BRUCEJACK GOLD MINE PROJECT

Application for an Environmental Assessment Certificate / Environmental Impact Statement

Appendix 3-J

Public Issues Tracking Table



Table 3-J1. Local Governments, Tenure Holders, Stakeholders and the Public Issues Tracking Table (until May 16, 2014)

Issue	Pretivm Response	Issue Raised By
Accidents and Malfunctions - Accidental spills of hazardous materials on the Brucejack Access Rd. and resulting environmental contamination.	A risk analysis of 430 potential accidents and malfunctions identified spills as the result of accidents as a medium risk. Chapter 30, Accidents and Malfunctions, addresses the accidental spills of hazardous materials on Brucejack Access Rd. Pretivm follows all regulatory standards pertaining to the transport of hazardous goods on all roads. Pretivm's policies and practices reflect preventative, mitigation, clean-up, and follow-up measures to deal with potential spills. Preventative measures include: road design, maintenance and reporting, driver training and monitoring, vehicle inspection and maintenance, and preventative driving and scheduling. Mitigation and clean-up measures include; load monitoring, spill protocols, spill kits, emergency response procedures specific to load, and notification of authorities and stakeholders. Follow-up measures include; environmental monitoring and further remediation if warranted. Specific measures for prevention, mitigation, and clean-up are detailed in the following management plans (Chapter 29, Environmental Management and Monitoring Plans): Emergency Response Plan (Section 29.6), Hazardous Materials Management Plan (Section 29.7), Spill Prevention and Response Plan (Section 29.14), and Transportation and Access Management Plan (29.16).	Public
Accidents and Malfunctions - Will erosion control and emergency response plans address potential storm events that could exceed 100-year maximums?	Potential effects to the Project related to floods, including measures that will be in place to mitigate potential effects, are discussed in Section 32.3.2 of Chapter 32, Effects of the Environment on the Project. A key aspect of minimizing impact to the project and environment related to extreme events is design criteria for water management features. Culverts along the access road are designed to discharge a 10-year storm event without static head (i.e., assuming no standing water) at the entrance, and to discharge a 100-year storm event utilizing available head at the entrance (assuming standing water; Cypress Forest Consultants 2011; Tetra Tech 2013- Appendix 5-A of the Application/EIS). Water management features around the mine site, including drainage and diversion ditches as well as a contact water collection pond will be designed to convey a 200 year event. Infrastructure will be monitored for signs of failure after large rain events. Alternative transportation (e.g. helicopter) will be used if access roads and bridges are damaged and closed due to flooding. Surface water control measures are being addressed in Section 29.19, Water Management Plan, of Chapter 29 of the Application/EIS, Environmental Management and Monitoring Plans.	Public

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Issue	Pretivm Response	Issue Raised By
Alternatives Assessment - Rationale for selecting this method of tailings storage.	Tailings generated by the Project will be preferentially deposited back into the underground mine. However, due to space limitations, not all tailings will be able to be placed underground. Tailings that cannot be directed underground will be deposited at depth in Brucejack Lake. Brucejack Lake provides an ideal location for long-term tailings management. Brucejack Lake is more than 85 m deep at its deepest point. At the end of the mine life, it is expected that about38 m of water will overlie the highest surface of the deposited tailings. This depth of water cover will help to ensure that (i) tailings will not exit the lake and disperse to downstream receiving environments and (ii) ensure that the potential for acid rock drainage is eliminated by maintaining anoxic conditions in the deposited tailings. These are two key considerations for tailings management. An alternative to storing the tailings in Brucejack Lake would be to construct a tailings storage facility on the surface. There are several benefits of using Brucejack Lake over an engineered tailings storage facility. Dams would need to be built for an engineered storage facility which would have the potential to fail over time; whereas a dam would not be required for tailings storage in Brucejack Lake. Surface storage facilities tend to result in seepage of poor quality water from within the tailings into underlying groundwater systems, which can be difficult to monitor and manage. Brucejack Lake is a natural groundwater discharge zone, such that the movement of water from the tailings would be into the overlying water column in the lake. Lake water quality is much more easily monitoring and managed, if required, than ground water. Furthermore, a surface storage facility would result in a larger overall footprint for the project, whereas tailings placed in Brucejack Lake will have an impact footprint only within Brucejack Lake. However, Brucejack Lake is a system with low natural productivity and does not contain any fish. The nearest fish habitat is l	Public

