



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

1595 Wynkoop Street

Denver, CO 80202-1129

Phone 800-227-8917

<http://www.epa.gov/region08>

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Christopher S. Savage
Forest Supervisor
Kootenai National Forest
31374 U.S. Highway 2
Libby, MT 59923-3022

rockcreekmine@fs.fed.us

Re: Rock Creek Mine – Draft Supplemental EIS; CEQ # 20160034

Dear Mr. Savage:

In accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency Region 8 has reviewed the *Draft Supplemental Environmental Impact Statement (DSEIS) for the Rock Creek Project* prepared by the Kootenai National Forest (KNF). It is the EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of this project, including rating the magnitude of potential environmental impacts and the adequacy of the environmental analysis in the NEPA document.

Background

Revett Mining Company, (a subsidiary of Hecla Mining Company), proposes the Rock Creek Project, an underground copper and silver mine and associated facilities in northwestern Montana, near Noxon. The Company holds the mineral rights for the Rock Creek ore deposit beneath and adjacent to the Cabinet Mountains Wilderness (CMW) in the KNF. The Rock Creek Project would include constructing three adits (one in the evaluation phase, two for mine operations), ore crushing, an ore processing mill, a paste tailings disposal facility, a rail loadout for transportation of mill concentrate, and water treatment facilities.

A Final EIS was previously prepared for the project in 2001. This DSEIS has been prepared in response to a court decision on the 2001 FEIS. In addition, the DSEIS updated the analysis for resources with new circumstances or more information. The document analyzes four mine and tailings disposal alternatives as well as the no action alternative. Alternative V, which has been identified as the preferred alternative, has been developed through the Forest Service's NEPA and state mining permit processes to reduce environmental impacts. There are two main phases of the proposed mine project, the Evaluation Phase during which an adit would be constructed into the mountain to access the ore body and collect additional information. The second phase of the project – the Operational Phase which includes

construction of two more adits, development of the mine, mill and tailings disposal facility. Information collected during the Evaluation Phase includes: more clearly determining the extent and characteristics of the ore body, locating faults and other geologic structures, evaluating the groundwater system including flow paths, quantity and quality. The information collected during the Evaluation Phase will be used to validate the models and assumptions used in predicting potential environmental effects of the proposed mine in the Supplemental EIS. The information will also be used to develop the final design of the mine, mill, tailings disposal and associated facilities.

Comments

As a cooperating agency with the KNF, the EPA appreciates the work of the Forest Service and their contractors in predicting and analyzing the potential environmental impacts of a very complicated project with many unknowns. The design of mine proposed in the 1990s has improved greatly as a result of the Forest Service's work during the NEPA process; however, the DSEIS predicts the proposed mine will permanently change surface and ground water resources in the area. It will be important to assure that this mine does not become a long-term liability for the state and federal governments by selecting a design and operational plan that can reliably limit environmental impacts, and by requiring sufficient financial assurance for mine closure, reclamation and long-term water treatment.

It will be difficult to document that assurance in the Final SEIS because much of the information needed to verify the analysis of the project's environmental impacts cannot be collected and analyzed until after the project is approved and Phase I of project has been completed. For that reason, we are recommending more formally defining the decisions that will be made during the transition from Phase I to Phase II and adding a public comment period. Sections 2.3.1.3 – Requirements to Proceed with Phase II (page 2-21) and 2.3.1.3.3 – Phase II Approval Process (page 2-25) describe the decision-making process that will be used in transitioning from Phase I to Phase II. We recommend approval of Phase II process be documented formally and made available to the public. One approach is to prepare a supplemental information report summarizing the information collected in the Evaluation Phase, identifying any major changes made to the design of the facility, mitigation and monitoring plans; and documenting the Forest Service's assessment of whether the new information warrants additional environmental review. We recommend that the KNF notify the public of the availability of the document and accept comments for consideration in the approvals of the modified plans for Phase II.

