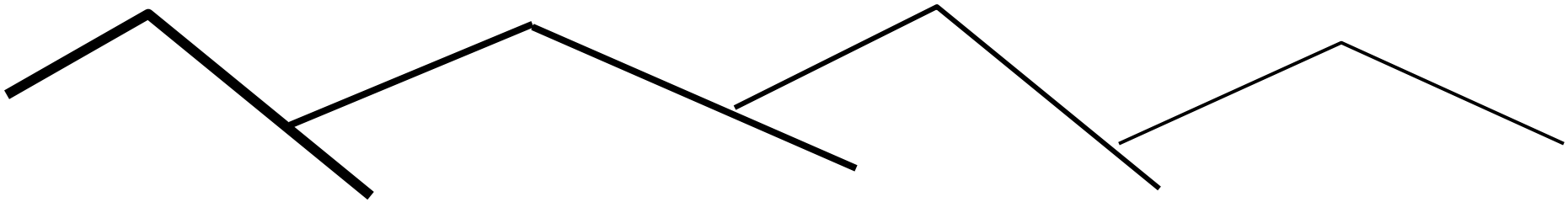
Metal Mine Bonding in Montana



Status and Policy Considerations

A Staff Report to the
Montana Environmental Quality Council
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Introduction

The Environmental Quality Council (EQC) is statutorily required to evaluate state environmental programs to determine whether or not they are contributing to the achievement of Montana's environmental policy and to make recommendations to the Governor and the Legislature. The EQC has requested a status report on metal mine bonding, given past concerns about the potential state liability for mine reclamation, subsequent legislative action, and indications of continuing problems. This report will focus on the status of metal mine operating permits and reclamation bonds during the time period from approximately 1997 to the present.

Zortman/Landusky Mine Reclamation – DEQ, Wayne Jepson Photo

The premise of metal mine reclamation bonding is that the mine operator is responsible for reclaiming the mine disturbance once mining is completed or if the mine is abandoned. To ensure that the approved reclamation plan is implemented, the state requires the mine operator to provide funds or financial guarantees sufficient to reclaim the mine in the event that the mine operator is unable or unwilling to do so. The purpose of the policy is to ensure that the site is reclaimed in accordance with the approved reclamation plan and that the state is left with no environmental or financial liabilities.

During the 2003-04 interim, the EQC heard testimony about the state's efforts to obtain adequate reclamation bonding for mines that are currently operating and the difficulty that it has in obtaining increased reclamation bonding for mines that are inactive. A panel presentation on the process of calculating, negotiating, and obtaining bonds for metal mine reclamation was also provided to the EQC.[1]

The state policies that require the reclamation of hard-rock or metal mines have been the subject of several reviews since 1997 because of the discovery of significant shortages in mine reclamation bonding following the 1998 bankruptcy of the Pegasus Gold Corporation (Pegasus), which once operated six mines in the state. Since then, there have been at least two other Legislative Branch evaluations of the adequacy of metal mine bonding in Montana.

Previous Legislative Evaluations

Legislative Audit Division - December 1997

As a result of the then-rumored Pegasus bankruptcy, the Legislative Audit Division (LAD) was asked to examine the overall compliance of the Montana Department of Environmental Quality (DEQ) metal mine reclamation bonding procedures and to review the methodology for determining hard-rock mine bond amounts. [2] The report described the methodology used by the agency in calculating bonds and the factors that go into the calculations by statute, rule, and practice. The report concluded that state metal mine bonding requirements did not include a requirement to bond for interim site management and maintenance costs in the event that a site was abandoned and the bond was not readily negotiable. A 1999 amendment (HB 183) to the metal mine reclamation laws, Title 82, chapter 4, part 3, MCA, added the authority for the state to include these potential costs in its bond calculations. The LAD report and a December 1998 performance audit [3] found that the internal management of and responsibility for reclamation bonds could be improved by separating the technical review of reclamation proposals from the financial determinations for bond management. The DEQ did not agree. Focusing on the six Pegasus mines in Montana, the LAD concluded that the calculations for the reclamation bond amounts were consistent with DEQ methodology at the time.

Legislative Finance Committee - February 2000

Prompted by legislative and public concern over mine reclamation costs and liabilities following the Pegasus bankruptcy, the Legislative Finance Committee (LFC) conducted an analysis of the adequacy of metal mine reclamation performance bonds.[4] The report described the bonding process as provided for in statute and as implemented by the DEQ. It determined that the amount of performance bonds on file at the agency was at least $24.6 million less than the estimated mine reclamation costs that the agency itself had identified in its file calculations. The report made several recommendations for policy changes designed to improve the bonding process (Appendix A). Several of these recommendations were incorporated into what became HB 69 that was enacted in 2001 following considerable amendment.

Applicability

This report will provide a brief review of metal mine bonding policies and their implementation by the DEQ, Environmental Management Bureau (EMB). The EMB administers Title 82, chapter 4, part 3, MCA, commonly known as the Metal Mine Reclamation Act (MMRA), which provides the state policy for the regulation of exploration, mining, and

reclamation of ore, rock, or mineral substances except oil, gas, bentonite, clay, coal, sand, gravel, peat, soil materials, or uranium. The MMRA describes and regulates what are considered to be "hard-rock" mines and mills for minerals, such as base metals, talc, limestone, phosphate, travertine, gems, decorative rock, and other quarries. Coal mines and open-cut sand, gravel, and soil material operations are permitted, regulated, and bonded under different laws by other organizational units within the DEQ.

The type and number of permitted mine facilities currently regulated by the EMB under the MMRA, excluding those facilities exempt through the small-miner exclusion statement, are listed in **Table 1**. Although there have been instances in which hard-rock or placer mines that fall within the small-miner exclusion statement exemption to the MMRA have created costly environmental and reclamation problems, they will not be included in this review. State policy minimally regulates these more than 500 operations, many of which are inactive. For example, the MMRA allows bonding only for small-miner placer or dredge operations up to a maximum of $10,000 an operation and requires bonding only for small hard-rock mines that use cyanide, mercury, or other leaching or amalgamation agents. Additionally, this review will not focus on the relatively benign travertine, decorative rock, talc, limestone, or other "rock" quarries that, although occasionally large in terms of land disturbance, typically are not believed to cause major air or water impacts that result in costly reclamation. The W.R. Grace vermiculite mine in Libby is a notable exception. A review of mine exploration licenses, reclamation plans, and bonds is also not included here.

Table 1.	Major Facilities Regulated Under the Metal Mine Reclamation Act – June 2004
Number	**Type of Facility or Mine Operation**
17	Active quarries
6	Inactive quarries, dormant or being reclaimed by the operator
5	Active metal mines
4	Inactive metal mines
6	Metal mines being reclaimed by the operator
2	Metal mines being reclaimed by the state
2	Active placer mine
3	Inactive placer mines
3	Placers being reclaimed by the operator
1	Inactive metal or custom mills
1	Active metal or custom mills
3	Active talc mines
3	Active talc mills or facilities
3	Talc mines being reclaimed by the operator
2	Inactive vermiculite mines--one under EPA jurisdiction, one to be reclaimed by the state and Forest Service
61	**Total**

The Mine Bonding Process

The process for obtaining a reclamation bond has been described in detail elsewhere and will not be reproduced here.[4] [5] The concept is that the mine operator is responsible for reclaiming the land disturbed by the operation in accordance with the MMRA, which is intended to implement Article IX, section 2, of the Montana Constitution relative to metal mining.

> Section 2. Reclamation. (1) All lands disturbed by the taking of natural resources shall be reclaimed. The legislature shall provide effective requirements and standards for the reclamation of lands disturbed.

Principles of state mine bonding policy include the following:

- A mine operating permit may not be issued without the submittal and approval of a reclamation plan (sections 82-4-335(4) and 82-4-336, MCA).
- A mine operating permit may not be issued until an adequate bond is provided (section 82-4-337(1)(c)).
- The amount of bond required must be sufficient to implement the reclamation plan and cover the state's cost of managing the mined site in the event of abandonment by or insolvency of the operator until the bond can be liquidated (section 82-4-338(1), MCA).
- Bonds and reclamation plans may be changed to account for changing conditions at the site if an environmental review is completed first (sections 82-4-337 and 82-4-342, MCA).

The mechanics of bond calculation are fairly straightforward and are spelled out in law and DEQ rules (Title 17, chapter 24, subchapter 1, ARM). The bond is based on a reclamation plan that must meet statutory and regulatory requirements for reclamation of the mined property. Once those criteria are established for the particular operation, the bond is calculated based on standard industry engineering cost-estimating books, modeling software, and agency and industry experience.

Prior to the enactment of the MMRA in 1971, the state did not require mine reclamation or bonds. U.S. Forest Service mine regulations were promulgated in 1974, and U.S. Bureau of Land Management mine regulations were promulgated in 1980, but both federal rules deferred to state bonding practices.[6] Between 1971 and 1974, state mine reclamation bonds were capped at $500 for each acre of disturbance with no criteria for air or water protection. Until 1999, the MMRA limited mine bonds to "not less than $250 or more than $2,500 for each acre" of disturbed land. However, the MMRA

provided that this dollar limitation was waived if the actual cost of complying with the MMRA was greater than the cost per acre limits. Today, the upper cap is gone, and bonds are calculated based on the agency's best engineering cost estimates of completing the reclamation plan as negotiated with the mine operator.