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Issue	Pretivm Response	Issue Raised By
Climate - Greenhouse gas emissions should get a full "lifecycle" accounting, including all mine related activities.	Project greenhouse gas emissions are estimated in Chapter 12, Assessment of Potential Climate Effects, and include emissions from direct emissions from Project equipment and activities (Scope 1), indirect emissions from electricity that is imported into site (Scope 2), indirect emissions from third party equipment (Scope 3), as well as those from net land use change. These estimates consider all Project related activities and components during the Construction and Operation phases (Closure and Post-Closure phases were scoped out) including the mine site, Knipple Transfer Area, Tide Standing Area, Bowser Aerodrome, transmission line, and use of the access road from the mine site to its junction with Highway 37. Emissions mitigation methods are included in the Air Quality Management Plan, Section 27.2. The residual effects assessment for climate effects concludes that the rise in atmospheric GHG levels is not significant during any Project phase. Scope 1 GHG emissions are expected to be slightly above the federal reporting threshold during the two year construction phase, but emissions are expected to be lower than the federal reporting threshold during the 22-year Mine Life.	Public
Consultation - Better outreach required to notify more Nisga'a citizens about community meetings and provide informational materials in advance of meetings.	Pretivm placed notices advertising the dates of the open houses, and the locations and timing of the public comment period in the following newspapers for a three-week period: Northern Connector, Terrace Standard, and Interior News. Pretivm notified NLG and the four village governments of the open house in New Aiyansh and provided advertising materials for posting in the villages including small posters. Pretivm will continue to work with NLG and village governments for better outreach in advance of the next anticipated open house, which will be following submission of the Application/EIS.	Public
Consultation - Keep communities and businesses apprised of the project and how it is progressing.	The Regional District of Kitimat-Stikine (RDKS) is a BC EAO Working Group participant and receives all project related updates from BC EAO. Pretivm has also met with City of Terrace Mayor, and Mayor and Council, on several occasions (see Appendix 3-H) of Chapter 3, Information Distribution and Consultation for a description of consultation activities with local governments). Pretivm will implement an engagement strategy under which regular and formal communications will take place with local and Aboriginal governments within the Regional Study Area (RSA) and Local Study Area (LSA) to provide updates on the Project.	City of Terrace
Consultation - Would like additional research to be presented at open houses.	During the first set of Open Houses for the Draft AIR, Pretivm displayed eight large posters describing the company and the Project. An information booklet was also available for the public, containing much of the information displayed on the posters. Some of this information described the socio-economic and environmental baseline studies underway. Large maps, and copies of the Draft AIR were also on display. At the next round of Open Houses following submission of the Application/EIS additional information will be available for presentation including some of the key findings from the environmental assessment process and some of the mitigations and management plans. The Application/EIS itself will be available to the public, along with baseline study reports, on the BC EAO project information centre (e-PIC) site.	Public

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Issue	Pretivm Response	Issue Raised By
Consultation - Would like to tour the site.	The RDKS represents local government on the BC EAO Project Working Group. The Working Group toured the Project site on September 5, 2013; however, RDKS was not able to attend.	Town of Smithers
Cumulative Effects - Methodology for assessment of cumulative effects.	The potential for cumulative effects arises when the residual effects of a project affect (i.e., overlap and interact with) the same resource/receptor that is affected by the residual effects of other historic, existing or reasonably foreseeable future projects or activities. The cumulative effects assessment considers the potential environmental, economic, health, social, and heritage cumulative effects of the Project. The cumulative effects assessment for the Project has been conducted following standard guidance as provided by the Canadian Environmental Assessment Agency and the BC EAO including the following documents <i>Operational Policy Statement: Addressing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012</i> (Canadian Environmental Assessment Agency 2013) and the <i>BC EAO User Guide</i> (BC EAO 2010). The cumulative effects methodology for the Project is described in Section 6.9 of the Application/EIS. Results of the cumulative effects assessment on individual intermediate components and receptor Valued Components are presented in Chapters 7 through 25 of the Application/EIS.	Public
Employment/Economic Opportunities - Concern that fly infly out operations will preclude sourcing labour, supplies and services from the northwest region.	Hiring practices will follow BC and federal legislation and regulations with a focus on hiring local and regional residents, where possible, in consultation with local Aboriginal groups and LSA communities (Section 19.5.1 of Chapter 19, Assessment of Potential Economic Effects). Pretivm will consider the needs of workers from regional and Aboriginal communities with the aim of increasing the level of employment participation in the Project. The Project will encourage the involvement of local and regional businesses interested in the opportunities to directly and indirectly supply the Project to maximize the benefits within the region. Suppliers will be selected based on location, quality, price, and delivery (among other criteria) with the standards for purchasing determined during the initial stages of the Project.	Town of Smithers

