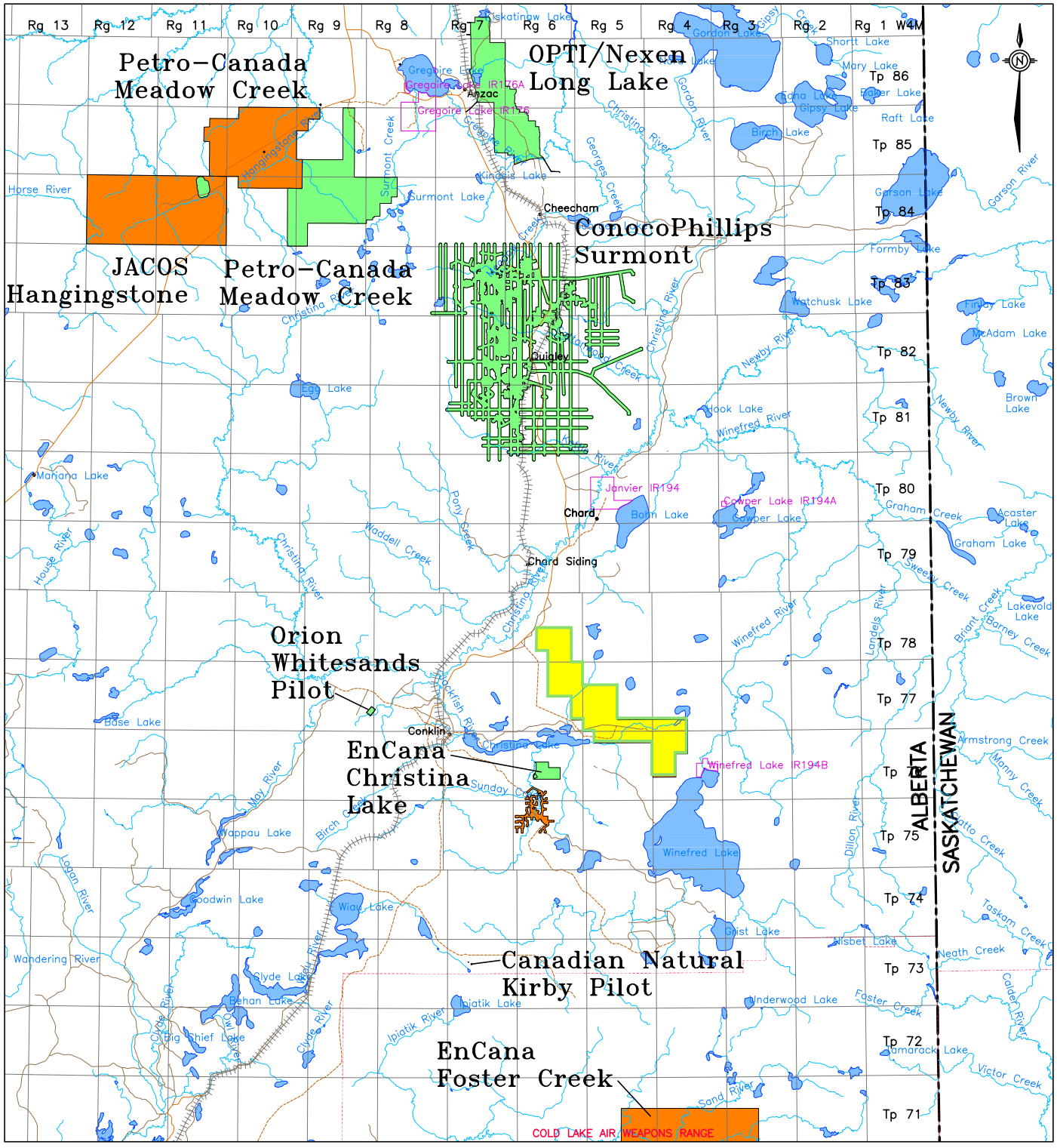
indicates that they do not plan on proceeding with the Kirby Thermal Project.

- **Devon Canada - Jackfish SAGD Project (approved).** The Jackfish SAGD project is expected to extract 35,000 barrels per day of bitumen over the life of the project. Total recoverable reserves are estimated at over 300 million barrels. Construction of the Jackfish Project is scheduled to begin in the first quarter of 2005 with full production targeted for 2008 (Devon Canada 2005).

2.5.1.2 Conventional Oil and Gas Surface Leases

Oil and gas leases include wellsites (Mineral Surface Leases [MSL]) and access roads to wellsites (Licence of Occupation [LOC]). Twenty-three companies hold MSLs and thirty-six companies that hold LOCs in the Resource Use RSA. In the LSA ten companies hold MSLs and twelve companies hold LOCs (Table 2.4). Companies holding conventional oil and gas leases include:

- Paramount Energy Operating Corp.
- Stylus Exploration Inc.
- Petro Canada
- MEG Energy Corp.
- Paramount Resources Ltd.
- Canadian Natural Resources Ltd.
- Devon ARL Corp.
- BP Canada Energy Company
- Devon Canada Corp.
- Superman Resources Inc.
- Talisman Energy Inc.
- Altagas Ltd.
- Nova Gas Transmission Ltd.



LEGEND

- ROADWAY
- RAILWAY
- EXISTING AND APPROVED DEVELOPMENT
- PLANNED DEVELOPMENT
- MEG OIL SANDS LEASE

REFERENCE

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

PROJECT

CHRISTINA LAKE REGIONAL PROJECT

TITLE

EXISTING INDUSTRIAL DEVELOPMENTS

MEG ENERGY CORP.

PROJECT 04-1334-001.8510			FILE NoExisting Industrial Dev.	
DESIGN	AP	14/01/05	SCALE AS SHOWN	REV. 0
CADD	PSR	11/02/05		
CHECK	AP	11/02/05		
REVIEW	TC	11/02/05		

FIGURE: 2-1

R:\CAD\2004\1322-EA\1334\04-1334-001 MEG\Stand Alones\Resource Use\Fig 2-1 Existing Industrial Developments.dwg Jul 27, 2005 - 4:27pm

2.5.1.3 Pipelines

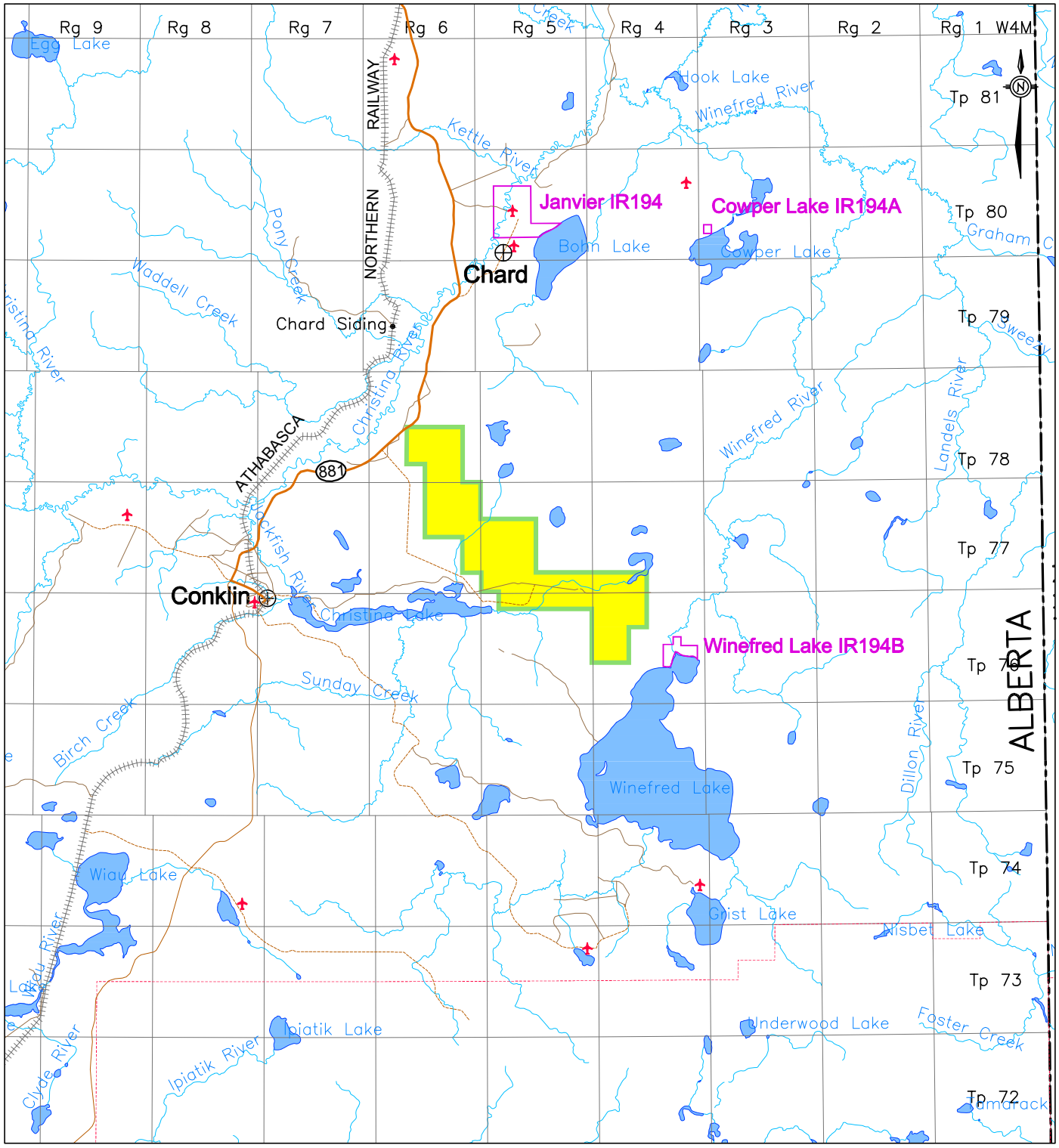
Major pipelines and gathering systems, held under Pipeline Agreements (PLAs), in the Resource Use RSA are owned by the following companies:

- Alta Gas Ltd.;
- ATCO Gas and Pipelines Ltd.;
- BP Canada Energy Company;
- Calpine Canada Resources Company;
- Canadian Natural Resources Limited;
- Devon Canada Corporation;
- Devon AOG Corporation;
- Enbridge Pipelines (Athabasca) Inc.;
- Encana Oil & Gas Ltd.;
- Ish Energy Ltd.;
- Northstar energy Corporation;
- Nova Gas Transmission Ltd.;
- Paramount Energy Operating Corp.;
- Paramount Resources Ltd.;
- Petro-Canada;
- Primewest Energy Ltd.;
- Superman Resources Inc.; and
- Talisman Energy Inc.

The majority of the companies listed above also hold pipeline installation leases (PIL) within the Resource Use RSA. These leases are sites associated with pipelines such as compressor sites, meters and heater sites.

2.5.2 Communities

Three communities are located in the vicinity of the Project. These are Janvier, the Hamlet of Chard, and the Hamlet of Conklin. There is an abandoned railway station that is also referred to as Chard, but there are no residents and few remaining buildings. Figure 2-2 shows the communities and access routes in the vicinity of the Project.



LEGEND

- ROADWAY
- RAILWAY
- AIRSTRIP
- MEG OIL SANDS LEASE

10 0 10
SCALE KILOMETRES

REFERENCE

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

PROJECT

CHRISTINA LAKE REGIONAL PROJECT

TITLE

COMMUNITIES AND PRINCIPAL ACCESS ROUTES

MEG ENERGY CORP.

PROJECT 04-1334-001.8510			FILE No. Communities/Access	
DESIGN	AP	14/01/05	SCALE AS SHOWN	REV. 1
CADD	PSR	02/02/05		
CHECK	AP	02/02/05		
REVIEW	TC	02/02/05		

FIGURE: 2-2

R:\CAD\2004\1322-EA\1334\04-1334-001 MEG\Stand Alones\Resource Use\Fig 2-2 Communities and Principal Access Routes.dwg Jul 27, 2005 - 4:32pm

2.5.2.1 Janvier

Janvier is the community situated on-Reserve in the Chipewyan Prairie Dene First Nation (CPDFN). Janvier is located approximately 100 km south of Fort McMurray off Highway 881 and about 30 km northwest of the Project. About 300 First Nation people live in the community of Janvier (RMWB Census 2004). The community is serviced by a Health Centre, volunteer Fire Department, a Band Administration Complex and a new Multi-Purpose Complex. Children attend school off-Reserve at the Fr. R. Perin School in the Hamlet of Chard. A First Nation High School is located on-Reserve in Janvier and is operated by the First Nation. Keyano College from Fort McMurray provides upgrading education for adults in the Multi-Purpose Complex. A gas bar and an adjoining small store provide basic goods to the residents.