As noted in many places in the DSEIS and most specifically in section 1.6.6 (page 1-24), Financial Assurance is the cornerstone of controlling and mitigating environmental impacts from hard rock mining. Although the DSEIS describes the line items that would be included the bond calculations for Phases I and II for fully funded reclamation and water treatment bonds, the predicted bond amount(s) are not disclosed. We recommend that the FSEIS and ROD include the bond amount(s) for the Phase I of the proposed project. The bonding amounts for Phase II should be disclosed during the public process for approving the modified plan of operation for Phase II.

We note that there are a number of private drinking water wells located near the proposed tailings disposal site. The Clark Fork River, Miller Gulch and Rock Creek are also adjacent to the proposed tailings site. Although the water discharged to the infiltration basin in Phase I of the operation is to be treated in accordance with the MDEQ groundwater discharge permit, there are concerns about the

vulnerability of the private wells to contamination from the proposed infiltration site. Because of the proximity of private wells, it would be very difficult to quickly collect and treat poor quality groundwater migrating from the proposed tailings site.

The geological investigation of the tailings site identified a continuous gravel layer overlying bedrock which could convey groundwater quickly away from the tailings site. Several studies have been conducted such as a tracer study, to better understand the movement of groundwater from the tailings disposal site. The purpose of the tracer study was to determine if local drinking water wells and surface water could be affected by groundwater seepage from the tailings site from either water discharged during construction of the evaluation adit (Phase I) or seepage from the tailings during Phase II. Unfortunately, the results of the tracer study were inconclusive, as the groundwater did not move as anticipated in developing the tracer study. Even with the studies prepared for the DSEIS, there are still a number of unknowns about the geology and movement of groundwater from the proposed tailings disposal site. We recommend that the monitoring plans in Appendix K include additional information to assess the potential vulnerability of nearby streams and local wells to groundwater discharge. Additional information needs include identifying the well logs, zones of perforation, depth of the wells, flow rates, aquifer characteristics and whether water from the wells is being used for drinking water. We also recommend assessing whether there would be sufficient water storage during the Evaluation Phase should high inflows be encountered. For example, when crossing a new fault zone there may be a substantial inflow which may require costly treatment prior to discharge to meet the nitrate discharge standard.

One of primary control mechanisms to limit water pollution from the mine, mill and tailings disposal site during the operational and reclamation phases would be the MPDES discharge permits. The surface water discharge permits provide specific details of surface water quality impacts such as outfall locations, discharge limits, and application of water quality standards including anti-degradation requirements. We understand the State reissued the MPDES permit for discharges of mine drainage and process wastewater in December 2015. We recommend that the reissued permit and fact sheet describing the determination of the limits be included in the Final SEIS.

The models used to predict changes in groundwater flow are based on professional judgment and the limited information available prior to construction of the evaluation adit (Phase I). Using information that will be collected in Evaluation Phase, we recommend that the groundwater models be rerun and calibrated. A section should be added to Appendix K to more specifically outline the groundwater data that will be collected in the evaluation phase and describing how the data will be used to validate and update the groundwater models developed for the DSEIS.

Enclosed with this letter are our detailed comments regarding the issues identified above as well additional comments regarding subsidence, the stability of the tailings disposal facility and air quality.

Rating

Based on our review, the EPA is rating Alternative V, the Preferred Alternative, as “Environmental Concerns – Insufficient Information” (EC-2). The “EC” rating means that the EPA’s review has identified potential impacts that should be avoided in order to fully protect the environment, including potential impacts to water quality and quantity. The “2” rating means that the DSEIS does not contain sufficient information for the EPA to fully assess environmental impacts. A description of EPA’s rating system can be found at: <https://www.epa.gov/nepa/environmental-impact-statement-rating-system-criteria>.