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Issue	Pretivm Response	Issue Raised By
Employment/Economic Opportunities - General Interest.	The Project will provide substantial employment and numerous business opportunities. Through this, it will contribute to household income, and regional and provincial GDP, as well as regional, provincial and federal tax revenue. Project benefits are described in detail in Section 1.9 of Chapter 1 (Project Overview) of the Application/EIS. In general, the Project is expected to create 3,912 person-years of direct (on-site), indirect and induced employment in BC during Construction (estimated duration of 2 years), which will contribute approximately \$308 million to household income. The provincial GDP is expected to benefit by \$395 million, whereas regional, provincial and federal government revenue will increase by approximately \$64 million. During Operations (estimated duration of 22 years), approximately 28,956 person-years of direct (on-site), indirect and induced employment is expected to be created in BC with household income of \$2,331 million. Provincial GDP is expected to increase by \$2,914 million, whereas regional, provincial and federal tax revenue will increase by approximately \$527 million. Construction and Operation of the Project will bring jobs mainly in construction and mining; however, other industries in BC will also benefit, including, but not limited to: professional, scientific, and technical services, accommodation and food services, manufacturing, transportation, warehousing, wholesale and trade.	Public
Employment/Economic Opportunities - Hire Nisga'a to staff the Project at all levels and all types of jobs.	Pretivm is committed to providing employment opportunities to individuals from several Aboriginal groups. Pretivm will consider the needs of workers from regional and Aboriginal communities with the aimed of increasing the level of employment participation in the Project. Hiring practices will follow BC and federal legislation and regulations with a focus on hiring LSA and RSA residents, where possible, in consultation with local Aboriginal groups and LSA communities (see Section 19.5.1 of Chapter 19, Economic Effects Assessment). Pretivm will also offer training and skill development to Project employees across departments, including on-the job training, in order to support on-going enhancement of worker skillsets and internal job advancement. Further, through the pursuit of IBAs or other forms of agreements, Pretivm will work with First Nations and Nisga'a Nation to address some of the barriers their community members face with respect to gaining higher levels of education and skill attainment.	Public
Employment/Economic Opportunities - How many Tahltan are working at the Project.	To date, Pretivm has engaged the Tahtlan Nation Development Corporation (TNDC) for road construction work. Pretivm will continue to consider the needs of workers from regional and Aboriginal communities and are aimed at increasing the level of employment participation in the Project, and looks forward to the ongoing involvement of Tahltan in Project employment.	Public
Employment/Economic Opportunities - Inform local business community about project plans/schedules so they are positioned to respond.	Pretivm will communicate with communities within the Local Study Area (LSA) to provide them with timely information on the Project development schedule and procurement. Information will assist businesses in their planning activities and making decisions to take advantage of the economic opportunities available from the Project.	City of Terrace, TEDA, RDKS

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Issue	Pretivm Response	Issue Raised By
Fish - Alteration, disruption, or destruction of fish habitat.	An assessment of potential effects to fish habitat was completed in the environmental assessment application (Chapter 15, Assessment of Potential Fish and Fish Habitat Effects). The proposed Project is not expected to result in fish habitat loss and/or serious harm to fish, therefore <i>Fisheries Act</i> authorizations will not be required for the project (Sections 15.5.1.2 and 15.6.4 of Chapter 15). Brucejack Lake is not fish bearing (Section 15.3.4.2 of Chapter 15). Fish-bearing stream crossings are located at the Bowser River transmission line crossing and along the Brucejack access road from Highway 37. At the Bowser River transmission line crossing, the transmission line will be approximately 120 m above the high water mark and riparian vegetation will not be removed, therefore fish habitat will not be affected (Section 15.5.1.2). As the access road is an existing feature, no additional fish habitat alterations are expected during road maintenance and implementation of mitigation measures (Section 15.6.4).	Public
Fish - Assessment boundaries are inadequate to assess eulachon in the Nass and Unuk rivers.	Eulachon has not been identified as a Valued Component as its distribution is well downstream of the Project and potential Project effects. Identified Valued Components are presented in Section 15.4.1, and the rationalization for their inclusion is presented in Section 15.4.1.3 (Chapter 15, Assessment of Potential Fish and Fish Habitat). Within the Unuk River watershed, the distribution of eulachon is within the lower reach of the Unuk River sloughs, the Hooligan River, and Klahini River (tributaries of the Unuk River), more than 50 km downstream of Project related discharges. Any potential effects related to the Project will be addressed within the local and regional study areas identified in Figure 15.4-1 (Chapter 15). Similarly, within the Nass River watershed, the distribution of eulachon is within the lower reach of the Nass River, hundreds of kilometres downstream of any proposed Project components and is not within the mine site discharge receiving environment.	Public
Fish - Effects to Brucejack Lake, including downstream effects on water quality and fish as a result of tailings deposition in Brucejack Lake.	Any potential effects on surface water quality from tailings deposition will be localized to Brucejack Lake (see Chapter 13, Assessment of Potential Surface Water Quality Effects, for further details). Discharge at the lake outlet will meet standards outlined in the MMER (MMER; SOR/2002-222) as well as EMA permit obtained for the Project. Further, Brucejack Lake and Brucejack Creek downstream to the confluence of Sulphurets Creek (upstream of a 200-m long series of cascades creates a barrier to fish migration) are non-fish bearing. Due to this considerable distance, and because potential effects are anticipated to be restricted to Brucejack Lake and the immediate receiving environment, the Project is not predicted to cause adverse effects on water quality, aquatic resources, and fish and fish habitat in mid- and far-field fish bearing receiving environments (Sulphurets Creek downstream of fish barrier, and the Unuk River). Assessment of potential effects to fish and fish habitat are specifically addressed in Chapter 15 (Assessment of Potential Fish and Fish Habitat Effects). Monitoring of aquatic receiving environments will be designed and executed to detect any potential changes in water quality, aquatic resources, and, by extension, fish and fish habitat. Adaptive management and mitigation measures will be implemented to manage any potential effects as required (Chapter 29, Environmental Management and Monitoring Plans).	Public

