Lhoosk'uz Dené Nation and Ulkatcho First Nation

Part C

Blackwater Gold Mine Project (Blackwater)

May 10, 2019

Written and compiled by Keefer Ecological Services Ltd.

Table of Contents

List of Figures

List of Appendices

Acknowledgements

Our team would like to acknowledge that this Part C document would not have been possible without the contributions of a wide number of individuals and organizations. Community members of both LDN and UFN have been very patient in their attempts to understand the intricacies of this major mining project's impacts on the environment, wildlife and their communities, both in terms of social and economic impacts. This interaction with the community allowed the technical review team to speak with the authoritative voices of the community in the development of this document, Working Group meetings, as well as throughout the condition development process. The political leadership of both Nations have also been highly engaged and have been subjected to numerous highly technical discussions with the Working Groups, allowing them to appreciate the complexities of this Project and to understand the significance of their potential support of the Project. Technical staff in both communities have been dedicated to the work and have provided critical insight, helped organize many meetings, and despite this process ending close to 2 years longer than the anticipated 180-day review period, made it to the end. Staff and contractors with Keefer Ecological Services have had to put other projects to the side in order to ensure that this project maintained focus and that the vast array of technical issues were brought to light and addressed as best as possible.

We would also like to acknowledge the work of staff from the BC Environmental Assessment Office, other BC Ministries, the Canadian Environmental Assessment Agency, Canadian Wildlife Service, and others within government. This collaborative process has strengthened the voices of our communities and has provided our Nations with a new ability to govern the natural resources within our traditional territories. Leadership, staff and contractors associated with the Carrier Sekani Frist Nation have also helped to produce a better project.

Jessica Lowey, MSc, AAg, of Keefer Ecological Services has worked tirelessly on drafting this document with key assistance from Michael Keefer, Neil Gauthreau, Daryl Sulin, Laurie Vaughan, Nadine Charlieboy, June Baptiste, Aaron Bruce, Jason Murray, among others. Our Nations are grateful for the opportunity to express our views on the impacts associated with the proposed Blackwater Gold project.

Executive Summary

The Dakelh people are the original inhabitants of the north-central region of British Columbia; they occupy the areas between the Coast Mountains in the west and the Rocky Mountains in the east, from Takla Lake in the north, south to the Chilcotin plateau (Furniss, 1993a). The Dakelh people organize their way of life to fit the local environment which is rich with fish, animals and plant foods through the development of a mobile hunting, fishing and gathering lifestyle (Furniss, 1993a). The language spoken by the Dakelh people, despite regional dialect differences, is part of the Athabascan language group which includes cultures stretching from Alaska to Nevada (Furniss, 1993a). The Dakelh people are often referred to as Carrier, although this non-traditional name only became widespread after the arrival of the Europeans in this area (Furniss, 1993a). The Ulkatcho First Nation (UFN) and Lhoosk'uz Dené Nation (LDN) are considered southern Dakelh bands (Furniss, 1993a).

Both of our Nations traditionally govern our respective territories using the same system that existed before contact with the European settlers and fur traders in the early 1700s. The *keyoh* system (or *keyah* in Ulkatcho dialect) is synonymous with a family territory or trapline (Dewhirst, 2013). Each family group, or *sadeku*, has its own *keyoh* that not only acted as a source of commercial furs in the 19th century and to a lesser extent today, but also acts as the main source of food for the *sadeku* (Dewhirst, 2013). Members of our communities still actively practice and depend on the hunting and gathering lifestyle refined by our ancestors, acquiring many important resources from the land within our traditional territories (personal communication, UFN Band member, April, 2017). The health of the land, water and wildlife are of paramount importance in preserving and maintaining this way of life and traditional land use. The southern Dakelh people understand the importance of respecting the spirits of the animals, trees, water, rocks and all other things that inhabit the land; respect which is shown by living according to traditional standards (Furniss, 1993a). The members of our communities understand the importance of acting as caretakers of the land from Elder teachings, and to not over-harvest or waste the resources needed for our survival (personal communication, UFN Band member, April, 2017).

Mount Davidson, the location of the proposed mine site, is one of many sacred sites identified by our community members. Not only does Mount Davidson hold traditional healing powers (personal communication, LDN Band member, April, 2017), but it is also an important hunting and berry picking site (personal communications, LDN and UFN Band members, April and May, 2017). The potential impacts on our health values are both actual and perceived, as varying opinions exist as to whether the New Gold's (the Proponent) mitigation measures will be sufficient to ensure the lasting health of the

land, water, wildlife and people within our traditional territories. Each of our community health values are interconnected, and as a result, an impact to one value results in resounding impacts throughout each of our values. Our Nations expressed that Aboriginal rights are often framed as a stand-alone activity or a practice in a standard EA process. Although this is an element of what the Project may impact, it is not necessarily the whole story. While hunting, fishing, and gathering are integral to our members' sustenance, the overall health of the people is dependent on many different factors that are both tangible and intangible in nature.

Our Nations, the Canadian Environmental Assessment Agency (CEAA), and BC's Environmental Assessment Office (EAO) worked collaboratively to develop a methodology for the assessment of impacts of the Project on Aboriginal interests, including rights and title as defined under section 35 of the *Constitution Act, 1982*.

In evaluating the severity of impact to health values of a biophysical nature (health of land, water, aquatic life, air, and wildlife) we used a framework that utilized a variety of indicators: extent, duration/frequency/reversibility, cultural integrity, regional/historic/cumulative effects, stewardship/nationhood, impact inequity, and mitigation/accommodation measures (including Federal and Provincial conditions). Using this framework, our Nations reached our conclusions on a scale from low, moderate, high (but acceptable), to extreme (not acceptable) impact on the health of land, water, aquatic life, air, and wildlife. For the non-biophysical health values (culture and language, spirituality, economy and governance), a general conclusion was reached on whether the effects of the Project would be positive or negative for our Nations.

1. Collaborative Assessment of the Project

1.1. Who we are: Lhoosk'uz Dené Nation & Ulkatcho First Nation

The Dakelh people are the original inhabitants of the north-central region of British Columbia; they occupy the areas between the Coast Mountains in the west and the Rocky Mountains in the east, from Takla Lake in the north, south to the Chilcotin plateau (Furniss, 1993a). The Dakelh people organize their way of life to fit the local environment which was rich with fish, animals and plant foods through the development of a mobile hunting, fishing and gathering lifestyle (Furniss, 1993a). The language spoken by the Dakelh people, despite regional dialect differences, is part of the Athabascan language group which includes cultures stretching from Alaska to Nevada (Furniss, 1993a). The Dakelh people are often referred to as Carrier, although this non-traditional name only became widespread after the arrival of the Europeans in this area (Furniss, 1993a). The Ulkatcho First Nation (UFN) and Lhoosk'uz Dené Nation (LDN) are considered southern Dakelh bands (Furniss, 1993a).

The Ulkatcho people, or "people of Gatcho Lake", occupy the far western end of the southern Dakelh territory. Ulkatcho means "fat of the land" in reference to the fact that all the animals and fish in this area are fat and healthy (Furniss, 1993a). The Ulkatcho people are historically referred to as *Nechowt'en* meaning "Dakelh people mixed with Chilcotin" by the Lhoosk'uz Dené Nation and other neighbours (Birchwater, 1993). The Ulkatcho speak both Carrier and Chilcotin languages. In the early 1800s the area around Anahim Lake was considered to be Chilcotin territory, with a large Chilcotin trading village, *Nagwuntl'oo*, situated on the shore of Little Anahim Lake (Furniss, 1993a). The Ulkatcho band is composed of both Dakelh and Chilcotin families as historically our two cultures intermarried after the smallpox epidemic and other diseases that occurred at *Nagwuntl'oo* (Furniss, 1993a).

The Lhoosk'uz Dené people, or "people of Kluskus Lake", comes from the Dakelh word *lhoos* which means "whitefish" and *k'uz* meaning "lake" (Furniss, 1993a). The Lhoosk'uz Dené people still reside east of the Ulkatcho people, with their territory centered around the Kluskus Lakes.

As of April 2016, the registered population of UFN was 1,050 (Statistics Canada, 2016b; British Columbia Statistics, 2016). Most of the population lives on their own reserve with 639 members residing on UFN reserve land, while 46 live on another reserve and the remaining 365 members live off-reserve (Statistics Canada, 2016b). As of August 2016, LDN had a registered population of 205 (LDN Band, personal communication, October, 2016). Much of the population lives off reserve, including individuals who live

on another reserve (e.g., Nazko, Lhatko and Ulkatcho). Thirty-five Nation members live on reserve year-round (LDN staff member, personal communication, October, 2016).

There are 21 UFN reserve areas, which total 3,245.7 hectares (INAC, 2012). Many of these reserves are located along Highway 20 (the Chilcotin Highway) and north of Anahim Lake. These reserve areas are inhabited by 66% of the UFN population with Squinas 2 the most populous UFN reserve (INAC, 2012). There are seventeen LDN reserves, totaling 1,647.5 hectares (INAC, 2016). Many of these reserves are located along the West Road (Blackwater) River, west of Quesnel. Of the seventeen LDN reserve areas, Kluskus IR1 with a population of 39, and Sundayman's Meadow 3 with a population of five were included in the Baseline Study Area for the Project (ERM, 2015). It should be noted that the data used by ERM is outdated as Sundayman's Meadow 3 has not been inhabited for some time. The data used also did not include three people living in Tatelkus Lake IR28 (personal communication, LDN staff member, February, 2017).

Both of our Nations govern our respective territories using the same system that existed before contact with the European settlers and fur traders in the early 1700s. The *keyoh* system (or *keyah* in Ulkatcho dialect) is synonymous with a family territory or trapline (Dewhirst, 2013). Each family group, or *sadeku*, has its own *keyoh* that not only acted as a source of commercial furs in the 19th century and to a lesser extent today, but also acts as the main source of food for the *sadeku* (Dewhirst, 2013). Use of the *keyoh* outside of the *sadeku* is by permission or invitation only; trespass and poaching are serious matters (Dewhirst, 2013). Many *keyoh* boundaries are defined by geographical landmarks such as rivers, lakes and mountains (Dewhirst, 2013). Many resources provided by our *keyohs* were traded between interior and coastal groups along the Nuxalk-Carrier Grease Trail (Section 164.1.1) which runs along the Blackwater River towards the coast. This trail is still of significant importance to our communities as it links many family *keyohs* and homesteads (personal communications, UFN Band members, April, 2017). The Nuxalk-Carrier Grease Trail network has been so central to the cultures of our communities throughout our history that it also has several sacred sites, culturally-modified trees and unmarked burial sites along its length (personal communications, UFN Band member, LDN staff member, April, 2017).

Mount Davidson, the location of the proposed mine site, is one of many sacred sites identified by our community members. Not only does Mount Davidson hold traditional healing powers (personal communication, LDN Band member, April, 2017), but it is also an important hunting and berry picking site (personal communications, LDN and UFN Band members, April and May, 2017). Members of our

communities still actively practice and depend on the hunting and gathering lifestyle refined by our ancestors, acquiring many important resources from the land within our traditional territories (personal communication, UFN Band member, April, 2017). The health of the land, water and wildlife are of paramount importance in preserving and maintaining this way of life and traditional land use. The southern Dakelh people understand the importance of respecting the spirits of the animals, trees, water, rocks and all other things that inhabit the land; respect which is shown by living according to traditional standards (Furniss, 1993a). The members of our communities understand the importance of acting as caretakers of the land from Elder teachings, and to not over-harvest or waste the resources needed for our survival (personal communication, UFN Band member, April, 2017).

With deviations from the traditional diet, culture and language evident within the younger generations of both of our communities, there is a strong desire for a "cultural revival" (personal communication, community meeting notes, March, 2017). There is a need to reinstate the traditional ways of communicating through teaching the traditional Dakelh and Tsilhqot'in language and through sharing information between community knowledge keepers and the younger generations. Our communities feel that getting families back out to their traditional family homes would be a major step in the cultural revival process and would help in lifting members' spirits (personal communications, LDN and UFN Band members, March, April and May, 2017). Time spent together out on the traditional family *keyoh* has been described by a number of community members as a "happier time" (personal communications, UFN Band members, March, April and May, 2017).

The perceived environmental effects of the Blackwater Gold Project are that the health of the land, water and wildlife, and consequently people, their culture, language and spirituality will be compromised, and essentially degraded through the development of the mine (personal communications, community meeting notes, LDN and UFN Band member interviews, March, April and May, 2017). For this reason, our Nations retained a third-party to complete a thorough review of the Environmental Assessment (EA) and have entered into a Memorandum of Understanding (MOU) with both federal and provincial governments, to ensure that these values, rights, and interests are thoroughly considered. Through extensive community input and consultation about these perceived and potential impacts, this document was able to be drafted on behalf of each of our communities.

2. Collaborative Assessment Process Overview

2.1. Memorandum of Understanding (MOU): How we got here

On November 5, 2012 the EAO issued an Order under section 10 (1)(c) of the *Environmental Assessment Act* requiring an EA of the Blackwater Gold Project (the Project). On April 5, 2013 the EAO offered to consult our Nations at the deeper end of the consultation spectrum in the EA process, which exceeded EAO's initial assessment of the legal duty to consult. The section 11 Order that set out the EAO's First Nation engagement process and New Gold's (the Proponent) consultation plan was provided to our Nations with the opportunity to comment on the engagement plans. Consultation with our Nations proceeded in accordance with the consultation process set out under the section 11 Order.

In January of 2016, our Nations met with the EAO and CEAA (or the Agency) to discuss their respective concerns with the Project and more importantly, the consultation process developed to assess our Aboriginal interests, including our respective Aboriginal rights and title, as recognized and affirmed under section 35 of the *Constitution Act*, 1983, that could be impacted by the Project. From our Nation's perspectives, very little meaningful engagement occurred at key decision points in the early stages of the EA process. Such decision points could have included collaboratively developing a government-to-government process before the EAO issued its section 11 Order and collaboratively deciding on whether New Gold's Application for an Environmental Assessment Certificate/Environmental Impact Statement (Application/EIS) was complete and contained appropriate information.

Our Nations made clear that the valued components developed for the EA process were not reflective of our respective views. Our Nations wanted to actively participate in the assessment of our Aboriginal interests rather than make comments on the work that the Proponent, EAO and the Agency had done in assessing Aboriginal interests, including determinations of what the significance of impacts may be on those interests and what potential mitigation or accommodation may address those impacts. In general, from the perspective of our Nations, the process developed for the EA was not done so in collaboration with our Nations and therefore did not respect our governance over the lands and resources within our traditional territories that the Project would potentially impact.

In February of 2016, follow up letters were sent to EAO, the Agency and New Gold to formally register concerns with the EA consultation process to date. A series of meetings were held following these letters where EAO, the Agency and our Nations agreed that a collaborative process to assess Aboriginal interests should be developed for the Project. The parties then negotiated and came to agreement on

the principles upon which the collaborative process would be based. Finally, on October 3, 2016 the EAO, the Agency and our Nations entered into a MOU setting out the principles for collaboration throughout the EA process (Appendix 1).

2.2. What does the Memorandum of Understanding (MOU) mean?

From the perspective of our Nations, the MOU is an assertion of our governance over the lands and resources within our respective traditional territories. The MOU provides an opportunity for our Nations to collaborate with the provincial and federal governments in making decisions on how the Project will be assessed, what values should be assessed, and how potential impacts on these values should be addressed. The MOU also establishes that the collaboration process does not end once the Project is approved, if it is approved. The MOU provides for the ongoing participation of our Nations in the management and monitoring of the Project.

Some key elements of the MOU are: the parties collaboratively drafted the section of the draft EA Report and the Assessment Report related to the impacts of the Project on LDN and UFN Aboriginal interests; the parties work together on proposed conditions and the development of consensus conclusions on the potential Project-related impacts on LDN and UFN rights; and, the parties work together on the adequacy of consultation and accommodation. To achieve the goals of the MOU, the parties participated in bi-weekly conference calls, community meetings, and technical meetings on specific issues such as water quality, wildlife, and cumulative effects.

The Nations' participation in the EA does not, on its own, satisfy the Crown's duty to consult and accommodate LDN or UFN in respect of the Project, and the Nations' participation in the EA process, on its own, should not be construed as endorsement of, or support for, the Project.

3. Ulkatcho and Lhoosk'uz Dené Assessment Methodology

UFN and LDN retained Keefer Ecological Services (KES) early in the EA process to supplement the capacity of our Nations in the technical review of the EA and to help represent our interests. The KES team's role as our third-party technical review team was to carefully assess the work New Gold presented in their Application (e.g., baseline studies, predictive models) to ensure that the science used to inform the Project design was sound; making culturally-appropriate recommendations where applicable throughout the process. These recommendations were identified through their consultation and collaboration with our Nations and as a result, significant improvements were made to the Project that relate specifically to our community's concerns, as presented within this document.

In order to accurately reflect our community's perspectives and concerns, the KES team worked diligently with our Nations, the provincial, and federal governments to develop an appropriate assessment methodology that included the collection of community knowledge from Elders, Band members and staff. The KES team held community meetings and information sessions, conducted community interviews, circulated newsletters and met with both Chiefs and Councils numerous times throughout the entire process. The KES team's involvement in this process gave them the knowledge to draft this Part C document on behalf of our communities.

3.1. Ulkatcho and Lhoosk'uz Dené perspectives on health values

Our Nations, the Agency, and the EAO worked collaboratively to develop a methodology for the assessment of impacts of the Project on Aboriginal interests, including Aboriginal rights and title as recognized and affirmed under section 35 of the *Constitution Act, 1982* (Figure 1).

Our Nations expressed that Aboriginal rights are often framed as a stand-alone activity or a practice in a standard EA process. Although this is an element of what the Project may impact, it is not necessarily the whole story. While hunting, fishing, and gathering are integral to our members' sustenance, the overall health of the people is dependent on many different factors that are both tangible and intangible in nature. As such, our Nations identified key health values that would be used to evaluate the impacts of the Project on the overall health of the people:

- Health of land (including landscape level impacts to Nuxalk-Carrier Grease Trail, sacred sites, traditional land use, and food and medicinal plant harvesting),
- Health of water,
- Health of aquatic life (including impacts to fish and waterfowl),
- Health of wildlife (including trapping and hunting activities),
- Health of air,
- Health of culture and language,
- Health of spirituality,
- Health of economy, and

- Health of governance (includes existing impacts and potential cumulative impacts from the Project to the *keyoh*/*keyah* governance systems of land and resource management within the territory of each Nation).

Following this methodology, our Nations determined our members' perspectives on different values related to land, water, resources, and people, and the interconnectedness of these values, and then discussed the potential changes to the environment caused by the Project. We then gathered baseline information on the health values by using existing information, community interviews, traditional knowledge, and/or traditional use studies, where available. The baseline data used to inform each of the health values was collected over a period of three years. Existing information was collected from such sources as Statistics Canada, Indigenous and Northern Affairs Canada and Northern Health Authority. Community interviews were conducted via teleconference hosted by KES with both LDN and UFN Elders, Band members and staff. During the interviews, our community members shared stories of berry picking and hunting at Mount Davidson, of legends and spirituality, of the importance of water and fish and their ability to live off the land within their traditional territories. They also shared their concerns with the proposed Project, including the potential impacts to *duni* (moose), berries and water and the fear that the land won't be usable for our future generations. Further information was collected from traditional knowledge and land use studies completed for the communities by such authors as Terry Tobias, Elizabeth Furniss and Sage Birchwater.

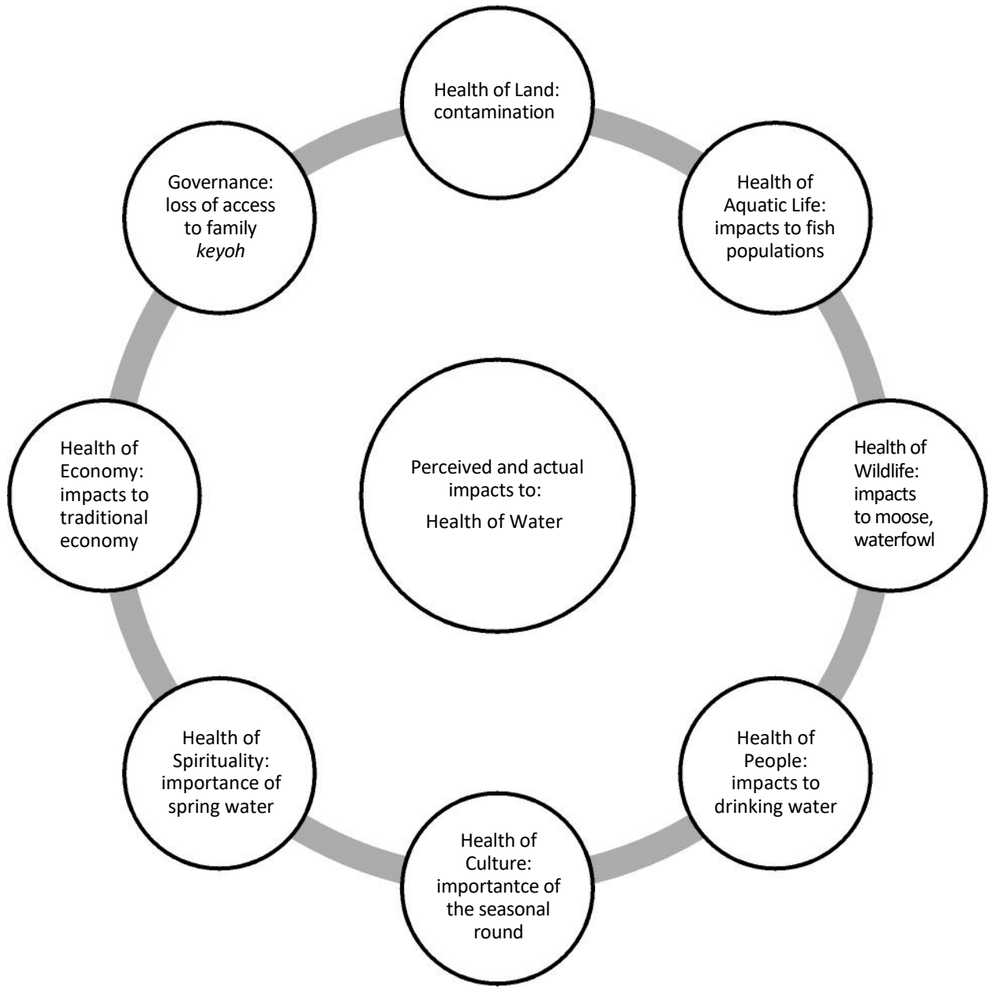

Figure 1 Diagram demonstrating the methodology for understanding potential impacts to Aboriginal interests.

Process Overview:
Each of the community health values are interconnected, and as a result, an impact to one value results in compounding impacts throughout each of the remaining health values. An example of this connectivity is presented within this figure, used to demonstrate the relationship between the central health value and the other health values. Where impacts to one health value exist, compounding impacts to other health values may also occur.

Health Value Under Consideration: e.g., Health of Water
Perceived and actual impacts based on community concerns:
- Contamination (i.e., heavy metals)
- Changes in flow in lakes, rivers and creeks
- Impacts to water resources (i.e., spring and drinking water)

Compounding Impacts to other Health Values based on Community Concerns:

A. Health of Land
   - Contamination from surface and groundwater
   - Impacts from tailings dam breach
   - Loss of access to traditional family *keyohs*

B. Health of Aquatic Life
   - Impacts to fish and fish habitat, invertebrates

C. Health of Wildlife
   - Impacts to moose, forage species and habitat
   - Impacts to grizzly bears
   - Impacts to waterfowl (i.e., muskrat, beaver)
   - Impacts to wetlands

D. Health of People
   - Impacts to drinking water
   - Impacts to cultural heritage, loss of access to sustenance wildlife
   - Positive effects of education, training, employment opportunities

E. Health of Culture and Language
   - Impacts to seasonal round, traditional gathering, hunting and fishing practices
   - Loss of heritage sites at Mount Davidson (e.g., caribou hunting features)

F. Health of Spirituality
   - Loss of sacred sites at Mount Davidson
   - Impacts to spring water

G. Health of Economy
   - Impacts to traditional non-monetary economy
   - Increased access to economic opportunities (i.e., joint ventures)

H. Governance
   - Impacts to traditional governance structure, *keyoh* system of resource management

Consideration of Mitigation Measures:
The Proponent proposed mitigation measures (Appendix 2) to address effects that may adversely impact health values. Upon review of the proposed mitigation measures, UFN and LDN identified a number of gaps in protections.

Condition Development and Residual Effects:
LDN, UFN and the provincial and federal governments undertook a collaborative condition drafting process that looked to address the community's concerns about the Project. Following the development of Project conditions, residual impacts were identified by the communities.

Conclusions:
Identification of the severity of impacts to Aboriginal interests after consideration of mitigation measures and conditions.

3.2. How the methodology was applied

In evaluating the severity of impact to health values of a biophysical nature (health of land, water, aquatic life, air, and wildlife) we used a framework that utilized a variety of indicators: extent, duration/frequency/reversibility, cultural integrity, regional/historic/cumulative effects, stewardship/nationhood, impact inequity, and mitigation/accommodation measures (including federal and provincial conditions). Using this framework, our Nations reached our conclusions on a scale from low, moderate, high (but acceptable), to extreme (not acceptable) impact on the health of land, water, aquatic life, air, and wildlife (Figure 2). For the non-biophysical health values (culture and language, spirituality, economy and governance), a general conclusion was reached on whether the effects of the Project would be positive or negative for our Nations.

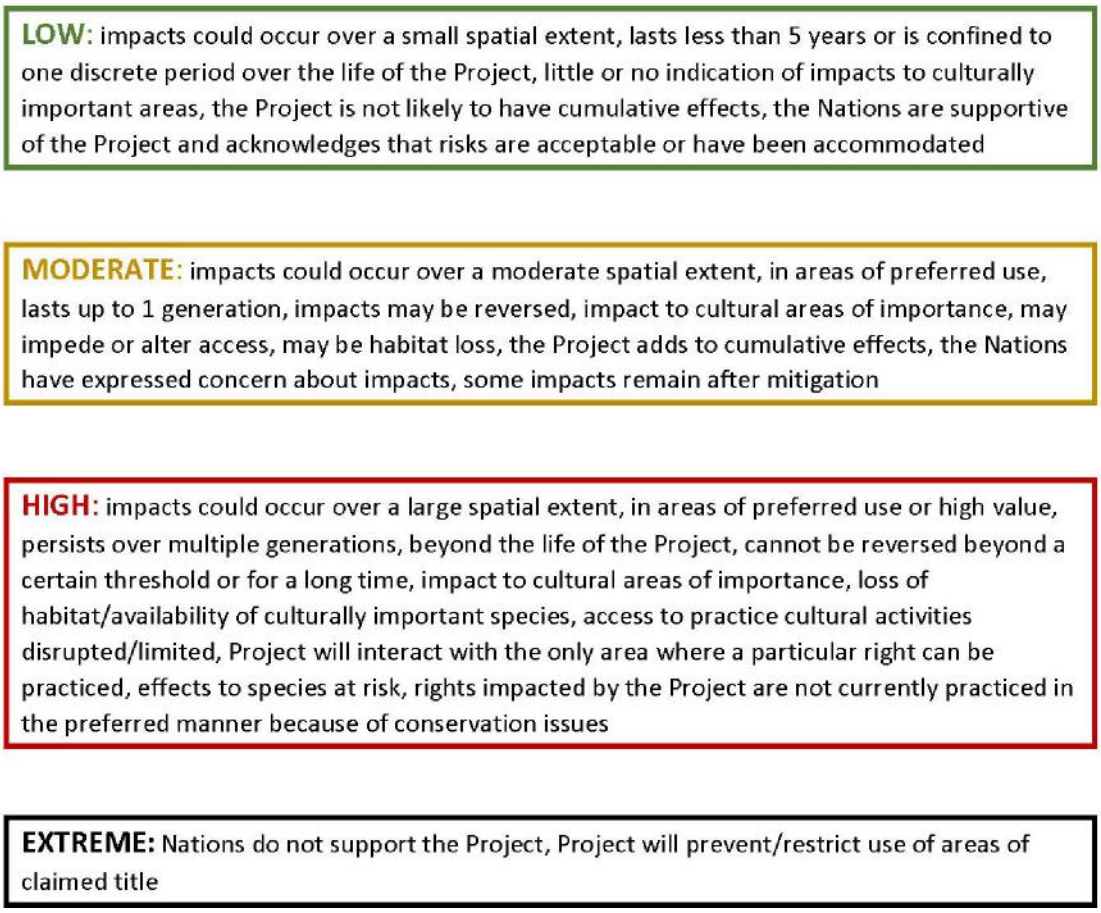

Figure 2 Criteria for determining the severity of impacts to Aboriginal rights and title.

4. Lhoosk'uz Dené and Ulkatcho Health Values

4.1. Health of Land

The health and safety of the land is of paramount importance to both of our Nations as it is a key component that is interconnected with other integral pieces in our traditional cultural practices. The health of the land dictates the health of the wildlife and of our traditional and medicinal plants. Our ancestors refined our cultural heritage using the resources that the land provided, and our current generation is committed to protecting it for our future generations.

