

ANNUAL SUMMARY EVALUATION
of the
COLORADO INACTIVE MINE RECLAMATION PROGRAM
for
EVALUATION YEAR 2008
(July 1, 2007, through June 30, 2008)



August 25, 2008



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ACRONYMS

AML	abandoned mine land
AMLIS	Abandoned Mine Land Inventory System
AMR	Abandoned Mine Reclamation
BLM	Bureau of Land Management (of the U.S. Dept. of the Interior)
CIMRP	Colorado Inactive Mine Reclamation Program
CDPHE	Colorado Department of Public Health and Environment
DFD	Denver Field Division (of the Office of Surface Mining)
DNR	Colorado Department of Natural Resources
DOGMM	Utah Division of Oil, Gas and Mining
DRMS	Colorado Division of Reclamation, Mining and Safety
EPA	U.S. Environmental Protection Agency
FAM	Federal Assistance Manual
NAAMLPP	National Association of Abandoned Mine Land Programs
OIG	Office of the Inspector General (of the U.S. Dept. of the Interior)
OSM	Office of Surface Mining Reclamation and Enforcement (of the U.S. Dept. of the Interior)
SMCRA	Surface Mining Control and Reclamation Act of 1977, as amended
USFS	Forest Service (of the U.S. Dept. of Agriculture)

Cover photo: Portal number 107 of the Railroad Gulch project safeguarded with a corrugated steel pipe and a grate with a bat slot. November 7, 2007.

I. Introduction

Title IV of the Surface Mining Control and Reclamation Act of 1977 (SMCRA or “the Act”) established the Abandoned Mine Reclamation Fund. The Fund’s primary purpose is to pay for mitigation of past mining effects. The Office of Surface Mining Reclamation and Enforcement (OSM) administers the Fund on behalf of the Secretary of the Interior. OSM awards grants to States and Indian tribes from the Fund to pay their administration costs and reclaim abandoned mines. SMCRA puts the highest priority on correcting the most serious abandoned mine land (AML) problems that endanger public health, safety, general welfare, and property. OSM, State, and Indian tribal AML programs work together to achieve the goals of the national program. OSM also works cooperatively with the States and Indian tribes to monitor their AML programs.

On December 20, 2006, the President signed the Tax Relief and Health Care Act of 2006 (P.L. 109-432). That legislation included the Surface Mining Control and Reclamation Act Amendments of 2006 (the 2006 Act). The 2006 Act amended title IV of SMCRA to make significant changes in the abandoned mine reclamation fee and the AML program. OSM published a **Federal Register** on June 20, 2008, in which it proposed to align the 30 CFR regulations with the SMCRA amendments (73 FR 35214). Colorado and other States and Indian tribes are preparing comments on that proposed rule. The comment period ends on August 29, 2008.

Directive AML-22 generally describes how OSM evaluates State and Tribal AML reclamation programs in “enhancement and performance reviews.” Following that Directive, a team of State and Federal personnel, called the Colorado-Utah AML Review Team, has evaluated the Colorado Inactive Mine Reclamation Program (CIMRP) and the Utah Abandoned Mine Reclamation Program (UAMRP) since January 1996. It also includes other individuals on an ad-hoc basis as needed. For the 2008 evaluation of the 1(a) performance measure, Jeff Graves, CIMRP, helped us as the project manager and Tony Gallegos, UAMRP, participated. Loretta Pineda, CIMRP Director, and Luci Malin, UAMRP Administrator, are members of the Team. Deb Zack, CIMRP, created new documents that we included in our second evaluation of the 2(e) performance measure. Kimberly Seymour, CIMRP, provided information for our evaluations of the 2(e) and 3(h) performance measures. Sharon Elliott and Roger Williamson, both of Colorado’s DNR, provided information for our 3(h) performance measure evaluation. Frank Atencio and Ron Sassaman represented OSM-DFD for the evaluations.

This report summarizes our review and evaluation of the Colorado Inactive Mine Reclamation Program for the 2008 evaluation year, which included the period of July 1, 2007, through June 30, 2008.

II. General Information on the Colorado Program

On June 11, 1982, the Secretary of the Interior approved Colorado’s AML reclamation plan (“State reclamation plan”) under Title IV of SMCRA. That approval allows

Colorado to reclaim abandoned mines in the State in non-emergency AML projects. CIMRP is part of the Division of Reclamation, Mining and Safety (DRMS) in the Department of Natural Resources (DNR). It administers Colorado's AML program under its approved plan. The Denver Field Division of OSM's Western Region works with CIMRP to fund and approve AML projects in Colorado and to evaluate AML reclamation and other aspects of the Program.

Section 405(f) of SMCRA authorizes State and Indian tribal AML programs to apply to OSM each year for a grant to support their programs and reclaim specific projects. Colorado's grant performance periods span the period of July 1 of one year through June 30 of the following year. That period coincides with the State's fiscal year and OSM's evaluation year. CIMRP's grants include money to pay the Program's administrative and construction costs. Administration funding applies to a single year following the grant award date and construction funding is available for three years.