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Issue	Pretivm Response	Issue Raised By
Fish - Presence of fish in Brucejack Lake.	Previous fisheries sampling effort (Newhawk 1989; Price 2005) has shown that Brucejack Lake is not fish bearing (Section 15.3.4.2 of Chapter 15, Assessment of Potential Fish and Fish Habitat). This conclusion has been confirmed in recent sampling work (Rescan 2013). The first 1,300 m of Sulphurets Creek upstream from the confluence with the Unuk River is fish bearing (Dolly Varden present only). Upstream of this reach, a 200-m long series of cascades creates a barrier to fish migration. Over 9,700 electrofishing seconds of sampling, 45 hours of gillnetting, and 1,445 hours of minnow trapping effort have been undertaken upstream of the cascades, and no fish have been captured (Rescan 2013). As a result, Sulphurets Creek and its tributaries are confirmed as non-fish-bearing above this point.	Public
Fish - Transboundary Effects via Sulphurets Creek and Unuk River (general public).	Water quality predictions are being made for the downstream receiving environment including the fish bearing reach of Sulphurets Creek and Unuk River. The Unuk River crosses the international boundary into Alaska approximately 45 km downstream for Brucejack Lake and 25 km downstream from the confluence of Sulphurets Creek and the Unuk River. The results of the water quality model indicate that Project related impacts on water quality (and therefore fish) are not expected to be observable in the fish-bearing reach of Sulphurets Creek or the Unuk River. Applicable provincial water quality guidelines for the protection of aquatic life are and anticipated water quality permit requirements are predicted to be achieved throughout the length of Sulphurets Creek, well upstream (~15 km) of the fish-bearing receiving environments (Section 15.6.3 of Chapter 15).	Public
Guiding/Outfitting - Access road will increase snowmobile traffic in winter- negative for business	The existing exploration access road (from Highway 37 to the Project site) is controlled at its intersection with Highway 37. The control point comprises a permanently staffed facility where each vehicle movement through the control point is checked and recorded. This level of access control will be maintained on the Brucejack Access Road throughout the Construction and Operation phases of the Project. Access control will be maintained during the Closure and Post-closure phases, but permanent staffing will be scaled down appropriately. Access control will cease once the road is deactivated. A Transportation and Access Management Plan (Section 29.16) has been prepared that stipulates the mitigation and management measures envisaged for the road.	Last Frontier Heliskiing
Guiding/Outfitting - Brucejack Access Rd. will be built over two of company's best runs	Last Frontier Heliskiing mentioned this concern in a land use interview conducted August 22, 2012. On October 31, 2012 Pretivm met with Last Frontier Heliskiing to follow up and discuss their concerns. The Brucejack Access Road is not anticipated to cross any of the company's runs, and most of it is within the treeline.	Last Frontier Heliskiing