4.1.1. Nuxalk-Carrier Grease Trail (Alexander Mackenzie Heritage Trail)

The region has an extensive trail network, often referred to as the Grease Trails which were made famous by Alexander Mackenzie during his first recorded crossing of continental North America in 1793 (Deeg, 2014); however, despite this acclaim, this trail and many other Grease Trails were predominantly traveled by local First Nation groups. Alexander Mackenzie made first contact with members of the Lhoosk'uz Dené Nation on July 10, 1793 at the head of the eastern and lowest Kluskus Lake (Dewhirst, 2013). The Grease Trail network to the coast served as an important artery to the Aboriginal fur trading network and provided access to many community ceremonies including marriages and cremation (Dewhirst, 2013). Locally known as the Nuxalk-Carrier Grease Trail, or the "Great Road" between the Fraser River and the Pacific Ocean (Birchwater, 1993), the trail runs along the north side of the Kluskus Lakes and remains a heavily used travel corridor from the coast to the interior plateau. The Nuxalk-Carrier Grease Trail is still widely utilized today as an important access point to a number of family *keyohs* (*keyahs* in Ulkatcho dialect), and as a trail connecting several sacred sites including fishing and hunting spots as well as crematory and spiritual sites (personal communication, UFN Band member, LDN staff member, April, 2017). The history of this trail, and the network of trails, is rich and varied with its use going back thousands of years (Birchwater, 1993). The Ulkatcho people have many stories and legends that document the historical importance of the Nuxalk-Carrier Grease Trail that spans many generations and feel slighted that the trail has been named after a European explorer (Birchwater, 1993; personal communication, UFN Band member, April, 2017). Ancestors of the Ulkatcho, Lhoosk'uz Dené, Nazko, Red Bluff and Nuxalk band members developed and used this trail system thousands of years before Alexander Mackenzie arrived in their territory and consider the trail networks an important part of their culture today (Birchwater, 1993). The Nuxalk-Carrier Grease Trail, running inland from the coast, has special significance because it is the predominant route where oolichan grease (or *tl'enaghe* in our

traditional language), which was a central part of the Aboriginal economy, was transported from the coast to the interior, and traded among many groups (Birchwater, 1993).

4.1.2. Sacred sites

Both of our communities have several unmarked sacred sites within each of our respective traditional territories, at mountain tops, along the length of the Grease Trails and around nearby lakes and rivers as well as places where human activity was generally focused. At one point along the Nuxalk-Carrier Trail, Alexander Mackenzie recorded an elderly woman clearing a circular spot in the grass which contained the graves of two family members. Whenever she passed this way, she always stopped to pay this sacred tribute of affection (Hakluyt Society, 1970). Our communities are in the best position to protect these sites as many community Elders hold knowledge about where these sites are located. For example, unmarked burial sites exist at *Taintezli* (Tanya Lakes) for victims of smallpox and the Spanish Flu (influenza), and are not to be visited (personal communication, community meeting notes, April, 2017).

K'ai k'uz (Kuyakuz Mountain), just east of the proposed mine site, is a sacred crematory mountain for LDN and is a "no-go" zone with respect to industrial development and other public land use. Along the south and eastern flanks of *K'ai k'uz* (Kuyakuz Mountain) lies Kuyakuz Lake, where a number of sacred sites and burials, in addition to a historical fishing site and a fish weir, exist along the shore (Dewhirst, 1995; Tobias, 2012). There are a number of other "very powerful" sacred sites along the Grease Trail and throughout our traditional territories. These sites range from absolutely do not enter, to ones that you can enter, but only after a set of protocols have been followed. The sites also have limitations on what can occur on them. For instance, there are sites where you can enter and sleep within the areas as long as the respectful protocol was followed before entering. There are other sites where you can cross over the area after the respective protocol was followed, but you are not allowed to sleep on the site (personal communication, LDN community members, April, 2013; Dewhirst, 1995).

Mount Davidson is highly respected by our communities for the food it provides and the healing ceremonies that occur at the mountain. Members of the Baptiste family (with rights to the Baptiste-Cassam *keyoh*; Figure 4) recount times when an Elder would guide them to a place on the mountain to sit for 3-4 days under a *ts'oo* (spruce) tree to fast. There is concern within our communities that the protocols for visiting these sacred places will not be followed by newcomers (personal communication, community meeting notes, March, 2017). Mount Davidson is also an important gathering area for certain higher-elevation medicinal plants (personal communication, community meeting notes, April,

2017). Mount Davidson and Tsacha Mountain, which is found just south of Mount Davidson, are collectively referred to as *Ts'oodenla*; meaning "sounds like two mountains together" or "something piled up like a mountain" as there is not a separate traditional name for each individual mountain (personal communication, LDN Band member, May, 2017; Dewhirst, 1995). An LDN community member recounts times when his family would camp at Mount Davidson to hunt and gather food and medicinal plants. When asked about the potential environmental effects of the mine, he indicated that his family is unlikely to return to Mount Davidson, Salmon House Falls, Takia Creek, or Dean River to participate in these traditional practices following the development of the Project (LDN Band member, personal communication, May, 2017).

4.1.3. Traditional land use

The traditional way of life of both of our Nations was based on the seasonal round, where small extended family groups, or *sadekus*, harvested animals, food and medicinal plants, and fish during different seasons mostly within their respective *keyohs* (Dewhirst, 2013; Furniss, 1993a).

Dewhirst (2013) reported that each *sadeku* followed a seasonal round within its *keyoh* based on intimate knowledge of its environment and resources. This traditional knowledge enabled each *sadeku* to thrive in a tough climate by seasonally harvesting key resources in a manner that allowed for longterm sustainability. While varying resources and circumstances have been observed within each family group and its use and ownership of the land, the seasonal round followed a general pattern. In late winter and early spring, most families living at their traditional village sites and trapping cabins were faced with exhausted supplies of dried meat and other provisions. With the thawing of lakes and creeks, traditional spring practices began including *tsa* (beaver) and *tes'ket* (muskrat) hunting, fishing, collecting plant foods, and burning of large areas to promote new vegetation, attract ungulate populations and to ease hunting from horseback practices (Dewhirst, 2013). The widespread use of fire clearly demonstrates that our communities actively managed our traditional territories and that it was not a wilderness at first contact as widely believed by the greater society.

Elders communicated that spring was a time when the Dakelh diet took on a cleansing aspect, and it was focused on fresh greens such as nettles, fiddleheads, and other green plants. These plants and the spring diet provide an opportunity to clean the blood after a winter diet of dried fish, meat and plants. The greens, including fresh grass, were eaten in copious amounts (interviews with Dakelh Elders, 2013 as cited in AMEC, 2015). Spring spawning fish were trapped and dried extensively at this time of year.

Summer was traditionally devoted to intensive food collection and preparation for the winter months (Dewhirst, 2013). Families generally remained close to home, where they practiced traditional fishing, hunting, food collection and haying. When the weather was too poor for haying, hunters would travel to meadows and swamps to hunt *whudzih* (caribou), *duni* (moose) and *yests'e* (deer). In the summer months, *ges* or *tah look* (spring salmon) became more available than in the spring and were harvested in large quantities wherever available. During face-to-face interviews with Dakelh Elders, it was noted that berry gathering in the summer continues to be an important activity, as well as fishing (AMEC, 2015). *'Ilhtsul* (blueberries) and *nawus* (soapberries) continue to be of utmost importance to our communities and are still harvested today (personal communication, community meeting notes, April, 2017). Other important berries and plants of note include what is described as being similar to rhubarb, known as *'ut'an ches*, and is most likely cow parsnip. This plant was picked in May when the grass begins to grow. The above-ground portion of the plant was gathered, boiled, sweetened and eaten (Dewhirst, 1996). There was also a root vegetable that was long and skinny and tasted like potatoes (likely to be Hemlock water parsnip; Dewhirst, 1996).

In late summer and early fall, families returned to their fishing stations at the outlets of lakes to catch spawning *lhuyul* (kokanee salmon), *lhoos* (whitefish), *tsa bai* (dolly varden) and *dulgi yaz* (suckers). These fish were trapped in large quantities and dried for the winter. During the fall, families completed their winter preparations (i.e., drying meats) and stocked up on winter hunting and trapping supplies (Dewhirst, 2013). Hunting focused primarily on *whudzih* (caribou) until the early 1900s when *duni* (moose) became the primary meat source for our Nations (Dewhirst, 2013; Furniss, 1993a). Camps were assembled in the valleys near *Ts'oodenla,* Itcha, Ilgatchuz and other mountains where meat would be dried following a successful hunt at higher elevations where the animals are most often abundant in the autumn. W*hudzih* (caribou) has been a very important and valuable animal, providing food but also materials for clothing, tent coverings, cooling and hunting implements, and many other items (Furniss, 1993a). When the cold of late fall arrived and animals' coats began to turn white, trapping practices began (Dewhirst, 2013). Traplines were very productive for small furbearers such as *chunih* (marten), *tsa* (beaver), mink, tes'ket (muskrat) and *dluk* (squirrel; Dewhirst, 2013).

Winter activity was more limited, with some hunting, trapping, and ice fishing occurring. Mid-winter was a good time to hunt larger *whudzih* (caribou) and *duni* (moose) for fresh meat as they moved into lower elevations, making them more accessible to hunters (Dewhirst, 2013). In spring, the seasonal round began again.

4.1.4. Food & medicinal plant harvesting

Plants play a crucial role in our traditional cultures. Both of our Nation's maintain a deep appreciation of the plants that grow in our traditional territories and a knowledge that ties the people to the land. Both LDN and UFN are known for our extensive traditional knowledge of plants which we use for food, materials and medicines (Dewhirst, 2013; Furniss, 1993a). A number of culturally significant plant species have been identified by community members. For example, in spring when the sap begins to flow, families collected cambium from lodgepole pines, known as *chundoo dzeh*. A number of tree species including the *chundoo* (lodgepole pine) have traditionally served as a source of sweetener for our communities. People also collected *dugoos* (cow parsnip), *tl'otsun* (nodding onion), fireweed shoots and a host of other plants. As berries ripened throughout the summer months, members of our Nations would gather *'ilhtsul* (blueberries), raspberries, *mai cho* or *mai dunulk'un* (huckleberries), Saskatoon berries, *'indzi* (strawberries), *nawus* (soapberry) and *dunih* (kinnikinnick berries (Dewhirst, 2013)).

The land is our pharmacy and we depend on a wide number of plants for our medicines. Though our usage of traditional medicines has declined since the advent of Western Medicine in our region, many people still depend on a wide number of plants for their medicine. Due to colonisation, much of this knowledge is now imperiled and we treasure what remains and are highly protective of this knowledge. A small number of our medicinal plants are: *whuscho* (Devil's club), *dunih* (kinnikinnick), *k'idlih* (willows), *gagistl'ah che* (yarrow), *chundoo* (lodgepole pine), *k'en dulk'un* (red osier dogwood/red willow), *nawus* (soapberry), and there are many others. As plants are not distributed evenly across the land we rely on information from our Elders on where the best places to gather the plants are based on abundance, medicinal qualities and other factors. Places such as Mount Davidson are relied on by our membership for the collection of higher elevation plants. Our communities have expressed concern about the loss of this area as well as the potential for air and water borne contaminants to damage our medicines stemming from the Project.

Plants remain an important and highly cherished part of our traditional diets. Though many plants continue to have high value to us, it is the berries that are perhaps most widely used in current times. Plants such as the *nawus t'an chun* (soopolallie bush), from which *nawus* (soapberry) are harvested, are known to almost everyone in our communities and are harvested in large volumes on a yearly basis and often used as a cleanser in the form of a tea. *Nawus t'an chun* (soopolallie bush) continues to be traded to our coastal neighbours the Nuxalk in exchange for fish and sold and traded at cultural events for a high value as part of our informal economy. There is widespread concern about the negative health

effects, related to the epidemic of diabetes and obesity, caused by the increasing difficulty to access many of our food plants. As with our medicinal plants, there is also concern about potential contamination of these plants from the Project.

Historically we also harvested many different plants as part of our technology. Roots of the *ts'oo* (spruce), *k'idlih* (willow) branches and other plants were all used in our basketry. *K'idlih* (willow), *nawus t'an chun* (soopolallie bush) and *k'en dulk'un* (red osier dogwood/red willow) were used in the production of fish traps. Along with pitches known uses for medicine they are also the old equivalent of caulking and were used widely. The bark of a number of shrubs was used as cordage and the list goes on of plants that were highly important for thriving on our lands in our traditional economy.

The extent of past *benidzo* (pine mushroom) and morel harvesting is unclear, however, in contemporary times they play a crucial role in the economy of both our communities and form part of the modern traditional round; with morels fruiting in abundance after fires in the spring to early summer and *benidzo* (pine mushroom) fruiting from mid to late summer. Mushroom harvesting also works to remove the economic boundary of people getting out on the land, as depending on prices it can be a profitable activity. Mushroom harvesting members also take part in a diversity of traditional practices including the harvesting of other plants and hunting.

In September 1993, the Pine Mushroom Task Force undertook a comprehensive study of the mushroom industry in British Columbia (Ministry of Forests and Range, 1995). The purpose of the study was to develop and maintain a sustainable *benidzo* (pine mushroom) industry while consulting with First Nations and respecting their rights. Large proportions of our traditional territories have site and stand conditions suitable for *benidzo* (pine mushroom) production; however, only a relatively small proportion of the landscape produces mushrooms. Unless potential producing areas are specifically identified and managed, it is likely that future *benidzo* (pine mushroom) production will be exceedingly small (Ministry of Forests and Range, 2009). Logging of beetle-impacted stands can greatly decrease or eliminate *benidzo* (pine mushroom) for years. With the logging also having major effects on wildlife use this industry substantially contributes to the cumulative effects being felt by our communities. Collaborating with our communities' leadership and our knowledgeable pickers to address overlaps between timber planning areas and predicted *benidzo* (pine mushroom) areas aids in stand-level management of *benidzo* (pine mushroom) and the preservation of good *benidzo* (pine mushroom) producing areas.

4.2. Health of Water

The health of water resources has been an overwhelmingly important topic at all community meetings as our memberships feel it should be a priority concern given the environmental effects that have occurred as a result of mining and other industry elsewhere in the province (personal communication, community meeting notes, March and April, 2017).

The Blackwater River (also known as the West Road River) is a British Columbia Heritage River and is home to a number of important fish species including *duk'ai* (bull and rainbow trout), *tsin'tel* (freshwater lingcod), *tsa bai* (dolly varden), *dulgi yaz* (suckers) and *tah look* (salmon; personal communication, UFN Band member, April, 2017; Ministry of Environment, n.d.). The Blackwater River is an extremely important resource since this one river contains all of the fish found within our traditional territories (personal communication, LDN staff member, June, 2017; Ministry of Environment, n.d.). Fishing has been important in shaping each Nation's identity and continues to be an important part of our livelihoods. We have relied on the use of clean water from nearby freshwater lakes throughout our Nation's histories. Our band members are concerned about the potential contamination of these waterbodies and the effects on water quality resulting from New Gold's proposed Blackwater Mine. Contamination and deteriorating water quality could have negative impacts on fish species, which are essential in many of the member's diets. A predominant perception among our communities is that the tailings water will be toxic and will poison fish and important waterfowl food sources such as *khoh* (geese), *dut'ai* (ducks) and *tes'ket* (muskrat; personal communication, UFN Band member, April, 2017) as well as *duni* (moose; personal communication, LDN Band member, April, 2017).

Several community members also identified '*Utut* as an important gathering and fishing location (personal communications, UFN and LDN Band members, April and May, 2017; Dewhirst, 1996). This small chain of lakes located approximately 15 kilometers southwest of the proposed Project, is a traditional fishing camp at which our members have installed fish traps (personal communications, UFN and LDN Band members, April and May, 2017). According to a member of the Cassam family, and relative of Kluskus Tommy, '*Utut*, also known as Tommy Lake, is named after Kluskus Tommy and his adopted daughter Elina Tommy who held a trapline in the area (personal communication, LDN staff member, June, 2017; Dewhirst, 1996; Dewhirst, 2013). The Baptiste and Cassam families (with rights to the Baptiste-Cassam *keyoh*; Figure 4) utilized four fishing stations at various points along the creeks that joined *'Utut* and would catch both *duk'ai* (bull and rainbow trout) and *dulgi yaz* (suckers). In addition to the four fishing stations that were set up in the creeks that connected the chain of lakes, the middle lake

was an important *shus* (grizzly bear) hunting spot. The Cassam family would hunt bears in May as they were attracted to the area during the *duk'ai* (bull and rainbow trout) spawning season (Dewhirst, 1996).

The Baptiste family (with rights to the Baptiste-Cassam *keyoh*; Figure 4) had their house at the head of Tsacha Lake. While they spent most of the spring hunting around their territory, they would also go to their fishing camp located between two spawning creeks at the head of Squirrel Lake where they caught *dulgi yaz* (suckers) and *duk'ai* (bull and rainbow trout).

The Cassam family (with rights to the Baptiste-Cassam *keyoh*; Figure 4) made their home at *Tanilhtl'us* (Blue Lake) which is located approximately 22 kilometers southwest of the proposed Project. They had relied on a number of resources from this lake, such as the *tsa* (beaver) and *chunih* (marten) that were trapped, consumed and furs sold while the market was good. They had a fishing station at the outlet of *Tanilhtl'us* where they would catch *duk'ai* (bull and rainbow trout) and *dulgi yaz* (suckers) in both a net as well as a cylindrical trap made of *chundoo* (lodgepole pine) and *ts'oo* (spruce) branches (Dewhirst, 1996). Large numbers of these fish were dried for winter use.

The Jimmie family (with rights to the Mashu *keyoh*; Figure 4) has homes at *Tl'oko'wacho* (Big Meadow) and at *Delhke'z* (Tatelkuz Lake). Tatelkus Lake IR28 is located approximately 12 kilometers east of the proposed Project and is directly downstream of the tailings pond, as Davidson Creek flows into *Delhke'z* (Tatelkuz Lake) and then into Cheddakuz Creek. There are a number of use sites identified around the *Delhke'z* (Tatelkuz Lake) area. A fishing station was located on the north end of the lake where it lets out into a stream. The station was comprised of a V-shaped weir and a basket trap, known as *te'ts'utih*. The *te'ts'utih* was made of *k'idlih* (willow) branches or small *chundoo* (lodgepole pine) branches, measuring about ten feet long by two and a half feet wide. It was submerged in the water and left overnight to catch *tsin'tel* (freshwater lingcod). Approximately three and a half kilometers southwest of Tatelkus Lake IR28, near Davidson Creek, is an area that was used to pick large *'ilhtsul* (blueberries; Dewhirst, 1996). Furthermore, there is a camp and a hay meadow known as *Talhughun ts'ih hoyai'a* along Cheddakuz Creek, about four kilometers northwest of Tatelkus Lake IR28. The camp was used when the Jimmie family was haying (Dewhirst, 1996). Approximately 500 meters from the camp and meadow, the Jimmie family would collect *k'unih* (lodgepole pine sap) in late May (Dewhirst, 1996).

A number of our community members have expressed the traditional and continuing importance of water resources (i.e., springs, fish and waterfowl). A variety of lakes throughout each of our Nation's traditional territories have and continue to serve as reliable fishing spots for community members and

their families as they set nets and camp, historically for weeks at a time. The fish that was caught would be smoked, dried and otherwise preserved for the winter months. These memories of healthy water and fish brought many of the interviewees back to a happier time when their families lived off the land. Despite a weakened cultural connection with the environment, with which our Nation's consider ourselves inseparable, there is a strong desire for our memberships to return to their family traditional territories; promoting a cultural revival and renewing our sovereignty through strengthening our cultural ties to the land.

The traditional management of water resources by the UFN community continues today, although to a lesser extent given certain access issues now in place (personal communication, UFN Band member, April, 2017). In the past, our community members would actively manage the water in the tributaries flowing into the Blackwater River for the fish; a vital cold-water source feeding the Blackwater River. The management of these creeks included the removal of *tsa* (beaver) dams to improve fish flow and water temperature in the Blackwater River, ensuring the preservation of several important fish species harvested from the Blackwater River (personal communication, UFN Band member, April, 2017). The act of pulling *tsa* (beaver) dams as a means to prepare rivers for spring fishing practices continues throughout our traditional territory today as our membership still actively manage a number of creeks this way (personal communication, community meeting notes, April, 2017). Furthermore, our Nations have historically protected the locations of a number of freshwater springs within our respective territories as these springs provide life-sustaining cold, freshwater to the community, particularly during the dry months (personal communication, UFN Band members, April, 2017). One family indicated they did not collect surface water for drinking or cooking, rather they travelled further to a natural freshwater spring and carried the water back to their home. The spring water has been noted to be clean, cold, fresh, and better tasting. Spring water is highly regarded and valued as healing water, and consequently, protected by those who rely on it (personal communication, Alexis family members, April, 2017; personal communication, community meeting notes, April, 2017).

Water quality is a persistent issue on our reserves. Members are no longer advised to obtain their water from groundwater wells, as many of have been experiencing issues with elevated concentrations of bacteria, fluoride, chloride, iron, magnesium, sodium, and various dissolved solids, often at concentrations exceeding the Canadian Drinking Water Quality Guideline thresholds (UFN Band member, personal communication, July, 2016). These geological contaminants have contributed to increased water turbidity and pH, which has made the water unpalatable and, in some cases, not fit for

consumption. This water quality issue exacerbates our Nations' concern of possible contamination of surface water and springs from the proposed Project as these natural freshwater sources are critical for community members to have access to clean freshwater.

4.3. Health of Aquatic Life

4.3.1. Fish

Water resources were, and remain, vital to our Nation's. Most of our members continue to harvest fish from within our traditional territories, and fishing remains an important part of our culture. Many band names and other Dakelh words exemplify their connection with water resources (AMEC, 2015). The Blackwater River runs east through LDN territory and into the Fraser River while the Dean River running north from Anahim Lake and west through the Coast Mountains is important to Ulkatcho (Furniss, 1993a). The majority of our membership continue to rely heavily on seasonally available anadromous fish (salmonids) that spawn in major rivers. Summer and fall are the seasons where all Dakelh groups (families, clans, and villages) would come together at traditional spots/villages/fishing locales where they harvested large numbers of fish in traps, weirs and nets (Dewhirst, 2013). Fish were eaten fresh and large quantities were dried as winter provisions.

There are a number of programs that monitor *tah look* (salmon) stock in and around the Bella Coola area, including rivers such as the Atnarko and Dean Rivers (Fisheries and Oceans Canada, 2014; Fisheries and Oceans Canada, 2016). The programs are designed to determine the number of fishes released from the fisheries each year such that the river resources are not exceeded. As mentioned, a number of other fish species are important to our Nations, including *duk'ai* (bull and rainbow trout), *tsin'tel* (freshwater lingcod), *dulgi yaz* (suckers), *tsa bai* (dolly varden), and *lhoos* (whitefish), all of which have been, and continue to be, harvested from the lakes and rivers within our traditional territories and around the proposed Project site. Historically, some of the lakes were stocked by community members transplanting fish from one lake, along a trail to another lake. The members would carry a bark backpack which they would dunk in the creeks and rivers along the trail, allowing the fish a chance to revive itself before carrying on along the trail to the next lake (personal communication, LDN staff member, April, 2017). Many lakes throughout the traditional territory were historically stocked this way (personal communication, LDN staff member, April, 2017). Fish species exist where they do today because of this traditional practice of managing water resources.

4.3.2. Waterfowl

Our memberships continue to trap and hunt a number of waterfowl species including *dut'ai* (ducks), *ts'incho* (swans) and *tes'ket* (muskrat), predominantly for their meat. Community members are concerned that the meat of the waterfowl will be contaminated if the animals are landing in and drinking from the tailing storage facility (personal communication, community meeting notes, April, 2017). T*es'ket* (muskrat) in particular is very popular and highly sought after for its meat (personal communication, UFN Band member, April, 2017).

4.4. Health of Wildlife

4.4.1. Trapping

The most important small animals used by the southern Dakelh people were rabbits and *tsa* (beaver; Furniss, 1993a). Rabbits were a reliable food source year-round, especially in winter when other animals were scarce. *Tsa* (beaver) were hunted and trapped for their fur and meat (Furniss, 1993a). A variety of other small animals were plentiful and captured by snare, including *dluk* (squirrel) and *jatsun* (porcupine), and birds including, *dut'ai* (ducks), *khoh* (geese), *ts'incho* (swans) and *dih* (grouse; Furniss, 1993a). In 1821, the North West Company (also known as the Hudson's Bay Company) established a fur trading post, Fort Alexandria, in southern Dakelh territory, along the east side of the Fraser River, allowing direct trade with the southern Dakelh, Chilcotin and Shuswap people (Furniss, 1993b). The Fort was built beside a traditional *tah look* (salmon) fishing site of the Lhatko Dené Nation and adjacent to good grazing land, allowing traders to collect a food supply and feed their horses (Furniss, 1993b). The southern Dakelh people (excluding Ulkatcho people who traded with the Nuxalk and coastal trade ships) brought a variety of furs to the Fort including, *tsa* (beaver), *sus* (bear), *wasi* (lynx), *nulhdzook* (otter), *nanguz* (fox), *chunihcho* (fisher), *chunih* (marten), *tes'ket* (muskrat), *yus* (wolf) and *noolh'utughih* (wolverine; Furniss, 1993b). In exchange, the Dakelh obtained many European goods including, guns and ammunition, kettles, axes, blankets, cloth, clothing and tobacco (Furniss, 1993b). With the onset of the European fur trade, families began to exert rights to specific trapping areas within the overall Band territory where they regularly trapped (Furniss, 1993b). Trapping continues to be an important traditional practice of both communities despite the decline in the fur trading industry, as trapping is a subsistence practice for our communities. While the furs may provide a source of income, the meat is of equal importance.

4.4.2. Hunting

Traditionally, the Dakelh people trapped animals using snares and deadfalls, and hunted larger game using surrounds or fences, while sometimes utilizing spears or bows and arrows (Furniss, 2004 as cited in AMEC, 2015). These traditional trapping and hunting practices continue to be important components of the seasonal round. Interviews with Elders (AMEC, 2015) revealed that trapping is currently not as commercially viable as it was in the 19th century, although it is still an economically significant traditional practice for many. It was also noted that *duni* (moose) and *whudzih* (caribou) populations have declined compared to historical population densities (personal communication, UFN and LDN Band members, April, 2017). Furniss (1993a) describes how *whudzih* (caribou) herds were found both in the eastern and western mountains of the territory before *duni* (moose) took over much of their range, forcing the *whudzih* (caribou) further west and higher into the mountains. The recent decline in *whudzih* (caribou) is believed to be a result of habitat changes that favour increased *duni* (moose) and *yus* (wolf) populations and subsequently alter the predator-prey system, subjecting *whudzih* (caribou) to higher predation (Ministry of Environment, 2013). These habitat changes coincide with increased industrial landscape changes at lower elevations, which have resulted in herds taking refuge from predation in higher elevation areas. However, industrial projects are threatening higher elevation habitats which forces herds from higher elevation sanctuaries to lower elevations and consequently exposes them to higher levels of predation (Ministry of Environment, 2013).

The province of British Columbia manages *whudzih* (caribou) habitat from the impacts associated with industrial resource development through imposing limitations on the acquisitions of new tenures in certain designated areas and through preventing and/or prohibiting certain work activities (Ministry of Environment, 2013). Furthermore, standardized management practices are implemented within identified high elevation winter habitat with the intention of managing the industrial footprint and restoring, reducing or prohibiting disturbance and reducing the potential for future disturbance and/or displacement of the *whudzih* (caribou) to lower elevations in the winter (Ministry of Environment, 2013). In the low elevation habitat, management practices including restoration and road deactivations are adopted when possible to address the effects of habitat fragmentation and support long term sustainable habitat conditions for the *whudzih* (caribou) population (Ministry of Environment, 2013). In circumstances where development will occur in high elevation habitats, Proponents are required to develop detailed mitigation and reclamation programs and monitoring plans such that habitat impacts are avoided, mitigated and/or fully restored (Ministry of Environment, 2013).

Hunting *whudzih* (caribou) was especially important to the traditional seasonal round of our Nations in the fall and winter. Many families would work together to harvest *whudzih* (caribou) by driving them along fence lines into corrals or by attracting the *whudzih* (caribou) to the foothills with smoke from their fires (Furniss, 1993a). In order to manage the declining *whudzih* (caribou) population within their traditional territories, community members have effectively halted all *whudzih* (caribou) hunts, demonstrating a conscious effort to carefully mitigate the potential effects of proposed industrial development within their traditional territories. In a letter to the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD) dated August 2016, UFN expressed concern regarding current *whudzih* (caribou) population statistics which are not indicative of a sustainable population and as such, many UFN members have ceased to exercise their right to harvest *whudzih* (caribou) for food, social and ceremonial purposes (personal communication, Chief Betty Cahoose, Ulkatcho First Nation, 2016). UFN has identified the severe effects of the MPB epidemic throughout their traditional territory and causal links between MPB stands, timber salvage, road development and wildfire with reduced *whudzih* (caribou) habitat and increased predation. UFN is actively seeking a working relationship with MFLNRORD and other stakeholders to stop the declining *whudzih* (caribou) population and calf recruitment levels and allow for population recovery and long-term sustainability of the herd (personal communication, Chief Betty Cahoose, Ulkatcho First Nation, 2016).