Colorado had three grants open during the 2008 evaluation year and applied for its 2008 grant. Its amended 2005 grant award totaled \$2,865,000 and expired on December 31, 2007. That grant funded 14 positions and other program administration costs. It also funded reclamation of three coal and twelve noncoal projects, project maintenance, and development of 12 projects CIMRP planned to include in its 2006 grant request. The State's 2006 grant award totaled \$2,419,000. It funds 14 positions and other administration costs as well as reclamation of four coal and 11 noncoal projects, project maintenance, and development of at least 12 additional projects for the State's 2007 grant application. The 2006 grant expires on June 30, 2009. Colorado's 2007 grant became effective July 1, 2007, and totaled \$2,443,481. This grant funded 15.5 full time equivalents and program administration in general. Also, it included funds for four coal and 13 noncoal reclamation projects and one project that combined coal and noncoal problems. That funding also enabled the State to develop at least 15 projects for funding in its 2008 grant. The State's 2007 grant expires on June 30, 2010. OSM also reviewed and approved Colorado's application for a 2008 grant, though it did not become effective until the first day of the 2009 evaluation period on July 1, 2008.

CIMRP also receives funding from non-SMCRA sources each year. Colorado Senate Bill 05-190 created the Abandoned Mine Reclamation Fund under Title 34 of the Colorado Revised Statutes effective July 1, 2005. That statute authorizes the State Legislature to annually appropriate \$500,000 to the Colorado DNR for allocation to DRMS for abandoned coal and hardrock mine reclamation. DRMS has three years to spend each appropriation. The additional funding supplements Colorado's SMCRA-funded grants and enables CIMRP to abate a wider range of abandoned mine problems. Beginning July 1, 2006, CIMRP also began receiving \$250,000 additional severance tax funding annually for water quality and conservation projects related to abandoned mines. Some of the partnerships described below in Part III benefited from this additional funding.

CIMRP oversees an insurance brokerage firm's administration of Colorado's approved Mine Subsidence Protection Program. A total of 890 active member households were

enrolled in the insurance program at the end of March 2008. That enrollment is a decrease of 29 member households since June 30, 2007, mostly due to a correction in record-keeping. Of the 890 member households, 802 are located in the Colorado Springs area. Another 75 are in the Boulder/Weld coal field. Ten member households are in the Rocky Mountain foothills and the remaining three are on the Western Slope. Members filed two claims during the period of July 1, 2007, through June 30, 2008, both for residences in the Colorado Springs area. Both claims were investigated and remain open as of June 30, 2008. Eight claims filed prior to July 1, 2008, remain open as well. One of those claims involves a home in Colorado Springs affected by abandoned underground coal mine subsidence that CIMRP addressed in a project it completed in late July 2005. Another involves a home in the Rocky Mountain foothills area that CIMRP addressed in a subsidence abatement project after receiving authorization to proceed in March 2008. At least one and possibly two other claims filed before the 2008 evaluation year are included in an area of Colorado Springs that another project will investigate with funds the State received in its 2008 grant.

Colorado does not have an OSM-approved emergency coal reclamation program. Though there were no OSM-declared emergencies in the 2008 evaluation year, CIMRP responded to two urgent situations late in the period. One involved a young boy who was injured by burning coal slack overlying an abandoned coal mine in Colorado Springs. The City of Colorado Springs extinguished the fire and constructed a surface seal and barrier. CIMRP installed thermocouples to monitor the slack's temperature. In the second case, vandals ignited trash and debris in an abandoned metal mine shaft near Victor. Local fire officials monitored the fire and CIMRP later safeguarded the shaft. No one was injured in that case.

III. Noteworthy Accomplishments

CIMRP's public outreach and assistance activities during the 2008 evaluation year included:

- Renewing its *Stay Out and Stay Alive* AML safety awareness message through interviews and responses to media inquiries;
- Participating in meetings with watershed groups, the Western Interstate Energy Board, the Colorado Department of Public Health and Environment (CDPHE), the Inactive Mine Reclamation Advisory Committee, OSM, and western States;
- Participating in the Colorado High Altitude Revegetation Conference and the OSM Geospatial Conference;
- Celebrating the ten-year anniversary of the Bureau of Land Management (BLM) and U.S. Department of Agriculture, Forest Service (USFS) AML programs;
- Touring the Millsap tailings noncoal project during and after reclamation, including tours with funding partners and Senator Ken Salazar. Colorado Department of Corrections inmates did much of the reclamation work;
- Jointly accepting the Department of the Interior's Cooperative Conservation Award for the Millsap Mill Tailings Restoration Partnership. That noncoal project reclaimed 45 acres of dangerous piles and embankments in a partnership of CIMRP, BLM, and

20 others, including the Colorado Department of Correction's heavy equipment program;

- Participating in EPA's announcement of the National Award for a Targeted Watershed Grant to the Clear Creek Watershed Foundation, and providing matching funds and technical assistance to the project;
- Participating with the Animas River Stakeholders group in accepting the Regional Partnership of the Year award for partnering with the Forest Service to improve public lands;
- Sponsoring exhibits at the Summit of Mining Communities, the Colorado Preservation Inc., Saving Places Conference, and the National Western Mining Conference; and
- Making presentations for the annual meeting of the Colorado Watershed Assembly.

The Program also participated in technology transfer, technical assistance, and training activities by:

- Attending and making presentations at the National Association of Abandoned Mine Land Programs (NAAML) conference and meetings. CIMRP's Director is the NAAML president;
- Participating in the OSM/Vista Watershed Development team to help watershed groups enhance partnerships, funding opportunities and watershed sustainability. Partners include the Animas River Watershed, Coal Creek Watershed, Lake Fork of the Arkansas Watershed, and North Fork of the Gunnison Watershed Groups;
- Providing information to the Governmental Accountability Office, the National Academy of Sciences, and others about hardrock AML reclamation in anticipation of Congressional action to reform the 1872 General Mining Law;
- Providing information to the Senate Energy and Natural Resources Committee's oversight hearing on issues relating to AML and uranium mining;
- Providing technical assistance to the U.S. Environmental Protection Agency (EPA), U.S. Department of the Interior, Bureau of Reclamation, and the CDPHE for remediation work at the Leadville Mine Drainage Tunnel; and
- Working with the BLM and Lake Fork of the Arkansas River watershed group to analyze a water source control project at the Dinero Tunnel.

