

GAO

Report to the Ranking Minority Member,  
Committee on Homeland Security and  
Governmental Affairs, U.S. Senate

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June 2005

# HARDROCK MINING

## BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs





Highlights of [GAO-05-377](#), a report to the Ranking Minority Member, Committee on Homeland Security and Governmental Affairs, U.S. Senate

## Why GAO Did This Study

Since the General Mining Act of 1872, billions of dollars in hardrock minerals, such as gold, have been extracted from federal land now managed by the Department of the Interior's Bureau of Land Management (BLM). For years, some mining operators did not reclaim land, creating environmental, health, and safety risks. Beginning in 1981, federal regulations required all operators to reclaim BLM land disturbed by these operations. In 2001, federal regulations began requiring operators to provide financial assurances before they began exploration or mining operations. GAO was asked to determine the (1) types, amount, and coverage of financial assurances operators currently use; (2) extent to which financial assurance providers and others have paid to reclaim land not reclaimed by the operator since BLM began requiring financial assurances; and (3) reliability and sufficiency of BLM's automated information system (LR2000) for managing financial assurances for hardrock operations.

## What GAO Recommends

GAO recommends that BLM strengthen its management of financial assurances by requiring its state office directors to develop an action plan for ensuring operators have adequate financial assurances and improving the reliability and sufficiency of LR2000. Interior did not concur with the recommendations; GAO believes they are needed to ensure adequate financial assurances.

[www.gao.gov/cgi-bin/getrpt?GAO-05-377](http://www.gao.gov/cgi-bin/getrpt?GAO-05-377).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Robin M. Nazzaro at (202) 512-3841 or [nazzaror@gao.gov](mailto:nazzaror@gao.gov).

## HARDROCK MINING

# BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs

## What GAO Found

According to GAO's survey of BLM state offices, as of July 2004, hardrock operators were using 11 types of financial assurances, valued at about \$837 million, to guarantee reclamation costs for existing hardrock operations on BLM land. Surety bonds, letters of credit, and corporate guarantees accounted for most of the assurances' value. However, these financial assurances may not fully cover all future reclamation costs for these existing hardrock operations if operators do not complete required reclamation. BLM reported that, as of July 2004, some existing hardrock operations do not have financial assurances and some have no or outdated reclamation plans and/or cost estimates, on which financial assurances should be based.

BLM identified 48 hardrock operations on BLM land that had ceased and not been reclaimed by operators since it began requiring financial assurances. BLM reported that the most recent cost estimates for 43 of these operations totaled about \$136 million, with no adjustment for inflation; it did not report reclamation cost estimates for the other 5 operations. However, as of July 2004, financial assurances had paid or guaranteed \$69 million and federal agencies and others had provided \$10.6 million to pay for reclamation, leaving \$56.4 million in reclamation costs unfunded. Financial assurances were not adequate to pay all estimated costs for required reclamation for 25 of the 48 operations because (1) some operations did not have financial assurances, despite BLM efforts in some cases to make the operators provide them; (2) some operations' financial assurances were less than the most recent reclamation cost estimates; and (3) some financial assurance providers went bankrupt. Also, cost estimates may be understated for about half of the remaining 23 operations because the estimates may not have been updated to reflect inflation or other factors.

BLM's LR2000 is not reliable and sufficient for managing financial assurances for hardrock operations because BLM staff do not always update information and LR2000 is not currently designed to track certain critical information. Specifically, staff have not entered information on each operation, and for those operations that are included, the information is not always current. Also, LR2000 does not track some critical information—operations' basic status, some types of allowable assurances, and state- and county-held financial assurances. Given these limitations, BLM's reliance on LR2000 to manage financial assurances is mixed: headquarters does not always rely on it and BLM state offices' reliance varies. To compensate for LR2000's limitations, some BLM offices use informal record-keeping systems to help manage hardrock operations and financial assurances. BLM has taken some steps and identified others to improve LR2000 for managing financial assurances for hardrock operations.

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**Abbreviations**

ALIS	Alaska Land Information System
BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Restoration, Compensation, and Liability Act of 1980
LR2000	Legacy Rehost 2000
RAMS	Restoration of Abandoned Mine Sites

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United States Government Accountability Office  
Washington, D.C. 20548

June 20, 2005

The Honorable Joseph I. Lieberman  
Ranking Minority Member  
Committee on Homeland Security and Governmental Affairs  
United States Senate

Dear Senator Lieberman:

The General Mining Act of 1872 encouraged development of the West by allowing individuals<sup>1</sup> to stake claims and obtain exclusive rights to gold, silver, copper, and other valuable hardrock mineral deposits on land belonging to the United States. Since then, thousands of operators<sup>2</sup> have extracted billions of dollars worth of hardrock minerals from land now managed by the Department of the Interior's Bureau of Land Management (BLM)—the agency that manages the largest amount of federal land.<sup>3</sup> However, some operators did not reclaim BLM land disturbed by hardrock operations related to exploration, mining, and mineral processing when their operations ceased. These operators left BLM with many thousands of acres of disturbed land, some of which posed environmental and health and safety risks.

The Federal Land Policy and Management Act of 1976 states that the Secretary of the Interior shall take any action required to prevent the “unnecessary or undue degradation” of public land and its resources. BLM has developed and revised regulations and issued policy under this provision. Specifically, BLM issued regulations, effective in 1981, that require all operators to reclaim BLM land disturbed by their hardrock operations. For plan-level operations—those disturbing over 5 acres of land or those in certain designated areas, such as the national wild and scenic rivers system—operators were to have a BLM-approved plan that

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<sup>1</sup>Individuals include citizens and people declaring an intention to become citizens.

<sup>2</sup>For simplicity in this report, we refer to claimants and operators as operators. An operator is the person who conducts operations in connection with exploration, mining, and processing hardrock minerals on BLM land. Both the claimant and operator are responsible for reclamation.

<sup>3</sup>BLM manages about 261 million acres, most of which are located in 12 western states, including Alaska. Other federal agencies, such as the Department of Agriculture's Forest Service, also manage federal land available for hardrock operations. For simplicity in this report, we refer to BLM-managed land as BLM land.

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documented all the anticipated hardrock activities and all required reclamation. For notice-level operations—those causing a surface disturbance of 5 acres or less—operators were to submit notices that informed BLM of the operators’ intentions, but these notices did not require BLM’s approval. Plans have to be approved and notices received by BLM before the operators begin exploration or mining operations. Also, to guarantee that reclamation costs are paid, these regulations stated that BLM could require plan-level operators to provide bonds or other financial assurances in an amount specified by BLM, taking into consideration the estimated cost of reasonable stabilization and reclamation of the disturbed land.<sup>4</sup> BLM also could require notice-level operators with a history of noncompliance with federal regulations to submit a plan of operation and thus notice-level operators could be required to provide financial assurances. Through a formal agreement, BLM can designate a state agency as responsible for managing some or all hardrock requirements, including financial assurances.<sup>5</sup> Operators have used a variety of types of financial assurances, ranging from funded assurances, such as cash and negotiable U.S. securities, to corporate guarantees, which are promises to complete reclamation that are backed only by the financial strength of the operator. Despite having the regulatory authority to do so, BLM rarely required operators to provide financial assurances throughout the 1980s.<sup>6</sup>

In August 1990, BLM issued a policy instructing BLM officials to require operators to provide financial assurances for all plan-level operations and for notice-level operations if the operators had a record of noncompliance with federal regulations.<sup>7</sup> BLM generally limited financial assurances to

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<sup>4</sup>The regulations stated that in lieu of a bond, the operator (1) could deposit in a federal depository account of the United States, directed by BLM, cash or negotiable U.S. securities or (2) show evidence of an existing bond provided for the operation pursuant to state law or regulations.

<sup>5</sup>Financial assurances could have been payable to either BLM or the designated state agency, depending on the terms of the agreement between BLM and the state, which are to coordinate efforts and avoid duplication of financial assurances and other requirements. These agreements may establish joint federal-state program management and enforcement of hardrock operations on BLM land or assign primary responsibility for management to either BLM or the state.

<sup>6</sup>GAO, *Importance of Financial Guarantees for Ensuring Reclamation of Federal Lands*, GAO/T-RCED-89-13 (Washington, D.C.: Mar. 7, 1989).

<sup>7</sup>BLM Instruction Memorandum No. 90-582, *Modification of Bonding Policy for Plans of Operation Authorized by 43 CFR 3809* (Aug. 14, 1990).



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\$1,000 per acre for exploration and \$2,000 per acre for mining operations. However, BLM required operators using leaching chemicals, such as cyanide and sulfuric acid, to extract minerals from ore and required operators with a record of noncompliance to provide financial assurances to cover all estimated reclamation costs for hardrock operations. For these operations, BLM was to estimate the cost of reclamation and add to it the reasonable administrative costs that would be incurred if reclamation were done under contract. However, BLM did not further specify the types of financial assurances that could or could not be used.

Concerns about the types of financial assurance and the lack of financial assurances requirements for all notice-level operations, among other things, prompted BLM to establish new regulations in 2001. The new regulations require operators to include reclamation plans and cost estimates in the notices and plans of operation that they submit to BLM for acceptance or approval. The new regulations require that before exploration or mining operations begin, operators must provide financial assurances to cover all estimated reclamation costs for both notice- and plan-level hardrock operations. In addition, BLM must periodically review the estimated cost of reclamation to determine if the cost estimates should be updated. The regulations also specify the types of acceptable financial assurances and prohibit new corporate guarantees and increases or transfers in the corporate guarantees used under BLM's previous policy. The financial assurance provisions of the new regulations applied immediately—on January 20, 2001, for new notice- and plan-level operations and on January 20, 2003, for extended notice-level operations, unless the notice was modified.<sup>8</sup> Plans of operations that were approved before January 20, 2001, were required to have financial assurances in place no later than November 20, 2001.

Under federal regulations, if an operator fails to complete required reclamation, BLM or the designated state agency may take steps to obtain funds from the financial assurance providers. Providers then have the option of (1) relinquishing the amount guaranteed by the financial assurance to BLM or the designated state agency, which would then use the funds for reclamation, or (2) completing the reclamation themselves. The regulations also give BLM the authority to take steps, such as issuing

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<sup>8</sup>Before the 2001 regulations, notice-level operations did not have an expiration date. The 2001 regulations stated that all notices filed on or after January 20, 2001, would be extended only for 2 years, after which they would have to be renewed or would expire.

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noncompliance and suspension orders, and revoking plans of operation, if operators do not comply with the financial assurance or other regulatory requirements.

BLM established an automated information system—the Legacy Rehost 2000 (LR2000)—in 1999 that combined into one system several existing systems that collect and store information on the programs and land BLM manages. LR2000 is composed of a number of subsystems, some of which contain information on hardrock operations and financial assurances.

You asked us to determine the (1) types, amount, and coverage of financial assurances operators currently use to guarantee reclamation costs, (2) amount that financial assurance providers and others have paid to reclaim operations that had ceased and not been reclaimed since BLM began requiring financial assurances and the estimated costs of completing reclamation for such operations, and (3) reliability and sufficiency of BLM’s LR2000 for managing financial assurances for hardrock operations.

We did not rely on LR2000 information to address these objectives, but instead designed two surveys to obtain information from BLM’s state and field offices because they maintain the case files and other specific information on hardrock operations. We asked the 12 BLM state offices that manage BLM programs across the United States to complete surveys for each state in their jurisdiction with hardrock operations.<sup>9</sup> We verified the information in the surveys through discussions with BLM officials in two state and four field offices and by reviewing case files and other documents. In the first survey, which focused on states’ experiences with hardrock operations, we asked these 12 offices to provide information on (1) the number of existing hardrock operations for each state within their jurisdiction,<sup>10</sup> (2) the types and the amounts of financial assurances provided for existing hardrock operations in each state, (3) their views on

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<sup>9</sup>Some of the 12 BLM state offices manage BLM programs in more than one state. For example, the BLM Montana state office manages BLM programs in Montana, North Dakota, and South Dakota, and the BLM Oregon state office manages BLM programs in Oregon and Washington.

<sup>10</sup>In our survey instructions, we defined existing operations to include those hardrock operations that (1) are pending BLM acceptance, (2) have been accepted but operations have not begun, (3) are ongoing, and (4) are temporarily inactive. While federal regulations require reclamation plans and cost estimates for all of these operations, they do not require financial assurances for those pending BLM acceptance or those that have been accepted but have not begun exploration or mining operations.

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the effectiveness of the various types of financial assurances, (4) their views on the reliability and sufficiency of hardrock operation data contained in LR2000, and (5) their use of LR2000 for managing hardrock operations and financial assurances in their states. In the second survey, which focused on selected hardrock operations, we asked these 12 offices to provide detailed information on hardrock operations within their jurisdiction that met both of the following criteria: the operator (1) ceased operations after the requirement for financial assurances went into effect—August 1990 for plan-level operations, January 2001 for new notice-level operations, and January 2003 for existing notice-level operations and (2) failed to complete the required reclamation. We used information in this survey to determine the estimated reclamation costs and the adequacy of financial assurances for reclaiming each hardrock operation that BLM identified as meeting these criteria. We took steps to determine whether BLM officials identified all hardrock operations that met these criteria, such as comparing BLM's list of operations with operations identified by others. To the extent that BLM did not identify all hardrock operations that had ceased and not been reclaimed by the operator, the information it reported to us would be understated. In addition, we did not collect information on the thousands of ceased hardrock operations since 1872 that did not require financial assurances and therefore fell outside the scope of this review.

We also took steps to understand BLM's management and oversight of hardrock operations and the use of financial assurances to ensure reclamation. We reviewed BLM regulations, documents, and independent studies relevant to hardrock operations and financial assurances. We also discussed these issues with BLM officials at headquarters and in selected state and field offices. To understand the relationship between BLM and state agencies responsible for overseeing hardrock operations, we met with BLM state office and state agency officials in several states, and reviewed relevant memorandums of understanding and other agreements. To understand the reliability and sufficiency of LR2000, we spoke with BLM officials responsible for administering the system and staff in selected BLM state and field offices who enter information into the system and who use the system to manage hardrock operations and financial assurances. We also discussed relevant hardrock operation and financial assurance issues with experts and representatives from the mining industry, academia, and environmental groups. Finally, to better understand hardrock operations and reclamation requirements, we visited five mining operations in Nevada and Montana. Appendix I provides detailed information on our scope and methodology.

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We conducted our review from October 2003 through May 2005 in accordance with generally accepted government auditing standards, which included an assessment of data reliability.

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## Results in Brief

As of July 2004, hardrock operators were using 11 different types of financial assurances, valued at approximately \$837 million, to guarantee reclamation costs associated with approximately 2,500 existing hardrock operations on BLM land in 12 western states, according to our analysis of survey results. Surety bonds (\$384 million), letters of credit (\$238 million), and corporate guarantees (\$204 million) accounted for almost all of the \$837 million in financial assurances. However, these financial assurances may not fully cover all future reclamation costs for these existing hardrock operations if operators do not complete required reclamation. BLM reported that, as of July 2004, some existing hardrock operations do not have financial assurances, and some have no or outdated reclamation plans and/or cost estimates on which financial assurances should be based.

BLM identified 48 hardrock operations on its land that had ceased and not been reclaimed by operators since it began requiring financial assurances. BLM reported that the most recent cost estimates for reclamation required by applicable reclamation plans and federal regulations for 43 of the 48 operations totaled about \$136 million, with no adjustment for inflation; it did not report reclamation cost estimates for the other 5 operations. However, as of July 2004, the BLM-required financial assurances had provided or were guaranteeing \$69 million, and federal agencies and others had provided \$10.6 million to pay the estimated costs for required reclamation for the 48 operations, leaving \$56.4 million in unfunded reclamation costs. Financial assurances were not adequate to pay all estimated costs for required reclamation for 25 of the 48 ceased operations for several reasons. First, operators did not provide required financial assurances for 10 operations, despite BLM's efforts in some cases to make the operators provide them. Second, financial assurances that were provided were less than the most recent reclamation cost estimates for 13 operations. Third, financial assurance providers went bankrupt and did not have the funds to pay all reclamation costs for two other operations. In addition, cost estimates may be understated for about half of the remaining 23 operations because the cost estimates may not have been updated to reflect inflation or other factors that could increase reclamation costs. Furthermore, the \$136 million cost estimate is understated to the extent that BLM did not identify or report information in response to our survey on all hardrock operations that had ceased and not been reclaimed by

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operators, as required. For example, Oregon's BLM state office estimated that 20 notice-level operations in Washington state had ceased and not been reclaimed, but neither the Oregon BLM state office nor its field offices completed our surveys for these operations. Clearly, the \$136 million estimate would be higher if BLM's state or field offices had reported this information. Finally, according to BLM officials, required reclamation had been completed for only 5 of the 48 operations as of July 2004, but they believe it is likely that required reclamation will be completed on an additional 28 operations sometime in the future.

BLM's LR2000 is not reliable and sufficient for managing financial assurances that guarantee coverage of reclamation costs for BLM land disturbed by hardrock operations because staff do not always update information, and LR2000 is not currently designed to track certain critical information. Specifically, staff have not entered information on each hardrock operation and, for those hardrock operations included in LR2000, the information is not always current. Moreover, LR2000 does not track some information on hardrock operations and their associated financial assurances that we believe is critical for effectively managing financial assurances. This information includes the basic status of operations, such as whether they are ongoing or have ceased and should be reclaimed; some types of allowable financial assurances; and state- and county-held financial assurances. Given these limitations, it is not surprising that BLM's reliance on LR2000 to manage financial assurances is mixed. Specifically, BLM headquarters does not always rely on the system, and BLM state offices' reliance varies—in four states with hardrock operations, the state and field offices relied on the system to little or no extent; in eight states, to a moderate or some extent; and in one state, to a very great extent. In part to compensate for LR2000's limitations, some BLM state and field offices use informal record-keeping systems to help manage hardrock operations and financial assurances. BLM has taken some steps and identified others to improve LR2000 for managing financial assurances for hardrock operations.

To ensure that hardrock operators on BLM land have adequate financial assurances, we are making recommendations to the Secretary of the Interior to strengthen BLM's management of financial assurances for hardrock operations on its land by directing the Director of BLM to (1) require state office directors to develop an action plan for ensuring that operators have adequate financial assurances and (2) improve the reliability and sufficiency of BLM's automated information system.

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In responding to a draft of this report, Interior stated that it appreciated the advice and critical assessment we provided on BLM's management of financial assurances required for hardrock operations. However, without acknowledging or addressing specific deficiencies identified in our report, Interior disagreed with our recommendations, stating that guidance already issued ensured that proper management attention was being provided. In the face of considerable evidence in this report to the contrary, Interior's assertions that all is well and that recently issued policy and guidance ensure that adequate financial assurances are in place seems hard to comprehend. Accordingly, we continue to believe that our recommendations are warranted to ensure that adequate financial assurances are in place. Interior's letter and our comments are included in appendix IV.

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## Background

BLM is responsible for managing approximately 261 million acres of public land, over 99 percent of which is located in 12 western states, including Alaska. Approximately 90 percent of this land is open to the public for hardrock mineral exploration and mining. Less than one-tenth of 1 percent of BLM land is affected by existing hardrock operations. Figure 1 shows the BLM land available for hardrock operations.

Figure 1: BLM-Managed Land



Source: BLM.

## How Hardrock Operations Work and the Importance of Reclamation

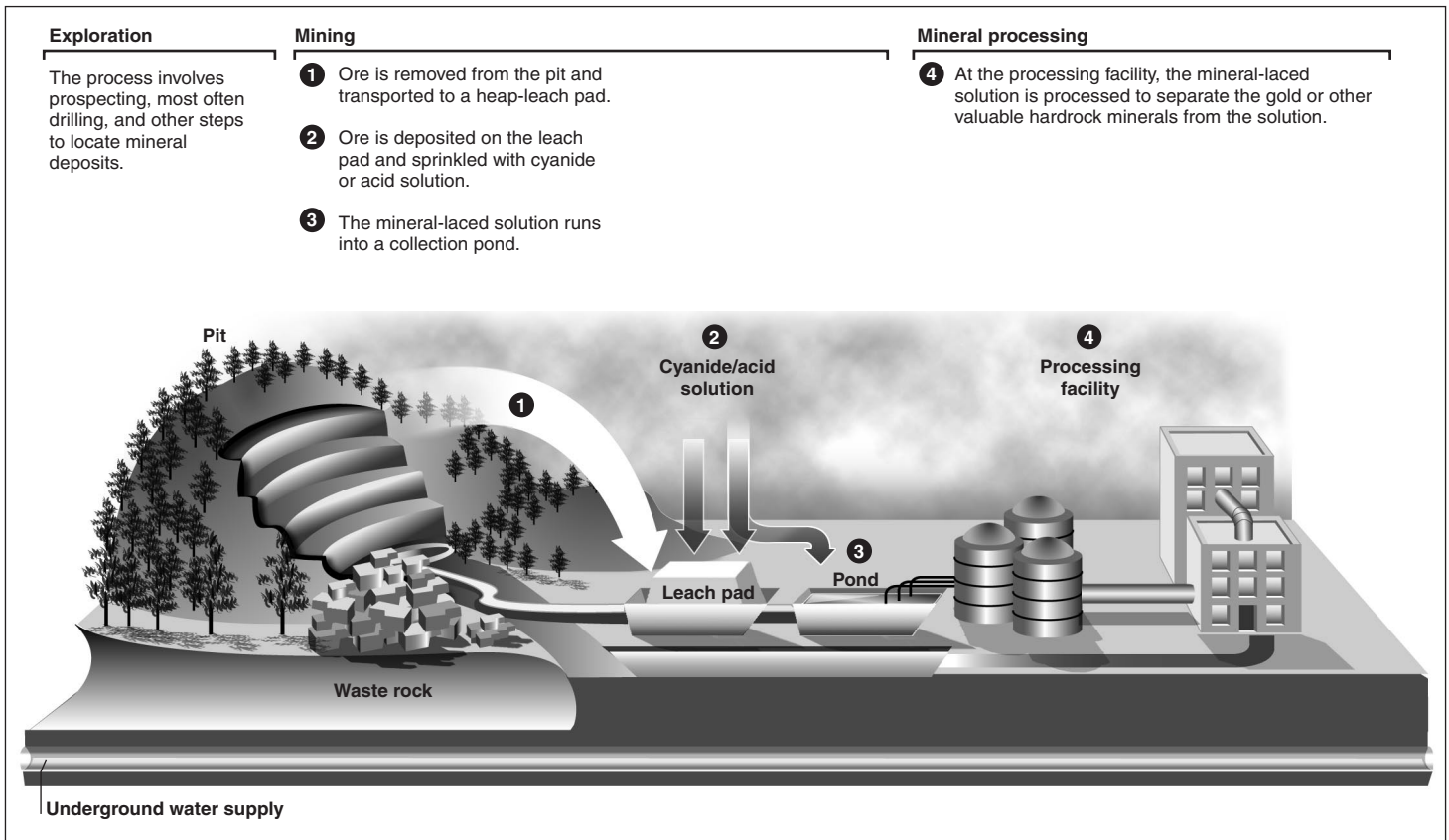
Hardrock operations consist of three primary stages—exploration, mining, and mineral processing. Operators are responsible for reclaiming the land disturbed by such operations at the earliest economically and technically feasible time, if this land will not be further disturbed. Exploration involves prospecting and other steps to locate mineral deposits. Drilling is the most common exploration tool for identifying the extent, quantity, and quality of

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minerals within an area. The mining phase includes developing the mining infrastructure (water, power, buildings, and roads) and extracting the minerals. Mineral extraction generally entails drilling, blasting, and hauling ore from pit areas to processing areas. To process minerals, operators prepare the ore by crushing or grinding it to extract minerals. The material left after the minerals are extracted—tailings (a combination of fluid and rock particles)—is then disposed of, often in a nearby pile. In addition, some operators use a leaching process to recover microscopic hardrock minerals from heaps of crushed ore by percolating solvent (such as cyanide for gold and sulfuric acid for copper) through the heap of ore. Through this heap-leaching process, the minerals adhere to the solvent as it runs through the leach heap and into a collection pond. The mineral-laced solution is then taken from the collection pond to the processing facility, where the valuable minerals are separated from the solution for further refinement. Figure 2 provides an overview of the three stages of a hardrock operation using a heap-leaching process.



