



**SKEENA**  
GOLD + SILVER

# CLOSURE OF THE SNIP MINE TAILINGS FACILITY

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Skeena’s Mineral Reserves and Mineral Resources included or incorporated by reference herein have been estimated in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”) as required by Canadian securities regulatory authorities, which differ from the requirements of U.S. securities laws. The terms “Mineral Reserve”, “Proven Mineral Reserve”, “Probable Mineral Reserve”, “Mineral Resource”, “Measured Mineral Resource”, “Indicated Mineral Resource” and “Inferred Mineral Resource” are defined in accordance with NI 43-101 and the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) “CIM Definition Standards – For Mineral Resources and Mineral Reserves” adopted by the CIM Council (as amended, the “CIM Definition Standards”). These standards differ significantly from the mineral property disclosure requirements of the U.S. Securities and Exchange Commission in Regulation S-K Subpart 1300 (the “SEC Modernization Rules”). Skeena is not currently subject to the SEC Modernization Rules. Accordingly, Skeena’s disclosure of mineralization and other technical information may differ significantly from the information that would be disclosed had Skeena prepared the information under the SEC Modernization Rules. In addition, investors are cautioned not to assume that any part, or all of, Skeena’s mineral deposits categorized as “Inferred Mineral Resources” or “Indicated Mineral Resources” will ever be converted into Mineral Reserves. “Inferred Mineral Resources” have a great amount of uncertainty as to their existence, and a great amount of uncertainty as to their economic and legal feasibility. Accordingly, investors are cautioned not to assume that any “Inferred Mineral Resources” that Skeena reports are or will be economically or legally mineable. Under Canadian securities laws, estimates of “Inferred Mineral Resources” may not form the basis of feasibility or prefeasibility studies, except for a Preliminary Economic Assessment as defined under NI 43-101.

For these reasons, the Mineral Reserve and Mineral Resource estimates and related information presented herein may not be comparable to similar information made public by U.S. companies subject to the reporting and disclosure requirements under the U.S. federal securities laws and the rules and regulations thereunder.



# Location and Access

Traditional lands of the Tahltan People

~100 km NW of Stewart, BC

Inside the “Golden Triangle”

Fly-in fly-out operation serviced from Bob Quinn Lake and Smithers

Climate:

- Cool and wet
- ~2000 mm annual precip, mostly as snow



# Property History

- Early 1900's - exploration in area, claim staking
- 1965 – Snip discovery outcrop identified
- 1980 to 1986 – exploration activities, drilling
- 1988 – underground exploration and drilling
- January 1991 to June 1999 – Snip Mine operated
- October 1999 – Snip Mine closed
- 2016 to 2022 – Exploration activities (Skeena / Hochschild)
- 1999 to Date – TSF in state of Active Closure (Skeena)





