Bralorne-Takla Mercury Mine

Innovative Risk Management and First Nations Community Engagement

RemTech, October 2018
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Contributors

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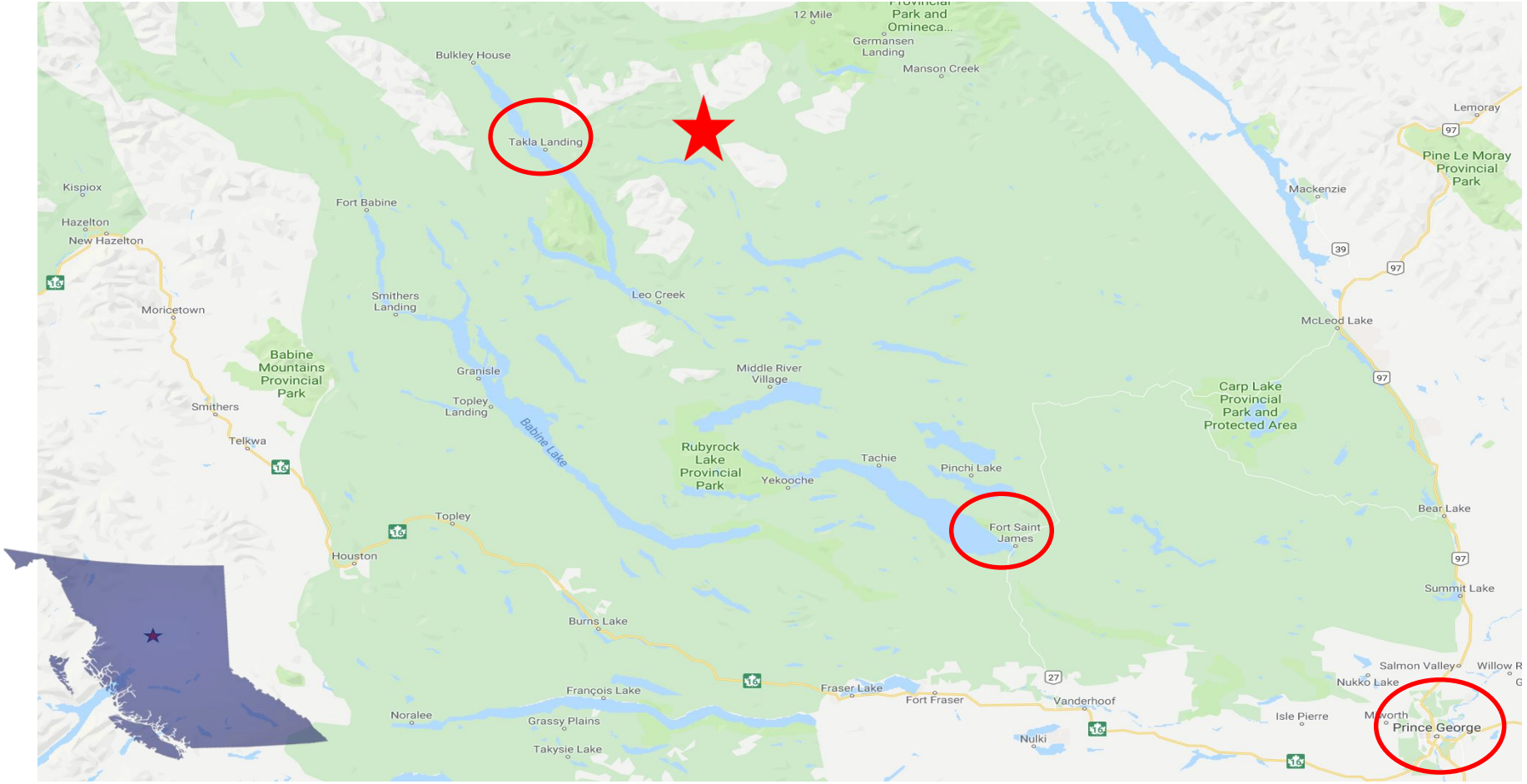
Presentation Outline