**Figure 2: Overview of a Hardrock Operation Using a Heap-Leaching Process**



Source: GAO analysis of information provided by BLM, the National Research Council, and others.

At the earliest feasible time, operators are required to reclaim BLM land that will not be further disturbed to prevent or control on-site or off-site damage. Reclamation practices vary by type of operation and by applicable federal, state, and local requirements. However, reclamation generally involves resloping pit walls to minimize erosion, removing or stabilizing buildings and other structures to reduce safety risks, removing mining roads to prevent damage from future traffic, and capping and revegetating leach heaps, tailings, and waste rock piles to control erosion and minimize the potential for contamination of groundwater from acid rock drainage

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and other potential water pollution problems.<sup>11</sup> Addressing potential water pollution problems may involve long-term monitoring and treatment. Reclamation costs for hardrock mining operations vary by type and size of operation. For example, the costs of plugging holes at an exploration site are usually minimal. Conversely, reclamation costs for large mining operations using leaching practices can be in the tens of millions of dollars.

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## Laws and Regulations for Hardrock Operations

Hardrock operations on BLM land are regulated by federal and state laws. Under the General Mining Act of 1872 (Mining Act),<sup>12</sup> an individual or corporation can establish a claim to any hardrock mineral on public land.<sup>13</sup> Upon recording a mining claim with BLM, the claimant must pay an initial \$25 location fee and a \$100 maintenance fee annually per claim;<sup>14</sup> the claimant is not required to pay royalties on any hardrock minerals extracted. The Mining Act was designed to encourage the settlement and development of the West; it was not designed to regulate the associated environmental effects of mining. The number of hardrock operations left abandoned throughout the West after operations ceased is not known but is estimated to be in the hundreds of thousands, many of which pose environmental, health, and safety risks. Until Congress passed the Federal Land Policy and Management Act of 1976 (FLPMA),<sup>15</sup> development of hardrock minerals on public land remained largely unregulated. FLPMA

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<sup>11</sup>Acid drainage occurs when water and oxygen contact rock with sulfides and sulfates and form acids that can be released into the environment.

<sup>12</sup>30 U.S.C. § 22.

<sup>13</sup>Under U.S. mining laws, minerals are classified as locatable, leasable, or saleable. Locatable minerals—often referred to as hardrock minerals—include, for example, copper, lead, zinc, magnesium, gold, silver, and uranium. Only hardrock minerals continue to be “claimed” under the Mining Act. Leasable minerals include, for example, oil, gas, and coal. The Mineral Leasing Act of 1920, 41 Stat. 437 (codified at 30 U.S.C. § 181) created a leasing system for coal, gas, oil and other fuels, and chemical minerals. Saleable minerals include, for example, common sand, stone, and gravel. In 1955, the Multiple Use Mining Act of 1955, 69 Stat. 367 (codified at 30 U.S.C. § 601) removed common varieties of sand, stone, and gravel from development under the Mining Act.

<sup>14</sup> The location and maintenance fees were reduced from \$30 and \$125, respectively, by the Consolidated Appropriations Act, 2005, and will not be reinstated until, among other things, BLM establishes a nationwide system to track the length of time between submission and approval of a hardrock plan of operation.

<sup>15</sup>Pub. L. No. 94-579 (1976) (codified at 43 U.S.C. § 1701).

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states that the Secretary of the Interior shall take any action necessary to prevent “unnecessary or undue degradation” of public land.<sup>16</sup>

Under FLPMA, BLM has developed and revised regulations and issued policies to prevent unnecessary or undue degradation of BLM land from hardrock operations. BLM issued regulations that took effect in 1981 on how these operations were to be conducted.<sup>17</sup> Named for their location in the *Code of Federal Regulations*, the “3809” regulations classify surface disturbance generated by hardrock operations into three categories: casual use, notice-level operations, and plan-level operations. For all three operation levels, the operator must prevent unnecessary and undue degradation and complete reclamation at the earliest feasible time. BLM issued the revised 3809 regulations, effective in part in January 2001 that, among other things, changed the definition of the types of operations, modified the reclamation requirements, and strengthened the financial assurance requirements. Table 1 describes each type of operation under both the old and new regulations.

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<sup>16</sup>In addition, hardrock mining operations on BLM land may be subject to a variety of federal environmental laws, such as the National Environmental Policy Act, the Endangered Species Act, and the Clean Water Act. States can also pass their own laws for regulating hardrock operations in their state, including operations on BLM land.

<sup>17</sup>BLM’s Surface Management Program for hardrock operations began in 1981 with the issuance of these regulations (43 C.F.R. 3809), which apply only to hardrock operations.

**Table 1: Description of Types of Hardrock Operations under 1981 and 2001 BLM Regulations**

Type of operation	Description under 1981 regulations	Description under 2001 regulations
Casual use	<ul style="list-style-type: none"> <li>• Activities ordinarily resulting in only negligible disturbance of public land and resources</li> <li>• Does not require the operator to notify BLM</li> </ul>	<ul style="list-style-type: none"> <li>• Activities ordinarily resulting in no or negligible disturbance of public land or resources</li> <li>• Does not require the operator to notify BLM</li> </ul>
Notice-level operation	<ul style="list-style-type: none"> <li>• Any operation that causes a surface disturbance of 5 acres or less</li> <li>• Operator must notify BLM 15 calendar days before commencing operations, but BLM does not approve the notice</li> </ul>	<ul style="list-style-type: none"> <li>• Exploration operations that disturb 5 acres or less of public land</li> <li>• Operator must notify BLM 15 calendar days in advance of causing surface disturbance, but BLM does not approve the notice</li> </ul>
Plan-level operation	<ul style="list-style-type: none"> <li>• Any operation that disturbs more than 5 acres or any operation, other than casual use, in BLM special status areas, such as the national wild and scenic river system</li> <li>• Plans of operations must be approved by BLM</li> </ul>	<ul style="list-style-type: none"> <li>• Any operation greater than casual use, except for notice-level operations, and operations causing surface disturbance greater than casual use in special status areas, such as designated wilderness areas and national monuments</li> <li>• Plans of operations must be approved by BLM<sup>a</sup></li> </ul>

Source: 1981 and 2001 federal regulations.

<sup>a</sup>Other plan-level operations include bulk sampling operations, in which 1,000 tons or more of presumed ore for testing will be removed.

While the performance standards for reclamation under the 1981 and 2001 regulations remain the same, the 2001 regulations specifically identified the components involved in reclamation. For standards under both regulations, the operator of a notice- or plan-level operation must reclaim the disturbed land at the earliest time that is economically and technically feasible, except to the extent necessary to preserve evidence of the presence of minerals, by taking reasonable measures to prevent or control on-site and off-site damage to federal land. Reclamation must include the following actions:

- saving topsoil to be applied after reshaping disturbed areas;
- taking measures to control erosion, landslides, and water runoff;
- taking measures to isolate, remove, or control toxic materials;
- reshaping the area disturbed, applying the topsoil, and revegetating disturbed areas, where reasonably practicable; and
- rehabilitating fisheries and wildlife habitat.

The 2001 regulations specified that, as applicable, reclamation components include:

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- isolating, controlling, or removing acid-forming and deleterious substances;
  - regrading and reshaping the disturbed land to conform with adjacent landforms, facilitating revegetation, controlling drainage, and minimizing erosion;
  - placing growth medium and establishing self-sustaining vegetation;
  - removing or stabilizing buildings, structures, or other support facilities;
  - plugging drill holes and closing underground workings; and
  - providing for post-mining monitoring, maintenance, or treatment.

The 2001 regulations also significantly strengthened the financial assurance requirements for hardrock mining operations. Under the 1981 regulations, BLM had the option of requiring an operator to obtain a bond or other financial assurances for plan-level hardrock operations and for notice-level operations where the operator had a record of noncompliance.<sup>18</sup> However, BLM rarely exercised this option.<sup>19</sup> In 1990, BLM instructed its officials to require operators of plan-level operations to provide (1) financial assurances of \$1,000 per acre for exploration and \$2,000 per acre for mining and (2) financial assurances for all estimated reclamation costs for operations that used leaching chemicals and for operators with a record of noncompliance. Under the 2001 regulations, BLM requires all notice- and plan-level hardrock operators to provide financial assurances that cover all estimated reclamation costs for all plan- and notice-level operations before exploration or mining operations begin. Casual-use operations do not have to provide financial assurances.

The 2001 regulations amended the types of financial assurances that can be used. The 1981 regulations identified three types of acceptable financial assurances—bonds, cash, and negotiable U.S. securities. BLM could also accept evidence of an existing bond pursuant to state law or regulations if BLM determined that the coverage would be equivalent to the amount that

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<sup>18</sup>For notice-level operations with a history of noncompliance, BLM had to first require the operator to file a plan of operation.

<sup>19</sup>[GAO/T-RCED-89-13](#).

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would be required by BLM. Some operations used corporate guarantees, which were allowable under state laws and regulations. In contrast, the 2001 regulations prohibit the use of corporate guarantees for new operations and state that corporate guarantees currently in use under an approved BLM and state agreement cannot be increased or transferred. The 2001 regulations specify the following types of financial assurances as acceptable:

- surety bonds that meet the requirements of U.S. Treasury Circular 570;<sup>20</sup>
- cash in an amount equal to the required dollar amount of the financial assurance and maintained in a federal depository account of the U.S. Treasury by BLM;
- irrevocable letters of credit from a bank or other financial institution organized or authorized to transact business in the United States;
- certificates of deposit or savings accounts not in excess of the Federal Deposit Insurance Corporation's maximum insurable amount;
- negotiable U.S., state, and municipal securities or bonds with a market value of at least the required dollar amount of the financial assurance maintained in a Securities Investors Protection Corporation insured trust account by a licensed securities brokerage firm for the benefit of the Secretary of the Interior;<sup>21</sup>
- investment-grade securities that (1) have a Standard and Poor's rating of AAA or AA, or an equivalent rating from another nationally recognized securities rating service, (2) have a market value of at least the required dollar amount of the financial assurance, and (3) are maintained in a Securities Investors Protection Corporation insured trust account by a licensed securities brokerage firm for the benefit of the Secretary of the Interior;

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<sup>20</sup>The Department of the Treasury reviews insurance companies to determine whether they qualify to underwrite insurance and annually publishes the list of qualified companies in Treasury Circular 570.

<sup>21</sup>The Securities Investors Protection Corporation is a nonprofit corporation created by Congress and funded by its member securities brokers and dealers to protect investors by returning cash, stock, and other securities if the brokerage firm goes bankrupt.

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- certain types of insurance underwritten by a company having an A.M. Best rating of “superior” or an equivalent rating from another nationally recognized insurance rating service;
  - evidence of an existing financial assurance under state law or regulations, as long as the financial assurance is held or approved by the state agency for the same operations covered by the notice or plan of operation, has a value equal to the required amount, and is redeemable by BLM. These financial assurances can include any of the above instruments. In addition, they can include state bond pools,<sup>22</sup> as well as corporate guarantees that existed on January 20, 2001, under an approved BLM and state agreement; or
  - trust funds or other funding mechanisms available to BLM. The 2001 regulations require operators, when BLM identifies a need for it, to establish a trust fund or other funding mechanism to ensure continuation of long-term treatment to achieve water quality standards and for other long-term, post-mining maintenance requirements.

Finally, under the 2001 regulations, all notice- and plan-level operators must submit a reclamation plan and an associated cost estimate with its notice or plan of operation and any modifications or renewals. The financial assurance amount is based on the cost estimate. Furthermore, the associated cost estimate must reflect the cost to BLM as if the agency had to contract with a third party to complete reclamation. In addition, BLM issued guidance in February 2003, which was revised in March 2004, setting forth factors that should be considered in developing cost estimates. For example, estimates should include administrative and other indirect costs. The regulations require BLM to periodically review the estimates to determine if the estimate should be updated to reflect any necessary changes in the cost of reclaiming the operation.

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## BLM’s Management and Oversight of Financial Assurances

BLM headquarters manages and oversees hardrock operations as well as its other programs, primarily through its headquarters, 12 state offices, and 157 field offices. Within headquarters, the Minerals, Realty, and Resource

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<sup>22</sup>The state must agree that, upon BLM’s request, it will use part of the bond pool to meet reclamation obligations on public land. In addition, the BLM state office director must determine that the bond pool provides the equivalent level of protection as otherwise required.

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Protection group is responsible for administering the mining laws and establishing hardrock operations policies. This office is also responsible for evaluating the effectiveness of policy implementation at the state- and field-office levels. For example, in 2004, BLM conducted a survey of 18 of its 157 field offices to determine, among other things, whether operators had obtained financial assurances as required.

Each state office is headed by a state director who reports to the Director of BLM in headquarters. BLM state office delegations of responsibilities for financial assurances vary from state to state. For example, some state offices verify the authenticity of the financial assurance and confirm that financial assurances are payable to BLM. The state offices manage BLM programs and land in the geographic areas that generally conform to the boundary of one or more states. The state offices are Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Wyoming, and Eastern States. BLM has little land in the east and the Eastern state office is responsible for all of the states in the east. Figure 3 shows the boundaries of the 12 BLM state offices.



**Figure 3: The Boundaries of the 12 BLM State Offices**



Source: GAO analysis of BLM data.

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The 157 BLM field offices, which are headed by field managers who report to the state directors, are responsible for implementing several BLM programs and policies, including many aspects of the hardrock mining program. The field offices maintain case files on each hardrock operation in their jurisdiction. Field office staffs are generally responsible for, among other things, (1) reviewing notices and plans of operations, along with associated reclamation plans and cost estimates; (2) determining the amount of financial assurances needed to pay reclamation costs; and (3) inspecting hardrock operations for compliance with regulations.

In addition, BLM has specialized centers, which are organizationally affiliated with headquarters, to carry out a variety of activities. One of these centers, near Denver, Colorado, administers BLM's LR2000, which is an automated information system used to collect and store information on BLM land and programs, including hardrock operations. LR2000 includes several subsystems that contain information on hardrock operations and the financial assurances provided by operators. Specifically, the Case Recordation System contains information on hardrock operations, such as the name and address of the operator; the location, type, and size of the operation; and inspection information. The other subsystem—the Bonding and Surety System—contains information on financial assurances, such as the types and amounts of financial assurances and the names of the providers. BLM state and field offices both enter data into LR2000 and thus are primarily responsible for the data's accuracy and completeness. In most instances, field offices are responsible for entering data about hardrock operations into the Case Recordation System, while BLM state offices are more often responsible for entering data about financial assurances into the Bonding and Surety System.

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## **BLM Identified 11 Types of Financial Assurances Valued at Approximately \$837 Million, but These Financial Assurances May Not Fully Cover Reclamation Costs**

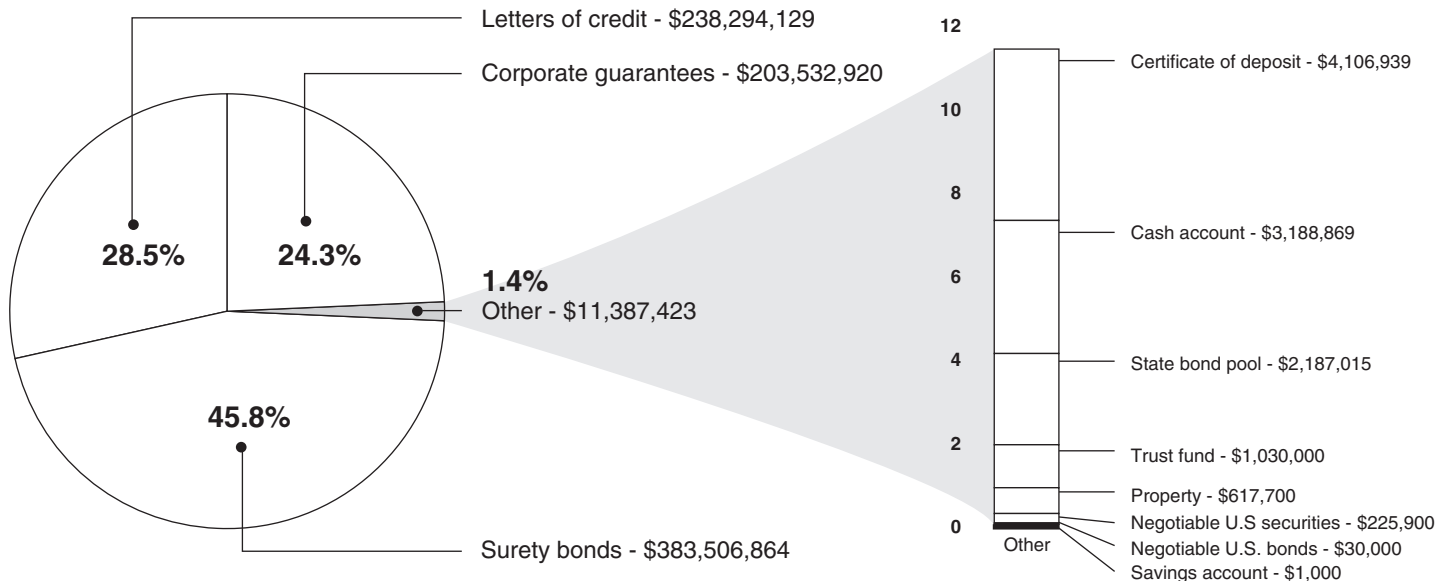
BLM reported that, as of July 2004, hardrock operators were using 11 types of financial assurances, valued at approximately \$837 million, to cover reclamation costs on BLM land in 12 western states. Surety bonds, letters of credit, and corporate guarantees accounted for almost 99 percent of this \$837 million. However, these financial assurances may not fully cover all future reclamation costs if operators fail to complete required reclamation. BLM reported that it had approximately 2,500 existing notice- and plan-level hardrock operations as of July 2004 and that some of these operations do not have financial assurances, and some have no or outdated reclamation plans and/or cost estimates on which financial assurances should be based. While BLM state office explanations indicated that financial assurances are not yet required for some operations, other

explanations indicated that some operations may not be complying with BLM's requirements.

**Surety Bonds, Letters of Credit, and Corporate Guarantees Are the Financial Assurances Currently Used to Cover Most of the Estimated Reclamation Costs**

As of July 2004, operators were using 11 different types of financial assurances valued at approximately \$837 million to guarantee reclamation costs for BLM land disturbed by hardrock operations, according to our analysis of survey results. Almost 99 percent of the \$837 million in financial assurances is in the form of surety bonds, letters of credit, and corporate guarantees. Figure 4 shows the types of financial assurances used, their value, and the percentage of the total value accounted for by each type.

**Figure 4: Types of Financial Assurances Used, Value, and Percentage of Total Value**



Source: GAO analysis of BLM survey responses.

BLM reported that all of the current notice- and plan-level hardrock operations on BLM land—2,490 operations—are located in 12 western

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states.<sup>23</sup> Table 2 shows the states with existing hardrock operations and the types and amounts of financial assurances operators are currently using in each state.

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<sup>23</sup>BLM reported a total of 1,704 notice-level operations and 786 plan-level hardrock operations in these 12 states. The BLM Montana state office, which also has jurisdiction over North Dakota and South Dakota, reported that South Dakota has only two hardrock operations and that both have ceased operating and are being reclaimed by the operators. For this reason, South Dakota was not included as a state with existing hardrock operations.