CIMRP continued to partner with other agencies to leverage its SMCRA funding for AML reclamation and/or to address a wider range of AML problems than those ordinarily funded under SMCRA. During the 2008 evaluation period, it partnered with the U.S. Department of Agriculture, Forest Service and the U.S. Department of the Interior, Bureau of Land Management (BLM), on six noncoal projects. CIMRP also participated in a dye tracer study of the Mary Murphy Mine's impacts on the Chalk Creek watershed. The purpose of that project is to identify water flows and contamination sources in underground hardrock mine workings. Partners in that effort include CDPHE, EPA, and the U.S. Department of the Interior, Fish and Wildlife Service. The Program also manages the bond forfeiture reclamation program for the Division of Reclamation, Mining and Safety.

IV. Results of Enhancement and Performance Reviews

We discussed changes to the “Colorado-Utah AML Review Team Performance Agreement” in a meeting on August 14, 2007. Based on that discussion, we updated the Agreement on October 15, 2007, to describe the principles of excellence and performance measures that we planned to review in the 2008 evaluation year.

Principles of excellence and performance measures emphasize on-the-ground or end-results as much as possible. Each general principle of excellence has one or more specific performance measure(s). Performance measures describe: Why we selected that topic; what the review population and sample sizes will be; how we will do the review and report the results; and our schedule for completing the review. The principles of excellence and specific performance measures we chose for our 2008 evaluation of the Colorado Inactive Mine Reclamation Program are:

Principle of Excellence 1: The State’s on-the-ground reclamation is successful.

- *Performance Measure (a):* Does reclamation meet the goals of the project?

Principle of Excellence 2: The State AML procedures are efficient and effective.

- *Performance Measure (e):* Does the information the State entered into AMLIS beginning July 1, 2004, agree with information in its files?

Principle of Excellence 3: The State has systems to properly manage AML funds.

- *Performance Measure (h):* Are the State’s drawdowns of AML grant funds in accordance with Chapter 5-55 of the Federal Assistance Manual?

Results of our 2008 evaluation are described below in Parts IV.A through C. We described our evaluation results in much greater detail in an enhancement and performance review report for each performance measure. Those reports are on file in OSM’s Denver Field Division and are the factual basis of this report’s summary of our evaluations of performance measures 1(a), 2(e), and 3(h).

A. Summary Evaluation of Performance Measure 1(a)

Our goal for this evaluation was to determine if reclamation of the Futurity and Railroad Gulch noncoal projects met project goals. We empirically compared CIMRP’s reclamation to its project specifications and used its closeout reports for additional information. We considered measures CIMRP approved in change orders during construction to address site-specific conditions. We also considered any requirements resulting from interagency consultation it completed to help OSM comply with the National Environmental Policy Act and other laws. Our evaluation focused on determining whether completed reclamation met project goals by continuing to abate

original hazards, complying with conditions of interagency consultation, and improving overall site conditions compared to pre-reclamation conditions.

We found that the Futurity and Railroad Gulch noncoal projects met their respective goals. We did not see any closures that were in immediate need of maintenance, though CIMRP will monitor two of them for maintenance needs in the next few years.

We viewed abatement of hazards associated with 19 portals and 33 vertical openings (including vertical shafts, stopes, and inclined shafts) in the sample projects. Overall, we observed 52 of 55 (94.5 percent) closures the Program constructed. Safeguarded mine openings of the sample projects are located on public and private land. Many of the safeguarded openings are in areas that are experiencing increased home construction and outdoor recreation. We saw evidence of visitation throughout the areas we visited.

CIMRP used 14 methods to safeguard the 52 former openings we observed. Those methods included: Machine backfills; hand backfills; polyurethane foam covered with backfill material; a grate on a concrete footer; polyurethane foam, backfill material, and a polyvinylchloride pipe; a corrugated steel pipe with a bat ladder and polyurethane foam; grates with locking access doors; a steel grate alone; grates with bat slots; backfill material and a 12-inch corrugated steel pipe with a protected opening for ventilation; a grate with a bat ladder; corrugated steel pipes closed with grates; corrugated steel pipes with grates and bat slots; and a native stone bulkhead. CIMRP completed most closures of the sample project features as planned in its specifications. It modified its original mine closure plans to accommodate differing site conditions in eight cases.

The Program also met project goals of complying with conditions of interagency consultation. Seven closures of the sample projects were bat-compatible, including six with bat slots and two with bat ladders. Grate closures in portals also included cutouts in the deck grating to enable other small wildlife species to pass through as well. Those measures demonstrated CIMRP's compliance with recommendations developed during its consultation with other agencies for protecting wildlife and wildlife habitat. They also reflect the Program's routine consideration of wildlife values. Preservation and/or avoidance of cribbing, cabin remnants, and other nearby historically significant values at six features of the sample projects demonstrated CIMRP's compliance with results of interagency consultation under the National Historic Preservation Act.