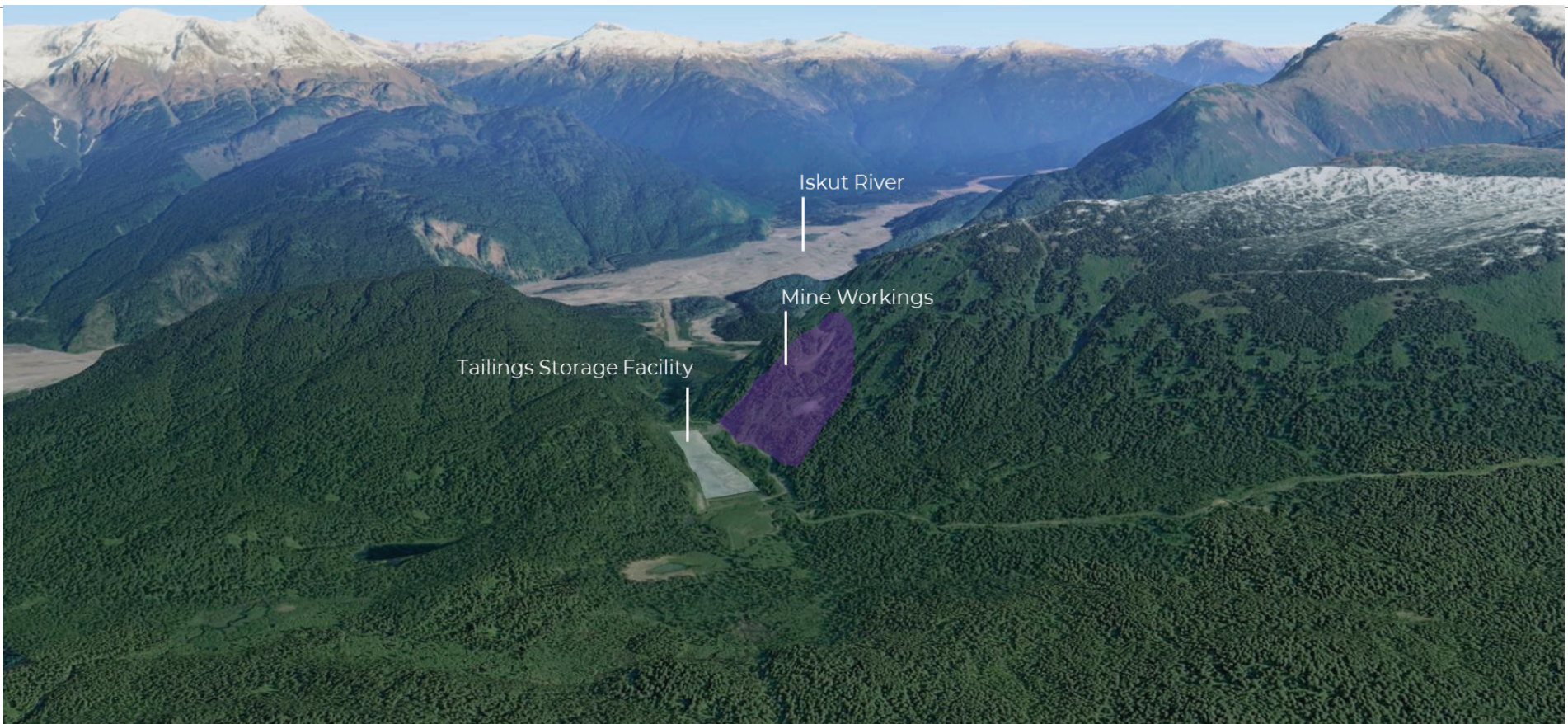
# Property Geology and Mineralization

Structurally controlled mineralized vein and shear zone system, within a sequence of laminated turbidites of the Upper Triassic Stuhini Group.

Gold occurs in the vein/shear systems which are characterized by typically parallel layers of chlorite-biotite, calcite, quartz and pyrrhotite-pyrite.

Gangue: calcite > iron-carbonate > quartz > pyrite > chlorite > biotite







# Mine Operations

Underground mine accessed via a series of portals

Free gold and gold-bearing sulphide concentrate produced from ore

Mine Production:

1.25M tonnes of ore

- 32M grams Au
- 12M grams Ag
- 250,000 kg Cu



440 Portal

# Mine Operations

The TSF was constructed in the saddle of a narrow valley forming the headwaters to both Monsoon Creek and Sky Creek.

Two cross-valley dams were constructed to form an impoundment approximately 150 meters wide and 800 meters long.

