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

June 19<sup>th</sup>, 2020

Re: Idaho Rivers United comments on Negotiated Rule Draft No. 7 of Ore Processing by Cyanidation: Docket No. 58-0113-1901

Thank you for considering our comments on the Negotiated Rule Draft No. 7.

Idaho Rivers United (IRU) is a 501(c)3 nonprofit environmental advocacy organization that is dedicated to protecting Idaho rivers and restoring our native fish populations. For almost 30 years, IRU has been working to defend Wild and Scenic rivers, advocate for endangered and threatened aquatic species, reform hydropower policy and promote enhanced water quality in all of Idaho's rivers.

IRU represents 3,500 river-loving, environmentally attuned members throughout Idaho and beyond. Our members and supporters expect protection of rivers for their ecological, scenic and recreational values. Therefore, our mission is to execute outstanding and thorough river preservation and conservation work to ensure environmental integrity of all of Idaho's river and citizens.

On behalf of our members and our rivers, we appreciate the opportunity to participate in the rulemaking process. Our comments are included in this letter, thank you.

Sincerely,

A handwritten signature in black ink that reads "Reese R. Hodges".

Reese Hodges  
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Idaho Rivers United  
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## **General Comments**

The staff, board, and members of Idaho Rivers United appreciate the opportunity to participate in the negotiated rulemaking for Ore Processing by Cyanidation. As we stated in previous comments, IRU has concerns due to the extensive history of incidents in cyanide leach gold mining projects that have resulted in significant impacts to water quality and aquatic life. Thus, we appreciate the Department's attention to this matter, and efforts to ensure that such risks are minimized. This process has resulted in many improvements to the rule, and we appreciate the efforts of all stakeholders to combine industry best practices, best available science, and regulatory standards to ensure protection of the waters of the state. Specific comments are below.

## **Data Collection and Monitoring**

In addition to the water quality monitoring and leak detection monitor requirements already included in Draft Rule 7, IRU requests additional monitoring requirements specific to process components. We suggest incorporating the following from Nevada regulations, **NAC 445A.442**

### **Monitoring: Process components:**

- 1. The Department shall determine the extent and complexity to which the holder of a permit must monitor individual process components for the release of contaminants after reviewing site and process controlled design conditions. Systems designed to detect and control leaks from process components must be located at the interface of the unit process components and the adjacent environment and be able to provide the first indication that pollutants or contaminants have escaped their primary containment.*
- 2. The program to monitor the process components must include:*
  - (a) A schedule of activities;*
  - (b) A roster of current job titles for persons responsible for and involved in the monitoring program; and*
  - (c) The form and frequency of reports to be submitted to the Department.*

*The Department may randomly collect information or samples for reference. The cost of analyzing samples may be placed upon the holder of the permit.*

We believe that these additions more clearly state the monitoring requirements specific to process components, and give the Department the ability to perform data collection if needed. If a more performance-based based approach is desired through this new rule, comprehensive data collection and monitoring are essential to evaluate performance of the facility. The Draft Rule 7 include language for "monitoring points that will provide early detection". However, we believe the addition from NAC are necessary to ensure effectiveness.

## **200 Requirements for Water Quality Protection**

### **200.05 Freeboard**

Draft Rule 7 calls for a minimum 2-foot freeboard at all aspects of a facility that contain or transport process water. We suggest that this freeboard minimum should be more conservative to accommodate wave run up. Considering that process waters in a tailings impoundment, in example, may contain WAD cyanide concentration of up to 50 mg/l, orders of magnitude above the EPA and state standards for discharge, minimizing risk of a spill is essential to prevent degradation of the waters of the state.

Nevada is often referred to as having some of the best regulations in this sector, and certainly the most experience with cyanidation permitting. In the response to questions from DEQ and the stakeholder group regarding freeboard, NDEP and BMRR responded that “Freeboard of at least 3 to 5 feet to accommodate wave run up” is a typical design approved for tailings impoundments. We encourage DEQ to consider at least a 3-foot minimum freeboard requirement.