The notable decline in the *duni* (moose) population has not been effectively addressed as noted in a personal communication with a UFN band member (April, 2017). *Duni* (moose) is an equally important food source to these Nations (Furniss, 1993a); however, recent ground counts indicate that *duni* (moose) numbers are extremely low and that calf recruitment levels indicate an unsustainable population (personal communication, UFN Band member, April, 2016). *Duni* (moose) is central to the cultures of both of our communities and there has been expressed concern about the impact of declining *duni* (moose) numbers on community members who are still reliant on *duni* (moose) meat; predominantly those who cannot afford to shop at the grocery store (personal communication, community meeting notes, April, 2017).

Mount Davidson and the surrounding area known as *Ts'oodenla*, including Tsacha Lake are traditionally important hunting grounds for *duni* (moose) and *whudzih* (caribou; personal communication, LDN Band member, May, 2017). A member of the Baptiste family (with rights to the Baptiste-Cassam *keyoh*; Figure 4) indicated that every year his and the Paul family would travel to Mount Davidson along a wagon road that they partially constructed from the eastern end of Tsacha Lake towards the proposed mine site on

Mount Davidson; the wagon road was never completed (personal communication, May, 2017). The families would camp out at Mount Davidson for weeks at a time while the men hunted and the women picked berries. Once the meat was dry, they would pack it back home. This same Band member also indicated that it has been a very long time since he has seen any *whudzih* (caribou) on Mount Davidson despite having once killed one there, more than 30 years ago (personal communication, May, 2017). The camp was set up near a lake from which the families would drink, less than two kilometers southeast of the proposed Project site (personal communication, LDN Band member, May, 2017). Another member of the Baptiste family has recounted stories of her family hunting *whudzih* (caribou) at Mount Davidson, describing a rock feature that was intentionally built to aid in the corralling of *whudzih* (caribou), as part of her family's hunting strategy. Her mother's knowledge of the location of this significant cultural feature within their *keyoh* (the Baptiste-Cassam *keyoh*; Figure 4) puts it close to the proposed pit location for the Project.

4.5. Health of Air

Members from both of our communities have expressed concerns about the potential effects of airborne contaminants from the proposed Project on their food and medicinal plants which continue to be extensively harvested from the Project area. Our two Nations continue to use the land as our pharmacy and highly value the remaining traditional knowledge surrounding the wide number of plants that are used for medicine. As these plants are not evenly distributed throughout the traditional territories of our Nations, community members rely heavily on the knowledge keepers of the communities to identify the best places for gathering in terms of abundance and medicinal qualities. Like many sacred sites located within the traditional territories of our Nations, many of these traditional gathering sites are unmarked. As with many of the Proponent's monitoring programs, our community members feel that they are in the best position to implement and ensure the continuous conduct of monitoring practices to ensure that the Proponent is meeting compliance requirements, especially for plants that are consumed regularly by our members.

Fugitive dust sources include the moving of material; crushing, screening, milling, and blasting operations; haul roads; and, increased wind erosion of exposed surfaces throughout the mine footprint (Arpacioglu and Er, 2003; US Army Corps of Engineers, 2013). It is these fugitive dust sources that are most difficult to control (Arpacioglu and Er, 2003). Fugitive mine dust can cause both nuisance and aesthetic deterioration of the environments surrounding a mine, although these impacts are generally confined to relatively small areas as a consequence of the relatively large emission particle sizes and

short release heights of other pollutants (Arpacioglu and Er, 2003; US Army Corps of Engineers, 2013). Larger dust particles are expected to settle out within the mine area, while fine particles are dispersed over much greater distances (US Army Corps of Engineers, 2013). Within the affected areas adjacent to the mine site, the fugitive dust may result in damaged vegetation as the settled dust may inhibit gas exchange through the leaves of the native vegetation (Environment Australia, 1988; as cited in Arpacioglu and Er, 2003).

4.6. Health of People

The health of our people is greatly influenced and affected by their environment and surroundings and is closely tied to their culture and language. Historical extractions from their cultures (i.e., the Indian Act, residential schools), and more recent deviations such as moving into town, have compounded a substantial loss of cultural connection for some members, which has been linked to a number of health problems in the communities. Reduced consumption of traditional foods and knowledge of traditional uses, for example, has resulted in health concerns such as diabetes, heart disease and cancer (personal communication, UFN Band members, July, 2016 and April, 2017).

Diabetes and gastroenterological diseases are common diseases among community members, specifically Type 2 diabetes (personal communication, community health personnel, October, 2016). The 2012 Aboriginal Peoples Survey (Statistics Canada, 2012a) found that 67% of off-reserve First Nation females aged 15 and older reported having at least one chronic condition, compared with 58% of males. The survey defines a chronic condition as being diagnosed by a health professional and lasts more than six months. Personal communications with community health personnel indicate that the members may be predisposed to Type 2 diabetes but that poor lifestyle decisions have also played a role in the disease's prevalence. The development of this predisposition begins in fetal life with poor nutrition, followed by a sedentary lifestyle and poor diet (Bloomgarden, 2004). Furthermore, if one parent has Type 2 diabetes, the child is substantially more likely to develop Type 2 diabetes than children born to parents without (Bloomgarden, 2004). Gastroenterological diseases, believed to be mostly related to long term alcohol consumption, are also prevalent within our communities and are most commonly displayed in the forms of irritable bowel syndrome and acid reflux diseases such as gastroesophageal reflux disease (personal communication, community health personnel, October, 2016).

Members of our communities were estimated to visit the hospital more than 15 times throughout the year, approximately half to three-quarters of which are related to alcohol consumption and intoxication

(personal communication, community health personnel, October, 2016). Alcohol consumption and intoxication have also contributed to a number of motor vehicle accidents (personal communication, community health personnel, October, 2016). Deaths related to alcohol stem from long term consumption, fetal alcohol syndrome and depression. In Canada, signs of fetal alcohol spectrum disorder (FASD) are estimated to be prevalent in nine out of every 1,000 births with three and a half out of every 1,000 being diagnosed with fetal alcohol syndrome (Northern Health, 2016). Fetal alcohol effects, which include cognitive, behavioural, facial dysmorphism and growth restriction, are entirely preventable and are the leading cause of developmental disabilities in Canada (Northern Health, 2016). For youth in the Northern Health region, the highest rates of unintended pregnancies occur in the age group with the highest binge drinking rates (Northern Health, 2016). In the 2012 Aboriginal Peoples Survey, 26% of First Nations people reported being heavy drinkers – defined as having five or more drinks on a single occasion at least once a month (Statistics Canada, 2016c), six percent higher than the total Canadian population.

4.7. Health of Culture and Language

The vast network of foot, horse and wagon and Grease Trails crisscrossing our traditional territories and those of neighbouring Nations were built and maintained by generations of Aboriginal people who occupied the land, as it was the lifeblood of the Aboriginal culture and economy (Birchwater, 1993). The trail system was used for trading with neighbours, visiting friends and family, getting to hunting, trapping, fishing, berry picking and resource gathering grounds and occasionally to engage in warfare (Birchwater, 1993). These trails made it quick and easy to travel throughout the land, a necessity given the harsh climate and short growing season of the Chilcotin Plateau region (Birchwater, 1993). People required a vast area of land to obtain the resources they needed to survive, making good travel routes essential (Birchwater, 1993). The movement of families throughout their territory represents the essence of the seasonal round, moving from Bella Coola at the peak of berry picking season to *Taintezli* (Tanya Lakes) in time for the *tah look* (salmon) run (Birchwater, 1993).

As European people settled closer to the traditional territories of our Nations, our people began to acquire a taste for European foods and trade goods, changing their diets and traditional tools and practices (Birchwater, 1993). Gradually some of the traditional practices such as making arrowheads and knives from obsidian or bows and arrows from local wood became lost as the knowledge of these skills was not passed down from one generation to the next (Birchwater, 1993). Changes in hunting practices through the use of firearms and metal traps increased the amount of time Aboriginal people spent

trapping and changed their relationship with the natural world, threatening animal populations through over hunting (Birchwater, 1993).

Many community members from our Nations have expressed the desire for a cultural revival, such that generational language barriers are lessened, and traditional cultural practices are promoted. Our community members have strong connections to the land which allows them the opportunity to disconnect from other aspects of day-to-day life. Our memberships have identified an onus of their respective leadership to invest in programs that would promote the cultural traditions and reconnect the knowledge keepers with the younger generations (personal communication, community meeting notes, May, 2017). There is an increasing desire for families to move back to their *keyohs* and areas where they were raised. There is concern that the Project will strip the area of its heritage and that younger generations will not know the area for what it was prior to the mine. A UFN Band member noted "there's no language and culture without the land" (2017).

Oral tradition is knowledge that is contained in stories that has been passed down from generation to generation and has always been vital to the survival of southern Dakelh culture. Instead of using a system of written language, the southern Dakelh people used an oral system for recording the knowledge that they have accumulated through centuries (Furniss, 1993a). Some stories explain the origin of the world and how humans, animals, plants and landforms were created while other stories serve as historical records of important events and people (Furniss, 1993a). Some stories contain clear messages of what will happen if people break codes of behaviour and act carelessly or irresponsibly while others explain the spiritual dimensions of life and the appropriate relations between humans and the world of spirits (Furniss, 1993a). All these traditional storytelling practices act to reinforce the values, beliefs and proper behaviours of our people (Furniss, 1993a).

4.8. Health of Spirituality

Historically, our people believed it was important to show respect for the spirits of the animals, trees, water, rocks and all other things that inhabited the land. Respect was shown by living according to certain standards of behaviour and by performing certain rituals (Furniss, 1993a). A person was expected to treat the foods and materials they relied on for survival with respect, and to not take them for granted (Furniss, 1993a). People were expected to act as caretakers of the land and not to overharvest or waste any of the animal or plant foods they harvested. Further, people performed rituals

of appreciation after a successful hunt in exchange for the good fortune of always having an abundance of food (Furniss, 1993a).

Through conversations with a number of community members, it is apparent that although spirituality manifests itself differently for each individual, the connection to the land and the memories of traditional family land use are strongly tied to community member's spirituality. The memories of having the whole family together on their land, working together and completing traditional chores such as haying, fishing, and gathering wood and water resonates strongly. This is a time they cherish, where family members are truly present, and sobriety is valued. The loss of this connection to the land and the traditional land uses has had resounding effects within both of our communities. A reduction in traditional practices is evident in the lifestyle changes observed in more recent generations; people have moved away from their land and away from using the resources the land provides them. Increasingly so, food is purchased in grocery stores which has contributed to increasing obesity and diabetes rates within community members.

Given the nature and sensitivity of spiritual sites, this report does not identify specific locations; rather it discusses general areas and highlights some of the uses or experiences people have described at various sites. The Dakelh people practiced ritual cremation after a person died. A number of crematory sites are located throughout our territories; be it along the Nuxalk-Carrier Grease Trail, on mountains or near lakes. Although a few people are still cremated today, the practice has shifted to funeral homes. There has also been a distinct transition towards burials and the construction of grave houses as markers, a transition that can be attributed to Russian influence during the fur trade. Many of these sites have descriptions of unusual occurrences such as seeing blue lights (referred to as *ne ihuna whutdzuk, hanuwhutdzuk, nelha whutdzuk, hanu whutdzuk*), hearing a loud old man's voice, drumming, laughing, singing, and talking (Dewhirst, 1996).

While all spiritual places have significant importance to our culture, the individual sites vary in terms of what can only be described as power. Community members have expressed concerns over the sites and have an interest in ranking each one on a scale based on its relative power. In some cases, people can enter/cross/sleep on the site with no ill effects as long as you are spiritually careful. There are sites where you can enter, but you are not allowed to sleep there. Finally, some sites have been identified as very powerful and have been designated as absolutely do not enter (personal communication, LDN Band members, April, 2017). The effects of the sites vary from people falling ill, to death within a year after

entering the site. In some instances, sites are said to be especially dangerous for children (Dewhirst, 1996).

The power of the sites within the culture is reflected in the teachings that Elders provide to their children. It is common for community members to recount their Elders telling them that they are not to go to a specific place because "the spirits might grab you" (Dewhirst, 1996, p.88). Or that a place "was possessed" and "if you go near it, it'll make you sick. And you need a medicine man or woman to fix you up" (Dewhirst, 1996, p. 98). Or that when they've gone to a spiritual place that "it kind of gives you a funny feeling at night when you go out, like somebody near you. An awful feeling when you go some place like that" (Dewhirst, 1996, p. 95). Community members have recounted times when they've stopped at a site where "the horse gets scared, and the dogs started brawling" (Dewhirst, 1996, p. 97). As a result, people try not to disturb the sites or avoid them altogether (personal communication, LDN staff member, June, 2017; Dewhirst, 1996).

Much like spiritual or sacred sites, legend sites also play a prominent role in our culture. For instance, there is a legend site located near one of the LDN reserves. The site is said to have been created after a strange man named *T'seina* had repeatedly tried to steal women from the Kluskus village. Upon growing tired of *T'seina* the people of Kluskus put a spell on him and he died on top of the hill. Since then, people picking berries in the area should neither look, nor point at the hill (Dewhirst, 1996). Other variations of the legend speak to Indian doctors fighting with a spirit power that had come to kill their children. Due to the events in the legend, people are told not to go into the area, no matter what, or else they may get sick and become unconscious (personal communication, LDN staff member, June, 2017; Dewhirst, 1996).

Other legends such as the one around *Delhke'z* (Tatelkuz Lake) speak about *Ya tahonquz*, a louse that dragged somebody into the lake. Or *Neyi*, a man-eater that had a terrible smell, like rotting flesh, which could cause sickness and even unconsciousness (Dewhirst, 1996). *Shus* (grizzly bear) is of particular importance to the LDN as it is a protector animal in the spiritual realm (personal communication, LDN Band member, June, 2017). A few legend sites have been identified that are associated with *shus* (grizzly bear); both of which feature *shus* (grizzly bear) tracks in stone that were formed through a series of events that had taken place at the site (personal communication, LDN staff member, June, 2017).

4.9. Health of Economy

Until recently, much of the land west of Quesnel had not been impacted by logging or mining and as a result, the southern Dakelh remained in control of their lands and were able to maintain an independent, self-sufficient lifestyle based on hunting, trapping and fishing. The economic base that has supported our Nations' self-reliant way of life for centuries depends on access to and use of our traditional lands and resources. The bond between the Dakelh people and their land is cultural and spiritual, and also economic (Brown, 2002). However, the expanding logging and other industries in the area is disrupting this self-reliance and few jobs have opened up for the Dakelh people within these industries. Consequently, many southern Dakelh people have been forced into unemployment and economic dependence (Furniss, 1993a).

Both of our Nations suffer from unemployment rates that are approximately 30% higher than the unemployment rate of the general BC population. Skill surveys conducted for each of our Nations indicate that the majority of participants are currently unemployed and do not have a valid BC driver's license (HCS, 2015; New Gold, 2016). The average income for members of our Nations is upwards of two to ten times less than the average BC income (Statistics Canada, 2012b; Statistics Canada, 2016a; New Gold, 2016), and as such, many community members are forced to seek social assistance.

4.9.1. Ulkatcho First Nation

Yun Ka Whu'ten Holdings Ltd. is a UFN company that co-owns West Chilcotin Forest Products with two other partners, ensuring UFN interests and rights are considered during forestry operations and planning (Veit & Gilbert, 2006). However, the company is currently non-operational (personal communication, UFN Band member, August, 2016). Issues with forest management and control have resulted from this competition for forest resources and are currently being solved through a tactical harvesting plan for the Anahim Lake supply block (personal communication, UFN Band member, August, 2016).

Economic development opportunities include increasing available rangeland for cattle and other animal farming as well as collecting and selling valuable natural resources such as wild mushrooms and medicinal plants (UFN, 2013). Activities such as mushroom harvesting fluctuate given that wild mushroom 'crops' vary from year to year and prices change which can increase or decrease the motivation for community members to become involved. Our members have traditionally used a non-monetary economy of barter and trade, which is still heavily used today (personal communication, UFN

Band member, April, 2017) despite the declining worth of products from the land (i.e., *nawus* (soapberry), fish, and ungulates).

4.9.2. Lhoosk'uz Dené Nation

Our Nation operates a number of joint ventures and forestry licenses, although community employment is not heavily supported by these business opportunities. The forest licenses held by Kluskus Management Holdings Ltd. expired in 2017 and 2018 and were managed by West Fraser Mills as our Nation does not have the capacity or ability (i.e., equipment or staff) to manage the licenses itself (personal communication, LDN staff member, October, 2016). In 2014, our Band signed a three-year Forest and Range Consultation and Revenue Sharing Agreement with the Province of BC to supplement the economic position of our Nation with funds derived from harvest activities within our traditional territory (Province of BC, 2014). The area's economy has historically been driven by forestry, but the mountain pine beetle (MPB) epidemic, the overall downturn in the forest industry, and the closure of local sawmills has resulted in negative economic effects in the region (AMEC, 2012). Our joint venture with Tahtsa Nation started as a small company and is currently building for the future, allowing time to work out the bugs and gain experience prior to competing for contracting opportunities associated with the proposed Project. We are also an investor in the Castle Mountain Hydro run-of-river project near McBride, BC, within the neighbouring Lhatko Dené Nation traditional territory. Chief Lilian Squinas and her council saw this as an excellent opportunity to work together with the Lhatko Dené Nation and consider themselves fortunate to be able to partner on the project (personal communication, LDN staff member, October, 2016).

4.10. Governance

Our Nations have occupied our respective territories since time immemorial and assert a right to self-government in relation to our internal and local affairs that is grounded in the exclusive use and occupation of our territories. Both of our Nations also assert our right to participate in decision-making matters which would affect our rights, and to be consulted in good faith in order to obtain our free, prior and informed consent before adopting changes that may affect us.

Although we have adopted some modern governance methods, we continue to manage and govern the resources within our traditional territories in ways consistent with previous generations. The *keyoh* system (*keyah* in Ulkatcho dialect) has been used to delineate land ownership amongst the membership, from which each family group would harvest resources to sustain their families throughout the year

(Dewhirst, 2013). Despite challenges with respect to monitoring traditional lands, our Nations have maintained a presence on our family *keyohs* throughout the generations. Furthermore, our Nations recognize the parameters of our extensive territories and have always controlled and enforced access to them; permission is required for outside groups seeking to access resources within our territories.

4.10.1. Lhoosk'uz Dené Nation

Since the 19th century, our Nation has been organized around four family descent groups or *sadekus*, each with its own exclusive hereditary territory or *keyoh*. Historically, a *sadeku* represented a subset of extended family of which all members have descended from a line through the grandfather, or have been "married in" (Dewhirst, 2013). Each *sadeku* operated as a social, economic, cultural and political unit under the leadership of the *detso*, the most senior male, whereby defending and protecting the *sadeku*s interests and effectively managing its exclusive territory (*keyoh*; Dewhirst, 2013). K*eyoh* is historically synonymous with trapline and family territory and is exclusively used by the owning *sadeku* unless permission or invitation has been extended to a member of another *sadeku*; as such, the *keyoh* acts as a system of land tenure (Dewhirst, 2013). Each *keyoh* provided the members of the *sadeku* with a round of traditional seasonal activities. Traditionally, families began trapping and hunting, fishing and gathering to replenish diminished winter provisions in the spring. They would travel to the trading posts on horseback and by wagon to sell their furs and stock up on supplies (Dewhirst, 2013). In summer, they would continue to hunt, fish and gather food for winter as well as harvest hay for their horses and cattle to overwinter. By fall, the final preparations for winter were made and trapping began again, lasting through the winter (Dewhirst, 2013). In more contemporary times, each *keyoh* serves more as a system of land tenure, and an indication of the strength of claim that the LDN has throughout their traditional territory.

Our Nation still follows election and governance by custom rather than the band elections introduced by the Department of Indian Affairs in 1952. Under LDN governance custom a Chief Councillor is retained for life, or until resignation, at which time members decide on a new Chief. The governing body consists of one Chief and four "Headmen or Clan Councillors" who represent each of the four "clans", or family descent groups (*sadeku*). Each clan elects its own Councillor who in turn represents the interests of his or her *keyoh* to the rest of the governing body (Dewhirst, 2013). In contrast to the Indigenous and Northern Affairs Canada (INAC) model that is based on a two-year cycle in which the newly elected Chief may decide to go in a new direction and discontinue plans that have been in the works for the previous

two years; the current Chief of the LDN has been in the position for the past 14 years which affords the LDN a tremendous level of stability, allowing the First Nation to move forward progressively.

In 2002, Liliane Squinas was elected Chief Councillor by custom, and maintains this position currently. Her four Councillors include Ella Stillas representing the Jimmie and Alexis Families, Rosa Chantyman representing the Chantyman Family, Violet Boyd representing the Boyd Family and June Baptiste representing the Cassam and Baptiste Families (Lhoosk'uz Dené Nation, 2018). The Chief and Councillors are currently working to develop an institution of well qualified individuals who will be able to exert greater control over what is said and done to the land within our traditional territory and gain control of the valuable resources that exist therein (personal communication, LDN Band member, November, 2016).

4.10.2. Ulkatcho First Nation

Our Nation traditionally implemented a family system of governance; however, in 2003 our electoral system was changed to the INAC model. Our current Chief and Council has developed ways in which the Band can effectively manage its land and resources (personal communication, UFN Band member, April, 2017) through the use of management plans and industry agreements (i.e., forest licenses). Consequently, the decision-making surrounding resources remains the responsibility of the Band.

Due to increasing pressures felt by both communities to move away from the *keyohs*, monitoring the proper use of these lands is an increasingly challenging task. Our Nations have, however, maintained a presence on our traditional lands, and assert our inherent right to govern our traditional territories. In order for an industrial project to proceed in our respective territories, both of our Nations will require the federal and provincial governments to obtain the free, prior and informed consent. In this time of reconciliation, provincial and federal decision-makers should be working in partnership with First Nation governments in making decisions on whether industrial projects should be approved and what measures are required to avoid, mitigate and accommodate their Aboriginal interests.

5. Potential Impacts on Lhoosk'uz Dené and Ulkatcho Values

The potential impacts on our community health values are both actual and perceived, as varying opinions exist as to whether or not the Proponent's mitigation measures will be sufficient to ensure the lasting health of the land, water, wildlife and people within our traditional territories. New Gold has proposed a set of measures that include monitoring, management and mitigation plans (Appendix 2), which represents their effort to ensure that the traditional territories of our Nations are protected.

Despite these proposed mitigation measures, the members of our communities remain concerned that the damage will extend beyond the physical environment, as the land, water and wildlife are so closely tied to the health of our people and our culture (personal communications, UFN and LDN Band members, April, 2017 and December, 2018). Furthermore, there has been expressed concern that the proposed Project will destroy the land, water and wildlife and that the Proponent will leave without ensuring the proper restoration of the environment; leaving this area of the LDN traditional territory and additional areas downstream, unusable (personal communication, UFN Band member, April, 2017). This perceived fate of the area around the mine and the creeks and lakes it could affect, has the potential to result in the loss of heritage tied to this land (personal communications, UFN and LDN Band members, April and May, 2017). The loss of the use of this land directly affects the culture of our Nations through the loss of traditional and current land use practices that occur in this area and have for generations (i.e., hunting at Mount Davidson by LDN Band members).

Each of the key health values are interconnected, and as a result, an impact to one value results in compounding impacts throughout each of our health values. For example, potential (actual and/or perceived) impacts to water include contamination, loss of access to traditional and current fishing areas, loss of access to healthy fish and waterfowl populations for harvesting, loss of use of traditional family *keyoh* lands, and so forth. It is clear to see that an impact to water has the potential to impact other health values such as health of aquatic life, wildlife, people, culture, spirituality, governance and economy (Figure 1). If community members are afraid to access their traditional family *keyohs* to harvest food, then our right to govern the resources within our traditional territories is compromised and these families are no longer able to participate in the non-monetary economy of barter and trade. Impacts that have such compounding effects for individuals and their communities inevitably contribute to the degradation of cultural ties that have been experienced for decades, as people spend less time on their land. This example was extrapolated for each of our health values during the determination of severity of impacts from the Project and is not specific to the health of water alone.

Our communities recognize that our traditional territories have been extensively altered by industry in recent history. The prevalence of forest service roads and cutblocks have fragmented our territories and substantially increased the access for all people as a result. The proposed Project will compound these impacts by creating new roads, clearing more land, and bringing more people (i.e., employees and their families) to the area. The lasting cumulative effects that this combination of mineral exploration and forest harvesting practices has within our traditional territories has recently been amplified by the

extensive losses from wildfire, with more than 1 million hectares burned in the Caribou Timber Supply Region in 2017 (Ministry of Forests, Lands, Natural Resource Operations and Rural Development, 2018). Our community members have expressed their concerns about the mounting pressures on the land and its resources, as reflected herein.

5.1. Landscape Level Disturbances: Forestry, Mountain Pine Beetle Epidemic and Wildfire

Provincial government forest health surveys show that over 50% of the forested land in our traditional territories was impacted by moderate to high levels of MPB mortality, primarily between 1999 and 2005 (iMapBC, 2017). The annual allowable cut in the timber supply areas was increased significantly for a temporary period of time to promote salvage of dead and dying pine as a result of the MPB epidemic. With the beetle infestation having ended in approximately 2005, the last of the dead salvageable timber is currently being harvested. After 15 years, the dead trees are assumed to fall over and are no longer viable for harvest (Province of BC, 2016); suggesting that the salvage harvesting of MPB-infested stands is reaching its end, which was estimated MFLNRORD to occur in 2020, 15 years following the peak of the epidemic in 2005 (personal communication, LDN staff member, June, 2016; Province of BC, 2016). The young seral forest stands that are replacing the *chundoo* (lodgepole pine) stands in the traditional territories of our Nations has caused a notable transition of both plant and animal species in addition to a number of other cumulative effects. *Chundoo* (lodgepole pine), was a prominent characteristic of the traditional territories of our Nations that "when you were in the jack pine country up top, you respected the Ulkatcho, Kluskus and Nazko people" (the late Ulkatcho Chief Jimmy Sillas as cited in Birchwater, 1993).

Large-scale timber harvesting has the potential to substantially alter the local water regimes as snowmelt occurs earlier and faster, which may cause extensive dry conditions through the summer months. In contrast, the removal of timber from the land may also cause the local water table to rise, as trees are no longer drawing it down. Furthermore, road building projects, which have greatly increased within our traditional territories, are generally associated with increased sediment load in creeks and rivers where crossings are constructed and contribute to landscape fragmentation. Such road building projects have also greatly increased within our traditional territories. Our territories used to be exclusively travelled by foot, or horse and wagon along the Grease Trails; a stark contrast to the ease of access that the extensive network of new logging roads has allowed.

Further fragmentation and associated cumulative effects have occurred in recent history with the increasing size of wildfires, as depicted in Figure 3. For the Lhoosk'uz Dené territory, by the year 2000, fire size and total hectares burned began increasing exponentially when compared with previous fire-season data acquired from DataBC. This is not just a local trend, rather a trend that can be seen at the National scale, when considering data from Canada and the United States (Moritz et al., 2014).

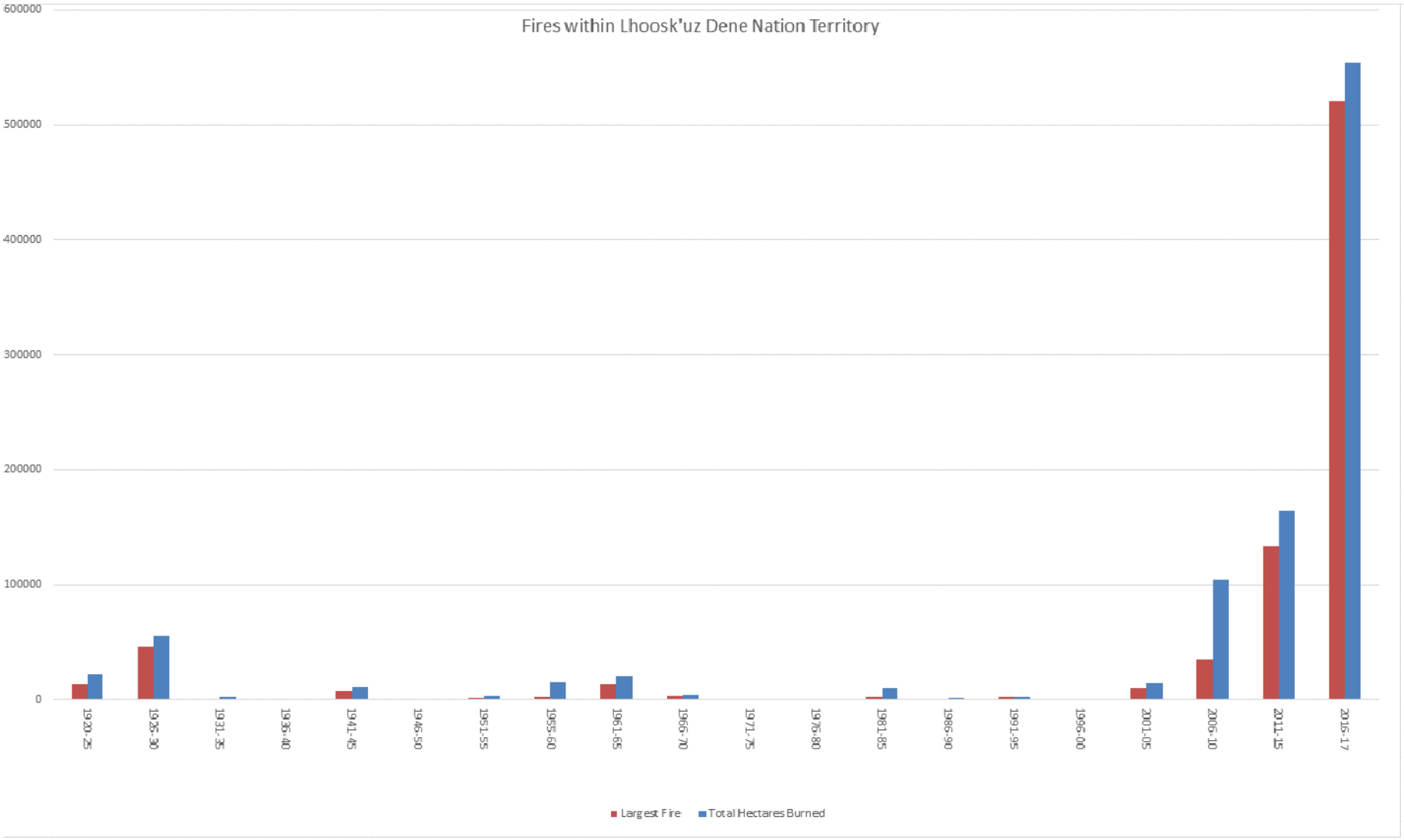

Figure 3 Wildfire size and total hectares burned within the LDN territory from 1920 to 2017 (personal communication, Neil Gauthreau, 2017).