The DEQ has one engineering position dedicated to the calculation of metal mine reclamation bonds. Bond estimates are then provided to the mine operator who reviews and develops a final figure with the agency. Estimates are generated based on the specifics of each mine operation and factors such as the size of the land disturbance, haul distances, soil and ore types, the predictability of short- or long-term water impacts from the operation, and others. The state has discovered through experience that an additional factor of as much as 30% to 40% must be added to final bond calculations to cover the state's potential costs of implementing and administering mine reclamation in the event that the operator or guarantor does not. The addition of these state indirect cost estimates to the bond amount is often the subject of debate between the state and the mine operator because the mine operator can usually perform the reclamation with less expense. However, in the event that the mine operator is unable or unwilling to perform the reclamation, the state has no recourse but to rely on the surety. In all cases in which the surety company had the opportunity to perform the reclamation that the mine operator was unable or unwilling to do, the surety declined and the state and its federal partners were required to assume that role and incur the additional indirect expenses for engineering, contract administration, equipment mobilization, and inflationary costs.[7] (See also **Table 5,** forfeited bond or settlement agreement notations.)

Types of Bonds

Reclamation financial assurance may be in the form of a surety bond, cash, certificate of deposit (CD), irrevocable letter of credit, or another form of surety acceptable to the DEQ. A few other states, the Environmental Protection Agency (EPA), and the BLM in the past have accepted corporate guarantees based on financial balance sheets of the mining company. Corporate guarantees have proved to be risky because the fortunes of the companies and their corporate subsidiaries can change rapidly, as Montana learned in the Pegasus case. **Table 2** lists the type, number, and amount of financial assurance bonds held by the state under the provisions of the MMRA as of June 2004, including those for small-miner exclusion statements and exploration licenses, which account for the large numbers of CDs and cash deposits.

Table 2. Types of Reclamation Bonds

TYPE OF BOND	TOTAL OF EACH TYPE	TOTAL AMOUNT	
Cash	139	$1,235,998.25	
CDs	72	$1,333,725.00	
Letters of Credit	25	$32,985,369.66	
Property Bond	3	$2,340,200.00	****
Sureties	63	$160,814,468.49	
TOTAL	302	$198,709,761.40	

****The three property bonds are estimates pending an appraisal. (Montana Tunnels/Apollo Gold (2) and Black Pine/ASARCO)

This information was accurate as of June 2004 - source DEQ.

As of January 2001, the EMB held reclamation bonds totaling $192,348,825 on 72 mine operating permits; $3,438,673 on 151 mine exploration licenses; and $218,837 for 525 small-miner exclusion statements. At that time, sureties accounted for over 94% of the performance bonds held on behalf of the 72 major mine operating permits and about 94% of all financial assurance on all operations. **Table 2** shows that by June 2004, sureties accounted for about 81% of the hard-rock bonds provided to the state.

Legislative Responses

As early as the 1999 legislative session, the Legislature began responding to the problems in the MMRA identified by the Pegasus bankruptcy experience. The first major effort at reform resulted in the enactment of HB 183 in 1999. This was a DEQ-requested bill that initially proposed some fairly innocuous changes to the MMRA and the open-cut mine reclamation act. The Legislature further amended the DEQ's introduced version of HB 183 by:

- eliminating the $2,500 per acre cap on metal mine bonds;
- adding to the bond calculation the state's costs of managing, maintaining, and operating an abandoned or bankrupted mine site until the bond can be fully liquidated;
- requiring a comprehensive review of each metal mine bond at least every 5 years and anytime that the state determines that a bond increase may be needed;
- providing for a hearing and statewide notice anytime that the DEQ intends to release or decrease a bond amount; and
- adding authority to require reclamation of a mine permit area if no activity has occurred in the 5 years prior to the 5-year comprehensive bond review if air or water quality violations may occur as a result of further suspension of operations.

The next major policy change to the MMRA was HB 69 in the 2001 session. This bill was the carrier for the final recommendations of the LFC following its interim review of mine bonding in Montana (Appendix A). The bill was heavily amended in the legislative process, but ultimately made the following changes to the law:

- requires the mine operator to post an increased reclamation bond within a time limit unless a hearing is requested, in which case the operator must provide the greater of whatever increase is acceptable to the operator or one-half of the total increase pending the outcome of the hearing;
- denies an operating permit to a person if the state or the person's surety had to provide mine reclamation on the person's behalf unless the person reimburses those costs with interest;
- suspends permits and results in the immediate cessation of operations until the required bond is posted;
- authorizes the state to forfeit a bond in increments of $150,000 or 10% of the bond (whichever is less) to abate immediate dangers if the permittee will not; and
- authorizes the state to forfeit the bond and reclaim the site to prevent air and water quality violations or to implement the reclamation plan if the permittee will not.

A comparison between what the LFC had recommended in the bill and what was ultimately enacted in HB 69 is shown in **Figure 1**.

Figure 1. Legislative Finance Committee Recommendations -- HB 69 introduced -- HB 69 enacted

LFC Recommendation	Introduced HB 69 – 2001 Session	Legislative Result
1. Allow bonding for unforeseen reclamation costs.	Add 10% to calculated bond amount for unforeseen reclamation contingencies.	Recommendation was not adopted. Bond calculations may not include amounts for contingencies that are not reasonably foreseeable results of mine operator's activities.
2. Allow a portion of the bond to be retained by the state following final reclamation for contingencies.	The 10% contingency portion of the reclamation bond is to be retained by the state for 10 years following final reclamation and general bond release.	Recommendation was not adopted. Bond retention is not allowed following reclamation.
3. Eliminate statutory maximum bond and require adequate bonding for all small-miner activities.	All small mine operations are required to post sufficient bond and reclaim to the same standards as other mine operators.	Recommendation was not adopted. All small-miner reclamation changes were stricken from the bill.
4. Require that an increase in bond be put into place quickly.	60-day negotiation, 30-day public comment period, and 30 more days to provide bond. If a hearing is requested, increased bond must be provided first. Operating permit is suspended unless increased bond is provided.	Same 120 days, but public comment period provision was rejected. A 30-day extension is permitted. If a hearing is requested, the operator must first provide the greater of one-half the proposed increase or all of the increase that is not contested, if any. Following hearing, the full bond amount must be provided within 30 days of decision or the operating permit is suspended. State may grant reasonable extensions of time.

LFC Recommendation	Introduced HB 69 – 2001 Session	Legislative Result
5. Provide authority for state to convert forfeited bonds to trust funds.	State may use bond proceeds to establish a trust to fund long-term compliance with air or water quality requirements.	Recommendation was not accepted. Bond amounts will be parceled out to the state as needed for reclamation.
6. Provide for quick receipt of bond proceeds upon forfeiture.	Upon receipt of notice of default, surety has 30 days to provide state with 10% of bond amount for use in interim reclamation pending payment of entire amount of bond.	Recommendation not adopted. However, if the operator refuses or is unable to abate an imminent danger, the state may suspend the permit and abate the danger. After the state initiates permit revocation proceedings and declares the operator in default, the state may forfeit the lesser of 10% of the bond or $150,000, which must be paid to the state by the surety within 30 days of notification of forfeiture. If the state needs more funds to abate the danger, this process may be repeated. Unused funds and interest must be returned to the surety.
7. Revise the "bad actor" provisions of the metal mine reclamation law.	No permit for operator if state or surety had to perform operator's reclamation responsibilities with bond funds. Operator's future refund of state or surety expenses does not justify forgiveness.	Repayment of state costs of reclaiming only that mine area for which a bond was forfeited at 6% interest and correction of conditions that resulted in bond forfeiture or receipt of bond proceeds rescind the permit prohibition.
8. Earmark all fees, bond proceeds, and earnings for mine reclamation account.	Same	Same - redirected by SB 449 to new environmental rehabilitation and response account.
	Additional provisions amended that were not part of the LFC bonding study.	Concurred - increased permit fees, added "load out" definition, and added third-party bond calculation provision.

In addition to these two bills that directly affected the bonding provisions of the MMRA, the Legislature enacted some policies to help with the inevitable state costs of providing some minimal reclamation at problem mine sites. In 1999, SB 49 and SB 492 reallocated a small portion of the metalliferous mine tax revenue to the Department of Natural Resources and Conservation's Reclamation and Development Grant Program and directed that the program place more emphasis on reclaiming lands impacted by mining. The 2001 session through SB 449 established a new environmental rehabilitation and response account (ERRA) for use by the DEQ to respond to environmental damages from a variety of causes, including mining.