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**Table 2: Type and Amount of Financial Assurances for 12 States with Existing Hardrock Operations, as of July 2004**

<b>State</b>	<b>Number of operations</b>	<b>Surety bonds</b>	<b>Letters of credit</b>	<b>Corporate guarantees</b>
Alaska	240	\$0	\$0	\$0
Arizona	185	3,802,763	571,907	0
California	303	3,986,000	737,000	0
Colorado	132	1,600,000	19,313	0
Idaho	55	242,340	305,050	0
Montana	180	103,831,894	3,996,803	0
New Mexico	35	3,307,406	921,293	0
Nevada	774	230,769,986	192,058,810	200,000,000
Oregon	175	34,000	0	0
Utah	216	1,719,343	365,699	122,000
Washington	139	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Wyoming	56	34,213,132	39,318,254	3,410,920
<b>Total</b>	<b>2,490</b>	<b>\$383,506,864</b>	<b>\$238,294,129</b>	<b>\$203,532,920</b>

Certificates of deposit	Cash accounts	State bond pools	Trust funds	Property	Negotiable U.S. securities	Negotiable U.S. bonds	Savings accounts	Total
\$0	\$0	\$1,000,000	\$0	\$0	\$0	\$0	\$0	\$1,000,000
113,085	239,343	0	0	0	45,900	0	0	4,772,998
184,000	27,800	0	0	0	0	0	1,000	4,935,800
116,000	1,600	0	0	0	0	0	0	1,736,913
140,969	77,173	0	0	0	0	30,000	0	795,532
708,081	153,452	0	0	617,700	0	0	0	109,307,930
61,009	9,281	0	0	0	0	0	0	4,308,289
1,931,761	2,526,893	1,187,015	1,030,000	0	180,000	0	0	629,684,465
16,000	2,000	0	0	0	0	0	0	52,000
393,034	128,109	0	0	0	0	0	0	2,728,185
a	a	a	a	a	a	a	a	a
443,000	23,218	0	0	0	0	0	0	77,408,524
<b>\$4,106,939</b>	<b>\$3,188,869</b>	<b>\$2,187,015</b>	<b>\$1,030,000</b>	<b>\$617,700</b>	<b>\$225,900</b>	<b>\$30,000</b>	<b>\$1,000</b>	<b>\$836,721,336</b>

Source: GAO analysis of BLM survey responses.

<sup>a</sup>The BLM Oregon office did not provide information on the amount of financial assurances available to reclaim the existing hardrock operations it identified in Washington state on BLM land. The office reported no individual bonds are used for operations in Washington state, but that a statewide bond is held by the Washington state Department of Ecology.

The information below describes the types of financial assurances currently being used and BLM state offices' views of the effectiveness of these assurances in minimizing losses to the federal government if the operator does not complete reclamation.

*Surety bonds.* Surety bonds are a third party guarantee that an operator purchases from an insurance company. As a third party with possible financial responsibility for reclamation, the insurance company has a strong incentive to monitor the operator's environmental safety record and efforts to fulfill reclamation obligations. If the operator does not complete required reclamation once operations cease, the insurance company has the option of performing the reclamation work or paying the financial assurance value to BLM or the designated state agency for reclamation. According to industry representatives and experts, insurance companies are amenable to issuing surety bonds for hardrock operations for predictable reclamation activities that will occur in a defined time frame. As table 2 shows, operators in 10 of the 12 states with hardrock operations

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are using surety bonds. In 7 of these 10 states, BLM state offices rated surety bonds as “effective” or “very effective” for minimizing losses to the federal government; in the other three states, BLM state offices reported that they had no experience (that is, they had not taken steps to obtain funds from the financial assurance provider) in using this type of assurance in minimizing losses to the federal government.<sup>24</sup>

*Letters of credit.* Letters of credit, which hardrock operators typically purchase from a bank or other financial institution, require the institution to pay BLM or the designated state agency the value of the letter of credit if the purchaser does not complete the required reclamation. Depending on the financial condition of the operator, the financial institution may require a deposit or collateral. Letters of credit are used in nine states with hardrock operations. In seven of these states, BLM state offices rated letters of credit as “moderately effective” or “very effective” in minimizing losses to the federal government; in the other two states, the BLM state offices reported that they had no experience in using this type of assurance in minimizing losses to the federal government.

*Corporate guarantees.* Corporate guarantees are promises by operators, sometimes accompanied by a test of financial stability, to pay reclamation costs, but do not require that funds be set aside to pay such costs. Although BLM prohibits new corporate guarantees in its 2001 regulations, 3 of the 12 states had existing corporate guarantees that were to cover almost one fourth of the total estimated reclamation costs, as of July 2004. Most of these corporate guarantees—\$200 million of the approximately \$204 million—are for operations in Nevada. The Nevada BLM state office rated corporate guarantees as “not effective” for minimizing losses to the federal government. Operators in Utah and Wyoming are also using corporate guarantees, although in relatively smaller amounts of \$122,000 and \$3.4 million, respectively. The Utah BLM state office reported that it has no experience in using this type of financial assurance to minimize losses to the federal government and therefore did not rate the effectiveness of this type of assurance. The Wyoming BLM state office rated corporate guarantees as a “very effective” financial assurance, although the office

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<sup>24</sup>We asked each of the 12 BLM state offices, for each state within their jurisdiction with hardrock operations, to rate the effectiveness of each type of financial assurance in minimizing losses to the federal government based on their experience. The rating categories were very effective, effective, moderately effective, somewhat effective, and not effective.



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reported it had no experience with an operation that had this type of financial assurance and failed to reclaim the land.

*State bond pools.* Operators in two states—Alaska and Nevada—use state bond pools to cover reclamation costs. According to Alaska BLM state office officials, all hardrock operators on BLM land in Alaska participate in the state bond pool.<sup>25</sup> Operators in the Alaska bond pool do not develop individual cost estimates for reclaiming the land disturbed by their operations. The bond pool, administered by the Alaska Department of Natural Resources, had \$1 million in reclamation funds as of July 2004.<sup>26</sup> According to Alaska BLM state office officials, if the bond pool funds are not sufficient to cover reclamation costs, the state of Alaska has agreed to cover any additional costs. The Alaska BLM state office rated the bond pool as “effective” in minimizing financial losses to the federal government. The office also reported that to date no requests or claims have been initiated to use bond pool funds for reclamation because either BLM has successfully negotiated with the operators to have the operations reclaimed, or the operations are pending further action.

The Nevada reclamation bond pool—which had about \$1.2 million as of July 2004—is open to operators on BLM or private lands. The state’s Division of Minerals administers this pool that was designed to help smaller operations that may have difficulty securing other forms of financial assurances. The Nevada bond pool does not establish the amount of the assurance required for each operation; this is typically done by BLM for operations on BLM land. The maximum bond amount for a participant is

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<sup>25</sup>The cost to an operator to participate in the Alaska state bond pool is calculated by multiplying the total number of acres to be disturbed by an operator by \$150.00. The \$150.00 includes a refundable reclamation deposit of \$112.50 per acre and an annual nonrefundable administrative fee of \$37.50 per acre. The fees for entry into the Alaska state bond pool were determined to be the average costs for reclamation per acre in the state for placer operations—those that involve extracting gold or other minerals from stream or beach sediment by gravity using water separation and typically do not use leaching chemicals. Operations using cyanide or other chemicals for leaching are not authorized to use the Alaska state bond pool and must secure another form of financial assurance.

<sup>26</sup>The Alaska bond pool covers all hardrock operations on federal, state, and private lands in the state.

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\$3 million.<sup>27</sup> The Nevada BLM state office rated the state's bond pool as "very effective" in minimizing financial losses but noted that the pool had not been used as of our July 2004 survey. Subsequently, the office told us that the bond pool was used for the first time in late 2004, when BLM requested funds from the pool to reclaim a hardrock operation.

*Certificates of deposit and savings accounts.* Certificates of deposit and savings accounts can be used to guarantee reclamation costs but must not exceed the maximum amount insured by the Federal Deposit Insurance Corporation. Operators use certificates of deposit in 10 of the 12 states with hardrock operations. BLM state offices in 7 of these 10 states rated these assurances as "effective" or "very effective" in minimizing losses to the federal government. Another state office rated this type of assurances as "moderately effective" and noted that care must be given to ensure that BLM is the beneficiary of the certificate. In the other two states, the BLM state offices reported that they had no experience with this type of assurance in minimizing losses to the federal government. Operators in one state are using savings accounts, and the BLM rated savings accounts as "very effective" for minimizing losses to the federal government.

*Cash accounts.* Operators provide cash to BLM to guarantee reclamation costs, and BLM must deposit and maintain this cash in a federal depository account of the U.S. Treasury. Operators in 10 of the 12 states with hardrock operations use cash accounts. BLM state offices in 8 of these 10 states rated cash as "very effective" for minimizing losses to the federal government. In the other two states, the offices reported that they had no experience with using this type of assurance to minimize losses to the federal government.

*Trust funds.* The 2001 regulations require operators, when BLM identifies a need for it, to establish a trust fund or other funding mechanism to ensure the continuation of long-term treatment to achieve water quality standards and other long-term, post-mining requirements. Funds are placed in an interest-bearing trust account by an operator with BLM as the beneficiary.

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<sup>27</sup>For bonds under \$10,000, the deposit is 100 percent of the bond amount, and the annual premium is 3 percent of the bond amount. For bonds of \$10,000 and greater, the deposit is 50 percent of the bond amount, escalating linearly to 80 percent at the cap; and the annual premium is 10 percent of the bond amount, declining linearly to 5 percent at the cap. Interest earned remains in the pool's account, and the deposit is returned to the operator when the bond is released following successful reclamation. Premiums are not returned to the operator.

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The trust account should accrue sufficient funds to be sustained in perpetuity. The Nevada BLM state office reported one trust fund with just over \$1 million and said it did not have sufficient experience to determine the effectiveness of this type of assurance in minimizing losses to the federal government.

*Property.* The Montana BLM state office reported that one operator has used \$617,000 in property—consisting of 17 mining claims on private land owned by the operator—as a financial assurance. According to BLM state office officials, the operator pledged these properties as collateral. The Montana BLM state office reported that it had no experience using property to minimize losses to the federal government. We note that the revised federal regulations do not identify property as an acceptable type of financial assurance.

*Negotiable U.S. securities and bonds.* Operators in two states—Arizona and Nevada—use negotiable U.S. securities. The Arizona BLM state office reported it had no experience in using this type of assurance to minimize losses to the federal government. The Nevada BLM state office rated this type of assurance as “effective.” The Idaho BLM state office reported that operators in the state use U.S. bonds to guarantee reclamation costs and that the state has no experience using bonds to minimize losses to the federal government.

Although the \$837 million in financial assurances that BLM reported is the most complete information available, we note that this total may not include all financial assurances for hardrock operations on BLM land. Some BLM state offices had difficulty determining the value of financial assurances for hardrock operations in their jurisdictions when designated state agencies hold these assurances. For example, the state offices reported the following:

- *Washington.* The Oregon BLM office did not provide the value of financial assurances for the 139 hardrock operations it identified in Washington state.
- *California.* The information the California BLM office provided may not be complete because some financial assurances may be held by California’s 58 county agencies, and the state office did not contact each county agency to complete our survey.

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- *Montana.* The Montana BLM office does not track state-held financial assurances for hardrock operations on BLM land. BLM obtained information on these assurances for our survey from the state and reported that this information was not all inclusive but appeared to be reasonably accurate.

See appendix II for the number of notice- and plan-level hardrock operations and associated financial assurances for each state identified by BLM state offices, as of July 2004.

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### Existing Financial Assurances May Not Fully Cover Future Reclamation Costs

Existing financial assurances for reclaiming BLM land disturbed by hardrock operations may not fully cover future reclamation costs for the approximately 2,500 hardrock operations that BLM reported if operators do not complete required reclamation. The costs may not be fully covered because BLM reported that some of these operations do not have financial assurances, and some have no or outdated reclamation plans and/or cost estimates. BLM's explanations for this lack of coverage indicate that some operators may not be complying with BLM requirements.

As of July 2004, BLM state offices reported that some notice- or plan-level operations in 9 of the 12 states with existing hardrock operations did not have financial assurances. For example, BLM state offices reported that in five states (Arizona, California, Idaho, New Mexico, and Utah) more than 5 percent of both notice- and plan-level operations did not have financial assurances. All of the operations in two other states—Colorado and Wyoming—had financial assurances, and the Oregon BLM state office reported that all plan-level operations in Washington state had financial assurances, but the office did not know the percentage of notice-level hardrock operations without financial assurances in Washington state. Table 3 shows the number of notice- and plan-level hardrock operations and the percentage of these operations without financial assurances for each of the 12 states with existing hardrock operations.

**Table 3: Number of Notice- and Plan-Level Hardrock Operations and the Percentage of These Operations BLM Reported Had No Financial Assurances, by State, as of July 2004**

State	Number of notice-level hardrock operations	Percentage of notice-level hardrock operations without financial assurances	Number of plan-level hardrock operations	Percentage of plan-level hardrock operations without financial assurances
Alaska	134	1-4	106	0
Arizona	130	50-74	55	25-49
California	205	5-14	98	15-24
Colorado	102	0	30	0
Idaho	32	5-14	23	5-14
Montana	150	1-4	30	0
Nevada	450	0	324	1-4
New Mexico	24	15-24	11	15-24
Oregon	165	1-4	10	0
Utah	167	50-74	49	15-24
Washington	127	Do not know	12	0
Wyoming	18	0	38	0

Source: GAO analysis of BLM survey responses.

Note: Based on our analysis of survey responses, we identified the range of percentages of hardrock operations that did not have financial assurances in each of the states with hardrock operations. Those percentage ranges were 0, 1-4, 5-14, 15-24, 25-49, 50-74, 75-99, and 100 percent.

For the states in which BLM state offices indicated that less than 100 percent of their hardrock operations had financial assurances, we asked them to provide an explanation. While some of the explanations indicated that financial assurances are not yet required for some operations, such as those that are pending BLM acceptance or have not yet begun exploration or mining, others indicated that the operations may not be complying with BLM's requirements. The following explanations provided by BLM state offices for the lack of financial assurances suggest that some operators may not be complying with applicable financial assurance requirements.

- *Alaska.* The operator failed to submit state bond pool fees on time.
- *California.* Some older operations may not have financial assurances.

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- *Idaho.* The office could not find records of financial assurance for two plan-level operations.
  - *Nevada.* Some operations have been terminated by the state bond pool, operators have gone bankrupt, or operations have been abandoned and the operator cannot be found.

BLM state offices also reported that, as of July 2004, some hardrock operations on BLM land have no or outdated reclamation plans and/or reclamation cost estimates. Specifically, BLM state offices reported that some existing hardrock operations in 9 of the 12 states did not have reclamation plans and/or cost estimates. For example, BLM state offices reported that in three states (Arizona, California, and Utah) both types of operations (notice- and plan-level operations) were missing some reclamation plans and cost estimates. In addition, according to BLM state office officials, all hardrock operators on BLM land in Alaska currently participate in the Alaska bond pool and do not develop cost estimates. All of the operations in two other states—New Mexico and Wyoming—had both reclamation plans and cost estimates, and the Oregon BLM office reported that in Washington state all plan-level operations have reclamation plans and cost estimates, but it did not know the percentage of notice-level hardrock operations without plans and estimates. Table 4 shows the percentage of BLM’s notice- and plan-level hardrock operations without reclamation plans and cost estimates, as of July 2004.

**Table 4: Reported Percentage of Notice- and Plan-Level Hardrock Operations without Reclamation Plans and Cost Estimates, by State, as of July 2004**

State	Percent of operations without reclamation plans		Percent of operations without cost estimates	
	Notice-level	Plan-level	Notice-level	Plan-level
Alaska	1-4	0	100 <sup>a</sup>	100 <sup>a</sup>
Arizona	50-74	25-49	50-74	25-49
California	1-4	15-24	15-24	1-4
Colorado	5-14	0	0	0
Idaho	0	0	5-14	1-4
Montana	0	0	1-4	0
Nevada	0	0	0	1-4
New Mexico	0	0	0	0
Oregon	1-4	0	1-4	0
Utah	50-74	15-24	50-74	15-24
Washington	Do not know	0	Do not know	0
Wyoming	0	0	0	0

Source: GAO analysis of BLM survey responses.

Note: Based on our analysis of survey responses, we identified the ranges of the percentages of hardrock operations that did not have reclamation plans and cost estimates in each of the states with hardrock operations. Those ranges were 0, 1-4, 5-14, 15-24, 25-49, 50-74, 75-99, and 100 percent.

<sup>a</sup>All of the Alaska operations are covered by the Alaska state bond pool and do not develop cost estimates.

For the states in which BLM state offices reported that less than 100 percent of their operations had reclamation plans and/or cost estimates, we asked BLM to provide an explanation. All notice- and plan-level operations are required to have reclamation plans and cost estimates. The following explanations provided by BLM state offices for the lack of reclamation plans and/or cost estimates suggest that some operators may not be complying with financial assurance requirements.

- *Arizona.* Some of the older plan-level operations may still have financial assurances that were calculated on the basis of \$2,000 per acre, which was the policy under previous federal regulations, rather than all of the estimated costs of reclamation as the 2001 regulations now require.
- *Colorado.* No reclamation plan was required when some of the notices were submitted.

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- *Idaho.* A record of a cost estimate for two plans could not be found.
  - *Oregon.* Not all of the notice-level operations have a reclamation plan because of a general backlog in updating reclamation plans, and reclamation cost estimates are still being developed in a few cases.

In addition, three state offices reported that some reclamation plans and cost estimates had not been updated. For example, the California BLM state office reported that some of the older reclamation plans for operations in that state have not been updated because of a workload backlog and staff vacancies. Consequently, these plans and estimates may not provide a sound basis for establishing financial assurances to cover all future reclamation costs.

Like our survey results, the results of the 2004 BLM survey of 18 of its 157 field offices showed that some hardrock mining operations under the jurisdiction of 7 field offices did not have financial assurances that met BLM's requirements in fiscal year 2003. For example, one field office reported that it did not have financial assurances that met BLM's requirements because none of the reclamation cost estimates for plan-level operations included indirect costs. Another field office had a backlog of nearly 80 plan-level operations that had not had their reclamation cost estimates updated because, among other things, the office did not have sufficiently trained staff to review updates. In yet another field office, higher priority work prevented timely updates of some reclamation cost estimates.

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## Financial Assurances Were Not Always Adequate to Pay All Estimated Costs for Required Reclamation for Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

BLM identified 48 hardrock operations on BLM land that had ceased and not been reclaimed by operators since it began requiring financial assurances. BLM reported that the most recent cost estimates for reclamation required by applicable plans and federal regulations for 43 of these operations totaled about \$136 million, with no adjustment for inflation; it did not report reclamation cost estimates for the other 5



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operations.<sup>28</sup> However, as of July 2004, financial assurances had provided or were guaranteeing \$69 million, and federal agencies and others had provided \$10.6 million to pay estimated reclamation costs for the 48 operations, leaving \$56.4 million of reclamation costs unfunded. In particular, financial assurances were not adequate to pay all estimated costs for required reclamation for 25 of the 48 operations because (1) some operations had no assurances, (2) some operations' assurances were less than the most recent reclamation cost estimates, and (3) some financial assurance providers declared bankruptcy and could not pay. In addition, for about half of the remaining 23 operations, cost estimates may be understated because the cost estimates may not have been updated to reflect inflation or other factors that could increase reclamation costs. Furthermore, the \$136 million cost estimate is understated to the extent that BLM did not identify or report information on all hardrock operations that had ceased and not been reclaimed by operators as required. Finally, according to BLM officials, required reclamation had been completed for only 5 of the 48 operations as of July 2004, but they believe it is likely that required reclamation will be completed for 28 of the remaining 43 operations.

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**BLM Identified 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators Since It Began Requiring Financial Assurances and About \$136 Million in Estimated Costs for Required Reclamation**

BLM identified 48 hardrock operations in seven states that had ceased and not been reclaimed by operators, as required by applicable reclamation plans and federal regulations, since it began requiring financial assurances.<sup>29</sup> The number of operations BLM identified in each of the seven states, along with the primary minerals explored, mined, and/or processed, and the operating authority for the 48 operations are shown in table 5. Appendix III, table 14, contains additional information about these operations.

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<sup>28</sup>BLM reported estimates before and/or after operations ceased. (See app. III, table 17 for details.) We used the most recent complete cost estimate to determine total estimated costs. (See app. I for detailed methodology.)

<sup>29</sup>For the other six states with hardrock operations—Colorado, New Mexico, Oregon, South Dakota, Utah, and Wyoming—BLM reported that no operations had ceased and not been reclaimed by operators since it began requiring financial assurances.

**Table 5: Number and Selected Characteristics of 48 Hardrock Operations Reported by BLM as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, by State, as of July 2004**

States	Number of hardrock operations reported by BLM as ceased and not reclaimed by operators	Primary hardrock minerals being explored, mined, or processed			Authority	
		Gold	Other minerals	Unidentified	Plan-level	Notice-level
Alaska	4	4	0	0	4	0
Arizona	6	6	0	0	5	1
California	2	2	0	0	2	0
Idaho	1	0	1 <sup>a</sup>	0	1	0
Montana	3	3	0	0	2	1
Nevada	29	25	4 <sup>b</sup>	0	26	3
Washington	3	1	0	2	3	0
<b>Total</b>	<b>48</b>	<b>41</b>	<b>5</b>	<b>2</b>	<b>43</b>	<b>5</b>

Source: GAO analysis of BLM survey responses.

<sup>a</sup>The primary mineral explored and mined at this operation was limestone.

<sup>b</sup>The primary mineral was different for each of these four operations: one mined copper, another silver, and a third zinc; the fourth was a mill site for platinum/gold.

According to BLM officials in each of the seven states, BLM had taken steps to compel operators of most of the 48 operations to reclaim BLM land. For example, it had sent notices of noncompliance (24 operations) and taken administrative, legal, or other actions (19 other operations), such as revoking plans of operations. BLM took no action to compel reclamation of the remaining five operations. However, none of the operators for these 48 operations completed reclamation, primarily because of bankruptcy (30 operations). Appendix III, table 16, details the actions BLM took to compel operators to complete reclamation and the reasons reclamation was not completed.

