OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT

ANNUAL EVALUATION SUMMARY REPORT

FOR THE

ABANDONED MINE LANDS PROGRAM

TABLE OF CONTENTS

MONTANA
ABANDONED MINE LANDS PROGRAM
ANNUAL REPORT

Part I. Introduction

Evaluation of the state reclamation program is conducted by the Casper Field Office (CFO) of the Office of Surface Mining (OSM). The 2008 evaluation period started on July 1, 2007 and concluded June 30, 2008. Evaluation methods are based upon OSM Directive AML-22 and a Performance Agreement (PA) between the State and OSM. This agreement incorporates a shared commitment by the State and OSM in determining how annual evaluations will be conducted. The State takes an active role in the entire evaluation process. The process is designed to evaluate whether the State, through its Abandoned Mine Land Reclamation (AMLR) program, is achieving the overall objective of Section 102 of the Surface Mining Control and Reclamation Act (SMCRA) which states that AMLR programs are to:

> "... promote the reclamation of mined areas left without adequate reclamation prior to the enactment of this Act and which continue, in their unreclaimed condition, to substantially degrade the quality of the environment, prevent or damage the beneficial use of land or water resources, or endanger the health or safety of the public ..."

As a result of the PA, specific topics were identified for review and review methodologies were developed for the evaluation period, in concert with the State. The review methodologies are described in detailed oversight work plans, developed for the review of each specific topic. The reviews were designed to result in an overall measure of the State's success in achieving planned reclamation goals. By focusing on end results, OSM is able to determine the root causes of problems (if any) and concentrate its resources on prevention by providing assistance to the State for any needed program improvement. The specified topics selected for review were those identified by OSM and the State from past experience which have the most potential for preventing the State from achieving their planned reclamation goals. At the end of the evaluation period, OSM prepared this annual report and gave the State the opportunity to comment on its contents.

Part II. General Information on the Montana Program

On November 24, 1980, the Secretary of the Department of the Interior approved the Montana AMLR Plan under the provisions of Title IV of SMCRA. With that approval, the State assumed primary authority for the reclamation of non-emergency abandoned mine land (AML) reclamation projects within the State. On August 18, 1983, the Secretary approved Montana's April 20, 1983, amendment to its AMLR Plan allowing Montana to assume responsibility for an emergency response reclamation program. The Montana Department of Environmental Quality (DEQ), Mine Waste Cleanup Bureau (MWCB) currently administers these programs.

The Montana Abandoned Mine Land Reclamation (AMLR) program continues to operate under the guidelines of SMCRA, the approved State Reclamation Plan, the Federal Assistance Manual and associated rules, regulations and policy decisions. The State administers an excellent AMLR program in full compliance with their approved AMLR Plan.

The Montana AMLR program was initiated in 1980 and for the next ten years the State concentrated on abating the hazards left by past coal mining practices. In 1990 the State certified that all known coal problems had been addressed and they were then authorized by OSM to begin reclaiming the multitude of high priority non coal hazards in their inventory. However, any abandoned coal hazards that are discovered must still be given priority funding over non coal projects, and this requirement has been followed by the State.

Both the design and construction portions of each AML project are completed by private contractors. The State has established a bid process to obtain the most qualified design and construction companies at the most cost effective price. The design and specification work is accomplished during the winter months when most outside work is impractical, and the actual reclamation work starts as soon as weather and ground conditions will allow heavy equipment to be moved to the site. Many of the sites presently being reclaimed are in mountainous terrain and at high altitudes. This may drastically shorten the amount of time available for reclamation work because of snow, ice and mud. In recent years the construction season has also been shortened by wildfires which necessitate special operating conditions shortening the allowable work days. A part of the responsibility of each design contractor is to provide an inspector for the construction work. This inspector will be on site during working hours to ensure that the work is being completed according to the plans and specifications that have been approved by the MWCB.

Staff personnel of the MWCB are very knowledgeable and dedicated to the completion of the program goals. An excellent working relationship exists between the staff of the MWCB, the CFO staff, and the State and Federal agencies that must be contacted during the course of preparing projects for reclamation. The MWCB personnel spend most of the construction season in the field coordinating and supervising the reclamation work, and preparing future projects for reclamation. Some construction work may continue into the winter months but the staff primarily spends this time of the year working with the design contractors to get projects ready for the upcoming construction season.

One AMLR Consolidated Grant was awarded to the State during this evaluation period and it was approved well within the government performance period of 60 days. No problems or issues exist in the Montana AMLR program.

The following is a list of acronyms used in this report:

AMD	Acid Mine Drainage
AML	Abandoned Mine Land
AMLIS	Abandoned Mine Land Inventory System
AMLR	Abandoned Mine Land Reclamation
CFO	Casper Field Office

DEQ	Department of Environmental Quality
EEE/CA	Expanded Engineer's Estimate and Cost Analysis
MWCB	Mine Waste Cleanup Bureau
OIG	Office of the Inspector General
OSM	Office of Surface Mining
PA	Performance Agreement
PAD	Problem Area Description
SMCRA	Surface Mining Control and Reclamation Act
USDA	United States Department of Agriculture

Part III. Noteworthy Accomplishments

Montana has been revising and improving the abandoned coal mine inventory database which contains entries for over 3200 individual coal mine sites located in the State. Software has been upgraded from Dbase to Access and the database structure has been modified to include electronic attachments to the inventory form that is utilized as the database interface. The revised design has increased the database utility by tracking construction and maintenance inspections. Work has included checking; confirming and correcting information contained in the database for accuracy and for conformity to other abandoned mine program records.