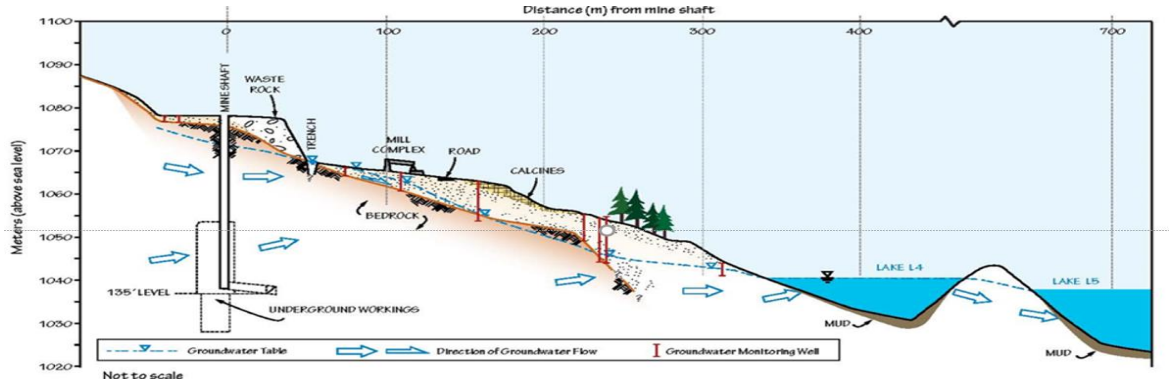
- Background
- Need for engagement in remediation planning
- Engagement process
- Outcomes



~180 km from Fort St. James - in Takla Nation territory

Background

- During WWII, cinnabar was roasted for mercury (Hg)
- ~3 ha impacted by core mine activities
- No “Responsible Person” = Orphan site
- Hg, methyl-Hg, Sb, As, Cd, Cr, Cu, Mo, Ni, Se, Zn, Pb, Mg, Sn, HCs in soil, surface water, groundwater, sediment
- Hazardous Waste: leachable Hg, liquid Hg, asbestos
- CCSP prioritized site for remediation



Recent History

2005	CCSP investigations began
2007-2010	Characterization paused to address TN concerns; interim risk management measures
2011-present	Engagement strategy
2011-2014	Investigations & remedial planning
2014	Consensus reached on remedial approach - combo of risk management & physical remediation
2015-2017	Remediation & reclamation
Ongoing	Monitoring and maintenance

Engagement Strategy

Communication Plan

- Laid out government-to-government relationship between CCSP and Takla Nation
- Described role of and membership in Technical Working Group
- Described flow of communication and decision-making process

Technical Working Group

- Takla Nation and CCSP
- Each supported by consultants
- Vehicle through which assessment/remediation was planned

Use of Traditional Knowledge

BRALORNE-TAKLA MINE: VOLUNTARY GAME TISSUE SAMPLING PROGRAM

BACKGROUND

- The BC provincial government is assessing environmental conditions at the historic Bralorne-Takla Mine site to prepare for its future clean-up, in partnership with Takla Lake First Nation (TFLN).
- TFLN members have expressed concern regarding traditional food quality near the area of the site.
- Samples from any game taken around the site can improve our understanding of risk to human health and the environment, which is important for planning clean-up of the site.

HOW CAN YOU PARTICIPATE?

If you have an interest or concern about food quality and you want your game tested, you can...

- Contact Margo French (Lead Environmental Technician) to assist in sampling;
- Document when and where the animal was taken; and
- Samples can include muscle tissue and organs from game mammals (moose, caribou, porcupine, bear etc.), but should only be those that you were going to consume (please do not hunt for the sole purpose of submitting a sample).

WHO TO CONTACT?

- Sampling instructions are available from Margo French, Takla Landing (Monday to Friday 9AM to 5PM).

