



TRANSBOUNDARY WATERS

FALL 2017

Friends & Neighbors: Background on the Bilateral Working Group

British Columbia (B.C.) and Alaska share many common interests and have a long history of working together. A key concern for citizens on both sides of the border is the protection of our natural environment.

In November of 2015, B.C.'s then-premier Christy Clark and State of Alaska Governor Bill Walker signed a Memorandum of Understanding (MOU) formalizing the mutual agreement to protect and enhance the shared environment, including the transboundary rivers, watersheds, and fisheries, for the benefit of both jurisdictions.

One year later, the two governments signed a Statement of Cooperation on Protection of Transboundary Waters. This agreement builds on the MOU and established a bilateral working group consisting of the commissioners of the Alaska Departments of Environmental Conservation, Fish and Game and Natural Resources, and the deputy ministers of the British Columbia Ministries of Energy, Mines, and Petroleum Resources, and Environment and Climate Change Strategy.

The bilateral working group meets quarterly to address these three priorities:

- Establish and oversee a Technical Working Group on Monitoring that will propose a coordinated process for the collection, summary and distribution of baseline, regional and project-specific water quality data
- Look for opportunities to build on and enhance

- participation in environmental assessments and permitting relating to mines and development
- Identify and share reports on mine discharges, operations and closures.

Members of the Bilateral Working Group

Alaska

Larry Hartig

Commissioner,

Department of Environmental Conservation

Sam Cotten

Commissioner,

Department of Fish and Game

Heidi Hansen

Deputy Commissioner,

Department of Natural Resources

British Columbia

Dave Nikolejsin

Deputy Minister,

Ministry of Energy, Mines & Petroleum Resources

Mark Zacharias

Deputy Minister,

Ministry of Environment & Climate Change Strategy



Water Quality Monitoring

A key element of B.C. and Alaska's commitment to protect transboundary waters is the establishment of a joint water quality monitoring program.

The program's objective is to improve our scientific understanding of the existing conditions of the Asek, Unuk, Taku and Stikine watersheds, and to collaboratively collect and share information on the potential impacts of mining and development activities on fisheries and other aquatic life.

The program will coordinate resources and sampling efforts between B.C.'s Ministry of Environment and Climate Change Strategy and Alaska's Department of Environmental Conservation.

B.C. and Alaska monitoring staff have started a two-year work plan under the program, which builds on previous monitoring efforts.

Partnerships with various provincial, state, tribal, and First Nations organizations are being pursued. Collectively these groups play a role in monitoring water quality and quantity, sharing traditional knowledge of the ecosystem, and sharing and interpreting the compiled data.

In August 2017, B.C. staff collected water and sediment samples at three sites on the Tulsequah



Water monitoring downstream on the Tulsequah River

River, two on the Taku River, three on the Stikine River, and one site on the Iskut River.

Relevant information will be shared publicly through websites maintained by the governments of British Columbia and Alaska.



British Columbia Mine Information Site

The Province of British Columbia is committed to providing effective oversight of the mining industry and ensuring transparency throughout the mining lifecycle.

The recently-launched BC Mine Information website provides key information on major active mines in the province. The website launched with profiles on 15 major mine sites across B.C. and more will be added in the months ahead.

This website is a collaboration between the Ministry of Energy, Mines, and Petroleum Resources, the Ministry of Environment and Climate Change Strategy, and the Environmental Assessment Office. It is the first online resource where information from these three agencies will be available in one place.

This resource provides easy access to environmental authorizations, inspection records, and annual reclamation and dam safety inspection reports.

Visit www.mines.nrs.gov.bc.ca for more information.

Brucejack Gold Mine

Following extensive environmental reviews conducted by the Province of British Columbia, Pretium Resources began mining operations at their Brucejack gold mine in May.

Located approximately 39mi. (62km) north of Hyder, Alaska, the Brucejack gold mine will employ more than 300 people and process 2,700 tonnes of ore per day at full capacity.

The company states that Brucejack is one of the largest and highest-grading undeveloped gold projects in the world. They anticipate the mine will be productive for the next 16 years.

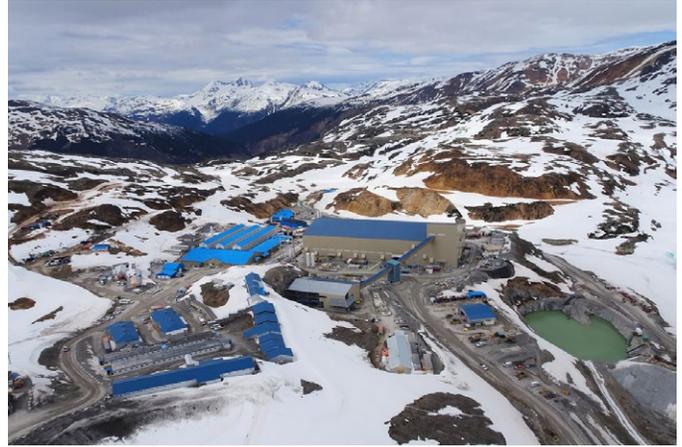
The mine will deposit a portion of its tailings and waste rock into Brucejack Lake—which does not contain fish—and the other portion will be backfilled underground.