A data control specialist has been hired by the AML program to complete site record review and data entry associated with updating the abandoned coal site inventory. Activities include cross referencing and rectifying site names between the original inventory, cultural resource reports, site name used in construction projects, historic mine name, and other names used in various investigations and reports. Data fields have been added that allow sites to be readily referenced back to completed reclamation construction projects as well as maintenance inspections. Work has included accurately defining construction projects and the individual mine sites that were involved with each project and rectifying that information with the information contained in the original inventory. The database now references project completion reports and bidding documents for each site. Coal outcrop fires have been added to the electronic inventory.

The database design includes the ability to attach electronic images to each site inventory entry via pull down menus accessed from the inventory site form. Attached images include mine maps, photographs, sampling data, sketches and engineering drawings. Coal site land ownership is available from each site form through a lat-long match to the State of Montana tax parcel database.

Future work to be completed on the abandoned coal inventory includes completing a field visit and site inspection and review of each site in the inventory. Electronic copies of project construction final reports and other documents will be available from the database once these are scanned and attached. Other future work will provide the ability to create topographic maps using digital terrain models and data contained in GIS databases.

Part IV. Montana Utilization of OSMRE Technological Assistance

A. National Technical Training Program (NTTP)

Six Montana AML staff members attended eight NTTP instructor-led training courses during the evaluation year.

B. Technical Innovation and Professional Services (TIPS)

The Montana AML Program is working towards resolving a discharge in Belt, MT. Use of the OSM TIPS RTK system will allow accurate GIS reference locations to be developed for project management of the electronic information. Additionally, the OSM TIPS GPS enabled camera was loaned to the Montana Program to support characterization and remediation of the discharge. The Montana program will save approximately $5,000 in contractor survey costs by using OSM TIPS equipment.

Half of Montana AML Program staff has been with the AMLR program for a year or less. As such, the new staff have greatly benefited from OSM sponsored technical training. The training aide's new staff in resolving technical challenges on projects, and facilitates use of mobile computing technology. A Fujitsu tablet was previously provided as TIPS seeding technology. The Montana AML Program has embraced this type of technology by investing in similar mobile computing tablets and hired key personnel to use the equipment.

Several Montana AML staff participated in the OSM TIPS Geospatial Conference, and the program has a representative on the Western Region Technology Transfer Team. Continued involvement in these technical conferences and teams, will foster additional partnerships and innovative approaches to resolve technical challenges.

A service manager visit was conducted at the Title IV and Title V Program offices in Helena to better understand the programs needs, deliver shared equipment for project use, and to identify opportunities where TIPS and Technology Transfer can better partner with Montana personnel as we work to implement regulatory solutions. Software updates to Galena and SedCAD TIPS core software were distributed to designated contacts during this reporting period. Additionally, 3 licenses of ArcPad were provided for mobile computing purposes.

During the evaluation year two staff members attended three TIPS training courses.

Part V. Results of Evaluation Year 2008 Review

The Montana Abandoned Mine Land PA was signed on June 25, 2008. It will apply to each year's evaluation through the 2009 evaluation year. The PA describes the team's purpose and the topics selected for review to evaluate the performance of the AML program. On-the-ground, performance-based results were the principal focus of program evaluation and documentation.

Results of the 2008 evaluations are summarized below. The evaluations included field visits to AML projects, interviews with DEQ-MWCB staff, and reviews of the AMLR Program's project specifications, grant applications and reports, and internal State and AMLIS inventories. The evaluation results are described in greater detail in evaluation reports, written for each review topic. Those reports are on file in OSM's CFO. Each topic was reviewed according to the methodology described in detailed oversight work plans. This report and the supporting topic evaluation reports describe the 2008 evaluations of four topics selected for review during the 2008 evaluation year.

A. Summary Evaluation of Overall Reclamation Success

Our 2008 evaluation of overall reclamation success determined if DEQ-MWCB's reclamation met project goals. The 2008 review sample included five non-coal reclamation projects completed during evaluation year 2008, and one coal reclamation project ninety percent completed during evaluation year 2008. The projects completed during evaluation year 2008 addressed clogged streams/stream lands, hazardous facilities, hardrock mill tailings, waste rock dumps containing elevated levels of heavy metals, portals and vertical openings.

We compared DEQ-MWCB's reclamation to project specifications, results of interagency consultation, and other information. Our evaluation focused on determining whether reclamation met project goals by implementing the scope of work to abate original hazards, complying with conditions (if any) resulting from interagency consultation, and improving overall site conditions compared to pre-reclamation conditions. Generally, we agreed projects met their goals if abatement and reclamation measures were intact and functional and if no problems compromising those measures were apparent. We considered site conditions improved overall if hazards to public health and safety were abated and associated reclamation reduced environmental problems such as erosion and sedimentation while promoting revegetation.

We concluded that generally the non-coal projects we visited met their respective goals. DEQ-MWCB met the goals of abating hazards and improving site conditions at the four of the five non-coal projects, however, one project will need further remediation to eliminate the hazard on site from a portal reopening after some subsidence of fill material. Mill tailings and mine wastes associated with abandoned hardrock mill and mine sites were excavated from streams and associated lands and disposed of in appropriate repositories located off-site and constructed on-site. Portals and vertical openings associated with abandoned underground hardrock mines were stabilized and backfilled. Hazardous equipment and facilities were removed.

B. Summary Evaluation of AML Emergency Investigations and Abatement Efforts

Our 2008 evaluation of AML emergency investigations and abatement efforts determined if the emergency criteria of the State AMLR plan are satisfied and the project(s) are completed as described in the AML Emergency Investigation report. The 2008 review sample included all AML emergency complaints received during the evaluation year, and all emergency projects completed during the evaluation year. During evaluation year 2008 the DEQ-MWCB received no citizen complaints of AML emergencies. Since no complaints were received, this topic could not be evaluated during the 2008 evaluation year.

