BLM

Abandoned Mine Land Program Policy Handbook

United States Department of the Interior
Bureau of Land Management

BLM Handbook H-3720-1

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1. OVERVIEW

This Handbook provides the U.S. Department of the Interior (DOI), Bureau of Land Management (BLM), Abandoned Mine Land (AML) program field staff with detailed policy direction for addressing abandoned mine sites. This chapter:

- Describes the purpose of this Handbook – Section 1.1;
- Explains the context of the AML program within the BLM – Section 1.2;
- Provides the AML program strategic objectives – Section 1.3;
- Summarizes the AML National Strategic Plan – Section 1.4;
- Introduces the concept of partnership and leveraging to support the BLM's mission – Section 1.5;
- Describes the AML program organization – Section 1.6;
- Summarizes the AML Coordinator Role – Section 1.7; and
- Lists and describes the statutes and regulations that authorize the BLM to address issues at AML sites – Section 1.8.

General BLM References

- *Abandoned Mine Land Program Policy* Manual Section (MS-3720) http://www.blm.gov/nhp/efoia/wo/manual/manuals.html
- AML National Strategic Plan http://www.blm.gov/nhp/efoia/wo/fy06/im2006-145attach1.pdf
- AML Website www.blm.gov/aml
- BLM Manual Sections http://www.blm.gov/nhp/efoia/wo/manual/manuals.html
- *NEPA Handbook* (BLM H-1790-1, 1988) http://www.blm.gov/nhp/efoia/wo/handbook/h1790-1.pdf
- *Response Actions Handbook (NCP/CERCLA)* (BLM H-1703-1, 2001) http://web.blm.gov/internal/wo-500/directives/dir-hdbk/h-1703-1.pdf

(See *General BLM References* text box for links to the main references cited throughout this document.)

1.1. Purpose

This Handbook expands upon program policy established under the BLM Manual Section 3720, *Abandoned Mine Land Program Policy*,[1] and ties together guidance for AML activities that often fall within BLM's broader existing policy and guidance documents (e.g., the BLM's Manual Section 1703, *Hazard Management and Resource Restoration*, the BLM's *Response Actions Handbook National Contingency Plan (NCP)/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)* (H-1703-1) and *National Environmental Policy Act (NEPA) Handbook* (H-1790-1)). This Handbook is intended to guide field staff on common AML remediation scenarios and, where possible, to provide options, tools, resources, and examples that can be considered when addressing significantly more complex remediation activities. Clean-up techniques and reclamation methodologies are continually changing and frequently advancing; therefore, specific technical details are not provided in this Handbook. Rather, technical information is provided in the form of links to technical references and the BLM's other guidance and publications. Technical information can be found on the BLM's AML Web site and other professional technical forums.

[1] The *Abandoned Mine Land Program Policy* Manual Section (MS-3720) is available on the BLM's Internet site at http://www.blm.gov/nhp/efoia/wo/manual/manuals.html, on the BLM's Intranet at http://web.blm.gov/internal/wo-500/directives/dir-manu/manu-dir.html, and on the AML's Internet site at http://www.blm.gov/aml/ap_manual.htm.

1.2. Context

The AML program supports the BLM's core programs by mitigating physical safety risks at AML sites on or affecting lands administered by the BLM, and providing solutions to degraded water quality and other environmental impacts (see Chapter 9). It supports the mission of public lands[2] conservation and water quality reclamation through partnerships with government and non-governmental organizations (NGOs) (see Chapter 4).

The BLM has a long history of addressing environmental and physical safety issues at abandoned mines. The BLM initiated AML inventory activities during the 1980s and 1990s in an effort to quantify the problem and formulate a resource request. Funding for AML water quality projects began in fiscal year (FY) 1997 with two pilot States—Colorado and Montana. In FY 1998, Utah also became a pilot State, and in FY 1999 the program expanded into a Bureau-wide remediation program.

The AML program addresses mine sites that were abandoned prior to January 1, 1981, the effective date of the BLM's surface management regulations (43 CFR 3809) that implement the "unnecessary or undue degradation" provision of the Federal Land Policy and Management Act of 1976 (FLPMA), as amended (43 U.S.C. 1700, et seq.). With 11,000 known sites in the BLM's AML inventory database (as of September 2006), hundreds of thousands of sites not inventoried, and limited resources, the BLM must establish program priorities in the context of the broader BLM mission.

Many AML sites previously considered "remote" are now accessible to people due to population expansion and increased recreational use. According to the 2000 Census, the West—where most public land is located— is the fastest-growing region in the Nation with nine of the twelve fastest-growing States. Today, more than 63 million people live in the West, and growth is expected to continue. More than 22 million people live within 25 miles of public lands.

Increased population growth in the West is also reflected in higher demand for outdoor recreation on public lands (e.g., recreation areas, national byways, and campground facilities), which can be located in proximity to AML sites. As western population centers grow and recreation pressures increase on public lands, potential exposure to contamination and accidents at AML sites becomes more commonplace. For example:

- Off-Highway Vehicles (OHVs) are often used at AML sites amid risks of open shafts and potential exposure to contaminated soils, water, and air;
- Recreational fishing can be impacted by decreased fish populations and can place anglers in proximity to AML sites; and
- Recreational events, historic commemorations, and other organized events on public lands can expose visitors to AML risks.

[2] The term "public lands" means any land and interest in land owned by the United States Government within the several States and administered by the Secretary of the Interior through BLM, without regard to how the United States acquired ownership, except— (1) lands located on the Outer Continental Shelf; and (2) lands held for the benefit of Indians, Aleuts, and Eskimos. Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. 1702 (e)). The phrase "BLM-managed land" is used synonymously.

The BLM remediates AML sites as part of its broader mission to support related BLM programs, such as Soil, Water, and Air; Recreation; Land Use Planning; Fisheries; Hazard Management and Resource Restoration; Surface Management; Cultural Resources; Wildlife; and Range (see Section 4.1).

1.3. Objectives

The main AML program strategic objectives are as follows:

1. Protect and restore the Nation's watersheds impacted by abandoned mines through a risk-based, watershed approach that uses partnerships to effectively leverage funding and facilitate projects.
2. Protect public safety and reduce liabilities by eliminating or reducing risks posed by abandoned mines.
3. Reduce environmental degradation caused by abandoned mines to ensure compliance with all applicable soil, water, and air quality standards, and applicable Federal, State, Tribal, and local laws.
4. Identify and prioritize for reclamation abandoned mines that most affect at-risk resources and functioning ecosystems.
5. Reduce Environmental and Disposal Liability (EDL)[3] of the DOI and the BLM by reducing the inventory of unreclaimed abandoned mines.
6. Apply the "polluter pays" principle to achieve cost avoidance/cost recovery for funding AML projects wherever possible.
7. Reclaim abandoned mine lands to productive uses including, but not limited to, recreation, fish and wildlife habitat, and preservation of historical/cultural resources.
8. Integrate abandoned mine land support in land use planning efforts.
9. Assure that actions are effective and that lessons learned through post-project monitoring and study benefit risk- and pollution-reducing efforts.
10. Educate employees and the public about the potential dangers posed by abandoned mines and the actions the BLM takes to address those dangers.
11. Develop partnerships, where possible, with States, local governments, Tribes, and voluntary environmental and citizen groups to pool resources and expertise to address abandoned mines.

1.4. Strategy

The AML National Strategic Plan:

- Establishes the context whereby the BLM mitigates and remediates hardrock AML sites on or affecting public lands;
- Correlates field activities with program goals, objectives, and priorities;
- Provides field managers and staff with a framework for setting State or local priorities; and
- Provides senior management and budget personnel with explanations of program values.

[3] An EDL is defined as an anticipated future outflow or other sacrifice of resources where, based on the results of due care, further study or cleanup is warranted due to past or current operations that have environmental closure requirements or a release of hazardous substances on lands or facilities of the DOI.

The BLM's personnel involved with AML program activities must be aware of the AML National Strategic Plan and work in accordance with it. The following paragraphs provide a high-level overview of the general program strategy, and Figure 1 (page 5) shows how the various aspects of the AML program (e.g., inventory, budget, and planning) are related.

To achieve AML program objectives and address environmental and physical safety risks associated with abandoned mine sites, the BLM identifies sites and prioritizes them based on risk (see Chapter 7). Once sites are identified they are included in a working inventory of known sites (i.e., AML inventory database – see Chapter 5). The BLM's field personnel conduct further inventory and field validation work of identified sites on a targeted basis in accordance with land use planning efforts.

The BLM selects sites in the inventory for remediation based on priority criteria (see Chapter 7) and partnership opportunities (see Chapter 4), while ensuring that each State Office with AML sites receives its fair share of available funds. The BLM remediates AML sites with available resources over specified time periods, and completes ongoing remediation and mitigation projects before engaging in new projects (except in the case of fatalities or other serious circumstances—see Section 9.2).[4]

Additionally, the BLM ensures that EDLs are reported, managed, and reduced. State Offices are required to report data regarding the BLM's EDLs in the BLM's site cleanup database. This information helps the DOI comply with the Office of Management and Budget (OMB) requirement that Federal agencies prepare annual audited financial statements in accordance with the Chief Financial Officers Act of 1990 and the Government Management Reform Act of 1994.

As the BLM remediates sites, it will report accomplishments, as required by the Government Performance and Results Act (GPRA). The BLM uses information provided in the AML inventory database and reported accomplishments to establish needed policy and program direction. Further, this information provides program management tools to State and Field Offices to enable them to meet policy and program directives.

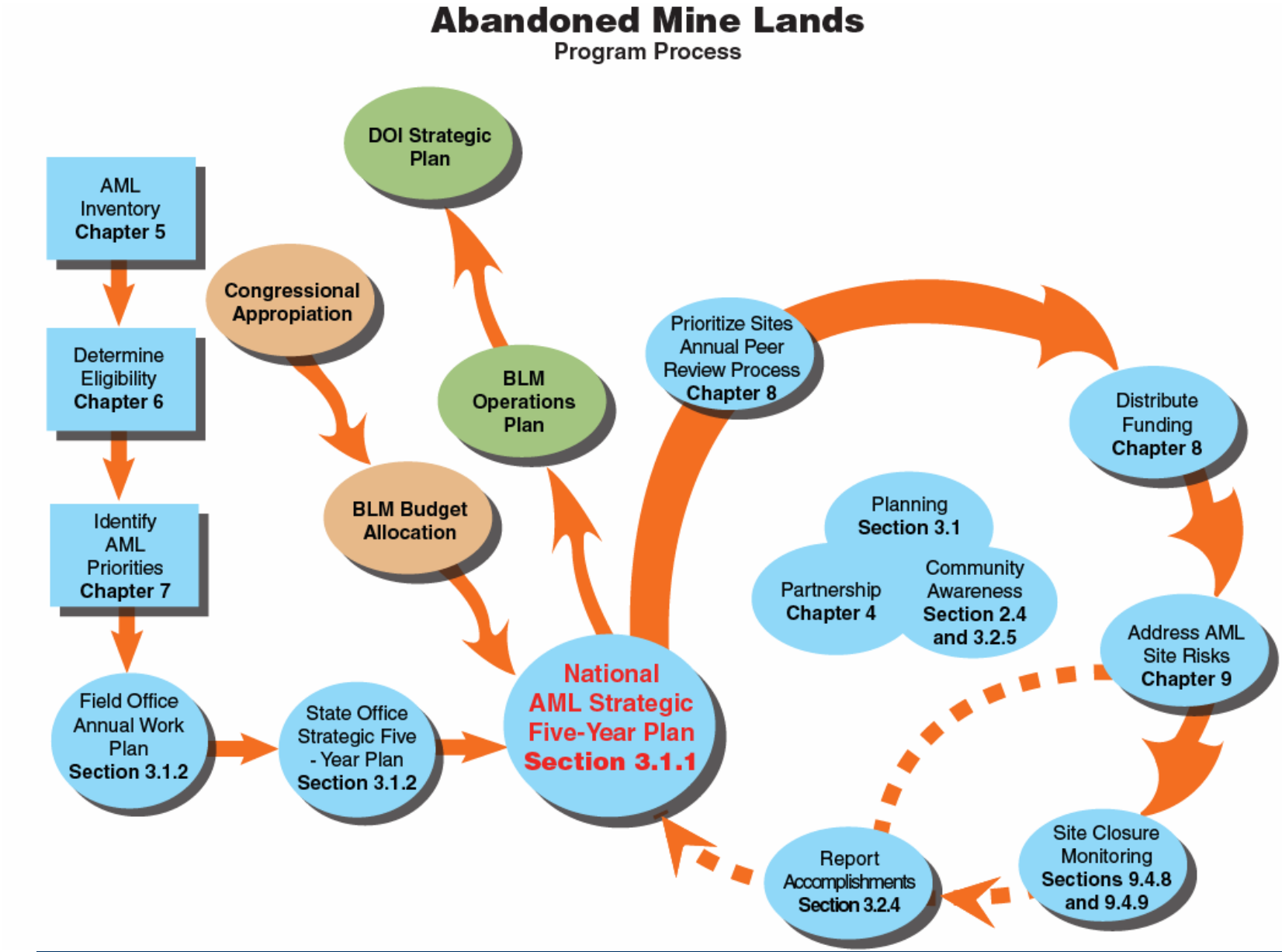
Additionally, the BLM conducts education and outreach activities to warn the public about the potential dangers associated with AML sites. The main ways in which the BLM informs the public are through its AML Web site www.blm.gov/aml and the *Stay Out – Stay Alive* program.

Budget and Performance Statutes

- Chief Financial Officers Act of 1990 http://govinfo.library.unt.edu/npr/library/misc/cfo.html
- Government Management Reform Act of 1994 http://govinfo.library.unt.edu/npr/library/misc/s2170.html
- GPRA http://www.whitehouse.gov/omb/mgmt-gpra/gplaw2m.html

[4] Generally, the BLM prefers to complete remediation activities at a site before beginning such activities at a new site in the same state; however, in certain circumstances (e.g., a fatality or heavy public use of a site with immediate potential health and safety risks), the BLM may decide to address concerns at a new site before completing activities at other sites in progress.

Figure 1: AML Program Process



1.5. Supporting the BLM's Mission Through Partnerships and Cooperative Funding

The BLM's State and Field Offices have developed extensive partnerships at all government levels: Federal, State, Tribal, regional, local, and international. Within the DOI, the BLM coordinates its program with the Office of Environmental Policy and Compliance (OEPC), Office of Surface Mining Reclamation and Enforcement (OSMRE),[5] U.S. Geological Survey (USGS), and National Park Service (NPS). Additionally, the BLM's personnel work with attorneys from the DOI's Office of the Solicitor to address potential legal issues arising from AML sites. See Section 4.1 for a more extensive list and description of the BLM's internal partners.

Other Federal partners include the Forest Service, Environmental Protection Agency (EPA), and U.S. Army Corps of Engineers (USACE). The BLM also partners with State and local entities, including State agencies delegated to enforce Federal laws and regulations (e.g., Surface Mining Control and Reclamation Act of 1977 – SMCRA) commonly in State departments of natural resources and environmental quality. See Section 4.2.1 and 4.2.2 for a more extensive list and description of other Federal and State/local partners, respectively.

The BLM also collaborates with NGOs, including mining companies and public interest, conservation, and volunteer groups. The BLM will continue to maintain existing working relationships and will pursue additional partnering opportunities. In addition, the BLM will continue to work with private landowners, particularly in split-estate (private surface/Federal mineral) situations and in areas of patented mining claims surrounded by lands administered by the BLM. See Section 4.3 for a more extensive list and description of NGO partners.

Nationally, the BLM and its partners have limited funds for reclaiming abandoned mine lands. Therefore, it is imperative to use cooperative funding, wherever possible, as envisioned by the watershed approach. Cooperative funding opportunities exist with partnering agencies and landowners. Additionally, some mining companies have been willing to enter into voluntary agreements to help fund AML remediation projects. Field personnel should pursue every opportunity to cooperatively fund projects with the BLM's partners. See Chapter 4 for more information on the BLM's partners.

1.6. Program Organization

The AML program assists the DOI, the BLM, and partners in fulfilling the broad mission of improving water quality and enhancing public safety. The AML program supports the BLM's other core programs to mitigate public health and safety risks, and remediate contamination from abandoned mines on or affecting public lands.

The AML program is administered Bureau-wide pursuant to Manual Section 3720, *Abandoned Mine Land Program Policy*, and the AML National Strategic Plan. The programmatic structure of the AML program is as follows:

- **Washington Office.** The AML program is part of the Minerals, Realty and Resource Protection directorate (WO-300) and the Division of Engineering and Environmental Services (WO-360).

[5] The Office of Surface Mining Reclamation and Enforcement is also known simply as the Office of Surface Mining (OSM).

The Division of Land and Resources Information Systems (WO-330) hosts the AML inventory and program management database.

- **State and District/Field Offices.** AML program leads in the State and District/Field Offices are split between full-time and collateral duty personnel (often with Hazard Management or Mining Law Administration responsibilities).
- **National Science and Technology Center (NSTC).** NSTC is a service organization of the BLM that provides the following type of support to State Offices and Field Offices upon request:
  - Scientific, engineering, technical, and CERCLA expertise and support;
  - National environmental service contractors;[6]
  - Assistance with searches for potentially responsible parties (PRPs) under CERCLA; and
  - Training support for health and safety and the National Training Center (NTC).
- **National Training Center.** NTC holds an AML site characterization course and integrates AML issues in a host of hazardous material and related courses.

1.7. AML Coordinator Roles

AML Coordinators in State, District, and Field Offices are responsible for the following activities:

- Working with the Washington Office to identify AML project priorities and funding needs, including contributing AML site and project priorities to the AML State Office Work Plan.
- Developing and sustaining partnerships with government agencies and NGOs, and coordinating program and project planning with partners (e.g., regional, watershed, and mixed-ownership situations).
- Proposing funding and projects, and managing AML project work, including site characterization, construction, and monitoring using CERCLA or NEPA processes, as appropriate.
- Coordinating the use of interim safety measures, such as posting signs and fencing.
- Reviewing design proposals and selecting contractors to perform actual reclamation work.
- Assuring that proposed and completed work is documented through appropriate reports and the BLM's applicable databases.
- Having situational awareness of AML-related issues and events, and communicating the information to appropriate officials.
- Contributing to the development of Preliminary Target Allocations and Annual Work Plans that outline specific planning targets and priorities.
- Completing required training for conducting AML investigations and cleanups.
- Conducting outreach and public education about AML projects and the potential risks of abandoned mines, including development of Web-based content.
- Initiating or conducting PRP searches and cost recovery.
- Ensuring that AML issues are covered in Land Use Plans.

[6] To access or obtain information regarding contractors, contact the NSTC Division of Environmental Compliance.

- Determining site eligibility for funding under the AML program and referring ineligible sites to other programs for appropriate action (e.g., Surface Management, Use and Occupancy, Hazard Management, or Law Enforcement).

The AML Coordinator has additional responsibilities when responding to CERCLA hazardous substance releases or the threat of releases on AML sites, as described in the BLM's *Response Actions Handbook NCP/CERCLA* (H-1703-1):

- Collect pertinent facts about releases or the threat of releases;
- Plan and manage site-specific response actions;
- Track and document costs;
- Coordinate with local, State, and Federal response agencies;
- Notify the National Response Center (NRC—see text box);
- Ensure worker safety;
- Develop and maintain administrative records;
- Perform community involvement activities;
- Ensure compliance with CERCLA, NCP, and the BLM's policy;
- Oversee PRP response activities; and
- Oversee natural resource restoration activities.

National Response Center (NRC) Notification

- Notify the NRC when a release of a hazardous substance occurs in an amount equal to or exceeding the reportable quantity in any 24-hour period.
- Table 302.4 in 40 CFR 302.4 provides a list of reportable quantities of hazardous substances.
- Notify the NRC by calling 1-800-424-8802.
- There also may be State and local hazardous substance release reporting requirements.

1.8. Authorities and Regulations

Laws and Regulations

- FLPMA (43 U.S.C. 1701) http://www.access.gpo.gov/uscode/title43/chapter35_subchapteri_.html
- NCP (40 CFR 300) http://www.access.gpo.gov/nara/cfr/waisidx_05/40cfr300_05.html
- CERCLA (42 U.S.C. 9601) http://www.access.gpo.gov/uscode/title42/chapter103_subchapteri_.html
- Wyden Amendment (PL 104-208) http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=104_cong_public_laws&docid=f:publ208.104
- NEPA (42 U.S.C. 4321) http://www.access.gpo.gov/uscode/title42/chapter55_.html
- SMCRA (30 U.S.C. 1201) http://www.access.gpo.gov/uscode/title30/chapter25_subchapteri_.html
- Surface Resource Act (PL-167) http://www.access.gpo.gov/uscode/title30/chapter15_subchapterii_.html
- RCRA (42 U.S.C. 6921-6924) http://www.access.gpo.gov/uscode/title42/chapter82_subchapteriii_.html
- Bevill Amendment 40 CFR 261.4(b)(7) http://www.access.gpo.gov/nara/cfr/waisidx_05/40cfr261_05.html
- CWA (33 U.S.C. 1251) http://www.access.gpo.gov/uscode/title33/chapter26_subchapteri_.html
- ESA (16 U.S.C. 1531) http://www.access.gpo.gov/uscode/title16/chapter35_.html
- NHPA (16 U.S.C.470) http://www.access.gpo.gov/uscode/title16/chapter1a_subchapterii_.html
- Mining Law of 1872 (30 U.S.C. 21) http://www.access.gpo.gov/uscode/title30/chapter2_.html

This subsection provides a description of the statutes and regulations that authorize the BLM to clean up environmental degradation and mitigate physical safety risks associated with abandoned mines. The text box below provides Web links to the full text of these laws and regulations.

- **Federal Land Policy and Management Act of 1976 (FLPMA) (43 U.S.C. 1701, et seq.).** Section 302(b) authorizes the Secretary of the Interior, through the BLM, to take actions that prevent unnecessary or undue degradation of public lands.
- **National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300).** The NCP "provide[s] the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants, and contaminants" (40 CFR 300.1).
- **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. 9601).** CERCLA was enacted to address risks to public health and the environment resulting from actual or potential releases of hazardous substances and to recover costs spent for cleanups from responsible parties. Executive Orders (EO) 12580 (Superfund Implementation) and 13016 (Amendment to E.O. 12580) delegate CERCLA authority and responsibility to the DOI to respond to actual or potential releases of hazardous substances on or affecting public lands administered, by the BLM and initiate cost recovery from responsible parties. These actions should comply with the requirements of the NCP.
- **Watershed Restoration and Enhancement Agreements ("Wyden Amendment") (Public Law (PL)-104-208, Sec. 124, PL 10-5-277, Sec. 136 of the 1999 Interior Appropriations Act of 1998).** The Wyden Amendment authorizes the BLM to conduct watershed-based environmental reclamation, through partnerships with States, at abandoned mines, impacted by contamination originating from non-Federal lands, to improve the viability of and otherwise benefit the fish, wildlife, and other biotic resources on public land in the watershed.