Also in 2001, SB 484 was enacted authorizing the sale of up to $8 million in general obligation hard-rock reclamation bonds payable with 8.5% of the metalliferous mine taxes for the direct state involvement in the maintenance and reclamation of insolvent mine operations. The DEQ used proceeds from a $2.5 million bond issue in FY 2002 to continue reclamation activities at the Beal Mountain mine, one of the Pegasus properties, after the $6.3 million surety bond was spent. In order to issue additional hard-rock bonds, the Director of the DEQ must certify to the Board of Examiners that there is no possibility that additional funds will be available from the operator to whom the permit was issued and that there will be sufficient revenue from the metalliferous mine tax stream to repay the bonds so that they do not become a burden on the state general fund. The 2003 Legislature was made aware of the fact that there is a projected shortfall in funding for long-term water treatment at the principal Pegasus sites of Zortman and Landusky, and it set aside another $2.5 million dollars of DEQ's bonding authority contingent on an additional sum of $10 million dollars being appropriated for that purpose by the federal government. That has not happened yet. Meanwhile, the DEQ reports that metal mine tax revenue from the five remaining active mines are not reliable enough to confidently project sufficient long-term income to repay the existing bonds, the contingent Zortman-Landusky bonds, and additional bonding authority within the $8 million cap for other necessary reclamation work.

In an effort that impacts potential mine bonding costs, the Legislature has also attempted to define reclamation requirements for open pits and rock faces. Legislation such as SB 9 in the 2000 special session and HB 428 and SB 366 in the 2003 session are examples. Also in the 2003 session, the Legislature enacted HB 527, which affects final reclamation and bonding costs. Finally, HB 617, enacted in 2003, effectively prevents the state from increasing a reclamation bond if a permit amendment or revision to an operating permit is necessary until the state has completed compliance with the Montana Environmental Policy Act (MEPA). If a properly permitted and bonded mine is proposing an expansion, this is not a problem. However, in the case of an existing operation when it is discovered that the approved reclamation plan is inadequate to address previously unidentified

reclamation needs, such as water treatment, a mine operation may be underbonded until the review and approval process is complete. If a thorough environmental impact statement is necessary, as is currently the case with the Golden Sunlight mine and the CR Kendall mine, this can result in a considerable delay in the state's ability to adjust the bond needed to cover any additional costs of reclamation. Periodic annual or 5-year bond evaluations and adjustments for inflation do not require a MEPA review if the operation and the approved reclamation plan are unchanged. A summary of amendments to the MMRA since 1999 is shown in **Figure 2**.

Figure 2. Selected Reclamation/Bonding Amendments to the Metal Mine Reclamation Act Since 1999

Bill	Chapter	Sponsor	Final Vote	Effect
REGULAR SESSION 1999				
HB 183	Ch. 507	Dale	50-0 83-14	This bill removed the $2,500 per acre cap on bonds, specifically allowed state site management costs to be included in the bond calculation, required annual bond overviews and comprehensive bond review every 5 years or anytime that the DEQ determines that it is necessary, and required action in permit areas where mining has been suspended for 5 years if air, water, or reclamation violations may occur. The bill also made several changes to the open-cut or gravel pit mine reclamation law.
SB 49 SB 492	Ch. 144 Ch. 552	Swysgood Grosfield	47-3 79-19 49-1 98-2	These bills reallocated some metalliferous mine taxes and RIGWA taxes to the DNRC Reclamation and Development Grant Program and to the orphan share program and placed more emphasis on abandoned mine cleanup for RDG program funds.

Bill	Chapter	Sponsor	Final Vote	Effect
SPECIAL SESSION MAY 2000				
SB 9	Ch. 7	Swysgood	34-15 60-40	This bill changed the purpose section of the Metal Mine Reclamation Act and revised reclamation requirements, declaring that mined land left as open pits and rock faces did not need reclamation by backfilling.
REGULAR SESSION 2001				
HB 69	Ch. 488	McCann	50-0 97-2	This bill included some of the recommendations of the Legislative Finance Committee following its study of metal mine bonding deficiencies. The bill: (1) increased some permitting fees; (2) allowed permits to be denied if state or surety has had to use applicant's bond proceeds to reclaim in the past under certain conditions; (3) changed the procedure for calculating bonds; (4) specifically required bonding to ensure compliance with air and water protection laws; (5) required the state to modify existing bond amounts anytime that it determines that a bond is insufficient; (6) required the permittee to provide the modified bond amount or at least one-half of any increased amount if the permittee requests a Board of Environmental Review hearing; and (7) authorized the state to use up to the lesser of $150,000 or 10% of a permittee's bond to abate imminent dangers unresolved by the permittee.

Bill	Chapter	Sponsor	Final Vote	Effect
SB 449	Ch. 338	Tester	49-0 95-5	This bill: (1) established a new environmental rehabilitation and response account (section 75-1-110, MCA) that may be appropriated to DEQ and used for: (a) mined land reclamation, research, and water rehabilitation; (b) remediation of hazardous waste sites; and (c) emergency responses to imminent environmental threats for which there is no other source of funding; and (2) is funded from penalties from the illegal disposal of septage, fines, fees, penalties, and excess unclaimed bond funds collected on metal mines and open-cut mines and account interest. As of January 2004, this fund balance was $445,579.
SB 484	Ch. 460	Beck	49-0 96-4	This bill created a hard-rock mining reclamation debt service fund (sections 82-4-312 through 82-4-315, MCA) and authorized the state to sell up to $8 million in general obligation bonds to pay for legally required hard-rock mine reclamation, operation, and maintenance if the available surety bond is insufficient and the mine operator is insolvent. Bonded indebtedness is paid with 8.5% of the metalliferous mine license tax collections.
REGULAR SESSION 2003				
HB 428	Ch. 247	Keane	45-4 93-3	This bill removed the language prohibiting the backfilling of open pits and rock faces in SB 9 above (Special Session 2000) after the provision was ruled unconstitutional. The bill was made void by the passage of SB 366 below.

Bill	Chapter	Sponsor	Final Vote	Effect
HB 527	Ch. 365	Mendenhall	50-0 68-32	This bill allows a mine operator after mine closure or abandonment to leave behind mine-related facilities for other industrial purposes. It allows disturbed land associated with mine-related facilities to not be reclaimed or mine-related facilities to not be removed if the postmining use of the facilities is approved by the state. Changes in a mine operating permit for the purpose of retaining mine-related facilities that are valuable for postmining use are not subject to MEPA review. The term "mine-related facilities" is not defined.
HB 617	Ch. 287	Mendenhall	34-16 60-37	This bill states that the modification of a mine operating permit cannot be finalized and an existing bond may not be increased until all of the permit modification processes in law, including compliance with MEPA if necessary, are complete.
SB 366	Ch. 459	Grimes	37-12 64-36	This bill replaces or voids HB 428 above. It replaces the unconstitutional prohibition on backfilling open pits and rock faces with language that neither requires nor prohibits the use of backfilling as a reclamation measure. The state is to make appropriate decisions based on site-specific conditions.

Current Status of Metal Mine Bonding

The current situation is greatly influenced by the financial status of the mines in Montana today. As indicated in **Table 1**, there are five metal mines currently active in Montana. The five major mines are: Golden Sunlight, Montana Tunnels, Stillwater Nye, Stillwater East Boulder, and Montana Resources. Although conditions are improving, low commodity prices and high operating costs for power in particular have made the past few years financially difficult for metal mine operations. The EQC heard testimony at its January 2004 meeting that the market cost of surety bonds has increased from about $6 per $1,000 to nearly $64 per $1,000 or from $6,000 a year per million dollars to $64,000 a year. With recalculated bond increases for new and existing operations sometimes in the tens of millions of dollars, the cost of financial assurance is becoming an increasingly important cost of doing business in what has been a financially difficult time for the mining industry. Additionally, the EQC was advised that the competition in the surety business was lacking because fewer companies are willing to write mine reclamation assurance. A thorough analysis of the mine surety market and the reasons for its demise are found in Kirschner and Grandy. [8]

The DEQ addresses the adequacy of mine bonds during the course of the annual review and, especially, during the mandatory 5-year comprehensive review. **Table 3** lists some of the major mine operations that have had reclamation bonds recalculated since the February 2000 LFC report and since the legislative changes described earlier. The table lists talc mines, limestone mines, sapphire operations, quarries, and metal mines. The total financial assurance for reclamation at the 10 facilities in **Table 3** is more than double what it was before the comprehensive bond reviews that resulted in the recalculations.

Table 3. Revised Major Mine Bonds Since 2000 LFC Report

Permit	Company	Last Bond Review	Previous Bond Review	Current Bond Amount	Reason
00093	ASARCO – Troy Mine	March 2000	$ 2,752,000	$10,500,000	5-Year Bond Review

Permit	Company	Last Bond Review	Previous Bond Review	Current Bond Amount	Reason
00013	Barretts Minerals – Regal Mine	March 2001	$ 987,000	$ 2,878,300	Life of Mine Expansion
00105	Graymount Western US	Dec. 2001	$ 766,000	$ 3,593,358	Life of Mine Expansion
00004	Holcim	February 2004	$ 544,000	$ 3,095,467	5-Year Bond Review
00005	Luzenac America-Yellowstone Mine	April 2001	$ 1,261,425	$12,266,126	5-Year Bond Review
00113	Montana Tunnels	February 2003	$14,987,688	$16,156,585	Amendment Approval
00044	Skalkaho Grazing	July 2001	$ 15,500	$ 180,000	5-Year Bond Review
00149	Stillwater Mining – East Boulder	July 2002	$ 3,805,192	$11,115,861	5-Year Bond Review
00148	WGI – Pipestone Quarry	July 2002	$ 330,540	$ 387,940	Life of Mine Expansion

Permit	Company	Last Bond Review	Previous Bond Review	Current Bond Amount	Reason
00151	Weaver Gravel, Inc.	April 2003	$ 19,000	$ 54,464	5-Year Bond Review
	Total		$25,468,345	$60,228,101	

The DEQ has provided a list of its 5-year bond tracking of current operating permit bonds in **Table 4**. The time between the "Last Review" and the "Review Due" is shown as 5 years as required by statute. The DEQ has had to conduct 5-year bond reviews since 1991 and consult with the permittee if the bond needed to be adjusted. HB 183 in 1999 required annual bond oversight and required a comprehensive bond review at least every 5 years or anytime that the DEQ determines that one is needed because of changes at the site. The 2001 amendments in HB 69 provide that when a review indicates that a bond increase is needed, the DEQ is required to consult with the mine operator before developing a preliminary bond determination. The mine operator must have 60 days to review and consult with the DEQ. At the end of that time, the DEQ must issue a proposed bond determination and publish a notice that the proposed bond will be final in 30 days unless the mine operator requests a hearing before the Board of Environmental Review, which will rule on the final bond decision. Before a hearing can be requested, the operator must provide at least one-half of the proposed increased bond. The DEQ is required to provide the mine operator with a copy of the bond calculations that formed the basis for the proposed bond.