We appreciate the opportunity to comment on this document and hope our suggestions for improving it will assist you with preparation of the Final EIS. We would be happy to meet to discuss these comments and our recommendations. If you have any questions or requests, please feel free to contact either me at 303-312-6704, or Dana Allen of my staff at 303-312-6870 or by email at allen.dana@epa.gov.

Sincerely,



Philip S. Strobel, Director
NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure: Detailed Comments

**EPA Region 8's Detailed Comments on the
Rock Creek Mine
Draft Supplemental Environmental Impact Statement
April 19, 2016**

1. Drinking Water. During operations and closure, the underdrain capture system at the base of the tailings storage facility is predicted in the DSEIS and 2014 Schafer technical report -- *Rock Creek Paste Tailings Seepage Model* to capture from 10% to 90% of the seepage and the remainder of the seepage will discharge to groundwater. Based on the preliminary geochemistry information and the modeling of seepage water quality, the technical report predicted that seepage water quality would remain within drinking water standards on average. Due to the difficulty in accurately predicting seepage water quality and groundwater flow paths with the limited data, it will be important to develop and require a groundwater monitoring system capable of quickly detecting deteriorating groundwater quality and initiating corrective actions. The DSEIS proposes converting the groundwater monitoring wells to pump back wells should groundwater quality exceed 50% of the MCLs (drinking water standards). One of the more likely groundwater quality issues would be the potential for nitrate levels to worsen quickly due to a precipitation event and for poor quality groundwater to migrate from the tailings site following a preferential pathways such as a gravel layer to nearby drinking water wells or one of the surface water surrounding the tailings disposal site.

Because the expected pathways for groundwater movement have not been fully determined, and the extensive gravel layer could enable groundwater to move quickly to surface water with minimal mixing, we recommend expanding the information in Appendix K to:

- Reassess the seepage water quality predictions in the Schafer report using the information collected during Phase I
- Describe the information that would be collected during Phase I to identify groundwater movement at the tailings disposal site and prevent groundwater movement through preferential pathways to drinking water wells and surface waters.

Also most of the current monitoring wells in the vicinity of the tailing storage facility lie within the tailings footprint (Figure 3-12) and will be covered with tailings during the operation. Therefore, in Phase I we recommend that new monitoring wells be installed for the dual purpose of monitoring and pumpback. The wells should have sufficient design capacity to be used immediately as a pumpback system for groundwater seepage if seepage water quality exceeds the action trigger levels.

This monitoring system would also be very useful in Phase I to track discharges into the infiltration basin and groundwater flows to private wells and to surface water bodies. If it is determined that groundwater discharges to surface water from the basin, an MPDES permit may be necessary. Also, as part of gathering information on local wells, we recommend that procedures be developed to quickly notify downstream and downgradient water users should monitoring detect any water quality problems.

2. Tailings impoundment. The preferred Alternative V states that a “modified design and use of paste tailings along with an advisory group review of the design would further reduce the risk of paste tailings facility failure.” We agree and emphasize that a major purpose of the two phase approach is to generate the needed information on the geochemistry and hydrology to better design the Rock Creek Mine facilities. The proximity of homes, roads and the Clark Fork River are cause for additional diligence. Although paste tailings are more stable than previous methods there is still the possibility of failure exacerbated by the clay foundation, springs and a former landfill located within the tailings facility footprint. Many recent international incidences prompted the organization of an international, collaborative review of standards, critical control strategies, governance and emergency preparedness related to tailings management lead by the International Council on Mining Metals. We recommend that Appendix K be revised to more formally outline the studies and technical advisory process that will be followed to design the tailings disposal site for long term stability.

3. Subsidence. Land subsidence is a serious concern not only from a human safety standpoint but also because the proposed underground mine underlies wilderness lakes and endangered species habitat. The Troy Mine that has been used as an analogous site throughout the NEPA review has experienced several significant subsidence events contributing to the eventual mine closure. We recommend that Appendix K be revised to more formally outline the studies and technical advisory process that will be followed to design the mine to minimize the risk of subsidence adversely affecting the wilderness and aquatic values of the Cabinet Wilderness Area.

