

DEPARTMENT OF ENVIRONMENTAL QUALITY
PERMITTING AND COMPLIANCE DIVISION
ENVIRONMENTAL MANAGEMENT BUREAU



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STATE OF MONTANA

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December 18, 1998

Dear Reader:

Enclosed for your review is an Environmental Assessment (EA) prepared by the Department of Environmental Quality - Hard Rock Program. The EA evaluates a proposal by the Stillwater Mining Company to construct water management facilities at the East Boulder Mine.

Public comment on this EA will be received by the Department until 5:00 p.m. January 18, 1999. Comments should be about the adequacy of the EA in assessing issues, new information not considered that may influence the analysis, and clarification. Comments should be specific. The department will use these comments, agency responses, the EA, and the application materials to make a final decision on the application. The decision may be to approve the proposal, deny the proposal, or approve an alternative.

RECEIVED

Written comments should be directed to:

DEC 22 1998

Bob Winegar
Department of Environmental Quality - Hard Rock Program
PO Box 200901
Helena, MT 59620-0901

**ENVIRONMENTAL
QUALITY COUNCIL**

Thank you for your time and consideration. Please call the DEQ (444-4953) if you have any questions or desire to give verbal comments.

Sincerely,

Bob Winegar

Robert C. Winegar
Hard Rock Program Supervisor
Department of Environmental Quality

Enclosure
RW:JTG/smb

CHECKLIST ENVIRONMENTAL ASSESSMENT

COMPANY NAME: Still water Mining Co.

Project: East Boulder Mine

LOCATION: 30 miles south of Big Timber on Forest Service road 205

County: Sweetwater

PROPERTY OWNERSHIP: Federal State Private

TYPE AND PURPOSE OF ACTION: Water Management Plan

Proposed Plan:

The Still water Mining Company (SMC) has a permit to construct and operate a mine in the East Boulder River Valley, 30 miles south of Big Timber, Montana. Environmental impacts from the mine have been analyzed in the Final EIS (1992) for the project. The operating permit for the project required that treatment and disposal plans for water and sewage be submitted to the agencies for approval prior to construction. The permit also allowed an expansion of up to 20 acres to facilitate the construction and operation of water treatment systems. In order to fully implement all aspects of the plan, it is necessary to expand the permit area by 145 acres instead of 20 acres. This EA is required because the permit boundary is being increased by 125 acres. This is more than the 10 acres allowed under 82-4-342 (g) MCA. Only water management surface facilities and associated disturbances are covered under this EA. Discharge load limits and impacts to water quality will be analyzed and permitted through the pending MPDES permit renewal.

SMC anticipates that a discharge of groundwater would result from underground mining operations at the proposed East Boulder Mine site. This water would be treated to remove most suspended particulates and some of the nitrogen before being discharged to infiltration ponds, delivered to a Land Application & Disposal (LAD) system or to the East Boulder River under an approved MPDES permit. Based upon experience gained from twelve years of operation at SMC's Nye mine site, it is anticipated that discharge water would result in nonsignificant changes in groundwater and surface water quality after mixing.

The East Boulder River, in the vicinity of the proposed mine, is a high quality stream having a B-1 classification, and is characterized by low concentrations of background metals and nutrients. Groundwater in the area is present in unconsolidated glacial/alluvial deposits and fractured bedrock and is of good quality. Due to hydrological and geological similarities, the quality of water discharged from the Still water Mine at Nye was utilized as the best estimate of quality of water that would be discharged from the East Boulder operation. A comprehensive discussion of underground water sources is contained in Chapter 2 of the Final EIS (1992) for the East Boulder Project. Surface water and groundwater monitoring sites have been established and continue to be sampled as part of SMC's water quality monitoring program.

The source of adit groundwater at the East Boulder Project would be from groundwater intercepted in underground workings. This water enters the underground mine workings through joints, fractures and faults in the rock. The larger groundwater inflows can be controlled by grouting the flow pathways in the rock. Groundwater that exits the mine would be sent to a clarifier for removal of sediment unless flows exceed the capacity of the clarifier. In this case the excess adit water would report to infiltration/settling ponds prior to treatment. Decant water from the clarifier would be returned to the underground workings, and any excess treated adit water would be transported to water disposal facilities for discharge.

