

INITIAL PROJECT DESCRIPTION SUMMARY

This document is an Initial Project Description (IPD) for the proposed Spanish Mountain Gold Project (the Project), which is being developed by Spanish Mountain Gold Ltd. (SMG). The Project description is based on a Pre-Feasibility Study completed by SMG in 2021 that envisions an open pit gold mine with an estimated production of approximately 96 million tonnes of ore, mined and processed at a planned throughput of 20,000 tonnes per day over a mine life of 14 years.

The purpose of the IPD is to initiate the regulatory approval process of the Project and to provide information for interested parties to understand the proposed Project. This document is the basis for engagement with Indigenous Nations, the public, and government during early engagement.

The Project is subject to review under the BC *Environmental Assessment Act* (BCEAA) that is administered by the British Columbia Environmental Assessment Office (BCEAO). The production capacity of the proposed project will be 7,300,000 tonnes per year, which will exceed 75,000 tonnes per year of mineral ore specified in the Reviewable Projects Regulation to the BCEAA.

Similarly, the Project is expected to be identified as a ‘designated project’ under the federal *Impact Assessment Act* (IAA) as it will be captured under the *Physical Activities Regulations*. The Regulations specify that designated projects include a new metal mine with ore production capacity of 5,000 tonnes per day or more, and a new metal mill with an ore input capacity of 5,000 tonnes per day or more.

SMG will utilize the IPD for entry into the assessment process of the BC EAA and IAA. In accordance with the Impact Assessment Cooperation Agreement between Canada and British Columbia (2019), SMG will ask that the Province make a request to the federal Minister of Environment and Climate Change to approve the substitution of the BC Environmental Assessment process for the federal Impact Assessment process, in which case the Province would commit to meet the legislative requirements of the federal Impact Assessment process and provide its report to both the Provincial and Federal Ministers for their consideration and decision.

SMG anticipates that several provincial and federal permits will be required to support construction and operation of the Project, as summarized in Tables S1 and S2.

Table S1 Summary of Possible Provincial Authorizations

Legislation	Authorization	Authorization Purpose
<i>Drinking Water Protection Act</i>	1) Water System Construction Permit 2) Water System Operating Permit	To construct and operate potable water supply systems for camps and process plant
<i>Drinking Water Protection Act</i>	Food Facility - Health Approval Application	Opening and operating a food service facility
<i>Environmental Management Act</i>	Effluent Discharge Permit	Authorizes discharges from sedimentation ponds, water treatment plants, tailings storage facility and seepage
<i>Environmental Management Act</i>	Air Emissions Discharge Permit	Authorizes discharges from incinerator and process plant
<i>Environmental Management Act</i>	Solid Waste Discharge Permit	Authorizes disposal of solid waste
<i>Environmental Management Act</i>	Hazardous Waste Registration	Authorizes hazardous waste transfer facility, plant truck shop
<i>Environmental Management Act</i>	Fuel Storage Registration	Authorizes fuel storage
<i>Environmental Management Act</i>	Sewage Registration	Authorizes sewage treatment plant
<i>Forest Act</i>	Occupant License(s) to Cut (Mines Act permit area, mine access road, airstrip and access road, waterline License of Occupation area, Transmission line License of Occupation area (and associated roads, laydown areas)	Authorizes Crown timber harvesting
<i>Forest Act</i>	Road Use Permit	Authorizes use of FSRs
<i>Forest and Range Practices Act</i>	Special Use Permit	Authorizes construction and operation of the Mine Access Road
<i>Forest and Range Practices Act</i>	Consent to connect Mine Access Road to FSR	Authorizes connection of FSR to Mine Access Road
<i>Heritage Conservation Act</i>	Permits (Archaeological Impact Assessment [AIA]/site alteration)	Authorizes site alteration and inspection
<i>Land Act</i>	License of Occupation (transmission line)	Authorizes occupancy and use of Crown Land
<i>Land Act</i>	Temporary use permit	Temporary access roads
<i>Mineral Tenure Act</i>	Mining lease	Production of minerals
<i>Land Title Act</i>	Easement (transmission line)	Authorizes occupancy and use of private land
<i>Mines Act</i>	Permit Approving Mine Plan and Reclamation Program	Approves mine plan and reclamation program
<i>Mines Act</i>	Explosives Storage and Use Permit	Use, care, transportation of explosives
<i>Safety Standards Act</i>	Permit	Connect a powerline
<i>Water Sustainability Act</i>	License (Section 9/7)	Diversion, storage or use of surface water or

Legislation	Authorization	Authorization Purpose
		groundwater for one or more purposes Construction of water storage dams, groundwater wells
<i>Water Sustainability Act</i>	Approvals/Notifications of changes in or about a stream (Section 11)	Changes in or about a stream for the water line and crossings associated with the water line access road, transmission line, Mine Access Road.
<i>Wildlife Act</i>	License	Designate no shooting area, relocate wildlife during construction

Table S1 Summary of Possible Federal Authorizations

Legislation	Authorization	Authorization Purpose
<i>Explosives Act</i>	License	Manufacturing and use of explosives
<i>Fisheries Act Metal and Diamond Mining Effluent Regulations</i>	Schedule 2 Amendment	Deposition of mine waste to fish bearing waterbodies
<i>Fisheries Act (Section 34 and 35)</i>	Authorization	Harmful, alteration, disruption of fish habitat (HADD; Section 35(1))
<i>Migratory Birds Convention Act (Section 5)</i>	Permit	Authorizes periods during which migratory birds and/or their nests may be impacted
<i>Radio Communications Act</i>	License	Issuance and operation of designated frequency
<i>Species at Risk Act (Section 32 and 33)</i>	Permit	Provides for protection of listed species in accordance with regulations
<i>Transportation of Dangerous Goods Act</i>	Permit	Transport of dangerous goods

Review of the Project was initiated in 2011 under the former (2002) BCEAA and Canadian Environmental Assessment Act (1992). Detailed environmental and socio-economic baseline studies were conducted in 2010 and 2011. Advancement on the EA was halted by SMG in 2012 while project design updates were completed. Between 2012 and 2019, both provincial and federal reviews were kept open, with SMG providing annual updates regarding its intention to continue the process. In recognition of new provincial and federal EA legislation coming into force, the Project was withdrawn from environmental assessment in 2019. This document represents the Project’s re-entry to the provincial and federal review processes.

The impact assessment process will be initiated when the BCEAO and the Impact Assessment Agency of Canada (IAAC) each accept the IPD and seek public comments on it. Regulators, agencies, Indigenous Nations, and the public will have an opportunity to provide comments.

