TABLE OF CONTENTS

List of Tables

TABLE OF CONTENTS (cont.)

List of Figures

TABLE OF CONTENTS (cont.)

List of Photos

7.2.8 Visual Resources

This section presents potential effects of the proposed Blackwater Gold Project (the Project) on the Visual Resources Valued Component (VC). Two assessments were essentially carried out—one for baseline and one for Project Effects.

7.2.8.1 Introduction

This subsection describes the approach and applicable regulatory framework for the assessment of the Visual Resources VC.

7.2.8.1.1 Information Sources and Methods

This effects assessment applied scientific literature and analyses to identify and measure potential interactions between the Project and visual resources in the visual resources study areas. Computer-generated viewshed analyses incorporated terrain elevation, projected crown height of vegetation, and maximum height of proposed facilities to identify and measure direct line of sight as a main indicator of effect to visual resources.

Potential Effects of the Project on visual resources were determined for locations where scenic and recreational features may interact with the proposed facilities. These locations are mapped, analyzed, and represented in various figures within the assessment. These areas represent those parts of the visual resources study areas considered important by the public, Aboriginal groups, the Proponent, scientists, and governments involved in the assessment process.

Attributes of visual resources were selected in order to be:

- Relevant to the social pillar;
- Comprehensive enough to enable a full understanding of potential effects;
- Representative of aspects important to scenic quality and recreation values;
- Responsive to potential effects of the project; and
- Concise enough to be clearly articulated and understood.

To accomplish these objectives, evaluation sites were identified where the following high value visual resources occur and will be intersected by, or located near proposed facilities:

- Scenic Areas with Low to Very High visual sensitivity established under the *Land Act*, through a British Columbia Ministry of Forests, Lands and Natural Resource Operations (BC MFLNRO) (2010) Visual Landscape Inventory (VLI) that defines landscape features where scenic values are a priority and require special management;
- Recreation Features with High to Very High recreation significance as identified by the BC MFLNRO (2012) through a Recreational Features Inventory (RFI) mandated by the *Forest Act*; and

- Recreation Sites and Trails (RSTBC) managed by the British Columbia Ministry of Community, Sport, and Cultural Development (BC MCSCD).

Additional information sources were examined to provide direction on regional land use objectives and traditional use areas:

- The Vanderhoof Land and Resource Management Plan (LRMP) delineates Resource Management Zones (RMZs) that describe specific resources and detail objectives and management strategies guiding integrated resource management;
- Discussions with First Nations residents in the Regional Study Area (RSA) revealed the landscapes and waterbodies of particular interest; and
- Non–traditional land and resource use (NTLRU) and transportation reports provide information on existing land uses and traffic volumes.

The Project Description (AMEC, 2013) provides dimensions and maximum heights of proposed facilities and linear features. Site-specific data were obtained during summer and winter field visits to catalogue site conditions and take photographs from strategic viewpoints. Where possible, photos were taken from ground level to represent what can be seen with the naked eye. Where photographs were unavailable due to accessibility constraints, images were used that were taken from an aircraft. These photographs give an indication of landscapes and vegetation cover surrounding the evaluation sites but exaggerate visibility due to their elevated location.

7.2.8.1.1.1 Regulatory Requirements and Management Plans

7.2.8.1.1.1.1 Visual Landscape Inventory

Currently, there are no regulations in British Columbia (BC) governing the effects of industrial development on visual resources, nor are there established procedures prescribing how to evaluate the Potential Effects on visual resources. However, section 150.3 of the *Forest and Range Practices Act* (*FRPA*, 2002) enables the creation of regulations to designate scenic areas and establish visual quality objectives for these areas.

Though specific to forest harvesting, the qualitative and quantitative visual quality objectives established through the *Forest Planning and Practices Regulation* (*FPPR*) provides a reasonable, defensible, and established basis on which to evaluate Baseline Conditions and Potential Effects on the study area's visual quality. The provincial VLI and Visual Impact Assessment standards and procedures are best practice procedures on which the Visual Resources Effects Assessments should be based.

Scenic areas established under the *Land Act* (1996) define broad geographic areas where scenic values are a priority. Pursuant to the BC *FRPA* (2002), section 7 Scenic Areas and Visual Quality Objectives of the Government Actions Regulation (GAR) states:

> *"7 (1) The minister responsible for the Land Act by order may establish an area as a scenic area if satisfied that the area:*
>
> - *is visually important based on its physical characteristics and public use; and*
> - *requires special management that has not otherwise been provided.*
>
> *(2) The minister responsible for the Forest Act may establish for a scenic area visual quality objectives that are within the categories of altered forest landscape prescribed under section 1.1 of the Forest Planning and Practices Regulation."*

Guided by these regulations, a VLI was compiled to provide a systematic and explicit delineation of Baseline Visual Resource Conditions near communities and along travel corridors, expressed as Visual Sensitivity Units (VSUs) (**Table 7.2.8-1**). VSUs are graded categories that identify the degree of concern attributable to the alteration of a particular site from a public perspective.

Table 7.2.8-1: Visual Sensitivity Units

Sensitivity to Human-made Visual Alteration	Visual Sensitivity Class Descriptions[(1)]
Very High	Area extremely important to viewers; very high probability of concern
High	Area very important to viewers; high probability of concern
Moderate	Area important to viewers; moderate probability of concern
Low	Area somewhat important to viewers; some risk of concern

Note: [(1)] Importance and probability that the public would be concerned if the VSU were to be visually altered.

7.2.8.1.1.1.2 Visual Quality Objectives and Visual Absorption Capacity

Within scenic areas, Visual Quality Objectives (VQOs) are defined under the BC *FPPR*. VQOs are resource management objectives that reflects the desired level of visual quality, based on the physical characteristics and social concern for the area. An Approved GAR Order, dated December 2005, established VQOs for the Vanderhoof Forest District. These VQOs were applied to scenic areas identified in the District Manager's letter dated September 2008 under section 180 of the BC *FRPA* (**Table 7.2.8-2**, **Figure 7.2.8-1**).

Visual Absorption Capacity (VAC) is the ability of a landscape to absorb and conceal developments, thereby avoiding significant negative effect on its inherent scenic quality. The BC MFLNRO's Resource Practices Branch recommends that the VAC, where available, be used to describe the context of Potential Effects. Not all VSUs in the visual resources study areas were classified in terms of VAC. **Table 7.2.8-3** outlines the parameters for three VAC classes.

Table 7.2.8-2: Established Visual Quality Objectives for Scenic Areas

Visual Quality Objective	Desired Level of Visual Quality: *"An altered forest landscape in which the alteration, when assessed from a significant public viewpoint," is:*
Preservation	(i) very small in scale, (ii) not easily distinguishable from pre-harvest landscape
Retention	(i) difficult to see, (ii) small in scale, and (iii) natural in appearance
Partial Retention	(i) easy to see, (ii) small to medium in scale, and (iii) natural and not rectilinear or geometric in shape
Modification	(i) very easy to see (ii) large in scale and natural in its appearance or small to medium in scale but with some angular characteristics
Maximum Modification	(i) very easy to see and (ii) very large in scale, rectilinear and geometric in shape, or both

Table 7.2.8-3: Visual Absorption Capacity

VAC Class	VAC Description	VAC Parameters
High	Landscape has high ability to absorb alteration and maintain its visual integrity	Dense vegetation cover and/or incised terrain
Moderate	Landscape has moderate ability to absorb alteration and maintain its visual integrity	Moderate vegetation cover and/or undulating terrain
Low	Landscape has low ability to absorb alteration and maintain its visual integrity	Sparse vegetation cover and/or open landscapes

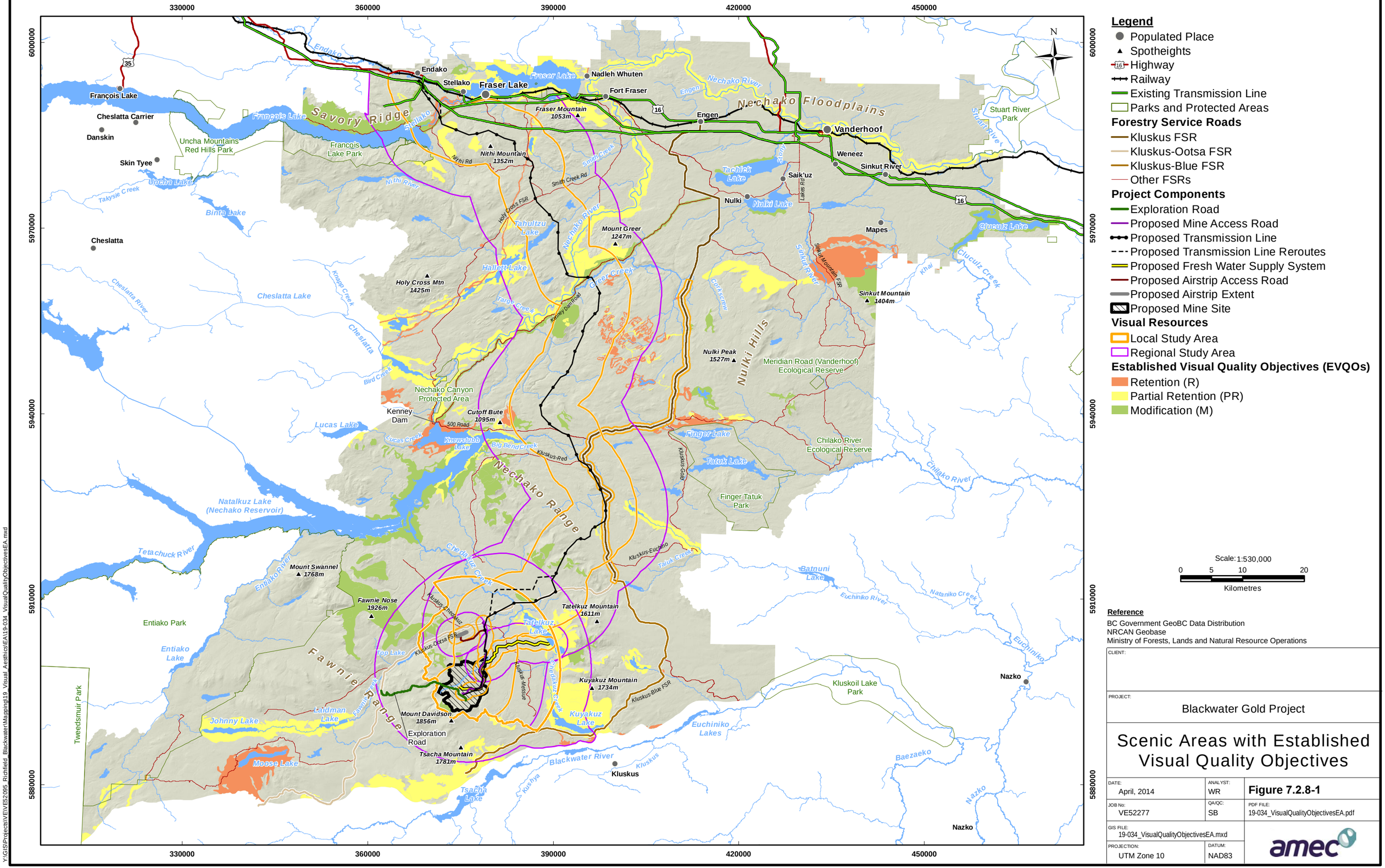
Note: VAC = Visual Absorption Capacity

7.2.8.1.1.1.3 Recreation Features Inventory

The mandate to develop and maintain a RFI is established in sections 2, 3, and 4 of the *Forest Act* (1996). This mandate sets out the Ministry's responsibility to assess and classify land according to recreation significance and sensitivity, and applies to all Crown lands outside of parks and settled areas. Under the mandate, forest resources include recreation resources. A review of data indicated that the visual resources study areas is classified with Moderate to High recreation significance and Low to Moderate recreation sensitivity (**Table 7.2.8-4**).

Table 7.2.8-4: Recreation Sensitivity and Significance Ratings

Sensitivity Rating	Sensitivity Description	Significance Rating	Significance Description
High	If development occurred it would likely result in a major impact to recreational resources	High	Subjective rating considering the combined importance of the attraction capability, uniqueness, scarcity, scenic view, accessibility and amount of current recreational use
Moderate	If development occurred it would likely result in moderate impact to recreational resources	Moderate	
Low	If development occurred it would likely result in little impact to recreational resources	Low	



Legend

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

Forestry Service Roads

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

Project Components

- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Proposed Transmission Line Reroutes
- Proposed Fresh Water Supply System
- Proposed Airstrip Access Road
- Proposed Airstrip Extent
- Proposed Mine Site

Visual Resources

- Local Study Area
- Regional Study Area

Established Visual Quality Objectives (EVQOs)

- Retention (R)
- Partial Retention (PR)
- Modification (M)

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:

PROJECT:

Blackwater Gold Project

Scenic Areas with Established Visual Quality Objectives

DATE:	ANALYST:	
April, 2014	WR	**Figure 7.2.8-1**
JOB No: VE52277	QA/QC: SB	PDF FILE: 19-034_VisualQualityObjectivesEA.pdf
GIS FILE: 19-034_VisualQualityObjectivesEA.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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7.2.8.1.1.1.4 Recreation Sites and Trails

Recreation Sites and Trails BC (RSTBC) are public campgrounds and trails located on Crown land outside of parks and settled areas. These sites are designated to provide enjoyable recreation experiences within an integrated resource management setting. Visitors can therefore expect to encounter a number of different land management activities.

Two categories of sites exist: recreation sites with rustic camping sites and pit toilets for self-sufficient users; and recreation reserves with no facilities of any kind. The Vanderhoof Tourist Information Centre promotes these sites and trails to recreational users.

The management of sites and trails has been the responsibility of the BC MCSCD since 2005. Prior to 2005, RSTBC was managed and maintained by the BC MFLNRO. Sites and trails potentially affected by the Project are listed in **Table 7.2.8-5**.

Table 7.2.8-5: Public Campgrounds and Trails within Visual Resources Study Areas

Name	Type	Camps
Brewster Lake	Recreation Site	2
Chief Gray Lake	Recreation Reserve	1
Greer Creek	Recreation Site	4
Hobson Lake	Recreation Reserve	2
Messue Wagon Road Trail	Recreation Trail	0
Kuyakuz Lake	Recreation Site	7
Tatelkuz Lake (SE)	Recreation Reserve	0
Tatelkuz Lake (S)	Recreation Reserve	0
Top Lake South	Recreation Site	2

7.2.8.1.1.1.5 Vanderhoof Land Resource Management Plan and Access Management Plan

LRMPs provide direction for integrated resource management. LRMPs reflect local vision with respect to land base management. The Vanderhoof LRMP delineates RMZs that describe specific resources and detail objectives and management strategies. The LRMP was endorsed in 1997 and was updated in 2006 to accommodate the Mountain Pine Beetle (MPB) outbreak.

Under the guidance of the Vanderhoof LRMP, the VFD has been implementing an Access Management Plan since 2008 (**Figure 7.2.8-2**). The Access Management Plan does not have legislative authority but relies on voluntary compliance from government, industry, and the public. **Table 7.2.8-6** describes four Access Designations and their associated policy objectives.

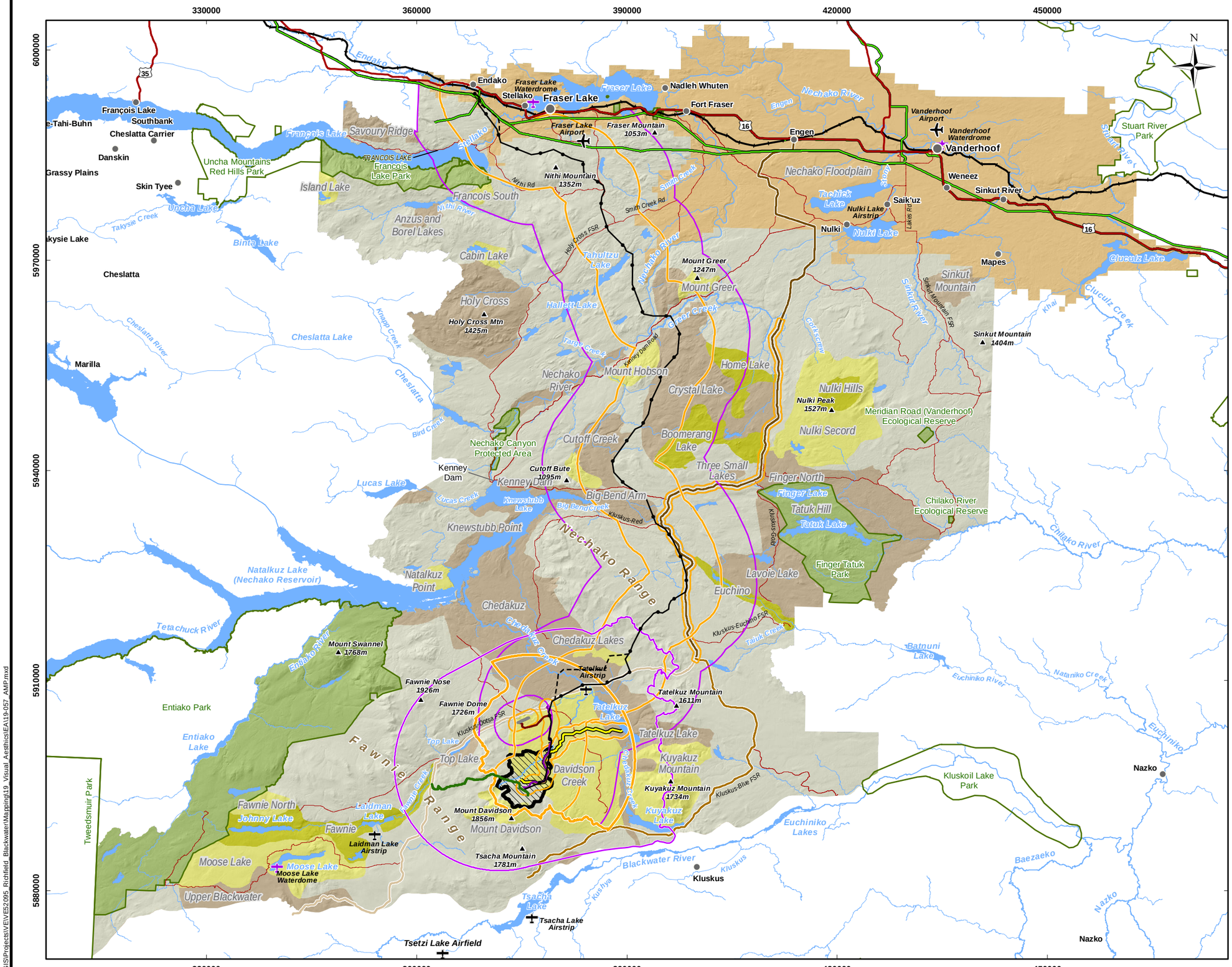
Table 7.2.8-6: Management Designations Regulating Access to Visual Resources

Zone Name	Recreation Opportunities	Policy Objectives
Road Natural/ Road Modified (RN/RM)	• Qualified natural features present; may be noticeably modified. • High levels of interactions with others; variety of party sizes. • Moderate opportunity to experience closeness to nature.	• Motorized access limited only by legal, environmental, or operational requirements.
Semi-primitive Motorized (SPM)	• High quality motorized interactions with more nature-based recreation experiences. • Low opportunities to interact with other people; very small party sizes. • Good opportunity to experience solitude and closeness to nature.	• While ensuring continued opportunity for motorized recreational opportunities, roads are managed to maintain or reduce overall density.
Semi-primitive Non-motorized (SPNM)	• Remote wilderness experience in a high-quality natural environment. • Low opportunities to interact with other people; very small party sizes. • Very good opportunity to experience solitude and closeness to nature.	• Low impact recreational experience, with hike-in only from Apr 1 to Nov 30.
Functionally Non-roaded (FNR)	• Primarily unroaded areas identified for backcountry recreation experience. • Very remote wilderness experience in a quality and unique natural environment. • Excellent opportunities to experience solitude and closeness to nature. • Extremely low levels of interaction with others; very small party sizes.	• Low impact recreational experience, with hike-in only from Apr 1 to Nov 30. • Any future roads are to be temporary in nature.

Note: The Vanderhoof Access Management Plan updates access designations of the Vanderhoof LRMP

7.2.8.1.1.1.6 Non-Traditional Land and Resource Use

Relevant additional data were obtained from the Project's NTLRU and Transportation reports. These reports provide information on existing land uses and traffic volumes. The Project Description (AMEC, 2013) provides dimensions and maximum heights of proposed facilities and linear features. Site-specific data were gathered during summer and winter field visits to catalogue site conditions and take photographs from strategic viewpoints.