The TSF is underlain by 50-55m of overburden

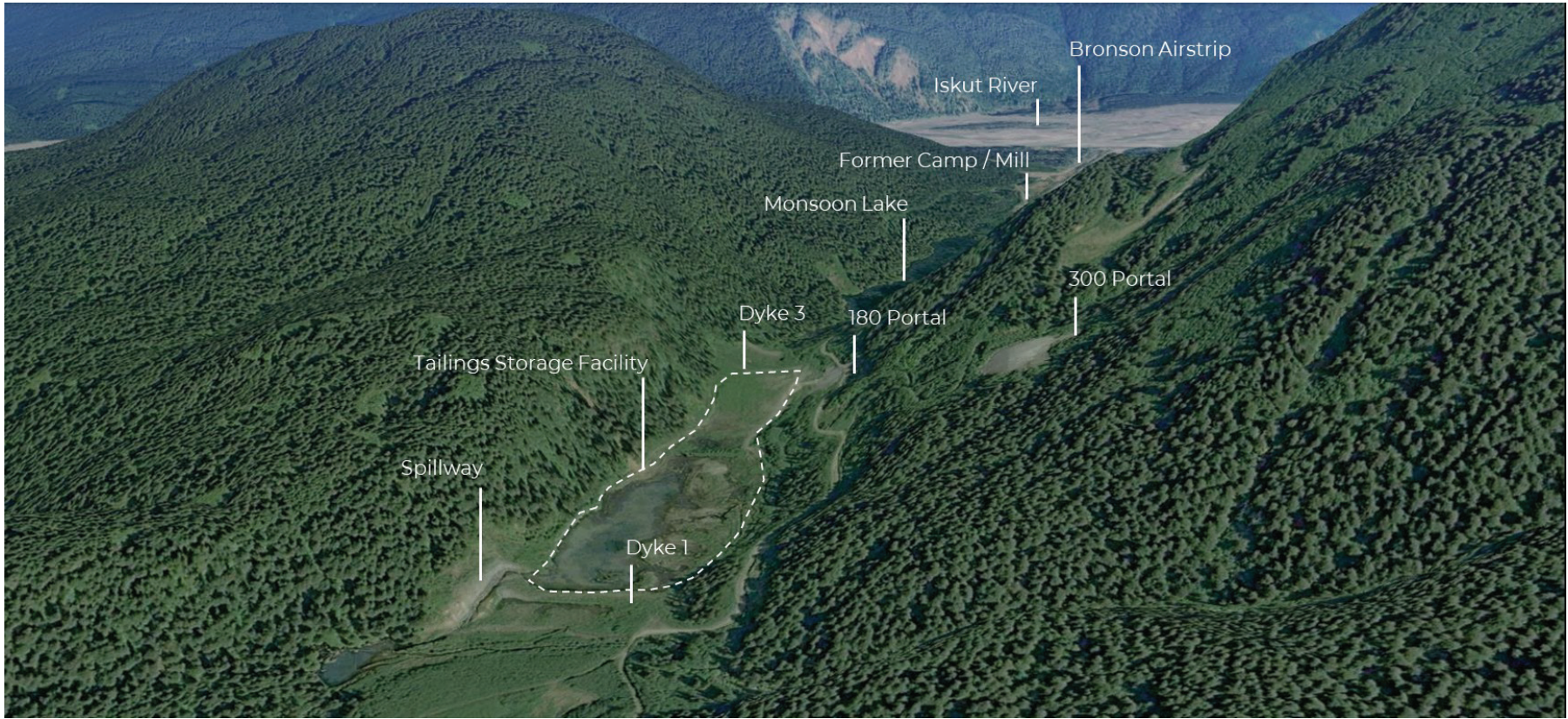
Contains approximately 1M tonnes of tailings

The mill, camp and support facilities were located north of the mine between Monsoon and Bronson Creeks



June  
1999





# Mine Wastes

During operations, limited waste rock was stockpiled in portal dumps

Most waste rock was ground down and used as hydraulic backfill or placed directly as rockfill underground

Tailings were cycloned to produce coarse- and fine-grained materials (slimes)

- Coarse tailings were used as backfill
- Fine materials (slimes) were discharged to the TSF