The primary representative from SMG during the regulatory review of the Project is:

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Project Location

The Project is located in the Cariboo Mining Division and the Cariboo Regional District of central British Columbia (Figure S1). The Property is located approximately 70 km northeast of Williams Lake, BC, with the closest population centre being the village of Likely, located about 6 km northwest. The Project is centred at 52 degrees 35 minutes North, 121 degrees 26 minutes West. The area of disturbance estimated for the mine site is 27 km², along with approximately 37 km² of transmission line footprint and buffer, which primarily follows an existing road and power corridor.

The Project lies within the traditional territories of the following First Nations:

Northern Shuswap Tribal Council

- Williams Lake First Nation (T'exelcenc)
- Xat'sull First Nation

Carrier Chilcotin Tribal Council

- Lhtako Dene Nation (Red Bluff Indian Band)

The Williams Lake First Nation reserve lands comprise 8 parcels, totaling approximately 1921 ha, centred approximately 52 km southwest of the Project site and 10 km east of Williams Lake (Figure S2). The WLFN office and primary community is located near Williams Lake, approximately 63 km from the Project.

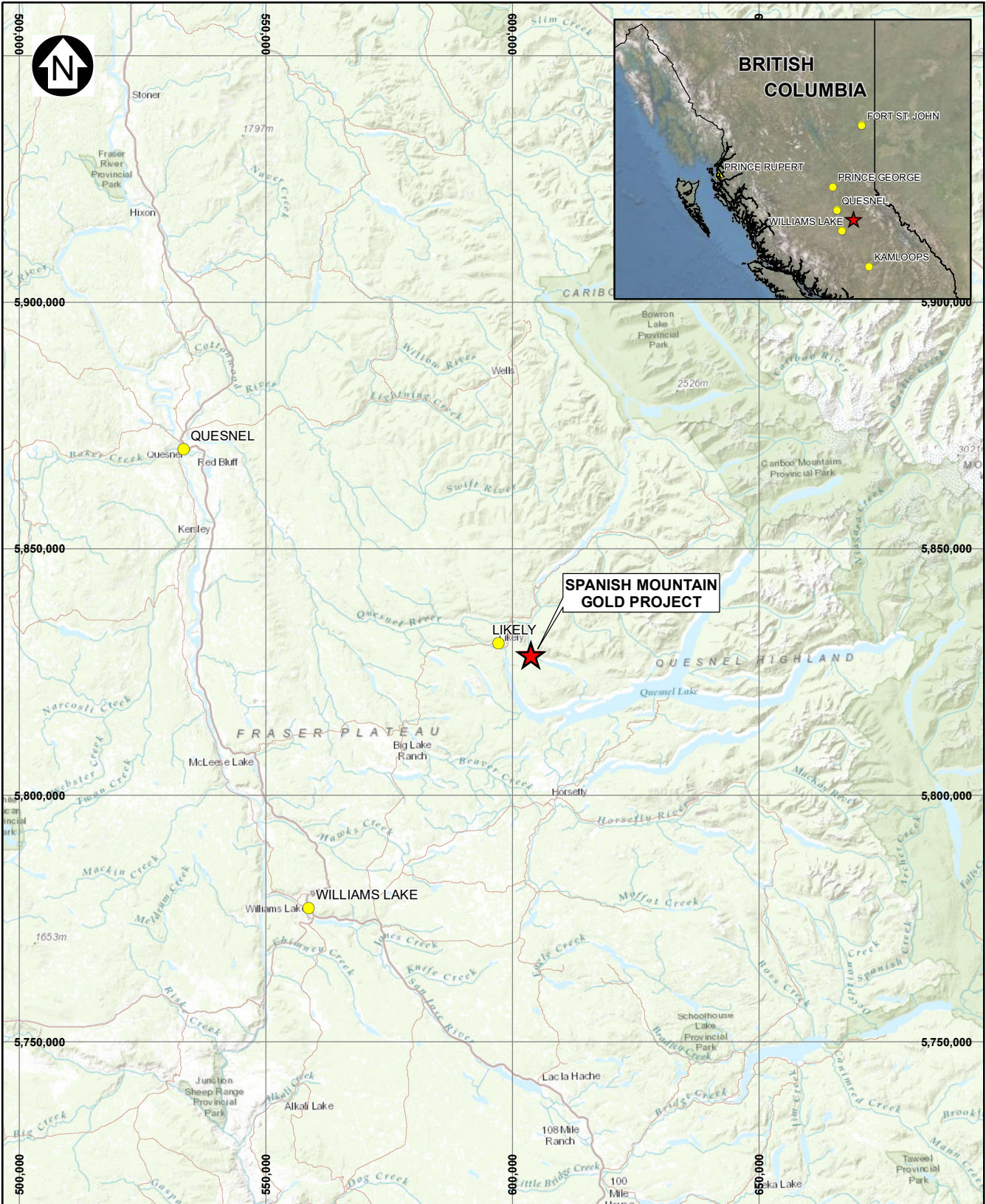
The Xat'sull First Nation reserve lands total 2093 ha, centred approximately 50 km southwest of the Project site, approximately 13 km north of Williams Lake (Figure S2). The Xat'sull First Nation office is located approximately 58 km from the Project.

The Lhtako Dene Nation reserve lands total approximately 683 ha, centred approximately 72 km northwest of the Project site and adjacent to the City of Quesnel (Figure S2). The LDN office is located approximately 80 km from the Project.

The point of interconnection of the powerline for the project, at McLeese Lake, occurs within the eastern margin of the asserted traditional territory of the Tsilhqot'in Nation.

The Métis Nation British Columbia assert Aboriginal rights in and around the Project area. The Cariboo-Chilcotin Métis Association, a Chartered Métis community based in Williams Lake, asserts harvesting and hunting rights in the region.

The Project is located on provincial crown land within mineral tenures held by SMG. The Project will not use any federal lands. The Williams Lake First Nation has signed a First Nations Land Management Act agreement with Canada, which enables the nation to opt-out of 40 sections of the Indian Act relating to land management. The nation can then develop their own laws about land use, the environment and natural resources and take advantage of cultural and economic development opportunities with their new land management authorities.



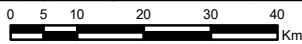
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LEGEND:

- ★ PROJECT LOCATION
- COMMUNITY

NOTES:

1. BASE MAP: ESRI ONLINE WORLD TOPOGRAPHIC MAP
2. COORDINATE GRID IS IN METRES. COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N.
3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:1,100,000 FOR 8.5x11 (LETTER) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.