Legend

- Populated Place
- Spotheights
- Airport
- Airstrip
- Waterdome
- Highway
- Railway
- Existing Transmission Line
- Parks and Protected Areas

Forestry Service Roads

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

Project Components

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

Access Designations

- Settlement Area
- Road Natural / Road modified (RN/RM)
- Semi-Primitive Motorized (SPM)
- Semi-Primitive Non-Motorized (SPNM)
- Functionally Non-Roaded (FNR)
- Parks and Protected Areas

Visual Resources

- Local Study Areaa
- Regional Study Areas

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

Access Management Plan for the Vanderhoof Forest District

DATE: March, 2014	ANALYST: WR	**Figure 7.2.8-2**
JOB No: VE52277	QA/QC: LR	PDF FILE: 19-057_AMP.pdf
GIS FILE: 19-057_AMP.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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7.2.8.1.1.2 Analytical Tools and Methods

The Visual Resources Baseline Report (**Appendix 7.1.4A**) provides a reference point with respect to pre-Project conditions, allowing future conditions to be modelled and compared to baseline conditions. ArcGIS 10 software from Environmental Systems Research Institute was used to map and illustrate outcomes of visual analysis. The Spatial Analyst extension of ArcGIS 10 was used to model spatial data. The spatial data were acquired from the BC Land and Resource Data Warehouse. Using the spatial data, viewshed analyses were modelled to depict the most prominent features of the Project.

In addition, 3D modelling software was used to display the visual effects of the Project components, identifying locations where Project components may be seen from a perspective of potentially sensitive receptors.

The Vanderhoof LRMP with its associated Access Management Plan was used to assess of expectations that recreational users would have of the scenic quality and the type of experience that each area should provide. Gazetted scenic areas with associated VOQs were mapped and described within each evaluation sites. Where proposed facilities intersected scenic areas and exceed the VOQ, the assessment of Magnitude was influenced accordingly.

Visual effects were determined using a model that considers terrain and vegetative cover. Terrain elevation information was supplemented with the presence of vegetation cover and the crown heights of that vegetation cover. In the interest of taking a conservative approach in undertaking this visual assessment, crown height data were omitted within the forest cut blocks, right-of-ways (ROWs) of Forestry Service Roads (FSRs), logging roads, and potential cleared areas associated with the Project.

The model integrated vertically prominent components of Project facilities. These Project facilities include the transmission line and certain mine site structures. The Open Pit and East and West Waste Rock Dumps were integrated into the model because of their elevated location on Mount Davidson and their physical size. The Site D main dam of the Tailings Storage Facility (TSF), although located at a lower elevation on Mount Davidson, was also integrated due to its physical size.

Potentially sensitive receptors were identified within 13 evaluation sites as discussed in **Section 7.2.8.3.1**. The viewshed analyses used these locations as observation points and included main viewpoints at recreation sites and homesteads of permanent residents. Finally, a viewshed analysis was generated indicating line of sight between receptors and project components.

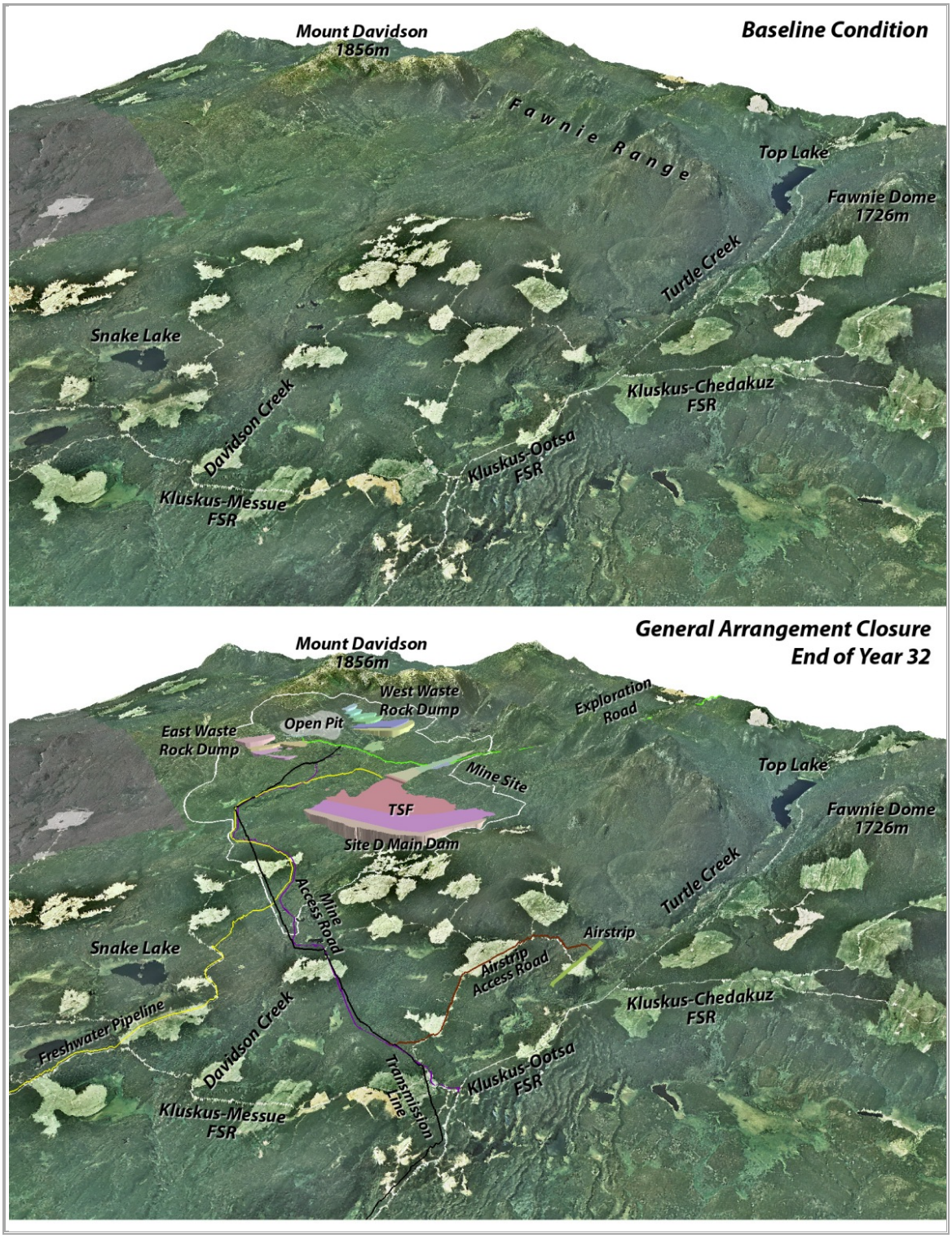

Figure 7.2.8-3: 3D Visualization of the Mine Site Footprint – Baseline Condition and Closure

Two analyses were completed. The first was generated using elevation, vegetation cover, and clearings associated with forestry activities, and ROWs and Project components. This analysis indicated areas where line of sight will occur despite the screening effect of vegetation. The second analysis was generated using the terrain elevation heights only, indicating additional areas where line of sight will occur if vegetation cover is removed. The assessment considered the following parameters:

- Digital Elevation Model (DEM)—height in metres above sea level (masl) at 30-metre (m) resolution;
- Projected crown height of vegetation;
- Exclusions from crown height:
  - Forest cut blocks and ROWs of FSRs and logging roads;
  - Footprint of the proposed transmission line, including route alternatives;
  - Footprint of selected mine site facilities;
- Project components:
  - Open pit (elevation before excavation);
  - East waste rock dump (1,535 masl maximum height);
  - West waste rock dump (1,590 masl maximum height);
  - Site D main dam of the TSF (1,339 masl maximum height);
  - Site C main dam of the TSF (1,351 masl maximum height);
  - Proposed transmission line (21 m height);
- A conservative offset height of 3 m was added to terrain height at each observation point to represent a human observer standing at ground level or sitting inside a vehicle:
  - 7 m offset used at Tatelkuz Lake Ranch Resort to accommodate the second storey of the resort building.

Professional judgement was applied to consider the ability of the landscape to absorb disturbance in the absence of available information. Duration and reversibility take into consideration the lifespan of specific components and the plans for their removal.

Potential interactions with the transmission line were assessed within Sites 1 to 9. Effects were considered likely when line of sight occurred between the proposed structure and potential sensitive receptors. As the transmission line is scheduled to be removed after Year 32, effects were considered Reversible.

Evaluation sites were stratified according to the amount of pre-existing human impacts. Sites with substantial pre-existing impacts were given a cursory assessment on the Project's visual impacts on the landscape, and sites with a minimal amount of pre-existing impacts were evaluated fully, to assess the impacts the Project will have on the visual resources.

7.2.8.1.1.3 Traditional Land Use and Traditional Knowledge

Information gathered through Project-related consultations indicates that First Nations residents of the RSA regard some landscapes and water bodies in the Project area as sacred. First Nations residents advise that several mountain peaks are visited for ceremonies and that lakes are used for fishing and other livelihood activities.

Several trails used by First Nations lead up the south face of Mount Davidson. These trails cross over the mountain heading to the north. Kuyakuz Mountain was identified as a sacred mountain. It is located over 20 km southeast of the mine site. The Messue Wagon Trail connects Kuyakuz Lake to Tatelkuz Lake and extends further north along the Chedakuz Creek to Knewstubb Lake.

First Nations consider the area around Tatelkuz Lake sacred. On the east side of Tatelkuz Lake there is an area where the Carrier people cremated the bodies of family members. They also brought their children to this area for prayer and ceremonial activities. Residents of Tatelkus Lake IR 28 note that Snake Lake is not used extensively.

7.2.8.1.1.4 Rationale and Spatial Boundaries

LSAs and RSAs were delineated using viewshed analyses to include areas with line of sight to mine site facilities and linear features.

Figure 7.2.8-4 shows the visual resources study areas determined with respect to the relevant Project components:

- Mine Site LSA and RSA;
- Transmission Line LSA and RSA;
- Fresh Water Pipeline LSA;
- Kluskus FSR Access Road LSA; and
- Airstrip LSA and RSA.

Viewshed analyses were generated to determine whether line of sight would occur between the Project and potential sensitive receptors. The most visually prominent components of the mine site, in terms of elevation and geographic extent, were selected as observer points:

- East and West Waste Rock Dumps;
- Open Pit;
- Site D main dam of the TSF; and
- Transmission Line.

330000 360000 390000 420000 450000

5970000 5940000 5910000 5880000

François Lake
Southbank
Cheslatta Carrier
Skin Tyee
Uncha Lake
Takysie Creek
Binta Lake
Cheslatta
Cheslatta River
Cheslatta Lake
Knapp Creek
Cheslatta
Bird Creek
Lucas Lake
Lucas Creek
Knewstubb Lake
Big Bend Creek
Tetachuck River
Entiako River
Entiako Park
Entiako Lake
Johnny Lake
Laidman Lake
Moose Lake
Bella Coola (Entiako) Trail
Tsacha Lake
Alexander Mackenzie Heritage/Grease Trail
Kushya
Endako
Stellako
Fraser Lake
Francois Lake Protected Area
Francois Lake
Savory Ridge
Uncha Mountains Red Hills Park
Francois Lake Park
Francois Lake Regional Watershed
Nithi River
Nithi Mountain 1352m
Nithi Rd
Smith Creek
Smith Creek Rd
Tahultzu Creek
Nechako River
Tahultzu Lake
Holy Cross FSR
Hallett Lake
Holy Cross Mtn 1425m
Cheslatta Trail
Targe Creek
Cheslatta River Regional Watershed
Kenney Dam Rd
Nechako Canyon Protected Area
Kenney Dam
Cutoff Butte 1095m
Lower Nechako Reservoir Regional Watershed
Natalkuz Lake (Nechako Reservoir)
Nechako Range
Kluskus-Red
Mt Swannel 1768m
Fawnie Nose 1926m
Fawnie Rose 1873m
Fawnie Dome 1726m
Fawnie Range
Upper Eutsuk Lake Regional Watershed
Top Lake
Mtn Davidson 1856m
Tsacha Mountain 1781m
Kluskus
Blackwater River
Euchiniko Lake Regional Watershed
Messue Wagon Trail
Chedakuz Creek
Chedakuz Lake
Kluskus-Euchiniko
Tatuk Creek
Euchiniko River Regional Watershed
Tatelkuz Lake
Tatelkuz Mountain 1611m
Kuyakuz Mtn 1734m
Kuyakuz Lake
Kluskus-Blue
Fraser Lake
Nadleh Whuten
Fort Fraser
Fraser Mountain 1053m
Engen
Nechako River
Nechako Floodplains
Vanderhoof
Bearhead Hill 853m
Stuart River
Stuart River Park
Weneez
Sinkut River
Tachick Lake
Saik'uz
Lakes Rd
Nulki
Nulki Lake
Nechako River Regional Watershed
Mapes
Sinkut Mountain FSR
Sinkut Mountain 1404m
Corkscrew
Nulki Hills
Nulki Peak 1527m
Chuculz Lake
Chuculz Creek
Khai
Finger Lake
Tatuk Lake
Iron Mountain 1270m
Finger Tatuk Park
Chilako River Regional Watershed
Chilako River
Batnuni Lake
Batnuni Creek
Euchiniko River
Alexander Mackenzie Heritage/Grease Trail
Euchiniko Lakes
Kluskoil Lake Park
Blackwater River Regional Watershed
Nazko
Baezaeko

N

Legend

- Populated Place
- Highway
- Railway
- Existing Transmission Line
- Recreation Trails
- Parks and Protected Areas
- Regional Watersheds

Forestry Service Roads (FSR)

- Kluskus FSR
- Kluskus-Ootsa FSR
- Kluskus-Blue FSR
- Other FSRs
- Proposed Airstrip Access Road

Project Components

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

Elevation (masl)

- 1,542 - 1,930
- 1,381 - 1,541
- 1,321 - 1,380
- 1,261 - 1,320
- 1,201 - 1,260
- 1,141 - 1,200
- 1,081 - 1,140
- 1,022 - 1,080
- 962 - 1,021
- 902 - 961
- 842 - 901
- 782 - 841
- 723 - 781
- 663 - 722
- 624 - 662

Visual Resources

- Local Study Areas
- Regional Study Areas

Scale: 1:480,000

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

Visual Resources Local and Regional Study Areas

DATE:	ANALYST:	
March, 2014	WR	**Figure 7.2.8-4**
JOB No: VE52277	QA/QC: SB	PDF FILE: 19-032_VisualSAsEA_v2.pdf
GIS FILE: 19-032_VisualSAsEA_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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The visual effects of the mine site were assessed from eight viewpoints where permanent residents and visitors are expected to congregate:

- Tatelkuz Lake Ranch Resort;
- Dykam Ranch;
- Tatelkus Lake IR 28;
- Tatelkuz Lake Recreation Reserve South;
- Tatelkuz Lake Recreation Reserve Southeast;
- Kuyakuz Lake Recreation Site;
- Top Lake Recreation Site; and
- Kuyakuz Lake Recreation Site.

Visual effects will occur within the context of current conditions within the Project study areas. Scenic quality is diminished by numerous cut blocks within the area that extends to higher elevations of the surrounding mountain ranges. Much of this is a legacy of the MPB infestation and an attempt by the forestry sector to reduce the potential scale and scope of the infestation.

Viewscapes are more carefully managed around recreation sites, although not to the extent that most effects from forestry operations have been negated. Forest cut blocks and ROWs of logging roads are visible from main viewpoints within the five Recreation Sites and Reserves.

7.2.8.2 Valued Component Baseline

This subsection provides detailed baseline information on the Visual Resources VC. The sources of information for the baseline have been described in **Section 7.2.8.1**, including available traditional and community knowledge.

Visual Resources supports a range of outdoor activities including recreational pursuits and general appreciation of nature. Project effects on visual resources may influence acceptance of the project, by some members of the public. Within the Project study areas, visual resources include areas with recreational significance, visually sensitive landscapes, recreation sites set aside as public campgrounds, and sacred sites valued by First Nations communities.

A comprehensive list of past, present and future project and activities located within the RSA for all selected VCs is presented in **Appendix 4C** and is summarized in **Table 4.3-11**. Past, present or future activities such as forestry, exploration, and agriculture may affect visual resources in the Project study areas (see **Section 7.2.8.5**).

7.2.8.2.1 Baseline Methods

Scenic quality, visibility, and current land uses were described to create an accurate setting to assess baseline conditions. Viewpoints were identified near permanent residents, recreation sites, and scenic features. In addition, certain general locations were described to illustrate the broad character of landscapes to passing viewers.

The Vanderhoof Access Management Plan was reviewed to gain an accurate understanding of viewer sensitivity and expectations of scenic quality, as well as the level of access (motorized, non-motorized) to areas with recreation significance.

7.2.8.2.2 Baseline Results

Most of the visual resources study areas are strongly influenced by silviculture practices and the associated heavy vehicle traffic along the Kluskus FSR (**Photo 7.2.8-1**). Forest cut blocks have altered the natural setting. In particular, forests within the mine site RSA are characterized by differing stand heights, clear-cuts, and monoculture planting patterns.

Photo 7.2.8-1: View from the Kluskus-Ootsa FSR onto the Davidson Creek Basin

In the mine site RSA (that includes the fresh water pipeline, Kluskus FSR access road, mine access road, and airstrip study areas), locations with High recreational significance ratings are located along the Nechako Range and on the west slopes of Mount Davidson. Areas with High visual sensitivity ratings are located around Tatelkuz Lake and the west slopes of Tatelkuz and Kuyakuz Mountains.

Recreation sites are located at Top Lake, Tatelkuz Lake, and Kuyakuz Lake where silviculture is more carefully managed to maintain a higher scenic quality rating. Typically, views at these sites are framed by relatively undisturbed forests adjacent to lakes and are surrounded by staggered tree lines. The mine site RSA has few permanent residents. The area is managed under access restriction with traffic restricted to logging trucks, and inhabitants of the Tatelkus Lake IR 28 and ranchers north of Tatelkuz Lake. Mills Ranch operates a resort for visitors interested in activities around Tatelkuz Lake.

In the transmission line RSA, locations with High recreational significance ratings are located along the Stellako River, Nithi Mountain, Mount Greer, Nechako River, and Greer Creek. Recreation sites identified near the alignment are Brewster Lake, Big Bend Meadow, Chief Gray Lake, Greer Creek, and Hobson Lake. Private land parcels are clustered adjacent to major lakes and rivers in the study area (i.e., Francoise Lake, Nithi River, Nechako River, and Greer Creek).

A series of trailheads is located within the Kluskus FSR access road LSA, between the Nulki Hills and the Nechako Range, where visitors park their vehicles and follow trails leading to recreation sites at the Greer Creek Falls, Johnson Lake, Home Lake, Gluten Lake, and Secord Lake. Topography and visibility conditions are similar to those described for the transmission line study areas. Densely forested areas line the road and visibility is mainly along the ROW. Visual effects of the FSR recede as users proceeds along the trail. The FSR is designated for industrial use and is a managed access road. Photo viewpoints within the Kluskus FSR access road LSA, are therefore, not carried through to the effects assessment.

Following a review of potential sensitive receptors, photographs were taken from strategic locations facing the Project and used to record baseline views and rate scenic quality. Photo viewpoint baseline views carried through from the baseline are listed in **Table 7.2.8-7**.

Table 7.2.8-7: Photo Viewpoint Baseline Views Carried Through to the Effects Assessment

No.	Viewpoint Name	View Description	Baseline Characteristics
VP-01	Tatelkuz Lake Ranch Resort	Looking southwest toward the Fawnie Mountain Range from the lodge.	Agricultural setting with fields, paddocks, and sheds. Forest cut blocks visible on surrounding hillsides.
VP-02	Tatelkus Lake IR 28	View from location near the Reserve looking southwest toward Mount Davidson.	
VP-03	Top Lake Recreation Site	Looking east toward the Fawnie Mountain Range from the recreation site.	Silvicultural setting with clear cuts visible on surrounding slope. FSR routing within 50 m. Water features dominate immediate view; mountains framing outward views.
VP-04	Kuyakuz Lake Recreation Site	Looking northwest toward the Fawnie Mountain Range from the recreation site.	Natural setting. Kuyakuz Lake and the Nechako Mountain framing immediate view with Fawnie Range in the distance. No cut blocks visible from within.
VP-11	Brewster Lake Recreation Site	Looking southeast across Brewster Lake from the main viewpoint.	Undisturbed forests adjacent to lake with sloping and staggered tree lines covering surrounding ridges. No forest cut blocks visible from the area. Nechako Range framing views in the distance.
VP-12	Greer Creek Recreation Site	Looking north down the Nechako River from the main viewpoint.	Pastoral setting with homesteads and paddocks. Flowing water features dominant with forested banks.

Note: Characteristics and ratings applicable to the direction the photograph was taken
Source: Field visit (11 to 13 March 2013)

Table 7.2.8-8 lists landscape rating of viewscapes at photo viewpoints carried through from the baseline.

Figure 7.2.8-5 illustrates a profile graph of the Upper Chedakuz Creek Valley and how topography and elevation affects visibility and baseline view characteristics within the mine site RSA.

