



COLORADO
**Division of Reclamation,
Mining and Safety**
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, CO 80203

May 3, 2019

Brian Briggs
Ouray Silver Mines, Inc.
PO Box 564
Ouray, CO 81427

RE: Revenue Mine, Permit No. M-2012-032, Technical Revision (TR-14), Adequacy Review-1

Dear Mr. Briggs:

The Division of Reclamation, Mining and Safety (Division) is in the process of reviewing the above referenced Technical Revision in order to ensure that it adequately satisfies the requirements of the Colorado Mined Land Reclamation Act (Act) and the associated Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations (Rules). During the review of the material submitted, the Division determined that the following issue(s) of concern need to be adequately addressed before the Technical Revision can be considered for approval. Please provide the following:

1. Discuss the rationale, purpose and evaluation for each chemical presented in Table 1. (why it's used, need in the system, comparisons to alternatives) - Pursuant to Rule 6.4.21(5)
2. Chemical storage volumes - Rule 6.4.21(5)
 - a. State the maximum total quantity of each chemical to be stored on site at any given time.
 - b. Clarify if the entire supply is stored within the Reagent Room or in various locations throughout the Revenue Mine site.
 - c. Volumes listed in Table 1 are generally less than a two weeks supply based on the total volume divided by the day tank size. Page 7 of TR-14 states "Chemicals are ordered under min/max and only a two-month supply will be available for use". TR-14 does not state how much is a two-month supply for each of the nine chemicals listed in table 1. Explicitly state the day use rate of each chemical.
 - d. Please provide the total volume of containment of each room or area of the reagent room including the common area, as well as provide the demonstration that each area is sufficient to contain the maximum amount of chemical to be stored in each area at any given time.
3. For each of the chemicals listed in Table 1, that are stored in the 'common area' of the Reagent Room, please provide a discussion on the potential bi-products, including safety or environmental hazards, created if the chemicals were to mix. (If a multi-system loss of containment were to occur) in accordance with Rule 6.4.21(5).
4. Many of the MSDS sheets are lacking sufficient information to address Rule 6.4.21(5)(a). For any chemical listed in Table 1, with a rating of a 2 or higher on the NFPA (National Fire Protection Association) Classification, or any chemical with adverse effects or no data provided for



ecological/environmental effects, provide supplemental documentation based on the best available science to address Rule 6.4.21(5)(a).

5. Expected concentrations of chemicals and process solution volumes are not stated. Please provide this information in accordance with Rule 6.4.21(5)(b).
6. Please provide the anticipated residual concentrations of chemicals in the tailings and concentrated ore, Pursuant to Rule 6.4.21(5)(b) and 6.4.21(6)(c).
7. The MSDS for Sodium Metabisulfite was not provided in Appendix 2 as required by Rule 6.4.21(5)(c). Please provide the MSDS.
8. The MSDS for Copper Sulfate from Old Bridge Chemicals is not the most current version available. Please provide the most accurate up to date MSDS per Rule 6.4.21(5)(c).
9. The MSDS for Hydrated Lime Type N produced by Benntag Pacific Inc. cannot be found on the manufacturer's website. Is this still the current provider of this chemical or is a different provider being used? If so, provide the manufacturers specific MSDS. - Pursuant to Rule 6.4.21(5)(c)
10. Commit to only storing a chemical within its designated area as shown on drawing 700-GA-001. Specifically, chemicals will be immediately offloaded from the transport vehicle into its designated storage space. Chemicals may not be stored in common areas awaiting future handling or putting away. - Pursuant to Rule 6.4.21(6)(b)(i)
11. Please provide details regarding how chemicals will be moved throughout the Reagent Room to their desired location, Pursuant to Rule 6.4.21(6)(b)(i). Forklift, dolly, by hand. How do you get into the containment structures?
12. Page 7 of TR-14 states "Due to the short shelf life, chemicals will be removed from the mine site under temporary cessation". Under Rule 1.13.2, the mine site could still be considered actively mining without having a need for/ or authorization to conduct milling operations (i.e. need to use the Reagent Room). What is the approximate term of cessation of milling operations that would constitute a need for chemicals to be removed from the site? Address Rule 6.4.21(6)(b)(i).
13. How will equipment that comes into contact with the chemicals in Table 1 be detoxified and/or disposed of? - Pursuant to Rule 6.4.21(6)(b)(i)
 - a. Are there any special precautions for PPE disposal, replacement of equipment, flowlines, etc?
 - b. Provide details regarding the procedure for tracking and storage of chemicals until they can be returned to the manufacturer or properly disposed of.
 - c. Describe the decommissioning process with regards to chemical handling. Ex: how are chemicals from within mixing tanks drained, etc.
14. OSMI plans to repurpose the building post reclamation. Please provide details regarding what measures will be necessary to ensure the building is properly detoxified in order to support its future use. - Pursuant to Rule 6.4.21(6)(b)(i)
15. Describe what features are in place to prevent adverse off-site impacts. - Pursuant to Rule 6.4.21(6)(b)(iii). This should describe containment structures, volumes and procedures for cleaning up in case of spill. In addition please provide a copy of the updated SPCC Plan specific to the reagent room.