In addition to the preceding primary authorities, the BLM also relies on the following secondary authorities applicable to the evaluation and cleanup of abandoned mine lands. These authorities present standards and requirements that must be observed in the course of AML cleanup and reclamation.

- **National Environmental Policy Act (NEPA) (42 U.S.C. 4321, et seq.).** In the absence of the application of CERCLA processes, AML projects require compliance with NEPA. NEPA establishes a process to review the environmental impacts of a proposed major Federal action that could significantly affect the quality of the environment, as well as the environmental impacts of possible alternatives to the proposed action. Proposed Federal activities that potentially could result in environmental impacts at abandoned mines include non-CERCLA environmental reclamation and physical safety risk mitigation efforts.
- **Surface Mining Control and Reclamation Act (SMCRA) (30 U.S.C. 1201, et seq.).** After meeting coal clean-up responsibilities, SMCRA allows States and Tribes with approved SMCRA AML programs to fund clean-up of non-coal sites. For abandoned mine purposes, the law also allows reclamation resources to be used for clean-up of non-coal mines that, if not addressed, would 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. This facilitates the

BLM's partnership opportunities with States, such as cooperative agreements and fund leveraging.

- **Surface Resources Act of 1955 (PL-167) (30 U.S.C. 611-614).** This statute authorizes the BLM to manage the vegetative and surface resources on mining claims located after 1955. The Act also provides for restriction on the use of unpatented mining claims.
- **Resource Conservation and Recovery Act of 1976 (RCRA) (42 U.S.C. 6921-6924).** RCRA is the primary Federal authority for managing hazardous wastes from cradle to grave. Subtitle C of RCRA regulates the generation, collection, transportation, treatment, storage, and disposal of hazardous wastes. In 1980, Congress amended RCRA to include the **Bevill Amendment (Section 3001(b) (3) (A) (ii) and 40 CFR 261.4(b)(7)),** which effectively exempted wastes from the extraction and beneficiation of ores and minerals from RCRA subtitle C, regardless of their chemical composition. A limited set of mining wastes *may* be eligible under RCRA—if the abandoned mine (or associated operations) held a subtitle C treatment, storage, or disposal facility permit or if the abandoned mine generated non-Bevill excluded waste. From a practical point of view, the Bevill Amendment exempts most tailings and waste rock from RCRA standards, thus many on-site repository solutions can be utilized for stabilization of mine wastes. (See Section 9.4.7.2 for more information on repositories).
- **Clean Water Act of 1972 (CWA) (33 U.S.C. 1251 et seq.).** The BLM can use the provisions of the CWA to promote cooperative clean-up efforts at abandoned mine sites impacting water quality.
- **Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531).** Where abandoned mines may impact endangered or threatened species (e.g., bats or fish), the BLM uses ESA authority to ensure environmental risks are addressed through ecologically protective reclamation efforts.
- **National Historic Preservation Act of 1966 (NHPA), as amended (16 U.S.C. 470).** Where abandoned mines may impact historic or cultural resources, the BLM uses NHPA authority to ensure protection of historic and archaeological properties. (See Section 9.3.3.1 for application).
- **Mining Law of 1872, as amended (30 U.S.C. 21, et seq.).** This statute allows the location, use, and patenting of mining claims on public lands.

Chapter Summary of Field Personnel Duties

BLM field personnel should do the following to support the AML program:

- Be aware of the AML National Strategic Plan and ensure activities are conducted in accordance with it.
- Update the AML inventory database with accomplishment, liability, and other information to assist the BLM in meeting its GPRA and OMB reporting requirements.
- Pursue every opportunity to leverage funds with the BLM's partners.

2. SAFETY FIRST

The BLM holds paramount the safety, health, and welfare of its employees, volunteers, contractors, and the visiting public. It strives to eliminate or minimize physical or environmental conditions that are causing, or have the potential to cause harm, to persons, property, or the environment. Accordingly, safety and health risk assessments and management procedures are an integral part of every operation. This chapter provides guidance on implementing this policy by providing the following information:

- General Responsibilities for all employees – Section 2.1;
- What to do upon discovering potential or known hazardous waste sites – Section 2.2;
- Additional information provided on the BLM's Intranet – Section 2.3; and
- AML's role in public safety – Section 2.4.

See *Health and Safety References*[7] text box for links to the health and safety references mentioned in this chapter.

Health and Safety References

- BLM National Safety Office Web site http://web.blm.gov/internal/wo-700/wo740/index.html
- BLM *Safety and Health for Field Operations Manual Handbook* (H-1112-2) http://www.blm.gov/nhp/efoia/wo/handbook/h1112-2.pdf
- BLM *Safety* Manual Section (MS-1112-1) http://www.blm.gov/nhp/efoia/wo/manual/1112.pdf
- DOI Learn Web site http://doilearn.doi.gov
- Federal Agency Safety Programs and Responsibilities (PL 91-596) (Section 19) http://www.usbr.gov/ssle/safety/pub_law.htm
- MSHA Web site http://www.msha.gov/
- Occupational Safety And Health Administration, Department Of Labor—Occupational Safety And Health Standards http://www.access.gpo.gov/nara/cfr/waisidx_06/29cfr1910_06.html
- Occupational Safety and Health Programs for Federal Employees (Executive Order 12196) https://www.denix.osd.mil/denix/Public/Legislation/EO/note27.html
- Occupational Safety and Health Standards, Hazardous waste operations and emergency response (HAZWOPER—29 CFR 1910.120) http://a257.g.akamaitech.net/7/257/2422/01jul20061500/edocket.access.gpo.gov/cfr_2006/julqtr/29cfr1910.120.htm
- OSHA Web site http://www.osha.gov/
- Worker Protection (40 CFR 311.1) http://www.access.gpo.gov/nara/cfr/waisidx_05/40cfr311_05.html

[7] The BLM currently is developing an *Underground Mine Entry Policy Handbook*. When it is finalized, it will be available at http://www.blm.gov/nhp/efoia/wo/handbook/handbook.html.

2.1. General Responsibilities

The the BLM's *Safety and Health for Field Operations Manual Handbook* (H-1112-2) provides guidance on safety requirements. Specifically, Chapter 2 delineates training that is required under the Occupational Safety and Health Administration (OSHA) standards, the DOI's requirements, and the BLM's policies.

While managers, supervisors, and safety and health specialists have more specific responsibilities, as described in the BLM's Manual Section 1112-1, *Safety*, all employees are responsible for the following:

- Use the BLM's risk management process to develop risk assessments which identify and mitigate hazards, and determine the level of risk and protection for workers.
- Comply with applicable work rules, practices, and procedures.
- Be familiar with the BLM's Manual Section 1112-1, *Safety*, and any other special safety and health requirements that are applicable to their own jobs and work environments.
- Use safety devices, personal protective equipment (PPE—see text box below), clothing, and other means provided or directed by recognized authority at all times when necessary for their protection.
- Report unsafe and unhealthful working conditions to management.
- Participate, on official time, in program activities afforded by the Occupational Safety and Health Act of 1970 (PL 91-596 Section 19), EO 12196 (Occupational Safety and Health Programs for Federal Employees), and 29 CFR 1960 (Occupational Safety and Health Programs for Federal Employees), without being subjected to restraint, interference, coercion, discrimination, or reprisal.
- Report every job-related accident/incident to their supervisor that results in, or has the potential to harm people, property, or the environment.
- Report personal conditions that could adversely affect their ability to perform in a safe and healthful manner on the job.

Personal Protection Equipment (PPE)

- Level A protection is required when the greatest potential for exposure to hazards exists, and when the greatest level of skin, respiratory, and eye protection is required.
- Level B protection is required under circumstances requiring the highest level of respiratory protection, with lesser level of skin protection.
- Level C protection is required when the concentration and type of airborne substances is known, and the criteria for using air-purifying respirators are met.
- Level D protection is a work uniform affording minimal protection and is used for nuisance contamination only. Level D is used when the atmosphere contains no known hazards and work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.

Examples of typical PPE for each level can be found on EPA's Web site http://www.epa.gov/superfund/programs/er/hazsubs/equip.htm.

2.2. Potential or Known Hazardous Waste Sites

Field personnel working in areas where historic tailings or mine dumps are located are required to develop site-specific health and safety plans (HASPs)[8] prior to continuing work in the area. If there is a question as to whether a site contains hazardous substances (e.g., leaking barrels), field staff should move to a safe location and contact the appropriate personnel for further guidance, as outlined in the Field Office/Resource Area Hazardous Materials Incident Contingency Plan.

The most important safety regulations for the AML program are 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER) and 40 CFR 311.1, Worker Protection, Scope and Application (of the National Contingency Plan). The primary requirements of these regulations are initial 40-hours training, annual refresher training, requirements for hazardous air monitoring, and the requirement for site-specific HASPs. Additionally, the BLM limits personnel to Level D site entry unless special exceptions are authorized by the State Director on a State or Center roster. All the BLM's personnel are subject to these requirements for any site that has hazardous substances or chemicals present, including, but not limited to, metals in mine waste and tailings.

2.3. Intranet-based Information

For additional guidance and access to relevant materials, refer to the BLM's National Safety Office Web site http://web.blm.gov/internal/wo-700/wo740/index.html. The site provides safety policy and guidance, safety tools, safety plans and programs, safety training, and related resources. The following topics may be of interest to AML coordinators:

- Accident and injury prevention
- Risk management
- Occupational health and industrial hygiene
- Motor vehicle safety
- Safety training
- Radiation safety
- Visitor safety
- Contractor safety and health

While the HAZWOPER refresher training is available online at the DOI's Learn Web site (http://doilearn.doi.gov), this should be used only in limited circumstances (e.g., by staff in remote locations that are unable to attend a local class).

2.4. Public Safety

Stay Out – Stay Alive is a national public awareness campaign aimed at warning children and adults about the risks associated with exploring and playing on active and abandoned mine sites. Every year, dozens of people are injured or killed in recreational accidents on mine property. The U.S. Department of Labor's (DOL) Mine Safety and Health Administration (MSHA) launched *Stay Out – Stay Alive* in 1999 to educate the public about the existing risks. Throughout the year, *Stay Out –*

[8] The HASP can be developed on a resource area-wide basis for general situations (e.g., shafts, adits, or dumps). In situations where a specific project is planned, more site-specific planning may be required.

Stay Alive partners across the country, including AML, schools, communities, and youth organizations, educate children about the importance of steering clear of active and abandoned mines. The campaign is a partnership of more than 70 Federal and State agencies, private organizations, businesses, and individuals. AML employees are encouraged to use available information to educate the public about abandoned mine risks. For more information and educational material, visit MSHA's *Stay Out – Stay Alive* Web site at http://www.msha.gov/sosa/SOSAhome.asp.

Chapter Summary

Field personnel conduct the following activities to ensure the health and safety of anyone on the BLM's land:

- Review and abide by the BLM's Health and Safety Manual Sections and Handbook.
- Be aware of the policy/procedure for addressing potential hazardous wastes.
- Develop a Health and Safety Plan for any on-site activities.
- Do not enter underground abandoned mines unless absolutely necessary; the need should be documented in writing and signed by the Field (or other relevant) Office's designated approval official.
- Abide by the most recent underground mine entry guidance and protocols.
- Educate the public about abandoned mine hazards.

3. PLANNING, BUDGET, AND PERFORMANCE

To ensure the effective implementation of its strategic objectives (see Section 1.3), the AML program:

- Conducts planning throughout the organization – Section 3.1;
- Implements its strategic plan through its program lifecycle – Section 3.2; and
- Evaluates the program and implementation of its plans – Section 3.3.

This chapter provides an overview of AML program planning, implementation, and evaluation, with additional details provided throughout the remainder of this document.

3.1. Strategic Planning

The BLM's AML program prepares and adheres to a program-wide five-year strategic plan (the AML National Strategic Plan) that accomplishes the following:

- Supports the DOI's strategic plan.
- Conducts implementation activities pursuant to the BLM's Annual Work Plans, State Office Strategic Plans, and Field Office Annual Plans.
- Links national goals with multi-year State Office Strategic Plans.
- Provides Field managers and staff with a policy framework for setting State or local priorities.
- Provides senior management and budget personnel with explanations of program values, processes, issues, and factors that impact the program's future.

Strategic Plan References

- Links to current and past strategic plans of the DOI are available on the DOI's Web site http://www.doi.gov/initiatives/management.html.
- The current AML National Strategic Plan is available on the AML Web site

The following subsections provide additional information on the AML National Strategic Plan, State Office Strategic Plans, and Field Office Work Plans, as well as the interactions among the planning levels.

3.1.1. AML National Strategic Plan

The AML National Strategic Plan ensures that the BLM meets its planning targets under the DOI's and the BLM's strategic and annual work plans. Developing the AML National Strategic Plan is a program-wide effort, and requires input from Washington, State, and Field Offices. The document provides a priorities framework, under which all offices focus efforts to meet AML goals and objectives. The plan also facilitates coordination when projects are proposed for funding under multiple subactivities.

The AML National Strategic Plan includes information related to the following types of projects:

- AML water quality projects funded under the Soil, Water and Air subactivity (1010);
- Physical safety risk projects funded under the Hazard Management and Resource Restoration subactivity (1640), including the Special Clean-up Fund (SCF);
- Projects funded under the DOI's Central Hazardous Materials Fund (CHF—subactivity 2641 and 2642);

- Projects funded in Nevada under the Southern Nevada Public Land Management Act; and
- Examples of projects funded cooperatively through SMCRA-funded partnerships.

For information related to funding codes see Table 3.

The BLM uses the AML National Strategic Plan in the following ways:

- Shares it with other Federal and State partners for program coordination.
- Reviews and updates it, as appropriate, to ensure policies and procedures are followed in a consistent and defensible manner, and to reflect appropriate changes to program planning.
- Support accomplishments and report performance measures under GPRA.

For further information on the AML National Strategic Plan, please refer to the AML Web site at www.blm.gov/aml.

3.1.2. State Office Strategic Plans

Each of BLM's State Offices, in conjunction with Field/District Offices (including contributions from AML Coordinators), develop and implement a five-year strategic plan focused on specific watershed projects and physical safety sites. These projects are prioritized according to the national priority criteria (see Chapter 7). State Offices update these work plans and submit them to the Washington Office. It is important that AML Coordinators provide their input to the State Office to ensure AML projects are appropriately funded. State Office project plans are due to the Washington Office before the annual AML project peer review meeting. This allows time for the Washington, State, and Field Offices to develop a list of funding priorities for the following fiscal year.

The State Office Strategic Plans cover multi-year periods and provide critical information for interagency program coordination, AML National Strategic Plan support, and budget projections. State Offices should obtain input from partners in developing and revising their plans. Field and District Offices support the development of the State Office Strategic Plans by providing detailed information on AML projects and goals. Close coordination between State and Field Offices is essential to developing an accurate strategic plan.

At a minimum, State Office Strategic Plans include the following:

- **Summary:** Provide a succinct paragraph highlighting significant mining areas and commodities. Complete the statistical summary of known sites, priority watersheds, and project status, and include an estimate of the number of hardrock mine sites on lands administered by the BLM.

- **AML Watershed Projects:** Highlight State AML watershed projects and explain how watersheds were selected. Most of the data can be derived from the AML inventory database and the Budget Planning System (BPS). State Office Strategic Plans should also include the following:
  - Prioritization of State AML watershed projects, along with funding estimates, number of sites per project, estimated start and end work dates, and key partners; and
  - Number of State AML watershed projects underway and completed to date.

- **AML Physical Safety Sites:** Highlight AML physical safety activities and explain how high-use areas were selected. Most of the data can be derived from the inventory database and the facility asset database. State Office Strategic Plans should also include the following:
  - Number of high-risk mine openings on State land administered by the BLM and land use for these areas; and
  - Prioritization of State AML physical safety projects along with funding estimates, number of sites per project, estimated start and end work dates, and key partners.

- **Workload Targets:** Provide best estimates on program element planning targets based on underlying site, feature, and project information in the inventory database.

- **Maps:** Provide separate maps depicting AML watershed and physical safety risk projects and activities. The maps should show the locations of priority watersheds and high-use areas. Use the BLM's current Geographic Information System (GIS) software to develop and annotate maps.

- **Contact Information:** Provide the State Office contact information.

3.2. Program Life Cycle

The AML Program life cycle consists of the following general activities, which are described in the indicated subsections:

- Identifying sites and establishing a site inventory – Section 3.2.1;
- Prioritizing sites based on risk – Section 3.2.2;
- Remediating sites with available resources – Section 3.2.3;
- Reporting program accomplishments – Section 3.2.4; and
- Conducting education and outreach activities – Section 3.2.5.

3.2.1. Identify Sites and Establish Site Inventory

Due to the large number of sites and the limited resources to conduct inventory work, the BLM does not have a complete inventory of AML sites on public lands. During the early 1990s, the BLM established an AML Task Force, which developed a comprehensive inventory strategy and issued data collection requirements. Field validations were funded through existing resources. The extent and quality of inventory data collected or validated varies among the States.

In 1996, the Task Force reported its progress to the Director and Assistant Secretary. Based on the number of sites inventoried, the BLM estimated it had a total of approximately 70,000 sites encompassing more than 300,000 features on lands administered by the BLM. The Task Force made several recommendations, including shifting focus to address known sites and conducting more targeted future inventory work in priority areas. The recommendations were approved by the BLM Director on January 12, 1997. By 2000, the inventory data was consolidated into a Bureau-wide AML inventory database (see Chapter 5).

When this Handbook was written, the inventory database contained approximately 11,000 sites and 40,000 features. The BLM's field personnel update these records and validate site features on an

ongoing basis, and when notified of the possible existence of an AML site, determine whether or not the site is on public lands (see Chapter 6). If the site is on or affecting lands administered by the BLM, it is added to the inventory database.

The BLM undertakes targeted inventory efforts in conjunction with land use planning activities. For example, inventory work can be authorized in areas with known historic mining activity where land use plans envision new OHV trails, recreation areas, campsites, or the expansion of urban areas. Further, targeted updates of existing information should be conducted when land use plans indicate increased activity. AML program personnel should advise land use planners to use the AML inventory database to support their program activities. For additional details regarding the AML site inventory and database system, refer to Chapter 5.

3.2.2. Prioritize Sites Based on Risk

Physical Safety Priorities
Enhanced concerns about public safety dictate a unified approach in targeting which AML physical safety risk sites to clean up.[9] The BLM's goal is to work toward identifying and addressing AML sites that pose health and safety risks to humans and animals. Therefore, it is essential to establish priorities (which is done using the BLM's national priority ranking criteria—see Section 7.2), especially for the short-term years. Accordingly, State and Field Offices will focus their physical safety risk AML clean-up projects at AML sites:

- That are either in, or eligible for listing in, the BLM's AML inventory database; and
- Where a death or injury is known to have occurred at the site; or
- That are situated on, or in immediate proximity to populated places, and designated recreation and high-use areas.

After this group of sites is addressed, additional priorities will be set for the remaining cleanups. A State, District, or Field Office may address other AML sites if it addresses the above short-term priorities and if adequate resources are available. An Office should begin with those sites where formal risk assessment, using the above AML priority criteria, indicates a risk level of high or extremely high.

To establish priorities and identify where additional inventory work may be required, AML program coordinators will need to be familiar with their inventory data and relate it spatially to recreation areas, campgrounds, trails, special use areas, and similar locations.

Watershed Priorities
Generally, the BLM's watershed priorities for purposes of the AML program reflect State government listings of impaired watersheds as reported to EPA under section 303(d) of the CWA (33 U.S.C. 1313(d), Identification of areas with insufficient controls; maximum daily load; certain effluent limitations revision). Web-based "303(d) listings" are available from EPA and State

[9] In addition to physical safety concerns from shaft, adits, etc., human health risks may be present at AML sites as a result of exposure to releases of hazardous substances. Remediation of these types of human health risks may be eligible for either AML or Hazard Management and Resource Restoration program funding or both, depending on site-specific conditions. For additional information regarding funding options, see Chapter 8.

government water agencies.[10] AML coordinators should know the impaired watershed listings for their areas. Since not all impaired watersheds involve abandoned mines, AML coordinators will need to work with their Federal and State partners on watershed characterization and prioritization.

The BLM's national priority ranking criteria for water quality and physical safety sites are outlined in more detail in Chapter 7.

3.2.3. Remediate Sites with Available Resources

The BLM strives to complete ongoing watershed and physical safety remediation and mitigation projects before undertaking new projects. Through cooperative conservation, clean-up activities reduce the burden on taxpayers and facilitate coordination with States, Tribes, and other Federal partners (see Chapter 4).

Physical Safety Risks
Consistent with available budget resources and other programmatic concerns, the BLM's field personnel should consider and implement appropriate mitigation or remedial actions. For sites where there is an immediate threat to health and safety (Section 9.2), these actions should either guard against (e.g., fencing) or warn of conditions (e.g., signs) that present significant physical safety risks on public lands that are easily accessible (e.g., sites located on main visitation pathways and adjacent areas when there is reason to believe visitation is occurring or has occurred in the past). Longer-term actions to eliminate the physical safety risk include closing shafts and adits (Section 9.3).

Water Quality Cleanups
The BLM actively participates in watershed reclamation efforts wherever public lands administered by the BLM are present, including those locations where surrounding lands are owned by other government entities or private parties (i.e., mixed-ownership situations). While the BLM's first priority is to spend its funds on site reclamation or clean-up projects on the public lands under the BLM's jurisdiction, there are legitimate reasons why the BLM may spend funds on coordination actions and on-the-ground projects involving nearby land not administered by the BLM. Generally, when undertaking mitigation or clean-up actions involving a mixture of sites situated on public land and land not administered by the BLM, the BLM should first complete work on those public land sites that are causing significant pollution and then proceed to work on mixed ownership sites.