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SPANISH MOUNTAIN GOLD PROJECT

PROJECT LOCATION



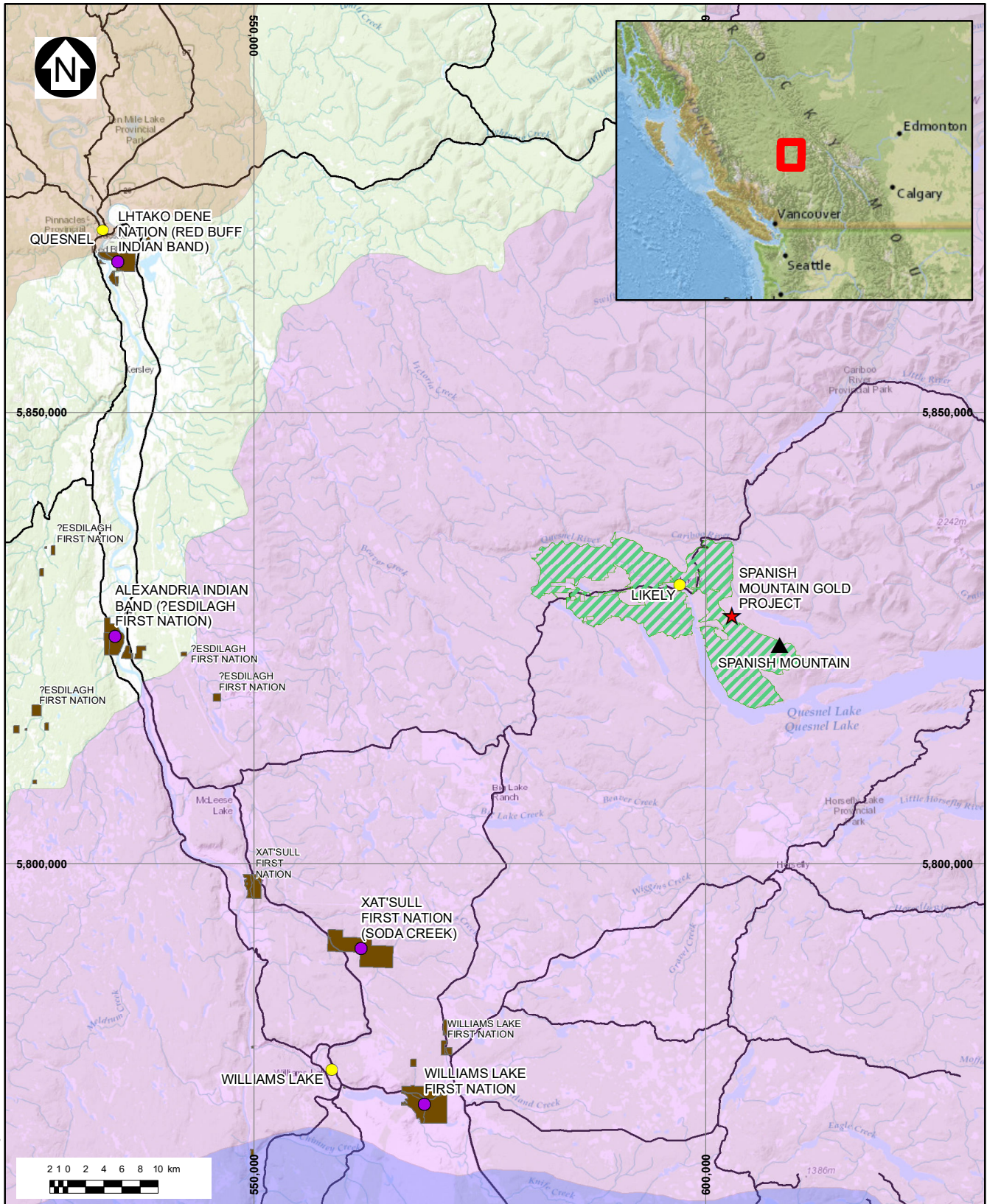
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VA102-272/15

REF NO:
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FIGURE S.1

REV	DATE	ISSUED WITH REPORT	DESCRIPTION	ACC DESIGNED	BH DRAWN	RCB REVIEWED
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REV
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- LEGEND:**
- ★ PROJECT LOCATION
 - FIRST NATIONS COMMUNITY
 - COMMUNITY
 - ROADS
 - INDIAN RESERVE
 - LIKELY - XAT'SULL COMMUNITY FOREST
 - NORTHERN SHUSWAP TRIBAL COUNCIL STATEMENT OF INTENT
 - NAZKO FIRST NATION STATEMENT OF INTENT
 - ESKETEMC FIRST NATION STATEMENT OF INTENT

- NOTES:**
1. BASE MAP: MAIN - ESRI TOPOGRAPHIC, INSET - ESRI NATIONAL GEOGRAPHIC
 2. COORDINATE GRID IS IN METRES, COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N.
 3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:600,000 FOR 8.5x11 (LETTER) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.
 4. FIRST NATIONS DATA OBTAINED FROM IMPACB
 5. DARK BLUE STATEMENT OF INTENT AREA SHOWN AT BOTTOM OF FIGURE REPRESENTS COMBINATION OF NORTHERN SHUSWAP AND ESKETEMC FIRST NATIONS

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SPANISH MOUNTAIN FIRST NATION INTEREST	
Knight Piésold CONSULTING	PIA NO. VA102-272/15 REF NO. 1 FIGURE S.2 REV 0

REV	DATE	DESCRIPTION	DESIGNED	DEA	DRAWN	CB	REVIEWED
0	11MAR22	ISSUED WITH REPORT					

Project Purpose and Justification

The purpose of the Spanish Mountain Gold Project is to produce 2.1 million ounces of gold and 0.9 million ounces of silver over its projected operational life of 14 years. The Project justification includes the provision of jobs and economic opportunities for local First Nations, and the people of BC and Canada. In addition, the Project will contribute financially to the Provincial and Federal Governments through corporate taxes, Provincial net proceeds and net revenue taxes, and sales taxes. The Project is expected to provide between 2000 and 2500 person-years of employment during construction and at peak operations, the Project is expected to employ 360 people.

Project Description and Alternatives

The Spanish Mountain deposit will be mined using a conventional drill and blast open pit mining method. The mining fleet will include hydraulic excavators and wheel loaders for mine loading, 140 tonne payload haul trucks and 40 tonne articulated trucks for production hauling.

Ore will be hauled to a crusher 0.5 km west of the pit and crushed to feed the process plant. Waste rock will be deposited into waste rock storage facilities (WRSF) 0.5 to 2.0 km west of the pit or used as rockfill to construct a tailings dam embankment 4.0 km southwest of the pit.