EMPR, undated



# Tailings

Limited characterization studies were done pre-mining and during operations

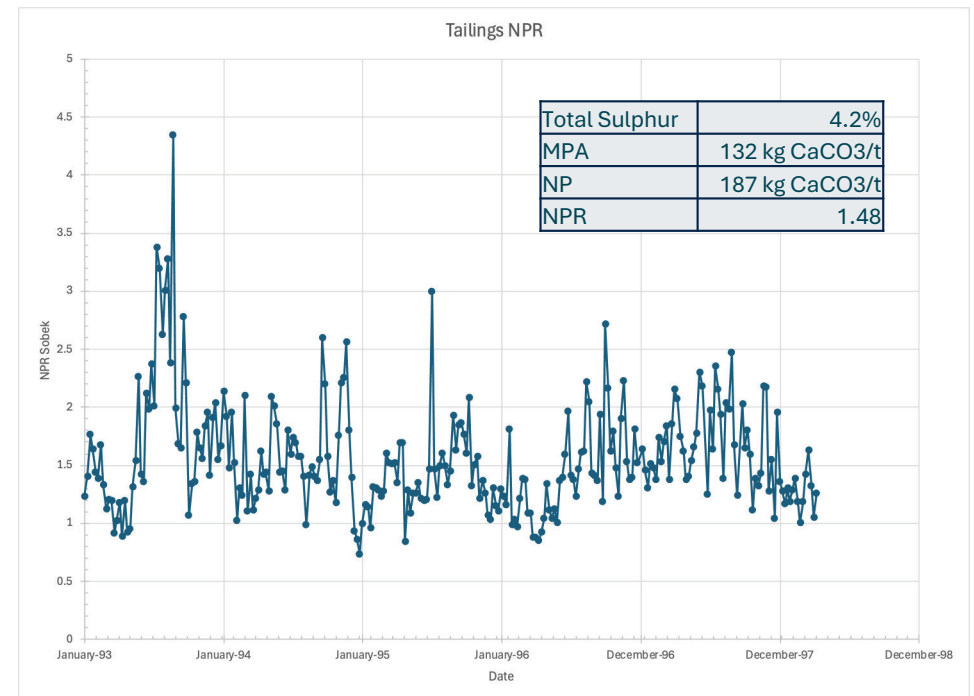
Testing was done on weekly composites of tailings and backfill materials during operations

Based on these results the final tailings surface was considered NPAG

Closure design concept was a dry cover:

- 15 cm of vegetated soil over tailings

Underlying tailings would be free to oxidize



# Tailings

Design considerations for the TSF evolved during the later stages of closure planning:

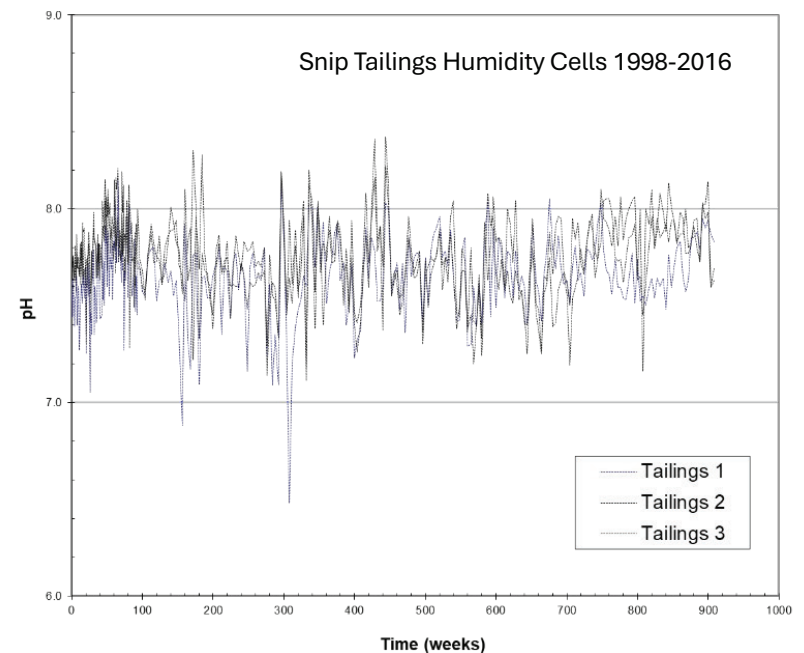
- Uncertainty with NPR 1-2 tailings managed as NPAG
  - NP sources
  - Accuracy of monitoring data
- Remote location

Minimizing tailings oxidation became a requirement

Tailings humidity cell testing initiated July 1998

\*Tailings humidity cells operated until 2016:

- estimated lag time ~30+ years to NP depletion





# Mine Closure

Key challenges for closure of the TSF

- Isolated location
  - Limited access (air only)
  - Minimal infrastructure following closure
- High annual precipitation (rain and snow)
- PAG tailings
- Potential uncertainty with the u/g mine drainage
- Beavers