BLM reported reclamation cost estimates for 43 of the 48 operations that had ceased and not been reclaimed by the operators; it did not report estimates for the other 5 operations—2 in Alaska, 2 in Nevada, and 1 in Arizona. The most recent estimates as of July 2004 indicated that the total

reclamation cost for the 43 operations was about \$136 million.<sup>30</sup> Almost 99 percent of this estimated cost was associated with operations in Montana and Nevada—primarily for the Zortman and Landusky mining operation in Montana (\$85 million) and the Paradise Peak operation (\$21.2 million) and MacArthur Mine operation (\$17 million) in Nevada. Clearly, the total cost estimate would be higher if the costs for the 5 operations with no estimates were included. The number of hardrock operations for which BLM reported cost estimates and the value of the most recent cost estimates, as of July 2004, for each of the seven states is shown in table 6. Appendix III, table 17, provides the reported estimates for each of the 43 operations.

**Table 6: Cost Estimates for Required Reclamation of 43 Hardrock Operations with Cost Estimates Reported by BLM as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, by State, as of July 2004**

State	Number of hardrock operations with cost estimates	Most recent BLM-reported reclamation cost estimates
Alaska	2	\$639,000
Arizona	5	944,439
California	2	17,431
Idaho	1	12,000
Montana	3	85,502,013
Nevada	27	48,840,972
Washington	3	33,825
<b>Total</b>	<b>43</b>	<b>\$135,989,680</b>

Source: GAO analysis of BLM survey responses.

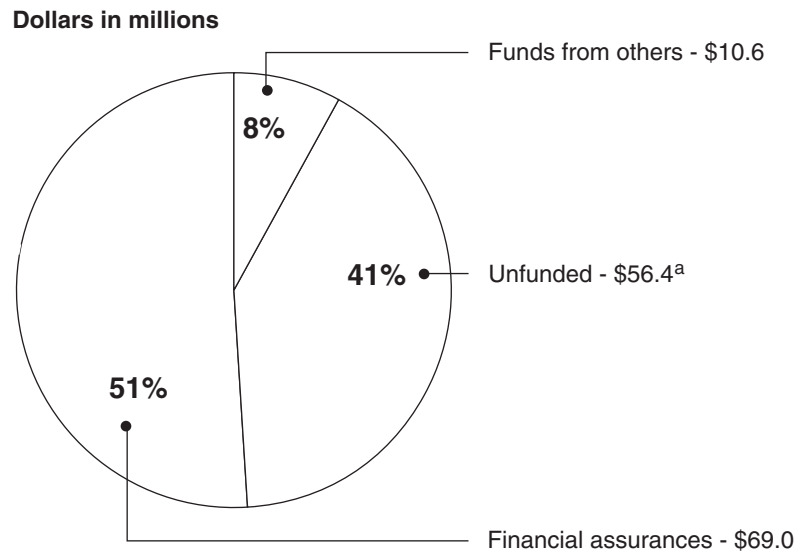
### Financial Assurances and Funds Provided by Others Were Not Adequate to Pay All of the Estimated \$136 Million in Costs for Required Reclamation

Financial assurances and funds provided by others were not adequate to pay all of the estimated \$136 million needed to complete the required reclamation of the 43 operations for which BLM reported cost estimates. Surety bonds and other types of financial assurances had provided or were guaranteeing \$69 million of the estimated costs for required reclamation that BLM reported for these operations, or about 51 percent. According to our analysis of information BLM officials provided in response to our survey, these funds were not adequate to pay all estimated costs for

<sup>30</sup>See appendix I for details on how the most recent cost estimates were identified.

required reclamation for 25 of the 48 operations. Moreover, cost estimates may be understated for 12 of the other 23 operations. In addition, funds provided by federal agencies and others paid only a fraction of the estimated reclamation costs. As a result, at least \$56.4 million, or about 41 percent, of the estimated \$136 million needed for required reclamation was unfunded, as shown in figure 5. Finally, the \$136 million cost estimate for required reclamation is understated to the extent that BLM did not identify or report information on all hardrock operations that had ceased and not been reclaimed, as required.

**Figure 5: Sources and Amount of Funds Provided or Guaranteed to Pay Estimated \$136 Million in Costs for Required Reclamation for Operations that BLM Identified as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, as of July 2004**



Source: GAO analysis of BLM survey responses.

<sup>a</sup>The \$56.4 million of unfunded costs includes \$4,233,465 in corporate guarantees that lost their value when the operator that guaranteed reclamation costs went bankrupt and had no funds to pay reclamation costs and \$949,350 that was not relinquished by a financially-troubled surety bond provider. When the \$56.4 million in unfunded costs is added to the \$10.6 million from others, a total of \$67 million, or about 49 percent of the total estimated cost, was not guaranteed by financial assurances.

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Types of Financial Assurances Varied but Were Not Adequate to Pay About Half of the Estimated Costs Needed for Required Reclamation

Operators used a variety of types of financial assurances for 38 operations to pay or guarantee coverage of \$74.2 million of the \$136 million of estimated costs for required reclamation, as table 7 shows. (The remaining 10 operations had no financial assurances.) Operators used surety bonds, a trust fund, and corporate guarantees to guarantee almost 97 percent of these costs, with the rest guaranteed by state bond pools, letters of credit, certificates of deposit, cash, and a construction bond provided by an operator. However, as of July 2004, financial assurances had provided or were guaranteeing only \$69 million, or almost 51 percent, of the reclamation costs. This amount decreased because \$4.2 million in corporate guarantees had lost all their value when the operator that guaranteed the reclamation costs declared bankruptcy and had no funds to pay such costs, and \$949,350 was not available from a surety bond because the financially-troubled financial assurance provider paid for reclamation instead of relinquishing the bond. See appendix III, table 18, for the types of financial assurances used for each hardrock operation.

**Table 7: Type and Value of Financial Assurances Used by Operators to Guarantee Reclamation Costs for 38 Operations with Financial Assurances that BLM Identified as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, as of July 2004**

Type of financial assurance	Number of operations with financial assurances <sup>a</sup>	Value of financial assurances
Surety bonds <sup>b</sup>	22	\$55,294,010
Trust funds	1	12,300,000
Corporate guarantees <sup>c</sup>	3	4,233,465
Operator's construction bond	1	2,000,000
State bond pools <sup>d</sup>	8	340,573
Letters of credit	2	18,500
Certificates of deposit	3	17,431
Cash	3	7,076
<b>Total<sup>e</sup></b>	<b>38<sup>e</sup></b>	<b>\$74,211,046</b>
Less financial assurances with no value	b,c	(\$5,182,815)
<b>Total</b>	<b>38<sup>e</sup></b>	<b>\$69,028,231</b>

Source: GAO analysis of BLM survey responses.

<sup>a</sup>Ten of the 48 operations had no financial assurances.

<sup>b</sup>As of July 2004, one security provider had financial problems and contracted for reclamation instead of relinquishing bond funds.

<sup>c</sup>As of July 2004, these three corporate guarantees had lost all their value because the operator that guaranteed the reclamation costs had gone bankrupt and had no funds to pay reclamation costs. However, these operations also had surety bonds that maintained their value.

<sup>d</sup>This is the value for six of the eight hardrock operations; BLM did not provide the value for the other two operations.

<sup>e</sup>Does not add because some operations had more than one type of financial assurance.

These 38 financial assurances provided or guaranteed funds for only about half of the estimated costs for required reclamation for the 48 hardrock operations. Specifically, these financial assurances were not adequate for 25 of the 48 operations because (1) operators did not provide financial assurances for 10 hardrock operations, (2) the financial assurances that were provided were less than the most recent cost estimates for 13 operations, and/or (3) the financial assurance providers declared bankruptcy and did not have the funds to pay all reclamation costs for two other operations. (Also, 2 of the 13 operations whose financial assurances were less than the most recent cost estimates went bankrupt.) Table 8 shows the reasons financial assurances were not adequate and the

associated funding differential. Table 8 also shows that most of the difference between the value of the estimated reclamation costs and the value of the financial assurances occurred because the financial assurances were less than the most recent cost estimate.

**Table 8: Reasons Financial Assurances Were Not Adequate to Pay Estimated Costs for Required Reclamation for 25 Hardrock Operations Identified by BLM as Ceased and Not Reclaimed by Operators Since BLM Began Requiring Financial Assurances, as of July 2004**

Reason for inadequate financial assurances	Number of affected hardrock operations	Value of estimated reclamation costs	Value of financial assurances	Funding differential
Operations had no financial assurances	10 <sup>a</sup>	\$2,001,014	\$0	(\$2,001,014)
Financial assurances less than most recent cost estimates	13	128,187,236	64,445,305	(63,741,931)
Bankrupt financial assurance providers	4 <sup>b</sup>	1,688,006	2,638,017	950,011
<b>Subtotal</b>	<b>25<sup>c</sup></b>	<b>\$131,876,256</b>	<b>\$67,083,322</b>	<b>(\$64,792,934)</b>
Less financial assurances with no value	<sup>d</sup>		(5,182,815)	(5,182,815)
<b>Total</b>	<b>25</b>	<b>\$131,876,256</b>	<b>\$61,900,507</b>	<b>(\$69,975,749)</b>

Source: GAO analysis of BLM survey responses.

<sup>a</sup>Includes one operation with no reported cost estimate.

<sup>b</sup>Four operations were affected by bankrupt financial assurances providers. The \$1.7 million and \$2.6 million are the values for estimated reclamation costs and associated financial assurances, respectively, for two of these operations—County Line and Olinghouse. For the other two operations—the MacArthur Mine and the Paradise Peak operations—the values for the estimated reclamation costs (\$38.2 million) and the associated financial assurances (\$4.8 million) are included with the 13 operations for which financial assurances were less than the most recent cost estimates.

<sup>c</sup>Does not add because two of these operations also had financial assurances that were less than the most recent cost estimate.

<sup>d</sup>As of July 2004, three of the four operations affected by bankruptcy used corporate guarantees that had lost all their value because the operator that guaranteed the reclamation costs was bankrupt and one surety bond provider did not relinquish bond funds because the provider went bankrupt.

## No Financial Assurances

As table 8 shows, 10 hardrock operations had no financial assurances. These operations were located in Washington (2), Arizona (4), and Nevada (4). The most recent reclamation cost estimates for 9 of these 10 operations indicated that slightly over \$2 million in reclamation costs was unfunded; BLM reported no cost estimate for the other operation. BLM officials provided the following explanations for why the 10 operations did not have the required financial assurances:

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- *Two operations in Washington.* An official in Oregon’s BLM state office, which manages BLM programs in Oregon and Washington, said that two operations in Washington did not have financial assurances, probably because the responsible BLM field office did not have adequate staff to enforce compliance with this requirement. The official also said that financial assurance training had been a problem and that staff turnover in one field office meant that financial assurances were overlooked for a period of time.
  - *Four operations in Arizona.* According to BLM state office officials, the operators of two operations did not provide financial assurances, even though BLM told them that financial assurances were required. According to an official in the BLM state office, the heavy workloads associated with other BLM programs dissuaded staff from taking enforcement actions that could involve time-consuming activities, such as obtaining court orders. Furthermore, the official said that case files indicated the third operation had financial assurances sometime during the 1990s, but information on the type and amount of financial assurances after it ceased could not be found. No reason was given for the fourth operation.
  - *Four operations in Nevada.* According to BLM state office officials, operators of three operations did not provide financial assurances, even though BLM notified the operators that financial assurances were required. At one of these operations, for example, BLM’s field office issued a noncompliance order that, after the operator appealed it, was upheld by the BLM state office. BLM is currently working with the state of Nevada to reclaim this operation. BLM state office officials said that the operator of another operation, who eventually went bankrupt, was never able to provide a suitable financial assurance instrument. Regarding the fourth operation—Relief Canyon—officials in BLM’s responsible field office told us that the operator refused to provide financial assurances despite the field office’s enforcement steps. The field office issued a noncompliance order and took other enforcement actions, such as revoking the operator’s plan of operation.

The Relief Canyon gold mine is located in north-central Nevada on about 344 acres, including 295 acres of BLM land. According to BLM officials, the mine was being reclaimed when a new operator purchased it in 1995 and, at that time, the agency advised the new operator of the need for financial assurances for all required reclamation—including past and future disturbances. However, the operator never obtained the



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financial assurances. According to BLM, the mine's plan of operation was last updated in October 1996, and before the operation ceased, the operator estimated reclamation costs at about \$889,000. BLM reported that, as of July 2004, 26 to 50 percent of the operation had been reclaimed. BLM officials told us that they had revoked the mine's plan of operation, operations had ceased, and the operator should complete reclamation, but the operator has appealed this revocation to Interior's Board of Land Appeals. The operator contends that he plans to either begin mining operations when he gets the funds or sell the operation. When we visited the operation in September 2004, we did not see any signs of ongoing mining activity and observed that buildings, collection pond liners, the security fence, and other structural facilities needed repair. As of June 2005, BLM was awaiting the board's decision.

#### Financial Assurances Were Less Than Recent Cost Estimates

As table 8 also shows, 13 operations had financial assurances that were less than the most recent cost estimates. These operations were located in Alaska (1), California (1), Montana (1), and Nevada (10). The most recent cost estimate for these 13 operations was \$128.19 million, and the value of the associated financial assurances was \$64.45 million, leaving \$63.74 million of the estimated reclamation costs with no financial assurance coverage. Table 9 shows the most recent cost estimates, compared with the value of financial assurances for each of the 13 operations. Three mining operations—Zortman and Landusky, MacArthur Mine and Paradise Peak—accounted for about 95 percent of the amount that the cost estimates exceeded the financial assurances.

**Table 9: Comparison of Most Recent Cost Estimate as of July 2004 with the Value of Financial Assurances for 13 Hardrock Operations with Cost Estimates That Exceeded Financial Assurances**

Hardrock operation	Location	Most recent cost estimate	Value of financial assurances	Amount cost estimate exceeded financial assurance
Gold Hill Mining	Alaska	\$500,000	\$15,000	\$485,000
Nina	California	15,000	5,000	10,000
Zortman and Landusky Mine	Montana	85,200,000	57,800,000	27,400,000
Wildhorse Canyon	Nevada	53,000	12,000	41,000
South Hy/Isabella	Nevada	169,700	22,000	147,700
Golden Butte	Nevada	1,397,000	328,942	1,068,058
Easy Jr	Nevada	668,936	365,917	303,019
Kinsley	Nevada	1,400,000	911,763	488,237
Phoenix Metals USA II Inc.	Nevada	100,000	45,904	54,096
American Canyon KOF	Nevada	21,600	5,314	16,286
16:1 Millsite	Nevada	458,000	124,017	333,983
MacArthur Mine <sup>a</sup>	Nevada	17,047,000	184,300	16,862,700
Paradise Peak <sup>a</sup>	Nevada	21,157,000	4,625,148	16,531,852
<b>Total</b>		<b>\$128,187,236</b>	<b>\$64,445,305</b>	<b>\$63,741,931</b>

Source: GAO analysis of BLM survey responses.

<sup>a</sup>Part of these financial assurances were corporate guarantees that lost their value when the operator that guaranteed reclamation costs went bankrupt.

For these 13 hardrock operations, we identified several reasons why financial assurances were less than the most recent reclamation cost estimate. In particular:

- *Estimates at the time operations ceased for 6 of the 13 operations did not consider all costs.* BLM reported that some estimates excluded BLM administrative or indirect costs, interim maintenance costs, long-term maintenance and monitoring costs, costs for inflation, and/or other costs. For example, estimates for five operations did not include sufficient funds to cover BLM administrative or indirect costs, which can be high, especially if BLM gets involved with bankruptcy procedures. In its guidance on preparing cost estimates BLM states that estimates should include (1) costs for contract administration, which should be between 6 and 10 percent of estimated operations and maintenance costs, depending on the size of the operation, and (2)

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indirect costs, which should be 21 percent of the contract administration costs.

- *One operator intentionally understated reclamation costs for an operation to minimize the amount of financial assurances required, according to BLM field office officials in Nevada. They said, for example, that the operator calculated the estimate as if very large equipment were going to be used, which would reduce costs; however, the operator did not have such equipment available in the state. The field office officials said that the BLM staff who reviewed the cost estimate were inexperienced and did not detect the understatement.*
- *Reclamation plans and cost estimates sometimes were not updated to reflect all reclamation costs when the scope of the plan of operations changed and, as a result, the reclamation requirements changed. For example, BLM reported that the amount of financial assurances for the Zortman and Landusky mining operation in Montana was significantly less than the cost estimate prepared after the operations ceased. The difference in costs was due in part to the failure to update the reclamation plan to address acid rock drainage found during an inspection in the early 1990s, despite efforts by the operator to update the plan. Specifically, the most recent cost estimate for water treatment is greater than the estimate prepared before operations ceased. In addition, the cost estimate increased because the revised reclamation plan required more extensive work on the heap-leach pad than in the earlier plan. Approval of the plan was delayed until 2002 by the review process and litigation over the effects of the proposed changes, and by that time the operator had declared bankruptcy.*

According to the Montana Department of Environmental Quality, which jointly manages the hardrock operation with BLM, the value of the financial assurances increased during this period. However, the most recent reclamation cost estimate was still greater than the associated financial assurances. An estimate of \$85.2 million for reclamation costs was prepared after operations ceased and addressed water contamination and other reclamation activities, such as backfilling, regrading, and revegetating. This estimate included \$36.3 million for earthworks, \$22 million for water treatment through 2017, and \$26.9 million for long-term water monitoring and treatment, according to BLM field office officials. This estimate was \$27.4 million more than the \$57.8 million in financial assurances provided for the reclamation. The financial assurances consisted of \$29.6 million in surety bonds for

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earthworks, a \$2 million construction assurance bond for water treatment facilities, \$13.9 million in surety bonds for water treatment through 2017, and \$12.3 million in a trust fund for long-term water treatment and monitoring. Part of the funding shortfall—about \$8.7 million—was covered with funds from other sources.

### Financial Assurance Providers Declared Bankruptcy

For four operations in Nevada, as table 8 shows, financial assurances were not adequate because financial assurance providers went bankrupt and could not pay all the reclamation costs they guaranteed. For three of these operations—Paradise Peak, County Line, and MacArthur Mine—an operator used corporate guarantees totaling \$4.2 million to guarantee part of the estimated reclamation costs. However, these corporate guarantees lost all their value when the operator went bankrupt. Reclamation costs for the fourth operation were guaranteed with a surety bond underwritten by a company that went bankrupt and spent \$850,650 for partial reclamation of the operation instead of relinquishing the \$1.8 million surety bond. In particular:

- Paradise Peak, a mining operation in central Nevada, used heap leaching to extract gold from ore. When the operation ceased, it covered almost 1,000 acres, about half of which was on BLM land. The plan of operation was last updated in May 1996, and in November 1995, the operator estimated that reclamation costs would be \$5,462,000. The operator, Arimetco Inc., provided financial assurances totaling \$4,625,000—\$1,157,000 in a surety bond and \$3,468,000 in a corporate guarantee that lost all of its value when Arimetco went bankrupt. As of July 2004, the surety bond company had relinquished the \$1,157,000, but none of the funds had been spent. BLM reported that estimated reclamation costs were \$21,157,000—\$20 million more than the funds the surety bond company relinquished. This estimated cost is significantly more than the original estimate, according to BLM state office officials, because the original estimate did not include all costs that it should have, such as costs for reclaiming collection ponds, and because the cost estimate was not updated to reflect changes in the reclamation plan. BLM reported that no reclamation had been done as of July 2004, but it was very likely that reclamation would be completed because a portion of the needed funding was obtained through bankruptcy procedures and BLM was working with the operator to perform reclamation.
- County Line Project, located on 130 acres of BLM land in western Nevada, used heap leaching to extract gold from ore. The plan of operation was last updated in January 1992, when the operator

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estimated that reclamation costs would be about \$837,000. BLM reported no more recent reclamation cost estimates. Arimetco Inc., the operator, provided \$838,000 in financial assurances—\$210,000 in surety bonds and \$628,000 in a corporate guarantee that lost all of its value after Arimetco went bankrupt. As of July 2004, the surety bond company had relinquished the \$210,000, but none of the funds had been spent.<sup>31</sup> BLM reported that, as of July 2004, between 26 percent and 50 percent of the operation had been reclaimed. BLM also reported that it was very unlikely that reclamation would ever be completed because it was unlikely that the operator would remain viable after bankruptcy.<sup>32</sup>

- The MacArthur Mine covers about 550 acres, over three-quarters of which are on BLM land. The MacArthur Mine was purchased by Arimetco in 1988. This copper mine consisted of a pit, waste dump, and roads used to haul ore from the pit to three heap-leach pads that Arimetco constructed on the nearby Yerington Mine, which was also on BLM land, to extract copper from the MacArthur ore.<sup>33</sup> BLM reported that Arimetco began operating the MacArthur Mine in 1992 and ceased operations in 1997, after it filed for bankruptcy. BLM also reported that the plan of operation was last updated in 1995 and that Arimetco had no reclamation cost estimate before operations ceased. Further, BLM provided documents that showed the MacArthur reclamation plan covered not only the MacArthur land but also the heap-leach pads at the Yerington Mine. Although Arimetco had no cost estimate, it did have \$184,300 in financial assurances—\$47,000 in a surety bond and \$137,300 in a corporate guarantee that had lost all of its value when Arimetco went bankrupt. BLM reported that, as of July 2004, the \$47,000 in surety bond funds had been relinquished but not spent. BLM also reported that estimated reclamation costs would be \$17,047,000—\$17 million more than the funds relinquished by the surety bond company. This estimate, according to an official in a BLM Nevada field office, was prepared by

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<sup>31</sup>BLM officials told us in February 2005 that, as of December 2004, some of the surety bond funds had been obligated to review and determine reclamation designs and costs.

<sup>32</sup>BLM officials told us in February 2005 that, as of December 2004, about 75 percent of the reclamation had been completed and that the heap-leach pad and process ponds were the remaining features to be reclaimed.

<sup>33</sup>The Yerington Mine, which is on BLM and private land, was mined by the Anaconda Copper Company from 1953 to 1978 (before BLM required reclamation or financial assurances) and was purchased by the Atlantic Richfield Company in 1977 and sold to a private entrepreneur in 1978. The entrepreneur sold the Yerington land to Arimetco in 1988.

