Appendix 7.1.2A
Non-Traditional Land Use 2013 Baseline Report

Blackwater Gold Project

2013 Baseline Report
Non-Traditional Land Use

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ACRONYMS

Abbreviations and Units of Measure	Definition
AADT	Average Annual Daily Traffic
AATT	Average Annual Total Traffic
ALR	agricultural land reserve
AMP	Access Management Plan
approx.	approximately
ATV	all-terrain vehicle
BC	British Columbia
BC EAO	British Columbia Environmental Assessment Office
BC ILMB	British Columbia Integrated Land Management Bureau
BCTS	British Columbia Timber Sales
CEA	cumulative effects assessment
CN	Canadian National
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CRD	Cariboo Regional District
CWS	Canadian Wildlife Service
DFA	Defined Forest Area
DFO	Department of Fisheries and Oceans
EIS	Environmental Impact Statement
FFSBC	Freshwater Fisheries Society of BC
FNR	functionally non-roaded
FSR	Forest Service Road
GIS	Geographic Information Systems
ha	hectare
Hwy.	Highway
ILRR	Integrated Land and Resource Registry
km	kilometre
km^2	square kilometres
LPM	litres per minute
LRDW	Land and Resource Data Warehouse
LRMP	Land and Resource Management Plan
LSA	Local Study Area
m	metre
m^3	cubic metres
MFLNRO	Ministry of Forests, Lands and Natural Resource Operations

Abbreviations and Units of Measure	Definition
MOF	Ministry of Forests
MP	Management Plan
MPB	mountain pine beetle
M	Million
Mha	Million hectares
Mt	Million tonnes
n/a	not applicable
NTLU	Non-traditional Land Use
NWSRI	Nechako White Sturgeon Recovery Initiative
OCP	Official Community Plan
OGMA	Old Growth Management Areas
PMFL	Private Managed Forest Land
POD	point of diversion
RDBN	Regional District of Bulkley-Nechako
RMZ	Resource Management Zone
RN/RM	road natural/road modified
RSA	Regional Study Area
SPM	Semi-primitive motorized
SPNM	Semi-primitive non-motorized
t/day	Tonnes per day
TEU	Twenty Foot Equivalent Units
TFL	Tree Farm Licence
TSA	Timber Supply Area
UWR	Ungulate Winter Range
VC	Valued Component(s)
WMA	Wildlife Management Area
WMU	Wildlife Management Unit

EXECUTIVE SUMMARY

Following a review of the available information, it can be concluded that there are a variety of non-traditional land uses occurring within the NTLU RSA, many of which overlap with the individual Project study areas associated with the various Project components including: the mine site, mine site access road, airstrip (and access road), freshwater supply pipeline, main transmission line, and Forest Service Road (FSR), collectively referred to as the Project local study area (LSA). A description of a variety of land uses is provided including: representative regional and local management plans; protected areas and parks: mining, prospects, exploration, and mineral tenures; forestry; hunting, trapping, and guide outfitting; fishing and aquaculture; agriculture; recreation and tourism; permits, licences, and land tenures; and transportation and access.

Vanderhoof Land and Resource Management Plan (LRMP), which was developed in January 1997, entered into an amendment process in 2005 to ensure that the values in the LRMP are respected and considered with respect to the mountain pine beetle (MPB) epidemic and future salvage harvesting. An Access Management Plan (AMP) was developed and implemented in coordination with the Vanderhoof LRMP between 1998 and 2005. The AMP attempted to effectively mitigate potential effects of roads on recreational opportunities and experiences available in the area through the management of road densities, while at the same time providing operational certainty for resource development. The majority of the non-traditional land use occurs at the north end of the NTLU RSA where both the transmission line and FSR study areas approach Highway (Hwy.) 16 and the more urbanized areas of Vanderhoof and Fraser Lake. The southern portion of the Project (including the mine site, mine site access road, airstrip, and freshwater supply) falls within the Davidson Creek Resource Management Zone (RMZ) 17.

The Project does not cross or overlap any Federal Parks or Protected Areas. The Stellako River WMA, located between Fraser and Francois Lakes, is intersected by the transmission line (main) study area. Finger Tatuk Provincial Park is located approximately 3 km east of the access route study area. The AMP has been developed and implemented in the NTLU RSA to specifically address potential Crown land use conflicts between recreational use and wildlife habitat as well as other resource values. The majority of the transmission line and FSR study areas fall within areas designated as Motorized Road Accessible. Several areas identified as being more sensitive to motorized vehicles, such as Horne Lake and Boomerang Lake, are located adjacent to the FSR study area. The mine site study area is located within the Mt. Davidson and Davidson Creek AMP area, which is designated Semi-Primitive Non-Motorized.

The recreational features inventory indicated that no recreational areas rated as having a high sensitivity to disturbance and a high or very high significance overlap the defined Project study areas. The recreational significance of the north section of the mine site study area is rated as having moderate sensitivity, moderate significance. The transmission line study area including Chedakuz Creek, Greer Creek, Nechako River, and the area east of Francois Lake Protected Area cross several recreational areas rated as having a high significance (moderate sensitivity). The FSR study area is located primarily in an area rated as having a low sensitivity, moderate recreational significance. The majority of the freshwater supply pipeline

study area crosses an area rated as having a moderate sensitivity, moderate recreational significance, with a small area rated as having a moderate sensitivity, high recreational significance located immediately south of the right-of-way.

There are no recreation sites or commercial lodges located within 5 km of the mine site, mine site access road or airstrip. There is a non-motorized recreational trail, the Messue Wagon Road, 13 km directly east of the mine site, running in a north-south direction, which will be crossed by the proposed freshwater supply from Tatelkuz Lake to the mine site at an existing resource road crossing. Tatelkuz Resort is located 2 km south of the mine site access road study area and main transmission line study area, and approximately 8.5 km from the proposed mine site. The proposed freshwater supply at Tatelkuz Lake is located between 600 m and 900 m from two recreation sites. Two recreation sites, Big Bend Meadow and Brewster Lake, which are also located proximate to the FSR study area, are intersected by the transmission line study area. The transmission line study area crosses the Nechako River in an area considered a popular canoe trail.

Twenty-three commercial lodges and several camping and forest recreation sites are located within the NTLU RSA. Many of the lodges are associated with the guide outfitting companies operating in the area. Twenty-two trapline areas are intersected by the proposed Project with the mine site overlapping 12% of one of the three traplines (the other two having approximately 1% of their total area overlapped). The trapline area falling within the transmission line (and Stellako and Mills Ranch re-routes) for the 13 different traplines ranges between 1% and 14%. Fishing areas located proximate to the proposed Project include: the Nechako River and Reservoir (Knewstubb Lake), Tatuk Lake, Finger Lake, Top Lake, Stellako River, Chedakuz Creek, Big Bend Creek, and Euchineko River. A number of smaller lakes and streams are also found in the area and fished by anglers hiking in.

Active mineral tenures overlap 100% of the mine site and freshwater supply study areas and the southern portion of the transmission line and access route study areas. The proponent owns mineral tenures or has agreements in place for all lands that would be used for the mine. Only two tenures falling within the mine site study area are not held by the Proponent. Mineral exploration is occurring in the area proximate to the proposed mine site. A review of the MINFILE Mineral Inventory indicated that there are no past, active or developed producers located within the defined Project study areas. One active producer is located within the NTLU RSA; the Endako Mine (MINFILE No. 093K 006) is located near Fraser Lake approximately 65 km west of Vanderhoof. Two developed prospects are located within the NTLU RSA: Vanderhoof Limestone and Capoose. Several mining prospects and showings are located within the mine, transmission line and access route study areas. One prospect, Blackwater-Davidson (MINFILE No. 093F 037), falls within the mine site study area and represents a portion of the defined Project study area being assed as part of the Project.

The Kluskus FSR was built through this area in 1975 and timber harvesting commenced in the area in the late 1980s. No legal or non-legal OGMAs have been identified within the NTLU RSA. There are a variety of retired, active, and pending forest tenures in the Project area. No active forest tenures overlap the mine site study area. The proponent holds several small tenures, one of which falls entirely within the mine site study area and is identified as pending.

The Project study area has been significantly affected by the MPB, and forestry management practices have been adjusted to facilitate recovery. A review of the available information indicated that there are approximately 3,240 different forest/timber tenures (with a status of active, pending, or retired) within the NTLU RSA; with 1,973 (61%) of the tenures retired between 2005 and 2011. There are no tree farm licences or community forests proximate to the Project. Several woodlots are intersected by the proposed transmission line (and Stellako and Mills Ranch re-routes) and FSR study areas. The proposed Project intersects numerous active and pending forest tenures and retired cut blocks.

Nine guide outfitter areas and twenty traplines fall within the NTLU RSA. Three guide outfitter areas and three traplines and are overlapped by the mine site study area. A number of streams, rivers, and lakes are a short distance away from Vanderhoof and are accessed by paved roads or FSRs, while other more distant and less-accessible waterbodies are accessed by kayak, canoe, boat, or float plane. Anglers visiting less-accessible waterbodies will often opt to camp overnight at nearby Forest Services' campsites or at less established camping spots along the shores of lakes and rivers. Visiting anglers also have the option to stay at one of the many fishing lodges located in the area, which offer guided fishing, rental boats, and equipment. Many of these lodges also offer floatplane excursions to more distant lakes and fishing spots. In the last 10 years, approximately six lakes have been stocked with rainbow trout within the NTLU RSA.

The expansion of Agricultural Lands in the Vanderhoof District has been significant in the last two decades. The Vanderhoof OCP states that whenever possible, the routing of future rural roadways and utility lines should avoid fragmenting agricultural lands by following alignments along section, boundary or property lines, road allowances, or existing utility corridors. Utility and road rights-of-way across ALR lands will not proceed without the approval of the provincial Agricultural Land Commission. No designated ALR lands fall within the mine site, mine site access road, airstrip, or freshwater supply study areas. The transmission line does not overlap with any ALRs. Several ALR properties are also located along the FSR. Eight active range tenures are intersected by the proposed Project. All of the Project study areas except for the Stellako re-route intersect one range tenure (RAN075154). This range tenure occupies 27% of the mine site study area and 90% to 100% of the mine site access road, airstrip, and freshwater supply study areas. The main transmission line study area intersects six range tenures.

The majority of the land ownership overlapped by the individual Project study areas is unknown. A small area (0.1%) of the transmission line study area is overlapped by a federal Crown tenure with a total area of 7.7 ha. Areas appearing as "unknown" are attributed to being unsurveyed Crown land in the database. No registered Crown tenures overlap the mine site study area or freshwater supply study area.

The majority of the land ownership overlapped by the individual Project study areas is unsurveyed Crown land (No registered Crown tenures overlap the mine site, mine site access road, airstrip, or freshwater supply study areas. The study area associated with the transmission line (and Stellako and Mills Ranch re-routes) and FSR intersects a variety of permits, licenses and land tenures registered on provincial Crown land by a small percentage

ranging from <0.001% to approximately 4% with the majority less than 1%. A variety of tenures associated with quarrying, agriculture, industrial, residential, environment, institutional and communication overlap the transmission line study areas.

The Crown on behalf of the residents of the province owns all water in BC. No licensed springs or water reserves/allocation restrictions occur within any of the individual Project study areas. Two groundwater wells, both owned by the proponent, are registered within the mine site study area. No other water licenses occur within the mine site study area, mine access road study area, airstrip study area, or freshwater supply study area. Two groundwater wells are registered within the transmission line study area. The FSR study area overlaps nine groundwater licences and four points of diversion for stockwatering.

The more urbanized areas of Vanderhoof and Fraser Lake occur at the north end of the NTLU RSA where both the transmission line and access route approach Hwy. 16. The mine site study area and freshwater supply are located in a relatively remote area where NTLU is primarily associated with forestry, trapping, guide outfitter, and mining exploration activities

1.0 INTRODUCTION

The information contained in this Non-traditional Land Use (NTLU) Baseline Report will support the environmental, social, economic, and cumulative effects assessment (CEA) for the proposed Blackwater Gold Project (the Project). This baseline report provides a summary of the publicly available baseline data describing land use activities that occur near the Project. A description of applicable land use management objectives for the Project area is presented at the beginning of the section to provide the background for the area. Land uses considered in this section include:

- Management plans and local community plans;
- Protected areas and parks;
- Mining, prospects, exploration, and mineral tenures;
- Forestry;
- Hunting, trapping, and guide outfitting;
- Fishing and aquaculture;
- Agriculture;
- Recreation and tourism;
- Permits, licences, and land tenures;
- Transportation and access; and
- Other land uses, including research and education facilities, utilities and energy, and military as appropriate.

Land use associated with treaty and non-treaty aboriginal groups is discussed in Part C of the Application for an Environmental Assessment Certificate / Environmental Impact Statement (Application/EIS).

1.1 Scope of Work

The NTLU baseline information review focused on historical and current baseline characteristics of the local and regional environment. Potential effects that the Project may have on existing and potential future land and resources uses was reviewed to ensure that the study area selected adequately captured potential Project effects. The scope of the land use baseline was determined by reviewing available information and identifying land use activities that required additional research due to their importance (as determined during research and in discussions with stakeholders) in the Project area.

1.2 Objectives

The overall goal of compiling the land use baseline information was to ensure that planning and management strategies important for the completion of the Application under the *Mines Act* were adequately described (Government of BC, 1996d). The specific objectives of the land use baseline study for the Project were to:

- Identify the land and resource uses in the study area;

- Describe the different land uses and management strategies proximate to the Project area to a level of detail that provides enough background to define the Valued Component(s) (VC) to be carried forward into the effects assessment (Part B of the Application/EIS); and
- Utilize the information collected during the compilation of the land use baseline to develop the project inclusion list for the CEA.

2.0 METHODS

2.1 Information Sources

The following information sources were used to compile the baseline information:

- Information from various government websites and reports was summarized and referenced;
- Information from Geographic Information Systems (GIS) databases was sorted, summarized, and mapped, where available; and
- Individuals and companies familiar with the Project area were contacted and requested to provide comment.

Data gaps were not identified during the detailed desktop study due to the large amount of publically-available information related to land and resource use in the Project area. Consequently, no data gap reviews were conducted with relevant local and provincial government agencies.

2.1.1 Desktop Data Compilation

The NTLU information for the baseline report was compiled from baseline reports from other disciplines, such as Vegetation and Plant Communities, Wildlife, and Transportation, as well as from existing databases. **Table 2.1-1** summarizes several of the main databases and references reviewed.

Table 2.1-1: Main Databases and References Reviewed

BC Ministry, Reference or Database	
British Columbia Integrated Land Management Bureau (BC ILMB)	BC Land and Resource Data Warehouse http://www.data.gov.bc.ca/dbc/geo/index.page
	BC ILMB Discovery Service. http://apps.gov.bc.ca/pub/geometadata
	Integrated Land and Resource Registry (ILRR). https://apps.gov.bc.ca/apps/ilrr/html/ILRRWelcome.html
BC Ministry of Forests, lands and Natural Resource Operations (BC MFLNRO)	http://www.ilmb.gov.bc.ca/category/region/coast-bc
	http://www.gov.bc.ca/for/
BC Ministry of Energy, Mines and Natural Gas	Minfile Mineral Inventory. http://www.empr.gov.bc.ca/Mining/Geoscience/MINFILE/Pages/default.aspx
	Exploration and Mining in British Columbia 2008, 2009 and 2010 http://www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/ExplorationinBC/Pages/default.aspx
BC Ministry of Finance	March 2013 Major Projects Inventory (released in June 2013) http://www.jtst.gov.bc.ca/ministry/major_projects_inventory
BC Environmental Assessment Office (BC EAO)	Electronic Project Information Center (e-PIC). http://www.eao.gov.bc.ca/epic/output/html/deploy/epic_project_list_report.html
Provincial Planning	Vanderhoof Land and Resource Management Plan http://archive.ilmb.gov.bc.ca/slrp/lrmp/princegeorge/vanderhf/plan/vanderhoof_lrmp/index.html Vanderhoof 2008 Access Management Plan http://archive.ilmb.gov.bc.ca/slrp/lrmp/princegeorge/vanderhf/plan/project.html
Regional Districts	Cariboo Regional District http://www.cariboord.bc.ca/ Regional District of Bulkley-Nechako http://www.rdbn.bc.ca/
Communities	District of Vanderhoof http://www.vanderhoof.ca/District.html Village of Fraser Lake www.fraserlake.ca/
Backroad Mapbook	Cariboo Chilcotin Coast BC. Backroad Mapbook (Mussio Ventures, 2010). 2nd Edition.
Fishing	2011-2013 Freshwater Fishing Regulations Synopsis http://www.env.gov.bc.ca/fw/fish/regulations/#Synopsis
Hunting, Trapping, and Guide Outfitting	Hunting and Trapping Regulations Synopsis (2012 – 2014) http://www.env.gov.bc.ca/fw/wildlife/hunting/regulations/
	Guide Outfitters Association of BC Member List. Guide Outfitters Association of BC. http://www.goabc.org.

2.1.2 Mapping

Environmental Management Systems Research Institute's ArcView 9.3.1 software was used to create all maps. The data used to generate the maps came from a variety of sources, including: pre-existing shape files and geo-databases within the local GIS department; and additional shape files downloaded from the British Columbia (BC) government's Land and Resource Data Warehouse (LRDW), Integrated Land and Resource Registry (ILRR), and Geo BC.

2.1.3 Interviews

In several instances, where additional information or confirmation of available information was required, telephone interviews were conducted. However, due to the substantial amount of information available from public sources, it was determined that specific information regarding historical, current, and potential future land and resource use in the study area, collected during the extensive stakeholder consultation process, would be compiled and incorporated in detail as part of the issues scoping process for the environmental impact assessment.

2.2 Study Area Rationale

To provide additional clarity, the following study areas were used to describe the NTLU potentially affected by the Project:

- Mine site study area;
- Mine site access road study area;
- Airstrip (and associated access road) study area;
- Freshwater supply study area;
- Transmission line study area (main);
- Forest Service Road (FSR) study area; and
- NTLU Regional Study Area (RSA).

Additional study areas include two alternative re-routes to the transmission line study area in different locations: the Stellako wildlife management area crossing alternative, in the northern end of the proposed transmission line study area; and the Mills route alternative, located at the southern extent of the transmission line study area. The spatial areas within the two alternative transmission line study areas were assessed separately under the transmission line (main) study area section where required.

Study area rationalization was primarily based on other study areas including aquatics, terrestrial vegetation, soils, and wildlife study areas, which consider unique ecosystems and natural landform barriers. The mine site study area for the land use component was defined as the maximum area that captures potential direct disturbances from all of the alternatives being assessed. The mine site study area is defined by a 500-m buffer around the Project footprint to ensure potential direct effects of the Project on land use are addressed.

Current access to the Project is by road from Vanderhoof via an existing network of forest service roads (FSRs) and an 18-km exploration road (existing road access route). The Project includes the deactivation of the existing exploration road, which transverses an Ungulate Winter Range (UWR), and moving site access east and north to avoid the UWR. A new 15-km mine site access road will connect with the Kluskus-Ootsa FSR. For the purpose of the NTLU baseline, the land uses along the Kluskus FSR, which have provided access to the area for many years, are described. The new 15-km mine site access road, which will be constructed to avoid the UWR, occupies approximately 28 ha (15 km long over a right-of-way 20 m wide).

The rationale and total area for each study area used to calculate land use percentages are described in **Table 2.2-1**. **Figure 2.2-1** shows the boundaries of these study areas and **Figure 2.2-2** focuses in on the mine site study area, mine access road, and proposed freshwater supply study area.

Table 2.2-1: Total Area, in Hectares, for Each Study Area

Study Area	Rationale	Total Area (ha)
Mine Site	500 m buffer around proposed mine site footprint.	6,122
Mine Site Access Road	500 m buffer around proposed mine site access road footprint.	677
Airstrip	500 m buffer around proposed Airstrip and access road footprint.	797
Freshwater Supply	500 m buffer around the proposed freshwater supply.	1,320
Transmission Line (Main)	500 m buffer around the proposed transmission line (main).	14,332
- Mills Ranch Re-route	500 m buffer around the proposed Mills Ranch re-route portion of the transmission line.	1572
- Stellako Re-route	500 m buffer around the proposed Stellako re-route portion of the transmission line.	907
FSR (Kluskus FSR)	500 m buffer around the existing Kluskus FSR.	12,869
NTLU RSA	Based on Vanderhoof Land and Resources Management Plan. Includes all subzones that overlap with defined LSAs or fall within RSAs identified for other disciplines (i.e., aquatics). In order to provide as representative information as possible the eastern RSA boundary was moved towards the west in order to balance out that area on either side of the proposed powerline and Kluskus Forest Service Road. This area will also be used for the biophysical cumulative effects assessment.	1,026,353

Note: ha = hectare; FSR = Forest Service Road; m = metre; RSA = Regional Study Area

The individual study areas associated with the various Project components including: the mine site, mine site access road, airstrip (and access road), freshwater supply, transmission line (and re-routes), and FSR are collectively referred to as the Project local study area (LSA).

Calculations presented using the GIS data included the following:

- % study area – the attribute area intersected by the Project component study area divided by the total Project component study area
- % attribute – the attribute area intersected by the Project component study area divided by the total attribute area

330000 360000 390000 420000 450000

6000000 5970000 5940000 5910000 5880000

N

Legend

- Populated Place
- Highway
- Railway
- Existing Transmission Line
- Kluskus FSR
- Kluskus-Blue FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components

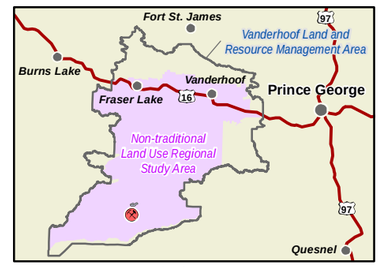
- Proposed Airstrip Extent
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Water Pipeline Route
- Proposed Airstrip Access Road
- Proposed Mine Site

Resource Management Zones

- Multi-Value Emphasis Zone
- Protected Area
- Resource Development Emphasis Zone
- Settlement/Agriculture Zone
- Special Resource Zone
- Vanderhoof Land and Resource Management Plan Area and Access Management Plan Area

Non-Traditional Landuse

- Regional Study Area
- Local Study Area



Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Non-traditional Land Use Study Areas and Resource Management Zones

DATE:	ANALYST:	Figure 2.2-1
July, 2013	AA	
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GIS FILE: 17-100-018_v4_NTLUSA_WP_NA.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	

amec

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360000 370000 380000 390000 400000

5910000

5900000

5890000

Proposed Transmission Line

Proposed Transmission Line (Mills Ranch Reroute)

Kluskus-Red

Chedakuz Creek

Chedakuz RMZ 16

Kluskus-Chedakuz FSR

Esker

Kluskus RMZ 14

Kluskus FSR

Kluskus-Euchiniko FSR

Chutanli Lake

Fawnie Nose 1926m

Davidson Creek RMZ 17

Kluskus-Ootsa FSR

TATELKUS LAKE RESERVE 28

Tatelkuz Mountain 1611m

933m

Tatelkuz Lake

Proposed Airstrip

Fawnie Dome 1726m

Fawnie Range

Turtle Creek

Proposed Airstrip Access Road

Davidson Creek

Chedakuz RMZ 16

Proposed Fresh Water Pipeline

Top Lake

1097m

Proposed Mine Access Road

1387m

1096m

1151m

Kluskus-Mesilinka FSR

Creek 661

1634m

1231m

Kluskus Malaput FSR

1666m

Fawnie Creek

1444m

1611m

Chedakuz Creek

Kuyakuz Mountain 1734m

Kluskus RMZ 14

1668m

Davidson Creek RMZ 17

1767m

Mount Davidson 1856m

Laidman Lake RMZ18

Kuyakuz Lake

Kluskus-Blue FSR

Upper Blackwater RMZ 19

Tsacha Mountain 1781m

Murray Creek

West Road (Blackwater)

Euchiniko Lakes

960m

KLUSKUS 1

UPPER KLUSKUS LAKE 9

Kluskus Village

KUSHYA CREEK 7

KUSHYA CREEK 12

Tsacha Lake

Kluskus Lakes

Kluskus Creek

N

Legend

- Populated Place
- Spotheights
- Stream
- Waterbody
- Indian Reserves
- Kluskus FSR
- Kluskus-Ootsa FSR
- Kluskus-Blue FSR
- Other FSRs
- Tracks

Project Components

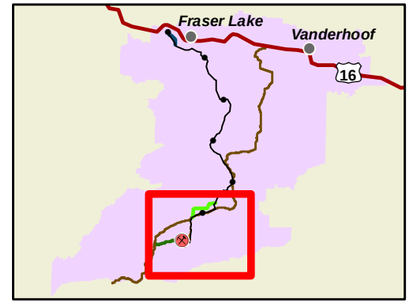
- Exploration Road
- Proposed Airstrip Access Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Proposed Mine Site
- Proposed Airstrip

Resource Management Zones

- Multi-Value Emphasis Zone
- Resource Development Emphasis Zone
- Special Resource Zone

Non-Traditional Landuse

- Regional Study Area
- Local Study Area



Scale:1:150,000

0 2.5 5 10

Kilometres

Reference

BC Government GeoBC Data Distribution
BCGOV FLNRO Recreation Sites and Trails Branch

CLIENT: newgold

PROJECT: Blackwater Gold Project

Mine Site, Mine Access Road and Water Pipeline Study Areas

DATE: April, 2014	ANALYST: WR	**Figure** 2.2-2
JOB No: VE52277	QA/QC: SB	PDF FILE: 17-100-039_ManZonesLSA_v3.pdf
GIS FILE: 17-100-039_ManZonesLSA_v3.mxd		
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3.0 RESULTS/DISCUSSION

3.1 Land Use Management Planning

Land use in BC is managed by multiple levels of government including provincial, regional, and community based planning strategies.

3.1.1 Provincial

BC's land use planning program began in the early 1990s, when it was developed as a tool to ease land use conflict among resource agencies, industry, First Nations, and the public, and to deliver BC's Protected Areas Strategy. BC is one of the only jurisdictions in the world that has applied this type of planning in a systematic way to balance social, economic, and environmental values. BC is also in a unique situation, in that 94% of the land base is still owned by the citizens of BC. The program was created to:

- improve land use certainty and economic stability;
- generate economic opportunities, investment and jobs; and
- achieve healthy communities and ensure the long-term viability of the environment.

Vanderhoof Land and Resource Management Plan (LRMP), which was developed in January 1997, divides 1.38 million hectares (Mha) into the following six different Resource Management Zone (RMZ) categories (Government of BC, 1997):

- Resource Development Emphasis RMZ – Incorporating 56.7% of the land base, the management on these lands emphasizes the development of resources such as mineral extraction and timber harvesting, while minimizing impacts on other resources through a variety of integrated resource management strategies.
- Multi-value Emphasis RMZ – Incorporating 17.8% of the LRMP area, these lands are managed for a wide array of resource values, often by dividing the RMZ into subzones.
- Settlement/Agriculture RMZ – Representing 14.7% of the land base, this zone manages Crown Lands consistently with the historic pattern of settlement and agriculture in the Nechako Valley and it is consistent with the Vanderhoof Crown Land Plan.
- Special RMZ – Representing 4% of the land base, managed in Special RMZs, to conserve one or more resource values such as habitat, scenery, and recreational opportunities.
- Protected Areas – Six RMZs have Protected Area status that stand alone as functioning units within the Vanderhoof Plan area.

The Vanderhoof LRMP encompasses the entire Project area included in the baseline and associated assessment and formed the basis for the selection of the NTLU RSA (**Figure 2.2-1** and **Figure 2.2-2**). The mine site study area, mine site access road study area,

airstrip study area, freshwater supply study area and FSR study area do not interact with a Special RMZ. The main transmission line study area crosses a narrow area of the Upper Nechako RMZ, a Special RMZ providing for the maintenance of the fisheries, wildlife, scenic views, and cultural values of the Nechako River Corridor (**Figure 2.2-1**).

The Vanderhoof LRMP Review and Amendment Project was initiated in 2005 through a cooperative inter-agency approach, under the mandate of BC ILMB, the Mountain Pine Beetle Action Plan (Government of BC, 2006-2011), and advice from stakeholders and the public. The objective of the Vanderhoof LRMP Review and Amendment Project was to ensure that the values in the LRMP are respected and considered with respect to the mountain pine beetle (MPB) epidemic and future salvage harvesting. While salvaging and optimizing the use of beetle-killed timber is economically vital to the community, there remains a need for the Vanderhoof LRMP to provide relevant strategic land use direction that supports balanced resource management to guide operational planning. A description of future salvage harvesting associated with the MPB in the Project area is included in the baseline review (Section 3.5 Forestry and Timber Resources).

Specific interests, objectives, and associated management strategies outlined in the Vanderhoof LRMP for the various land uses that fall within the Project study area are described in the representative land use sections below.

An Access Management Plan (AMP) was developed and implemented in coordination with the Vanderhoof LRMP between 1998 and 2005. Under the direction of the provincial MPB Action Plan access and recreation values identified most at risk from the MPB epidemic and associated salvage harvesting were assessed and updated. The Vanderhoof AMP for Forest Recreation updated the original plan to include a range of recreation opportunities for motorized and non-motorized uses (Government of BC, 2008a). The revised plan attempted to effectively mitigate potential effects of roads on recreational opportunities and experiences available in the area through the management of road densities, while at the same time providing operational certainty for resource development.

3.1.1.1 Mine Site Study Area

The mine site study area is located in Davidson Creek RMZ 17, a Resource Development Emphasis Zone and is bordered to the east and west by Multi-value Emphasis Zones (**Figure 2.2-2**).

The Davidson Creek RMZ 17 lies on the eastern slopes of the Fawnie Range in the south-central portion of the Vanderhoof LRMP (Government of BC, 1997). It extends from the Knewstubb Reservoir in the north to the Blackwater River Valley area on the south. With relatively few lakes, its most prominent geographic features are on its western boundary and include Tsacha Mountain, Mt. Davidson, and Fawnie Dome. The Kluskus FSR bisects the zone with the Chedakuz Road leading northwest from 128 km and the Davidson Creek Road leading southeast at 124.5 km. The Kluskus-Tsacha (Blue Road) enters the zone at the south end from the east.

The intent of the Davidson Creek RMZ 17 is to (Government of BC, 1997):

- Manage as a Resource Development Emphasis RMZ;
- Integrate management of wildlife, recreational, and Native interest values through appropriate access management;
- Limit vehicle access to the entire area south of the Kluskus FSR to that which is associated with resource development activities; and
- Manage the northwest section of the zone to restrict access and provide a buffer between resource development and the critical caribou winter range further west.

The Kluskus-Ootsa FSR provides the main access, which is currently restricted into the Naglico Lakes beyond the 167 km area, with trenches and berms across the road to provide hike-in/horseback riding opportunities into the Wolf and Naglico Lakes (Government of BC, 1997). A road closure at 158 km impedes road access to Moose Lake, a fly-in recreational fishing lake.

3.1.1.2 Mine Site Access Road Study Area

The proposed 15-km mine site access road would fall within the Davidson Creek RMZ 17. Applicable plans and bylaws for the mine site access road are the same as for the mine site study area.

3.1.1.3 Freshwater Supply Study Area

The freshwater supply study area is located predominately within the Davidson Creek RMZ 17 (**Figure 2.2-2**). The portion of the freshwater supply pipeline that enters Tatelkuz Lake is located within the Chedakuz RMZ 16, a Multi-value Emphasis Zone. Management objectives of the Chedakuz RMZ include: maintaining opportunities for mineral exploration and development while ensuring that these activities are undertaken with sensitivity to natural, cultural, and recreational values; and managing access for wildlife habitat enhancement and decreased soil erosion by not permitting any permanent access south from 124.5 km on the Kluskus-Ootsa FSR into the Davidson Zone (Government of BC, 1997).

3.1.1.4 Airstrip Study Area

Applicable plans and bylaws for the airstrip access road are the same as for the mine site study area.

3.1.1.5 Transmission Line Study Area

The transmission line crosses the following eight RMZs, shown in **Figure 2.2-1**, starting at the mine site and ending at the Glenannon substation near Endako:

- RMZ 5 – Nechako Valley Settlement/Agriculture Zone;
- RMZ 6 – Francois North;
- RMZ 8 – Nechako West Resource Development Emphasis Zone;

- RMZ 9 – Upper Nechako River Special Resource Zone;
- RMZ 10 – Crystal Lake Multi-value Emphasis Zone;
- RMZ 14 – Kluskus Resource Development Emphasis Zone;
- RMZ 16 – Chedakuz Multi-value Emphasis Zone;
- RMZ 17 – Davidson Creek Resource Development Emphasis Zone.

The Stellako and Mills Ranch re-route study areas fall within the same RMZs as the transmission line study area.

3.1.1.6 FSR Study Area

The FSR study area, the majority of which has provided access to the area for years, crosses the following RMZs (starting at the mine site and ending at Hwy. 16):

- RMZ 5 – Nechako Valley Settlement/Agriculture Zone;
- RMZ 10 – Crystal Lake Multi-value Emphasis Zone;
- RMZ 12 – Vanderhoof South Resource Development Emphasis Zone;
- RMZ 14 – Kluskus Resource Development Emphasis Zone;
- RMZ 16 – Chedakuz Multi-value Emphasis Zone; and
- RMZ 17 – Davidson Creek Resource Development Emphasis Zone.

The access road runs along the eastern side of the Crystal Lake RMZ 10, which borders Vanderhoof South RMZ 12 (**Figure 2.2-1**).

3.1.2 Regional Districts

According to the *Local Government Act* (Government of BC, 2012) the regional district is an autonomous order of government, acting within their jurisdiction. The scope of responsibilities of the regional district is to:

- Provide good government for each community;
- Provide services and other things that the board considers are necessary or desirable for all or part of a community;
- Provide for stewardship of the public assets of each community; and
- Foster the current and future economic, social, and environmental well-being of each community.

Under the *Local Government Act*, the provincial government and regional districts work as a cooperative. The regional districts provide government services for unincorporated (rural) areas (Government of BC, 1991). The *Local Government Act* provides a platform for intermunicipal partnership whereby provincial mandates can be implemented (i.e., regional waste management planning). Through a consultation process involving the public,

stakeholders, relevant agencies, and First Nations, regional initiatives and strategies are developed.

The mine site, mine site access road, airstrip, and freshwater supply study areas fall within the Cariboo Regional District (CRD). The NTLU RSA falls with the Regional District of Bulkley-Nechako (RDBN) and the CRD. A brief description of the regional districts is provided below. A more comprehensive description is included in the Economics Baseline and the Social Baseline, and on the respective regional district websites.

Figure 3.1-1 provides a summary of the regional district and community boundaries that overlap with the Project study area.

3.1.2.1 Cariboo Regional District

The CRD is located in the central interior of BC and was incorporated in 1968. The CRD consists of 12 electoral areas and four unincorporated member municipalities (CRD, 2013a). The CRD comprises 20,262 km^2 and the region's reported population is 63,392 inhabitants (Statistics Canada, 2012b). The mine site, mine site access road, airstrip, and freshwater supply study areas fall within CRD Electoral Area I, West Fraser/Nazko (CRD, 2013a) which is managed by the North Cariboo Area Rural Land Use Bylaw 3505. The CRD currently provides approximately 99 local government services for taxpayers including fire protection, emergency planning, solid waste management, land use planning, and invasive plant management (CRD, 2013b).

300000 360000 420000 480000 540000

6060000 6000000 5940000 5880000

Tachie
Pendleton Bay
Babine Lake
Stuart Lake
District Municipality of Fort St. James
Fort St. James
Bear Lake
Salmon River
Decker Lake
Village of Burns Lake
Burns Lake
Tintagel
27
97
Stuart River
Village of Fraser Lake
Tchesinkut Lake
35
16
Fraser Lake
Fort Fraser
District Municipality of Vanderhoof
Fraser-Fort George Regional District
Willow River
Ferndale
Southbank
Francois Lake
Engen
Vanderhoof
Tachick Lake
Nechako River
Prince George
Nulki Lake
Clucuiz Lake
Bulkley-Nechako Regional District
City of Prince George
Red Rock
Ootsa Lake
Cheslatta Lake
Tatuk Lake
Knewstubb Lake
Nechako Reservoir
Natalkuz Lake
Hixon
Tetachuck Lake
Fraser River
Cariboo Regional District
West Road (Blackwater) River
26
Quesnel River
Quesnel
Dean River

N

Legend

- Proposed Project Mine Site
- Populated Place
- Highway
- Kluskus Forestry Service Road
- Local Roads

Project Components

- Airstrip Extent
- Exploration Road
- Proposed Airstrip Access Road
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- *Proposed Transmission Line (Stellako Re-route)*
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Stream (>=4th Order)
- Waterbody (>1400 ha)
- Municipal Boundaries
- Vanderhoof Rural Official Community Plan

Regional Districts

- Bulkley-Nechako
- Cariboo
- Fraser-Fort George

Vanderhoof District

- Land and Resource Management Plan Area

Non-Traditional Landuse

- Regional Study Area

Scale:1:800,000

0 10 20 40

Kilometres

Reference

Atlas of Canada
BC Government GeoBC Data Distribution
Access Road: Supplied by AllNorth Consultants Limited dated July 09, 2012
Transmission Line: Supplied by Knight Piesold dated July 09, 2012

CLIENT: newgold

PROJECT: Blackwater Gold Project

Regional Districts and Communities Overlapping and Proximate to the Non-traditional Land Use Regional Study Area

DATE:	ANALYST:	Figure 3.1-1
December, 2013	WR	
JOB No: VE52277	QA/QC: PB	PDF FILE: 17-100-68_RegionalDdistricts_v3.pdf
GIS FILE: 17-100-68_RegionalDistricts_v3.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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3.1.2.2 Regional District of Bulkley-Nechako

The RDBN, which was established on 1 February 1966, is comprised of eight incorporated municipalities and seven rural electoral areas (RDBN, 2013a). The RDBN encompasses an area of 73,440 km^2 and serves a reported population of 39,208 (Statistics Canada, 2012a). The RDBN provides 65 separate services to its taxpayers including development services, 9-1-1, environmental services, and liquid waste disposal (RDBN, 2013b). The transmission line study area crosses Electoral Areas D (Fraser Lake Rural) and F (Vanderhoof Rural); and the FSR study area ends at Hwy. 16 within Electoral Area F, Vanderhoof Rural (RDBN, 2013c).