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Issue	Pretivm Response	Issue Raised By
Guiding/Outfitting - Business could be negatively impacted if new road build from Bowser is restricted access. Would prefer to at least be able to walk up road with clients (Milligan Outfitting).	The existing exploration access road (from Highway 37 to the Project site) is controlled at its intersection with Highway 37. The control point comprises a permanently staffed facility where each vehicle movement through the control point is checked and recorded. This level of access control will be maintained on the Brucejack Access Road throughout the Construction and Operation phases of the Project. Access control will be maintained during the Closure and Post-closure phases, but permanent staffing will be scaled down appropriately. Access control will cease once the road is deactivated. To uphold safety standards members of the public will not be permitted to utilize the road by foot or vehicle and a Transportation and Access Management Plan (Section 29.16) has been prepared that stipulates the mitigation and management measures envisaged for the road.	Milligan Outfitting
Guiding/Outfitting - Increased helicopter traffic posing safety concerns for Last Frontier's helicopters (need for flight coordination)	On October 31, 2012 Pretivm met with Last Frontier Heliskiing to discuss helicopter safety and will request that pilots communicate with Last Frontier Heliskiing pilots during operations to minimize disturbance.	Last Frontier Heliskiing
Guiding/Outfitting - Last Frontier was not consulted prior to exploration access road construction	On October 31, 2012 Pretivm met with Last Frontier Heliskiing to discuss restricted access to the Brucejack Access Road. The gated road will address Last Frontier's concern that a road could increase unrestricted snowmobile access in alpine areas.	Last Frontier Heliskiing
Guiding/Outfitting - Would like to establish an agreement enabling his guides to use portions of the exploration roads.	The existing exploration access road (from Highway 37 to the Project site) is controlled at its intersection with Highway 37. The control point comprises a permanently staffed facility where each vehicle movement through the control point is checked and recorded. This level of access control will be maintained on the Brucejack Access Road throughout the Construction and Operation phases of the Project. Access control will be maintained during the Closure and Post-closure phases, but permanent staffing will be scaled down appropriately. Access control will cease once the road is deactivated. To uphold safety standards members of the public will not be permitted to utilize the road by foot or vehicle and a Transportation and Access Management Plan (Section 29.16) has been prepared that stipulates the mitigation and management measures envisaged for the road.	Guide Tenure Holder 601074

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Issue	Pretivm Response	Issue Raised By
Hunting/Trapping - Supportive of Project partly because of a belief that it will improve access to trapping areas if new road built	The existing exploration access road (from Highway 37 to the Project site) is controlled at its intersection with Highway 37. The control point comprises a permanently staffed facility where each vehicle movement through the control point is checked and recorded. This level of access control will be maintained on the Brucejack Access Road throughout the Construction and Operation phases of the Project. Access control will be maintained during the Closure and Post-closure phases, but permanent staffing will be scaled down appropriately. Access control will cease once the road is deactivated. Since the road is not accessible to the public, it will not increase access to trapping areas. No additional roads are being built. A Transportation and Access Management Plan (Section 29.16) has been prepared that stipulates the mitigation and management measures envisaged for the road.	Trapline Holder TR0621T001
Hydrogeology - Number of underground water tables that will be affected.	The water table in the immediate vicinity of the proposed underground mine will be lowered by dewatering activities to facilitate mining and maintain a safe working environment. Modeling work completed to date indicates that at maximum dewatering effort, the elevation of the water table is drawn down approximately 400 m within the footprint of the underground workings. The majority of the drawdown is predicted to occur over an area 2-3 times the size of the footprint of the underground workings. This area of about 2 km by 3 km is limited to the Brucejack Lake watershed and the upper portion of the Brucejack Creek watershed. The numerical hydrogeologic model focuses specifically on the local and regional study areas associated with the mine site, and does not cover other areas of other project development, such as the Knipple Transfer Area and Bowser Aerodrome in the Bowser River watershed (i.e., the drawdown from dewatering of underground workings is not expected to affect water tables in these other areas of the Project).	Public
Infrastructure and Services - Indirect impacts that may affect provision of services by regional districts.	Consideration has been made by the proponent for potential impacts to infrastructure and services, including health services, in the RSA. The potential effects of the Project on community infrastructure, services and housing have been assessed and are presented in Chapter 20 (Assessment of Potential Social Effects) of the Application/EIS. Increased demand on infrastructure, services and housing will be mitigated through ongoing communications, including engagement with local governments, regarding the project development schedule so that the necessary planning can take place to respond to any changes in infrastructure and service demands (Section 20.5 of Chapter 20).	RDKS
Infrastructure and Services - Potential impacts to Stewart's infrastructure and health services.	Consideration has been made by the proponent for potential impacts to infrastructure and services, including health services, in the RSA. The potential effects of the Project on community infrastructure, services and housing have been assessed and are presented in Chapter 20 (Assessment of Potential Social Effects) of the Application/EIS. Increased demand on infrastructure, services and housing will be mitigated through ongoing communications, including engagement with local governments, regarding the project development schedule so that the necessary planning can take place to respond to any changes in infrastructure and service demands (Section 20.5 of Chapter 20).	District of Stewart