C. Summary Evaluation of AML Grant Fiscal and Administrative Controls

The Montana AML Grants administration was monitored throughout EY2008. A site visit to the state program and accounting offices in Helena, Montana by the OSM Western Region (WR) Grants Specialist and Casper Field Office Abandoned Mine Land Program Specialists to discuss Montana AML Program implementation for the current evaluation year was conducted June 24-26, 2008. A letter-of-credit random sample drawdown request for the FY2007 AML Grant S07AP12415 was selected by the WR Grants Specialist for further analysis, and no deficiencies were noted. Interviews

conducted with the Montana AML Grant Accounting staff confirmed that recent audits had no questioned or disallowed costs associated with OSM-Montana AML grant(s). The WR Grants Specialist will continue to monitor Montana AML Grants administration in EY2009.

D. Summary Evaluation of Abandoned Mine Land Inventory System (AMLIS)

Our 2008 evaluation of AMLIS determined if the information the State entered into AMLIS agrees with information in its files. This topic was mandated for review due to a September, 2004 report issued by Interior's Office of the Inspector General (OIG). The report criticized the accuracy of AMLIS data, based on the OIG review of AMLIS data for four eastern States' AML programs. The OIG's review concluded that AMLIS data did not match data in those States' files and 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." In response to the OIG's recommendation, OSM required its field offices to implement two requirements. The first requirement is 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" as part of the FY2004 oversight (subsequently changed to FY2005). OSM Headquarters subsequently advised field offices to drop the certification requirement. As a result, the focus is to make sure States and Tribes have requisite systems in place. The CFO and Montana DEQ-MWCB chose to include this assurance as part of the evaluation year 2006 oversight. The evaluation year 2006 oversight determined Montana has such a system in place that is adequate to ensure accurate data is entered into AMLIS.

The second requirement implemented by OSM in response to the OIG's recommendation stated, "[o]nce these State and Indian Tribe procedures are in place, OSM will annually review a random sample of [PADs] to see if the information entered into AMLIS agrees with the information in the PAD." As a result, the focus is to make sure the data States and Tribes entered into AMLIS PADs (an integral part of AMLIS) agrees with the information in their files. The CFO and DEQ-MWCB chose to include this assurance as part of the evaluation year 2008 oversight. The evaluation goal was to determine if the information Montana enters into AMLIS, for projects completed during the evaluation year, agrees with information in its files. Six reclamation projects were completed during the evaluation year.

The DEQ-MWCB compiles data from EXCEL spreadsheets for input into AMLIS. Upon award of a construction contract after completion of the bidding process, the engineer's estimate and contractor's bid are entered into an EXCEL spreadsheet to maintain cost accounting throughout the duration of the construction project and to prepare contractor invoice forms. The Fiscal Officer maintains control of the EXCEL spreadsheet. At the completion of the project, construction quantities and costs are reconciled by the contractor and engineer, approved by the project manager and transferred to the Fiscal Officer for final reconciliation. The engineer completes the Final Construction Completion Report using the same engineer's estimate and format as originally prepared in the EEE/CA. The Project Manager enters the costing data from the Final Construction Completion Report into the AMLIS PAD completed category.

Completion information entered into AMLIS for the six projects completed during the evaluation year were analyzed and compared to the information contained within the DEQ -MWCB files.

We concluded the information the DEQ-MWCB entered into AMLIS for completed

projects agrees with the information in its files.

E. Summary Evaluation of Public Outreach

Our 2008 evaluation of public outreach determined if the DEQ-MWCB is performing public outreach efforts by holding public meetings before applying for grants for new potential project areas. The Montana AMLR Plan requires that the public be afforded the opportunity to offer comments on abandoned mine reclamation projects. The MWCB considers the public an important component of the reclamation program, and conducts a public meeting in the community nearest each project. The meetings are well publicized and are held in the evenings or on weekends to allow maximum citizen participation. The overall plan for the project area, construction design, maps, overlays and aerial photographs are available and discussed at each public meeting. Individuals may submit comments in writing, or meet with the project managers at any time prior to completion of the comment period on a project. Project managers also meet with affected landowners to explain each project in detail, and keep them informed of the progress throughout the construction phase. Work plans are often altered to conform to comments received from landowners, contractors and the general public.

The 2008 review sample included file data of project areas selected for AML reclamation during the 2008 evaluation year. During the evaluation year DEQ-MWCB selected three project areas for reclamation. The file data contained a Public Meeting Attendance Record for the projects. Public meetings for the other eight reclamation projects that were either completed or under construction during the current evaluation year were conducted during the previous evaluation year(s).

We concluded the DEQ-MWCB is adhering to the public participation and involvement policy of the State AMLR plan by holding public meetings regarding potential AML project sites.

Part VI. Acid Mine Drainage

Acid Mine Drainage (AMD) is found throughout the State in both coal and non coal abandoned mines, but the heaviest concentrations of AMD are found in the Great Falls/Lewistown Coal Field area. With normal reclamation procedures, the MWCB is able to control or eliminate most of the AMD from the non coal mines. However, the 400+ abandoned coal mines in the 5000 square miles of the Great Falls/Lewistown Coal Field continue to pose an unmanageable AMD problem with the funding level the State receives and the technology that is presently available regarding the treatment of AMD. The only method currently available to treat the widespread AMD problem found in this extensive abandoned coal field is to construct a large water treatment plant, or several smaller plants, at strategic locations. The polluted water could then be piped from throughout the area into the treatment facility or facilities. The cost of the treatment facilities and the pipeline necessary to handle the AMD could easily run as high as twenty times the annual AML allocation received by the State, and this does not include the cost of any maintenance or the routine operation and maintenance of the system once it is in use.

The MWCB has completed a considerable amount of abandoned mine reclamation in the Great Falls/Lewistown Coal Field area of the State, and they are still attempting to control the AMD situation through conventional methods of reclamation. Some of these

methods work for a short period of time but are not acceptable for long term use. The MWCB continues to monitor scientific advancement in the prevention and treatment of AMD in anticipation that a cost effective treatment method will be found. The MWCB is beginning to evaluate alternative mitigation concepts that focus on AMD source control, rather than active or chemical treatment of AMD. Source control could include plantings of deep-rooted alfalfa, on the surface above underground mine voids, to soak up excess surface water entering the mines. Procurement of alternative funding sources for AMD abatement is also being investigated.