2.5.2.2 Hamlet of Chard

The Hamlet of Chard is located immediately south of the Reserve. It is administered by the Regional Municipality of Wood Buffalo (RMWB). It is approximately 99 km south of Fort McMurray and about 30 km northwest of the Project. Approximately 112 people live in the Hamlet of Chard (RMWB Census 2004). About two-thirds of the population of the Hamlet is Metis with the remainder being of First Nation descent. Residents of the Hamlet access Health Services through the Health Centre in Janvier. Students attend the Fr. R. Perrin School in the Hamlet. Adult residents can take upgrading education through the Keyano College program in Janvier. A new facility provides office space and a recreation facility for the Hamlet. There is a volunteer Fire Department and a RMWB Contact Office for municipal services.

2.5.2.3 Hamlet of Conklin

The Hamlet of Conklin is located 140 km southeast of Fort McMurray off Highway 881. It is approximately 20 km from the proposed plant site, at the confluence of the Jackfish River and Christina Lake. A majority of the 213 residents of the Hamlet are Metis (RMWB 2003). Community resources include an elementary school, Grades k – 7, church and volunteer Fire Department, and an Adult Learning Centre operated by Keyano College. Health Services are accessed through the Margaret A. Quintal Health Centre in the Hamlet. Although most goods and services come from Fort McMurray, the community hosts two gas bars, a post office and a general store. The Leismer Airstrip (12 km north of Conklin) provides air access to the community. The Christina Lake Lodge provides accommodation and recreational opportunities to residents and visitors (Fort McMurray Tourism, 2004). Accommodation and food services are provided also by two Open Camp facilities in the community.

2.5.2.4 First Nations and Métis

First Nations and Métis within the Resource Use RSA include the Chipewyan Prairie-Dene First Nation (Janvier IR 194, Cowper Lake IR 194A and Winefred Lake IR 194B). The Métis primarily reside in the hamlets of Conklin and Chard. Refer to the Traditional Land Use EIA Section (MEG 2005) for more details.

2.5.3 Access

2.5.3.1 Primary Access

The primary access route into the region is via SH881, which is a paved highway that links the lease area to Fort McMurray and the rest of the provincial highway system (Figure 3-2). The 2003 Annual Average Daily Traffic (AADT) volume along SH881 north and south of Conklin averages 240 vehicles per day, while the AADT north and south of Janvier averages 375 vehicles per day (Alberta Transportation 2004). According to Alberta Transportation statistics, these traffic volumes are down from 1999 and 2000 volumes of 520 for the Conklin area and 485 for the Janvier area..

An all season road, between Conklin and Janvier/Chard provides access into the Project area off of SH881. A similar all season road runs southeast from Conklin to south of Winefred Lake.

2.5.3.2 Railroad

The Athabasca Northern Railway runs five days per week from Boyle to Lac La Biche and from Lac La Biche to Fort McMurray, passing through the community of Conklin and the abandoned hamlet of Chard. This railway is a freight line that serves the Oil Sands Region, shipping petroleum coke, sulphur, pipe, scrap metal, logs and various dimensional loads. The railroad was formally owned by Canadian National Railway, but is now a wholly owned subsidiary of CANDO Contracting Ltd. (Athabasca Northern Railway 2005).

2.5.3.3 Airstrips

Existing airstrips in the vicinity of the lease area include:

- Conklin - a local grass strip and Leismer Airstrip located 12 km north of Conklin;
- Janvier - west of Bohn Lake;
- Cowper - by the fire lookout north of Cowper Lake;

- Grist Lake - at the north end of Grist Lake;
- Kirby – approximately 10 km southeast of Kirby Lake; and
- Primrose – east of Wiau Lake.

An abandoned strip is also located in the Janvier Indian Reserve. See Figure 2-2 for the locations of these airstrips.

2.5.3.4 Linear Corridors

Linear corridors include any access routes and cutlines that could be used by off-road vehicles (e.g., all-terrain vehicles (ATV) and snow machines), although access may not be the primary intention of these corridors. Industry (e.g., oil sands and forestry) has developed a number of linear corridors, such as improved and unimproved industry roads, pipelines, seismic lines and trails. These corridors provide public access to parts of the Resource Use RSA, although some may have access control measures that restrict access to the general public. Lengths of access routes within the Resource Use LSA are provided in Table 2-2. It is important to note that these lengths are a conservative measure of existing access as some of these linear corridors run parallel to each other (e.g., roads and transmission lines) within the same right of way.

Table 2-2 Access within the Resource Use Local Study Area

Access Type	Length (km)
road – gravel	6.4
pipeline	97
seismic lines	380
trails and cutlines	187
transmission lines	2.5
MEG 3D seismic	276
MEG exploratory access	68

2.6 LAND USE DISPOSITIONS

Authority to use public land is granted through dispositions issued under the provisions of the *Public Lands Act.* A disposition is a land use contract that gives specific rights to a land or resource user (e.g., lease, license, or permit) (ASRD 2004). Records for all surface and subsurface dispositions held on crown land are archived in the Land Status Automated System (LSAS). This database is

maintained by the Alberta Department of Energy Information Centre. A description of the various types of surface disposition codes is provided in Table 2-3.

Several land-based projects and activities exist within the Resource Use LSA. Most are related to resource extraction, particularly gas wells, oil sands projects, pipelines, transmission lines, trapping and timber harvesting. Table 2-4 provides a summary of the types of surface dispositions that exist within Resource Use LSA. A detailed list of each specific surface disposition within the Resource Use LSA is provided in Appendix I.

Table 2-3 Surface Activity Codes for Common Surface Dispositions

Surface Activity Code	Disposition Name	Explanation
CNT	consultation notation	a notation on a piece of land indicating department interest
CTL	coniferous timber license	license to harvest coniferous trees; no larger than 30,000 ha; usually issued for five years
CTP	coniferous timber permit	permit to harvest coniferous trees; usually for one year
DTL	deciduous timber license	a license authorizing a quota holder to harvest predominately deciduous timber and minor coniferous timber volumes
DTP	deciduous timber permit	license to harvest deciduous trees; usually for one year
EZE	easement	agreement between landowner and company; usually for power lines or buried cable
FMA	forest management agreement	tenure agreement between a forest company and the government providing the forest company with the right to grow, harvest and remove timber
GRL	grazing lease	lands not suited to cultivation that are leased for grazing purposes; may be leased for up to ten years
GRP	grazing permit	for lands where it is not desired to commit to a long-term lease
LOC	license of occupation	usually for roads, also for launches, erosion control, marsh development, reservoirs
MLL	miscellaneous lease	miscellaneous such as campgrounds, corrals, water wells, hunting/fishing lodges
MSL	mineral surface lease	wellsites, flare stacks, mining areas and some access roads
PIL	pipeline installation lease	sites associated with pipelines including compressor sites, meter sites and heater sites
PLA	pipeline agreement	pipelines, flowlines and cathodic protection lines
PNT	protective notation	area selected by the government for protection

Table 2-3 Surface Activity Codes for Common Surface Dispositions (continued)

Surface Activity Code	Disposition Name	Explanation
RIA	range improvement agreement	occurs in association with a grazing lease; government approval for the licensee to do range improvement such as clearing
RRD	registered roadway	a developed roadway registered with ASRD
SML	surface material lease	permits surface extraction activities such as sand, gravel, peat and topsoil extraction over an extended period of time
SMP	surface materials permit	similar to sml but for short duration
SME	surface materials exploration	for exploring potential for mining surface materials
TFA	temporary field authorization	issued for either site preparation or additional workspace, in which case it must be associated with an approved activity
TPA	trapping area	indication of a trapline
WRO	wild rice operation	approval for a wild rice operation

Source: ASRD 2004.

Table 2-4 Summary of surface dispositions within the Resource Use Local Study Area

Surface Disposition	Disposition Holder
CNT	Beaver Lake Lac La Biche, Land and Forest Service
EZE	Altagas Ltd.
FMA	Alberta Pacific Forest Industries Inc.
LOC	Talisman Energy Inc. Paramount Energy Operating Corp. Stylus Exploration Inc. Altagas Ltd. MEG Energy Corp. Devon Canada Corp. Nova Gas Transmission Ltd. Petro Canada Paramount Resources Ltd. Canadian Natural Resources Limited Devon ARL Corporation Superman Resources Inc.
MSL	Paramount Energy Operating Corp. Stylus Exploration Inc. Petro Canada

Table 2-4 Summary of surface dispositions within the Resource Use Local Study Area (continued)

Surface Disposition	Disposition Holder
	MEG Energy Corp. Paramount Resources Ltd. Canadian Natural Resources Limited Devon ARL Corporation BP Canada Energy Company Devon Canada Corporation Superman Resources Inc.
PIL	Altagas Ltd. Nova Gas Transmission Ltd. Devon Canada Corporation
PLA	Altagas Ltd. Talisman Energy Inc. Paramount Resources Ltd. Nova Gas Transmission Ltd. Paramount Energy Operating Corp. Enbridge Pipelines (Athabasca) Inc. Primewest Energy Ltd. Canadian Natural Resources Limited
PLA (cont.)	Devon Canada Corporation BP Canada Energy Company Superman Resources Inc.
PNT	Beaver Lake Lac La Biche, Land and Forest Service - Christina Lake Recreation Potential
RRD	Alberta Transportation
SME	297917 Alberta Ltd.
TPA	Connie Down-Cicoria Stuart Janvier Donald Thom Gary York
TFA	Atco Electric Ltd.

3 EXISTING CONDITIONS

3.1 AGGREGATE AND OTHER SURFACE MINERALS

Alberta Sustainable Resource Development (ASRD) administers and manages sand and gravel resources on public lands. Recently, the Athabasca Regional Issues Working Group (ARIWG) conducted a survey to establish existing supply and annual demand for aggregate in the RMWB. According to this survey, there is a total supply of road base aggregate of 1,009,218 m^3 with an annual demand of 290,159 m^3 in the Project vicinity (Table 3-1).

Gravel for the Project will be supplied from an existing pit that is owned by the Multi Cultural Alliance Corp. This pit is located along the Altagas Road, approximately 14 km before the plant gate. MEG has been granted sole access to this pit, which has sufficient supply for the CLRP. Five new borrow pits will be developed to supply clay and sand for the Project. Of the five new borrow pits, three are located within the LSA, one is located adjacent to the LSA border and one is located outside the LSA near five of the source wells.

Within the Resource Use RSA there are ten surface material exploration (SME) dispositions, one holder of a surface material license (SMC) and seven surface material lease (SML) holders. There is only one SME disposition in the LSA, held by 297917 Alberta Ltd., located in the southeast portion of the lease area in SW¼, Township 76, Range 4, W4M.

3.2 AGRICULTURE

Agricultural operations are not typically found within the Green Area of Alberta, but rather further south in the White Area (see Section 2.2 for area definitions). Two agricultural activities are located within the Resource Use RSA; wild rice operations and grazing leases.

3.2.1 Wild Rice Operations

Two wild rice operations, owned by Joe Hoffman (SE¼ 23 and NE¼ 23, Township 74, Range 4, W4M) and Joel Clark (SW¼ 01 and NW¼ 01, Township 77, Range 7, W4M; Section 2, Township 77, Range 7, W4M; and SE¼ 3 and NE¼ 3, Township 77, Range 7, W4M) are located within the Resource Use RSA. These operators hold a 16 year and a six year license, respectively, both of which expire at the end of October 2005.

Table 3-1 Aggregate Resources in the Regional Municipality of Wood Buffalo

Location	Aggregate Supply Status[a]			Estimated Remaining Supply (years)[b]
	Aggregate Type	Total Supply (m^3)	Annual Demand (m^3)	
Regional Municipality of Wood Buffalo	Road Base	32,709,218	6,834,659	4.8
	Concrete[c]	4,509,218	406,979	11.1
North of Fort McMurray and East of the Athabasca River	Road Base	29,200,000	4,650,000	6.3
	Concrete[c]	1,000,000	0	0
North of Fort McMurray and West of the Athabasca River	Road Base	2,500,000	1,894,500	1.3
	Concrete[c]	2,500,000	205,000	12.2
South of Fort McMurray	Road Base	1,009,218	290,159	3.5
	Concrete[c]	1,009,218	201,979	5.0

NOTES:

(a) New aggregate supplies discovered post-2002 are not included.