Once the significant sites on public lands are completed, the BLM should take appropriate measures to determine whether or not any other sites should be addressed. An exception to this principle may be applied if there is a sound geological or engineering basis. For instance, sites on land *not* administered by the BLM at a higher elevation that are causing significant runoff onto public lands could be addressed first to protect the land that is administered by the BLM. Agreements (see Section 4.4) with private landowners may be necessary to ensure proper permission for access, construction, and possible use of borrowed materials on private lands. In many cases, cost-avoidance may also be achieved by cooperation with private parties.

[10] A list of impaired waters for each State is available on EPA's Web site (http://www.epa.gov/owow/tmdl/); however, at the time this Handbook was written, the most recent online data available was for 2004, and data for some States is available only for 1998.

3.2.4. Report Program Accomplishments

The BLM is responsible for reporting program accomplishments under GPRA, which requires Federal agencies to set priorities and goals, determine strategies for reaching those goals, measure their performance, and report on progress each year. The BLM's annual performance reporting requirements under GPRA are handled as part of the DOI's Annual Report on Performance and Accountability. To show trends, this report outlines both long-term and annual goals and shows planned and actual performance levels for the current year, as well as actual performance in recent years.

Links to current and past performance and accountability reports of the DOI are available on the DOI's Web site http://www.doi.gov/initiatives/management.html.

Through a collaborative process, the Washington, State, and Field Offices set annual workload measure goals based on the program elements in Table 1.

Table 1: AML Program Elements and Workload Measures

AML Program Elements	Workload Measure
BH – Inventory AML Sites	# of sites
HP – Remediate AML Physical Safety Hazards	# of sites
JK – Implement AML Projects to Restore Water Quality[11]	# acres
NP – Evaluate PRPs for Cost Avoidance/Recovery	# actions completed
NQ – Process Hazmat Cost Avoidance/Recovery Cases	# cases referred
MG – Monitor and Maintain AML, Hazmat & Natural Resources Damage Assessment and Restoration (NRDAR) Sites (Sites where clean-up actions are completed)	# of sites
Central Hazardous Materials (CHF) Fund Program Elements	**Measure**
BF – Assess Hazmat Sites	# of site verifications/evaluations/assessments/ inspections completed
HO – Respond to Hazmat Risk Sites	# of actions completed

On an annual basis, State Offices determine the sites that will be addressed. The site-specific accomplishments are documented in the AML inventory database. State Offices enter aggregate statistics into the BLM's performance management system and report progress quarterly. AML program personnel need to ensure that the summary information entered into the performance tracking system is supported by project and site-specific records in the AML inventory database. For example, if a State Office reports in the performance tracking system that sites with an aggregate of 100 acres have been reclaimed, the AML inventory database must be able to report the underlying sites that were reclaimed (e.g., Site A – 25 acres, Site B – 40 acres, and Site C – 35 acres). This documentation ensures that performance measures and accomplishments are supported and easily accessible to users and managers. It is the responsibility of AML Coordinators to enter accurate data demonstrating accomplishments.

[11] Links directly to Bureau Performance Measures 1.1.13 in the BLM's Operating Plan.

Washington and State Office program lead personnel review and verify the data and supporting documentation entered into the system to ensure accuracy of accomplishments data. Accomplishment credits for field activities and site closures are not acknowledged until the information is accessible through the GPRA reporting system. During quarterly reviews, Washington, State, and Field Offices certify the accuracy of the performance and workload measurement data used to report on performance measures. The AML program database shows progress at long-term complex remediation projects at abandoned mine sites by reporting CERCLA and NEPA steps as they are accomplished.

3.2.5. Conduct Education and Outreach Activities

The BLM's AML program promotes community involvement and outreach efforts. The AML program facilitates public participation in the decision-making processes to promote public education and awareness of issues related to abandoned mines. Community involvement and outreach efforts include, but are not limited to, the following activities:

- Preparing and distributing education, outreach, and awareness materials;
- Developing program success stories and press releases;
- Working with local advisory boards (e.g., Recreation Resource Advisory Boards);
- Developing and maintaining a user-friendly and functional Web site; and
- Actively supporting public education programs, such as *Stay Out – Stay Alive*. (See AML program Web site www.blm.gov/aml.)

3.2.6. AML and Land Use Planning

AML State and Field Office personnel should be included in the development and review of land use plans, especially those that may result in new trails, campgrounds, recreation sites, land disposals, or exchanges. AML field staff should offer to assist in determining whether historic mining has transpired in the area, and if so, whether there are any known AML sites on or around the area to be developed. AML personnel should review the AML inventory database (see Chapter 5) and any other relevant databases or systems that identify potential mine sites on land administered by the BLM and other abandoned mine sites.

- If there are no potential mine sites on land administered by the BLM or other abandoned mine sites on or around the area to be developed, then the BLM's AML personnel take no additional action.
- If there appear to be no potential sites administered by the BLM's AML program on or around the area to be developed but historic mining is known to have occurred, then the inventory may be incomplete. AML personnel should conduct inventory work in the area to ensure that there are no abandoned mine sites on land administered by the BLM.
- If there are known sites administered by the BLM's AML program on or around the area to be developed, then AML personnel need to address any physical safety or water quality issues at these sites prior to or in conjunction with the development of the new trails, campgrounds, recreation sites, etc., including future monitoring and maintenance of measures taken.

3.3. Program Evaluation

During the AML program evaluation, the BLM reviews actual budget and performance data (i.e., accomplishments) and compares them to the goals provided in the annual strategic plans. The evaluation process helps explain deviations from planned performance and presents specific examples of how budget and performance integration has helped programs manage changing budgets. Additionally, modifications to goals can be made in subsequent State strategic plans.

Additionally, the BLM evaluates how AML expenses are linked to actual program performance results. The BLM reviews funding justifications for those activities that meet program accomplishment goals outlined in the AML National Strategic Plan, AML State Office Strategic Plans, and Field Office Work Plans.

The Washington Office gathers and verifies reporting data in coordination with the State Offices and retrieves all financial and workload data reported in the financial databases. Therefore, it is essential that State and Field Offices ensure the quality of their data.

Additionally, the BLM evaluates yearly expenses per program element along with how accurately past expenses reflected goals set forth in previous Annual Work Plans. The Washington Office reports any efficiency that helped maintain or increase past performance, and recommends changes that may increase or improve future performance. The AML program reports future funding issues, current and future workloads, and how the funding ties into the program's top priority of addressing risk at abandoned mine lands.

Chapter Summary

AML Field personnel should conduct the following activities to support the AML Program:

- Provide input to the State and Field Office Plans, which feed into the AML National Strategic Plan.
- Document site-specific accomplishments in the AML inventory database.
- Constructively view program evaluation as an iterative process in improving both performance and measurement of success.
- Incorporate AML issues in land use planning efforts.
- Participate in and actively support community outreach to promote safety and inform the public of AML activities.

4. PARTNERSHIPS

With limited funding and personnel, the BLM must form partnerships with others to achieve its strategic goals. Therefore, partnering with Federal, State, local, and Tribal governments is standard practice at the BLM. Additionally, to facilitate the efficient and effective use of resources, AML personnel must coordinate their activities with other programs and offices within the BLM. This coordination involves exchanging information with the BLM's other programs and offices outside of AML. Further, the BLM's personnel should work with attorneys from the DOI's Office of the Solicitor to address potential legal issues arising from AML sites. Information on establishing agreements with partners is provided in Section 4.4.

Partnerships help the BLM achieve a number of objectives in its planning process:

- Gain early and consistent involvement of stakeholders;
- Incorporate local knowledge of economic, social, and environmental conditions, as well as State and local land use requirements;
- Address intergovernmental issues;
- Avoid duplication of effort;
- Enhance local credibility of the planning review process;
- Encourage partnership and stakeholder support for planning decisions;
- Seek cost avoidance and cost recovery;
- Find practical cleanup solutions on mixed ownership AML sites; and
- Build relationships of trust and cooperation.

To help achieve the above objectives, this chapter provides information regarding the following:

- Coordination with the BLM's other programs – Section 4.1;
- Partnerships with the other DOI offices and other Federal agencies – Section 4.2.1;
- Partnerships with State and local programs and agencies – Section 4.2.2; and
- Partnerships with NGOs – Section 4.3.

4.1. Internal Coordination

To ensure the most effective and efficient implementation of the BLM's policy and procedures, AML staff often need (or are required by law) to coordinate with the BLM's other programs or the DOI's agencies (especially the Office of the Solicitor). This coordination helps support the BLM's management principles of multiple use and sustained yield—a combination of uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including recreation, range, timber, minerals, watershed, fish and wildlife, wilderness, and natural scenic, scientific, and cultural values. This subsection provides information on AML's coordination within the BLM.

A description of the type of coordination that is necessary among the BLM's various programs is described below and summarized in Table 2 (page 24):

Table 2: Summary of Internal Coordination

BLM Program	When Coordination is Needed	Related Sections	Organization (WO)
Hazard Management and Resource Restoration	Fund leveraging; Site evaluation; Avoidance of duplicative project funding; CERCLA policy development and implementation; Reporting Environmental and Disposal Liabilities (EDLs).	Sections 1.4 and 8.2	Minerals, Realty, & Resources Protection – Division of Engineering and Environmental Services (WO-360)
Surface Management	Mining claimant site restoration policy; LR 2000 enhancements; Surface management of mining claims under 43 CFR 3809; Notification to the current mining claimant to reclaim pre-claimant disturbance only if previous disturbances are re-disturbed	Chapter 6	Minerals, Realty, & Resources Protection – Division of Solid Minerals (WO-320)
Soil, Water, and Air	Water quality standards and total maximum daily loads (TMDLs)	Sections 3.1.2, 3.2.2, 3.2.3, and 7.1	Minerals, Realty, & Resources Protection – Division of Engineering and Environmental Services (WO-360)
Land Use Planning	Future AML inventory and field validation priorities; NEPA policy	Section 3.2.1	Renewable Resources and Planning – Division of Planning and Science Policy (WO-210)
Recreation and Visitor Services	Priorities for AML physical safety risk mitigation at designated recreation areas, National Landscape Conservation System (NLCS) areas, OHV and other trails, and special recreation use permit areas	Section 7.2	Renewable Resources and Planning – Division of Recreation and Visitor Services (WO-250)
National Landscape Conservation System	Landscape preservation in National Conservation Areas, Wilderness Areas, Wilderness Study Areas, Wild and Scenic Rivers, and National Historic and Scenic Trails	Section 9.3.3.3	Minerals, Realty, & Resources Protection – Land and Resources Information Systems (WO-330)
Cultural and Historical Preservation	NHPA requirements and policy	Sections 9.3.3.1 and 9.3.3.2	Renewable Resources and Planning – Division of Cultural, Paleontological Resources and Tribal Consultation (WO-240)
Fisheries	Fish habitat protection and reclamation	Section 9.3.3.3	Renewable Resources and Planning – Division of Fish, Wildlife, & Plant Conservation (WO-230)
Wildlife and Special Status Species	Habitat and migration corridor protection and reclamation; Bat conservation	Section 9.3.3.3	
Lands and Realty	Land tenure transactions (e.g., exchanges, conveyances, acquisitions, sales, Recreation and Public Purposes patents and leases, or rights of way) involving AML sites	Chapter 9	Minerals, Realty, & Resources Protection – Division of Lands Realty, and Cadastral Survey (WO-350)

- **Hazard Management and Resource Restoration**
  AML State Offices and field staff coordinate with the Hazard Management and Resource Restoration program to remediate as many sites as possible with the limited funds available (see Section 8.2) and to ensure remediation activities are CERCLA compliant.

- **Surface Management Program**
  The AML program does not fund or manage the cleanup of sites where the active claimant or entity that submitted the Notice or Plan of Operation is responsible for the damage caused to the site. AML State Offices and field staff refer these sites to the Surface Management program. Field staff need to check the Mining Claim Recordation System for any active claims or Notice or Plan of Operation on a proposed mine reclamation project. If the active claimant or entity that submitted the Notice or Plan of Operation is not responsible for the site disturbance and/or is not willing or able to clean up the site, then field staff notify the claimant or entity and proceed with the project after notifying and receiving approval from the Office of the Solicitor.

- **Soil, Water, and Air Program**
  AML State Offices and field staff coordinate with the Soil, Water, and Air program to ensure AML sites that may impact water quality are included in watershed clean-up programs. AML sites should be cleaned up to meet water quality standards and total maximum daily loads (TMDLs) for the watershed.

- **Land Use Planning**
  Under the principles of multiple use and sustained yield, the BLM provides opportunities for outdoor recreation, human occupancy, and use of campgrounds and recreational areas. AML State Offices and field staff work with land use planning personnel to ensure that any physical safety or environmental risks associated with AML sites are prioritized for remediation. Remediation activities must be evaluated in accordance with the NEPA process unless the CERCLA process is initiated at the AML site. Additionally, State and Field Office staff work with land use planning personnel to ensure the inclusion of appropriate language in planning documents for necessary monitoring and maintenance of remediated water-quality and physical-safety sites—especially protection of repositories and passive water-treatment systems, particularly important in the urban interface and popular recreation sites.

- **Division of Recreation and Visitor Services**
  AML State Offices and field staff should work with recreation and visitor services personnel to help develop priorities for AML physical safety risk mitigation at designated recreation areas, OHV and other trails, and special recreation use permit areas.

- **National Landscape Conservation System**
  AML State Offices and field staff work with the National Landscape Conservation System (NLCS) to ensure AML remediation activities do not interfere with landscape preservation in National Conservation Areas, Wilderness Areas, Wilderness Study Areas, Wild and Scenic Rivers, and National Historic and Scenic Trails.

- **Division of Cultural, Paleontological, Resources and Tribal Consultation**
  AML State Offices and field staff work with historic preservation personnel to ensure compliance with NHPA. Post-cleanup mine sites may also be ideal opportunities for interpretation of mining history.

- **Division of Fish, Wildlife, & Plant Conservation**
  AML State Offices and field staff work with wildlife conservation personnel to ensure compliance with ESA and the protection of bat habitats.

- **Division of Lands, Realty, and Cadastral Survey**
  AML State Offices and field staff work with lands and realty personnel in the event an AML site is involved in any land tenure transaction (e.g., exchanges, conveyances, acquisitions, sales, Recreation and Public Purposes patents and leases, and rights of way) or a withdrawal from mineral entry. Additionally, field staff should ensure that AML remediation activities do not destroy cadastral survey corners and are done with respect to private land boundaries.

4.2. Government Organizations

4.2.1. Federal

The BLM partners with other Federal agencies under the AML program. The following are some examples of these partnerships, which can be formalized using a variety of agreements: Interagency/Intra-agency Agreements (see Section 4.4.2), Memoranda of Understanding (MOUs – see Section 4.4.4), and Data Sharing Agreements (see Section 4.4.6). Formal agreements should be used if financial transactions occur. See the text box *Federal Agency Partners* for relevant Web site addresses.

Federal Agency Partners

DOE (UMTRA) http://web.em.doe.gov/bemr96/umtra.html
EPA AML http://www.epa.gov/aml/
EPA OAR http://www.epa.gov/radiation/tenorm/uranium_waste.htm
EPA OW http://www.epa.gov/water/programs.html
MSHA http://www.msha.gov/sosa/sosahome.asp
MSL http://www.epa.gov/brownfields/policy/initiatives_sb.htm#msl
NPS http://www2.nature.nps.gov/geology/distlands/about_aml.cfm
NRCS http://www.nrcs.usda.gov/programs/ramp/
OEPC http://www.doi.gov/oepc/
OSM http://www.osmre.gov/osmaml.htm
USACE https://www.nwo.usace.army.mil/html/rams/rams.html
USDA HazMat http://www.usda.gov/da/hmmg/
USFS http://www.fs.fed.us/geology/mgm_reclamation.html
OSWER/Superfund http://www.epa.gov/superfund/programs/aml/index.htm

U.S. Department of the Interior (DOI)

- **Office of the Solicitor** provides essential support to the BLM in several ways:
  - Assisting in the development of long-term strategies and priorities for AML cleanup;
  - Assisting the BLM in compliance with applicable environmental laws and regulations incident to investigative, removal, and remedial activities needed at abandoned mines;

- Working with the BLM to develop and undertake cost recovery strategies and enforcement actions with respect to PRPs; and
- Preventing liability and defending the BLM against potential claims or litigation arising from abandoned mines.

To enable the most effective and timely protection of the BLM's interests, AML staff consult with the Office of the Solicitor promptly upon identifying any legal issues at abandoned mines or upon receiving notice of claims against the BLM. The BLM's State, District, or Field Office staff inform the attorneys of their local Field Solicitor's Office or the nearest Regional Solicitor's Office (if there is no Field Solicitor's Office in the vicinity of the BLM's office) regarding any AML issues, claims, anticipated actions, or plans arising within the BLM's local office's area of jurisdiction. AML staff within the BLM's Washington Office work mainly with attorneys at the Headquarters Office of the Solicitor.

- **National Park Service's (NPS)** Abandoned Mineral Land program inventories sites, eliminates public safety risks, and eliminates or reduces adverse effects on resources. In addition, NPS registers abandoned mines for inclusion in the National Register of Historic Places and provides education and awareness to the public on the preservation and interpretation of historic and cultural artifacts and the maintenance of specific abandoned mineral lands for critical wildlife habitat, particularly for threatened and endangered species.

- **Office of Environmental Policy and Compliance (OEPC)** provides national and regional leadership and direction in the coordination and development of environmental policy and program evaluation, and provides for a coordinated and unified approach and response to environmental issues that affect multiple bureaus.

- **Office of Surface Mining Reclamation and Enforcement (OSMRE)** AML program reclaims eligible lands mined and abandoned or left inadequately cleaned up before passage of SMCRA in 1977. (Also see Sections 1.8 Authorities and below 4.2.2.1 SMCRA States.)

- **U.S. Geological Survey (USGS)** AML Initiative is part of a larger strategy by the DOI and the U.S. Department of Agriculture (USDA) to coordinate activities for the cleanup of Federal lands affected by AML. USGS provides science-based, integrated watershed characterization that is useful for identifying and prioritizing AML sites for potential cleanup.

U.S. Department of Agriculture (USDA)

- **Forest Service (USFS)** restores and reclaims lands and watersheds affected by mining practices. The priority is to make tangible progress in restoring these lands; to balance and prioritize human health and safety issues; to approach restoration on a watershed basis; and to meet CWA and CERCLA requirements when restoring these lands.

- **Hazardous Materials Management Division** aids in the cleanup and restoration of USDA-managed lands.

U.S. Department of Defense (DOD)

- **U.S. Army Corps of Engineers (USACE)** established the Restoration of Abandoned Mine Sites (RAMS) to support activities and priorities of the State, Federal, and nonprofit entities. RAMS enhances the stakeholders' current activities. RAMS work includes remediation of all risks associated with AMLs, including acid mine drainage, safety risks, and ecosystem restoration. RAMS utilizes the USACE environmental authorities to provide technical, planning, and design assistance to Federal and non-Federal interests in carrying out projects to address water quality problems caused by drainage and related activities from abandoned and inactive non-coal mines.

U.S. Department of Energy (DOE)

- **Office of Environmental Management** Uranium Mill Tailings Remedial Action Program implements the regulations (40 CFR 192) promulgated in response to the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRA). The Act authorizes DOE to stabilize, dispose of, and control uranium mill tailings and other contaminated material at 24 uranium mill processing sites and approximately 5,200 associated vicinity properties. Under the provisions of UMTRA, DOE pays 100 percent of the cost of the assessment activities and 90 percent of the remedial action activities. The affected States pay the remaining 10 percent of the remedial action costs, with the exception of those sites located on Indian Tribal lands, where DOE pays 100 percent of the costs.

U.S. Department of Labor (DOL)

- **Mine Safety and Health Administration (MSHA)** coordinates *Stay Out – Stay Alive*—a national public awareness campaign aimed at warning children and adults about the dangers of exploring and playing on active and abandoned mine sites.

U.S. Environmental Protection Agency (EPA)

- **Federal Brownfields Partnership Mine-Scarred Lands (MSL) Initiative** is an interagency effort established in 2003 to explore opportunities for multiple Federal agencies to coordinate and collaborate with each other and with State partners and local mining communities on the cleanup and redevelopment of former mines. The establishment of this interagency partnership was created in response to the passage of the **Small Business Liability Relief and Brownfields Revitalization Act** (the Brownfields Law) in 2002 (PL No. 107-118, 115 stat. 2356), which provides new legal and financial tools for the cleanup and revitalization of mining properties. The law uses the term "mine-scarred lands" to describe mining-related brownfields properties.

  The Federal agencies that established the MSL Initiative include the Appalachian Regional Commission; USACE; USDA; U.S. Department of Housing and Urban Development; the DOI's BLM, OEPC, and OSMRE; and EPA's Conflict Prevention and Resolution Center, Office of Brownfields Cleanup and Redevelopment, and Office of Superfund Remediation and Technology Innovation. Since its inception, new partnerships have developed with many other Federal and State agencies, local governments, communities, and non-profit and private sector organizations. The MSL Initiative partners have been providing technical assistance to six demonstration projects since the summer of 2004, and the BLM has had a direct role with projects in San Juan County, Colorado and Beatty, Nevada.

- **Office of Solid Waste and Emergency Response (OSWER a.k.a. Superfund)** resources are directed to the range of environmental risks and challenges from AMLs, as well as risk management approaches.

- **Office of Water (OW)** is responsible for implementing the CWA and Safe Drinking Water Act, and portions of the Coastal Zone Act Reauthorization Amendments of 1990, RCRA, Ocean Dumping Ban Act, Marine Protection, Research and Sanctuaries Act, Shore Protection Act, Marine Plastics Pollution Research and Control Act, London Dumping Convention, the International Convention for the Prevention of Pollution from Ships and several other statutes. Activities are targeted to prevent pollution wherever possible, and reduce risk for people and ecosystems in the most cost-effective ways possible. OW often provides guidance, specifies scientific methods and data collection requirements, performs oversight and facilitates communication among those involved.

- **Office of Air and Radiation (OAR)** is currently studying the extent and nature of the Technologically-Enhanced Naturally-Occurring Radioactive Materials problem in the form of mining waste and its potential health effects. To date, EPA has developed technical reports on mining wastes and a database of mining locations with uranium-bearing wastes in the 14 western States. Additionally, OAR has produced *Technologically Enhanced Naturally Occurring Radioactive Materials from Uranium Mining Volume 1: Mining and Reclamation Background* (EPA 402-R-05-007, January 2006). This report, the first of two volumes, examines the occurrence of uranium in its natural settings in the United States, its industrial uses, and the methods employed during the last century to extract it from ore deposits. The report also explores the nature of solid and liquid wastes generated by the extraction methods, and the various reclamation and remediation methods that can environmentally restore the extraction site.