Figure 3.1-2 summarizes the Land Use Designations outlined in the Vanderhoof Rural Official Community Plan (OCP) prepared by the RDBN (2010). The Vanderhoof Rural OCP is not a land use, subdivision, or development regulation. The community's vision for the future and how the community aims to reach that vision are outlined. The Vanderhoof Rural OCP is intended to be used to provide direction regarding planning and development within the Vanderhoof rural area by the public, the Board of Directors, Regional District staff, and Provincial agencies. Collaborative planning between the RDBN and the District of Vanderhoof is proposed to facilitate urban growth and develop land use strategies (RDBN 2009). **Figure 3.1-3** shows the ecological and wildlife values described in the Vanderhoof Rural OCP and identifies areas where specific ecological and wildlife habitat values will be considered during development review processes (RDBN, 2009).

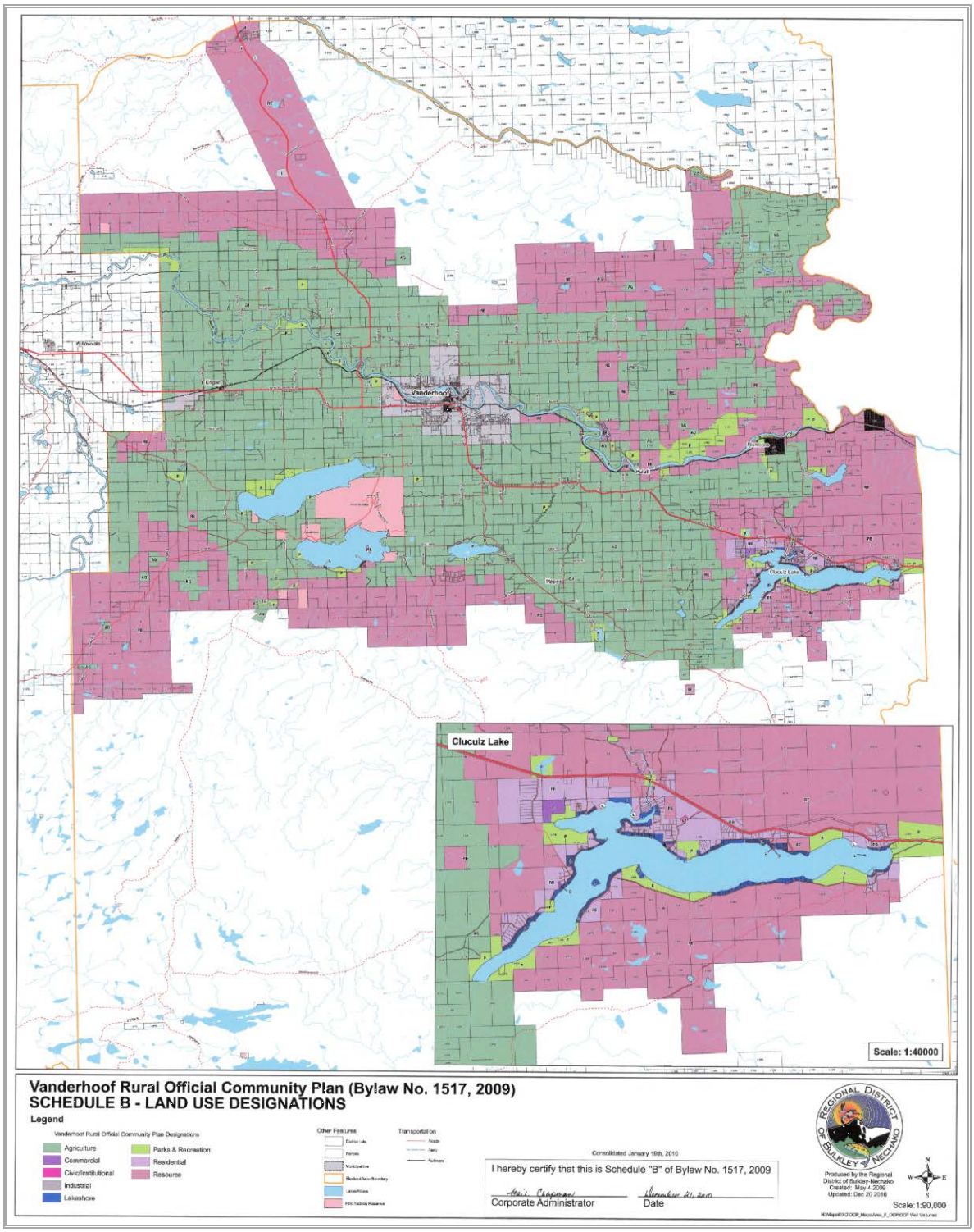


Figure 3.1-2 Land Use Designations within the Vanderhoof Rural Official Community Plan

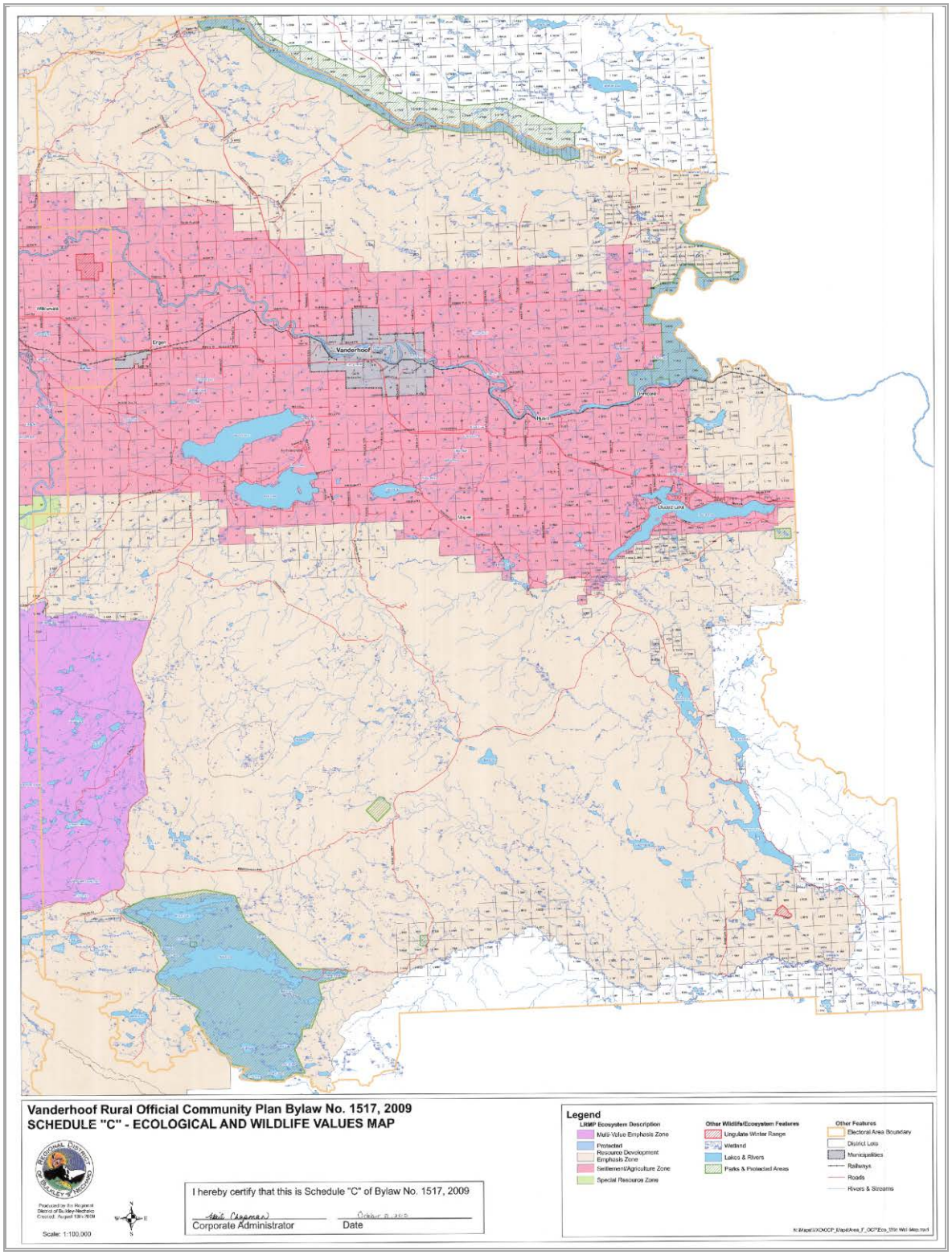


Figure 3.1-3 Vanderhoof Rural Official Community Plan Ecological and Wildlife Values Map

3.1.3 Communities

Figure 3.1-1 shows the location of the various communities near the Project. Where appropriate, details pertaining to land uses that may be affected within each community by proposed Project activities are provided in the various sections below. **Section 9.0**, Community Summaries, located in the Social Conditions Baseline Report, provides additional information, including population and other statistics. First Nations reserves that fall within or are located proximate to the Project are summarized in **Section 14** of the Application.

No communities fall within the mine study area, mine site access road study area, airstrip study area, or freshwater supply study area. The transmission line study area, where it connects into the existing transmission line, is approximately 1 km south of the community of Endako, and the FSR study area joins Hwy. 16 in the Engen area (both within the District of Vanderhoof). Other nearby communities includes Stellako and Fraser Lake.

The District of Vanderhoof, with an area of 54.83 km^2, is located at the geographic centre of BC, 100 km west of Prince George. Vanderhoof was founded in 1914, shortly after the last spike was driven in the neighbouring townsite of Fort Fraser, marking the completion of the Grand Trunk Pacific Railway. People moved to the area to farm and the community became the first agricultural settlement in the province. Lumber harvesting soon followed when lumber prices rose in the late 1940s. Today, Vanderhoof is a community of 4,480 residents (Statistics Canada, 2012a) and is a service centre to the surrounding rural population. Today, important industries still include agriculture and logging as well as tourism. The community is accessible by Hwy. 16 and commercial transportation in and out of Vanderhoof includes bus service as well as train.

The Vanderhoof OCP (District of Vanderhoof, 2006) is currently being updated (http//:HQPrinceGeorge.com, 2013) and environmental stewardship, economic development, and social and cultural issues are identified as key items for review.

The Village of Fraser Lake is located south of Fraser Lake along Hwy. 16 between the proposed northern terminus of the transmission line and FSR study areas on Hwy. 16. The OCP for the Village of Fraser Lake (Kerry Pateman Planning Services, 2008) indicates that, although the Endako Mine and Fraser Lake Mill continue to operate, an effort is being made to increase economic diversification and encourage commercial growth.

3.2 Protected Areas and Parks

3.2.1 Land Use Planning

The Vanderhoof LRMP outlines six protected areas, totalling 6.8% of the LRMP land base, which is consistent with the Protected Areas Strategy and guidance provided by the Resource Management Division (Government of BC, 1997). A review of the following protected areas is provided below:

- National (federal) protected areas;
- Provincial protected areas;
- Provincial parks;
- Ecological reserves;
- Conservancies;
- Biodiversity areas; and
- Other important areas.

3.2.2 National/Federal Protected Areas

From a federal perspective, there are no designated National Parks (National Parks System Plan, 3rd Edition, undated), National Historic Sites (National Historic Sites of Canada System Plan, undated), National Marine Conservation Areas (Parks Canada, 2013), National Wildlife Areas (Environment Canada, 2013a), or Migratory Bird Sanctuaries (Environment Canada 2013b) proximate to the Project (Canadian Wildlife Service (CWS) 2009; Parks Canada 2008). The Nechako Migratory Bird Sanctuary, which has traditionally attracted very large numbers of spring migrating Canada geese, is located within the town limits of Vanderhoof, approximately 20 km east of where the Kluskus FSR connects with Hwy. 16 and more than 100 km (straight line measurement) north of the proposed mine site (**Figure 3.2-1**).

3.2.3 Provincial Parks and Protected Areas

Table 3.2-1 and **Figure 3.2-1** summarize the Provincial Parks located in the area and their respective approximate distance from the Project (BC Parks, 2011). The Stellako River Wildlife Management Area (WMA), located between Fraser and Francois Lakes, is intersected by the transmission line (main) study area. The southern part of the existing exploration access road, which will be deactivated once the mine site access road is completed, runs within approximately 13 km of the southeastern limit of a caribou wintering area in the Entiako Protected Area. Additional information regarding the defined caribou winter range and wildlife management areas in general is provided in the Wildlife and Wildlife Habitat Baseline Report.

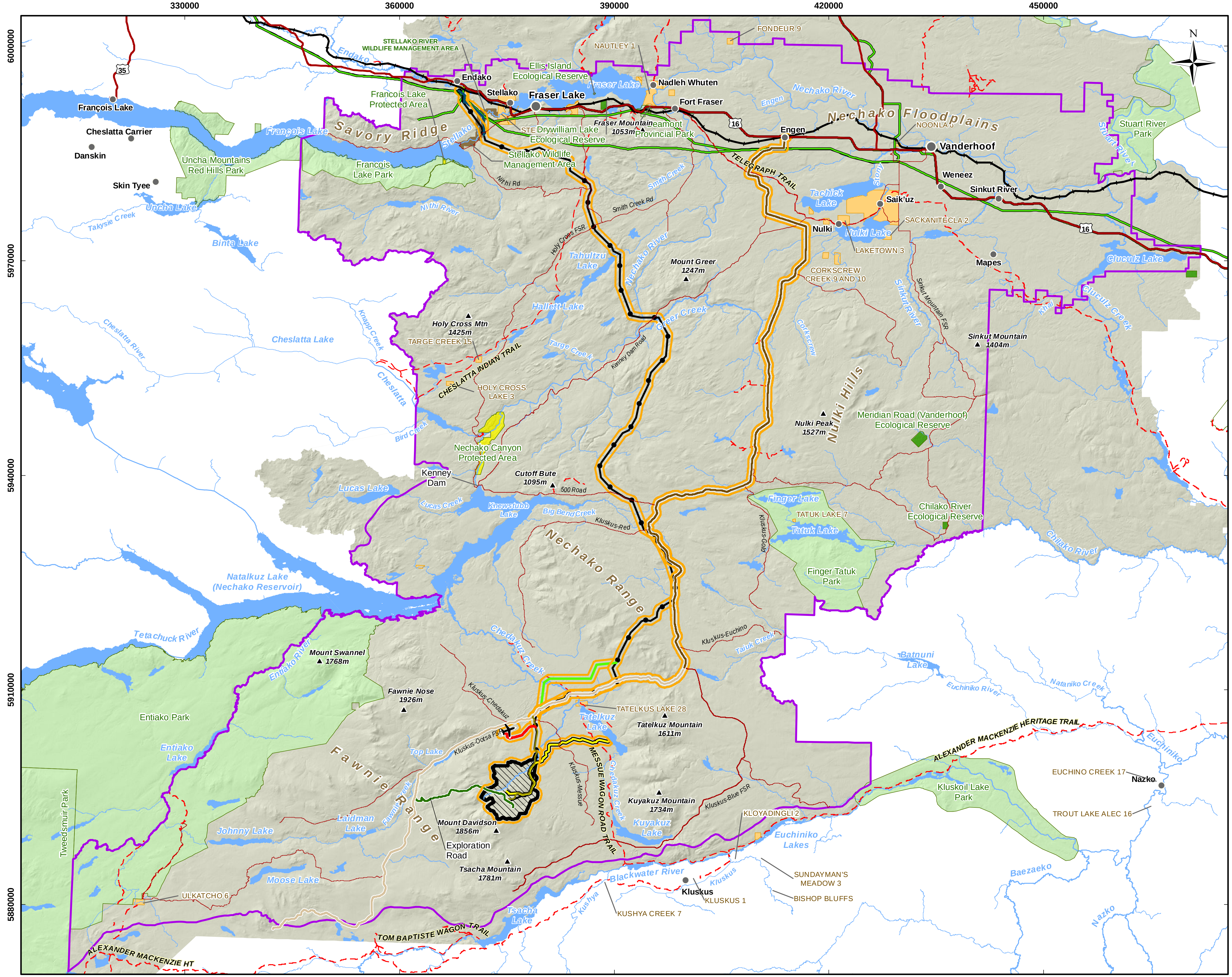
Table 3.2-1: Description of Provincial Parks and Protected Areas within the Non-traditional Land Use Regional Study Area

Provincial Park or Protected Area	Type	General Description	Approximate Distance from Closest Project Study Area (km)
Stellako River	Wildlife Management Area	503 ha along the Stellako River between Fraser and Francois Lakes protected on 7 December 2011 for the purpose of managing a historically significant, high quality fishery along with terrestrial wildlife.	Intersected by the northern end of the main transmission line study area and the Stellako re-route.
Beaumont Park	Class A Park	Located on the southeastern shores of Fraser Lake Beaumont Provincial Park (191.8 ha) provides a variety of services including camping, motorized and non-motorized boats, hiking up Fraser Mountain, fishing, swimming, etc.	20 km east of transmission line study area
Chilako River	Ecological Reserve	The Chilako River Ecological Reserve is located 54 km south of Vanderhoof, 2 km north of the Chilako River. The ecological reserve is 64 ha in size, and protects the most southerly known stand of tamarack trees in BC.	> 30 km east of FSR study area
Drywilliam Lake	Ecological Reserve	The 95 ha Drywilliam Lake Ecological Reserve, located between Fraser Lake and Drywilliam Lake on the north side of Hwy. 16, was established in 1975 to preserve a representative stand of Douglas-fir in the Sub-boreal Spruce Zone for forestry research.	13 km east of transmission line study area
Ellis Island	Ecological Reserve	The 1 ha Ellis Island Ecological Reserve, located in Fraser Lake, was established in 1991 to protect a vulnerable gull nesting colony for research purposes.	15 km east of transmission line study area
Entiako Park	Class A Park	Entiako Park and protected area is an isolated wilderness area home to a wide range of wildlife including moose, grizzly bears, and wolves. Visitors to the area are few but there are opportunities to boat, fish, hunt, or hike in a remote wilderness. Entiako Park is located approximately 150 km southeast of Houston and 150 km southwest of Vanderhoof, directly east of Tweedsmuir Provincial Park.	26 km west of LSA
Finger Tatuk Park	Class A Park	Finger-Tatuk Provincial Park (17,151 ha) was legislated in June 1999, following the recommendations of the Vanderhoof LRMP. The park protects one of the best representations of sub-boreal spruce and Engelmann spruce/sub-alpine fir within the Nazko Upland. The area provides a variety of outdoor recreation opportunities, including boating, canoeing, hiking, picnicking, wildlife viewing, hunting, swimming, and fishing.	3 km east of FSR study area

Provincial Park or Protected Area	Type	General Description	Approximate Distance from Closest Project Study Area (km)
Francois Lake	Class A Park/ Protected Area	Francois Lake Park (7,214 ha), located at the east end of Francois Lake, protects 25 km of shoreline and predominantly coniferous forests. Recreation opportunities include boating and fishing on Francois Lake, with rustic camping and picnic facilities. The park's forest and plant life provides a high quality moose winter habitat.	5 km west of transmission line study area
Meridian Road (Vanderhoof)	Ecological Reserve	The Meridian Road (Vanderhoof) Ecological Reserve, established in 1977, is located 40 km south of Vanderhoof. The ecological reserve is 262 ha in size, and preserves a sample of mature Engelmann Spruce – Subalpine Fir forest representative of uplands within the Nechako Plateau.	20 km east of FSR study area
Nechako Canyon	Protected Area	Established in July 2000, this 1,246 ha protected area, located about 80 km southwest of Vanderhoof, includes the 7 km long 'grand canyon' of the Nechako.	15 km west of transmission line study area

Note: BC = British Columbia; ha = hectare; km = kilometre

Source: BC Parks website (http://www.env.gov.bc.ca/bcparks/explore/); BC Government GeoBC Data Distribution – Parks and Protected Areas Section Boundaries



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François Lake
Cheslatta Carrier
Danskin
Skin Tyee
Uncha Mountains Red Hills Park
Uncha Lake
Takysie Creek
Binta Lake
Savory Ridge
Francois Lake Park
Francois Lake Protected Area
Endako
Stellako
Fraser Lake
Ellis Island Ecological Reserve
STELLAKO RIVER WILDLIFE MANAGEMENT AREA
Stellako Wildlife Management Area
Drywilliam Lake Ecological Reserve
Fraser Mountain 1053m
Beaumont Provincial Park
NAUTLEY 1
Nadleh Whuten
Fort Fraser
FONDEUR 9
Nechako River
Nechako Floodplains
NOONLA 6
Engen
Vanderhoof
Weneez
Sinkut River
Stuart River Park
Stuart River
TELEGRAPH TRAIL
Tachick Lake
Saik'uz
Nulki
Nulki Lake
SACKANITECLA 2
LAKETOWN 3
CORKSCREW CREEK 9 AND 10
Mapes
Cluculz Lake
Cluculz Creek
Sinkut Mountain 1404m
Mount Greer 1247m
Tahultzu Lake
Hallett Lake
Greer Creek
Holy Cross Mtn 1425m
TARGE CREEK 15
CHESLATTA INDIAN TRAIL
HOLY CROSS LAKE 3
Cheslatta Lake
Cheslatta River
Knapp Creek
Nechako Canyon Protected Area
Kenney Dam
Cutoff Bute 1095m
Nulki Hills
Nulki Peak 1527m
Meridian Road (Vanderhoof) Ecological Reserve
Finger Lake
TATUK LAKE 7
Tatuk Lake
Finger Tatuk Park
Chilako River Ecological Reserve
Chilako River
Lucas Lake
Knewstubb Lake
Big Bend Creek
Nechako Range
Natalkuz Lake (Nechako Reservoir)
Tetachuck River
Entiako River
Mount Swannel 1768m
Fawnie Nose 1926m
Entiako Park
Entiako Lake
Tweedsmuir Park
TATELKUZ LAKE 28
Tatelkuz Lake
Tatelkuz Mountain 1611m
Top Lake
Fawnie Range
Mount Davidson 1856m
Exploration Road
Tsacha Mountain 1781m
Kuyakuz Mountain 1734m
Kuyakuz Lake
MESSUE WAGON ROAD TRAIL
Laidman Lake
Johnny Lake
Moose Lake
ULKATCHO 6
Tsacha Lake
TOM BAPTISTE WAGON TRAIL
ALEXANDER MACKENZIE HT
Blackwater River
Kluskus
KLUSKUS 1
KUSHYA CREEK 7
SUNDAYMAN'S MEADOW 3
BISHOP BLUFFS
KLOYADINGLI 2
Euchiniko Lakes
ALEXANDER MACKENZIE HERITAGE TRAIL
Kluskoil Lake Park
EUCHINO CREEK 17
Nazko
TROUT LAKE ALEC 16
Batnuni Lake
Euchiniko River
Nataniko Creek
Baezaeko

Legend

- Populated Place
- Highway
- Existing Transmission Line
- Stream (>=4th Order)
- Waterbody (>5000 ha)
- Indian Reserve

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components

- Airstrip Extent
- Exploration Road
- Proposed Mine Access Road
- Proposed Water Pipeline Route
- Proposed Transmission Line
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Transmission Line (Stellako Re-route)
- Proposed Airstrip Access Road
- Recreation Trail
- Proposed Mine Site

Protected Areas

- Provincial Park
- Protected Area
- Ecological Reserve
- Wildlife Management Area

Non-Traditional Landuse

- Regional Study Area
- Local Study Area

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Provincial Parks, Protected Areas and Concervancies Overlapping and Proximate to the Non-tradtional Land Use Regional Study Area

DATE: April, 2014	ANALYST: WR	Figure 3.2-1
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-002_v5_parks.pdf
GIS FILE: 17-100-002_v5_parks.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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3.3 Recreation and Tourism

The area overlapping the NTLU RSA is used year-round for a variety of recreational uses including all-terrain vehicle use (ATVing), snowmobiling, hiking, camping, cross-country skiing, horseback riding, fishing, hunting, interpretive cultural heritage experiences, and eco-tourism. Locations and facilities related to these recreational and tourism activities include recreational areas, sites, campsites, trails, lodges, lakes, and rivers.

3.3.1 Land Use and Planning

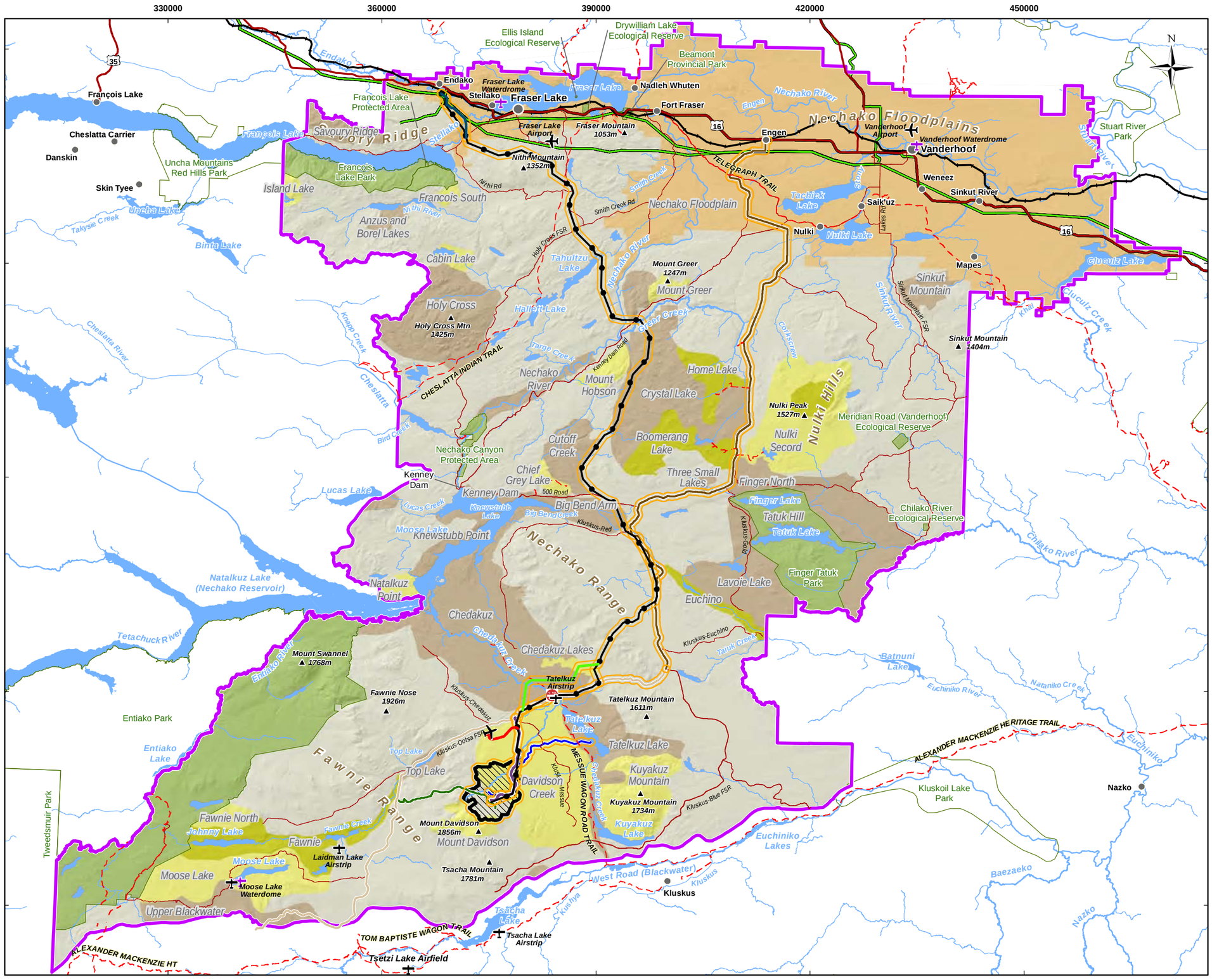
For the mine site study area a recreation and tourism objective outlined within the Davidson Creek RMZ included maintaining the primitive state of Snake Lake and Tsacha Lake by providing no access south of Blue Road into Tsacha Lake (designated as “walk-in only”) (Government of BC, 1997).

The Vanderhoof Access Management Plan (AMP) for Forest Recreation has been developed and implemented in the NTLU RSA to specifically address potential Crown land use conflicts between recreational use and wildlife habitat as well as other resource values (**Figure 3.3-1**). Historically, industrial users (i.e., forestry) established roads into areas that were once inaccessible resulting in recreation users and other commercial ventures access resulting in conflicts between the diverse groups of users (Government of BC, 2008a; 250News.com, 2007). The Vanderhoof Forest District, under the guidance of the Vanderhoof LRMP, has been implementing an AMP for the last 10 years. Due to the MPB epidemic in area forests the Vanderhoof AMP for Forest Recreation was revised to:

- Align the existing patterns of recreational use with the current situation regarding roads and access;
- Manage for the continued integrity of the recreational experiences and opportunities provided; and
- Ensure there is no impact to timber flow and supply.

The updated AMP provides a summary of:

- Where specific recreational opportunities and experiences currently exist;
- Current and established patterns of motorized and non-motorized recreational use;
- Clarification of the guidance provided in the LRMP; and
- The current state of road density so that future development can consider the recreational values identified.



Legend

- ● Populated Place
- ✈ Airport
- ✝ Airstrip
- ✝ Waterdome
- ⛔ Restricted Access
- Highway
- Railway
- Existing Transmission Line
- Recreation Trail
- ☐ Parks

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components

- ✈ Proposed Airstrip Extent
- Exploration Road
- Proposed Mine Access Road
- Proposed Water Pipeline Route
- Proposed Transmission Line
- Proposed Airstrip Access Road
- ▨ Proposed Mine Site

Non-Traditional Landuse

- ☐ Regional Study Area
- ☐ Local Study Area

Access Zones

- 🟩 Parks and Protected Areas
- 🟧 Settlement Area
- ☐ A - Motorized Road Access: Roaded Natural or Roaded Modified (RN/RM)
- ☐ B - Motorized Road Accessible Recreation: Semi Primitive Motorized (SPM)
- 🟨 C - Non Road Accessible Recreation: Semi Primitive Non Motorized (SPNM)
- 🟨 D - Non Road Accessible Recreation: Semi Primitive Non Motorized: Functionally Non Roaded (FNR)

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT:

newgold

PROJECT:

Blackwater Gold Project

Vanderhoof Access and Management Plan

DATE:	ANALYST:	
July, 2013	WR	**Figure** 3.3-1
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GIS FILE: 17-100-060_AccessManPlan_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	

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The Vanderhoof AMP has been divided into the following management categories:

- Motorized road access (A) – Road natural/Road modified (RN/RM);
- Motorized road access semi-remote (B) – Semi-primitive motorized (SPM);
- Non-road accessible recreation (C) – Semi-primitive non-motorized (SPNM); and
- Non-road accessible recreation (D) – Semi-primitive non-motorized, functionally non-roaded (FNR).

Table 3.3-1 includes a brief description of the specific management categories that overlap with the Project study area, with an emphasis on the non-motorized (SPNM and FNR) areas as they would be considered more sensitive. The majority of the transmission line and FSR study areas fall within areas designated as Motorized Road Accessible.

Table 3.3-1: Summary of Vanderhoof Access Management Plan Non-Motorized Areas that Overlap with Project Study Areas

AMP Area	Description	Proximity to Project Study Area
Non-road Accessible Recreation: Semi-Primitive Non-Motorized Functionally Non-roaded (FNR)		
Fawnie Dome	This area is to be managed to protect the ecological integrity of the naturally occurring "Forest Ecosystem Networks" or corridors, with a focus on grizzly bear and caribou habitat. The LRMP emphasizes the management of wildlife populations (grizzly bear, caribou, and moose habitat) and need to maintain backcountry and wilderness recreation opportunities. Mechanized access should be controlled to prevent displacement of caribou from their critical habitat. This FNR follows Fawnie Creek up to Top Lake/Kluskus–Ootsa FSR, approximately 10 km west of the mine site study area.	>10 km west of mine site study area. Fawnie AMP area comes within <1 km of the Kluskus-Ootsa FSR
Home Lake	This area includes a well-established, multi-use recreation trail that accesses a rustic cabin on a high quality angling lake. This area also supports numerous hiking trails to various other high quality angling lakes within reasonable driving distance from the communities. The LRMP emphasis is to manage for the recreation fisheries and wildlife values. This area's other forest values and its existing recreation use patterns are suitable for a continued low intensity recreation area. The traditional means of accessing Home Lake is to be maintained.	Located immediately west of Kluskus FSR (FSR study area)
Boomerang Lake	This area provides numerous hiking trails to high quality angling lakes within reasonable driving distance from the communities. The LRMP emphasis is to manage for the recreation fisheries and wildlife values. This area's existing recreation use patterns are suitable for a continued low intensity, backcountry wilderness recreation.	Located immediately west of Kluskus FSR (FSR study area)

AMP Area	Description	Proximity to Project Study Area
Non-road Accessible Recreation: Semi-Primitive Non-Motorized (SPNM)		
Mt. Davidson	This area integrates the management of wildlife, recreational and First Nation interest values through appropriate access management. The opportunity to drive to higher elevation destination for hiking and non-motorized adventures in a subalpine environment is offered.	Overlaps the mine site study area
Davidson Creek	This area is very popular with local horseback riding clubs and non-motorized hunting. Alternate opportunities to access historic and culturally significant trails including the Messue Wagon Road, Messue Horse Trail/Kluskus Bypass are provided. Other recreational activities supported in this area include hiking, camping, interpretive cultural heritage experiences, horseback outfitting tours, and eco-tourism. The LRMP guidance for this area is to integrate the management of wildlife, recreational and First Nation interests and values through appropriate access management. The Messue area, located immediately north of Davidson Creek, has a similar management strategy and is rich in cultural heritage features and interpretive opportunities. Recreation uses include ecotourism, wildlife viewing, hiking, camping, cultural heritage experiences, guided horseback outfitting tours, and public hunting using horses.	Overlaps all of the Project study area
Chedakuz Lakes	This area supports a high quality, wild stock rainbow trout fishery. Other recreational uses in the area include angling, camping, and photography.	Located immediately west of transmission line study area
Chief Gray Lake	A “hike-in” only lake, this area is very popular with the local communities for a high quality fishing experience in a wilderness setting. This area has had a non-motorized recreation use pattern is in existence for many years.	Located approximately 1 km west of the transmission line study area
Mt. Hobson	This area provides the same opportunities as Mt. Greer and has traditionally been used by recreationists seeking the opportunity for day hiking, picnicking, sightseeing, and wildlife viewing. Accessible by road and with reasonable driving distance from surrounding communities.	Located approximately 1 km west of the transmission line study area
Mt. Greer Backcountry	As one of the higher mountains in the area, this area is used by recreationists seeking adventure in a moderate backcountry surrounding for day-hiking, picnicking, sightseeing, and wildlife viewing. This is a “park and walk” area that is accessible by road and within reasonable driving distance from the surrounding communities.	Overlaps the transmission line study area

Note: BC = British Columbia; km = kilometre; AMP = Access Management Plan

Source: Vanderhoof Recreation Map – Ministry of Forests, Land and Natural Resource Operations website (http://www.for.gov.bc.ca/dva/Other%20Documents/REC_08_all.pdf); BC Government GeoBC Data Distribution, Vanderhoof Access Management Plan

3.3.2 Recreation Sites and Trails

There are several historically and culturally significant trails located within 20 km of the Project including the Alexander Mackenzie Heritage Trail, Messue Wagon Road, and Messue Horse Trail/Kluskus Bypass. The Alexander MacKenzie Heritage Trail passes 15 km south of the proposed mine site in an east-west direction. There is a non-motorized recreational trail, the Messue Wagon Road, 13 km directly east of the mine site, running in a north-south direction, which will be crossed by the proposed freshwater supply from Tatelkuz Lake to the mine site at an existing resource road crossing.