(b) Birch Mountain Resources calculation of remaining supply.

(c) Concrete aggregate refers to the coarse component of concrete aggregate only.

SOURCE: ARIWG 2003, Birch Mountain Resources 2004

3.2.2 Grazing

More than 450,000 ha of rangeland exist in the forests of Alberta's Green Area. These rangelands provide natural grazing areas for wildlife and domestic livestock. A considerable amount of the grazing in the Green Area occurs on provincial grazing reserves administered under the Public Lands Act and managed by ASRD (ASRD 2005). Individuals or corporations may hold grazing leases, permits, licenses or allotments. Two grazing leases are located within the Resource Use RSA. Alvina Laboucane holds the lease located in 79-06-W4 and John Stepanowich holds the lease located in 79-05-W4 and 80-05-W4.

3.3 FORESTRY

3.3.1 Timber Management

Commercial timber harvesting is an important resource use in the RMWB. Alberta-Pacific Forest Industries Inc. (Al-Pac) holds the forest management agreement (FMA) with the Crown for commercial timber management in the region. The FMA is further subdivided into Forest Management Units (FMUs). The project lease area is located within FMU L11J.

Under the terms of the FMA, Al-Pac must outline a long-term management plan, with associated Annual Allowable Cut (AAC), which is approved by the Crown. Al-Pac principally harvests deciduous trees (mostly aspen and balsam poplar), although they also own the rights to all conifer trees in FMU L11J. Al-Pac's main planning document is their General Development Plan which indicates harvesting activity over the next five years. This document is submitted annually with their Annual Operating Plan. The AAC for Zone A, which contains FMU L11, is 330,660 m^3 per year of deciduous forest and 159,000 m^3 per year of coniferous forest (Al-Pac 2000).

3.3.2 Timber Rights

Al-Pac has the rights to all deciduous forest resources within FMU L11J. Under the FMA, Al-Pac manages coniferous timber allocations. These are split between timber quota holders and miscellaneous timber use (MTU) operators. Aside from Al-Pac, coniferous timber permits in FMU L11J are held by Edward Bobocel, Randolph Onciul, Wayne Onciul, Lawrence Huser, Carrier Janvier Forest Products and an unnamed permit holder. Harvested deciduous timber is used to supply a bleached draft pulp mill located near the Athabasca River, approximately 69 km northwest of Lac La Biche.

3.3.3 Timber Supply

Timber productivity rating is the potential timber productivity of forest land and nonforested vegetated land based on the height and age of the dominant species. This rating reflects factors affecting tree growth such as soil, topography, climate, elevation and moisture (AEP 1996). In the AVI system, stands are given a timber productivity rating of good, moderate, fair or unproductive. Timber productivity ratings (TPR) are assigned to the landbase and are one factor in calculating AAC for the FMU. The Terrestrial Resources LSA contains approximately 3,549 ha of productive forests. Refer to the Forestry Environmental Setting Report (Golder 2005) for the details of timber supply in the Terrestrial Resources LSA.

3.3.4 Merchantable Timber

Merchantable timber volumes are estimated using historical AVI data for the Central Mixedwood Subregion and provides average coniferous, deciduous and total volume factors (e.g., height and crown closure) for coniferous, deciduous and mixedwood community types. In the Terrestrial Resources LSA, the merchantable timber volume of productive forest stands is 6,542 m^3 of deciduous timber and 49,130 m^3 of coniferous timber.

3.4 PROTECTED AREAS

In Alberta, areas of particular ecological and recreational importance are designated as one of the following (Alberta Community Development 2004):

- ecological reserves;
- natural areas;
- provincial parks;
- wildland parks;
- wilderness areas; and
- recreation areas or heritage rangelands.

The designation depends on the usage goals and protective status intended for the area. These areas are administered and protected by Alberta Community Development. There are no provincially designated protected areas located within the Resource Use RSA.

3.4.1 Heritage Rivers

The Canadian Heritage Rivers System (CHRS) was developed to manage Canada's outstanding rivers and to help conserve their natural, cultural and recreation values over the long term (CHRS 2004). There are no heritage rivers identified in the Resource Use RSA. In 2004, however, the northern portion of Christina River, was designated as a Heritage River under the CHRS along with the Alberta section of the Clearwater River (CHRS 2004). This section of the river lies southeast of Fort McMurray, approximately 35 km south from its confluence with the Clearwater River.

3.4.2 Environmentally Significant Areas

Environmentally Significant Areas (ESA) are important, unique and often sensitive natural features and landscapes (Geowest 1996). They are defined as landscape elements or places which are vital to the long-term maintenance of biological diversity, soil, water, or other natural process, both on-site and in a regional context (Jennings and Reganold 1991 and Geowest 1996). Potential sites were evaluated for their environmental significance and ranked for their significance (e.g., regional, provincial). Unlike parks and protected areas, environmentally significant areas are not protected by legislation.

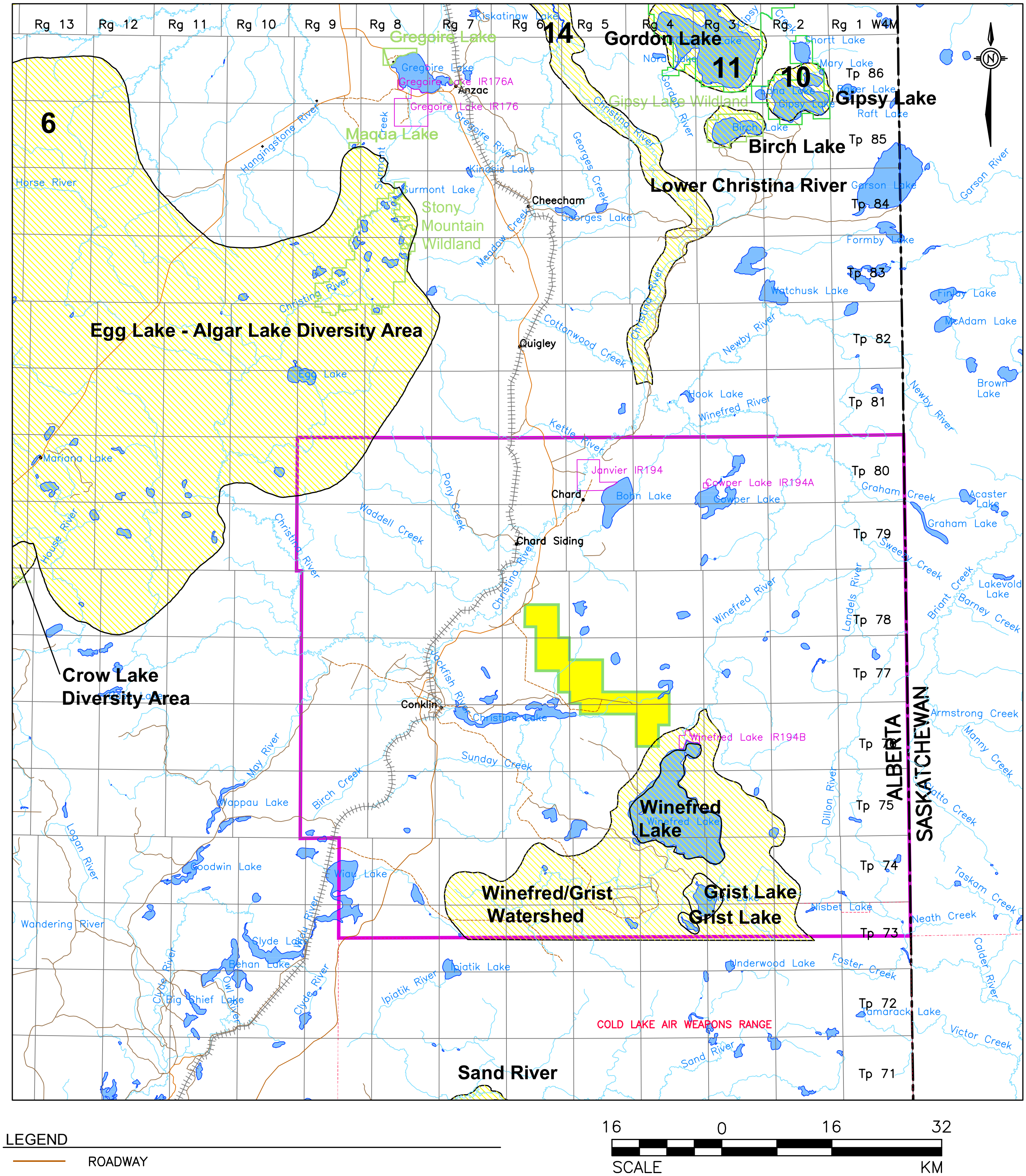
Three ESAs are located within the Resource Use RSA and one overlaps the northwest corner of the RSA (see Table 3-2). There are no ESAs identified in the Resource Use LSA. Figure 3-1 shows the locations of ESAs and protected areas in relation to the Resource Use LSA and RSA.

Table 3-2 Environmentally Significant Areas within the Resource Use Regional Study Area

Name	Size (ha)	Location	Significance	Features
Grist Lake	3,218	74-04-W4M	Provincial	Important sport fishery Hydrologically important lake One of the most productive fisheries in the boreal forest of Alberta
Winefred Lake	12,338	75- 04-W4M	Provincial	Trophy fishing lake Important sport fishery (walleye, lake whitefish, cisco, northern pike, yellow perch and burbot) Bald eagle nesting area Moulting and staging waterfowl Double-crested cormorant and great blue heron nesting
Winefred/Grist Watershed	77,192	74-04-W4M	Provincial	Important sport and trophy fishing Important river otter production River otters, double-crested cormorants, great blue herons and bald eagles present
Egg Lake-Algar Lake Diversity Area	495,231	80-09-W4M	Provincial	Important caribou area Significant patterned fen High vegetation diversity One of the most diverse and relatively intact Boreal Forest landscapes in Alberta

3.4.3 Significant Natural Features

Significant natural areas are important natural features or landscapes that meet a series of established criteria (Westworth & Associates 1990). Potential sites were then evaluated for their significance using eight criteria and then categorized into Regional, Provincial, National or International significance classes. According to Westworth & Associates (1990), there are twenty identified significant natural features within the Resource Use RSA, one of which (Christina Lake Caribou Area) overlaps the Resource Use LSA (see Table 3-3).



R:\CAD\2004\1322-EA\1334\04-1334-001 MEG\Stand Alones\Resource Use\Fig 3-1 ENVIRONMENTALLY SIGNIFICANT_PROTECTED AREAS.dwg Jul 27, 2005 - 4:35pm

LEGEND

- ROADWAY
- RAILWAY
- MEG OIL SANDS LEASE
- REGIONAL STUDY AREA
- ENVIRONMENTALLY SIGNIFICANT AREA (REFER TO TABLE X-xx FOR NUMBER DESIGNATION)
- PROTECTED AREA

REFERENCE

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

PROJECT

CHRISTINA LAKE REGIONAL PROJECT

TITLE

ENVIRONMENTALLY SIGNIFICANT AREAS AND PROTECTED AREAS

MEG ENERGY CORP.

