

DEPARTMENT OF ENVIRONMENTAL QUALITY
Environmental Assessment

Water Protection Bureau

Name of Project: O.T. Mining – Basin Mill

Type of Project: Placement of hard rock mill tailings into on-site impoundments. The existing Montana Ground Water Pollution Control System (MGWPCS) permit has established limitations, monitoring, and mitigation requirements.

Location of Project: Latitude: 46.27106°; Longitude: -112.25533
Section 17, Township 06 North, Range 05 West

Nearest City/Town: Basin

County: Jefferson County

Description of Project: This Environmental Assessment (EA) is for the renewal of an existing MGWPCS permit (MTX000014) for the Basin Mill (facility). The permit reauthorizes The O.T. Mining Corporation (permittee) to dispose of hard rock tailings slurry into a single existing on-site impoundment.

The first known water permit issued by the State of Montana for this facility was in November of 1983. The permittee does not hold a license or approval under the Montana Metal Mine Reclamation Act because it was in existence prior to promulgation of the law. The MGWPCS permit may currently be the only State of Montana regulatory program that actively requires on-site monitoring.

Basin Mill is located in the Basin mining district which is primarily underlain by quartz monzonite of the Boulder batholith. The monzonite formations are cut by dikes of dacite and rhyolite. The district contains both placer and lode ore deposits, the lode deposits being of late Cretaceous and Tertiary ages. The older lodes are valued for their silver, lead, and zinc content, while the younger lodes are valued for their gold and silver content (Sahinen, 1935).

Nearby gold deposits were reported to have been located as early as the summer of 1862 with extensive mining and milling occurring in the area into the late 1950s. The adjacent town of Basin reached a population of 1,500 persons in 1905.

The present day O.T. Mill was constructed in 1950. The compound includes a mill, tailings impoundment, and support structures (office and garage). The entire complex encompasses approximately 19 acres. The mill site is bounded by the town of Basin (to the west) and Interstate 15 (to the south). The mill has not been in operation since 1989.

The area is located within the Basin Mining Area Superfund Site, which consists of two operable units. The mill is located in the Town of Basin Operable Unit (OU) number 1. The Basin Mill was not one of the sites remediated in the OU1 efforts (EPA, 2001).

Basin Mill is used for ore mined from small hard rock mining operations. The mill utilizes crushing, grinding, and froth floatation to produce a concentrate from ore. The process results in the generation of rock tailings. This technique, first used in Montana in 1911, is commonly used for the recovery and upgrading of sulfide ores. The mill has a capacity of approximately 150 tons a day and can target trace metals such as lead, silver, copper, and gold. The mill is placed in operational shut-down when ore is unavailable. Cyanide has never been approved for milling use at this site.

The tailings impoundment is located adjacent to the mill building. It is underlain by colluvium, trending in depth from grus (weathered intrusive rock) to intrusive rock. The depth to top contact of the shallow water bearing unit below the tailings impoundment is approximately 55 to 62 feet in depth.

The tailings impoundment is located on a bench approximately 50 feet above the Boulder River Valley. The river is located approximately 1,050 feet to the southeast. The area in between the tailings impoundment and the Boulder River was historically used to dispose of tailings from the Katie/Jib Mill. It was also the location of the historic Atwater Mill which reworked these valley bottom tailings. The Town of Basin's domestic wastewater treatment system is also located in this area.

The 1994 EA completed by the predecessor of DEQ, the Montana Department of Health and Environmental Sciences, is used as the basis of this EA document and the associated MGWPCS permit. This EA explored multiple proposed actions (including no action). The final decision established the following stipulations:

- Ground water monitoring;
- Ground water compliance limitations and contingency measures;
- Prohibition of cyanide materials and treated tailings;
- Facility Operating Plan;
- Reclamation Plan;
- Reclamation Monitoring Plan;
- Best management practices to control fugitive dust emissions; and,
- Best management practices to control sedimentation and erosion.

DEQ recognized that the local environment was already heavily impacted by anthropogenic activities dating back to the 1800s; and that with no action (no stipulations) severe environmental impacts may continue. The above listed stipulations can be found within the MGWPCS permit. The 1994 administrative record has been entered as a reference into the current administrative record.

The scope of this EA addresses the operation and placement of the tailings slurry distribution system. The magnitude and significance of potential impacts are summarized below (bullet #26). Additional information and interpretive figures are provided within the MGWPCS permit fact sheet document.