EMPR, 1999

Competing interests: manage high water flow, keep the tailings saturated, and maintain dam stability

# TSF Closure

PAG tailings required an oxygen limiting cover

Traditional water cover was considered a risk due to blockage of the discharge spillway from beaver activity

- Isolated location would not allow for continuous monitoring or maintenance

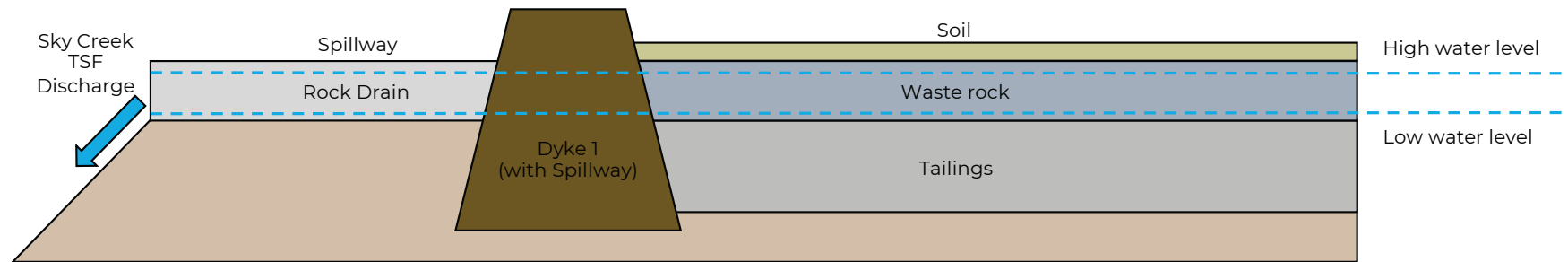
Insufficient material for an oxygen limiting dry cover

Selected option was to maintain saturated tailings by covering with a rock layer and vegetated soil cap



Tailings impoundment during operations, looking south towards Dyke 1

# TSF Closure



Design based on material quantities/volumes and site water balance

- Water level would fluctuate within the waste rock cover
- Inflows to the TSF would drain freely through the spillway
- Spillway included a rock drain to discourage beavers
- Soil would provide a growth medium for revegetation and stabilization of the cover



# TSF Closure – June to October 1999

Tailings surface was regraded to promote drainage towards Sky Creek

PAG waste rock placed in the deeper areas of the TSF

NPAG waste rock placed as granular cover (0.5 to 1.0 m)

Soil was placed over the waste rock (0.15 to 0.3 m)

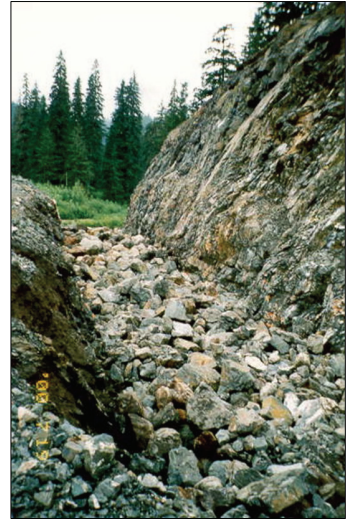
Cover construction was not fully completed in a small area near Dyke 1 (Sky Creek end) due to upwelling of tailings in front of the cover placement



# TSF Closure – June to October 1999

A discharge spillway was constructed through bedrock adjacent to Dyke 1 (Sky Creek)

The spillway was filled with coarse rock material to discourage damming by beavers.



Coarse rock pad also built out into TSF at entrance of spillway

# Mine Closure - Underground

To minimize the potential for acid generation, the mine was closed to minimize airflow into the workings

- Hydraulic bulkheads were installed in the 130 and 180 portals.
- The mine was flooded to the 300 level, the highest elevation possible
- A P-trap was installed in the 300 Portal
- Portals above the 300 level were sealed with a mixture of waste rock and concrete

Drainage from the 300 Portal was directed to the TSF (same as operations)



180 Portal Plug  
(CM Rock Engineering, 2024)



# Mine Closure

Site closure activities began following the end of mine production in June 1999.

