

A-J Mine Comments

Southeast Alaska Conservation Council is grateful for the opportunity to participate in the discussion being held by the A-J Mine Advisory Committee. We believe it is critical for the committee to information that is as unbiased as possible.

Below is some information and concerns that should be addressed.

Backfilling with Paste Tailings

Dumping of tailings underground by paste backfilling prevents some surface disturbance from tailing storage facilities and eventual tailing dam failure, but the engineering requirements and costs are enormous. These costs can be a significant contribution to the operating costs of a mine. Where cemented backfills are used, these costs tend to be between 10 and 20% of the total operating cost of the mine. Cement represents up to 75% of that cost.¹

Additionally, the paste tailings occupy a much larger volume than the original rock removed. This places an upper limit on the amount of backfilling that can occur in any mine. Not all the dirt ever fits back into the hole.

The ore must be ground very fine to achieve proper binding strength. This greatly increases the volume. Binders, usually Portland cement, and cellular foams are added. Typically, backfill systems have utilization rates of between 66% and 75%, so one third to one fourth of the tailings will not fit back into the mine.¹

A study conducted to test the option of placing all tailings back underground as paste fill found that the backfill took up 46% more volume than the ore that was removed.¹

Other Disadvantages:

- Hold ups in extraction because backfill needs to set before any nearby blasting can occur.
- Risks of liquefaction of the tailings if saturation levels are high and a trigger (seismic vibration) are present.
- Seepage of tailing effluent into groundwater, thus contamination.

These concerns need addressed. There is no such thing as a perfect mine operation.

Water Quality

The A-J mine is located in Juneau's drinking water source. The attempt by Echo Bay to pump out the mine resulted in contamination of Gold Creek. Water from milling processes and mining will have to be treated. The ability of the permitting process and environmental impact analysis to successfully predict negative impacts to water quality is very poor. A 2006 study found that 76% of the mining projects that predicted no impact to water quality ended up polluting surface and ground water. Studies that predicted water quality problems and required treatment facilities ended up failing 84% of the time and polluted the water anyway. (Comparison of Predicted and

Actual Water Quality at Hardrock Mines, Kuipers and Maest, 2006). Available at: www.mine-aid.org/predictions/ComparisonsReportFinal.pdf).

Juneau's clean drinking water resource must be protected.

Independent Resources

SEACC suggests third party independent resources be consulted to provide unbiased information to the committee. I would suggest Jim Kuipers P.E. of Kuipers and Associates. He can be reached at www.kuipersassoc.com. Mr. Kuipers can provide valuable information on water treatment technology and the ability of mining operations to protect water quality.

For information on the overall economic considerations of a mine, SEACC suggests inviting Dr. Tom Powers. Dr. Powers is the chairman of the Economics Department at the University of Montana and a member of the Montana Environmental Information Center. He can be contacted through that organization at: www.meic.org.

SEACC would be willing to help defray the costs of getting these experts to Juneau to address the Committee. It is critical that the committee receive independent information from experts in mine operations that do not have a financial interest in a possible project.

Please contact Guy Archibald at 586-6942 or at guy@seacc.org for any further information or questions. Thank you for the opportunity to comment.

¹ (Underground Mining with Backfill) at:
http://web2.uqat.ca/gnm1002/Cours%20231_Introduction/Article_Vue%20d%27ensemble%20des%20remblais.pdf