5.2. Health of Land

The perceived and potential effects of the Project on the health of the land is that access to traditional and sacred sites and the continuation of traditional land use within and surrounding the Project footprint will be lost, further affecting the culture and heritage for our Nations' members. Furthermore, there will be cumulative effects on wildlife and water as habitats are increasingly fragmented and water resources are threatened by pollution (personal communication, UFN Band members, April, 2017). Further road building and land clearing must occur after thorough consultation with both communities, as LDN and UFN access protocols will apply, and will need to be adhered to should any of these industrial activities occur near our sacred sites (e.g., along the Grease Trail or at *Delhke'z* (Tatelkuz Lake)). Substantial concern exists around the mine's effect on the community's relationship and connection to the land (personal communication, community meeting notes, April, 2017). As stated by a UFN band member, "when you take away the land, it affects the Nation's ability to exercise sovereignty over it" (personal communication, community meeting notes, April, 2017). Our communities feel it is necessary to recognize the potential benefits associated with getting community members onto the land in monitoring positions and incorporating our traditional knowledge to inform decision making.

The spatial extent of the impacts, both actual and perceived, range from those derived from within the Project footprint to those that affect access to traditional family *keyohs* and other areas within the traditional territories of our Nations. Access to lands within the Project footprint will be lost for the duration of the life of the mine, although some of this land will be remediated post-closure and may be accessible again to our communities, if our community members choose to use this land in the future. However, numerous hectares of land on and around Mount Davidson will be unusable for many generations into the future, some of which are likely never to be useable again (i.e., area around the tailings storage facility, pit lake). While these areas comprise a small amount of our traditional territories and may be viewed as moderate in extent, this also results in the loss of land within traditional family *keyohs* that underly and border the Project footprint; thus, impacting a much greater extent on a local scale. The mine and associated infrastructure footprints fall within the Baptise-Cassam and Mashu *keyohs*, both of which are families of the Lhoosk'uz Dené Nation (Figure 4).

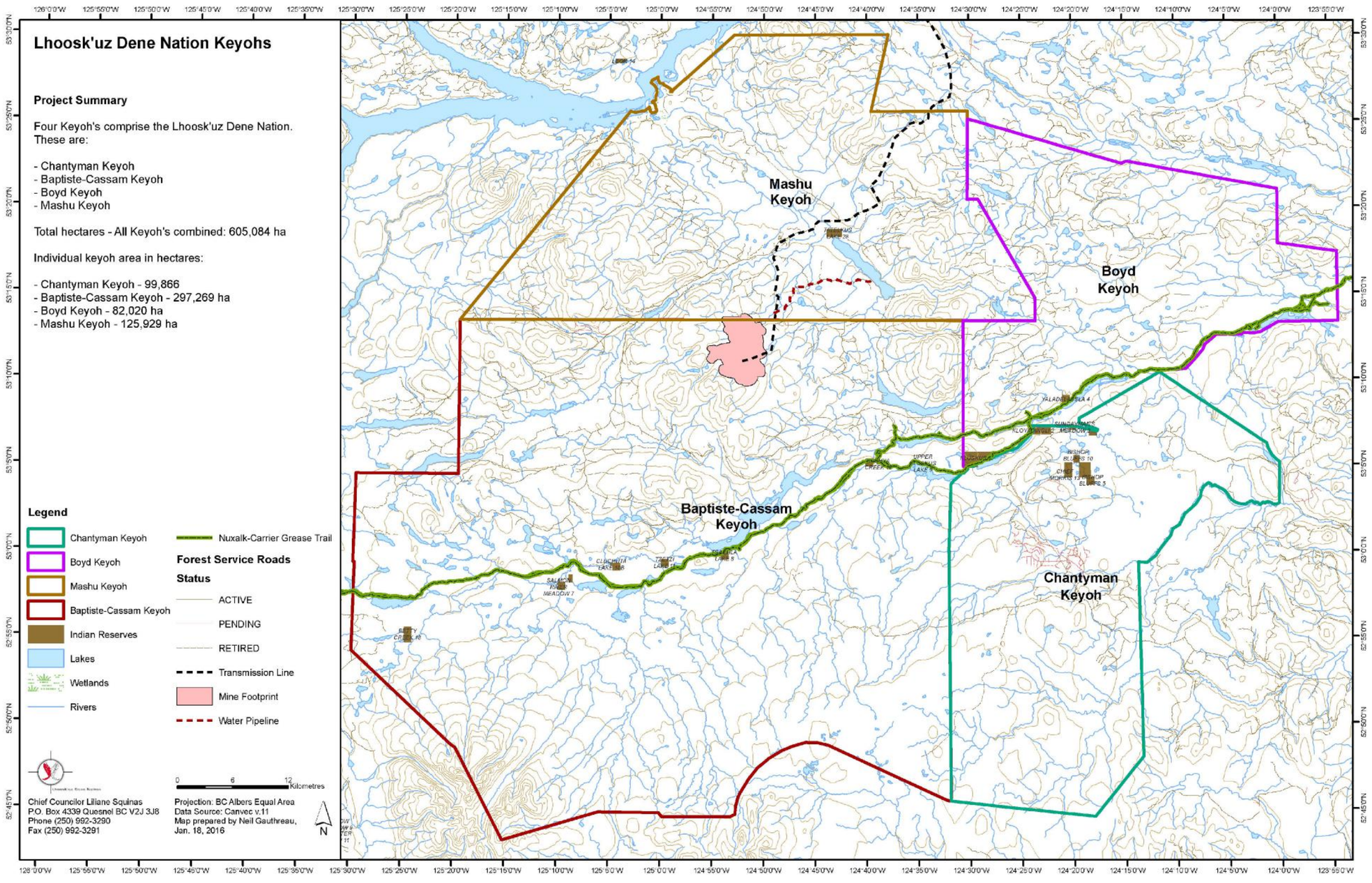

Figure 4 Map of LDN *keyohs* underlying the mine footprint (personal communication, Neil Gauthreau, 2016).

The impacts to the health of land are anticipated to persist throughout the life of the Project and beyond, as certain areas of the mine footprint remain closed to access. This means that future generations will continue to be affected by these impacts. Consequently, these impacts have negative implications to our cultural integrity as families, particularly those whose *keyoh* access will be lost, will be restricted from accessing traditional and current harvesting areas; thus, contributing the cumulative effects felt by our communities with increased industrial activity within our traditional territories. It is important to us that the Proponent have scientifically-defensible Care and Maintenance and Reclamation and Closure Plans. These plans need to be specific about how certain maintenance and emergency situations will be addressed (e.g., spill prevention and response, sediment and erosion control, management of tailings and waste rock, measures to monitor and mitigate adverse effects to wildlife).

Both of our Nations feel that work remains to be completed with respect to the health of the land prior to construction of the Project, specifically the collection and analysis of baseline toxicity levels in soil, plants and animals, as detailed in provincial Country Foods Monitoring Plan condition and in federal condition 6.11 (including subsection 1 through 3). A baseline risk assessment of this nature will provide our community members with a starting place from which to measure the true impacts to the health of land resulting from the operation of the mine. The continued monitoring (i.e., collection and analysis) of these parameters throughout the life of the mine may help ease some of the concerns that our community members have about the health of the land by quantifying changes, or lack there of, once the mine is in operation. Our Nations feel that the Proponent can play a role in supporting this project through funding and staffing contributions, as both of our Nations have limited resources to fill these roles.

5.3. Health of Water

The perceived and potential effects of the Project on the health of water include the quality of surface water, the protection of sacred spring water both within the Project area as well as throughout our territories, and the effects that polluted water will have on the people, wildlife and aquatic life. The community's concerns have been mirrored by the EA Review Team throughout the review process as additional analysis of water treatment options, cumulative effects and the development of a long-term robust water management plan have been recommended (personal communication, Rina Freed, Shannon Shaw and Stella Swanson (EA Review Team members), April, 2017). Although progress has been made to ensure the appropriate treatment and management of water at the Project site, these

plans give little comfort to community members as they have both a limited understanding of the scientifically complex plans and little trust of either government or New Gold and thus some remain skeptical (personal communication, community meeting notes, April, 2017). Both of our communities maintain concerns and fears about the fish in *Delhke'z* (Tatelkuz Lake), water levels in lakes and rivers/creeks in the area of the mine, and the future water quality in the area of the Project post-closure (personal communication, community meeting notes, April, 2017). Members from both of our communities have expressed the need for ongoing water testing and reliable access to the results (personal communication, community meeting notes, April, 2017).

The spatial extent of the impacts, both actual and perceived, is large, including not only the Davidson Creek and *Delhke'z* (Tatelkuz Lake) watershed, but also the sacred natural spring water that occurs throughout the traditional territories of our Nations and waterbodies that may be impacted by a tailings dam breach. Our communities have consistently voiced their concerns regarding water quality and the rippling effects that sudden and/or unforeseen changes in water quality could have on our health values. Furthermore, the fear of a tailings dam breach similar to that at Mount Polley has been expressed by UFN Chief and Council, some LDN councillors, as well as both UFN and LDN community members on a number of occasions. The extent of such an event has been proven to be high, with irreversible effects and other severe environmental impacts (Ministry of Energy and Mines, 2015). It will be imperative that the Proponent engages our community members to ensure that monitoring is conducted and that water quality parameters are reported back to the community to ease their concerns regarding the health of water, in addition to ensuring that all Project conditions are met.

The perceived effects of contaminated water may result in impacts to aquatic life, wildlife, people, culture, spirituality, economy and governance, similar to the examples discussed previously. If our community members believe that the water is contaminated, they may no longer harvest aquatic or terrestrial animals (i.e., fish, *tes'ket* (muskrat), *duni* (moose)) for fears that the contaminants would be passed on, thus impacting the health of the people. Further, such a belief would reduce a family's ability to manage and acquire resources within their traditional family *keyoh* and to participate in the non-monetary economy; consequently, impacting our cultural values. These impacts are anticipated to persist throughout the life of the mine and beyond, impacting future generations, with the risk of causing irreversible changes to the health of water in our traditional territories.

Our Nations have discussed the need for the development of Water Management Policies for the waterbodies within our traditional territories and believe that in doing so we may be able to alleviate

some of the concerns that persist within our communities regarding water quality. Another recurring issue that our Nations believe must be addressed by the Proponent is an Emergency Response Plan specific to a tailings dam breach that will ensure the safety of the family living at *Delhke'z* (Tatelkuz Lake). With the anticipated average water flow depth and arrival time of a flood associated with a tailings dam breach (Knight Piésold Ltd., 2016), it is imperative that a robust plan be put in place to protect this family. Suggestions that have been presented by community members include establishing permanent and reliable communications at Tatelkus Lake IR28 and should be included in the Accidents and Malfunctions Administration and Communications Plan. Should plan development be pushed to the permitting phase of the EA, then our Nations request the development of a collaboration agreement that ensures continued consultation throughout the permitting processes for this Project, thereby ensuring that our concerns are addressed.

5.4. Health of Aquatic Life

The perceived and potential effects of the Project on the health of aquatic life have been expressed through concerns about fish, waterfowl and *tes'ket* (muskrat) populations. The direct effects on Davidson Creek fish habitat and *Delhke'z* (Tatelkuz Lake) water levels may alter the ability for fish to return to these areas for spawning. Members of both communities have expressed fisheries concerns despite New Gold's findings that changes to habitat availability will be only five percent and therefore New Gold does not anticipate substantial effects to fish or fish habitat. The health of the water and the aquatic life, both of which are integral pieces to our Nation's culture and traditional practices, are dependent on proper management of water at and flowing from the mine site into our traditional territories. The *tes'ket* (muskrat), for example, is viewed as symbolic of the way that the community and waterways are interconnected and travel through the territory. It is also another important staple in the culture and diet of our Nations and is potentially threatened by polluted water in the tailings storage facility and throughout our traditional territories. *Tes'ket* (muskrat) is still trapped and eaten by community members today (personal communications, UFN Band member and community meeting notes, March and April, 2017).

The spatial extent of the impacts, both actual and perceived, is moderate, including loss of access to important fishing areas around the Project footprint and to fish and waterfowl populations that have been unaffected by the Project. Harvesting aquatic animals from our traditional territories has long been a part of our seasonal round and continues to be an important part of our daily lives. Since time immemorable our membership has thoroughly depended on aquatic resources including the

preparation and transportation of *tl'enaghe* (oolichan grease) along the Grease Trails, the use of fish traps on major rivers and streams throughout our traditional territories and annual trips to access *tah look* (salmon) runs within the greater Chilcotin plateau region.

As with the health of water, the perceived impacts to the health of aquatic life has the potential to impact health of people, culture, spirituality, economy and governance. These irreversible impacts are predicted to last throughout the life of the mine and beyond, affecting future generations. Our communities would like to see the Proponent mitigate these impacts through fish habitat offsetting projects (i.e., federal condition 3.11), by establishing flow and level requirements for Davidson Creek and *Delhke'z* (Tatelkuz Lake; i.e., federal conditions 3.8 and 3.9 and the Tatelkuz Lake Protection Plan provincial condition), as specific concerns have been raised about the impacts to the benthic environment in *Delhke'z* (Tatelkuz Lake).

5.5. Health of Wildlife

Prior to industrial development, the members of our Nations would rarely purchase food from a store. Instead, they would saddle up their horses and head into the mountains to hunt and trap. They would set up camp where they could smoke and dry the meat before transporting it home. As such, they were able to sustain their families through the resources provided within their traditional territory. This is no longer a reality for our Nations. Due to the cumulative impacts of industry, the health of our wildlife has suffered, and our members have no longer been able to sustain themselves by means of traditional hunting and gathering practices.

The perceived and potential effects of the Project on the health of wildlife are linked to existing cumulative effects to wildlife species, where community members have observed continual and accelerated population decline of important wildlife species like *duni* (moose) and *whudzih* (caribou), and consequently the loss of traditional hunting practices. Community members are concerned about offsetting for habitat fragmentation and loss associated with the Project. Members of both of our communities have requested to be included in the development of survey designs and building the wildlife management plan (i.e., provincial Wildlife Management Plan condition). Relevant studies conducted by UFN and LDN community members are believed to help inform these studies as members are aware of den locations and calving sites and are believed to be in the best position to carry out these studies (personal communication, community meeting notes, April, 2017).

The spatial extent of the impacts, both actual and perceived, is large; while direct impacts to preferred UFN and LDN harvesting areas appear moderate in their spatial extent, the landscape-level impacts will be much larger. Both of our communities are concerned about the impacts of the Project on *duni* (moose), *whudzih* (caribou), *shus* (grizzly bear) and other furbearer populations within our traditional territories and have expressed this concern throughout the EA process. There has been such a substantial decline in *whudzih* (caribou) populations within our traditional territories that members from both Nations have stopped exercising their right to hunt *whudzih* (caribou) for the sake of conservation and have reached out to the appropriate governments several times requesting that guide outfitters operating in our traditional territories do the same. While it is understood that such impacts are not solely the responsibility of the Proponent, there are fears that an already threatened population would only be further impacted by the Project.

The Southern Dakelh Nation Alliance (SDNA), of which our two Nations are a part, is working to develop an overarching strategic approach for *whudzih* (caribou) management within our traditional territories. The SDNA membership is committed to preserving and protecting the health and integrity of wildlife throughout our territories. Through our work with the SDNA, we have confirmed commitment from both the provincial and federal governments to work with us to collaborate on initiatives related to *duni* (moose) and *whudzih* (caribou) recovery and habitat restoration and protection. We are developing an effective engagement process with both levels of government to ensure that the SDNA is involved directly in decisions regarding wildlife in our territories, and specifically *whudzih* (caribou) and *duni* (moose). These strategies and processes will allow for our increased participation, management and stewardship across our traditional territories and allow for the recovery and mitigation of cumulative effects on the health of wildlife and will ensure our role in managing and protecting our territories in the future.

Duni (moose) is also an important part of our diet and is another ungulate that has seen substantial decline in our traditional territories, likely due to increased industrial activity, predation from wolves, road building and other forms of habitat fragmentation, including large-scale wildfires. And while the Proponent is not responsible for their recent decline, our community members fear that mounting pressures will only contribute to a weaker and smaller population in the future. Members have expressed that they have to travel farther than ever before to harvest a *duni* (moose) from within their traditional family *keyohs*. It is important that the Proponent understands that offsetting and mitigations for each of these important ungulate species must be separate and species-appropriate, and that the

use of traditional community knowledge should be considered when developing management, monitoring and mitigation plans that our communities will have confidence in.

There is consensus within our communities and our EA technical review team that several wildlife species were not sufficiently studied, including *whudzih* (caribou), *duni* (moose), *shus* (grizzly bear) and other furbearers. As such, our communities are struggling to quantify the potential impacts to the health of wildlife as we feel that appropriate baseline data have not been provided. Our Nations would like to see the Proponent support the development of a program that will result in the production of scientifically-defensible and culturally-appropriate baseline studies for these wildlife species, and the development of management, monitoring and mitigation strategies that are collaborative and incorporate traditional knowledge from community members (provincial Wildlife Management and Monitoring Plan condition). We feel that in doing so, the Proponent may contribute to alleviating some of the concerns that persist within our memberships. Another mitigation measure that the Proponent can support to reduce some of our communities' concerns and ensure a positive corporate legacy in our communities is to set up a wildlife fund, a commonplace non-habitat offsetting measure. This fund would subsequently be used to carry out surveys and studies not covered in the Project conditions.

Potential impacts and increases in cumulative effects on the health of wildlife are perceived to last for many generations and are irreversible; the loss of access to these important wildlife species has a significant impact on our culture integrity as future generations inherit limited access to these resources. As with all actual and/or perceived impacts related to the Project, and those related to other cumulative effects, the degradation of the health of wildlife will have resounding impacts throughout our communities.

5.6. Health of Air

Based on the perceived impacts of fugitive dust from the proposed Project, both LDN and UFN community members have expressed concern about the likelihood of returning to the Project area post-closure to hunt and gather. The perceived toxic effects that the mine will have on the plants and animals in the area have been identified as main reasons for not returning to this land for subsistence hunting and gathering as many families have done for years. Mount Davidson is highly respected by our communities for the food it provides and the healing ceremonies that occur at the mountain.

The effects of dust on other important cultural services that this land provides to our Nations includes the potential effects on actively utilized campsites throughout the traditional territories, in addition to

the potential effects of fugitive dust on the closest inhabited reserves, namely Tatelkus Lake IR28 and Kluskus IR1.

Many community members have expressed the desire for a cultural revival, such that generational language barriers are lessened, and traditional cultural practices are promoted. Our Nations have a strong connection to the land which allows our members the opportunity to disconnect from other aspects of day-to-day life. There is an increasing desire for families to move back to their *keyohs* and areas where they were raised. The connection to the land and the memories of traditional family land use are strongly tied to community members spirituality. If the impacts of fugitive dust on the areas adjacent to the Project are not appropriately mitigated, the loss of this connection to the land and the traditional land uses will have resounding effects within both communities. While the effects of fugitive dust are generally not expected to be permanent, they are long-term.

The impacts to the health of air are of small spatial extent and are expected to last throughout the life of the Project. Upon closure the impacts are anticipated to be substantially reduced as blasting and processing stops and the majority of travel around the Project footprint will be drastically reduced. Although, our community members have expressed concerns over eating contaminated resources from the areas around the mine and throughout our traditional territories even following mine closure. As mentioned in the Health of Land (Section 5.2), there is lacking baseline data on the current toxicity levels within the soil, plant and animal tissues throughout our traditional territories. Community fears could be reduced if the Proponent supported the development of an ongoing monitoring program that reported on the changes, or lack there of, relative to the operation of the mine as referenced in provincial Air Quality and Dust Management Plan and Country Foods Monitoring Plan conditions, and federal conditions 6.11 and 6.12.

5.7. Health of People

Concerns exist for those struggling with addiction as our community's fear that healthy people will be employed and the unhealthy will be left behind (personal communication, community meeting notes, March, 2017). A vicious cycle exists among community members which is linked to the health of the food our members are consuming and the way of life that has developed since many of our members have moved away from their traditional family land and into towns. The loss of knowledge of traditional food and consequently, the reduced consumption of food provided by the land has resulted in a number of the health problems discussed herein. The health of people is strongly influenced by their

surroundings (personal communication, UFN Band member, April, 2017). The transition from a traditional diet rich in animal foods and fresh, seasonal plants and berries to a diet of the European settlers of white flour, sugar, and other processed foods has contributed to the health epidemic facing the community (i.e., obesity, diabetes and alcoholism; Earle, 2013; Halseth, 2015). A trend which one community member feels will worsen with the introduction of high-paying mining jobs, as money has a way of negatively influencing people (personal communication, UFN Band member, April, 2017).

The health of the people is strongly connected to each of the other community heath values presented herein, and a negative impact on one is likely to have lasting negative impacts to our people, an interconnectedness that has been characterized throughout this report. Historically, our Nations have relied on the resources the land provides (i.e., access to fresh and cleansing spring water, harvesting fish, waterfowl and other wildlife resources, and gathering an abundance of native plant parts for consumption, cultural and spiritual needs), a tradition that continues, although to a lesser extent, today. The degradation of these resources has resulted in changes in our traditional hunting and gathering culture and the Project will contribute to the cumulative effects that our traditional territories are being impacted by. The Project will also further negatively impact the health of our people by altering the landscape at Mount Davidson, limiting access to traditional family *keyohs*, limiting access to sacred sites and by bringing a transient worker population into our traditional territories, an issue that has been reported as being a significant threat to the health of Indigenous populations, particularly women and children (Amnesty International, 2018). The results of this study are not precedent-setting, the impacts to the health of First Nation people associated with resource development have been described in a number of studies including one authored by the Pauktuutit Inuit Women of Canada (2016), the Firelight Group in collaboration with the Lake Babine Nation and the Nak'azdli Whut'en Nation (2017), and an earlier Amnesty International study (2016).

Both of our communities feel that the proposed mitigations for the health of people are insufficient. The Ulkatcho First Nation has requested that the Proponent contribute to the development of a permanent Treatment and Rehabilitation Centre for community members, thus creating a lasting positive legacy within the community. With support from the SDNA, the Lhoosk'uz Dené Nation has proposed the development of a Health Centre for First Nations in Quesnel. The goal is to construct a Nation Centre where members from the SDNA can gather and connect within the traditional territory of the SDNA. The Nation Centre would include educational, cultural, health and language components, as well as community recreation areas. The Nation Centre and the Treatment and Rehabilitation Centre are both

key projects that will positively offset the negative impacts that may be faced by our people should the Project be approved.

Beyond these projects our communities are uncertain as to what programs or policies may help improve the health of our people. Both of our Nations are requesting aid in gathering baseline human health data that may be used to inform the Proponent's Health and Wellness Strategies and future programs, as a substantial amount of work remains to be done to help our community members improve their health so that they can be trained and educated to fill the available job opportunities associated with the mine. For the small proportion of job-ready community members, there will likely be significant positive impacts.

Within LDN, our members are benefiting from the Proponent's contribution to the Quesnel-Dakelh Education and Employment Society, which was formed by us, Lhatko Dené Nation and Nazko First Nation in collaboration with UBC and industry partners to improve job-readiness in our communities. With the intention of developing and offering an adjusted standardized curriculum fine-tuned to community needs based on the outcomes of the Training and Employment Strategy, the Society is able to connect people with employment opportunities with the Proponent, Nation joint venture companies or as sub-contractors of the Nation. Our community members are hopeful that these positive impacts from the Project will initiate a trickle-down effect where those who are currently improving their education, skills and training to secure gainful employment will act as positive role-models for the next generation of LDN and UFN members.

5.8. Health of Culture and Language

Loss of heritage in the area of the proposed Project will be enhanced through the potential loss of sacred sites which exist throughout our Nation's territories. Mount Davidson in particular, is respected by community members for the food it provides as an important berry picking location, for hunting, and the traditional healing ceremonies that occur at the mountain. There is substantial concern that newcomers will not respect the protocols for visiting sacred sites and traditional hunting grounds, and that their access throughout the traditional territories of our Nations will not be carefully regulated or monitored.

We anticipate that the proposed SDNA Nation Centre will include components that will enhance the health of culture and language. The Nation Centre, located within the historic path of the Grease Trail will connect the communities, and will provide a space for healing, education and cultural revitalization.

The Nation Centre will include a repository for artifacts, classrooms for language revitalization and cultural activities, and gathering spaces. The Nation Centre is essential to the continued health of our culture and language. Our Nations feel that funding from New Gold will contribute to the realization of this vision for a Nation Centre and will subsequently offset some of the negative impacts to the health of our culture and language associated with the Project.

The impacts to the health of culture and language are perceived to be long-lasting, predominantly because of the cumulative impacts from other health values that will negatively affect the traditional ways of our Nations. Our culture and language are anticipated to be further negatively impacted by the influx of mine employees who choose to recreate (i.e., hunt and fish) in our traditional territories, inevitably leaving less resources for our community members. It is imperative that the Proponent ensure that all mine employees are educated about the traditional territories they are on, how they are governed and how they continue to support the traditional ways of our Nations. This should be done through signage around the mine and associated infrastructure (i.e., worker camp), as well as through site orientation/training exercises as detailed in the provincial Indigenous Cultural Awareness and Recognition condition. As with the Rainy River mine in Ontario, our community members have expressed interest in developing an offering site where newcomers can present gifts or tobacco, thus paying respect to the families and Nations whose land the mine overlaps. Our communities also feel that it is necessary to honour these families, specifically those belonging to the *keyohs* that will be impacted most severely, the Baptise-Cassam and Mashu families, by hosting a ceremony thanking them for sharing their *keyohs*.

5.9. Health of Spirituality

The perceived and potential effects of the Project on the health of culture, language and spirituality could be mitigated through a "cultural revival" as requested by a number of community members through programs which allow families to return to their traditional family land, promoting environmental stewardship among community members, and teaching the community youth to implement traditional practices such as harvesting, preparing and storing berries and meat from fish and other animals (personal communication, community members meeting notes, March, 2017). Support for the Nation Centre in Quesnel is an example of how the Proponent can attempt to offset the negative impacts of the Project on the health of spirituality.

5.10. Health of Economy

Members from both of our communities have expressed fears that their traditional economies will continue to be impacted by development, and that jobs will not flow into the community as promised (personal communication, community meeting notes, March, 2017). Similar to the effects felt by the community with respect to the forestry industry, there is concern that habitats will continue to be destroyed and access roads will increase hunting pressures further reducing *duni* (moose) and *whudzih* (caribou) populations while the community is granted no real benefits. UFN members have expressed the importance of the land and their traditional economy by stating that money doesn't equate to wealth; wealth is what the people can get from the land (personal communication, community meeting notes, April, 2017).

While there are negative impacts to the traditional economy that is still active in our communities, there will also be many entry-level employment opportunities for job-ready members, providing them with the opportunity to act as positive role-models for the next generation of LDN and UFN members, and giving them greater access to the monetary economy through negotiated contracts with potential business partners. The support and development of Nation-owned companies and joint ventures will offer further opportunities to a variety of community members, including those who may not qualify for jobs directly related to the proposed Project. Overall, our communities feel that the economic benefits will have the most positive impact of all Project impacts.