Two historic trails cross through the Chedakuz RMZ 16. The Carrier Indian Trail route from the southeast, through the Chedakuz Valley to Cheslatta and north (used prior to the Nechako Reservoir development in the 1950s) is a continuation of the Messue Trail from the Messue Indian Reserve on the northwest end of Tatelkuz Lake (Government of BC, 1997). To the south, the Messue Trail continues through the valley and joins the Nuxalk-Carrier Grease Trail (Alexander Mackenzie Route) at Euchiniko Lakes. To the north of Tatelkuz Lake the trail carries on to Suscha Lake and connects with the Messue Wagon Road at the southeast end of the lake. A historic Carrier Indian wagon road route was upgraded to a jeep road for ranching and guiding activities by the Erhorn and Nunn families in the 1950s and 1960s, prior to the development of the Kluskus FSR in the late 1970s (Government of BC, 1997). **Table 3.3-2** summarizes the data available from the BC Data Warehouse for each study area and **Figure 3.3-2** shows the locations of the recreation sites and trails. The transmission line study area crosses the Nechako River, which has a designated canoe trail from Cheslatta Falls to Prince George (Vanderhoof Forest District, undated).

In addition to the recreation sites described in **Table 3.3-2**, other sites that fall within the NTLU RSA are shown on **Figure 3.3-2**. To provide additional context, **Figure 3.3-2** also shows recreational scenic areas which are described in detail in the Visual and Aesthetic Resources Baseline.

Table 3.3-2: Description of Recreation Sites and Trails Overlapping One or More Project Study Areas

Recreational Sites and Trails	Description	Within Project Footprint
Mine Site Study Area		
	There are no recreational sites within 5 km of the mine site study area	-
REC1300: Top Lake South	Approximately 7.5 km northwest of proposed mine site study area	-
REC1412: Tatelkuz Lake South	Approximately 10 km east of proposed mine site study area	-
REC1411: Tatelkuz Lake (SE)	Approximately 10 km east of proposed mine site study area	-
REC6859: Laidman Lake	Approximately 16 km southwest of proposed mine site study area	-
REC1415: Kuyakuz Lake	Approximately 16 km southeast of proposed mine site study area	-
Mine Site Access Road Study Area		
	No recreation sites within 5 km	-

Recreational Sites and Trails	Description	Within Project Footprint
Airstrip Study Area		
	No recreational sites or trails within 5 km of proposed airstrip study area	-
Freshwater Supply Study Area		
REC1412: Tatelkuz Lake South	Approximately 820 m southeast of proposed freshwater pipeline	-
REC1411: Tatelkuz Lake (SE)	Approximately 660 m east of proposed freshwater pipeline	-
REC1476: Messue Wagon Road	Trail intersects FSR, Mills Ranch TL re-route. Total length of trail is over 40 km	Yes (FSR; TL: Main; TL: Mills Ranch; Freshwater Supply)
Transmission Line (TL) Study Area		
REC5651: Big Bend Meadow	A small portion (0.387 ha) of the 5.5 ha site is within the main TL study area. A portion of the site is within the FSR footprint, and the entire site is within the FSR study area	Yes (FSR)
REC1497: Brewster Lake	This 9.0 ha site falls completely within the TL study area. A very small portion (<1 ha) is within the main TL footprint	Yes (TL: Main)
REC5740: Hobson Lake	Approximately 1,500 m west of proposed TL study area on the eastern arm of Knewstubb Lake	-
REC1418: Foster Lake	Approximately 700 m northwest of proposed TL study area	-
REC6140: Chief Grey Lake	Approximately 4 km east of proposed TL study area on the eastern arm of Knewstubb lake	-
REC1296: Veronica Lake	Approximately 3.5 km east of proposed TL study area	-
REC1419: Nithi River	Approximately 3 km south of proposed TL study area	-
REC1103: Greer Creek	Approximately 700 m south of proposed TL study area	-
REC5739: Casey Lake	Approximately 2,100 m west of proposed TL study area	-
Nechako River Canoe Trail	Canoe route along Nechako river intersects the proposed TL	Yes (TL: Main)
REC6084: Cheslatta Indian Trail; and REC0970: Cheslatta Trail	Trail intersects proposed TL. Trail length is over 52 km. Trail follows the lake corridor slated as an Aboriginal heritage restoration project in conjunction with the Nadleh Whut'en and Cheslatta First Nations. An 8-unit site is located 1.5 km upstream from Cheslatta Falls	Yes (TL: Main)
REC1476: Messue Wagon Road	Trail intersects FSR, Mills Ranch transmission line re-route. Total length of trail is over 40 km	Yes (FSR, TL: Main; TL: Mills Ranch; Freshwater Supply)
Mills Ranch Re-Route		
REC1476: Messue Wagon Road	Trail intersects FSR, Mills Ranch transmission line re-route. Total length of trail is over 40 km	Yes (FSR; TL: Main; TL: Mills Ranch; Freshwater Supply)
Stellako Re-Route		
REC1419: Nithi River	Approximately 4,600 m west of proposed Stellako TL re-route	-
REC5739: Casey Lake	Approximately 3,300 m west of proposed Stellako TL re-route	-
Forest Service Road (FSR) Study Area		
REC5651: Big Bend Meadow	This site is directly adjacent to the FSR footprint, and all of the site is within the FSR study area. A small portion (0.387 ha) of the 5.5 ha site is also within the main TL study area	Yes (FSR)
REC1497: Brewster Lake	Approximately 350 m west of proposed FSR study area. Also falls completely within the TL study area. A very small portion (0.008 ha) is within the main TL footprint	Yes (TL: Main)

Recreational Sites and Trails	Description	Within Project Footprint
REC5663: Greer Creek Falls	Approximately 620 m west of proposed FSR study area	-
REC4102: Greer Creek Falls Trails	Trail begins adjacent to FSR, and runs west approximately 1.5 km	Yes (FSR)
REC5650: Secord Lake	Approximately 950 m east of proposed FSR study area	-
REC6862: Arthur Lake	Approximately 1 km southeast of proposed FSR study area	-
REC1238: Chutanli Lake	Approximately 1.2 km east of proposed FSR study area	-
REC106220: Home Lake North East	Approximately 2.7 km west of proposed FSR study area	-
REC5648: Gluten Lake	Approximately 2.8 km east of proposed FSR study area	-
REC1298: Home Lake	Approximately 4.1 km west of proposed FSR study area	-
REC1319: Home Lake Trails	Trail begins adjacent to FSR, and runs approximately 5.3 km to the west	Yes (FSR)
REC5646: Tanli Lake	Approximately 4.5 km southeast of proposed FSR study area	-
REC1335: Johnson Lake Trail	Trail begins adjacent to FSR. A hiking trail leads to a rustic campsite on Johnson Lake (approx. one-way distance 4.5 km), with a side trail to small Jenyo Lake. All-terrain vehicles prohibited	Yes (FSR)
REC5649: Secord-Gluten Lakes Trail	Trail begins adjacent to FSR. A hiking trail to Zippermouth (Secord) and Gluten and Duten Lakes. Approx. one way distance to Secord 2 km; to Gluten, 6 km	Yes (FSR)
REC1476: Messue Wagon Road	Trail intersects FSR, Mills Ranch TL re-route. Total length of trail is over 40 km	Yes (FSR; TL: Main; TL: Mills Ranch; Freshwater Supply)

Note: "-" = not applicable; near analysis of recreation sites were focused on sites location within 5 km of each Project component. For the mine site study area, recreation sites were described up to 20 km away. All trails intersecting Project components or within 1 km are described

Source: Government of BC, 2008b; Government of BC undated; and GeoBC Data Distribution – Recreation Points and Polygons; and Recreation Sites and Trails Branch, Recreational Features (Government of BC, 2013a)

3.3.3 Registered Commercial Lodges and Camping Sites

Twenty-three commercial lodges, shown on **Figure 3.3-2** and summarized in **Table 3.3-3**, were identified from various sources including websites and available tourism information, and are located within the NTLU RSA.

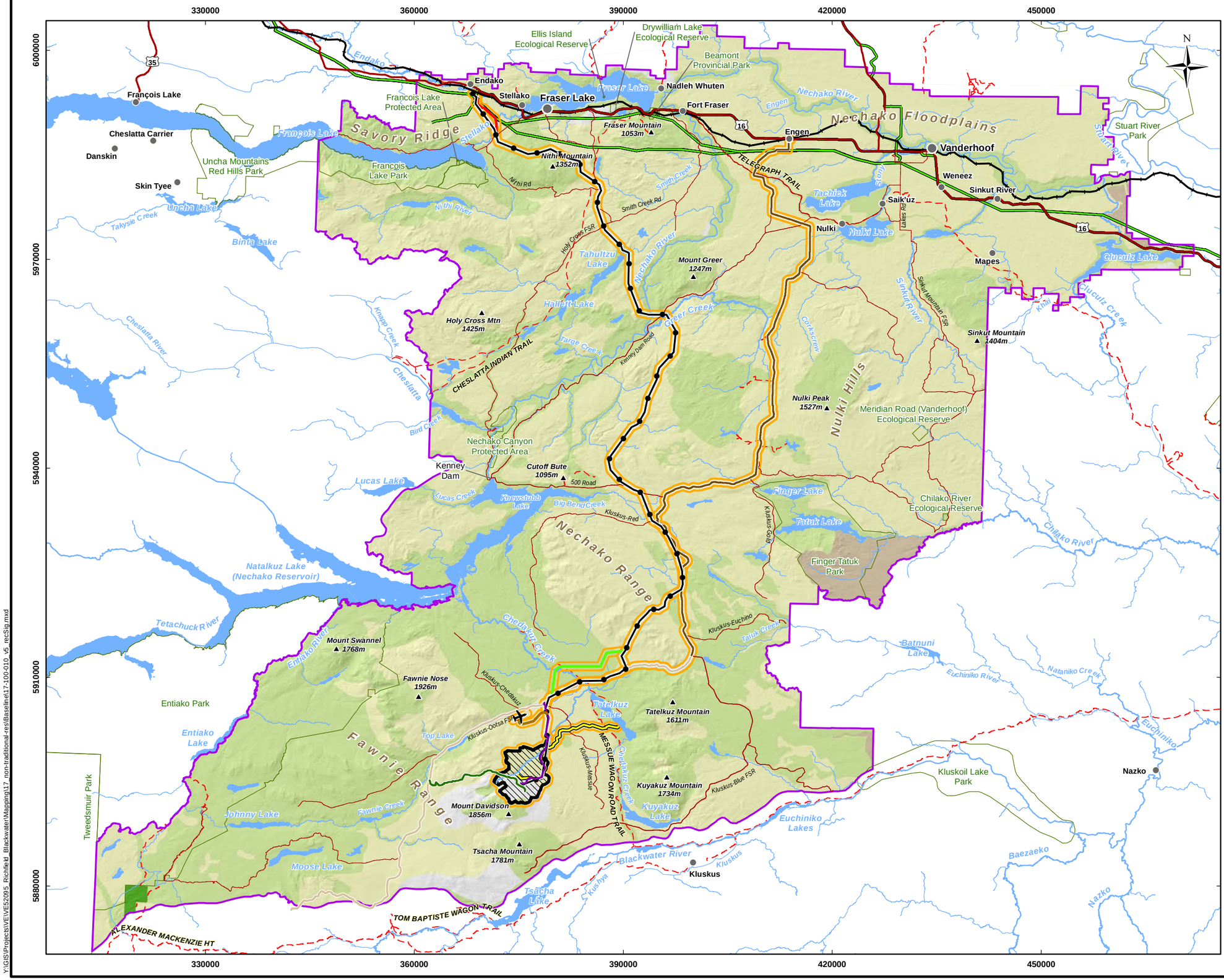
Table 3.3-3: Commercial Lodges Overlapping One or More Project Study Areas and Located within the Non-Traditional Land Use RSA

Lodge	Contact Information	Location/Description
Mine Site Study Area		
Tatelkuz Resort	PO Box 2300 Vanderhoof, BC, V0J 3A0 Phone: 1 (250) 483-4023 cell 1 (250) 567-1113 tlrnr@uniserve.com http://tatlakeranchresort.com/	• Located on Tatelkuz Lake, <2 km south of the mine site access road study area and main TL study area, and approximately 8.5 km from the proposed mine site • Facilities include a wilderness resort (log cabins and a lodge) and working cattle/dude ranch, offering fishing and boating on an exclusive lake, hiking and picnicking in a remote wilderness setting, and horseback riding
Laidman Lake Ecolodge	3733 Carp Road, Box 308 Carp, Ontario K0A 1L0 Toll-Free: 1 (866) 889-1558 Tel: (613) 482-2679 Cell: (613) 839-3168 info@laidmanlakelodge.com http://www.laidmanlakelodge.com/	• Located approximately 18 km southwest of the mine site study area and <10 km from the Kluskus-Ootsa FSR. Various cabin options are available. Camping, fishing, sightseeing and hiking, ATVing, snowmobiling, snowshoeing, archery, Aurora Borealis scheduling/watching, and gold mine day trips are some of the activities offered. Optional fly-out options by floatplane are also available
Mine Site Access Road Study Area		
Tatelkuz Resort		• Located <2 km south of the mine site access road, east of the proposed mine site access road
Airstrip Study Area		
Tatelkuz Resort		• Approximately 6 km northeast of proposed airstrip study area
Freshwater Pipeline Study Area		
Tatelkuz Resort		• Approx. 4.5 km north of proposed freshwater pipeline
Transmission Line Study Area		
Main		
Crystal Lake Resort	PO Box 619 Vanderhoof, BC, V0J 3A0 Sat. Tel: (604) 629-9836 Cell: (250) 567-7337 crystallake@xplornet.com crystallakebc.com	• Located approximately 3 km east of the proposed TL, and 60 km northeast of the mine site, the Crystal Lake Resort has facilities on 13 different remote wilderness sites, including Crystal Lake, Greer Creek, Kennedy Lake, Johnson Lake, Nulki Hills, Paddle Lake, Holler Lake, Little Moose Lake, Ghost Lake, Duckfoot Lake, Lang Lake, Rona Lake, and Hat Lake. Trail network offers access to over 40 lakes via ATV or hiking only. Visitors come to the resort to hunt or fish
Crystal Lake Cabins	Refer to Crystal Lake Resort	• Located approximately 5.6 km east of proposed TL, and 70 km northeast of mine site, Crystal Lake Cabins are part of the Crystal Lake Resort Facility network
Nechako Retreat		• Approximately 4.5 km southwest of proposed TL
HSP Ranch		• Approximately 9 km west of the proposed TL
Tatelkuz Resort		• Located on Tatelkuz Lake <2 km south of the mine site access road study area and main TL study area, and approximately 8.5 km from the proposed mine site

Lodge	Contact Information	Location/Description
Stellako Resort	PO Box 400 Fraser Lake, BC V0J 1S0 Tel: (250) 699-6695	• Located approximately 5 km west of the main TL study area at the southern end of the Stellako re-route. Offers riverside cabins, onsite camping, and trailer hook-ups.
Nithi Resort	PO Box 10 Fraser Lake, BC V0J 1S0 Tel/Fax (250) 699-6675 http://nithiresort.com/index2.html	• Located on Francois Lake approximately 10 km west of where the proposed TL joins Hwy. 16, at the southern end of the Stellako re-route. Cabins and camping offered, as well as fishing on the lake.
Mills Ranch Re-Route		
Tatelkuz Resort		• Approximately 4.5 km southeast of the Mills ranch re-route
Stellako Re-Route		
Stellako Resort		• Located approximately 5 km west of the Stellako re-route
Nithi Resort		• Located approximately 10 km west of the Stellako re-route
Forest Service Road (FSR) Study Area		
Finger Creek Ranch	Tel: (250) 567-9536	• Located <1 km from the proposed FSR study area, and 48 km from the mine site. Offers guided horseback trail rides
Finger Lake Resort	PO Box 181, 400 Gold Road km 59 Kluskus Road Vanderhoof, BC V0J 3A0 (866) 334-6437 (778) 785-1114 info@fingerlakeresort.com fingerlake@xplornet.com http://www.fingerlakeresort.com/	• Located approximately 2 km south of the proposed FSR study area, and approximately 50 km northeast of the mine site • Offers log cabin/cottage rentals, RV camping, boat rentals, and fishing for rainbow trout and kokanee. Resort is currently up for sale (http://www.bcresortsforsale.ca/)
Tachick Lake Resort	PO Box 1112 Vanderhoof, BC V0J 3A0 Tel: (250) 567-4929 Toll-Free: 1-877-567-4929 http://www.tachicklakeresort.com/aboutus.html	• Located approximately 2 km east of proposed FSR study area, approximately 88 km northeast of mine site, approximately 20 km southwest of Vanderhoof. Facilities include cabins, camping (powered or non-serviced), and boat rentals to anglers. Lake offers trout and whitefish fishing
Nulki Spirit Resort	11464 Edwards Road Vanderhoof, BC V0J 3A1 Tel: (250) 567-4851 Info@nulkispiritretreat.com mjaypjay@ uniserve.com http://www.nulkispiritretreat.com/index.htm	• Located approximately 5 km east of the proposed FSR study area on Nulki Lake. Open from 15 May to 15 November. Activities offered include rainbow trout and burbot fishing, hiking, and biking
Saikuz Park and Camping Ground	(250) 567-4916	• Located on Nulki Lake approximately 8 km east of the proposed FSR study area. Facilities include 8 cabins with 2 bedrooms, 3 cabins with bathrooms and running water. Camping facilities for RVs and tents, picnic area, and boat launch

Lodge	Contact Information	Location/Description
RSA		
Southwest		
Johnny Lake Lodge	Information not available	• Located approximately 40 km west of the mine site study area. No additional information available
Moosehead Lodge	Anahim Lake Toll-Free: (800) 668-7544 Tel: (604) 232-5532	• Located approximately 30 km southwest of the mine site study area. Offers cabins, motor and pontoon boats, float tubes, and canoes for lake fishing. Offers guided and non-guided fishing experience on Moose Lake, Trophy Lake, and other nearby lakes and rivers via boat, hiking, or floatplane access
Moose Lake Lodge	PO Box 3310 Anahim Lake, BC V0L 1C0 Tel: (250) 742-3535 ooslk@telus.net http://www.mooselakelodge.com/	• Located approximately 35 km southwest of the mine site study area. Provides both guided and unguided fly fishing trips for steelhead, rainbow and cutthroat trout, and salmon. Approximately 50% of the lodge's business comes from fishing. Hiking and horseback riding are offered. Optional fly-out options by float plane are available
East		
Tatuk Lake Resort	PO Box 1217 Vanderhoof, BC, V0J 3A0 (250)483-6780 tatuklakeresort@xplornet.com http://www.tatuklake.com/default.htm	• Located approximately 20 km east of junction of proposed mine site access road and TL, approximately 50 km northeast of the mine site and 8.5 km southeast of FSR • Activities provided at this all-season resort include angling and fly fishing services for rainbow trout and kokanee on Tatuk Lake and other nearby lakes. Offers boat and motor rentals. Summer and winter recreation and sports include snowmobiling, ice fishing, cross-country skiing, boating, hiking, and mountain biking
Sumanik's Sanctuary	Tel: (250) 962-8582 huntsumaniks@xplornet.ca	• Located northeast of proposed mine site and approximately 18 km southeast of the proposed FSR study area, south of Tatuk Lake, within Finger-Tatuk Provincial Park; offers guide outfitting, snowmobiling, snowshoeing, cross-country skiing, and ice fishing
West		
Nechako Lodge	Nechako Lodge & Aviation 2500-500 Road Vanderhoof, BC V0J 3A1 Tel: (250) 412-2665 info@nechakolodge.com http://www.nechakolodge.com/	• Located approximately 16 km west of the proposed TL on the shores of Knewstubb Lake near Kenney Dam. Promotes minimum impact outdoor activities, including guided fishing adventures, backcountry hiking, canoeing, and flight-seeing • Nechako Aviation Ltd., a float plane charter service offered by Nechako Lodge, is one of only a few commercial carriers licensed to transport customers into the park. They also hold commercial guiding and angling permits for South Tweedsmuir Park and Entiako Park & Protected Area

Lodge	Contact Information	Location/Description
Northeast		
Sob Lake Adventure Camp	Sob Lake Road, Post: RRI S10 C6 Vanderhoof , BC V0J 3A0 Tel: (250) 567-3884	• Located >30 km east of the proposed FSR study area; offers two wilderness cabins
Brookside Resort	RR 1 Site 16 Comp 75 Vanderhoof , BC V0J 3A0 Tel: (250) 441-0035	• Located at the northeast corner of the NTLU RSA along Hwy. 16 >40 km east of the access road study area. Set on Cluculz Lake, the resort is open to RVers and tenters from May 1 to October 31. Providing shaded sites with 30 and 50 amp service, full hook-ups and pull-through, tent sites, showers, laundry, ice, flush toilets, grocery store, driving range, and fire pits
Lakeside Resort	54035 Guest Road Vanderhoof, BC V0J 3A0 Tel: (250) 441-3344	• Located at the northeast corner of the NTLU RSA, south of Hwy. 16, >40 km, east of the access road study area. No additional information available
Northwest		
Francois Lake Resort	Francois Lake Road Fraser Lake, BC V0J 1S0 Tel: (250) 699-6551	• Located >10 km west of the TL study area, nearest to the Stellako re-route. No additional information available
Birch Bay Resort	PO Box 484 Fraser Lake, BC V0J 1S0 Tel: (250) 699-8484 Fax: (250) 699-6919 bbresort@telus.net http://www.birchbay.ca/index.html	• Located at the northwest corner of the NTLU RSA on the north shore of Francois Lake. Offers cottages, log houses, RV connections, and camping. Fishing and other outdoor activities available
Pitka Mountain Camp	PO Box 42 Fort Fraser, BC V0J 1N0 Tel: (250) 690 7406 pitka_anderson@uniserve.com http://www.pitkamountainoutfitters.com/index.htm	• Located on the northwest corner of the RSA, approximately 18 km west of the proposed TL. Caters to hunters



Legend

- Populated Place
- Highway
- Railway
- Recreation Trail
- Existing Transmission Line
- Stream (>=4th Order)
- Waterbody (>= 100ha)

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components

- Proposed Airstrip Extent
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Stellako Re-route)
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Proposed Airstrip Access Road
- Exploration Road
- Proposed Transmission Line
- Proposed Mine Site

Non-Traditional Landuse

- Regional Study Area
- Local Study Area

Recreationally Significant Areas

- Very High
- High
- Medium
- Low
- Unknown

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Sensitivity and Significance Rating for Recreation Areas within the Non-traditional Land Use Regional Study Area

DATE: December, 2013	ANALYST: AA	**Figure** 3.3-2
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-010_v5_recSig.pdf
GIS FILE: 17-100-010_v5_recSig.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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3.3.4 Recreational Values

The recreation features inventory defines the sensitivity of a recreation features polygon as its relative vulnerability to potential alterations caused by resource development. The rating considers both the level of potential public concern and potential effects to resources (BC Ministry of Forests (MOF) 1998). The significance of a recreation features polygon as its relative importance to recreation is defined based on its potential to attract recreation use, uniqueness, scarcity, scenic view, amount of current recreation use, accessibility, and any other significant factors (BC MOF, 1998). These subjective ratings were developed using a recreation features inventory for determining the sensitivity and significance of recreation features polygons throughout BC by the BC MOF (1998).

The proximity of recreationally significant areas to the Project study area is summarized below (**Figure 3.3-3)**.

Figure 3.3-4 provides additional details on recreational significance by incorporating the sensitivity to disturbance for the various areas. **Figure 3.3-5** provides a detailed summary of the sensitivity and significance of recreationally significant areas overlapping the mine site study area, mine access road, and freshwater supply study area. Additional information regarding recreational values, which is also used in describing the significance of visual resources, is provided in the Visual and Aesthetic Resources Baseline. The recreational features inventory indicated that no recreational areas rated as having a high sensitivity to disturbance and a high or very high significance overlap the individual project component study areas that collectively make up the Project LSA.

3.3.4.1 Mine Site Study Area

The recreational significance of the north section of the mine site study area is rated as having moderate sensitivity, moderate significance. The south portion of the mine site study area is predominately rated as “unknown” with a small portion, associated with Mt. Davidson, rated as having moderate sensitivity, high significance for recreation.

3.3.4.2 Mine Site Access Road Study Area

The mine site access road study area is located north of the mine site in a recreational area rated as having moderate sensitivity, moderate recreational significance.

3.3.4.3 Airstrip Study Area

The airstrip study area is located north of the mine site in a recreational area rated as having moderate sensitivity, moderate recreational significance.

3.3.4.4 Freshwater Supply Study Area

The majority of the freshwater supply study area crosses an area rated as having a moderate sensitivity, moderate recreational significance. A small area rated as having a moderate sensitivity, high recreational significance is located immediately south of the right-of-way. Another area, associated with Tatelkuz Lake (rated as having a moderate sensitivity) high

recreational significance is overlapped by the freshwater supply study area as it approaches the lake.

3.3.4.5 Transmission Line Study Area

The majority of the proposed transmission line study area is located within an area rated as having low sensitivity, moderate significance. Several recreational areas rated as having a high significance (moderate sensitivity) are crossed by the transmission line study area including Chedakuz Creek, Greer Creek, Nechako River, and the area east of Francois Lake Protected Area.

Stellako Re-Route Study Area

The Stellako re-route study area intersects an area rated as having a moderate sensitivity, moderate significance.

Mills Ranch Re-Route Study Area

The Mills Ranch re-route study area intersects an area predominantly rated as having a moderate sensitivity, high significance.

3.3.4.6 FSR Study Area

The FSR study area is located primarily in an area rated as having a low sensitivity, moderate recreational significance. The FSR study area overlaps the same area of Chedakuz Creek as the transmission line study area as well the edges of several areas rated as having a low sensitivity, high recreational significance.

330000 360000 390000 420000 450000

6000000 5970000 5940000 5910000 5880000

N

Endako
Ellis Island Ecological Reserve
Stellako
Fraser Lake
Nadleh Whuten
Fort Fraser
Francois Lake Protected Area
Fraser Mountain 1053m
Drywilliam Lake Ecological Reserve
Provincial Park
Engen
Nechako Floodplains
Vanderhoof
Stuart River Park
Francois Lake
Savory Ridge
Nithi Mountain 1352m
Francois Lake Park
Uncha Mountains Red Hills Park
Weneez
Sinkut River
Saikuz
Tachick Lake
TELEGRAPH TRAIL
Nulki
Nulki Lake
Mapes
Cucuiz Lake
Cucuiz Creek
Tahultzu Lake
Mount Greer 1247m
Holly Cross FSR
Nechako River
Hallett Lake
Holy Cross Mtn 1425m
Greer Creek
Sinkut River
Sinkut Mountain FSR
Sinkut Mountain 1404m
Cheslatta Lake
Cheslatta River
Knapp Creek
CHESLATTA INDIAN TRAIL
Target Creek
Kenney Dam Road
Nulki Peak 1527m
Nulki Hills
Meridian Road (Vanderhoof) Ecological Reserve
Nechako Canyon Protected Area
Kenney Dam
Cutoff Butte 1095m
500 Road
Lucas Lake
Lucas Creek
Knewstubb Lake
Big Bend Creek
Kluskus-Red
Finger Lake
Chilako River Ecological Reserve
Kluskus-Gold
Tatuk Lake
Chilako River
Nechako Range
Finger Tatuk Park
Natalkuz Lake (Nechako Reservoir)
Tetachuck River
Mount Swannel 1768m
Entiako River
Chedakuz Creek
Kluskus-Euchiniko
Tatuk Creek
Batnuni Lake
Euchiniko River
Nataniko Creek
Fawnie Nose 1926m
Kluskus-Chedakuz
Entiako Park
Tatelkuz Lake
Tatelkuz Mountain 1611m
Top Lake
Kluskus-Odzsa FSR
Entiako Lake
Fawnie Range
Kluskus-Messue
MESSUE WAGON ROAD TRAIL
Chedakuz Creek
Euchiniko
Nazko
Kuyakuz Mountain 1734m
Kluskus-Blue FSR
Kuyakuz Lake
Kluskoil Lake Park
Tweedsmuir Park
Laidman Lake
Fawnie Creek
Johnny Lake
Mount Davidson 1856m
Exploration Road
Euchiniko Lakes
Moose Lake
Tsacha Mountain 1781m
Blackwater River
Kluskus
Baezaeko
Tsacha Lake
Kushya
Nazko
TOM BAPTISTE WAGON TRAIL
ALEXANDER MACKENZIE HT

Legend

- Populated Place
- Highway
- Existing Transmission Line
- Recreation Trail

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components

- Airstrip Extent
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Transmission Line (Stellako Re-route)
- Proposed Fresh Water Pipeline
- Proposed Mine Site

Recreation Features Inventory

Sensitivity and Significance Rating

- High sensitivity, very high significance
- High sensitivity, high significance
- Moderate sensitivity, high significance
- Moderate sensitivity, moderate significance
- Low sensitivity, high significance
- Low sensitivity, moderate significance
- Low sensitivity, low significance
- Unknown

Non-Traditional Landuse

- Regional Study Area
- Local Study Area

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

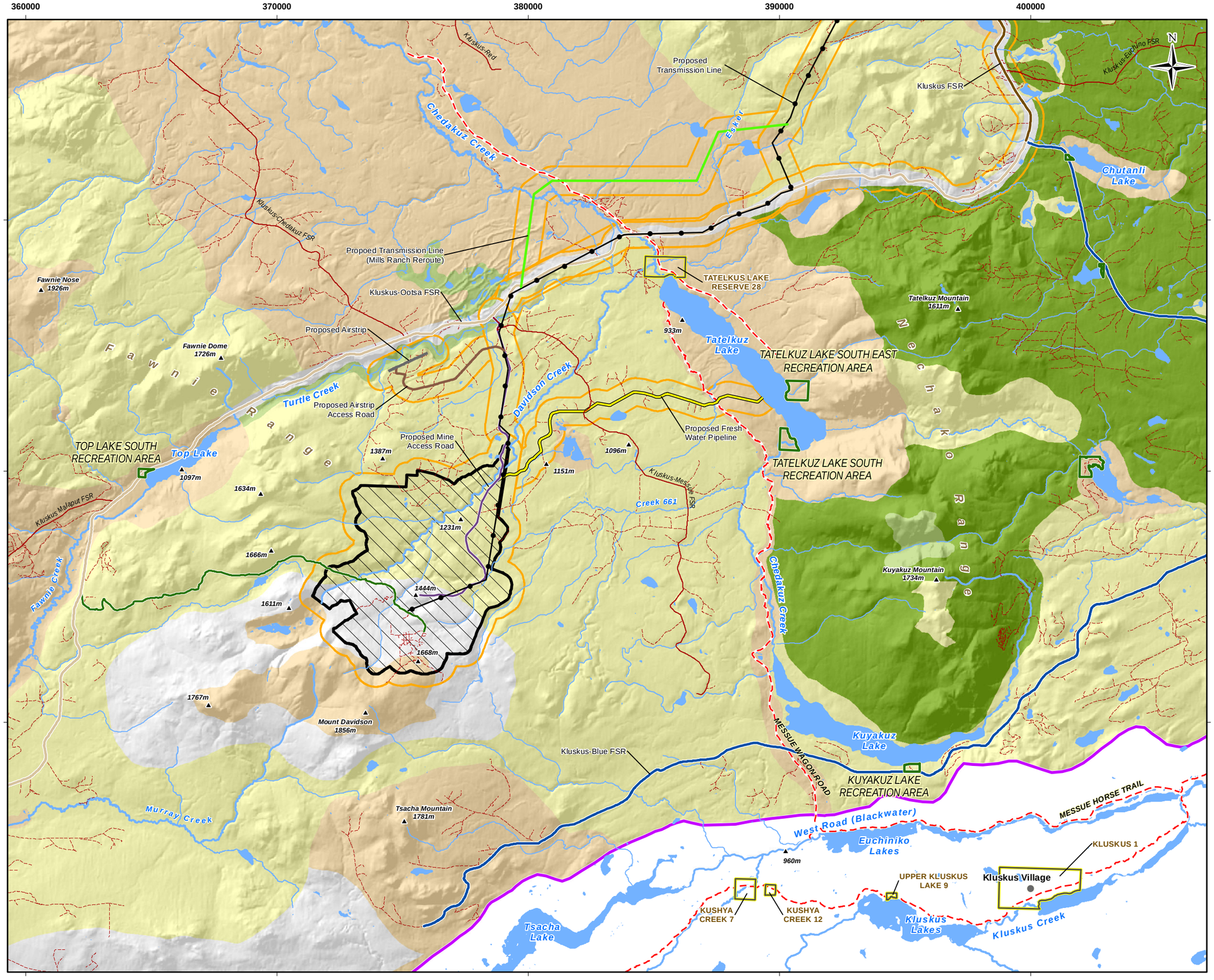
CLIENT: newgold

PROJECT: Blackwater Gold Project

Sensitivity and Significance Rating for Recreation Areas within the Non-traditional Land Use Regional Study Area

DATE: April, 2014	ANALYST: WR	**Figure** 3.3-3
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-009_v4_recValues.pdf
GIS FILE: 17-100-009_v4_recValues.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

Y:\GIS\Projects\VE\VE52095 Richfield BlackwaterMapping\17 non-traditional-resBaseline\17-100-009 v4 recValues.mxd



Legend

- Populated Place
- Indian Reserves
- Recreation Area

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Kluskus-Blue FSR
- Other FSRs
- Tracks

Project Components

- Exploration Road
- Proposed Mine Access Road
- Proposed Fresh Water Pipeline
- Proposed Airstrip Access Road
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Transmission Line
- Proposed Airstrip

Recreation Features Inventory

Sensitivity and Significance Rating

- High sensitivity, very high significance
- High sensitivity, high significance
- Moderate sensitivity, high significance
- Moderate sensitivity, moderate significance
- Low sensitivity, high significance
- Low sensitivity, moderate significance
- Low sensitivity, low significance

Non-Traditional Landuse

- Regional Study Area
- Local Study Area

Scale:1:150,000

0 2.5 5 10

Kilometres

Reference

BC Government GeoBC Data Distribution
BCGOV FLNRO Recreation Sites and Trails Branch

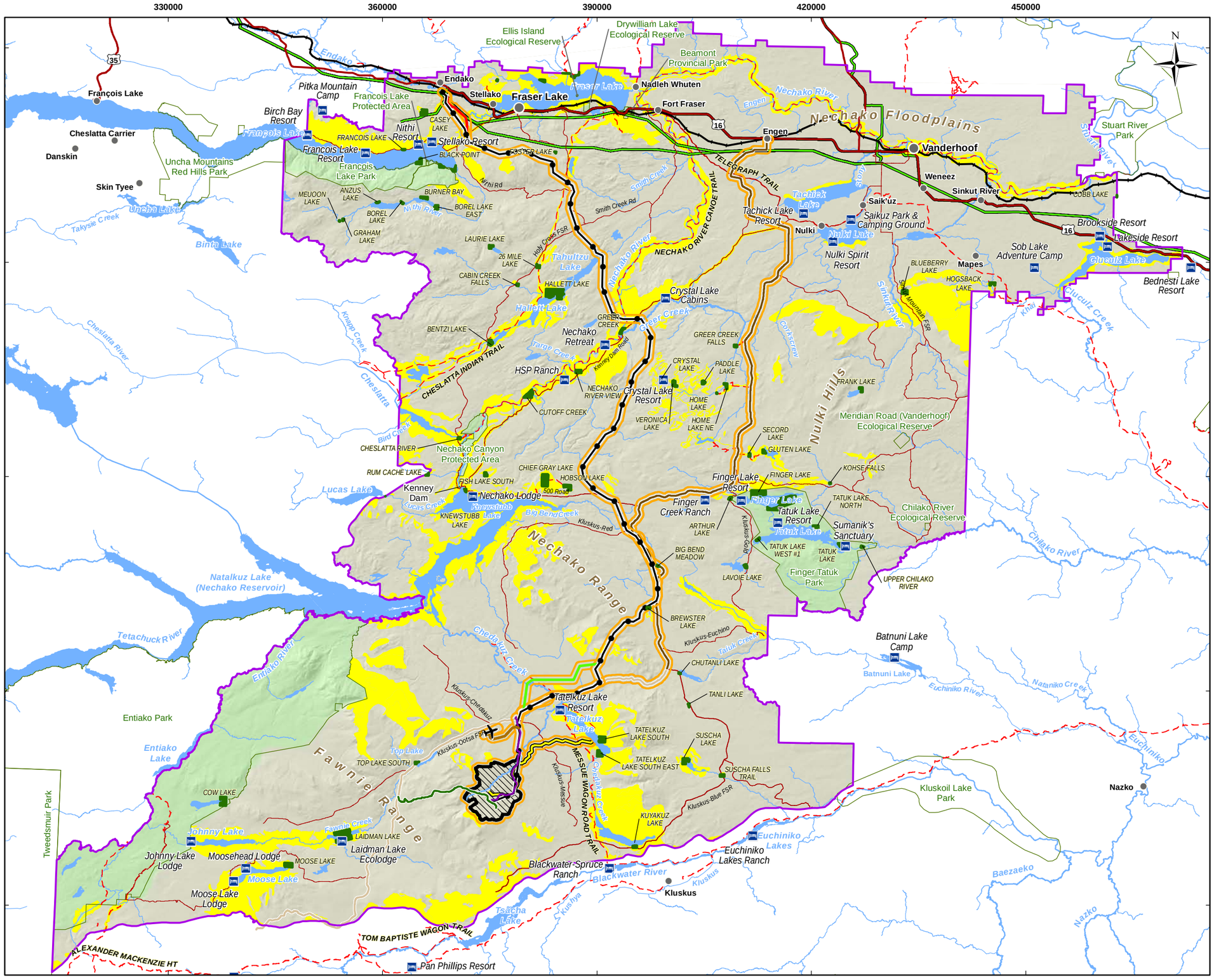
CLIENT: newgold

PROJECT: Blackwater Gold Project

Sensitivity and Significance Rating for Recreation Areas within the Mine Site, Mine Access Road and Water Pipeline Study Areas

DATE: April, 2014	ANALYST: WR	**Figure** 3.3-4
JOB No: VE52277	QA/QC: SB	PDF FILE: 17-100-036_recValuesLSA_v2.pdf
GIS FILE: 17-100-036_recValuesLSA_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

Y:\GIS\Projects\VE\VE52095 Richfield BlackwaterMapping\17 non-traditionalrestBaseline\17-100-036 recValuesLSA v2.mxd



Legend

- ● Populated Place
- Highway
- Existing Transmission Line
- Stream (>=4th Order)
- Waterbody (>= 100ha)

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components

- ✈ Proposed Airstrip
- Proposed Airstrip Access Road
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Stellako Re-route)
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- ▨ Proposed Mine Site

Recreation Locations

- Recreation Lodge
- Recreation Trail
- 🟩 Recreation Area
- 🟨 Recreation Scenic Area
- Parks and Protected Areas

Non-Traditional Landuse

- Regional Study Area
- Local Study Area

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT:
newgold

PROJECT:
Blackwater Gold Project

Recreation Sites, Trails and Lodges Located in the Non-traditional Land Use Regional Study Area

DATE: December, 2013	ANALYST: AA	Figure 3.3-5
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-008_v5_recLoc.pdf
GIS FILE: 17-100-008_v5_recLoc.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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3.3.5 Local Parks, Areas of Interest and Tourism Opportunities

3.3.5.1 Local Parks

The Riverside Park and Campground (associated with the Nechako Migratory Bird Sanctuary) is located within the town limits of Vanderhoof more than 20 km east of where the Kluskus FSR connects with Hwy. 16. Riverside Park is part of the Vanderhoof Community Trail Network, which follows along rivers, marshes, wooded areas, and urban roads (District of Vanderhoof, 2013). The WL McLeod Wetland and Heritage Park/Heritage Trail and a connecting road network complete the Vanderhoof Community Trail Network (**Figure 3.3-6**).