Federal Mining Dialogue (FMD), of which the BLM is a member, is a forum for discussing and coordinating AML-related issues among Federal agencies. EPA serves as the lead agency. Core participating agencies and offices include the DOI's NPS, OEPC, USGS, OSMRE and USDA's Hazardous Materials Management Group and the Forest Service. Other agencies participate when issues of interest arise, including the U.S. Department of Justice, USACE, and MSHA. Examples of FMD topics have included CERCLA coordination at mixed-ownership sites, use of joint repositories, sharing of spatial inventory data, and exchange of best practices. The FMD has also provided input into EPA's One Cleanup program, which has taken on several non-legislative issues at a senior level.

4.2.2. State/Local

The following are some examples of partnerships that the BLM has with State and local entities, which can be formalized using a variety of agreements: Cooperative Agreements (see Section 4.4.3), MOUs (see Section 4.4.4), and Data Sharing Agreements (see Section 4.4.6).

Alaska

- State of Alaska – Department of Natural Resources, Division of Mining, Land and Water

Links to State AML Programs

AK http://www.dnr.state.ak.us/mlw/mining/aml/
AZ http://www.asmi.state.az.us/index.cfm?method=abandoned.entrance
CA http://www.consrv.ca.gov/OMR/abandoned_mine_lands/index.htm
CO http://www.mining.state.co.us/
ID http://www.idl.idaho.gov/bureau/Minerals/abandoned_mine/abl_index.htm
MT http://www.deq.state.mt.us/AbandonedMines/Index.asp
NV http://minerals.state.nv.us/programs/aml.htm
NM http://www.emnrd.state.nm.us/emnrd/mining/AML/AMLmain.htm
OR http://www.deq.state.or.us/wmc/pubs/factsheets/cu/AbandonedMineCUsHighCostLackFunding.pdf
UT http://www.ogm.utah.gov/amr/default.htm
WA http://www.dnr.wa.gov/geology/abanmine.htm
WY http://deq.state.wy.us/aml/

Arizona

- State of Arizona – Department of Environmental Quality
- State of Arizona – Department of Game and Fish
- State of Arizona – Department of Land
- State of Arizona – Department of Water Resources
- State of Arizona – Office of Mine Inspector

California

- State of California – Water Resources Control Board
- Nevada County – Resource Conservation District
- Placer County – Resource Conservation District
- State of California – Department of Environmental Conservation, Office of Mine Reclamation

Colorado

- Hinsdale County
- San Juan County
- San Juan Resource Conservation District
- State of Colorado – Department of Natural Resources[12]
- State of Colorado – Department of Public Health and Environment

Idaho

- Butte County
- City of Coeur d'Alene
- Coeur d'Alene Basin Commission
- State of Idaho – Department of Environmental Quality
- State of Idaho – Department of Fish and Game
- State of Idaho – Department of Lands
- State of Idaho – Geological Survey
- State of Idaho – Historic Preservation Office

[12] The two key divisions of the Colorado Department of Natural Resources are 1) the Division of Reclamation, Mining, and Safety and 2) Division of Wildlife.

Montana
- Fort Belknap Tribes
- State of Montana – Department of Environmental Quality

Nevada
- State of Nevada – Commission on Natural Resources Division of Minerals
- State of Nevada – Department of Wildlife
- State of Nevada – Department of Conservation and Natural Resources Division of Environmental Protection

New Mexico
- State of New Mexico – Energy, Minerals, and Natural Resources Department

Oregon
- State of Oregon – Department of Environmental Quality, Land Quality Division

Utah
- State of Utah – Department of Natural Resources, Division of Oil, Gas and Mining

Washington
- State of Washington – Department of Natural Resources, Division of Geology and Earth Resources

Wyoming
- State of Wyoming – Department of Environmental Quality, Abandoned Mine Land Division

4.2.2.1. SMCRA States

Title IV of SMCRA (see Section 1.8) levies fees on active coal mining operations to pay the reclamation costs. Collected fees are deposited in an AML Fund. Congress authorized States and Tribes to implement their own programs. The following western States and Tribes have approved programs: Alaska, Colorado, Crow Tribe, Hopi Tribe, Montana, Navajo Tribe, New Mexico, North Dakota, Utah, and Wyoming. The programs are funded through grants from OSMRE, which receives funding from the AML Fund via the regular congressional budget and appropriations process. Under SMCRA, priority is given to reclamation of abandoned coal mines and affected lands and water. However, States or Tribes certifying that they have achieved all existing known coal-related reclamation objectives or have instituted the necessary processes to reclaim any remaining coal related problems may then use their AML funds for non-coal reclamation (30 CFR 875.13). Currently, the following States and Indian Tribes have certified the completion of all coal reclamation projects: Hopi Tribe, Louisiana, Montana, Navajo Tribe, Texas, and Wyoming. The BLM should consult with the State agency administering SMCRA funds as to the prioritizing and funding of projects that include priority sites administered by the BLM. The BLM does not normally cover reclamation of coal AML sites because these should be addressed under the SMCRA program.

Additionally, States that have not certified can fund non-coal reclamation projects on a case-by-case basis upon the request by the Governor of the State or the head of the Tribal body. The request should indicate that reclamation of the site is necessary for the protection of the public health, safety,

and general welfare from extreme danger (i.e., that the priority 1 problem criterion under SMCRA has been met).

Land and water are eligible for non-coal reclamation if they were mined or affected by mining of minerals and materials other than coal and left in an inadequate reclamation status prior to August 3, 1977. Non-coal reclamation is carried out with money from the AML Fund and administered by a State or Indian Tribe under an approved reclamation program. Funds shall not be used for the reclamation of sites and areas designated for remedial action under UMTRA or that have been listed for remedial action pursuant to CERCLA.

4.3. Non-Governmental Organizations (NGOs)

Examples of partnerships between the BLM and NGOs are provided below. These partnerships can be formalized using a variety of agreements: Volunteer Agreements (see Section4.4.5), MOUs (see Section 4.4.4), and Data Sharing Agreements (see Section 4.4.6). See the text box *National NGO Partners* for relevant Web site addresses.

4.3.1. National NGOs

National NGO Partners

BCI http://www.batcon.org
NAAMLP http://www.onenet.net/~naamlp
NFHAP http://www.fishhabitat.org/plan
NMA http://www.nma.org
NOHVCC http://www.nohvcc.org
Tread Lightly! http://www.treadlightly.org
WGA http://www.westgov.org

In 1993, **Bat Conservation International (BCI)** and the BLM founded the North American Bats and Mines Project to reduce the loss of bats during closures of abandoned mines. This program informs managers of opportunities to conserve and manage key bat roosts in abandoned mines. To minimize the loss of mine-roosting bats, the program provides national leadership and coordination among Federal, State, and private agencies, and the mining industry.

National Association of Abandoned Mine Land Programs (NAAMLP) serves to foster positive and productive relationships between the States and Tribes and the Federal government. Though chiefly a coal-AML, SMCRA-based association, several western States with hardrock AML programs are members. The BLM supports the NAAMLP by participating at its annual conferences as presenters and panel moderators.

National Fish Habitat Action Plan (NFHAP) was developed by a coalition of partners to protect, restore, and enhance the nation's fish and aquatic communities. The BLM endorses this plan and has committed to playing an active role in its implementation.

National Mining Association (NMA) is the voice of the American mining industry in Washington, D.C. NMA is the only national trade organization that represents the interests of mining before Congress, the Administration, Federal agencies, the judiciary, and the media. NMA provides a forum for all the diverse segments of the mining industry to come together and advocate public policies designed to protect and expand opportunities for domestic mining.

National Off-Highway Vehicle Conservation Council (NOHVCC) is a publicly supported, education foundation organized for the sole purpose of developing and providing a wide spectrum of programs, materials and information, or "tools," to individuals, clubs, associations, and agencies to further a positive future for responsible OHV recreation.

Tread Lightly! is a nonprofit organization whose mission is "To empower generations to enjoy the outdoors responsibly through education and stewardship."

Western Governors Association (WGA) has conducted studies and issued reports on the impacts of hardrock AML sites. In addition, WGA is involved in various legislative initiatives, including proposed "Good Samaritan" amendments to the CWA.

4.3.2. State and Local NGOs

Alaska
- University of Alaska – Fairbanks
- Yukon River Inter-Tribal Watershed Council
- Yukon Territory – Division of Indian and Northern Development

Arizona
- Maturango Museum for Bat Surveys

California
- Abandoned Mine Lands Task Force
- American River Conservancy (ARC)
- Bear River Coordinated Resource Management Plan (CRMP)
- Cache Creek Watershed Council
- California Association of Rural Counties
- Delta Tributary Mercury Council (DTMC)
- Friends of Deer Creek
- International Indian Treaty Council
- Nevada County Resource Conservation District (NCRCD)
- Placer NCRCD
- Putah Creek Watershed Council
- Sacramento River Watershed Alliance (SWRP)
- Sierra Fund
- Sierra Nevada Abandoned Mine Land Alliance
- South Yuba River Citizens League (SYRCL)
- Trout Unlimited
- Tsi-Akim Maidu Tribe

Idaho
- Idaho Mining Association

Nevada
- Nevada Mining Association

New Mexico
- WERC: A Consortium for Environmental Education and Technology Development

4.4. Agreements

BLM *Guide to Agreements*
http://www.blm.gov/natacq/tools/ib2005118.htm

To develop formal partnerships and transfer/commit funds to the partners described in previous sections, the BLM's personnel must prepare written agreements, as permitted by legislative authority. The primary authority is FLPMA, as amended (43 U.S.C. 1737(b)). FLPMA states that "the Secretary may enter into contracts and cooperative agreements for the management, protection, development, and sale of public lands." Signatory authority is delegated to either an individual or a position. A description and applicability of various kinds of agreements most likely to be used for AML program activities are provided below. For a more complete description and additional information (e.g., authority, approval, signature authority, references, and contact information), refer to the BLM's *Guide to Agreements* (http://www.blm.gov/natacq/tools/ib2005118.htm). For additional policy and process references, see the individual text boxes for each type of agreement (the BLM's referenced Manual Sections are available at http://www.blm.gov/nhp/efoia/wo/manual/manuals.html).

4.4.1. Contract

In general, use a procurement contract as a legal instrument reflecting a relationship between the BLM and a State, a local government, or other recipient when the principal purpose of the contract is to acquire (by purchase, lease, or barter) property or services for the direct benefit or use of the government. A decision to acquire supplies or services by contract initiates a partnership between the BLM's program and contracting personnel to establish contract objectives and to formulate plans to achieve those objectives. The Federal government contracting process is governed by various statutes, such as the Federal Acquisition Regulations, Executive Orders, Comptroller General Decisions, and the other DOI and BLM regulations.[13]

4.4.2. Interagency Agreement (IA) and Intra-agency Agreement (I-A)

The BLM uses Interagency Agreements (IAs) to reimburse other Federal agencies outside the DOI for goods or services provided to the BLM. The BLM uses Intra-agency Agreements (I-As) to reimburse other bureau(s) within the DOI for goods or services provided to the BLM.

IAs/I-As References

- Federal Acquisition Regulations, 48 CFR, 17.5
- DOI Acquisition Regulation System, Part 1417
- BLM Manual Section 1510, Acquisition, Part 1510-17.5

Contact State Procurement Analyst or Field Office procurement personnel for more information.

The BLM does not use IAs/I-As to obtain off-the-shelf items, such as maps from the USGS or pamphlets and books from the Government Printing Office. For these purchases, the BLM uses a Government

[13] In addition, as of this writing, BLM is beginning to transition to using a governmental resource named the E-Grants Initiative, part of the President's 2002 Fiscal Year Management Agenda to improve government services to the public. Under the initiative, agencies allow applicants for Federal Grants to apply for and ultimately manage grant funds online through a common Web site, simplifying grants management and eliminating redundancies. AML staff involved with procurement and contracts should contact the appropriate procurement and contracting office for current information.

purchase card, purchase order, or other simplified procedures to reduce time and expense. The BLM should not use IAs/I-As to circumvent the statutory requirements for competition.
The BLM uses a contract if the primary purpose is to meet a mission need and a Cooperative Agreement or grant if the primary purpose is one of support or stimulation.

4.4.3. Cooperative Agreement (CA)

CAs, a type of Assistance Agreement (AA), are authorized by FLPMA Section 1737(b), (43 U.S.C. 1737 (b)). Most CAs serve one or more of the following purposes:

- Foster Federal-State cooperation;
- Minimize intergovernmental overlap and duplication; and
- Provide uniform and effective application of the program.

CA References

- BLM Manual Section 1511, Assistance Agreements
- BLM Handbook H-1511-1, Assistance Agreements

Contact State Procurement Analyst for more information.

Use a CA as the legal instrument:

- When the relationship between the BLM and a State, local government, or other recipient has as its principal purpose the transfer of a thing of value to a State or local government or other recipient;
- To carry out a public purpose of support or stimulation authorized by a law of the United States; and
- Substantial involvement is expected between the BLM and the State and local government, or other recipient when carrying out the activity contemplated in the agreement. For example, both the BLM and the recipient perform the work effort together.

4.4.4. Memorandum of Understanding (MOU)

An MOU is a written agreement between the BLM and another entity (or entities) that confirms the use of cooperative policies or procedures to promote mutual endeavors. An MOU documents an agreement to do the following:

- Use cooperative management policies or procedures;
- Provide mutual assistance; or
- Exchange results for the promotion of common endeavors.

MOU References

- BLM Manual Section 1786, Memorandums of Understanding, Section 1786.3

Contact State MOU Coordinator, MOU Custodian, or State Procurement Analyst for more information.

An MOU may be an “umbrella” or detailed agreement that provides a basis for subagreements; it does not provide authority to enter into contracts or AAs. It may not commit to future noncompetitive contracts with the MOU’s entities or subvert any of the procurement laws and regulations. An MOU does NOT:

- Obligate or exchange private or Federal funds, supplies, equipment, or services;
- Share or exchange data with non-Federal entities; or
- Serve as a substitute for covenants or reservations in land or mineral patents.

4.4.5. Volunteer Agreement

The BLM's volunteers are individuals and groups who contribute their time and service to assist the BLM in the accomplishment of its mission, and receive no wages, salary, stipend, or other compensation other than reimbursement for incidental expenses, compensation for work-related injuries or damage or loss of personal property, and protection from tort claims.

Volunteer Agreement References

- BLM Manual Section 1114, Volunteers (as amended)
- BLM Volunteer Program Intranet page: http://web.blm.gov/internal/wo-600/envired.html

Contact State Volunteer Coordinator for more information.

Donated workers are individuals or groups who receive a salary, wage, or stipend from another entity, such as a Federal, State, or local government agency or private group in payment for the donated worker's contributed service to the BLM.

The BLM's Volunteer Agreement (the BLM's Form 1114-4 for individuals; Form 1114-5 for groups) must be established for the BLM to accept services from persons in either category. Volunteer Agreements are effective for one fiscal year, but may be renewed.

Volunteers and donated workers may not be used for all tasks, nor in all of the BLM's programs; see the BLM's Manual Section 1114, *Volunteers,* for restrictions.

4.4.6. Data Sharing Agreement

Data Sharing Agreements allow the BLM to share or exchange data with other Federal Agencies, State or local governments, or private parties on an ongoing basis when no funds are obligated. The BLM may use cost recovery under this scenario.

Data Sharing Agreement References

- BLM Manual Section 1278, External Access to BLM Information.
- BLM Manual Section 1270-2, Cost Recovery.

Contact Records and Data Administrators for more information.

The principal purpose of a data sharing agreement is to provide the BLM's data to another party at no cost (waiving of fees) or under a cost recovery schedule, where the BLM is not obligating appropriated funds and is receiving data or services in return. The agreement may be used for obtaining the BLM's information on an ongoing basis and must contain a detailed description of the specific data to be shared, as well as important metadata.[14] Standard security measures must be documented when on-line access is needed.

4.4.7. Access Agreements

Access Agreements or other partnership agreements may be necessary when an AML cleanup site is adjacent to private lands, as is often the case. The practical and financial ability of the BLM to conduct a cleanup may hinge on cooperation with private landowners. Issues may include access across private lands (right-of-ways) or use of borrowed materials (e.g., soil for repository covers or

[14] Metadata is information about data and/or geospatial services, such as content, source, vintage, spatial scale, accuracy, projection, responsible party, contact phone number, method of collection, and other descriptions.

large rock for armoring). These agreements should be customized to meet specific needs and prepared in conjunction with the local Field Solicitor to protect private and the BLM's rights. Cost-avoidance can often be demonstrated by formally obtaining these agreements from private parties that are either not responsible parties or not financially able to provide funds for actual cleanup.

Chapter Summary

AML personnel should be aware of the following:

- The BLM's programs that may need AML information or have information useful to achieve AML strategic goals, and provide or obtain relevant information, as necessary;
- Partnerships described in this chapter and either lead or participate in these partnerships to achieve strategic goals; and
- Various types of agreements permitted by legislative authority to develop formal partnerships and transfer/commit funds to partners, and work closely with agreements and procurement staff to select the appropriate procurement/agreement tool.

5. AML INVENTORY SYSTEM/DATABASE

5.1. Uses

Useful Links Related to the AML Inventory Database

- BLM's Geospatial Data Clearinghouse http://www.blm.gov/nhp/what/geospatial/clearinghouse.htm
- GeoCommunicator web.geocommunicator.gov
- LR2000 System http://www.blm.gov/lr2000/

The AML inventory database and information system is an application with the principal purpose of supporting the BLM's AML related programs. The system stores and reports information about inactive and abandoned mine sites. Although the AML program's current focus is on hardrock mine sites affecting watersheds, any type of AML site can be entered into the system. Each record comprises a site located on or potentially affecting surfaces managed by the BLM.

On-the-ground AML inventories were conducted under one of the BLM's 1993 directives that put into place common data elements to ensure that AML is characterized consistently. To date, only a small percent of all public lands have been inventoried with these strategy guidelines, and the data quality of the inventory records varies widely. Therefore, significant data cleanup is needed, and the BLM continues to work to improve data quality.

As sites are identified or additional information is obtained regarding sites currently in the database, field staff should update the database. To obtain access to the database, contact your State Office AML Coordinator. State Office Coordinators should contact the Washington Office. A complete inventory record contains the following information:

- Site identification (e.g., site name) and location (e.g., county and State), including accurate Global Positioning System (GPS) measurements (see the BLM's Geospatial Data Clearinghouse http://www.blm.gov/nhp/what/geospatial/clearinghouse.htm);
- Site features (e.g., caved adits, open shafts, and/or tailings) and risks (e.g., physical and environmental);
- Potential hazardous materials;
- Reclamation conditions and status; and
- Project information and status (e.g., projected and actual start and completion dates).

Additional detailed site maps, sampling, and other technical information is contained in the State Office and/or Field Office project file records (see Section 9.4.5 for additional information that should be included in the case file).

All AML employees are encouraged to maintain, update, and use the inventory to support the following program and project management activities at all levels of the BLM:

- Setting clean-up priorities – State Offices should know the total number of sites and the level of contamination and remediation required at each site to determine priorities for their State Office Strategic Plan and the AML National Strategic Plan (see Section 3.1). Geospatial information identifies sites that are near campgrounds and other high use sites; and therefore, priority sites (see Chapter 7).
- Identifying future inventory and field validation needs and targeting those efforts – Sites previously entered into the database with little detail may require a site visit or other follow up.

- Identifying sites scheduled for clean-up funding.
- Justifying the BLM's bureau-wide budget requests and State/Field Office resource needs – The information in the inventory database should provide the details (e.g., remediation status, contaminant of potential concern, and acres to be remediated) about each site included in the budget estimate.
- Reporting site and project clean-up status – Information regarding the progress at each site will help identify upcoming resource needs (e.g., for sampling, remediation, or other activities) that can then be translated into budget requests or priority shifts.
- Reporting accomplishments (summary statistics and site-specific details) – The BLM is required to report program accomplishments under GPRA (see Section 3.2.4). The inventory database provides program elements where all AML activities and accomplishments can be recorded and subsequently reported.
- Supporting information needs of the BLM's other programs (see Section 4.1), including:
  - Hazardous Materials Management;
  - Land Use Planning;
  - Water and Water Quality Restoration;
  - Solid Minerals;
  - Recreation;
  - Cultural Resources; and
  - Surface Management.
- Identifying future monitoring and maintenance needs – Site remediation status can help show likely future needs for long-range budget planning (e.g., projected remediation completion dates may signify the need for future monitoring).
- Supporting partnership efforts with other government agencies and private landowners.
- Responding to information requests from the public – Complete records of AML sites will make responding to and reporting out information faster and easier (i.e., querying a database is more efficient than compiling information from various hardcopy documents).

All AML sites can be displayed on the internal GeoCommunicator Intranet page at web.geocommunicator.gov by using the Site Mapper feature.[15] Site Mapper is a tool that can display other types of sites and cases within the area of an AML site. This data includes HazMat sites, Facilty Asset Management System (FAMS) sites, and LR2000 cases (see text box). In addition, a variety of base maps can be overlayed, including USGS topographic map, Surface Management Agency, and Ortho Aerial Photography. Maps can be saved and printed.

[15] As of this writing, the BLM's AML records are not available on the public GeoCommunicator Internet page.

LR2000

LR2000 is the BLM's land and mineral records system. All AML projects must be entered into LR2000 using one of the AML case type codes:

- 372000 – AML - Physical Safety
- 372001 – AML - Water Quality
- 372002 – AML - Repository

Once the project is in LR2000, a memorandum is written to the State Office Records Manager requesting the AML project be noted on the Master Title Plats. This notation is necessary to ensure that future land uses are compatible with reclamation/remediation completed at the site. For example,

- The depth to underground workings should be known if a structure is built on a site that has been reclaimed.
- Radiation cleanup standards are based on land use proposed after reclamation is completed. If the site is used for housing, the cleanup standard is more stringent than an occasionally used recreational site in a remote area.

The LR2000 system and user information and guidance are available at http://www.blm.gov/lr2000/.

5.2. Structure

At the time this Handbook was prepared, the AML inventory database contained fields for the status (e.g., completed, in progress, no action, or undetermined) and date for the basic NEPA and CERCLA activities (see Section 9.1 for a list and description of these activities). It is likely that these or very similar fields will be maintained in the current database and any subsequent version of the database.