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the state of Nevada for bankruptcy procedures. BLM reported that, as of July 2004, no reclamation of the MacArthur operation had been undertaken or completed and that it was very unlikely reclamation of this operation would occur. However, in March 2005, the BLM official told us that the Yerington Mine, including the leach heaps built and used by Arimetco for the MacArthur operation, would be cleaned up under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA).<sup>34</sup> CERCLA governs cleanup of severely contaminated hazardous waste sites.<sup>35</sup>

- The Olinghouse Mine operation, a exploration and mining operation in northwest Nevada, used heap leaching to extract gold from ore on 502 acres, of which 447 acres were BLM land. The plan of operation was last updated in September 2002, and the operator estimated that reclamation costs would be about \$851,000. BLM has not reported any more recent cost estimates. Alta Gold Company, the operator of the Olinghouse operation and eight other hardrock operations in Nevada, provided financial assurances to guarantee reclamation of all nine operations through a statewide surety bond underwritten by the Frontier Insurance Company (Frontier). In April 1999, Alta Gold Company filed for bankruptcy, and BLM gave Frontier the option of paying or performing reclamation. Subsequently, the insurance company filed for bankruptcy and was put into “rehabilitation”—a term for bankruptcy with the intent of making the company solvent. In October 2001, Frontier offered to reclaim the operation to a “satisfactory level.” According to BLM, its options were to (1) wait upon the bankruptcy court, with no guarantee to obtain funds or (2) find an alternative solution to reclaim most of the land. BLM entered into an agreement with Frontier for it to perform reclamation using contractors, with BLM oversight. Frontier completed the agreed-upon reclamation by February 2003, and in December 2003, BLM released the company from future financial obligations for this operation. Frontier performed the reclamation for \$850,650, which was significantly less than the \$1.8 million surety bond that it would have

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<sup>34</sup>42 U.S.C. §§ 9601-9675.

<sup>35</sup>BLM officials advised us that their most recent reclamation cost estimates for the MacArthur Mine pit and waste piles was \$350,000 and for the haul road was \$1.15 million. They also said that, assuming the estimate for the bankruptcy court was correct, over \$15.5 million of the cleanup costs for the leach heaps on the Yerington Mine used to extract copper from the MacArthur pit will be included in the CERCLA cleanup costs. The officials said that the total reclamation costs for the Yerington Mine had not yet been estimated.

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relinquished if Frontier had not performed the reclamation. BLM state and field office officials told us that this solution was satisfactory to all parties, even though all reclamation required by the reclamation plan was not completed. BLM reported that, as of July 2004, 86 to 95 percent of the reclamation had been completed, but it was very unlikely that the remaining reclamation would ever be completed. For example, BLM reported that all exploration roads were not reclaimed.

**Financial Assurances for 12  
Hardrock Operations May Not  
Be Adequate to Pay All Costs for  
Required Reclamation**

Financial assurances may not be adequate to pay all costs for required reclamation for 12 of the other 23 operations—11 for operations where financial assurances were equal to the associated cost estimates and 1 where the financial assurance was greater than associated cost estimate.<sup>36</sup> The financial assurances may not be adequate because the cost estimates on which they were based were prepared before operations ceased—in some cases, as long as a decade ago—and likely do not reflect inflation or other factors that would cause reclamation costs to increase. Table 10 shows the value of the cost estimate prepared before the operations ceased and the number of months elapsed between that time and July 2004, when our surveys were completed.

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<sup>36</sup>Of the remaining 11 operations, 3 had been reclaimed, 4 had no basis to assess the adequacy of the cost estimates because BLM reported no estimates, and the most recent cost estimates for 4 were prepared after operations ceased.

**Table 10: Value of Cost Estimate Prepared before Hardrock Operations Ceased and the Number of Months Elapsed between Estimate Date and July 2004 for 12 Hardrock Operations Where Financial Assurances Were Equal to or Greater than Cost Estimate**

<b>Operation</b>	<b>Value of cost estimate prepared before hardrock operations ceased</b>	<b>Date of cost estimate</b>	<b>Number of months elapsed between cost estimate and July 2004</b>
Pan Project	\$5,670	Feb. 1993	137
Monte Exploration	7,395	April 1993	135
Ward Mine	141,500	Mar. 1993	136
Northern Crown Mines	3,897	Dec. 1991	151
Phil Claims Expl Proj	28,556	Oct. 1995	105
Diamond Peak Prospect Mtn	6,500	May 2001	38
Eldorado Pediment	8,200	Oct. 2001	33
Elder Creek	256,062	Feb. 1996	101
Gold Bar Resource Area	303,300	Dec. 1994	115
Gold Bar Mine	2,608,000	Oct. 1994	117
Atlas Exploration <sup>a</sup>	265,000 <sup>a</sup>	June 1994	121
Snowbound Placer	\$2,970	June 2003	13

Source: GAO analysis of BLM survey responses.

<sup>a</sup>The value of the financial assurance for this operation was \$2,000 more than the value of the cost estimate.

Because reclamation costs can be influenced by many factors, we did not attempt to project the amount that the cost estimates prepared before operations ceased were likely to be less than the amount currently needed to complete reclamation. However, BLM's past experience with reclamation costs indicates that cost estimates prepared after operations ceased likely will be higher than cost estimates prepared before operations ceased. Specifically, BLM updated cost estimates for 16 of the 43 operations for which cost estimates had been prepared before operations ceased, and those updated estimates were the same for 2, lower for 2, and higher for 12 operations. The increases in BLM's 12 higher estimates totaled about \$35.5 million, or about a 47 percent increase over the estimates before operations ceased, and ranged from \$690 to \$16.7 million per hardrock operation, while the decreases in BLM's 2 lower estimates totaled \$10,497, or about a 33 percent decrease, and were \$6,000 and \$4,497 for the two hardrock operations.

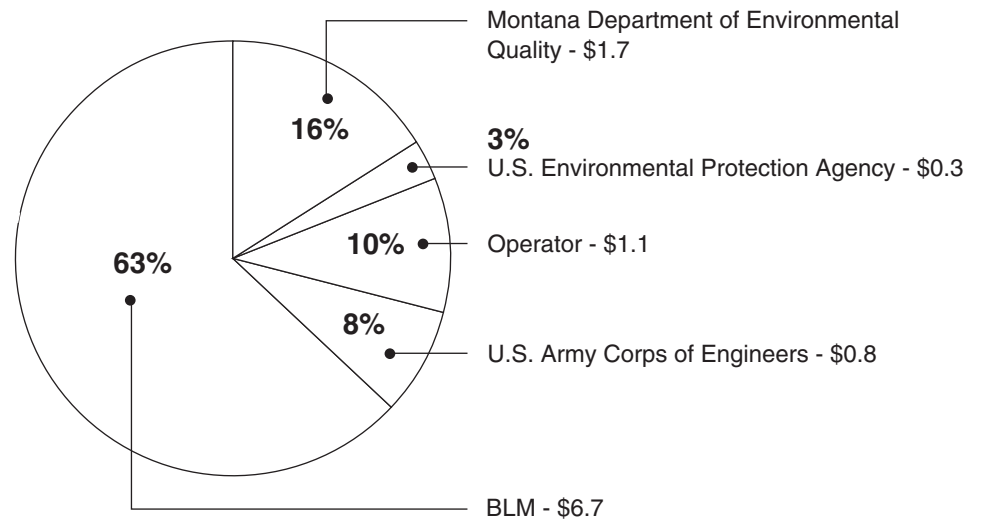


**Federal Agencies and Others Provided Only a Fraction of the Funds Needed to Pay Estimated Costs for Required Reclamation**

As of July 2004, BLM reported that federal agencies and others had provided about \$10.6 million to help reclaim 11 operations. These funds accounted for about 8 percent of the estimated \$136 million needed to pay for required reclamation for operations identified by BLM as ceased and not reclaimed by operators. The sources and amounts of funds provided by others are shown in figure 8. Appendix III, table 19, shows the other sources of funds for the 48 operations.

**Figure 6: Sources of \$10.6 Million Provided by Others to Pay the Cost of Required Reclamation for 11 Operations Identified by BLM as Ceased and Not Reclaimed by Operators, as of July 2004**

Dollars in millions



Source: GAO analysis of BLM survey responses.

BLM headquarters provided over \$6.7 million to reclaim 10 operations. Nearly all of this amount—\$5,594,500—was for the Zortman and Landusky mining operation in Montana.<sup>37</sup> Officials in Montana’s Lewistown field office told us that most of these funds came from BLM’s Abandoned Mine Land Program and were used to remove leach pads and tailings, backfill

<sup>37</sup>Lewistown Montana BLM field office officials told us that BLM provided additional funds after July 2004.

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pits, and treat water.<sup>38</sup> BLM headquarters officials told us that some of the funds used to reclaim the 10 operations were special funds that became available on a one-time basis as the result of a GAO report.<sup>39</sup> In March 2001, we reported that BLM had improperly used Mining Law Administration Program funds for purposes other than intended by that program and recommended that BLM correct the improper charges. BLM made the corrections and, according to BLM headquarters officials, used some of the funds for reclamation.

The U.S. Army Corps of Engineers (the Corps) provided about \$0.8 million to reclaim two operations through its Restoration of Abandoned Mines Sites (RAMS) program, according to BLM. The RAMS program, created in 1999, allows the Secretary of the Army to provide assistance to federal and nonfederal entities for projects to address water quality problems caused by drainage and related activities from inactive and abandoned noncoal mines, such as hardrock operations. Specifically, BLM reported that the Corps provided \$171,000 to reclaim the Easy Jr Mine located near Ely, Nevada. These funds were used for a site characterization study and for construction to close the operation, with the primary goal of recontouring and reclaiming a heap-leach pad. In addition, the Corps provided \$600,000 to reclaim the Golden Butte Mine, which is also located near Ely, Nevada. This project included collecting and analyzing water data, characterizing the leach pad, and developing a closure plan. The Corps also partnered with BLM through the RAMS program on another operation that had ceased and not been reclaimed by the operator—the Elder Creek operation located near Battle Mountain, Nevada. BLM told us that, as of July 2004, the Corps had provided all of the funds to develop the engineering closure design for this project, but BLM did not identify the amount of funds provided.

Funds to reclaim the Zortman and Landusky mining operation also were provided from other sources, according to BLM. Through a bankruptcy procedure, the bankrupt operator provided \$1,050,000 to help reclaim the

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<sup>38</sup>The Abandoned Mine Land Reclamation Program is authorized by Title IV of the Surface Mining Control and Reclamation Act of 1977 and provides funds for reclamation and restoration of land mined and abandoned or left inadequately restored before August 13, 1977, and for which there is no continuous reclamation responsibility under state or other federal laws.

<sup>39</sup>GAO, *Bureau of Land Management: Improper Charges Made to Mining Law Administration Program*, [GAO-01-356](#) (Washington, D.C.: Mar. 8, 2001).

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operation. The Environmental Protection Agency provided \$340,000 in grant funds, primarily to prepare a supplemental environmental impact statement. Finally, the Montana Department of Environmental Quality provided \$1,697,000 for reclamation activities, such as studies, sampling, tailings removal, water treatment, and monitoring.<sup>40</sup> The status of reclamation in 1993 and 2004 for the Zortman and Landusky mining operations is shown below.

**Description of Zortman and Landusky Mine**

The Zortman and Landusky Mine is located in north-central Montana on about 1,200 acres, half of which are on BLM land. The operation, originally permitted in the 1970s, was the first large open-pit gold mine to use heap leaching in the United States. BLM reported that the operation began under a BLM-approved plan of operation in 1981 and ceased in 1999 after Pegasus Gold, the parent company, went bankrupt. BLM reported that, as of July 2004, over 85 percent of the required reclamation had been done and that complete reclamation is very likely.

Source: BLM and others.

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<sup>40</sup>Most of this money came from Resource Indemnity Trust Grants, which are derived from taxes on coal mining in the state.

**Figure 7: Zortman and Landusky Mining Operations at or Near Buildout in 1993 and Status of Reclamation in 2004**

Zortman 1993  
at full buildout



Landusky 1993  
near full buildout



Source: BLM.



Zortman 2004  
Reclamation near  
completion



Landusky 2004  
Reclamation near  
completion

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**The \$136 Million Estimate of Costs for Required Reclamation Is Understated to the Extent That BLM Did Not Identify or Report on All Hardrock Operations**

The \$136 million estimate of costs for required reclamation for hardrock operations that had ceased and not been reclaimed by the operators as required is understated to the extent that BLM did not identify or report information on all such operations. For example, officials in Oregon's BLM state office estimated that 20 notice-level operations in Washington state met these criteria, but neither the Oregon BLM state office nor its field offices completed our surveys for any of these operations. State office officials did not explain why surveys had not been completed for these notice-level operations. Clearly, the \$136 million estimate would be higher if BLM's state or field offices had reported this information. Furthermore, some other BLM offices had difficulty identifying operations that met our criteria and may not have identified all such operations. For example, Nevada's BLM state office completed additional hardrock operation surveys after we questioned whether they had identified all the operations that met the criteria. For more detailed information on the difficulties in identifying hardrock operations that met our criteria, see our scope and methodology in appendix I.

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**Required Reclamation Has Been Completed for 5 of the 48 Hardrock Operations, and BLM Officials Believe That Reclamation Will Likely Be Completed for 28 Others**

BLM reported that, as of July 2004, required reclamation had been completed for 5 of the 48 hardrock operations on BLM land that had ceased and not been reclaimed by operators since it began requiring financial assurances, and it expects to complete reclamation for most of the remaining operations. BLM reported that the reclamation status was in various stages or unknown for the 43 operations that had not completed reclamation. BLM officials' views on the likelihood of completing required reclamation for these operations varied, but they believed that 28 of the 43 operations are likely to be reclaimed, as shown in table 11. Appendix III, table 19, shows the status and likelihood of completing reclamation for the 48 operations.

**Table 11: Reclamation Status and BLM Views on the Likelihood of Completing Reclamation of 43 Hardrock Operations for Which Required Reclamation Had Not Been Completed by Operators, as of July 2004**

Reclamation status		BLM's views on the likelihood of completing reclamation			
Percent of reclamation completed	Number of hardrock operations	Somewhat or very likely	About as likely as unlikely	Somewhat or very unlikely	No answer
96-99	4	4	0	0	0
76-95	7	6	0	1	0
51-75	3	3	0	0	0
26-50	4	1	0	3	0
1-25	8	5	0	3	0
0	13	7	5	1	0
Do not know	4	2	0	1	1
<b>Total</b>	<b>43</b>	<b>28</b>	<b>5</b>	<b>9</b>	<b>1</b>

Source: GAO analysis of BLM survey responses.

Required reclamation of the five operations that were fully completed was accomplished with funds from several sources. For three of the five operations, financial assurances were sufficient to cover the costs to complete reclamation, including one for which the operator did some reclamation and negotiated with BLM to have BLM do the remaining reclamation. For the other two operations, BLM paid at least part of the reclamation costs. Specifically, BLM spent \$92,000 to reclaim one operation that had no financial assurances, and spent \$15,000 to reclaim another operation whose financial assurance was less than the most recent reclamation cost estimate. In the latter case, the operator agreed to abandon the claim if BLM did the reclamation; the operation was in a wild and scenic river canyon in California.

BLM officials generally believed that required reclamation would be completed for most of the 43 operations that had not been reclaimed by the operators as of July 2004. They reported that required reclamation was somewhat or very likely for 28, or almost two-thirds of the 43 operations. Some BLM officials believed reclamation would be completed because funds were available from financial assurances or other sources. For example, BLM reported that completion was very likely for the Zortman and Landusky mining operation in Montana, which was between 86 and 95 percent reclaimed as of July 2004, partly because funds for earthwork were available and work was under way. At the same time, BLM noted that more than \$18 million in additional funds would be needed to maintain water treatment at the operation in perpetuity. In other cases, officials believed

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that operations may be taken over by new operators, or reopened by the existing operators, who will ultimately complete reclamation of the operations. For example, BLM reported that completing reclamation of an operation in Alaska that was less than 50 percent reclaimed was very likely because another operator agreed to reclaim the area in conjunction with taking over the operation from the bankrupt operator. Conversely, BLM reported that completing required reclamation was somewhat or very unlikely for nine operations, most of which had less than 50 percent of required reclamation completed as of July 2004. BLM said that the operators of several of these operations could not do the required reclamation, usually because they lacked funds.

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## **BLM's LR2000 Is Not Reliable and Sufficient for Managing Financial Assurances for Hardrock Operations**

BLM's LR2000 is not reliable and sufficient for managing financial assurances to cover reclamation costs for BLM land disturbed by hardrock operations because staff do not always update information, and LR2000 is not currently designed to track certain critical information. Specifically, staff have not entered information on every hardrock operation and, for those hardrock operations included in LR2000, information is not always current. In addition, the system does not track some information on hardrock operations and their associated financial assurances, which we believe is critical for effectively managing financial assurances. This information includes the basic status of operations, some types of allowable financial assurances, and state- and county-held financial assurances. Given these limitations, it is not surprising that BLM's reliance on LR2000 to manage financial assurances is mixed. In part to compensate for LR2000 limitations, some BLM offices use informal record-keeping systems to help manage financial assurances. BLM has taken some steps and identified others to improve LR2000 for managing financial assurances for hardrock operations.

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## **Information in LR2000 Is Not Reliable and Sufficient**

Information in LR2000 is not reliable and sufficient because staff do not always update the information, and the system is not currently designed to track critical information. Specifically, some hardrock operations are not in LR2000:

- In Nevada—the state with the largest number of hardrock operations—LR2000 does not contain information on all hardrock operations that a state BLM official's informal records show. When Nevada officials queried LR2000 during our visit, the system showed 248 plan-level



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operations in the state. However, according to a senior Nevada BLM state office official who keeps informal records of the hardrock operations, some of the operations are not in LR2000; his records contain 300 plan-level operations. According to BLM state and field office officials, some operations are not in the system because some data were lost during the conversion from an earlier information system to LR2000 in 1999. Officials in one Nevada field office told us that they have not had time to reenter some of the lost data but plan to do so in the future.

- Alaska—with 240 hardrock operations—does not use LR2000 to record information on these operations. Instead, BLM state office officials told us that they use the Alaska Land Information System (ALIS) because LR2000 cannot be used to meet the office's other needs. That is, LR2000 cannot process the conveyance of land from the federal government to the state of Alaska and to Native villages and corporations. In addition, the costs and staff time associated with incorporating the information in ALIS into LR2000 contributed to BLM's decision to continue to use ALIS.
- In BLM's March 2004 assessment of 18 of its 157 field offices' compliance with current hardrock regulations, 3 of the 18 offices reported that all hardrock operations were not recorded in LR2000. For example, one of these field offices reported that its office had only recently received training on LR2000.

Furthermore, for some operations that are in LR2000, information is not up to date. For example, in responding to our survey regarding the number of existing notice- and plan-level hardrock operations with financial assurances, the New Mexico state office explained that some of its existing operations without financial assurances may be inactive and should be closed in LR2000. BLM officials are to open a case in LR2000 when a notice or plan of operation is received, and they are to close the case in LR2000 when operations have ceased and reclamation is complete. However, BLM state and field office officials reported that data entry is not always timely. For example, some field office officials told us that they do not enter data until the winter, when it is more difficult to work in the field and they spend more time in the office. In addition, in BLM's March 2004 assessment, 11 of the 18 field offices reported that the results of compliance inspections were not entered in a timely manner.<sup>41</sup> These inspections are critical to ensuring

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<sup>41</sup>In this survey, BLM defined timely as within 5 days.

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that all hardrock operations are meeting federal requirements. The field offices explained that this problem occurred because of other office priorities, lack of staff trained to use LR2000, and staff workload. In addition, the BLM officials who administer LR2000 said the quality of the data currently in LR2000 varied in part because of the varied emphasis the field offices gave to data entry.

LR2000 also does not track some critical information on hardrock operations and their associated financial assurances. In particular, LR2000 does not track the following:

- *The status of hardrock operations, such as whether the operation is ongoing or has ceased and should be reclaimed.* LR2000 uses the term “open” to identify both operations that are ongoing and operations that have ceased and should be reclaimed. It uses the term “closed” to refer to those operations where reclamation has been completed. While field staff should know whether an operation is ongoing or has ceased because of first-hand knowledge or access to case files in their offices, BLM headquarters and state office officials do not have ready access to this basic information. For example, in response to our survey regarding the number of ongoing hardrock operations with financial assurances, the Arizona state office reported that only 32 of 55 plan-level operations had financial assurances. The office also reported that it was reviewing its case files to determine the status of the operations without financial assurances, such as whether any of these operations have ceased, been reclaimed, and should have been closed in LR2000. Also, in response to our survey, the California state office reported that LR2000 showed 639 “open” hardrock operations in the state, but officials estimated that only 303 of these operations were actually ongoing. Furthermore, for 9 of the 13 states with hardrock operations, BLM state offices reported that they did not track the status of reclamation where operators had failed to do required reclamation using LR2000 or other means.<sup>42</sup>
- *Information on all types of financial assurances allowed under federal regulations.* LR2000 has data entry fields for five of the allowed types of assurances—surety bonds, letters of credit, certificates of

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<sup>42</sup>BLM state office officials completed state surveys for those states within their jurisdiction with hardrock operations—a total of 13 states. The BLM Montana state office said that one state within its jurisdiction—South Dakota—had only two hardrock operations, both of which had ceased operating and were being reclaimed by the operators.

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deposit, cash, and treasury securities—as well as a “personal” field. However, some of the missing types of financial assurances, such as corporate guarantees, bond pools, and trust funds, are being used to guarantee reclamation costs. For example, corporate guarantees covered \$204 million in reclamation costs, or 24 percent of the total value of financial assurances that BLM reported as of July 2004. To overcome this system limitation, the Nevada BLM state office uses the “personal” field to track information on both corporate guarantees and operations covered by the state bond pool. Without the capability to track all types of financial assurances, BLM cannot identify the total amount of reclamation costs that each type of financial assurance guarantees.

