

MEMORANDUM

Date: February 21, 2023

To: Jim Coefield, Friends of the Jocko
Daniel Brister, Ferguson & Coppes, PLLC

From: David Donohue, M.S., P.G., Senior Hydrogeologist, HydroSolutions Inc

Subject: **Comments on Hydrogeologic and Environmental Resource Information Presented in the Draft Environmental Assessment Prepared by Montana Department of Environmental Quality, Riverside Contracting, Inc. Opencut Permit #3415, Marvin Rehbein Site, Lake County, Montana**

On behalf of the Friends of the Jocko, I completed a review of the hydrogeologic and environmental resource information presented in the environmental assessment (EA) prepared by Montana Department of Environmental Quality (DEQ) for the Riverside Contracting, Inc. Opencut Permit #3415, Marvin Rehbein Site located in Lake County, Montana. In addition, the Application for Opencut Mining Permit for the site was reviewed to provide related information regarding water resource and environmental information. This review focused on assessment of the thoroughness of the water resource and the environmental information presented in the DEQ EA and the application.

In general, the EA currently lacks specific details and analysis regarding the proposed opencut operation and expansion, including a correct and acceptable depth to groundwater impact assessment, impacts to water resources, identification of process water flow rates and volumes to supply crusher and wash facilities and dust suppression, identification of a legally accessible source of water, and monitoring plans. In addition, the use of the asphalt plant must include the need for a Spill Prevention Control and Countermeasure (SPCC) Plan if regulated quantities of asphalt are stored on site.

The EA lacks a thorough description of the proposed action as required by the Montana Environmental Policy Act (MEPA). All equipment proposed for use on-site for production of the construction materials must be adequately described. This includes equipment planned for crushing, feeding, screening, sizing, washing, and classifying, scrubbing, dewatering, sampling, mixing and blending, fines recovery, and tailings and water management. Numerous subjective statements such as “impacts are not anticipated”, “not expected to”, “does not foresee any unusual demands”, and “no direct impacts are anticipated” without providing quantitative and detailed analysis are not supportable statements which meet Montana Environmental Policy Act (MEPA) requirements. A thorough impacts analysis, as required in ARM 17.4.603, must be completed to ensure compliance with MEPA.

The EA presumably relied on information presented in the Riverside Contracting, Inc, Marvin Rehbein Site application to DEQ for Standard Opencut Mining Permit, Opencut #3415, original dated April 7, 2022 and final update December 6, 2022. The application does not provide sufficient information on how protection of shallow groundwater resources used by local residents with senior water rights as well as the historic Pellew Creek channel will be protected. Mitigation plans in the event that water resources are impacted by mine operations, asphalt plant operations, and post mine reclamation action should be identified and analyzed in the EA.

The EA lacks information on current and long-term monitoring needs. DEQ should require the applicant to monitor groundwater wells, surface water creeks, and irrigation canals surrounding the proposed gravel pit operation as well as the undefined water supply proposed for industrial use at the gravel pit. An effective monitoring plan would typically include quarterly monitoring for the first five years of operation, twice a year for duration of the mining operation, and twice a year for five to ten years following completion of mining. This will provide assurance to the contractor, nearby landowners, DEQ, and U.S. Environmental Protection Agency and State agencies that the mining operation has not impacted private property, private water rights, or ecological resources, nor violated the Clean Water Act (CWA). A complete monitoring and mitigation plan should be submitted by the applicant and approved by DEQ as part of the permit. The monitoring plan must comprehensively address groundwater, surface water, and ecological resources. An opencut mining EA should be no less rigorous and detailed than what DEQ requires for a hardrock mine EA.

In DEQs August 17, 2022, Deficiency Notice for the application, it is apparent that issues referring to the location of Pellew Creek and inadequate depth to shallow groundwater data were not adequately addressed in the application which was considered complete in December 2022. The lack of a technical assessment on the impacts to the historic channel from the opencut operation and the implication of contamination moving into the shallow groundwater through this pathway still needs to be addressed. A lack of information was provided in the plan of operation as required in 82-4-432, MCA. The application should not have been considered complete until the issue of Pellew Creek and determination of the depth to seasonal high and seasonal low groundwater levels has been sufficiently addressed.

Specific comments are provided below.

Comments on Compliance with Montana Environmental Policy Act (MEPA), Page 3:

The purpose of an EA is to identify, disclose, and analyze the impacts of the proposed action in accordance with ARM 17.4.603. However, insufficient information is provided and does not allow for the public to fully understand the implications of the proposed action. In addition, direct, secondary, and cumulative impacts to resource areas are not described thoroughly or not described at all. It is clear that insufficient data were presented in the application which can be used to support a valid assessment of impacts to the human environment without quantifying those impacts and completing a thorough analysis of the proposed action.