The tailings storage facility (TSF) will comprise a north embankment (dam) and a south embankment (dam) with the east and west margins confined by local topography. The embankments will be built as earthfill/rockfill structures with a low-permeability core. The TSF embankments will be expanded in stages throughout the mine life using the centerline construction method, with each stage providing the required capacity for the period until the next stage of construction is completed. The TSF north embankment will be approximately 31 m high at the starter configuration and 58 m high at its ultimate height. The TSF south embankment will be approximately 17 m at the starter configuration and 44 m high at its ultimate height. Seven stages of construction are expected to be required to reach the final crest elevations. Each stage will be constructed in advance of the storage needs of the project, at approximately one-to two-year intervals.

Mining dams in BC are regulated by the BC Health Safety and Reclamation Code issued by the Ministry of Energy, Mines and Low Carbon Innovation. Additionally, the new Global Industry Standard on Tailings Management recommendations further strengthens the design approach (GISTM 2020). The TSF for the Project has been designed in accordance with these most recent and modern tailings standards.

The process plant will separate metals from the ore by gravity flotation, then by leaching using cyanide to collect the gold and silver, with electrowinning as the final step to produce gold doré bars as the product. The doré will be shipped from site by specialized security contractors using

armoured vehicle or helicopter. Shipments will be infrequent, expected to be approximately one truck or helicopter per week on average, but on an irregular schedule for purposes of security.

The majority of water used for ore processing will be collected/recycled from site operations. Surface runoff from the waste rock management areas, water pumped from the open pit, clarified water from the TSF, and overflow from the process plant, will all be directed to the water management pond. The process plant will draw makeup water from the water management pond as needed. Make-up freshwater supply will be from two groundwater wells pumped to a storage tank, from which water will be used for processing, fire suppression, and cooling. The water storage tank will also supply potable water, after it is sterilized and stored separately in a potable water tank.

Construction equipment and materials will be shipped to the Project by heavy trucks on existing public access roads over the 24-month construction period. A temporary, 265-person, construction camp will be established on site for the construction phase of the project. This camp, along with the existing 50-person exploration camp, will house most of the construction workers for the project. Some construction workers will reside in their residences locally and be transported from Likely and the surrounding area to the construction site on buses. The temporary camp will be decommissioned at the end of the construction period and the 50-person camp will be maintained as onsite accommodation. The remainder of the operations workforce will reside within the region.

Access to the Spanish Mountain Property will be along a 1.9 km Main Access Road that ties into the existing Spanish Lake Road west of Hepburn Lake. The main access road will provide access to the process plant site, accommodations, and laydown yard after passing the gatehouse for the property. Immediately after the tie-in point to the Main Access Road, Spanish Lake Road will be re-routed to avoid Project infrastructure such as Waste Rock Storage Facilities and the ultimate pit. The re-routing covers a 5.4 km portion of Spanish Lake Road, shifting the road north around the Project, and ties the road back into the existing portion south of Spanish Lake.

Administration and service infrastructure will include:

- An office administration building, which will also house first aid, control station, and kitchen services
- Truck shop and warehouse
- Assay laboratory and cold storage building

Explosives will be stored in an authorized magazine located at least 1 km away from the mill site, pit, roads, highways, and all working and public areas to meet regulatory safety clearance guidelines. The facility will separately store Ammonium Nitrate Prill (granules) and Ammonium Nitrate Emulsion (suspended in a liquid). There will be one container for booster storage and one for

detonators. The explosives storage facility will be situated within a secure area that will be surrounded by a perimeter fence and gated.

Water management infrastructure will be designed to minimize water stored on site and to divert clean runoff away from the Project. Temporary and permanent site water diversion and collection ditches will be used during construction, operations, and closure to minimize sediment mobilization and erosion, collect, and convey mine contact water, and protect natural drainages and watercourses. Non-contact runoff from catchments directly upstream of the TSF will be diverted around the west side of the TSF to Cedar Creek, while runoff from catchments upstream of the south embankment will be diverted to Boswell Lake, where it will be pumped around the west side of the TSF to be discharged into Cedar Creek during initial operations. In Year 10, the Boswell Lake South Diversion Channel will be constructed to redirect the Boswell Lake catchment south into Winkley Creek.

Sediment and erosion control measures will be necessary to limit effects on the surrounding environment and water sources due to earth-moving activities related to the construction and operations of the Project.

The treatment of mining-influenced waters (MIW) will be required during all stages of the Project. During the initial construction SMG will manage the suspended solids generated during earthwork and construction through best practices and water management; active treatment is not required in the first year. Active treatment will be required to treat nitrogen compounds derived from blasting used to generate clean rock for later construction components; SMG will continue to manage suspended solids without active treatment. During operations, active treatment of mine-influenced water will be required. In the active closure period, active treatment will transition to the passive treatment of MIW.

All MIW runoff water will report to a water management pond (WMP), a fully lined pond with an HDPE geomembrane liner. This pond will store and supply recycled water to the process plant. Any water that is excess to the process plant requirement will be treated in the active water treatment plant (WTP) for discharge to Cedar Creek, which flows to Quesnel Lake. The WTP will incorporate a variety of process technologies including oxidation, settling and clarification, microfiltration, denitrification, and reverse osmosis.

Electric power will be provided at 138 kV from BC Hydro, who will establish a new 138 kV substation near Highway 97 at McLeese Lake adjacent to their existing substation. The new substation will be fed at 230 kV from existing BC Hydro line 2L95 and will contain a step-down transformer to 138 kV. A set of outgoing suspension insulators will form the Point of Interconnection (POI). The new substation will be owned and operated by BC Hydro. A new 138 kV transmission line will be installed between the POI and the receiving substation at the Spanish Mountain mine

site. The transmission line will be single pole type. The 77.8 km long transmission line will generally follow the road, to a point just west of the town of Likely, then it will be routed north, around Likely, to the mine site. The transmission line will be owned and operated by Spanish Mountain.

Diesel fuel will be supplied in mobile 75,000 litre tanks and stored in a concrete bunded fuel storage area located at the plant site. The mobile fuel tanks will be double-walled and will be equipped with pre-packaged fuel unloading modules. These tanks will also supply fuel for the plant site mobile equipment. Fuel will be trucked to storage tanks for other facilities such as emergency generators and incinerators. Liquid propane for building heating will be provided by contractor road tanker, from supply depots in Williams Lake.