In reality, the DEQ and the mine operator consult at length over the preliminary bond figures. By the time that the proposed bond is determined, both parties have usually agreed to an amount. The EQC heard testimony that the most recent Stillwater Mining Co. bond revision was reviewed for a year. **Table 4** shows that the bonds for 14 mines will be reviewed on the regular 5-year bond cycle in 2004. The table also shows that ASARCO (Black Pine and Troy) and CR Kendall had bond calculations done and did not post them. Montana Resources is also going through a lengthy review that will be completed in 2004. Four mines, Golden Sunlight, Stillwater Nye, Stillwater East Boulder, and CR Kendall are having bonds reviewed as part of ongoing environmental impact statements that are scheduled to be completed in 2004.

Table 4. DEQ EMB Five-Year Bond Review Tracking (04-18-04)

Permit	Company	Permit Issue Date	Last Review	New Review Due	Review Status	Comments
00012	ARCO ENVIRONMENTAL REM., LLC	March 6, 1972	May 14, 2003	May 12, 2008		Bond = $59,634
00142	ARCO ENVIRONMENTAL REM., LLC	January 25, 1991	October 4, 2002	October 3, 2007		Bond = $30,000
00063	ASARCO, INC. (Black Pine)	December 24, 1974	June 1, 2000	May 31, 2005	EA in progress	Bond = $70,000 Canceled; $8,074,500 bond not posted; Property bond $1,300,000 waiting for appraisal
00093	ASARCO, INC. (Troy Mine)	November 27, 1978	March 22, 2000	March 21, 2005		Bond = Interim bond; $10,500,000; Internal review - Draft bond of $20+ million sent to company; Revised reclamation submitted May 15, 2004
00003	ASH GROVE CEMENT CO.	November 16, 1971	November 29, 1999	November 27, 2004		Bond = $135,900 All Ash Grove permits being consolidated into 00003 with new reclamation plan
00090	ASH GROVE CEMENT CO.	December 16, 1977	April 30, 1999	April 28, 2004	In progress	Bond = $447,000
00098	ASH GROVE CEMENT CO.	March 20, 1980	April 30, 1999	April 28, 2004	In progress	Bond = $726,100
00139	ASH GROVE CEMENT CO.	May 23, 1990	May 9, 2001	May 8, 2006		Bond = $42,160
00019	ASH GROVE CEMENT CO.	May 17, 1972	February 4, 2001	February 3, 2006		Bond = $4,500
00126	ASH GROVE CEMENT CO.	November 20, 1984	November 10, 1999	November 8, 2004	In progress	Bond = $22,500
00130	BARNARD CONSTRUCTION CO.	January 6, 1986	February 21, 2002	February 20, 2007		Bond = $1,000
00009	BARRETTS MINERALS, INC.	January 26, 1972	August 31, 2001	August 30, 2006		Bond = $209,100
00013	BARRETTS MINERALS, INC.	March 17, 1972	March 20, 2001	March 19, 2006		Bond = $2,878,300
00078	BARRETTS MINERALS, INC.	October 25, 1976	July 21, 1999	July 19, 2004	In progress	Bond = $4,593,000
00022	BIG HORN CALCIUM (Drummond)	August 11, 1972	October 30, 2001	October 29, 2006		Bond = $31,777 total held ($8,791 for organics and bond obligation will be $22,986)
00008	BIG HORN LIMESTONE CO. (Warren)	March 21, 1977	March 30, 2004	March 29, 2009		Bond = $284,490; Waiting for life-of mine submittal
00141	BLUE RANGE MINING CO.	October 4, 1990	October 4, 2002	October 3, 2007		Bond = $33,200; Reclaiming two wells and closing portal
00042	BULLOCK BROTHERS, INC.	August 17, 1973	Placed inactive			EPA is reclaiming the site; file is closed
00122	CR KENDALL CORP.	September 14, 1984	May 31, 2000	May 30, 2005	EIS in progress	Bond = currently $1,869,000; Draft bond for current plan is $3,736,982; New plan to include water treatment

Permit	Company	Permit Issue Date	Last Review	New Review Due	Review Status	Comments
00134	CABLE MOUNTAIN MINE, INC.	July 6, 1988	January 26, 2004	January 24, 2009		Bond = $15,755
00087	CLAY LEWIS	September 26, 1986	March 1, 1999	February 28, 2004	In progress	Bond = $5,600
00039	COMER, A.L. MINING	August 3, 1973	Placed inactive			Final bond released
00160	DIAMOND HILL MINING, INC.	May 21, 1996	March 26, 2002	March 25, 2007		Bond = $632,000; Obligated $622,512
00065	GOLDEN SUNLIGHT MINES, INC.	June 27, 1975	June 29, 1998	June 28, 2003	EIS in progress	Bond = $63,355,020; $54,380,000 posted to date ($20,400,000 Water Treatment / $33,988,200 Reclamation)
00105	GRAYMONT WESTERN US, INC.	June 26, 1981	December 27, 2001	December 26, 2006		Bond = $3,593,358
00071	HALLETT MINERALS CO.	March 24, 1976	September 19, 2000	September 18, 2005		Bond = $33,102
00140	HIGHLAND GOLD PROPERTIES	June 15, 1990	February 7, 2002	February 6, 2007		Bond = $25,000
00004	HOLCIM (US), INC.	December 9, 1971	February 27, 2004	February 26, 2009		Bond = $3,095,467
00089	JOHN FANUZZI QUARRY	October 20, 1977	April 8, 1999	April 6, 2004	In progress	Bond = $43,101
00010	KOOTENAI DEVELOPMENT CO. (Libby W.R. GRACE)	January 31, 1972	August 22, 1997	August 21, 2002	Delayed	Bond = $66,700; Will review grandfathered acres; Check EPA plans for area
00006	LUZENAC AMERICA INC.	December 21, 1971	April 9, 2001	April 8, 2006		Bond = $11,000
00005	LUZENAC AMERICA INC.	December 21, 1975	April 12, 2001	April 11, 2006		Bond = $12,266,126
00075	LUZENAC AMERICA INC.	August 27, 1976	July 28, 1999	July 26, 2004	In progress	Bond = $116,000
00109	LUZENAC AMERICA INC.	October 16, 1981	February 11, 2002	February 10, 2007		Bond = $200,000 ($51,552 obligated)
00127	LUZENAC AMERICA INC.	April 18, 1985	March 1, 2004	February 28, 2009		Bond = $93,000
00152	M&W MILLING & REFINING, INC.	September 27, 1993	November 4, 1998	November 3, 2003	In progress	Bond = $35,500
00162	MAJESTY MINING, INC.	October 28, 1998	October 28, 1998	October 27, 2003	In progress	Bond = $53,300 ($24,100 / $29,200)
00015	MERIDIAN AGGREGATES CO.	May 1, 1984	September 21, 1999	September 19, 2004	In progress	Bond = $239,600 ($178,000 / $61,600)