Closure activities were completed by October 1999.

Discharge from the partly flooded mine via the 300 Portal to the TSF began in January 2000



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# Post-Operations Active Closure

# Closure Management Program

Monitoring since site closure has included water quality sampling, geotechnical inspections, geochemical testing, aquatic resource monitoring, and land use inspections

Vegetation is periodically cleared from the dams and spillway

The compliance point for the site is the tailings pond discharge (TPD)

Additional monitoring and studies to support closure management have been undertaken since Skeena's exploration activities began in 2016



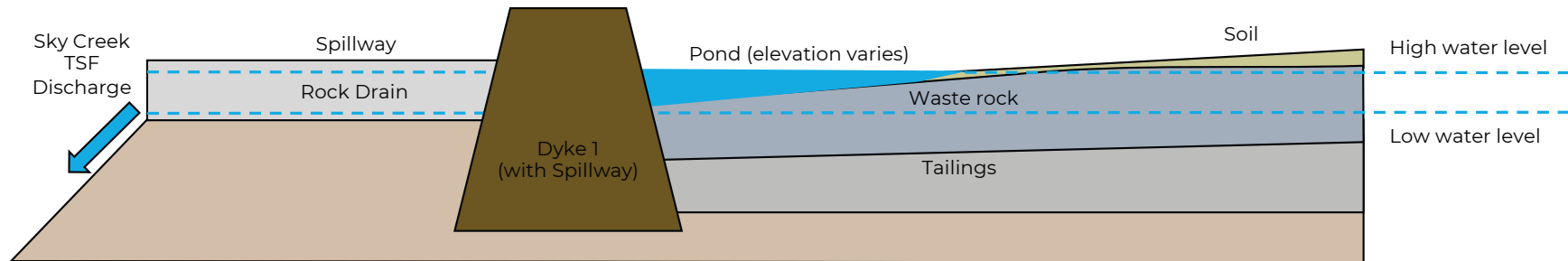
**Tailings Pond Discharge**



**Monitoring camera near spillway**



# TSF Cover Performance



Shallow pond formed almost immediately at the downstream end of the TSF, likely due to:

- Challenges with cover placement in wet unconsolidated tailings
- Settling of unconsolidated tailings 'slimes' post-construction



# TSF Cover Performance

The soil surface of the reclaimed tailings facility was not seeded

Growth of native species soon covered much of the non-ponded areas





# Tailings Cover Performance





# Spillway Performance

The spillway rock drain worked well for many years.

However, the presence of the pond has encouraged beavers to return and impact spillway drainage.

- Ongoing clearing of beaver debris from the spillway
- Assess options to:
  - limit the potential for beaver activity to block the spillway
  - reduce the pond volume within the TSF



May 2006



July 2022  
(EMPR)

# Slope Failures / Debris Flows

Slope failures have been observed in the TSF area, both historically and recently.

In November 2019, a 100 to 300 m<sup>3</sup> debris flow reached the TSF and released sediment into the pond.

Flow was triggered by a small rockslide which blocked a roadside drainage and resulted in a larger volume of unconsolidated materials flowing downslope

The event was detected that day by the remote monitoring camera at the TSF spillway