Table 7.2.8-8: Landscape Rating for Photo Viewpoints carried through to the Effects Assessment

No.	Viewpoint Name	Rationale (Potential Viewers & Relevance)	Visibility	Viewer Sensitivity	Scenic Quality
VP-01	Tatelkuz Lake Ranch Resort	Permanent resident and commercial operation in the mine site LSA.	Enclosed; densely forested; ridgelines blocking view outside immediate viewshed.	Very Low	Low
VP-02	Tatelkuz Lake IR 28	Permanent resident and historic settlers in the mine site LSA.	Partially enclosed; surrounded by patches of forests; mountain ranges visible in the distance.	Low	Low
VP-03	Top Lake Recreation Site	Recreation site in the mine site RSA used by visitors for picnics, camping, kayaking, fishing, and hunting.	Partially enclosed; surrounded by patches of forests with hills; some views in specific directions.	Low to Moderate	Moderate
VP-04	Kuyakuz Lake Recreation Site		Unrestricted views across waterbody up to nearest ridgeline or mountain.	Moderate	High
VP-11	Brewster Lake Recreation Site	Recreation site in the transmission line LSA used by visitors for picnics, camping, kayaking, fishing, and hunting.	Enclosed; densely forested; ridgelines blocking view outside immediate viewshed.	High	High
VP-12	Greer Creek Recreation Site		Enclosed; steep valley slopes limiting views to upstream and downstream.	Moderate to High	Moderate

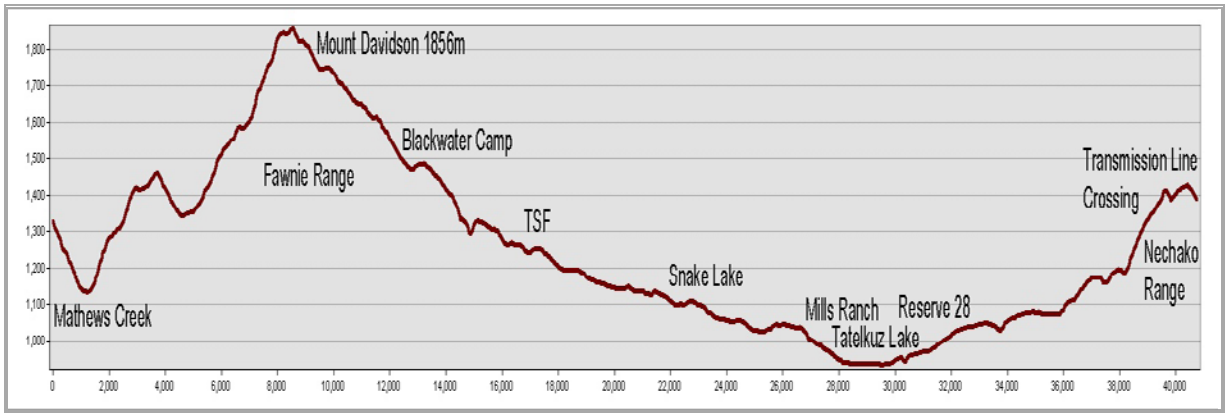


Figure 7.2.8-5: Profile Graph of the Upper Chedakuz Creek Valley

7.2.8.3 Potential Effects of the Proposed Project and Proposed Mitigation

This section describes the method used for the assessment of Project Effects and presents the results of the assessment, including proposed mitigation measures.

The effects of past and present projects and activities that are present in the RSA, when measurable, are described in the visual resources baseline (**Section 7.1.4**). If the residual effect of the proposed Project on the VC is determined to be other than negligible and a potential temporal or spatial interaction with a project or activity is identified, then a cumulative effects assessment will be conducted taking into account past, present, certain and reasonably foreseeable future project or activities. The cumulative effects assessment is discussed in **Section 7.2.8.5**.

7.2.8.3.1 Methods

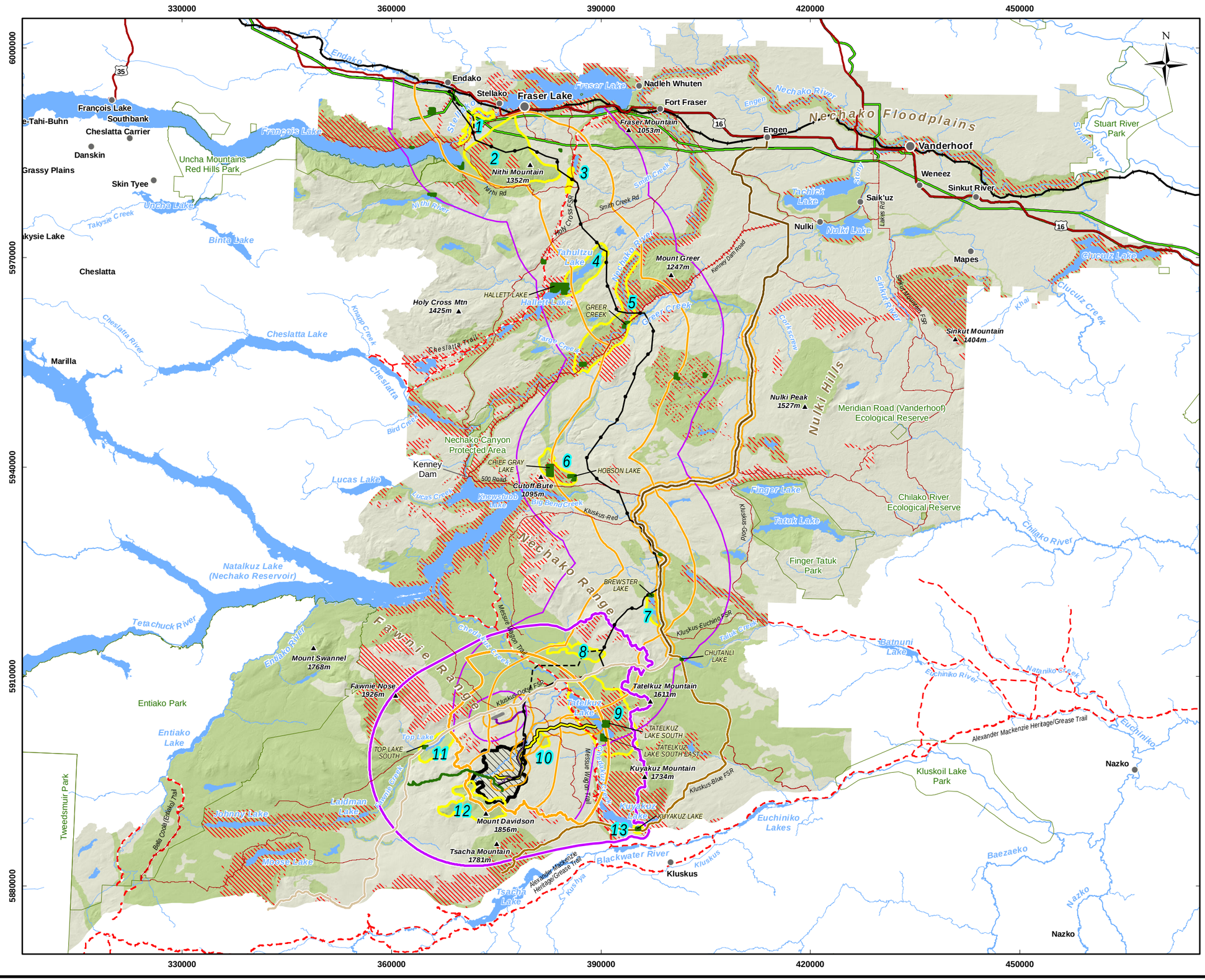
The assessment was conducted using the following systematic process:

- Observation points were selected within recreation sites where visitors congregate, homesteads of permanent residents and commercial operations;
- Viewshed analyses were generated using the Spatial Analyses extension of ArcGIS 10 to determine line of sight between observation points and proposed mine site facilities and associated linear features;
- A three dimensional rendering of the mine site was generated to illustrate post construction conditions using the ArcScene extension of ArcGIS;
- Criteria were established to identify sites for assessment. These criteria included consideration of recreation significance, visual sensitivity, and formal recreation designation (**Figure 7.2.8-6**, **Figure 7.2.8-7**). Thirteen sites were identified to meet these criteria (**Table 7.2.8-9**); and
- Potential effects were evaluated within these sites to determine whether interaction will occur with the Project components.

Table 7.2.8-9: Evaluation Sites: Location, Visibility, and Rationale for Site Selection

Evaluation Site	Location, Visibility, and Setting	Rationale for Selection
1. Stellako River Crossing	• Section between Francois Lake and Fraser Lake • Visibility enclosed by steep valley slopes, limiting views upstream and downstream, and by dense forest cover • High scenic quality	• Protected Area • High Recreation Significance • Very High Visual Sensitivity • Proximate to the transmission line
2. Nithi Mountain	• Southeast of the Stellako River • Good visibility due to elevated mountain slopes • Moderate scenic quality due to farming and pasturage and forest cut blocks	• High Recreation Significance • High Visual Sensitivity • Proximate to the transmission line
3. Cheslatta Trail Crossing	• South of Chowsunkut Lake near the Holy Cross FSR/Nithi Road junction • Visibility enclosed by Foster Creek depression • Moderate scenic quality due to numerous cut blocks	• Recreation/Heritage Trail • High Visual Sensitivity • Proximate to the transmission line alignment
4. Tahultzu Lake	• Downstream of Hallett Lake • Visibility is restrained outside immediate viewshed by forested ridgelines around the lake • Moderate scenic quality; cut blocks overlapping area of High recreation significance	• Recreation Site (Hallett Lake) • High Recreation Significance • Proximate to the transmission line
5. Nechako River Crossing	• Section of River flowing around Greer Mountain • Visibility enclosed by steep valley slopes, limiting views upstream and downstream, and by dense forests cover • Moderate scenic quality due to farming and pasturage beyond immediate viewshed	• Recreation Site (Greer Creek) • Recreation Trail (Nechako Canoe) • High Recreation Significance • High Visual Sensitivity • Proximate to the transmission line
6. Chief Gray Lake/Hobson Lake	• Near the inflow of Big Bend Creek into Knewstubb Lake • Visibility enclosed by surrounding ridgelines, limiting views outside the immediate viewshed • High scenic quality similar to park-like vistas over undisturbed forests; staggered tree lines surround lakes	• Recreation Reserves (Chief Gray Lake and Hobson Lake) • Recreation Trail (Chief Gray Lake) • High Recreation Significance • Very High Visual Sensitivity • Proximate to transmission line
7. Brewster Lake	• Northeast slopes of Nechako Range at the headwaters of the Bigbend Creek • Visibility enclosed by surrounding ridgelines, limiting views outside the immediate viewshed • High scenic quality similar to park-like vistas over undisturbed forests; staggered tree lines surround lakes	• High Recreation Significance • High Visual Sensitivity • Brewster Lake Recreation Site • Proximate to the transmission line alignment
8. Chedakuz Lakes	• North of the Kluskus-Ootsa FSR where it traverses the Nechako Range • Moderate visibility due to location along lower slopes of Nechako Range • Moderate scenic quality; cut blocks visible on surrounding hills	• High Recreation Significance • Proximate to the transmission line alignment

Evaluation Site	Location, Visibility, and Setting	Rationale for Selection
9. Tatelkuz Lake	• Along the west-facing slopes of Tatelkuz Mountain, fed by Chedakuz Creek draining Kuyakuz Mountain • Visibility is limited outside immediate viewshed by forested ridgeline along west bank • Moderate scenic quality due to cut blocks covering surrounding hills, many of which are at high elevations	• High Recreation Significance • Very High Visual Sensitivity • Tatelkuz Lake South and Southeast Recreation Reserves • Messue Wagon Road Trail • Proximate to the transmission line and fresh water pipeline; distant views of mine site facilities
10. Snake Lake	• South of the Kluskus-Messue FSR where it crosses the Davidson Creek • Visibility limited by forest cover • Low scenic quality surrounded by cut blocks	• High Recreation Significance • Proximate to the transmission line, freshwater pipeline, and mine site facilities
11. Top Lake	• At the headwaters of the Fawnie Creek between the Fawnie Dome and Mount Davidson • Visibility limited by skylines of surrounding mountains • Moderate scenic quality near Kluskus-Ootsa FSR; large cut blocks on west-facing slopes of Mount Davidson	• High Recreation Significance • Top Lake Recreation Site • Proximate to the mine site facilities
12. Mount Davidson	• Spanning the boundary of the Upper Eutsuk Lake and Lower Nechako Reservoir regional watersheds • High elevation vantage points offering excellent visibility • Scenic quality High on west-facing slopes; Moderate to Low on east-facing slopes	• High Recreation Significance • Proximate to the mine site facilities
13. Kuyakuz Lake	• At the southern extent of the Nechako Range • Kuyakuz Lake dominates immediate view with Kuyakuz Mountain framing immediate viewscape with views of the Fawnie Range in the far distance • Scenic quality High due to careful management of forest activities around the site	• High Visual Sensitivity • Kuyakuz Lake Recreation Site



Legend

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

Forestry Service Roads

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

Project Components

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

Visual Resources

- Local Study Area
- Regional Study Area
- High Recreation Significance (RFI)
- Moderate to Very High Visual Sensitivity (VLI)
- Recreation Sites in the Visual Resources Study Areas
- Recreation Trails
- 13 Evaluation Sites

1 Stellako River Crossing
2 Nithi Mountain
3 Cheslatta Trail Crossing
4 Tahultzu Lake
5 Nechako River Crossing
6 Chief Grey/Hobson Lakes
7 Brewster Lake
8 Chedakuz Lake
9 Tatelkuz Lake
10 Snake Lake
11 Top Lake
12 Mount Davidson
13 Kuyakuz Lake

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

Rationale for Site Selection: Transmission Line

DATE: March, 2014	ANALYST: WR	**Figure 7.2.8-6**
JOB No: VE52277	QA/QC: LR	PDF FILE: 19-036_VisualVcsEA_v2.pdf
GIS FILE: 19-036_VisualVcsEA_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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360000 368000 376000 384000 392000 400000

5912000 5904000 5896000 5888000

Chedakuz Lakes
8
Kluskus-Chedakuz FSR
Chedakuz Creek
Esker
Kluskus FSR
Dykam Ranch
Tatelkuz Airstrip
TATELKUS LAKE RESERVE 28
Tatelkuz Lake Ranch Resort
Tatelkuz Lake
9
933m
Tatelkuz Lake
Tatelkuz Mountain 1611m
Kluskus-Ootsa FSR
Fawnie Nose 1926m
Fawnie Dome 1726m
Fawnie Range
Turtle Creek
Davidson Creek
Tatelkuz Lake South East Recreation Reserve
Nechako Range
Snake Lake
10
1096m
1387m
1151m
Tatelkuz Lake South Recreation Reserve
MESSUE WAGON ROAD
Creek 661
Top Lake Recreation Site
Top Lake
1097m
11
Top Lake
1634m
1231m
1666m
Kluskus-Nalaput FSR
Fawnie Creek
1444m
1611m
Kluskus-Messue FSR
Chedakuz Creek
Kuyakuz Mountain 1734m
Mount Davidson
12
1668m
1767m
Mount Davidson 1856m
Kuyakuz Lake
Kuyakuz Lake Recreation Site
Kluskus-Ootsa FSR
Mathews Creek
Kluskus-Blue FSR
13
Kuyakuz Lake
Tsacha Mountain 1781m
Kluskus-Blue FSR
West Road (Blackwater)
MESSUE HORSE TRAIL
Euchiniko Lakes
KUSHYA CREEK 12
960m
KLUSKUS 1
Blackwater-Spruce Lodge
KUSHYA CREEK 7
UPPER KLUSKUS LAKE 9
Kluskus Village
Tsacha Lake
ALEXANDER MACKENZIE HERITAGE TRAIL

N

Legend

- Populated Place
- Spotheights
- Restricted Access
- Forestry Service Roads
- Logging roads
- Private land
- Indian Reserves

Project Components

- Blackwater Camp
- Exploration Road
- Proposed Mine Access Road
- Proposed Transmission Line
- Mills Ranch Reroute
- Proposed Fresh Water Pipeline
- Proposed Airstrip Access Road
- Proposed Airstrip Extent
- Proposed Fresh Water Pipeline Intake
- Proposed Mine Site
- Mine Site Facilities

Visual Resources

- Local Study Areas
- Regional Study Areas
- High Recreation Significance (RFI)
- Visual Sensitivity Units (VLI)
- Recreation Sites
- Recreation Trails
- 13 Evaluation Sites

Scale:1:145,000

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

Rationale for Site Selection: Mine Site

DATE: March, 2014	ANALYST: WR	**Figure 7.2.8-7**
JOB No: VE52277	QA/QC: SB	PDF FILE: 19-058_VisualVcRationaleMS_v2.pdf
GIS FILE: 19-058_VisualVcRationaleMS_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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There is potential for visual effects during the construction, operations, closure and post-closure phases of the Project. The magnitude of potential visual effects was assessed during the phase of the Project when facilities would be at their maximum size and the Project would be fully developed. This scenario corresponds to the end of the operations phase of the Project when mining facilities such as the TSF and waste rock dumps would reach their maximum size and linear components (i.e., transmission line, airstrip, freshwater supply system, and the Kluskus FSR) would be constructed. By applying this approach, each Project phase is taken into account for the significance determination. The potential for visual effects during the construction, closure and post-closure phases is expected to be lower as the Project is being constructed and the site is being reclaimed.

7.2.8.3.2 Evaluation Sites

Potential effects of the Project are assessed at 13 evaluations sites where facilities may interact with visual resources. Certain sites are in the form of congregation points such as recreation sites of homesteads of permanent residents. Others are areas of recreation significance or visual sensitivity. Evaluation sites are described along the proposed transmission line from Endako in the north, moving south towards the mine site. Sites numbered 1–8 were evaluated for effects of the proposed transmission line, while Sites 9–13 were evaluated for all Project components.

As stated in **Section 7.1.4.1.2.6**, no conservancy areas overlap the visual resource study areas. The closest conservancy is the Dean River Conservancy, located 104 km to the west of the Project along the western boundary of Tweedsmuir Park. An evaluation site for the visual assessment was not selected in the area of Francois Lake Park because no lines of sight were identified between the transmission line and the eastern boundary of the park, which overlaps the visual resources LSA. There are high elevation areas in Francois Lake Park, located within the visual resources RSA. However, given the distance of these areas from the transmission line is more than 6 km, it is not expected that the Project will be visible from these areas in the park. An evaluation site for the visual assessment was not selected in the area of the Francois Lake Protected Area because there are no line of sites between the Protected Area and the Project, and the Protected Area is located in the RSA.

7.2.8.3.2.1 Site 1: Stellako River Crossing

The Stellako River was the first site where potential interactions between the transmission line and visual resources were assessed. The Stellako River flows from Francois Lake to Fraser Lake through an incised valley. **Photo 7.2.8-2** shows the view along the Stellako River valley toward the Stellako Wildlife Management Area (WMA).

Photo 7.2.8-2: View of the Stellako River Valley crossing point near the existing transmission lines as seen from an aircraft

7.2.8.3.2.1.1 Potential Effects

The transmission line alignment traverses the Stellako WMA, crossing the river valley 5 km downstream from its natural outflow of Francois Lake. The Stellako River VSU is within the WMA and has High visual sensitivity. The VSU is designated as Retention VQO, which prescribes that alterations should not be easily distinguishable from pre-construction landscapes to avoid alteration that could cause public concern.

The result of the viewshed analysis indicates a one-kilometre stretch of river, where line of sight is expected to occur between the transmission line and individuals using watercraft on the river. Geographic extent is Local as visibility is restricted to the river valley. Magnitude is considered High as the transmission line will be highly visible and the Retention VQO will be exceeded. This localized area is of High visual sensitivity and High recreation significance within a wildlife management area.

However, the opportunity to view the facility will be restricted to those few individuals who choose to travel down the river in watercraft. Further, the visual effect will be constrained to the period of time that the watercraft is passing through the viewshed. Duration will be Long-term throughout operations and closure. Frequency is intermittent within the viewshed of the structure. Effects will be Reversible once the transmission line has been removed. A Not Significant (moderate) effect on visual resources was assigned given these circumstances.

There is a proposed alternative alignment (**Figure 7.2.8-8**) within an existing corridor, where the provincial transmission system routes between Prince George and Prince Rupert. This alignment is preferred from a visual resources perspective as it avoids creating new effects in a previously

undisturbed area. If this alternative were selected, visual effects would be considered Not Significant (negligible).

Two additional sites were given a cursory assessment due to substantial pre-existing impacts. A VSU with Moderate visual sensitivity is designated along a buffer of the Endako Mine Road. It has a Modification VQO, which prescribes that new structures may be very easy to see and medium in scale with some angular characteristics. At the crossing point the proposed transmission line follows the same route as the existing transmission lines therefore, any new impacts will occur in the same viewshed as existing impacts. The potential effects are therefore, considered to be Not significant (negligible).

Similarly a VSU with Moderate Visual Sensitivity and a Modification VQO buffers the Francois Lake road that links Fraser Lake with private land parcels at the east end of Francois Lake. The road is located within an agricultural setting with fields, paddocks, sheds, homesteads, asphalt roads and telephone lines. Given the existing impacts, Modification VQI the potential effects are considered to be Not Significant (negligible).