PROJECT 04-1334-001.8510		
DESIGN	AP	14/01/05
CADD	PSR	25/01/05
CHECK	AP	25/01/05
REVIEW	TC	25/01/05

FILE No. Env. Significant Areas

SCALE AS SHOWN REV. 0

FIGURE: 3-1

Table 3-3 Significant Natural Areas within the Resource Use Regional Study Area

Name	Location	Significance	Features
Christina Lake Caribou Area	77-05-W4M	Provincial	Important caribou area Important furbearer habitat
Wiau Caribou Area	74-09-W4M	Provincial	Important caribou area
Christina Lake/Jackfish River	76-06-W4M	Regional	Important sport and domestic fishery Important waterfowl nesting area Significant woodland caribou habitat
Kirby Lake	75-05-W4M	Regional	Important sport and domestic fishery Hydrologically important lake
Kettle River	80-05-W4M	Regional	Wildlife movement corridor Important sport fishery
Cowper Lake	80-03-W4M	Regional	Important waterfowl nesting area Important sport fishery Hydrologically important lake
Bohn Lake	80-05-W4M	Regional	Important waterfowl nesting area Important sport fish area Hydrologically important lake
Wiau Lake	74-09-W4M	Regional	Important waterfowl nesting area Important osprey nesting area Hydrologically important lake
Name	Location	Significance	Features
Dillon River	75-02-W4M	Regional	Hydrologically important river Wildlife movement corridor High wildlife diversity
Christina Uplands Moose Area	78-08-W4M	Regional	Important moose habitat High landform diversity High vegetation diversity
Christina River (middle)	79-06-W4M	Regional	Important sport fishery Significant meander reach Wildlife movement corridor
Landels River	78-01-W4M	Regional	Wildlife movement corridor Important fur-bearing habitat Important sport fishery
Landels River Diversity Area	77-02-W4M	Regional	High landform diversity High vegetation diversity High wildlife diversity
Edwards Lake	75-09-W4M	Regional	Important sport fishery Important commercial/domestic fishery Hydrologically important lake

Table 3-3 Significant Natural Areas within the Resource Use Regional Study Area (continued)

Name	Location	Significance	Features
Glover Lake	75-09-W4M	Regional	Important sport fishery Important commercial/domestic fishery Hydrologically important lake
Royemma Lake	75-01-W4M	Regional	Important sport fishery Important commercial/domestic fishery Hydrologically important lake
Unnamed Lake	80-03-W4M	Regional	Important sport fishery Hydrologically important lake
Unnamed (Sand) River	74-04-W4M	Regional	Important sport fishery Important otter habitat Hydrologically important creek
Christina River Peatlands	80-09-W4M	Regional	Significant patterned bog Significant patterned fen High landform diversity
Jumbo Lake	73-04-W4M	Regional	Important sport fishery Important commercial/domestic fishery Hydrologically important lake

3.4.4 Wildlife Protection Areas

In Alberta's regional caribou land-use guidelines (Boreal Caribou Committee (BCC) 2001), caribou management zones have been established based on identification of suitable habitat and available information on woodland caribou distribution (ASRD 2005b). In general, woodland caribou populations are declining in the province (McLoughlin et al. 2003). As a result, resource extraction companies (e.g., petroleum and natural gas, timber, peat mines) are asked to follow specific land-use guidelines for operations within caribou management zones. Since the Project is located within the Christina Caribou Area, MEG has developed a Caribou Protection Plan (MEG 2004) to be employed during construction, operations and reclamation of the Project that outlines the caribou conservation measures and general mitigation plans to conserve caribou habitat. A Caribou Protection Plan Strategy will also be developed as an appendix to the Wildlife Assessment that will show committment to caribou habitat protection throughout the life of the project.

3.4.5 Other

There are no Special Places 2000 Program Sites located within the Resource Use RSA. The closest sites are Whitemud Falls Wildland, Gipsy Lake Wildland and Stony Mountain Wildland, all located north of the RSA close to Ft. McMurray (Alberta Community Development 2004b).

3.5 BERRY PICKING

Berry picking is an important activity for First Nations people, but it is also carried out for non-traditional purposes. Information regarding specific areas and types of plant collection by First Nations is detailed in the Traditional Land Use Study EIA section (MEG 2005). Information on berry habitat is available from the vegetation component of the Terrestrial Resources ESR and is based on ecosite phases. Typical berry picking target species are high and low bush cranberries and blueberries. Table 3-4 provides a list of the ecosite phases that support berries, as well as the berry species associated with each ecosite phase, and an indication of the percent coverage of these vegetation types within the lease area.

Table 3-4 Percentage of Berry Habitat by Ecosite Phase

Ecosite Phase	Area (ha)	Percent of Lease Area (%)
Blueberry *(Vaccinium myrtilloides)*		
a1	34	1
b1	15	<1
b3	7	<1
Cranberry *(Viburnum edule)*		
d1	14	<1
d2	6	<1
Strawberry *(Fragaria virginiana)*		
b1	15	<1
b3	7	<1

3.6 FISHING

3.6.1 Commercial

Commercial fishing for lake whitefish occurred in Christina Lake up to 1982, and then again between 1987 and 1989 (AEP 1991 and Golder 1998). No commercial fisheries presently operate at Christina Lake.

Three fishing lodges are located within the vicinity of the Project:

- Christina Lake Lodge is located at Conklin and offers a full service main lodge, lakefront cabins, RV and tent camping and boat rentals. Other activities at the lodge include canoe trips, hiking, watersports, hunting, ATV trails and snowmobiling (Fort McMurray Tourism 2004).
- Winefred Lake Lodge, situated on a quiet, sandy bay along the southeast shore of Winefred Lake, offers fishing for trophy-sized walleye and northern pike. They provide full-service lodge, cabins, wall tent camping, boat rentals and guided fishing and hunting (Winefred Lake Lodge 2004).
- Grist Haven Lodge is located at the south end of Grist Lake, which is accessible by road or air. The full-service lodge is open year-round for fishing for lake trout and northern pike and offers cabins, boat rentals, ice fishing, snowmobiling and cross-country skiing. RV camping is also located at north end of Grist Lake (Grist Haven Lodge 2004).

3.6.2 Sports Fishing

ASRD regulates all fishing and angling within the province. In order to better manage fisheries resources, the province has been divided into three ecosystem-based fish management zones (Eastern Slopes, the Parkland-Prairie and the Northern Boreal). Each zone is divided into Watershed Units based on height of land dividing two watersheds, which expands on specific regulations established to meet water body and fish population needs (Alberta Outdoorsman 2004).

The Project is located within Zone 3 (Northern Boreal) and watershed unit NB4. Within this zone, many streams are from muskeg drainages and are tributaries within larger watersheds that, in turn, are part of the major drainage basins of the Athabasca, Peace and Hay rivers.

Popular game fish of the zone are yellow perch, northern pike, walleye, lake whitefish, Arctic grayling and lake trout (Alberta Outdoorsman 2004). There are no lakes or fish-bearing streams within the Aquatic Resources LSA. Within the Aquatic Resources RSA however, sport fishing occurs at 13 lakes and along four rivers. The main fishing locations are at Christina, Winefred and Grist lakes and along the Christina River. Refer to the Aquatic Resources Environmental Setting

Report (Golder 2005b) for information of fish species abundance and habitat potential in the region. Table 3-5 lists all the fishing locations within the Aquatic Resources RSA and describes the fishing season, species limits and access for each location. In an effort to improve Alberta's fisheries, ASRD implemented barbless fishing in all lakes and rivers within the province as of April 1, 2004 (ASRD 2004c).

Table 3-5 Fishing Locations within the Aquatic Resources Regional Study Area

Location	Fishing Season	Fish Species (limits)	Access
Base Lake	May 21 to March 31	Pike (3 >63 cm), perch (15), whitefish (10)	Dry-weather road (bush road or seismic line)
Christina Lake – Sawbones Bay	June 1 to March 15	Walleye[(a)] (0), pike (3 >63 cm), perch (15), lake whitefish (10), burbot (10)	All-weather road, boat
Christina Lake – remainder of lake	May 21 to March 31	Walleye[(a)] (0), pike (3 >63 cm), perch (15), lake whitefish (10), burbot (10)	All-weather road, boat
Cowper Lake	May 21 to March 31	Pike (3 >63 cm), perch (5)	Winter or ATV only
Edwards Lake	May 21 to March 31	Pike (3 >63 cm), lake whitefish (10), burbot (10)	Gravel road
Glover Lake	May 21 to March 31	Pike (3 >63 cm), lake whitefish (10), burbot (10)	Dry-weather road
Grist Lake	May 21 to March 31	Lake trout (2 >65 cm), pike 3 >63 cm), lake whitefish (10)	Winter road
Hook (Kimowin) Lake	May 21 to March 31	Pike (3), perch (5, only 1 >30 cm)	Air access in summer, snowmobile access via Lac La Loche winter road in winter
Jumbo Lake	May 21 to March 31	Pike (3 >63 cm), lake whitefish (10)	Winter road to Grist Lake, then travel on seismic lines
Kirby Lake	May 21 to March 31	Pike (3 >63 cm), lake whitefish (10), perch (15)	Winter road, float plane
Royemma Lake	May 21 to March 31	Pike (3 >63 cm), lake whitefish (10), perch (15)	Winter or air access only
Wappau Lake	May 21 to March 31	Walleye (3 >50 cm), pike (3 >63 cm), perch (15)	Gravel road
Watchusk Lake (south lake only)	May 21 to March 31	Pike (3 >63 cm), perch (15)	Air access only
Winefred Lake	May 21 to March 31	Walleye[(b)] (2 >50 cm), pike (2 >70 cm), perch (15), lake whitefish (10), burbot (10)	Dry weather and winter road
Christina River	June 1 to October 31	Arctic grayling (2 >35 cm, 0 Sept. 1 to Oct. 31), mountain whitefish (5 >30 cm), walleye (3 >50 cm), pike (3 >63 cm), burbot (10).	Parallels Hwy 881 north of Conklin
Jackfish River	June 1 to October 31	Walleye, pike, arctic grayling	Leaves north end of Christina Lake, crossed by Hwy 881
May River	June 1 to October 31	Pike, grayling	Joins Christina River northwest of Conklin on Highway 881. Access via gravel road.
Winefred River	June 1 to October 31	Walleye, pike, perch, arctic grayling	Dry-weather road from Conklin

NOTES:
(a) walleye population has collapsed, zero limit.
(b) walleye population is vulnerable, limit of 2 >50 cm.

SOURCE: Alberta Outdoorsman 2004.

3.6.3 Traditional Fishery

One domestic (traditional) fishing license is usually issued on Christina Lake each year (AEP 1991 and Golder 1998). Refer to the Traditional Land Use EIA Section (MEG 2005) for more details on traditional fishing.

3.7 HUNTING

Hunting in Alberta is regulated through ASRD and is managed through the use of Wildlife Management Units (WMU). There are six WMUs located within the Terrestrial Resources RSA (WMU512, 515, 517, 519, 529 and 726), one of which (WMU517) overlaps the Terrestrial Resources LSA (Figure 3-2). WMU 726 encompasses the Cold Lake Air Weapons Range and no hunting is allowed within this WMU (M. Brick, pers. comm.). A survey conducted by Golder Associates Ltd. (2001) among local residents in the Athabasca Oil Sands Region, indicated that the preferred species for hunting are moose and deer, followed by grouse, black bear, duck, partridge, goose and ptarmigan. Refer to the Wildlife Environmental Setting Report (Golder 2005c) for information on species abundance and distribution and habitat potential within the Terrestrial Resources RSA.

Numerous species of big game, upland birds and waterfowl have open seasons in the six WMUs covered by the Terrestrial Resources RSA. Table 3-6 lists these species and their hunting season.

Big game harvest statistics for the period from 1995 to 2001 for WMU 517 are provided in Table 3-7. Games bird harvest statistics for the same period are provided in Table 3-8. These numbers do not include aboriginal harvest. Hunting statistics for all six WMUs overlapping the terrestrial RSA are provided in Appendix II (big game) and Appendix III (game birds).

According to the Alberta Professional Outfitters Association for Guiding/Outfitting, there are 33 guide/outfitters that operate within the six WMUs overlapping the terrestrial RSA, with a total of 551 allocations/privileges (Brick 2005, pers. comm.). Five of these guide/outfitters operate in WMU 517 with a total of 102 allocations/privileges. These outfitters have allocations for moose, white-tailed deer, mule deer and black bear.

Table 3-6 2004–2005 Hunting Seasons for Wildlife Management Units within the Terrestrial Resources Regional Study Area

Species	Type	Season	
		Archery	General
mule Deer	antlered	August 25-31	September 1 – November 30
white-tailed deer	antlered and antlerless	August 25-31	September 1 – November 30
moose	antlered	August 25-31	September 1 – October 31, November 1 – November 30
black bear	fall 2004	August 25-31	September 1 – November 30
	spring 2005		April 17 - June 15
ruffed and spruce grouse	n/a	None	September 1 – November 30
sharp-tailed grouse	n/a	None	September 1 – November 30
ducks	n/a	None	September 1 – December 16
coots, common Snipe	n/a	None	September 1 – December 16
white-fronted and Canada geese	n/a	None	September 1 – December 16
snow and Ross' geese	n/a	None	September 1 – December 16

SOURCE: Alberta Outdoorsmen 2004.

.