B. Summary Evaluation of Performance Measure 2(e)

In September 2004, the U.S. Department of the Interior, Office of the Inspector General (OIG), issued report number 2003-I-0074 based on its review of Abandoned Mine Land Inventory System (AMLIS) data for four eastern States' abandoned mine land programs. That report criticized the accuracy of AMLIS data in Problem Area Descriptions (PADs), concluding that AMLIS data did not match data in the respective States' files. In part, the OIG recommended establishing "a quality control system that ensures that States,

Tribes, and OSM, as applicable, review and certify the accuracy of data entered into AMLIS.”

OSM responded to the OIG’s recommendation with two new requirements for program evaluations. The first required OSM field offices to “assure that each State and Indian Tribe AML program has procedures in place to ensure and certify the accuracy of data entered into AMLIS.” CIMRP uses project closeout to compile data for AMLIS input. We consider the project closeout reports to be CIMRP’s “system” for ensuring that completion data it enters into AMLIS match data in its files. So, we developed the 2(d) performance measure to meet the first new requirement and evaluated it in the 2005 evaluation year. We developed performance measure 2(e) to address the second new requirement and determine if CIMRP’s use of its system works as intended. Our evaluation of the 2(e) measure involves an annual comparison of data in a sample of Colorado’s AMLIS PADs to data in the State’s closeout reports. The 2008 evaluation sample included 12 completed noncoal projects and two completed coal projects. We did this evaluation in two reviews. It was our third annual evaluation of CIMRP’s use of that system.

The first review included all 14 projects, but our review of the noncoal project data involved CIMRP’s County-wide noncoal PADs. The two coal projects had project-specific PADs. Our first review found that completion data was presented much more consistently in sample project closeout reports than we found in previous evaluations. All sample projects had closeout reports. On the other hand, we found that data in only one project closeout report matched data in AMLIS. We also found that data in four other projects’ closeout reports differed in various ways from AMLIS PAD data. Further, the State did not update AMLIS for nine sample projects upon project completion and for six projects when those projects were funded. CIMRP’s closeout report data for six of the 14 sample projects agreed with completion data in its corresponding grant performance reports. Finally, none of the 14 sample projects’ AMLIS PADs included priority documentation forms to support the priority designation.

Based on the findings from our first review, we reached a number of conclusions. First, the quality of CIMRP’s project closeout reports improved, though timeliness of that reporting did not meet CIMRP’s administrative goals in some cases. On the other hand, we also concluded that CIMRP’s use of project closeout reports to ensure that data in its files match AMLIS PAD data was not successful in most cases. We noted that CIMRP does not routinely update all AMLIS PADs when they are funded and upon project completion, and its use of County-wide PADs with multiple noncoal projects in each PAD makes updating and interpreting AMLIS very problematic. Last, the sample problems CIMRP inventoried in AMLIS were not supported with priority documentation forms. These findings were consistent with those of our previous year’s evaluation of this performance measure. We made a number of recommendations based on our first review that were very similar to those we made for the 2007 evaluation.

CIMRP made two significant changes shortly after the end of the evaluation year in response to our initial findings and the recommendations we made to address the

recurring problems. It dedicated a staff person to updating AMLIS and began to phase-out use of County-wide noncoal PADs. Our second review of this performance measure for 2008 was based on those changes and the new documents.

The findings of our second review were markedly different from those of the first. Though the sample projects remained the same, CIMRP created new project-specific PADs for the 12 completed noncoal projects in our evaluation sample. We found that data in the new PADs and existing coal PADs match data in the closeout reports for all sample projects. CIMRP also created priority documentation forms for all fourteen sample projects and entered cost sharing and performance measures data where appropriate. Finally, it made one correction to a sample coal project's PAD.

Based on the findings from our second review, we reached three conclusions. First, CIMRP's use of new, project-specific PADs for noncoal projects improved its match of data in those PADs with data in those projects' closeout reports. Also, project-specific PADs made the data much clearer and easier to interpret. Third, ensuring that data in its files match AMLIS data is dependent on two things: Completion of accurate and timely project closeout reports; and updating AMLIS when projects are funded and completed. The data will not match if one is done but not the other. We recognized the progress Colorado made on project closeout reporting, dedicating a staff person to work with AMLIS, and using project-specific noncoal PADs. We also acknowledge CIMRP's observation that AMLIS is not an accurate reporting tool for Colorado's program.

Based on the findings and conclusions of our second review, we made a number of recommendations. Among them was our recommendation that CIMRP routinely update coal and noncoal PADs when funded as required by OSM Directive AML-1, that it update PADs upon project completion as required by 30 CFR 886.23(b), and that CIMRP continue to complete priority documentation forms for new PADs and projects. We also recommended that CIMRP fully implement the administrative procedures it is considering to improve project closeout report timeliness and quality control. Also, we recommended that CIMRP continue to phase-out County-wide noncoal PADs and replace them with project-specific PADs as it develops new noncoal projects.

C. Summary Evaluation of Performance Measure 3(h)

Our evaluation of this performance measure determined that Colorado draws-down AML grant funds in accordance with the Federal Assistance Manual (FAM). The purpose of our evaluation was to determine the actual and optimum number of days CIMRP takes to pay its customers. We concluded that Colorado complies with the requirements of FAM Chapter 5-55 and the Cash Management Act of 1990. Our review sample included drawdown reports from fiscal years 2006, 2007 and 2008. This is the first time we evaluated this performance measure for Colorado.

We limited our review to CIMRP's financial information, though the State uses the Colorado Financial Reporting system (COFRS) to account for all expenses. DNR's accounting section processes CIMRP's expenses and performs a monetary draw-down

to pay for them. All program administrative and project costs are drawn from a letter of credit according to grant number and fund account.