Permit	Company	Permit Issue Date	Last Review	New Review Due	Review Status	Comments
00157	MONTANA OREGON INVESTMENT	April 12, 1995	September 22, 2003	September 20, 2008		Bond = $132,185
00030 00030A	MONTANA RESOURCES, INC.	June 18, 1986	November 19, 1996	November 18, 2001	In progress	Bond = $25,919,000; Internal review; Draft in circulation
00113	MONTANA TUNNELS MINING, INC.	February 20, 1986	February 27, 2003	February 26, 2008		Bond = $16,156,585 (includes $617,700 property bond)
00150	NORANDA - MONTANORE	May 14, 1993	June 16, 1998	June 15, 2003	Delayed	Bond = $30,000; Wells being reclaimed; Waiting for water level
00123	PAN AMERICAN MINERALS, INC.	August 8, 1984	October 4, 2002	October 3, 2007		Bond = $54,000
00154	PAUL KURTH MINING	August 23, 1987	July 6, 1999	July 4, 2004	In progress	Bond = $35,000
00082	PLUM CREEK TIMBER CO.	December 15, 1976	January 16, 2002	January 15, 2007		Bond = $4,200
00002	RHODIA, INC.	November 5, 1971	April 17, 2000	April 16, 2005		Bond = $22,800
00153	SAPPHIRE VILLAGE	March 1, 1994	June 2001	May 31, 2006		Bond = $15,742 total (incremental bond - current bond $11,742 w/ increments of $2,000 on July 1 of 2003-05)
00045	SCHELLINGER CONSTRUCTION-ESSEX QUARRY	March 8, 1977	January 23, 2004	January 21, 2009		Bond = $139,624
00044	SKALKAHO GRAZING, INC.	December 2, 1975	July 19, 2001	July 18, 2006		Bond = $180,000
00027	SOUTHERN TALC COMPANY	May 21, 1980	October 4, 2002	October 3, 2007		Bond = $350,000; In reclamation by company
00155	SPOKANE MINERALS, LTD.	November 4, 1994	September 19, 1997	September 18, 2002	In progress	Bond = $47,000 ($11,000 / $36,000)
00094	STANSBURY HOLDINGS CORP.	March 9, 1979	December 18, 2000	December 17, 2005	Permit revoked	Bond = $29,000 FS to contribute to reclamation in 2005
00149	STILLWATER MINING CO. (East Boulder)	April 26, 1993	July 23, 2002	July 22, 2007	EIS in progress – postclosure water mgmt	Bond = $11,115,861
00118	STILLWATER MINING CO. (Nye)	January 28, 1986	May 17, 1995	May 15, 2000	EIS in progress – postclosure water mgmt	Bond = $8,895,000 ($8,819,767 obligated, $75,243 unobligated)
00158	SWEETWATER GARNET, INC.	November 2, 1995	April 19, 2004	April 18, 2009		Bond = $68,000; $21,150 Mill bond – mine being reclaimed by operator
00023	T. PATRICK O'HARA, INC.	September 18, 1972	June 21, 2000	June 20, 2005		Bond = $71,724; Check site for organics increment

Permit	Company	Permit Issue Date	Last Review	New Review Due	Review Status	Comments
00100	TVX MINERAL HILL, INC.	July 14, 1986	June 3, 2003	June 1, 2008		Bond = $5,711,180
00045A	U.S. ANTIMONY CORP.	November 28, 1973	May 12, 1999	May 10, 2004	In progress	Bond = $47,200 ($1,000 / $14,450 / $23,310 / $8,440)
00077	WALTER H. SAVOY	October 22, 1976	October 4, 2002	October 3, 2007		Bond = $5,000
00148	WASHINGTON GROUP INT'L.	January 24, 1992	July 19, 2002	July 18, 2007		Bond = $387,940
00151	WEAVER GRAVEL, INC.	August 30, 1993	April 1, 2003	March 30, 2008		Bond = $54,464
Notes: Review Status Includes: in calculation; internal DEQ review; USFS/BLM review; company review; published/comment period.						

Table 5 is a numerical list of mine operating permit bonds showing how they have changed since 1997 according to agency records. Although the data in the table is sporadic between the years 1997 and 2004, a review of the information shows that, generally, mine bonds have been recalculated and increased over time. The table also shows several mine operations that are no longer active and have been reclaimed.

Table 5. Hard-Rock Reclamation Bond Changes…1997-2004

Permit	Operator	1997[1]	1998	1999[2]	2000	2001	2002[3]	2003	2004[4]
00002	Rhodia Maidenrock Quarry	$38,000		$36,000	$22,800				$22,800
00003	Ash Grove Cement	$17,250	$60,550	$135,900			$135,900		$135,900
00004	Holcim Cement	$544,000			$544,000		$544,000		$3,095,467
00005	Luzenac Yellowstone	$1,117,800			$1,177,925		$11,562,000		$12,266,126
00006	Luzenac Alder Loadout	$20,960		$19,000			$11,000		$11,000
00008	Big Horn Limestone – Warren	$207,000					$224,980		$284,490
00009	Barretts Minerals Talc Mill	$132,061		$132,061			$209,100		$209,100
00010	Kootenai Development (W.R. Grace – Libby)	$472,000					$66,700		$66,700
00012	ARCO Anaconda Lime Quarry	$83,000					$83,000		$59,634
00013	Barretts Minerals Regal Talc	$71,000				$987,000	$2,878,300		$2,878,300
00015	Meridian Aggregates McQuarrie Quarry	$178,000		$239,000			$239,600		$239,600

[1] Legislative Audit Division report #98L-36
[2] DEQ 5-year bond review for 1999 and 2000
[3] DEQ EMB 5-year bond tracking form
[4] Table 4 – DEQ EMB 5-year bond tracking form

Permit	Operator	1997[1]	1998	1999[2]	2000	2001	2002[3]	2003	2004[4]
00019	Ash Grove Cement	$4,500*					$4,500*		$4,500*
00022	Big Horn Calcium Drummond Quarry						$31,777		$31,777
00023	T. Patrick O'Hara – Travertine	$13,740			$71,747				$71,724
00027	Southern Talc	$350,000			$350,000				$350,000
00030, etc.	Montana Resources (Butte)	$9,486,464**			$25,919,000		$25,919,000 being reviewed		$25,919,000
00039	A.L. Comer – Vermiculite	$1,500		$1,500			$1,500		Reclaimed by company
00042	Bullock Bros. Crystal Mine	N.A.				$1,500			EPA NPL site
00044	Skalkaho Grazing – Sapphire	$18,500			$180,000				$180,000
00045	Schellinger Construction – Essex Quarry	$120,000		$120,000			$120,000		$139,624
00045A	U.S. Antimony Mill	$47,200		$273,000 calculated					$47,200*
00054	Hemphill Bros. – Silica	$39,500							Reclaimed by company
00063	ASARCO – Black Pine	$70,000			$70,000				$70,000 bond canceled; $1,300,000 property bond – est. $8,074,500 needed

Permit	Operator	1997[1]	1998	1999[2]	2000	2001	2002[3]	2003	2004[4]
00065	Golden Sunlight Mines	$38,043,902					$54,380,000		$63,355,020; $54,380,000 obligated
00071	Hallett Minerals – Black Butte – Iron Ore	$26,400			$32,702		$33,102		$33,102
00073	Montana Power Fly Ash Pond	$115,000							Reclaimed by company
00075	Luzenac – Beaverhead Mine	$116,000							$116,000
00077	Walter Savoy Quarry	$5,000							$5,000
00078	Barretts Minerals – Treasure Mine	$1,054,479			$4,543,000				$4,593,000
00079	Chouteau County Quarry	NA							Reclaimed – transferred to SMES
00082	Plum Creek Timber – Keeler Creek Quarry	$1,500			$4,200		$5,700		$4,200
00087	Clay Lewis Placer	$5,600					$5,600		$5,600
00089	John Fanuzzi Quarry	$60,000		$42,805					$43,100
00090	Ash Grove Cement	$145,000		$447,000					$447,000

Permit	Operator	1997[1]	1998	1999[2]	2000	2001	2002[3]	2003	2004[4]
00093	ASARCO Troy	$2,763,500			$10,500,000				$10,500,000 estimate that $20,000,000+ is needed
00094	Stansbury Holdings Co. Western Vermiculite	$20,000			$110,639 calculated				Forfeited bond $29,000 permit revoked
00095	Pegasus Landusky	$19,600,000 dirtwork only							Settlement agreement with surety
00096	Pegasus Zortman	$10,024,000 dirtwork only							Settlement agreement with surety
00098	Ash Grove Cement – Clarks Gulch Limestone	$340,000		$726,100			$726,100		$726,100
00100	TVX Mineral Hill (Jardine)	$1,300,775		$7,607,202			$8,537,000		$5,711,180
00105	Graymont Western US – Limestone	$700,000				$766,000			$3,593,358
00109	Luzenac – Antler Chlorite Mine	$191,125							$200,000 – $51,552 obligated
00113	Montana Tunnels	$15,767,000 total bond; $14,007,000 obligated		$14,450,000			$14,456,400		$16,156,585, including property bond

Permit	Operator	1997[1]	1998	1999[2]	2000	2001	2002[3]	2003	2004[4]
00118	Stillwater Mining (Nye)	$3,174,000			$7,800,000		$8,895,000		$8,895,000 – $8,919,767 obligated
00122	CR Kendall	$1,869,000					Should be $9,900,000		$1,869,000 – estimate is $3,736,982 w/o water treatment
00123	Pan American Minerals – Hog Heaven	$54,000		$54,000			$54,000		$54,000
00124	Dillon Exploration Elk Creek – Barite	$6,200							Reclaimed by company
00125	Dillon Exploration Coloma – Barite	$10,000							Reclaimed by company
00126	Ash Grove – Maronick Quarry	$22,000		$22,000					$22,500
00127	Luzenac – Sappington Talc Mill	$254,758			$41,000		$46,000		$93,000
00129	Phil Rivera Belmont Mine	$21,950							Forfeited bond
00130	Barnard Construction Quarry	$1,000							$1,000
00131	RLTCO Bon Accord Placer	$6,325							Forfeited bond