3.3.5.2 Areas of Interest and Tourism Opportunities

The Centre of BC Cairn is located 5 km east of Burrard Avenue on Hwy. 16 at the entrance of CJ's Trailer Park on the north side of the highway.

The following destinations and activities (**Figure 3.3-2**), located within the NTLU RSA (but not within any of the individual Project study area), are included in the Vanderhoof tourist information brochure distributed by the Vanderhoof Visitor Centre (Vanderhoof Chamber of Commerce, 2010) and/or the Trail Map and Area Hiking Guide (Vanderhoof Chamber of Commerce, undated):

- Kenney Dam – Built in the 1950s, it was at the time the largest earthfill dam in the world. It is located approximately 90 km down Kenney Dam Road. Kenney Dam holds back water in the Nechako Reservoir that is used to generate electricity for an aluminium smelter in Kitimat.
- Cheslatta Falls – Located a short distance from the Kenney Dam and includes a maintained picnic and camping site located south of the bridge over the Cheslatta River. Cheslatta Falls are located 1.2 km from the picnic area.
- Greer Creek Falls – Located along the Kenney Dam Road/Kluskus FSR near the 37 km marker, more than 20 km east of where the Kluskus FSR connects with Hwy. 16. The 8 m waterfall and picnic area is accessible by a 1.2 km trail.
- Sinkut Mountain – Accessed by a 5.4 km return hike, Sinkut Mountain (1,483 m) is the highest point in the area and offers a clear view of the Nechako Valley and beyond. The top of Sinkut Mountain is located approximately 20 km east of the access road study area.

Source: District of Vanderhoof website (http://www.vanderhoof.ca/District/Departments/ArenaParks/Trails.html)

Figure 3.3-6: Vanderhoof Community Trail Network

3.4 Mining, Prospects, Exploration, and Mineral Tenures

Details associated with historical, current, and potential future mining activities in the Project area were identified using the MINFILE Mineral Inventory (BC Ministry of Energy, 2013a), the mineral tenures database (Government of BC, 2013b), and various publically available reference sources such as company websites and stock market reports.

In the MINFILE Mineral Inventory, the status or stage of development of a mineral occurrence is recorded based on the level of information available (i.e., showing has the least amount of information available, prospect has more information, and developed prospect usually has the most information available). Producers are currently operating and past producers have been closed. Commodities are ranked in decreasing order of importance, based on perceived economic significance and quantity of significant minerals (BC Ministry of Energy, 2013b).

3.4.1 Land Use Planning

The third of the Davidson Creek RMZ bordering the Chedakuz RMZ has low metallic potential and no recorded claims. The central and western two-thirds have moderate to high metallic potential for gold (Au), silver (Ag), zinc (Zn), lead (Pb), and copper (Cu) (Government of BC, 1997). A large tenure grouping is centred on and around Mount Davidson.

For the mine site study area, strategies outlined in the Vanderhoof LRMP within the Davidson Creek RMZ for mineral exploration and development includes:

- Maintain mineral lands in designations open to mineral exploration and development, and ensure access to those lands;
- Ensure the hidden nature of the resource is considered in land planning;
- Honour existing resource tenure rights;
- Minimize exploration site disturbance in areas of sensitive wildlife habitat such as meadow complexes;
- For proposed mine developments, incorporate wildlife, viewscape, habitat, and recreation into the provincial mine development review process; and
- Incorporate natural, cultural, and recreational values in exploration planning through the permit process.

3.4.2 Past Producers

There are no past producers located within the Project LSA. The only past producer located within the NTLU RSA is Denak (MINFILE No. 093K 008), which is associated with the currently operating Endako Mine discussed in **Section 3.4.3**. **Figure 3.4-1** summarizes the historical and current mining and mineral exploration within the NTLU RSA.

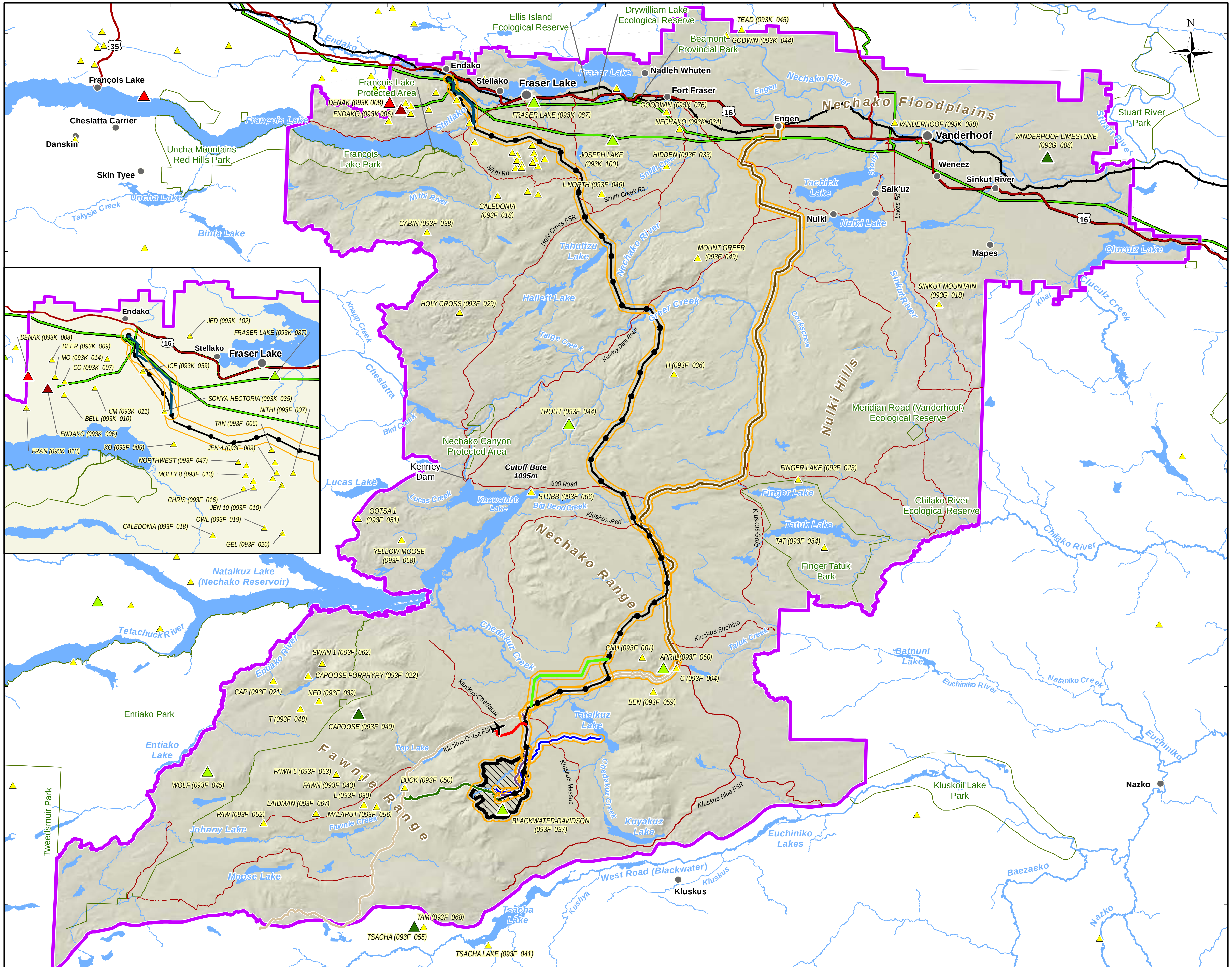
3.4.3 Producers

There are no active producers within the Project LSA. One active producer is located within the NTLU RSA; the Endako Mine (MINFILE No. 093K 006) is located near Fraser Lake approximately 65 km west of Vanderhoof. The mine is operated as a joint venture with Thompson Creek holding a 75% interest and Sojitz Corporation, a Japanese company, holding a 25% interest.

The Endako Mine, which began operations in 1965, includes a concentrator that processes ore through crushing, grinding, and flotation circuits into molybdenum disulfide concentrate, and a multiple-hearth roasting facility that converts the concentrate into technical grade molybdenum oxide (Endako Mines 2013).

The Endako Mine consists of three pits. The Endako Pit, the largest, was the focus of mining activity for many years. In January 2008, mining activity shifted entirely to the Denak West Pit, and during 2008, the in-pit crusher was moved from the Endako Pit to an area between the Denak West and Denak East pits and an overland conveyor was installed from that location to the mill. The conveyor commenced transporting ore to the mill in March 2009. Plans call for the creation of a single pit by mining the walls between the three existing pits.

In April 2008, an expansion and modernization project that would increase the mill capacity to 50,000 tonnes per day (t/day) from 28,000 tonnes was commenced. The expansion project was suspended in December 2008 in response to the economic downturn and resumed in August 2009. Construction of a new mill building and installation of new processing equipment was completed in March 2012 (Thompson Creek, 2013). Based on existing mineral reserves, the mine life has been estimated at 16 years.



Legend

- Populated Place
- Highway
- Railway
- Existing Transmission Line
- Parks

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components

- Proposed Airstrip Extent
- Exploration Road
- Proposed Mine Access Road
- Proposed Water Pipeline Route
- Proposed Transmission Line
- *Proposed Transmission Line (Mills Ranch Re-route)*
- *Proposed Transmission Line (Stellako Re-route)*
- Proposed Airstrip Access Road
- Proposed Mine Site

Mining and Exploration (January 2012)

- Past Producer
- Producer
- Developed Prospect
- Prospect
- Showing

Non-Traditional Landuse

- Regional Study Area
- Local Study Area

Scale: 1:530,000

0 5 10 20 Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Mining and Mineral Exploration in the Non-traditional Land Use Regional Study Area

DATE: July, 2013	ANALYST: WR	Figure 3.4-1
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-041_minFile_v2.pdf
GIS FILE: 17-100-041_minFile_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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3.4.4 Developed Prospects, Prospects, and Showings

There are no developed prospects located within the Project LSA. Two developed prospects are located within the NTLU RSA: Vanderhoof Limestone and Capoose. Vanderhoof Limestone (MINFILE No. 093G 008) is located 19 km southeast of Vanderhoof and was last sampled in 1988. In December 2011, New Gold acquired 100% interest in the Capoose property (MINFILE No. 093F 040) located approximately 20 km west of the mine site study area).

3.4.4.1 Mine Site Study Area

One prospect, Blackwater-Davidson (MINFILE No. 093F 037), falls within the mine site study area and represents a portion of the defined Project study area being assed as part of the Project. Mine Site Access Road Study Area

No MINFILE records fall within the mine site access road study area.

3.4.4.2 Airstrip Study Area

No MINFILE records fall within the airstrip study area.

3.4.4.3 Freshwater Supply Study Area

No MINFILE records fall within the freshwater supply study area.

3.4.4.4 Transmission Line Study Area

There are two mineral showings located along the main transmission line study area: Sonya-Hectoria (MINFILE No. 093K 035); and Ice (MINFILE No. 093K 059). There are no other overlaps with MINFILE records.

The Stellako and Mills Ranch re-route study areas do not intersect any MINFILE records.

3.4.4.5 FSR Study Area

Along the FSR study area one mineral showing, C (MINFILE No. 093F 004), is located on the Kluskus-Ootsa FSR south of where the Kluskus FSR branches into the Kluskus-Ootsa FSR and the Kluskus-Blue FSR. No other MINFILE records were identified.

3.4.5 Mineral Claims and Tenures

The *Mineral Tenure Act* (Government of BC, 1996a) outlines the legislation concerning registering and maintaining mineral claims and tenures.

The BC mineral tenure system allows individuals and corporations to acquire mineral rights and conduct exploration for minerals situated on Crown and private land. Before registering mineral claims, the company or individual is required to register with the government and pay a fee to obtain a Free Miner Certificate. Mineral rights are acquired by registering (system went web-based in January 2006) a mineral claim to the Mineral Titles Online Registry (Association for Mineral Exploration BC, 2013).

Mineral rights do not provide an individual or corporation with surface rights or automatic right to proceed to development. Individuals or corporations wishing to develop mineral properties using mechanical equipment must acquire multiple permits for specific activities related to exploration and development (Association for Mineral Exploration BC, 2013).

The proponent owns mineral tenures or has agreements in place for all lands that would be used for the mine. The proponent's claims in the region of the Project are shown in **Figure 3.4-2**. The proponent's mineral tenures in the region cover a total area of 91,087 ha, of which 27,163 ha correspond to Blackwater mineral tenures (New Gold Inc., 2012). Other companies' mineral tenures in the region are also presented in **Figure 3.4-3**.

330000 360000 390000 420000 450000

6000000 5970000 5940000 5910000 5880000

N

François Lake
Cheslatta Carrier
Danskin
Skin Tyee
Endako
Stellako
Fraser Lake
Ellis Island Ecological Reserve
Francois Lake Protected Area
Nadleh Whuten
Fort Fraser
Fraser Mountain 1053m
Beaumont Provincial Park
Drywilliam Lake Ecological Reserve
Engen
Nechako River
Nechako Floodplains
Vanderhoof
Stuart River Park
Stuart River
Weneez
Sinkut River
Saik'uz
Tachick Lake
Nulki
Nulki Lake
Lakes Rd
Mapes
Chuculz Lake
Chuculz Creek
Khai
Sinkut Mountain 1404m
Sinkut Mountain FSR
Sinkut River
Corkscrew
Nulki Hills
Nulki Peak 1527m
Meridian Road (Vanderhoof) Ecological Reserve
Savory Ridge
Stellako
Nithi Mountain 1352m
Nithi Rd
Nithi River
Smith Creek
Smith Creek Rd
Francois Lake Park
Uncha Mountains Red Hills Park
Uncha Lake
Takysie Creek
Binta Lake
Holy Cross FSR
Tahultzu Lake
Mount Greer 1247m
Nechako River
Greer Creek
Holy Cross Mtn 1425m
Hallett Lake
Large Creek
Kenney Dam Road
Knapp Creek
Cheslatta River
Cheslatta
Bird Creek
Nechako Canyon Protected Area
Kenney Dam
Cutoff Bute 1095m
500 Road
Lucas Lake
Lucas Creek
Knewstubb Lake
Big Bend Creek
Kluskus-Red
Nechako Range
Kluskus-Gog
Finger Lake
Tatuk Lake
Chilako River Ecological Reserve
Chilako River
Finger Tatuk Park
Natalkuz Lake (Nechako Reservoir)
Tetachuck River
Entiako River
Mount Swannel 1768m
Chedakuz Creek
Kluskus-Euchiniko
Tatuk Creek
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Euchiniko River
Nataniko Creek
Euchiniko
Fawnie Nose 1926m
Kluskus-Chedakuz
Entiako Park
Entiako Lake
Tatelkuz Lake
Tatelkuz Mountain 1611m
Top Lake
Kluskus-Ootsa FSR
Fawnie Range
Kluskus-Nessle
Chedakuz Creek
Kuyakuz Mountain 1734m
Kluskus-Blue FSR
Kuyakuz Lake
Kluskoil Lake Park
Nazko
Tweedsmuir Park
Johnny Lake
Mount Davidson 1856m
Tsacha Mountain 1781m
Moose Lake
Euchiniko Lakes
Blackwater River
Kluskus
Kluskus
Tsacha Lake
Baezaeko
Nazko

Scale: 1:530,000
0 5 10 20
Kilometres

Legend

- Proposed Airstrip
- Proposed Airstrip Access Road
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Stellako Re-route)
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Exploration Road
- Proposed Mine Site

Mineral Tenures and Claims

- In the Local Study Area
- In the Regional Study Area

Mineral Claims (Corporations: significant tracts)

- AMARC RESOURCES LTD.
- ANGILD INVESTMENTS LTD
- ANSELL CAPITAL CORP
- BCT MINING CORP
- COPPER CREEK GOLD CORP
- KINROSS GOLD CORPORATION
- KOOTENAY RESOURCES INC.
- LANDMARK GEOLOGICAL INC.
- LEEWARD CAPITAL CORP
- LITTLE BEAR GOLD CORP
- MOUNTAIN BOY MINERALS LTD.
- NEW GOLD INC.
- OMEGA EXPLORATION SERVICES INC.
- PACIFIC CASCADE MINERALS INC.
- REDHILL RESOURCES CORP
- RJK EXPLORATIONS LTD.
- SEABORNE MINERALS INC.
- TAIGA CONSULTANTS LTD
- THOMPSON CREEK MINING LTD
- TTM RESOURCES INC.
- Corporations: Other
- Private Individuals

Non-Traditional Landuse

- Regional Study Area
- Local Study Area

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Mineral Tenures and Claims Overlapping the Non-traditional Land Use Regional Study Area

DATE: January, 2014	ANALYST: WR	**Figure** 3.4-2
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-042_minClaim_v4.pdf
GIS FILE: 17-100-042_minClaim_v4.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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360000 370000 380000 390000 400000

5910000 5900000 5890000 5880000

Chedakuz Creek
Kluskus-Chedakuz FSR
Fawnie Nose ▲ 1926m
Kluskus-Ootsa FSR
Fawnie Dome 1726m
Fawnie Range
Turtle Creek
Top Lake 1097m
Kluskus-Maliaput FSR
Fawnie Creek
1634m
1666m
1611m
1387m
1231m
1444m
1668m
1767m
Mount Davidson 1856m
Murray Creek
Tsacha Mountain 1781m
Eskar
STRICKLAND, DERRICK
Davidson Creek
1151m
1096m
Kluskus-Mesilinka FSR
Creek 661
ROZEK, BENJAMIN JASON
TILL, MICHAEL DON
SAULNIER, PAUL ALBERT
TATELKUS LAKE RESERVE 28
933m
Tatelkuz Lake
OTTO, JESSE
Kluskus FSR
HENRICKSON, JARED THOMAS
BILQUIST, RONALD JOHN
Chutanli Lake
Tatelkuz Mountain 1611m
Nechako Range
CHRISTIANSON, THOMAS ROBERT
Kuyakuz Mountain 1734m
Chedakuz Creek
Kuyakuz Lake
Kluskus-Blue FSR
Blackwater River
Euchiniko Lakes
960m
KUSHYA CREEK 7
KUSHYA CREEK 12
UPPER KLUSKUS LAKE 9
Kluskus Village
KLUSKUS 1
Kluskus Lakes
Kluskus Creek
Tsacha Lake

N

Legend

- Populated Place
- Spotheights
- Stream
- Waterbody

Project Components

- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Proposed Airstrip Access Road
- Proposed Airstrip
- Proposed Mine Site

Mineral Claims (Corporations: significant tracts)

- AMARC RESOURCES LTD.
- ANGILD INVESTMENTS LTD
- ANSELL CAPITAL CORP
- COPPER CREEK GOLD CORP
- DRIVEN CAPITAL CORP
- LITTLE BEAR GOLD CORP
- MOUNTAIN BOY MINERALS LTD.
- NEW GOLD INC.
- OMEGA EXPLORATION SERVICES INC.
- PACIFIC CASCADE MINERALS INC.
- REDHILL RESOURCES CORP
- RJK EXPLORATIONS LTD.
- SEABORNE MINERALS INC.
- TTM RESOURCES INC.

Mineral Claims (Corporations: Other)

Mineral Claims (Private Individuals)

Non-Traditional Landuse

- Regional Study Area
- Local Study Area

Scale:1:160,000

0 2.5 5 10

Kilometres

Reference

BC Government GeoBC Data Distribution
BCGOV FLNRO Recreation Sites and Trails Branch

CLIENT: newgold

PROJECT: Blackwater Gold Project

Mineral Tenures and Claims Overlapping the Mine Site, Mine Access Road and Water Pipeline Study Areas

DATE: April, 2014	ANALYST: MY	**Figure** 3.4-3
JOB No: VE52277	QA/QC: SB	PDF FILE: 17-100-084_MineralTenuresLSA_v4.pdf
GIS FILE: 17-100-084_MineralTenuresLSA_v4.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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3.4.5.1 Mine Site Study Area

Within the mine site study area, the only land use tenures are for the purposes of mineral extraction. Twenty-nine (all but two) of the mineral tenures belong to NewGold Inc. Little Bear Gold Corp. holds the remaining two tenures. There is also one mineral prospect owned by Davidson Blackwater. However, there are no active mineral producers within the study area.

Table 3.4-1 summarizes the number of tenures held by each registered holder, the tenure area (in ha and %) falling within the mine site study area and the associated percent of the total mine site study area.

Table 3.4-1: Mineral Tenures Overlapping with the Mine Site Study Area

Mineral Tenure Holder	No. of Tenures/Total Area (ha)	Area falling within Mine Site Study Area (ha)	% of Total Mineral Tenure Area	% of Total Mine Site Study Area
Little Bear Gold Corp	2/929	158	17	3
New Gold Inc.	29/11,730	5,965	51	97

Source: BC Government GeoBC Data Distribution = Mineral Titles and Policy Branch, Mineral and Placer Claims

3.4.5.2 Mine Site Access Road Study Area

Within the mine site access road, seven active mineral claim tenures belonging to the Proponent overlap the entire extent of the study area.

3.4.5.3 Airstrip Study Area

Seven active mineral tenures overlap the airstrip study area. Table our tenures, covering approximately 58% of the study area, are owned by the Proponent, and Little Bear Gold Corp. owns the three tenures that cover the remaining 42% of the airstrip study area.

Table 3.4-2: Mineral Tenures Overlapping with the Airstrip Study Area

Mineral Tenure Holder	No. of Tenures/Total Area (ha)	Area falling within Mine Site Study Area (ha)	% of Total Mineral Tenure Area	% of Total Mine Site Study Area
Little Bear Gold Corp	3/1391	341	25	42
New Gold Inc.	4/1914	456	24	58

Source: BC Government GeoBC Data Distribution, Mineral Titles and Policy Branch, Mineral and Placer Claims

3.4.5.4 Freshwater Supply Study Area

Four different tenure holders hold 14 active mineral tenures overlapping the freashwater supply study area. Mineral claim tenures overlap 100% of the freshwater supply study area with the proponent holding the six tenures that account for 36% of the total study area. **Table 3.4-3** summarizes the number of tenures held by each registered holder, the tenure

area (in ha) falling within the freshwater supply study area and the associated percent of the total freshwater supply study area.

Table 3.4-3: Mineral Tenures Overlapping with the Freshwater Supply Study Area

Mineral Tenure Holder	No. of Tenures/Total Area (ha)	Area falling within Freshwater Supply Study Area (ha)	% of Total Mineral Tenure Area	% of Total Freshwater Supply Study Area
Mountain Boy Minerals Ltd.	2/967	42	4	3
New Gold Inc.	5/1721	478	28	36
Otto, Jesse	2/580	253	44	19
RJK Explorations Ltd.	5/2088	546	26	41

Source: BC Government GeoBC Data Distribution – Mineral Titles and Policy Branch, Mineral and Placer Claims

3.4.5.5 Transmission Line Study Area

Eighteen different tenure holders overlapping the transmission line study area hold 56 active mineral tenures. Mineral tenures overlap approximately 49% of the transmission line study area with the proponent holding the 14 tenures that account for approximately 12% of the total study area. **Table 3.4-4** summarizes the number of tenures held by each registered holder, the tenure area (in ha and %) falling within the transmission line study area and the associated percent of the total transmission line study area.

Stellako Re-Route

One mineral claim tenure, owned by Thompson Creek Mining Ltd., overlaps the Stellako re-route study area and represents less than one percent of the tenure area.

Table 3.4-4: Mineral Tenures Overlapping with the Transmission Line Study Area

Mineral Tenure Holder	No. of Tenures/ Total Area (ha)	Area falling within Transmission Line Study Area (ha)	% of Total Mineral Tenure Area	% of Total Transmission Line Study Area
Amarc Resources Ltd.	7/3,253	1,067	33	7
Carmichael, Robert Gordon	3/1,381	327	23	2
Copper Creek Gold Corp	1/480	226	47	2
Critchlow, Dedra	6/2,468	930	37	7
Henrickson, Jared Thomas	3/1,311	392	30	3
Leeward Capital Corp	1/2,853	214	8	2
Mountain Boy Minerals Ltd.	4/1,931	659	34	5
New Gold Inc.	2/927	179	19	1
Otto, Jesse	1/251	69	28	0.5
Pacific Cascades Minerals Inc.	1/463	18	4	0.1
RJK Explorations Ltd.	2/2,660	569	21	4
Saulnier, Paul Albert	1/232	199	86	1
Strickland, Derrick	1/464	166	36	1
Taiga Consultants Ltd.	3/5,530	435	8	3
Thompson Creek Mining Ltd.	2/835	283	34	2
TTM Resources Inc.	6/2,759	739	27	5

Source: BC Government GeoBC Data Distribution = Mineral Titles and Policy Branch, Mineral and Placer Claims

Mills Ranch Re-Route

Ten mineral tenures, held by four different owners, occupy 100% of the Mills Ranch re-route area. The study area overlapped by the individual tenures range between 4% (one TTM Recources Inc tenure) and 16% (one Mountain Boy Minerals Ltd. tenure), representing between 23% and 38% of their total mineral tenure area, within the Mills Ranch re-route study area.

Table 3.4-5: Mineral Tenures Overlapping with the Mills Ranch Re-Route

Mineral Tenure Holder	No. of Tenures/Total Area (ha)	Area falling within Freshwater Supply Study Area (ha)	% of Total Mineral Tenure Area	% of Total Freshwater Supply Study Area
Amarc Resources Ltd.	1/483	148	31	9
Mountain Boy Minerals Ltd.	5/2412	912	38	58
Strickland, Derrick	1/463	173	37	11
TTM Resources Inc.	3/1466	338	23	22

Source: GeoBC Data Distribution, Mineral Titles and Policy Branch, Mineral and Placer Claims (Government of BC, 2013a)

3.4.5.6 FSR Study Area

There are 46 mineral claims held by 14 tenure holders that overlap approximately 40% of the study area. The Project Proponent holds one of the 46 tenures intersected by the FSR study area.

Table 3.4-6 summarizes the number of tenures held by each registered holder, the tenure area (in ha) falling within the FSR study area and the associated percent of the total FSR study area.

Table 3.4-6: Mineral Tenures Overlapping with the FSR Study Area

Mineral Tenure Holder	No. of Tenures/Total Area (ha)	Area falling within FSR Study Area (ha)	% of Total Mineral Tenure Area	% of Total FSR Study Area
Amarc Resources Ltd.	8 / 3,829	1,076	28	8
Billquist, Ronal John	3 / 944	270	29	2
Copper Creek Gold Corp	1 / 481	77	16	1
Critchlow, Dedra	6 / 2,535	657	26	5
Henrickson, Jared Thomas	4 / 1,890	375	20	3
Kennedy, Johnathan Sean	2 / 859	91	11	1
Mountain Boy Minerals Ltd.	4 / 1,932	599	32	5
New Gold Inc.	1 / 464	152	33	1
Omega Exploration Services Inc.	3 / 1,043	497	48	4
Otto, Jesse	1 / 251	46	19	0.4
Pacific Cascades Minerals Inc.	1 / 463	196	43	2
Saulnier, Paul Albert	1 / 232	188	82	1
Strickland, Derrick	2 / 927	167	18	1
TTM Resources Inc.	9 / 2,749	720	26	6

Source: BC Government GeoBC Data Distribution, Mineral Titles and Policy Branch, Mineral and Placer Claims

3.5 Forestry and Timber Resources

The Project falls within the Vanderhoof Forest District. Active forestry operations proximate to the Project are performed by L&M Lumber who have developed a road system in the Davidson Creek drainage (AMEC, 2012). The total volume of wood cut during the 2011 season in the Vanderhoof Forest District was 3,021,645 cubic metres (m^3).

Timber harvesting is a fairly recent resource use in the Davidson Creek RMZ, beginning in the late 1980s, even though the Kluskus FSR was built through this area in 1975 (Government of BC, 1997). Plateau Forest Products' operating area is located north of the Kluskus, while L&M Lumber Ltd.'s road system services harvesting under their opportunity wood (small diameter pine) license south of the Kluskus in the Davidson Creek drainage (Government of BC, 1997). Portions of the zone contain low site productivity pine stands.

Topography is flat to rolling or steep. The area is represented by three biogeoclimatic subzones. The elevation varies over 1,000 m from Knewstubb Lake (850 m) to Mt. Davidson (1,850 m). Forests consist primarily of pine and spruce with true fir making up significant proportions of stands at higher elevations (Government of BC, 1997). Aspen is scattered throughout the zone at lower elevations and occur in continuous stands near Knewstubb Lake. Wetlands are significant in this zone, particularly south of the Kluskus-Ootsa FSR along Davidson Creek. Most of the limited alpine in the Vanderhoof LRMP appears in this zone on the Fawnie Dome and Mt. Davidson. A large fire raged through the area west of Chedakuz Creek during the 1950s (Government of BC, 1997).

Details associated with the vegetation and forestry habitat within the area is presented in the Vegetation and Plant Communities Baseline Report.

3.5.1 Land Use Planning

For the mine site study area, a variety of access strategies were outlined within the Davidson Creek RMZ for timber harvesting, silviculture, and forest health, focusing on:

- Ensuring a variety of access to meet the needs of all values and interests, which included imposing access barriers where appropriate and allowing access into areas supporting moose populations that can withstand hunting pressure;
- No major haul loop road development unless there is a demonstrated requirement;
- Considering access management in undeveloped areas that are slotted for development; and
- Restricting access in consideration of time constraints and seasonal constraints (Government of BC, 1997).

Between 2003 and 2005, three forest tenure holders and BC Timber Sales (licensees), along with public and Aboriginal representatives (the Sustainable Forest Management Public Advisory Group), developed the initial Sustainable Forest Management Plan for the Vanderhoof Defined Forest Area (DFA). In 2011, in order to meet the current CSA Z809-08 standard and standardize the requirements and content across various operations, a revised Sustainable Forestry Management Plan was developed by Canadian Forest Products Ltd. (Vanderhoof Division) and BC Timber Sales (BCTS), Stuart-Nechako Business Area (Canfor 2012). A variety of environmental, social, and economic indicators were used to identify objectives, indicators, and targets including means of achieving goals, forecasts, and monitoring requirements.

The forestry information provided in the Vanderhoof LRMP (Government of BC, 1997) has been updated several times in an attempt to address the effects of the MPB epidemic in the area. The Mountain Pine Beetle Action Plan (Government of BC, 2006-2011) is the cornerstone of the province's coordinated response to the MPB infestation (BC Ministry of Forests, Lands, and Natural Resource Operations (BC MFLNRO, 2013a). The Action Plan guides provincial responses and helps coordinate all levels of government, communities,

industries, and stakeholders working to mitigate impacts of the MPB. It addresses forestry and environmental issues as well as economic, social, and cultural sustainability.

The Vanderhoof Forest District encompasses 1.4 Mha, with 1.0 Mha provincial Crown forest land and 740,000 ha available for harvesting. Of the Prince George Timber Supply Area's (TSA) 8 Mha:

- 66% is considered productive forest (outside of Indian Reserves, private lands, woodlots and community forests);
- 23% of productive forest is not available for timber harvesting because it is reserved for biodiversity, fish or wildlife or because the site is too poor to grow trees quickly; and
- Actual harvest averaged 9.87 Mm^3 (72% pine) from 2007 to 2011.

Old-growth forests, which often fall within forest tenure areas, are managed as either legal or non-legal management areas. Legal old-growth management areas (OGMAs) are declared in an old-growth order. Forest licensees must incorporate the legal OGMAs into the area's forest stewardship plan. Non-legal OGMAs have not been declared in an old-growth order. Forest licensees that are required to prepare a forest stewardship plan may chose to incorporate the non-legal OGMAs in their planning objectives. No legal or non-legal OGMAs have been identified within the NTLU RSA.

Land use objectives were established in 2006 for agriculture development areas and settlement reserve areas that restrict timber harvesting to activities such as fuel reduction at the wildland-urban interface and forest health salvage/prevention.

3.5.2 Forestry Tenures and Activity

Tenure is the mechanism by which the government transfers specific rights to use Crown, or public, forest, and resources to others. Private forest companies, communities, and individuals gain the right to harvest timber in public forests through tenure agreements with the provincial government. A timber tenure can take the form of an agreement, licence, or permit. Each is a legally binding contract that provides the contract holder with specific rights to use public forests over a specific period of time, in exchange for meeting government objectives, including forest management obligations, and the payment of fees including stumpage.

From a forestry management perspective, land use is divided into various categories/tenure types, including: Timber Supply Area (TSA); Community Forest; Tree Farm Licence (TFL); Woodlot Licence; and private forest lands. Other than for private lands, the Prince George Timber Supply Area office is responsible for Crown forest land (public land) and its resources through various tenure agreements under the *Forest Act* at the regional level.

Figure 3.5-1 provides a status summary of the active, pending, and retired forest tenures within the NTLU RSA. The ongoing forestry management activities and projected harvesting inventory are also shown on **Figure 3.5-1**. **Figure 3.5-2** describes the forest tenures lessees and associated cut blocks located within the NTLU RSA. **Figure 3.5-3** provides a more detailed view of the forest tenures and associated cut blocks overlapping the mine site, mine

site access road, airstrip, transmission line, and freshwater supply study areas and proposed new access road section.

A description for the forest cutblocks and tenures falling within the individual Project study area is provided below and includes a summary of the areas overlapping each individual Project study area. Retired forest/timber tenure areas are included in this summary as they represent the approximate areas that have already been logged or disturbed.

Forest tenures also include areas tenured to private individuals under the Private Managed Forest Land (PMFL) Program which encourages private landowners to manage their lands for long-term forest production (BC MFLNRO 2012c). Similar programs have been in existence since 1988. Today, the program continues under the *Private Managed Forest Land Act (PMFL Act)*, designed to encourage the social, environmental, and economic benefits of those practices (Government of BC 2003). The program aims to balance the rights of private property owners while protecting key public environmental values of fish habitat, water quality, critical wildlife habitat, soil conservation, and reforestation. The Land Tenures Branch acts as the liaison with the PMFL Council and addresses any public concerns that arise as a result of the *PMFL Act* or its program.

Tree Farm Licenses (TFL) convey the nearly exclusive right to manage forests and to harvest an annual allowable cut (AAC) of Crown timber from the licence area, which may comprise private and Crown lands (Cortex 2001). TFLs carry the greatest management responsibilities, including protection, maintaining resource inventories, strategic and operational planning, road building, and reforestation. Most TFLs require the licensee to maintain a manufacturing facility. Licensees must use logging contractors for part of the volume harvested during a calendar year. No tree farm licences are located within the NTLU RSA (BC MFLNRO, 2013d).