4. Groundwater. Much of the environmental impact analyses presented in the DSEIS are highly uncertain due to limited data. The magnitude of those environmental impacts also have the potential to be quite large depending on actual site and geologic conditions and on the success of mitigation measures. For example, groundwater drawdown has been estimated using several hydrogeologic models based on very limited actual data. The model outputs are to be reevaluated and calibrated using information collected during the evaluation Phase I of the project. The conceptual models identify the potential for significant impacts such as a 500 foot drawdown in the groundwater table (Figures 4-2, 4-3). As noted in the DSEIS, this level of drawdown would be likely to adversely affect groundwater-dependent surface features within and outside of the Cabinet Mountains Wilderness such as springs, seeps, and stream baseflow. To reduce the uncertainty regarding the project’s impacts, substantial information on groundwater and geology will be collected during the Phase I – Evaluation. These actions include additional data collection, decisions regarding data use, action thresholds, identification of baseline and benchmark monitoring sites, and a groundwater dependent ecosystem (GDE) inventory. The EPA supports the collection of these critical background data that are needed to refine the numerical groundwater model input. We recommend that a more extensive area and duration of groundwater monitoring be developed to more fully understand the seasonality, yearly variation of flows and connection of groundwater to precipitation. For example we recommend that monitoring of springs be initiated for the entire area during the Phase I to provide a baseline to detect future impacts from mining.

Specifically, additional field data collected during the Phase I is needed to more fully assess the relationships between rainfall events and seeps, springs, groundwater dependent ecosystems and

surface water bodies. To establish an estimate of baseline conditions for the water resources affected by this proposed alternative, bimonthly field sampling could be conducted over a period of 3 to 5 years. Sampling could include groundwater elevations for available wells, discharge measurements for springs, and surface water discharge measurements along the watershed. To better understand whether spring flows at various locations are affected by precipitation, flow rates should be measured before and after precipitation over the course of a year. Flows and discharges could then be compared to precipitation levels to estimate how dependent these springs are on groundwater by observing how affected they are by precipitation.

5. Air Quality. The preferred alternative has incorporated many design features and mitigation measures that minimize mine site air emissions as well as the Montana Department of Environmental Quality (MDEQ) air quality permit and fugitive dust plan. Minimizing impacts to air quality is particularly important for the Rock Creek project as the mine and mill will be located immediately adjacent to the Cabinet Mountains Wilderness, which is a Class I Area. These areas are granted special air quality protections under the federal Clean Air Act to maintain pristine air quality.

We recommend all the air quality protection components of the preferred alternative and the mitigation measures be addressed in Section 4.4.8 “Effectiveness of Agencies’ Proposed Mitigation” (page 4-18). In the DSEIS, this section only addresses the State’s air quality permit. The section should be revised to include air protection measures that are not covered by the State’s permit or are only partially covered by the permit. It is important to demonstrate that these commitments will be fully implemented to minimize emissions as many of the design features/mitigation measures go beyond the requirements of the MDEQ air permit. Listed below are many of the mitigation measures that will be important in keeping air emissions at a minimum.

- Use of electrical power line versus on-site power generation
- Electrification of underground mine equipment, including electrified heaters
- Engines that meet Tier 4 emission standards where engines are present;
- Scrubbers, and baghouse filtration used for crushing and screening operations; (included in MDEQ air quality permit)
- Optimization of blasting operations to promote complete detonation/deflagration;
- Rigorous dust mitigation (including a MDEQ fugitive dust plan);
- Enclosing exposed conveyors;
- Transporting tailings, wastewater and other material streams by pipe to avoid trucking; and
- Car-pooling to the mill site.

The discussion should mention if implementation of the measures would be required such as through the Forest Service’s Plan of Operation or the State’s mining permit. We also recommend that the ROD document these measures as requirements.