368000 372000 376000 380000 384000

5992000 5988000 5984000 5980000

Glenannan Substation
Endako Mine road crossing
Endako Mine Road
Vanderhoof R.N./R.M.
Endako River
Fraser Lake VSU EVQO - PR
Fraser Lake Waterdome
Fraser Lake
Fraser Lake VSU EVQO - PR
Seas Lake
Endako Mine Rd VSU EVQO - M
Stellako Alternative Route
Stellako River VSU EVQO - R
Stellako River crossing (Reroute)
Stellako River
Robertson Creek
Proposed Transmission Line LSA (5km)
Mudhole Lake
Nechako Floodplain Settlement Area
Stellako River crossing (Project Description)
1
Francois Lake Road VSU EVQO - M
Fraser Lake Airport Rd
Glenannan Rd
Stellako River
Stellako River Wildlife Management Area
Francois Lake road crossing
Roys Lake
Mudhole Creek
Stellako Resort
Francois Lake North Shore VSU EVQO - M
Francois Lake Rd
Robertson Creek
Fraser Lake Airport
Foster Creek
Nithi Mountain (SW Flank) EVQO - PR
FOSTER LAKE RECREATION RESERVE
Francois Lake
Nithi Mountain
2
Foster Lakes
Nithi Mountain
Nithi Mountain (SW Flank) EVQO - PR
Nithi Mountain 1352m
Steiner Ranch
NITHI RIVER RECREATION SITE
Nolan Lake
Vanderhoof R.N./R.M.
Francois Lake Park
Proposed Transmission Line LSA (5km)
Nithi River
Nithi Valley (South Side) VSU EVQO - PR

N

Legend

- Highway
- Local roads
- Tracks
- Existing Transmission Line
- Railway
- Private land
- Forest Cutblocks
- Parks and Protected Areas
- Vanderhoof Access Management Plan

Project Components

- Proposed Transmission Line

Visual Resources

- Local Study Area
- Very High Visual Sensitivity (VLI)
- High Visual Sensitivity (VLI)
- Moderate Visual Sensitivity (VLI)
- High Recreation Significance (RFI)
- Recreation Site
- 13 Evaluation Sites

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Distance buffers (1km succession)

Viewshed Analyses (line of sight)

Stellako River Crossing

- Incorporating crown height of vegetation
- Based on terrain (masl)

Steiner Ranch

- Incorporating crown height of vegetation
- Based on terrain (masl)

Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction with Project Activities (Stellako River, Nithi Mountain)

DATE:	ANALYST:	**Figure 7.2.8-8**
March, 2014	WR	
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-038_Vc1Stellako2NithiMtn_v3.pdf
GIS FILE: 19-038_Vc1Stellako2NithiMtn_v3.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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7.2.8.3.2.1.2 Mitigation

The following measures related to river valleys in relatively undisturbed settings was considered during the project planning and design phase and will serve as guidelines for post construction mitigation:

- Locate facilities near existing infrastructure to avoid additional surface disturbance;
- Investigate site-specific measures and designs to soften visual effects from a river level vantage point, where structure might breach the natural ridgelines of the river valley;
- Allow grass and brush to colonize the ROW for sections in visually sensitive areas;
- Paint or stain structures to blend with the character of the surrounding environment; and
- Investigate measures to soften the visual effects associated with overhead cables where the Stellako River flows underneath the proposed transmission line.

7.2.8.3.2.2 Site 2: Nithi Mountain

An area of High recreational significance spans Nithi Mountain. The mountain is located in an agricultural setting and is used primarily for rangeland and forestry practices, with many cut blocks evident along its central and eastern flanks. No locations were identified where recreational users congregate for a prolonged duration of time. An observation point was located at the Steiner Ranch in the Nithi Valley, where distant views are possible from some private land holdings located in the Nithi Valley to Nithi Mountain; (**Photo 7.2.8-3**).

Photo 7.2.8-3: View East along Nithi Road toward Nithi Mountain (VP-12)

7.2.8.3.2.2.1 Potential Effects

The proposed transmission line is aligned through cut blocks on the north-facing slopes, except for a section of roughly two kilometres where it overlaps with the Nithi Mountain (SW flank) VSU. This VSU is classified as having High visual sensitivity and is designated with a Partial Retention VQO, indicating that new activities may be visible but should remain subordinate to avoid public

concern. VAC is not classified in available data; however, context is robust due to the undulating mountain landscape and dense vegetation cover (**Figure 7.2.8-9**).

This site is located within a Roaded Modified Zone of the Vanderhoof Access Management Plan. In this zone, motorized access is only limited by environmental and operational requirements. The presence of Project facilities is not anticipated to conflict with the expectations of recreational users as there is only a moderate opportunity to experience solitude and closeness to nature.

The visual effect of the transmission line is considered Not Significant (negligible) with a Local geographic extent. A Low magnitude with an Intermittent frequency is expected as users moving through a robust, undulating, forest-covered landscape will not have a continuous view of the structure. Given these visibility parameters, it is not expected that the Partial Retention VQO will be exceeded. There are opportunities to obscure the transmission line from line of sight by implementing the suggested mitigation.

7.2.8.3.2.2.2 Mitigation

The following measures related to elevated landscapes in relatively disturbed settings was considered during the project planning and design phase and will serve as guidelines for post construction mitigation:

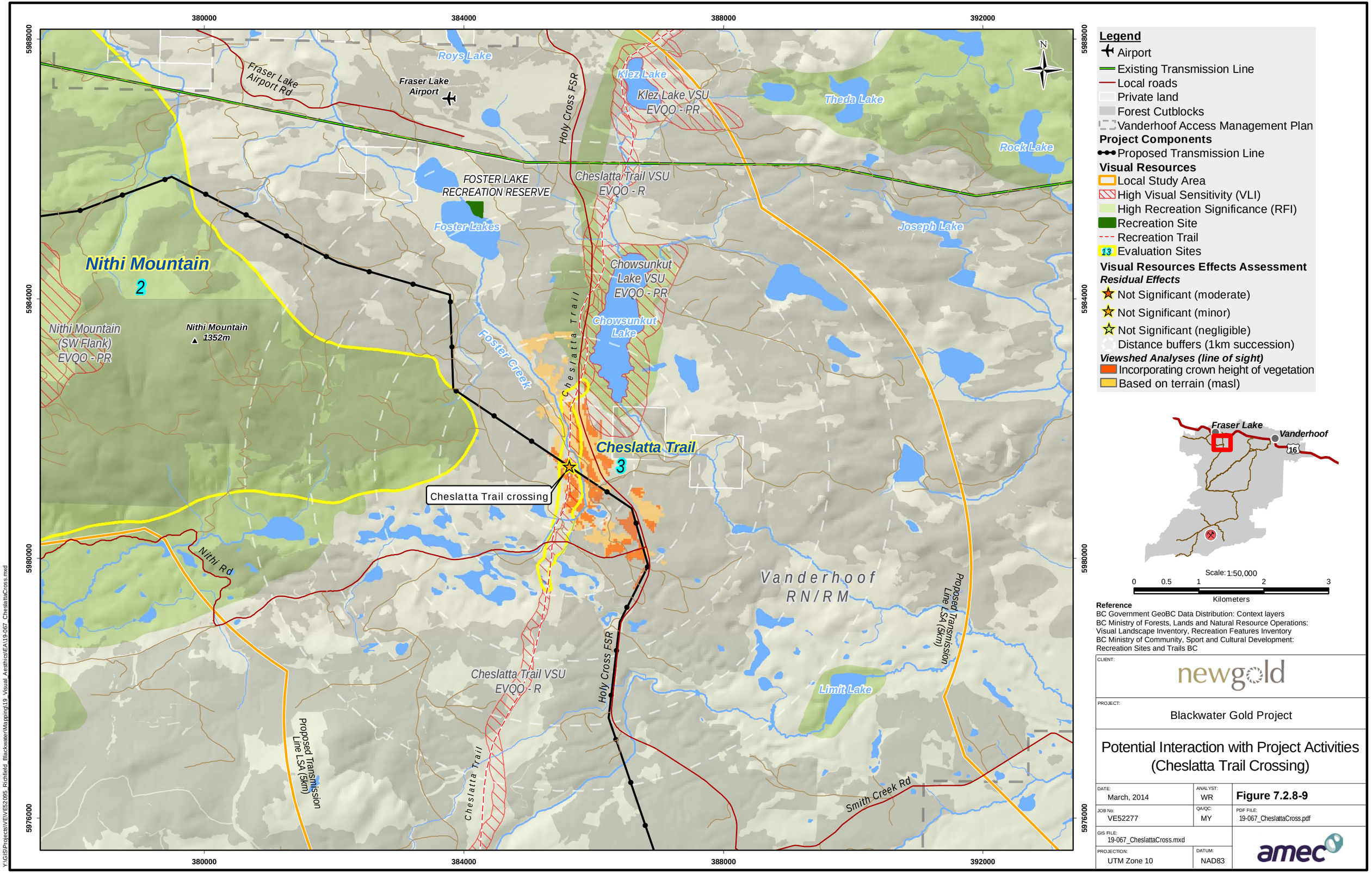
- Avoid placing facilities on ridgelines, summits, or other locations where they will be silhouetted against the sky from important viewing locations;
- Locate Project infrastructure to take advantage of both topography and vegetation as screening devices to restrict views of the structures from visually sensitive areas; and
- Allow grass and brush to colonize the ROW for sections in visually sensitive areas.

7.2.8.3.2.3 Site 3: Cheslatta Trail Crossing

The Cheslatta Trail aligns with the Holy Cross FSR along the west bank of Chowsunkut Lake, from where it crosses Foster Creek and the Nithi Road, heading to Cheslatta Lake.

The proposed transmission line will cross the Cheslatta Trail after traversing the north slopes of Nithi Mountain, before turning south towards the mine site. The Cheslatta Trail VSU with High visual sensitivity and a Retention VQO is designated approximately 100 m either side of the trail.

Numerous cut blocks are located around Nithi Mountain and Chowsunkut Lake, and either side of the Holy Cross FSR. The west bank of Chowsunkut Lake and the crossing point have recently been clear-cut, and is currently a regrowth area. VAC is not classified; however, context is robust due to the undulating landscapes and vegetation cover.



Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction with Project Activities (Cheslatta Trail Crossing)

DATE: March, 2014	ANALYST: WR	**Figure 7.2.8-9**
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-067_CheslattaCross.pdf
GIS FILE: 19-067_CheslattaCross.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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This site is located within a Roaded Modified Zone of the Vanderhoof Access Management Plan. Motorized access is only limited by environmental and operational requirements. The presence of Project facilities is not anticipated to conflict with the expectations of recreational users as there is only a moderate opportunity to experience solitude and closeness to nature.

7.2.8.3.2.3.1 Potential Effects

A viewshed analysis of the crossing point indicates that the transmission line will be visible to users of the trail along a 300 m section. The Partial Retention VQO will be exceeded within this viewshed. Views will however be intermittent, as the transmission line will be constrained from long views by vegetation cover and undulating terrain. Magnitude is Low as the transmission line will only be visible within a Local geographic extent, restricted to areas adjacent to the trail.

Duration will be Long-term throughout operations and closure. Frequency is intermittent within the viewshed of the structure. Effects will be Reversible once the transmission line is removed. The visual effect of the transmission line on the Cheslatta Trail crossing point is considered to be Not Significant (minor), in consideration of the zoning objectives of the region and the recreational and importance and heritage value of the Cheslatta Trail.

7.2.8.3.2.3.2 Mitigation

The following measures relate to screening and concealment was considered during the project planning and design phase and will serve as guidelines for post construction mitigation:

- Paint or stain structures to blend with the character of the surrounding environment;
- Allow grass and brush to colonize the ROW for sections in visually sensitive areas; and
- Investigate measures to soften the visual effect of overhead cables where the Cheslatta Trail crosses underneath the transmission line.

7.2.8.3.2.4 Site 4: Tahultzu Lake

All areas close to Project components where High recreation significance (RFI), High visual sensitivity (VLI), and designated Recreation Sites occur were evaluated in the interest of taking a conservative approach and applying a high degree of rigour. All three of these circumstances are evident at Tahultzu Lake (**Photo 7.2.8-4**). The transmission line alignment traverses the north section of the Tahultzu Lake recreationally significant area.

The Hallett Lake Recreation Site is surrounded by VSUs with High visual sensitivity and is considered a sensitive receptor. However, the line of sight from the recreation site to the transmission line alignment is over 5 km distance across the lake. The transmission line structure and ROW are anticipated to be obscured as a result of the distance from the viewpoint and the context of the vegetation cover. The alignment follows the natural contours of the land, further obscuring its visibility.

Photo 7.2.8-4: North Section of Tahultzu Lake with High Recreation Significance as seen from an aircraft

7.2.8.3.2.4.1 Potential Effects

The visual effect of the transmission line on the Tahultzu Lake area is considered to be Not Significant (negligible) due to distance and the absence of scenic areas with VQOs. The geographic extent is Highly Localized because of the small size of the visible area of the transmission line falling within the line of sight and the dense forest cover free of cut blocks surrounding the lake.

7.2.8.3.2.4.2 Mitigation

The following measures relate to lakes surrounded by scenic areas with few disturbances was considered during the project planning and design phase and will serve as guidelines for post construction mitigation:

- Locate structures outside of the viewsheds of publicly accessible vantage points;
- Locate facilities away from prominent landscape features where they might interrupt a natural line or edge;
- Allow grass and brush to colonize the ROW for sections in visually sensitive areas; and
- Paint or stain structures to blend with the character of the surrounding environment.

7.2.8.3.2.5 Site 5: Nechako River Crossing

The transmission line alignment crosses the Nechako River north of its confluence with Greer Creek (**Photo 7.2.8-5**). This crossing point intersects an area of High recreation significance. The crossing is also within the Nechako River VSU. This VSU is designated High visual sensitivity and Partial Retention VQO. The site is located in the Upper Nechako Special RMZ of the Vanderhoof LRMP, meaning the land base is managed to conserve resource values such as habitat, scenery, and recreational opportunities.

Photo 7.2.8-5: Downstream View of the Nechako River Valley from the Greer Creek Recreation Area

7.2.8.3.2.5.1 Potential Effects

An observation point representing a potential sensitive receptor was selected in the Greer Creek Recreation Site. The site is the most likely point of congregation of people seeking recreational pursuits such as anglers and users of recreational watercraft (**Figure 7.2.8-10**). Results from the viewshed analysis indicate that the transmission line will not be visible from the Greer Creek Recreation Site due to immediate upstream and downstream bends in the river. As line of sight does not occur, no visual effects are expected at this viewpoint.

This reach of the Nechako River near the Greer Creek Recreation Site is within the Nechako River Canoe Trail. Users of the trail will move downstream through an area with a clear and proximate line of sight of the transmission line. The transmission line will be constrained from long views from the river level vantage point by naturally occurring bends in the river.

The structure will be highly visible from approximately 500 m on either side of the crossing point. The Partial Retention VQO is expected to be exceeded within this stretch of the river. However, this effect is offset by the probable short period of visibility as paddlers continuously move downstream and around river bends, making the context robust. Magnitude is Medium as the transmission line will be visible within a Local geographic extent restricted to the river valley.

Duration will be Long-term throughout operations and closure. Frequency is intermittent within the viewshed of the structure. Effects will be Reversible once the transmission line is removed. The visual effect of the transmission line on the Nechako River crossing point is considered to be Not Significant (moderate), in consideration of the zoning objectives of the region and the recreational importance of the Nechako River Canoe Trail.

7.2.8.3.2.5.2 Mitigation

Consideration regarding visual resource during the project-planning phase, led to the realignment of the transmission line route. The alignment was originally located within a few hundred metres of the Greer Creek Recreation Site. The crossing point was moved downstream of the Recreation Site after the interests of users and private landholders were considered.

Further measures will serve as guidelines for post construction mitigation to avoid visual intrusion of artificial elements into the viewshed surrounding the recreation site. All measures listed under Stellako River apply, with the following additions:

- Develop site-specific measures and designs to soften visual effects where facilities breach the natural ridgelines of the Nechako River valley from a river-level vantage point; and
- Allow grass and brush to colonize the ROW for sections in visually sensitive areas.

384000 388000 392000 396000 400000

5972000 5968000 5964000 5960000

Holy Cross FSR
Fifteen Creek
Lily Lake Rd
Nechako River Canoe Trail
Nechako River VSU
EVQO - PR
Vanderhoof
RN/RM
NechakoFloodplain
Settlement Area
Vanderhoof
RN/RM
Tahultzu Lake
4
Norman
Lake
Nechako River
Laurence
Lake
Tahultzu Lake
Mount Greer
SPM
Mount Greer
1247m
Mount Greer
SPNM
Hallet Lake VSU
EVQO - PR
Hallet Lake
Recreation Site
Hallett
Lake
Vanderhoof
RN/RM
Nechako River VSU
EVQO - PR
Greer Mountain VSU
EVQO - PR
Crystal Lake
Cabins
Kenney Dam Rd
Greer Creek
Hallet Lake VSU
EVQO - PR
Proposed Transmission
Line LSA (5km)
Kenney Dan Road VSU
EVQO - M
Proposed Transmission
Line LSA (5km)
Harlow
Lake
True Triangle
Lake
Bungalow
Lake
Nechako River crossing
Lorne
Lake
Crystal Lakes VSU
EVQO - R
5
Nechako
River
Greer Creek
Recreation Site
Vanderhoof
RN/RM
Nechako
Retreat
Crystal Lake
SPM
Mount Hobson
SPNM

N

Fraser Lake
Vanderhoof
16

Scale: 1:67,000

0 0.5 1 2 3
Kilometers

Legend

- Recreation lodge
- FSRs
- Logging Roads
- Private Land
- Forest Cutblocks
- Vanderhoof Access Management Plan

Project Components

- Proposed Transmission Line

Visual Resources

- Local Study Area
- High Recreation Significance (RFI)
- High Visual Sensitivity (VLI)
- Moderate Visual Sensitivity
- Recreation Site
- 13 Evaluation Sites

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Distance buffers (1km succession)

Viewshed Analyses (line of sight)

- Incorporating crown height of vegetation
- Based on terrain (masl)

Reference

BC Government GeoBC Data Distribution

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction between Visual Resources and Project Activities (Tahultzu Lake, Nechako River)

DATE:	ANALYST:	**Figure 7.2.8-10**
March, 2014	WR	
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-038_Vc3Tahultzu4Nechako5MtnGreer_v2.pdf
GIS FILE: 19-038_Vc3Tahultzu4Nechako5MtnGreer_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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7.2.8.3.2.6 Site 6: Chief Gray Lake/Hobson Lake

The transmission line is aligned through a remote area, passing about 2.5 km east of the Chief Gray and Hobson Lakes Recreation Reserves (**Photo 7.2.8-6**). This area has High recreation significance and Very High visual sensitivity. A recreation trail joins the two recreation reserves. The VSU around Chief Gray Lake has Very High visual sensitivity and a Retention VQO.

The Hobson Lake Recreation Reserve is closer to the transmission line alignment. However, the VSU around Hobson Lake has Moderate visual sensitivity and a Modification VQO, meaning new structures may be visually dominant but should have characteristics that appear natural.

Both recreation reserves are within an SPNM access zone. Accordingly, it can be anticipated that visitors would expect a very good opportunity to experience solitude and closeness to nature in a high quality natural environment with few opportunities to interact with others (**Figure 7.2.8-11**).

Photo 7.2.8-6: High Recreation Significance - Chief Gray Lake/Hobson Lake as seen from an aircraft

7.2.8.3.2.6.1 Potential Effects

Two observation points within the reserves representing potential sensitive receptors were selected. The viewshed analysis indicates that given the current vegetation cover, visibility is constrained to within the site. A second viewshed analysis, however, indicates some sections of the transmission line could become visible if vegetation cover is removed in certain locations between Hobson Lake and the proposed structure. As the transmission line will not be visible from these viewpoints, no visual effects are expected.

7.2.8.3.2.6.2 Mitigation

Several mitigation measures related to lakes surrounded by areas with high scenic value and few disturbances are proposed. These measures are the same as for Site 4 (Tahultzu Lake) with the addition of:

- Working collaboratively with the Vanderhoof Forest District to manage vegetation cover between the proposed transmission line and the Hobson Lake Recreation Site with care;
- Allowing grass and brush to colonize the ROW for sections in visually sensitive areas; and
- Locating infrastructure to take advantage of both topography and vegetation as screening devices to restrict views of structures from visually sensitive areas.

381000 384000 387000 390000

5943000 5940000 5937000

Cutoff Creek

Proposed Transmission Line LSA (5km)

Vanderhoof RN/RM

Cutoff Creek SPM

Vanderhoof RN/RM

Chief Gray Lake SPNM

Chief Gray Lake VSU

EVQO - R

CHIEF GRAY LAKE RECREATION RESERVE

Chief Gray Lake

Chief Gray Lake, Hobson Lake

6

CHIEF GRAY (BITCH) LAKE TRAIL

HOBSON LAKE RECREATION RESERVE

Hobson Lake VSU EVQO - M

Hobson Lake

Cutoff Bute 1095m

CUTOFF BUTTE TRAIL

Knewstubb Lake VSU EVQO - PR, VAC - M

Knewstubb Lake VSU EVQO - PR, VAC - M

Knewstubb Lake VSU EVQO - M, VAC - M

Kluskus-Natalkuz FSR

Knewstubb Lake (Nechako Reservoir)

Knewstubb Lake VSU EVQO - PR, VAC - M

Kenney Dam SPM

Wood Cabin

Big Bend Creek

Knewstubb Lake VSU EVQO - PR, VAC - M

Knewstubb Lake VSU EVQO - M, VAC - M

Big Bend Arm SPM

N

Legend

- FSRs
- Logging Roads
- Private land
- Forest Cutblocks
- Vanderhoof Access Management Plan

Project Components

- Proposed Transmission Line

Visual Resources

- Local Study Area
- High Recreation Significance (RFI)
- Very High Visual Sensitivity (VLI)
- High Visual Sensitivity (VLI)
- Moderate Visual Sensitivity (VLI)
- Recreation Site
- Recreation Trail
- 13 Evaluation Sites

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Distance buffers (1km succession)

Viewshed Analyses (line of sight)

Chief Gray Lake/ Hobson Lake

- Incorporating crown height of vegetation
- Based on terrain (masl)

Wood Cabin (Private Land)

- Incorporating crown height of vegetation
- Based on terrain (masl)

Scale: 1:40,000

0 0.5 1 2

Kilometers

Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction with Project Activities (Chief Gray, Hobson Lake)

DATE: March, 2014	ANALYST: WR	**Figure7.2.8-11**
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-038_Vc6GreyHobson_v2.pdf
GIS FILE: 19-038_Vc6GreyHobson_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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7.2.8.3.2.7 Site 7: Brewster Lake

The Visual Resources Baseline Report highlighted this area as having the highest scenic quality in the visual resources study areas (**Photo 7.2.8-7**). The area is designated High recreation significance. From the main viewpoint in the Brewster Lake recreation site, scenic vistas span across a lake. The area is within a carefully managed viewscape, surrounded by a VSU with High visual sensitivity (**Figure 7.2.8-12**).