A community forest is described as any forestry operation managed by a local government, community group, First Nation, or community-held corporation for the benefit of the entire community. Community forestry involves the three pillars of sustainable development: social, ecological, and economic sustainability (BC Community Forest Association, 2013). There are no community forests currently located within the Vanderhoof Forest District (BC Community Forest Association, 2013). In April 2013, the District of Vanderhoof was given an invitation by the MFLNRO to apply to have a community forest (45,000 m^3 harvest per year) near Vanderhoof (HQPrinceGeorge.com, 2013b). The District of Vanderhoof has received approval from local licensees and First Nations to operate a community forest.

330000 360000 390000 420000 450000

6000000 5970000 5940000 5910000 5880000

N

François Lake
Cheslatta Carrier
Danskin
Skin Tyee
Uncha Mountains Red Hills Park
Uncha Lake
Takysie Creek
Binta Lake
Cheslatta River
Cheslatta Lake
Knapp Creek
Bird Creek
Lakes Timber Supply Area 23
Natalkuz Lake (Nechako Reservoir)
Tetachuck River
Entiako Park
Entiako Lake
Tweedsmuir Park
Johnny Lake
Laidman Lake
Moose Lake
Lucas Lake
Lucas Creek
Kenney Dam
Nechako Canyon Protected Area
Endako
Stellako
Fraser Lake
Nadleh Whuten
Fort Fraser
Engen
Nechako River
Nechako Floodplains
Stuart River Park
Vanderhoof
Weneez
Sinkut River
Saik'uz
Nulki
Nulki Lake
Tachick Lake
Mapes
Cluculz Lake
Cluculz Creek
Sinkut Mountain 1404m
Sinkut Mountain FSR
Sinkut River
Savory Ridge
Francois Lake Park
Fraser Mountain 1053m
Nithi Mountain 1352m
Nithi Rd
Nithi River
Smith Creek
Smith Creek Rd
Holy Cross FSR
Tahultzu Lake
Mount Greer 1247m
Nechako River
Hallett Lake
Holy Cross Mtn 1425m
Greer Creek
Targe Creek
Kenney Dam Road
Prince George Timber Supply Area 23
Vanderhoof Forest District
Nulki Peak 1527m
Meridian Road (Vanderhoof) Ecological Reserve
Cutoff Bute 1095m
500 Road
Knewstubb Lake
Big Bend Creek
Kluskus-Red
Nechako Range
Finger Lake
Tatuk Lake
Kluskus-Coglistiko
Chilako River Ecological Reserve
Chilako River
Finger Tatuk Park
Batnuni Lake
Euchiniko River
Nataniko Creek
Euchiniko
Nazko
Kluskoil Lake Park
Euchiniko Lakes
Kluskus
Blackwater River
Baezaeko
Nazko
Kushiya
Quesnel Timber Supply Area 26
Mount Swannel 1768m
Fawnie Nose 1926m
Entiako River
Kluskus-Chedakuz
Kluskus-Ootsa FSR
Top Lake
Fawnie Creek
Fawnie Range
Mount Davidson 1856m
Exploration Road
Tsacha Mountain 1781m
Tsacha Lake
Chedakuz Creek
Kluskus-Euchino
Tatuk Creek
Tatelkuz Lake
Tatelkuz Mountain 1611m
Kluskus-Messue
Kuyakuz Mountain 1734m
Kluskus-Blue FSR
Kuyakuz Lake

Legend

- Populated Place

Forestry Service Roads
- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components
- Proposed Airstrip
- Proposed Airstrip Access Road
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Stellako Re-route)
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Exploration Road
- Proposed Mine Site

Forestry Management
- Timber Supply Areas
- Vanderhoof Forest District
- Active Woodlot License
- Pending Woodlot License
- Harvesting Inventory
- Silviculture Obligations on Crown Land

Operational Activities for Cut Blocks

Life Cycle
- Active
- Pending
- Retired

Non-Traditional Landuse
- Regional Study Area
- Local Study Area

Scale: 1:530,000
0 5 10 20
Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

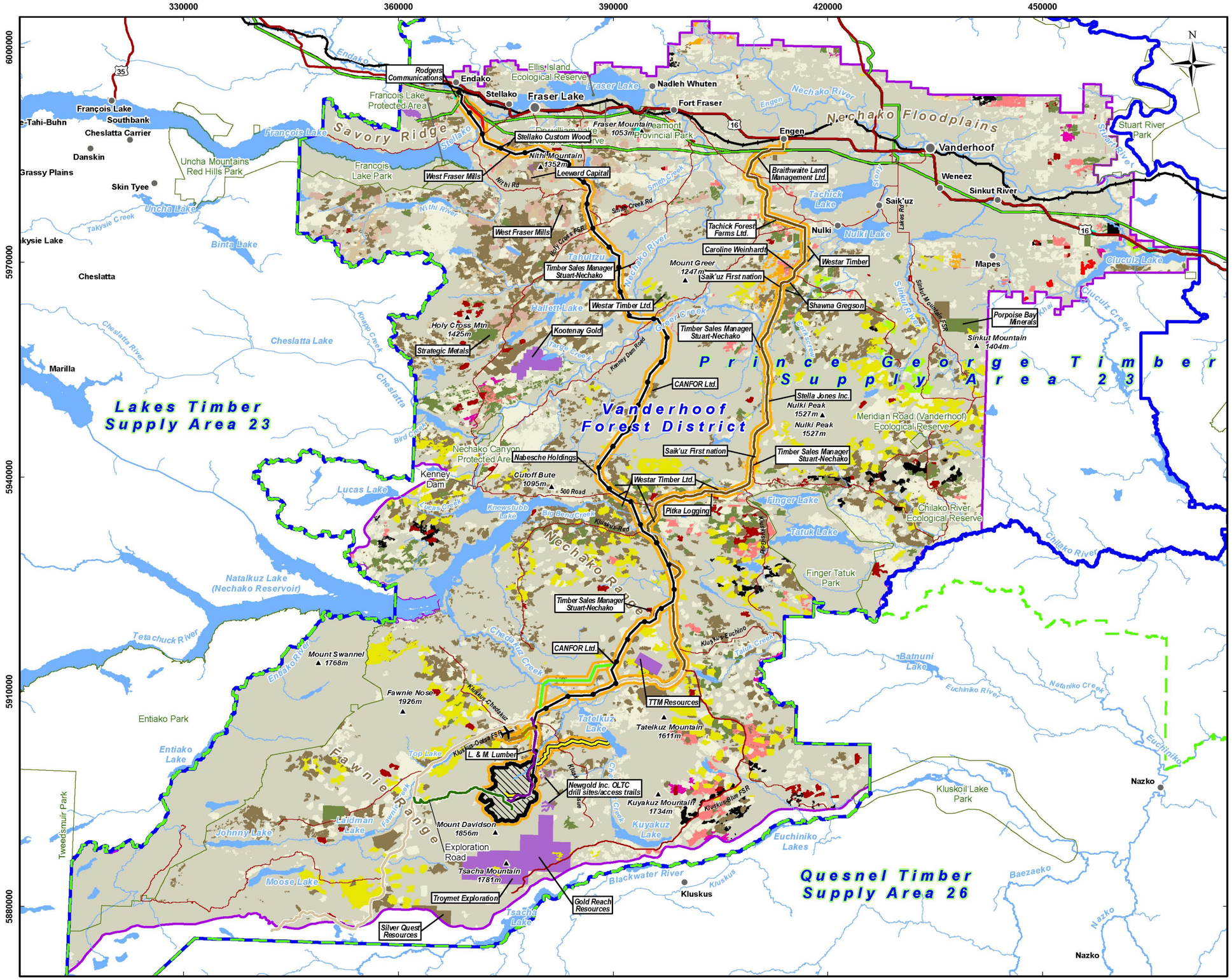
CLIENT: newgold

PROJECT: Blackwater Gold Project

Status Summary for Forestry Cut Block Life Cycle, Forestry Management Activities and Projected Harvesting Inventory within the Non-traditional Land Use Regional Study Area

DATE: April, 2014	ANALYST: WR	**Figure** 3.5-1
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-81_cutBlocksCycle_v2.pdf
GIS FILE: 17-100-81_cutBlocksCycle_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

Y:\GIS\Projects\VE\VE52069_Richfield_BlackwaterMapping\17_non-traditional-res\Baseline\17-100-81_cutBlocksCycle_v2.mxd



Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Forest Tenures and Retired Cut Blocks Overlapping the Non-traditional Land Use Regional Study Area

DATE: April, 2014	ANALYST: WR	**Figure** 3.5-2
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-043_cutBlocks_v3.pdf
GIS FILE: 17-100-043_cutBlocks_v3.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

Y:\GIS\Projects\VE\VE52095_Richfield_BlackwaterMapping\17_non-traditional-res\Baseline\17-100-043_cutBlocks_v3.mxd

360000 370000 380000 390000 400000

5910000

5900000

5890000

Proposed Transmission Line
Kluskus FSR
Kluskus-Blue FSR
Chedakuz Creek
Kluskus-Red
TTM Resources
Mills Ranch Re-route
Esker
W1529 A
Chutanli Lake
Kluskus-Chedakuz FSR
Fawnie Nose 1926m
Kluskus-Ootsa FSR
TATELKUS LAKE RESERVE 28
Tatelkuz Mountain 1611m
933m
Tatelkuz Lake
Proposed Airstrip Extent
Fawnie Dome 1726m
Fawnie Range
Turtle Creek
Davidson Creek
Proposed Airstrip Access Road
Proposed Mine Access Road
Proposed Fresh Water Pipeline
Top Lake
1387m
1096m
1097m
1151m
1634m
Kluskus-Mesilinka FSR
Creek 661
Kluskus Malaput FSR
1231m
Nechako Range
1666m
1444m
Fawnie Creek
1611m
1668m
1767m
Mount Davidson 1856m
Kuyakuz Mountain 1734m
Kuyakuz Lake
Gold Reach Resources
Troymet Exploration
Tsacha Mountain 1781m
Murray Creek
West Road (Blackwater)
Euchiniko Lakes
960m
KLUSKUS 1
UPPER KLUSKUS LAKE 9
Kluskus Village
KUSHYA CREEK 7
KUSHYA CREEK 12
Kluskus Lakes
Kluskus Creek
Tsacha Lake

N

Legend

- Existing Roads
- Stream
- Waterbody

Project Components

- Exploration Road
- Proposed Airstrip Access Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Proposed Airstrip
- Proposed Mine Site

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Kluskus-Blue FSR
- Indian Reserves
- Active Woodlot License

Forest Tenure Cutblocks

- British Columbia Ltd.
- BC Hydro
- Chamber of Commerce/Societies
- Communications
- Consulting/Contracting
- Mining / Resources
- Mining / Resources (New Gold Inc.)
- First Nations
- Individuals
- Logging Companies
- Logging Companies (Canadian Forest Products)
- Logging Companies (L. & M. Lumber Ltd.)
- Mills
- Ranches
- District/Sales Manager
- Retired Tenures

Scale:1:150,000

0 2.5 5 10

Kilometres

Reference

BC Government GeoBC Data Distribution
BCGOV FLNRO Recreation Sites and Trails Branch

CLIENT: newgold

PROJECT: Blackwater Gold Project

Forest Tenures and Retired Cut Blocks Overlapping the Mine Site, Mine Access Road and Water Pipeline Study Areas

DATE: April, 2014	ANALYST: WR	**Figure** 3.5-3
JOB No: VE52277	QA/QC: SB	PDF FILE: 17-100-048_cutBlocksLSA_v4.pdf
GIS FILE: 17-100-048_cutBlocksLSA_v4.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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A Woodlot Licence is a legal agreement between the Forest Service and the licence holder that grants exclusive rights to manage and harvest Crown timber within the woodlot licence area (BC MFLNRO, 2013e). Woodlot licences are awarded through an advertised, competitive application process. The most suitable applicant is determined by evaluating several variables including the applicant's education and personal experience relevant to managing a woodlot licence; the amount and quality of private forest land that the applicant is proposing to include in the woodlot licence; and commitments as to how the woodlot licence would be managed if the applicant is successful.

In exchange for the right to harvest timber on the Crown portion of the woodlot licence, the licence holder must agree to manage the private land contribution in accordance with provincial forestry legislation such as the *Forest and Range Practices Act*. In the interior the maximum amount of Crown land that can be included in a woodlot licence is 1,200 ha (BC MFLNRO, 2013e). Any amount of private land can be included in a woodlot licence area. A summary of woodlot licences that overlap with the Project study area is provided below and shown on **Figure 3.4-3** and **Figure 3.5-1.**

3.5.2.1 Mine Site Study Area

Four active forest tenures (3 occupant licenses to cut and 1 special use permit) overlap the mine site study area (**Table 3.5-1**). A small occupant license to cut tenure (3 ha) identified as pending is held by the proponent. L&M Lumber Ltd. holds the majority of tenures falling within the Davidson Creek basin with eight retired cutblock areas overlapping the mine site study area by 1.7%. Fourteen "Unknown – Harvesting Inventory" cutblocks, described as future harvesting with no client name, are also intersected by the mine site study area.

Table 3.5-1: Forest Cutblocks and Tenures Overlapping with the Mine Study Area

Forest Tenure Holder	Total No. of Tenures	Area falling within Mine Study Area (ha)/ Total Area of Tenure (ha)	% of Total Forest Tenure Area	% of Total Mine Study Area
Logging Companies				
L&M Lumber Ltd.	8 Retired	104/232	45	1.7
Mining/Resources				
New Gold Inc.	1 Pending	0.1/3	3	0.003
Unknown – Harvesting Inventory				
	14 Future / Unknown	262/370	71	4

Source: BC Government GeoBC Data Distribution, Resource Tenures and Engineering Forest Tenure Managed Licence

No woodlot licences are located within the mine site study area.

3.5.2.2 Mine Site Access Road Study Area

One active occupant licence to cut tenure falls 100% within the mine site access road study area. L&M Lumber Ltd. has ten retired cutblock areas and one active occupant licence to cut tenure area (3% of mine site access road study area) overlapping the mine site study area.

There are 14 “Unknown – Harvesting Inventory” cutblock areas, described as future harvesting with no client name, intersected by the mine site access road study area.

Table 3.5-2: Forest Cutblocks and Tenures Overlapping with the Mine Site Access Road Study Area

Forest Tenure Holder	Total No. of Tenures	Area falling within Mine Study Area (ha)/ Total Area of Tenure (ha)	% of Total Forest Tenure Area	% of Total Mine Study Area
Logging Companies				
L&M Lumber Ltd.	1 Active	21/140	15	3
	10 Retired	108/333	32	16
Unknown – Harvesting Inventory				
	14 Future / Unknown	233/512	46	34

Source: BC Government GeoBC Data Distribution, Resource Tenures and Engineering Forest Tenure Managed Licence

No woodlot licences are located within the mine site access road study area.

3.5.2.3 Airstrip Study Area

One active occupant licence to cut tenure falls 57% within the airstrip study area. Within the study area, seven retired cutblocks and one active tenure belongs to L&M Lumber Ltd. and two retired cutblocks belong to Canfor. The remaining 16 cutblock areas within the study area are categorized as future inventory.

Table 3.5-3: Forest Cutblocks and Tenures Overlapping with the Airstrip Study Area

Forest Tenure Holder	Total No. of Tenures	Area falling within Mine Study Area (ha)/ Total Area of Tenure (ha)	% of Total Forest Tenure Area	% of Total Airstrip Study Area
Logging Companies				
L&M Lumber Ltd.	1 Active	77/140	55	10
	7 Retired	284/365	78	36
Canadian Forest Products Ltd.	2 Retired	20/29	69	3
Unknown – Harvesting Inventory				
	16 Future / Unknown	128/214	60	16

Source: BC Government GeoBC Data Distribution, Resource Tenures and Engineering Forest Tenure Managed Licence

No woodlot licences are located within the airstrip study area.

3.5.2.4 Freshwater Supply Study Area

There are two active licenses to cut tenures overlapping the freshwater supply study area. The proponent has one small tenure (3 ha) pending. Within the study area, 15 retired cutblocks belong L&M Lumber Ltd. The remaining 27 cutblock areas within the study area are categorized as future inventory.

Table 3.5-4: Forest Cutblocks and Tenures Overlapping with the Freshwater Supply Study Area

Forest Tenure Holder	Total No. of Tenures	Area falling within Mine Study Area (ha)/ Total Area of Tenure (ha)	% of Total Forest Tenure Area	% of Total Mine Study Area
Logging Companies				
L&M Lumber Ltd.	15 Retired	265/519	51	20
Mining/Resources				
New Gold Inc.	1 Pending	0.04/3	1.3	0.003
	27 Future	262/366	71	21

Source: GeoBC Data Distribution, Resource Tenures and Engineering Forest Tenure Managed Licence (Government of BC, 2013a)

No woodlot licences are located within the freshwater supply study area.

3.5.2.5 Transmission Line Study Area

Forty-six active and one pending forest tenures are held by five different tenure holders overlapping the transmission line study area. Canadian Forest Products Ltd. holds the most, with 43 retired cutblocks and 3 active tenures. West Fraser Mills Ltd. holds 29 active tenures (eight retired cutblocks). **Table 3.5-5** summarizes the number of tenures (divided up between active, pending, and retired) held by each registered holder, the tenure area (in ha) falling within the transmission line study area and the associated percent of the total transmission line study area.

Table 3.5-5: Forest Cutblocks and Tenures Overlapping with the Transmission Line Study Area

Forest Tenure Holder	Total No. of Tenures	Area falling within Transmission Line Study Area (ha)/ Total Area (ha)	% of Total Forest Tenure Area	% of Total Transmission Line Study Area
Private Individuals				
Heise, Allan	2 Active	6/6	100	0.02
Schmidt, Kenneth	3 Active	6/9	67	0.1
	1 Retired	4/4	100	0.1
Mueller, Marcel	2 Active	6/10	60	0.04
Logging Companies				
Canadian Forest Products Ltd.	4 Active	85/199	43	0.6
	6 Silviculture Obligations	202/449	45	1
	42 Retired	748/1790	42	5
Stellako Custom Wood Ltd.	4 Retired	90/260	37	0.6
Nabesche Holdings Ltd.	1 Retired	2/2	100	0.02
Westar Timber Ltd.	5 Silviculture Obligations	201/456	44	1
Sawmills				
Fraser Lake Sawmills Ltd.	6 Silviculture Obligations	429/635	68	3
West Fraser Mills Ltd.	35 Active	327/1074	30	2
	1 Pending	2/208	1	0.01
	7 Silviculture Obligations	327/497	66	2
	29 Retired	926/1734	53	7
Timber Sales Manager				
Stuart-Nechako	2 Silviculture Obligations	23/118	20	0.2
Unknown – Harvesting Inventory				
	174 Future Harvesting Inventory	1081/2327	47	8
	10 Silviculture Obligations	433/741	58	3

Source: GeoBC Data Distribution; Resource Tenures and Engineering Forest Tenure Managed Licence (Government of BC, 2013a)

Table 3.5-6 summarizes the two woodlot licences, the license area (in ha) falling within the transmission line study area and the associated percent of the total transmission line study area.

Table 3.5-6: Woodlot Licences Overlapping the Transmission Line Study Area

Woodlot License Owner/ License Number	No. of Tenures/ Total Area (ha)	Area falling within Study Area (ha)	% of Total Woodlot Tenure Area	% of Total Transmission Line Study Area
The Forestdale Canyon Adventure Ltd. / W1529	1/511	44	9	0.3
Guyishton Woodlot Ltd / W1689	1/68	2	3	0.01

Source: BC Government GeoBC Data Distribution; Resource Tenures and Engineering Forest Tenure Managed Licence

Stellako Re-Route

Within the re-route area, five forest tenure areas are identified as future harvest inventory. In addition, there is one woodlot belonging to Guyishton Woodlot Ltd., a 36 ha parcel within the study area that overlaps 10% of the re-route area.

Mills Ranch Re-Route

There are total of 23 tenures (17 in the category of harvesting inventory and 6 retired cutblocks belonging to CanFor) within the Mills Ranch re-route area. In addition, a 20 ha woodlot parcel within the area, belonging to The Forestdale Canyon Adventure Ltd., overlaps 1.3% of the study area.

3.5.2.6 FSR Study Area

Sixty-one active tenures are held by five different corporate and First Nations tenure holders overlapping the FSR study area. Of these tenures, the Saiku'z First Nation have a total of 30 active tenures that overlap 2% of the FSR study area, and five active private forest tenures held by three private individuals overlap the FSR study area. The active private forests represent <1% of the total FSR study area. One tenure is pending for the Stuart-Nechako timber sales manager. There are 293 tenures classified as either future harvesting inventory or silvicultural obligations on Crown land. There are no TFLs or old growth forests. **Table 3.5-7** summarizes the number of tenures (active, pending, and retired) held by each registered holder, the tenure area (in ha) falling within the FSR study area, and the associated percent of the total FSR study area.

Table 3.5-7: Forest Cutblocks and Tenures Overlapping with the FSR Study Area

Forest Tenure Holder	Total No. of Tenures	Area falling within FSR Study Area (ha)/ Total Area (ha)	% of Total Forest Tenure Area	% of Total FSR Study Area
Private Individuals				
Weinhardt, Caroline	1 Active	12 / 77	16	0.1
Gulbranson	1 Silviculture Obligation	4 / 82	5	0.03
Kochel, John	3 Active	16 / 78	13	0.1
Gregson, Shawna	1 Active	0.09 / 0.6	15	<0.001
	4 Retired	116 / 135	86	0.9
Logging Companies				
Basghelh Holdings Ltd.	9 Retired	25 / 36	69	0.2
Blue Valley Enterprises Ltd.	1 Active	38 / 113	34	0.3
Braithwaite Land Management Ltd.	3 Retired	15 / 47	32	2
Canadian Forest Products Ltd.	16 Active	261 / 495	53	2
	15 Silviculture Obligations	454 / 1,015	45	6
	43 Retired	746 / 2,320	32	6
Pitka Logging Ltd.	2 Active	34 / 42	81	0.3
Tachick Forest Farms Ltd.	7 Active	61 / 136	4	0.5
Nultac Logging Company Ltd.	1 Retired	0.2 / 14	1	<0.001
Stella – Jones Inc.	1 Silviculture Obligation	48 / 58	83	0.9
Westar Timber Ltd.	8 Silviculture Obligations	374 / 619	60	3
First Nations				
Saik'uz First Nation	30 Active	237 / 319	74	2
Timber Sales Manager				
Timber Sales Manager Stuart-Nechako	1 Pending	34 / 65	52	0.3
	3 Silviculture Obligations	82 / 106	77	0.6
Unknown – Harvesting Inventory				
	253 Future Harvesting Inventory	1,560 / 2,614	60	12
	12 Silviculture Obligations	440 / 1,298	34	3

Source: BC Government GeoBC Data Distribution; Resource Tenures and Engineering Forest Tenure Managed Licence

There are eight registered woodlot licence holders with a total of 13 tenures representing approximately 8% of the FSR study area (**Table 3.5-8**).

Table 3.5-8: Woodlot Licences Overlapping the FSR Study Area

Woodlot Licence Owner/ License Number	No. of Tenures / Total Area (ha)	Area falling within Study Area (ha)	% of Total Woodlot Tenure Area	% of Total FSR Study Area
Douglas, Damon / No. W0253	1 / 476	178	37	1
Tachick Forest Farms Ltd. / No. W0293	3 / 714	239	34	2
Kells, Norman / No. W0620	2 / 603	242	40	2
Kochel, John / No. W0621	2 / 317	86	27	0.6
Weinhardt, Caroline / No. W0631	2 / 269	76	27	0.5
Saik'uz First Nation / No. W0635	1 / 245	149	61	1
Weaver, Darrell / No. W1416	1 / 129	16	12	0.1
The Forestdale Canyon Adventure Ltd. / #W1529	1 / 511	29	6	0.2

Source: BC Government GeoBC Data Distribution; Resource Tenures and Engineering Forest Tenure Managed Licence

3.5.3 Mountain Pine Beetle Management

The MPB epidemic in BC, the most severe beetle infestation in recorded North American history, is recognized as an unprecedented forest-altering event. The combination of abundant mature pine (due to enhanced fire suppression measures) and the absence of killing frosts in winter enabled an explosive growth in the MPB population starting in 1999/2000 (BC MFLNRO, 2012b).

Due to the MPB epidemic in the Prince George TSA, timber supply forecasts were prepared to examine scenarios for mid-term timber supply mitigation. Mitigation scenarios were compared to a reference forecast, which is based on similar assumptions used for the current performance base case used in the timber supply review process. These assumptions include accounting for all existing land-use decisions and non-timber constraints, focusing harvesting in pine-leading stands, and assuming pine will have economic value for 15 years after death. The analysis indicates that, without mitigation, timber supply in the Prince George TSA is projected to decline by 32% in the mid-term – from 9.364 m^3 a year to 6.4 Mm^3 (BC MFLNRO, 2013c). During the mid-term, harvesting will depend on existing non-pine stands, second-growth managed stands, and pine stands that survived infestation.

Version 5 of Provincial-Level Mountain Pine Beetle Model was used to predict the current and future pine mortality for the Vanderhoof District. This model predicted that 83% of the mature pine in the Vanderhoof District that was on the timber harvesting land base in 1999 would be killed by 2024 (BC MFLNRO, 2013c). The Special Committee on Timber Supply's report signals the start of the final phase in a decade-long response to the MPB infestation (Government of BC, 2012a). Since 2001, the Government of BC has invested over $884 million on forest management and economic developments in beetle-infested areas to assist forestry-dependent communities diversify their economic base.

'Beyond the Beetle: A Mid-Term Timber Supply Action Plan' provides a sharper focus on increasing the mid-term timber supply and better utilizing timber for bioenergy and other

purposes, to complement the traditional focus on sawlogs (Government of BC, 2012b). Highlights of the Action Plan include a 10-year forest inventory strategy, innovative silviculture practices to grow more trees faster, and landscape fire management planning to reduce risks to the midterm timber supply. Other key elements of the Action Plan includes proposed new legislation to convert volume-based forest licences to area-based forest licences, and the creation of a new supplemental forest licence to increase bioenergy opportunities (Government of BC, 2012b).

The Action Plan also supports the special committee's recommendation to ensure any harvesting in areas set aside for old-growth, wildlife and scenic values only be considered if it is scientifically and ecologically sound to do so, and has the support of local communities and First Nations. Some communities have asked the provincial government to consider harvesting within sensitive areas of the timber harvesting land base (Government of BC, 2012b).

Figure 3.5-4, which summarizes the MPB infestation in central and southern BC from 1999 to 2003, shows how the damage to the Vanderhoof Forest District began as early as 1999.

Figure 3.5-5 and **Figure 3.5-6** show the updated status and severity of the MPB attack for 2011 in the NTLU RSA. **Table 3.5-9** and **Figure 3.5-5** summarize the MPB status as of 2011 based on the stage of the MPB attack. Newly attacked trees turn red approximately one year after infestation. Trees can stay in the red-attack stage for two to four years before turning grey as they lose their needles. The three main stages of MPB attack include:

- Green Attack – Adult beetles have found a new host tree and tunnelled underneath the bark to lay their eggs. The tree dies soon after, but the needles stay green for several months;
- Red Attack – The needles have turned red as a result of the beetles killing the tree by eliminating the tree's nutrient supply; and
- Grey Attack – The needles have fallen off the tree and only the bare branches remain. The decaying tree has become more susceptible to falling or being blown down.

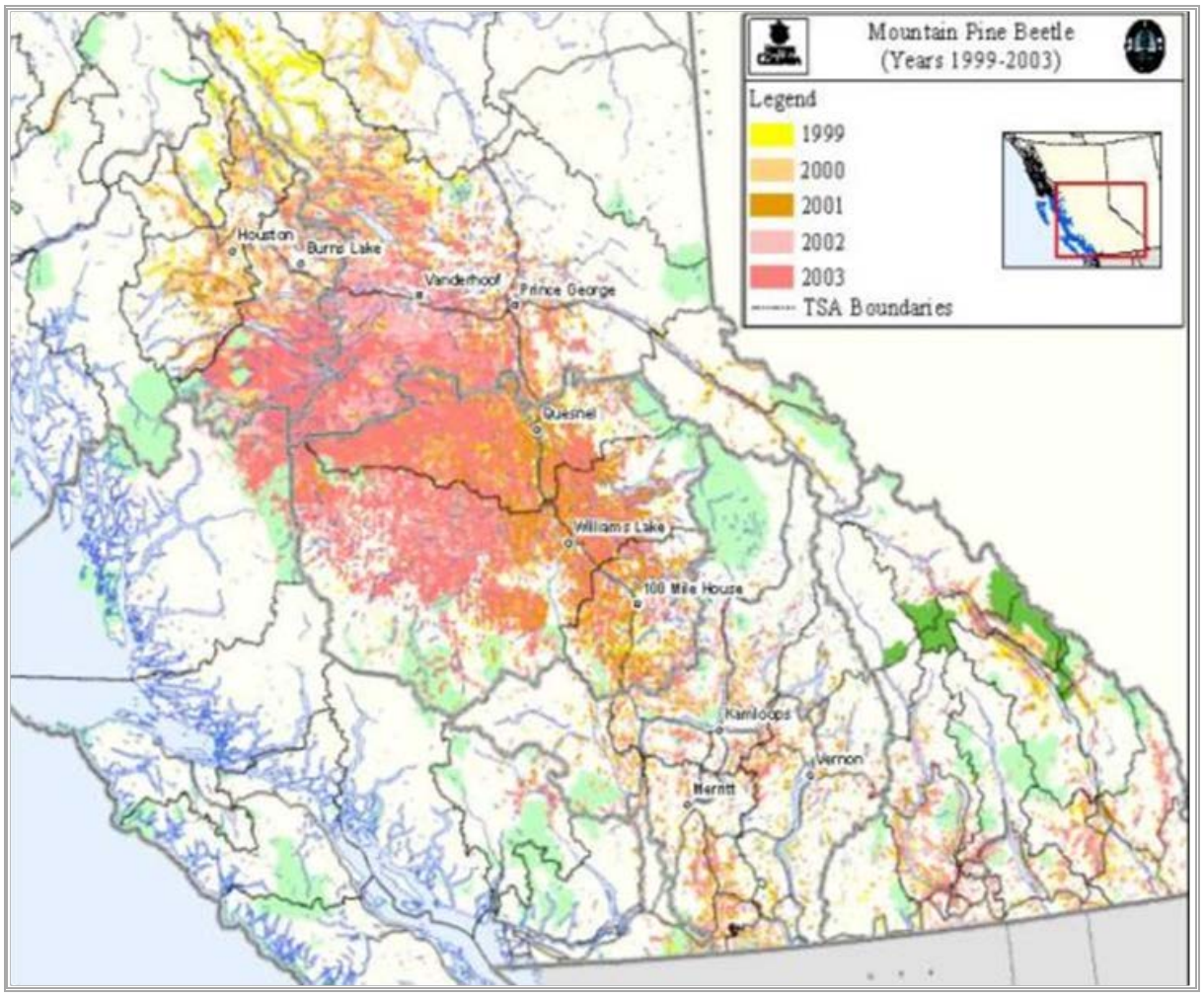
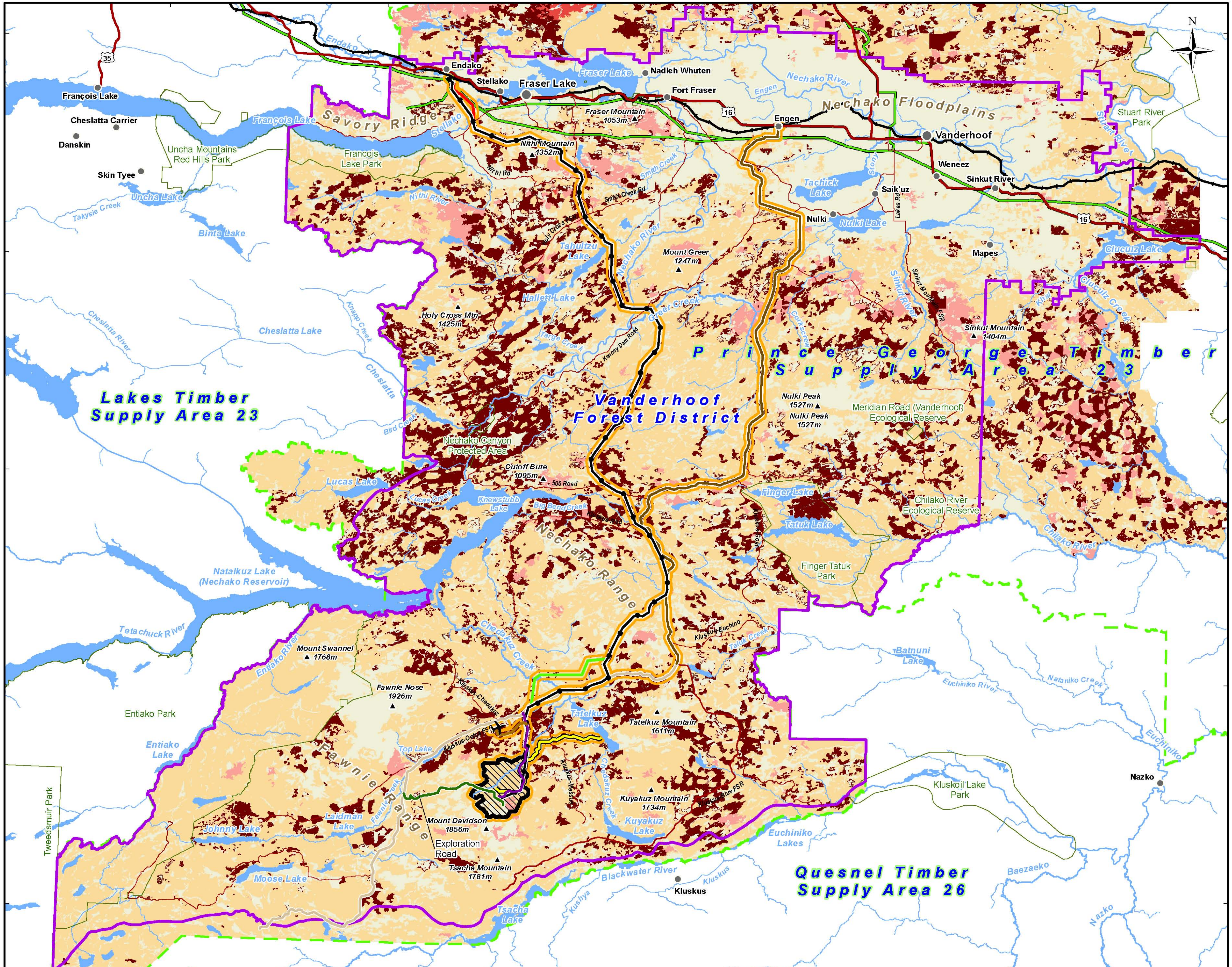


Figure 3.5-4: General Summary of Central and Southern BC Mountain Pine Beetle Infestation

Table 3.5-9: Status of the Mountain Pine Beetle Infestation as of 2011 within the Project Study Areas

MPB Attack as of 2011 Falling within Project Study Areas	Area (ha)	% of Total Study Area
NTLU RSA		
Old Grey (1999 – 2007)	608,690	59
New Grey (2008 – 2009)	28,121	3
Red (2010 – 2011)	47	0.005
Mine Site Study Area		
Old Grey (1999 – 2007)	4,285	68
New Grey (2008 – 2009)	377	8
Red (2010 – 2011)	0	0
Mine Site Access Road Study Area		
Old Grey (1999 – 2007)	609	90
New Grey (2008 – 2009)	0	0
Red (2010 – 2011)	0	0
Airstrip Study Area		
Old Grey (1999 – 2007)	696	87
New Grey (2008 – 2009)	0	0
Red (2010 – 2011)	0	0
Freshwater Supply Study Area		
Old Grey (1999 – 2007)	1,131	81
New Grey (2008 – 2009)	278	2
Red (2010 – 2011)	0	0
Transmission Line Study Area: Main		
Old Grey (1999 – 2007)	10,478	73
New Grey (2008 – 2009)	469	3
Red (2010 – 2011)	0	0
Transmission Line Study Area: Mills Ranch Re-Route		
Old Grey (1999 – 2007)	1,268	81
New Grey (2008 – 2009)	0	0
Red (2010 – 2011)	0	0
Transmission Line Study Area: Stellako Re-Route		
Old Grey (1999 – 2007)	100	27
New Grey (2008 – 2009)	0	0
Red (2010 – 2011)	0	0
FSR Study Area (Kluskus M/L)		
Old Grey (1999 – 2007)	9,000	64
New Grey (2008 – 2009)	610	4
Red (2010 – 2011)	0	0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Stellako
Fraser Lake
Nadleh Whuten
Fort Fraser
Engen
Vanderhoof
Weneez
Sinkut River
Saik'uz
Nulki
Mapes
François Lake
Cheslatta Carrier
Danskin
Skin Tyee
Uncha Mountains Red Hills Park
François Lake Park
Savory Ridge
Nechako Floodplains
Stuart River Park
Fraser Mountain 1053m
Nithi Mountain 1352m
Tachick Lake
Nulki Lake
Mount Greer 1247m
Tahultzu Lake
Hallett Lake
Holy Cross Mtn 1425m
Cheslatta Lake
Lakes Timber Supply Area 23
Vanderhoof Forest District
Prince George Timber Supply Area 23
Nulki Peak 1527m
Meridian Road (Vanderhoof) Ecological Reserve
Sinkut Mountain 1404m
Nechako Canyon Protected Area
Cutoff Bute 1095m
Lucas Lake
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Tatuk Lake
Chilako River Ecological Reserve
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Natalkuz Lake (Nechako Reservoir)
Nechako Range
Tetachuck River
Mount Swannel 1768m
Fawnie Nose 1926m
Entiako Park
Entiako Lake
Tatelkuz Lake
Tatelkuz Mountain 1611m
Batnuni Lake
Top Lake
Fawnie Range
Kuyakuz Mountain 1734m
Kuyakuz Lake
Kluskoil Lake Park
Nazko
Mount Davidson 1856m
Exploration Road
Laidman Lake
Johnny Lake
Tsacha Mountain 1781m
Moose Lake
Tweedsmuir Park
Euchiniko Lakes
Blackwater River
Kluskus
Quesnel Timber Supply Area 26
Tsacha Lake
Baezaeko
N