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Issue	Pretivm Response	Issue Raised By
Project Closure - Adequacy of upfront bonding to cover reclamation costs, monitoring, and maintenance.	A high level cost for closure, reclamation, and monitoring is presented in Chapter 30.10 of the EA document. The amount of the security for bonding to cover closure and reclamation is determined by the BC Chief Inspector of Mines at the Permitting stage. The amount of security that will be posted by the Proponent for the Project will be evaluated and adjusted over the life of the mine to reflect the nature of mining activities and to take into account reclamation completed at the Project site. Under subsection 10(7) of the Mines Act (1996), the Chief Inspector may impose changes to the security required with or without an application (for a permit) under the Act. Under subsection 10(5) of the Health, Safety and Reclamation Code for Mines in British Columbia it is stated that "if required by the Chief Inspector, the owner, agent, manager or permittee, in each year, must deposit security in an amount and form satisfactory to the chief inspector so that, together with the deposit under subsection 10(4) and calculated over the estimated life of the mine, there will be money necessary for mine reclamation, and to provide for protection of, and mitigation of damage to, watercourses and cultural heritage resources affected by the mine" (BC MEMPR 2008). Further information on estimating mine reclamation can be found in the Mine Reclamation Costing and Spreadsheet, Version 3.5.1, January 2006 published by the Ministry of Energy and Mines, Mining and Minerals Division.	Public
Project Location - Relation of exploration activities and project to the Nass River and Nass Area.	The primary mine site, including underground development, mine site operations camp, and processing facility will be located just outside of the western edge of the Nass Area, adjacent to Brucejack Lake. Several ancillary components of the Project will be located within the Nass Area, including the majority of the access road, transmission line, aerodrome, and transfer station. The Brucejack Access Road, which connects the Project with Highway 37 about 30 km south of Bell II, runs east-west through the western portion of the Nass Area, as defined by the Nisga'a Final Agreement. The Brucejack Access Road will be used to transport personnel, equipment and concentrate. The proposed transmission line from the Project to Long Lake Hydroelectric Project, which is currently under construction near Stewart, passes north-south through the Nass Area.	Public
Project Location - Tahltan territory in relation to the Project.	The Project is located in the southern extremity of Tahltan territory. The eastern most segment of Brucejack Access Road, approximately the first 9 km of road branching off to the west of Highway 37, is within Tahltan territory. All other Project components are outside of the territory (see Figure X, in Chapter 26, Aboriginal Rights and Interests).	Public
Tailings Management - Capacity of Brucejack Lake to contain the total volume of tailings.	The total volume of Brucejack Lake is about 30.4 Mm ³ . It is expected that about 8 Mt of tailings will be directed to Brucejack Lake over the 22 year mine life of the Project. At the end of the mine life, it is expected that the highest surface of the tailings mound will be about 38 m below the surface of Brucejack Lake. A Tailings Management Plan has been developed to minimize potential adverse environmental effects of tailings disposal (Section 29.15 of Chapter 29, Environmental Management and Monitoring Plans).	Public

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Issue	Pretivm Response	Issue Raised By
Tailings Management - General.	The Project is expected to create about 16 Mt of flotation tailings over the life of the mine. A Tailings Management Plan has been developed to minimize potential adverse environmental effects of tailings disposal (Section 29.15 of Chapter 27, Environmental Management and Monitoring Plans). Approximately half of the total tailings generated will be re-deposited in the underground mine as paste backfill. The tailings paste provides structural support for the underground mine and is a preferred method for long-term storage of tailings. Tailings that cannot be directed underground will be deposited at depth in Brucejack Lake via a pipeline. The tailings pipeline will be at a depth of 80 m and will allow a mound of tailings to grow over the terminus of the pipeline. The combination of discharging at depth and below, i.e. from within, the tailings mound will reduce the potential for tailings to enter the overlying water column. The tailings are not anticipated to be acid generating based on acid base accounting test work. Tailings management is described in section 5.11.2 of Chapter 5, Project Description. For the assessment of alternatives for the tailings disposal method see Section 4.4.5 of Chapter 4, Project Design and Alternatives Assessment.	Public
Tailings Management - Sub-aqueous deposition of tailings in Brucejack Lake (water contamination).	Brucejack Lake is the proposed site of sub-aqueous waste rock and tailings disposition. Any potential effects on surface water quality from sub-aqueous tailings deposition are predicted to be localized to Brucejack Lake (see Chapter 13, Assessment of Potential Surface Water Quality Effects, for further details). Further, water quality predictions are being modeled for Brucejack Lake and the immediate downstream receiving environment (Chapter 13). The water quality model included tailings/waste rock deposition. The results of the water quality model are predicted to conclude that there will be no change in water quality of downstream receiving waters (Brucejack Creek). Further, all points of discharge will be monitored and mitigated as required by standards outlined in the MMER (MMER; SOR/2002-222) and EMA permits.	Public
Vegetation and Soils - Plan for revegetating road cutbanks and cleared right-of-ways.	Road cutbanks and cleared right of ways will be re-vegetated to avoid erosion and sedimentation, as well as, the introduction of invasive plants. Re-vegetation efforts will take into consideration site conditions e.g., site history (e.g., flooding), soil characteristics, and germination conditions (e.g., elevation). This information is further detailed in the Ecosystem Management Plan (Chapter 29, Environmental Management and Monitoring Plans). A native seed mix is planned to be used for erosion control and revegetation of road cutbanks and cleared right-of-ways. This is discussed in Chapter 30.5.6 of the Application/EIS.	Public
Vegetation and Soils - Terrestrial environment theme should include avalanche track ecosystems as a valued subcomponent.	The effects of the Project on avalanche track ecosystem extent and function are assessed as a valued component of alpine, parkland, or forested ecosystems, depending on the biogeoclimatic (BEC) unit within which they occur. This evaluation is provided in the Assessment of Potential Terrestrial Ecology Effects (Chapter 16, Assessment of Potential Terrestrial Ecology Effects).	Public