The transmission line alignment is located west of the turnoff from the Kluskus FSR approximately 500 m away from the Recreation Site access road. Visibility of the transmission line from the access road will be limited by the vegetation cover to intermittent views.

Photo 7.2.8-7: View Southeast, Viewpoint in the Brewster Lake Recreation Site

7.2.8.3.2.7.1 Potential Effects

A viewshed analysis from the main viewpoint indicates visibility constrained within the immediate viewshed of the recreation site, with the exception of distant views near Esker Creek (approximately 1.5 km) and the Nechako Range (approximately 3 km). The view is currently obscured by vegetation cover with respect to the alignment near Esker Creek.

The transmission line alignment may be visible where it traverses the Nechako Range. At 3 km distance, structures are not expected to be visible; however, the ROW is predicted to be evident, especially during periods of snow cover.

Potential views of the transmission line may occur near the Nechako Range, but will be constrained by distance. Magnitude is therefore, Low with a Local geographic context. The route intersects a section of the Brewster Lake VSU with a Partial Retention VQO. However, this occurs only in a 400 m section north of the recreation site and outside the area of High recreational significance. Duration will be Long-term throughout operations and closure. Frequency is Intermittent due to the screening effect of vegetation cover. Effects will be Reversible once the

transmission line is removed. This assessment is dependent on the management of the viewscape in order to retain scenic quality.

7.2.8.3.2.7.2 Mitigation

The following mitigation measures relating to lakes surrounded by areas with High scenic value and few disturbances will soften potential effects:

- Maintain the transmission line outside of the viewshed of Brewster Lake Recreation Area;
- Locate facilities away from and not adjacent to prominent landscape features where they might interrupt a natural line or edge;
- Allow grass and brush to colonize the ROW for sections in visually sensitive areas; and
- Communicate and integrate activities with resource managers currently managing the viewscape.

393000 396000 399000 402000

5925000 5922000 5919000 5916000

Vanderhoof R.N./R.M.

Euchino FNR

Kluskus FSR

Proposed Transmission Line LSA (5km)

Big Bend Creek

Euchinico River

Euchinico River VSU
EVQO - PR

BREWSTER LAKE
RECREATION SITE

Brewster Lake VSU
EVQO - PR

Brewster Lakes

Esker Creek

Nechako Range

Goose Lake

Kluskus-Euchino

7
Brewster Lake

N

Legend

- Kluskus FSR
- Logging Roads
- Private land
- Forest Cutblocks
- Vanderhoof Access Management Plan

Project Components

- Proposed Transmission Line

Visual Resources

- Local Study Area
- High Visual Sensitivity (VLI)
- Moderate Visual Sensitivity (VLI)
- High Recreation Significance (RFI)
- Recreation Site
- 13 Evaluation Sites

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Distance buffers (1km succession)

Viewshed Analyses (line of sight)

- Incorporating crown height of vegetation
- Based on terrain (masl)

Scale: 1:44,000

0 0.5 1 2

Kilometers

Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction with Project Activities (Brewster Lake)

DATE:	ANALYST:	
March, 2014	WR	**Figure 7.2.8-12**
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-038_Vc7BrewsterLake_v2.pdf
GIS FILE: 19-038_Vc7BrewsterLake_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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7.2.8.3.2.8 Site 8: Chedakuz Lakes

To avoid private land and ranches at the north end of Tatelkuz Lake, an alternative alignment of the transmission line is under consideration. This alternative alignment will traverse between the Chedakuz Lakes, an area that is designated as High recreation significance; however, there are no VSUs or recreation sites (**Photo 7.2.8-8**, **Figure 7.2.8-7**).

7.2.8.3.2.8.1 Potential Effects

No locations were identified where users congregate. A natural depression surrounds the two lakes, resulting in visibility being constrained within the immediate vicinity. The Chedakuz Lakes are located within an SPNM Access Zone. The area is not widely used according to local reports due to difficulty of access.

Effects are considered Not Significant (negligible) with a highly Localized geographic extent and Low magnitude. From a visual resources perspective, the section that follows the Kluskus-Ootsa FSR route is preferred as it aligns with existing effects along the Kluskus FSR.

Photo 7.2.8-8: Chedakuz Lake High Recreation Significance Area as seen from an aircraft

7.2.8.3.2.8.2 Mitigation

The following mitigation measures related to lakes surrounded by areas with Moderate scenic value with some disturbances are proposed:

- Avoid additional surface disturbance by locating facilities along existing ROW, shared access, and other infrastructure (“brownfields” development); and
- Minimize cut-and-fill disturbance and control erosion by avoiding steep slope, in particular when crossing the Nechako Range; and

- Allow grass and brush to colonize the ROW for sections in visually sensitive areas.

7.2.8.3.2.9 Site 9: Tatelkuz Lake

The Tatelkuz Lake area is of High recreation significance and includes numerous VSUs ranging from Moderate to Very High visual sensitivity—Tatelkuz Lake Recreation Reserve South, Tatelkuz Lake Recreation Reserve Southeast, and the Messue Wagon Road Trail. The area is greatly influenced by current land use practices. In addition to effects related to forestry, the north section of Tatelkuz Lake lies within an agricultural setting that includes forage fields, paddocks, and sheds.

The Tatelkuz Lake Ranch Resort is located within a VSU with Very High visual sensitivity at the north section of Tatelkuz Lake (**Photo 7.2.8-9**). The resort accommodates visitors interested in recreational activities focusing on the lake.

Photo 7.2.8-9: View toward the Mine Site – Tatelkuz Lake Ranch Resort (VP-01)

7.2.8.3.2.9.1 Potential Effects

A viewshed analysis was completed from a viewpoint at the Tatelkuz Lake Ranch Resort facing the Project site, which in turn is located on the east-facing slopes of Mount Davidson. The viewshed analysis indicates that line of sight will not occur with any of the mine site facilities. The mine site from this viewpoint is shielded by a prominent forest-covered ridgeline located along the west bank of Tatelkuz Lake (**Photo 7.2.8-10**). As the mine site will not be visible from this viewpoint, there is no expected visual effect.

Photo 7.2.8-10: View in the Direction of the Mine Site from Tatelkuz Lake

Artificial light emanating from the mine site may be visible in the southwest skyline at night. As the mine site is located approximately 13 km from this viewpoint, artificial light effects can be minimized with the application of appropriate mitigation.

A second viewshed analysis evaluates visual effects on the Tatelkuz Lake South Recreation Reserve. Kayakers and canoeists primarily use the reserve during the summer months. Due to its location on the west bank of Tatelkuz Lake, line of sight only occurs toward the east in the opposite direction to the mine site (**Figure 7.2.8-13**, **Figure 7.2.8-14**). As the mine site will not be visible from this viewpoint, there is no expected visual effect.

Photo 7.2.8-11: View toward the Mine Site from the Crossing Point of the Fresh Water Pipeline and the Messue Wagon Road Trail

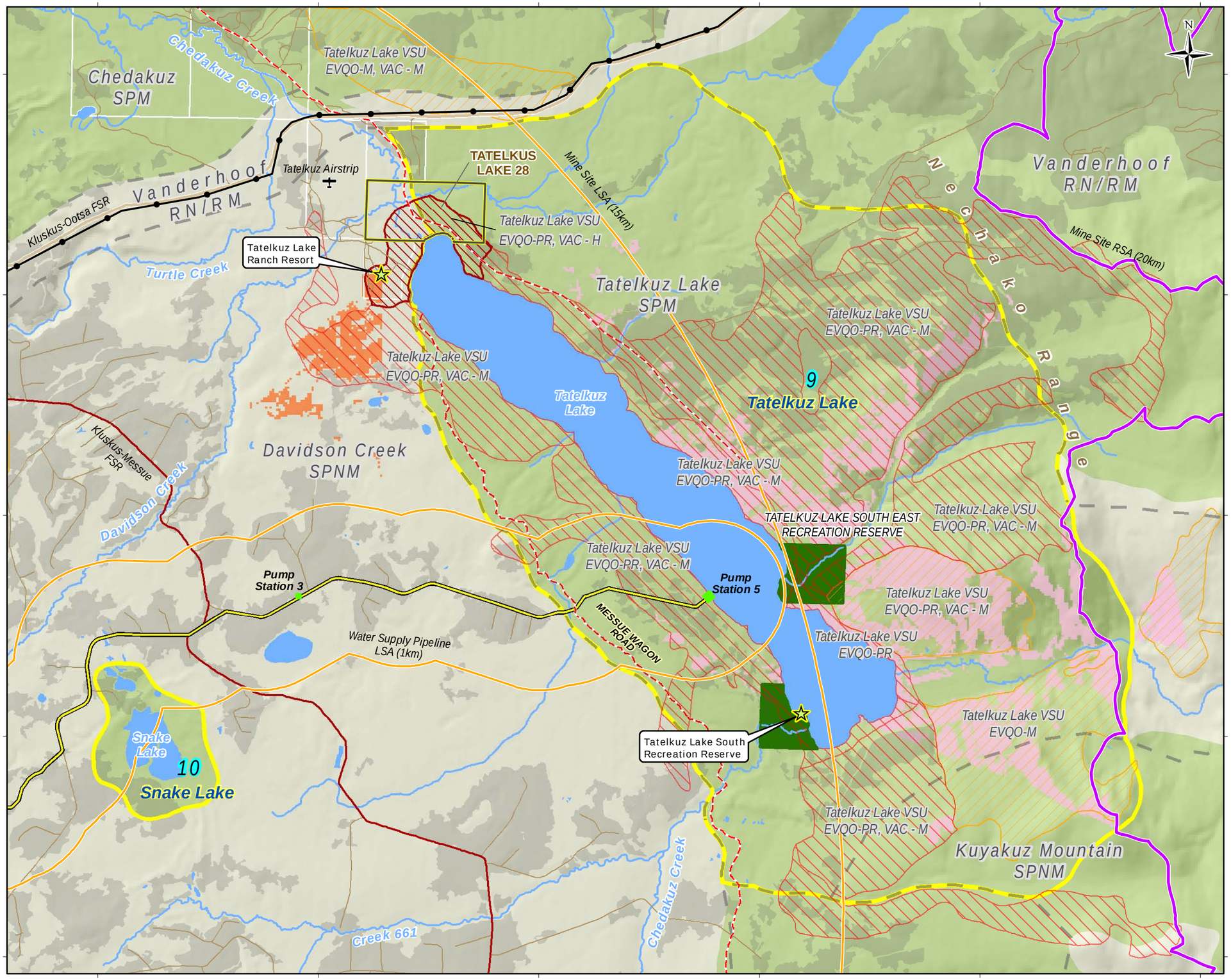
The Messue Wagon Road Trail follows the contours along the west bank of the lake in dense forest. The trail is reportedly not heavily used. The mine site will not be visible to users of the trail as a result of the dense forest cover and undulating terrain. However, trail users may encounter the crossing points of both the fresh water pipeline and the transmission line (**Photo 7.2.8-11**). Since the mine site will not be visible from the trail, there is no expected visual effect.

Photo 7.2.8-12: View towards Mount Davidson – Tatelkus Lake IR 28 (VP-02)

The terrain rises in elevation along the east bank of Tatelkuz Lake so that certain areas of the mine site become visible in the far distance as line of sight with some mine site facilities occurs above the ridgeline along the west bank. Viewshed analyses were generated from a cabin on the Tatelkus Lake IR 28 (**Photo 7.2.8-12**), Dykam Ranch, and the Tatelkuz Lake Southeast Recreation Reserve, indicating similar results with line of sight occurring with mine site facilities located on the higher elevations of Mount Davidson.

As indicated in **Table 7.2.8-16** and **Figure 7.2.8-16**, the Open Pit and the adjacent East and West Waste Rock Dumps may be visible from these three vantage points. In addition, the upper section of the Site D main dam of the TSF is within the line of sight from a selected vantage point in the Tatelkus Lake IR 28. Visibility will be constrained by distance (approximately 15 km) from all three locations. From this distance, the visible mine site facilities may blend into similar colour/contrast scenarios arising from large cut blocks on the northeast slopes of Mount Davidson. Magnitude is therefore, considered to be Medium.

Geographic extent is considered Local as line of sight falls within the mine site LSA. Frequency will be frequent with a Chronic duration as the Project facilities used in the viewshed analyses will not be removed. There are mitigation options available to minimize colour/contrast effects. Although distant, due to the physical size of the prominent mine site facilities, the visual effect of the mine site from these vantage points is assigned Not Significant (moderate).



Legend

- Recreation lodge
- Kluskus-Ootsa FSR
- Pumpstation
- Private land
- Homestead
- Airstrip
- Forest Cutblocks
- Vanderhoof Access Management Plan

Project Components

- Proposed Transmission Line
- Proposed Fresh Water Pipeline

Visual Resources

- Local Study Area
- Regional Study Area
- High Recreation Significance (RFI)
- Very High Visual Sensitivity (VLI)
- High Visual Sensitivity (VLI)
- Moderate Visual Sensitivity (VLI)
- Recreation Site
- Recreation Trail
- 13 Evaluation Sites

Visual Resources Effects Assessment

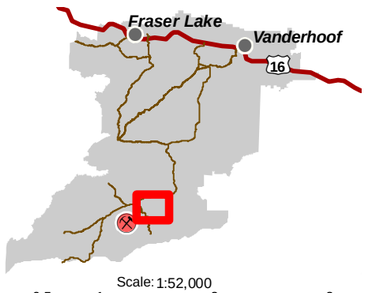
Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Distance buffers (1km succession)

Viewshed Analyses (line of sight)

Incorporating crown height of vegetation

- Tatelkuz Lake Ranch Resort
- Tatelkuz Lake South Recreation Reserve



Scale: 1:52,000

0 0.5 1 2 3

Kilometers

Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction with Project Activities (Tatelkuz Lake West Bank)

DATE:	ANALYST:	
March, 2014	WR	**Figure 7.2.8-13**
JOB No:	QA/QC:	PDF FILE:
VE52277	MY	19-038_Vc9TatelkuzLakeEA_v2.pdf
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UTM Zone 10	NAD83	

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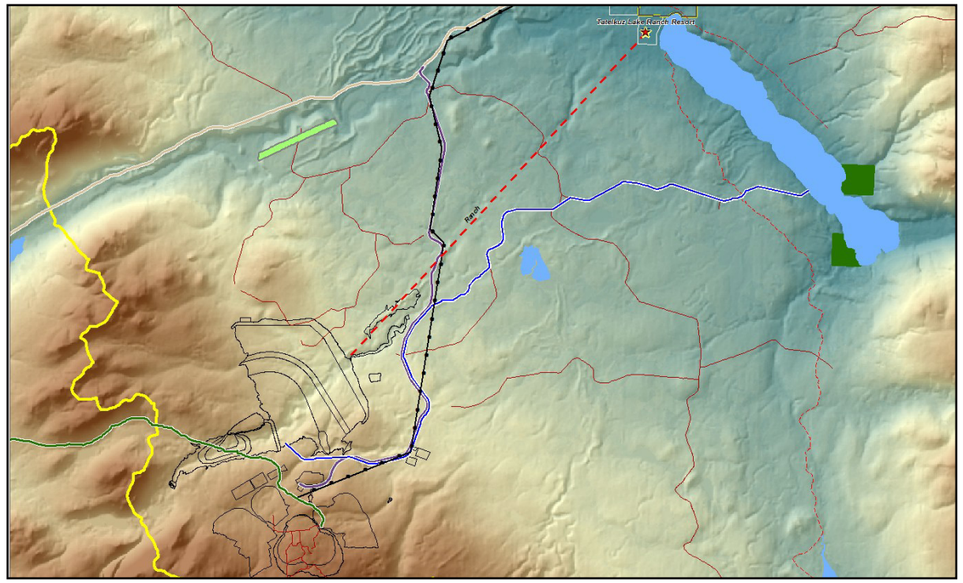
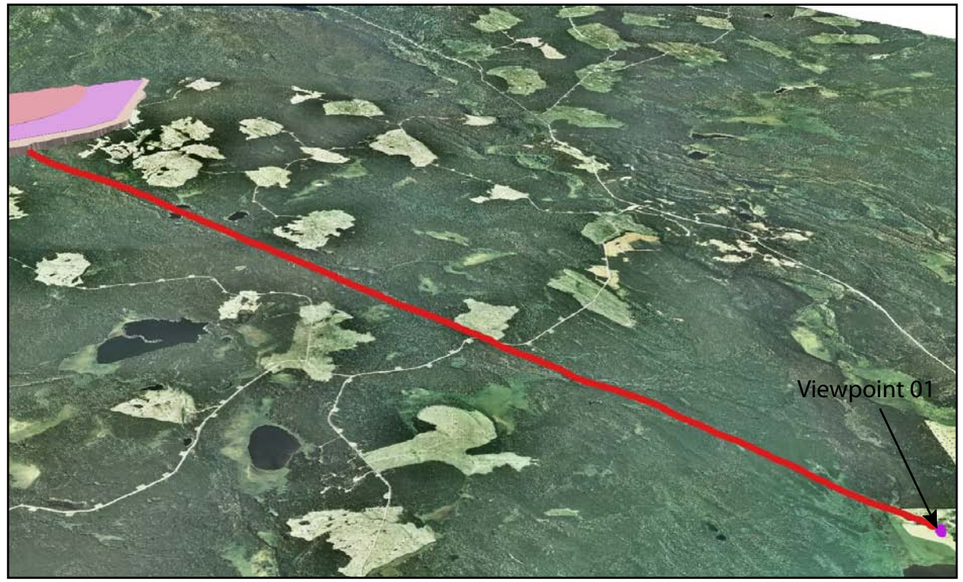
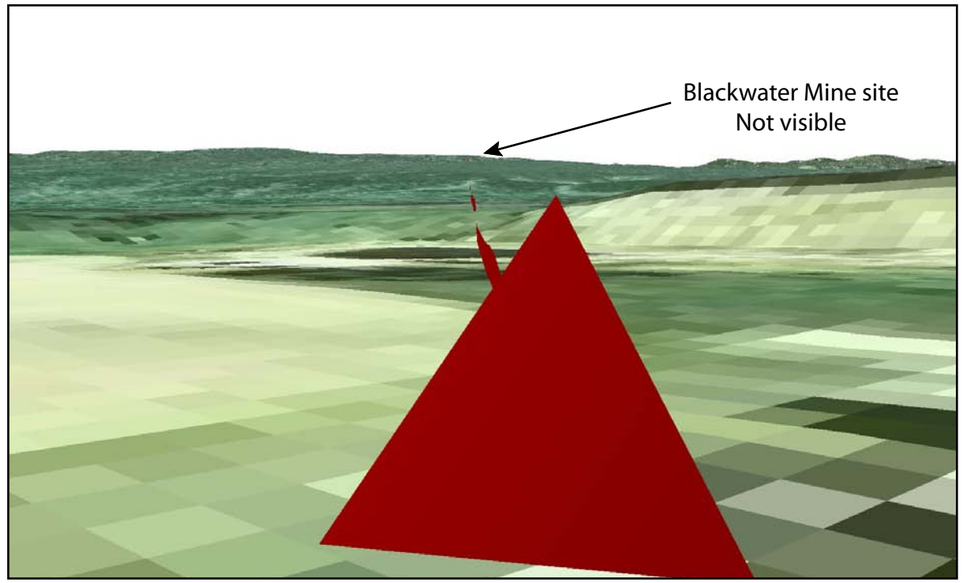


Viewpoint 01 location and bearing angle illustration in 2D View



Viewpoint 01 location and bearing angle illustration in 3D Arscene

Viewpoint 01 location and bearing angle illustration from field



Viewpoint 01 location and bearing angle illustration simulation in 3D Arcscene

CLIENT: newgold

AMEC Environment & Infrastructure
4445 Lougheed, Suite 600, Burnaby, B.C., V5C 0E4
Tel. 604-294-3811 Fax 604-294-4664