Legend

- Populated Place
- Highway
- Railway
- Existing Transmission Line
- Stream (>=4th Order)
- Waterbody (>= 100ha)

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs

Project Components

- Proposed Airstrip
- Proposed Airstrip Access Road
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Stellako Re-route)
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Proposed Mine Site

Forestry Management

- Timber Supply Areas
- Vanderhoof Forest District

MPB Attack Status

- Red (2010-2011)
- New Grey (2008-2009)
- Old Grey (1999 - 2007)
- n/a
- Harvested
- Local Study Area

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Mountain Pine Beetle Attack Severity (2011) within the Non-traditional Land Use Regional Study Area

DATE: April, 2014	ANALYST: WR	Figure 3.5-5
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-64_mpbStatus_v2.pdf
GIS FILE: 17-100-64_mpbStatus_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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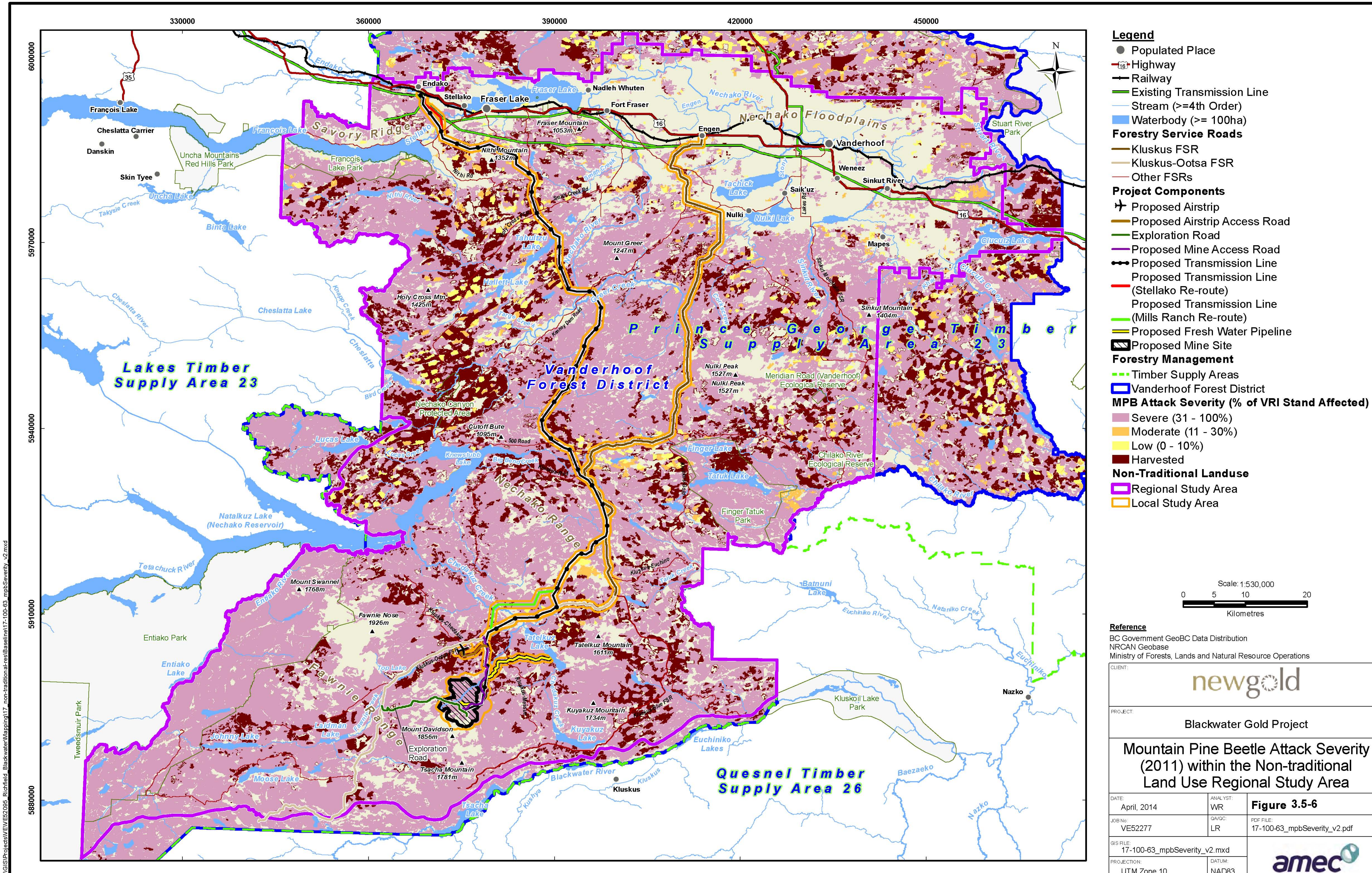
The severity of MPB attack as of 2011 in the Vanderhoof Forest District is summarized on **Figure 3.5-6** and in **Table 3.5-10**.

Table 3.5-10: Severity of the Mountain Pine Beetle Infestation as of 2011 within the Project Study Areas

MPB Attack as of 2011 Falling within Project Study Areas	Area (ha)	% of Total Study Area
NTLU RSA		
Severe	538,668	52.48
Moderate	21,457	2.09
Low	76,733	7.48
Mine Site Study Area		
Severe	4,580	74.81
Moderate	0	0
Low	99	1.62
Mine Site Access Road Study Area		
Severe	358	52.84
Moderate	0	0
Low	242	35.71
Airstrip Study Area		
Severe	362	45.46
Moderate	7	0.89
Low	324	40.61
Freshwater Supply Study Area		
Severe	802	60.75
Moderate	67	5.04
Low	209	15.87
Transmission Line Study Area: Main		
Severe	8,068	56.29
Moderate	489	3.41
Low	1,915	13.36
Transmission Line Study Area: Mills Ranch Re-Route		
Severe	1,207	76.80
Moderate	0	0
Low	62	3.94
Transmission Line Study Area: Stellako Re-Route		
Severe	99	26.74
Moderate	0	0
Low	0	0
FSR Study Area		
Severe	6,751	52.46
Moderate	634	4.93
Low	959	7.45

Source: BC Government GeoBC Data Distribution - Forest Analysis and Inventory Branch - Mountain Pine Beetle



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Endako
Stellako
Fraser Lake
Nadleh Whuten
Fort Fraser
Fraser Mountain 1053m
Engen
Vanderhoof
Nechako Floodplains
Nechako River
Stuart River Park
Weneez
Sinkut River
Saik'uz
Nulki
Nulki Lake
Tachick Lake
Mapes
Clucuz Lake
François Lake
Cheslatta Carrier
Danskin
Skin Tyee
Uncha Mountains Red Hills Park
François Lake Park
Savory Ridge
Uncha Lake
Binta Lake
Nithi Mountain 1352m
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Nechako Range
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Tetachuck River
Mount Swannel 1768m
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Entiako Park
Entiako Lake
Tatelkuz Lake
Tatelkuz Mountain 1611m
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Top Lake
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Tweedsmuir Park
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Mount Davidson 1856m
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Kuyakuz Mountain 1734m
Kuyakuz Lake
Kluskoil Lake Park
Nazko
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Tsacha Mountain 1781m
Blackwater River
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Populated Place
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Proposed Mine Access Road
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Proposed Transmission Line (Stellako Re-route)
Proposed Transmission Line (Mills Ranch Re-route)
Proposed Fresh Water Pipeline
Proposed Mine Site
Forestry Management
Timber Supply Areas
Vanderhoof Forest District
MPB Attack Severity (% of VRI Stand Affected)
Severe (31 - 100%)
Moderate (11 - 30%)
Low (0 - 10%)
Harvested
Non-Traditional Landuse
Regional Study Area
Local Study Area
Scale: 1:530,000
0 5 10 20
Kilometres

Reference
BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Mountain Pine Beetle Attack Severity (2011) within the Non-traditional Land Use Regional Study Area

DATE: April, 2014	ANALYST: WR	Figure 3.5-6
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-63_mpbSeverity_v2.pdf
GIS FILE: 17-100-63_mpbSeverity_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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The amount of dead pine now exceeds that which can be recovered for lumber. In 2008, the Province of BC announced its Bioenergy Strategy with $25 million to establish a provincial Bioenergy Network for greater investment and innovation in BC bioenergy projects and technologies. The Bioenergy Network encourages the development of pilot and demonstration projects with industries and communities in key biomass resource areas. In 2008, the Government of BC also funded Geoscience BC to provide data about potentially high quality mineral deposits in MPB-affected areas for prospectors to use to narrow their searches. This was expected to trigger higher investment in mineral exploration and lead to new mine developments in the epidemic zone (BC MFLNRO, 2012b).

The success of the Omineca Region has long been reliant on its timber resources. However, the MPB epidemic is expected to diminish opportunities in the forestry sector for several decades. Although mineral exploration and mining have been important to the region's economy in the past, the industry has considerable potential to play a more important role (Omineca Beetle Action Coalition, 2013).

3.6 Hunting

BC MFLNRO has legislated responsibility for monitoring wildlife populations and adjusting hunting seasons and regulations, including closures and bag limits. There are three categories of hunters in BC, each of which has specific laws and regulations: resident; non-resident; and Aboriginal. Aboriginal groups residing in BC are required to comply with hunting regulations related to public health and safety, but are not required to obtain a hunting licence under the BC *Wildlife Act* (Government of BC, 1996e*)*.

The first priority of the BC MFLNRO is to ensure the long-term conservation of wildlife populations and their habitats. The ministry also recognizes that Aboriginal peoples hold Aboriginal rights to harvest wildlife for sustenance (food, social, and ceremonial purposes) in their traditional areas. Such uses of wildlife must be sustainable, and harvesting methods must not jeopardize safety or the use and enjoyment of property (BC MFLNRO, 2012e). Any hunting of wildlife species for sale or barter, in whole or in part, is not legal, except as authorized by regulation or where there is a demonstrated Aboriginal or treaty right to do so. Hunting by Aboriginal groups is discussed in Parts C and D of the Application/EIS.

Specific information regarding available resident, non-resident and trapping harvest data for the years 2000 to 2010 is provided in the Wildlife and Wildlife Habitat Baseline Report.

3.6.1 Land Use Planning

The Vanderhoof LRMP recognizes that trapping, hunting, and guiding are acceptable activities within a Protected Area (Government of BC, 1997). Where an activity is permitted, it is assumed to include transfer of tenure and use of all customary methods and tools. The Vanderhoof LRMP also indicates that access management should be used when it is generally agreed that other strategies (e.g., angling restrictions, habitat enhancement, hunting regulations) will not meet resource management objectives. **Table 3.6-1** provides a summary of Wildlife Management Units (WMUs) overlapped by the Project that fall within three different administrative regions: Region 5 – Cariboo; Region 6 – Skeena; and Region 7A – Omineca.

Table 3.6-1: Wildlife Management Units Overlapped by the Project

	Region/WMU					
	North Chilcotin (Region 5: Cariboo)	Upper Nechako (Region 6: Skeena)		Fort George (Region 7A: Omineca)		
Project Study Area	**WMU 5-13**	**WMU 6-1**	**WMU 6-4**	**WMU 7-11**	**WMU 7-12**	**WMU 7-13**
Mine Site		X				
Mine Site Access		X				
Airstrip		X				
Freshwater Supply		X				
Transmission Line	X	X	X		X	
FSR	X	X		X	X	X

330000 360000 390000 420000 450000

6000000 5970000 5940000 5910000 5880000

SKEENA WMU 6-5
OMINECA WMU 7-13
MARK WERNER
CERT NO 701155
COLONEL ANDERSON
CERT NO 701137
Endako
Stellako
Fraser Lake
Nadleh Whuten
Fort Fraser
Nechako River
Nechako Floodplains
Engen
Vanderhoof
Stuart River Park
Pitka Mountain Camp
François Lake
Cheslatta Carrier
Danskin
Skin Tyee
Uncha Mountains Red Hills Park
Francois Lake Park
Savory Ridge
Stellako
Stuart River
Weneez
Sinkut River
Saik'uz
Tachick Lake
Tachick Lake
Stony
Lakes Rd
Nulki
Nulki Lake
Mapes
Chuchuz Lake
Chuchuz Creek
Kinzi
Sinkut Mountain FSR
Sinkut River
Cottscrew
STEFAN MUEHLMEYER
CERT NO 601048
OMINECA WMU 7-12
Nithi Rd
Nithi River
Smith Creek
Smith Creek Rd
Holy Cross FSR
Tahultzu Lake
Nechako River
Crystal Lake Cabins
Crystal Lake Resort
Greer Creek
Hallett Lake
HAROLD KOENIG
CERT NO 601049
Binta Lake
Uncha Lake
Takysie Creek
SKEENA WMU 6-4
Cheslatta River
Cheslatta Lake
Knapp Creek
Cheslatta
Bird Creek
ALLEN RAY
CERT NO 701166
Kenney Dam Road
DANIEL BROOKS
CERT NO 701156
Meridian Road (Vanderhoof) Ecological Reserve
Nechako Canyon Protected Area
Kenney Dam
Lucas Lake
Lucas Creek
Knewstubb Lake
500 Road
Big Bend Creek
Kluskus-Red
OMINECA WMU 7-11
Finger Lake
Chilako River Ecological Reserve
Kluskus-Goo
Tatuk Lake
DANIEL BROOKS
CERT NO 701161
Finger Tatuk Park
Chilako River
SKEENA WMU 6-2
Nechako Range
Natalkuz Lake (Nechako Reservoir)
Tetachuck River
Entiako River
Cheshkuz Creek
Kluskus-Euchino
Tatuk Creek
Batnuni Lake Camp
Batnuni Lake
JIM D. LINNELL
CERT NO 500948
Euchiniko River
Naranko Creek
Entiako Park
Entiako Lake
SKEENA WMU 6-1
Kluskus-Cheshkuz
Kluskus-Odsa FSR
Top Lake
Tatelkuz Lake
LYLE BARSBY
CERT NO 601039
CARIBOO WMU 5-13
Fawnie Range
JOHN BLACKWELL
CERT NO 600384
Laidman Lake
Johnny Lake
Tweedsmuir Park
Kluskus-Nessie
Cheshkuz Creek
Kuyakuz Lake
HARRINGTON, DAVID
CERT NO 500929
Kluskoil Lake Park
Nazko
Euchiniko Lakes Ranch
Euchiniko Lakes
Exploration Road
Moose Lake Lodge
Moose Lake
Blackwater River
Kluskus
RICHARD BRAUN
CERT NO 500961
Baezaeko
Tsacha Lake
Kushya
CARIBOO WMU 5-2
HANS-ALBERT JACOBS
CERT NO 500952
JIM RUSSELL
CERT NO 500945
CERT NO 0
Nazko

N

Legend

- Populated Place
- Hunting and fishing lodge
- Highway
- Railway

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Other FSRs
- Stream (>=4th Order)
- Waterbody (>= 100ha)

Project Components

- Proposed Airstrip
- Proposed Airstrip Access Road
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Stellako Re-route)
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Proposed Mine Site

Registered Guide Outfitters

Overlapping the Local Study Area

- Colonel Anderson
- Lyle Barsby
- John Blackwell
- Daniel Brooks
- Jim D. Linnell
- Stefan Muelmeyer
- Allen Ray

Overlapping the Regional Study Area

- Local Study Area

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Wildlife Management Units and Guide Outfitting Areas Overlapping the Non-traditional Land Use Study Area

DATE: April, 2014	ANALYST: WR	**Figure** 3.6-1
JOB No: VE52277	QA/QC: MY	PDF FILE: 17-100-011_v11_outfitter.pdf
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PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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3.6.2 Resident Hunters

A valid Hunter Number Card is required for BC residents 18 years of age and older. Recent changes to the hunting licence program (effective 1 April 2013) make it easier for a BC resident 10 to 17 years of age to try hunting with a youth licence that is held by the parent or guardian. BC resident hunters are allowed to accompany a Canadian non-resident one time per year, provided they have obtained the appropriate documents. Residents in the area most commonly hunt moose, deer, wolf, and black bear, but also cougar, coyote, wolverine, lynx, and snowshoe hare. Hunting regulations for the regions overlapped by the Project are summarized in the 2012 – 2014 Hunting and Trapping Regulations Synopsis (BC MFLNRO, 2012).

3.6.3 Non-Resident Hunters (Guide Outfitting)

In order to hunt “big game” in BC, non-residents must be accompanied by either a licensed guide (in the case of hunters from other countries) or a resident holding a Permit to Accompany (in the case of Canadian hunters not residing in BC).

The guide outfitter reporting system tracks non-resident hunter and harvest data. Guide outfitters are required to report on every hunt they guide within 10 days of the end of the hunt under the BC *Wildlife Act* (Government of BC, 1996b). Reports must include species hunted, duration, and location of the hunt, name of the individual guided, and success of the hunt.

A valid BC Guide Outfitter Licence or an Assistant Guide Outfitter Licence is required to legally guide hunters (BC MFLNRO, 2012). A Guiding Territory Certificate provides exclusive control over guiding privileges within a specific guiding territory. As of 15 June 2009, the owner of a Guiding Territory Certificate does not necessarily have to be a guide (BC MFLNRO, 2012); a licensed outfitter may guide or supervise guided hunts in more than one territory.

A total of 14 guide outfitter areas overlap the NTLU RSA. **Figure 3.6-1** shows the guide outfitter certificate areas registered with the Government of BC and locations of hunting lodges associated with individual guide outfitters. **Table 3.6-2** summarizes the guide outfitter areas located within the NTLU RSA that overlap with one or more of the individual Project study areas. A summary of the nine guide outfitters overlapping the various individual Project study area is presented below based on the 2010-2011 Guide Outfitters in British Columbia reference (BC MOE, 2010) and publically available information from the internet.

Table 3.6-2: Guide Outfitter Areas Overlapping with One or More Project Study Areas

Project Study Area	500929	600384	601039	700298	701137	601048	701156	701161	500948
Mine Site	X	X	X						
Mine Site Access		X	X						
Airstrip		X							
Freshwater Supply		X	X						
Transmission Line		X	X	X	X	X	X		
FSR		X	X	X	X		X	X	X

3.6.3.1 Mine Site Study Area

The mine site footprint overlaps three active guide outfitter area certificates; 500929; 60038; and 601039. **Table 3.6-3** summarizes the guide outfitter areas that overlap with the mine site study area.

Table 3.6-3: Guide Outfitter Areas that Overlap with the Proposed Mine Area

Outfitter Certificate Number/WMU	Lodge	Species Hunted							Area falling within Study Area (ha)/ Total Guide Outfitter Area (ha)	% of Total Guide Outfitter Area Overlapping Mine Site Study Area	% of Total Mine Site Study Area
		Black Bear	Grizzly Bear	Caribou	Cougar	Deer	Moose	Wolf			
500929/5-12, 5-13	Euchiniko Lakes Ranch	X	X	X	X	X	X	X	12/106041	0.01	0.2
600384/6-04	/Moose Lake Lodge	X	X	X	-	X	X	X	2196/319311	0.7	36
601039/6-01	Batnuni Lake Guide & Outfitters	X	X	-	-	X	X	X	3914/54322	7	64

Note: "-" = not hunted; LSA = Local Study Area

Source: BC Government GeoBC Data Distribution, Fish and Wildlife Branch, Guide Outfitter Areas

Fawnie Mountain Outfitters (Fawnie Mountain Outfitters, 2013) is operated out of Moose Lake Lodge located approximately 30 km west of the proposed mine site (Moose Lake Lodge, 2013) as well as an outpost cabin on Entiako Lake (located approximately 40 km west of the proposed mine site). Hunting activities offered include moose and bear (grizzly and black bear) and a variety of different fishing is offered.

Batnuni Lake Guide & Outfitters offers moose, bear, wolf, cougar, and lynx hunts as well as fishing (Batnuni Lake, 2013). Batnuni Lake is located approximately 35 km east of the Project access road within guide outfitter area 500948, which runs along the eastern border of the FSR study area.

Euchiniko Lakes Guest Ranch is located on the east shore of Euchiniko Lake and the Blackwater River. Moose, black bear, grizzly bear, caribou, cougar, deer, wolf, and game bird hunting are offered. Winter trapline trips are also available.

3.6.3.2 Mine Site Access Road Study Area

Guide outfitting area 600384 overlaps 99% of the access road study area, with the remaining 1% overlapped by guide outfitting area 601039. For both guide outfitting areas, the access road study area accounts for a fraction (less than 0.3%) of their total guide outfitting areas.

3.6.3.3 Airstrip Study Area

The entire study area extent is overlapped by guide outfitting area 600384. This represents less than 0.3% of this total guide outfitting area.

3.6.3.4 Freshwater Supply Study Area

For the proposed freshwater supply, almost 100% of the study area falls within the guide outfitting area 601039, which accounts for 2% of this guide outfitting area. Less than 0.1% of guide outfitting area 600384 is overlapped by the freshwater supply study area.

3.6.3.5 Transmission Line Study Area

Table 3.6-4 summarizes the guide outfitter areas that overlap with the transmission line study area. Crystal Lake Resort and Crystal Lake Cabins, located within 5 km and 2 km, respectively, of the proposed transmission line both fall within guide outfitter area 701156. Hunting for moose, black bear, grizzly bear, cougar, deer, mountain sheep, and wolf is offered as well as rainbow trout fishing. The same guide outfitter that operates Crystal Lake Resort and Crystal Lake Cabins also owns the guide outfitter area certificate (701161) for the Finger Lake and Tatuk Lake areas.

Pika Mountain Outfitters, located west of Fraser Lake approximately 5 km from the transmission line study area, offers moose hunting with a secondary focus on trophy mule deer, whitetail deer, bear, elk, and wolf hunting.

Hallett Lake Outfitters mainly offer moose and black bear, but also offer mule deer, whitetail deer, wolf, and lynx hunting.

Table 3.6-4: Guide Outfitter Areas that Overlap with the Transmission Line Study Area

Outfitter Area/WMU	Lodge	Species Hunted							Area falling within Transmission Line Study Area (ha) /Total Guide Outfitter Area (ha)	% of Total Guide Outfitting Area Overlapping Transmission Line Study Area	% of Total Transmission Line Study Area
		Black Bear	Grizzly Bear	Caribou	Cougar	Deer	Moose	Wolf			
700298/ 7-12	Hallett Lake Outfitters Ltd.	X	-	-	-	X	X	X	2,887 / 272,724	1	20
600384/ 6-04	Moose Lake Lodge	X	X	X	-	X	X	X	2,647 / 319,571	0.8	18
601039/ 6-01	Batnuni Lake Guide & Outfitters	X	X	-	-	X	X	X	2,209 / 54,322	4	15
701137/ 6-05, 6-07, 7-12, 7-13, 7-25	/ Pitka Mountain Outfitters Ltd.	X	X	-	-	X	X	X	1,885 / 266,449	0.7	13
601048/ 6-04, 7-12	Uncha Mountain Outfitters Ltd.	X	X	-	-	X	X	X	1,473 / 99,557	2	10
701156/ 5-13, 7-11, 7-12	Crystal Lake Resort	X	X	-	X	X	X	X	2,948 / 145,719	2	20

Note: "-" = not hunted

Source: BC Government GeoBC Data Distribution; Fish and Wildlife Branch, Guide Outfitter Areas

3.6.3.6 FSR Study Area

The six guide outfitter certificate areas that overlap with the FSR study area are summarized in **Table 3.6-5**. The percent of each total guide outfitter area overlapping the FSR study area ranges from 0.3% to 5.0%. Guide outfitter area 701166 accounts for the largest proportion (23%) of the total FSR study area.

Table 3.6-5: Guide Outfitter Areas that Overlap with the FSR Study Area

Outfitter Area (s)/ WMU	Name	Species Hunted							Area falling within Study Area (ha) / Total Guide Outfitter Area (ha)	% of Total Guide Outfitting Area Overlapping FSR Study Area	% of Total FSR Study Area
		Black Bear	Grizzly Bear	Caribou	Cougar	Deer	Moose	Wolf			
701166/ 7-12	Hallett Lake Outfitters, Ltd.	X	-	-	-	X	X	X	3,392 / 272,724	1	23
701161, 701156/ 7-11, 7-12, 5-13	Crystal Lake Resort	X	X	-	X	X	X	X	4,746 / 240,928	2	3
600384/ 6-04	Moose Lake Lodge	X	X	X	-	X	X	X	2,567 / 319,571	0.8	18
500948/ 5-13, 7-11	Batnuni Lake Guide & Outfitters	X	-	-	X	X	X	X	511 / 162,137	0.3	4
601039/ 6-01	Batnuni Lake Guide & Outfitters	X	X	-	-	X	X	X	2,476 / 54,322	5	17
701137/ 6-05, 6-07 7-12, 7-13 7-25	Pitka Mountain Outfitters Ltd. Lodge	X	X	-	-	X	X	X	681 / 266,449	0.3	5

Note: "-" = not hunted

Source: BC Government GeoBC Data Distribution; Fish and Wildlife Branch, Guide Outfitter Areas

3.6.4 Trapping

To protect furbearers and address overharvesting, a trapline registry was started in 1926. The BC *Wildlife Act* (Government of BC, 1996b) establishes regulations on harvest and harvesting methods, and trappers are obligated to purchase exclusive trapping rights within certain areas. In BC, approximately 3,500 trappers actively manage 17 furbearing animal species, following standards, legislation, and regulations developed by BC MFLNR Operations (BC MFLNR, 2012). Approximately half of the province's trappers are Aboriginal. The Fur Management Program includes the BC Trappers Association's Continuing Trapper Education Program courses for new and experienced trappers, and the "Furbearer Management Guidelines" (BC MFLNR 2012, 2013j).

Trapping seasons have been developed to regulate harvests by considering a variety of criteria including pelt primeness, relative vulnerability of age and sex classes to harvesting, abundance, and capture technique (BC MFLNR, 2012). The primary system for setting harvest guidelines and managing furbearing animals is the registered trapline system. Furbearers are divided into the following three species classes to manage harvest levels:

- Class 1 – managed on individual traplines (includes beaver, fox, marten, mink, muskrat, raccoon, skunk, squirrel, and weasel);
- Class 2 – not manageable on individual traplines and harvests are regulated regionally (includes lynx, bobcat, wolverine, fisher, and otter); and

- Class 3 – not manageable on individual traplines; harvests are not regulated regionally as species are not considered vulnerable to over-trapping (includes wolf and coyote).

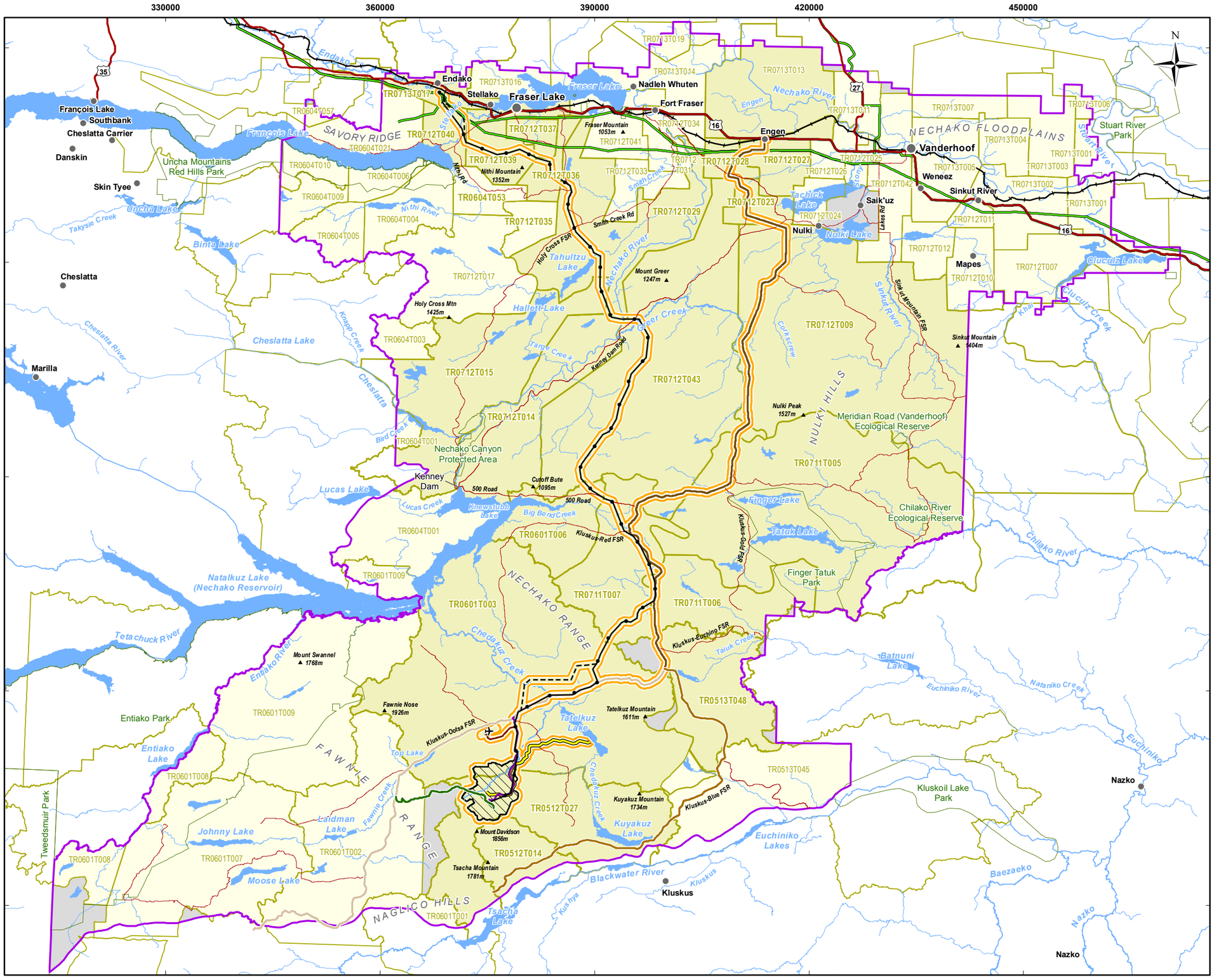
Table 3.6-6 summarizes the wildlife species trapped in BC and the 2012 to 2014 provincial trapping seasons by management unit that overlap with the Project study areas.

Table 3.6-6: Wildlife Species Trapped in the Non-traditional Land Use Regional Study Area and Applicable Season

Wildlife Species	Trapping Season					
	WMU 5-13	WMU 6-1	WMU 6-4	WMU 7-11	WMU 7-12	WMU 7-13
Beaver	Oct 15 - Apr 30	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31
Black Bear	Oct 15 - May 15	Oct 1 - May 31	Oct 1 - May 31	Sep 15 - May 31	Sep 15 - May 31	Sep 15 - May 31
Bobcat	Nov 15 - Feb 15	-	-	-	-	-
Coyote	Oct 15 - Mar 31	Oct 15 - Mar 31	Oct 15 - Mar 31	Oct 15 - Mar 31	Oct 15 - Mar 31	Oct 15 - Mar 31
Fisher	Nov 1 - Feb 15	Nov 1 - Feb 15	Nov 1 - Feb 15	Nov 1 - Feb 15	Nov 1 - Feb 15	Nov 1 - Feb 15
Fox	Oct 15 - Mar 31	Oct 15 - Feb 28	Oct 15 - Feb 28	Oct 15 - Feb 28	Oct 15 - Feb 28	Oct 15 - Feb 28
Marten	Nov 1 - Feb 15	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28
Mink	Nov 1 - Feb 15	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 15	Nov 1 - Feb 15	Nov 1 - Feb 15
Muskrat	Oct 15 - Apr 30	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31
Raccoon	Oct 1 - Mar 31	Oct 1 - Mar 31	Oct 1 - Mar 31	Oct 1 - Mar 31	Oct 1 - Mar 31	Oct 1 - Mar 31
River Otter	Oct 15 - Apr 30	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31	Oct 1 - May 31
Skunk	Oct 15 - Feb 28	Oct 15 - Feb 28	Oct 15 - Feb 28	Oct 15 - Feb 28	Oct 15 - Feb 28	Oct 15 - Feb 28
Squirrel	Nov 1 - Mar 15	Nov 1 - Mar 30	Nov 1 - Mar 30	Nov 1 - Mar 30	Nov 1 - Mar 30	Nov 1 - Mar 30
Weasel	Nov 1 - Feb 15	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28
Wolverine	Nov 1 - Jan 31	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28	Nov 1 - Feb 28
Wolf	Apr 1 - Oct 14 *	Oct 15 - Mar 31	Oct 15 - Mar 31	Oct 15 - May 31	Oct 15 - May 31	Oct 15 - May 31

Note: "-" = not trapped; * No closed season, restricted to private land only and use of modified leg hold traps only

A total of 78 registered traplines overlap the NTLU RSA. **Figure 3.6-2** shows the traplines registered with the Government of BC; those traplines that overlap one of the individual Project study areas have been separated for reference. **Table 3.6-7** summarizes the 22 registered traplines that overlap with one or more of the individual Project study areas.



Legend

- Populated Place
- Highway
- Railway
- Existing Transmission Line
- Parks and Protected Areas

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Kluskus-Blue FSR
- Other

Project Components

- Proposed Airstrip
- Proposed Airstrip Access Road
- Proposed Mine Access Road
- Exploration Road
- Proposed Transmission Line
- Proposed Transmission Line Reroutes
- Proposed Fresh Water Pipeline
- Proposed Mine Site

Non-Traditional Landuse

- Local Study Area
- Regional Study Area

Registered Traplines

- Overlapping the LSA
- Overlapping the RSA
- n/a

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold™

PROJECT: Blackwater Gold Project

Registered Traplines Overlapping the Non-traditional Land Use Regional Study Area

DATE:	ANALYST:	Figure 3.6-2
February, 2015	WR	
JOB No: VE52240	QA/QC: MY	PDF FILE: 17-100-012_v11_trapLines.pdf
GIS FILE: 17-100-012_v11_trapLines.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	

amec

\\bby-fs2\bby-e-gis\GIS\Projects\VE\VE52095_Richfield_BlackwaterMapping\17_non-traditional-resBaseline\17-100-012_v11_trapLines.mxd

Table 3.6-7: Registered Traplines Overlapping with One or More Project Study Areas

Project Study Area	Registered Trapline																				
	TR0512T014	TR0512T027	TR0513T048	TR0601T003	TR0601T006	TR0711T005	TR0711T006	TR0711T007	TR0712T009	TR0712T014	TR0712T015	TR0712T023	TR0712T027	TR0712T028	TR0712T029	TR0712T036	TR0712T037	TR0712T039	TR0712T040	TR0712T043	TR0713T013	TR0713T017
Mine Site	X	X		X																		
Mine Site Access Road				X																		
Airstrip				X																		
Freshwater Supply				X																		
Transmission Line				X	X		X	X		X	X				X	X	X	X	X	X		X
FSR			X	X		X	X	X	X			X	X	X						X	X	

Table 3.6-8 to **Table 3.6-10** summarise the 22 traplines operating within the defined Project study areas including the area and percent of the trapline that is overlapped by each Project study area.

3.6.4.1 Mine Site Study Area

The mine site study area is overlapped by three different registered trapline areas with 75% occupied by trapline TR0512T027, which accounts for 12% of the total area for that trapline. **Table 3.6-8** summarizes the registered trapline areas overlapping the mine site study area.

Table 3.6-8: Registered Trapline Areas Overlapping the Mine Site Study Area

Trapline	Area falling within Study Area (ha) / Total Trapline Area (ha)	% of Total Trapline Area Overlapping Mine Site Study Area	% of Total Mine Site Study Area
TR0512T027	4,580 / 37,737	12	75
TR0512T014	120 / 11,071	1	2
TR0601T003	1,424 / 101,536	1.4	18

Source: BC Government GeoBC Data Distribution; Fish and Wildlife Branch, Traplines of British Columbia

3.6.4.2 Mine Site Access Road Study Area

There is one registered trapline area (0601T003) that overlaps the entire extent of the study area, representing less than 1% of the total trapline area.