Comments on Table 1, Summary of activities proposed in the application, Project Water Source, Page 5.

The proposed source for water used in the opencut operation has not been identified. DEQ needs to request the water source be identified to verify that the volume, flow rate, and use for this water source has a valid water right permit. Since the well is located some distance from the proposed opencut operation, a monitoring plan must be included at the location of the water source to identify any impacts to surrounding water users.

Comments on Table 1, Summary of activities proposed in the application, Water Quality, Page 5.

The opencut operation must comply with applicable local, county, state, and federal requirements pertaining to water quality. However, additional information regarding all requirements should be listed and described in the EA. The EA should also describe the requirements of the site Stormwater Permit and the Spill Prevention Control and Countermeasure (SPCC) plan.

Comments on Section 1. Geology and Soil Quality, Stability, and Moisture

Direct Impacts, Last Paragraph, Page 7. Structure and geochemical composition of the soil in the stockpile will likely be negatively impacted during storage (approximately 25 years) before it is used for final reclamation of the opencut site. A reclamation plan should include laboratory analysis of the stockpiled soils to determine the need for soil amendments so that a solid start for reestablishing vegetation on the property occurs.

Direct Impacts, Paragraph one, Page 8. Based on this EA, it appears that DEQ did not complete a site inspection of the property before completing this EA. An inspection should have been completed so that a thorough first-hand understanding of the plan of operation and potential impacts to the human environment would be recognized by the agency.

Comments on Section 2. Water Quality, Quantity, and Distribution

Page 8, Paragraph 1. The EA states that “public comments received by DEQ and historic maps of the area show Pellew Creek as running, entering near the center of the eastern proposed permit boundary, and exiting along the proposed northern boundary on the east side of the landowner residence”. DEQ further states that “there is no evidence, however, that Pellew Creek currently conveys surface water through the site. A site inspection revealed no signs of a defined channel or drainage feature”.

Ignoring the impacts to the historic channel of Pellew Creek from past land use modifications and the proposed opencut operation in the historic channel appears to be a violation of the CWA. Published U.S. Geologic Survey (USGS) topographic maps provide evidence that Pellew Creek was an existing water way. Additionally, the potential for this channel to reestablish itself in the event of historic precipitation events must be evaluated and the consequences understood. DEQ should evaluate the illegal modification of this drainage before considering issuing the opencut permit.

Investigation or analysis to understand the potential to release contaminants from mine operations or spills into the shallow groundwater was not described. The gravels proposed for mining have a high permeability which allow for rapid vertical migration of fluids below the surface of the mining operation. Given the presence of a spring creek and the Jocko River within one mile downgradient of the mine operation, further assessment of the potential direct impacts is needed. Typical groundwater velocity in a sandy or gravelly aquifer may range from 0.5 to 50 feet per day. The direct and indirect impacts to shallow groundwater both on and off the proposed gravel pit site must be evaluated.

Page 8, Paragraph 2, Soil Test Holes. The text states that the applicant did not encounter ground water or surface water in any of the 20 soil test holes in the permit area. Several of these soil test holes were located in the vicinity of the mapped Pellew Creek, with no groundwater or surface water intersected during excavation. However, the maximum depth of the soil test holes was only three feet and the actual test hole location in relation the historic Pellew Creek channel has not been provided. The shallow boreholes would not be expected to encounter the buried Pellew Creek channel if the channel bottom is deeper than three feet. In addition, the lack of water in the historic buried channel does not rule out the existence of the channel. DEQ should carefully scrutinize the applicant's claims regarding Pellew Creek and require a shallow geophysical investigation across the site in order the evaluate the location of the channel and the effect the opencut operation will have on the historic channel and the local hydrogeologic system.

Page 8, Paragraph 2, Depth to Shallow Groundwater. The EA states that average static water level is 72-78 feet; however, this is clearly incorrect for the following reasons.

1. The three wells used in the applicant's depth to groundwater calculations were installed in 1984, 1992, and 1996 and do not represent depth to groundwater in 2023, a period of time ranging from 27 to 39 years since the wells were installed. Land use changes, increased groundwater pumping, and variable recharge availability, among other factors, will impact groundwater levels.
2. The three wells used in the applicants depth to groundwater calculations do not represent depth to seasonal high groundwater in the shallow water table. The three wells were completed at depths ranging from 102 feet below ground surface (bgs) to 140 feet bgs. Reported static water levels found on the Montana Bureau of Mines and Geology (MGMG) Ground Water Information Center (GWIC) website indicate confined to semi-confined aquifer conditions since groundwater elevations were reported above the top of the confined aquifer. The groundwater levels indicate artesian aquifer conditions and not water table aquifer conditions.
3. Static water levels used in the applicant's depth to groundwater calculations for estimating seasonal high groundwater elevations were measured during winter months which are typical periods of seasonal low groundwater levels. Thus, the depth to groundwater below the bottom of the excavation when groundwater levels are closest to the surface has not been provided.
4. It is common for a driller to drill past first shallow water into deeper aquifers to provide more assurance of a reliable source of water for the well owner.