Part VII. Public and Interagency Participation

The MWCB goes to great lengths to develop and maintain a good working relationship with all the State and Federal agencies it works with. This carries over into the relationship with local agencies and groups, and to the landowners who have AML sites on their land.

Habitat enhancement for wildlife is incorporated into each project where it is feasible, and the retention of surface water for landowners is a high priority. They have also recorded a significant amount of the mining history of the State to be provided to educational facilities, and to mitigate the loss of important cultural resources during the reclamation process.

The DEQ-MWCB provides further opportunities for public participation and involvement through its internet website and press releases. The MWCB posts Engineering Evaluation/Cost Analysis Reports of proposed projects, Reclamation Investigation reports, notices of public hearings of proposed AML projects and "A Guide to Abandoned Mine Reclamation." Public meetings have been held in several communities in the Great Falls/Lewiston Coal Field to keep the citizens updated on the problems and progress of research to abate the acid mine drainage concerns from the areas abandoned coal mines.

Part VIII. Accomplishments and Inventory Reports

Several projects are presently in the investigation, engineering, or design phase. These are listed in **Chart 1**. Since implementation of their approved AMLR program, the MWCB has eliminated safety hazards and threats to the environment posed by abandoned mines. Reclamation has involved coal and non-coal mines as provided for in SMCRA. **Chart 2** shows hazard categories reclaimed during the 2008 evaluation year and the status of hazard categories remaining at the end of the 2008 evaluation year. The hazard categories reclaimed (completed) during the 2008 evaluation year were addressed by the individual project listed in **Chart 3**. The hazard categories under construction (not completed) during the 2008 evaluation year were addressed by the individual projects listed in **Chart 4**.

CHART 1

Montana 2008

Pre-Construction Projects That Are In The Investigation, Engineering, or Design Phase

PROJECT	COST (1)	ENVIRONMENTAL BENEFIT	
Bald Butte Mine	$1,635,150	14	acres reclaimed
Bald Mountain	$2,905,650	8	acres reclaimed
Barnes King Gulch Tailings	$1,198,791	4	acres reclaimed
Boss Tweed	$3,049,860	10	acres reclaimed
Broken Hill	$204,600	20.1	acres reclaimed
Champion Mine	$402,600	4	acres reclaimed
Chartam	$352,770	7.5	acres reclaimed
Custer Mill Site	$757,680	40	acres reclaimed
Drumlummon Mine/Mill/ Tailings	$6,192,450	12.1	acres reclaimed
East Pacific Mine	$2,519,550	12	acres reclaimed
Elkhorn Cr. Tailings	$1,703,955	8	acres reclaimed
Elkhorn Queen	$759,000	5	acres reclaimed
Emery Mine	$8,778,825	13	acres reclaimed
Forest Rose Mine	$1,023,000	12	acres reclaimed
Frohner Mine	$330,000	5	acres reclaimed
Garnet Gold Mine	$1,487,970	13	acres reclaimed
Gold Leaf/Priscilla	$11,764,500	12	acres reclaimed
Goldsill Millsite	$23,100,000	60	acres reclaimed
Highland	$1,320,000	2.5	acres reclaimed
Keating Tailings	$4,752,000	55	acres reclaimed
Lily/Orphan Boy Mine	$85,800	2	acres reclaimed
McLaren Tailings	$12,474,000	38	acres reclaimed
Montro Gold	$207,900	3	acres reclaimed
Ohio	$1,864,500	45	acres reclaimed
Queen/Tourmaline Queen	$2,640,000	2.5	acres reclaimed
Republic Mine and Mill (aka Erma No. 4)	$265,782	0.7	acres reclaimed
Spring Meadow Lake	$1,155,000	40	acres reclaimed
Sunrise/January Mine	$363,990	5	acres reclaimed
Toston Smelter	$495,000	10	acres reclaimed
TOTALS	**$93,790,323**	**463**	**acres reclaimed**

(1) Based on average disposal cost per cubic yard using historic engineering and construction costs through 2007.

Chart 2
Montana 2008
Acres and Hazards Remaining

HAZARD STATUS	6/30/2007 STATUS	EY 08 AMLIS ADDITIONS	RECLAIMED IN EY 2008	6/30/2008 STATUS
BE Bench	0.0 acres	0	0	0.0 acres
CS Clogged	22.6 MILES	0.4 MILES	0.8 MILES	22.2 miles
CSL Clogged Stream Lands	93.7 acres	2.5 acres	3.6 acres	92.6 acres
DH Dangerous Highwalls	0.0 feet	0	0	0.0 feet
DI Dangerous Impoundments	0	0	0	0
DP Ind/Res Waste	0.0 acres	16.1 acres	15.1 acres	1.0 acres
DPE Dangerous Pile	273.2 acres	0	2.0	271.2 acres
DS Dangerous Slide	0.0 acres	0	0	0.0 acres
EF Equip/Facil	0	0	0	0
GHE Hazard	0	0	0	0
GO Gobs	0	0	(11.0) acres	11.0 acres
H Highwalls	0.0 feet	0	0	0.0 feet
HEF Hazard Equip	664	5	21.0	648
HR Haul Road	0.0 acres	0	0	0.0 acres
HWB	8	0	0	8
IRW Indust/Resid	665.7 acres	11.2 acres	26.8 acres	650.1 acres
MO Mine Opening	0	0	0	0
P Portal	197	6	9	194
PI Pits	0.0 acres	0	0	0.0 acres
PW AI Polluted Water	0	0	0	0
PEHC Polluted Water	0	0	0	0
S Subsidence	0.1 acres	60.1 acres	60.1 acres	0.1 acres
SA Spoil Area	0.0 acres	0.1 acres	0.1 acres	0 acres
SB Surface Burning	0	3.0 acres	3.0 acres	0.0 acres
SP Slump	0.0 acres	0	0	0.0 acres
UMF Underground	1 each	0	1.0	0
VO Vertical Opening	81 each	0	0	81
WA Water Problems	0.0 gpm	0	(100.0 gpm)	0