DWN BY:	MY
CHK'D BY:	AP
DATUM:	NAD83
PROJECTION:	UTM Zone 10
SCALE:	N/A

PROJECT: Blackwater Gold Project

TITLE: Viewpoint 01 from Tatelkuz Lake Lodge Towards Proposed Minesite

DATE:	July, 2012
PROJECT NO:	VE52277
REV. NO.:	A
FIGURE No.	7.2.8-14

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368000 376000 384000 392000

5912000 5904000 5896000 5888000

Chedakuz Creek
Lower Nechako Reservoir Regional Watershed
Kluskus-Chedakuz FSR
Dykam Ranch Farmstead
Kluskus-Ootsa FSR
Tatelkuz Airstrip
TATELKUS LAKE RESERVE 28
Tatelkuz Lake Reserve Cabin
Tatelkuz Lake Ranch Resort
933m
Nechako Range
Tatelkuz Mountain 1611m
Tatelkuz Lake
Fawnie Dome 1726m
Tatelkuz Lake South East Recreation Reserve
Turtle Creek
Davidson Creek
Top Lake
1097m
1634m
1387m
Snake Lake
1096m
1151m
Tatelkuz Lake South Recreation Reserve
Kluskus-Messue FSR
Creek 661
Site D Main Dam
1231m
Tailings Storage Facility
Site C Main Dam
1666m
1444m
Construction Camp
1611m
West Waste Rock Dump
East Waste Rock Dump
1668m
Open Pit
5km
10km
15km
20km
MESSUE WAGON ROAD
Chedakuz Creek
Kuyakuz Mountain 1734m
1767m
Mount Davidson 1856m
Fawnie Range
Upper Eutsuk Lake Regional Watershed
Euchiniko Lake Regional Watershed
Kuyakuz Lake
Kuyakuz Lake Recreation Site
Kluskus-Blue FSR

N

Legend

- Airstrip
- Homestead
- Lodge
- Restricted Access
- FSRs
- Logging Roads
- Recreation Trail
- Regional Watersheds
- Indian Reserves
- Private land

Project Components

- Forest Cutblocks
- Blackwater Camp
- Recreation Site
- Proposed Transmission Line
- Proposed Fresh Water Pipeline
- Exploration Road
- Proposed Mine Access Road
- Proposed Airstrip Access Road
- Airstrip Footprint
- Proposed Mine Site
- Proposed Site Facilities

Visual Resources

- Local Study Area
- Regional Study Area

Visual Resources Effects Assessment

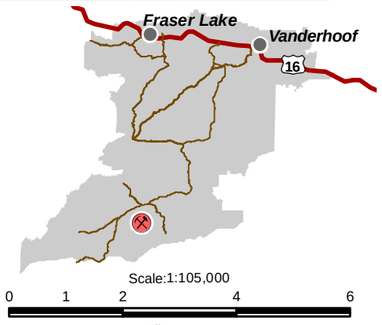
Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Distance buffers (1km succession)

Viewshed Analyses (line of sight)

Tatelkuz Lake East Bank Locations

- Incorporating crown height of vegetation
- Based on terrain (masl)



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Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction with Project Activities (Tatelkuz Lake East Bank)

DATE:	ANALYST:	
March, 2014	WR	**Figure 7.2.8-15**
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GIS FILE: 19-055_ViewshedTL-EastBank_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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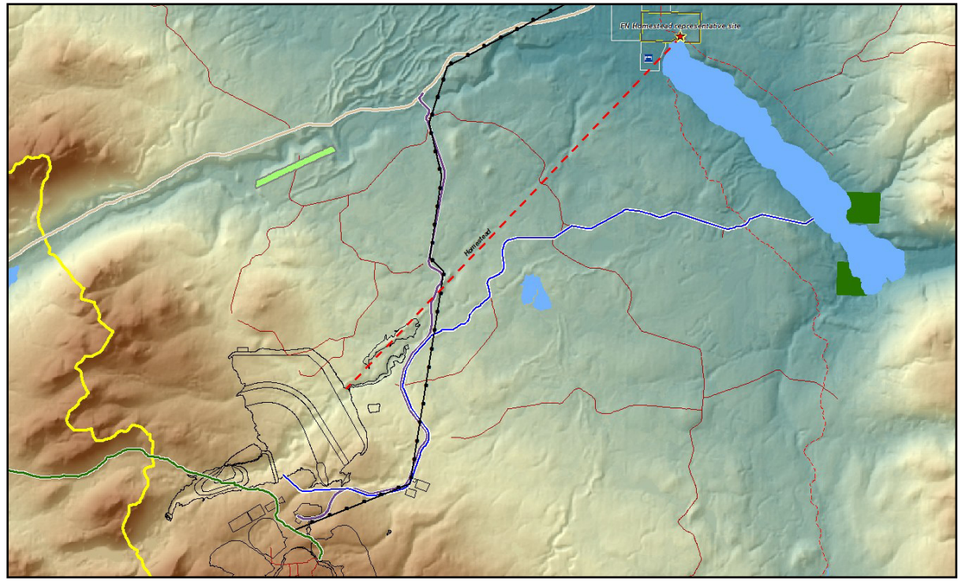
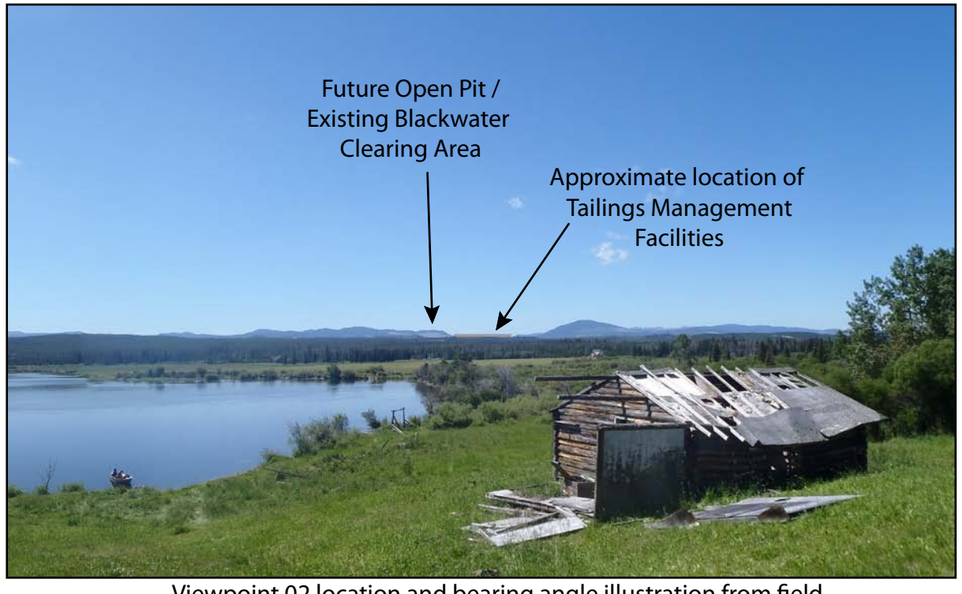
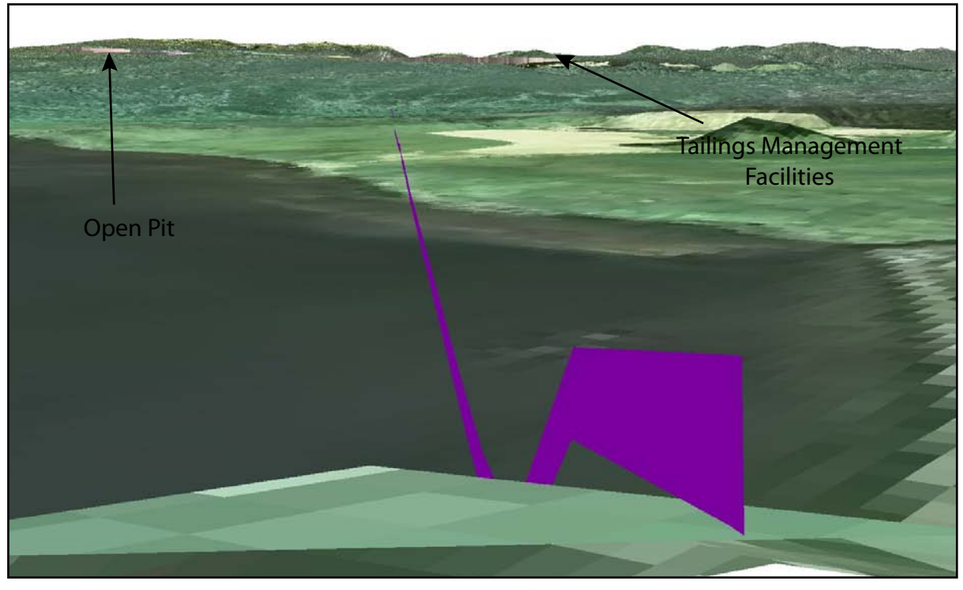


Viewpoint 02 location and bearing angle illustration in 2D View

Viewpoint 02 location and bearing angle illustration in 3D Arscene



Viewpoint 02 location and bearing angle illustration from field



Viewpoint 02 location and bearing angle illustration simulation in 3D Arcscene

CLIENT: newgold	DWN BY: MY	PROJECT: Blackwater Gold Project	DATE: July, 2012	
AMEC Environment & Infrastructure 4445 Lougheed, Suite 600, Burnaby, B.C., V5C 0E4 Tel. 604-294-3811 Fax 604-294-4664	CHK'D BY: AP		PROJECT NO: VE52277	
	DATUM: NAD83	TITLE: Viewpoint 02 from Homestead Towards Proposed Minesite	REV. NO.: A	
	PROJECTION: UTM Zone 10		FIGURE No. 7.2.8-16	
	SCALE: N/A			

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7.2.8.3.2.9.2 Mitigation

Mitigation measures recommended in the Visual Resources Environmental Management Plan (EMP) can moderate effects on residents and users at Tatelkus Lake IR 28, Dykam Ranch, and the Tatelkuz Lake Southeast Recreation Reserve. Measures for the management of artificial light include:

- *Need*: Limit artificial light to the minimum required. Design the site so that security lights are unnecessary. Where they are necessary, extinguish security lights except when activated by motion detectors;
- *Direction*: All light should be directed only where it is needed, and any light escaping into other directions should be eliminated;
- *Intensity*: Lights should only be as bright as required for the specific operational need;
- *Duration*: Artificial lighting should only be used when required, reducing the effects of artificial light through automated timers and motion detectors; and
- *Spectrum*: Avoid using full spectrum light, which has blue and ultraviolet wavelengths that are more damaging to wildlife and insects.

Measures to mitigate colour/contrast issues:

- Re-vegetate with native vegetation and establish a composition consistent with the surrounding undisturbed landscape where necessary, when construction is within approximate line of sight of a known view point;
- Select and design materials to repeat and blend with landscape elements;
- Avoid installing gravel and pavement where possible to reduce color and texture contrasts with existing landscape;
- Paint or stain structures to blend with the colour and character of surroundings; and
- Use non-reflective or low-reflective coatings to blend with the Project's backdrop.

7.2.8.3.2.10 Site 10: Snake Lake

An isolated area of High recreation significance surrounds Snake Lake, south of the Kluskus-Messue FSR and Davidson Creek (**Photo 7.2.8-13**). Visibility in this area is constrained by forest cover to open areas adjacent to the lake.

Photo 7.2.8-13: Snake Lake

7.2.8.3.2.10.1 Potential Effects

Incidental views of the proposed transmission line and fresh water pipeline may be possible along the unmaintained logging road that provides access to the area (**Figure 7.2.8-7**). The dense forest cover and undulating terrain constrains viewing opportunities. Recreational users do not frequent the area according to local reports. Potential visual effects are considered to have a Low geographic extent with Low magnitude. The visual effects are therefore, considered Not Significant (negligible).

7.2.8.3.2.11 Site 11: Top Lake

An area of High recreation significance surrounds Top Lake (**Photo 7.2.8-14**). The recreation site includes two campgrounds. The Vanderhoof Access Management Plan allows for a low degree of motorized access. No VSUs are present in the area.

Photo 7.2.8-14: View from Top Lake toward the Fawnie Range (VP-03)

7.2.8.3.2.11.1 Potential Effects

As indicated in **Figure 7.2.8-17**, the mine site facilities will not be visible from the main vantage point at the recreation site as the Fawnie Range blocks the line of sight. However, due to its proximity to the mine site, artificial light may be a concern from this vantage point. The application of appropriate mitigation can minimize the effects of artificial light.

The visual effect of the mine site is considered Not Significant (negligible) from the Top Lake Recreation Site.

7.2.8.3.2.11.2 Mitigation

As the mine site is not visible from this location, mitigation need only focus on the effects of artificial light in the night sky to the southeast. These mitigation measures are documented for the Tatelkuz Lake site (Site 9) in **Section 7.2.8.3.2.9.2**.

7.2.8.3.2.12 Site 12: Mount Davidson

The Mount Davidson Peak Site is located immediately south of the mine site. Mount Davidson is one of the most prominent features within the viewscape and is visible from many vantage points. Much of the evaluation site is located at a high elevation and spans the boundary between the Upper Eutsuk Lake and Lower Nechako Reservoir regional watersheds (**Photo 7.2.8-15**).

Photo 7.2.8-15: View toward the West-facing Slopes of Mount Davidson (VP-05)

7.2.8.3.2.12.1 Potential Effects

The upper elevations of Mount Davidson are located in an area of High recreation significance, with the boundary of two watersheds dividing the area. The proposed mine site intersect with 114 ha of the northeast section of this area. West-facing slopes are relatively undisturbed by forestry activities, with only a few cut blocks visible at lower elevations. The management policies of the Laidman Lake RMZ (Vanderhoof LRMP) places the emphasis on multiple values that incorporates recreational land uses.

East-facing slopes are located in the Davidson Creek Resource Development Zone where the effects of forestry activity are very evident. A VSU with Low visual sensitivity is located along the northeast-facing slopes. This VSU was identified as it forms the backdrop of distant views from Tatelkuz Lake and the Laidman Lake region. The proposed mine site does not intersect this VSU however, it extends to its eastern boundary (**Figure 7.2.8-17**).

The area is located within an SPNM access designation only. Visitors to the area are not numerous and no locations were identified where users congregate. Although nearby, project facilities are only visible from the north-facing slope with the remainder of the area unaffected from a visual perspective.

As very few visitors frequent the north-facing slopes, the overall visual effect is considered to be Not Significant (negligible) within the Mount Davidson site.

7.2.8.3.2.13 Site 13: Kuyakuz Lake

Kuyakuz Lake surrounds the south-facing slopes of Kuyakuz Mountain at the south end of the Nechako Range. The Chedakuz Creek flows from its source on the east slopes of Kuyakuz Mountain into Kuyakuz Lake. Kuyakuz Lake connects with Tatelkuz Lake (**Photo 7.2.8-16**). The area is covered by a VSU with High sensitivity and is designated with Low recreation significance.

The Kuyakuz Lake Recreation Site is located on the south shores of the lake with numerous camping sites offering rustic facilities to recreational users. The Chedakuz Creek valley presents a viewscape toward the mine site to the west-northwest, flanked by the Nechako and Fawnie Mountain Ranges.

363000 366000 369000 372000 375000 378000

5901000 5898000 5895000 5892000

TOP LAKE SOUTH RECREATION SITE
Kluskus-Ootsa FSR
Top Lake
Fawnie Creek
Top Lake SPM
Turtle Creek
Lower Nechako Reservoir Regional Watershed
Davidson Creek SPNM
Tatelkuz Lake VSU EVQO - M, VAC - M
Tatelkuz Lake VSU EVQO - M, VAC - M
11 Top Lake
Kluskus-Malaput FSR
Creek 688328
Mine Site LSA
Davidson Creek
Fawnie Range
Fawnie FNR
Fawnie Creek
Creek 705
Lake 01428UEUT
Creek 704454
Lake 01682LNRS
Lake 01538UEUT
Vanderhoof RN/RM
Kluskus-Ootsa FSR
Tatelkuz Lake VSU EVQO - M, VAC - M
12 Mount Davidson
Upper Eutsuk Lake Regional Watershed
Mount Davidson SPNM
Mount Davidson 1856m
Mathews Creek
Euchiniko Lake Regional Watershed

N

Legend

- Blackwater Camp
- Local roads
- Logging Roads
- Vanderhoof Access Management Plan
- Regional Watersheds

Project Components

- Proposed Transmission Line
- Exploration Road
- Proposed Mine Site

Visual Resources

- Local Study Area
- Moderate Visual Sensitivity (VLI)
- Low Visual Sensitivity (VLI)
- High Recreation Significance (RFI)
- Recreation Site
- 13 Evaluation Sites

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Distance buffers (1km succession)

Viewshed Analyses (line of sight)

Tatelkuz Lake East Bank Locations

- Incorporating crown height of vegetation
- Based on terrain (masl)

Scale: 1:55,000

0 0.5 1 2 3

Kilometers

Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction with Project Activities (Top Lake, Mount Davidson)

DATE: March, 2014	ANALYST: WR	**Figure 7.2.8-17**
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-038_Vc11TopLake_v2.pdf
GIS FILE: 19-038_Vc11TopLake_v2.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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Photo 7.2.8-16: View from Kuyakuz Lake toward the Fawnie Range (VP-04)

7.2.8.3.2.13.1 Potential Effects

The Kuyakuz Lake Recreation site, situated along the Kluskus-Blue FSR, was included in the mine site RSA to apply a measure of rigour, despite its distant location from the mine site. The viewshed analysis generated during the Visual Resources Baseline Report indicated that line of sight occurs between the TSF and the Kuyakuz Lake Recreation Site (**Figure 7.2.8-18**). This potential interaction could occur at Year 17, when the Site D main dam of the TSF reaches its maximum height.

The baseline viewshed analysis did not incorporate vegetation cover. Subsequently, crown height of vegetation was taken into account, indicating that line of sight only occurs in a very small area south of the construction camp and south of the TSF at a distance of over 22 km. Visual effect on this site is therefore, considered Not Significant (negligible).

7.2.8.3.3 Mitigation

As demonstrated in the preceding sections, the potential effects on visual resources for each of the evaluation sites vary due to various factors. The mitigation measures have been included in each of the evaluation site discussions to address potential effects for that site and the identified type of effect.

368000 376000 384000 392000

5912000 5904000 5896000 5888000

Chedakuz Creek
Lower Nechako Reservoir Regional Watershed
Kluskus-Chedakuz FSR
Dykam Ranch
Kluskus-Ootsa FSR
TATELKUS LAKE RESERVE 28
Tatelkuz Airstrip
Tatelkuz Lake Ranch Resort
933m
Nechako Range
Tatelkuz Mountain 1611m
Fawnie Dome 1726m
Tatelkuz Lake
Tatelkuz Lake South East Recreation Reserve
Turtle Creek
Davidson Creek
Kluskus-Ootsa FSR
Top Lake
1097m
1387m
Snake Lake
1096m
1151m
Tatelkuz Lake South Recreation Reserve
1634m
Site D Main Dam
Kluskus-Messue FSR
Creek 661
1231m
Tailings Storage Facility
Site C Main Dam
1666m
1444m
1611m
Construction Camp
5km
10km
15km
20km
MESSUE WAGON ROAD
Chedakuz Creek
Kuyakuz Mountain 1734m
West Waste Rock Dump
East Waste Rock Dump
1668m
Open Pit
Fawnie Range
1767m
Mount Davidson 1856m
Upper Eutsuk Lake Regional Watershed
Euchiniko Lake Regional Watershed
Kuyakuz Lake
Kluskus-Blue FSR
Kuyakuz Lake Recreation Site

N

Legend

- Airstrip
- Homestead
- Lodge
- Restricted Access
- FSRs
- Logging Roads
- Recreation Trail
- Regional Watersheds
- Indian Reserves
- Private land

Project Components

- Forest Cutblocks
- Blackwater Camp
- Recreation Site
- Proposed Transmission Line
- Proposed Fresh Water Pipeline
- Exploration Road
- Proposed Mine Access Road
- Proposed Airstrip Access Road
- Airstrip Footprint
- Proposed Mine Site
- Proposed Site Facilities

Visual Resources

- Local Study Area
- Regional Study Area

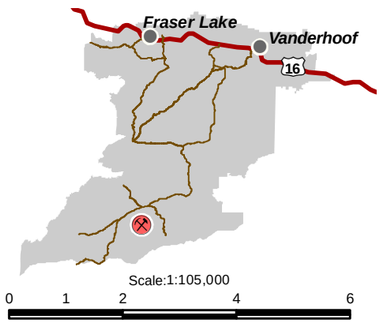
Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Distance buffers (1km succession)

Viewshed Analyses (line of sight)

- Incorporating crown height of vegetation
- Based on terrain (masl)



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Kilometres

Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Potential Interaction with Project Activities (Kuyakuz Lake)

DATE:	ANALYST:	
March, 2014	WR	**Figure 7.2.8-18**
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GIS FILE: 19-048_ViewshedKuyakuz_v3.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	