Table 3-7 Harvest and Effort Hunting Data by Resident Hunters for Selected Big Game Species for Wildlife Management Unit 517 (1995–2001)

Species	Year	WMU	Estimated Hunters	Estimated Total Harvest	Percent Hunter Success	Hunter Days/ Animal
black bear	2001	517	46	4	9%	77.8
	2000	517	52	15	29%	15.7
	1999	517	34	13	38%	18.6
	1998	517	38	10	26%	28.8
	1996	517	17	4	24%	27.8
	1995	517	12	8	67%	8.5
moose	2001	517	297	87	28%	23.0
	2000	517	173	33	19%	26.8
	1999	517	260	63	24%	19.8
	1998	517	159	58	36%	15.5
	1996	517	167	33	17%	32.3
	1995	517	189	38	20%	32.7
mule deer	2001	517	20	0	0%	0.0
	2000	517	32	0	0%	0.0
	1999	517	24	0	0%	0.0

Table 3-7 Harvest and Effort Hunting Data by Resident Hunters for Selected Big Game Species for Wildlife Management Unit 517 (1995–2001) (continued)

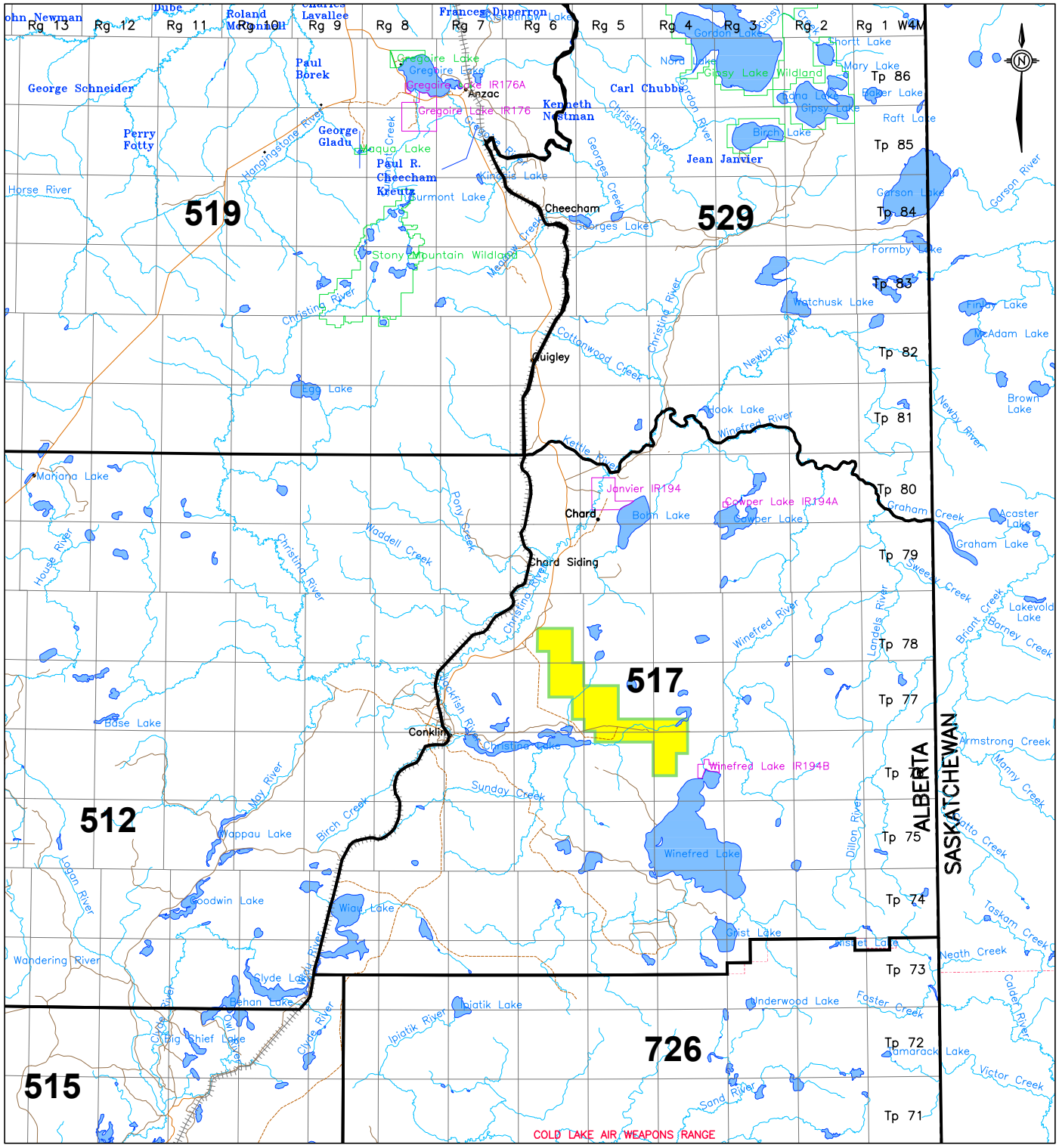
Species	Year	WMU	Estimated Hunters	Estimated Total Harvest	Percent Hunter Success	Hunter Days/ Animal
	1998	517	5	0	0%	0.0
	1996	517	5	0	0%	0.0
	1995	517	23	0	0%	0.0
white-tailed deer	2001	517	116	58	50%	8.1
	2000	517	152	61	40%	10.7
	1999	517	85	37	44%	21.1
	1998	517	93	27	29%	21.2
	1996	517	86	19	22%	21.8
	1995	517	151	38	25%	21.0

SOURCE: ASRD 2005c.

Table 3-8 Harvest and Effort Hunting Data by Resident Hunters for Selected Game Bird Species by Wildlife Management Unit (1995–2000)

Species	Year	WMU	Estimated Hunters	Estimated Harvest	Birds Per Day
ducks	1995	517	n/a	n/a	n/a
geese	1995	517	n/a	n/a	n/a
ruffed grouse	1995	517	96	218	0.2
sharp-tailed grouse	1995	517	n/a	n/a	n/a
	2000	517	n/a	n/a	n/a
spruce grouse	1995	517	42	162	0.2
	2000	517	17	17	0.1

SOURCE: ASRD 2005c.



LEGEND

- ROADWAY
- RAILWAY
- MEG OIL SANDS LEASE
- WILDLIFE MANAGEMENT UNIT BOUNDARY
- PROTECTED AREA

REFERENCE

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

PROJECT

CHRISTINA LAKE REGIONAL PROJECT

TITLE

WILDLIFE MANAGEMENT UNITS

MEG ENERGY CORP.

PROJECT 04-1334-001.8510			FILE No. Wildlife Manage Units	
DESIGN	AP	14/01/05	SCALE AS SHOWN	REV. 0
CADD	JEF	02/02/05	FIGURE: 3-2	
CHECK	AP	02/02/05		
REVIEW	TC	02/02/05		

R:\CAD\2004\1322-EA\1334\04-1334-001 MEG\Stand Alones\Resource Use\Fig 3-2 Wildlife Management Units.dwg Jul 27, 2005 - 4:38pm

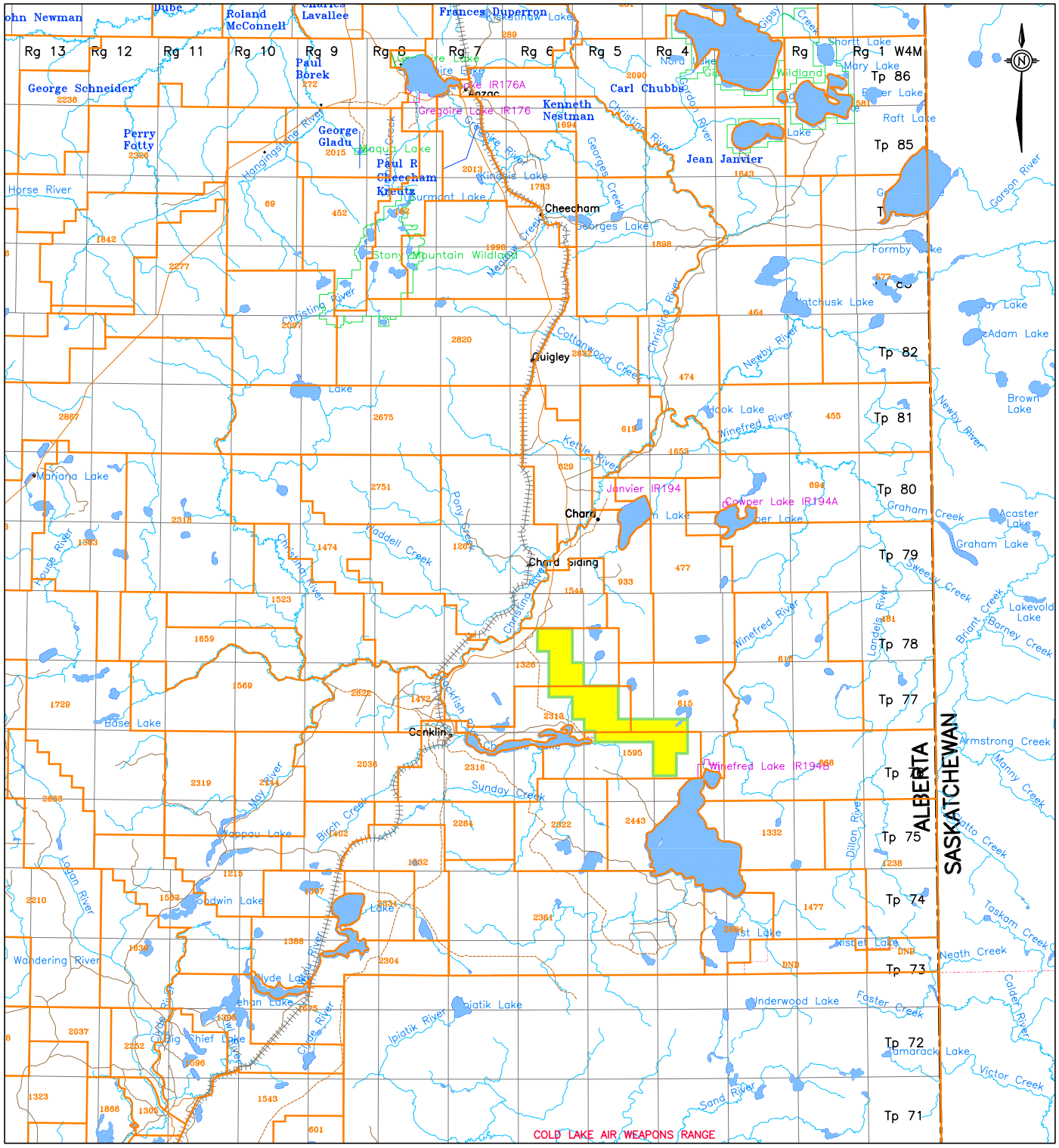
Trapping

Trapping in Alberta is governed through the use of a registered trapline system. Under this system, trapline owners are licensed to harvest in a registered fur management area (RFMA). There are approximately 1700 RFMAs in Alberta. Owners are requested to provide yearly harvest data to ASRD for harvest management and monitoring. Harvest statistics are only recorded for the RFMA holder and do not reflect any harvest values from leasees of the RFMA (Bev Fetter, pers. comm.).

Revenue from all RFMAs in the province has shown a long-term (1977 to 2001) decline that corresponds to a similar decline in both harvests and pelt prices over this same period. Trappers in the region have indicated that lower fur prices have made earning a living by trapping very difficult, thus many trappers have entered other industries. Reasons attributed to the decrease in the value of pelts include decreasing demand for furs and decreasing quality of furs taken from traplines in the region (Golder 2001).

There are 66 RFMA holders in the Terrestrial Resources RSA, four of which overlap the Project area (see Table 3-9 and Figure 3-3). Species that are typically trapped include large carnivores, semi-aquatic fur-bearers, small mammals and mustelids (Table 3-10). Harvest data is protected under the *Freedom of Information and Privacy Act* (FOIP), therefore the ASRD can only release the information after receiving permission from the RFMA license holder. Information release forms were only received for two RFMAs (#1326 and #1595). Total harvest for these two RFMAs for the period from 1994 to 2004 is provided in Table 3-11. It is difficult to establish harvest trends from only two RFMAs, but generally harvest levels for most species appear to have decreased over the past ten years. Provincial fur prices over the time period from 1993 to 2003 are provided in Table 3-12. Over this period, a majority of pelt prices have decreased, with only wolf, otter, lynx and coyote pelt prices showing an increase.

Trapping statistics were not available for the remaining 62 RFMA in the Terrestrial Resources RSA. Harvests from private license holders, residents, Métis and First Nations trappers are not reflected in the statistics.