### **200.06.B.II**

To ensure effectiveness in the compaction test for compacted soil layer, a statistically based sampling plan will help avoid biased results. These tests must be conducted by the engineers and they should be done in a random nature. We suggest adding “*performed on random samples*” at the end of the second sentence.

### **200.06.B.III**

IRU acknowledges that alternatives to a 24” CCL may be preferable in certain cases. However, in addition to the requirements for an “equivalent layer replacing the soil layer”, we ask that DEQ incorporate standards in line with Nevada’s **NAC 445A.437 Minimum design criteria: Tailings impoundments. Suggested are the following directly from NAC:**

2. *An alternate level of containment may be required by the Department for all of the tailings impoundment or for a portion thereof after considering the following factors:*
  - (a) *The anticipated characteristics of the material to be deposited;*
  - (b) *The characteristics of the soil and geology of the site;*
  - (c) *The degree to which the hydraulic head on the impoundment liner is minimized;*
  - (d) *The extent and methods used for recycling or detoxifying fluids;*
  - (e) *Pond area and volume;*
  - (f) *The depth from the surface to all groundwater; and*
  - (g) *The methods employed in depositing the impounded material.*

These additional criteria allow for a comprehensive, site-specific, and performance-based assessment of the design facility.

### **200.06.b.iv Geomembrane liners**

It is common knowledge that the welded seams are one of the most frequent sources of liner failure. However, the draft rule does not acknowledge this factor or provide any requirements to

mitigate for this weakness. municipal wastewater liners must have their seepage rate measured after construction. There are no references to seepage testing in this document. How will the post-installation integrity of the liners be verified? Leak detectors can be un-reliable and results can be misinterpreted as "ground water" or malfunction. They cannot be repaired or replaced once buried. These can offer some solace if they are placed at a certain density based upon a statistical model, however, that is not specified in the guidance. We ask that the Department incorporate in 200.06.b.iv the following; "*Demonstration of the post-installation integrity is to be verified by completing a seepage test congruent with IDAPA 58.01.16.*"

It is suggested that the DEQ incorporate sections of IDAPA 58.01.16 that among other things, call for the inclusion of a seepage test on constructed liners prior to construction and periodically afterwards as covered in IDAHO ADMINISTRATIVE CODE IDAPA 58.01.16 Department of Environmental Quality Wastewater Rules Section 493 Page 52;

*Design Standard. Lagoons shall be designed for a maximum leakage rate of five hundred (500) gallons per acre per day. (3-30-07)*

*b. Operating Standard. The leakage rate for lagoons constructed after April 15, 2007 shall be no more than zero point one hundred twenty-five (0.125) inches (1/8 inch) per day, which is approximately thirty-four hundred (3400) gallons per acre per day. The leakage rate for existing lagoons constructed prior to April 15, 2007 shall be no more than zero point twenty-five (0.25) inches (1/4 inch) per day. (3-30-07)*

*c. For lagoons located over sensitive aquifers or near 303d listed stream segments, the leakage rate shall be no more than zero point one hundred twenty-five (0.125) inches (one-eighth (1/8) inch) per day, which is approximately thirty-four hundred (3400) gallons per acre per day. The operating standard may be considerably lower based on a ground water investigation considering fate and transport of contaminants to determine the effect of the seepage on the aquifer or stream segment and the best capability of measurement at the time of the investigation.*

## **204 Design Criteria for Tailings Impoundments**

### **204.01.b Hydraulic Head**

Idaho Rivers United asks the DEQ to reconsider the changes made to the draft rule regarding maximum hydraulic head on tailings impoundments. Through the rulemaking process, this standard has changed from "12 inches or less" in Draft Rules 1-5, to "less than two (2) feet on average and five (5) feet maximum" in Draft Rule 6, to "A system designed to limit hydraulic head over the geomembrane liner to the maximum extent practicable" in Draft Rule 7.

The recent literature submitted by IMA on May 12, 2020 does provide some support for depositing tailings directly on a geosynthetic liner because holes are better filled by tailings than gravel, but there is little support for removing a hydraulic head maximum standard.