5.11. Governance

The perceived and potential effects of the Project on governance stem from ongoing mismanagement of traditional First Nation lands by the provincial and federal governments in the form of various industry tenures, park boundaries and associated rules (i.e., park use permits; personal communication, UFN Band members, April, 2017). When government rules and industry activities are imposed on First Nation lands, the First Nations feel disempowered and may ultimately abandon the land and are effectively forced to move into town if these new rules are not adhered by. For example, a UFN Elder with limited proficiency in English has been requested to file a Park Use Permit in order to continue trapping on his family's traditional lands, a document which he is incapable of completing and has therefore been told that he is no longer in compliance with the park use rules and no longer governs his own traditional land as a consequence (personal communication, UFN Band members, April, 2017). Furthermore, non-Aboriginal forestry representatives have restricted access to traditional family lands on which they are harvesting (personal communication, UFN Band member, April, 2017); another blatant violation of the

traditional *keyoh* governance system. There has been concern from community members that increased access throughout their traditional territories associated with the development of the Blackwater Gold Project will increase the degradation of the *keyoh* system as newcomers will not respect the First Nation rules about travelling and recreating on these lands (personal communication, UFN Band member, LDN staff member, April, 2017).

The impacts to governance may be mitigated by the Proponent through the establishment of cultural camps and the acknowledgement and promotion of the traditional *keyoh* system, whereby bringing community members back out onto the land. The *keyoh* system has been increasingly degraded since the first contact with early European settlers in the area and is a concern that our communities have voiced throughout the EA process. Our Nations feel that the health of the people, their culture and language, and their right to exert governance over their traditional family *keyohs* through exclusive use and occupancy can be improved by giving our people the opportunity to return to these lands and participate in the traditional seasonal round activities that occurred here for centuries.

The positive impacts that are anticipated to come form the development of the Project includes the emergence of a new method for exerting governance over the resources within our traditional territories, through positive and collaborative interactions with government agencies and industry. The Proponent can support these positive impacts and promote a positive legacy within our communities by supporting and encouraging the development of capacity within our Nations, business or otherwise.

6. Conclusions

Our Nations have occupied and governed our respective traditional territories since time immemorable and continue to do so in similar ways currently. The signing of the MOU provided for the collaborative drafting of this report. It has also provided our Nations with strong relationships between the federal and provincial government agencies and has given us the opportunity to strengthen our voices on issues that are important to us. This opportunity has given us the ability to exert governance over our land and its resources in a new way, marrying our traditional governance systems with government agreements and industry partnerships. In doing so, we can continue to promote and protect our community health values that were identified herein.

The interconnected health values that were identified by our community members include:

- Health of land,

- Health of water,
- Health of aquatic life,
- Health of wildlife,
- Health of air,
- Health of people,
- Health of culture and language,
- Health of spirituality,
- Health of economy and,
- Governance.

When attempting to assess the severity of impacts of the Project on these health values, our community members identified the importance of understanding the connections between each of the health values and how an impact to one often results in compounding impacts to many other health values, as shown in Figure 1. Our community members also assessed the Proponents proposed mitigation measures (Appendix 2) and provided feedback on alternative mitigation measures that the Proponent should consider to ease some of the persistent community fears surrounding the Project. These recommendations were considered and generally incorporated in the collaborative drafting process for the provincial and federal conditions. With all pertinent information considered, our Nations leaderships evaluated the severity of impacts (Figure 2) associated with the Project on each of the key health values.

6.1. Health of Land

Our Nations leaderships have reviewed and thoroughly considered the potential impacts, both actual and perceived; the suite of mitigation measures proposed by the Proponent; the provincial and federal conditions for the Project, and have identified impacts to the health of land as being high, but acceptable. The proposed mitigation measures and the Project conditions aim to ensure that the impacts to the health of land are minimized; however, there are permanent impacts that our future generations will inherit and that will contribute to the cumulative effects of resource extraction (i.e., logging and mining) in our traditional territories.

Many of our Nations' concerns were addressed through the collaborative condition development process, including the use of Aboriginal group monitors (Aboriginal Group Monitor and Monitoring Plan), and baseline toxicity assessments and monitoring (Country Foods Monitoring Plan). However, our Nations maintain concerns about the protection of the health of the land through issues identified and not resolved in the provincial conditions and assessment reports for the Project, including the effectiveness of the proposed mitigation measures. Many of these issues were flagged by EAO to be resolved in a post-EA certificate government-to-government collaboration agreement which was received by our Nations on April 9, 2019. Additional issues flagged for post-EA certificate resolution have been included in a permitting collaboration plan between our Nations and the Ministry of Energy, Mines and Petroleum Resources (EMPR), Ministry of Environment (MOE) and Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) which was received by our Nations on April 25, 2019. The contents of these agreements, although the expectation of LDN and UFN was that the collaborative permitting process would be a legally binding process to ensure the continued commitment of the province to work with our Nations in making collaborative decisions, the contents of these agreements have provided our Nations with comfort that our concerns will continue to be addressed throughout the collaborative drafting and review of management plans and permit applications, either for or by the EAO or other provincial ministries.

6.2. Health of Water

Our Nations leaderships have reviewed and thoroughly considered the potential impacts, both actual and perceived; the suite of mitigation measures proposed by the Proponent; the provincial and federal conditions for the Project and have identified impacts to the health of water as being high, but acceptable. The proposed mitigation measures and the Project conditions aim to ensure that the impacts to the health of water are minimized; however, there remains uncertainty in the effectiveness of the mitigation measures and a lack of trust in the water treatment and dam safety measures to be employed at the Project site.

Many of our Nations' concerns were addressed through the collaborative condition development process, including aspects of adaptive management and public communications. However, our Nations maintain concerns about the protection of the health of water through issues identified and not resolved in the provincial conditions and assessment reports for the Project, including the effectiveness of the proposed mitigation measures. Many of these outstanding concerns were flagged to be resolved through the aforementioned collaboration agreements with EAO, EMPR, MOE and FLNRORD.

6.3. Health of Aquatic Life

Our Nations leaderships have reviewed and thoroughly considered the potential impacts, both actual and perceived; the suite of mitigation measures proposed by the Proponent; the provincial and federal conditions for the Project and have identified impacts to the health of aquatic life as being moderate. The proposed mitigation measures and the Project conditions aim to ensure that the impacts to the health of aquatic life are minimized; however, there remains uncertainty in the effectiveness of the mitigation measures for ensuring water quality in the receiving environment and the results of the predictive models for water withdrawals from *Delhke'z* (Tatelkuz Lake), and the associated impacts to fish and fish habitat in the Lake will only be known once constructed and operated.

6.4. Health of Wildlife

Our Nations leaderships have reviewed and thoroughly considered the potential impacts, both actual and perceived; the suite of mitigation measures proposed by the Proponent; the provincial and federal conditions for the Project and have identified impacts to the health of wildlife as being high, but acceptable. The proposed mitigation measures and the Project conditions aim to ensure that the impacts to the health of wildlife are minimized; however, our Nations remain concerned about the impacts of habitat loss and alteration associated with the Project and the effectiveness of the proposed mitigation measures; in addition to the potential impacts to water quality and the compounding impacts poor water quality could have on wildlife.

Our Nations maintain concerns about the protection of the health of wildlife through issues identified and not resolved in the provincial conditions or assessment reports for the Project. For example, the Caribou Mitigation and Monitoring Plan condition does not identify the preferred location for the offsets, which UFN leadership and Band members have consistently requested be Capoose Mountain, or Capoose High Elevation Ungulate Winter Range. Capoose has been identified as the highest value habitat for caribou in the area not only by UFN but also by representatives of the BC government. The final location of the offsetting for caribou is of great importance to our Nations.

6.5. Health of Air

Our Nations leaderships have reviewed and thoroughly considered the potential impacts, both actual and perceived; the suite of mitigation measures proposed by the Proponent; the provincial and federal conditions for the Project and have identified impacts to the health of air as being low. Our Nations feel

that the proposed mitigation measures and Project conditions are likely to reduce the impacts associated with dust and noise from the Project.

6.6. Health of People, Culture, Language, Spirituality, Economy and Governance

Our Nations leaderships have reviewed and thoroughly considered the potential impacts, both actual and perceived; the suite of mitigation measures proposed by the Proponent; the provincial and federal conditions for the Project and have identified impacts to the health of people as being high, but acceptable. The proposed mitigation measures and Project conditions aim to ensure that the impacts to these non-biophysical health values are minimized; however, given the lingering uncertainty in the baseline data and the effectiveness of the proposed mitigation measures and the compounding impacts that could result, our Nations are not certain that negative impacts from the Project will be minimized effectively. However, the positive impacts from the Project will all aim to improve the status of these non-biophysical health values. Our Nations are hopeful that the positive contributions that the Proponent has made (e.g., the Quesnel-Dakelh Education and Employment Society) will help guide community members, present and future, to more gainful employment and better opportunities in general.

7. Outstanding Issues

Many of the issues raised by our Nations were proposed to be addressed in a post-EA certificate government-to-government collaborative agreement that will ensure our continued involvement in the development and review of management plans as required by EAO, in addition to initial and life-of-mine permitting processes as required by EMPR, MOE and FLNRORD. On April 9, 2019 the EAO delivered a letter to our Nations outlining the province's commitment to maintain a collaborative approach during the review of management plans and other post-EA certificate activities, should a certificate be issued for the proposed Project. Further, on April 25, 2019 EMPR, MOE and FLNRORD collectively delivered a letter to our Nations outlining their commitment to maintain a collaborative approach through initial and life-of-mine permitting for the proposed Project. While neither agreement is legally binding, it provides our Nations with some comfort in knowing that there is a process for addressing unresolved concerns that will carry forward from the EA review process.

8. Chief and Council Support

A community information session for UFN Band members was scheduled for March 4, 2019 but due to a death in the community, the meeting was rescheduled. The LDN community information session was held in Quesnel for LDN Band members on March 6, 2019, which UFN leadership attended. The UFN community meeting was rescheduled for March 13, 2019, but another community death cancelled the event. Given the recent tragedies in the UFN community, the meeting was not rescheduled, and the UFN leadership was thankful for the opportunity to be a part of the meeting in Quesnel. The information session provided those in attendance with an overview of the results of the EA process, including the results of the impacts assessment and condition development processes.

As of April 18, 2019, our Nations confirmed that New Gold had adequately consulted and accommodated our Nations with respect to our asserted Aboriginal rights and title in respect of the EA. Our Nations acknowledge that this precedent-setting process has been more effective than that of previous EAs and take satisfaction in having our concerns included in the conditions for this Project; however, the process is not complete at this time as not all of our Nations' concerns or interests regarding the Project have been addressed or resolved through the EA process. Before the Crown can be considered to have adequately satisfied its duty to consult and accommodate our Nations, we require that EAO ensure that all non-consensus views and outstanding issues are clearly and fairly articulated in the decision materials for statutory decision-makers, that British Columbia negotiate with our Nations an agreement to share the direct mineral tax revenue on the Project, and that British Columbia
negotiate with our Nations a process to ensure that government-to-government collaboration in respect of the Project continues through initial and life-of-mine permitting.

References

AMEC. (2012). New Gold Inc. Blackwater Gold Project, British Columbia. Project Description Summary [PDF document]. Retrieved from http://www.ceaa.gc.ca/050/documents/p80017/83283E.pdf

AMEC. (2015). Blackwater Gold Project Application for an Environmental Assessment Certificate/Environmental Impact Statement Aboriginal Baseline Information [PDF document].

Amnesty International. (2016). Out of Sight, Out of Mind. Gender, Indigenous Rights, and Energy Development in Northeast British Columbia, Canada [PDF Document]. Retrieved from https://www.amnesty.ca/sites/amnesty/files/Out%20of%20Sight%20Out%20of%20Mind%20EN%20FINAL%20web.pdf

Amnesty International. (2018). *Violence and resource development – lessons from a new Manitoba cumulative impacts study*. Retrieved from https://www.amnesty.ca/blog/violence-and-resource-development-%E2%80%93-lessons-new-manitoba-cumulative-impacts-study

Arpacioglu, C.B. and Er, C. (2003). Estimation of fugitive dust impacts of open-pit mines on local air quality – a case study: Bellavista Gold Mine, Costa Rica. Retrieved from http://www.maden.org.tr/resimler/ekler/001ef257407d5a3_ek.pdf

Birchwater, S. (1993). Ulkatcho Stories of the Grease Trail. Quesnel, BC: Ulkatcho Indian Band.

Bloomgarden, Z. (2004). Type 2 Diabetes in the Young. *American Diabetes Association, 27*(4), 998-1010. https://doi.org/10.2337/diacare.27.4.998

British Columbia Statistics. (2016). *Quarterly Population Highlights.* Retrieved from http://www.bcstats.gov.bc.ca/Publications/Infoline.aspx?BlogTagID=bc63623b-7bc5-4c24-9dd5-9de29da13ab7

Brown, D. (2002). Carrier Sekani Self-Government in Context: Land and Resources. *Western Geography, 12*, 21-67.

Deeg, B. (2014). *Mackenzie Grease-Trail*. Canadian Encyclopedia. Retrieved from http://www.thecanadianencyclopedia.ca/en/article/mackenzie-grease-trail/

Dewhirst, J. (1996). A Traditional Use Study of Kluskus Tribal Territory Vol. One: Report. Comprehensive Version Prepared for the Kluskus First Nation. Quesnel, BC: Archaeo Research Limited.

Dewhirst, J. (2013). *An Ethnohistory of Lhoosk'uz Dené Nation Traditional Territory*. Quesnel, BC: Archaeo Research Limited.

Earle, L. (2013). Traditional Aboriginal Diets and Health [PDF Document]. Retrieved from https://www.ccnsa-nccah.ca/docs/emerging/FS-TraditionalDietsHealth-Earle-EN.pdf

ERM. (2015). Proposed Blackwater Project – Socio-Economic Baseline Information Update for Aboriginal Groups. [PDF document].

Firelight Group with Lake Babine Nation and Nak'azdli Whut'en. (2017). Indigenous Communities and Industrial Camps [PDF Document]. Retrieved from http://www.thefirelightgroup.com/thoushallnotpass/wp-content/uploads/2016/03/Firelight-work-camps-Feb-8-2017_FINAL.pdf

Fisheries and Oceans Canada. (2014). *DFO continues to work with communities and partners to conserve and protect B.C. sockeye salmon*. Retrieved from http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/sockeye-smonrouge/index-eng.html

Fisheries and Oceans Canada. (2016). Central Coast Chinook Salmon Escapement Surveys 2015; Final Report for Pacific Salmon Commission (CSA 57123). Stock Assessment, Pacific Region: Bella Coola, BC.

Furniss, E. (1993a). *Dakelh Keyoh: The Southern Carrier in Earlier Times*. Quesnel, BC: Kluskus, Nazko, Red Bluff and Ulkatcho Indian Bands.

Furniss, E. (1993b). *Changing Ways: Southern Carrier History, 1793-1940*. Quesnel, BC: Kluskus, Nazko, Red Bluff and Ulkatcho Indian Bands.

Hakluyt Society. (1970). *The Journals and Letters of Sir Alexander Mackenzie*. Great Britain: The Syndics of the Cambridge University Press.

Halseth, R. (2015). *The Nutritional Health of the First Nations and Métis of the Northwest Territories*. Retrieved from https://www.ccnsa-nccah.ca/docs/emerging/RPT-NutritionalHealthFNsMetis-Halseth-EN.pdf

HCS (Human Capital Strategies). (2015). Blackwater Project First Nation Training and Employment Strategy – Ulkatcho First Nations Member Skills Survey Results. [PDF Document].

iMapBC. (2017). *Health Forestry Surveys with Pest Infestation Map Layer Added*. Retrieved from https://maps.gov.bc.ca/ess/hm/imap4m/

INAC (Indigenous and Northern Affairs Canada). (2012). Reserves/Settlements/Villages. Retrieved from http://pse5-esd5.ainc-inac.gc.ca/FNP/Main/Search/FNReserves.aspx?BAND_NUMBER=722&lang=eng

Indigenous and Northern Affairs Canada (INAC). (2016). *Reserves/Settlements/Villages*. Retrieved from http://fnp-ppn.aandcaadnc.gc.ca/fnp/Main/Search/FNReserves.aspx?BAND_NUMBER=721&lang=eng

Knight Piésold Ltd. (2016). Blackwater Gold Project – Tailings Dam Breach Inundation Study Report. [PDF Document].

Ministry of Energy and Mines. (2015). Mount Polley Mine Tailing Storage Facility Breach [PDF Document]. Retrieved from https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-

industry/mineral-exploration-mining/documents/directives-alerts-info/chief-inspector-s-report-page/m-200_mount_polley_2015-11-30_ci_investigation_report.pdf

Ministry of Environment. (n.d.). *Fisheries Information Summary System*. Retrieved from http://www.env.gov.bc.ca/fish/fiss/

Ministry of Environment. (2013). Implementation plan for the ongoing management of the South Peace Northern Caribou (*Rangifer tarandus caribou* pop. 15) in British Columbia. Victoria, B.C.

Ministry of Forests and Range. (1995). *Wild edible mushrooms*. Retrieved from https://www.for.gov.bc.ca/hfp/publications/00002/chapt1.htm

Ministry of Forests and Range. (2009). *Managing for Pine Mushrooms Through the Mountain Pine Beetle Epidemic in the West Chilcotin*. Retrieved from https://www.for.gov.bc.ca/hfd/pubs/rsi/fsp/EN/RSI_EN09.pdf

Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD). 2018. Impacts of the 2017 Fires on Timber Supply in the Caribou Region [PDF Document]. Retrieved from https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/stewardship/forest-analysis-inventory/impacts_2017_fires.pdf

Moritz, M.A., Baltloria, E., Bradstock, R.A., Stringer, J., Sitzlar, R., Hessburg, P.F., Leonard, J., McCaffrey, S., Odion, D.C. and Syphard, A.D. (2014). Learning to coexist with wildfire. *Nature, 515*, 58-66. doi:10.1038/nature13946

New Gold. (2016). First Nations Member Skills Survey Results. [PDF document].

Northern Health. (2016). Chief Medical Health Officer Child Health Status Report Technical Report [PDF document]. Retrieved from

https://northernhealth.ca/Portals/0/About/Community_Accountability/documents/CMHO-Child-Health-Status-Technical-Report.pdf

Pauktuutit Inuit Women of Canada. (2016). The Impacts of Resource Extraction on Inuit Women and Families in Qamani'tuaq, Nunavut Territory [PDF Document]. Retrieved from https://www.pauktuutit.ca/wp-content/uploads/Quantitative-Report-Final.pdf

Province of BC. (2014). Lhoosk'uz Dené Nation Forest & Range Consultation and Revenue Sharing Agreement (FCRSA) [PDF document]. Retrieved from http://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/consulting-with-first-nations/agreements/lhooskuz_fcrsa_agreement_-_2014.pdf

Province of BC. (2016). Ministry of Forests, Lands and Natural Resource Operations. *Quesnel Timber Supply Area Timber Supply Analysis Discussion Paper*. Retrieved from https://www.for.gov.bc.ca/hts/tsa/tsa26/2015/26tspdp_16_final.pdf

Statistics Canada. (2012a). *Social determinants of health for the off-reserve First Nation population, 15 years of age and older, 2012*. Retrieved from http://www.statcan.gc.ca/pub/89-653-x/89-653-x2016010-eng.htm

Statistics Canada. (2012b). *Income Characteristics.* Retrieved from http://pse5-esd5.aadnc-aandc.gc.ca/fnp/Main/Search/FNIncome.aspx?BAND_NUMBER =722&lang=eng

Statistics Canada. (2016a). *Median total income, by family type, by province and territory (all census families)*. Retrieved from http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/famil108a-eng.htm

Statistics Canada. (2016b). *Registered Population.* Retrieved from http://fnp-ppn.aadnc-aandc.gc.ca/FNP/Main/Search/FNRegPopulation.aspx? BAND_NUMBER=722&lang=eng

Statistics Canada. (2016c). *Aboriginal Peoples Survey, 2012 Social determinants of health for the off-reserve First Nations population, 15 years of age and older*. Retrieved from https://www150.statcan.gc.ca/n1/pub/89-653-x/89-653-x2016010-eng.htm

Tobias. (2012). Lhoosk'uz Dene Nation Use and Occupancy Map Survey. Tobias and Associates.

UFN (Ulkatcho First Nation). (2013). Community Economic Development Plan. [PDF Document].

US Army Corps of Engineers. (2013). Environmental Considerations for Selecting Cost-Effective Dust Control Technologies. [PDF Document]. Retrieved from http://www.wbdg.org/FFC/ARMYCOE/PWTB/pwtb_200_1_133.pdf

Veit, S. & Gilbert, C. A. (2006). Social and Cultural Impacts of the Mountain Pine Beetle Epidemic on the Ulkatcho First Nation. [PDF Document].

Appendix 1: Memorandum of Understanding (MOU)

ORIGINAL

FILE COPY

MEMORANDUM OF UNDERSTANDING ("MOU")

Regarding the Environmental Assessment for the proposed Blackwater Gold Project ("the Project")

between

Her Majesty the Queen in Right of the Province of British Columbia
as represented by the
Environmental Assessment Office ("EAO")

and

Her Majesty the Queen in Right of Canada
as represented by the
Canadian Environmental Assessment Agency ("the Agency")

and

Ulkatcho First Nation, as represented by Chief and Council **("Ulkatcho")**

and

Lhoosk'uz Dene Nation, as represented by Chief and Council **("Lhoosk'uz Dene")**

(each a "Party" and, collectively, the "Parties")

Purpose

1) The Parties have created this MOU in recognition of Ulkatcho and Lhoosk'uz Dene's asserted Aboriginal rights and interests, including title ("Aboriginal Interests") and to facilitate collaboration on the respective provincial and federal processes. The purpose of this MOU is to deliver an effective, transparent, and rigorous environmental assessment that, guided by the principles and commitments outlined below, effectively assesses the potential adverse effects of the Project on the interests of Ulkatcho and Lhoosk'uz Dene while meeting the respective statutory and legal obligations of EAO and the Agency.

Principles

2) Government-to-Government relationship — The Parties recognize the importance of their relationship and government-to-government basis for discussions, including their respective accountability to their constituents.

a) Collaboration within the environmental assessment (the "EA") process for the Project can facilitate EAO and the Agency's constitutional duty to consult and accommodate Ulkatcho and Lhoosk'uz Dene's Aboriginal Interests". However, the focus of collaboration will be working together on a government-to-government basis.

b) Participation in the EA by Lhoosk'uz Done and Ulkatcho should not be construed as endorsing or supporting the Project.

c) The Parties recognize that issues may arise that could exceed the scope of the EA, or the mandate of either the EAO or Agency. The Parties will be open to exploring approaches or discussions that may necessitate broader government-to-government involvement. Where other government-to-government processes are established, they will be informed by the activities of each, and feedback mechanisms will exist between them.

3) ***Living document—*** The Parties will treat the MOU as a living document. They may incorporate new collaboration ideas into the MOU if and as they arise and are agreed to by the Parties.

4) ***Mutual accountability—*** The Parties take responsibility to participate and advance decision-making in a timely fashion. The Parties agree that an assessment should be robust, rigorous, predictable, timely, credible, and support durable decisions. The Parties will respect and seek to inform mutual decisions and timelines recognizing each government has decisions to make and decision-making processes to follow relating to the Project. The EAO and Agency must operate within their existing policy and legislation frameworks.

5) ***Interest-based—*** The Parties will avoid taking positions and will attempt to resolve issues in an interest-based manner, where possible.

6) ***Transparency —*** The Parties value collaborative processes that are clear, neutrally administered, transparent and predictable; where information is shared and made publicly available; and where decision-makers consider a range of information, including traditional, cultural, economic and scientific knowledge.

7) ***Fairness —*** The Parties agree that the following matters will inform the process outlined in the MOU: constitutional obligations to Ulkatcho and Lhoosk'uz Dene, third party interests, sufficiency of information, and administrative fairness.

a) The Parties will ensure that the proponent of the Project, New Gold Inc., has access to and opportunity to respond to issues affecting the assessment of the Project.

b) Where additional information identified is not available in a timeframe to allow the information to be adequately considered during the EAO's Application review stage and the Agency's technical review stage, the Parties will work toward developing consensus recommendations on requests for timeline extensions or suspensions, or consensus recommendations for alternative approaches to address the limited information or analysis.

8) ***Collaboration and consensus-seeking —*** Different levels of collaboration may be required for the following steps in relation to the EA for the Project:

a) The Parties collaboratively draft those sections of the EAO's Project Assessment Report (the "Assessment Report") and the Agency's Environmental Assessment Report ("EA Report") relating to the effects to Ulkatcho and Lhoosk'uz Dene's Aboriginal Interests;

b) The Parties collaboratively draft and work toward consensus on proposed EA conditions (should they be issued) related to addressing impacts to Ulkatcho and Lhoosk'uz Dene's Aboriginal Interests. Subject to agreement, the Parties will include New Gold Inc., key working group members, and government agencies as appropriate and available to participate in discussions;

c) Work toward development of consensus conclusions in the Assessment Report and EA Report on:

i) Project-related impacts on Ulkatcho and Lhoosk'uz Dene's Aboriginal Interests; and
ii) the adequacy of consultation and accommodation with Ulkatcho and Lhoosk'uz Den&

d) Where the Parties are unable to reach consensus, the Parties will ensure any non-consensus views are clearly and fairly articulated in decision materials for statutory decision makers;

e) Other collaborative opportunities may include:

i) regularly scheduled (bi-weekly) collaboration meetings;
ii) community meetings;
iii) specific working group or sub-working group structures, as needed; and
iv) meetings with other First Nations involved in the EA.

9) ***Ongoing involvement—*** Effective, meaningful and ongoing participation of Ulkatcho and Lhoosk'uz Dene can be explored within EA decision-making, and opportunities appropriate to the nature of potential impacts to each of Ulkatcho and Lhoosk'uz Dene's Aboriginal Interests. The Parties will establish a work plan regarding such opportunities.

a) The Parties will consider ongoing roles for Ulkatcho and Lhoosk'uz Dene in monitoring within Ulkatcho and Lhoosk'uz Dene's traditional territory.