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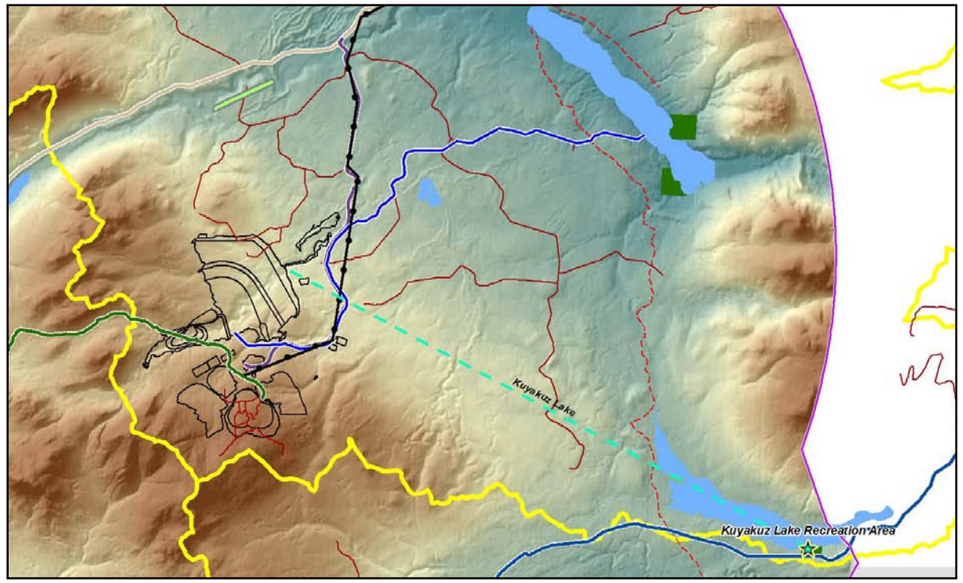
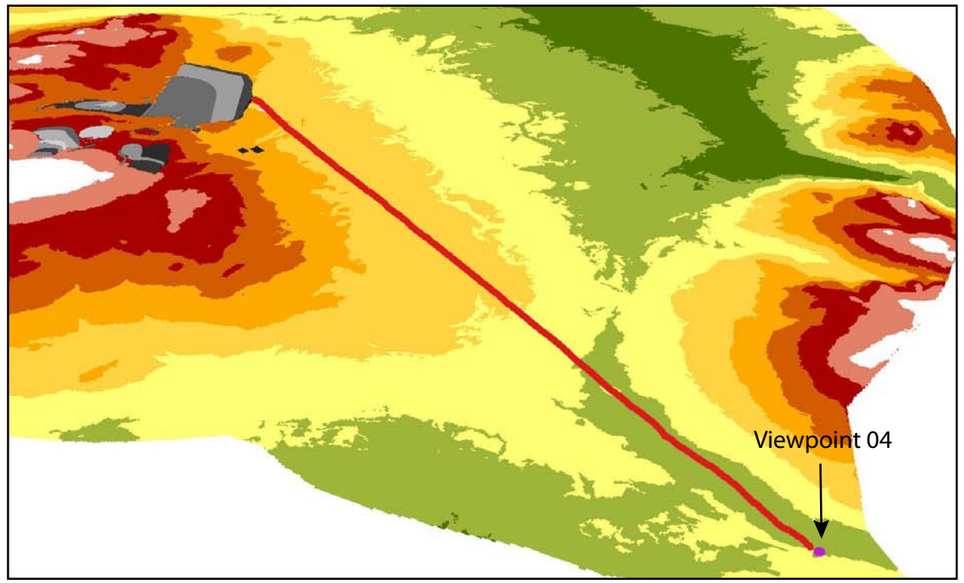
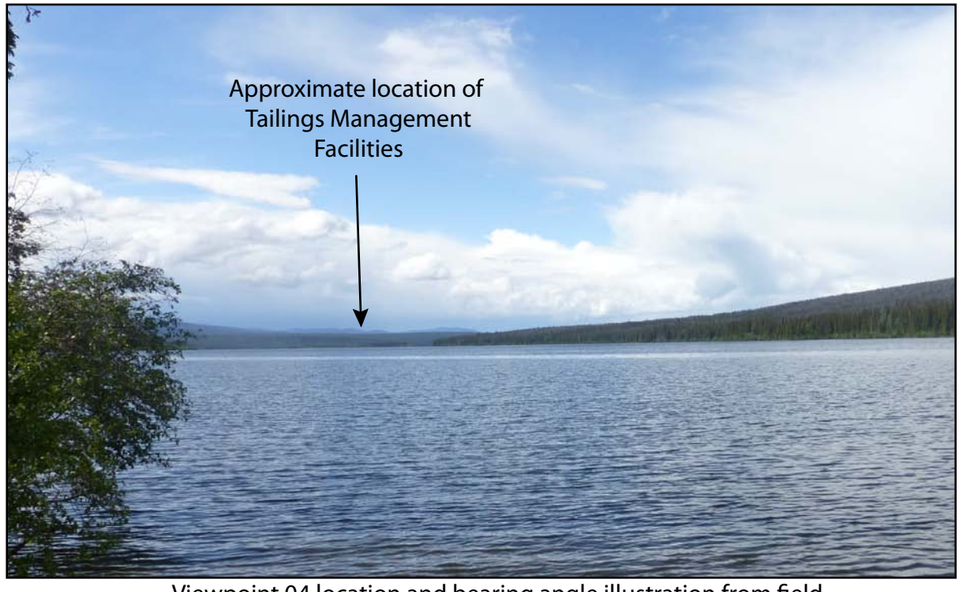


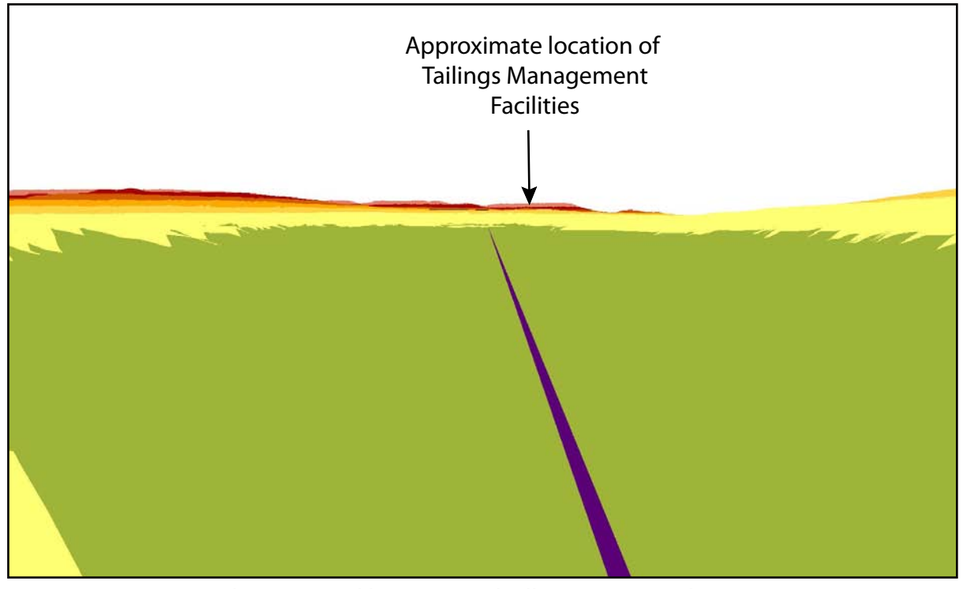
Viewpoint 04 location and bearing angle illustration in 2D View



Viewpoint 04 location and bearing angle illustration in 3D Arscene



Viewpoint 04 location and bearing angle illustration from field



Viewpoint 04 location and bearing angle illustration simulation in 3D Arcscene

CLIENT: newgold

AMEC Environment & Infrastructure
4445 Lougheed, Suite 600, Burnaby, B.C., V5C 0E4
Tel. 604-294-3811 Fax 604-294-4664

DWN BY:	MY
CHK'D BY:	AP
DATUM:	NAD83
PROJECTION:	UTM Zone 10
SCALE:	N/A

PROJECT: Blackwater Gold Project

TITLE: Viewpoint 04 from Kuyakuz Lake Towards Proposed Minesite

DATE:	July, 2012
PROJECT NO:	VE52277
REV. NO.:	A
FIGURE No.	7.2.8-19

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Table 7.2.8-10 provides ratings for effectiveness of mitigation measures to avoid or reduce potential effects on visual resources during mine site development. Mitigation measures will be based on site-specific information and construction engineering and are therefore preliminary at this stage.

Table 7.2.8-10: Mitigation Measures and Effectiveness of Mitigation to Avoid or Reduce Potential Effects on Visual Resources during Mine Site Development

Likely Project Effect	Project Phase	Mitigation/Enhancement Measure	Effectiveness of Mitigation Rating
Stellako River Crossing			
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Locate facilities near existing infrastructure to avoid additional surface disturbance	High
		Investigate site-specific measures and designs to soften visual effects from a river level vantage point, where structure might breach the natural ridgelines of the river valley	Moderate
		Allow grass and brush to colonize the ROW for sections in visually sensitive areas	High
		Paint or stain structures to blend with the character of the surrounding environment	High
		Investigate measures to soften the visual effects associated with overhead cables where the Stellako River flows underneath the proposed transmission line	Moderate
Nithi Mountain			
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Avoid placing facilities on ridgelines, summits, or other locations where they will be silhouetted against the sky from important viewing locations	Moderate
		Locate Project infrastructure to take advantage of both topography and vegetation as screening devices to restrict views of the structures from visually sensitive areas	High
		Allow grass and brush to colonize the ROW for sections in visually sensitive areas	High
Cheslatta Trail Crossing			
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Paint or stain structures to blend with the character of the surrounding environment	High
		Allow grass and brush to colonize the ROW for sections in visually sensitive areas	High
		Investigate measures to soften the visual effect of overhead cables where the Cheslatta Trail crosses underneath the transmission line	Moderate
Tahultzu Lake			
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Locate structures outside of the viewsheds of publicly accessible vantage points	High
		Locate facilities away from prominent landscape features where they might interrupt a natural line or edge	High
		Allow grass and brush to colonize the ROW for sections in visually sensitive areas	High
		Paint or stain structures to blend with the character of the surrounding environment	High
Nechako River Crossing			

Likely Project Effect	Project Phase	Mitigation/Enhancement Measure	Effectiveness of Mitigation Rating
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Develop site-specific measures and designs to soften visual effects where facilities breach the natural ridgelines of the Nechako River valley from a river-level vantage point	Moderate
		Allow grass and brush to colonize the ROW for sections in visually sensitive areas	High
Chief Gray Lake/Hobson Lake			
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Work collaboratively with the Vanderhoof Forest District to manage vegetation cover between the proposed transmission line and the Hobson Lake Recreation Site with care	Moderate
		Allow grass and brush to colonize the ROW for sections in visually sensitive areas	High
		Locate infrastructure to take advantage of both topography and vegetation as screening devices to restrict views of structures from visually sensitive areas	High
Brewster Lake			
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Maintain the transmission line outside of the viewshed of Brewster Lake Recreation Area	Moderate
		Locate facilities away from and not adjacent to prominent landscape features where they might interrupt a natural line or edge	High
		Allow grass and brush to colonize the ROW for sections in visually sensitive areas	High
		Communicate and integrate activities with resource managers currently managing the viewscape	Moderate
Chedakuz Lakes			
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Avoid additional surface disturbance by locating facilities along existing ROW, shared access, and other infrastructure (“brownfields” development)	High
		Minimize cut-and-fill disturbance and control erosion by avoiding steep slope, in particular when crossing the Nechako Range	Moderate
		Allow grass and brush to colonize the ROW for sections in visually sensitive areas	High
Tatelkuz Lake			
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Re-vegetate with native vegetation and establish a composition consistent with the surrounding undisturbed landscape where necessary, when construction is within approximate line of sight of a known view point	Moderate
		Select and design materials to repeat and blend with landscape elements	Moderate
		Avoid installing gravel and pavement where possible to reduce color and texture contrasts with existing landscape	Moderate
		Paint or stain structures to blend with the colour and character of surroundings	High
		Use non-reflective or low-reflective coatings to blend with the Project's backdrop	High
Snake Lake			

Likely Project Effect	Project Phase	Mitigation/Enhancement Measure	Effectiveness of Mitigation Rating
Effects on Visual Resources	Construction, Operations, Closure, Post-Closure	Re-vegetate with native vegetation and establish a composition consistent with the surrounding undisturbed landscape where necessary, when construction is within approximate line of sight of a known view point	Moderate
		Select and design materials to repeat and blend with landscape elements	Moderate
		Avoid installing gravel and pavement where possible to reduce color and texture contrasts with existing landscape	Moderate
		Paint or stain structures to blend with the colour and character of surroundings	High
		Use non-reflective or low-reflective coatings to blend with the Project's backdrop	High

In summary, low success rating means mitigation has not been proven successful, moderate success rating means mitigation has been proven successful elsewhere, and high success rating means mitigation has been proven effective. The effectiveness of mitigation measures is rated high for those mitigation measures that have been proven highly successful in other mining projects in similar settings. Moderate ratings are applied to those measures that are deemed successful in similar circumstances, but not necessarily mining developments.

7.2.8.4 Significance of Residual Effects

This subsection:

- Identifies and describes any residual effects after mitigation;
- Where residual adverse effects have been identified, provides an assessment of the significance of those residual effects considering context, magnitude, geographic extent, duration, reversibility, frequency;
- Assesses the likelihood of the effect;
- Assesses the significance of the residual effects; and
- Assesses/discusses the level of confidence and risk in the determination of significance and likelihood of the residual effect.

As indicated in **Table 7.2.8-11**, the significance of Residual Effects attributable to each site is considered Not Significant (negligible) with five exceptions. These exceptions are Site 1 Stellako River (Stellako River Crossing), Site 3 Cheslatta Trail (Recreation/Heritage Trail), (Site 7 (Brewster Lake); the Nechako River crossing point within Site 5; and three viewpoints within Site 9 (Tatelkus Lake IR 28, Tatelkuz Lake Southeast Recreation Site, and the Dykam Ranch).

Table 7.2.8-11: Summary of Residual Effects

Evaluation Site	Sensitive Receptor	Residual Effects
1. Stellako River	Stellako River Crossing	Yes
2. Nithi Mountain	Area of recreational significance	No
3. Cheslatta Trail	Recreation/Heritage Trail	Yes
4. Tahultzu Lake	Hallett Lake Recreation Site	No
5. Nechako River Valley	Greer Creek Recreation Site	No
	Nechako River Crossing Point	Yes
6. Chief Gray Lake/Hobson Lake	Chief Gray Lake, Hobson Lake Recreation Reserves	No
7. Brewster Lake	Brewster Lake Recreation Site	Yes
8. Chedakuz Lakes	Area of recreational significance	No
9. Tatelkuz Lake	Tatelkuz Lake Ranch Resort	No
	Tatelkuz Lake South Recreation Site	No
	Messue Wagon Road Trail	No
	Tatelkuz Lake Southeast Recreation Reserve	Yes
	Dykam Ranch	Yes
	Tatelkus Lake IR 28	Yes
10. Snake Lake	Area of recreational significance	No
11. Top Lake	Top Lake Recreation Site	No
12. Mount Davidson	Area of recreational significance	No
13. Kuyakuz Lake	Kuyakuz Lake Recreation Site	No

Table 7.2.8-12 and **Table 7.2.8-13** summarize the rating criteria that guide the evaluation of potential Project effects for social and economic VCs. Effects were considered to occur when Project components were within line of sight of sensitive receptors. The Effects Assessment took into account the magnitude, geographic extent, duration, frequency, and reversibility of effects.

Table 7.2.8-12: Characterization of Residual Effects

Significance	Criteria	Scale
Magnitude	Influenced by height, shape and size, proximity to viewpoint, and land use objectives.	• Negligible—cannot be captured by the human eye • Low—visible but distant or partially obscured • Medium—visible but distant • High—proximate, highly visible
Geographic Extent	The area over which the expected impact is likely to occur	• Site-specific • Local • Regional
Duration	Length of time the effect lasts. (life span of the project and resultant effect)	• Short-term—construction phase • Medium-term • Long-term—operations and closure • Chronic—post-closure
Frequency	How often an effect is expected to occur.	• Once • Intermittent—several times • Continuous
Reversibility	Ability of conditions to return to original state once the stressor is removed.	• Reversible • Permanent

Table 7.2.8-13: Significance of Residual Effects

Significance	Criteria
Not Significant (negligible)	Effects are point-like or local in geographic extent, have a low context rating, have a negligible magnitude, are short-term, are reversible, and have a low frequency (once or intermittent).
Not Significant (minor)	Effects are local in geographic extent, have a low context rating, have a low magnitude, are short-term to chronic, are reversible, and have a low frequency (once or intermittent).
Not Significant (moderate)	Effects are local to regional in geographic extent, have a medium context rating, are medium in magnitude, are medium-term to chronic, are reversible, and occur at all frequencies.
Significant	Effects are regional in geographic extent, have a medium to high context, have high magnitude, are long-term to chronic, are non-reversible, and occur at all frequencies.

The significance determination and certainty are summarized in **Table 7.2.8-14** for the five sensitive receptors taken through to the Residual Effects and Cumulative Effects Assessment. Effects resulting from the proposed transmission line are considered reversible as the structure will be removed after the active life span of the Project (27 years).

The Visual Effects Assessment was carried out using a rigorous and scientifically defensible methodology. Professional judgement was applied sparingly due to the robust available background information, clear land use planning objectives, and effective modelling tools. Project effects determination pursuant to this methodology yielded significance determinations for each of the sites that are likely and that can be assessed with high confidence.

Table 7.2.8-14: Summary of Significance of Residual Effects

Evaluation Site	Sensitive Receptor	Criteria						Likelihood Determination	Level of Confidence for Likelihood	Significance Determination	Level of Confidence for Significance
		Context	Magnitude	Geographic Extent	Duration	Frequency	Reversibility				
1. Stellako River	Stellako River Crossing Point	Neutral	Medium	Local	Long- term	Intermittent	Yes	High	High	Not Significant (moderate)	High
3 Cheslatta Trail	Cheslatta Trail Crossing Point	Neutral	Low	Local	Long- term	Intermittent	Yes	High	High	Not Significant (minor)	High
5. Nechako River Valley	Nechako River Crossing Point	Neutral	Medium	Local	Long- term	Intermittent	Yes	High	High	Not Significant (moderate)	High
7. Brewster Lake	Brewster Lake Recreation Site	Neutral	Low	Local	Long- term	Intermittent	Yes	Low	High	Not Significant (minor)	Moderate
9. Tatelkuz Lake	Tatelkuz Lake Southeast Recreation Reserve	Neutral	Medium	Local	Chronic (permanent)	Continuous	No	Moderate	Moderate	Not Significant (moderate)	Moderate
	Dykam Ranch	Neutral	Medium	Local	Chronic (permanent)	Frequent	No	Moderate	Moderate	Not Significant (moderate)	Moderate
	Tatelkus Lake IR 28	Neutral	Medium	Local	Chronic (permanent)	Frequent	No	Moderate	Moderate	Not Significant (moderate)	Moderate

7.2.8.5 Cumulative Effects

This subsection determines the need for assessing cumulative effects, and identifies and assesses potential cumulative effects.

A cumulative effect occurs if a residual effect of the Project, with a higher significance determination than Not Significant (negligible), overlaps spatially with known or likely residual effects of one or more current or future projects or human activities identified in the Project Inclusion List.

Forestry activities generate the most effects on visual resources. Forestry activities account for approximately 95% of the spatial overlap with visual resources within the RSA. For consideration of cumulative effects, this assessment includes retired, operational, and planned cut blocks connected by main FSRs and logging roads throughout the Visual Resources RSAs.

One operational mine (i.e., Endako Molybdenum) falls within the transmission line RSA. Prospecting activities are taking place in various mineral tenures in the Fawnie Range, within the mine site RSA. Agricultural activities occur in the Nechako Agricultural Land Reserve decreasing in density to the south. **Table 7.2.8-15** summarizes the spatial overlap with the Visual Resources RSAs:

Table 7.2.8-15: Spatial Overlap by Project/Activity in the Visual Resources RSAs

Project	Spatial Overlap with Visual Resources RSAs	Amount of Overlap (ha)
Agricultural activities	Yes	3,214
Mining activities	Yes	1,978 [(a)]
Forestry activities	Yes	89,626
Forestry roads	Yes	3,729
Total		**103,001**

Note: ha = hectare
[(a)] Current prospecting = 205 ha, Quarries = 452 ha, Active Mining = 1,978 ha

7.2.8.5.1 Interactions between the Visual Resources VC and other Past, Present, or Future Projects/Activities

A total of 2,050 hectares (ha) of other projects and human activities overlap spatially with the residual effects of the Project. Forestry related impacts accounts for approximately 92% of the spatial overlap with visual resources (**Table 7.2.8-15**). Cumulative effects were evaluated for residual effects along the transmission line route at the Stellako River, Cheslatta Trail, and Nechako River crossing points, and Brewster Lake.

Cumulative effects were evaluated within the mine site at three locations along the east bank of Tatelkuz Lake (**Table 7.2.8-16** and **Figure 7.2.8-20** to **Figure 7.2.8-24**).

Table 7.2.8-16: Spatial Overlap by Project/Activity for Residual Effects Higher than Not Significant (Negligible)

Evaluation Site	Sensitive Receptor	Residual Effect	Agriculture	Forestry	Mining	Total Overlap (ha)
1. Stellako River	Stellako River Crossing Point	Not Significant (moderate)	0	65	0	65
3 Cheslatta Trail	Cheslatta Trail Crossing Point	Not Significant (minor)	0	49	0	49
5. Nechako River Valley	Nechako River Crossing Point	Not Significant (moderate)	0	10	0	10
7. Brewster Lake	Brewster Lake Recreation Site	Not Significant (minor)	0	493	0	493
9. Tatelkuz Lake	Dykam Ranch; Tatelkuz Lake IR 28; Tatelkuz Lake Southeast Recreation Reserve	Not Significant (moderate)	69	1,288	76	1,433
Total						**2,050**

Note: ha = hectares

7.2.8.5.2 Mitigation Measures and Potential Residual Cumulative Effects

There has been extensive forestry harvesting in the region since the MPB outbreak. The primary means to mitigate future forestry related impacts will be by continuing to follow forest harvest guidelines, including insect and disease management and reforestation.