3.6.4.3 Airstrip Study Area

Trapline area 0601T003 overlaps the entire airstrip study area. This represents less than 1% of the total registered trapline area.

3.6.4.4 Freshwater Supply Study Area

The entire freshwater supply study area falls within one registered trapline area (TR0601T003) and accounts for only 1% (1,393 ha) of the total area (101,537 ha) for this trapline.

3.6.4.5 Transmission Line Study Area

The transmission line study area is overlapped by 13 different registered trapline areas with four traplines, TR0712T029 (14%), TR0712T043 (22%), TR0711T007 (18%), and TR0601T003 (15%), accounting for almost 70% of the total study area. **Table 3.6-9** summarizes the registered trapline areas overlapping the transmission line study area.

Table 3.6-9: Registered Trapline Areas Overlapping the Transmission Line Study Area

Trapline	Area falling within Study Area (ha) / Total Trapline Area (ha)	% of Total Trapline Area Overlapping Project Study Area	% of Total Project Study Area
TR0601T003	2,168 / 101,537	2	15
TR0601T006	394 / 13,054	3	3
TR0711T006	433 / 18,460	2	3
TR0711T007	2,584 / 21,859	12	18
TR0712T014	258 / 24,162	1	2
TR0712T015	437 / 39,575	1	3
TR0712T029	2,052 / 31,148	7	14
TR0712T036	543 / 3,994	14	4
TR0712T037	77 / 2,858	3	1
TR0712T039	1,207 / 10,350	12	8
TR0712T040	635 / 4,582	14	4
TR0712T043	3,211 / 73,874	4	22
TR0713T017	334 / 21,979	2	2

Source: BC Government GeoBC Data Distribution; Fish and Wildlife Branch, Traplines of British Columbia

Stellako Re-Route

Three registered trapline areas (0712T039, 0712T040, and 0713T017) overlap the study area. Trapline 0712T040 overlaps 66% of the study area, representing 5% of its total trapping area. The overlap of the other trapping areas is less than 1% of their respective total trapline areas.

Mills Ranch Re-Route

Within the Mills Ranch re-route, there is one trapline area (0601T003) that overlaps the entire extent of the study area, representing approximately 1.5% of the total trapline area.

3.6.4.6 FSR Study Area

A total of 98% of the FSR study area is overlapped by 11 different registered trapline areas.

Table 3.6-10: Registered Trapline Areas Overlapping the FSR Study Area

Trapline	Area falling within Study Area (ha) / Total Trapline Area (ha)	% of Total Trapline Area Overlapping Project Study Area	% of Total Access Route study area
TR0513T048	302 / 21,486	1	2
TR0601T003	2,378 / 101,537	2	18
TR0711T005	1,380 / 84,292	2	11
TR0711T006	827 / 18,460	4	6
TR0711T007	1,591 / 21,859	7	12
TR0712T009	3,197 / 126,858	3	25
TR0712T023	1,048 / 4,459	24	8
TR0712T027	563 / 7,711	7	4
TR0712T028	435 / 3,245	13	3
TR0712T043	848 / 73,874	1	7
TR0713T013	32 / 22,019	0.2	0.3

Source: BC Government GeoBC Data Distribution; Fish and Wildlife Branch, Traplines of British Columbia

3.7 Fishing and Aquaculture

3.7.1 Land Use Planning

The Project falls within three regional resources management areas: Region 5 (Cariboo), 6 (Skeena), and 7 (Omineca). **Table 3.6-1** provides a summary of WMUs overlapped by the Project; this is also shown in **Figure 3.6-1**. The Fisheries and Aquatic Resources Baseline Report provides additional information on freshwater fisheries. Available information regarding subsistence fishing by First Nations is described in the Aboriginal Groups Background Information included in Section 14 of the Application.

3.7.2 Recreational Fishing

The Vanderhoof area is a popular fishing destination due to the area's vast network of streams, rivers, and lakes. A number of streams, rivers, and lakes are a short distance away from Vanderhoof and are accessed by paved or FSRs, while other more distant and less-accessible waterbodies are accessed by kayak, canoe, boat, or float plane (Destination BC Corp, 2013; Stakeholder comments, *pers. comm.*). Anglers visiting less-accessible waterbodies will often opt to camp overnight at nearby Forest Services' campsites or at less established camping spots along the shores of lakes and rivers. Visiting anglers also have the option to stay at one of the many fishing lodges located in the area, which offer guided fishing, rental boats, and equipment. Many of these lodges also offer floatplane excursions to more distant lakes and fishing spots.

Angling season starts in May and runs until October (Destination BC Corp, 2013; Stakeholder comments, pers. comm.). Ice fishing is also a popular winter activity in the area although to a lesser extent. Commonly sought after species include rainbow trout, lake trout, Dolly Varden, whitefish, char, kokanee, and others (Fisheries and Aquatic Resource Baseline; Destination BC Corp, 2013; Stakeholder comments, pers. comm.). Fishing areas located proximate to the

proposed Project include: the Nechako River and Reservoir (Knewstubb Lake), Tatuk Lake, Finger Lake, Top Lake, Stellako River, Chedakuz Creek, Big Bend Creek, and Euchineko River. A number of smaller lakes and streams are also found in the area and fished by anglers hiking in (Government of BC, 1997).

Freshwater recreational fishing regulations are summarized in the following references:

- 2013-2015 Freshwater Fishing Regulation Synopsis (MFLNRO, 2013k); and
- 2013-2015 British Columbia Freshwater Salmon Supplement (DFO, 2013).

Table 3.7-1 summarizes the general regulations for freshwater environments in Regions 5, 6, and 7 (DFO, 2013 a, b).

Restrictions on gear type and fishing methods include:

- A single barbless hook must be used in all streams, all year in all three regions;
- In region 6, set lining for burbot is permitted in all lakes;
- In region 7, set lining is only permitted in lakes and are restricted to one line with a single hook with a gap of no less than 3 cm (refer to BC MFLNRO, 2013k for more details); and
- In region 7, a bait ban is in effect for all stream fishing, all year.

In addition to fish species and fishing gear restrictions, the following general timing restrictions apply:

- In region 5, there is no fishing (spring closure) from any stream of the Fraser River Watershed from 01 April to 30 June (refer to BC MFLNRO, 2013k or exceptions); and
- In region 7, there is no fishing (spring closure) in any streams from 01 April to 30 June.

Table 3.7-1: General Fishing Regulations for Freshwater (Non-Tidal) Species in Region 5, 6, and 7

Species	Region	Limits/Period
Chinook, Sockeye, Coho	5, 6 and 7	No salmon fishing, all year
Trout/char *	5	5, but not more than
		1 over 50 cm
		2 from streams
		1 Dolly Varden/bull trout
		3 lake trout
		Must be released:
		All steelhead
		All lake trout, 01 October to 30 November
	6	5 (trout/char), but not more than
		1 over 50 cm
		1 trout from streams, 01 July to 31 October
		1 Dolly Varden/bull trout and/or lake trout combined
		Must be released:
		All Dolly Varden/bull trout from streams, all year
		Trout under 30 cm from any stream
		Trout of any size from streams, 01 November to 30 June
		Lake trout from Fraser watershed, 15 September to 30 November
		All wild steelhead
	7	5, but not more than
		1 over 50 cm
		2 from streams
		1 bull trout (Dolly Varden), only between 30-50 cm in length, from 16 October to 14 August, from lakes
		3 lake trout
		Must be released:
		Bull trout from streams, all year
		Bull trout from lakes, 15 August to 15 October
		Lake trout of any size, 15 September to 31 October
		Lake trout under 30 cm, all year
Kokanee	5	5, none from streams
	6 and 7	10, none from streams
Arctic grayling	6	3
	7	Catch and release only
Bass	5	Closed to all fishing
Burbot	5, 6 and 7	5
Northern pike	6	5
Whitefish	5, 6 and 7	15 (all species combined)
White sturgeon	5	Closed to all fishing in the Fraser River Watershed
	6	Catch and release only
	7	Closed to all fishing
Inconnu	6	1

Note: Refer to the 2013-2015 Freshwater Fishing Regulation Synopsis (DFO 2013b) for waterbodies-specific regulations; * = char include Dolly Varden, null trout, brook trout, and lake trout.

Source: BC MFLNRO 2013k; DFO 2013

3.7.3 Aquaculture and Commercial Fisheries

There are a number of licensed angling guide and commercial fishing lodges operating within the RSA. These provide guiding services, boat and equipment rental, and floatplane access to remote fishing spots. Anglers may stay at local fishing lodges or be flown from other resorts. Lodges located within the Project study area are discussed in more detail in **Section 3.3.3**.

As the area becomes more developed and better known, fishing pressure is expected to increase. The Vanderhoof LRMP recognizes the economic opportunities associated with the fishing industry and has identified the area as a high priority area for Total Resource Planning. Management strategies for specific lakes include restricting access to hike-in or fly-in only; restricting future commercial backcountry; restricting development to lakes with existing commercial lodges; identifying high values of fisheries streams using the BC *Forest Practices Code* riparian management approach; and using riparian management planning to limit access to lakes.

Between 800 and 1,000 BC, lakes and streams are stocked annually with more than 10 million trout, char, and kokanee produced and operated by the Freshwater Fisheries Society of BC (FFSBC) hatchery network (FFSBC 2013; M. Green, pers. comm.). In the last 10 years, approximately six lakes have been stocked with rainbow trout within the NTLU RSA (FFSBC, 2013). **Table 3.7-2** summarizes fish stocking numbers for waterbodies within the NTLU RSA for the last 10 years (2004 to 2013).

Table 3.7-2: Fish Stocking Numbers for Waterbodies within the Non-traditional Land Use Regional Study Area (2004-2013)

Water Body Name	Approx. Distance from Closest Project Study Area (km)	Year									
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Tachick Lake	2.5 km east of access route study area	40,000	40,000	40,000	40,176	-	-	-	-	-	-
Nulki Lake	4 km east of access route study area	10,000	10,000	10,000	10,090	10,000	10,000	10,021	10,000	10,000	-
Casey Lake	2.5 km west of transmission line study area	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Hobson Lake	2 km west of transmission line study area	-	2,500	-	2,500	-	18,000	18,000	18,000	18,000	-
Chief Gray Lake	5 km west of transmission line study area	-	1,700	-	1,658	-	5,400	2,700	2,700	2,700	-

Note: "-" indicates no stocking that year

3.7.4 White Sturgeon Conservation Centre

Fishing of the Nechako white sturgeon is illegal. The Nechako River white sturgeon was designated as an endangered species by the Committee on the Status of Endangered Wildlife

in Canada (COSEWIC) in 2003 and listed on Schedule 1 of the federal *Species at Risk Act* in 2006. The Nechako River sturgeon population is thought to have declined to less than 600 individuals since the 1960s (COSEWIC, 2003) as a result of impacts associated with the construction of the Kenney Dam and Skins Lake Spillway. Recruitment failure is thought to be the main factor preventing recovery of the Nechako River population.

The Nechako White Sturgeon Recovery Initiative (NWSRI) was formed to lead the recovery efforts for this unique fish species (NWSRI, 2013). In 2006, a conservation aquaculture project was initiated to increase the number of juveniles in the river. In April 2013, the Freshwater Fisheries Society of BC received $10 million for the construction of the Nechako Sturgeon Conservation Centre that will be located in Vanderhoof (NWSRI, 2013; The Vancouver Sun, 2013). The facility will host a hatchery and include headquarters for a research program aimed at the recovery of the species. The conservation centre will be located across the river from the only known spawning site for Nechako white sturgeon. The facility will release up to 12,000 tagged juvenile sturgeon into the river each year to rebuild the population, study their behaviour, and monitor their survival (The Vancouver Sun, 2013).

3.8 Agriculture and Grazing

The Vanderhoof Range Program (which falls under the mandate of the Vanderhoof Forest District) allocates and administers hay cutting and grazing agreements and grazing leases on Crown range across the province (BC MFLNRO, 2013b). Program activities focus on ensuring healthy and sustainably managed rangelands, which are capable of supporting the interests and activities of clients, stakeholders, and partners. Parties with an interest in the management of BC rangelands include the ranching industry, guide outfitters, First Nations, Government and Non-Government Agencies, wildlife, recreationalists, and the public at large.

3.8.1 Land Use and Planning

There has been a lot of growth in developing agricultural lands in the Nechako Valley over the past 20 years (Government of BC, 1997). Key to this expansion were BC Lands agricultural lease policies that facilitated the leasing and conversion of more than 20,000 forested ha in the valley to forage and cereal crops. One-third of the 165,000 ha agricultural land belt is still in the land-clearing and developmental stages. The LRMP is complementary to the Vanderhoof Crown Land Plan, designated Agricultural Development Areas, and the Agricultural Land Reserve (ALR).

Strategies designed to minimize the conflict between agriculture and grazing with other resource uses have been developed in a number of RMZs. For the mine site study area, strategies outlined within the Davidson Creek RMZ for agriculture management include: identifying and maintaining opportunities for future agricultural development, grazing interests and range along the zone's northern and southern boundaries; and allowing reasonable access to all private and agricultural lease lands.

The expansion of Agricultural Lands in the Vanderhoof District has been significant in the last two decades (LM Forest Resource Solutions Ltd., 2011). The Minister of Agriculture and Crown Lands established the agricultural development and settlement reserves order in 2006 to reduce the possibility of land use conflicts arising between forest resource users, woodlots,

and developers of agricultural land and settlement areas. Land use objectives were established for agriculture development areas and settlement reserve areas that restrict timber harvesting to activities such as fuel reduction at the wildland-urban interface and forest health salvage/prevention.

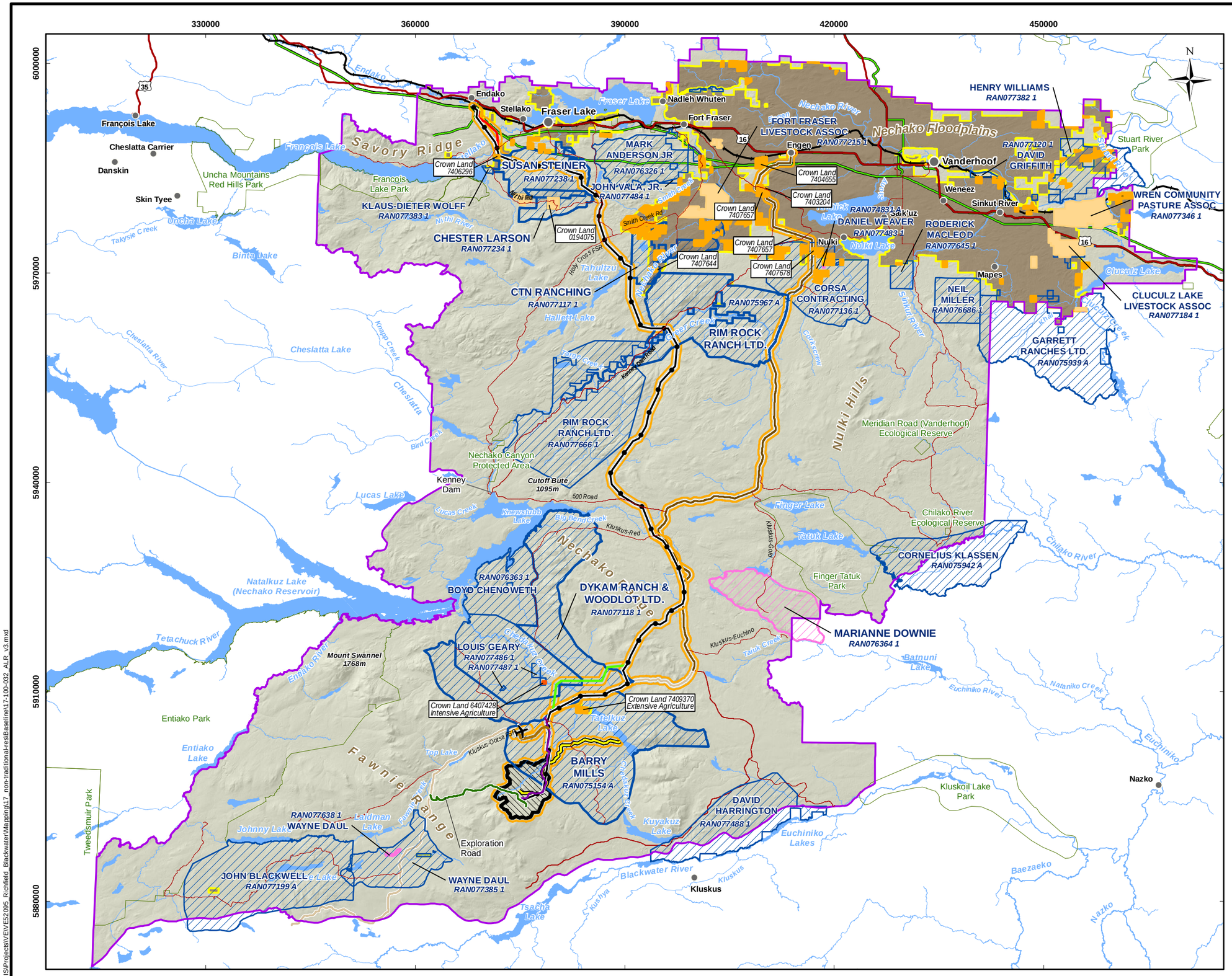
The Vanderhoof OCP (District of Vanderhoof, 2006) states that whenever possible, the routing of future rural roadways and utility lines should avoid fragmenting agricultural lands by following alignments along section, boundary or property lines, road allowances, or existing utility corridors. Utility and road rights-of-way across ALR lands will not proceed without the approval of the provincial Agricultural Land Commission (ALC).

Grazing is managed by both tenures under the *Range Act* and leases under the *Lands Act* (BC MFLNRO, 2013g). Grazing leases are a 20-year tenure issued under the *Land Act*. Only the existing lessee can apply for an existing grazing lease upon its expiry. The Grazing Lease Program under the *Land Act* is not accepting applications for new Grazing Leases.

3.8.2 Agricultural Land Use and Range Tenures

No designated ALR lands fall within the mine site, mine site access road, airstrip, or freshwater supply study areas. The transmission line does not overlap with any ALRs. The Mills Ranch re-route does not overlap any ALR properties and three ALR properties are intersected by the Stellako re-route (which accounts for 10% of the total Stellako re-route). Three ALR properties are overlapped 32% by the existing portion of the FSR study area for a total of 2,065 ha (which accounts for 14% of total FSR study area). **Figure 3.8-1** provides a summary of the following three types of agriculture occurring on Provincial Crown land within the Project study area:

- Extensive – the use of Crown land for soil bound cultivation to produce cereal, seed, forage, vegetable or fruit crops for mechanical harvesting (managed under the *Land Act* (Government of BC, 2011a);
- Intensive – the use of Crown land parcels of an area of 15 ha or less for the commercial production of animals, fruits, and/or vegetables. Examples of intensive agriculture include poultry farms, dairy farms, market gardens, greenhouses, nurseries, piggeries, and feed lots (managed under the *Land Act* (Government of BC, 2011b)); and
- Grazing.



Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Agricultural Land Use and RangeTenures Overlapping the Non-traditional Land Use Regional Study Area

DATE:	ANALYST:	**Figure** 3.8-1
April, 2014	WR	
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-032_ALR_v3.pdf
GIS FILE: 17-100-032_ALR_v3.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	

amec

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Additional information on agriculture tenures on Provincal Crown land is provided in **Section 3.9.3**.

The status and availability of grazing and hay-cutting tenures (licenses and permits) issued under the *Range Act* as either a licence (10-year term) or a permit (1 to 5-year term) can be determined in discussion with BC MFLNRO staff (BC MFLNRO, 2013h). There are a total of 69 active range tenures and 3 pending range tenures overlapping the NTLU RSA. **Table 3.8-1** summarizes the eight active range tenures overlapping with one or more individual Project study areas.

Table 3.8-1: Range Tenures Overlapping with the One or More Individual Project Study Areas

Project Study Areas	Active Range Tenure Area							
	Barry Mills RAN075154 A	Rim Rock Ranch Ltd. RAN075967 A	CTN Ranching Ltd. RAN077117 1	Dykam Ranch and Woodlot Ltd. RAN077118 1	Corsa Contracting Ltd RAN077136 1	Chester Larson RAN077234 1	Susan Steiner RAN077238 1	Louis Geary RAN077486
Mine Site	X	-	-	-	-	-	-	-
Mine Site Access Road	X	-	-	X	-	-	-	-
Airstrip	X	-	-	-	-	-	-	-
Freshwater Supply	X	-	-	-	-	-	-	-
Transmission Line	X	X	X	X	-	X	X	-
- Mills Ranch	-	-	-	X	-	-	-	X
- Stellako	-	-	-	-	-	-	-	-
FSR	X	X		X	X			-

Note: "-" = not applicable

Table 3.8-2 summarizes the 8 active range tenure areas that overlap the individual Project study areas as well as the corresponding percentage of each tenure area and percentage of total individual Project study area. One range tenure (RAN075154 A) is intersected by all of the Project study areas except for the Stellako re-route.

Table 3.8-2: Percentage of Active Range Tenure Areas that Fall within One or More Individual Project Study Areas

Range Tenure Holder/ Tenure Number	Total Range Tenure Area (ha)	% of Total Range Tenure Overlapping Project Study Area	% of Total Project Study Area
Mine Site Study Area			
Mills, Barry /RAN075154 A	27,930	7	27
Mine Site Access Road Study Area			
Mills, Barry /RAN075154 A	27,930	2	92
Dykam Ranch And Woodlot Ltd./ RAN077118 1	23,886	0.2	8
Airstrip Study Area			
Mills, Barry /RAN075154 A	27,930	3	100
Freshwater Supply Study Area			
Mills, Barry /RAN075154 A	27,930	7	100
Transmission Line Study Area			
Mills, Barry /RAN075154 A	27,930	6	4
Larson, Chester /RAN077234 1	2,807	0.6	0.1
CTN Ranching Ltd./RAN077117 1	5,117	2	0.6
Dykam Ranch and Woodlot Ltd./ RAN077118 1	23,886	4	6
Rim Rock Ranch Ltd./ RAN075967 A	19,428	3	4
Steiner, Susan /RAN077238 1	7,622	22	12
Mills Ranch Re-route			
Dykam Ranch and Woodlot Ltd./ RAN077118 1	23,886	3	48
Louis Geary /RAN077486 1	14,261	4	39
FSR Study Area			
Mills, Barry /RAN075154 A	27,930	6	4
Corsa Contracting Ltd./RAN077136 1	13,363	8	8
Dykam Ranch and Woodlot Ltd./RAN077118 1	23,886	3	5
Rim Rock Ranch Ltd./RAN075967 A	19,428	3	4

Source: BC Government GeoBC Data Distribution; Provincial Range Operations, Range Tenure (Grazing and Haycutting Tenures)

3.9 Land Ownership and Tenures

3.9.1 Land Use and Planning

The Province of BC operates within a framework of policies that govern the disposition, administration, and management of Crown land. The policies are developed in consultation with other provincial agencies and stakeholder groups. In BC, 94% of the land is provincial Crown land, 5% is privately owned, and 1% is federal Crown land including Indian Reserves, Defence Lands, Federal Harbours, etc. (BC MFLNRO, 2013f).

Provincial Crown land is available for a wide range of purposes to provide opportunities for sustainable economic development. Different Crown land tenure types are available, depending on the desired use and term of the contract. Types of tenures include investigative permits, temporary permits, licences of occupation, statutory rights-of-way, and leases. The BC MFLNRO and delegated agencies, through an application process, may grant the use and occupation of Crown land to citizens and registered organizations for a variety of purposes, such as utilities generation (i.e., water power and wind power), agriculture (i.e., range tenures described above), commercial activities (including forestry described in detail in **Section 3.5.2**), industrial use, adventure tourism/commercial recreation, roadway development, log handling, grazing, mining, marinas, communication sites, alpine skiing/all-season resorts, aggregates development, airports, residential use, aquaculture, and private moorage (BC MFLNRO, 2013f).

3.9.2 Land Ownership

From an ownership perspective, lands within the NTLU RSA, south of the District of Vanderhoof, are predominately designated as “unknown.” Information was compiled using available resources from the provincial GeoBC Data Distribution database. Areas appearing as “unknown” are attributed to being unsurveyed Crown land in the database (i.e., there is no historical survey or title registered for those areas). However, there is a small chance that some areas shown as unsurveyed could be titled property due to historical errors made in the provincial parcel/title repositories. **Table 3.9-1**, **Figure 3.9-1**, and **Figure 3.9-2** summarize the land ownership within the Project study area. Additional land use information for the District of Vanderhoof can be found on the rural OCP Land Use Map provided in **Figure 3.1-2**.

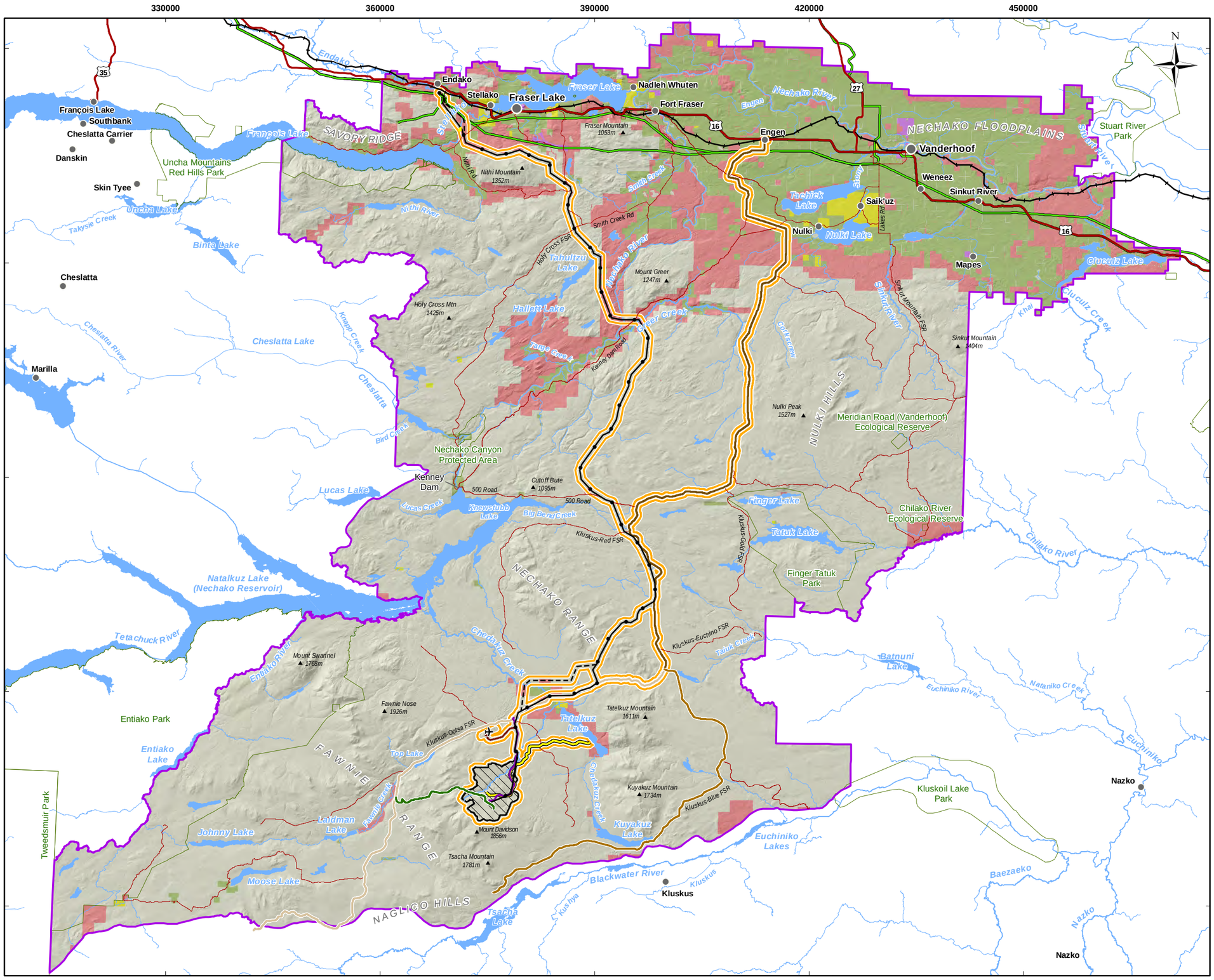
The majority of the land ownership overlapped by the individual Project study areas is classified as “unknown.” A small area (0.05%) of the transmission line study area is overlapped by a federal Crown tenure with a total area of 7.7 ha and legal description of BK B OF DL 2557 R5C.

Table 3.9-1: Land Ownership (%) Overlapping the Project Study Area

Ownership	Project Study Areas							
	Mine Site (%)	Mine Site Access Road (%)	Airstrip (%)	Freshwater Supply (%)	Transmission Line (%)			FSR (%)
					Main	Stellako	Mills Ranch	
Crown federal	0	0	0	0	0.05	0	0	0
Crown municipal	0	0	0	0	0	0	0	0
Crown provincial	0	0	0	0.6	17	53	20	11
Private	0	0	0	0	2.5	34	1	14
Unknown*	100	100	100	99.4	80.5	13	79	75

Note: *Areas appearing as “unknown” are attributed to being unsurveyed Crown land in the database (i.e., there is no historical survey or title registered for those areas).

Source: GeoBC Data Distribution, TANTALIS Crown Land Licenses (Government of BC, 2013a)



Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Land Ownership Overlapping the Non-traditional Land Use Regional Study Area

DATE: April, 2014	ANALYST: WR	**Figure** 3.9-1
JOB No: VE52277	QA/QC: MY	PDF FILE: 17-100-047_ownership_v4.pdf
GIS FILE: 17-100-047_ownership_v4.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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360000 368000 376000 384000 392000

5912000 5904000 5896000 5888000

Chedakuz Creek
Esker
Proposed Transmission Line
N
DL 1850
REM DL 1848
DL 3127
DL 1852
DL 1851 R4C
DL 1849 R4C
DL 1848
DL 1843 R4C
DL 1845
REM DL 1845
Proposed Transmission Line (Mills Ranch Re-route)
DL 1843 R4C
REM DL 1842
DL 1842 R4C
TATELKUS LAKE RESERVE 28
DL 1841
DL 1847
REM DL 1847
DL 1846
DL 1844
DL 1844 R4C
DL 1840
933m
DL 1838
DL 1839
Tatelkuz Lake
DL 1836
DL 1837
DL 1835
DL 1834
Proposed Fresh Water Pipeline
Fawnie Nose 1926m
Fawnie Dome 1726m
Kluskus-Ootsa FSR
Proposed Airstrip
Proposed Airstrip Access Road
Proposed Mine Access Road
Turtle Creek
Davidson Creek
Fawnie Range
Nechako Range
Tatelkuz Mountain 1611m
Top Lake
1097m
1387m
1634m
1151m
1096m
Creek 661
1231m
1666m
1144m
1611m
1668m
DL 3136 R4C
Fawnie Creek
DL 3137 R4C
DL 3134 R4C
1767m
Mount Davidson 1856m
DL 1833
DL 91
DL 92
Kuyakuz Lake
Kuyakuz Mountain 1734m
Kluskus-Blue FSR
DL 1830
DL 1829
DL 1831
DL 3239 R4C
DL 124 R4C
Murray Creek
Tsacha Mountain 1781m
West Road (Blackwater)
Euchiniko Lakes
960m

Legend

- Spotheights

Forestry Service Roads
- Kluskus FSR
- Kluskus-Ootsa FSR
- Kluskus-Blue FSR
- Other FSRs
- Tracks
- Stream
- Waterbody
- Indian Reserves

Project Components
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Proposed Airstrip Access Road
- Proposed Airstrip
- Proposed Mine Site

Land Ownership
- Crown Federal
- Crown Municipal
- Crown Provincial
- Private
- Unknown

Non-Traditional Landuse
- Regional Study Area
- Local Study Area

Scale:1:120,000

0 1 2 4 6

Kilometres

Reference

BC Government GeoBC Data Distribution
BCGOV FLNRO Recreation Sites and Trails Branch

CLIENT: newgold

PROJECT: Blackwater Gold Project

Land Ownership Overlapping the Mine, Access Road and Water Pipeline Study Areas

DATE: April, 2014	ANALYST: WR	**Figure** 3.9-2
JOB No: VE52277	QA/QC: SB	PDF FILE: 17-100-089_ownershipLSA_v2.pdf
GIS FILE: 17-100-089_ownershipLSA_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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3.9.3 General Permits, Licences, Land Tenures, and Charges

BC operates within a framework of policies that establish principles such as land use, allocation, tenure term, and pricing, and govern the disposition, administration, and management of Crown land. These policies are developed in consultation with other provincial agencies, First Nations, and stakeholder groups. The allocation and administration of provincial Crown land facilitates environmental sustainability and expands and diversifies the economy. The Province of BC has a responsibility to ensure that Crown land is managed to maximize and sustain the flow of benefits to all British Columbians and to meet this responsibility, government provides policy and legislative direction for Crown land allocation and management. Some of the information presented below has already been presented in more detail in representative sections above as there are inherent overlaps in the provincial tenures system (i.e., forestry).

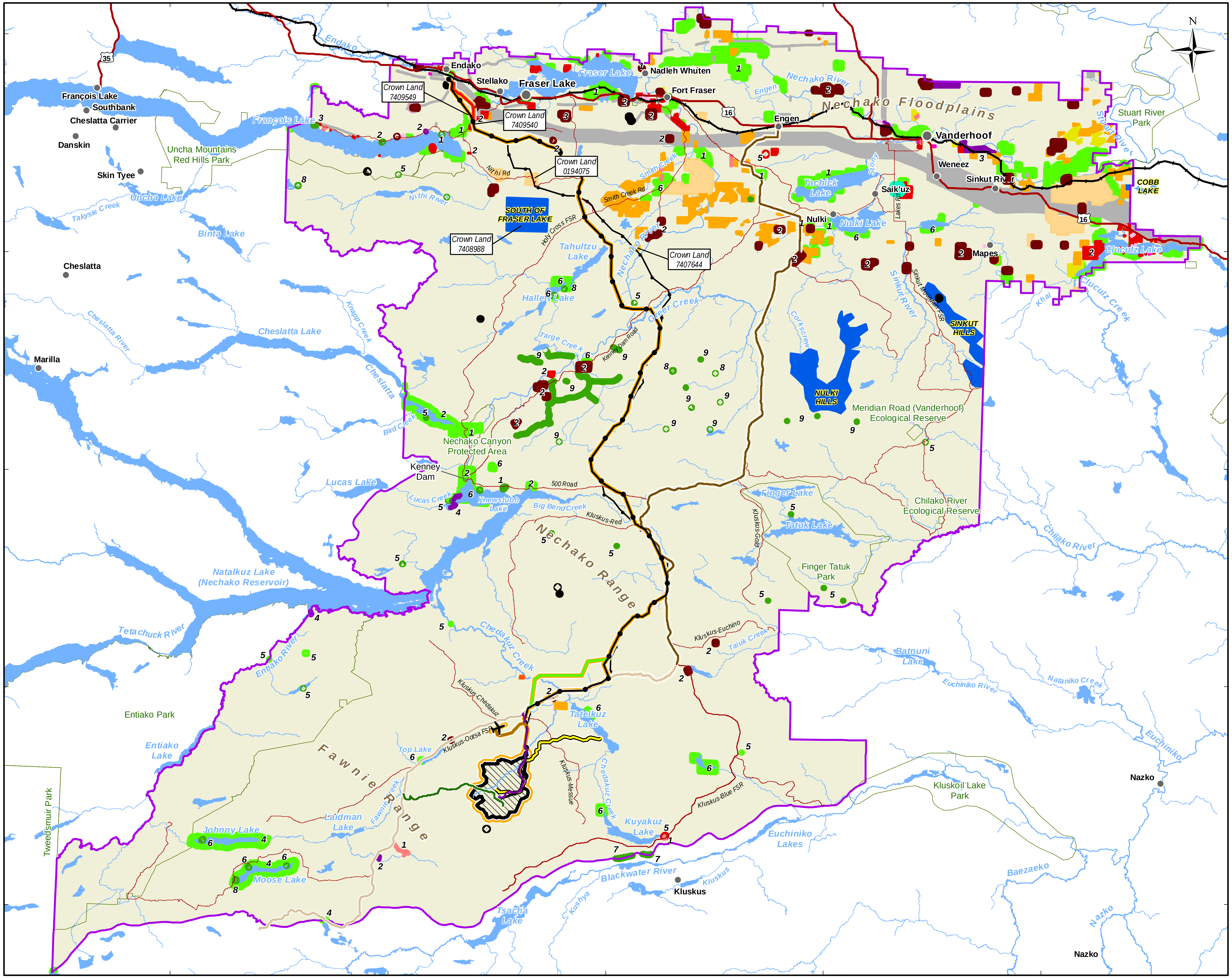
Non-forestry and mining related Crown tenures overlapping the NTLU RSA, transmission line study area and FSR study area are summarized in **Table 3.9-2, Figure 3.9-3**, and **Figure 3.9-4** to provide an overview of land uses in the NTLU RSA and mine site study area, respectively. No registered Crown tenures overlap the mine site, mine site access road, airstrip, or freshwater supply study areas.