- *Information on financial assurances held by the state or county agencies.* Several BLM state offices reported that some financial assurances for hardrock operations on BLM land are held by state or county agencies and are not included in LR2000. For example, the Montana BLM state office contacted the Montana Department of Environmental Quality to obtain information on the types and amounts of financial assurances. The Idaho office reported that it relies on its own informal records to track state-held financial assurances and provided the information. In California, where county agencies can hold the financial assurances for hardrock operations on BLM land, the office reported that it does not have information on all financial assurances held by the counties and did not contact them to provide it. In commenting on a draft of this report, Interior stated that BLM issued an instruction memorandum in April 2005 to provide guidance and direction on data standards for LR2000.<sup>43</sup> The instruction memorandum states that BLM data entry staff must use a specific action code when financial assurances are filed and instructs the staff to use that action code when BLM receives documentation that a financial assurance is held by another agency.

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## BLM Makes Limited Use of LR2000

Given LR2000’s limitations, it is not surprising that BLM’s reliance on the system to manage financial assurances is mixed. At the headquarters level, BLM does not always rely on information in LR2000. Rather, to obtain information needed on hardrock operations and associated financial

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<sup>43</sup>BLM Instruction Memorandum 2005-126, *Data Standard Changes for Surface Management Plans of Operations*, (Apr. 14, 2005).

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assurances, BLM headquarters officials must contact their state and field offices. For example, because the information was not in LR2000, in March 2003, BLM headquarters requested information from its state and field offices on the number of notice-level operations that (1) did not meet the required deadline to request an extension, (2) requested an extension, and (3) were extended under the 2001 regulations. BLM needed this information to determine if all notice-level operations were in compliance with current regulations.<sup>44</sup>

Furthermore, BLM headquarters does not always rely on LR2000 to answer questions on financial assurances at a national or state level from the Congress, the public, and other interested parties. For example, BLM headquarters could not provide information on hardrock operations and financial assurances in response to our request for such information and told us we would have to get this information from the state and field offices. State offices told us that some of the critical information, such as the status of the hardrock operation and reclamation cost estimates needed to determine the adequacy of the financial assurances, is in paper case files located in the field offices. Others also have found that BLM does not systematically use LR2000 to track information on hardrock operations. For example, in its 1999 report on hardrock mining, the National Research Council found no systematic, easily available compilation and analysis of information about hardrock operations on BLM land.<sup>45</sup>

At the state- and field office-levels, BLM's reliance on LR2000 for managing financial assurances for hardrock operations varies. BLM state offices reported that in four states with hardrock operations LR2000 was relied on to little or no extent; in eight states, to a moderate or some extent; and in one state—Nevada—to a very great extent.<sup>46</sup> Of the four BLM state offices reporting little or no reliance on LR2000, two explained that there is no BLM state office oversight of the program; one defers program responsibility to the state agency; and one has few hardrock operations.

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<sup>44</sup>BLM Instruction Memorandum 2003-118, *43 C.F.R. 3809 Notice-Workload Analysis* (Mar. 24, 2003).

<sup>45</sup>National Research Council, *Hardrock Mining on Federal Lands* (Washington, D.C.: 1999).

<sup>46</sup>We asked each of the BLM state offices with hardrock operations to what extent the state office or its field offices rely on information in BLM's LR2000 system for managing the financial assurance program for hardrock operations. The categories were: little or no extent, some extent, moderate extent, great extent, and very great extent. The Alaska BLM state office answered this question for ALIS.

The lack of reliance on LR2000 for managing financial assurances is due in part to state office concerns about the reliability and adequacy of information in the system. For example, as discussed earlier, some BLM state offices do not use LR2000 because it does not contain information on financial assurances held by state or county agencies. States' views on the reliability and adequacy of LR2000 are shown in table 12.

**Table 12: States' Views on Reliability and Adequacy of LR2000 to Manage Financial Assurances**

Survey question: To what extent is the information in LR2000	BLM state offices' views					
	Did not use LR2000 to manage financial assurances	Very unreliable/ Inadequate	Unreliable/ Inadequate	Marginal or borderline reliability/ Adequacy	Generally reliable/ Adequate	Very reliable/ More than Adequate
Reliable for managing financial assurances <sup>a</sup>	2	2	1	2	5	1
Adequate to manage financial assurances <sup>b</sup>	2	2	1	2	6	<sup>c</sup>

Source: GAO's analysis of BLM survey responses.

<sup>a</sup>We asked each of the BLM state offices with hardrock operations how reliable is the information in LR2000 for managing financial assurances. The categories were: very unreliable, unreliable, marginal or borderline reliability, generally reliable, very reliable, or do not use LR2000 for this purpose. The Alaska BLM state office answered this question for ALIS.

<sup>b</sup>We asked each of the BLM state offices with hardrock operations how adequate is the information in LR2000 for managing financial assurances. The categories were: very inadequate, inadequate, marginal or borderline adequacy, generally adequate, more than adequate, or do not use LR2000 for this purpose. The Alaska BLM state office answered this question for ALIS.

<sup>c</sup>None of the BLM state offices chose this response.

Some BLM offices reported using informal record-keeping systems or records to track information on hardrock operations and associated financial assurances within their jurisdiction. For example:

- In Alaska, the field offices use an Alaska state agency database to obtain information on the number of existing notice- and plan-level hardrock operations.
- The New Mexico BLM state office has an informal database that lists all financial assurances filed and approved to track financial assurance information in the state.
- The Nevada BLM state office uses field offices' logs and the Nevada state database to track information on hardrock operations.

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- The Idaho BLM state office maintains informal records on state-held financial assurances.

According to agency officials, BLM has taken some steps to improve the information in LR2000 and is planning others. Specifically, BLM reported the following actions:

- *Developing revised data standards for LR2000, which have not been updated since the 1990s.* These standards set forth the type and format of information that must be entered into LR2000. Officials are considering expanding information on the status of hardrock operations in the system to show whether operations have been abandoned and the type of activity associated with the operation, such as mining and road construction. In commenting on a draft of this report, Interior stated that BLM's April 2005 instruction memorandum provided guidance on action codes to track the length of time between submission and approval of hardrock plans of operation.
- *Planning to add an additional report to LR2000 so that BLM officials can directly compare information on hardrock operations with their associated financial assurances.* The creation of this report was prompted by a request from the Nevada BLM state office for this information.
- *Reengineering LR2000 to better reflect the way BLM does business so that officials will have better management information.* Officials said that while progress has been made on this effort with some other BLM programs, such as oil and gas, reengineering BLM's data management for hardrock operations is planned for the future.

BLM state offices also identified some changes to LR2000 that could help them better manage financial assurances for hardrock operations. These changes included ensuring the codes in LR2000 match the on-the-ground conditions of operations; changing it to better identify critical information on financial assurances, such as those held by state and county agencies; and enhancing its capability to notify BLM officials when it is time to review financial assurance amounts. According to BLM officials responsible for administering LR2000, the system has the capacity to handle virtually any changes that the state and field offices request. In commenting on a draft of this report, Interior stated that BLM will continue to refine and enhance LR2000 data systems as needed to facilitate the hardrock mining program.

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## Conclusions

Having adequate financial assurances to pay reclamation costs for BLM land disturbed by hardrock operations is critical to ensuring that the land is reclaimed if operators fail to complete reclamation as required. Furthermore, financial assurances must be based on sound reclamation plans and current cost estimates so that BLM can be confident that financial assurances will fully cover reclamation costs. For years, BLM headquarters has relied on BLM state offices that, in turn, rely on BLM field offices and sometimes on state and county agencies to obtain adequate financial assurances. However, while federal regulations and BLM guidance set forth financial assurance requirements for notice- and plan-level hardrock mining operations, BLM does not have a process for ensuring that the regulations and guidance are effectively implemented to ensure that adequate financial assurances are actually in place, as required.

Moreover, BLM does not know whether all hardrock operations have adequate financial assurances because of limitations in the types of information collected in LR2000 and failure of staff to update information in a timely manner. Specifically, LR2000 does not track the status of hardrock operations, whether each existing operation that requires a financial assurance has the assurance, and whether the financial assurance is adequate to pay the cost of required reclamation.

Because BLM does not have an effective management process and critical management information, it has not ensured that some current and previous operators have adequate financial assurances, as required by federal regulations and/or BLM guidance. Furthermore, some operations either do not have any, or have outdated reclamation plans and/or cost estimates. When operators without any financial assurances, or with inadequate financial assurances, fail to reclaim BLM land disturbed by their hardrock operations, BLM is left with public land that requires tens of millions of dollars to reclaim and poses risks to the environment and public health and safety. Until BLM establishes monitoring and accountability mechanisms to ensure that all operations have required financial assurances—based on sound reclamation plans and current cost estimate—and improves the information it collects to effectively manage financial assurances, these problems will continue.

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## Recommendations for Executive Action

To ensure that hardrock operations on BLM land have adequate financial assurances, we recommend that the Secretary of the Interior direct the Director of BLM to take the following two actions:

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- require the BLM state office directors to establish an action plan for ensuring that operators of hardrock operations have required financial assurances and that the financial assurances are based on sound reclamation plans and current cost estimates, so that they are adequate to pay all of the estimated costs of required reclamation if operators fail to complete the reclamation, and
  - modify LR2000 to ensure that it tracks critical information on hardrock operations and associated financial assurances so that BLM headquarters and state offices can effectively manage financial assurances nationwide to ensure regulatory requirements are met.

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## Agency Comments and Our Evaluation

We received written comments on a draft of this report from the Department of the Interior. Interior stated that it appreciated the advice and critical assessment we provided on BLM's management of financial assurances required for hardrock operations. However, Interior did not acknowledge or address specific deficiencies identified in our report and did not concur with our recommendations or the conclusions upon which the recommendations were based.

In commenting on our recommendation to establish an action plan for ensuring that operators of hardrock operations have required financial assurances, Interior stated that existing procedures and policies ensure financial guarantees are in place to protect the public should an operator fail to reclaim. We disagree and believe that Interior's view is inconsistent with the evidence we developed based on information provided by BLM's own offices. While we agree that existing federal regulations and BLM guidance require financial assurances to cover all reclamation costs for notice- and plan-level hardrock operations, the evidence in our report shows that notices and plans of operation do not always have adequate financial assurances, as required. As we stated in this report, BLM state offices with existing hardrock operations informed us that, as of July 2004, some notice- and/or plan-level operations did not have adequate financial assurances. Furthermore, the evidence is clear that hardrock operations have ceased without operators having the adequate financial assurances required by regulations and BLM guidance. As a result, funds are not available to pay at least \$56.4 million in reclamation costs for operations that had ceased and not been reclaimed since BLM began requiring financial assurances. We continue to believe that this evidence clearly calls for a plan of action that includes monitoring and accountability



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mechanisms to ensure that the requirements in the federal regulations and BLM guidance to have adequate financial assurances are met.

In commenting on our recommendation to modify LR2000 to ensure that it tracks critical information on hardrock operations and associated financial assurances, Interior stated that BLM does track all critical information on authorized operations in LR2000. Again, we disagree with BLM's opinion and find this view troubling when viewed in the context of clear evidence to the contrary presented in this report. As we reported, LR2000 does not track the critical information needed to effectively manage and oversee financial assurances, including the operation's basic status, such as whether the operation is ongoing or has ceased and should be reclaimed; some types of financial assurances being used, such as corporate guarantees, bond pools, and trust funds; and the adequacy of financial assurances to pay the cost of required reclamation. We are encouraged by BLM's April 2005 instruction memorandum to provide guidance and direction on data standards for LR2000 and the recent addition of codes and edits to LR2000 for plans of operations and financial guarantees, and we have added information to our report, as appropriate. We are also encouraged by BLM's willingness to refine and enhance LR2000. However, we continue to believe that until BLM timely enters, tracks, and uses this critical information it will not be able to effectively manage financial assurances to ensure that federal regulations and BLM guidance are followed.

Interior also suggested some technical changes that we have incorporated as appropriate. Interior's letter is included in appendix IV, along with our comments.

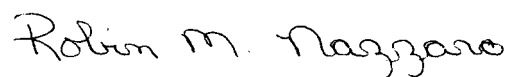
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As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. We will then send copies to other appropriate congressional committees and to the Secretary of the Interior. We will also make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

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If you or your staff have any questions concerning this report, please contact me at (202) 512-3841 or [Nazzaror@gao.gov](mailto:Nazzaror@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix V.

Sincerely yours,



Robin M. Nazzaro  
Director, Natural Resources and Environment

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# Objectives, Scope, and Methodology

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This appendix details the methods we used to examine three aspects of financial assurances used to cover reclamation costs for the Department of the Interior's Bureau of Land Management (BLM) land disturbed by hardrock exploration, mining, and processing operations. Specifically, we were asked to determine the (1) types, amount, and coverage of financial assurances operators currently use to guarantee reclamation costs; (2) amount that financial assurance providers and others have paid to reclaim operations that had ceased and not been reclaimed since BLM began requiring financial assurances and the estimated costs of completing reclamation for such operations; and (3) reliability and sufficiency of BLM's automated LR2000 information system for managing financial assurances for hardrock operations.

To address these objectives, we designed two surveys to obtain information from BLM's state and field offices because they maintain the case files and other specific information on hardrock operations. We asked the 12 BLM state offices that manage BLM programs across the United States to complete surveys for each state in their jurisdiction with hardrock operations. The 12 BLM state offices were Alaska, Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Wyoming, and Eastern States.<sup>1</sup>

We used the first survey, which focused on states' experiences with hardrock operations, to determine the types and amounts of financial assurances currently used to guarantee reclamation costs. Specifically, we asked the 12 BLM state offices to provide information on (1) the number of existing hardrock operations for each state within their jurisdiction, (2) the types and the amounts of financial assurances provided for existing hardrock operations in each state, (3) their views on the effectiveness of the various types of financial assurances, (4) their views on the reliability and sufficiency of hardrock operation data contained in the LR2000, and (5) their use of LR2000 for managing hardrock operations in their states.

We used the second survey, which focused on selected hardrock operations, to determine the amount of funds provided by financial assurances and others to reclaim hardrock operations that had ceased and

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<sup>1</sup>Some of the 12 BLM state offices manage BLM programs in more than one state. For example, the BLM Montana state office manages BLM programs in Montana, North Dakota, and South Dakota, and the Oregon state office manages BLM programs in Oregon and Washington.

not been reclaimed by operators since BLM began requiring financial assurances and the estimated costs of completing reclamation of such operations. We asked the state offices to provide detailed information on each hardrock operation within their jurisdiction that met both of the following criteria: the operator (1) ceased operations after the requirement for financial assurances went into effect—August 1990 for plan-level operations, January 2001 for new notice-level operations, and January 2003 for existing notice-level operations—and (2) failed to complete the required reclamation. In most cases, BLM field office staff completed this survey because hardrock operation case files are maintained in these offices. Also, as necessary, we obtained information from BLM state and field staff to clarify responses to the survey. We used the information obtained to determine the estimated reclamation costs and the adequacy of financial assurances for reclaiming the hardrock operations that BLM identified as meeting our criteria.

To determine the adequacy of financial assurances, we compared the most recent complete reclamation cost estimate that BLM reported for each operation with the dollar value of the financial assurance that BLM reported for that operation. We then computed the difference between the most recent cost estimate and the value of the financial assurance to determine the total net excess or deficiency of the financial assurances. The total is the sum of the differences between the values of the financial assurances and the cost estimates that were made at different times over the past 15 years and were not adjusted for inflation. For each operation, we asked BLM to report the value of the (1) estimates that the operator had before operations ceased, (2) estimates that BLM prepared after operations ceased, (3) actual reclamation costs, (4) BLM's estimate of the shortfall in funds needed to complete reclamation in excess of funds relinquished by the financial assurance provider, and (5) BLM's estimates of funds needed to complete required reclamation. BLM reported one or more of these values for 43 operations, and no value for the other 5 operations. For 24 of these 43 operations, BLM reported only one value, and we used that value as the most recent reclamation cost estimate. For the other 19 operations, BLM reported two or more values. In determining which value to use for our analysis, we generally did not use the (1) actual costs for operations that were not fully reclaimed because the actual cost could not be known unless reclamation was complete and (2) estimated funds needed to complete reclamation for operations that were partly reclaimed because those estimates did not include funds that had already been spent. We used the following values as the most recent reclamation cost estimate for these 19 operations.

- For 12 operations, we used BLM's estimate prepared after operations ceased because those estimates were the most recent.
- For three operations that BLM reported as having no reclamation completed or not knowing the status of reclamation, we used BLM's reported estimate of funds needed to complete required reclamation.
- For one operation that BLM reported as being fully reclaimed, we used BLM's reported actual cost.
- For one operation, we used BLM's estimate of the shortfall of funds needed in excess of funds relinquished by the financial assurance provider because that estimate was the most recent and most accurate, according to BLM officials.
- For one operation, we used the estimate available before operations ceased because the only other value reported for the operation was BLM's estimate of funds needed to complete reclamation and reclamation was only partly completed.
- For one operation, we used the estimate available before operations ceased because the other values reported for the operation were BLM's estimate of funds needed to complete reclamation and the reported amount of actual costs, but reclamation was only partly completed.

We provided a copy of these two surveys to BLM headquarters and incorporated officials' comments as appropriate. We also pretested these surveys with state and field office staff in Nevada, Utah, and Arizona and made changes in the surveys' scope and content as appropriate. Further, after respondents submitted their answers, we (1) verified the information in the survey that focused on states' hardrock operations experience through discussions with BLM officials in two state offices with extensive financial assurance experience in hardrock operations—Nevada and Montana—and (2) verified information reported in four randomly selected hardrock operations surveys through discussions with officials and a review of case files in three Nevada field offices—Carson City, Elko, and Winnemucca—and one Montana field office—Lewistown. We checked the answers respondents had given to the questions against information contained in the case files. In many cases, staff provided answers based on their own knowledge and information in the case files.

Some BLM state offices had difficulty identifying hardrock operations that met our criteria. For example, some states completed our surveys for hardrock operations that did not appear to meet our criteria, and we contacted the respondents to clarify whether the operations did or did not meet the criteria. We eliminated 12 surveys that did not meet the criteria from our analysis.

Furthermore, we cannot know whether BLM reported to us all hardrock operations that met our criteria. To address this concern, we took additional steps to help ensure that BLM completed the selected hardrock operations survey for all operations that met our criteria. For example, in Nevada, we compared a list of bankrupt operations prepared by the Nevada Bonding Task Force with a list of BLM's completed surveys to identify potential omissions. In addition, we asked selected experts, interest groups, and others to identify instances when operators failed to complete required reclamation and the federal government or others paid such reclamation costs or the required reclamation was not fully completed. To the extent that BLM staff did not identify all of the operations that met our criteria or did not report information on those operations that did meet the criteria, the information the BLM staff reported is incomplete. Furthermore, we did not collect information on the thousands of ceased hardrock operations since 1872 that did not require financial assurances and, therefore, fell outside the scope of this review.

To determine the reliability and sufficiency of BLM's LR2000 system, we spoke with BLM information technology officials in the headquarters unit near Denver, Colorado, who are responsible for administering the system; BLM state and field office staff in two states who enter information into the system; and BLM managers at headquarters and in two states who use information from the system. In addition, we visited information technology officials near Denver to discuss the structure and history of LR2000 and to observe firsthand how data are entered into and processed by the two subsystems used to manage financial assurances—the Case Recordation System, which contains information about hardrock operations, and the Bond and Surety System, which contains information about financial assurances. Also, in our two surveys of BLM's 12 state offices, we asked questions to gather data on whether each respondent used LR2000 to respond to the survey. Specifically, we asked questions about whether the information used to respond came from LR2000 or from state office personnel's knowledge, field office personnel's knowledge, other databases, case files, or other sources. These questions helped us

determine the extent to which BLM officials used and relied on the data in LR2000.

It is important to note that the practical difficulties of conducting any survey introduce various types of errors. Differences in how a particular question is interpreted and differences in the sources of information available to respondents can also be sources of survey response errors. We included steps in both the data collection and data analysis stages to minimize such errors. These steps included developing our survey questions with the aid of our survey specialists, conducting pretests of the questionnaires, and twice verifying the entry of survey data where applicable.

In addition to the surveys, we took several steps to understand BLM's management and oversight of hardrock operations and the use of financial assurances to ensure reclamation. We reviewed GAO reports, federal laws and regulations, BLM documents, and independent studies on hardrock operations and financial assurances. We also discussed these issues with BLM officials at headquarters and in selected state and field offices in Arizona, Montana, Nevada, and Utah. To understand the relationship between BLM and state agencies responsible for overseeing hardrock operations, we met with BLM and state agency officials in Colorado and Nevada, and we reviewed relevant memorandums of understanding and other documents for these and other states. We also discussed relevant hardrock operation and financial assurance issues with experts and representatives from the mining industry, academia, and environmental groups. Finally, to better understand hardrock operations and reclamation requirements, we visited five hardrock operations on BLM land in two states—the Florida Canyon, MacArthur Mine, Olinghouse, and Relief Canyon operations in Nevada and the Zortman and Landusky operation in Montana.

We conducted our review from October 2003 through May 2005 in accordance with generally accepted government auditing standards, including an assessment of data reliability.

# Number of Notice- and Plan-Level Hardrock Operations and Value of Associated Financial Assurances

This appendix provides information on the number of notice- and plan-level operations and dollar value of associated financial assurances for the 12 states with existing hardrock operations as of July 2004, as reported by BLM.