With respect to agriculture, there is an overlap from the Tatelkus Lake IR 28 viewpoint of the Mills Ranch. The Tatelkuz Lake evaluation site was brought forward to Cumulative Effects Assessment because it was determined that the residual effect on visual resources was rated Not Significant (moderate). The Project Visual Resource Assessment was undertaken in the context of the presence of the Mills Ranch within the viewshed. As such, no additional cumulative visual effect is expected and no mitigation is proposed or required.

Current and future mining activities primarily focus on exploratory drilling and supporting access infrastructure concentrated within the Davidson Creek basin. These mining activities may be visible from the Tatelkuz Lake evaluation sites. However, they are highly localized disturbance sources located in excess of 15 km from any of the viewpoints. As such, visibility of these activities from the three viewpoints along the east bank of Tatelkuz Lake is considered to be obscured and no mitigation is proposed.

7.2.8.5.3 Significance of Potential Residual Cumulative Effects

The interaction between residual effects and other human interactions at the Stellako River Crossing comprises forestry activities. This interaction occurs with cut blocks and logging roads over 65 ha (Cut blocks - Future 64 ha, Logging Roads: 1 ha) with two forest cut blocks on the west bank of the river. Magnitude is Low given the small size of the overlap with a Local geographic

extent and Intermittent frequency. The effects are reversible when the transmission line is removed. When Project effects are considered, the cumulative significance determination is Not Significant (minor). The interaction between residual effects and other human interactions at the Cheslatta Trail Crossing comprises forestry activities. This interaction occurs with cut blocks and logging roads over 49 ha (Cut blocks: Present 41 ha; Logging Roads: 8 ha) with forest cut blocks east of the trail. Magnitude is Low given the small size of the overlap with a Local geographic extent and Intermittent frequency. The effects are reversible when the transmission line is removed. When Project effects are considered, the cumulative significance determination is Not Significant (minor).

The interaction between residual effects and other human interactions at the Nechako River Crossing comprises forestry activities. This interaction occurs over 10 ha (Cut blocks: Future 3 ha; Logging Roads: 7 ha) with two forest cut blocks on the east bank of the river. Magnitude is Low given the small size of the overlap with a Local geographic extent and Intermittent frequency. The effects are reversible when the transmission line is removed. When Project effects are considered, the cumulative significance determination is Not Significant (negligible).

The interaction between residual effects and other human interactions at the Brewster Lake Recreation Site is also with forestry activities. This interaction occurs over 493 ha (Cutblocks: Past 13 ha, Present 381 ha, Future 86 ha; and Logging Roads: 13 ha) with various forest cut blocks surrounding the site. This interaction occurs mostly at a distance of greater than 2 km along the slopes of the Nechako Range. Magnitude is therefore, Low with a Local geographic extent, as the cumulative effects are visible but distant. When Project effects are considered, the cumulative significance determination is Not Significant (minor).

The interaction between residual effects and other human interactions from sensitive receptors along the east bank of Tatelkuz Lake is with agriculture, forestry, and mining activities. This interaction comprises approximately 1,433 ha (Cutblocks: Past 159 ha, Present 671 ha, Future 421 ha; and Logging Roads: 37 ha), with numerous forest cut blocks within the Davidson Creek basin, one extensive agriculture tenure (Mills Ranch), and the footprint of prospecting drill holes and tracks along the slopes of the Fawnie Range.

Viewsheds for Dykam Ranch, Tatelkus Lake IR 28 and the Tatelkuz Lake South East Recreation Reserves sites are comparable due to their position on the west slopes of the Nechako Range, facing the east slopes of the Fawnie Range. The most visually prominent components of the mine site (open pit, waste rock dumps) will be visible, adding to the current disturbance within the viewsheds of the three sites. However, disturbance is incremental to current activities that are closer to the viewpoint. Although the visible extent of the mine site is relatively large and prominent due to elevation, it is distant at approximately 15 km.

Magnitude is Medium due to the facilities being visible but distant. Geographic extent is Local as effects are within the Mine Site LSA. Duration, Frequency, Reversibility, and Certainty are similar to the ratings as determined by the Residual Effects Assessment. When Project effects are considered, the cumulative significance determination is Not Significant (moderate). The summary of cumulative effects is presented in **Table 7.2.8-17**.

Table 7.2.8-17: Summary of Significance of Cumulative Effects

Evaluation Site	Sensitive Receptor	Criteria						Likelihood Determination	**Level of Confidence for Likelihood**	Significance Determination	**Level of Confidence for** Significance
		Context	Magnitude	Geographic Extent	Duration	Frequency	Reversibility				
1. Stellako River	Stellako River Crossing Point	Neutral	Low	Local	Long- term	Intermittent	Yes	High	High	Not Significant (minor)	Moderate
3 Cheslatta Trail	Cheslatta Trail Crossing Point	Neutral	Low	Local	Long- term	Intermittent	Yes	High	High	Not Significant (minor)	Moderate
5. Nechako River Valley	Nechako River Crossing Point	Neutral	Low	Local	Long- term	Intermittent	Yes	High	High	Not Significant (minor)	Moderate
7. Brewster Lake	Brewster Lake Recreation Site	Neutral	Low	Local	Long- term	Intermittent	Yes	Moderate	Moderate	Not Significant (minor)	Low
9. Tatelkuz Lake	Tatelkuz Lake Southeast Recreation Reserve	Neutral	Medium	Local	Chronic (permanent)	Continuous	No	High	High	Not Significant (moderate)	High
	Dykam Ranch	Neutral	Medium	Local	Chronic (permanent)	Frequent	No	High	High	Not Significant (moderate)	High
	Tatelkuz Lake IR 28	Neutral	Medium	Local	Chronic (permanent)	Frequent	No	High	High	Not Significant (moderate)	High

368000 370000 372000 374000 376000

5992000 5990000 5988000 5986000

Endako Mine Road

Stellako Alternative Route

Stellako River Wildlife Management Area

Stellako River

STELLAQUO 1

Fraser Lake

16

Stellako River crossing

Francois Lake Road

Mudhole Creek

Stellako River Wildlife Management Area

Nithi Rd

Francois Lake

N

Legend

- Highway
- Railway
- Existing Transmission Line
- Logging Roads
- Private Land
- Indian Reserves
- Recreation Site

Project Components

- Proposed Transmission Line

AGRICULTURE

- Agricultural Land Reserve

Crown Tenure Purpose

- Extensive

FORESTRY

- Cutblocks and woodlots
- Logging Roads (ROW)

MINING

Mining Activities

- Quarries (Tenure Purpose)

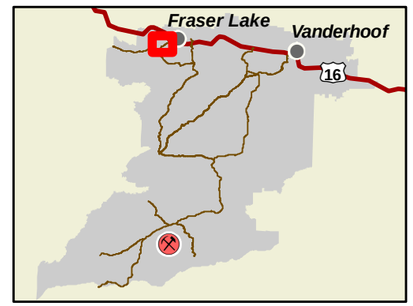
VISUAL RESOURCES

- Local Study Area

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Line of sight with project components



Scale: 1:30,000

0 250 500 1000 1500

Meters

Reference

BC Government GeoBC Data Distribution

CLIENT: newgold

PROJECT: Blackwater Gold Project

Projects and Human Activities Included in the Cumulative Effects Assessment - (Stellako River Crossing)

DATE:	ANALYST:	
March, 2014	WR	**Figure 7.2.8-20**
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-070_StellakoCE.pdf
GIS FILE: 19-070_StellakoCE.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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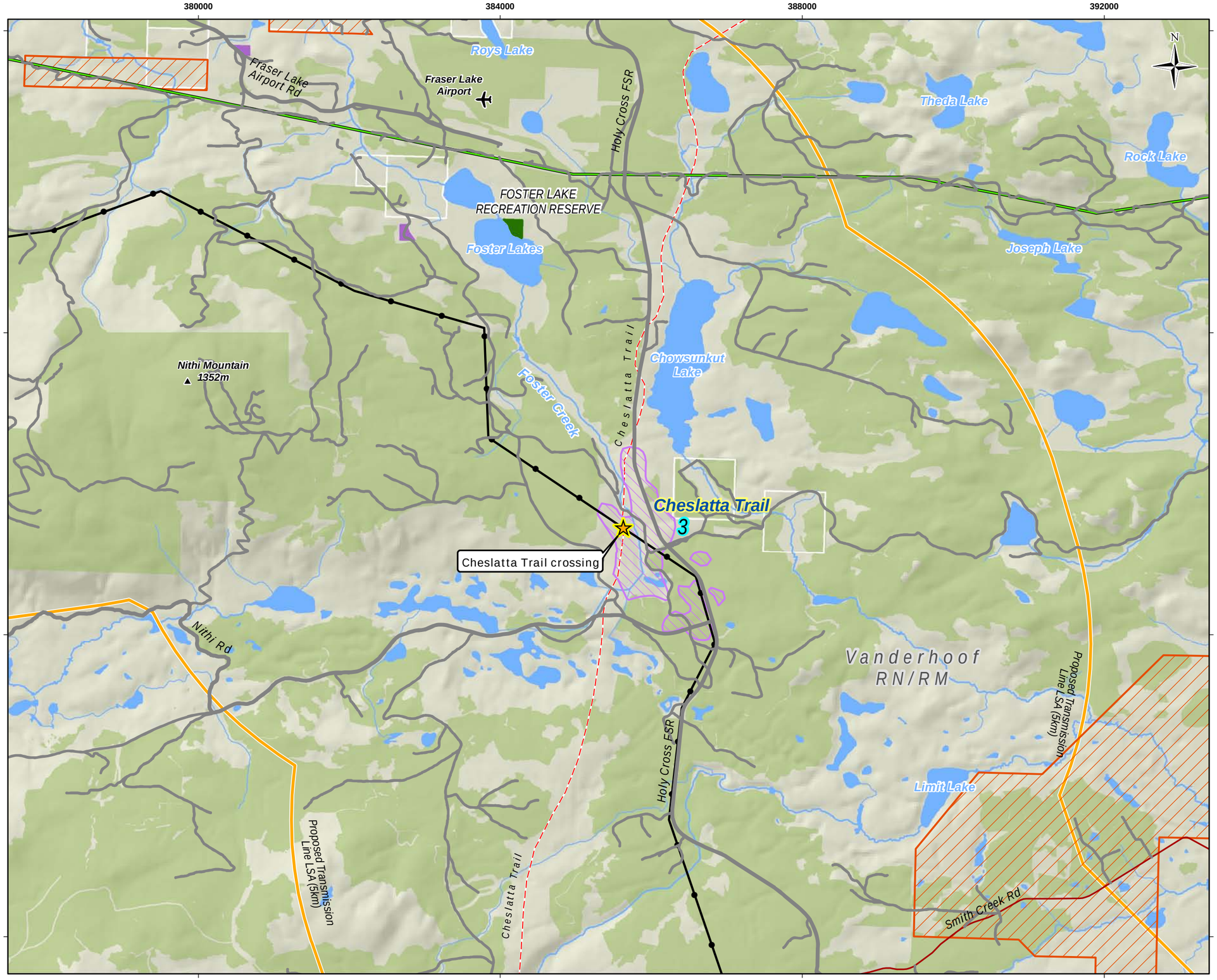


Legend

- Airport
- Existing Transmission Line
- Local roads
- Recreation Trail
- Recreation Site
- Private land
- Forest Cutblocks

Project Components

- Proposed Transmission Line

Visual Resources

- Local Study Area

AGRICULTURE

- Nechako Valley Agricultural Land Reserve

FORESTRY

- Cutblocks and woodlots
- Logging Roads (ROW)

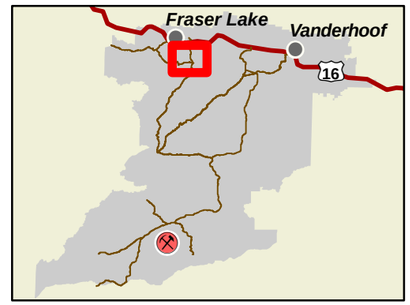
MINING

- Quarries (Tenure Purpose)

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Line of sight with project components



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0 0.5 1 2 3

Kilometers

Reference

BC Government GeoBC Data Distribution

CLIENT: newgold

PROJECT: Blackwater Gold Project

Projects and Human Activities Included in the Cumulative Effects Assessment - (Cheslatta Trail Crossing)

DATE:	ANALYST:	
March, 2014	WR	**Figure 7.2.8-21**
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-069_CheslattaCE.pdf
GIS FILE: 19-069_CheslattaCE.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

Y:\GIS\Projects\VE\VE52095 Richfield BlackwaterMapping\19 Visual Aesthics\EA\19-069_CheslattaCE.mxd

384000 388000 392000 396000 400000

5972000 5968000 5964000 5960000

Holy Cross FSR
Fifteen Creek
Lily Lake Rd
N
Norman Lake
Nechako River
Nechako River Canoe Trail
Laurence Lake
Tahuizu Lake
Mount Greer 1247m
HALLETT LAKE RECREATION SITE
Hallett Lake
Crystal Lake Cabins
Kenney Dam Rd
Greer Creek
Hallet Lake VSU EVQO - PR
True Triangle Lake
Proposed Transmission Line LSA (5km)
Harlow Lake
Bungalow Lake
Nechako River crossing
Lorne Lake
GREER CREEK RECREATION SITE
Nechako Retreat

Legend

- Recreation lodge
- FSRs
- Logging Roads
- Private Land
- Recreation Site

Project Components

- Proposed Transmission Line

AGRICULTURE

- Agricultural Land Reserve

FORESTRY

- Cutblocks and woodlots
- Logging Roads (ROW)

MINING

Mining Activities

- Quarries (Tenure Purpose)

VISUAL RESOURCES

- Local Study Area

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Line of sight with project components

16

Scale: 1:67,000

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Kilometers

Reference

BC Government GeoBC Data Distribution

CLIENT: newgold

PROJECT: Blackwater Gold Project

Projects and Human Activities Included in the Cumulative Effects Assessment - (Nechako River Crossing)

DATE: March, 2014	ANALYST: WR	**Figure 7.2.8-22**
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-061_CEnechakoCross.pdf
GIS FILE: 19-061_CEnechakoCross.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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393000 396000 399000 402000

5925000 5922000 5919000 5916000

Kluskus FSR

Euchiniko River

Proposed Transmission Line LSA (5km)

Big Bend Creek

BREWSTER LAKE RECREATION SITE

Brewster Lakes

Esker Creek

Kluskus FSR

Goose Lake

Proposed Transmission Line LSA (5km)

Kluskus-Euchino

Nechako Range

N

Legend

- Kluskus FSR
- Logging Roads
- Recreation Site
- Forest Cutblocks
- Logging Roads (ROW)

Project Components

- Proposed Transmission Line

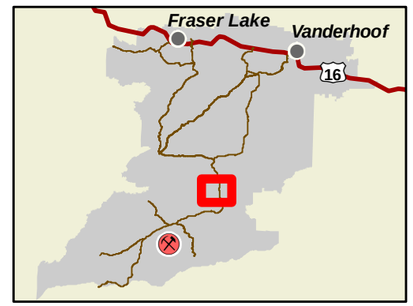
Visual Resources

- Local Study Area

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Line of sight with project components



Scale: 1:44,000

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Kilometers

Reference

BC Government GeoBC Data Distribution

CLIENT: newgold

PROJECT: Blackwater Gold Project

Projects and Human Activities Included in the Cumulative Effects Assessment - (Brewster Lake)

DATE: March, 2014	ANALYST: WR	**Figure 7.2.8-23**
JOB No: VE52277	QA/QC: MY	PDF FILE: 19-063_CEbrewster.pdf
GIS FILE: 19-063_CEbrewster.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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368000 376000 384000 392000

5912000 5904000 5896000 5888000

Chedakuz Creek
Dykam Ranch Farmstead
Kluskus-Ootsa FSR
Kluskus-Chedakuz FSR
Tatelkuz Airstrip
TATELKUS LAKE RESERVE 28
Tatelkuz Lake Reserve Cabin
Tatelkuz Lake Ranch Resort
933m
Tatelkuz Mountain 1611m
Tatelkuz Lake
Nechako Range
Fawnie Dome 1726m
Turtle Creek
Davidson Creek
Tatelkuz Lake South East Recreation Reserve
Top Lake
1097m
1387m
Snake Lake
1096m
1151m
Tatelkuz Lake South Recreation Reserve
1634m
Site D Main Dam
Kluskus-Messue FSR
Creek 661
1231m
Tailings Storage Facility
Site C Main Dam
1666m
1444m
Construction Camp
1611m
West Waste Rock Dump
East Waste Rock Dump
1668m
Open Pit
Fawnie Range
1767m
Mount Davidson 1856m
MESSUE WAGON ROAD
Chedakuz Creek
Kuyakuz Mountain 1734m
Kuyakuz Lake
Kuyakuz Lake Recreation Site
Kluskus-Blue FSR

N

Legend

- Restricted Access
- Recreation Trail
- Indian Reserves
- Private land
- Recreation Site

Project Components

- Blackwater Camp
- Proposed Transmission Line
- Proposed Fresh Water Pipeline
- Exploration Road
- Proposed Mine Access Road
- Proposed Airstrip Access Road
- Airstrip Footprint
- Proposed Mine Site
- Proposed Site Facilities

Visual Resources

- Local Study Area
- Regional Study Area

AGRICULTURE

- Agricultural Land Reserve

Crown Tenure Purpose

- Extensive
- Intensive

FORESTRY

- Cutblocks and woodlots
- Logging Roads (ROW)

MINING

Mining Activities

- Current Prospecting
- Quarries (Tenure Purpose)

Visual Resources Effects Assessment

Residual Effects

- Not Significant (moderate)
- Not Significant (minor)
- Not Significant (negligible)
- Line of sight with project components

Scale: 1:105,000

0 1 2 4 6

Kilometres

Reference

BC Government GeoBC Data Distribution: Context layers
BC Ministry of Forests, Lands and Natural Resource Operations: Visual Landscape Inventory, Recreation Features Inventory
BC Ministry of Community, Sport and Cultural Development: Recreation Sites and Trails BC

CLIENT: newgold

PROJECT: Blackwater Gold Project

Projects and Human Activities Included in the Cumulative Effects Assessment - (Tatelkuz Lake East Bank)

DATE:	ANALYST:	**Figure 7.2.8-24**
March, 2014	WR	
JOB No: VE52095	QA/QC: SB	PDF FILE: 19-062_CEtatelkuz.pdf
GIS FILE: 19-062_CEtatelkuz.mxd		
PROJECTION: UTM Zone 10	DATUM: NAD83	amec

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7.2.8.6 Limitations

The assumptions and limitations relative to the assessment of Project effects and the assessment of cumulative effects are:

- There are inherent limitations associated with the use of viewshed modelling, such as the overestimation of visible areas. However, the inclusion of vegetation height and conservative methods addressed these potential limitations;
- There are no regulations in BC that specifically govern the effects of mine development on visual resources, nor are there any established procedures prescribing how to evaluate the Potential Effects of mine development on visual resources;
- The VLI and RFI data layers are specific to forest harvesting and may not account for all landscape features rated by the public as significant and sensitive in terms of recreation and scenery. However, stakeholder feedback on visual resources was incorporated into the assessment; and
- The resolution of the raster data was ±30 m, which is considered optimal for the dimensions of the study areas.

7.2.8.7 Conclusion

This subsection provides a conclusion regarding the significance of residual effects and cumulative effects.

Potential effects of the Project were assessed within the context of the regional topography, existing land use plans, available recreation and scenic inventories, and current land uses and their resultant impacts on scenic quality. The VFD is strongly influenced by silviculture practices with forest cut blocks altering the natural setting in most viewscapes within the Visual Resources study areas. Scenic areas, as identified by the VLI, are less affected and represent remaining high value visual resources. Recreation sites are consistently located within these scenic areas where scenic quality is maintained through integrated resource management and planning.

The assessment focused on thirteen evaluation sites where the Project may interact with visual resources. Within these sites, high recreational significance and moderate to very high visual sensitivity overlapped with locations where users and residents were expected to congregate. Effects were considered to occur when Project components are within line of sight of these sensitive receptors. After consideration of mitigation measures embedded in the project design, clear and efficient measures were proposed to mitigate significant adverse effects of the project.

The Effects Assessment took into account the magnitude, geographic extent, duration, frequency, and reversibility of effects to determine the significance of Residual Effects attributable to each site. Effects were considered Not Significant (negligible) at the Endako and Francois Lake road crossing points and at Tahultzu Lake, Chief Grey Lake, Hobson Lake, Chedakuz Lake, Top Lake, Snake Lake, and Kuyakuz Lake.

Effects were considered Not Significant (minor) at the Cheslatta Trail crossing point and Brewster Lake, and Not Significant (moderate) at the Stellako and Nechako River crossing points and Tatelkuz Lake east bank locations. The Stellako River crossing point is considered to be Not Significant (negligible) if the reroute along the existing transmission lines is selected.

Cumulative effects were assessed for evaluation sites rating higher than Not Significant (negligible). Brewster Lake and the Stellako River, Nechako River and Cheslatta Trail crossing points, received a cumulative effects rating of Not Significant (minor). Cumulative effects at the Tatelkuz Lake east bank locations are considered to be Not Significant (moderate).