

Paula Wilson
Idaho Department of Environmental Quality
1410 N. Hilton, Boise, ID 83706

Dear Ms. Wilson:

Following are my comments for the Ore Processing by Cyanidation: Docket No. 58-0113-1901 - Negotiated Rulemaking.

I agree that the State cyanide regulations could use some updating, but not necessarily limited to the Idaho Mining Association suggestions. Their call for allowing new technology and using performance-based criteria is worth considering. With that in mind, DEQ should look at adding requirements to treat mine wastewater to remove cyanide (*to a concentration that meets surface water quality standards*) prior to deposition in a tailings storage facility. Given the numerous cyanide neutralization methods available, it seems to me that a creative hydrometallurgist could incorporate such measures into any given beneficiation process (whether mill circuit or heap leach). This may prove preferable to having to deal with treating supernatant water and/or leachate resulting from the inevitable tendency of liners to leak over time. DEQ should task the mining industry with providing a peer-reviewed analysis of this approach that reviews existing industrial scale processes along with emerging technologies that have potential scalability. The standard INCO oxidation process by itself has its limitations and other options may be more effective. Obviously the mining industry will want to minimize costs and is predisposed to selecting the least expensive alternatives. If they argue that treating process water to State surface water standards during the milling circuit is prohibitively expensive, it should be incumbent upon permit applicants to submit a cost/benefit analysis supporting this assertion.

I have a few comments regarding the IMA letter and the IDEQ PowerPoint posted on the website. The PowerPoint includes plan specifications that refer to IDAPA 58.01.13.200.03, but nowhere in the regulations can I find criteria for when a double liner vs. a single liner is required. The IMA letter suggests allowing more options for liner materials. I would add that this may be justified, as long as the 10^{-11} cm/sec maximum permeability coefficient is adhered to. For example, products like Bentomat (5×10^{-09} cm/sec P.C.) would need to be used in conjunction with lower permeability layers. The statement that the installation of a high permeability medium would “undoubtedly” damage the secondary liner needs some clarification. It would be nice to know what sort of “high permeability media” were being considered when this was originally written. If damage were to result in every case, I suspect this would have been noted and taken into account. It might be worth contacting Bruce Schuld to get his take on this. If indeed there are no examples of this design being successfully implemented without damage to the secondary liner, it would be useful to see some data supporting that assertion. IMA goes on to state that there are better options for leak management. Such as?

In closing, I'd just like to offer my perspective regarding the ultimate purpose of this rulemaking and why it is happening now. As IDEQ has acknowledged in the PowerPoint, it is the application for a cyanidation permit by Midas Gold that instigated this rulemaking process. And ultimately I suspect the objective, as obliquely referred to in the IMA letter, is to avoid any requirement to treat process water in perpetuity. Naturally, every mining company would love to complete their reclamation work, monitor for a few years, and be done with it. The prospect of never-ending capital drain for water treatment is anathema for them. However, the complex and often slow geochemical reaction kinetics at any given mined site make provisions for such water treatment a very reasonable and prudent requirement. This is the crux of the matter where it comes down to cost versus water quality. As I suggested above, removing cyanide during the milling circuit solves a lot of issues. IDEQ is tasked

with protecting Idaho water quality, please stick to your primary mission and let science, not political influence drive the rulemaking process. Easier said than done. Good luck.

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