**Table 13: Number of Notice- and Plan-Level Hardrock Operations and Associated Financial Assurances, by State, as of July 2004**

State	Notice-level operations		Plan-level operations		Total for notice- and plan-level hardrock operations	
	Number of operations	Value of financial assurances	Number of operations	Value of financial assurances	Number of operations	Value of financial assurances
Alaska	134	<sup>a</sup>	106	<sup>a</sup>	240	\$1,000,000
Arizona	130	446,107	55	4,326,891	185	4,772,998
California <sup>b</sup>	205	116,800	98	4,819,000	303	4,935,800
Colorado	102	14,600	30	1,722,313	132	1,736,913
Idaho <sup>c</sup>	32	43,761	23	751,771	55	795,532
Montana	150	<sup>d</sup>	30	<sup>d</sup>	180	109,307,930
New Mexico	24	<sup>e</sup>	11	<sup>e</sup>	35	4,298,989
Nevada <sup>f</sup>	450	7,001,785	324	621,495,665	774	629,684,465
Oregon	165	21,000	10	31,000	175	52,000
Utah <sup>g</sup>	167	552,556	49	2,175,629	216	2,728,185
Washington	127	<sup>h</sup>	12	<sup>h</sup>	139	<sup>h</sup>
Wyoming <sup>i</sup>	18	51,000	38	77,357,524	56	77,408,524
<b>Total</b>	<b>1,704</b>	<sup>j</sup>	<b>786</b>	<sup>j</sup>	<b>2,490</b>	<b>\$836,721,336</b>

Source: GAO analysis of BLM data.

<sup>a</sup>The Alaska state bond pool covers all hardrock operations in the state. The Alaska BLM office did not provide information on the value of financial assurances for each type of operation.

<sup>b</sup>The \$4,935,800 in financial assurances includes those held by BLM, the state of California, and some county agencies in California. However, it may not include all financial assurances held by California counties to guarantee reclamation of hardrock operations on BLM public land.

<sup>c</sup>The \$795,532 in financial assurances includes \$512,590 held by the state of Idaho and \$282,942 held by the BLM.

<sup>d</sup>Montana BLM holds \$66,390 in financial assurances for hardrock operations in the state. The majority of financial assurances funds, \$109,241,540, are held by the Montana Department of Environmental Quality. Neither the BLM nor the state agency provided information on the value of the financial assurances by type of operation.

<sup>e</sup>New Mexico BLM holds \$975,191 in financial assurances—\$71,898 for notice-level operations and \$903,293 for plan-level operations. Additional financial assurances held by the New Mexico Mining and Minerals Division for hardrock operations on BLM land total \$3,323,798. The New Mexico agency did not provide information on the value of these financial assurances by type of operation.

<sup>f</sup>The Nevada BLM reported that some operators in the state use statewide and nationwide financial assurances that the office could not separate by notice- and plan-level operation. The office estimated



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**Appendix II**  
**Number of Notice- and Plan-Level Hardrock**  
**Operations and Value of Associated Financial**  
**Assurances**

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that 10 percent of the statewide and nationwide financial assurances cover notice-level and 90 percent cover plan-level operations and allocated assurances accordingly. The \$629,684,465 in financial assurances includes corporate guarantees held by the state of Nevada and one trust fund and the state bond pool, which are maintained by the State of Nevada.

<sup>g</sup>The \$2,728,185 in financial assurances for Utah includes those held by both the BLM and the state of Utah.

<sup>h</sup>The Oregon BLM state office did not provide information on the amount of financial assurances available to reclaim the 139 existing hardrock operations it identified in the state of Washington on BLM public land. The office reported no individual bonds are used for operations in Washington state, but that a statewide bond is held by the Washington Department of Ecology.

<sup>i</sup>The state of Wyoming holds all financial assurances to guarantee reclamation of BLM public land.

<sup>j</sup>The total value of financial assurances for notice-level operations or the total value for plan-level operations is not available because BLM did not provide this information for some states.

# Detailed Information on 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators

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This appendix provides detailed information obtained from our survey on the 48 hardrock operations that BLM identified as ceased but not reclaimed by the operator since BLM began requiring financial assurances. Specifically, the appendix presents tables 14 through 19 showing: the basic characteristics of the 48 hardrock operations; key reclamation dates; BLM steps to compel operators to reclaim BLM land disturbed by hardrock operations and reasons operators did not reclaim the land; estimated reclamation costs; the types and amount of financial assurances and the amount of financial assurances relinquished and spent on reclamation; and sources of other funds and the status of reclamation.

**Appendix III  
Detailed Information on 48 Hardrock  
Operations That Had Ceased and Not Been  
Reclaimed by Operators**

**Table 14: Basic Characteristics of 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators**

<b>State and operation</b>	<b>Authority</b>	<b>Type of operation</b>	<b>Primary hardrock mineral</b>	<b>Heap-leaching</b>	<b>BLM acres</b>
<b>Alaska</b>					
Chapman Creek Mining	Plan	Mining; other (road construction)	Gold	No	5
R D Environmental Mining	Plan	Exploration; mining	Gold	No	2
Gold Hill Mining	Plan	Mining	Gold	No	30
Nixon Fork Mine	Plan	Exploration; mining	Gold	No	115
<b>Arizona</b>					
Tyro Mill	Plan	Other (gold milling)	Gold	No	20
Granite Property	Plan	Exploration	Gold	No	<sup>a</sup>
Herring Mine	Plan	Mining	Gold	No	2
SKOR	Plan	Mining	Gold	No	3
UFO	Plan	Mining	Gold	No	12
Ironwood Claim Group	New notice	Exploration	Gold	No	<sup>a</sup>
<b>California</b>					
Screech Owl	Plan	Exploration	Gold	No	2
Nina	Plan	Mining; other (placer gold wash plant)	Gold	No	4
<b>Idaho</b>					
West One Minerals	Plan	Exploration; mining	Limestone	No	7
<b>Montana</b>					
Snowbound Placer	New notice	Exploration	Gold	No	0
Zortman & Landusky Mine	Plan	Mining	Gold	Yes	684
Zortman Exploration Plans	Plan	Exploration	Gold	Yes	88
<b>Nevada</b>					
Adelaide Crown	Plan	Mining	Gold	Yes	69
Wildhorse Canyon	Plan	Exploration	Gold	No	12
South Hy/Isabella	Plan	Exploration	Gold	No	22
Hogum or Golden Eagle	Plan	Mining	Gold	No	10
Golden Butte	Plan	Mining	Gold	Yes	235
Pan Project	Plan	Exploration	Gold	No	30
Monte Exploration	Plan	Exploration	Gold	No	18
Ward Mine	Plan	Mining	Zinc	No	22
Easy Jr	Plan	Mining	Gold	Yes	247
MacArthur Mine	Plan	Mining	Copper	Yes	415
Northern Crown Mines	Plan	Exploration	Gold	No	4

**Appendix III  
Detailed Information on 48 Hardrock  
Operations That Had Ceased and Not Been  
Reclaimed by Operators**

*(Continued From Previous Page)*

<b>State and operation</b>	<b>Authority</b>	<b>Type of operation</b>	<b>Primary hardrock mineral</b>	<b>Heap-leaching</b>	<b>BLM acres</b>
Maverick Springs	Plan	Exploration	Gold	No	13
Phil Claims Expl Proj	Plan	Exploration	Gold	No	23
Kinsley	Plan	Mining	Gold	Yes	350
County Line Project	Plan	Mining	Gold	Yes	130
Olinghouse Mine	Plan	Exploration; mining	Gold	Yes	447
Mina Mill	Plan	Other (custom mill)	Gold	No	20
Diamond Peak Prospect Mtn	New Notice	Exploration	Gold	No	1
Eldorado Pediment	New Notice	Exploration	Gold	No	1
Phoenix Metals USA II Inc.	Plan	Other (mill site)	Platinum group metals/gold	No	12
American Canyon KOF	New Notice	Exploration	Gold	No	1
Jumbo Mine	Plan	Mining	Gold	Yes	63
Relief Canyon Mine	Plan	Mining	Gold	Yes	295
Elder Creek	Plan	Mining	Gold	Yes	102
Gold Bar Resource Area	Plan	Exploration; mining	Gold	Yes	154
Atlas Exploration	Plan	Exploration	Gold	No	149
16: 1 Millsite	Plan	Mining	Silver	Yes	40
Gold Bar Mine	Plan	Exploration; mining	Gold	Yes	1,175
Paradise Peak	Plan	Mining	Gold	Yes	470
<b>Washington</b>					
Raven Hill Mining	Plan	Mining	Rare Earth Elements	No	10
Empire Creek Project	Plan	Exploration	Unknown	No	5
Lamefoot	Plan	Mining	Gold	No	5

Source: BLM survey responses.

<sup>a</sup>No acreage given.

**Appendix III  
Detailed Information on 48 Hardrock  
Operations That Had Ceased and Not Been  
Reclaimed by Operators**

**Table 15: Key Dates for 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators**

<b>State</b>	<b>Operation began</b>	<b>Last plan of operation update</b>	<b>Last reclamation plan update</b>	<b>Last cost estimate update</b>	<b>Operation ceased</b>	<b>BLM cost estimate</b>
<b>Alaska</b>						
Chapman Creek Mining	7/1996	7/1996	Not applicable	No answer	1/1998	No answer
R D Environmental Mining	1/1992	7/1995	7/1995	No answer	1/1995	6/2003
Gold Hill Mining	2/1999	5/2000	No answer	No answer	5/2002	No answer
Nixon Fork Mine	1/1991	5/1999	No answer	No answer	1/1999	No answer
<b>Arizona</b>						
Tyro Mill	1/1980	2/2000	2/2000	2/2000	7/2002	No answer
Granite Property	1/1990	5/1990	5/1990	No answer	11/1990	No answer
Herring Mine	1/2002	6/2002	6/2002	6/2002	1/2002	No answer
SKOR	1/1984	3/1985	Not applicable	No answer	1/1991	6/2003
UFO	1/1982	5/1991	Not applicable	No answer	1/1991	3/2004
Ironwood Claim Group	1/1983	1/2003	No answer	No answer	1/2003	No answer
<b>California</b>						
Screech Owl	7/1981	8/1995	8/1995	No answer	8/1996	No answer
Nina	1/1988	5/1995	4/1988	4/1988	1/2001	9/2003
<b>Idaho</b>						
West One Minerals	3/1990	1/1991	No answer	No answer	4/1991	No answer
<b>Montana</b>						
Snowbound Placer	1/2003	6/2003	9/2003	6/2003	1/2003	No answer
Zortman & Landusky Mine	1/1981	2/1994	2/1994	6/1998	1/1999	8/2004
Zortman Exploration Plans	1/1981	1/1996	1/1996	8/1999	1/1998	8/1999
<b>Nevada</b>						
Adelaide Crown	6/1988	6/1991	3/1988	No answer	10/1991	No answer
Wildhorse Canyon	10/1989	3/1995	3/1995	3/1995	7/1999	6/2003
South Hy/Isabella	5/1988	5/1995	5/1995	5/1995	7/1999	6/2003
Hogum or Golden Eagle	1/1997	2/1989	2/1989	No answer	1/1999	No answer
Golden Butte	1/1986	9/1995	4/1993	4/1993	1/1999	8/2004

**Appendix III  
Detailed Information on 48 Hardrock  
Operations That Had Ceased and Not Been  
Reclaimed by Operators**

(Continued From Previous Page)

<b>State</b>	<b>Operation began</b>	<b>Last plan of operation update</b>	<b>Last reclamation plan update</b>	<b>Last cost estimate update</b>	<b>Operation ceased</b>	<b>BLM cost estimate</b>
Pan Project	1/1989	9/1989	No answer	No answer	1/1999	No answer
Monte Exploration	1/1987	4/1993	4/1993	4/1993	1/1999	No answer
Ward Mine	1/1989	3/1993	11/1994	No answer	1/1999	No answer
Easy Jr	1/1987	5/1999	5/1999	5/1999	1/1999	8/2003
MacArthur Mine	9/1992	9/1995	5/1998	No answer	11/1997	No answer
Northern Crown Mines	12/1991	3/1993	Not applicable	12/1991	12/1993	No answer
Maverick Springs	7/1990	12/1990	Not applicable	No answer	7/1991	9/1993
Phil Claims Expl Proj	1/1982	10/1995	10/1995	10/1995	1/1998	No answer
Kinsley	1/1994	3/1997	1/1996	1/1996	1/2000	No answer
County Line Project	5/1991	1/1992	12/1994	1/1992	12/1995	No answer
Olinghouse Mine	5/1998	9/2002	9/2002	9/2002	5/1999	No answer
Mina Mill	11/1985	11/1994	11/1994	11/1994	6/1996	No answer
Diamond Peak Prospect Mtn	6/2001	8/2002	5/2001	5/2001	1/2003	No answer
Eldorado Pediment	8/2001	10/2001	10/2001	10/2001	10/2003	No answer
Phoenix Metals USA II Inc.	1/1997	12/2001	2/1999	9/1997	12/2001	11/2001
American Canyon KOF	1/2002	5/2002	Not applicable	5/2002	1/2002	No answer
Jumbo Mine	1/1983	6/1986	4/1986	No answer	1/1997	1/1998
Relief Canyon Mine	1/1995	5/1997	5/1994	5/1997	1/2001	No answer
Elder Creek	1/1989	10/2000	12/1995	2/1996	1/2000	No answer
Gold Bar Resource Area	12/1986	8/2004	9/2004	12/1994	12/1994	No answer
Atlas Exploration	1/1984	12/1994	9/2004	6/1994	1/1994	No answer
16: 1 Millsite	4/1981	3/1991	No answer	7/1991	6/1992	7/1992
Gold Bar Mine	1/1984	8/2004	9/2004	10/1994	1/1994	No answer
Paradise Peak	12/1995	5/1996	5/1996	11/1995	8/2003	No answer
<b>Washington</b>						
Raven Hill Mining	1/1995	6/1995	No answer	No answer	1/1996	No answer
Empire Creek Project	4/1997	4/1997	No answer	4/1997	Unknown	No answer
Lamefoot	1/1992	11/1991	No answer	No answer	1/2001	No answer

Source: BLM survey responses.

**Appendix III  
Detailed Information on 48 Hardrock  
Operations That Had Ceased and Not Been  
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**Table 16: BLM Steps to Compel Operators to Reclaim BLM Land Disturbed by 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators and the Reasons Operators Did Not Reclaim the Land**

<b>State and operation</b>	<b>BLM steps to compel reclamation</b>	<b>Operator did some reclamation</b>	<b>Reasons operators did not complete reclamation</b>
<b>Alaska</b>			
Chapman Creek Mining	Notice of noncompliance; other (sent letters)	No	Recently ceased; other (operator tried unsuccessfully to sell)
R D Environmental Mining	Notice of noncompliance	Some reclamation	Other (claimant had health problems)
Gold Hill Mining	Notice of noncompliance; other (issued enforcement order)	No	Bankruptcy
Nixon Fork Mine	Other (worked with solicitor re: bankruptcy)	Some reclamation	Bankruptcy
<b>Arizona</b>			
Tyro Mill	Other (issued orders)	No	Other (operator in violation of two orders)
Granite Property	No action	No	Unknown
Herring Mine	Notice of noncompliance; other (revoked plan)	Some reclamation	Bankruptcy
SKOR	No action	No	Bankruptcy
UFO	Other (tried to locate operator)	Some reclamation	Bankruptcy; other (operator failed to submit bond)
Ironwood Claim Group	Other (asked friends to do reclamation)	Some reclamation	Other (claimant died)
<b>California</b>			
Screech Owl	Notice of noncompliance	Some reclamation	Other (claimant had BLM reclaim using financial assurance funds)
Nina	Other (negotiated bond release & claim relinquishment)	Some reclamation	Bankruptcy; other (BLM reclaimed in exchange for forfeiture of claim)
<b>Idaho</b>			
West One Minerals	Notice of noncompliance; other (attached bond)	No	Bankruptcy
<b>Montana</b>			
Snowbound Placer	Notice of noncompliance; other (sent letters)	Some reclamation	Recently ceased; other (operator was busy but promised to reclaim)
Zortman & Landusky Mine	Other (filed bankruptcy claim & worked with state re: bond)	Some reclamation	Bankruptcy
Zortman Exploration Plans	Other (unsuccessfully tried to have financial assurance provider do work)	Some reclamation	Bankruptcy
<b>Nevada</b>			
Adelaide Crown	Notice of noncompliance	No	Bankruptcy
Wildhorse Canyon	Notice of noncompliance	No	Bankruptcy

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<b>State and operation</b>	<b>BLM steps to compel reclamation</b>	<b>Operator did some reclamation</b>	<b>Reasons operators did not complete reclamation</b>
South Hy/Isabella	Notice of noncompliance	No	Bankruptcy
Hogum or Golden Eagle	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Golden Butte	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Pan Project	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Monte Exploration	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Ward Mine	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
Easy Jr	Other (legal procedures to obtain bond)	Some reclamation	Bankruptcy
MacArthur Mine	Notice of noncompliance	No	Bankruptcy; other (operator believes reclamation will affect sale)
Northern Crown Mines	Notice of noncompliance	No	Other (ceased operations in 1993; no BLM action since)
Maverick Springs	Other (sent letters)	Some reclamation	Other (civil action)
Phil Claims Expl Proj	Notice of noncompliance; other (sent letters & made phone calls)	Some reclamation	Other (operator would like to continue work, but has no funds)
Kinsley	No action	Some reclamation	Bankruptcy
County Line Project	Notice of noncompliance	No	Bankruptcy
Olinghouse Mine	Notice of noncompliance	No	Bankruptcy; other (financial assurance provider went bankrupt, but did some work)
Mina Mill	Notice of noncompliance	No	Other (operator died & spouse has no funds for reclamation)
Diamond Peak Prospect Mtn	Other (sent notice of expiration)	No answer	Unknown
Eldorado Pediment	Other (sent expiration letter)	No	Recently ceased operation
Phoenix Metals USA II Inc.	Other (civil action & obtained court order to seize property)	No	Other (operator died)
American Canyon KOF	Notice of noncompliance	No	Other (operator fled)
Jumbo Mine	Notice of noncompliance	Some reclamation	Bankruptcy
Relief Canyon Mine	Notice of noncompliance; other (revoked plan)	No	Other (another operator assumed responsibility)
Elder Creek	Other (sent letters)	No	Bankruptcy
Gold Bar Resource Area	Notice of noncompliance	No	Bankruptcy
Atlas Exploration	Notice of noncompliance	Some reclamation	Bankruptcy
16: 1 Millsite	No action	Some reclamation	Bankruptcy
Gold Bar Mine	Notice of noncompliance	No	Bankruptcy
Paradise Peak	Notice of noncompliance	No	Bankruptcy



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<b>State and operation</b>	<b>BLM steps to compel reclamation</b>	<b>Operator did some reclamation</b>	<b>Reasons operators did not complete reclamation</b>
<b>Washington</b>			
Raven Hill Mining	Notice of noncompliance	Some reclamation	Bankruptcy
Empire Creek Project	No action	Some reclamation	Bankruptcy; other (project languished and was never completed)
Lamefoot	Other (awaiting operator decision re: closure)	Some reclamation	No answer

Source: BLM survey responses.

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**Table 17: Estimated Reclamation Costs for 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators**

<b>State and operation</b>	<b>Operators cost estimate before operation ceased</b>	<b>BLM cost estimate after operations ceased</b>	<b>Actual cost or estimate of shortfall or funds needed to complete reclamation</b>	<b>Most recent reclamation cost estimate as of July 2004</b>
<b>Alaska</b>				
Chapman Creek Mining	No answer	No answer	No estimate	\$0
R D Environmental Mining	No answer	\$139,000	No estimate	\$139,000
Gold Hill Mining	No answer	No answer	\$500,000 needed to complete reclamation	\$500,000
Nixon Fork Mine	No answer	No answer	No estimate	\$0
<b>Arizona</b>				
Tyro Mill	\$47,023	\$800,000	\$300,000 needed to complete reclamation and \$800,000 actual	\$800,000
Granite Property	No answer	No answer	No estimate	\$0
Herring Mine	\$1,800	No answer	\$34,000 needed to complete and \$34,000 actual	\$34,000
SKOR	No answer	\$88,240	\$92,239 actual cost	\$92,239
UFO	\$24,000	\$18,000	No estimate	\$18,000
Ironwood Claim Group	\$200	No answer	No estimate	\$200
<b>California</b>				
Screech Owl	No answer	No answer	\$2,431 actual cost	\$2,431
Nina	\$5,000	\$15,000	No estimate	\$15,000
<b>Idaho</b>				
West One Minerals	\$12,000	No answer	No estimate	\$12,000
<b>Montana</b>				
Snowbound Placer	\$2,970	No answer	\$2,970 needed to complete and \$2,970 actual	\$2,970
Zortman & Landusky Mine	\$68,500,000	\$85,200,000	\$18,500,000 needed to complete and \$25,200,000 shortfall	\$85,200,000
Zortman Exploration Plans	\$299,043	\$299,043	No estimate	\$299,043
<b>Nevada</b>				
Adelaide Crown	No answer	No answer	No estimate	\$0

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<b>State and operation</b>	<b>Operators cost estimate before operation ceased</b>	<b>BLM cost estimate after operations ceased</b>	<b>Actual cost or estimate of shortfall or funds needed to complete reclamation</b>	<b>Most recent reclamation cost estimate as of July 2004</b>
Wildhorse Canyon	\$52,310	\$53,006	\$53,000 needed to complete	\$53,000
South Hy/Isabella	\$122,369	\$169,593	\$169,700 needed to complete	\$169,700
Hogum or Golden Eagle	No answer	No answer	No estimate	\$0
Golden Butte	\$328,942	\$1,397,000	\$400,000 needed to complete and \$1,068,000 shortfall	\$1,397,000
Pan Project	\$5,670	No answer	No estimate	\$5,670
Monte Exploration	\$7,395	No answer	No estimate	\$7,395
Ward Mine	\$141,500	No answer	No estimate	\$141,500
Easy Jr	\$365,917	\$668,936	\$100,000 needed to complete and \$400,000 shortfall	\$668,936
MacArthur Mine	No Answer	No answer	\$17,000,000 shortfall over \$47,000 funds relinquished	\$17,047,000
Northern Crown Mines	\$3,897	No answer	No estimate	\$3,897
Maverick Springs	No Answer	\$7,999	\$37,846 needed to complete	\$37,846
Phil Claims Expl Proj	\$28,556	No answer	No estimate	\$28,556
Kinsley	\$911,763	\$1,400,000	\$550,000 needed to complete and \$500,000 shortfall	\$1,400,000
County Line Project	\$837,356	No answer	No estimate	\$837,356
Olinghouse Mine	\$850,650	No answer	No estimate	\$850,650
Mina Mill	\$116,408	No answer	No estimate	\$116,408
Diamond Peak Prospect Mtn	\$6,500	No answer	No estimate	\$6,500
Eldorado Pediment	\$8,200	No answer	No estimate	\$8,200
Phoenix Metals USA II Inc.	\$45,904	\$100,000	\$30,000 needed to complete	\$100,000
American Canyon KOF	\$21,600	No answer	No estimate	\$21,600
Jumbo Mine	\$8,197	\$3,700	\$2,500 needed to complete	\$3,700

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<b>State and operation</b>	<b>Operators cost estimate before operation ceased</b>	<b>BLM cost estimate after operations ceased</b>	<b>Actual cost or estimate of shortfall or funds needed to complete reclamation</b>	<b>Most recent reclamation cost estimate as of July 2004</b>
Relief Canyon Mine	\$888,696	No answer	\$463,500 needed to complete	\$888,696
Elder Creek	\$256,062	No answer	No estimate	\$256,062
Gold Bar Resource Area	\$303,300	No answer	No estimate	\$303,300
Atlas Exploration	\$265,000	No answer	No estimate	\$265,000
16: 1 Millsite	\$124,017	\$458,000	No estimate	\$458,000
Gold Bar Mine	\$2,608,000	No answer	No estimate	\$2,608,000
Paradise Peak	\$5,461,537	No answer	\$20,000,000 shortfall over \$1,157,000 funds relinquished	\$21,157,000
<b>Washington</b>				
Raven Hill Mining	\$6,700	No answer	No estimate	\$6,700
Empire Creek Project	\$7,125	No answer	No estimate	\$7,125
Lamefoot	No answer	\$20,000	No estimate	\$20,000

Source: BLM survey responses.