<Original signed by>

Signed on day of , 2016

Chief Betty Cahoose

Ulkatcho First Nation

<Original signed by>

Signed on day of , 2016

Chief Liliane Squinas

Lhoosk'uz Dene Nation

<Original signed by>

Signed on day of , 2016

Michelle Carr, Assistant Deputy Minister

Environmental Assessment Office

<Original signed by>

Signed on day of , 2016

Lisa Walls, Regional Director

Canadian Environmental Assessment Agency

Appendix 2: New Gold's Proposed Mitigation Measures

BLACKWATER GOLD PROJECT: SUMMARY OF PROPOSED MITIGATION MEASURES (NOVEMBER 6, 2018)

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
1.0	**Noise and Vibration**		
	Change in ambient noise levels	**C, O**	• Select equipment with industry standard noise abatement technology (e.g., brakes, exhaust, sound hoods, mufflers, jackhammer jackets) • Minimize the height of material drops from the plant and machinery • House the pebble crusher and grinding circuits in insulated structures, and position equipment in sheltered or enclosed locations, to the extent possible • Locate construction and operations camps to minimize noise disturbance from road and air traffic, and mine equipment • Conduct regular vehicle and equipment inspections to check noise abatement devices • Turn off equipment when not in use, to the extent possible • Implement 60 km/hr speed limit on Project-controlled roads • Operate and maintain equipment within specifications and capacities, and to relevant standards and guidelines (e.g., Environment Canada's Environmental Code of Practice for Metal Mines) to the extent possible[1] • Adhere to Part 8 (Explosives) of the Health, Safety and Reclamation Code for Mines in British Columbia (BC MEM 2017)[2] • Use smaller aircraft (e.g., Dash 8-100) instead of larger aircraft whenever possible • Avoid low altitude flights except on final approach and take-off • Limit flights to daylight hours • Limit taxing time • Use low noise equipment (e.g., generator with muffler) • Develop and implement a Noise Management Plan (draft plan provided in Section 12.2.1.18.4.20 of the Application/EIS) prior to commencement of Construction, and consult with Indigenous groups and relevant government agencies on the plan • Develop and implement a noise complaint response and resolution process
2.0	**Climate Change**		
	Change in atmospheric levels (GHG)	**C, O**	• Use buses and/or airplanes, instead of personal transportation, to transport workers to the mine site during Construction and Operations to reduce emissions • Use low sulphur fuel for off-road vehicles (e.g., mine fleet) in compliance with the Off-Road Compression-Ignition Engine Emission Regulations (SOR/2005-32)[3] • Operate and maintain emission control equipment as per manufacturers requirements (e.g., refuse incinerator) • Manage vehicle and equipment emissions by conducting regular vehicle, machinery and equipment maintenance, restricting speeds, sizing of equipment and reducing idling • Implement an Air Quality and Emissions Management Plan (AQEMP; draft plan provided in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage fugitive dust
3.0	**Air Quality**		

1 Environment Canada. 2009. *Environmental Code of Practice for Metal Mines*. Environment Canada. https://www.ec.gc.ca/lcpe-cepa/documents/codes/mm/mm-eng.pdf

2 BC MEM. 2017. *Health, Safety and Reclamation Code of British Columbia.* British Columbia Ministry of Energy and Mines. http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/health-and-safety/code-review/health_safety_ and_reclamation_code_2017.pdf

3 Off-Road Compression-Ignition Engine Emission Regulations, SOR/2005-32. http://canlii.ca/t/lfgk

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
	Change in ambient air quality	**C, O**	• Manage fugitive dust during Construction and Operations through measures such as speed limits on Project-controlled gravel roads, wetting unpaved roads, revegetation of disturbed areas and/or using other materials, use of appropriately aggregate for road surfaces with low silt content, and progressive reclamation of disturbed areas as soon as possible during Operations, Closure and Post-closure • Implement an AQEMP (draft plan provided in Section 12.2.1.18.4.9 provided in the Application/EIS), including measures to manage fugitive dust such as revegetation of disturbed areas, a follow-up monitoring program to confirm air quality and air dispersion model predictions and to determine the effectiveness of any mitigation measures with regard to air issues, and consult Indigenous groups and relevant government authorities on the draft plan • Operate and maintain emission control equipment as per manufacturers requirements (e.g., refuse incinerator) • Manage vehicle and equipment emissions by conducting regular vehicle, machinery and equipment maintenance, restricting speeds, sizing of equipment and reducing idling • Use low sulphur fuel for off-road vehicles (e.g., mine fleet) in compliance with the Off-Road Compression-Ignition Engine Emission Regulations (SOR/2005-32)[3]
4.0	**Surface Water Quantity**		
4.1	Change to surface water flows (Davidson Creek, Creek 661, Creek 705 and Chedakuz Creek watersheds)	**C, O, CL, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment • Construct the Northern and Southern diversions during the Construction phase to supplement the Freshwater Supply System (FWSS) (i.e., Tatelkuz Lake water) to mitigate changes in flows in Davidson Creek and Chedakuz Creek, downstream of Tatelkuz Lake, and provide flexibility in apportionment of flow to Davidson Creek during Operations, Closure and Post-Closure • Construct and operate the pit water treatment plant during Operations to provide flexibility to minimize surplus water accumulation in the tailings storage facility (TSF) and apportion flow to Davidson Creek • Source process water from site contact water sources during Operations to reduce water withdrawal from Tatelkuz Lake and associated flow reduction in Chedakuz Creek • Flood open pit with TSF supernatant water and ECD flows during Closure to reduce water withdrawal from Tatelkuz Lake and associated flow reduction in Chedakuz Creek • Pump water from Tatelkuz Lake to meet Davidson Creek instream flow needs (IFN) until the end of Closure • Discharge treated pit water to Davidson Creek to reduce water withdrawal from Tatelkuz Lake during years 5-14 • Implement seepage control at TSF dams and pit lake • Construct the TSF D spillway in Year 10 to intercept additional unrecoverable seepage from the TSF to Davidson Creek and Creek 661, if monitoring determines there is unrecoverable seepage that needs to be captured • Implement a Mine Water Management Plan (draft plan provided in Section 12.2.1.18.4.18 of the Application/EIS), including plans for operation of the TSF, seepage monitoring plans and adaptive management plans and on-site water management • Adhere to the Environmental Code of Practice for Metal Mines (Environment Canada 2009), to the extent possible[1]
4.2	Change to Tatelkuz Lake levels	**O, CL**	• Minimize withdrawals from Tatelkuz Lake by maximizing on-site water recycling and reuse (e.g., sourcing process water from site contact water sources) and diverting non-contact water around the TSF to Davidson Creek
5.0	**Surface Water Quality**		

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
5.1	Change in anions, nutrients, total and dissolved metal concentrations in Davidson Creek (nitrate, antimony dissolved aluminum and total zinc)	**O** (nitrate and dissolved aluminum) **PC** (antimony, dissolved aluminum, total zinc)	• Use conventional SO_2/air treatment for cyanide destruction of tailings during Operations, prior to deposition in the TSF • Treat run-off and seepage from the low grade ore (LGO) stockpile during Operations, if monitoring determines necessary to meet permit conditions • Backfill the LGO in the pit if the LGO stockpile is not processed by the end of mill operations • Construct the TSF D spillway in Year 10 to intercept additional unrecoverable seepage from the TSF to Davidson Creek and Creek 661, if monitoring determines there is unrecoverable seepage that needs to be captured • Locate fuel storage and refuelling activities outside riparian areas • Active water treatment to treat low grade ore stockpile runoff, tailings, open pit surface and groundwater during Operations • Active water treatment to treat TSF supernatant and water treatment brine during Closure • Active water treatment to treat open pit water; water reporting to ECD, and TSF water and brine during Post-Closure • Implement a Mine Waste Management Plan (draft plan provided in Section 12.2.1.18.4.17 of the Application/EIS), including plan for prediction, monitoring, prevention and mitigation of metal leaching/acid rock drainage and management strategies for waste rock, tailings and LGO • Implement a Mine Water Management Plan (draft plan provided in Section. 12.2.1.18.4.18 of the Application/EIS), including plan for on-site water management • Follow the Environmental Code of Practice for Metal Mines to the extent possible and the International Cyanide Management Code (ICMC) • Implement an AQEMP (see draft plan in Section 12.2.1.18.4.9), including measures to manage fugitive dust
5.2	Change in total and dissolved metal concentrations in Creek 661 (dissolved aluminum, total chromium, total copper and total zinc)	**O** (dissolved aluminum, total chromium, total copper, total zinc) **PC** (dissolved aluminum, total zinc)	• Construct the TSF D spillway in Year 10 to intercept additional unrecoverable seepage from the TSF to Davidson Creek and Creek 661, if monitoring determines there is unrecoverable seepage that needs to be captured • Install pit lake seepage collection system to intercept seepage from the open pit lake to Creek 661 if monitoring determines there is unrecoverable seepage that needs to be captured during Post-closure • Implement a Mine Waste Management Plan (draft plan provided in Section 12.2.1.18.4.17 of the Application/EIS), including plan for prediction, monitoring, prevention and mitigation of metal leaching/acid rock drainage and management strategies for waste rock, tailings and LGO • Implement a Mine Water Management Plan (draft plan provided in Section 12.2.1.18.4.18 of the Application/EIS), including plan for on-site water management
5.3	Change in total and dissolved metal concentrations in Chedakuz Creek (dissolved aluminum)	**PC**(dissolved aluminum)	• Treat open pit water, including pit sumps and perimeter wells, during Operations for dissolved metals before discharge to Davidson Creek, if monitoring determines necessary to meet permit conditions • Treat for sulphate, ammonia and dissolved metals before discharge to Davidson Creek during Post-closure, if monitoring determines necessary to meet permit conditions • Implement a Mine Waste Management Plan (draft plan provided in Section 12.2.1.18.4.17 of the Application/EIS), including plan for prediction, monitoring, prevention and mitigation of metal leaching/acid rock drainage and management strategies for waste rock, tailings and LGO • Implement a Mine Water Management Plan (draft plan provided in Section. 12.2.1.18.4.18 of the Application/EIS), including plan for on-site water management
5.4	Change in total suspended solids and turbidity	**C, O, CL**	• Implement a Sediment and Erosion Control Plan (SECP; draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion control measures (e.g., diversion and runoff collection ditches, sediment control ponds, revegetation of disturbed areas and use of flocculants) • Adhere to BC Ministry of Environment (BC MOE) Technical Guidance 7: Assessing the Design, Size, and Operation of Sediment Ponds used in Mining (2015)[4]
6.0	**Sediment Quality**		
	Change to sediment quality due to changes in surface water quality	**O, CL, PC**	• Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion and sediment control measures (e.g., diversion and runoff collection ditches, sediment control ponds, revegetation of disturbed areas and use of flocculants) • Adhere to BC MOE Technical Guidance 7: Assessing the Design, Size, and Operation of Sediment Ponds used in Mining (2015)[4] • Implement a Mine Water Management Plan (draft plan provided in Section 12.2.1.18.4.18 of the Application/EIS) including plan for on-site water management
7.0	**Groundwater Quality and Quantity**		
7.1	Change to groundwater quantity	**O, CL, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment

[4] BC MOE. 2015. *Technical Guidance 7: Assessing the Design, Size, and Operation of Sediment Ponds used in Mining*. British Columbia Ministry of the Environment. http://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/assessing_design_size_and_operation_of_sediment_ponds.pdf

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
7.2	Change to groundwater quality	**O, CL, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment • Implement a Mine Water Management Plan (draft plan provided in Section 12.2.1.18.4.18 of the Application/EIS), including plans for seepage collection from the TSF and open pit
8.0	**Wetlands** (Indicators: ecological, hydrological, biochemical and habitat functions)		
	Loss of wetland extent/degradation of PC wetland function	**C, O, CL,**	• Design linear features to avoid wetlands to the extent possible • Maintain existing drainage connections when designing and installing culverts for cross drainage, and avoid creating outlets that either drain wetlands or constrict the natural outlet during construction, where possible • Use low ground pressure equipment or tracked equipment for work in areas with saturated soils during Construction, to the extent possible • Use timber mats, driving mats, or log corduroys or other means of ground protection where needed to minimize disturbances to vegetation and reduce rutting during construction • Adhere to Fisheries and Oceans Canada's (DFO's) Guidance on Measures to Avoid Causing Harm to Fish and Fish Habitat (DFO 2013)[5], Approved Work Practices for Managing Riparian Vegetation (BC Hydro et al. 2003)[6] • Implement applicable best management practices identified in Wetland Ways: Interim Guidelines for Wetland Protection and Conservation in British Columbia (Cox and Cullington 2009)[7], Riparian Management Area Guidebook (BC MOF 1995)[8], and Forested Wetlands-Functions, Benefits, and the Use of Best Management Practices (Welsch et al. 1995)[9] • Prior to construction, install sediment controls, including silt fences and containment structures, prior to and maintain them during construction activities • Protect natural drainages and watercourses by constructing appropriate on-site sediment control devices (such as collection and diversion ditches, sediment traps, sediment ponds) and use of flocculants • Place soil salvage stockpiles in locations where they will have no impact on natural drainages • Locate fuel storage and refuelling activities outside riparian areas • Direct all surface runoff from plant site grading, open pit development, TSF construction and waste rock storage area development to the TSF basin • Control metal leaching by separating contact and non-contact surface water through diversion dams and collection trenches; and • Collect all (except minimal) TSF seepage downstream of the TSF D Dam during operations and post-closure • Implement a Wetlands Management Plan (draft plan provided in Section 12.2.1.18.4.3 of the Application/EIS), including definition of wetland buffer zones and wetlands monitoring plan • Where possible, a 30 metre vegetation buffer will be used to protect wetland functions • Implement a Wetland Compensation Plan (WCP; draft plan provided in Appendix 5.3.7A) pursuant to the Federal Policy on Wetland Conservation, (Government of Canada 1991)[10], including on-site compensation (creation of wetlands within TSF) and off-site compensation
9.0	**Fish** (Indicators: rainbow trout and kokanee)		

5 DFO. 2013. *Measures to Avoid Causing Harm to Fish and Fish Habitat*. Fisheries and Oceans Canada. http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html

6 BC Hydro. 2003. *Approved Work Practices for Managing Riparian Vegetation, Guide to Incorporating Riparian Environmental Concerns into the Protocol Agreement for Work In and Around Water*. BC Hydro and Power Authority. https://www.bchydro.com/content/dam/hydro/medialib/internet/documents/bctc_documents/work_practices_riparian.pdf

7 Cox and Cullington. 2009. *Wetland Ways: Interim Guidelines for Wetland Protection and Conservation in British Columbia.* Wetland Stewardship Program. http://www.env.gov.bc.ca/wld/BMP/bmpintro.html and http://www.env.gov.bc.ca/wld/documents/bmp/wetlandways2009/Wetland%20Ways%20Ch%201%20Introduction.pdf

8 BC MOF. 1995. *Riparian Management Area Guidebook*. British Columbia Ministry of Forests, Forest Practices Code: Victoria, BC.

9 Welsch, D.J., Smart, D.L., Boyer, J.N., Minken, P., Smith, H.C. and McCandless, T.L., 1995. *Forested Wetlands: Functions, Benefits and the Use of Best Management Practices*.

10 Government of Canada. 1991. *The Federal Policy on Wetland Conservation*. Ottawa, Ontario, Published by Authority of the Minister of Environment, 15 pp. http://publications.gc.ca/collections/Collection/CW66-116-1991E.pdf

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
9.1	Loss of fish in upper Davidson Creek and Creek 661 headwaters	**C, O, CL, PC** (mine site)	• Where instream construction is required, isolate work areas and complete fish salvage and relocation as detailed in a Fish Salvage Plan • Conduct instream construction during the lowest risk timing window for rainbow trout (15 July to 15 April of the following year) to avoid interruptions to spawning migrations and egg mortalities, to the extent possible[11] • Implement a Fisheries Mitigation and Offsetting Plan, as approved by Fisheries and Oceans Canada, to offset effects to fish, including offsetting measures and a monitoring plan • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion control measures (e.g., ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats and use of flocculants) • Implement an Aquatic Resources Management Plan (draft plan in Section 12.2.1.18.4.1 of the Application/EIS), including identification of lowest risk timing windows, and measures related to handling of hydrocarbons, site re-vegetation and bridge and riparian area maintenance • Adhere to DFO *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* (D.G. Wright and G.E. Hopky (1998))[12]
9.2	Disruption of salmonid homing to Davidson Creek	**O, CL**	• Minimize disturbance to the Davidson Creek watershed downstream of the mine site, to minimize changes to natural run off and flow to Davidson Creek • Construct the Northern and Southern diversions during the Construction phase to supplement the FWSS (i.e., Tatelkuz Lake water) to mitigate changes in flows, and provide flexibility in apportionment of flow to Davidson Creek
9.3	Mobilization of mercury in Lake 01682LNRS	**C, O, CL, PC**	• Strip vegetation and topsoil material above the existing high water line and up to the expected high water line in the enlarged Lake 01682LNRS, except in areas where vegetation and topsoil material are retained as part of fisheries offsetting or other habitat restoration initiatives • Monitor sediment quality in Lake 01682LNRS
9.4	Change in water temperature in Davidson Creek	**C, O, CL, PC**	• During the Construction phase, allow for the FWSS to discharge directly to Davidson Creek or a surface discharge from the freshwater reservoir (FWR), in addition to low level outlet in the FWR, until Post-closure • Construct the Northern and Southern diversions during the Construction phase to supplement the FWSS (i.e., Tatelkuz Lake water), to provide for better alignment of Davidson Creek temperatures with baseline conditions and temperature requirements of fish species in Davidson Creek • Install and operate a temperature and flow control system (TFCS) supported by a monitoring and adaptive management strategy to inform the operation of the TFCS • Prior to FWSS operation, locate the Tatelkuz Lake intake at an appropriate depth in Tatelkuz Lake, and install end of pipe fish screens as required by DFO (1995)[13]
9.5	Reduction of littoral fish habitat of Tatelkuz Lake or change in water surface elevation of Tatelkuz Lake	**O, CL, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment • Minimize withdrawals from Tatelkuz Lake by maximizing on-site water recycling and reuse (e.g., sourcing process water from site contact water sources), diverting non-contact water around the TSF to Davidson Creek and implementing an adaptive management strategy for instream flow needs in Davidson Creek • Utilise seasonal and/or life stage specific instream flow requirements to derive pumping volumes from Tatelkuz Lake to minimize withdrawals to what is necessary to meet the instream flow need in Davidson Creek • Prior to the commissioning of the FWSS, undertake studies on fish habitat in Tatelkuz Lake, and monitor fish habitat quantity and quality in the littoral zone in mid-summer • Consult with Indigenous groups on the Aquatic Effects Monitoring Plan, which would include the fish habitat studies referenced above, and incorporate culturally relevant biomagnification indicators

11 BC MOE. 2004. *Reduced Risk Timing Windows and Measures for the Conservation of Fish and Fish Habitat for the Omineca Region.* http://www.env.gov.bc.ca/omineca/documents/fpc_omineca_twm_final_may04.pdf

12 DFO.1998. *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters.* http://www.dfo-mpo.gc.ca/Library/232046.pdf

13 DFO. 1995. *Freshwater Intake End-of-Pipe Fish Screen Guideline. Fisheries and Oceans Canada.* http://www.dfo-mpo.gc.ca/library/223669.pdf

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
9.6	Change in aquatic health due to changes in surface water quality in Davidson Creek and Creek 661	**C, O, CL, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment • Minimize disturbance to the Davidson Creek watershed downstream of the mine site, to minimize changes to natural run off and flow to Davidson Creek • Locate fuel storage and refuelling activities outside riparian areas • Construct the Northern and Southern diversions during the Construction phase to supplement the FWSS (i.e., Tatelkuz Lake water) to mitigate changes in flows, and provide flexibility in apportionment of flow to Davidson Creek • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including measures to control erosion (e.g., diversion and runoff collection ditches, sediment control ponds, and use of flocculants) • Implement an AQEMP (see draft plan in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage fugitive dust
9.7	Change in nutrients in Davidson Creek, **PC** Creek 661, Chedakuz Creek	**C, O, CL,**	• Implement an AQEMP (see draft plan in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage fugitive dust • Implement a Hazardous Materials Management Plan (draft plan provided in Section 12.2.1.18.4.12 of the Application/EIS), including measures to manage explosives use • Locate fuel storage and refuelling activities outside riparian areas • Adhere to DFO *Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters* (D.G. Wright and G.E. Hopky (1998))[13]
10.0	**Fish Habitat** (Indicators: rainbow trout and kokanee)		
10.1	Loss of fish habitat (Rainbow trout)	**C, O, CL, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment • Implement a Fisheries Mitigation and Offsetting Plan , as approved by DFO, to offset effects to fish habitat, including offsetting measures and monitoring plan
10.2	Change in surface water flow	**C, O, CL, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment • Minimize disturbance to the Davidson Creek watershed downstream of the mine site, to minimize changes to natural run off and flow to Davidson Creek • Construct the Northern and Southern diversions during the Construction phase to supplement the FWSS (i.e., Tatelkuz Lake water) to mitigate changes in flows, and provide flexibility in apportionment of flow to Davidson Creek • Minimize withdrawals from Tatelkuz Lake by maximizing on-site water recycling and reuse (e.g., sourcing process water from site contact water sources), diverting non-contact water around the TSF to Davidson Creek and implementing an adaptive management strategy for instream flow needs in Davidson Creek • Construct a fish passage barrier in Davidson Creek, at the mine access road, and in Creek 505659 upstream of Creek 661 within the area included in the Fisheries and Mitigation Offsetting Plan
10.3	Mobilization of mercury in **PC** Lake 01682LNRS	**C, O, CL,**	• Strip vegetation and topsoil material above the existing high water line and up to the expected high water line in the enlarged Lake 01682LNRS, except in areas where vegetation and topsoil material are retained as part of fisheries offsetting or other habitat restoration initiatives
10.4	Change in water temperature in Davidson **PC** Creek	**C, O, CL,**	• During Construction, allow for the FWSS to discharge directly to Davidson Creek or a surface discharge from the FWR, in addition to low level outlet in the FWR, until Post-closure when the open pit lake is allowed to discharge to Davidson Creek • Construct the Northern and Southern diversions during the construction phase to provide for better alignment of Davidson Creek temperatures with baseline conditions and temperature requirements of fish species in Davidson Creek • Install and operate a temperature and flow control system (TFCS) supported by a monitoring and adaptive management strategy to inform the operation of the TFCS • Locate the Tatelkuz Lake FWSS intake at an appropriate depth in Tatelkuz Lake, and install end of pipe fish screens as required by DFO (1995)[14]
10.5	Reduction in littoral fish habitat of Tatelkuz Lake change in water surface elevation of Tatelkuz Lake	**O, CL**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment and reduce flow impacts to Creek 661 and Tatelkuz lake further downstream • Minimize withdrawals from Tatelkuz Lake by maximizing on-site water recycling and reuse (e.g., sourcing process water from site contact water sources), diverting non-contact water around the TSF to Davidson Creek and implementing an adaptive management strategy for instream flow needs in Davidson Creek • Utilise seasonal and/or life stage specific instream flow requirements to derive pumping volumes from Tatelkuz Lake, supporting the minimizing of withdrawals to what is necessary to meet the instream flow need in Davidson Creek

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
10.6	Change in aquatic health due to changes in surface water quality in Davidson Creek and Creek 661	**C, O, Cl, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance in the Creek 661 catchment and reduce flow impacts to Creek 661 and Tatelkuz Lake further downstream • Construct the Northern and Southern diversions during the Construction phase to provide flexibility in apportionment of flow to Davidson Creek during Operations, Closure and Post-closure • Locate fuel storage and refuelling activities outside riparian areas • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion control measures (e.g., diversion and runoff collection ditches, sediment control ponds and use of flocculants)
10.7	Change in nutrients in Davidson Creek, Chedakuz Creek and Creek 661	**C, O, Cl, PC**	• Implement an AQEMP (draft plan in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage fugitive dust • Implement a Hazardous Materials Management Plan (draft plan provided in Section 12.2.1.18.4.12 of the Application/EIS), including measures to minimize residual explosives products • Adhere to DFO Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters (D.G. Wright and G.E. Hopky 1998)[13]
11.0	**Physiography and Topography**		
	Alteration of baseline landscape	**C, O, CL, PC**	• Remove the East Dump and associated water management infrastructure (e.g., sediment pond, and diversion and collection ditches located in Creek 661 watershed) to reduce mine disturbance • Implement a Reclamation and Closure Plan (RCP: draft plan provided in Section 2.6 of the Application/EIS), including integration of mine features into the Post-closure landscape • Minimize roads constructed on-site to reduce mine disturbance
11.2	Terrain stability and accelerated erosion	**C, O, CL, PC**	• Avoid hazardous terrain, to the extent possible • Implement a Landscape, Soils, and Vegetation Management and Restoration Plan (LSVMRP; draft plan provided in Section 12.2.1.18.4.4 of the Application/EIS), including measures to mitigate adverse effects on landscape stability (e.g., slope gradients along road cuts and disturbed areas to gradients are or below the angle of repose of those disturbed areas, and using drainage control measures and water passage structures (e.g., culverts) to manage surface water run-off, where appropriate) • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats, and use of flocculants) • Implement a RCP (draft plan provided in Section 2.6 of the Application/EIS), including seeding and progressive reclamation of exposed slopes to improve slope stability • Minimize roads constructed on-site to reduce mine disturbance
12.0	**Surficial Geology and Soil Cover**		
12.1	Removal and relocation of overburden material	**C, O, CL**	• Implement a RCP (draft plan provided in Section 2.6 of the Application/EIS), including a plan for salvaging and stockpiling topsoil • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats and use of flocculants)
12.2	Soil disturbance	**C, O**	
12.3	Soil re-distribution	**PC**	
13.0	**Soil Quality**		
13.1	Soil contamination due to spills, leaks	**C, O, CL, PC**	• Implement an Emergency and Spill Preparedness Response Plan (draft plan provided in Section 12.2.1.18.4.13 of the Application/EIS), including response, containment and clean-up plans • Implement an AQEMP (see draft plan in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage vehicle emissions and dust • Implement a preventative maintenance program for equipment • Utilize secondary containment where appropriate • Implement a Hazardous Materials Management Plan (HMMP; S draft plan provided in Section 12.2.1.18.4.12 of the Application/EIS), including measures for transporting, storing and disposing of hazardous materials

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
13.2	Alteration and loss of soil due to terrain **PC** stability and accelerated erosion	**C, O, CL,**	• Minimize the mine site footprint and avoid hazardous terrain • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including identification of erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats and use of flocculants) • Salvage soil in accordance with the RCP (draft plan provided in Section 2.6 of the Application/EIS)
13.3	Soil contamination due to dust deposition	**C, O, CL**	• Implement an AQEMP (draft plan provided in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage vehicle emissions and dust
13.4	Chemical and physical alteration due to soil disturbance	**C, O**	• Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including identification of erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, revegetation of disturbed areas, erosion control mats and use of flocculants) • Implement a RCP (draft plan provided in Section 2.6 of the Application/EIS), including soil management plan
13.5	Physical alteration due to soil re-distribution	**CL**	• Implement a RCP (draft plan provided in Section 2.6 of the Application/EIS), including plans for progressive reclamation
14.0	**Ecosystem Composition** (Indicators: ecosystem distribution, riparian areas, old growth forest, sparsely vegetated ecosystems, traditional use plants habitat)		
14.1	Loss of ecosystems (ecosystem distribution, riparian ecosystems, old growth forest, traditional use plant habitat)	**C, O, CL, PC**	• Avoid riparian areas and old growth forests where possible • Use existing roads and cleared areas where possible, and maximize the use of existing areas of disturbance • Identify no-work and management work zones (with restrictions, such as no heavy machinery, etc.) and setbacks in accordance with best management practices (BC MFLNRO, 2014) where feasible • Implement construction best management practices to mitigate for altered hydrology (e.g., installing appropriate culverts where required, and maintaining functioning water tables and drainage throughout all phases) • Follow *Approved Work Practices for Managing Riparian Vegetation* (BC Hydro 2003)6 for work in and around water • Implement a RCP (draft plan provided in Section 2.6 of the Application/EIS), including plans for progressive reclamation and reforestation • Implement a SECP (Section 12.2.1.18.4.1 of the Application/EIS), including identification of erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats and use of flocculants) • Implement an AQEMP to manage fugitive dust (Section 12.2.1.18.4.9 of the Application/EIS), and invasive species proliferation (Invasive Species Management Plan (ISMP)(draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS), and include traditional use plants in reclamation prescriptions (RCP; Section 2.6 of the Application/EIS)
14.2	Nitrogen deposition (ecosystem distribution, riparian ecosystems, traditional use plant habitat)	**C, O**	• Implement an AQEMP (draft plan provided in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage fugitive dust and Transportation and Access Management Plan (TAMP; draft plan provided in Section 12.2.1.18.4.14 of the Application/EIS), including measures to speed limits on Project-controlled roads
14.3	Spread of invasive plants (ecosystem distribution, riparian ecosystems, traditional use plant habitat)	C, O, CL, PC	• Minimize disturbing areas outside or adjacent to areas targeted for clearing (e.g., machinery and equipment movement, or extent of grubbing and stripping) • Clean earth moving vehicles prior to entering the mine site • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including measures for erosion and sediment control • Implement the LSVMRP and ISMP (draft plans provided in Section 12.2.1.18.4.4 and 12.2.1.18.4.5 of the Application/EIS), including measures to manage plant species at risk and reduce the introduction and spread of invasive species, and replanting procedures • Implement a RCP (draft plan provided in Section 2.6 of the Application/EIS), including use of weed-free seed for reclamation

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
15.0	**Plant Species and Ecosystems and Risk** (Indicators: whitebark pine, plant species at risk habitat, ecosystems at risk)		
15.1	Loss of ecosystems (whitebark pine, plant species at risk habitat and ecosystems at risk)	**C, O, CL, PC**	• Avoid grubbing, stripping, and removal of shrubs and herbaceous species in areas requiring clearing to retain the topsoil and vegetation root mat, to the extent possible • Flag or otherwise identify clearing limits as appropriate • Provide orientation to workers on whitebark pine identification to minimize the disturbance to whitebark pine • Prior to Construction, develop fire management plans, including consideration of whitebark pine on Mt Davidson in suppression planning, and provision of information to the Wildfire Management Branch on whitebark pine distribution to help inform suppression efforts • Implement a Whitebark Pine Management Plan (refer to measures identified in draft plan provided in Section 12.2.1.18.4.4.9 of the Application/EIS), including cone collection and seedling propagation, and depending on the results and success of reclamation trials, enhancing stands on the mine site to improve conditions for whitebark pine survival and recruitment, and using whitebark pine seedlings for mine site reclamation • Implement an ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS), including measures to reduce the introduction and spread of invasive plant species • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats, and use of flocculants)
15.2	Nitrogen deposition (whitebark pine and plant species at risk habitat	**C, O**	• Implement an AQEMP (draft plan provided in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage fugitive dust and TAMP (draft plan provided in Section 12.2.1.18.4.14 of the Application/EIS), including measures to implement speed limits on Project-controlled roads
15.3	Reduced ability for whitebark pine to regenerate (whitebark pine)	**C, O, CL, PC**	• Provide orientation to workers on whitebark pine identification as part of overall mine site orientation • Implement a Whitebark Pine Management Plan (refer to measures identified in draft plan provided in Section 12.2.1.18.4.4.9 of the Application/EIS) including cone collection and seedling propagation, and depending on the results and success of reclamation trials, enhancing stands on the mine site to improve conditions for whitebark pine survival and recruitment, and using whitebark pine seedlings for mine site reclamation
16.0	**Wildlife** (Indicators: Caribou, amphibians [western toad], forest and grassland birds [olive-sided flycatcher, Clark's nutcracker, red-tailed hawk, short-eared owl, interior forest habitat barn and bank swallow, black swift], furbearers [marten, beaver, fisher, wolverine], invertebrates [Jutta arctic, American emerald], moose and waterbirds [ring-necked duck, yellow rail, Wilson's snipe, greater yellow legs, horned grebe])		
16.1	Habitat loss and alteration	**C, O** for amphibians (mine site, mine site access road, FWSS, airstrip, Kluskus FSR) **C,O, CL, PC** for amphibians (transmission line)	Amphibians • Locate the transmission line in disturbed areas where possible • Locate project components away from wetlands and riparian areas • Use existing roads and follow existing linear disturbances and cleared areas to support transmission line construction • Identify no-work and management work zones (with restrictions such as no heavy machinery, etc.) and setbacks in accordance with best management practices (BC MLFNRO 2014)[14], to the extent possible • Restrict clearing of terrestrial amphibian breeding habitats to periods outside of the amphibian breeding season (1 April to 30 September) as per ECCC guidance, or conduct pre-construction and pre-clearing surveys and amphibian salvage if clearing is required during the breeding season. If salvage is required, adhere to the *Best Management Practices for Amphibian and Reptile Salvages in British Columbia* (BC MFLNRO 2016)[15] • Implement a Wildlife Management Plan (WLMP; draft plan provided in Section 12.2.1.18.4.612 of the Application/EIS), including measures to reduce sensory disturbance • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS) including erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats and use of flocculants) • Implement a LSVMRP (draft plans provided in Section 12.2.1.18.4.4 of the Application/EIS), ISMP (draft plan in Section 12.2.1.18.4.5 of the Application/EIS), and RCP (draft plan in Section 2.6 of the Application/EIS), including progressive reclamation using local native vegetation, wherever possible, or appropriate commercially grown, weed-free native species • If amphibian use of the TSF is observed during periods when water quality poses a mortality risk, New Gold will consult with regulators and First Nations on appropriate mitigations to exclude amphibians from the area until water quality has sufficiently improved