Chapter Summary

AML Field personnel should maintain, update, and use the following to store and obtain information about potential and actual AML sites:

- AML inventory database;
- LR2000 system;
- Appropriate Field Office AML files; and/or
- State Office AML project files.

6. DETERMINING SITE FUNDING ELIGIBILITY

This chapter provides guidance and information to help AML personnel determine if a site is eligible for cleanup funding under the AML program. In general, an abandoned mine site is eligible for funding under the AML program if it:

- Is on or affecting land administered by the BLM;
- Was last mined prior to promulgation of the 43 CFR 3809 regulations (i.e., January 1, 1981; see Section 1.8) that implement the unnecessary or undue degradation provision of FLPMA; and
- Has no mining claimants or responsible parties able or willing to clean up the site.

AML Program Funding Eligibility Resources

- *Response Actions Handbook (NCP/CERCLA)* (BLM H-1703-1, 2001) http://web.blm.gov/internal/wo-500/directives/dir-hdbk/h-1703-1.pdf
- *Surface Management,* (BLM Manual Section 3809)

However, determining eligibility can be complicated, and although this chapter describes a typical process for determining AML funding eligibility, there are exceptions, caveats, and additional considerations. Therefore, the process described in this chapter may not need to be followed exactly. See the text box *AML Program Funding Eligibility Resources* for sources of additional guidance and information.

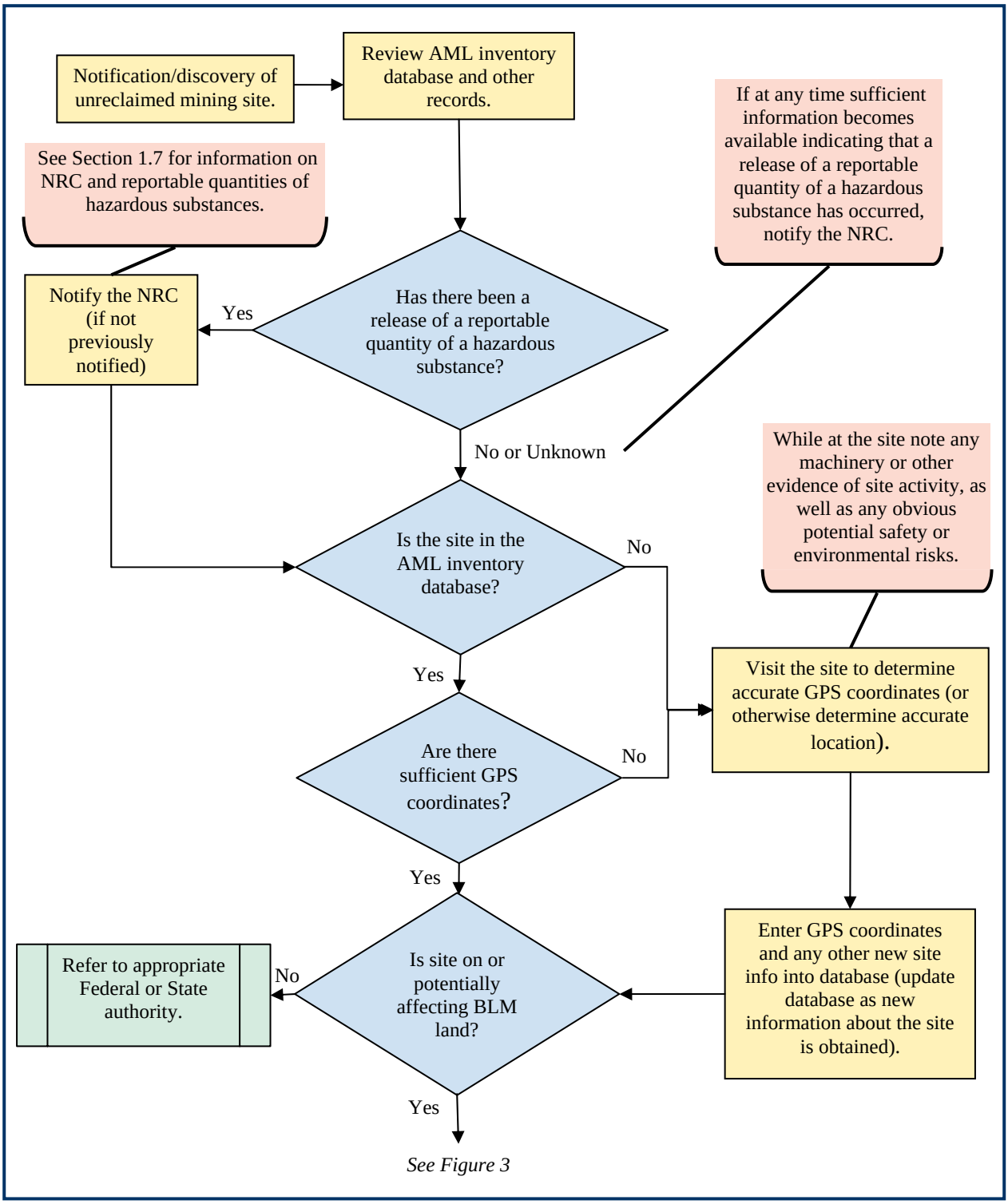
The process of determining funding eligibility begins when AML field staff discover or are notified of a potential abandoned mine site that may need remediation (either for environmental cleanup or for physical safety concerns). If at any point in the process information indicates that there has been a reportable quantity of a hazardous substance, AML field staff notifies the NRC (see Section 1.7 for additional information). Because site location is key to determining AML funding eligibility, accurate GPS coordinates are essential. If accurate coordinates are not determined during site discovery activities (see Sections 9.3.1 and 9.4.1)—i.e., they are not available in the AML inventory database (see Chapter 5), mining records, or other documentation—visit the site to obtain these coordinates (see Sections 9.3.2 and 9.4.2 for additional site visit guidance). Additionally, while at the site:

- Observe any machinery or other evidence of site activity;
- Note any obvious potential safety or environmental risks;
- Take digital pictures or video; and
- Obtain data needed for the inventory database.[16]

Enter the accurate GPS coordinates into the AML inventory database and any additional information obtained during the site visit. If the site is not on or potentially affecting land administered by the BLM, then refer the site to the appropriate Federal or State authority (e.g., Forest Service). Figure 2 shows a typical process flow for the initial discovery phase of the AML funding eligibility process.

[16] Refer to user documentation for current requirements.

Figure 2: Discovery and Location of Potential AML Site

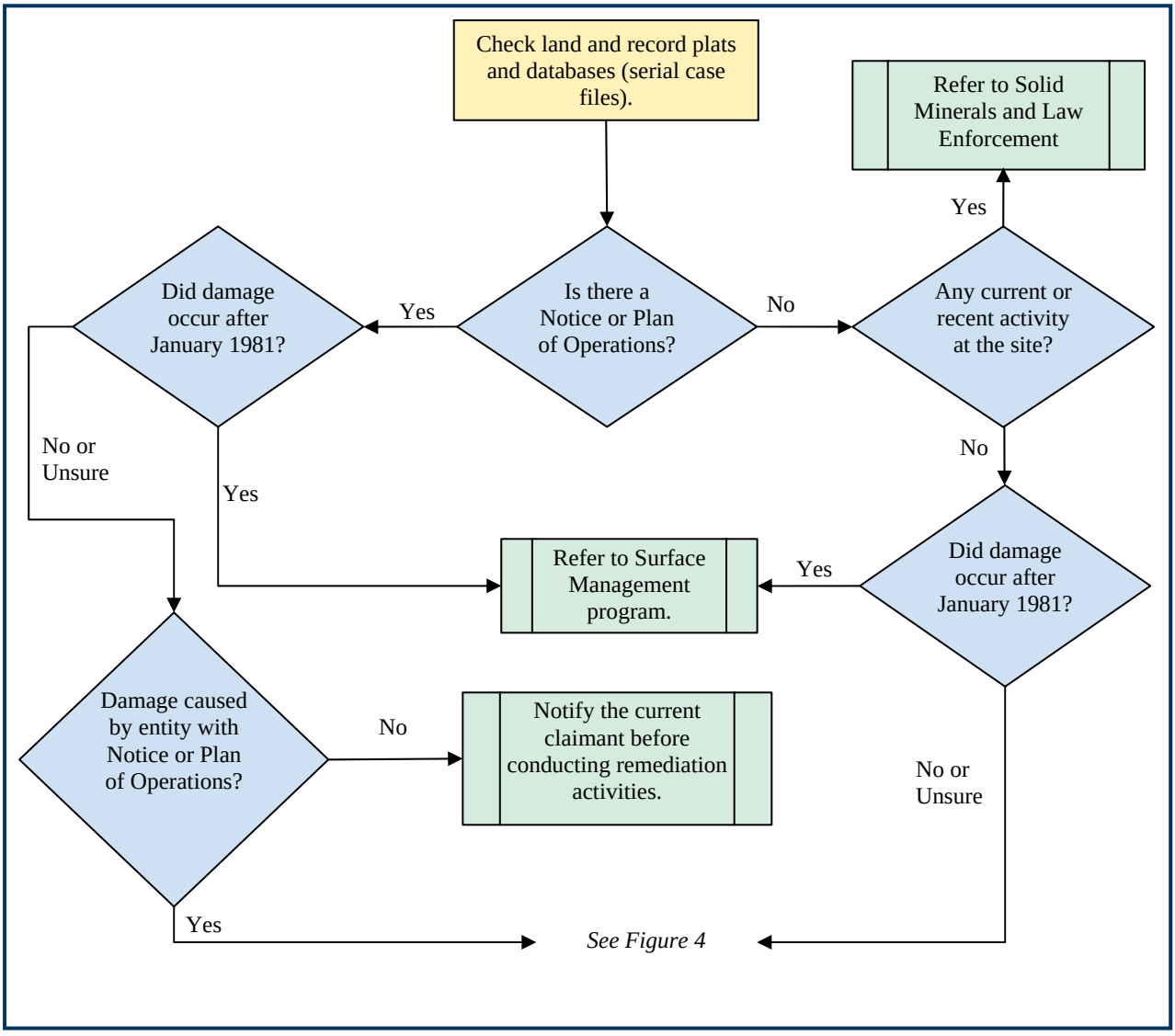


After determining that the site is on or affecting land administered by the BLM (as verified through GPS procedures), AML field personnel check land and record plats and relevant databases to determine if there are mining claims (including notices or plans of operation), any existing mineral

leases, mining claims, or mineral material sales or free use permits, or any other information that leads to evidence of a past or current operator(s).[17] Under the following circumstances, AML refers the site to one of the BLM's other programs (see Figure 3):

- **If there is no authorized Notice or Plan of Operations**, but there appears to be recent activity at the site, then the AML program refers the site to the Surface Management and Law Enforcement programs to determine if a non-compliance or an occupancy issue exists.
- **If there is an authorized Notice or Plan of Operations** and the unnecessary or undue degradation that needs to be addressed occurred after January 1, 1981 (i.e., the effective date of the BLM's Surface Management regulations codified at 43 CFR 3809), the AML program refers the site to the Surface Management program.

Figure 3: Sites on or Affecting BLM Land



[17] All mining claims filed after enactment of FLPMA in 1976, mineral leases, and mineral material sales and free use permits recorded with BLM can be found in BLM's Legacy Rehost 2000 (LR2000) System (see Chapter 5). Mining claims predating the FLPMA requirement can be researched at the local County Recorders Office.

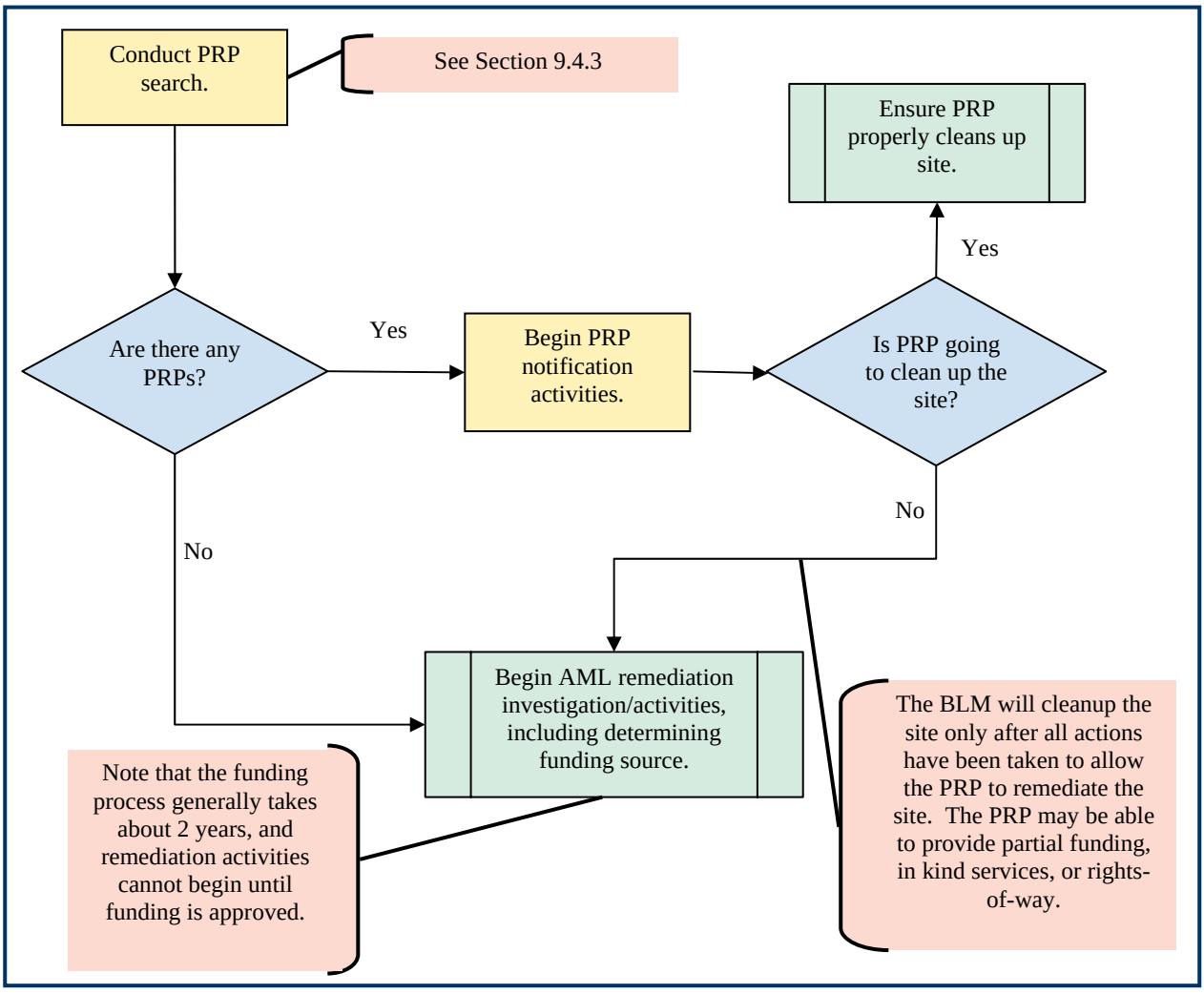
If there is a notice or plan of operations, but the claimant is not responsible for the unnecessary or undue degradation that occurred prior to January 1, 1981, then AML personnel should notify the current claimant and then begin on-site activities—see Figure 3.

If there is a CERCLA hazardous substance release on land administered by the BLM as a result of activity that took place prior to January 1, 1981 (i.e., the effective date of the BLM's Surface Management regulations codified at 43 CFR 3809), the AML program may be able to require the entity that caused the unnecessary or undue degradation to conduct the remediation or at least require the entity to reimburse AML for the cost of the remediation under the following circumstances:

- If the entity with the Notice or Plan of Operations is responsible for the unnecessary or undue degradation, that entity is considered the PRP and is responsible for the remediation.
- If the entity with the Notice or Plan of Operations is not responsible for the unnecessary or undue degradation, AML conducts a PRP search.

Figure 4 shows a typical process flow for sites on land administered by the BLM that may be addressed by a PRP or under the AML program.

Figure 4: PRP Search



All other avenues for funding the site cleanup are investigated before funding through the AML program. If there is no PRP and the site is eligible for funding through the AML program, the AML State or Field Office prioritizes the site (see Chapter 7) and obtains the appropriate funding (see Chapter 8) prior to beginning any remediation activities (other than activities to address emergency physical safety risks – see Section 9.2). Note that the funding process generally takes about 2 years, and remediation activities cannot begin until funding is approved.

In addition, portions of sites that meet the above criteria also may be eligible for AML funding. The following are examples of sites that may be eligible for partial AML funding:

- If there are pre- and post-FLPMA portions of a site, the AML program could fund the cleanup on the pre-FLPMA portion of the site. Cleanup of the post-FLPMA portion would be left for bond forfeiture or other funding.
- Where there is a hazardous material/substance situation (e.g., drug lab, old chemicals or explosives), the Hazmat program may be able to fund the removal of the hazardous material, while the AML program would fund the remaining site cleanup.
- If a mining claimant or PRP exists, but cannot, if necessary, clean up the site (e.g., no available funds), they may be able to make in-kind contributions or grant the BLM rights-of-way or use of their property (e.g., for a repository).

Conversely, AML funding cannot be provided for remediating sites that:

- Are not on or affecting land administered by the BLM;
- Have a notice or plan of operation (i.e., are post-FLPMA);
- Have occupancy or trespass issues (may involve the BLM's law enforcement); or
- Have a mining claimant or PRP that is able and willing to clean up the site (see the BLM's CERCLA *Response Handbook* (H-1703-1) or BLM Manual Section 3809, Surface Management, for details).

Field personnel should enter all sites that are considered for the AML program into the AML inventory database (see Chapter 5), even if they are eventually funded by other means.

Chapter Summary

Prior to beginning any site remediation, field personnel determine site eligibility in the AML program by conducting the following activities, as necessary and appropriate:

- Visit the potential abandoned site.
- Obtain accurate GPS coordinates, take digital pictures or videos, complete a site inventory form, and enter the data into the inventory database.
- Refer sites not on the BLM's land to the appropriate Federal or State authority.
- Refer sites with damages occurring after January 1, 1981 to the Surface Management program.
- Check land and record plats and databases (e.g., serial case files) for Notice or Plan of Operations, active claimants, mineral leases, and mineral material sales and free use permits.
- Notify entity causing damages that they are PRPs and responsible for the site remediation.
- If the entity did not cause the damages, notify of pending activities at the site.
- Refer sites with apparent current activity but no Notice or Plan of Operations to the Solid Minerals and Law Enforcement programs.
- If entity with the Notice or Plan of Operations is unable or unwilling to remediate the site, conduct a PRP search; notify PRP; and ensure PRP properly cleans up the site.
- Determine and obtain funding source prior to beginning any site remediation.

7. PRIORITIZING SITES

The BLM implements a prioritization process when a site(s) has been identified on or affecting public lands administered by the BLM, and deemed eligible for funding under the AML program (see Chapter 6). The general process for identifying, prioritizing, and funding AML projects begins at the field level and follows procedures governing the use of the BLM's BPS. This process employs a combination of the national evaluation criteria (below) and a risk-based watershed approach. Priorities focus on those sites that are in close proximity to high-use areas (e.g., urban areas, recreational areas, or main visitation areas) and pose an actual or potential threat to public health and safety and/or the environment. (See *Leadville Mill Tailings project* text box for an example.)

Leadville Mill Tailings project is located three miles east of Leadore, Idaho. Potential impacts to public health and safety existed due to the exposed tailings and six open-mine workings found on the site; the site was being used by OHV enthusiasts. The primary water quality issue was the potential for Canyon Creek to be contaminated by the Leadville Mill tailings (which are high in lead, zinc, and occasionally arsenic) during a flood. Future flooding had the potential to threaten salmon and bull trout populations. During 2004, mine tailings were removed from the floodplain, mines were closed and fitted with bat gates, and the site was revegetated. For additional information regarding this site see http://www.id.blm.gov/aml/leadville/addinfo.htm.

State and Field Offices are responsible for establishing priorities for AML site mitigation and remediation through the use of the national evaluation criteria. The national evaluation criteria are based on a point-scale to assist the AML program in determining priorities and funding sources for sites impacted by water quality and/or physical safety risks. State Offices develop, and update when appropriate, strategic plans that focus on specific sites and projects they plan to pursue during a five- to ten-year period (see Section 3.1.2).

7.1. Water Quality Criteria

In general, highest-priority sites are where humans potentially could come into contact with highly contaminated soil, water, or air or where the BLM must clean up a site in order for one of its partners to complete a project. Specifically, in ranking AML sites for peer review and budget planning, each site can receive up to ten points for each of the following national evaluation criteria for water quality sites.

- **State government priority.** Under the watershed approach, the State government has identified the watershed or watershed segment as a high priority in the context of Unified Watershed Assessment Categories I and II,[18] and the State Watershed Restoration Action Strategy.[19]

[18] CWA requires each State to prepare a Unified Watershed Assessment to determine where additional funding will help achieve "fishable and swimmable" waters for all Americans. Note that at the time this Handbook was prepared, not all States had completed a Unified Watershed Assessment.

- Category I - Watersheds in need of restoration. These watersheds do not now meet, or face imminent threat of not meeting, clean water and other natural resources goals.
- Category II - Watersheds meeting goals, including those needing action to sustain water quality.

[19] A Watershed Restoration Action Strategy is required by the CWA and is a short, clear, comprehensive watershed plan that reflects specific goals, objectives, and commitments to preserve and restore habitat and water quality.

- **Partnerships.** The project reflects a collaborative effort (such as fund leveraging) with other land management agencies having an interest in a specific watershed or watershed segment. (For additional information on partnerships, see Chapter 4.)

- **Cost avoidance/cost recovery.** When PRPs contribute to the remediation effort there is a realistic potential for cost avoidance or cost recovery; although, enforcing cost recovery actions is authorized only under CERCLA. (For additional information on PRPs, see Section 9.4.3.)

- **Impairment of water quality standards.** The AMLs are causing, contributing to, or could contribute to an impairment of one or more water quality standards (Federal, State, Tribal, or local).

- **Water quality violations.** The AMLs are causing, contributing to, or could contribute to a violation of Federal or State water quality law or regulation.

- **Threat to public health or safety.** The AMLs are causing, contributing to, or could contribute to a threat to public health or safety.