Permit	Operator	1997[1]	1998	1999[2]	2000	2001	2002[3]	2003	2004[4]
00132	Pegasus – Basin Creek	$6,276,100							$3,825,000 settlement agreement with surety
00134	Cable Mtn. Mining	$128,000		$128,000			$128,000		$15,755
00135	Pegasus – Beal Mtn.	$6,312,300							$6,312,300 settlement agreement with surety
00138	New Butte Mining	$124,000							Forfeited bond
00139	Ash Grove – Silica Quarry	$20,000					$42,160		$42,160
00140	Highland Gold – Fish Creek Placer	$29,429			$144,000 pending		$33,829		$25,000
00141	Blue Range Mining – Geis and Virgin Gulch	$33,200			$33,200		$33,200		$33,200
00142	ARCO Opportunity Quarry	$30,000					$30,000		$30,000
00145	Seahawk Placer	$235,000							Forfeited bond
00146	Washington Gulch Placer	$206,000							Forfeited bond
00147	Bill Bahny Topsoil	$15,000							Open-cut mine – transfer

Permit	Operator	1997[1]	1998	1999[2]	2000	2001	2002[3]	2003	2004[4]
00148	Washington Group Intl. Pipestone Quarry	$280,500					$330,540		$387,940
00149	Stillwater Mining (E. Boulder)	$805,192					$3,680,000		$11,115,861
00150	Noranda Montanore	$192,000					$30,000		$30,000
00151	Weaver Gravel Quarry	$24,100					$19,000		$54,464
00152	M&W Gold Mill	$35,500					$35,500		$35,500
00153	Sapphire Village – Sapphire	$5,700			$25,228		$15,742		$15,742 total; incremental bond $11,742 posted to date
00154	Paul Kurth – Bon Accord Mine	$27,000			$35,000		$35,000		$35,000
00155	Spokane Minerals Limestone Quarry	$36,000					$47,000		$47,000
00157	Montana Oregon Investment Group Garnet Mine	$465,000					$465,000		$132,185
00158	Sweetwater – Garnet	$68,000					$68,000		$68,000 mine bond $21,150 mill bond
00159	Sieben Ranch – Quarry	$12,100							Reclaimed by company

Permit	Operator	1997[1]	1998	1999[2]	2000	2001	2002[3]	2003	2004[4]
00160	Diamond Hill – Gold	$520,000					$1,153,800		$632,000
00161	Iron Horse – Whitefish Investors – Topsoil	$25,000							Open-cut mine – transfer
00162	Majesty Mining						$53,300		$53,300

* grandfathered bond calculated at maximum of $500/acre

** four permits under different numbers

Remaining Issues

The Legislature has made several changes to avoid the problems described in the LFC's February 2000 report that showed that estimated reclamation costs exceeded available performance bonds by $24.6 million. In reality, the gap was greater than that.[9] A review of the legislation listed in **Figure 2**, particularly HB 183 and HB 69, shows that the Legislature tried to improve the state's ability to calculate mine bonds in a timely manner, to include bond calculations for agency costs of overhead and management when forced to assume reclamation responsibilities, and to attempt to obtain forfeited reclamation bond amounts more expeditiously. A recent analysis of hard-rock mine reclamation financial assurance shows that Montana, at $15,809 an acre of mine disturbance, now holds the highest mine reclamation guarantee of 11 other regional mining states except for an anomaly in Washington State.[10] However, the report uses these gross measures to describe what the state has learned about the fallacy of calculating mine bonds on a cost per acre basis or placing a cost per acre cap on mine reclamation cost estimates.

It's the Water

Metal mine reclamation is no longer a simple matter of bulldozing and revegetation, particularly where large open pit mines expose acid-producing rock in proximity to water. Predicting the timing, extent, and duration of a mine's impact to surface and ground water resources for the purposes of calculating a financial liability guarantee is a difficult and administratively contentious task. Despite continuing evidence from historic mining operations at the Mike Horse mine complex in the Upper Blackfoot River drainage, the Crown Butte complex near Cooke City, the Barker-Hughesville mining district near Neihart and Monarch, the Ten Mile Creek area near Rimini, and the underground coal mines near Belt, adequate reclamation bonding for long-term water treatment is a relatively recent component of mine bonding calculations in Montana and elsewhere. Based on DEQ financial assurance estimates, the state has determined that 10 of 13 major mines in Montana are acid producing or have other impacts that will require some form of long-term water treatment, according to one report.[10] Calculating reclamation bonds to address these water quality impacts is not a simple matter of using a cost per acre figure or some arbitrary cost cap. In particular, large heap leach operations that disturb, pulverize, and process a variety of mineral ores can create complex and often unanticipated chemical reactions and problems that demand flexible engineering solutions and a substantial long-term financial commitment.

Examples include the Beal Mountain mine near Anaconda, which was to be reclaimed with the $6.3 million mine bond. The agencies were unable to reclaim the mine with the bond alone because of the need for unanticipated water treatment.

Land application of treated leach pad solutions led to impacts to soil, vegetation, and water, but was driven by the fact that pH in the leach pad was dropping and the agencies were trying to avoid consequences to German Gulch. The U.S. Forest Service has spent $2.7 million and the state has spent $2.5 million in hard-rock reclamation bond revenue on constructing a water treatment system and water treatment, and more will be needed in the future.

Grandfathered Mine Reclamation

The MMRA was not made retroactive when it was enacted. Mined lands disturbed prior to 1971 and not redisturbed by contemporary operations are not subject to reclamation by the mine operator. Further, lands disturbed between 1971 and 1974 were bonded based on a $500 an acre limit. Again, the reclamation emphasis was on dirtwork and revegetation. This is especially applicable in the case of the former Anaconda Company properties, now Atlantic Richfield Company (ARCO) properties, and, partially, the Montana Resources (MR) properties in Butte. The federal EPA through the federal superfund program, or CERCLA, is conducting most of the reclamation at that site, subject to reimbursement or cost recovery from ARCO. The MR operating permit was modified in 1998 to remove 391 acres of historically mined lands and again in 2004 to remove another 109 acres, transferring any potential reclamation liability to the CERCLA project.

MMRA Remedy Issues

One of the most difficult situations that the state faces is how to obtain additional reclamation financial assurance from mine operations that are either financially challenged, voluntarily suspended for economic reasons, or suspended for noncompliance with operating permit requirements. If a comprehensive bond review indicates that additional funds are needed to guarantee mine reclamation, including water treatment, but the increased bond is not provided, the state has the following statutory remedies:

(1) suspend the mine permit (section 82-4-338(3)(c), MCA);
(2) modify the reclamation plan, recalculate the bond, and order the bond to be increased (sections 82-4-337 and 82-4-338, MCA);
(3) fine the mine operator between $100 and $1,000 a day for failure to have an adequate reclamation plan or bond in place and up to $5,000 a day if the violation created imminent danger or significant environmental harm (section 82-4-361, MCA);
(4) suspend the permit for failure to pay penalties (section 82-4-362, MCA);
(5) cause the inadequate bond to be forfeited and attempt reclamation itself (section 82-4-341, MCA); or
(6) revoke the permit for failure to abide by an order of the DEQ (section 82-4-362(2), MCA).

If a mine operation is voluntarily suspended because of low commodity prices (ASARCO/Revett at Troy), high production costs for labor or electricity (MR/Butte from 2000-03), bankruptcy or insolvency (W.R. Grace and Pegasus), completion of mining (CR Kendall), or for any other reason, the state threat to suspend a permit and order that the operation cease is ineffective. The only advantage to the state is that the conditions leading to the permit revocation would need to be addressed and the revocation would need to be lifted to resume mine operations. In the case of the CR Kendall, W.R. Grace, and Pegasus mines, even this remedy is not an effective option.

Mine operations at the ASARCO Troy mine have been suspended by the company since 1993 because of low metal prices. ASARCO was purchased by Grupo Mexico in 1999. The Troy property was sold in 1999 to Sterling Mining, now Revett Silver Company. The operating permit is still in ASARCO's name. Revett is reportedly making the bond payments.[11]

The state reviewed the cost of reclamation in 2000 and estimated it to be $20,190,170, up from $2,763,500. The higher number included $9.5 million for "dirtwork" and an estimate for long-term water treatment, which is not included in the original reclamation plan. ASARCO provided an interim surety bond in the amount of $10.5 million, $9.5 million for the "dirtwork" estimate and an increment of $1 million towards then-undetermined water treatment. Water quality issues at Troy are reportedly minimal in comparison to most of the Pegasus sites. The mine tailings are composed primarily of nonreactive quartz grains, cyanide was not used for leaching, and there are no documented acid mine drainage problems. ASARCO provided some additional scientific studies on such topics as water pathways, copper attenuation, and cover soil suitability to the DEQ in mid-May 2004. These studies should allow the DEQ to answer questions raised in the 2000 review and to determine the degree of environmental analysis (such as an Environmental Assessment or Environmental Impact Statement) needed to formalize a new reclamation plan and recalculate a reclamation bond with a specific water treatment component. The final bond amount may be less than what was estimated in the 2000 review.