SMC would follow a water management plan designed to minimize water quality impacts of groundwater discharged from underground workings. A very similar plan in use at SMC's Nye operation has been effective in reducing nitrogen loads through Best Management Practices (BMP's) and by treatment of discharge water through clarification, land application disposal techniques, and biological denitrification (referred to as biotreatment). Implementation of this plan has enabled the Still water Mine to meet its production targets while maintaining concentrations and loads of nitrogen and other parameters within permit limits. Major components of a water management plan include source reduction in the mine and good water handling practices in underground mine workings, such as grouting of groundwater inflow and selective implementation of various water treatment and disposal methods.

The water management plan for the East Boulder Project focuses primarily on removal of particulate matter (sediment) and nitrogen. Sediment would be controlled using clarifiers, bag or sand filters, followed by infiltration ponds. This combination has proven very effective in removing sediment from mine adit water. Nitrogen released from underground blasting would be minimized through the implementation of source-control procedures and employee training, which emphasizes the care handling of explosives in order to control spillage and waste. Nitrogen loading in discharge water would be reduced through treatment processes such as biological denitrification and LAD.

Whenever possible and practical, uncontaminated natural groundwater would be intercepted and piped from the underground workings directly to the East Boulder River. A discharge to the river of clarified and treated adit water would occur only as a last resort after all other discharge

options (LAD, percolation and storage) have been utilized to their design and operational capacity.

The production phase of the SMC East Boulder Project would include facilities at the mine site that would require provisions for sewage disposal. The facilities are to serve an estimated daily population of 600 persons. The current per capita total wastewater production at SMC's mine near Nye is approximately 17 to 20 gallons per capita per day (gpcd). A design wastewater flow of 30 gpcd would be used for planning and design at the East Boulder mine to be conservative and allow for peak conditions. The resulting daily design flow is 18,000 gallons per day. The most practical type of sewage treatment and disposal system for a small, isolated development of this type with this magnitude of flow is a septic tank and subsurface drain field.

This Water Management Plan has been developed to meet the requirements of the Montana Water Quality Act and to comply with the Montana Nondegradation Statute. It would also provide the operational flexibility and water treatment necessary to meet all permit requirements while protecting water quality within the East Boulder Valley.

Disturbances associated with water management facilities would be reclaimed in accordance with procedures contained in the approved reclamation plan for the project.

N = Not present or No Impact will occur.

Y = Impacts may occur (explain under Potential Impacts).

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE: Are soils present which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?	[N]
2. WATER QUALITY, QUANTITY AND DISTRIBUTION: Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?	[Y] Concentrations of nitrates in LAD water would be below nondegradation limits and would not cause exceedences of standards in groundwater or surface water. All other discharges to surface or groundwater would be subject to discharge limits imposed by the MPDES permit.
3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?	[N]
4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?	[N]
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?	[N]
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES: Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?	[N]

IMPACTS ON THE PHYSICAL ENVIRONMENT

7. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?	[N]
8. AESTHETICS: Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?	[N]
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY: Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?	[N]
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	[N]

IMPACTS ON THE HUMAN POPULATION

11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?	[N]
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?	[N]
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.	[N]
14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?	[N]
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	[N]
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[N]
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[N]
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N]
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N]

IMPACTS ON THE HUMAN POPULATION

20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]
21. PRIVATE PROPERTY IMPACTS: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required.	[N]
22. PRIVATE PROPERTY IMPACTS: Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required.	[N]
23. PRIVATE PROPERTY IMPACTS: Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.	[N]
24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N]

25. **Alternatives Considered:**

No Action: SMC's water management plan would not be approved. The water management plan was required by the operating permit. The no action alternative would not fulfill this requirement.

Approve the company's proposed plan. The plan as proposed fulfills the requirements of stipulation #1 of operating permit #00149.

Approve the company's proposed plan with agency modifications.

26. **Public Involvement:** A four week public comment period is planned upon release of this EA.

27. **Other Governmental Agencies with Jurisdiction:** U.S. Forest Service, Gallatin National Forest

28. **Magnitude and Significance of Potential Impacts:** Impacts would be minor and would not cause degradation of water quality.

29. **Cumulative Effects:** Discharges from the mine may result in a slight increase in nutrient load to the watershed during mine life but would stop with cessation of mining. This plan minimizes the nutrient load from the mine. The pending MPDES discharge permit renewal will analyze and permit actual discharge load limits.

Recommendation for Further Environmental Analysis: EIS More Detailed EA No Further Analysis

EA Checklist Prepared By: DEQ, Environmental Management Bureau

Approved By:

Robert C. Winegar
Signature

December 18, 1998
Date