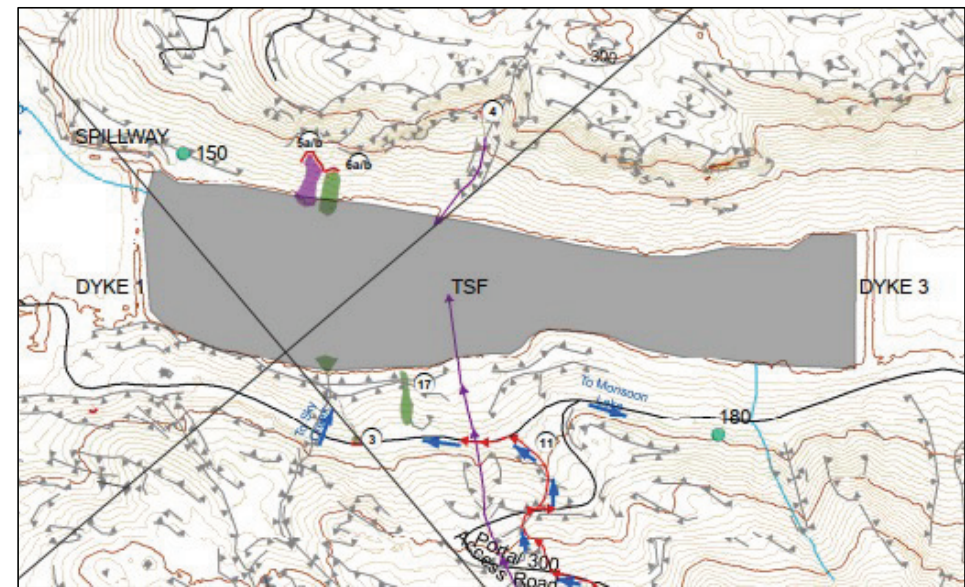
Debris flow and suspended sediment from November 2019 event  
(Knight Piesold, 2020)

# Slope Failures / Debris Flows

In response to the event, a terrain stability analysis of the site was conducted to identify potential risk

- Evidence suggests that a few similar sized ( $\sim 100\text{m}^3$ ) events have occurred recently
- A larger ( $\sim 1000\text{m}^3$ ) event occurred sometime pre-mining
- Probability of a large event occurring was low

Geotechnical monitoring and studies are ongoing to further assess risk and develop mitigation approaches



(Knight Piesold, 2020)



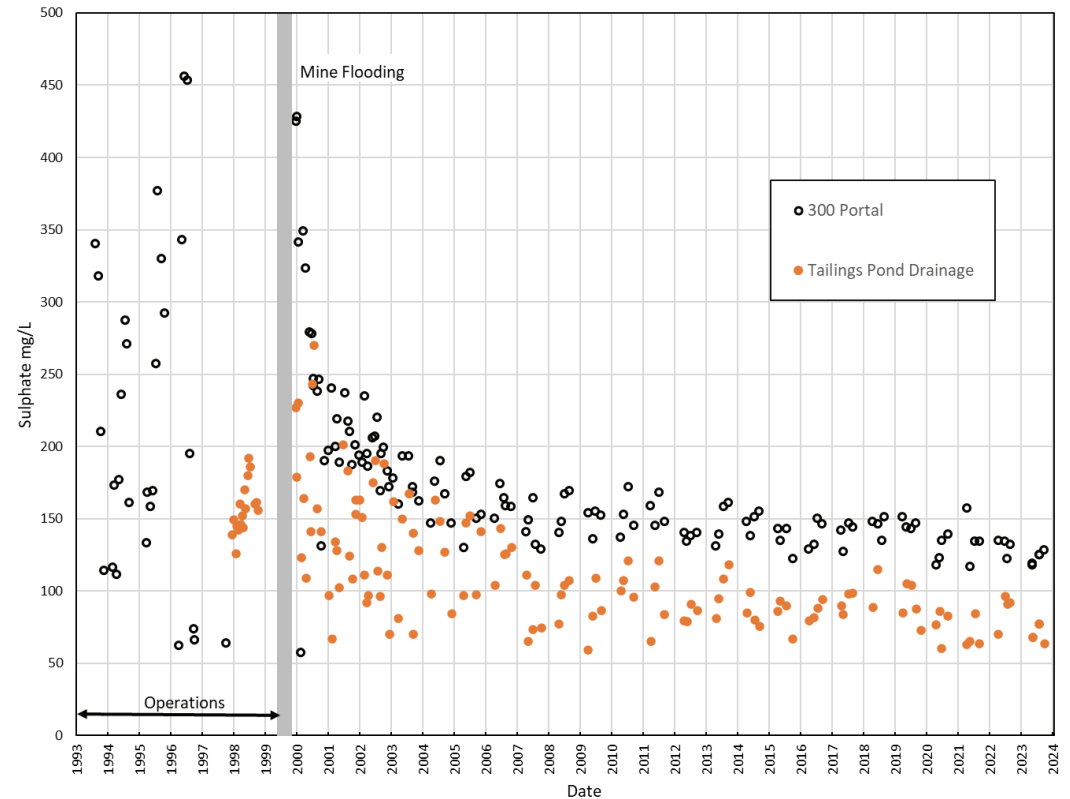
# Water Quality

Sulphate concentrations have decreased in the TSF drainage since mine flooding

TSF flows have sulphate levels that are approximately one-third of the 300 Portal concentrations