In the meantime, if ASARCO were to declare bankruptcy, the state could be up to $10 million short of the amount needed for long-term water treatment at the Troy mine based on the DEQ's earlier estimate. The operator or its surety could carry out the reclamation. At anytime prior to the recalculation of the reclamation bond, Revett could apply for assignment from ASARCO of the existing operating permit at Troy by supplying a substitute bond in the amount of $10.5 million. The state would still be an estimated $10 million dollars short of what is needed to reclaim the site. However, merely suspending the permit would not have been especially productive because operations were voluntarily suspended, except that the mine could not be operated until the bond was in place, the reclamation plan was current, and the suspended permit reactivated.

Regardless of the adequacy or inadequacy of the bond, the permittee is responsible by law for the reclamation of the site. As long as the permitholder is not bankrupt, the state can require a permitholder to perform operation, maintenance, and reclamation at the site. This is the situation with the ASARCO Troy mine, the ASARCO Black Pine mine near Philipsburg (see **Tables 4 and 5**), and CR Kendall.[9]

ASARCO presents a special case because the parent company, Grupo Mexico, has signed a settlement agreement with the federal EPA and Department of Justice to establish a $100 million remediation trust account to cover all of the company's remediation liabilities nationwide. The trust will be administered by the EPA and will probably be used as a mini superfund for ASARCO sites nationwide in the event that the company files for bankruptcy. Funds from this account were used to pay for some reclamation work at Black Pine in 2003. More of the fund will be used to pay for reclamation work at Black Pine in 2004.

The CR Kendall mine operator has completed mining and has performed some dirtwork reclamation. Water treatment became necessary, and the operator is maintaining a water pumpback and monitoring system. To settle a bond forfeiture proceeding initiated by the DEQ, CR Kendall's surety company provided the agency with cash payment of $1,869,000, which was the face amount of the bond, and was released from further liability. The DEQ must use this money and the interest that it is earning to reclaim the Kendall mine. The operator may submit a modification to a mine reclamation plan, the state can order an operator to submit a revised plan, or the agency can modify a reclamation plan when it is clear that the existing plan, although approved and bonded, is inadequate. After rejecting CR Kendall's proposed reclamation plan modifications as inadequate, the agency initiated its own effort under section 82-4-337, MCA. The DEQ is preparing a state-funded environmental impact statement on alternatives for a revised reclamation plan at CR Kendall. HB 617 (2003), codified as section 82-4-337(4), MCA, prohibits the DEQ from modifying an existing reclamation plan and increasing an existing bond until an environmental review is completed in accordance with MEPA.

In the case of a major amendment to a plan, an environmental impact statement may be required that can extend the time that a mine operation is underbonded. Mine permit modifications and bond calculations that are implicated by this legislative change include those for CR Kendall, ASARCO Troy and Black Pine, Golden Sunlight, and possibly Montana Tunnels and Montana Resources. Minor plan amendments or bond adjustments because of inflation are not impacted by this legislation.

The liability for the costs of reclamation that exceed the bond amount remains with the permittee (section 82-4-341(6), MCA). Collecting the costs of that liability is another matter. The state can revoke a mine operating permit by DEQ order and forfeit a performance bond for failure to comply with the requirements in a notice of violation or an order of license suspension subject to a Board of Environmental Review hearing (section 82-4-362(2), MCA). In the case of an underbonded mine, whether it is active or inactive, revoking a permit merely transfers the responsibility for proceeding with the reclamation to the state and its federal partners, if any. Given DEQ's cost estimates, the CR Kendall mine and the Troy mine are classic examples of this situation. The DEQ believes that revoking a permit eliminates any possibility of getting the mine permittee to perform any work at the site and that it reduces the potential of eventually obtaining a revised reclamation plan and adequate bond. Still, the possession of a mine operating permit may be the most valuable asset that a mining company owns. Obtaining a metal mine operating permit can be very time consuming and expensive. Loss of an operating permit eliminates any possibility of generating investment capital for the site, prohibits the extraction of the ore reserve, eliminates the potential sale and transfer of a permitted mine property, and jeopardizes the permittee's ability to obtain another mine operating permit in Montana (sections 82-4-335(8) and (9) and 82-4-341(7), MCA).

Balancing Economic Considerations With Reclamation Costs

In the case of an operating mine, the agency is faced with the reality of having to balance what the science and mechanics of mine reclamation require with the economics of the mine operation. The Golden Sunlight case determined that the state cannot base its reclamation decisions on what reclamation alternative is economically feasible but on what is more protective of the environment. (National Wildlife Federation v. Mont. Dept. of State Lands (DEQ), 2000 ML 3565, Cause CDV-92-486) The Pegasus bankruptcies illustrated that inattention to all facets of mine reclamation and unforeseen contingencies can leave the state with environmental damages and costly public expenditures. The bond for Revett Silver Company's proposed and permitted Rock Creek Mine has been calculated to be between $75 million and $80 million. Revett Silver Company has met with the Governor to seek assistance in reopening the ASARCO Troy mine by minimizing the proposed $10 million reclamation bond increase for the mine.[12]

After being idle for 3 years and with the help of some local property tax relief, a $1 million local grant, and a $2.34 million Board of Investments loan, hundreds of employees went back to work at the Montana Resources Continental mine in Butte in 2003. The last reclamation bond review for MR was conducted in 1998. The mine is due for another comprehensive review. The agency is preparing internal draft estimates for discussion purposes with the mine company. Given that surety bonds are currently difficult to obtain and much more expensive than they were in the pre-September 11, 2001, and the pre-Pegasus bankruptcy era[8] and given that the reclamation bond for MR is both out of date and

potentially underfunded, the DEQ will be under considerable internal and external pressure to calculate an appropriate bond.

If it is determined that an active mine is seriously underbonded, the agency is reluctant to suspend the permit and order that mining stop until the bond is provided until and unless it is clearly obvious that no bond or bond increase will be provided. In the case of an operating mine that is "financially challenged", the agency and the permittee use a variety of methods to provide sufficient financial assurance. The mine bond may be provided incrementally, depending on how much mine disturbance occurs with time (e.g., Golden Sunlight). This requires constant agency oversight and the cooperation of the permittee in order to keep up with reclamation needs. In some cases (e.g., Montana Tunnels and Golden Sunlight), concurrent reclamation may be possible in order to reduce the acres under bond if water treatment concerns are addressed.

Reclamation Shortfalls

In the past, as described here and elsewhere, some hard-rock mines have been bonded for less than what became the actual cost of reclamation, especially in regard to the cost of water treatment. When this situation is combined with a financially weak or uncooperative mining company, the result may be that:

(1) reclamation did not occur and human health and the environment were impacted;
(2) the state and federal government had to pick up the additional costs of reclamation; or
(3) reclamation was less than thorough, given the limited availability of funds.

Legislators and the public are concerned about how much the reclamation of metal mines will cost "the taxpayer".[13] A partial view of the current extent of the problem can be seen in the DEQ provided figures in **Table 6.**

Not listed is the W.R. Grace/Kootenai Development mine in Libby, which will have large public costs because of federal superfund involvement. Although not directly related to mine site reclamation, the company has recently appealed a federal judge's order to reimburse the EPA $54.5 million for asbestos cleanup in Libby, plus any future costs.[14] **Table 4** and **Table 5** show that the state has a $66,700 bond left for remaining reclamation at the mine (permit 00010). The maximum bond posted for the mine was $472,000 in 1988. As portions of the mine were reclaimed beginning in 1991, portions of the bond were released until a bond of $66,700 remained on 125 acres by December 1997. Following a hearing on a request for final bond release in late 1999, the health impacts of asbestosis became well known and the EPA efforts

and superfund listing began. The state retained the $66,700 bond. Reclamation status is under review by the EPA in 2004 and 2005.

Table 6 lists the sources of reclamation funds that have been or will be spent at three bankrupt Pegasus mines and at the closed CR Kendall mine. Mine bond funds are listed first, followed by available public funds, including resource indemnity trust funds, DEQ funds, environmental rehabilitation and response account funds (section 75-1-110, MCA), hard-rock reclamation bond funds (section 82-4-313, MCA), and federal funds from the EPA, the U.S. Forest Service, and the Bureau of Land Management. For example, the Forest Service has recently used land management agency authority in CERCLA to declare the Beal Mountain mine a federal superfund site subject to reclamation with additional federal funding. The figures on the right hand side of **Table 6** are DEQ estimates of future needs.

In summary, public funds have been spent on these mine reclamation projects and more expenditures are anticipated in the future beyond the amount of the financial guarantees. There is no further possibility of obtaining additional funds from Pegasus. However, if the CR Kendall Corporation remains a viable economic entity into the future, the state can exercise its authority under the permitting statute to hold the company accountable for additional reclamation needs. The company and its surety have already provided the previous $1.869 million bond amount to the state, but the mine operating permit is still in place. An environmental analysis is being conducted on alternatives for a new closure and reclamation plan after which a new bond amount will be calculated. If it is determined that additional bond is necessary, the company will be required to provide the new bond amount and continue completion of the reclamation plan.

Despite the state's best efforts, it is still possible that mines may be added to the list in **Table 6** in the future. Mining fortunes and commodity prices change, environmental contingencies occur, cost estimates may be erroneous, sureties will contest forfeited bond amounts and reclamation needs, and the specific requirements of mine reclamation or the standards by which reclamation is measured are left to interpretation by the regulators, the mining companies, and the public.