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Issue	Pretivm Response	Issue Raised By
Water Quality - Baseline information about the limnology, hydrology, and aquatic resources of Brucejack Lake needed and baseline (ideally pre-exploration) data for Bowser Lake.	No pre-exploration water quality data are available for Brucejack Lake, Brucejack Creek or Camp Creek. Monitoring began in 1987 to support a Stage 1 Impact Assessment for the Sulphurets Project proposed by Newhawk Gold Mines Ltd., whereas underground development began in autumn 1986. From that time onward watercourses within the Brucejack Watershed were affected by drainage from areas disturbed through surface activities, active (dewatering) or passive drainage from the adit, as well as reclamation activities (Newhawk 1989, Price 2005). Newhawk's active mining and exploration ceased in 1990. Historical surface water quality data (1987 to 2001: Price 2005; Newhawk 1989) were incorporated into the environmental setting and assessment to more accurately constrain effects of previous mining and explorations from the proposed Project-related activities. Aquatic resources baseline data for Brucejack Lake was collected in 1988, 2012, and 2013. Water quality (general chemistry, nutrients, and total and dissolved metals) data for Bowser Lake were collected in 2010 (appended to Chapter 13, Assessment of Potential surface Water Quality Effects). Aquatic Resources data for Bowser Lake was collected in 2010 (Sections 4 to 6 of Appendices 1 to 6 of the Cumulative Aquatic Resources Baseline Report, itself appended to Chapter 14, Assessment of Potential Aquatic Resources Effects.) Data from Bowser Lake is considered representative of pre-exploration baseline conditions as it is un-impacted by previous or past exploration activities.	Public
Water Quality - Effects to Brucejack Lake, including downstream quality and fish as a result of tailings deposition.	Any potential effects on surface water quality from tailings deposition will be localized to Brucejack Lake and Brucejack Creek (see Chapter 13, Assessment of Potential Surface Water Quality Effects, for further details). Discharge at the lake outlet will meet standards outlined in the MMER (MMER; SOR/2002-222) as well as EMA permit obtained for the Project. Further, Brucejack Lake and Brucejack Creek downstream to the confluence of Sulphurets Creek (upstream of a 200-m long series of cascades creates a barrier to fish migration) are non-fish bearing. Due to this considerable distance, and because potential effects are anticipated to be restricted to Brucejack Lake and the immediate receiving environment, the Project is not predicted to cause adverse effects on water quality, aquatic resources, and fish and fish habitat in mid- and far-field fish bearing receiving environments (Sulphurets Creek downstream of fish barrier, and the Unuk River). Assessment of potential effects to fish and fish habitat are specifically addressed in Chapter 15 (Assessment of Potential Fish and Fish Habitat Effects). Monitoring of aquatic receiving environments will be designed and executed to detect any potential changes in water quality, aquatic resources, and, by extension, fish and fish habitat. Adaptive management and mitigation measures will be implemented to manage any potential effects as required (Chapter 29, Environmental Management and Monitoring Plans).	Public

Table 3-J1. Local Governments, Tenure Holders, Stakeholders and the Public Issues Tracking Table (until May 16, 2014)