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**Table 18: Types and Amount of Financial Assurances and the Amount of Financial Assurances Relinquished and Spent on Reclamation of 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators**

<b>State and operation</b>	<b>Financial assurance</b>	<b>Types and amount of financial assurances</b>	<b>Types and amount relinquished</b>	<b>Types and amount spent</b>
<b>Alaska</b>				
Chapman Creek Mining	Yes	Bond pool - no value reported	None relinquished	Not applicable
R D Environmental Mining	Yes	Bond pool - \$139,000	None relinquished	Not applicable
Gold Hill Mining	Yes	Bond pool - \$15,000	None relinquished	Not applicable
Nixon Fork Mine	Yes	Bond pool - no value reported	None relinquished	Not applicable
<b>Arizona</b>				
Tyro Mill	No	No financial assurances	Not applicable	Not applicable
Granite Property	Yes	Surety bond - \$2,000	None relinquished	Not applicable
Herring Mine	No	No financial assurances	Not applicable	Not applicable
SKOR	No	No financial assurances	Not applicable	Not applicable
UFO	No	No financial assurances	Not applicable	Not applicable
Ironwood Claim Group	Yes	Cash - \$200	Cash - \$200	Cash - \$200
<b>California</b>				
Screech Owl	Yes	Certificate of deposit - \$2,431	Certificate of deposit - \$2,431	Certificate of deposit - \$2,431
Nina	Yes	Certificate of deposit - \$5,000	None relinquished	Not applicable
<b>Idaho</b>				
West One Minerals	Yes	Letter of credit - \$12,000	Letter of credit - \$12,000	Letter of credit - \$12,000
<b>Montana</b>				
Snowbound Placer	Yes	Cash - \$2,970	None relinquished	Not applicable
Zortman & Landusky Mine	Yes	Surety bond - \$43,500,000; other - \$14,300,000	Surety bond - \$31,200,000 other - \$2,000,000	Surety bond - \$31,200,000 other - \$1,800,000
Zortman Exploration Plans	Yes	Surety bond - \$299,043	None relinquished	Not applicable
<b>Nevada</b>				
Adelaide Crown	No	No financial assurances	Not applicable	Not applicable
Wildhorse Canyon	Yes	Bond pool - \$12,000	None relinquished	Not applicable
South Hy/Isabella	Yes	Bond pool - \$22,000	None relinquished	Not applicable

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<b>State and operation</b>	<b>Financial assurance</b>	<b>Types and amount of financial assurances</b>	<b>Types and amount relinquished</b>	<b>Types and amount spent</b>
Hogum or Golden Eagle	Yes	Surety bond - \$24,000	Surety bond - \$24,000	Surety bond - none
Golden Butte	Yes	Surety bond - \$328,942	Surety bond - \$328,942	Surety bond - none
Pan Project	Yes	Surety bond - \$5,670	Surety bond - \$5,670	Surety bond - none
Monte Exploration	Yes	Surety bond - \$7,395	Surety bond - \$7,395	Surety bond - none
Ward Mine	Yes	Surety bond - \$141,500	Surety bond - \$141,500	Surety bond - none
Easy Jr	Yes	Surety bond - \$365,917	Surety bond - \$365,917	Surety bond - none
MacArthur Mine	Yes	Surety bond - \$47,000; corporate guarantee - \$137,300	Surety bond - \$47,000; corporate guarantee - none	Surety bond-none; corporate guarantee-not applicable
Northern Crown Mines	Yes	Cash - \$3,897	None relinquished	Not applicable
Maverick Springs	No	No financial assurances	Not applicable	Not applicable
Phil Claims Expl Proj	Yes	Bond pool - \$28,556	None relinquished	Not applicable
Kinsley	Yes	Surety bond - \$911,763	Surety bond - \$911,763	Surety bond - \$561,763
County Line Project	Yes	Surety bond - \$210,000; corporate guarantee - \$628,017	Surety bond - \$210,000; corporate guarantee – none relinquished	Surety bond-none <sup>a</sup> Corporate guarantee-not applicable
Olinghouse Mine	Yes	Surety bond - \$1,800,000	None relinquished	Not applicable
Mina Mill	No	No financial assurances	Not applicable	Not applicable
Diamond Peak Prospect Mtn	Yes	Letter of credit - \$6,500	None relinquished	Not applicable
Eldorado Pediment	Yes	Surety bond - \$8,200	None relinquished	Not applicable
Phoenix Metals USA II Inc.	Yes	Surety bond - \$45,904	None relinquished	Not applicable
American Canyon KOF	Yes	Surety bond - \$5,314	None relinquished	Not applicable
Jumbo Mine	Yes	Certificate of deposit - \$10,000	Certificate of deposit - \$4,323	Certificate of deposit - \$1,800
Relief Canyon Mine	No	No financial assurances	Not applicable	Not applicable
Elder Creek	Yes	Surety bond - \$256,062	Surety bond - \$256,062	Surety bond - none
Gold Bar Resource Area	Yes	Surety bond - \$303,300	None relinquished	Not applicable
Atlas Exploration	Yes	Surety bond - \$267,000	None relinquished	Not applicable
16: 1 Millsite	Yes	Bond pool - \$124,017	None relinquished	Not applicable
Gold Bar Mine	Yes	Surety bond - \$2,608,000	None relinquished	Not applicable

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<b>State and operation</b>	<b>Financial assurance</b>	<b>Types and amount of financial assurances</b>	<b>Types and amount relinquished</b>	<b>Types and amount spent</b>
Paradise Peak	Yes	Surety bond - \$1,157,000; corporate guarantee - \$3,468,148	Surety bond - \$1,157,000; corporate guarantee-none relinquished	Surety bond-none; corporate guarantee-not applicable
<b>Washington</b>				
Raven Hill Mining	No	No financial assurances	Not applicable	Not applicable
Empire Creek Project	No	No financial assurances	Not applicable	Not applicable
Lamefoot	Yes	Surety bond - \$3,000,000	None relinquished	Not applicable

Source: BLM survey responses.

<sup>a</sup>BLM told us in February 2005 that, as of December 2004, some of the surety bond funds had been obligated to review and determine reclamation design and costs.

**Appendix III  
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**Table 19: Sources of Other Funds and the Status of Reclamation of 48 Hardrock Operations That Had Ceased and Not Been Reclaimed by Operators**

<b>State and operation</b>	<b>Sources and amount of funds received from others</b>	<b>BLM made arrangements for the financial assurance provider to do the reclamation</b>	<b>Percent of reclamation complete</b>	<b>Likelihood reclamation will be completed</b>
<b>Alaska</b>				
Chapman Creek Mining	None	No answer	96-99%	Very likely
R D Environmental Mining	BLM - \$65,000	No answer	86-95%	Very likely
Gold Hill Mining	None	No answer	None	Somewhat likely
Nixon Fork Mine	None	No answer	26-50%	Very likely
<b>Arizona</b>				
Tyro Mill	BLM - \$517,088	No answer	76-85%	Very likely
Granite Property	None	No answer	None	About as likely as unlikely
Herring Mine	BLM - \$34,000	No answer	None	Very likely
SKOR	BLM - \$92,000	No answer	100%	Not applicable-reclamation complete
UFO	BLM - \$35,110	No answer	76-85%	Somewhat likely
Ironwood Claim Group	None	Yes	100%	Not applicable - reclamation complete
<b>California</b>				
Screech Owl	None	No	100%	Not applicable - reclamation complete
Nina	BLM - \$15,000	No answer	100%	Not applicable - reclamation complete
<b>Idaho</b>				
West One Minerals	None	No	100%	Not applicable - reclamation complete
<b>Montana</b>				
Snowbound Placer	None	No	1-25%	Somewhat unlikely
Zortman & Landusky Mine	BLM - \$5,594,500; <sup>a</sup> operator - \$1,050,000; EPA - \$340,000; MT DEQ - \$1,697,000	No	86-95%	Very likely
Zortman Exploration Plans	None	Yes	76-85%	Very likely
<b>Nevada</b>				
Adelaide Crown	None	No answer	1-25%	Very unlikely



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<b>State and operation</b>	<b>Sources and amount of funds received from others</b>	<b>BLM made arrangements for the financial assurance provider to do the reclamation</b>	<b>Percent of reclamation complete</b>	<b>Likelihood reclamation will be completed</b>
Wildhorse Canyon	None	No answer	None	About as likely as unlikely
South Hy/Isabella	None	No answer	None	About as likely as unlikely
Hogum or Golden Eagle	None	No	1-25%	Very likely
Golden Butte	U.S. Army Corps of Engineers - \$600,000	No	51-5%	Very likely
Pan Project	None	No	96-99%	Very likely
Monte Exploration	None	No	96-99%	Very likely
Ward Mine	None	No	1-25%	Very likely
Easy Jr	BLM - \$300,000; U.S. Army Corps of Engineers - \$171,000	No	51-75%	Very likely
MacArthur Mine	None	No	None	Very unlikely
Northern Crown Mines	None	No Answer	Do not know	Very unlikely
Maverick Springs	None	No Answer	Do not know	Somewhat likely
Phil Claims Expl Proj	None	Yes	None	Very likely
Kinsley	None	No	51-75%	Very likely
County Line Project	None	No	26-50%	Very unlikely
Olinghouse Mine	None	Yes	86-95%	Very unlikely
Mina Mill	None	No answer	None	About as likely as unlikely
Diamond Peak Prospect Mtn	None	No answer	Do not know	Very likely
Eldorado Pediment	None	No	None	Very likely
Phoenix Metals USA II Inc.	BLM - \$50,000	No answer	76-85%	Very likely
American Canyon KOF	None	No answer	None	About as likely as unlikely
Jumbo Mine	None	No	96-99%	Very likely
Relief Canyon Mine	None	No answer	26-50%	Somewhat unlikely
Elder Creek	None	Yes	1-25%	Very likely

**Appendix III  
Detailed Information on 48 Hardrock  
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*(Continued From Previous Page)*

<b>State and operation</b>	<b>Sources and amount of funds received from others</b>	<b>BLM made arrangements for the financial assurance provider to do the reclamation</b>	<b>Percent of reclamation complete</b>	<b>Likelihood reclamation will be completed</b>
Gold Bar Resource Area	None	Yes	None	Somewhat likely
Atlas Exploration	None	Yes	1-25%	Somewhat likely
16: 1 Millsite	None	No answer	1-25%	Somewhat unlikely
Gold Bar Mine	None	Yes	None	Somewhat likely
Paradise Peak	None	No	None	Very likely
<b>Washington</b>				
Raven Hill Mining	BLM - \$2,500	No answer	26-50%	Very unlikely
Empire Creek Project	None	No answer	Do not know	No answer
Lamefoot	None	No answer	1-25%	Very likely

Source: BLM survey responses.

<sup>a</sup>Lewistown Montana BLM field office officials told us that BLM provided an additional \$550,000 after July 2004 and before September 2004.

# Comments from the Department of the Interior

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



## United States Department of the Interior

OFFICE OF THE SECRETARY  
Washington, D.C. 20240



In Reply Refer To:  
1245 (830)

JUN 8 2005

Ms. Robin M. Nazzaro  
Director, Natural Resources and Environment  
Government Accountability Office  
441 G Street, NW  
Washington, DC 20548-0001

Dear Ms. Nazzaro:

Thank you for the opportunity to respond to the U.S. Government Accountability Office (GAO) Draft Report, *Hardrock Mining - BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs* (GAO-05-377).

The draft report captures many of the demands facing the Mining Law Administration, Surface Management Program of the Bureau of Land Management (BLM) related to managing financial guarantees required for operations authorized under the General Mining Law of 1872, as amended (Mining Law). Following are our responses to the recommendations and some suggested changes within the report.

### Responses to the Recommendations:

**Recommendation #1:** *We recommend that the Secretary of the Interior direct the Director of BLM to require the BLM state office directors to establish an action plan for ensuring that operators of hardrock operations have required financial assurances, and that the financial assurances are based on sound reclamation plans and current cost estimates so they are adequate to pay all of the estimated costs of required reclamation if operators fail to complete the reclamation.*

Existing procedures and policies ensure financial guarantees are in place to protect the public should an operator fail to reclaim. The regulations at 43 CFR 3809 require the operator to provide a financial guarantee that covers the full reclamation cost for the operation. The regulations also require the BLM to conduct a periodic review of the reclamation cost estimate and the financial guarantee. BLM issued guidance on February 5, 2003 (IM 2003-082) on the review and acceptance of financial guarantee cost estimates for Notices and Plans of Operations under the 43 CFR 3809 Surface Management regulations. This guidance was updated on March 1, 2004 (IM 2003-082, Change 1). The guidance provides specific timeframes within which reclamation cost estimates must be reviewed for adequacy. The guidance requires: cost estimates for Notices are to be reviewed at time of extension (every two years); reclamation cost estimates for Plans of Operations are to be reviewed at least every three years; financial

See comment 1.

guarantees for part of an operation are to have the cost estimate reviewed annually; anytime an operation is modified, the cost estimate for the entire operation is to be reviewed; and if there is an agreement with the State dealing with financial guarantees and the State has review timeframes more stringent than the BLM's, the State's more stringent timeframe must be met.

Ensuring that the financial guarantees for operations authorized under the Mining Law meet the requirements of the regulations are a priority of the BLM's Surface Management Program. The importance of having adequate financial guarantees in place for all operations is stressed through the budget process and in directives issued by the BLM-Washington Office and State Offices.

In summary, we do not concur with this recommendation because the BLM has recently updated and implemented national policy and field guidance to ensure bond adequacy.

**Recommendation #2:** *We recommend that the Secretary of the Interior direct the Director of BLM to modify LR2000 to ensure that it tracks critical information on hardrock operations and associated financial assurances so that BLM headquarters and state offices can effectively manage financial assurances nationwide to ensure regulatory requirements are met.*

The BLM tracks all critical information on authorized operations in LR2000, which include case recordation and the bond and surety systems. BLM issued Instruction Memorandum No. 2005-126 on April 29, 2005 to provide guidance and direction on data standards for LR2000. Recently, the BLM added codes and edits to LR2000 for Plans of Operations, environmental analyses, financial guarantees and appeals. The BLM will continue to refine and enhance LR2000 data systems as needed to facilitate the surface management program.

**Suggested changes within the report:**

**Report title:** Consider changing the report title to *BLM Needs to Better Manage Financial Assurances "that" Guarantee Coverage of Reclamation Costs.*

**Page 3, 2<sup>nd</sup> paragraph, after last sentence add:** Plans of Operations that were approved on or before January 20, 2001, were required to have financial guarantees in place that met the requirements of the regulations on November 20, 2001.

**Page 4, 1<sup>st</sup> paragraph, revise sentence from** "... give BLM authority to take steps, such as issuing notices of noncompliance and revoking plans of operations" to "... give BLM authority to take steps, such as issuing noncompliance and suspension orders, and revoking plans of operations..." We suggest this because the previous regulations (43 CFR 3809, October 1, 2000) used the term "notice of noncompliance." The current regulations use the term "noncompliance and suspension orders."

See comment 2.

See comment 3.

See comment 4.

See comment 5.

Now on pp. 3 and 4.

Appendix IV  
Comments from the Department of the  
Interior

See comment 6.

**Page 5, 1st paragraph, 2nd sentence** "... with operations identified by others": If possible, identify GAO's "others."

See comment 7.

**Page 11, Figure 2 footnote:** If possible, identify "others."

See comment 8.

**Page 11, Figure 2:** Remove Step 5. The reason we suggest removal of the step is the operation described in the figure is employing a heap-leaching process. However, the described operation includes a tailings pile. There are no tailings in heap-leaching operations. Tailings piles are associated with operations that employ milling and flotation.

See comment 9.

**Page 12, 2<sup>nd</sup> paragraph, 2nd sentence, change to read:** Upon recording a mining claim with BLM, the claimant must pay, per claim, an initial location fee, and a maintenance fee that is required annually; the claimant is not required to pay royalties on any hardrock minerals extracted.

See comment 10.

**Page 20, 1<sup>st</sup> paragraph:** To clarify this paragraph please include the following: Approved operations on notices and plans of operations are subject to the claimant or operator filing and obtaining approval of the financial guarantee instrument from BLM in accordance with regulations and policy.

See comment 11.

**Page 21, paragraph:** For consistency with information on page 20, add "notice- and plan-level" before "... hardrock operations...."

See comment 12.


**Page 63, Conclusions:** We disagree with the 4th sentence that reads "BLM has no process in place to ensure that operators obtain adequate financial assurance." As stated under Recommendation #1, the BLM process as mandated in regulations and guidance adequately addresses the financial obligations of an operator for notice-level and plan-level hardrock mining operations. In addition, we do not agree with the sentence "Specifically, LR2000 does not track the status of hardrock operations...." As noted under our response to Recommendation 2, BLM tracks all critical information on authorized operations in the LR2000 database.

Now on page 65.

See comment 13.

We appreciate the advice and critical assessment the GAO has given to BLM's Mining Law Administration, Surface Management Program. If you have any questions, please contact Ted Murphy, Chief, Division of Solid Minerals, at 202-452-0351, or Andrea Nygren, BLM Audit Liaison Officer, at 202-452-5153.

Sincerely,

  
Rebecca W. Watson  
Assistant Secretary  
Land and Minerals Management

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The following are GAO's comments on the Department of the Interior's letter dated June 8, 2005.

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## GAO Comments

1. See agency comments and our evaluation section of this report.
2. See agency comments and our evaluation section of this report.
3. We did not change the title of the report because doing so would indicate that adequate financial assurances are in place to guarantee reclamation costs. As we report, this is not the case.
4. We added a sentence to state that plans of operations that were approved before January 20, 2001, were required to have financial assurances in place no later than November 20, 2001.
5. We changed the language to state that BLM has the authority to take steps, such as issuing noncompliance and suspension orders or revoking plans of operations, if operators do not comply with financial assurance or other regulatory requirements.
6. The "other" sources of information on hardrock operations that had ceased and not been reclaimed, as required, are identified in appendix I.
7. We added the National Research Council as one of the other sources used to develop figure 2.
8. We removed step 5, which described leftover material known as tailings, from figure 2.
9. We changed the language to clarify that upon recording a mining claim with BLM, the claimant must pay the fees discussed in our report, and that the location fee is not paid annually.
10. We did not add this language to this section of the report because we explain in the background section of the report that BLM requires all notice- and plan-level hardrock operations to have financial assurances before exploration or mining operations begin.
11. We clarified the language by adding "notice- and plan-level" before hardrock operations.

12. We clarified this sentence in our conclusion to state that “However, while federal regulations and BLM guidance set forth financial assurance requirements for notice- and plan-level hardrock mining operations, BLM has no process for ensuring that the regulations and guidance are effectively implemented to ensure that adequate financial assurances are in place, as required.” Our report shows that BLM state offices with hardrock operations reported that, as of July 2004, some hardrock operations did not have adequate financial assurances. Furthermore, past experience has shown that some hardrock operations have ceased without operators having the adequate financial assurances required by regulations and BLM guidance. We continue to believe that until BLM establishes monitoring and accountability mechanisms to ensure that all hardrock operations have required financial assurances based on sound plans and current cost estimates, these problems will continue.
  
13. We did not change this sentence in our conclusion because evidence in our report shows that LR2000 does not track the critical information BLM needs to effectively manage financial assurances on hardrock operations. Specifically, we reported that LR2000 does not track some critical information, including the operation’s basic status, such as whether the operation is ongoing or has ceased and should be reclaimed; some types of financial assurances being used, such as corporate guarantees, bond pools, and trust funds; and the adequacy of financial assurances to pay the cost of required reclamation.

# GAO Contact and Staff Acknowledgments

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## GAO Contact

Robin M. Nazzaro (202) 512-3841

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## Acknowledgments

In addition to the contact named above, Andrea Wamstad Brown, Byron S. Galloway, Heather Holsinger, Carol Herrnstadt Shulman, Walter Vance, and Amy Webbink made key contributions to this report.



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