Colorado generates COFRS reports on a monthly basis along with cash receipts validated by State Treasury “in-house” codes. The U.S. Treasury’s Automated Standard Application for Payment (ASAP) system is another back-up system for the cash receipts. CIMRP’s drawdowns are balanced against the ASAP balances. ASAP provides an updated record of all grant funds as Colorado draws them for payment. It also records the amounts to be drawn-down from OSM and other Federal funds. The transaction report shows each subaccount’s available balance and the total amount being requested by subaccount. Colorado’s accounting system has built-in safeguards that cross-verify Federal grant funds as they are drawn-down to pay for CIMRP’s expenses. These safeguards also prevent unauthorized payments.

The State maintains a hand-written grant billing log that it updates daily. The log contains the grant billing date, amount drawn, the draw date and cash receipt number. Information for this log comes from a monthly COFRS report. The COFRS report is used to enter grant drawdown data. COFRS tracks all costs of individual projects and services. This system keeps a running total of all direct and indirect charges for each program budget expense. Expenditures are subtracted and the unencumbered updated balances are provided to the CIMRP Director on a monthly basis.

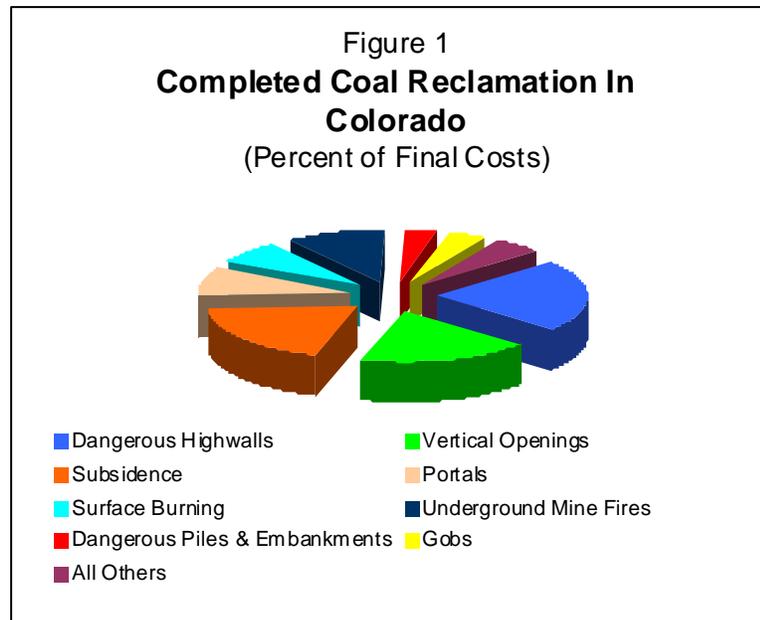
Colorado operates on an advance payment method where funds are drawn to cover immediate CIMRP payment requirements. The State’s system pays out funds usually a day or two after CIMRP submits payment voucher requests. Advances of Federal funds are limited to the amount(s) required to meet CIMRP’s immediate cash needs. All tests of the drawdown procedures indicate that the time to transfer funds to pay for CIMRP expenses is minimal. Colorado does not keep Federal funds more than three days after they are drawn down to make payments.

V. Accomplishments and Inventory Reports

Title IV of SMCRA emphasizes reclamation of abandoned coal mine-related problems because active mining operations pay a fee on each ton of coal produced, and that fee generates the AMR Fund. The 2006 act increases that emphasis. Colorado maintains an inventory of abandoned coal mine problems in AMLIS, and CIMRP continues to reclaim them but at a lesser frequency than it reclaims noncoal mines. The State receives funding to reclaim noncoal mine hazards upon request by the Governor under section 409(c) of SMCRA.

Colorado received funding to reclaim 184 coal projects since OSM approved the State’s program on June 11, 1982, excluding cancelled projects. Of those, CIMRP completed 162 by the end of the 2008 evaluation period. Abating eighteen types of abandoned coal mine-related problems required over \$13.28 million from all sources since program approval. Based on AMLIS data, about 94.5 percent of the money Colorado spent on coal reclamation so far addressed eight types of problems. Those problem types and

the percentage of final costs attributed to their funding include: Dangerous highwalls (22.2%); subsidence (19%); vertical openings (18.7%); underground mine fires (10.6%); portals (9.2%); surface burning (7%); gobs (4.3%); and dangerous piles and embankments (3.5%). Figure 1 (below left) illustrates these accomplishments. Abating



ten other problem types required the remaining 5.5 percent of the total cost of completed coal reclamation. AMLIS data show that CIMRP's costs of abating priority 1 problems made up about 22.8 percent of the \$13.28 million total final costs funded from all sources. Work to abate priority 2 problems made up about 68.4 percent of the total final cost. Finally, about 8.8 percent of the total final cost in funds from all sources of CIMRP's completed coal reclamation is associated with abating priority 3 problems. Appendix 1 shows the numbers

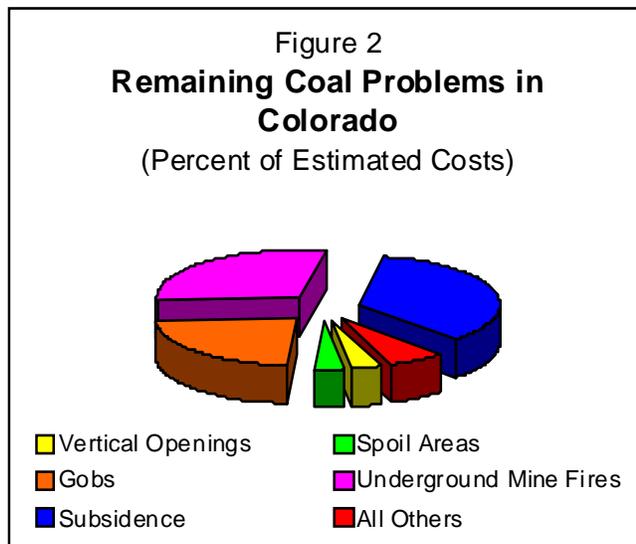
of coal problems addressed and their final costs in more detail.