Chart 3 Montana
2008
Completed Projects

Project Name	Project Cost	Environmental Benefit
Washington Mine and Millsite	$2,025,106	CSL, CS, IRW, HEF
Belle Lode Mine	$29,230	IRW, HEF, P
Big Chief Mine	$215,975	P, CSL, IRW
Bluebird Mine	$2,094,754	CS, CSL, DPE, HEF, VO
Ontario Mine	$538,386	IRW, CS, CSL, HEF
Argentine Mine	$210,829	CS, IRW, DPE

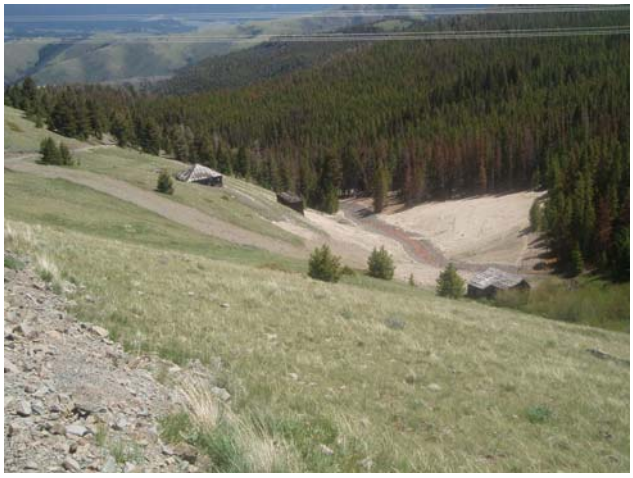
Chart 4 Montana
2008
Projects under Construction (not completed)

Project Name	Project Cost[1]	Environmental Benefit
Trail Creek Coal	$606,050 (a)	P, DPE
Snowshoe Mine and Millsite	$3,697,958 (b)	CS, CSL, IRW, P
Belt Coal Mine Drainage	$3,105,020 (a)	PWHC, DPE

[1] a = estimated completion
b= contract bid amount

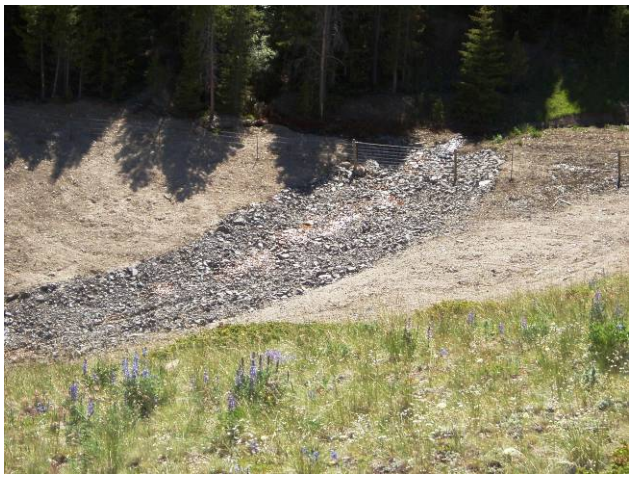
Part IX. Photos

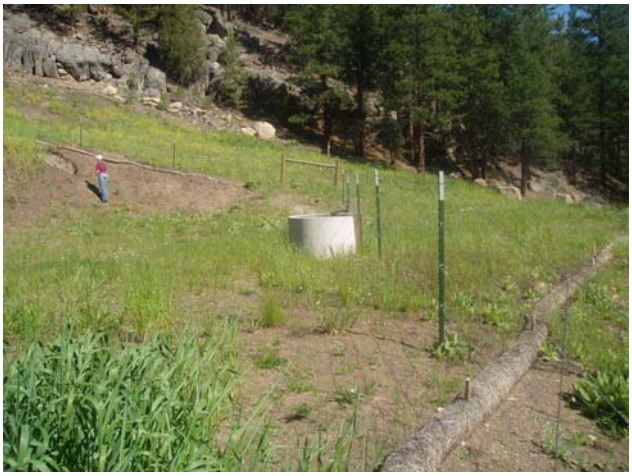
The following photographs have been attached to this report to further demonstrate the degree of hazardous conditions encountered in various areas of the State, and the excellent reclamation accomplished by the MWCB to eliminate the hazards.



Bluebird Mine & Mill, photos above & below August 2005 (before reclamation) showing acid mine drainage, piles of mine wastes

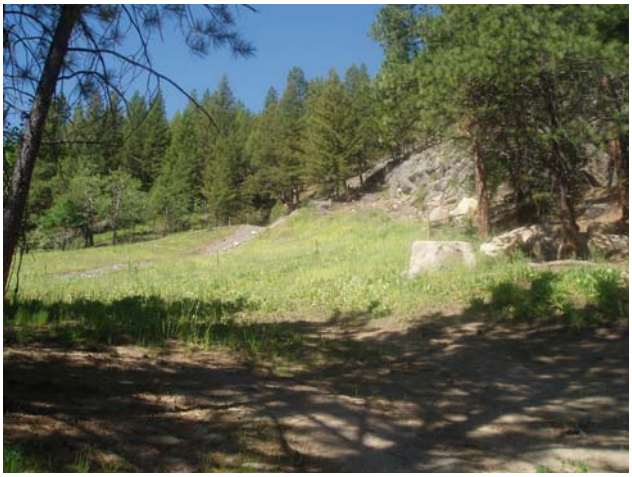
Bluebird Mine & Mill photos above & below June 2008 (reclamation complete) showing slight trace of acid mine drainage at head of channel, mine wastes piles removed