COMMENTS OR CONCERNS? CONTACT A PROJECT COORDINATOR

Takla Lake First Nation Mining Coordinator: David Rodies, Tel: 250-564-8321, Email: drodies.takla@gmail.com

SNC-Lavalin Project Coordinator: Trevor McConkey, Tel: 250-562-5172, Email: trevor.mcconkey@snclavalin.com

SNC-LAVALIN Environment

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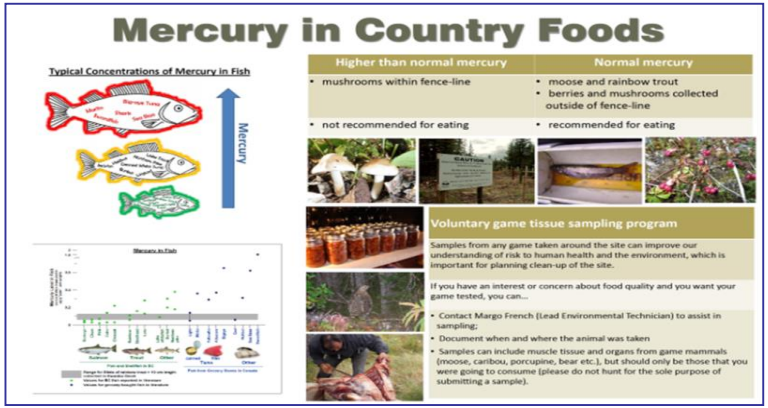
- Community gathered traditional knowledge and communicated to team
- Sampling of country foods directed by TN members
- Additional plants and animals identified for ecological risk assessment and assessment of country foods
- Community encouraged to submit game-tissue samples for testing



Mercury in Country Foods

Typical Concentrations of Mercury in Fish

Mercury

Higher than normal mercury	Normal mercury
• mushrooms within fence-line	• moose and rainbow trout • berries and mushrooms collected outside of fence-line
• not recommended for eating	• recommended for eating

Voluntary game tissue sampling program

Samples from any game taken around the site can improve our understanding of risk to human health and the environment, which is important for planning clean-up of the site.

If you have an interest or concern about food quality and you want your game tested, you can...

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- Document when and where the animal was taken
- Samples can include muscle tissue and organs from game mammals (moose, caribou, porcupine, bear etc.), but should only be those that you were going to consume (please do not hunt for the sole purpose of submitting a sample).

Use of Traditional Knowledge

A two-day “camp” was held in 2012 for community members, the TN’s consultants and the project team to learn about the mine site and to share knowledge.