CIMRP completed reclamation of three coal projects during the 2008 evaluation year. Completed projects safeguarded two vertical openings and one portal. Of the 11 coal projects funded in the three AML grants Colorado had open in the 2008 evaluation year, four were complete by the end of the year on June 30th. Colorado requested funding for a total of 16 coal projects in its 2005, 2006, 2007, and 2008 grants.

Three other coal projects still were ongoing by the end of the evaluation year. One will stabilize subsidence around a home in a suburban area while another investigates subsidence on a college campus. Both of those projects are located in the Rocky Mountain foothills in two subsidence-prone areas of the State. The third ongoing coal project will safeguard about eight portals and four vertical openings in a soon-to-be-developed rural subdivision. Updates to AMLIS data show CIMRP funded ongoing reclamation of nine portals, including one emitting hydrogen sulfide gas, and five vertical openings at abandoned coal mines during the 2008 evaluation year. Appendix 1 shows Colorado's currently-funded abandoned coal mine problems and costs in more detail.

Colorado still inventories more than \$36.94 million in unfunded coal problems in AMLIS slightly more than 26 years after the Secretary approved its program. That is an increase compared to the estimated cost of reclaiming unfunded coal problems reported in 2006 and 2007. Each year's increase reflects the additional estimated cost of abating subsidence. About 93.3 percent of the estimated cost of reclaiming those coal problems is associated with five problem types. Those problems and the percentages

of estimated costs attributed to them include: Subsidence (34.6%); underground mine fires (29.1%); gobs (22.8%); spoil areas (3.5%); and vertical openings (3.3%). The remaining 6.7 percent of estimated costs is associated with 13 other problems types included as “all others” in Figure 2 (right). The list of these problems is unchanged from the 2007 evaluation year and their respective percentages are very similar as well. Figure 2 is an illustrated comparison of these percentages.



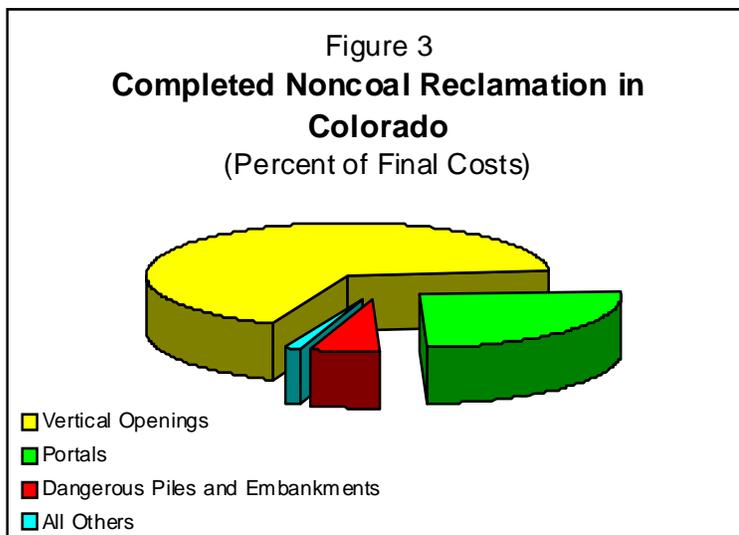
Colorado’s unfunded coal problems represent all three reclamation priorities. The estimated cost of abating priority 1 portals, subsidence, an underground mine fire, vertical openings and dangerous highwalls totals \$633,650, or about 1.7 percent of the estimated total cost. Priority 2 problems remaining make up \$24,313,987, or about 65.8 percent of the remaining cost. Those problems include dangerous highwalls, hazardous equipment and facilities, portals, subsidence, surface burning, underground mine fires, and vertical openings. Priority 2 subsidence and underground mine fires make up slightly more than 94 percent of the cost of abating Colorado’s remaining priority 2 problems. Colorado’s unfunded priority 3 coal problems are estimated to cost \$12,001,149 to reclaim. That is about 32.5 percent of the total estimated cost of unfunded coal problems in the State. Gobs and spoil areas make up almost 81 percent of the estimated cost to reclaim the State’s unfunded priority 3 problems. The 2006 Act significantly increased Colorado’s 2008 grant funding and will do so at least through the year 2014. That additional funding should enable the State to devote much more funding to addressing its remaining coal problems. Appendix 1 shows all the remaining, unfunded coal problem types and their estimated costs that Colorado currently inventories in AMLIS.

We discussed AMLIS data for Colorado’s remaining unfunded coal problems in a meeting in the 2007 evaluation year. At that time, we concluded that CIMRP should remove some unfunded data from AMLIS because they show coal problems where the Program’s project managers believe none are likely to remain. That task remains unfinished.