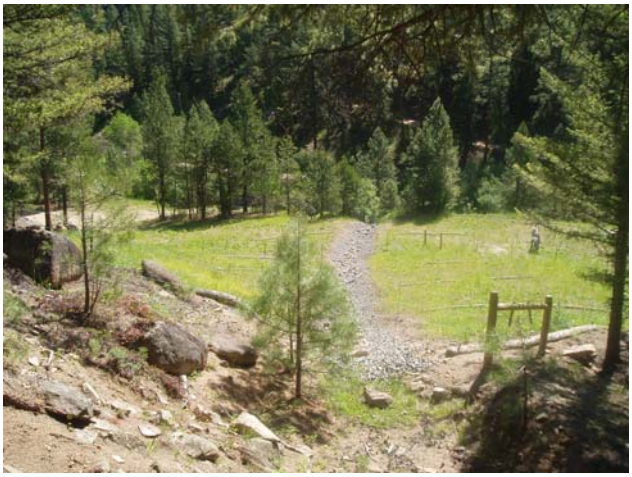


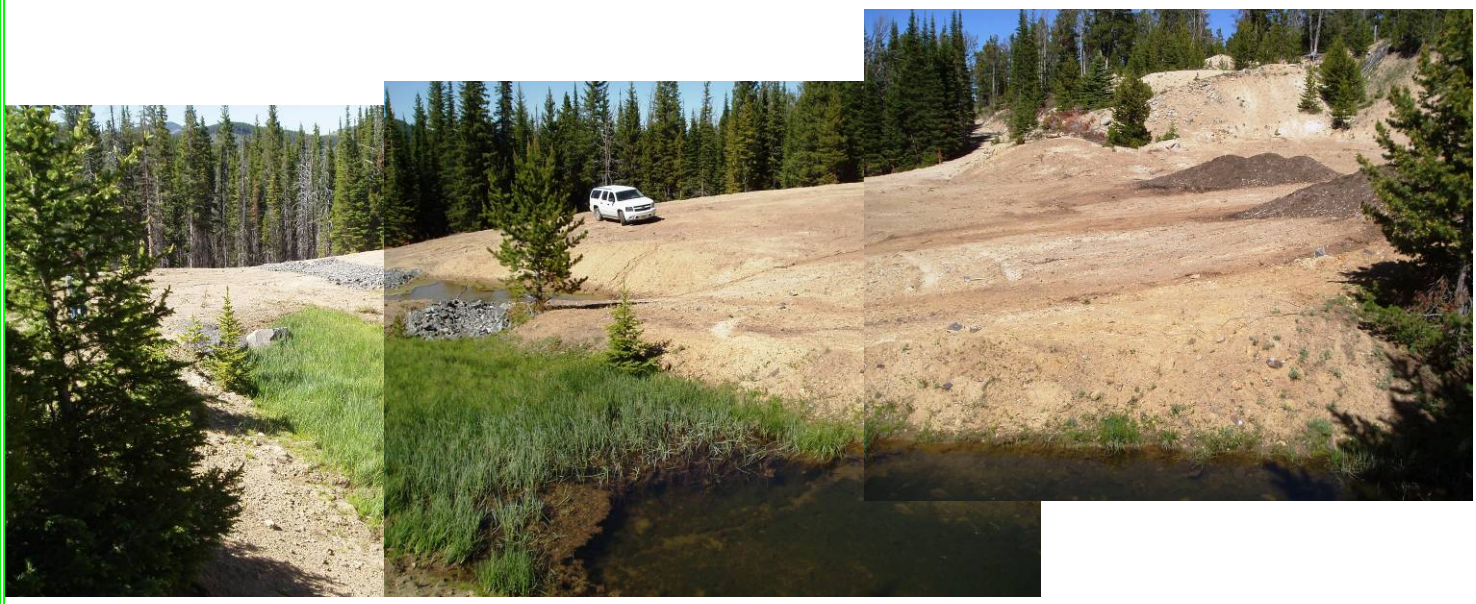


Big Chief Mine, photos above & below August 2005 (before reclamation) showing piles of mine wastes

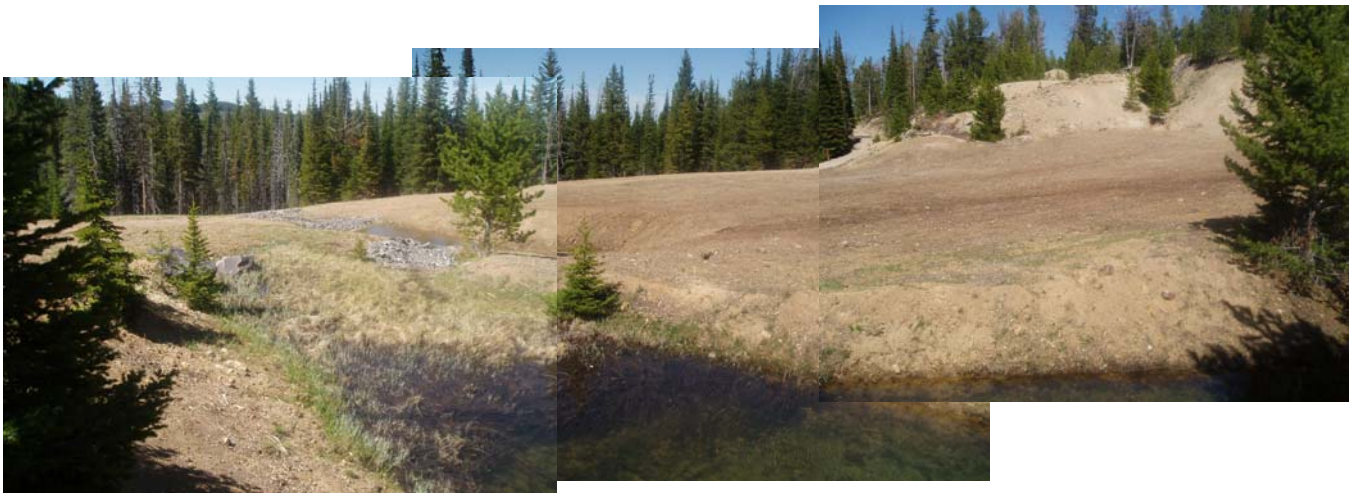
Big Chief Mine, photos above & below June 2008 (reclamation complete) showing mine wastes piles removed, areas regraded, drainage channel reestablished