Outflow to the lake will be processed through a water treatment plant to address the potential for any direct or cumulative chemical and physical impacts on water. There is no tailings storage facility at Brucejack.

Pretium’s Environmental Management Act (EMA) permit outlines that they must conduct sampling and monitoring to ensure the parameters for contaminants do not exceed levels outlined in



*Pictured above: Brucejack mill building.
Photo source: Pretium Resources Inc. website*



*Pictured above: The Brucejack mining facility as of May 2017.
Photo source: Pretium Resources Inc. website*

the permit. It also specifies the frequency of water quality monitoring between sampling sites.

These requirements will mitigate any potential impact to the water quality of the salmon-bearing Unuk River. The river flows from B.C. into Alaska where it travels through the Misty Fjords National Monument and drains into Behm Canal northeast of Ketchikan.

As part of the Memorandum of Understanding between the governments of British Columbia and Alaska, state officials were invited to review and comment on B.C.’s Mines Act and Environmental Management Act applications, as well as their chromium management plan.

Alaska was also provided copies of the permits in draft form and participated in the Mine Review Committee process and submitted comments, which were considered and incorporated into the final permit.

Brucejack Gold Mine Details	
Owner/Operator	Pretium Resources Inc.
Commodities	Gold, Silver
Number of Tailings Storage Facilities	Zero
Construction	Active
Operation	Active
Monitoring & Reporting	Active



Tulsequah Chief Mine Update

The Tulsequah Chief Mine is situated roughly 40mi (64km) northeast of Juneau, Alaska. It operated from 1950 to 1957, but there have been attempts over the years by companies to reopen the mine with the obligation to deal with historical acid rock drainage into the Taku River.

The mine is currently owned by Chieftain Metals, who acquired the property in 2010 and received a B.C. environmental assessment certificate in 2012. Chieftain agreed to address acid rock drainage as part of re-development of the mine, and worked with the B.C. government to begin water testing and remediation planning. However, the company went into court ordered receivership in September, 2016.

Recent Activity

Shortly after the receivership, B.C. confiscated a \$1.2 million security held for mine reclamation. This money has been used to fund several actions at the Tulsequah site since.

In 2016, the B.C. government conducted an aquatic ecological risk assessment (AERA). The AERA results showed the waters in the immediate vicinity of the mine site pose an unacceptable risk to fish, fish eggs, and invertebrates.

The assessment also identified that, while the risk to wildlife was significant within approximately 0.3 miles (500 metres) of the mine site, it was unlikely that fish and aquatic invertebrates would spend a significant amount of time in the area due to a combination of poor habitat, high natural turbidity, and low pH input from mine sources.

In addition to the AERA, government representatives cleared out numerous unsecured and hazardous materials on-site at the mine, left behind by the former operators.



Pictured above: Tulsequah Chief Mine

On August 28, 2017, the Ministry of Energy, Mines and Petroleum Resources began work efforts to address concerns regarding the stability of the exfiltration pond at the site. This involved shoring up the exfiltration pond— overflowing from numerous locations on its perimeter—in order to alleviate the risk of uncontrolled flooding of water and sediment into the Taku River and protect the long-term integrity of the pond.

Looking forward

The B.C. Government intends to hold all current and previous owners accountable for the remediation of the site, and this includes Chieftain Metals Corp., which is currently in receivership.

On October 27, 2017, the Chief Inspector of Mines issued an order under section 35 (1) of the Mines Act requiring Chieftain Metals to provide a plan that sets out remediation strategies and an implementation plan to mitigate the discharge of acid waters into the receiving environment and the exceedances of the applicable provincial water quality standards in that environment.

This plan is to be submitted to the Chief Inspector of Mines by November 2017.

Historic Mine Remediation Underway

The Johnny Mountain Mine, located approximately 65mi (105km) northwest of Hyder, Alaska, is a historical gold mine that has been out of operation since the early 1990's.

Upon the mine's closure in 1993, legacy mining machinery and operational constructions—such as the tailings impoundment, underground workings, airstrip, and rock quarries—were left behind on the site by the operating company.

In 2016, the mine, as part of a 29,436-hectare land parcel, was acquired by Seabridge Gold through the acquisition of SnipGold.

SnipGold initiated a full evaluation and development of a remediation program which will mitigate historical impacts of the mine.

In coordination with the B.C. Government and the Tahltan First Nation, remediation efforts began in 2016 starting with a general cleanup of the airstrip and the removal of all toxic and corrosive material from the mine site. Most recently gas storage tanks and waste dumps near the mine plant site have been removed.

Moving forward, plans are underway for the removal of the mine plant site, to close and divert the water from the mine adits, and to remove all of the remaining infrastructure and waste dumps from the site. Approximately \$6 million has been spent on these remediation activities in the last 16 months.

Over the next five to seven years, Seabridge has made a commitment to ensure that the entirety of the mining infrastructure is removed and the site is restored.

Once completed, the company will regenerate the land and restore it back to its natural appearance to encourage productive natural habitat for wildlife.



Pictured above: Johnny Mountain mine fuel storage area, prior to remediation efforts.



Pictured above: Fuel storage area, prior to remediation efforts.



Pictured above: Fuel storage area, after initial remediation efforts.