Agency Action and Applicable Regulations: The proposed action is to reissue the existing individual MGWPCS permit that contains limitations, monitoring, mitigation, contingency measures, monitoring, and reclamation requirements. MGWPCS may currently be the only State of Montana regulatory program that requires these measures. The permit is issued under the authority of the Montana Water Quality Act (MCA 75-5-101 *et seq.*), the Montana Ground Water Pollution Control System (ARM 17.30.1001-1045), and the Montana Numeric Water Quality Standards in the Department Circular DEQ-7.

Summary of Issues: The purpose of this action is to require the permittee to implement, monitor, and manage practices to prevent pollution of state waters. The respective MGWPCS permit conditions include the following:

- Prohibition of cyanide product and treated tailings.
- Regulating the placement of hard rock tailings;
- Requiring best management practice plans to identify and mitigate potential impacts;
- Monitoring and reporting ground water conditions;
- Ground water compliance limitations;
- Contingency measures; and,
- Reclamation requirements.

Affected Environment & Impacts of the Proposed Project:

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

N = Not Present or No Impact will likely occur.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES
<p>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?</p>	<p>[Y] The constructed embankment of the tailings impoundment, ore pad, and other constructed tiers has a slope that may be steeper than that of the original landscape. This may increase the chances of erosion or instability.</p> <p>The MGWPCS permit requires reclamation of the tailings impoundment (first established in the 1995 EA). Ore, wasterock and/or tailings were observed to be found throughout the facility area (DEQ, 2017). These areas will also need to be addressed when reclamation efforts are initiated (see Fact Sheet). Until reclamation takes place, measures are required to mitigate erosion.</p> <p>Noxious weed infestations were also observed throughout the facility (DEQ, 2017). Weed control measures will need to take place as a best management practice for erosion control, and in future reclamation efforts.</p>
<p>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?</p>	<p>[Y] Ground water monitoring, limitations, contingency, mitigation, and reclamation measures will be reestablished within the MGWPCS permit. The permit also requires the development of best management practices to prevent the pollution of state waters. The permit requires on-going reporting of all on-site monitoring activities.</p> <p>The facility is located within a historic mining district in which mining and milling activities took place from the 1860s into the late 1950s. Over time, activities may have resulted in adverse impacts to the water quality and may have limited the beneficial uses of statewaters.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT

	<p>A recent onsite visit by DEQ (DEQ, 2017) documented instability within the tailings impoundment berm (DEQ, 2017). In order to prevent unauthorized discharge or placement of tails slurry, DEQ is requiring the permittee to submit a report documenting the structural integrity of the impoundment prior to commencement of activities. Please see the Fact Sheet for additional information.</p> <p>The MGWPCS permit does not authorize discharge of storm water to state surface water. Operational activities may impact water quality by contributing discharges of sediment to surface waters. The permittee may therefore be required to obtain permit coverage under a Montana Pollutant Discharge Elimination System (MPDES) General Permit for Storm Water Discharges Associated with Construction Activity. The permittee may be required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which includes best management practices to protect nearby surface waters. Additional information can be found at the following website: http://deq.mt.gov/Water/WPB/mpdes/stormwater</p>
<p>3. AIR QUALITY: Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?</p>	<p>[Y] The permit requires the development of standard operating procedures to monitor and mitigate fugitive dust emissions (Appendix V.B., Fact Sheet). The permittee is encouraged to consult with the Montana DEQ Air Resources Management Bureau: http://deq.mt.gov/Air</p>
<p>4. VEGETATION COVER, QUANTITY AND QUALITY: Will vegetative communities be significantly impacted? Are any rare plants or cover types present?</p>	<p>[N] No significant impacts have been identified. The facility is located within a historic mining district in which mining and milling activities took place from the 1860s into the late 1950s. Over time, activities may have resulted in adverse impacts to the native flora. Further impacts are not anticipated.</p> <p>Based on a search of the Natural Heritage Database, there are no species listed as either S1, S2, LE, or LT in the general vicinity of the facility. http://fieldguide.mt.gov/statusCodes.aspx#msrc:rank</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT

<p>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS: Is there substantial use of the area by important wildlife, birds or fish?</p>	<p>[N] No significant impacts have been identified. The facility is located within a historic mining district in which mining and milling activities took place from the 1860s into the late 1950s. Over time, activities may have resulted in adverse impacts to the native fauna. Further impacts are not anticipated.</p> <p>Based on a search of the Natural Heritage Database, there are no species listed as either S1, S2, LE, or LT (http://fieldguide.mt.gov/statusCodes.aspx#msrc:rank) in the general vicinity of the facility.</p>
<p>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?</p>	<p>[N] See #4 and #5 above.</p> <p>The facility is located within a historic mining district in which mining and milling activities took place from the 1860s into the late 1950s. Over time, activities may have impacted environmental resources.</p> <p>Site and habitat inventories for the applicable species were recommended in consultation with the Montana Natural Heritage Program. The applicant is encouraged to contact and consult with this program or other Natural Resource Information Programs available at the Montana State Library: http://nris.msl.mt.gov/.</p>
<p>7. SAGE GROUSE EXECUTIVE ORDER: Is the project proposed in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: https://sagegrouse.mt.gov/</p>	<p>[N] The project site is not listed as being located within sage grouse habitat. DEQ referred to the Habitat and Occurrence mapping program at https://sagegrouse.mt.gov/projects/. If there are questions about Sage Grouse at this site, the applicant must contact and consult with the Sage Grouse Habitat Conservation Program at: https://sagegrouse.mt.gov/.</p>
<p>8. HISTORICAL AND ARCHAEOLOGICAL SITES: Are any historical, archaeological or paleontological resources present?</p>	<p>[Y] The mining district has seen anthropogenic activities since the 1860s and therefore there may be many historical resources present.</p> <p>The historic mining and milling activity may have had adverse impacts on any archaeological materials present prior to the 1860s.</p>

IMPACTS ON THE PHYSICAL ENVIRONMENT	
	A general recommendation by the Montana State Historic Preservation Office (MSHPO) states that in the event that cultural materials are inadvertently discovered, the permittee should contact the MSHPO office for investigation.
9. 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?	[Y] The tailings impoundment, mill building, and supporting structures may be visible from the nearby Interstate 15 corridor.
10. 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? Will new or upgraded power line or other energy source be needed?	[N] No significant impacts have been identified. The mill was built in 1950 and has not been in operation since 1989.
11. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES: Are there other activities nearby that will affect the project?	[N] No significant impacts have been identified.

IMPACTS ON THE HUMAN ENVIRONMENT

<p>12. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?</p>	<p>[Y] The facility is located within a historic mining district in which mining and milling activities took place from the 1860s into the late 1950s. Over time, activities may have resulted in adverse environmental impacts.</p> <p>A recent onsite visit by DEQ (DEQ, 2017) documented instability within the tailings impoundment berm (inside embankment). In order to prevent unauthorized discharge or placement of tails slurry DEQ is requiring the permittee to submit a report documenting the structural integrity of the impoundment prior to commencement of activities. Please see the Fact Sheet for additional information.</p> <p>In addition, the DEQ site visit also observed the following potential safety risks:</p> <ul style="list-style-type: none"> • Mill buildings with potential structural damage, • Sagging and downed power lines, and, • Steep embankments. <p>DEQ did observe a four-strand barbed wire fence with securable gates along the property perimeter that may mitigate unapproved access.</p>
<p>13. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION: Will the project add to or alter these activities?</p>	<p>[N] No significant impacts have been identified.</p>
<p>14. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[N] No significant impacts have been identified.</p>
<p>15. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?</p>	<p>[N] No significant impacts have been identified.</p>
<p>16. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?</p>	<p>[N] No significant impacts have been identified.</p>

IMPACTS ON THE HUMAN ENVIRONMENT	
17. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[N] No significant impacts have been identified.
18. 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] The mill and the surrounding areas are largely privately owned (old historic mining claims). There is a Jefferson County cemetery located immediately to the Northeast of the mill. The cemetery was accessible during a recent DEQ site visit (DEQ, 2017).
19. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N]
20. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N]
21. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]
22. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N]
23(a). 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]
23(b). PRIVATE PROPERTY IMPACTS: Is the agency proposing to deny the application or condition the approval in a way that restricts the use of the regulated person's private property? If not, no further analysis is required.	[N]
23(c). PRIVATE PROPERTY IMPACTS: If the answer to 23(b) is affirmative, 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. The agency must disclose the potential costs of identified restrictions.	[N] No significant impacts were identified in 23(b).

24. **Description of and Impacts of other Alternatives Considered:**

A. No Action: Under the “No Action” alternative, the Department would not issue this ground water discharge permit. “No Action” may lead to the creation of non-permitted wastewater systems. This may result in a net negative impact to ground water quality as the permit would prevent pollution and degradation of state waters.

B. Approval with Modification: The Department has not identified any necessary modifications to grant approval.

25. **Cumulative Effects:**

The permit prohibits pollution of state waters. The permit includes ground water monitoring, compliance limitations, contingency measures, and standard conditions. The Department actively reviews self-monitoring records in order to monitor any potential impacts to the beneficial uses of statewaters.