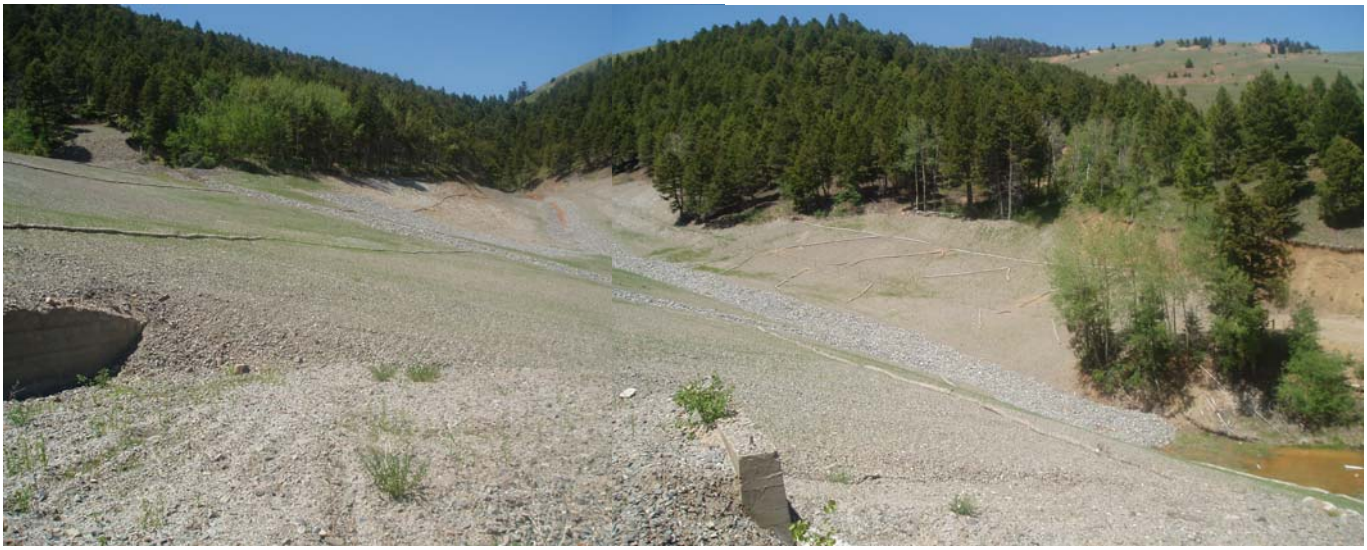
Argentine Mine, photos above June 2007 (during reclamation) & below June 2008 (reclamation complete) showing mine waste piles removed, areas regraded, drainage channel reestablished.

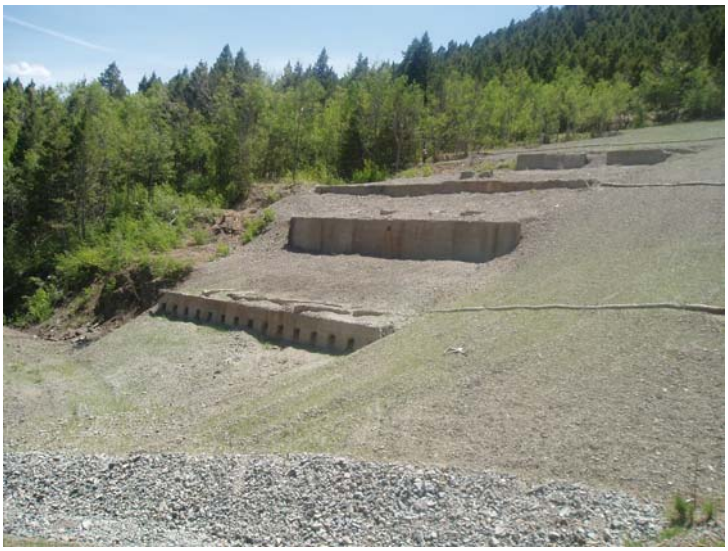


Washington Mine & Mill, photos above August 2005 (before reclamation) showing piles of mine & mill wastes and hazardous equipment and facilities