Table 6. Source of Mine Reclamation Funds

Funding Source	Total Funds	Expended	Balance	Activity	Reclamation Complete?	Estimated Need	Possible Funding Sources[1]
Pegasus ZORTMAN and LANDUSKY MINES – Through March 2004							
Zortman Bond	$10,024,000	$8,879,000	$1,235,000	Reclamation	90%	$1,530,000	Metal mine tax, RIT, HR bonds, Congress
Landusky Bond	$19,600,000	$17,740,000	$1,860,000	Reclamation	85%	0	N/A
Trust Reserve	$14,800,000	0	$14,800,000	Water treatment	Matures in 2017	$12,400,000	Metal mine tax, RIT, BLM, HR bonds, Congress
Water O & M	$13,895,101	$4,387,926	$9,507,175	Water treatment	Continuing	$4,200,000	Metal mine tax, RIT, BLM, HR bonds, Congress
Construction Assurance	$2,040,970	$1,840,000	$200,970	Water treatment plant	N/A	0	N/A
Bankrupt Settlement	$1,050,000	$1,050,000	0	Reclamation	N/A	0	N/A
RIT	$900,000	$900,000	0	Organics, water treatment, Ruby Gulch tailings	Yes	0	N/A

[1] Sources of funding include: state metalliferous mine taxes, resource indemnity trust tax /interest, hard-rock reclamation bonds, federal agency funding from Bureau of Land Management, U.S. Forest Service, or Congressional appropriations assumed to be a 50/50 match with state funds on federal lands or 100% federal on private lands.

Funding Source	Total Funds	Expended	Balance	Activity	Reclamation Complete?	Estimated Need	Possible Funding Sources[1]
RIT	$540,000	$540,000	0	Water treatment zero coupon bond payment	See Trust Reserve above		
DEQ	$60,000	$60,000	0	Studies/ sampling	N/A	$60,000	DEQ
DEQ	$182,000	$182,000	0	Water treatment	N/A	0	N/A
ERRA	$15,000	$15,000	0	Monitoring well	N/A	0	N/A
EPA	$340,000	$340,000	0	EIS	N/A	0	N/A
BLM	$5,564,500	$2,335,807	$3,318,693	Reclamation	N/A	N/A	See columns above
Pegasus BEAL MOUNTAIN MINE – Through March 2004							
Mine Bonds	$6,312,000	$6,182,692	$129,608	Reclamation	85%	$1,000,000 for waste rock, facilities, and access road	Forest Service, metal mine tax, RIT, HR bonds. Amount depends on remedial alternative
Interest	$506,236	$506,236	0	Reclamation	N/A	0	N/A
Gold Recovery	$750,000	$750,000	0	Reclamation	N/A	0	N/A
FS Money	$218,476	$108,397	$110,079	EECA	50%	0	N/A
FS Money	$484,458	$7,854	$492,312	Operations	2004-05	$2,000,000	FS funds

Funding Source	Total Funds	Expended	Balance	Activity	Reclamation Complete?	Estimated Need	Possible Funding Sources[1]
FS Funds	$2,000,000	$2,000,000	0	Water treatment			
RIT	$75,000	$75,000	0	Water treatment		$5,000,000? Needed for long-term water treatment in German Gulch and heap leach pad	Metal mine tax, RIT, HR bonds, Forest Service. Total depends on remedial alternative
Hard-Rock Bonds	$2,500,000	$2,500,000	0	Water treatment	N/A	N/A	N/A
FS AMP/ECP	$100,000	$100,000	0	FS wages – maintenance	Continuous	$30,000/year	FS AMP/ACP Program
Pegasus BASIN CREEK-TEN MILE MINE – Through March 2004							
Mine Bonds	$3,825,000	$3,497,734	$327,266	Reclamation	100%	$1,000,000 to line pad with geomembranes	Metal mine tax, RIT, HR bonds
Interest	$318,108	0	$318,108	Water O & M	N/A	Ongoing	N/A
RIT	0	0	0	Long-term maintenance of site and water treatment		$1,000,000?	Metal mine tax, RIT, HR bonds
FS CERCLA	$2,065,753	$2,065,753	0	Luttrell Pit	N/A	Variable/year	FS CERCLA
FS AMP/ECP	$150,000	$150,000	0	FS wages	N/A	$20,000/year	FS AMP/ACP Program

Funding Source	Total Funds	Expended	Balance	Activity	Reclamation Complete?	Estimated Need	Possible Funding Sources[1]
Canyon Resources KENDALL MINE – Through MARCH 2004							
Bond	$1,869,000	0	$1,869,000	Reclamation	0% by agencies	$2,000,000?	CR Kendall, metal mine tax, RIT, HR bonds
Bond	0	0	0	Water treatment	Pumpbacks, zeolite system in place	$12,000,000	CR Kendall, metal mine tax, RIT, HR bonds
Interest	$98,028	0	$98,028	Reclamation	N/A	0	N/A
DEQ	$270,000	$135,000	$135,000	EIS	50%	0	N/A
EPA	$224,000	$54,500	$169,500	EIS	N/A	0	N/A
CR Kendall	0	0	0	EIS	N/A	$270,000	Canyon Resources?

APPENDIX A

Memo

Date: June 15, 2000

To: Clayton Schenck

From: Roger Lloyd and Gary Hamel

Re: Metal Mine Performance Bonds-LFC Recommendations

The Legislative Finance Committee endorses the following changes and supports legislation that enacts the required statutory amendments. The Department of Environmental Quality (DEQ) will submit a copy of their draft legislation to Legislative Fiscal Division staff for review.

1. ***Allow bonding for unforeseen costs.*** The DEQ is contemplating, among other options, that a contingency factor be added to the calculated bond amount based on risk to pay for unforeseen environmental or reclamation costs.
2. ***Require that an increase in bond be put in place immediately***. The DEQ would like to establish a timeframe for changing a bond amount: a) DEQ would be required to issue a preliminary bond amount within 30 days of the review; b) the operator and DEQ would have 60 days to discuss the amount prior to DEQ issuing the final amount; and c) the operator would then have 30 days to post the bond and then could appeal the final amount.
3. ***Small miners - eliminate the maximum bond; bond all activity***. The DEQ proposes to: a) eliminate the $10,000 maximum bond on placer and dredge mining operations (thus requiring them to bond for the full cost of reclamation); b) impose a monetary maximum bond on other small miners who currently are not required to post bond; and c) use interest from the resource indemnity trust for any shortfalls.
4. ***Allow a portion of the bond to be retained after reclamation***. The LFC recommends that the DEQ be allowed to retain a portion of the bond after reclamation as a contingency for unforeseen environmental or reclamation costs, but that a reasonable maximum retention time be established. The LFC asks the DEQ to work with the mining industry to determine a "reasonable" time limit and to report back to the LFC with a proposal for further debate.
5. ***Review 82-4-360, MCA, to see if it is working as intended; bankruptcy***. This section states that a person may not conduct mining or exploration activities in Montana if that person or a business association of that person had a bond forfeited. The LFC asked staff to provide further information to the LFC to determine if the statute is clear enough to carry out legislative intent.
6. ***Statutorily require all bond proceeds and earnings be used for reclamation.***
7. ***Submit a copy of the Metal Mine Performance Bonds and State Liability report to the State Auditor and request that they review statute to ensure that the state's interests are protected upon incapacity of a surety due to bankruptcy, default, or revocation of its license and to report their findings to the LFC.***
8. ***Provide statutory authority for the DEQ to convert bond money to trust funds.***

ENDNOTES

[1] See minutes of the EQC meeting for October 9, 2003, and January 15, 2004.

[2] Review of Hard-rock Mining Reclamation Bond Requirements, Legislative Request #98L-36, Legislative Audit Division, December 4, 1997.

[3] Permitting and Compliance Division, Department of Environmental Quality, Performance Audit #98P-08, Legislative Audit Division, December 1998.

[4] Metal Mine Performance Bonds and State Liability, Legislative Finance Committee, Roger Lloyd, February 29, 2000.

[5] Reclamation Bonding in Montana, Stuart M. Levin and James R. Kuipers, Center for Science and Public Participation, November 2000.

[6] Hardrock Mining on Federal Lands, p. 41, National Research Council, National Academy Press,1999.

[7] Warren McCullough, DEQ Environmental Management Bureau Chief, testimony before the EQC, October 9, 2003.

[8] "Mining and the Vanishing Surety Bond Market", Lisa A. Kirschner and Edward B. Grandy, Natural Resources and the Environment, Vol. 17, No. 3, Winter 2003.

[9] Personal communication with the DEQ EMB staff, March 2004.

[10] Putting a Price on Pollution, Financial Assurance for Mine Reclamation and Closure, Mineral Policy Center Issue Paper No. 4, Jim Kuipers, March 2003, p. 43.

[11] Personal communication with Frank Duval, CEO, Revett Mining Company, Spokane, Washington, April 21, 2004.

[12] "CEO Seek Tax Breaks, Bond Freeze for Troy Mine", Michael Jamison, Missoulian, December 13, 2003

[13] "Mine Cleanup Costs Not Solely on Taxpayers", Michael Dennison, Great Falls Tribune, March 8, 2004.

[14] "Grace Appeals Ruling That It Must Pay for $54 Milllion Cleanup", Missoulian, April 28, 2004.