The best available science and regulatory practice supports that minimizing hydraulic head on any system designed to contain process waters, including tailings impoundments is essential to protect the waters of the state. When DEQ and Stakeholders asked representatives from Nevada NDEP and BMRR about hydraulic head minimums, they responded with the following on September 11, 2019;

*“By minimizing hydraulic head, the potential for leakage by the liner system is also minimized regardless of material (clay, geosynthetics, geosynthetic clay layer, bitumen, etc.).”*

*“Standard accepted engineering practice is to utilize a maximum 1-foot head above any liner surface.”*

Tailings impoundments should be required to limit the hydraulic head to 12” or less, as is required in the draft rule for leach pads, considering that the tailings impoundment would contain process waters with potential to degrade waters of the state from any leak in the liner system.

In addition, in the June 10<sup>th</sup>, 2020 meeting, there seemed to be a discussion or suggestion of replacing hydraulic head with "liquid level". As the department is aware, hydraulic head may or may not have anything to do with the weight of water. For example, a slurry could have a specific gravity of greater than 2, effectively halving the allowable "liquid level" compared to water of a slurry. We ask that the Department do not replace hydraulic head limits with "liquid level".

#### **204.02 Enhanced Containment Criteria**

IRU supports all of the current factors listed in the draft rule. We ask that in addition to those factors, that DEQ consider making the following addition.

- i. The characteristics of the geomorphology and topography of the site.

The Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation Response letter posted by DEQ on 9/11/19 stated at 9(c) that typical designs approved by Nevada for tailings impoundments that contain process water containing cyanide “Avoid valley fills designs when and where possible.” The geomorphology and topography of any potential site are should be considered for enhanced containment criteria.

#### **WAD Cyanide Concentration**

##### **204.03 Tailings Treatment**

IRU commented on previous Draft Rules to request that the maximum WAD cyanide concentration limit in tailings impoundments be reduced below 50 mg/L. We stand by this request, as the risks of discharge from a tailings impoundment would result in release of WAD cyanide concentrations that are orders of magnitude greater than the state and EPA regulations. We request incorporation of the following language from Nevada Administrative Code:

**NAC 445A.430** *Stabilization of spent ore.* ([NRS 445A.425](#), [445A.465](#))

*1. Spent ore which has been left on pads or which will be removed from a pad must first demonstrate stability of the discharge effluent from the pads or from the spent ore such that:*

*(a) WAD cyanide levels in the effluent are less than 0.2 mg/L;*

*(b) The pH level of the effluent is between 6.0 and 9.0; and*

*(c) Contaminants in any effluent from the processed ore which would result from meteoric waters would not degrade waters of the State.*

**NAC 445A.431 Stabilization of tailings.** ([NRS 445A.425](#), [445A.465](#)) *Upon termination of the active use of a tailings impoundment, representative samples of the material deposited in the impoundment must be collected and characterized. The tailings must be stabilized during the final closure of a facility so as to inhibit the migration of any contaminant that has the potential to degrade the waters of the State.*

In the current draft rule, there is no discussion of the WAD cyanide concentration or pH levels for waters that can be discharged during operation or upon closing. Specific standards must be included, based on best practices, best available science, and congruence with water quality standards.

Idaho Mining Association stated in a comment letter dated May 12, 2020, that “IDEQ has regularly selected the strictest prescriptive standard from other states’ regulations for each component of a facility design rather than focusing on the effectiveness of a facility’s design to protect the environment”. Idaho Rivers United disagrees with this statement, and it is evident that the most recent Draft Rule 7 is much less prescriptive than many comparable state regulatory standards, and indeed much more subjective. IRU would like to emphasize that reducing prescriptive standards to a “performance-based outcomes” approach can have merit. However, if there is a lack of strict standards for outcomes (such as WAD concentrations for discharge, PH of process waters, hydraulic head on tailings impoundments), then performance cannot be accurately characterized or assessed.

### **501.02 Submittal of a Permanent Closure Report**

IRU supports the current draft rule that requires the permittee to submit a permanent closure report to the Department for review and approval.