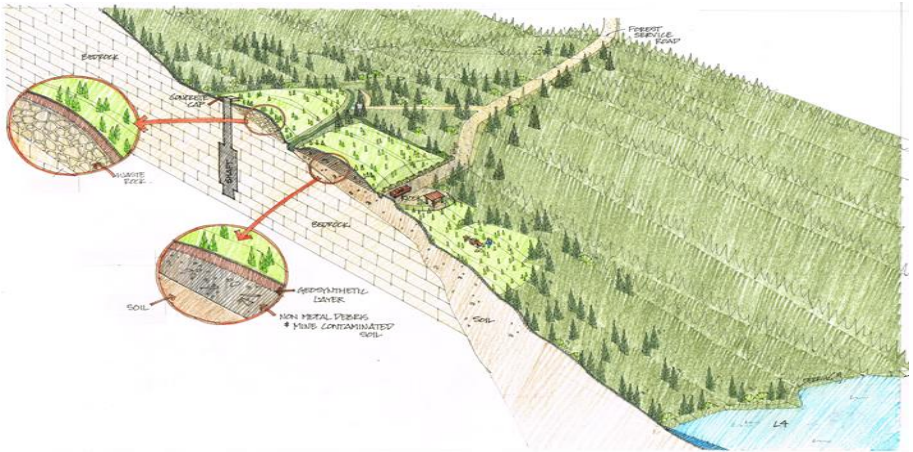
Community Meetings

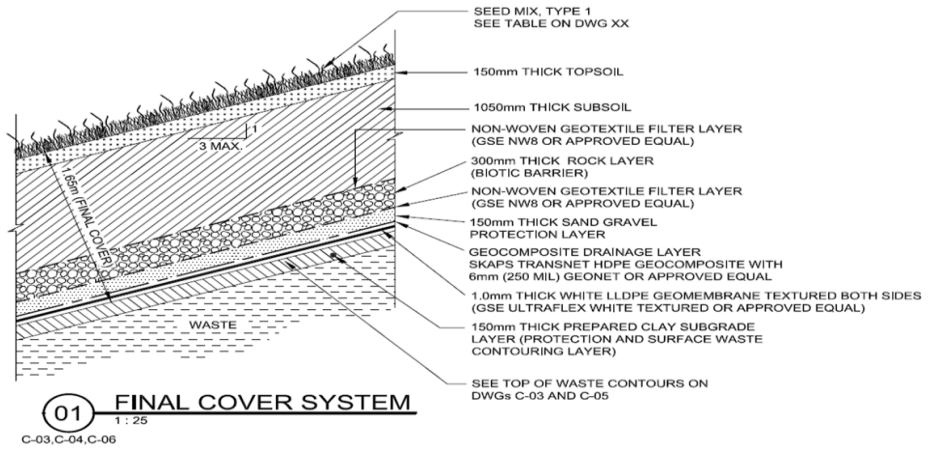
Remedial Planning Workshops

- TWG agreed on remediation objectives, reviewed conceptual options, discussed decision criteria
- Short-listed options to review in more detail

Key Outcomes of Remedial Planning Workshops

- Recommended a combination of on- and off-site management:
  - Removal of Hazardous Wastes from the site
  - Landfill cover design that supports forest growth
  - Reclamation with ecologically and culturally appropriate species
  - Ongoing risk management





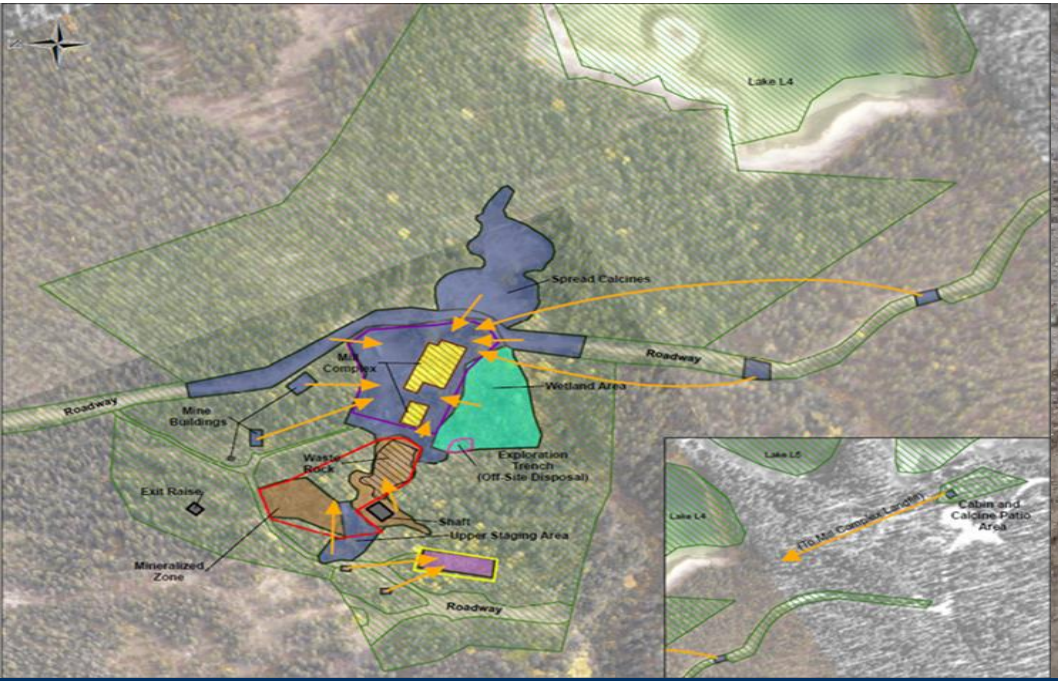
Remediation 2017-18

(see next presentation)