Loads primarily originate from the mine

Contribution from the TSF (via tailings oxidation) appears to be minimal

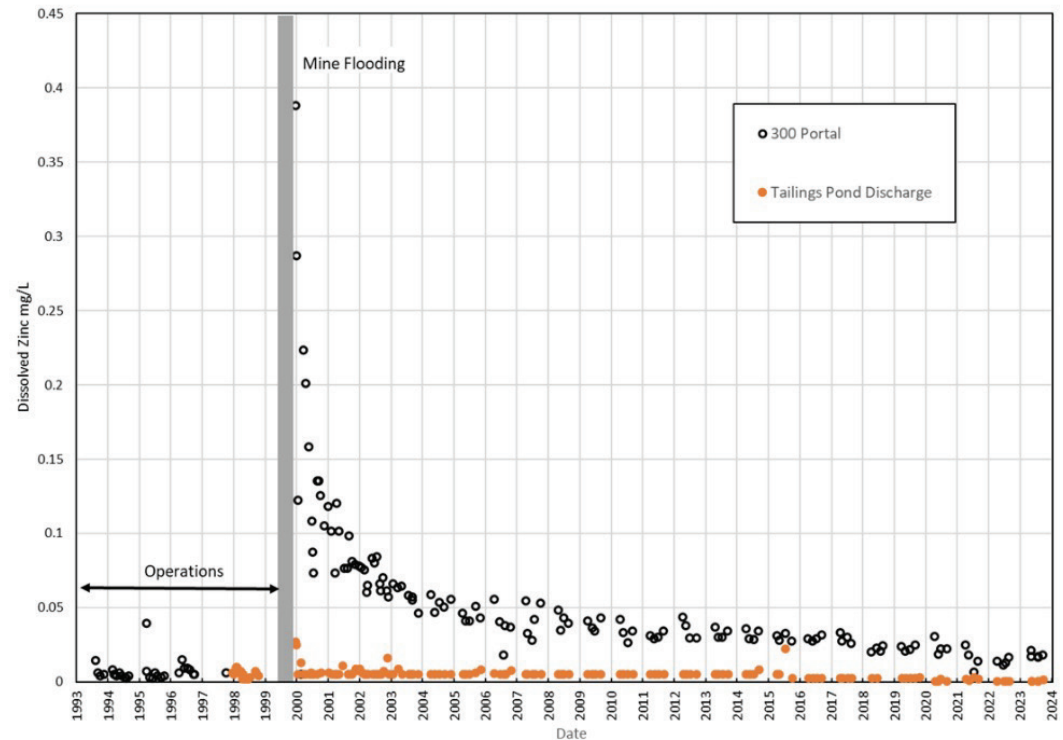


# Water Quality

Zinc concentrations in the 300 Portal water have been reduced by at least an order of magnitude during flow through the TSF.

Dilution can account for approximately a 30-50% reduction in concentrations at the TSF

Attenuation of zinc may be occurring within the TSF



# Closing Thoughts

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The Snip TSF has been in active closure for 25 years and continues to function as intended

However, the presence of a shallow water pond on the cover has complicated the TSF closure

- Increased dam safety risks and site management requirements

Could a more comprehensive ML/ARD assessment earlier in the mine life have improved the tailings management and cover design?

- e.g. Tailings desulphurization near end of operations

Could a more extended closure construction phase have improved the cover?

- e.g. Additional cover placement in pond areas



# Closing Thoughts

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Closed sites will continue to change over time as nature reclaims the land

- Key drivers for closure management at the end of operations may change
- Biology becomes a more important influence with time
  - Revegetation
  - Sediment
  - Wildlife

Some successful aspects of a site closure may complicate other aspects

- Robust vegetation growth and habitat development versus stability of dam structures