LEGEND

- ROADWAY
- RAILWAY
- MEG OIL SANDS LEASE
- 1323 REGISTERED FUR MANAGEMENT AREA
- PROTECTED AREA

REFERENCE

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

PROJECT

CHRISTINA LAKE REGIONAL PROJECT

TITLE

REGISTERED FUR MANAGEMENT AREAS IN THE TERRESTRIAL RSA

MEG ENERGY CORP.

PROJECT 04-1334-001.8510			FILE No.Reg. Fur Management	
DESIGN	AP	14/01/05	SCALE AS SHOWN	REV. 0
CADD	JEF	02/02/05	FIGURE: 3-3	
CHECK	AP	02/02/05		
REVIEW	TC	02/02/05		

R:\CAD\2004\1322-EA\1334\04-1334-001 MEG\Stand Alones\Resource Use\Fig 3-3 Registered_Fur_Management.dwg Jul 27, 2005 - 4:42pm

Table 3-9 Registered Fur Management Area Owners Overlapping the Project Area

RFMA Number	RFMA License Holder
615	Stuart Janvier
1326	Gary York
1595	Connie Down-Cicoria
2313	Donald Thom

NOTES: Refer to Figure 4-3 for RFMA locations.

Table 3-10 Species Harvested by the Trapping Industry

Type of Furbearer	Species
Large carnivores	Black bear, wolf
Medium mammals	Coyote, lynx, fox
Semi-aquatic furbearers	Beaver, muskrat, otter
Small mammals	Squirrel
Mustelids	Weasel, mink, fisher, marten

Table 3-11 Total Harvest by Registered Fur Management Area between 1994 and 2004

RFMA	Beaver	Black bear	Coyote	Fisher	Fox	Lynx	Marten	Mink	Muskrat	Otter	Squirrel	Weasel	Wolf
1326	422	44	246	106	29	107	99	47	179	63	1800	313	51
1595	64	20	131	61	18	61	0	21	56	53	125	51	16
615*													
2313*													

SOURCE: ASRD 1993-2004.

* permission to release data for RFMA #615 and #2313 has not yet been received.

Table 3-12 Average Provincial Fur Prices between 1993 and 2003

Species	1993-1994 ($)	1994-1995 ($)	1995-1996 ($)	1996-1997 ($)	1997-1998 ($)	1998-1999 ($)	1999-2000 ($)	2000-2001 ($)	2001-2002 ($)	2002-2003 ($)	Average ($)
beaver	33	28	35	37	31	32	24	26	25	20	29
black bear	86	84	90	96	86	103	197	163	136	74	112
coyote	45	27	36	39	32	40	36	29	40	58	38
fisher	40	44	44	61	46	33	28	39	45	36	42
fox[(a)]	23	26	27	21	21	18	22	26	37	49	27
lynx	122	98	106	115	92	87	65	91	127	166	107
marten	64	47	58	60	44	36	42	43	56	48	50
mink	28	20	30	23	21	14	11	16	19	17	20
muskrat	3	2	5	4	3	2	3	3	3	2	3
otter	111	69	64	62	101	56	113	117	155	197	105
squirrel	1	1	1	3	1	1	1	2	2	n/a	1
weasel	6	4	8	7	5	3	4	6	5	5	5
wolf	93	65	66	109	75	136	100	114	114	117	99

NOTES:

[(a)] fox pelt prices are an average of silver, cross, red and arctic (if available).

dollar value rounded to nearest dollar.

n/a not applicable.

SOURCE: From ASRD (1993-2004).

3.8 TOURISM AND RECREATION (NON-CONSUMPTIVE)

The region surrounding the Project supports little formal recreation or tourism. Fort McMurray to the north, Cold Lake to the south and Lac La Biche to the southwest provide more formal recreational and tourism opportunities.

Locally, Christina Lake is the major recreational attraction. Common recreational pursuits include swimming, boating and fishing. Two commercial operators are located on Christina Lake: Christina Lake Recreational Resort and Christina Lake Lodge. Christina Lake Recreational Resort is located 2 km east of Conklin and offers 100 non-serviced campground sites, cabins, a boat launch and boat rentals (Discover Alberta 2004). Christina Lake Lodge supports a full service main lodge, lakefront log cabins and R.V. and tent camping (no hookups). Typical recreational activities at the lodge include fishing for walleye and northern pike, canoe trips, water sports, hiking, fall hunting, ATV trails and snowmobiling (Fort McMurray Tourism 2004). An active Protective Notice (PNT) has been issued by the Beaver Lake/Lac La Biche office of the Land and Forest Service for recreational potential at Christina Lake in Section 6, Township

77, Range 5, W4M. Agency consent is still required before this area can be established as a park or formal recreational area.

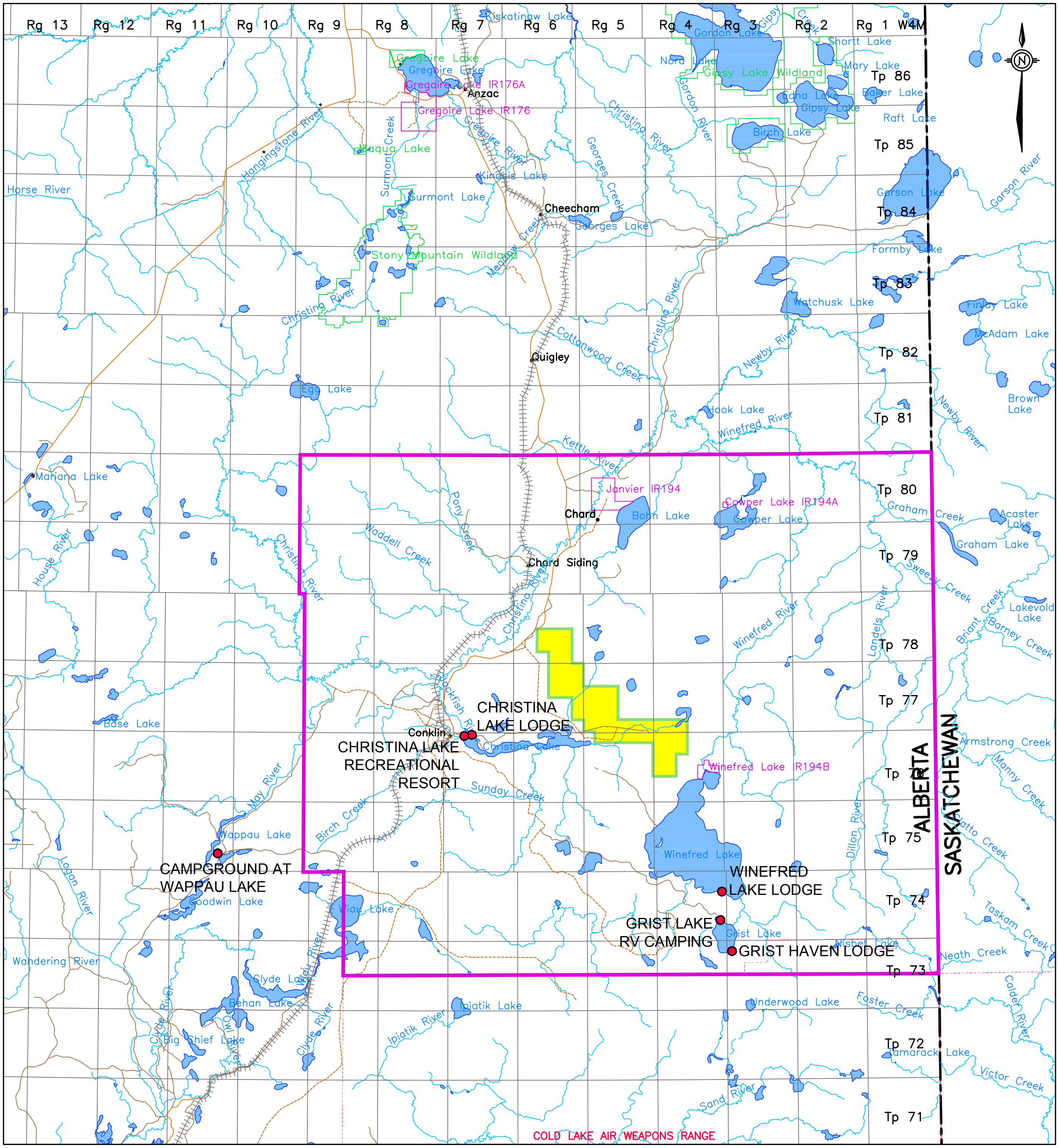
Two other lodges are located south of Christina Lake: Winefred Lake and Grist Haven lodges (see section 3.5.1 for description). There is also a campground located just outside the Resource Use RSA at Wappau Lake, to the southwest of Christina Lake. Figure 3-4 depicts the recreational areas within the Resource Use RSA.

No formal ATV or snowmobile trails exist in the area, however ATV users and snowmobilers likely use the numerous cutlines, trails and other related linear corridors to access portions of the Resource Use LSA and RSA (Kerry Helmer, pers. comm.). Many riders likely use these access routes for informal recreational purposes and for hunting and trapping.

3.9 TRADITIONAL USE

A Traditional Land Use Study (TLUS) has been conducted in the Project area for the purpose of collecting information of relevance for the project assessment (MEG 2005). This study provided recent and local information on various past and existing uses, including plant use, trapping, hunting, fishing and cultural and spiritual sites.

R:\CAD\2004\1322-EA\1334\04-1334-001 MEG\Stand Alones\Resource Use\Fig 3-4 Recreational Areas in the Land and Resource RSA.dwg Jul 27, 2005 - 4:45pm



16 0 16 32

SCALE KM

LEGEND

- ROADWAY
- RAILWAY
- MEG OIL SANDS LEASE
- REGIONAL STUDY AREA
- PROTECTED AREA

REFERENCE

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

PROJECT

CHRISTINA LAKE REGIONAL PROJECT

TITLE

RECREATIONAL AREAS IN THE LAND AND RESOURCE USE RSA

MEG ENERGY CORP.

PROJECT 04-1334-001.8510			FILE No.	Recreational Areas
DESIGN	AP	14/01/05	SCALE AS SHOWN	REV. 0
CADD	JEF	11/02/05		
CHECK	AP	11/02/05	**FIGURE: 3-4**	
REVIEW	TC	11/02/05		

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4.3 PERSONAL COMMUNICATIONS

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Helmer, Kerry. President, McMurray Sno-Drifters Snowmobile Club. Fort McMurray, AB. Contacted on January 12, 2005.

LAND AND RESOURCE USE

APPENDICES

Appendix I
Surface Dispositions within the Land and Resource Use Local Study Area

Legal Land Description (Meridian- Range-Township-Section)	Surface Disposition	Type of Activity	Client Name
4-06-78-16-NW	CNT-890198	Consultative Notation - potential timber disposal	Beaver Lake Lac La Biche, Land and Forest Service
4-05-76-32-SE&SW 4-05-76-33-SE&SW 4-05-76-33-NE	EZE-880020	Easement	Altagas Ltd.
4-05-77-04-SE	EZE-880019	Easement	Altagas Ltd.
4-04-76-20 4-04-76-28 to 33 4-05-76-32 to 36 4-04-77 4-05-77-01 to 05, 07-09 4-05-77-16 to 21 4-06-77-12 to 15 4-06-77-22 to 27 4-06-77-34 to 36 4-06-78	FMA-9100029	Forest Management Agreement	Alberta Pacific Forest Industries Inc.
4-04-76-17-SW,NW, NE	LOC-891217	License of Occupation	Talisman Energy Inc.
4-04-76-17-NW 4-04-76-20-SW&NW 4-04-76-29-SW&NW 4-04-76-32-SW	LOC-851360	License of Occupation	Paramount Energy Operating Corp.
4-04-76-19-NW&NE 4-04-76-20-NW	LOC-871006	License of Occupation	Paramount Energy Operating Corp.
4-04-76-28-SW&NW 4-04-76-33-SW	LOC-010344	License of Occupation	Stylus Exploration Inc.
4-04-76-28-SW	LOC-982342	License of Occupation	Stylus Exploration Inc.
4-04-76-31-NW&NE 4-04-76-32-NW&NE 4-04-76-33-NW&NE 4-05-76-36-NW 4-04-77-04-SW	LOC-841135	License of Occupation	Paramount Energy Operating Corp.
4-04-76-33-SE&SW	LOC-982139	License of Occupation	Stylus Exploration Inc.
4-05-76-32	LOC-851725	License of Occupation	Altagas Ltd.