Alternative means for carrying out the Project have been considered, including: ore processing; tailings and waste rock storage management, location and technology; power source; camp facilities; waste and water management; on-site materials transport; and worker transport and rotation. SMG through their engineering and design work as captured in the Pre-Feasibility Study did not identify an economically viable alternative to the Project.

Project Wastes and Emissions

Potential waste produced by the Project includes:

- mined waste rock which must be removed to access the ore
- tailings from milling the ore
- hazardous and non-hazardous waste (office, domestic waste, and vehicle maintenance wastes)
- sewage
- contaminated soil in the event of spills or leaks

The current mine production schedule produces approximately 304 Mt of waste (overburden and waste rock), and an additional 77 Mt of subgrade ore over the mine life. Suitable mine waste rock that is Non- Potentially Acid Generating (Non-PAG) will be hauled from the pit and placed on two external WRSF's, North WRSF and West WRSF, both adjacent to the pit. Non-PAG mine waste rock will also be used for dam embankment construction at the tailings facility and water management ponds, as required.

The TSF will be used to provide secure and permanent containment for all tailings solids and potentially acid-generating (PAG) waste rock, and to provide temporary containment for impounded process water prior to being recycled. A total of 72 Mt of PAG waste rock has been planned for subaqueous disposal in the tailings pond. Some of the PAG waste rock will be used for upstream tailings embankment construction, in locations where this material will be kept under water.

Wastewater and sewage will be directed to an on-site septic treatment facility. An incinerator will be used for the disposal of non-hazardous, combustible waste materials and will be located within the accommodation complex. Inert solid waste will be collected and transported off-site to existing authorized landfills. Hazardous waste will be collected and transported to authorized off-site facilities for disposal.

Potential sources of air emissions from the Project include:

- fugitive dust (total suspended particulate and fine particulate matter) from blasting and crushing, material handling by mining equipment and hauling, coarse ore stockpiles, and road use
- Nitrogen and sulphur oxides, and carbon dioxide from combustion of fossil fuels
- The maximum annual net Greenhouse Gas (GHG) emissions for the construction phase of the Project were calculated to be 26,394 t CO₂e. The maximum annual net GHG emissions for the operations phase of the Project are 78,736 t CO₂e. Annual net GHG emissions for the decommissioning phase of the Project are 2,203 t CO₂e.

The Project is subject to Environment and Climate Change Canada's Strategic Assessment of Climate Change.

Water emissions will include: the discharge of contact water that has been in contact with potential sources of contamination and treated as necessary, and the diversion of non-contact water from upstream catchments that has not been in contact with mine workings.

Any water that has the potential for its quality to be adversely affected by Project activities, including runoff and seepage from tailings, waste rock and overburden management facilities, will be handled as contact water, and will be collected and managed on site prior to treatment and discharge to the environment.

Surface water runoff generated upstream of Project areas is considered to be non-contact water and will be diverted around the Project area with perimeter containment diversion ditches established during the pre-production phase and expanded and maintained through the operations phase.

Non-contact water from Boswell Lake will be pumped around the west side of the TSF and discharged into Cedar Creek until approximately Year 11 of operations via a diversion ditch to be extended from the eastern side of the TSF to convey flows north to Cedar Creek. This will reduce the flows requiring pumping around the TSF and maximize the amount that can be conveyed via gravity in ditches. A south diversion channel will be excavated in approximately Year 10 to discharge flows from Boswell Lake to the south into Winkley Creek.

Project Schedule

Permitting of the project will precede physical development of the Project, which will be initiated with a Construction Phase, followed by the Operation Phase, Active Closure Phase, and Passive Closure Phase. A generalized schedule for each phase is provided in Figure S3.

Appropriate seasonal work windows will be incorporated into the Project construction schedule. No other seasonal timing constraints have been identified.

Figure S3 Generalized Project Schedule

Task	YEAR																											
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Permitting	█	█	█	█																								
Construction				█	█	█																						
Operation							█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Active Closure																												
Passive Closure																												

Biophysical Environment

The biophysical environment was extensively studied in 2010 and 2011 in support of the regulatory review process initiated in 2012, and these studies resumed in 2020 and continue.

Topography is locally rugged with steep slopes and cliffs along deeply incised creek valleys. Elevations on the Property vary from 930 masl at Spanish Lake to 1,460 masl near the top of Spanish Mountain and 1,325 masl at the top of Mount Warren. Water is abundant in the area, with several lakes and year-round streams close to the Project property.

Vegetation is heavy forest, consisting primarily of thick stands of hemlock, balsam, cedar, and Douglas-fir in the valley bottoms, with spruce, fir, and pine on the ridges. Underbrush is thick, especially in logged areas. The effects from the 1999-2015 mountain pine beetle outbreak are still observed. For the past 10 years, all harvesting in the Williams Lake Supply Area has been focused on salvage of beetle-killed trees.

The Property has been logged historically and includes several recent large cut blocks and forestry roads, and both historical and active placer mining operations. A gravel airstrip is located west of the Property and immediately west of Hepburn Lake.

The climate in the area is modified continental with moderately warm summers and cold snowy winters. Typical daytime temperature ranges are from 25°C to 35°C in summer and -15°C to -35°C in winter. The area lies within the interior dry belt; precipitation averages about 700 mm annually (rainfall equivalent) at Likely. The 24-hour peak maximum precipitation was 198 mm (based on long term precipitation data from the Barkerville station, approximately 35 km north of Spanish Mountain). Thick accumulations of snow (as much as 2m) are common in winter at the Project.

The Spanish Mountain Gold Project spans the Spanish Creek, Cedar Creek, Fisher Creek, Grogan Creek, and Poquette Creek watersheds. The larger watersheds in the Project area are generally characterised by high flows in the spring due to snowmelt, and rainfall combined with snowmelt; medium flows in the late summer/ fall; and very low flows in the winter. There are several minor, unnamed tributary creeks flowing through the Project area. These creeks are affected by ice formation during the winter, with the smaller intermittent systems typically freezing over, or drying up, for extended periods. Generally, Spanish Creek flows continually throughout the year, but flows can be affected by ice formation during winter.

A water quality monitoring program was conducted from 2007 to 2012 to characterize baseline conditions and was restarted in September 2020, continuing monthly. Water quality samples are collected from 14 established monitoring sites. Sample sites within the Project claim boundary tend to have higher metals concentrations, with total and dissolved metals often exceeding Provincial (British Columbia Water Quality Guidelines) and Federal guidelines (CCME Canadian Water Quality Guidelines) for the protection of aquatic life, notably aluminium, cadmium, and iron. This likely reflects both the natural mineralization of the claims area and disturbance from historical placer mining activity. Water samples collected outside of the claim boundary (Cedar Creek, Spanish Creek, Blackbear Creek, Hepburn Lake and Winkley Creek) have all been within guideline concentrations.