Issue	Pretivm Response	Issue Raised By
Water Quality - Impacts on Stewart harbour.	The Brucejack Project area is located 65 km north-northwest of Stewart within headwater tributary watersheds of the Unuk River and Nass Rivers. Thus, project effects on the harbour near Stewart are not anticipated. Gold and silver concentrate will be transported from the mine site to existing facilities for shipment to either Eastern Canada or oversees depending on the location of the purchaser of the concentrate, which is currently unknown. The Port of Stewart is one location that would be considered for concentrate shipment in the event that marine shipment is required. In this case, it is expected that the Brucejack concentrate would be accommodated by existing harbour facilities and marine traffic such that effects to the harbour near Stewart would not be impacted.	District of Stewart
Water Quality - Long-term effects of tailings management in Brucejack Lake.	Water treatment and monitoring of Brucejack Lake and its outflow will be required to meet discharge standards outlined in the MMER (MMER; SOR/2002-222) and EMA permits. Water quality predictions were modeled for Brucejack Lake and the immediate downstream receiving environment during Project construction, operations, closure, and post-closure phases (Chapter 13, Assessment of Potential Surface Water Quality Effects). The results of the water quality model conclude that there will be no significant effects to water quality in downstream receiving waters and, therefore, no measureable water quality changes are predicted to occur in mid- or far-field receiving environments (Sulphurets Creek and Unuk River) (Section 13.6, Chapter 13, Assessment of Potential Surface Water Quality Effects).	Public
Water Quality - Potential effects to and mitigation and management measures for Nass River, Bowser River, and Bowser Lake.	Pretivm acknowledges the importance of water quality within the Bowser River and Nass River watersheds. Changes in water quality from typical operations are not predicted to occur in the Bowser or Nass River systems as there will be no project related surface discharges within these watersheds. Mine effluent including tailings and waste rock will be directed to Brucejack Lake, located in the Unuk River watershed, which is not hydrologically connected to the Bowser River or Nass River watersheds. Project components located in the Bowser River watershed include a transmission line, transfer area, aerodrome, and access road. Affects to water quality related to these project components are not anticipated under normal operating conditions (see Chapter 13, Assessment of Potential Surface Water Quality Effects).	Public
Water Quality - Prevention of chemical leaching in Brucejack Lake from tailings.	Subaqueous placement of tailings into Brucejack Lake minimizes the potential for chemical leaching. This was confirmed by predictive water quality modeling (Section 13.6 Chapter 13, Assessment of Potential Surface Water Quality Effects). Predictive modelling further confirms that no significant residual effects to water quality of the receiving environment as a result of chemical leaching in Brucejack Lake from tailings deposition are anticipated (Section 13.6, Chapter 13).	Public

Table 3-J1. Local Governments, Tenure Holders, Stakeholders and the Public Issues Tracking Table (until May 16, 2014)

Issue	Pretivm Response	Issue Raised By
Water Quality - Will discharged water be treated to a higher quality than the water pumped out from the underground workings?	Seepage water from the underground mine will be sent directly to the water treatment plant for treatment prior to discharge to the receiving environment and will be of higher water quality than that which was pumped out from the underground workings. Priority of use for this treated water will be in the process plant. Some of this water will be discharged back into the underground mine workings with the paste backfill or into Brucejack Lake with the tailings. All points of discharge will be monitored and mitigated as required by the standards outlined in MMER (MMER; SOR/2002-222) and EMA permits.	Public
Water Quality - Transboundary effects via Sulphurets Creek and Unuk River.	Water quality predictions for Brucejack Lake and the immediate downstream receiving environment, Brucejack Creek, are presented in Chapter 13 of the Application/EIS (Assessment of Potential Surface Water Quality Effects). These waterbodies are the proposed receiving environments for the Project and are in the headwaters of Sulphurets Creek. The results of the water quality model conclude that measureable changes in water quality downstream of Brucejack Creek are not expected as a result of Project activities. Thus, the potential for any transboundary effects to occur (i.e. change in water quality 45 km downstream of the outflow of Brucejack Lake and Brucejack Creek) is considered extremely unlikely. However, monitoring of downstream watercourses will be designed and executed to detect any potential changes in water quality as part of the Aquatics Environment Effects Monitoring and Management Program (AEMP); adaptive management and mitigation measures will be implemented to manage any potential effects on surface water quality, as required (AEMP, Chapter 29, Environmental Management and Monitoring Plans).	Public
Wildlife - Bears in the Bell-Irving valley becoming habituated due to increase in people in area.	To mitigate the potential for bear habituation, attractants associated with the Project will be minimized through proper garbage and waste management, as outlined in the "Waste Management Plan" (Chapter 29.17, Environmental Management and Monitoring Plans). An "Environmental Management Plan and Standard Operating Procedures - Bear, Marten, Education and Camp Hygiene/Exclusion" was developed to minimize wildlife-human interaction and ensure safety of Project employees and prevent avoidable wildlife mortalities during Pretivm exploration activities and is planned to be implemented throughout the construction and operations phases. All staff will receive training during an initial orientation and thereafter on an annual basis, which will include a presentation on potential problem wildlife and directions for preventing interactions.	Spey Lodge
Wildlife - Helicopters as result of mining making bears nocturnal.	Grizzly bears are most active during diurnal (daytime) and crepuscular (dawn and dusk) periods and do not generally respond to aircraft if flights remain 200 m above ground level. Helicopters will follow mitigation and management to remain above 200 m to 300 m elevation where safe to do so to mitigate this potential effect. Furthermore, helicopter use during operation of the Brucejack Gold Mine Project is expected to be limited and infrequent, used primarily for emergency services, causing minimal disturbance to bears and is not anticipated to result in changes to grizzly bear activity patterns.	Milligan Outfitting