- **Threat to the environment.** The AMLs are causing, contributing to, or could contribute to a threat to the environment. In some cases, the actual violation may be significantly downstream in a watershed, in which case only a hydrologic connection to the AML need be demonstrated to justify funding.

- **Continuing/expediting an existing on-the-ground project.** The additional funding will contribute to or expedite completion of ongoing AML watershed remediation (as opposed to inventory work in a new watershed).

- **Location.** The AMLs to be addressed are documented in the BLM's AML inventory database and are located on public lands (not privately owned lands or mixed-ownership sites).

- **Cost efficient.** The mitigation or remediation actions to be funded can achieve results by applying low cost, low maintenance measures (as opposed to higher cost, active water treatment methods).

7.2. Physical Safety Risk Criteria

Although the following criteria are used to prioritize sites, death or injury at a site elevates the priority for addressing the site (after priorities have already been established). Additionally, if Special Permit Areas are established or if the BLM has invited the public onto its lands (see the *Lemhi Pass* text box for an example), the BLM will make efforts in support of site safety. Some examples of steps the BLM may take include establishing institutional/physical controls to limit/deter access, or at the very least providing sufficient warning of the dangers (e.g., posting signs). In ranking AML sites for peer review and budget planning, each

Lemhi Pass is located near Salmon, Idaho, on the Lewis and Clark Trail. Past mining and exploration activities left a legacy of physical safety hazards, such as open mines, shafts, and pits. In 2005, numerous adits were closed to safeguard visitors to the Lewis and Clark Trail. Bat gates were used whenever possible to preserve bat habitat. For additional information regarding this site see http://www.id.blm.gov/aml/lewisclark/addinfo.htm.

site may receive up to five points for each of the following criteria met under the national evaluation criteria for physical risk projects.

- **Death or injury has occurred.** A death or injury is known to have occurred at the AML site and the site has not already been addressed.

- **Visitation/high use.** The AML site is situated on or in immediate proximity to developed recreation sites and areas with high visitor use, which can include dry lakebeds, sand dunes, high use roads, frequently used special event areas, and open OHV areas. Other sites qualify if a formal risk assessment indicates a risk level of high or extremely high.

- **Accessibility.** The AMLs are judged to be easily accessible. Examples could include those located on main visitation pathways and adjacent areas when there is reason to believe visitation is occurring or has occurred in the past.

- **Location.** The AMLs to be addressed are documented in the BLM's AML inventory database and are located on lands managed by the BLM (not privately owned lands or mixed-ownership sites).

- **Cost efficient.** The mitigation or remediation actions to be funded can achieve results by applying low cost, low maintenance measures.

Chapter Summary

State and Field Offices use the AML National Level Evaluation Criteria to prioritize sites prior to requesting funding.

8. PROPOSING AND FUNDING PROJECTS

In general, the more complex the site, the more expensive the site will be to clean up. The more funds allocated to a project, the more likely there will be competition for funds, screening, and oversight. This chapter describes the funding options for the various types of AML projects. Table 3 summarizes appropriations and subactivities and AML-related uses.

8.1. Soil, Water, and Air – AML Share

The BLM uses Soil, Water, and Air funds allocated through the Annual Work Plans for most AML projects. Base allocations are appropriate for general program development and administration needs. These funds can be used for program administration and future program/project development activities, which may include payment for PRP searches; site characterization and inventory enhancement; watershed analysis; other coordination activities with present and future partnering entities; purchase of necessary field equipment or other essentials for program administration; safety education and outreach; and salaries, benefits, and training of AML personnel. One-year allocations are for specific water quality-based AML projects and can be used to remove ancillary debris, structures, or other physical risks at watershed-based reclamation projects. AML water quality project nominations are submitted through the BPS process, and peer review factors into the funding decisions. Sites receiving Soil, Water, and Air funds (1010 funding) must undergo an investigation to identify PRPs associated with the site.

8.2. Hazard Management and Resource Restoration

The BLM uses Hazard Management and Resource Restoration funds (1640 base funds) in accordance with Hazard Management and Resource Restoration program priorities. Generally, stand-alone AML physical safety sites, mill sites, and other sites not impacting water quality can be funded if funds are available. Because priority is given to response actions to address illegal activities (e.g., drug labs, dumping) and emergencies involving release or threat of release of hazardous substances, some State Offices make a normal practice to wait until the third quarter of the fiscal year before they are able to determine if 1640 funds can be released for AML sites. However, because AML sites frequently become places where hazardous materials (e.g., chemical drums) are found, it may be possible to apply 1640 funds earlier in the year at least to address those removal needs.

8.3. Special Cleanup Fund (SCF)

The Special Cleanup Fund (SCF) offers an alternative way to earmark some 1640 funds for specific projects at the national level. Each year, a portion of the 1640 base funds are converted into targeted one-year funds (i.e., SCF) for addressing larger, high-risk sites not eligible for other funding sources. The SCF provides a funding source internal to the BLM to manage specific safety risks and conduct hazardous materials cleanups that are not currently eligible for the DOI's CHF (see Section 8.4). The SCF funds can be used to perform assessments, samplings, investigations, removal actions, and other related hazardous materials cleanup activities (except for inventory work). Management at State and Field Offices apply and compete for these funds. SCF project nominations are submitted through the BPS process, and peer review factors into the funding decisions.

Table 3: AML Funding Options[20]

Appropriation	Annual Work Plan Subactivity	Activities Funded
BLM Appropriations		
Soil, Water, and Air: AML share	1010 (Base)	AML hardrock sites adversely impacting water quality, including the following activities: ▪ Program management, ▪ Project definition, ▪ Information technology support, and ▪ Contract oversight.
	1010 (one-year)	▪ AML hardrock sites adversely impacting water quality, including on the ground activity, such as: - Site remediation, - Monitoring, - Project management, and - Contract oversight. ▪ Physical safety risks included in conjunction with cleanup.
Hazard Management and Resource Restoration	1640 (Base)	▪ Response actions (e.g., illegal dumping, spills) ▪ Environmental compliance ▪ Emergency response actions ▪ Physical risks
Special Cleanup Fund (SCF)	1640 (one-year)	Preferred for targeted one-time clean-up sites that are currently not eligible for CHF funding. Addresses hazardous material, solid waste, and physical risks site work, including assessments, sampling, investigation, removal actions, etc. Requires at least $50K for cleanup or mitigation (includes petroleum sites and physical risks). Requires a nomination process via BPS.
DOI Appropriations		
Central Hazardous Materials Fund (CHF)	2641	DOI appropriated funds for CERCLA. Nomination process required. ▪ Release related response actions, ▪ Remedial Investigation/Feasibility Study (RI/FS), and ▪ Cleanups.
	2642	DOI cost recovered funds for CERCLA ▪ Release related response actions, ▪ RI/FS, and ▪ Cleanups.
Natural Resources Damage Assessment and Restoration (NRDAR)	9210	Program Administration
	9260	Damages sought as a result of damaged natural resources, used for ▪ Assessments for CERCLA, AML, and non-hazmat sites, and ▪ Processing cost avoidance/recovery cases (must have a PRP).

[20] While there may be other potential sources of funding (e.g., recreational and cultural resource programs), the funding sources described in this chapter are the typical funding sources used by AML. Additionally, Mining Law Administration (sub activity 1990) funds should never be used.

8.4. Central Hazardous Materials Fund (CHF)

CHF provides a source of funding for remedial and removal actions undertaken pursuant to CERCLA (subactivity 2641). State and Field Offices are encouraged to take advantage of this funding source by submitting project nominations on an annual basis. It is the BLM's policy to address hazardous material sites requiring medium to long-term CERCLA studies and/or actions with funding available from the CHF. The CHF is also appropriate to fund remedial and removal actions in response to litigation and enforcement actions brought against the BLM.

Most AML projects funded through CHF are non-time-critical removal actions under CERCLA. While funds are primarily used for clean-up work, investigations, engineering evaluations/cost analysis (EE/CA), and other post-site inspection studies have been funded in the past. CHF funding may also be used for the BLM's oversight costs, which include paying the salary of the BLM's project manager or retaining the services of a project manager for the BLM through temporary hires, interagency agreements, or contracts. Because CHF funding is limited to the life of the project, the BLM's term appointment employees may be hired using CHF funds. In addition, funding may be requested and used for the BLM's employees and contractors who are performing oversight of clean-up activities performed by PRPs.

Sites receiving CHF funding must undergo an investigation to identify PRPs associated with the site (see Section 9.4.3 for information regarding PRP searches). CHF funding may be used to prepare a baseline PRP Report and Cost Recovery Strategy. The CHF is meant to be a revolving fund; therefore, if costs are recovered from PRPs, the recovered funds must be returned to the CHF to fund further clean-up actions (subactivity 2642). When it is determined that no viable PRPs exist for a site, CHF funds may be requested and used for cleanup of the site without expectation that these funds will be recovered. However, a Cost Recovery Strategy that documents the lack of viable PRPs at the site should be prepared.

Preliminary Assessments (PAs), Site Investigations (SIs), and individual small-scale removal actions of hazardous materials should not be funded through CHF. These activities should be funded through either subactivity 1010 or 1640 funds.

8.5. Natural Resource Damage Assessment and Restoration (NRDAR)

Natural Resources Damage Assessment and Restoration (NRDAR) provides a source of funding for the assessment of injuries to natural resources and services caused by releases of CERCLA hazardous substances and oil spills, including the development and preparation of remediation plans. A critical criterion for funding is that a PRP for a site exists. Each year State and Field Offices submit project nominations for potential funding. These funds can be used for resource damage assessment costs, but not for the costs of remediation actions, which should be incurred by the PRP.

Chapter Summary

State and Field Offices submit project nominations or otherwise request funding using the following general AML hierarchy for the BLM's funding:

1. An emergency water quality or physical safety site is a number one consideration for subactivity 1010 AML and /or 1640 Hazmat funding.
2. A non-emergency water quality site is a number two consideration for subactivity 1010 AML funding.
3. A non-emergency physical safety site closely tied to a non-emergency water quality site is a number three consideration for subactivity 1010 AML funding.
4. A non-emergency physical safety site not affiliated with any water quality site is usually not considered for subactivity 1010 AML funding. It is more appropriate to seek subactivity 1640 Hazmat funding.

Additional funding from DOI is available from CHF (a PRP is not required) and NRDAR (PRP is required for restoration activities).

9. GETTING WORK DONE ON-THE-GROUND

This chapter describes the cleanup and reclamation activities that Field Office personnel conduct at the following types of AML sites:

- Physical Safety Risk Emergencies – Section 9.2;
- Physical Safety Risk Sites – Section 9.3;

  and
- Water Quality Sites – Section 9.4.

Resources for Getting Work Done On-The-Ground

- *Abandoned Mine Site Characterization and Cleanup Handbook* (EPA 910-B-00-001, August 2000) http://www.epa.gov/superfund/resources/remedy/pdf/amscch.pdf
- *Handbook of Western Reclamation Techniques* (University of Wyoming/OSMRE, December 1996) http://www.ott.wrcc.osmre.gov/library/hbmanual/westrecl.htm#downloadhandbook
- *Managing the NEPA Process – BLM* (DOI Manual Part 516, Chapter 11) http://elips.doi.gov/app_dm/index.cfm?fuseaction=home
- *NEPA Handbook* (BLM H-1790-1, 1988) http://www.blm.gov/nhp/efoia/wo/handbook/h1790-1.pdf
- *Response Actions Handbook (NCP/CERCLA)* (BLM H-1703-1, 2001) http://web.blm.gov/internal/wo-500/directives/dir-hdbk/h-1703-1.pdf
- *Solid Minerals Reclamation Handbook* (H-3042-1, 1992) http://web.blm.gov/internal/wo-300/wo-320/rechandbook.html

9.1. Introduction

The type of AML site activities to be performed determines which regulations guide the site activities. In general, field staff should follow NEPA procedures[21] when conducting activities to address physical safety issues and for those sites where activities have historic, cultural, or wildlife impacts.[22] When an imminent physical safety emergency occurs, the BLM should conduct NEPA procedures concurrently or as soon as possible after the fact. Physical safety risk emergencies may be categorically excluded from NEPA compliance. For information regarding NEPA, see the BLM's *NEPA Handbook* (H-1790-1).

[21] At the time this Handbook was written, the DOI was proposing revisions to the BLM's procedures for Chapter 11 of the DOI's Manual DM516—Managing the NEPA Process (see text box *Resources for Getting Work Done On-The-Ground*). Information about the proposed changes can be found at http://www.doi.gov/oepc/cx_analysis.html. Although the proposed changes are not likely to significantly impact the AML program, field staff should ensure they adhere to the most recent version of the department manual. Additionally, the proposed revisions may provide useful guidance. Also, note that at the time this Handbook was written a draft revised *Solid Minerals Handbook* had been completed and was under review. Field staff should ensure they refer to the most recent version of the *Solid Minerals Handbook*. The link provided in the above text box should provide the most recent authorized version (i.e., if the revised handbook is still under review, the link will provide the 1992 version).

[22] For simplicity, historical, cultural, and wildlife conservation are included in the section describing physical safety issues under NEPA (section 9.3.3). In reality, sites being addressed under CERCLA authority also may have historical, cultural, or wildlife impacts that would be addressed under Applicable or Relevant, and Appropriate Requirements (ARARs), and the guidance provided in Section 9.3.3 also would be applicable to CERCLA sites.

Follow the CERCLA process for sites with a release or the threat of a release of a hazardous substance (e.g., water quality sites). EPA uses the term "hazardous substance" for the chemicals which, if released into the environment above a certain amount, must be reported and, depending on the threat to the environment, Federal involvement in handling the incident can be authorized. A list of the hazardous substances is published in 40 CFR 302, Table 302.4.

A typical AML site may have mine tailings and waste rock present. If site investigations indicate the likely possibility that heavy metals in mine waste (e.g., lead, zinc, copper, cadmium, arsenic, zinc) have been or are likely to be released into the environment and degrade water quality, then CERCLA is the most appropriate authority to address the site. Besides being most appropriate for sites with hazardous substances, there are two major advantages of using the CERCLA process:

1. Cost recovery is possible and authorized if a viable PRP has been identified; and
2. CERCLA actions are not subject to pre-enforcement legal challenge.

For detailed information on CERCLA site characterization, see the BLM's *Response Actions Handbook NCP/CERCLA* (H-1703-1).[23]

Using Contractors

The BLM often uses contractors for remediation and other activities associated with water quality sites. In addition to local contractors, the NSTC Division of Environmental Compliance maintains Blanket Purchase Agreements (BPAs) with contractors (commonly referred to as the National AML/Hazmat Contractors) in support of ongoing AML work. The contractors are available through contact with the Division and can also be accessed through Field Office procurement staff and the usual BPA process. Division staff can provide Statements of Work, Cost Estimates, and Technical Proposal Evaluation Committee (TPEC) assistance regardless of other levels of support provided to a project.

Table 4 (page 55) shows which NEPA and CERCLA activities typically are conducted during the process of addressing AML sites. Note that the tasks listed under each step do not always occur in the exact order shown. In some situations, tasks described under one step may overlap, be continued in, combined with, or possibly precede subsequent steps. Therefore, the following steps should not be interpreted as necessarily sequential. AML field personnel enter the date of completion into the AML inventory database (see Chapter 5) for each of the NEPA and CERCLA activities listed in Table 4.

9.2. Physical Safety Risk Emergencies

Accidents and deaths or the immediate potential for such tragedies at AML sites on land administered by the BLM are considered emergencies. Upon notification of an emergency at an AML site, Field Office Managers and AML field personnel should immediately contact the local authorities and initiate appropriate emergency procedures (e.g., initiate search and rescue).

[23] In general, the AML program follows CERCLA procedures when there is a release of a hazardous substance, and NEPA processes when there is no release of a hazardous substance; however, in certain situations, for example a site being remediated in partnership with the State, the State may choose to use NEPA instead of CERCLA.

Table 4: Process for Addressing AML Sites under NEPA or CERCLA

GENERAL PROCESS	NEPA	CERCLA
Site Discovery	Categorical Exclusions (CX)	Site Evaluation (PA/SI)
Site Visit/ Site Verification	Screening/Scoping Physical Risks Recognition	Site Evaluation (PA/SI)
Claimant Contact*	Contact Mining Claimant (or operator with Notice or Plan of Operations)	Contact Mining Claimant (or operator with Notice or Plan of Operations) PRP Search
Site Characterization†	Wildlife (e.g. bat), Cultural, & other Surveys	Sampling and Analysis Plan (SAP) Wildlife (e.g. bat), Cultural, & other Surveys
Reporting	Record of Decision (in the case of an EIS)/ Decision Record (in the case of an EA)	EE/CA or RI/FS ARARs Estimate and Report Clean-up Costs
Public Involvement/ Comment	*Notice of Intent* *Public Comment*	Community Involvement Plan Public Comment Period
Remediation	ROD (in the case of an EIS)/ Decision Record (in the case of an EA) *Issue Permit/Authorization* *Final Design* *Construction Started* *Construction Completed*	Action Memorandum/ROD‡ Final Design Construction Started Construction Completed
Closure	*Closeout Report*	Closeout Report
Monitoring	*As specified in the Record of Decision*	Post-closure Monitoring requirements 5-Year Reviews

Notes:

Public Involvement/Comment items in *italics* are not necessary for Environmental Assessments (EA) under NEPA, but are necessary when an Environmental Impact Statement (EIS) is required. Italicized items under Remediation, Closure, and Monitoring also are not necessary for an EA, but may be necessary for the EIS.

ARAR – Applicable or Relevant, and Appropriate Requirements
EE/CA – Engineering Evaluation/Cost Analysis
PA/SI – Preliminary Assessment/Site Investigation
RI – Remedial Investigation
RI/FS – Remedial Investigation/ Feasibility Study
ROD – Record of Decision
SI – Site Investigation

*An entity may not need a mining claim to obtain approval to operate under a Notice or Plan of Operations; therefore, in this context, claimant also refers to an operator with a Notice or Plan of Operations.

†Under the NCP, site characterization occurs from the PA through an EE/CA or RI, and the SI also requires a SAP.

‡RODs are prepared for remedial actions and Action Memoranda are prepared for removal actions.

Once the immediate situation has been resolved (e.g., a human being is no longer in immediate danger), Field Office personnel should visit the site to take necessary actions to control the immediate impacts of the emergency (e.g., post signs, fill in sinkholes). Such actions are generally

exempt from Environmental Assessment and Environmental Impact Statement (EA/EIS) reporting requirements (i.e., they may be exempt under a categorical exclusion).[24] However, other actions, such as related recovery actions after the emergency has passed, remain subject to NEPA review. If the physical safety risk emergency itself is categorically excluded from NEPA compliance, Field Office staff should prepare a Categorical Exclusion (CX) document for management to sign.[25] For specific guidance, consult the Council on Environmental Quality regulations (40 CFR 1506.11), the DOI Manual 516 DM 5, and the BLM's *NEPA Handbook* (H-1790-1). As with any potential AML site, new information gained from a site visit or other activities related to physical safety risk emergencies should be entered into the AML inventory database (see Chapter 5).

To expeditiously address physical safety risk emergencies, field staff may need to make assumptions. If this is necessary, err on the side of caution. For example, in the case of an adit, assume bats are present and immediately erect an appropriate bat gate rather than expend time and resources conducting bat surveys and delaying the elimination of the risk.

9.3. Physical Safety Risk Sites

The BLM estimates that 25 percent of the abandoned mine lands in its inventory have physical safety risks. Field personnel are responsible for evaluating AML sites and addressing any physical safety risks. The following are typical risks that may be encountered at AML sites:

Multiple Sites – BLM field personnel may group sites (physical safety and/or water quality/environmental) and evaluate the cumulative effect to increase efficiency and to decrease the negative cumulative effects of activities at nearby sites.

- Open shafts and adits (some concealed by deterioration or vegetative growth);
- Unstable rock and decayed support structures;
- Deadly gases and lack of oxygen;
- Explosives and toxic chemicals (including illicit drug labs);
- Highwalls; and
- Open pits.

More subtle risks include the following:

- Encounters with wild animals (e.g., rattlesnakes, bears, mountain lions, or scorpions);
- Exposure to diseases from bat droppings, hantavirus, radon and radiation; and

[24] The BLM has determined that there are categories of actions that do not have a significant effect on the quality of the human environment, and therefore, are exempt from NEPA. (See 516 DM 2, Appendix 1 or 516 DM11 for specific categorical exclusions.)

[25] BLM prefers that field personnel complete the CX paperwork prior to conducting any activities that are categorically excluded; however, if these activities must be undertaken immediately to protect human life, the CX forms should be completed as soon as possible after implementing the emergency actions. BLM's NEPA Handbook (H-1790-1) provides a sample form that may be used to document the CX; however, this form does not explicitly require an explanation of how the (proposed) action fits the CX category and that when applicable there are no extraordinary circumstances in which such a normally excluded action may have a significant environmental effect. BLM encourages documentation of such an explanation to ensure that CXs are applied appropriately.

- Toxic mine tailings and soil, water, and air contaminated with cyanide, lead, arsenic, mercury, and other toxins that may be inhaled through dust and particles or through contact with impounded acidic water.

The potential risk for injuries and deaths at AML sites is expected to increase as western population grows and recreational use of public lands (e.g., use of mountain bikes and OHVs) increases. The public is increasingly in contact with heretofore isolated sites. For sites where physical safety risks may exist, but do not present an imminent threat to human health and safety, field personnel should follow the process described in this subsection for evaluating the site and addressing any physical safety risks.

9.3.1. Site Discovery

Field personnel become aware of potential AML physical safety risk sites through their own inventory efforts or notification via another Federal or State agency or a private citizen or organization. The first step after being notified of a potential AML physical safety risk site is to determine if it is eligible for AML program funding (see Chapter 6). A site visit may be necessary to determine eligibility (see Section 9.3.2). If not already reviewed during the site eligibility determination, field personnel should check the AML inventory database, and if the site is not already in the inventory, they should add it to the database and continually update the site record as additional information is obtained.