Fisheries baseline studies confirmed the presence of Rainbow Trout in Spanish Creek, Cedar Creek, Boswell Lake, and the lowermost portion of Winkley Creek. Chinook Salmon juveniles were sampled from lower Spanish Creek and lower Cedar Creek. Burbot and Longnose Dace were also captured from lower Cedar Creek. Adult Coho Salmon were detected in lower Spanish Creek downstream of a fish migration barrier located 1.5 km upstream from the Cariboo River. Hepburn Lake, upper Winkley Creek and many of the small unnamed tributaries to Cedar Creek, Winkley Creek and Spanish Creek below Spanish Lake, are non fish bearing. Fish presence into the upper reaches of these tributaries is either limited by steep gradients or insufficient surface flow.

The Project is located within the Quesnel Highlands ecosection, which is a highland area intermediate between the plateau to the west and the high, rugged mountains to the east. The forest in the Project area is composed primarily of hybrid white spruce, balsam, western redcedar, Douglas-fir, and hemlock in the valley bottoms, with Douglas-fir and pine on the ridges. Cottonwood and alder occur in some localities as well.

Potential plant species or communities of concern in the Project area include:

- Short-flowered evening primrose
- Haller's Apple Moss
- Scrub birch / sedges/ peat mosses

- Awned sedge Fen – Marsh
- Tamarack / low birch / bluejoint reedgrass – sedges / peat mosses
- Hybrid white spruce / foam lichens
- Douglas-fir / Rocky Mountain juniper / kinnikinnick
- Douglas-fir – western redcedar / wavy-leaved moss
- Nuttall’s alkaligrass – foxtail barley
- Seaside arrow-grass Marsh

Potential wildlife species of concern in the Project area include:

- Black Swift (Endangered; *Species at Risk Act* (SARA))
- Peregrine Falcon (*anatum* subspecies) (Red listed in BC)
- Swainson’s Hawk (Red listed in BC)
- Western Grebe (Red listed in BC)
- American Badger (Endangered; SARA)
- Southern Mountain Caribou (Red listed in BC)
- Fisher (Columbian population) (Red listed in BC)

Additionally, a number of migratory birds frequent the Project area.

Additional work in progress includes a full analysis of species presence, breeding, and habitat use and development of wildlife habitat suitability models.

Human Environment

The Project is located within the Cariboo Regional District, a regional government consisting of 12 electoral areas (A through L). Each electoral area elects a Director, except for the incorporated member municipalities (Williams Lake (population 10,000), Quesnel (population 12,000), 100 Mile House (population 1,900)), which are represented by an elected Mayor and Council. The Project resides in Cariboo Regional District Electoral Area F, which includes the communities of Likely, Big Lake, and Horsefly.

The Project will be located approximately 6.5 km away from the unincorporated community of Likely, with the closest school located approximately 7 km away. Likely has basic amenities including a motel, hotel, rental cabins, corner store, gas pumps, and a seasonal restaurant. Some heavy equipment is also available for hire from local contractors. SMG has a modern, full-service facility on purchased land near the Project that provides a base for exploration activity.

Major industries that support the Cariboo Regional District include forestry, agriculture, mining, oil and gas, and tourism. Several wood processing and value-added wood manufacturing plants exist throughout the area. There are several large mines in the region, including the Mount Polley Mine near Likely and the Gibraltar Gold and Copper Mine approximately 70 km north of Williams Lake.

There are also significant mining exploration activities that are ongoing. The region's agriculture industry includes cattle ranching and farming, floriculture, and nursery production, as well as some other types of crop and livestock production.

The Project lies within the Williams Lake Timber Supply Area, within which there are individual license holders.

Commercial activities in the area are largely derived from outdoor recreation, including back country guiding and fishing, and hunting.

Health care in the Project area is governed, planned, and delivered by the Interior Regional Health Authority within the Cariboo/Chilcotin Local Health Area of the Thompson Cariboo Shuswap Health Service Area. The administration of funding derived from property taxes for hospitals and medical services is done by the Cariboo Chilcotin Regional Hospital District shared with the Ministry of Health. The main health facilities include:

- South Cariboo Health Centre in 100 Mile House
- Cariboo Memorial Hospital in Williams Lake
- G.R. Baker Memorial Hospital in Quesnel (operated by the Northern Health Authority)

Life expectancy in the Cariboo/Chilcotin Local Health Area is 79.6 years, compared to 82.6 years for the province. In 2015-2016, 68% of the Thompson Cariboo Shuswap Health Service Area population (aged 12 and up) reported very good or excellent mental health. Incidents of chronic diseases, including asthma, chronic obstructive pulmonary disease, heart failure, and high blood pressure are generally higher than the provincial average, with the exception of diabetes, which is slightly lower.

Indigenous Engagement

SMG understands that meaningful engagement with Indigenous nations and all stakeholders is an essential component of any successful project. SMG will continue to build upon the engagement activities that have already been completed to implement methods that have proven to work within the communities.

Three Indigenous Nations were identified for deep engagement during the early project development in 2010 and earlier. The relationships established at that time have been supported by all parties and continue to the present. The Nations are:

- Williams Lake First Nation (WLFN), a member of the Northern Shuswap Tribal Council
- Xat'sull First Nation (XFN), also a member of the Northern Shuswap Tribal Council
- Lhtako Dene Nation (LDFN), a member of the Carrier Chilcotin Tribal Council

SMG has been actively engaging with Williams Lake First Nation and Xat'sull First Nation since 2011 and with Lhtako Dené Nation since 2012, through meetings, teleconferences, workshops, e-mails,

presentations, and site visits. The engagement has assisted SMG in the development of a broader understanding of First Nation interests and concerns regarding the Project and in the application of that understanding in Project design, potential mitigation measures, and potential Project benefits.

SMG signed Memoranda of Understanding with each of WLFN, in 2011, XFN, in 2011, and LDFN, in 2012. All these agreements were initiated in relation to the previous project plan. SMG signed an Engagement Agreement with XFN in October 2021 that is the first step toward negotiation of a Relationship Agreement to cover the life of the Project – the Relationship Agreement is presently in negotiation. SMG signed an Engagement Agreement with LDN in December 2021 that is the first step toward negotiation of a Relationship Agreement to cover the life of the Project. SMG also is currently in negotiations with WLFN for a life-of-project participation agreement.