Abandoned noncoal mines generally pose more frequent and immediate hazards to public health and safety in Colorado than abandoned coal mines do. However, as an uncertified State, Colorado must restrict its SMCRA-funded noncoal reclamation to priority 1 hazards under section 409(c) except in rare cases where lower priority problems must be abated as part of addressing priority 1 problems. OSM began funding noncoal projects in Colorado’s third grant in 1985. Excluding cancelled projects, CIMRP received SMCRA grant funding for 233 noncoal projects since that

time. The Program completed reclamation of 194 noncoal projects to date. Noncoal projects outnumber coal projects in CIMRP’s grant requests and reclamation for the past 13 years and outnumber them three-to-one overall in the four most recent grants combined. Colorado’s 2005, 2006, 2007, and 2008 grants requested funds for 12, 11, 13, and 12 noncoal projects, respectively.

AMLIS data show that reclamation of Colorado’s noncoal mine problems to date required about \$28.5 million in funding from all sources. Vertical openings, portals, hazardous equipment and facilities, dangerous piles and embankments, gobs, pits, and subsidence were the noncoal problems CIMRP abated to date. The cost of safeguarding priority 1 vertical openings, portals, and dangerous piles and embankments comprised about 67.4, 26, and 5.4 percent, respectively, of the \$28.5 million total final cost of Colorado’s noncoal AML reclamation to date. CIMRP safeguarded at least 7,421 noncoal portals and vertical openings between 1985 and the July 31, 2008, date of the AMLIS data we used for this evaluation. Figure 3 (above

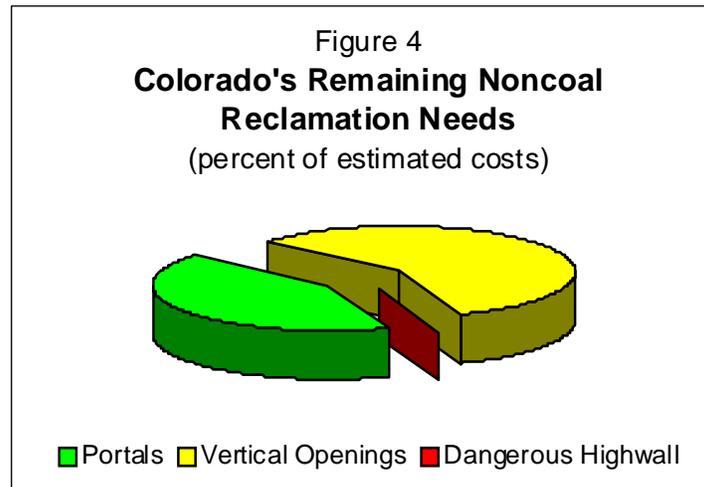


right) compares the percent of total final costs attributed to safeguarded portals, vertical openings, and all other noncoal problems Colorado reclaimed. Additional noncoal problems grouped together as “all others” in Figure 3 include priority 1 hazardous equipment and facilities and subsidence, priority 2 portals and vertical openings, and priority 3 gobs and pits. Combined, they make up the remaining 1.2 percent of the cost to all sources of reclaiming noncoal problems in Colorado. CIMRP reclaimed most of the priority 2 and 3 noncoal problems with funding from non-SMCRA sources.

CIMRP completed nine noncoal projects by the end of the 2008 evaluation year. Those projects safeguarded about 67 portals and 90 vertical openings. One of those projects also reclaimed 45 acres of dangerous piles and embankments. CIMRP partnered with other agencies to leverage its funding with additional, non-SMCRA funds for six of those nine projects. These accomplishments are reflected in the data shown in Appendix 2.

Appendix 2 also shows that, as of July 31, 2008, CIMRP had funding from all sources to address an additional 142.5 portals (partial portals reflect partial funding), 119 vertical openings, and 1 acre of industrial / residential waste at a cost of about \$1,276,616.

Priority 1 portals and vertical openings make up about 99.9 percent of the estimated cost of abating the unfunded noncoal problems Colorado currently inventories in AMLIS. The remaining 0.1 percent of the estimated unfunded cost is associated with a priority 2 dangerous highwall. Figure 4 (below) illustrates the percentages that portals, vertical openings, and the dangerous highwall comprise of Colorado's estimated unfunded noncoal reclamation costs. We note that Colorado does not inventory all its abandoned noncoal mine problems in AMLIS.



Appendix 1

Colorado Inactive Mine Reclamation Program

Coal Reclamation Accomplishments Since June 11, 1982, and Remaining Reclamation Needs*