Table 3.9-2: Provincial Crown Tenures (%) Overlapping the Project Study Areas

Tenure Purpose	Project Study Areas		
	Transmission Line (ha/%)	FSR (ha/%)	NTLU RSA (ha/%)
Agriculture	17/0.1	201 / 1.6	15,442 / 1.5
Commercial	0	0	16 / 0.002
Commercial Recreation	0	0	78 / 0.01
Communication	0	0	9 / 0.001
Community	0	0	1,75 / 0.02
Energy Production	0	0	0
Environment, Conservation, and Recreation	97 / 0.7	83/0.7	14,195 / 1.4
First Nations	0	0	62 / 0.01
Industrial	0	0.5 / <0.001	787 / 0.08
Institutional	0.8 / 0.01	0	39 / 0.004
Miscellaneous Land Uses	0	0	1,086 / 0.11
Quarrying	2 / 0.01	84 / 0.7	2,215 / 0.22
Residential	71 / 0.5	6 / 0.05	2,052 / 0.20
Transportation	0	0	37 / 0.004
Utility	129 / 0.9	464 / 3.6	22,627 / 2.2
Wind Power	0	0	9,967 / 1.0

Note: NTLU = Non-traditional Land Use; RSA = Regional Study Area

Source: BC Government GeoBC Data Distribution; TANTALIS Crown Land Licenses



Legend

Crown Tenure (Purpose)

Agriculture
- Extensive
- Grazing
- Intensive

Commercial
- 1 Commercial B
- 2 Commercial wharf
- 3 Marina
- 4 Miscellaneous
- 5 Trapline cabin
- 6 Recreation fishing camps
- 7 Recreation walking
- 8 Recreation hunt camps
- 9 Recreation multiple use

Communication
- Communication

Community
- Community

Environment, Conservation
- 1 Fish and Wildlife
- 2 Flooding Reserve
- 3 Forest Research
- 4 Protection
- 5 Scientific Measurement
- 6 Recreation Reserve

Industrial
- 1 General
- 2 Light
- 3 Miscellaneous
- 4 Log handling/storage

Institutional
- Public works
- Cemetery
- Waste disposal
- Local/Regional Park

Miscellaneous
- Other
- Planning/Development

Other
- Energy production
- FN reserve expansion

Quarrying
- 1 Rock for crushing
- 2 Sand and gravel
- 3 Miscellaneous

Residential
- 1 Urban residential
- 2 Rural residential
- 3 Recreation residential
- 4 Private moorage
- 5 Miscellaneous
- 6 Remote residential

Transportation
- 1 Roadway
- 2 Airport/Airstrip
- 3 Railway

Utility
- Gas and oil pipeline
- Electric power line
- Water line
- Miscellaneous
- Sewer/Effluent line
- Telecom lines

Windpower
- Investigative phase

Scale: 1:530,000

0 5 10 20

Kilometres

Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Permits, Licences, Land Tenures, and Charges Overlapping the Non-traditional Land Use Regional Study Area

DATE: April, 2014	ANALYST: WR	Figure 3.9-3
JOB No: VE52277	QA/QC: LR	PDF FILE: 17-100-045_tenure_v3.pdf
GIS FILE: 17-100-045_tenure_v3.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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360000 370000 380000 390000 400000

5910000

5900000

5890000

Proposed Transmission Line

Proposed Transmission Line (Mills Ranch Re-route)

CROWN LAND 6407428 EXP 30/06/2034

CROWN LAND 0344460 EXP 31/12/9999

CROWN LAND 7409585

CROWN LAND 7409370

CROWN LAND 0258789 EXP 31/12/9999

CROWN LAND 0333239 EXP 31/12/9999

CROWN LAND 0333239 EXP 31/12/9999

CROWN LAND 6401125 EXP 31/12/9999

CROWN LAND 0332386 EXP 30/07/9999

CROWN LAND 0332386 EXP 30/07/9999

CROWN LAND 0128700 EXP 31/12/9999

CROWN LAND 6407686 EXP 28/02/2016

CROWN LAND 6407765 EXP 03/11/2016

CROWN LAND 6406074 EXP 16/05/9999

CROWN LAND 0347141 EXP 31/12/9999

CROWN LAND 5406630 EXP 01/10/2012

CROWN LAND 5406630 EXP 01/10/2012

Proposed Airstrip

Proposed Airstrip Access Road

Proposed Mine Access Road

Proposed Fresh Water Pipeline

TATELKUS LAKE RESERVE 28

KLUSKUS 1

UPPER KLUSKUS LAKE 9

KUSHYA CREEK 7

KUSHYA CREEK 12

Kluskus Village

Kluskus FSR

Kluskus-Ootsa FSR

Kluskus-Blue FSR

Kluskus-Red

Kluskus-Euchiniko FSR

Kluskus-Chedakuz FSR

Kluskus Malaput FSR

Kluskus-Mesilinka FSR

Chedakuz Creek

Ester

Chutanli Lake

Tatelkuz Lake

Davidson Creek

Turtle Creek

Fawnie Creek

Creek 661

Kuyakuz Lake

Euchiniko Lakes

Kluskus Lakes

Kluskus Creek

Tsacha Lake

West Road (Blackwater)

Murray Creek

Fawnie Range

Nechako Range

Fawnie Nose 1926m

Fawnie Dome 1726m

Top Lake 1097m

1634m

1387m

933m

1151m

1096m

1231m

1666m

1444m

1611m

1668m

1767m

Mount Davidson 1856m

Tatelkuz Mountain 1611m

Kuyakuz Mountain 1734m

Tsacha Mountain 1781m

960m

Legend

- Populated Place
- Spotheights

Forestry Service Roads

- Kluskus FSR
- Kluskus-Ootsa FSR
- Kluskus-Blue FSR
- Other FSRs
- Tracks
- Waterbody
- Indian Reserves

Project Components

- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line (Mills Ranch Re-route)
- Proposed Fresh Water Pipeline
- Proposed Airstrip Access Road
- Proposed Airstrip
- Proposed Mine Site

Crown Tenure (Purpose)

- Extensive Agriculture
- Intensive Agriculture
- Recreation Reserve
- Quarrying (Sand and gravel)
- Transportation (Roadway)
- Residential (Miscellaneous)

Scale:1:150,000

0 2.5 5 10

Kilometres

Reference

BC Government GeoBC Data Distribution
BCGOV FLNRO Recreation Sites and Trails Branch

CLIENT: newgold

PROJECT: Blackwater Gold Project

Permits, Licences, Land Tenures, and Charges Overlapping the MineSite, Mine Access Road and Water Pipeline Study Areas

DATE: April, 2014	ANALYST: WR	**Figure** 3.9-4	
JOB No: VE52277	QA/QC: SB	PDF FILE: 17-100-083_CrownTenuresLSA_v2.pdf	
GIS FILE: 17-100-083_CrownTenuresLSA_v2.mxd			
PROJECTION: UTM Zone 10	DATUM: NAD83	amec	

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Information relating to specific permits, licenses, and tenures overlapping the individual Project study areas are presented below.

3.9.3.1 Mine Site Study Area

No general permits, licenses, or tenures overlap with the mine site study area.

3.9.3.2 Mine Site Access Road Study Area

There are no registered Crown land tenures within the mine site access road study area.

3.9.3.3 Airstrip Study Area

There are no registered Crown land tenures within the airstrip study area.

3.9.3.4 Freshwater Supply Study Area

No registered Crown land tenures overlap with the freshwater supply study area.

3.9.3.5 Transmission Line Study Area

Seven provincial Crown tenures licensed for agriculture (extensive, grazing), environment/conservation/recreation, institutional, quarrying and residential overlap the main transmission line study area. **Table 3.9-3** summarizes the tenure area (in ha) falling within the transmission line study area and the associated percent of the total transmission line study area.

Table 3.9-3: Permits, Licences, and Tenures Overlapping the Transmission Line Study Area

Permit, Licence, or Tenure	Area falling within Transmission Line Study Area (ha)	% of Total Transmission Line Study Area
Agriculture / 7406296	17	0.1
Environment, Conservation, & Recreation/ 7409548	49	0.3
Environment, Conservation, & Recreation/ 7409549	47	0.3
Institutional / 0067244	0.8	0.01
Quarrying / 0344460	2	0.01
Residential / 7409539	2	0.01
Residential / 7409540	70	0.5

Source: BC Government GeoBC Data Distribution; TANTALIS Crown Land Licences

Stellako Re-Route

Eight provincial Crown tenures licensed for environment/conservation/recreation, quarrying and residential overlap the Stellako re-route transmission line study area. **Table 3.9-4** summarizes the tenure area (in ha) falling within the transmission line study area and the associated percent of the total transmission line study area.

Table 3.9-4: Permits, Licences, and Tenures Overlapping the Transmission Line Study Area – Stellako Re-Route

Permit, Licence, or Tenure	Area falling within Transmission Line Study Area (ha)	% of Total Transmission Line Study Area
Environment, Conservation, & Recreation / 7409548	42	11
Environment, Conservation, & Recreation / 7409549	22	6
Quarrying / 0107944	2	1
Quarrying / 0276738	8	2
Residential / 7409539	6	2

Source: BC Government GeoBC Data Distribution; TANTALIS Crown Land Licences

Mills Ranch Re-Route

No registered Crown land tenures overlap with the Mills Ranch re-route study area.

3.9.3.6 FSR Study Area

Fourteen provincial Crown tenures licensed for agriculture (extensive), environment (fish and wildlife management), industrial (miscellaneous), quarrying (sand and gravel), and residential (rural) overlap the FSR study area. **Table 3.9-5** summarizes the number of tenures held by each registered holder, the tenure area (in ha) falling within the FSR study area and the associated percent of the total FSR study area.

Table 3.9-5: Permits, Licences, and Tenures Overlapping the FSR Study Area

Permit, Licence, or Tenure	Area falling within FSR Study Area (ha)	% of Total FSR Study Area
Agriculture/ 7404655	5.2	0.04
Agriculture/ 7401087	59.6	0.5
Agriculture/ 7403204	44.4	0.3
Agriculture/ 7407657	6.1	0.05
Agriculture/ 7407678	45.2	0.4
Agriculture/ 7408214	40.2	0.3
Agriculture/ 7407884	5.3	0.04
Environment, Conservation, & Recreation/ 7406420	64.1	0.5
Environment, Conservation, & Recreation/ 7407895	18.9	0.2
Industrial/ 7406288	0.5	<0.001
Quarrying/ 0344460	2.0	0.02
Quarrying/ 7403210	81.9	0.6
Residential/ 7406855	5.3	0.04
Residential/ 7409537	0.5	<0.001

Source: BC Government GeoBC Data Distribution; TANTALIS Crown Land Licences

3.9.4 Water Licences

All water in BC is owned by the Crown on behalf of the residents of the province (BC MFLNRO, 2013i). Authority to divert and use surface water is obtained by a licence or approval in

accordance with the statutory requirements of the *Water Act* and the *Water Protection Act* (BC MFLNRO 2013i). **Figure 3.9-5** summarizes the locations for groundwater wells, surface water licences, water licensed work, licensed springs, water reserves / allocation restrictions, as well as the licensed points of diversion located within the Project study area. Specific information for the licences overlapping with individual Project study areas is discussed in the following sections. No licensed springs or water reserves/allocation restrictions occur within any of the individual Project study areas.

3.9.4.1 Mine Site Study Area

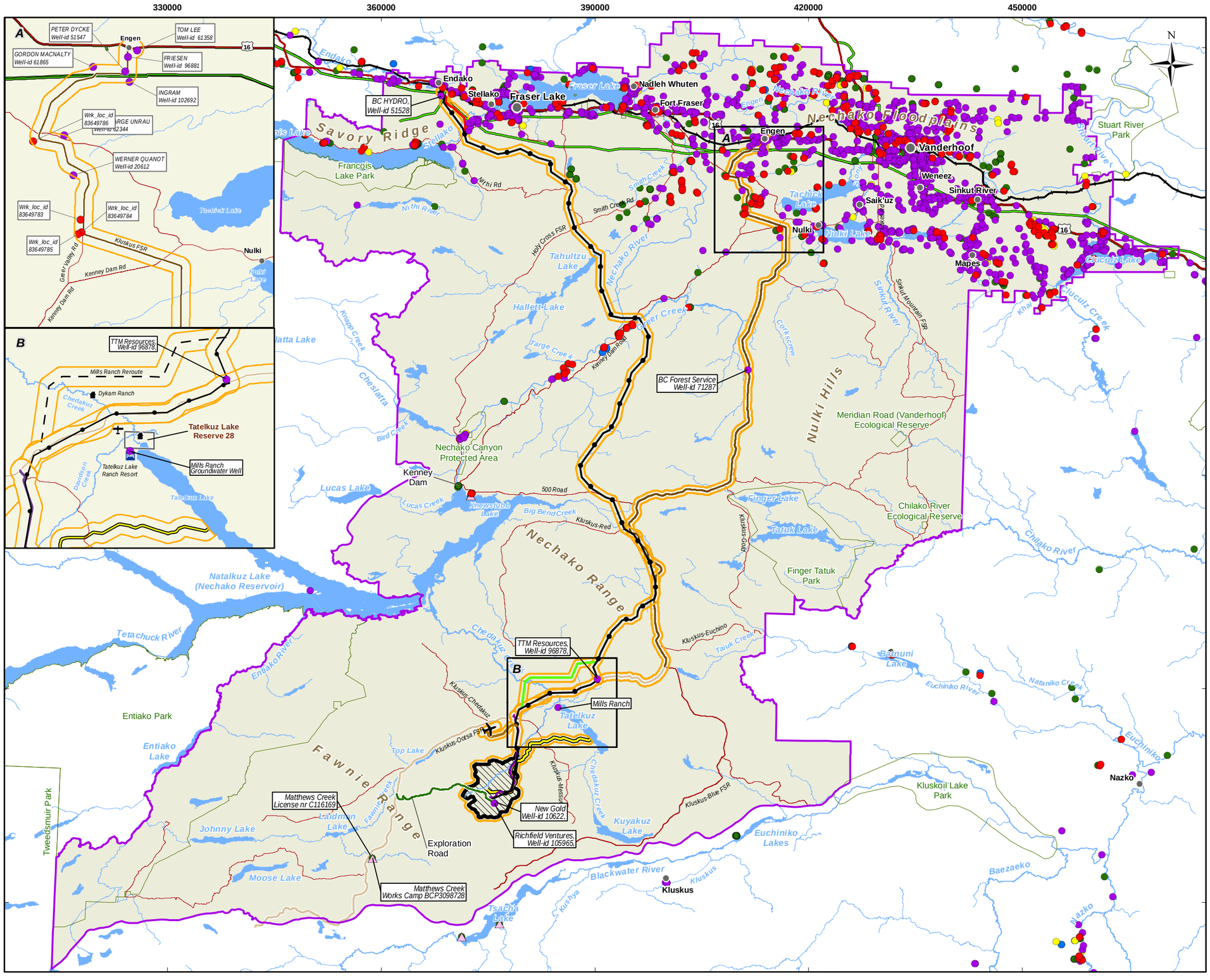
Two groundwater wells, both owned by the proponent, are registered within the mine site study area (**Table 3.9-6**). No other water licences occur within the mine site study area.

Table 3.9-6: Groundwater Licences Located within the Mine Site Study Area

Groundwater Well ID Number	Owner	General Location	Use	LPM
106022	New Gold	-	Private Domestic	15
105965	Richfield Ventures	Blackwater Camp	-	30

Notes: "-" = information not available; Litres per minute (LPM)

Source: BC Government GeoBC Data Distribution, Water Management Branch, Water Licensed Works – Points



Reference

BC Government GeoBC Data Distribution
NRCAN Geobase
Ministry of Forests, Lands and Natural Resource Operations

CLIENT: newgold

PROJECT: Blackwater Gold Project

Water Licenses Overlapping the Non-traditional Land Use Regional Study Area

DATE: May, 2014	ANALYST: WR	**Figure** 3.9-5
JOB No: VE52420	QA/QC: SB	PDF FILE: 17-100-049_waterLic_v3.pdf
GIS FILE: 17-100-049_waterLic_v3.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

Y:\GIS\Projects\VE\VE52095_Richfield_BlackwaterMapping\17_non-traditional-resBaseline\17-100-049_waterLic_v3.mxd

3.9.4.2 Mine Site Access Road Study Area

There are no registered water licences within the mine site access road study area.

3.9.4.3 Airstrip Study Area

There are no registered water licences within the airstrip study area.

3.9.4.4 Freshwater Supply Study Area

No water licences fall within the freshwater supply study area.

3.9.4.5 Transmission Line Study Area

Table 3.9-7 summarizes the two groundwater wells registered within the transmission line study area. Well ID 96878 is also overlapped by the FSR study area. There are no other water licences within the transmission line study area.

Table 3.9-7: Groundwater Licences Located within the Transmission Line Study Area

Groundwater Well Tag Number	Owner	General Location	Use	LPM
96878	TTM Resources	Chu Mountain Mine/Kluskus FSR Road	Freshwater Supply System	30
51528	BC Hydro	Endako Substation	Unknown Well Use	11

Note: "-" = information not available; Litres per minute (LPM)

Source: BC Government GeoBC Data Distribution – Water Management Branch, Water Licensed Works - Points

Stellako Re-Route

Two groundwater wells are intersected by the study area for the Stellako re-route.

Table 3.9-8: Groundwater Licences Located within the Transmission Line Study Area – Stellako Re-Route

Groundwater Well ID Number	Owner	General Location	Use	LPM
47086	Private Individual	Francios Lake Road	Private Domestic	15
50493	Private Individual	Fraser Lake / Ely Subdivision	Private Domestic	0

Note: "-" = information not available; litres per minute (LPM)

Source: BC Government GeoBC Data Distribution, Water Management Branch, Water Licensed Works - Points

Mills Ranch Re-Route

No water licences are overlapped by the Mills Ranch re-route.

3.9.4.6 FSR Study Area

Table 3.9-9 summarizes the available information for the nine groundwater wells registered within the FSR study area; five of which appear to be for private domestic use.

Table 3.9-9: Groundwater Licences Located within the FSR Study Area

Groundwater Well ID Number	Owner	General Location	Use	LPM
61865	Gordon Mcnalty	Nechako Pit Road	Private Domestic	10
62344	Abe and Marge Unrau	Heck Road	Private Domestic	30
96878	TTM Resources	Kluskus FSR	Freshwater Supply System	30
20612	Werner Quanot	-	Unknown Well Use	11
71287	BC Forest Service	Kluskus FP Construction Camp	-	95
61358	Tom Lee	-	Private Domestic	30
96881	Friesen	1660 Bearhead Road	Private Domestic	76
102692	Ingram	Bearhead Road	Private Domestic	38
51547	Peter Dycke	Engenon Bear Head	Unknown Well Use	15

Source: BC Government GeoBC Data Distribution – Water Management Branch, Water Licensed Works - Points
Notes: "-" = information not available; Litres per minute (LPM)

Table 3.9-10 summarizes the four current points of diversion (POD) that are overlapped by the FSR study area. These PODs are all located near the northern end of the FSR study area.

Table 3.9-10: Current Points of Diversion Located within the FSR Study Area

Point of Diversion	Owner	General Location	Use
PD72624	Kochel Cattle And Timber Inc.	Spencer Pond #4	Stockwatering
PD72025	Kochel Cattle And Timber Inc.	Spencer Pond #1	Stockwatering
PD72821	Pearson, Alexander & Judith	Spencer Pond #7	Stockwatering
PD72027	Kochel Cattle And Timber Inc.	Spencer Pond #2	Stockwatering

Source: BC Government GeoBC Data Distribution – Water Management Branch, Water Licensed Works - Points
Note: "-" = information not available; US/Imperial gallons per minute (GPM)

Westshore Terminals Ltd. has a cancelled POD that was located on sixty-five Mile Lake. In addition to the POD listed above, there are also four water licensed works overlapped by the FSR study area along the north end.

3.9.5 Utilities and Energy

The general utilities overlapping with the NTLU RSA are primarily focussed at the north end of the study area proximate to Hwy. 16 and the more urban areas. No utility tenures fall within the mine site or freshwater supply study areas. A summary of the various types of utility tenures/licences that are overlapped by the individual Project study areas is provided below.

3.9.5.1 Mine Site Study Area

There are no utility tenures within the mine site study area.

3.9.5.2 Mine Site Access Road Study Area

There are no utility tenures within the mine site study area.

3.9.5.3 Airstrip Study Area

There are no utility tenures within the mine site study area.

3.9.5.4 Freshwater Supply Study Area

There are no utility tenures within the mine site study area.

3.9.5.5 Transmission Line Study Area

A summary of the 10 electrical, one telecommunication, and one miscellaneous utility tenures overlapping the transmission line study area is provided in **Table 3.9-11**.

Table 3.9-11: Utility Tenures Overlapping the Transmission Line Study Area

Permit, Licence, or Tenure	Area falling within FSR Study Area (ha)	% of Total FSR Study Area
Licence Of Occupation / 6407425	0.2	<0.001
Notation Of Interest / 0336972	108	0.8
Statutory Right Of Way (Easement) / 0257666	3	0.02
Statutory Right Of Way (Easement) / 0267730	4	0.03
Statutory Right Of Way (Easement) / 0271890	1	0.01
Statutory Right Of Way (Easement) / 0287970	0.6	<0.001
Statutory Right Of Way (Easement) / 0327970	11	0.07
Statutory Right Of Way (Easement) / 0348339	8	0.05
Statutory Right Of Way (Easement) / 6401726	5	0.03
Statutory Right Of Way (Easement) / 6403350	0.2	<0.001

Source: BC Government GeoBC Data Distribution; TANTALIS Crown Land Licenses

Stellako Re-Route

A summary of the 10 electrical, one telecommunication, and one miscellaneous utility tenures overlapping the transmission line study area is provided in **Table 3.9-12**.

Table 3.9-12: Utility Tenures Overlapping the Transmission Line Study Area

Permit, Licence, or Tenure	Area falling within FSR Study Area (ha)	% of Total FSR Study Area
Licence Of Occupation / 6407425	0.2	<0.001
Notation Of Interest / 0336972	108	0.8
Statutory Right Of Way (Easement) / 0257666	3	0.02
Statutory Right Of Way (Easement) / 0267730	4	0.03
Statutory Right Of Way (Easement) / 0271890	1	0.01
Statutory Right Of Way (Easement) / 0287970	0.6	<0.001
Statutory Right Of Way (Easement) / 0327970	11	0.07
Statutory Right Of Way (Easement) / 0348339	8	0.05
Statutory Right Of Way (Easement) / 6401726	5	0.03
Statutory Right Of Way (Easement) / 6403350	0.2	<0.001

Source: BC Government GeoBC Data Distribution; TANTALIS Crown Land Licences

Mills Ranch re-Route

There are no utility tenures within the Mills re-route transmission line study area.

3.9.5.6 FSR Study Area

Table 3.9-13 summarizes the number of tenures held by each registered holder, the tenure area (in ha and %) falling within the FSR study area, and the associated percent of the total FSR study area.

Table 3.9-13: Utility Tenures Overlapping the FSR Study Area

Permit, Licence, or Tenure	Area falling within FSR Study Area (ha)	% of Total FSR Study Area
Statutory Right Of Way (Easement) / 0308989	0.2	<0.001
Statutory Right Of Way (Easement) / 0327970	24	0.2
Statutory Right Of Way (Easement) / 0348339	13	0.10

Source: BC Government GeoBC Data Distribution; TANTALIS Crown Land Licences

3.10 Transportation and Access

A high-level description of methods of transportation available in the general area is included below to provide context.

3.10.1 Land Use and Planning

The Hwy. 16 corridor is considered important in projecting an image of the community to passing traffic (District of Vanderhoof, 2006).

The proposed mine site and offsite facilities fall within the area managed by the AMP for Forest Recreation (Government of BC, 2008a). A summary of the AMP is provided in the Recreation and Tourism Section (**Section 3.3.1**; **Figure 3.3-1**).

3.10.2 Roads

A number of FSRs occur in the NTLU RSA. The Kluskus FSR bisects the Davidson Creek RMZ. Davidson Creek Road leads southeast off the main road and runs through the Project area. The Kluskus-Tsacha (Blue Road) enters the area from the south end of the east portion of the Management Zone.

To help protect wildlife populations and maintain unique hunting opportunities the entire area south of the Kluskus FSR is managed under access restriction (Government of BC, 1997). The road block at the 44 km marker on Blue Road restricts vehicle access to the south portion of the zone. The intent is to limit vehicle access to this area to only that which is associated with resource development activities. Portable bridges are to be removed on Davidson Creek Road following harvesting and silviculture activities; currently the bridges are blocked with large cement blocks. The north end of Chedakuz Road is similarly blocked, with the bridge removed to a MPB-harvesting block.

The proposed mine site is readily accessible by vehicle from the network of FSRs originating at the community of Engen, approximately 20 km west of Vanderhoof, off Hwy. 16. As presented on **Figure 3.3-1**, the existing FSR to the Project makes use of the Kluskus FSR for 103 km and continues on the Ootsa FSR for an additional 43 km (Kluskus-Ootsa FSR) to reach the 18-km-long exploration road built in 1986 by Granges and recently improved by Richfield. This route provides direct access to the proposed exploration camp. The total distance along the existing road FSR from Vanderhoof to the exploration camp is approximately 194 km and the driving time is roughly 2.5 hours; vehicles should be radio-equipped as the FSR is used by logging trucks.

The existing exploration road currently traverses the Ungulate Winter Range (UWR). The proponent plans to deactivate the existing exploration road, and move it to the east and north to avoid this area. A new 15-km mine site access road will connect with the Kluskus-Ootsa FSR. For the purpose of the NTLU baseline, the land uses along the Kluskus FSR, which have provided access to the area for many years, are described. The new 15-km mine site access road, which will be constructed to avoid the UWR, occupies approximately 28 ha (15 km long over a right-of-way 20 m wide), as presented on **Figure 3.3-1**.

Road traffic studies, as reported in the transportation section, showed that the average annual daily traffic (AADT) on the Kluskus FSR in 2013 was estimated at 29 return vehicle trips per day; a decrease of 31%, or 13 return vehicle trips per day, compared to 2012 traffic on this road. Canfor accounted for about 78% of the vehicle traffic on the Kluskus FSR in 2013, with the Proponent accounting for about 11% (**Table 3.10-1).**

Table 3.10-1: Traffic Volumes on Kluskus FSR, 2012 and 2013

Traffic Source	2012 Traffic Estimates		2013 Traffic Estimates	
	AADT	AATT	AADT	AATT
Canfor Plateau[(1)]	37	13,650	21	6,250
BC Timber Sales[(2)]	Nil	Nil	Nil	Nil
L&M Timber Sales[(3)]	Nil	Nil	Nil	Nil
Blackwater Project[(4)]	2	570	3	1,040
Other Industrial Users	1	250	1	290
Pickups and other private road users	2	570	4	1,460

Note: [(1)]Update provided by Canfor, July 2013.
[(2)]Update provided by MFLNRO, July 2013.
[(3)]Update provided by L&M Timber Sales, July 2013.
[(4)]Update provided by the Proponent, July 2013.
AADT = Average Annual Daily Traffic; AATT = Average Annual Total Traffic

It was estimated that light trucks (mainly pickups, crew cabs, and vans) owned and operated by the public, private road users, and BC government agencies account for an average of about four return trips per day throughout the year in 2013, or 14% of the total traffic on the road. However, this traffic increases during the summer and fall months, when local and regional residents camp, fish, and hunt in this area south of Hwy. 16. Some of the light truck traffic is linked to 9 guide outfitters and 20 trappers with hunting and trapping areas that

overlap and use the Kluskus FSR, and the four private lake resorts and one dude ranch located adjacent to the Kluskus FSR.

As the main user of the Kluskus FSR, Canfor is responsible for maintenance, upkeep, and snow removal on this road. Other industrial users of this road, including the Proponent, have signed road management agreements with Canfor, whereby they agree to pay a portion of the cost for ongoing road maintenance, repair, and snow removal, based on the projected volume of industrial traffic that will use the FSR month-to-month throughout the year. The road management agreements are in effect for one year, but renewable on an ongoing basis.

Additional detailed traffic and road use information is presented in **Section 3.10** Transportation.

3.10.3 Water

A general description of the major ports that may provide support for the Project is provided below.

The RDBN (2013) is located near three major shipping ports. The distance from the municipalities in the RDBN to Prince Rupert ranges from 353 km to 624 km. The Prince Rupert Port Authority (2013), which operates the Port in the Prince Rupert Harbour, is an autonomous and commercially viable agency, with a mandate to facilitate and expand the movement of cargo and passengers through the Port of Prince Rupert.

The Prince Rupert Container Terminal (2013), a 24 ha facility, was the first dedicated intermodal (ship to rail) container terminal in North America with the capacity to move 500,000 Twenty Foot Equivalent Units (TEU) per year. The 22 m wharf extension provides a berth depth of 18.7 m, enabling the terminal to easily accommodate container ships in excess of 12,500 TEUs. Upon completion of Phase 2 in 2012, the container terminal will have a two million TEU capacity, making it the second largest handling facility on the West Coast.

The Port of Kitimat (2013) is the third largest Canadian Asia Pacific Gateway port on the west coast of Canada. The private Port of Kitimat is the deepest and closest inland port on Canada's Northwest Transportation and Trade Corridor and offers both inbound and outbound transportation.

3.10.4 Air

The Project's current air access is by helicopter. An airstrip is proposed as part of the Project and is included in this baseline.

Vanderhoof has two airports, the Vanderhoof District Water Aerodrome (CAN9), located 22 km east at the north end of the existing Kluskus FSR, and the Vanderhoof Airport (CAU4), located approximately 4 km further east. Fraser Lake may be accessed by planes landing at the Fraser Lake Airport (CBJB), located approximately 29 km west of the north end of the existing Kluskus FSR, or at the Fraser Lake Aerodrome (CBZ9), located approximately 10 km north of CBZ9 (AMEC 2012).

Approximately 17 km (in a straight-line distance) to the south of the proposed mine site is the turf/gravel Tsacha Lake Airport (CAE4); 26 km southwest of the mine site is the Tsetzi Lake

(Pan Phillips) Airport (CBT3), and 28 km west of that are the Moose Lake (Lodge) Airport (CAS2) and Moose Lake (Lodge) Seaplane Base (CBE8) (AMEC 2012; Skyvector.com 2013). The Vanderhoof LRMP Access Management Study (Avison Management Services Ltd. 2005) indicated that the road west of Laidman Lake airstrip, located between the mine site and the Moose Lake Waterdome, needs to be deactivated. The status of this airstrip is unknown at this time.

The locations of the airports, airstrips, and waterdomes falling within the NTLU RSA are shown on **Figure 3.3-1**.

3.10.5 Rail

Canadian National Rail (CN Rail), which follows the Hwy. 16 corridor, provides freight services to Vanderhoof, and offers routes from Kitimat (approximately 530 km west of Vanderhoof), Prince Rupert (approximately 620 km west of Vanderhoof), Prince George (approximately 100 km east of Vanderhoof), and Vancouver (approximately 900 km south of Vanderhoof). The CN Rail Intermodal Terminal is designed to support customers shipping to and from Asia through the Port of Prince Rupert. Passenger service is available with VIA Rail through 'The Skeena' passenger train, reaching Vanderhoof via Prince George and Jasper and extending to Prince Rupert. Passenger access from Vancouver and Edmonton is available by connecting to 'The Skeena" at Jasper from the 'The Canadian' passenger train that runs between Vancouver and Toronto.

3.11 Other Land Uses

3.11.1 Research and Educational Facilities

No formal historical or current research/educational facilities were identified following a review of available information.

3.11.2 Military

No historical or current military activity was identified following a review of available information or during discussions with individuals familiar with the Project study area.

4.0 CONCLUSIONS

Following a review of the available information, it can be concluded that there are a variety of non-traditional land uses occurring within the NTLU RSA, many of which overlap with the individual Project study areas. The NTLU RSA falls entirely within the Vanderhoof LRMP area, which is also managed by various other strategies/plans including an AMP and MPB Timber Supply Action Plan. The majority of the non-traditional land use occurs at the north end of the NTLU RSA where both the transmission line and FSR study areas approach Hwy. 16 and the more urbanized areas of Vanderhoof and Fraser Lake. The southern portion of the Project (including the mine site, mine site access road, airstrip, and freshwater supply) falls within the Davidson Creek Resource Management Zone (RMZ) 17.

The Project does not cross or overlap any Federal Parks or Protected Areas. The Stellako River WMA, located between Fraser and Francois Lakes, is intersected by the transmission line (main) study area. Finger Tatuk Provincial Park is located approximately 3 km east of the access route study area. The AMP has been developed and implemented in the NTLU RSA

to specifically address potential Crown land use conflicts between recreational use and wildlife habitat as well as other resource values. The majority of the transmission line and FSR study areas fall within areas designated as Motorized Road Accessible. Several areas identified as being more sensitive to motorized vehicles, such as Horne Lake and Boomerang Lake, are located adjacent to the FSR study area. The mine site study area is located within the Mt. Davidson and Davidson Creek AMP area, which is designated Semi-Primitive Non-Motorized.

Two recreation sites, Big Bend Meadow and Brewster Lake which are also located proximate to the FSR study area, are intersected by the transmission line study area. The proposed freshwater supply at Tatelkuz Lake is located between 600 m and 900 m from two recreation sites. The transmission line crosses the Nechako River, which has a designated canoe trail from Cheslatta Falls to Prince George.

Twenty-three commercial lodges and campsites are located within the NTLU RSA, many of which are associated with the nine guide outfitter areas that overlap the individual Project study areas. Tatelkuz Resort is located 2 km south of the mine site access road study area and main transmission line study area, and approximately 8.5 km from the proposed mine site. The proposed Project intersects nine guide outfitter concession areas accounting for <1 % to 7% of their total concession area. Twenty-two trapline areas are intersected by the proposed Project with the mine site overlapping 12% of one of the three traplines (the other two having approximately 1% of their total area overlapped). The trapline area falling within the transmission line (and Stellako and Mills Ranch re-routes) for the 13 different traplines ranges between 1% and 14%.

Fishing is popular in the entire Project study area and many of the lodges offer floatplane excursions to more distant lakes and fishing spots. Fishing areas located proximate to the proposed Project include: the Nechako River and Reservoir (Knewstubb Lake), Tatuk Lake, Finger Lake, Top Lake, Stellako River, Chedakuz Creek, Big Bend Creek, and Euchineko River. A number of smaller lakes and streams are also found in the area and fished by anglers hiking in.

No past producers or current producers are located proximate to the proposed Project. The proponent owns mineral tenures or has agreements in place for all lands that would be used for the mine. Only two tenures falling within the mine site study area are not held by the Proponent. Mineral exploration is occurring in the area proximate to the proposed mine site. One prospect, Blackwater-Davidson (MINFILE No. 093F 037), falls within the mine site study area and represents a portion of the defined Project study area being assed as part of the Project. There are five mineral showings located along the transmission line and one mineral showing along the access route. In addition to the mine site, mineral tenures are also intersected by the mine site access road, airstrip, freshwater supply, transmission line (and Stellako and Mills Ranch re-routes) and FSR.

The Project study area has been significantly affected by the MPB, and forestry management practices have been adjusted to facilitate recovery. A review of the available information indicated that there are approximately 3,240 different forest/timber tenures (with a status of active, pending, or retired) within the NTLU RSA; with 1,973 (61%) of the tenures retired between 2005 and 2011. There are no tree farm licences or community forests proximate to the Project. Several woodlots are intersected by the proposed Transmission Line (and

Stellako and Mills Ranch re-routes) and FSR study areas. The proposed Project intersects numerous active and pending forest tenures and retired cut blocks.

No designated ALR lands fall within the mine site, mine site access road, airstrip, or freshwater supply study areas. The transmission line does not overlap with any ALRs. Several ALR properties are also located along the FSR. Eight active range tenures are intersected by the proposed Project. One range tenure (RAN075154 A) is intersected by all of the Project study areas except for the Stellako re-route. This range tenure occupies 27% of the mine site study area and 90-100% of the mine site access road, airstrip, and freshwater supply study areas. The main transmission line study area intersects six range tenures.

The majority of the land ownership overlapped by the individual Project study areas is unsurveyed Crown land. No registered Crown tenures overlap the mine site, mine site access road, airstrip, or freshwater supply study areas. The study area associated with the transmission line (and Stellako and Mills Ranch re-routes) and FSR intersects a variety of permits, licences, and land tenures registered on provincial Crown land by a small percentage ranging from <0.001% to approximately 4% with the majority less than 1%.

Two groundwater wells, both owned by the proponent, are registered within the mine site study area. No other water licences occur within the mine site study area. Two groundwater wells are registered within the transmission line study area. The access route study area overlaps nine groundwater licences and four points of diversion for stockwatering. No water licences fall within the freshwater supply study area

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