Additionally, before visiting the site, field personnel should review available documents and other existing information (e.g., old mining records, land status plats, geological publications, LR2000—Mining Claim Recordation System, and photographs) for the specific site and surrounding area. Much of this information is available in the BLM's State and Field Offices or with other State and Federal agencies. This information will help in determining the following:

- **BLM program funding eligibility** (see Chapter 6).
- **Types of physical risks** that may be present.
- **How likely the public is to visit the site.** For example, if the site is near or in a designated recreation area or near a heavily populated area, the site is more likely to be visited by the public, which will increase the priority of the site (see Section 7.2).
- **Current mine claimants.** Past mining claimants, even though their claims may have lapsed, may be responsible for the final disposition of the property (including resolving any physical safety issues). They also are responsible if they enjoy the benefits that an owner would, including continued use, attempt to sell the property, or taking legal action to protect the property. Any entity operating under a Notice or Plan of Operations, even though they may not be a claimant, also may be responsible for addressing any safety risks at the site. If the claimant or operator does not take action to remedy the risks at the site, the BLM may conduct the work at the expense of the claimant or operator (see *Cost Recovery* text box).

Cost Recovery

Depending on the circumstances, cost recovery for physical safety risk and environmental remediation may be conducted by AML or another program of the BLM (e.g., Solid Minerals or Surface Management) via an enforcement order or the reclamation bond required under 43 CFR 3809. Funds expended by the BLM for environmental restoration also may be recouped from the claimant or operator under CERCLA authority to recover from PRPs. If the reclamation bond is not adequate or no bond was posted, the BLM uses all available legal means to recover any public funds expended reclaiming the site. It is acceptable and often necessary that 43 CFR 3809 and 43 CFR 3715 enforcement actions take place in tandem with other actions such as CERCLA. Whenever possible, the BLM coordinates all actions taken (preferably through the Solicitor's Office) to insure the strongest possible case can be made for all actions contemplated by the BLM.

9.3.2. Site Visit/Site Verification

If after reviewing available information the BLM determines that the physical safety risk warrants further consideration, field personnel visit the abandoned mine site and surrounding vicinity to gather first-hand information in characterizing the site and determining next steps. The site visit helps to confirm AML funding eligibility (see Chapter 6), identify specific suspected safety risks, and provide additional input on public accessibility (which is useful for prioritization – see Section 7.2). All of OSHA's and the BLM's health and safety regulations and directives must be followed while conducting all on-site activities (see Chapter 2). While at the site, field personnel may post signs and/or fence around openings to address any immediate concerns (see Section 9.2 on documenting these activities).

9.3.3. Site Characterization

For many physical safety risk sites, the site visit may be sufficient to assess and characterize the site to determine if any imminent or long-term physical safety risks exist that would require additional activities. However, additional review may be needed to determine if there are any historical, cultural, or wildlife (e.g., bats) issues that should be addressed as a result of mitigating the physical safety risk.

9.3.3.1. Historic Preservation

The NHPA (16 U.S.C. 470) requires Federal agencies to consider the effects of their activities on historic properties and to provide the Advisory Council on Historic Preservation (ACHP)[26] a reasonable opportunity to comment. The BLM must comply with these requirements, which are implemented within the BLM through a national Programmatic Agreement (nPA) with the ACHP and the National Conference of State Historic Preservation Officers. This agreement is implemented through individual protocols between the BLM's State Offices and State Historic Preservation Officers, with direction for compliance provided in the BLM's Manual 8100 series.

If the BLM is considered the responsible Federal agency, field staff must determine whether the proposed activities at the AML site could affect historic properties. Historic properties are listed in the National Register of Historic Places database (http://www.nr.nps.gov) or meet the criteria for the National Register. When the BLM determines the potential effects of a proposed project on current or potential historic properties, field personnel shall follow procedures set forth in the nPA, State

[26] ACHP is an independent Federal agency that promotes the preservation, enhancement, and productive use of the nation's historic resources, and advises the President and Congress on national historic preservation policy.

protocols, and the 8100 Manuals. See *Historic Preservation Resources* text box for additional information sources.

Historic Preservation Resources

- 36 CFR 800 http://www.achp.gov/regs-rev04.pdf
- 36 CFR 800 summary http://www.achp.gov/106summary.html
- BLM Manual Section 8100 http://www.blm.gov/nhp/efoia/wo/manual/8100.pdf
- Criteria for the National Register http://www.achp.gov/nrcriteria.html
- *Guidelines for Identifying, Evaluating, and Registering Historic Mining Sites* (Noble, Jr. and Spude, revised 1997) http://www.cr.nps.gov/nr/publications/bulletins/nrb42/
- Information on the ACHP http://www.achp.gov/aboutachp.html
- Information on NHPA http://www.achp.gov/nhpa.html
- Information on State Historic Preservation Officers http://www.achp.gov/shpo.html
- National Register database http://www.nr.nps.gov/
- NPS Historic Preservation Program http://www.achp.gov/nps.html

9.3.3.2. Cultural Preservation

The BLM views the management of cultural resources as an integrated system of identifying and evaluating cultural resources, deciding on their appropriate uses, and administering them accordingly. This approach applies to both public lands and other lands where the BLM's decisions could affect cultural resources. For detailed information, field personnel should see the BLM's Manual 8100 series, which establishes the BLM's uniform process for meeting the requirements of the cultural resource authorities (see *Cultural Preservation Resources* text box).

Cultural Preservation Resources

- ***The Foundation for Managing Cultural Resources*** (BLM, MS-8100) provides BLM managers with basic information and general summary guidance for managing cultural resources http://www.blm.gov/nhp/efoia/wo/manual/8100.pdf.
- ***Identifying and Evaluating Cultural Resources*** (BLM, MS-8110) provides general direction on identifying, evaluating, categorizing and allocating to uses all the cultural resources that occur on public lands within a Field Office manager's jurisdiction http://www.blm.gov/nhp/efoia/wo/manual/8110.pdf.
- ***Planning for Uses of Cultural Resources*** (BLM, MS-8130) clarifies the level of cultural resource information and the long-term management decisions needed in land use plans that pertain to cultural resources http://www.blm.gov/nhp/efoia/wo/manual/8130.pdf.

9.3.3.3. Wildlife Conservation

AML sites, especially the mine itself (e.g., shafts, tunnels, and adits), are frequently used as habitat by many wildlife species including birds, reptiles, insects, and a variety of mammals, most notably bats.

Additionally, water bodies (e.g., lakes, streams, ponds) on or adjacent to the AML site may provide habitat for fish and other aquatic species, which may be negatively affected as a result of past or current activities at the site. The BLM's field personnel, contractors, or partners shall investigate and evaluate AML sites in consultation with qualified biologists:

Wildlife Conservation Resources

- *Special Status Species Management* (MS-6840) http://www.blm.gov/nhp/efoia/wo/manual/6840.pdf

- To determine if the AML site is of value to wildlife populations, or provides habitat for special status species (see MS-6840 and Section 1.8); and
- To reduce or eliminate unnecessary wildlife mortality and habitat loss, thus reducing or avoiding the need to add other species to the threatened and endangered list under the ESA (see Section 1.8).

The BLM's field personnel shall work with the State by consulting with the State wildlife officials and reviewing the State Wildlife Action Plans (also known as Comprehensive Wildlife Conservation Strategies). Each State's plan identifies priority wildlife species and habitats, assesses threats to their survival, and identifies long-term conservation actions, including those on public lands administered by the BLM.

Fish Conservation

Aggressive placer mining throughout the West has removed critical streambed habitat for fish and macroinvertebrates. The BLM's field personnel should consider State Wildlife Action Plans, most of which highlight fish species of state management concern. Also, field personnel should review current assessments and strategies published by the Western Native Trout Initiative, a partnership of state and federal agencies focused on restoration of coldwater fish and their habitats.

9.3.3.4. Bat Surveys

Abandoned underground mines provide significant habitat for bats—more than half of North America's 47 bat species are known to use mines. Acquiring even a basic understanding of bat use of abandoned mines often requires repeated surveys during different seasons. Sealing mines without first evaluating their importance to bats may be one of the single greatest threats to North American bats.

This subsection provides a brief overview of the major steps involved in evaluating mines for the presence of bats and bat habitats. The information provided in this subsection is intended as a general overview of considerations for bat surveys at abandoned mines. It is not intended to be used as a survey protocol. See the *Bat Survey Guidance* text box for references on standardized protocols. Further guidance on procedures and techniques for mine surveys for bats is available from a variety of other BLM and AML publications.

Bat Survey Guidance

- *Bats and Mines Handbook* (BCI, 1998) http://www.batcon.org/home/index.asp?idPage=53&idSubPage=87
- *Bat Conservation and Mining: A Technical Interactive Forum* (2000) http://www.mcrcc.osmre.gov/Forum.htm
- *Bats and Mines: 1994 Workshop Proceedings. Biological Resources Research Center, University of Nevada, Reno.*

Field personnel shall conduct surveys and other activities at abandoned mine sites in consultation with qualified biologists experienced with bats and their use of mines. During the site visit, field personnel shall conduct a preliminary evaluation to describe all mine openings and relevant

information to assess whether a particular site has the potential to provide bat habitat. Mines with high potential for bat use generally have one or more of the following:

- Large, complex underground features;
- Features with underground interconnections;
- Multiple, scattered surface openings; or
- Air movement at a portal.

Virtually any abandoned mine could be used as roosting habitat for bats. However, where the ribs, back, and sill of shallow adits are visible from the portal and no lateral workings and sign of bat use is seen, it is safe to assume that the site has low potential as bat habitat. Similarly, mines that are flooded above any lateral connections and/or even periodically flooded to within a foot of the back are not likely to provide suitable roosting sites (Altenbach et al., 1999).

Additional Bat Survey Resources

- *Brochure - Evaluating Abandoned Mines for Bats: Recommendations for survey and closure* http://www.batcon.org/news2/mines/nrcs_brochure.pdf
- *Evaluation of Bat Use in Abandoned Mines* in *Species Conservation Assessment and Conservation Strategy for the Townsend's Big-eared Bat. Idaho Conservation Effort* (Altenbach, J.S.; D. Genter; B.L. Keller; and K. Navo, 1999)
- *Managing Complex Systems Simply: Understanding Inherent Variation in the Use of Roosts by Townsends's Big-Eared Bat* in *Wildlife Society Bulletin* 31(1):62-72 (Sherwin, R.E.; W.L. Gannon; and J.S. Altenbach, 2003)

Sites with potential bat roosts shall be prioritized for future surveys. Determine the safety and feasibility of conducting internal surveys within the mine. An internal survey is a thorough visual inspection of all potential roosting surfaces within the mine for resident bats or evidence of their presence. Evidence of bat use may include guano, urine staining, odor, insect parts, and social calls or other acoustic indications. Internal surveys are extremely dangerous and require extensive preparations and safety precautions. The BLM's officials entering an abandoned mine must have the appropriate training, experience, and approvals.[27] However, when properly conducted, internal surveys are the most reliable and least labor-intensive survey type for evaluating abandoned mines as bat roosts. Generally, if bat use of a mine is significant, bats or evidence of bats will be encountered well before the entire mine has been evaluated.

If no evidence of bats is apparent during an internal survey, but the mine has potentially important inaccessible areas (e.g., large stopes or dangerous shafts), or where internal surveys are not safe, feasible, or permitted by authorities, external observations at all portals are necessary. External surveys consist of positioning personnel where they can observe bats exiting and/or entering the mine during the night. Observations may be made with night vision, infrared cameras/recorders, or a variety of other aids. Avoid the use of red lights, as some bat species are sensitive to this wavelength. With care, external surveys are potentially safer for personnel, and less disturbing to bats than internal surveys. However, external surveys are far less efficient and more labor intensive.

Bat use may be documented by a single survey if the animals are actually observed. However, determining that a site is not used can only be inferred after repeated surveys where no animals or signs were detected. Many bat species routinely switch between suitable roosting sites. Movements

[27] At the time this handbook was written, the Solid Minerals Division was developing underground site entry guidance. Filed personnel should follow the most recent available guidance for underground site entry.

may occur between mine roosts every few weeks during the warm season, with some bats using five or more different roosts throughout the summer. As a result, the timing and frequency of external surveys is crucial to understanding how bats use particular roost sites to avoid a false conclusion that a site is not used. See the *Additional Bat Survey Resources* text box for additional references on timing, frequency, equipment, and methods for internal and external bat surveys.

9.3.4. Reporting

After conducting the site characterization activities, the BLM's field staff, contractors, or partners prepare a narrative report summarizing the findings of the investigation. The narrative report summarizes what is known about the site, the activities conducted, and all information researched. Additionally, depending on site circumstances, activities conducted for physical safety sites on land administered by the BLM may require the preparation of an EA, unless the site is exempt from NEPA review.[28] Because impacts from the BLM's actions on AML sites are mitigated in conjunction with the activities at the site, an EIS is generally not needed for physical safety risk remediation activities conducted on AML sites.

Information regarding the documentation of CXs is provided in Section 9.2. See Table 4 (above) for a list of the NEPA steps that may require documentation, and see the BLM's *NEPA Handbook* (H-1790-1) for specific NEPA reporting requirements. Additionally, a case file should be maintained containing information that may not be available elsewhere (e.g., topographic maps, invoices, photos, e-mail messages).

9.3.5. Remediation

9.3.5.1. Interim Measures

During the site visit, field personnel may take temporary measures, such as posting warning signs and fencing, to mitigate immediate physical safety risks. These measures keep the public away from and warn of the risk posed at sites (see Section 9.2 on documenting these temporary actions).

9.3.5.2. Permanent Measures

Field personnel should have obtained sufficient information during the site characterization (see Section 9.3.3) to determine what type of longer-term action they should take to mitigate physical safety risks at the site. Additional longer-term remedial measures may include the following:

- Closing adits and shafts;
- Filling or blocking other potentially hazardous openings;
- Backfilling highwalls;
- Draining impoundments;
- Contouring and reseeding spoil piles;
- Removing or stabilizing tailings;
- Removing leftover equipment, dangerous structures, and debris; and

[28] In SMCRA States where the State agency has an agreement with BLM and OSMRE regarding NEPA requirements, the State is authorized to prepare appropriate NEPA documents with concurrence and review from the Federal counterparts.

- Revegetating to help offset erosion and improve stability.

If during the site characterization, the BLM's field personnel determine that remedial activities may impact historical, cultural, or wildlife resources or habitat, they must mitigate these impacts during the remedial activities. For example, the BLM's field personnel install bat-compatible gates, grates, or cupolas when mine workings are determined to be beneficial as habitat for bats. Bat gates and cupolas are cost effective closure methods that protect and promote bat habitat by allowing bats to pass in and out of a mine while blocking human entry. In many cases, it may be more cost effective to assume the presence of bats and install bat-compatible closures (e.g., gates, grates, or cupolas) rather than expending the time, effort, and resources required to conduct bat surveys (see Section 9.3.3.4).

Technical References for Physical Hazard Remediation

- *Bats and Mines Handbook* (BCI, 1998) Appendix III provides detailed plans for the construction of bat gates and cages http://www.batcon.org/home/index.asp?idPage=53&idSubPage=87.
- *Efficient Permanent Closure of Abandoned Mine Safety Hazards on BLM-Managed Lands* (BLM Resource Notes Issue 73, by Christopher Ross, 8/27/2004) http://www.blm.gov/nstc/resourcenotes/rn73.html
- Nevada Commission on Mineral Resources Division of Minerals AML Website provides a link to drawings showing minimum state standards for fences around mine shafts and adits http://minerals.state.nv.us/programs/aml.htm.
- *Solid Minerals Reclamation Handbook (H-3042-1, 1992*) http://web.blm.gov/internal/wo-300/wo-320/rechandbook.html

Complete closure of abandoned mines known to support bats should be considered only as a last resort, and should be done in consultation with qualified biologists experienced with bats (e.g., consult with the BLM's Wildlife and Special Status Species program). If it is determined that an abandoned mine containing a known roost must be permanently closed, the BLM's field personnel shall implement bat exclusion techniques, such as netting, several days prior to closure activities. Exclusionary measures shall be conducted in early spring or in the fall to avoid impacts to hibernating bats or flightless young.

Where extremely hazardous mines are present in close proximity to high human use areas, the need to reduce or eliminate threats to public safety may outweigh the potential loss of wildlife habitat. Where there is an urgent need to complete remediation in the interest of public safety, bat surveys are a lower priority. However, exclusion techniques should be implemented.

9.3.6. Monitoring

Although physical safety sites may not need as frequent monitoring as water quality sites (see Section 9.4.9), they still need to be monitored for the following reasons:

- Adits and shaft closures can fail over time;
- Fences and signs can be vandalized or otherwise damaged; and
- Remedial activities may be adversely impacting wildlife (e.g., bat gates may have been placed incorrectly and may cause death or stress to the bat population).

Therefore, remedies for physical safety risks also need to be monitored periodically to ensure that the remedy remains in place as long as necessary and continues to achieve the desired result.

9.4. Water Quality Sites

Water quality sites are those sites where a hazardous substance release has occurred, is suspected, or the threat of release exists. The BLM generally uses CERCLA authority to address these sites.[29] The majority of activities at AML sites involving water quality issues will follow CERCLA's removal action process, rather than the remedial process; however, the basic steps in the two processes are similar. The remainder of this chapter outlines various steps in addressing water quality sites under CERCLA. Note that these steps may overlap (i.e., tasks described under one step may be continued in other steps). For example, site characterization (Section 9.4.4) occurs from the Preliminary Assessment (PA) through an EE/CA or Remedial Investigation (RI). Therefore, the following steps should not be interpreted as necessarily sequential. For detailed information on the activities that are conducted under CERCLA refer to the BLM's *Response Action Handbook NCP/CERCLA* (H-1703-1).

9.4.1. Site Discovery

As with physical safety sites (see Section 9.3.1), field personnel become aware of potential AML water quality sites through their own inventory efforts or notification via another Federal or State agency or a private citizen or organization. The first step after being notified of a potential AML site is to determine if it is eligible for AML program funding (see Chapter 6). A site visit may be necessary to determine eligibility (see Section 9.4.2). If not already reviewed during the site funding eligibility determination, field personnel check the AML inventory database (see Chapter 5) and review available documents and other existing information (e.g., old mining records or photographs) for the specific site and surrounding area. Much of this information is available in the BLM's State and Field Offices or with other State and Federal agencies. If the site is not already in the inventory, it should be added to the database and continually updated as additional site information is obtained. Information obtained during the site discovery phase will provide the basis for the CERCLA PA.

If sufficient information exists, field personnel make a determination of the time-critical nature of the suspected or actual release. If the release poses imminent and substantial threat to the public health or welfare of the environment (i.e., an emergency situation) or if the removal action must be initiated within six months, AML field personnel refer the site to the HAZMAT division (Section 4.1). A site visit and additional investigation may be required to make this determination.

9.4.2. Site Visit/Site Verification

After reviewing available information, field personnel visit the abandoned mine site and surrounding vicinity to gather useful first-hand information in characterizing the site and determining next steps. The site visit helps identify the following:

- Suspected hazardous substances (e.g., cyanide or explosives);
- Safety risks;
- Surface water bodies; and
- Whether the site is near or in a designated recreation area or near a heavily populated area.

[29] If the BLM's field staff implements CERCLA authority at a site, separate NEPA analysis is not required. Field staff can address physical safety hazards concurrently with the environmental remediation under CERCLA, which requires a similar NEPA-type investigation into historical, cultural, and wildlife impacts of any activities at the site.

All of OSHA's and the BLM's health and safety regulations and directives must be followed while conducting all on-site activities (see Chapter 2). Field personnel can develop a HASP in conjunction with the Work Plan prior to the site visit, but these documents may need to be revised for the site characterization (see Section 9.4.4). Under CERCLA, the site visit provides information for the site evaluation, which consists of a Preliminary Assessment/Site Investigation (PA/SI). The objective of the PA/SI is to determine if any action at the site is needed.

9.4.3. PRP Search

CERCLA provides the Federal government with powerful tools to recover costs spent responding to hazardous substance releases, or avoid such costs by having responsible parties perform appropriate response action or provide funding for such action. A PRP under CERCLA is "any person that may be held liable for the costs of cleaning up hazardous substances released into the environment." This includes the current or past owner/operator, generator, or transporter. Any person that qualifies as a PRP as defined by CERCLA may be held liable for some portion of, or all of the costs for site cleanup incurred by the BLM, the DOI, other entities of the Federal or State government, or Indian Tribe.

Resources for PRP Searches

- *CERCLA Potentially Responsible Party Search Guide* (USDA, June 2001) http://BML_AML/pdfs/USDA_PRPSearchGuide.pdf
- *Potentially Responsible Party Searches* (BLM Resource Note 57), January 2002 http://www.blm.gov/nstc/resourcenotes/respdf/RN57.pdf
- *PRP Search Manual* (EPA, September 2003) http://BML_AML/pdfs/EPA_PRPSearch.pdf

To ensure that all PRPs are identified, it is necessary to conduct a PRP search. The primary objective of a PRP search is to collect information to determine legal liability and financial viability of individuals and/or companies that have or had responsibilities for actions undertaken at the site. Funding for a site cleanup requires the completion of a PRP search that identifies a PRP responsible for clean-up costs, or that determines that no viable PRP exists for an abandoned mine site. See *Resources for PRP Searches* text box for additional information.

It is the BLM's policy to make every reasonable effort to identify PRPs as early in the process as possible. However, PRP searches should not delay initiation of AML projects, nor should the costs of conducting PRP searches be disproportional to the estimated costs of the site(s) to be addressed. Conduct PRP searches concurrently with other phases of the project. If a financially viable responsible party is identified, coordinate actions with the appropriate Solicitor's Office (see Section 4.2.1) and bring the responsible party into the next phase of project completion or reimbursement.

Typically, the BLM's State Offices are responsible for initiating PRP searches to determine if a PRP exists for each site being addressed under the AML program. However, State Directors are authorized to further delegate their assigned functions in cases where Field Offices are prepared to take on such duties and responsibilities. For more extensive and robust PRP search efforts, the BLM has several pre-approved contractors that can be used to assist the BLM in conducting the PRP search process at an abandoned mine site.

Any individual who conducts a PRP search should have the expertise to search land title records, review corporate and individual financial records, and assess mining claims and patent records. The

individuals should have sufficient knowledge of CERCLA and other environmental laws to assess whether a PRP exists at a site, and if the waste contains a CERCLA hazardous substance. The BLM's employees who may conduct PRP searches should attend the BLM's training course related to CERCLA cost recovery and enforcement.