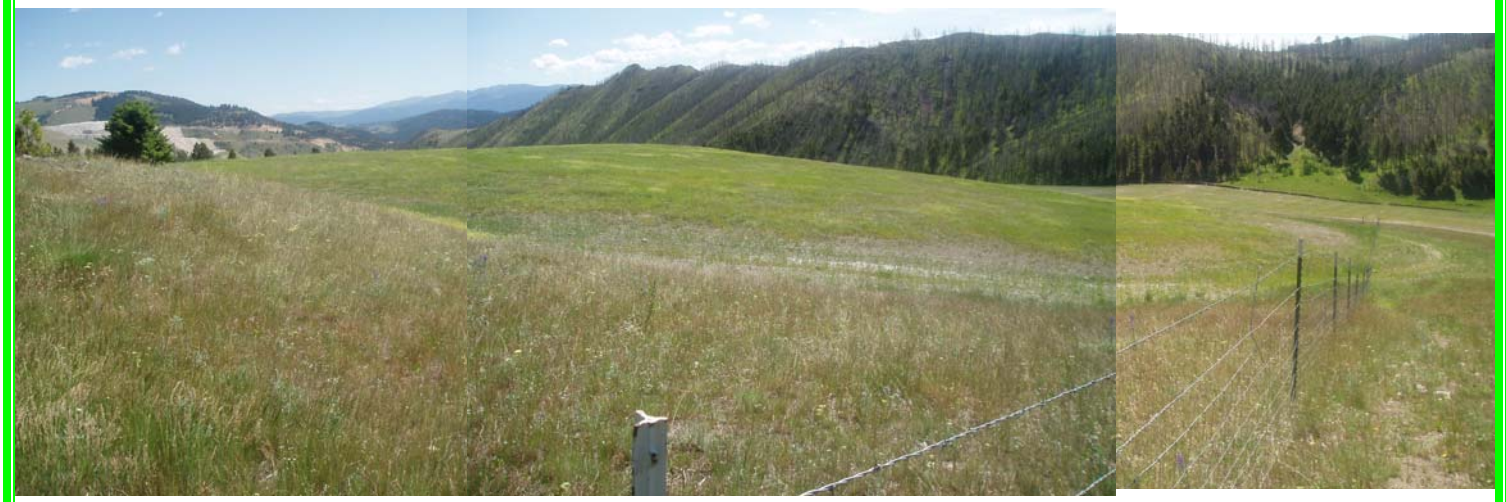
Washington Mine & Mill, photo left June 2008 (reclamation complete) piles of mine & mill wastes and hazardous equipment and facilities removed, high altitude revegetation

Washington Mine & Mill, photos above June 2007 (during reclamation) & below June 2008 (reclamation complete) showing mill foundation, mine & mill wastes and hazardous equipment and facilities removed, stream channel reconstructed, high altitude revegetation

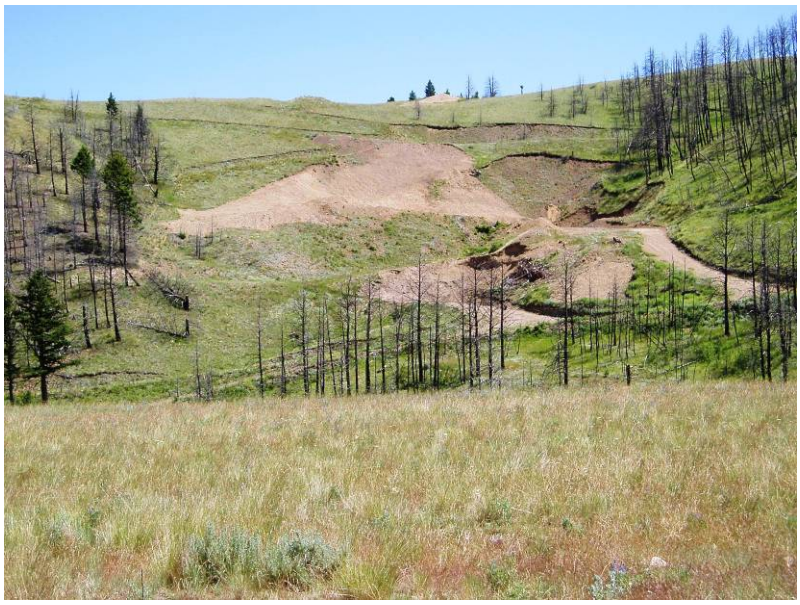




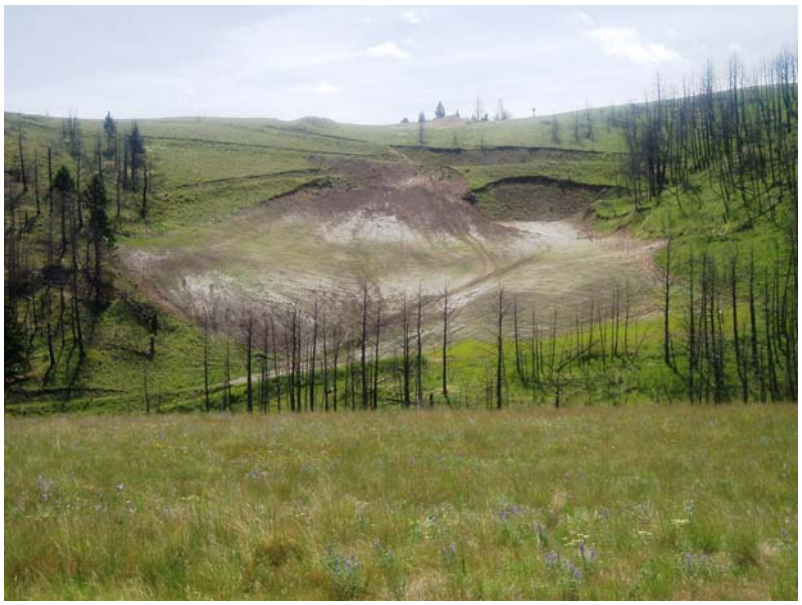
Washington Repository, photos above June 2007 (nearing completion) showing final surface cap of constructed repository for permanent disposal of mine & mill wastes from Washington Mine & Mill project and other nearby projects



Washington Repository, photos above June 2008 (reclamation complete) showing final revegetated surface cap



Belle Lode Mine, photo June 2007 (during reclamation) showing removal of mine wastes



Belle Lode Mine, photo June 2008 (reclamation complete) showing mine wastes removed, area revegetated

Belle Lode Mine, photo June 2008 taken from above site (reclamation complete) showing mine wastes removed, area revegetated (active hardrock mining operation in background)

Appendix A:

Montana's Comments and Casper Field Office Responses

Montana was given opportunity to comment and revise this report if necessary, but chose to not do so and accepts the report as written.