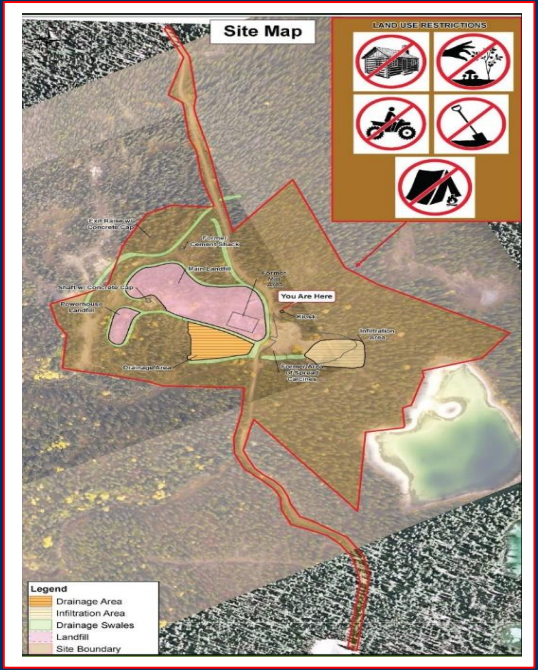

What Does Closure Look Like To You?

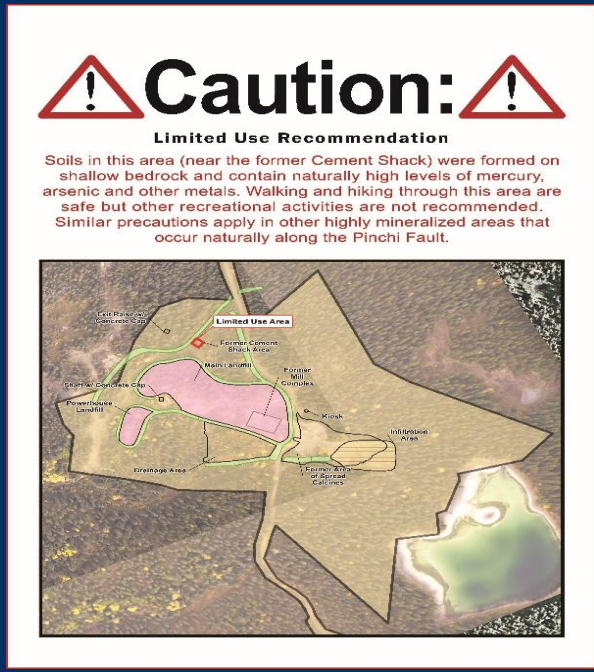


https://youtu.be/wveuqfL1-c4.