Legal Land Description	Surface Disposition	Type of Activity	Client Name
4-05-76-32-SE&SW	LOC-851438	License of Occupation	Altagas Ltd.
4-05-76-32-NW&NE 4-05-77-05-SW	LOC-040718	License of Occupation	MEG Energy Corp.
4-05-76-33-SE,SW,NE	LOC-851438	License of Occupation	Altagas Ltd.
4-05-76-33-SE	LOC-910839	License of Occupation	Paramount Energy Operating Corp.
4-05-76-33-SE&SW	LOC-910992	License of Occupation	Devon Canada Corp.
4-05-76-33-SW	LOC-910839	License of Occupation	Paramount Energy Operating Corp.
4-05-76-33-SE&NE	LOC-810676	License of Occupation	Nova Gas Transmission Ltd.
4-05-76-34-SE	LOC-991868	License of Occupation	Paramount Energy Operating Corp.
4-05-76-33-SE 4-05-76-34-SW	LOC-851118	License of Occupation	Paramount Energy Operating Corp.
4-05-76-35-SW&NW 4-05-77-02-SW 4-05-77-03-SE&SW 4-05-77-04-SE&SW 4-05-77-05-SE&SW 4-05-77-06-SE&SW	LOC-5500	License of Occupation	Petro Canada
4-05-76-35-SW	LOC-991868	License of Occupation	Paramount Energy Operating Corp.
4-05-76-36-SE&SW	LOC-941216	License of Occupation	Paramount Resources Ltd.
4-05-76-36-NW	LOC-871005	License of Occupation	Paramount Energy Operating Corp.
4-05-76-36-NE 4-04-77-06-NW&NE 4-05-77-01-SE&NE	LOC-850428	License of Occupation	Paramount Energy Operating Corp.
4-05-77-01-SW 4-05-77-02-SE&SW	LOC-840296	License of Occupation	Paramount Energy Operating Corp.
4-05-77-03-SW&NW	LOC-851056	License of Occupation	Altagas Ltd.
4-05-77-03-NW&NE	LOC-870934	License of Occupation	Altagas Ltd.
4-05-77-04-SE	LOC-880063	License of Occupation	Altagas Ltd.
4-05-77-06-SE&NE 4-05-77-07-SE	LOC-930161	License of Occupation	Paramount Energy Operating Corp.
4-05-77-07-SE	LOC-040582	License of Occupation	MEG Energy Corp.
4-05-77-08-SE 4-05-77-09-SW	LOC-991869	License of Occupation	Paramount Energy Operating Corp.

Legal Land Description	Surface Disposition	Type of Activity	Client Name
4-05-77-09-SE	LOC-871007	License of Occupation	Paramount Energy Operating Corp.
4-05-77-16-SE 4-05-77-17-SE&SW 4-05-77-18-SE&SW	LOC-851116	License of Occupation	Paramount Energy Operating Corp.
4-05-77-17-NE 4-05-77-20-SE	LOC-941465	License of Occupation	Paramount Resources Ltd.
4-05-77-18-SW	LOC-930162	License of Occupation	Paramount Energy Operating Corp.
4-05-77-18-NW 4-05-77-19-SW&NW	LOC-930160	License of Occupation	Paramount Energy Operating Corp.
4-05-77-20-SE 4-05-77-21-SE&SW	LOC-851059	License of Occupation	Paramount Energy Operating Corp.
4-05-77-21-SW&NW	LOC-881530	License of Occupation	Canadian Natural Resources Limited
4-06-77-15-SW	LOC-931339	License of Occupation	Devon ARL Corporation
4-06-77-22-NW&NE 4-06-77-26-NW 4-06-77-27-NE	LOC-032124	License of Occupation	MEG Energy Corp.
4-06-77-22-NE 4-06-77-23-NW 4-06-77-26-SW	LOC-900058	License of Occupation	Devon Canada Corporation
4-06-77-25-SE&NE	LOC-930132	License of Occupation	Canadian Natural Resources Limited
4-06-77-25-NW 4-06-77-26-NW&NE 4-06-77-35-SW&NW 4-06-78-02-SW 4-06-78-03-SE&SW	LOC-791249	License of Occupation	Devon Canada Corporation
4-06-77-26-SE&NE 4-06-77-35-SE	LOC-931682	License of Occupation	Superman Resources Inc.
4-06-77-26-SW 4-06-77-27-SE,SW,NW	LOC-900081	License of Occupation	Devon Canada Corporation
4-06-77-35-SE&NE 4-06-78-02-SE	LOC-930321	License of Occupation	Superman Resources Inc.
4-06-77-35-NW&NE 4-06-77-36-NW&NE	LOC-891230	License of Occupation	Devon Canada Corporation
4-06-77-36-NE	LOC-900029	License of Occupation	Devon Canada Corporation

Legal Land Description	Surface Disposition	Type of Activity	Client Name
4-05-76-36-NE	LOC-841135	License of Occupation	Paramount Energy Operating Corp.
4-04-77-06-NE	LOC-871020	License of Occupation	Paramount Energy Operating Corp.
4-06-78-02-SE&NE	LOC-930320	License of Occupation	Superman Resources Inc.
4-06-78-02-SW,NW,NE	LOC-901327	License of Occupation	Devon Canada Corporation
4-06-78-02-NW&NE 4-06-78-11-SW&NW 4-06-78-14-SW	LOC-850049	License of Occupation	Superman Resources Inc.
4-06-78-11-NW	LOC-891229	License of Occupation	Superman Resources Inc.
4-06-78-14-SW&NW 4-06-78-15-SE 4-06-78-16-SE&SW	LOC-791251	License of Occupation	Devon Canada Corporation
4-06-78-14-NW	LOC-870223	License of Occupation	Superman Resources Inc.
4-06-78-16-SE&NE	LOC-940429	License of Occupation	Superman Resources Inc.
4-04-76-17-NW	MSL-840467	Mineral Surface Lease	Paramount Energy Operating Corp.
4-04-76-19-NW	MSL-871638	Mineral Surface Lease	Paramount Energy Operating Corp.
4-04-76-20-NW	MSL-871635	Mineral Surface Lease	Paramount Energy Operating Corp.
4-04-76-28-SW	MSL-983046	Mineral Surface Lease	Stylus Exploration Inc.
4-04-76-31-SE	MSL-871634	Mineral Surface Lease	Paramount Energy Operating Corp.
4-04-76-31-NE	MSL-041696	Mineral Surface Lease	MEG Energy Corp.
4-04-76-32-NW	MSL-841085	Mineral Surface Lease	Paramount Energy Operating Corp.
4-04-76-33-SW	MSL-982784	Mineral Surface Lease	Stylus Exploration Inc.
4-05-76-32-SE	MSL-851870	Mineral Surface Lease	Paramount Resources Ltd.
4-05-76-32-NE	MSL-041194	Mineral Surface Lease	MEG Energy Corp.
4-05-76-33-SE	MSL-992703	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-76-33-SW	MSL-041665	Mineral Surface Lease	MEG Energy Corp.
4-05-76-34-SE&SW	MSL-851869	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-76-35-SW	MSL-992704	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-76-36-SE	MSL-941749	Mineral Surface Lease	Paramount Resources Ltd.

Legal Land Description	Surface Disposition	Type of Activity	Client Name
4-05-76-36-SW&NW	MSL-871637	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-01-SW	MSL-851708	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-03-SW	MSL-842099	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-04-SW&NW	MSL-880047	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-05-SW	MSL-041198	Mineral Surface Lease	MEG Energy Corp.
4-05-77-05-SW	MSL-880046	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-07-SE	MSL-041016	Mineral Surface Lease	MEG Energy Corp.
4-05-77-07-SE	MSL-930252	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-077-08-SE&SW	MSL-992705	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-09-SE&SW	MSL-871640	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-17-NE	MSL-942134	Mineral Surface Lease	Paramount Resources Ltd.
4-05-77-18-SW&NW	MSL-930243	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-19-NW	MSL-930242	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-20-SE	MSL-851721	Mineral Surface Lease	Paramount Energy Operating Corp.
4-05-77-21-NW	MSL-882275	Mineral Surface Lease	Canadian Natural Resources Limited
4-06-77-15-SW	MSL-991934	Mineral Surface Lease	Devon ARL Corporation
4-06-77-15-SW	MSL-992764	Mineral Surface Lease	BP Canada Energy Company
4-06-077-22-SE&NE	MSL-900072	Mineral Surface Lease	Devon Canada Corporation
4-06-77-25	MSL-791953	Mineral Surface Lease	Devon Canada Corporation
4-06-77-26-SE	MSL-932478	Mineral Surface Lease	Superman Resources Inc.
4-06-77-27-NW	MSL-900100	Mineral Surface Lease	Devon Canada Corporation
4-06-77-27-NE	MSL-033189	Mineral Surface Lease	MEG Energy Corp.
4-06-77-35-SE	MSL-930514	Mineral Surface Lease	Superman Resources Inc.
4-06-77-36-NE	MSL-891556	Mineral Surface Lease	Devon Canada Corporation
4-04-77-06-NE	MSL-850710	Mineral Surface Lease	Paramount Energy Operating Corp.
4-06-78-02-SE	MSL-930513	Mineral Surface Lease	Superman Resources Inc.
4-06-78-02-NW	MSL-033259	Mineral Surface Lease	MEG Energy Corp.
4-06-78-11-NW	MSL-891555	Mineral Surface Lease	Devon Canada Corporation

Legal Land Description	Surface Disposition	Type of Activity	Client Name
4-06-78-14-NW	MSL-791951	Mineral Surface Lease	Devon Canada Corporation
4-06-78-16-NE	MSL-932310	Mineral Surface Lease	Superman Resources Inc.
4-04-76-32-NW	PIL-850079	Pipeline Installation Lease	Altagas Ltd.
4-05-77-03-SW 4-05-77-04-SE	PIL-850062	Pipeline Installation Lease	Altagas Ltd.
4-05-77-03-SW 4-05-77-04-SE	PIL-860001	Pipeline Installation Lease	Nova Gas Transmission Ltd.
4-06-77-36-NE	PIL-900060	Pipeline Installation Lease	Devon Canada Corporation
4-06-078-11-SW&NW	PIL-900061	Pipeline Installation Lease	Devon Canada Corporation
4-04-76-17-NW 4-04-076-20-SW&NW 4-04-76-29-SW&NW 4-04-76-32-SW&NW	PLA-850986	Pipeline Agreement	Altagas Ltd.
4-04-76-19-NW&NE 4-04-76-20-NW	PLA-880024	Pipeline Agreement	Altagas Ltd.
4-04-76-20-NW	PLA-880025	Pipeline Agreement	Altagas Ltd.
4-04-76-28-SW&NW 4-04-76-33-SE,SW,NE	PLA-010292	Pipeline Agreement	Altagas Ltd.
4-04-76-17-SE&SW	PLA-940847	Pipeline Agreement	Talisman Energy Inc.
4-04-76-31-SE,NW,NE 4-04-76-32-NW	PLA-880027	Pipeline Agreement	Altagas Ltd.
4-04-76-31-NW&NE 4-04-76-32-NW&NE 4-04-76-33-NW&NE 4-05-76-36-NW&NE 4-04-77-06-SE&NE 4-05-77-01-SW 4-05-77-02-SE&SW 4-05-77-03-SE&SW	PLA-850983	Pipeline Agreement	Altagas Ltd.
4-05-76-32-SE&SW 4-05-76-33-SE,SW,NE 4-05-76-34-SW	PLA-850984	Pipeline Agreement	Altagas Ltd.
4-05-76-33-SE	PLA-000571	Pipeline Agreement	Paramount Resources Ltd.
4-05-76-33-SE&NE	PLA-810676	Pipeline Agreement	Nova Gas Transmission Ltd.
4-05-76-33-SE,SW,NE	PLA-870793	Pipeline Agreement	Nova Gas Transmission Ltd.