Through ongoing engagement, Indigenous Interests regarding the Project are becoming understood.

Key interests were largely shared by each nation and include:

- Interest and expectations regarding education and training, employment, and business opportunities with the Project
- Interest in direct economic benefits of the Project
- Ensure that results of an updated Traditional Land Use study are considered in the Project development
- Ensure protection of water and water quality
- Ensure appropriate design, construction, and operation of the Tailings Storage Facility
- Interest in how the Project will look and behave in its post-closure phase

Public Engagement

SMG completed a significant level of public and community engagement during the original entry to the approval process. Public engagement took the form of open houses, information sessions, letters, emails, news circulars, and online information. Targeted meetings were held with several stakeholder groups within the following communities:

- Likely
- Horsefly
- Big Lake
- Williams Lake
- 150 Mile House
- Quesnel

Key issues raised by the public and stakeholder groups included the following:

- Protection of water quantity and quality

- Robust design and operation of the tailings storage facility
- Impacts to viewscales and potential for increased dust and noise
- Changes to housing supply and real estate costs

Potential Project Interactions

A preliminary list of potential Project interactions, along with possible mitigation to be applied is summarized in Table S3 below. Note that there are no anticipated interactions or impacts outside of the province of British Columbia, or on federal land.

Table S3 Preliminary Identification of Potential Project Interactions

Environment Component	Issue/Potential Effect	Example of Potential Mitigation
Indigenous Interests		
Current Use of Lands for Traditional Purposes, Sites of Historical, Archaeological or Cultural Importance, and Physical and Cultural Heritage	The Project-environment interactions have the potential to affect the harvesting of plants for food and medicinal and ceremonial purposes, exercising of Aboriginal rights and traditional land uses in and around the Project area, camping and gathering at sites of cultural, spiritual, and historic importance.	The assessment of the Project will consider the rights and interests of Indigenous peoples in consultation. The participating Indigenous Peoples will be engaged on the evaluation and selection of mitigation measures to minimize potential effects. This may include avoiding/minimizing Project interaction with identified sites.
Indigenous Peoples' Health, Social or Economic Conditions	The Project-environment interactions have the potential to affect biophysical components, resulting in a potential impact to Indigenous health, social, or economic conditions.	Health: implementing environmental monitoring programs Social: Implement a socio-economic baseline survey update every 5 to 10 years Economic: support Indigenous communities' agencies with training and skills development.
Physical Environment		
Geology, Soils and Terrain	Changes to geology, soils, and terrain from vegetation removal, storage of waste rock, construction of Project facilities. Loss of soil profile and structure. Modification of slopes and vegetation resulting in potential soil erosion. Changes to soil quality due to changes in soil chemical and physical characteristics.	Management practices for soil erosion control and soil contamination management. Implement a reclamation and closure plan. Soil salvage, soil stockpile, and soil placement management.
Hydrogeology	Changes to groundwater quality and quantity. Groundwater withdrawals for pit dewatering and the mine process may change local groundwater flow patterns during the period of dewatering. Altered groundwater flow patterns may affect baseflows in creeks that receive groundwater inflows or creeks that provide groundwater recharge. Groundwater quality may be altered by infiltration of mine-influenced water from surface operations.	Collect and manage mine-influenced water to minimize potential for infiltration to groundwater (e.g., lined water management pond and TSF, contact water collection system and segregation from clean runoff). Implementation of erosion control and spills management plans. Implement groundwater monitoring plans (quality and flow patterns) during construction and operation and adapt to findings. Implement a reclamation and closure plan, including a closure water management plan.

<p>Surface Hydrology and Water Quality</p>	<p>Potential effects on surface water quantity (i.e., hydrology) may include alteration of seasonal stream flow patterns due to: Stream diversion. Groundwater withdrawals affecting baseflows. Discharge to surface waters.</p> <p>Changes in erosion rates/timing and/or sediment deposition patterns/rates in streams due to changes in surface water flow regime.</p> <p>Changes in sediment loading in streams related to changes in flow/erosion.</p> <p>Changes in chemical water quality related to: contact with mineralized areas or materials exposed by the mining operation; emissions from the mining operation; and/or to changes in flow.</p> <p>Changes in groundwater/surface water interactions (e.g., increased or decreased groundwater recharge; groundwater withdrawals discharged to surface).</p>	<p>Divert non-contact water away from mine operations to: Collect and divert clean runoff away from mine operations. Divert creeks around mine facilities to maintain downstream flows.</p> <p>Collect all mine-influenced runoff from the site. Maximize use of mine-influenced water in the mine process to minimize the need for fresh makeup water.</p> <p>Treat any excess mine-influenced water before discharge to surface waters.</p> <p>A surface water monitoring program will be conducted during the construction, operations, active closure, and passive closure project phases.</p>
<p>Air Quality, Noise and Vibrations</p>	<p>The mining operation will be a source of particulate matter originating in fugitive emissions from:</p> <ul style="list-style-type: none"> ○ Drilling, blasting, loading, and hauling of ore/waste rock from the mine. ○ Dumping of ore/waste on stockpiles. ○ Crushing, screening of ore at the plant. ○ Vehicle operation on gravel roads. <p>The operation will be a source of greenhouse gases, including carbon dioxide, carbon monoxide, sulphur oxides and nitrous oxides produced in fossil fuel combustion by vehicles, back-up generators, building heating, and the carbon regeneration kiln in the gold plant.</p> <p>Noise and/or vibrations from mining operations including drilling, blasting, ore/waste loading.</p>	<p>Implement a dust control plan involving application of best management practices including water/dust suppressants on roads, dust collection and control at the crusher.</p> <p>Minimize the use of fossil fuel burning vehicles and appliances as much as technically and economically practical.</p> <p>Implementation of an air quality monitoring plan to monitor the effectiveness of management practices.</p> <p>Use of noise minimization equipment.</p>
<p>Biological Environment</p>		