[14] BC FLNRO. 2014. *Guidelines and Best Management Practices (BMPs)*. http://www.env.gov.bc.ca/wld/BMP/bmpintro.html (accessed March 13, 2017)

[15] BC MFLNRO. 2016. *Best Management Practices for Amphibian and Reptile Salvages in British Columbia*. BC Ministry of Forests, Lands and Natural Resource Operations. http://a100.gov.bc.ca/pub/eirs/finishDownloadDocument.do;jsessionid=YcLRYHmL1NTTvFJpvwPSBJfSSrQh2rWnphcWBwGZT3mN8QRhlnVX!1900646311?subdocumentId=10351 (accessed March 13, 2017)

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.2	Habitat loss and alteration *(cont'd)*	**C, O, CL, PC** for bats and grizzly bear	Bats • Minimize the mine site footprint and avoid large scale clearing of old-growth forest to the extent possible • Adhere to *Best Management Practices Guidelines for Bats in British Columbia* (Holroyd, S.L. and V.J Craig. 2016)[16] • Monitor and protect roost and hibernacula by: conducting pre-construction surveys in the mine site to identify/confirm potential roost and hibernacula features; maintaining an inventory of wildlife trees, snags, buildings, mines, rocky outcrops and cliff/cave features that may function as potential roost and hibernacula features to inform potential mitigation measures; conducting surveys to confirm whether they are used and by which species; applying appropriate mitigation measures if roosts or hibernacula are detected at the mine site and avoidance is not possible • Timing windows used for vegetation clearing will be based on local information of the timing of roosting/ rearing versus hibernation. • Prior to construction, conduct pre-clearing surveys to identify wildlife trees (snags) and any bat roosting habitats in the transmission line right of way. Should roosts be observed, artificial roosts will be installed in consultation with province of British Columbia bat experts and based on provincial guidance in MOE 2016 *Best Management Practices for Bats in British Columbia*, Chapter 2: Mine Developments and Inactive Mine Habitats. • Identify no-work and management work zones (with restrictions, such as no heavy machinery, etc.) and setbacks in accordance with best management practices (BC MFLNRO, 2014) where feasible • Minimize sensory disturbance due to noise in areas adjacent to the mine site and airstrip, including use of noise abatement technology, equipment placement, regular equipment maintenance, and enforcement of speed limits • Minimize light disturbance in areas adjacent to the mine site by limiting the use of outside artificial lighting to areas where necessary for safe operation of the Project, including directional lighting and lighting that is activated by motion detector(s) to the extent possible Grizzly Bears • Locate the transmission line in disturbed areas where possible • Use existing roads and follow existing linear disturbances to support transmission line construction • Use helicopters to support transmission line construction in steep areas, where safe and practicable • Conducting pre-clearing surveys to identify grizzly bear activity within potential denning habitat during sensitive periods as described in the WLMP • Avoid clearing and development of berry and kokanee areas, to the extent possible • Minimize the mine site footprint and avoid large scale clearing of old-growth forest and riparian areas, to the extent possible • Minimize sensory disturbance due to noise and light in areas adjacent to the mine site and airstrip, including the use of noise abatement technology, equipment placement, regular equipment maintenance, and enforcement of speed limits • Implement invasive plant management techniques, as described in the ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS) • Restore disturbed habitats at mine closure or develop habitats capable of supporting grizzly bears as described in the RCP (Section 2.6 of the Application/EIS) and WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) and avoid using species that attract bears • Implement no hunting (including no trapping) and no firearms policies for Project employees and contractors while resident on the mine site as described in the WLMP (Section 12.2.1.18.4.6 of the Application/EIS) • Participate in grizzly bear regional wildlife and resource management initiatives in Wildlife Management Units (WMUs) 6-01 and 7-12 where appropriate

[16] Holroyd, S.L. and V.J Craig. 2016. *Best Management Practices Guidelines for Bats in British Columbia, Chapter 2: Mine Developments and Inactive Mine Habitats.* BC Ministry of Environment, Victoria, BC. 60pp.

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.3		**C, O, CL, PC** for caribou, forest and grassland birds, furbearers, invertebrates, moose and waterbirds	Caribou • Minimize the mine site footprint and avoid large scale clearing of old-growth forest, riparian stands and lichen-rich stands where possible • Decommission and restore the existing exploration access road and Mt. Davidson exploration road during the Construction phase • Prior to the commencement of construction, conduct caribou aerial surveys, and subsequently every five years until the end of mine operations, and provide survey results to First Nations and relevant government authorities • Construct the mine access road to the mine site to avoid ungulate winter range (HE-1-001 Mt. Davidson) • If a mineral lick is identified during pre-construction surveys, or during construction or operations, engage with FLNRO and First Nations to identify appropriate mitigation measures to minimize impacts to the mineral lick • Minimize sensory disturbance due to noise and light, including directional lighting and lighting that is activated by motion detector(s) to the extent possible, noise abatement technology, equipment placement, regular equipment maintenance, and enforcement of speed limits • Schedule project activities to take into account the caribou "least risk window" (as defined by Ungulate Winter Range Order (UWR) 7-01-012), where practicable. In the event caribou are observed in the area of the mine site, work may be stopped until the caribou leave the area • As part of the Caribou Mitigation and Monitoring Plan (CMMP), implement a Caribou Offsetting Plan, including land securement and restoration • Establish an Environmental Monitoring Board to monitor project-related effects and make recommendations related to adaptive management • Implement invasive plant management techniques as defined in the ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS), including developing and implementing detailed construction and operational plans of invasive plant prevention and detection strategies, and an action protocol if invasive plants are detected • Implement measures to manage fugitive dust as defined in the AQEMP (draft plan provided in Section 12.2.1.18.4.9 of the Application/EIS), such as: o Maintenance of unpaved roads which will be regularly compacted and kept in good repair o Use of coarse aggregate for road surfaces with low silt content o Roadways will be wetted to minimize dust from ore and waste rock haulage and grading, when ambient air temperatures permit o Cleaning of paved areas as required to minimize dust o Wetting of materials to minimize dust in material handling, as needed o Reporting incidents involving excessive dust on site and implementing adaptive management • Implement progressive reclamation using local native vegetation wherever possible or appropriate commercially grown, weed-free native species pursuant to the RCP (Section 2.6 of the Application/EIS) • Restore disturbed habitats at mine closure or develop appropriate habitats capable of supporting caribou and other wildlife, as per the Recovery Strategy for Woodland Caribou, Southern Mountain Population (*Rangifer tarandus caribou*) in Canada (ECCC 2014)[17] and/or the provincial *Draft Caribou Recovery Program* and/or the Tweedsmuir Herd Plan when it becomes available • Support non-habitat based tools for caribou recovery identified in the provincial *Draft Caribou Recovery Program* and/or the Tweedsmuir Herd Plan when it becomes available

[17] Environment Canada. 2014. Recovery Strategy for the Woodland Caribou, Southern Mountain population (*Rangifer tarandus caribou)* in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. viii + 68 pp.

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.4	Habitat loss and alteration	**C, O, CL, PC**	for caribou, forest and grassland birds, furbearers, invertebrates, moose and waterbirds

Forest and Grassland Birds

- Locate project components away from wetlands
- Minimize the mine site footprint and avoid large scale clearing of old-growth forest and riparian areas to the extent possible
- Avoid vegetation clearing during bird breeding windows. If clearing required during breeding bird window, conduct point surveys and/or other survey techniques consistent with ECCC guidance (*Avoidance of Detrimental Effects to Migratory Birds (Incidental Take), Avoidance Guidelines: General Nesting Periods of Migratory Birds in Canada*. 2016, and *Avoidance of Detrimental Effects to Migratory Birds (Incidental Take), Avoidance Guidelines: Technical Information*. 2016) and RISC/RIC standards. These pre-clearing surveys will consider the specific habitat requirements and survey protocols for listed species at risk, including rusty blackbird, olive-sided flycatcher, barn swallow, bank swallow, black swift, and common nighthawk.
- Minimize sensory disturbance due to noise and light to areas adjacent to the mine area and airstrip, including directional lighting and lighting that is activated by motion detector(s) to the extent possible , noise abatement technology, equipment placement, regular equipment maintenance, and enforcement of speed limits on Project-controlled roads
- Where possible, retain and enhance forest edge habitat along road areas to provide escape or thermal cover for passerines (or birds)
- Retain coarse woody debris where appropriate for microshelter habitat for birds
- Implement an AQEMP (draft plan provided in Section 12.2.1.18.4.912 of the Application/EIS), including measures to manage fugitive dust
- Develop and implement a Whitebark Pine Management Plan (draft plan provided in Section 12.2.1.18.4.4.9 of the Application/EIS), including cone collection and seedling propagation, and depending on the results and success of reclamation trials, enhancing stands on the mine site to improve conditions for whitebark pine survival and recruitment, and using whitebark pine seedlings for mine site reclamation
- Implement progressive reclamation using local native vegetation wherever possible or appropriate commercially grown, weed-free native species, including use of conifers and whitebark pine in suitable sites, pursuant to the LSVMRP (draft plan provided in Section 12.2.1.18.4.4 of the Application/EIS), and RCP (draft plan in Section 2.6 of the Application/EIS),
- Implement invasive plant management techniques as defined in the ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS), including developing and implementing detailed construction and operational plans of invasive plant prevention and detection strategies, and an action protocol to be used if invasive plants are detected
- Monitor for Clark's nutcracker, and integrate the results into adaptive management measures as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6)

Raptors

- Avoid vegetation clearing during bird breeding windows. If clearing required during breeding bird window, conduct point surveys and/or other survey techniques consistent with ECCC guidance (*Avoidance of Detrimental Effects to Migratory Birds (Incidental Take), Avoidance Guidelines: General Nesting Periods of Migratory Birds in Canada*. 2016, and *Avoidance of Detrimental Effects to Migratory Birds (Incidental Take), Avoidance Guidelines: Technical Information*. 2016) and RISC/RIC standards. These pre-clearing surveys will consider the specific habitat requirements and survey protocols for listed species at risk, including short-eared owl.

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

16.5	Habitat loss and alteration *(cont'd)*	**C, O, CL, PC** for caribou, forest and grassland birds, furbearers, invertebrates, moose and waterbirds *(cont'd)*	<u>Furbearers</u> • Minimize the mine site footprint and avoid large scale clearing of old-growth forest and riparian areas where possible • Locate the transmission line in existing disturbed areas where possible • Use existing roads and follow existing linear disturbances to support transmission line construction • Use helicopters to support transmission line construction in steep areas, where safe and practicable • After initial clearing, maintain vegetation along the transmission line right of way to minimize predator sight lines by maintaining limits of approach and the height of the plant community at no lower than three feet from the ground on an average basis, except where an area is needed for tower bases, guy anchor points and along access roads • Conduct pre-clearing surveys during the denning period (March – April) to identify and avoid potential dens of marten and fisher. If a den is located, establish a 50 metre setback around the den. • Designate well demarcated no-work zones and management work zones (with restrictions, such as no heavy machinery, etc.) and setbacks in areas adjacent to riparian wildlife habitats in accordance with best management practices (BC FLNRO 2014) where feasible • Deploy berms, woody debris, and/or other visual barriers in appropriate locations along the transmission line that may also facilitate cover and movement for furbearers • Minimize sensory disturbance due to noise and light in areas adjacent to the mine site and airstrip, including use of noise abatement technology, equipment placement, regular equipment maintenance, and enforcement of speed limits • Implement a LSVMRP (draft plan provided in Section 12.2.1.18.4.4 of the Application/EIS), including minimizing ground disturbance and damage to vegetation • Implement invasive plant management techniques as defined in the ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS), including developing and implementing detailed construction and operational plans of invasive plant prevention and detection strategies, and an action protocol to be used if invasive plants are detected • Implement no hunting (including no trapping) and no firearms policies for Project employees and contractors while resident on the mine site as described in the WLMP (Section 12.2.1.18.4.6 of the Application/EIS) • Implement progressive reclamation using local native vegetation wherever possible or appropriate commercially grown, weed-free native species pursuant to the RCP (draft plan provided in Section 2.6 of the Application/EIS) • Restore disturbed habitats or develop appropriate habitats capable of supporting furbearers pursuant to the RCP (draft plan provided in Section 2.6 of the Application/EIS) <u>Invertebrates</u> • Locate facilities and topsoil piles within the mine site area away from wetlands, and/or minimize ground disturbance footprint • Minimize clearance of black spruce forest and maintaining hydrological regimes of wetlands near infrastructure • Implement an LSVMRP (draft plan provided in Section 12.2.1.18.4.4 of the Application/EIS), including progressive reclamation using local native vegetation wherever possible, or appropriate commercially grown, weed-free native species • Implement fugitive dust control measures as described in the AQEMP (draft plan provided in Section 12.2.1.18.4.9 of the Application/EIS), including watering roads and avoiding use of road salts to improve invertebrate habitat suitability • Implement progressive reclamation using local native vegetation wherever possible or appropriate commercially grown, weed-free native species pursuant to the RCP (Section 2.6 of the Application/EIS) <u>Moose</u> • Locate the transmission line in existing disturbed areas where possible • Use existing roads and follow existing linear disturbances to support transmission line construction • Use helicopters to support transmission line construction in steep areas along the alignment • After initial clearing, maintain vegetation along the transmission line right of way to minimize predator sight lines by maintaining limits of approach and the height of the plant community at no lower than three feet from the ground on an average basis, except where an area is needed for tower bases, guy anchor points and along access roads • Participate in moose regional wildlife and resource management initiatives in WMUs 6-01 and 7-12 where appropriate • Minimize ground disturbance and damage to vegetation in areas adjacent to footprints by flagging sensitive habitats, as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) • Minimize sensory disturbance due to noise and light, including directional lighting and lighting that is activated by motion detectors, noise abatement technology, equipment placement, regular equipment maintenance, and enforcement of speed limits • If a mineral lick is identified during pre-construction surveys or during construction or operations, engage with FLNRORD and First Nations to identify appropriate mitigation measures to minimize impacts to the mineral lick • Conduct moose aerial surveys prior to the commencement of Construction, and subsequently every five years until the end of mine operations

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
			• Implement no hunting (including no trapping), no gathering and no firearms policies for Project employees and contractors residing on the mine site, as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) • Implement invasive management measures as described in the ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS) • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats, and use of flocculants) • Implement an AQEMP (draft plan provided in Section 12.2.1.18.4.9) along Project-controlled roads, including watering roads and avoiding use of salt on Project-controlled roads • Implement a WMP (draft plan provided in Section 12.2.1.18.4.3 of the Application/EIS) and WCP (Appendix 5.3.7A of the Application/EIS) • Install road signs to alert drivers of speed limits and of wildlife use areas along Project-controlled roads • Implement invasive plant management techniques as defined in the ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS), including developing and implementing detailed construction and operational plans of invasive plant prevention and detection strategies, and an action protocol to be used if invasive plants are detected • Restore disturbed habitats at mine closure or develop habitats capable of supporting moose pursuant to the RCP (Section 2.6 of the Application/EIS)

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.6	Habitat loss and alteration *(cont'd)* for caribou, forest and grassland birds, furbearers, invertebrates, moose and waterbirds (Note: No interaction of transmission line with caribou) *(cont'd)*	**C, O, CL, PC**	Waterbirds • Locate Project components away from wetland and riparian areas • Designate well demarcated no-work zones and management work zones (with restrictions, such as no heavy machinery, etc.) and setbacks in areas adjacent to riparian wildlife habitats in accordance with best management practices (BC FLNRO 2014) where feasible • Avoid vegetation clearing during bird breeding windows. If clearing required during breeding bird window, conduct point surveys and/or other survey techniques consistent with ECCC guidance (*Avoidance of Detrimental Effects to Migratory Birds (Incidental Take), Avoidance Guidelines: General Nesting Periods of Migratory Birds in Canada*. 2016, and *Avoidance of Detrimental Effects to Migratory Birds (Incidental Take), Avoidance Guidelines: Technical Information*. 2016) and RISC/RIC standards. These pre-clearing surveys will consider the specific habitat requirements and survey protocols for listed species at risk, including horned grebe and yellow rail. • Implement a SECP (draft plan provided in Section 12.2.1.18.4.1), including erosion identification of erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats, and use of flocculants) • Implement no hunting (including no trapping) and no firearms policy for Project employees and contractors while resident at the mine site as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6) • Implement invasive plant management techniques as defined in the ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS) • Minimize sensory disturbance due to noise and light to areas adjacent to the mine area and airstrip, including directional lighting and lighting that is activated by motion detector(s) to the extent possible, noise abatement technology, equipment placement, regular equipment maintenance, and enforcement of speed limits • Implement a Wetland Compensation Plan (Appendix 5.3.7A of the Application/EIS) • Restore disturbed habitats and develop habitats capable of supporting waterbirds where possible, pursuant to the RCP

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.7	Mortality risk	**C, O, CL, PC** for bats, caribou, grizzly bear, invertebrates	Bats • Adhere to federal guidance to prevent the spread of white nose syndrome, as outlined in *Western Canada White Nose Syndrome Transmission Prevention* (CWHC 2015) • Monitor and protect roost and hibernacula by: conducting pre-construction surveys in the mine site to identify/confirm potential roost and hibernacula features; maintaining an inventory of wildlife trees, snags, buildings, mines, rocky outcrops and cliff/cave features that may function as potential roost and hibernacula features to inform potential mitigation measures; conducting surveys to confirm whether they are used and by which species; applying appropriate mitigation measures if roosts or hibernacula are detected at the mine site and avoidance is not possible • Locate roads and transmission line poles away from wetland and riparian areas, to the extent possible • Minimize sensory disturbance due to noise and light at the mine site and airstrip, including use of noise abatement technology, equipment placement, and regular equipment maintenance Caribou • Decommission and restore the existing exploration access road and Mt. Davidson exploration road during the Construction phase • Collaborate with FLNRORD and First Nations on appropriate site treatment options to provide habitat features for security of caribou and to foster habitats not suitable for alternate prey species. Examples include placing woody debris on the surface of upland slopes (e.g., waste rock pile), and scarifying and replanting surfaces. • Implement adaptive management to manage alternate prey habitat, wolf access or other similar measures, as described in the WLMP (draft plan provided in Section 12.2.1.4.18.6 of the Application/EIS). • Prior to the commencement of construction, conduct caribou aerial surveys, and subsequently every five years until the end of mine operations, and provide survey results to First Nations and relevant government authorities • After initial clearing, maintain vegetation along the transmission line right of way to minimize predator sight lines by maintaining limits of approach and height of plant community at no lower than three feet from the ground on an average basis, except where an area is needed for tower bases, guy anchor points and along access roads • During the early years of Operations, deactivate and decommission access roads that are constructed to support transmission line construction to limit predator movements and vision along the line • Schedule Project activities to take into account the caribou "least risk window" (as defined by UWR Order 7-01-012), where practicable. In the event caribou are observed in the area of the mine site, work may be stopped until the caribou leave the area • Develop an Access Management Plan and establish an Access Management Working Group to reduce potential for predators and hunters to gain new access to caribou habitat • Implement no hunting (including no trapping) and no firearms policies for Project employees and contractors while resident at the mine site as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) • Implement caribou awareness and response protocols for mine personnel during mine safety and environmental orientations • Enforce speed limits and post signs to identify areas of high wildlife activity along Project-controlled roads • Implement best management practices for road surface maintenance (including dust suppression measures) to allow good vehicle line of sight and control to reduce potential collisions with wildlife • Minimize attraction of wildlife to roadsides using adaptive management measures, such as avoiding the use of road salts, removing carrion, and selection of appropriate revegetation species along Project-controlled access roads • Restrict and control road access to the mine site, as described in the TAMP (draft plan provided in Section 12.2.1.18.4.14) • Restore disturbed habitats at mine closure or develop appropriate habitats capable of supporting caribou and other wildlife, as per the Recovery Strategy for Woodland Caribou, Southern Mountain Population (*Rangifer tarandus caribou*) in Canada (ECCC 2014)[18] and/or the provincial *Draft Caribou Recovery Program* and/or the Tweedsmuir Herd Plan when it becomes available • Support non-habitat based tools for caribou recovery identified in the provincial *Draft Caribou Recovery Program* and/or the Tweedsmuir Herd Plan when it becomes available

[18] Environment Canada. 2014. Recovery Strategy for the Woodland Caribou, Southern Mountain population (*Rangifer tarandus caribou)* in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. viii + 68 pp.

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.8	Mortality risk *(cont'd)*	**C, O, CL, PC** for bats, caribou, grizzly bear, invertebrates	Grizzly Bear • Conduct pre-clearing surveys to identify and avoid potential denning habitat as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6) • Report and document wildlife observations and incidents/accidents along Project-controlled access roads • Minimize attraction of wildlife to roadsides using adaptive management measures, such as avoiding the use of road salts, removing carrion, and selection of appropriate revegetation species along Project-controlled access roads, pursuant to the WLMP (draft plan provided in Section 12.2.1.18.4.6) • Implement best management practices for road surface maintenance (including dust suppression measures) to allow good vehicle line of sight and control to reduce potential collisions with wildlife • Post signs along Project-controlled roads, warning drivers of the possibility of wildlife encounters in areas of high wildlife activity • Enforce speed limits along Project-controlled roads • Implement the WLMP (Section 12.2.1.18.4.6), including a Bear Awareness Program • Implement the TAMP (draft plan provided in Section 12.2.1.18.4.14) • Implement Industrial and Domestic Waste Management Plan (draft plan provided in Section 12.2.1.18.4.11) • Select re-vegetation species that minimize attraction of wildlife to roadsides, and remove carrion along Project-controlled access roads as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6) • Implement no hunting, no feeding and no wildlife harassment policies for Project employees and contractors residing at the mine site Invertebrates • Implement an ISMP (draft plan provided in Section 12.2.1.18.4.5), including invasive plant management • Implement fugitive dust management measures along Project-controlled roads, as described in the AQEMP (draft plan provided in Section 12.2.1.18.4.9), including watering roads and avoiding use of road salts

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.9		**C, O, CL, PC** for amphibians, furbearers, moose and waterbirds	Amphibians • Implement a WLMP (draft plan in Section 12.2.1.18.4.6), including adhering to Guidelines for Amphibian and Reptile Conservation during Urban Rural Land Development in British Columbia (BC MFLRNO 2014) • Implement fugitive dust management measures along Project-controlled roads, as described in the AQEMP (draft plan provided in Section 12.2.1.18.4.9) • Post signs along Project-controlled roads to identify amphibian crossings in areas of high wildlife activity, such as potential toad crossings near breeding sites, to the extent possible • Conduct pre-clearing and pre-construction surveys, and if required, salvage amphibians prior to Construction or temporary loss of wetlands during the active period (extends April 1 to September 30) • Where safe and practicable, implement adaptive management measures to deter water birds and amphibians from the TSF and pit lake waters • Implement a salvage plan that identifies relocation sites and outlines salvage operations prior to Construction during breeding season in potential Western toad habitat Furbearers • After initial clearing, maintain vegetation along the transmission line right of way to minimize predator sight lines by maintaining limits of approach and the height of the plant community at no lower than three feet from the ground on an average basis, except where an area is needed for tower bases, guy anchor points and along access roads • During early years of operations, deactivate and decommission access roads that are constructed to support line construction to limit predator movements and vision along the line • Deploy berms, woody debris, and/or other visual barriers in appropriate locations along the line that may also facilitate cover and movement for furbearers • Include wildlife awareness information in regular safety and environmental inductions performed by the mine • Control access to the mine site and manage speed limits on Project-controlled roads as described in the TAMP (draft plan provided in Section 12.2.1.18.4.14 of the Application/EIS) • Implement no hunting (including no trapping) and no firearms policies for Project employees and contractors while resident at the mine site as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) • Select re-vegetation species that minimize attraction of wildlife to roadsides, and remove carrion along Project-controlled access roads as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) Moose • After initial clearing, maintain vegetation along the transmission line right of way to maintain limits of approach and maintain plant community at no lower than three feet from the ground on an average basis, except where an area is needed for tower bases, guy anchor points and along access roads • During early years of operations, deactivate and decommission access roads that are constructed to support line construction to limit predator movements and vision along the line • Conduct moose aerial surveys prior to the commencement of construction, and subsequently every five years until the end of mine operations • If a mineral lick is identified during pre-construction surveys or during construction or operations, engage with FLNRO and First Nations to identify appropriate mitigation measures to minimize impacts to the mineral lick • Include wildlife awareness information in regular mine safety and environmental orientations • Install road signs to alert drivers of speed limits and of wildlife use areas along Project-controlled roads • Implement best management practices for road surface maintenance (including dust suppression measures) to allow good vehicle line of sight and control to reduce potential collisions with wildlife • Report and document wildlife observations and incidents/accidents along Project-controlled access roads • Implement a no hunting (including no trapping) and no firearms policy for Project employees and contractors while resident at the mine site as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) • Participate in moose regional wildlife and resource management initiatives in WMUs 6-01 and 7-12

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.10	Mortality risk *(cont'd)*	**C, O, CL, PC** for amphibians, furbearers, moose and waterbirds *(cont'd)*	Waterbirds • Locate project components away from wetland areas and riparian areas to the extent possible • Deploy markers on the shield wires on the transmission line and phase conductors on distribution lines • Avoid vegetation clearing during bird breeding windows as per ECCC guidance (*Avoidance of Detrimental Effects to Migratory Birds (Incidental Take), Avoidance Guidelines: General Nesting Periods of Migratory Birds in Canada*. 2016, and *Avoidance of Detrimental Effects to Migratory Birds (Incidental Take), Avoidance Guidelines: Technical Information*. 2016). Pursuant to ECCC guidance and RIC/RISC, undertake pre-construction surveys where appropriate. These pre-clearing surveys will consider the specific habitat requirements and survey protocols for listed species at risk, including horned grebe and yellow rail. • Where safe and practicable, implement adaptive management measures to deter water birds and amphibians from the TSF and pit lake • Minimize sensory disturbance due to noise and light, including use of directional lighting and lights that are activated by motion detector(s) to the extent possible • Enforce speed limits along Project-controlled roads • Implement a WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS), including adaptive management measures for the TSF and open pit waters, as required, monitoring program for the transmission line (monitor and investigate bird mortality) and implement adaptive measures to reduce further mortality • Implement no hunting (including no trapping) and no firearms policies for Project employees and contractors while resident at the mine site as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS)
16.11	Change to movement patterns	**C, O, CL, PC** for amphibians	• Follow best management practices as described in the *Guidelines for Amphibian and Reptile Conservation during Urban Rural Land Development in British Columbia* (BC MFLRNO 2014)[19] where applicable • Post signs along Project-controlled roads to identify amphibian crossings in areas of high wildlife activity, such as potential toad crossings near breeding sites, to the extent possible • Conduct pre-clearing and pre-construction surveys in areas with high probability of occurrence, and if required, salvage amphibians prior to Construction or temporary loss of wetlands during the active period (extends April 1 to September 30) • Implement a salvage plan that identifies relocation sites and outlines salvage operations prior to Construction during breeding season in potential Western toad habitat • Implement a WLMP (draft plan provided in Section 12.2.1.18.4 of the Application/EIS)
		C, O, CL, PC for moose	• Participate in moose provincial regional initiatives related in WMUs 6-01 and 7-12 where appropriate • Enforce speed limits and post signs along Project-controlled roads to identify moose sensitive areas such as migration routes and seasonal feeding areas • Implement best management practices for road surface maintenance to allow good vehicle line of sight and control to reduce potential collisions with moose • Minimize attraction of wildlife to roadsides using adaptive management measures, such as avoiding the use of road salts, removing carrion, and selection of appropriate revegetation species along Project-controlled access roads, pursuant to the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) • Minimize sensory disturbance due to noise and light, including use of noise abatement technology, equipment placement, and regular equipment maintenance • Select re-vegetation species that minimize attraction of wildlife to roadsides to reduce potential for vehicle collisions and predation as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) • Record wildlife observations on Project-controlled roads • Include wildlife awareness information in regular mine safety and environmental inductions

[19] BC FLNRO. 2014. *Guidelines for Amphibian and Reptile Conservation during Urban Rural Land Development in British Columbia*. Available online at: http://www.env.gov.bc.ca/wld/documents/bmp/HerptileBMP_complete.pdf

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.12	Changes to population dynamics	**C, O, CL** for caribou	• Decommission and restore the existing exploration access road during the Construction phase • After initial clearing, maintain vegetation along the transmission line right of way to minimize predator sight lines by maintaining limits of approach and the height of the plant community at no lower than three feet from the ground on an average basis, except where an area is needed for tower bases, guy anchor points and along access roads • During the early years of Operations, deactivate and decommission access roads that are constructed to support transmission line construction to limit predator movements and vision along the line • Place natural cover such as rock piles and woody debris piles in open areas to reduce predator efficiency and create temporary visual cover for caribou pursuant to the RCP (draft plan provided in Section 2.6 of the Application/EIS) • Prior to the commencement of construction, conduct caribou aerial surveys, and subsequently every five years until the end of mine operations, and provide survey results to First Nations and relevant government authorities • Place woody debris on the surface of upland slopes and between rocks and along the slopes, parallel and perpendicular with the slopes, to provide habitat features for security of caribou and to foster habitats not suitable for alternate prey species • Implement adaptive management to manage alternate prey habitat, wolf access or other similar measures, as described in the WLMP (draft plan provided in Section 12.2.1.4.18.6 of the Application/EIS • Restore disturbed habitats at mine closure or develop appropriate habitats capable of supporting caribou and other wildlife, as per the Recovery Strategy for Woodland Caribou, Southern Mountain Population (*Rangifer tarandus caribou*) in Canada (ECCC 2014)[20] and/or the provincial *Draft Caribou Recovery Program* and/or the Tweedsmuir Herd Plan when it becomes available • Support non-habitat based tools for caribou recovery identified in the provincial *Draft Caribou Recovery Program* and/or the Tweedsmuir Herd Plan when it becomes available
		C, O, CL, PC for moose and waterbirds	Moose • After initial clearing, maintain vegetation along the transmission line right of way to minimize predator sight lines by maintaining limits of approach and the height of the plant community at no lower than three feet from the ground on an average basis, except where an area is needed for tower bases, guy anchor points and along access roads • During early years of operations, deactivate and decommission access roads that are constructed to support line construction to limit predator movements and vision along the line • Remove carrion along Project-controlled roads to reduce the risk of attracting predator species, as described in the WLMP (draft plan in Section 12.2.1.4.18.6 of the Application/EIS); and • Implement adaptive management to manage alternate prey habitat, wolf access or other similar measures, as described in the WLMP (draft plan provided in Section 12.2.1.4.18.6 of the Application/EIS). Waterbirds • Locate Project components away from wetland areas and riparian areas to the extent possible • Identify no-work and management work zones (with restrictions such as no heavy machinery), and setbacks in accordance with best management practices (BC MFLNRO 2016)20 to the extent possible • Implement an ISMP (draft plan provided in Section 12.2.1.18.4.5 of the Application/EIS), including invasive plant management techniques • Restore disturbed habitats during mine closure or develop habitats capable of supporting waterbirds pursuant to the RCP (draft plan provided in Section 2.6) • Compensate for impacts to wetlands as described in the WMP (draft plan provided in Section 12.2.18.4.3 of the Application/EIS) and WCP (draft plan provided in Appendix 5.3.7A), pursuant to the Federal Policy on Wetland Conservation (Government of Canada 1991)[21]
16.13	Changes to invertebrate health	**C, O, CL** for invertebrates	• Implement a SECP (draft plan provided in Section 12.2.1.18.4.1 of the Application/EIS), including erosion control measures (e.g., proper ditching, reducing slopes and placement of soil salvage piles, diversion and runoff collection ditches, sediment control ponds, erosion control mats, and use of flocculants) • Implement fugitive dust management measures along Project-controlled roads, as described in the AQEMP (draft plan provided in Section 12.2.1.18.4.9), including watering roads and minimize attraction of wildlife to roadsides and improve invertebrate habitat suitability

20 Environment Canada. 2014. Recovery Strategy for the Woodland Caribou, Southern Mountain population (*Rangifer tarandus caribou)* in Canada [Proposed]. *Species at Risk Act* Recovery Strategy Series. Environment Canada, Ottawa. viii + 68 pp.