Legal Land Description	Surface Disposition	Type of Activity	Client Name
4-05-76-33-SE&NE	PLA-900902	Pipeline Agreement	Nova Gas Transmission Ltd.
4-05-76-33-SE,SW,NE 4-05-77-03-SW 4-05-77-04-SE	PLA-910608	Pipeline Agreement	Paramount Energy Operating Corp.
4-05-76-33-SE,SW,NE	PLA-971111	Pipeline Agreement	Enbridge Pipelines (Athabasca) Inc.
4-04-76-31-NE 4-05-76-36-SW,NW,NE	PLA-880007	Pipeline Agreement	Altagas Ltd.
4-05-77-03-SW&NW 4-05-77-04-SE	PLA-810675	Pipeline Agreement	Nova Gas Transmission Ltd.
4-05-77-03-SW&NW 4-05-77-04-SE	PLA-850987	Pipeline Agreement	Primewest Energy Ltd.
4-05-77-03-SW&NW	PLA-870794	Pipeline Agreement	Nova Gas Transmission Ltd.
4-05-77-03-SW&NW 4-05-77-04-SE 4-05-77-09-SE&SW	PLA-880028	Pipeline Agreement	Altagas Ltd.
4-05-77-03-SW	PLA-890312	Pipeline Agreement	Nova Gas Transmission Ltd.
4-05-77-03-SW&NW 4-05-77-04-SE	PLA-900901	Pipeline Agreement	Nova Gas Transmission Ltd.
4-05-77-03-SW&NW 4-05-77-04-SE	PLA-971112	Pipeline Agreement	Enbridge Pipelines (Athabasca) Inc.
4-05-77-04-SE,SW,NW	PLA-880054	Pipeline Agreement	Altagas Ltd.
4-05-77-04-NW 4-05-77-05	PLA-890505	Pipeline Agreement	Altagas Ltd.
4-05-77-07-SE&NE 4-05-77-18-SE,SW,NW 4-05-77-19-SW&NW	PLA-931394	Pipeline Agreement	Altagas Ltd.
4-05-77-04-NE	PLA-880028	Pipeline Agreement	Altagas Ltd.
4-05-77-16-SE 4-05-77-17-SE&SW 4-05-77-18-SE&SW 4-05-77-20-SE 4-05-77-21-SE&SW 4-06-77-13-SE	PLA-850988	Pipeline Agreement	Altagas Ltd.
4-05-77-20-NW&NE 4-05-77-21-NW	PLA-940140	Pipeline Agreement	Canadian Natural Resources Limited

Legal Land Description	Surface Disposition	Type of Activity	Client Name
4-05-77-21-NW&NE	PLA-890228	Pipeline Agreement	Canadian Natural Resources Limited
4-05-77-21-NW&NE	PLA-900963	Pipeline Agreement	Canadian Natural Resources Limited
4-06-77-22-NW&NE 4-06-77-27-SW&NW	PLA-970093	Pipeline Agreement	Devon Canada Corporation
4-06-77-15-SW	PLA-000436	Pipeline Agreement	BP Canada Energy Company
4-06-77-25-SE&NE 4-06-77-36-SE&NE	PLA-980174	Pipeline Agreement	Devon Canada Corporation
4-06-77-27-NW 4-06-77-34-SW 4-06-77-35-NW&NE 4-06-77-36-NW&NE 4-06-78-02-SW 4-06-78-03-SE,SW,NW 4-06-78-03-NE 4-06-78-10-SE 4-06-078-11-SW&NW 4-06-78-14-SW&NW	PLA-900697	Pipeline Agreement	Devon Canada Corporation
4-06-77-34-NW&NE 4-06-77-35-NW 4-06-78-02-SE&SW	PLA-900874	Pipeline Agreement	Nova Gas Transmission Ltd.
4-06-77-35-SE&NE 4-06-78-02-SE&NE 4-06-78-11-SE&NE 4-06-78-14-SE	PLA-940374	Pipeline Agreement	Superman Resources Inc.
4-06-77-36-NE	PLA-931176	Pipeline Agreement	Devon Canada Corporation
4-04-77-06-NE	PLA-870883	Pipeline Agreement	Altagas Ltd.
4-06-78-16-NE	PLA-940563	Pipeline Agreement	Superman Resources Inc.
4-05-77-06	PNT-890605	Protective Notation - Christina Lake recreation potential	Beaver Lake Lac La Biche, Land and Forest Service
4-06-78-16-NW	RRD-8822024	Registered Roadway	Alberta Transportation
4-04-76-29-SW&NW 4-04-76-30-SE	SME-040032	Surface Mineral Exploration	297917 Alberta Ltd.
4-04-76-17 to 20, 28 to 33 4-05-76-32 to 36	TPA-1595	Trapping Area	Down-Cicoria, Connie

Legal Land Description	Surface Disposition	Type of Activity	Client Name
4-04-77 4-05-77-01 to 02	TPA-615	Trapping Area	Janvier, Stuart
4-05-77-03 to 09, 16 to 21 4-06-77-12 to 15, 22 to 24	TPA-2313	Trapping Area	Thom, Donald
4-06-77-25 to 27, 34 to 36 4-06-78-02 to 03 4-06-78-09 to 11, 14 to 16	TPA-1326	Trapping Area	York, Gary
4-06-78	TFA-030062	Temporary Field Authorization - Easement ROW	Atco Electric Ltd.

Appendix II
Harvest and Effort Hunting Data by Resident Hunters for Selected Big Game Species by Wildlife Management Unit (1995–2001)

Species	Year	WMU	Estimated Hunters	Estimated Total Harvest	Percent Hunter Sucess	Percent Days/ Animal
Black Bear	**2001**	512	36	20	54%	7.1
		517	46	4	9%	77.8
		518	n/a			
		519	13	4	31%	20.3
		529	n/a			
		530	33	17	52%	14.9
		531	13	0	0	0
	2000	512	52	15	29%	16.7
		517	52	15	29%	15.7
		518	28	5	18%	22.4
		519	28	9	32%	17.3
		529	14	0	0%	0
		530	24	14	58%	12.4
		531	14	5	36%	21.4
	1999	512	55	10	18%	29.2
		517	34	13	38%	18.6
		518	34	4	12%	33
		519	16	4	25%	39
		529	4	0	0%	0
		530	23	7	30%	52.1
		531	26	4	15%	42.3
	1998	512	48	0	0%	0
		517	38	10	26%	28.8
		518	24	5	21%	46.8
		519	18	0	0%	0
		529	15	12	80%	5.3
		530	19	6	32%	15
		531	20	4	20%	23
	1996	512	68	8	12%	53.1
		517	17	4	24%	27.8
		518	21	8	38%	27.2
		519	34	4	12%	69.2
		529	4	0	0%	0
		530	30	8	27%	10.8
		531	13	4	31%	23.8
	1995	512	88	27	31%	28.1
		517	12	8	67%	8.5
		518	38	4	11%	51
		519	66	16	24%	35.1
		529	14	0	0%	0
		530	53	8	15%	70.9
		531	12	0	0%	0
Moose	**2001**	512	378	139	37%	18.4
		517	297	87	28%	23
		518	295	96	33%	17.3
		519	341	161	47%	12
		529	171	23	13%	48.5

Species	Year	WMU	Estimated Hunters	Estimated Total Harvest	Percent Hunter Sucess	Percent Days/ Animal
Moose (cont.)		530	183	37	20%	27.4
		531	132	20	15%	40.4
	2000	512	423	172	41%	15.3
		517	173	33	19%	26.8
		518	221	72	33%	18.4
		519	214	109	51%	12.5
		529	87	24	28%	14.8
		530	150	49	33%	19.4
		531	162	71	44%	14.1
	1999	512	413	124	30%	22.9
		517	260	63	24%	19.8
		518	212	47	22%	29.8
		519	274	104	38%	19
		529	129	17	13%	58.9
		530	178	57	32%	19.3
		531	154	44	29%	22.7
	1998	512	683	252	37%	16.5
		517	159	58	36%	15.5
		518	224	74	33%	18.9
		519	329	96	29%	23.4
		529	146	48	33%	17.9
		530	169	68	40%	15.8
		531	96	28	29%	20.8
	1996	512	621	204	31%	19.5
		517	167	33	17%	32.3
		518	180	59	28%	23.8
		519	263	77	27%	29.1
		529	168	52	29%	20.3
		530	194	69	33%	23.9
		531	80	36	33%	14.9
	1995	512	660	205	31%	23
		517	189	38	20%	32.7
		518	147	36	24%	32.7
		519	298	92	31%	27.9
		529	120	38	32%	25.9
		530	192	61	32%	21.7
		531	89	27	30%	22.1
Mule Deer	**2001**	512	55	12	22%	19
		517	20	0	0%	0
		518	8	0	0%	0
		519	4	0	0%	0
		529	n/a			
		530	16	0	0%	0
		531	12	0	0%	0
	2000	512	93	8	9%	59.6
		517	32	0	0%	0
		518	32	0	0%	0
		519	12	8	67%	5.5
		529	8	4	50%	16
		530	8	0	0%	0

Species	Year	WMU	Estimated Hunters	Estimated Total Harvest	Percent Hunter Sucess	Percent Days/ Animal
Mule Deer (cont.)	2000	531	4	0	0%	0
	1999	512	55	7	13%	55
		517	24	0	0%	0
		518	21	0	0%	0
		519	14	0	0%	0
		529	3	0	0%	0
		530	7	3	43%	15.3
		531	3	0	0%	0
	1998	512	140	5	4%	165.2
		517	5	0	0%	0
		518	32	9	28%	16.8
		519	24	0	0%	0
		529	8	4	50%	21
		530	5	0	0%	0
		531	n/a			
	1996	512	50	5	10%	41.6
		517	5	0	0%	0
		518	21	5	24%	14.8
		519	9	5	56%	18.4
		529	10	0	0%	0
		530	n/a			
		531	5	0	0%	0
	1995	512	114	14	12%	57.5
		517	23	0	0%	0
		518	23	9	39%	23
		519	19	0	0%	0
		529	5	0	0%	0
		530	18	0	0%	0
		531	n/a			
White-tailed Deer	**2001**	512	268	116	43%	14.7
		517	116	58	50%	8.1
		518	35	22	63%	17.8
		519	49	26	53%	11.5
		529	13	4	31%	27.8
		530	31	13	42%	14.6
		531	8	0	0%	0
	2000	512	303	155	51%	10.3
		517	152	61	40%	10.7
		518	79	30	38%	21.7
		519	60	30	50%	8.4
		529	17	4	24%	25.5
		530	35	0	0%	0
		531	4	0	0%	0
	1999	512	534	221	41%	13.9
		517	85	37	44%	21.1
		518	57	8	14%	39.3
		519	156	37	24%	20.4
		529	57	20	35%	16.9
		530	33	0	0%	0

Species	Year	WMU	Estimated Hunters	Estimated Total Harvest	Percent Hunter Sucess	Percent Days/ Animal
White-tailed Deer (cont.)	1999	531	29	0	0%	0
	1998	512	586	278	47%	12.9
		517	93	27	29%	21.2
		518	136	31	23%	21.3
		519	264	35	13%	49
		529	89	16	18%	33.1
		530	58	20	34%	16.6
		531	19	4	21%	20
	1996	512	673	259	38%	15.1
		517	86	19	22%	21.8
		518	176	43	24%	24.3
		519	478	67	14%	54.5
		529	176	24	14%	51.3
		530	118	10	8%	109
		531	34	0	0%	0
	1995	512	867	334	39%	17.4
		517	151	38	25%	21
		518	167	31	19%	32.7
		519	440	43	10%	75.2
		529	109	23	21%	33.7
		530	130	4	3%	213.5
		531	27	4	15%	53

Appendix III
Harvest and Effort Hunting Data by Resident Hunters for Selected Game Bird Species by Wildlife Management Unit (1995–2001)

Species	Year	WMU	Estimated Hunters	Estimated Harvest	Birds Per Day
Ducks	**1995**	512	10	100	2.5
		517	n/a		
		518	31	227	3.2
		519	42	472	1.7
		529	21	84	0.4
		530	31	206	1
		531	10	120	1
Geese	**1995**	512	10	40	1.3
		517	n/a		
		518	n/a		
		519	42	84	0.3
		529	n/a		
		530	21	21	1
		531	n/a		
Ruffed Grouse	**1995**	512	408	778	0.1
		517	96	218	0.2
		518	182	80	0
		519	289	10	0
		529	85	0	0
		530	236	53	0
		531	42	36	0.1
Sharp-tailed Grouse	**1995**	512	26	31	0.1
		517	n/a		
		518	26	0	0
		519	53	0	0
		529	5	0	0
		530	37	0	0
		531	n/a		
	2000	512	35	17	0.1
		517	n/a		
		518	n/a		
		519	n/a		
		529	n/a		
		530	17	0	0
		531	n/a		
Spruce Grouse	**1995**	512	144	186	0.1
		517	42	162	0.2
		518	32	0	0
		519	102	0	0
		529	37	0	0
		530	102	16	0
		531	21	0	0
	2000	512	17	0	0
		517	17	17	0.1
		518	17	51	1
		519	n/a		
		529	n/a		
		530	17	17	0.5
		531	17	51	0.3