<p>Terrestrial Resources</p>	<p>Loss and/or alteration of vegetation within the Project area as a result of site clearing, affecting vegetation and soils, during construction of mine facilities.</p> <p>The removal of vegetation will impact wildlife species due to habitat alteration, destruction, degradation, fragmentation, and/or obstruction.</p> <p>Duration of habitat loss will vary, depending on location:</p> <ul style="list-style-type: none"> ○ Clearing and grubbing for staging, borrow, laydown, and spoil areas required during construction will result in the temporary loss of vegetation and wildlife habitat; staged reclamation will be used to minimize the duration of the impact. ○ Clearing, grubbing, and grading for facility construction will result in the longer-term (i.e., from construction through closure) loss of vegetation and wildlife habitat; vegetation cover will be re-established during reclamation. ○ Vegetation in the area of the open pit footprint will be permanently lost and replaced by a pit lake and cliff habitat on the pit highwall post-closure. <p>Riparian vegetation will be removed where stream crossings need to be established for new roads and will be replaced when the stream crossings are removed at closure.</p> <p>Siting of the mine facilities has the potential to disrupt wildlife movement patterns in the regional landscape.</p> <p>Wildlife will be displaced from the mine site during construction, operation, and closure, with the site becoming available to wildlife again in post-closure.</p> <p>Temporary or permanent loss of nesting habitat of migratory birds, including passerines and water birds</p>	<p>Implement appropriate construction/operation/closure management practices and ecosystem/species management plans.</p> <p>Develop and implement a reclamation and closure plan appropriate to the terrain, local vegetation, and wildlife communities; including progressive reclamation to minimize the duration of any vegetation/habitat losses.</p> <p>Identify opportunities for the development of offsetting habitat through engagement with government and First Nations and incorporate these in the reclamation plan.</p>
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<p>Aquatic Resources</p>	<p>Direct loss or change in quantity or quality of fish and fish habitat resulting from placement of waste rock, and other mine infrastructure. Development of the TSF in Cedar Creek, directly displacing fish and fish habitat Change in quantity and quality of aquatic habitat resulting from alteration of stream flows in Cedar Creek and Winkley Creek. Surface water quality effects associated with mine development may include alteration or deterioration of aquatic habitat, with potential direct or indirect effects on fish and aquatic species such as direct mortality, decreased food availability, life cycle disruption, and decreased habitat utilization.</p>	<p>Avoid and/or minimize Project direct loss of habitat through selection of waste rock storage locations and TSF that minimize interaction with fish bearing waterbodies. Treat any excess mine-influenced water before discharge. Implement appropriate environmental management plans including development of new fish habitat to offset potential losses of existing habitat.</p>
<p>Human Environment</p>		
<p>Archaeology</p>	<p>An updated Archaeological Impact assessment was conducted throughout the entire mineral concession in 2019 (Terra Archaeology, 2019). It confirmed that the Project is unlikely to impact heritage resources.</p>	<p>Implement management plans including chance find procedures.</p>
<p>Economy and Socio-community</p>	<p>Local effects and regional effects from worker migration. Economic and social effects of housing workforce in Quesnel, Williams Lake, and other smaller communities in the region. Employment, income, local revenue generation and gross domestic product effects. Changes to demand for local service industries and infrastructure, including housing, education, healthcare, social services, road maintenance, transport, consumables, catering, and equipment servicing.</p>	<p>Environment, Health, Safety and Community Plans. Implement local employment policies and planning. Planning for local procurement of goods and services. Support local initiatives to address demand for housing and local services, including early communication with local government agencies. Local business capacity inventory. Local skills inventory, training, and skills development programs.</p>

<p>Land Use</p>	<p>Changes in traffic volume on Keithley Creek Road, Spanish Lake Road, Likely Road, Highway 97, and access to/from the site.</p> <p>Changes to recreational fishing in areas within the mine area (e.g., Nina Lake).</p> <p>Potential disturbances from the construction of a new transmission line.</p> <p>Disturbances from the development of the Mine Site and associated infrastructure.</p> <p>Potential effects to recreation sites (including fishing and camping) including noise, air quality, water quality, and water quantity, and year-round and seasonal properties.</p> <p>Hunting restrictions on the Project site during construction, operations, and closure.</p> <p>Potential effects on Likely- Xatsúll Community Forest related to forest products harvest as well as to traditional plant, berry, and medicine collection.</p>	<p>A traffic management plan will be developed to mitigate the impacts of road use during construction and operation.</p> <p>Ongoing engagement and communication with stakeholders related to access and use.</p> <p>Management practices and environmental management plans for Ecosystems, Species, Aquatic Health, Air Quality, Noise, and Visual Quality.</p> <p>Development of end land use objectives for reclamation and closure planning in consultation with Indigenous nations and other local stakeholders.</p>
<p>Visual Aesthetics</p>	<p>Changes to the landscape will include but will not be limited to the development of the TSF, the Open Pit, and waste rock storage facilities.</p> <p>These changes may have indirect effects to cultural, recreational, and tourism values that are related to the visual quality and the enjoyment of scenic values.</p>	<p>An evaluation of the potential visual aesthetic changes to existing conditions during the construction, operation, and decommissioning phases of the Project will be addressed in the Application.</p> <p>Development and implementation of landscape design in reclamation and closure planning to mitigate adverse visual at project end.</p>
<p>Human and Terrestrial Wildlife Health</p>		
<p>Human and Terrestrial Wildlife Health</p>	<p>Increased particulate matter concentrations (i.e., PM_{2.5} and PM₁₀), which may cause health risks to local communities.</p> <p>Potential effects to worker and community health, air quality, noise, and water quality.</p> <p>Deposition of dust to plants and soil.</p> <p>Water runoff may contribute to changes in water quality downstream waterbodies which may impact health of humans, fish, and wildlife.</p>	<p>Implementation of an air emissions and dust control plan and an air quality monitoring plan.</p> <p>Implementation of a Site Water monitoring and Management Plan.</p> <p>Engagement will be conducted with a range of stakeholders including the Public, First Nations, community administrators, public health and social services and infrastructure providers, educational institutions, and business representatives.</p> <p>Project effects on social, health, and community issues will be determined.</p>

Note(s):

1. PM₁₀ = particulate matter less than 10 µm (micrometres) in diameter.
2. PM_{2.5} = particulate matter less than 2.5 µm (micrometres) in diameter.

Effects of the Environment on the Project

Climate change could affect the frequency and intensity of severe weather events. The following environmental factors could lead to environmental effects on the Project's physical infrastructure:

- Natural Hazards
- Seismic events
- Landslides
- Drought
- Flooding
- Hailstorms
- Lightning
- Volcanic events
- Wildfires
- Erosion and sedimentation

The supply of water for mine facilities will be susceptible to environmental changes, such as changes to temperature, precipitation, and rates of evapotranspiration. Mine facilities rely on a continuous supply of water to sustain mining and processing activities throughout the operating period. For instance, water for the process plant for the processing of ore will be provided by a combination of freshwater from make-up sources, including the Open Pit, and reclaim water pumped from the WMP. Water supply from these make-up sources is influenced by precipitation and runoff from catchments in the Project area.

Although water supply will be susceptible to environmental changes, appropriate mitigations to severe weather events will be incorporated into designs and plans.