Problem Type and Description	Unfunded		Funded		Completed		Total	
	Units	Costs	Units	Costs	Units	Costs	Units	Costs
Bench	55 acres	\$197,000	0	0	2.5 acres	\$27,920	57.5 acres	\$224,290
Dangerous Highwalls	1,030 feet	\$30,000	0	0	51,992 feet	\$2,955,885	53,022 feet	\$2,985,885
Dangerous Piles & Embankments	0	0	0	0	43.5 acres	\$468,050	43.5 acres	\$468,050
Equipment & Facilities	62 (count)	\$94,000	0	0	7 (count)	\$14,657	69 (count)	\$108,657
Gases: Hazardous/Explosive	0	0	1.0 (count)	\$3,000	0	0	1.0 (count)	\$3,000
Gobs	457.3 acres	\$8,416,954	25 acres	\$205,753	88.5 acres	\$576,670	570.8 acres	\$9,199,377
Highwall	0	0	0	0	1,175 feet	\$41,386	1,175 feet	\$41,386
Hazardous Equipment & Facilities	1(count)	\$2,000	0	0	1(count)	\$1	2 (count)	\$2,001
Haul Road	4 acres	\$13,000	0	0	0	0	4 acres	\$13,000
Industrial / Residential Waste	3 acres	\$13,000	8 acres	\$84,000	15 acres	\$106,657	26 acres	\$203,657
Mine Openings	212 (count)	\$631,000	3 (count)	\$3,206	18 (count)	\$62,592	233 (count)	\$696,798
Other	26.0	\$101,000	0	0	0	0	26.0	\$101,000
Portals	32 (count)	\$136,060	38 (count)	\$105,636	548 (count)	\$1,223,465	618 (count)	\$1,465,161
Pits	93 acres	\$423,100	0	0	63.9 acres	\$233,585	156.9 acres	\$656,685
Polluted Water: Agric. & Industrial	0	0	1 (count)	\$50,000	3 (count)	\$19,699	4 (count)	\$69,699
Subsidence	178.6 acres	\$12,785,610	0	0	51.9 acres	\$2,529,376	230.5 acres	\$15,314,986
Spoil Area	365.6 acres	\$1,286,095	2 acres	\$25,000	97.5 acres	\$183,502	465.1 acres	\$1,494,597
Surface Burning	1acre	\$5,000	5 acres	\$70,000	29.2 acres SMCRA ; 42 acres all sources	\$500,828 SMCRA; \$935,165 all sources	35.2 acres SMCRA; 48 acres all sources	\$575,828 SMCRA; \$1,010,165 all sources
Slump	25 acres	\$804,000	0	0	0	0	25 acres	\$804,000
Underground Mine Fire	176.5 acres	\$10,750,000	53 acres	\$2,955,532	182 acres	\$1,413,817	411.5 acres	\$15,119,349
Vertical Openings	38 (count)	\$1,239,967	29 (count)	\$144,995	305 (count)	\$2,484,012	372 (count)	\$3,868,974
Water Problems	24 gal/min	\$22,000	1 gal/min	\$25,000	1 gal/min	\$6,000	26 gal/min	\$53,000
COLORADO TOTAL COSTS		\$36,949,786		\$3,672,122		\$12,847,472 SMCRA; \$13,281,809 all sources		\$53,469,380 SMCRA; \$53,903,717 all sources

* This table is based on a Problem Type Unit and Cost Summary Report from the Abandoned Mine Land Inventory System as of July 31, 2008. "All sources" of funding exclude the Federal Emergency Program.

NOTE: Completed cost of \$1 means that problem type's reclamation was incidental to reclamation of another problem type.

Appendix 2

Colorado Inactive Mine Reclamation Program

Noncoal Reclamation Accomplishments Since June 11, 1982, and Remaining Reclamation Needs*

Problem Type and Description	Unfunded		Funded		Completed		Total	
	Units	Costs	Units	Costs	Units	Costs	Units	Costs
Dangerous Highwalls	1.0	\$5,000	0	0	0	0	1.0 foot	\$5,000
Dangerous Piles & Embankments					60 acres	\$1,536,512	60 acres	\$1,536,512
Gobs	0	0	0	0	3 acres	\$78,250	3 acres	\$78,250
Hazardous Equipment & Facilities	0	0	0	0	13 (count)	\$214,669	13 (count)	\$214,669
Industrial/Residential Waste	0	0	1 acre	\$20,000	0	0	1.0 acre	\$20,000
Portals	3,630 (count)	\$18,684,174	105.5 (count) - SMCRA; 142.5 (count) - all sources	\$471,631 - SMCRA; \$795,671 - all sources	2,606.5 (count) - SMCRA; 2,759.5 (count) - all sources	\$7,338,956 - SMCRA; \$7,461,795 - all sources	6,335 (count) SMCRA; 6,525 (count) - all sources	\$26,459,014 - SMCRA; \$26,905,893 - all sources
Pits	0	0	0	0	2 acres	\$12,000	2 acres	\$12,000
Subsidence	0	0	0	0	3 acres	\$10,661	3 acres	\$10,661
Vertical Openings	4,405.5 (count) - SMCRA; 4,940.5 (count) - all sources	\$22,996,436 - SMCRA; \$25,667,936 - all sources	107.5 (count) - SMCRA; 119 (count) - all sources	\$424,999 - SMCRA; \$460,945 - all sources	4,024.5 (count) - SMCRA; 4,662 (count) - all sources	\$16,502,424 - SMCRA; \$19,236,618 - all sources	8,537.5 (count) - SMCRA; 9,721.5 (count) - all sources	\$39,923,859 - SMCRA; \$45,365,499 - all sources
COLORADO TOTAL COSTS		\$41,685,610 - SMCRA; \$44,357,110 - all sources		\$916,630 - SMCRA; \$1,276,616 - all sources		\$24,503,592 - SMCRA; \$28,550,505 - all sources		\$67,070,085 - SMCRA; \$74,148,484 - all sources

* This table is based on a Problem Type Unit and Cost Summary Report from the Abandoned Mine Land Inventory System as of July 31, 2008. AMLIS does not include a complete inventory of Colorado's unfunded noncoal problems.

Appendix 3

State Comments on the Report

From: Pineda, Loretta [Loretta.Pineda@state.co.us]
Sent: Monday, August 25, 2008 9:35 AM
To: Ronald Sassaman
Cc: James Fulton
Subject: RE: Comments on draft annual summary evaluation report
[Ron](#)

I agree with the report and its findings. As you know AMLIS still presents its challenges and Colorado will continue to work with OSM to provide accurate reporting data. I also want to thank you for your efforts and guidance in Colorado's oversight process. I am hopeful that this cooperative spirit and partnership that we have with OSM will continue as we move into the next phase of the program with increased funding to abate hazards and environmental problems of abandoned mines in Colorado.

Loretta E. Pineda

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