The permit also includes prohibitions, operational monitoring, erosion monitoring and mitigation, and reclamation requirements. The permit conditions require the permittee to use best management practices to prevent unauthorized discharges and pollution of state waters. Please refer to the MGWPCS fact sheet document for additional information.

26. **Summary of Magnitude and Significance of Potential Impacts:**

Impacts were assessed with the assumption that the facility will comply with the terms and conditions of the permit. Violations of the permit could lead to significant adverse impacts to state waters. Violations of the permit are not an effect of the agency action since the permit itself forbids such activities. However, the Department has taken steps to ensure that violations do not occur. The Department provides assistance to applicants in understanding and implementing the requirements of the permit. The Department also conducts periodic inspections of permitted facilities, and identifies potential problems with design or management practices. If violations of the permit do occur, the Department will take appropriate action under the water quality act (75-5-617, MCA). Enforcement sanctions for violations of the permit include injunctions, civil and administrative penalties, and cleanup orders.

27. **Preferred Action Alternative and Rationale:** The preferred action is to reissue the existing individual MGWPCS discharge permit. This action is preferred since the permit provides a regulatory mechanism for protecting statewaters by applying limitations, monitoring, mitigation plans, remediation conditions, and active reporting. The facility was in existence prior to promulgation of the Montana Metal Mine Reclamation Act, therefore the MGWPCS permit may be the only active monitoring and reporting tool available by the State of Montana.

Recommendation for Further Environmental Analysis:

EIS More Detailed EA No Further Analysis

Rationale for Recommendation: The existing facility is located in an area that has seen adverse impacts to the environment since the 1800s. The facility first established in 1950, is not currently proposing major modifications to their current facility or industrial process. An EIS is therefore not required under the Montana Environmental Policy Act because the project lacks significant adverse effects to the human and physical environment.

28. **Public Involvement:** Legal notice information for water quality discharge permits are listed at the following website: <http://deq.mt.gov/Public/notices/wqnotices>. Public comments on this proposal are invited any time prior to close of business on **September 27, 2017**. Comments may be directed to:

DEQWPBPublicComments@mt.gov

or at:

Water Protection Bureau
PO Box 200901
Helena, MT 59620

All comments received or postmarked prior to the close of the public comment period will be considered in the formulation of the final permit. DEQ will respond to all substantive comments pertinent to this permitting action and may issue a final decision within thirty days of the close of the public comment period.

All persons, including the applicant, who believe any condition of the draft permit is inappropriate, or that DEQ's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, shall raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing). All public comments received for this draft permit will be included in the administrative record and will be available for public viewing during normal business hours.

Copies of the public notice were mailed to the applicant, state and federal agencies and interested persons who have expressed interest in being notified of permit actions. A copy of the distribution list is available in the administrative record for this draft permit. Electronic copies of the public notice, draft permit, fact sheet, and draft environmental assessment are available at the following website:
<http://deq.mt.gov/Public/notices/wqnotices>.

Any person interested in being placed on the mailing list for information regarding this permit may contact the DEQ Water Protection Bureau at (406) 444-3080 or email DEQWPBPublicComments@mt.gov. All inquiries will need to reference the permit number (MTX000014), and include the following information: name, address, and phone number.

During the public comment period provided by the notice, DEQ will accept requests for a public hearing. A request for a public hearing must be in writing and must state the nature of the issue proposed to be raised in the hearing.

29. **Persons and/or Agencies Consulted or Referenced in the Preparation of this Analysis:**

Mining History Journal
Montana Natural Heritage Program
Montana Bureau of Mines and Geology, Ground Water Information Center
Natural Resource Information System, Montana State Library
U.S. Geological Survey, Publication Warehouse

Bunyak, Dawn. 2000. To Float or Sink: A Brief History of Flotation Milling. Mining History Journal.

DEQ. 2017. July 26, 2017 Site Visit. Basin Mill
DEQ. 1994. Environmental Assessment. Basin Mill.

Sahinen, Uno M. 1935. Mining Districts of Montana. Montana School of Mines, Butte, Montana.

U.S. Environmental Protection Agency and Montana Department of Environmental Quality, Record of Decision for the Basin Mining Area – Operable Unit 1, Town of Basin Project, March 2001.

Wolle, Muriel Sibell. 1963. Montana Pay Dirt. Sage Books, Athens, Ohio.

Additional references are further detailed within the MGWPCS fact sheet document.

EA Checklist Prepared By:

Chris Boe

August 25, 2017

Approved By:

Jon Kenning, Chief
Water Protection Bureau

DRAFT

Signature

Date