21 Government of Canada. 1991. *The Federal Policy on Wetland Conservation.* Ottawa, Ontario, Published by Authority of the Minister of Environment, 15 pp. Available online: http://publications.gc.ca/collections/Collection/CW66-116-1991E.pdf (accessed March 9, 2017)

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
16.14	Changes to amphibian health due to changes in surface water quality in Davidson Creek and Creek 661	**C, O, CL, PC**	• Implement a WLMP (draft plan in Section 12.2.1.18.4.6 of the Application/EIS), including best management practices to reduce potential dust contamination of amphibian habitats • Implement a Hazardous Materials Management Plan (draft plan provided in Section 12.2.1.18.4.12 of the Application/EIS), including explosives use • Implement an AQEMP (draft plan in Section 12.2.1.18.4.9 of the Application/EIS) to manage fugitive dust
17.0	**Provincial Economy and Government Revenues**		
	Loss of employment	**CL**	• Prior to scheduled mine closure, develop an integrated closure plan to help employees transition to new employment
18.0	**Regional and Local Employment and Business**		
	Loss of employment	**CL**	• Prior to scheduled mine closure, develop an integrated closure plan to help employees transition to new employment • Develop and implement a Socio-economic Effects Monitoring Plan (SEEMP to manage socio-economic effects related to the Project, including identification of roles and responsibilities of project personnel and contractors, an implementation schedule, public feedback process, monitoring plan, and a process for adaptive management
19.0	**Regional and Local Government Finances**		
	Loss of employment	**CL**	• Prior to scheduled mine closure, develop an integrated closure plan to help employees transition to new employment • Develop and implement a SEEMP to manage socio-economic effects related to the Project, including identification of roles and responsibilities of project personnel and contractors, an implementation schedule, public feedback process, monitoring plan, and a process for adaptive management
20.0	**Demographics**		
	Changes to population in the Socio-**CL** economic Regional Study Area	**C, O,**	• Develop and implement a SEEMP to manage socio-economic effects related to the Project, including identification of roles and responsibilities of project personnel and contractors, an implementation schedule, public feedback process, monitoring plan, and a process for adaptive management • Provide incentives for employees to relocate to the SERSA, where appropriate, and encourage the Project management team to reside in the SERSA • Use the airstrip to transport temporary construction workers residing outside of the SERSA • House workforce in camps during construction and operations while on shift
21.0	**Regional and Community Infrastructure**		
	Increase in demand for housing, utilities, recreation and leisure services	**C, O**	• Provide data related to the Project workforce and operations to the province (to the extent that this data can be provided without violating applicable law), and participate in provincial initiatives to monitor potential cumulative socio-economic impacts in the region • Implement a SEEMP to manage socio-economic effects, including identification of roles and responsibilities of project personnel and contractors, an implementation schedule, public feedback process, monitoring plan, and a process for adaptive management • Continue to liaise with the Community Liaison Committee (CLC) over the life of the Project to identify, monitor and discuss measures to mitigate Project effects related to service provision, housing, and health and social services • House workforce in camps during Construction and Operations while on shift • Use the airstrip to transport temporary construction workers residing outside of the SERSA • Use buses or alternatives to personal transportation to transport workers to the mine site during Construction and Operations to reduce potential for traffic accidents
22.0	**Family and Community Well-being**		
22.1	Increase in economic hardship due to loss of employment	**CL**	• Prior to scheduled mine closure, develop an integrated closure plan to help employees transition to new employment

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
22.2	Increase in socially disruptive behaviours	**C, O**	• Continue to liaise with the CLC over the mine life to identify, monitor and discuss measures to mitigate Project effects related to service provision, housing, and health and social services • House workforce in camps during Construction and Operations while on shift • Implement a SEEMP to manage socio-economic effects related to the Project, including identification of roles and responsibilities of Project personnel and contractors, an implementation schedule, public feedback process, monitoring plan, and a process for adaptive management
22.3	Deterioration in family relationships	**C, O**	• Continue to liaise with the CLC over the mine life to identify, monitor and discuss measures to mitigate Project effects related to service provision, housing, and health and social services • Implement a SEEMP to manage socio-economic effects related to the Project, including identification of roles and responsibilities of Project personnel and contractors, an implementation schedule, public feedback process, monitoring plan, and a process for adaptive management • Implement a Health and Medical Services Plan that is consistent with the *Health and Medical Services Best Management Guide for Industrial Camps* (Northern Health Authority, March 2015)[22] including identification of: on-site health and medical services to be implemented to meet the Project's workforce's urgent and non-urgent health care needs; disease and infection prevention and outbreak protocols; health promotion, disease prevention and worker wellness program information; a process for communication, coordination and collaboration with the NHA and other local health service providers (including patient care/transfer, data collection and reporting), and an adaptive management plan
23.0	**Regional Services**		
	Increase in demand on education, health, protective and health services	**C, O, CL**	• Continue to liaise with the CLC over the life of the Project to identify, monitor and discuss measures to project effects related to service provision, housing, and health and social services • Develop and implement a SEEMP to manage socio-economic effects related to the Project, including identification of roles and responsibilities of project personnel and contractors, an implementation schedule, monitoring plan, and a process for adaptive management • Implement a Health and Medical Services Plan that is consistent with the *Health and Medical Services Best Management Guide for Industrial Camps* (Northern Health Authority, March 2015)[23] including identification of: on-site health and medical services to be implemented to meet the Project's workforce's urgent and non-urgent health care needs; disease and infection prevention and outbreak protocols; health promotion, disease prevention and worker wellness program information; a process for communication, coordination and collaboration with the NHA and other local health service providers (including patient care/transfer, data collection and reporting), and an adaptive management plan • Use the airstrip to transport temporary construction workers residing outside of the SERSA
24.0	**Non-traditional Land and Resource Use**		
24.1	Displacement of land use activities	**C, O, CL, PC**	• Consult with tenure holders to identify mutually-acceptable accommodations for potential Project effects, in accordance with relevant guidance including FLNRO's (2008) *Practical Guide to Effective Coordination of Resource Tenures* (all indicators) • Allow livestock to be moved to other pastures if necessary (Agriculture and Range) • Identify alternative watering locations in discussion with the land and/or livestock owner(s), if livestock access to water supply is curtailed by mine operations activities or infrastructure (Agriculture and Range) • Protect groundwater wells with temporary fencing during construction (Water Use) • Narrow the transmission line right of way (ROW) to avoid overlap with PID 9280481 (Private Properties) • Inform the public (e.g. through signage) that consumption of surface water in the TSF and pit lake is not advisable during closure and post-closure, and that Davidson Creek may not be potable during the months of April and May during post-closure • Provide maps and early notification of Project development and other physical work to affected regional forestry stakeholders
24.2	Impeded access to lands and resources	**C, O, CL, PC**	• Provide the construction schedule to tenure holders and recreational groups (e.g., Northwest Brigade Paddling Club, nearby lodges and the local offices of BC FLNRO) overlapping the Project, 30 days prior to the start of construction and resolve any issues related to access as per appropriate industry and provincial standards, guidelines and best practices (all indicators) • Erect appropriate signage notifying temporary closure on affected access routes (all indicators) • Implement the TAMP (draft plan provided in Section 12.2.1.18.4.14 of the Application), including a Traffic Management Plan (draft plan provided in Section 12.2.1.18.4.14.7.4 of the Application/EIS) (all indicators) • Bus or fly the workforce to the mine site during Construction and Operations, where applicable (all indicators) • Participate in the Kluskus FSR industrial road users group over the mine life (all indicators) • Facilitate movement of livestock and farm machinery across ROW corridors, where applicable (Agriculture and Range)

[22] Northern Health Authority. 2015. *Health and Medical Services Best Management Guide for Industrial Camps*. https://northernhealth.ca/Portals/0/Your_Health/Programs/Public%20Health/OfficeHealthResourceDevelopment/2015-03-HMSP.pdf

[23] Northern Health Authority. 2015. *Health and Medical Services Best Management Guide for Industrial Camps*. https://northernhealth.ca/Portals/0/Your_Health/Programs/Public%20Health/OfficeHealthResourceDevelopment/2015-03-HMSP.pdf

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
24.3	Reduced resource availability	**C, O, CL, PC**	• Implement the TAMP (draft plan provided in Section 12.2.1.18.4.14 of the Application/EIS), including a Traffic Management Plan (draft plan provided in Section 12.2.1.18.4.14.7.4) (Hunting, Guide Outfitting and Trapping) • Compensate affected trapline holders in accordance with industry and provincial protocols with associated proof of lost revenue • Limit disturbance to habitat of marten, weasel, beaver, muskrat, and other furbearers during Construction by avoiding, where possible, prime denning and breeding habitat (e.g., mature riparian forests and old forest stands, which are favoured denning habitats for marten; Section 5.4.13.8) (Hunting, Guide Outfitting and Trapping) • Use noise abatement and operations scheduling considerations at noise-sensitive locations and times, where appropriate, to limit disruption to sensitive receptors (Hunting, Guide Outfitting and Trapping) • Implement no hunting (including no trapping), no gathering, and no firearms policies for Project employees and contractors while resident at the mine site as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) • (Hunting, Guide Outfitting and Trapping) • Deactivate and decommission transmission line access roads during the early years of operations to limit predator movements and vision along the line • Deploy berms, woody debris, and/or other visual barriers in appropriate locations along the transmission line that may also facilitate cover and movement for furbearers and other smaller animals (Hunting, Guide Outfitting and Trapping) • Manage vegetation by foot during operation of the line, accessed from existing forest roads. (Hunting, Guide Outfitting and Trapping) • After initial clearing, maintain vegetation along the transmission line right of way to minimize predator sight lines by maintaining limits of approach and the height of the plant community at no lower than three feet from the ground on an average basis, except where an area is needed for tower bases, guy anchor points and along access roads (Hunting, Guide Outfitting and Trapping) • Compensate impacts on fish and fish habitat by implementing a Fisheries Mitigation and Offset Plan (Fishing and Aquaculture) • Implement a no fishing policy as described in the WLMP (draft plan provided in Section 12.2.1.18.4.6 of the Application/EIS) (Fishing and Aquaculture) • Require Project vehicles to use only the ROWs and designated access roads near Project development areas to minimize compaction of agricultural soil (Agriculture and Range) • Implement preventative protocols for cleaning of equipment (i.e. construction and excavation) of weeds, according to government and industry standards (i.e. weed control plans and guidelines) (Agriculture and Range) • Follow BC FLNRO guidelines and requirements for clearing, handling, and hauling beetle-infested wood (Forestry and Timber Use) • Communicate with the Village of Fraser Lake regarding plans for clearing and construction of the transmission line and discuss interest in timber from the community forest (Land File 7409927) (Forestry and Timber Use) • Work with FLNRO during detailed engineering of the transmission line at the permitting stage with the goal of avoiding MN4848 (growth and yield plots). If avoidance is not possible and prior to construction, New Gold will have this plot re-measured at New Gold's cost by a contractor to be approved by FLNRO (Forestry and Timber Use) • Work with MOTI to complete the required gravel/quarrying volumes testing for Land file 0107944 and compensate MOTI for the volume sterilized, if any, prior to start of construction in this area (Aggregates and Construction)
24.4	Disturbance of land users' quality of experience		• Implement an AQEMP (draft plan provide in Section 12.2.1.18.4.9 of the Application/EIS), including measures to manage fugitive dust (all indicators) • Implement fugitive dust management measures as described in the AQEMP (see draft plan in Section 12.2.1.18.4.9 of the Application/EIS), which may include wetting unpaved roadways, revegetation of disturbed areas and/or using other materials to minimize dust (all indicators) • Use noise abatement and construction scheduling considerations at noise-sensitive locations and times, where appropriate, to limit disruption to sensitive receptors (all indicators) • Implement visual quality mitigation measures for the transmission line including clear-spanning trails, avoiding tower and pole placement on trails, minimizing placement of towers/poles on top of ridgelines, summits, or other locations where they may be silhouetted against the sky and locating towers/poles and ROW to take advantage of natural screening from vegetation and topography (all indicators) • Require project drivers to close gates properly when vehicles require access to right of way corridors on fenced and gated lands (Agriculture and Range) • Install fencing to restrict cattle movement into the transmission line ROW (Land File 0194075), as necessary and feasible (Agriculture and Range)
25.0	**Current Land and Resource Use for Traditional Purposes**		

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
25.1	Reduced access to hunting and trapping sites for UFN, LDN and STN	**C, O, CL, PC**	• Establish an Access Management Working Group with Aboriginal participation • Establish a Traditional Knowledge/ Traditional Land Use (TK/TLU) Committee to monitor project development and provide TK/TLU information to incorporate during final project design, construction, operations, closure and post-closure • Monitor for unanticipated Indigenous food security effects resulting from the Project based on the following: o change in moose abundance and distribution (using information from the moose winter aerial surveys which New Gold has committed to, as well as other available data); o change in country foods safety and perceived risk (country foods monitoring program); o information brought forward through the TK/TLU Committee as well as through other direct engagement with Indigenous groups (e.g., Environmental Monitoring Board). Should monitoring identify unanticipated effects of the Project on Indigenous food security, New Gold will engage with Indigenous groups to identify appropriate measures to address the effects. Adaptive management may include working with Indigenous groups to identify and deactivate orphan roads to reduce habitat fragmentation in the regional study area, either via in-kind support from New Gold or by assisting Aboriginal groups access funding • Support programs that preserve the transfer of TK, as developed and guided by Aboriginal groups • Post and enforce speed limits on Project-controlled roads • Communicate with trappers and guide outfitters • Implement a country food monitoring plan (draft plan provided in Appendix 9.2.2B of the Application/EIS) in relation to the mine site to monitor species that represent pathways for metals concentrations in country food including plants, mammals and fish) Establish a cultural awareness program to provide information on the history of Aboriginal groups within the vicinity of the Project • Establish a procedure to facilitate access to the mine site area by designated Aboriginal groups for cultural purposes, provided access can be accommodated
25.2	Reduced access to other cultural and traditional land use sites for UFN and STN	**C, O, CL, PC**	• Establish an Access Management Working Group with Aboriginal participation • Establish a TK/TLU Committee to monitor project development and provide TK/TLU information to incorporate during final project design, construction, operations, closure and post-closure, and support programs that preserve the transfer of TK, as developed and guided by Aboriginal groups • Post and enforce speed limits on Project-controlled roads • Establish a cultural awareness program to provide information on the history of Aboriginal groups within the vicinity of the Project • Establish a communications process with potentially affected First Nations regarding project-related activities • Establish a procedure to facilitate access to the mine site area by designated Aboriginal groups for cultural purposes, provided access can be accommodated
25.3	Reduced access to gathering areas for UFN	**C, O, CL, PC**	• Establish an Access Management Working Group with Aboriginal participation • Establish a TK/TLU Committee to monitor project development and provide TK/TLU information to incorporate during final project design, construction, operations, closure and post-closure and support programs that preserve the transfer of TK, as developed and guided by Aboriginal groups • Post and enforce speed limits on Project-controlled roads • Use existing roads to extent possible • Establish a communications process with potentially affected First Nations regarding project-related activities • Establish a procedure to facilitate access to the mine site area by designated Aboriginal groups for cultural purposes, provided access can be accommodated • Implement a no gathering policy for Project workers and contractors while resident on site to reduce access to gathering areas and pressure on gathering

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
25.4	Reduced wildlife harvesting success for LDN, NWFN, SFN, StFN, UFN and STN	**C, O, CL, PC**	• Participate in regional wildlife and resource management initiatives for grizzly bear, moose and caribou in WMs 6-01 and 7-12 • Follow guidelines for wildlife "least risk windows" where practicable • Post and enforce speed limits on Project-controlled roads and manage transportation to reduce wildlife collisions • Implement various environmental management plans related to wildlife management, visual resources and traffic management (Section 12 of the Application/EIS) • Use vegetation and coarse woody debris and other approaches to form visual barriers on cut lines, trails or other linear features to reduce changes in predator-prey dynamics • Implement no hunting (including no trapping) and no firearms policies for Project workers and contractors while resident on site to reduce hunting access and pressure • Restore disturbed habitats capable of supporting wildlife during reclamation and closure (draft plan provided in Section 2.6 of the Application/EIS) • Incorporate traditional knowledge in the finalization of the proposed new transmission line alignment to avoid impacting important sites and/or reduce adverse impacts on Aboriginal rights and interests • Establish a TK/TLU Committee to monitor Project development and incorporate TK/TLU information during final Project design, construction, operations, closure and post-closure and support programs that preserve the transfer of TK, as developed and guided by Aboriginal groups • Employ Aboriginal monitors over the life of the Project to assist with environmental and other monitoring
25.5	Reduced plant gathering success for UFN and STN	**C, O, CL, PC**	• Participate in regional wildlife and resource management initiatives for grizzly bear, moose and caribou in Wildlife Management Units 6-01 and 7-12 • Follow guidelines for wildlife "least risk windows" where practicable • Post and enforce speed limits on Project-controlled roads and manage transportation to reduce wildlife collisions • Implement various environmental management plans related to wildlife management, visual resources and traffic management (Section 12 of the Application/EIS) • Use vegetation and coarse woody debris and other approaches to form visual barriers on cut lines, trails or other linear features to reduce changes in predator-prey dynamics • Implement a no gathering policy for Project employees and workers while resident on the mine site to reduce access to gathering area and pressure on gathering • Restore disturbed habitats capable of supporting wildlife during reclamation and closure (draft plan provided in Section 2.6 of the Application/EIS) • Incorporate traditional knowledge in the finalization of the proposed new transmission line alignment to avoid impacting important sites and/or reduce adverse impacts on Aboriginal rights and interests • Implement a country food monitoring plan (draft plan provided in Appendix 9.2.2B of the Application/EIS) in relation to the mine site to monitor species that represent pathways for metals concentrations in country food including plants, mammals and fish) • Establish a cultural awareness program to provide information on the history of Aboriginal groups within the vicinity of the Project • Establish a TK/TLU Committee to monitor Project development and incorporate TK/TLU information during final Project design, construction, operations, closure and post-closure and support programs that preserve the transfer of TK, as developed and guided by • Aboriginal groups Employ Aboriginal monitors over the life of the Project to assist with environmental and other monitoring

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
25.6	Reduced quality of experience using lands and resources for hunting and trapping, fishing, plant gathering and use of cultural and traditional lands for LDN, NWFN, SFN, StFN, UFN and STN	**C, O, CL, PC**	• Establish an Access Management Working Group with Aboriginal participation • Establish a procedure to facilitate access to the mine site by designated Aboriginal groups for cultural purposes, provided access can be accommodated • Establish a TK/TLU Committee to salvage cultural data where avoidance of known archaeological sites, heritage sites and cultural heritage resources is not possible and support programs that preserve the transfer of TK, as developed and guided by Aboriginal groups • Establish a cultural awareness program to provide information on the history of Aboriginal groups within the vicinity of the Project • Allow vegetation to colonize the right-of-way as needed for sections in visually sensitive areas • Paint or stain transmission line structures to blend with the character of the surrounding environment as needed in visually sensitive areas as appropriate • Locate the transmission line within or alongside the footprints of existing long-term linear infrastructure (roads and transmission lines) to cluster disturbance, to the extent possible • Locate project infrastructure to take advantage of both topography and vegetation as screening devices to restrict views of the structures in sensitive viewing areas • Align the transmission line ROW to run in parallel to the natural contours of the landscape rather than perpendicular, to the extent possible • Avoid placing facilities on ridgelines, summits, or other locations where they will be silhouetted against the sky in sensitive viewing areas where possible • Avoid increasing disturbance within remaining areas of intact forests (i.e., areas with low levels of landscape disturbance) to the extent possible • Develop site-specific measures and/or designs at the crossings of the Nechako and Stellako rivers so structures do not unnecessarily affect natural lines (e.g., treelines, ridgelines, river banks) • Allow grass and brush to colonize the transmission line ROW for sections in sensitive viewing areas • Place towers/poles away from the banks of rivers
26.0	**Visual Resources**		
26.1	Change to visual quality (Residences 3, 5, 6 and 7, Mary Jane Lake Recreation Site, Cabin Creek Falls Recreation Site, Nechako River/ Cut-off Creek Recreation Site, Big Bend Meadow Recreation Site, Cheslatta Trail, Brewster Lake Recreation Site, Tatelkuz Lake Indian Reserve (IR) 28, Stellako River)	**C, O, CL, PC**	• Locate the transmission line within or alongside the footprints of existing long-term linear infrastructure (roads and transmission lines) to cluster disturbance, to the extent possible • Locate project infrastructure to take advantage of both topography and vegetation as screening devices to restrict views of the structures in sensitive viewing areas • Align the transmission line ROW to run in parallel to the natural contours of the landscape rather than perpendicular, to the extent possible • Avoid placing facilities on ridgelines, summits, or other locations where they will be silhouetted against the sky in sensitive viewing areas where possible • Avoid increasing disturbance within remaining areas of intact forests (i.e., areas with low levels of landscape disturbance) to the extent possible • Develop site-specific measures and/or designs at the crossings of the Nechako and Stellako rivers so structures do not unnecessarily affect natural lines (e.g., treelines, ridgelines, river banks) • Allow grass and brush to colonize the ROW for sections in sensitive viewing areas • Place towers/poles away from the banks of rivers • Paint or stain transmission line towers/poles to blend in with surrounding environment
26.2	Change to visual quality (Tatelkus Lake IR 28, Dykam Ranch, Tatelkuz Lake Southeast Recreation Reserve, Snake Lake, Top Lake, Davidson Mountain, Kuyakuz Lake Recreation Site)	**C, O, CL, PC**	• Limit artificial light escaping from the mine site to the extent possible • Select and design materials to blend with landscape elements in sensitive viewing areas as appropriate • Paint or stain transmission line structures to blend with the colour and character of surroundings in sensitive viewing areas • Re-vegetate with native vegetation and establish a composition consistent with the surrounding undisturbed landscape where necessary, when construction is within line of sight of a known view point
27.0	**Archaeological Sites**		
	Loss or alteration of know and as-yet unknown archaeological sites	**C, O**	• Avoid known archaeological sites to the extent possible • Conduct an archaeological impact assessment of the final transmission line alignment in areas of moderate to high potential prior to commencing transmission line construction to help inform the final transmission line route • Implement an Archaeology and Heritage Resources Management Plan (AHRMP; draft plan provided in Section 12.2.1.18.4.7 of the Application/EIS, including a chance find procedure and process for reporting chance finds to Aboriginal groups
28.0	**Historic Sites**		

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure

ID#	Valued Component (VC) / Effect	Timing	Mitigation Measures
	Loss or alteration of know and as-yet unknown historic heritage sites	**C, O**	• Avoid known historic heritage sites to the extent possible • Implement an AHRMP (draft plan provided in Section 12.2.1.18.4.7 of the Application/EIS), including a chance find procedure and process for reporting chance finds to Aboriginal groups
29.0	**Paleontological Resources**		
	Land- altering activities impacting sites	**C, O**	• Avoid known palaeontological sites to the extent possible • Conduct a desk-based paleontological study prior to commencing transmission line construction to help inform the final transmission line route • Implement the AHRMP (draft plan provided in Section 12.2.1.18.4.7 of the Application/EIS), including a chance find procedure, and a process for reporting chance finds to Aboriginal groups
30.0	**Environmental Exposures[24]**		
	Project-related noise and environmental contaminants	**C, O, CL, PC**	• Implement various environmental management plans mitigate adverse effects related to noise, air quality, water quality, terrestrial resources, fish and aquatic resources, and wildlife valued components. These plans will identify objectives, specific measures to mitigate effects, monitoring requirements and an adaptive management plan.
31.0	**Worker Health and Safety**		
	Changes in health risk resulting in a change in the likelihood of injury or disease	**C, O, CL**	• Adhere to Part 2 (Occupational Health) of the Health, Safety and Reclamation Code for Mines in British Columbia (BC MEM 2017)[2] • Implement a Health and Medical Services Plan that is consistent with the Health and Medical Services Best Management Guide for Industrial Camps (Northern Health Authority, March 2015)[21], and includes identification of: on-site health and medical services to be implemented to meet the Project's workforce's urgent and non-urgent health care needs; disease and infection prevention and outbreak protocols; health promotion, disease prevention and worker wellness program information; a process for communication, coordination and collaboration with the NHA and other local health service providers (including patient care/transfer, data collection and reporting), and an adaptive management plan • Implement an Occupational Health and Safety Management Plan (OHSMP; draft plan provided in Section 12.2.1.18.4.15 of the Application/EIS), including measures to promote the health, safety and well-being of employees • Adhere to the *Drinking Water Protection Act*[25] and Drinking Water Protection Regulation and treat drinking water or provide alternative drinking water if monitoring of the site well identifies exceedances of drinking water quality guidelines • Implement fugitive dust management measures as described in the AQEMP (see draft plan in Section 12.2.1.18.4.9 of the Application/EIS), which may include wetting unpaved roadways, revegetation of disturbed areas and/or using other materials to minimize dust

[24] The determination of significance considers all Project phases but it is based on the HHERA conducted for the Operations phase, which reflects the worse conditions for noise and environmental contaminants.

[25] *Drinking Water Protection Act*, SBC 2001, c 9. http://canlii.ca/t/52p75 (accessed on April 13, 2017)

Project phase: C = Construction; O = Operations; CL = Closure; PC = Post-closure