I reviewed 54 well logs found in GWIC within approximately one mile of the proposed opencut site. Well depths varied from 38 feet bgs to 200 feet bgs. Water levels ranged from 5 feet bgs to 150 feet bgs. The significance of this wide range of well depth and water levels indicate that the three wells used by the applicant and presented in the EA do not adequately represent the hydrogeologic conditions within the proposed gravel pit area and may incorrectly conclude that the bottom of the opencut excavation will not encounter groundwater.

It is clear that the site hydrogeology must be more fully characterized and understood in a robust water resource assessment. The applicants current water resource assessment used by DEQ in this EA does not provide the necessary depth of analysis to support an evaluation of impacts to the water resources as required by MEPA.

Page 8, Paragraph 3, Water Source. The water source proposed for use at the opencut operation must be identified. The water right for the water source must be reviewed to determine if proposed flow rate, volume, place of use, and proposed industrial use are adequate and permitted.

Page 8, Paragraph 3, Water Source. Road salt has significant consequences when it leaches to groundwater. If stored onsite, it should be stored on a geotextile-lined asphalt pad with secondary containment, which includes an engineer-designed leachate collection system and an evaporation basin. It should also be securely covered with tear-resistant cover or preferably under a sturdy but temporary Quonset hut building. The applicant should discuss proper storage methods with DEQ and with the Montana Department of Transportation consistent with any requirements of a stormwater permit.

The EA neglects to identify where the salt and gravel will be mixed and neglects to analyze impacts for salt storage and mixing on site. This component of the opencut operation must be evaluated.

Page 9, Paragraph 4, Buffer. DEQ should require the applicant to include a buffer around the historic Pellew Creek channel.

Page 9, Direct Impacts, Paragraph 5, Surface Water and Groundwater. It is clearly premature to state that DEQ does not anticipate an impact to surface water or groundwater quality or quantity and distribution management. Pellew Creek has been altered which could impact the local hydrology and needs to be evaluated fully for violation of the CWA. The EA neglects to quantify any impacts to groundwater from the opencut operation. A source of water used for the opencut operation has not been identified and will need to be evaluated to determine if it is acceptable for the proposed use. Depth to groundwater was incorrectly estimated and needs to be recalculated using current water level data, not data that is over 30 years old. A full reassessment of the water resources in the vicinity of the proposed opencut and the impacts expected must be completed before mitigations and alternatives can be prepared.

Page 9, Direct Impacts, Paragraph 5, Run-off. The EA states that “heavy storms may result in offsite sediment runoff. Precipitation and surface water runoff leaving the site, however, would generally be expected to infiltrate into the subsurface.” This is an unacceptable way to manage sediment runoff. DEQ must require the operator to obtain a stormwater permit and use appropriate best management practices (BMPs) to control sediment runoff and impact to surrounding properties.

DEQ states that “because of the 50-foot buffer, runoff carrying sediment is not expected to reach the irrigation ditch/canal”. A statement that runoff is not **expected** to reach a ditch or canal, or move off site, without analysis to support these statements, is inappropriate. Mitigations must be evaluated and presented in this EA in the event that offsite runoff occurs.

Comments on Section 9. Demands on Environmental Resources of Land, Water, Air or Energy. Page 17, Paragraph 1.

It is unclear what is meant by “unusual demands” in this statement. In addition, documentation used to conclude that unusual demands are not anticipated from the proposed opencut operation should be provided.

Page 18, Direct Impacts, Paragraph 1. DEQ states that completion of this EA relied on available data and certifications made by the applicant. Given that some inaccuracies with depth to water calculations, valid groundwater assessment of the area, and disregard for the historic Pellew Creek channel have been identified during this review, a complete review of the applicant’s information to verify all data and statements attributed to the applicant are correct is required. Presentation of inaccurate information does not meet opencut mining requirements found in ARM 17.24.218 and 82-4-432 MCA and will support an acceptable MEPA analysis.

Comments on Figures.

Both Figure 1 – Site Map and Figure 2-Area Map do not show the location of the proposed wash plant and the proposed settling pond. In addition, the source of water planned for use at the site must be identified on a figure and in the text.