16. Section 4 of this revision implies that the floors and containment structures of the reagent room will be constructed from concrete. Please clarify if any sort of sealant or epoxy coating will be applied to the floor and or walls of the containment structures pursuant to Rule 6.4.21(6)(b)(iii).
17. Please provide more details, including any necessary drawings, regarding the sump system as mentioned in the narrative and depicted in some of the drawings. The details should include but are not limited to showing the path and direction of any pipes or lines, clarification if the material is piped to a central location or recirculated and details regarding the total volume capacity of each sump system for each containment area pursuant to Rule 6.4.21(6)(b)(iii).
 - a. In addition please clarify why only the flocculent and lime areas are depicted to have sump systems installed.
18. Provide more detailed information related to the site specific conditions related to construction activities in support of the reagent room prior to TR-14 submission per Rule 6.4.21(7)(a). The information should include but is not limited to;
 - a. The narrative as well as Table 3 demonstrate that the foundation excavation has already been completed, and according to the narrative 2,800 cubic feet of topsoil was salvaged. What other excavation work took place in support of constructing the Reagent Room?
 - b. What is the volume of material to be removed? Provide a cross section depicting undisturbed ground compared to final grades necessary to complete the Reagent Room as per the engineered plans.
 - c. Were any upgradient surface water controls installed to direct water away from the facility?
 - d. Table 3 suggests a seep was exposed during the excavation, please provide details on the discovery of the seep as well as what measures were taken to handle the water generated by the seep.
19. A site wide Environmental Protection Map was included in the TR-14 package however no EPF specific information was provided, as required by Rule 6.4.21(7)(d). Address this item with regards to the Reagent Room specifically.
20. Describe the release response procedures, redundancies and back-up measures necessary, appropriate, and economically reasonable, to control, prevent and mitigate releases of the designated chemicals from the containment facility outside the permit area during mining and reclamation operations pursuant to Rule 6.4.21(7)(e).
21. Containment Facilities Evaluation- Rule 6.4.21(7)(f)
 - a. Section 4 states that all designated chemical piping is doubled walled, however drawings 700-MP-207 and 700-MP-208 do not specify the pipe will be double walled. Please provide more information regarding the double wall construction of the piping.
 - b. Xanthate Table 1 states 240 gal mixing/storage tank, drawing 700--GA-001 states 240 gal solution tank, 240 gal mixing tank and drum storage which allows for significantly more volume to be stored than reported. Please clarify the size of each tank and amount to be stored in preparation to be mixed and or stored resulting in a total volume contained within the reagent room.
 - c. Zinc Sulfate on Table 1 states 240 gal mixing/storage tank, drawing 700-GA-001 states 240 Gal Solution Tank AND 240 Gal mixing tank in addition to the bags and pallet rack.

Please clarify the size of each tank and amount to be stored in preparation to be mixed and or stored resulting in a total volume contained within the reagent room.

- d. Copper Sulfate on Table 1 states 240 gal mixing/storage tank, drawing 700-GA-001 states 240 Gal Solution Tank AND 240 Gal mixing tank in addition to the bags and pallet rack. Please clarify the size of each tank and amount to be stored in preparation to be mixed and or stored resulting in a total volume contained within the reagent room

22. Quality Assurance and Quality Control - Rule 6.4.21(16)

- a. Page 5 of the Revision states that the mine will send QA/QC documentation (reinforced steel, slump tests, & 28 day compressive tests) to the DRMS monthly until certification of the EPF is complete. Please provide more information regarding the QA/QC measures and tests to be conducted and reported for each task during each phase of construction.
 - b. For each set of QA/QC items please provide a success criteria of each test or certification to be submitted.
23. In addition to items 22 a and b of this review, please further define each phase of construction of the reagent building, and which phases are proposed to have QA/QC certification or inspections pursuant to Rule 7.3.1(1).
24. In addition to item 18 c of this review, please describe stormwater design features surrounding the Reagent Room Pursuant to Rule 7.3.1(3). What new features were installed for this building to handle water coming from above the building?
25. Once the phases of construction are defined, including the identification of phases that require QA/QC certification and or inspection, please commit to providing certification documentation, receiving any required inspection AND receiving acceptance from the Division prior to proceeding to the next phase of construction pursuant to Rule 7.3.3(2).
26. Page 6 of the revision asserts that if DRMS is not able to make an inspection, the Operator can contract an independent reviewer. If the Operator chooses to utilize independent review, a request must be made, in writing that clearly addresses all requirements of Rule 7.4.3. Please note that the request must be made, and acceptance granted prior to the independent review.
27. Per Rule 8.3 please provide the Division with a copy of your Emergency Response Plan including specifics as it relates to designated chemicals and commit to keeping an up to date copy on file with the Division.

Please submit your responses to the above listed issues by Monday, May 17, 2021 in order to allow the Division sufficient time for review. If you cannot address the above issues by May 17, 2021 please request an extension to the decision due date to ensure adequate time for the Division to review materials. A decision due date of **May 24, 2021** has been set. If any adequacy issues remain by the decision due date the Division may deny your request.

The Division will continue to review your Technical Revision and will contact you if additional information is needed. If you require additional information, or have questions or concerns, please feel free to contact me.

Sincerely,



Lucas West

Environmental Protection Specialist

Division of Reclamation, Mining and Safety

Ec: Travis Marshall, Senior EPS, DRMS

Amy Yeldell, DRMS

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