Closure Ceremony & Potlatch

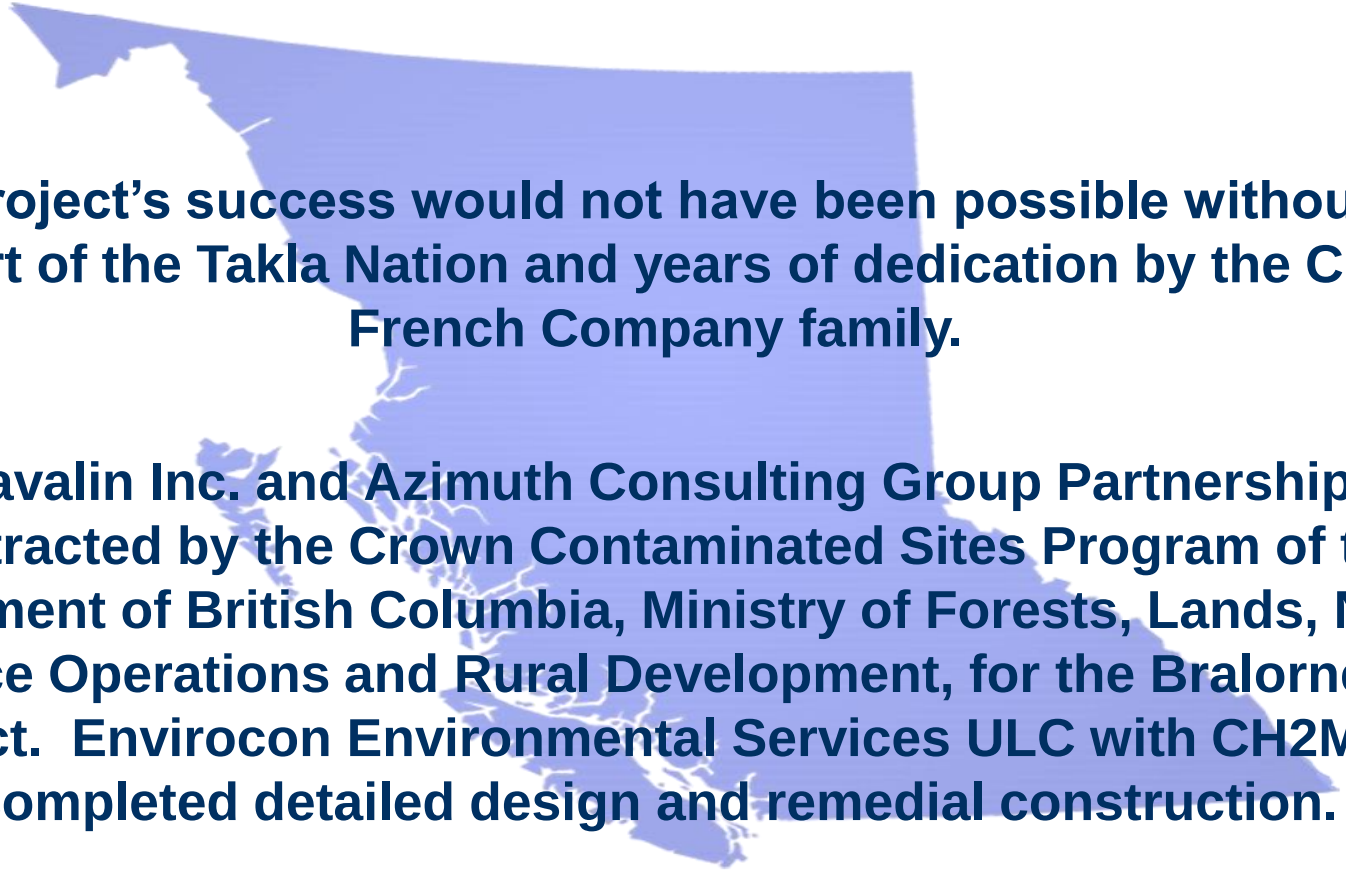
Post-Remediation Management and Communication





Learning & Outcomes

- Continued and authentic engagement of the community was critical to project success
- Engagement plan collaboratively designed and diligently followed
- Site is remediated – ongoing monitoring and maintenance with Takla involvement
- Engagement will continue



This project's success would not have been possible without the support of the Takla Nation and years of dedication by the Charlie French Company family.

SNC-Lavalin Inc. and Azimuth Consulting Group Partnership were contracted by the Crown Contaminated Sites Program of the Government of British Columbia, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, for the Bralorne-Takla project. Envirocon Environmental Services ULC with CH2M Hill completed detailed design and remedial construction.

Questions?