9.4.4. Site Characterization

Site characterization involves assessing the site to determine if any imminent or long-term safety and environmental risks exist that would require additional activities. During site characterization, the BLM's field personnel, contractors, and partners gather information about contaminants of concern (by collecting soil and/or water samples), exposure pathways, and potential receptors for water quality sites. Therefore, water quality sites generally require a sampling and analysis plan (SAP). If not previously prepared, the SAP may be prepared in conjunction with the Work Plan and HASP. If necessary, the Community Involvement Plan should also be developed. (See Section 9.4.6 for more information regarding community involvement.) Site characterization information is used to prepare the EE/CA[30] for removal actions and the Remedial Investigation/Feasibility Study (RI/FS) for remediation actions, as required by CERCLA. The objective of the EE/CA or RI/FS is to determine what actions need to be conducted at the site.

9.4.5. Reporting

As indicated above, field personnel should prepare the following plans prior to conducting any on-site activities:

- Work Plan;
- SAP;
- HASP; and
- Community Involvement Plan.

CERCLA requires that field personnel report at least the following information obtained during site activities in the EE/CA or RI/FS:

- Field investigations and analytical results, which are reported in the PA and/or SI;
- Identification of and compliance with Applicable or Relevant and Appropriate Requirements (ARARs);[31]
- Assessment of risk; and
- Anticipated costs of the remediation options.

A list of the documents that are required for the CERCLA Administrative Record is provided in Appendix 1 of the BLM's *Response Actions Handbook NCP/CERCLA* (H-1703-1).

[30] If an EE/CA is planned, a removal site evaluation (PA or SI) and EE/CA Approval Memo is required.

[31] ARARs are Federal, State, and local standards that are directly applicable or may be considered relevant and appropriate to the circumstances on the site. Examples include NHPA and ESA.

Additionally, a case file should be created for each water quality project.[32] It is important for the case file builder and user to be able to locate information about the project; therefore, this file does not have to be a duplication of another file that already contains the information (e.g., hazmat file or administrative record). The following basic information should be included in the case file:

- AML case recordation abstract (serial register page) or other abstracts;
- Master Title Plat showing location of site;
- Topographic maps showing location of site;
- Newspaper articles;
- Manual, Handbook, or other legal references;
- Title research documentation;
- Contract information;
- Reports;
- Invoices;
- Photos;
- E-mail messages, phone messages, and other correspondence;
- Decision memos, Decisions, and Notices; and
- Evidence of constructive service.

9.4.6. Public Involvement/Comment

The values and unique culture of each community impact how area residents react to clean-up efforts at AML sites. Under CERCLA authority, field personnel must consider community involvement. CERCLA has specific requirements for the following public involvement activities:

- Preparing Community Involvement Plans;
- Providing the public with information before and after documents are prepared; and
- Allowing for and addressing public comments.

In addition to complying with CERCLA requirements, incorporating the surrounding community into the process may help in other ways:

- Identify overlooked local knowledge;
- Increase the public's knowledge regarding AML sites and their risks; and
- Provide support for remediation activities at the site.

9.4.7. Removal/Remediation

Based on information collected during the site characterization and reported in the EE/CA or RI/FS, a specific removal or remedial action is determined. EPA guidance for conducting EE/CAs or RI/FSs specifically identifies how remedies are to be developed and how they are to be analyzed.

[32] Generally, field personnel create case files for large, long-term AML projects, such as water quality projects where project codes are assigned. They *may* choose to apply similar reporting practices to manage large physical safety projects as well.

Conventional or innovative/emerging technologies or institutional controls[33] may be used. Before implementing any removal or remediation action on land managed by the BLM, an Action Memorandum must be completed. The Action Memorandum provides basic information regarding the selected removal/remediation action. For remedial actions, additional activities include preparing and obtaining approval of the final design, and beginning and completing the construction of treatment processes. The following are typical approaches to remediating water quality sites:

- Remove the source of the contamination (e.g., moving tailings out of active floodplain, stabilizing in place, or treating soils and solid materials);
- Treat the contaminated water; and/or
- Reroute the flow of water away from contamination or stabilized mine waste.

9.4.7.1. Site Remediation Technology Options

There are many options for addressing the potential and actual water quality and other environmental damage caused by abandoned mines. Determining the best option for a particular site requires evaluating the following:

- Type of contamination;
- On-site and surrounding ecology and environment;
- Media contaminated (e.g., ground water, soil, surface water, and sediment);
- Specific characteristics of each site; and
- Previously identified ARARs (see Section 9.4.5).

Additionally, more than one option may be selected for each site. Treatability studies or pilot tests may need to be conducted to determine the appropriate option(s). The following is not an exhaustive list but does provide some examples of remediation options that are used at AML sites.[34]

Remediation References

- *Abandoned Mine Site Characterization and Cleanup Handbook* (EPA 910-B-00-001, August 2000) http://www.epa.gov/superfund/resources/remedy/pdf/amscch.pdf
- *Abandoned Mine Waste Repositories – Site Selection, Design, and Cost* (Technical Note 410), April 2004 http://www.blm.gov/nstc/library/pdf/TN410.PDF
- *Handbook of Western Reclamation Techniques* (University of Wyoming/OSMRE, December 1996) http://www.ott.wrcc.osmre.gov/library/hbmanual/westrecl.htm#downloadhandbook
- *Passive Treatment Systems for Acid Mine Drainage* (Technical Note 409), April 2003 http://www.blm.gov/nstc/library/pdf/TN409.PDF
- *Solid Minerals Reclamation Handbook* H-3042-1 (1992) http://web.blm.gov/internal/wo-300/wo-320/rechandbook.html

[33] Institutional controls are non-engineering site management techniques or strategies used to protect human health and the environment (e.g., fencing, zoning, health education, easements, and other deed restrictions).

[34] Most of the examples included in Section 9.4.7.1 were found in *Draft Engineering Evaluation and Cost Analysis La Sal Creek Watershed Project San Juan County, Utah.* October 20, 2005 for BLM by Au' Authum Ki, Inc.

- **Access restrictions** can be implemented with the use of institutional controls, for example:
  - Fencing and signs to discourage direct access to specific areas and warn of risks;
  - Land use restrictions to limit the future uses of certain areas;
  - Physical modification of the ground surface to discourage long-term visitors (e.g., uneven or rough surfaces—for example scattered boulders may discourage some unauthorized campers); and/or
  - Removal of access roads.

Because access restrictions do not eliminate the risk, they are generally used in conjunction with other technologies.

- **Passive treatment systems** (e.g., wetlands or bioreactors) use sulfate-reducing bacteria, limestone, or both to neutralize acidity (from acid mine drainage) and precipitate metals. The BLM prefers the use of passive treatment systems rather than active systems (e.g., water treatment plants) because the former generally use less power and less hazardous chemicals (e.g., hydrated lime, caustic soda, and ammonia), and are less expensive.

- **Engineering controls** generally do not reduce the toxicity or volume of contaminants (except in the case of bulkheads), but do reduce mobility by isolating the contaminated materials from direct exposure to the wind, surface water, and groundwater. Engineering controls to consider include bulkheads, surface controls, subsurface controls, containment, or disposal in an on- or off-site repository.

  - **Bulkheads** serve as a plug to prevent discharge of mine waters. Mine water backs up behind the bulkhead, and generally the water rises to pre-existing natural groundwater levels. The flooded mine workings are referred to as the "mine pool." Once the mine pool forms, any abandoned mine discharge (AMD) generated in the upper portion of the mine pool tends to migrate (through small differences in water density) to the bottom of the mine pool. This mine pool "stratification" helps to remove AMD from release. The stratification process may take several years to complete. In addition, the mine pool becomes anoxic (i.e., oxygen deficient), which removes one of the components in the AMD chemical reaction.

    Water may be contained in the mine pool or depending on the existence of faults, fractures, veins, and other mine openings, water may seep out generally with flows much less than the existing discharge. Depending on site-specific conditions, any new seeps may or may not be contaminated with AMD (e.g., by excluding oxygen, the formation of AMD is reduced). In addition, minor leakage may occur around the bulkhead through natural factures or fractures induced by mining. Fracture grouting in the vicinity of the bulkhead can limit this residual leakage. Any significant residual flow can be addressed with additional source control or treated with small-scale passive treatment methods described below.

  - **Surface controls** reduce contaminant migration by curtailing water and wind erosion of the contaminated material and reducing the potential for infiltration of surface-water runoff. Because surface controls alone do not reduce the risks of direct exposure to the contaminated materials, they are commonly combined with source control technologies where there is concern of risks due to direct exposure. The process options that are commonly used as surface controls include consolidation and erosion mitigation (e.g., run-on and run-off controls, revegetation, and grading).

- **Consolidation** groups similar wastes in a common area for more efficient management or treatment. On-site wastes are excavated and transported to an identified on-site or off-site consolidation area where the wastes can then be managed, treated, and/or disposed as a single unit.

- **Erosion mitigation** (e.g., run-on and run-off controls, revegetation, and grading) is used to reduce the transport of the contamination off site via stormwater runoff and wind. Examples include construction of diversions to channel surface water away from or around the contaminated area, regrading to lessen slopes, covering the contaminated material with erosion resistant materials (e.g., natural or synthetic fabrics), and revegetating the surface of the contaminated area.

  Run-on and run-off control are used to prevent run-off from upslope areas (run-on) from contacting the contaminated material and to control run-off from precipitation falling on contaminated or otherwise disturbed areas. Controls include the use of earthen berms, V-ditches, channel diversions, and gravel drains.

  Revegetation stabilizes surface materials thereby reducing the potential for wind and surface-water erosion and minimizing water infiltration through plant evapotranspiration processes. Revegetation usually requires ground preparation (e.g., grading or scarifying) and application of soil amendments (e.g., nutrients and organic matter) and additives to improve pH conditions and water-storage capacity. Soil may need to be imported at sites where sufficient topsoil is not available on-site. The success of the revegetation largely depends on proper seed selection, site preparation, mulching, irrigation, and fertilization. Revegetation is generally used in conjunction with other remediation technologies.

  Grading is used to consolidate mine waste materials, control erosion by decreasing side slopes associated with contaminated areas, construct diversion structures and run-on/run-off controls, and improve site aesthetics. This may include construction of retaining walls to protect against channel bank erosion.

Erosion and Sediment Control

Often during remediation, erosion and sediment control are necessary. The California Stormwater Quality Association (CASQA) provides detailed instructions for various best management practices (BMPs) for erosion and sediment control in Section 3 of its *Construction Handbook* (CASQA, 2004), including the following that are sometimes used at AML sites:

- Streambank stabilization
- Preservation of existing vegetation
- Hydroseeding
- Earth dikes and drainage swales
- Sediment basin
- Straw bale barrier
- Wind erosion control

An electronic copy of the CASQA *Construction Handbook* is available at http://www.cabmphandbooks.com/Construction.asp.

- **Subsurface controls** are used to reduce the potential for interaction between contaminated materials and groundwater. The controls are generally designed to intercept up-gradient groundwater and direct the flow away from or around the contaminated material. Potential passive control measures include the use of low-permeability liners, slurry walls, and intercept drains.

- **Containment** is used as an on-site source control measure, and for solid material, involves capping the material in place. Capping the material and implementing appropriate erosion controls, eliminates direct exposure to the contaminated materials, reduces surface water infiltration, and creates a surface for vegetation. Regrading to reduce side slopes is often required to reduce erosion. The cover material should be less permeable than the natural subsoils beneath the contained waste. Cover designs at mines include natural-rock covers, soil covers, composite natural covers consisting of a low-permeability soil/clay layer overlain with native soil/rock, and geotextile covers with natural-rock or native soil cap.

  The construction of structures/features to control off-site migration of materials is another containment option. This approach includes those designed to capture sediment while allowing water to pass through the feature (e.g., structural silt fences), water retention features (e.g., sedimentation ponds) in combination with constructed channels to direct flow to the feature, and retaining structures (constructed walls or earthen berms).

- **On/Off-site disposal** of excavated contaminated materials occurs in an engineered repository. The contaminated material may be treated to stabilize or solidify the material, reduce mobility of contaminants, or remove contaminants through dissolution or leaching and precipitation processes. Repository design is a function of the characteristics of the mine waste and underlying hydrogeology. Potential designs range from an unlined repository with a vegetated soil cover to a fully lined and capped containment cell. A leachate collection system may be included to allow monitoring and proper management of any leachate within the repository. Additional guidance specific to the BLM regarding the use and placement of repositories is provided in Section 9.4.7.2.

  Aurora Mine and Mill Site (California) was active from 1853 up to the 1950´s. In the summer of 2000, restoration activities began with the removal of 8,000 cubic yards of mercury retort waste rock (calcines) and placement into a repository located adjacent to the site. All unearthed mining debris was also placed into the repository. The disturbed areas were recontoured and capped with two to three feet of non-mercury native soil. Native plant seeds from the adjacent vegetated areas were collected and then spread out under several inches of weed-free rice straw. To control erosion and stormwater runoff, rice straw hay bales were staked in the ground along the slope contours to help slow down the water and allow for the germination of the native plants. Total cost for restoration was $324,000. For more information on this site see http://www.blm.gov/ca/pa/aml/aurora.html.

- **Physical/chemical treatment** reduces the mobility, toxicity, and/or volume of the contaminated material. Treatments can be conducted *in-situ* (i.e., material is treated in place without excavation) or *ex-situ* (i.e., the material is excavated before treatment). Because treatment generally involves adding reagents to the contaminated media, *in-situ* treatment processes generally provide less control than *ex-situ* processes. The following physical/chemical treatment technologies can be used to treat contaminated solid materials (not all of the options can be done *in-situ*):

- **Physical separation** is used to concentrate contaminated solids by separating more highly contaminated material from less contaminated and/or uncontaminated material. It is commonly done by passing the material through sieves and screens of varying sizes to concentrate contaminants into smaller volumes or using magnetic separation to remove iron-bearing compounds.

- **Soil washing** is a water-based process for separating the finer fraction (including sorbed contaminants) from the bulk mass of the mine-waste material. The wash water may include a basic leaching reagent, surfactant, pH adjustment, or chelating agent to help remove contaminants. Contaminants are removed from the matrix materials by either 1) dissolving or suspending the contaminants in the wash solution or 2) concentrating the contaminants into a smaller volume of material through particle size separation. The recovered wash solutions and concentrated contaminated material then need to be treated.

- **Chemical extraction** is used to reduce the volume of contaminated material that needs to be treated. The process is similar to soil washing but uses a chemical extract (e.g., hydrochloric acid) rather than water to dissolve contaminants. The process consists of mixing the contaminated material with a chemical extractant to increase contaminant dissolution. Physical separation processes are commonly used before chemical extraction to separate the material into coarse and fine fractions.

- **Stabilization/solidification** is accomplished via chemical reactions between the treatment media and contaminants to reduce contaminant mobility (stabilization) or enclosing the contaminants within an inert, stabilized mass (solidification). To reduce the mobility of metals, common stabilization processes involve combining reagents, such as lime, limestone, and calcium hydroxide with the mine waste to raise the pH. Metal-binding reagents (e.g., phosphate compound) can be used to bind with metals in the waste to form relatively insoluble compounds.

- **Reprocessing** is used as a source control measure. The contaminated material is processed to recover economically valuable metals.

- **Phytoremediation** is the use of plants to reduce or stabilize metals toxicity in soils and water. There are different categories of phytoremediation:
  - **Phytoextraction** – the use of plants to remove soil contaminants by uptake into plant tissue. (This is not a passive technology; the plants need to be harvested to remove the contaminant, and without harvesting, off-site migration of contaminants may still occur or increase.)
  - **Phytotransformation** – the use of plants to transform soil contaminants into less toxic forms (e.g. the phytovolatilization of selenium).
  - **Rhizofiltration** – the use of plant roots to sorb, precipitate, and concentrate contaminants in flowing water.
  - **Phytostabilization** – the use of plants to help contain contaminants in place.

9.4.7.2. Repositories

If mine wastes are removed during reclamation, they are generally placed in a "mine waste stabilization area" (i.e., repository). Many AML sites exist on lands with mixed private and public ownership, such as patented mining claims surrounded by land administered by the BLM. Constructing and maintaining a single repository for storing all the mine wastes is usually the most efficient, cost effective, and environmentally sound approach. At the same time, the BLM and other parties must plan for potential liabilities that could arise under CERCLA in the event a repository fails.

State Directors can determine the location for an on site-specific repository with concurrence by the Office of the Solicitor (see Section 4.2.1). Decisions must minimize the possibility that the BLM will be held liable for the AML mine waste of others, or for the operation and management of repositories that the BLM does not operate or manage itself. The BLM's State Directors approve only AML repositories that contain waste rock, tailings, and milling wastes; they do not approve of placing hazardous wastes[35] in those areas.

The following factors must be taken into consideration when deciding on the placement of repositories:

- ***Economic*** – The transportation costs to relocate the mine wastes must be economically feasible.

- ***Environmental Engineering*** – The proposed repository must be in an environmentally sound location (e.g., minimal physical displacement of/impact to fish habitat—including seasonal variations; habitat and water quality are not impaired or disturbed), and the site must be adequately managed. The repository placement decision must be based on an appropriate environmental review (e.g., EA, EE/CA or other equivalent analysis, additional research, or studies).

- ***Partnership Approach*** – As discussed in Chapter 4, the BLM considers partnerships with Federal and State agencies, and private partners crucial to the development and implementation of logical and environmentally sound reclamation proposals. The best location for a particular stabilization area may be on Federal, State, or private land, or a combination of those lands. Partnerships regarding repositories must include the following:

  - ***Reciprocal Agreement*** – AML mine waste from lands managed by another Federal or State agency may be placed into a repository located on lands managed by the BLM provided the other Federal or State agency has a similar policy. This reciprocity must apply at a national level between the participating Federal agencies and at a State level with participating State agencies.

  - ***Proportionate Waste Responsibility*** – AML mine waste from lands managed by the BLM may be placed into a repository located on lands managed by others only if any other mine waste and the mine waste stabilization area are sponsored and maintained by a Federal or State agency. The BLM is only responsible for that proportion of AML wastes from its lands. Other Federal or State agencies must sponsor their portion of AML wastes.

[35] Hazardous wastes are wastes subject to regulation under subtitle C of RCRA, 42 U.S.C. 6921-6939e, or those which a State determines to be hazardous under subtitle C of RCRA.

If the best location for a joint-use AML repository is on private land, the BLM or another Federal or State agency may also consider acquiring ownership of the repository area.

9.4.8. Closure

When the remediation goals have been met, as described in the RI/FS and EE/CA, the site is considered closed and field personnel must prepare a Closeout Report. However, closure does not mean the end of the BLM's involvement at the site.

9.4.9. Monitoring

All sites must be monitored to ensure that the remedy remains in place as long as necessary and continues to achieve the desired result. Water quality sites likely will require at least periodic sample collection to determine if previously established water quality criteria have been and continue to be met. Even passive treatment technologies require some maintenance and monitoring on a regular basis. The CERCLA process requires that a review is conducted every five years (i.e., a 5-year review) to ensure the continued effectiveness of the remedy. The Champagne Creek Restoration Project is an example of a site where monitoring resulted in changes to the treatment system (see text box).

Champagne Creek Restoration Project

- The site is located about 17 miles west of Arco, Idaho, and was deemed a priority because of the negative water quality impacts. The goal was to remove highly metal-contaminated soils from the Champagne Creek drainage and enhance the natural wetland's ability to continue to treat the metals in the environment.
- Remediation activities to address impaired water quality resulting from acid mine drainage (from previous silver mining activities) included removal and placement of spoil piles in a repository above the flood plain, construction of a passive bioreactor system to provide a long-term solution to acidic mine drainage, and reclamation, fencing, and reseeding for establishment of vegetation.
- After remediation activities were completed, analysis of the water quality data indicated that a high concentration of iron was interfering with the effectiveness of the bioreactor berms in removing zinc and copper and buffering the pH level. An anaerobic tank was added to remediate the problem. The treatment system is expected to stabilize over time. The reductions in metal concentrations and an increase in pH levels will allow for gradual recovery and restoration from past mining impacts at Champagne Creek.
- For additional information, see http://www.id.blm.gov/aml/champagne/addinfo.htm.

Under the Mining Law (see Section 1.8), if a site is not withdrawn from mineral entry, it can be re-disturbed under a Notice or Plan of Operations and required reclamation bond. If there are issues regarding a site that was reclaimed (e.g., cyanide heap leach pad) and there are still water quality issues, stipulations concerning avoidance of damage or interference with in-place remediation structures/features, etc. should be addressed by the BLM's local authorized officer and addressed in the Plan of Operations.

Chapter Summary

In general, AML Field personnel conduct the following activities to address physical risks and water quality issues at AML sites:

- Obtain available information regarding the site before conducting a site visit.
- Determine if any PRPs are available to address the site issues.
- During the site visit(s), identify and characterize the risks. (More than one site visit may be necessary.)
- Ensure historical, cultural, and wildlife issues are evaluated and addressed.
- Determine remediation alternatives; select the most effective and efficient remedy; and conduct appropriate activities to address the site issues (i.e., reclaim the site).
- Prepare appropriate reports and update the case file, administrative record, and inventory database, as necessary.
- Monitor the site to ensure the remedy continues to achieve the desired result.

10. REFERENCES

10.1. Technical References

BLM Handbooks[36]

Although the handbook versions provided below were current at the time this document was written, updates may have occurred. The most recent versions of the BLM's Handbooks are available at http://www.blm.gov/nhp/efoia/wo/handbook/handbook.html.

- *Land Use Planning Handbook* (H-1601-1, 3/11/2005)
  http://www.blm.gov/nhp/efoia/wo/handbook/h1601-1.pdf
- *NEPA Handbook* (H-1790-1, 11/25/1988, Release 1-1547)
  http://www.blm.gov/nhp/efoia/wo/handbook/h1790-1.pdf
- *Pre-Acquisition Environmental Site Assessments Handbook* (H-2101-4, 8/17/2000)
  http://www.blm.gov/nhp/efoia/wo/handbook/h2101-4.pdf
- *Response Actions Handbook NCP/CERCLA* (H-1703-1, 2001)
  http://web.blm.gov/internal/wo-500/directives/dir-hdbk/h-1703-1.pdf
- *Safety and Health for Field Operations Manual Handbook* (H-1112-2, 1/15/1998)
  http://www.blm.gov/nhp/efoia/wo/handbook/h1112-2.pdf
- *Solid Minerals Reclamation Handbook (H-3042-1, 1992)*
  http://web.blm.gov/internal/wo-300/wo-320/rechandbook.html

BLM Manual Sections

Although the manual section versions provided below were current at the time this document was written, updates may have occurred. The most recent versions of the BLM's Manual Sections are available at http://www.blm.gov/nhp/efoia/wo/manual/manuals.html.

- *Abandoned Mine Land Program Policy* (MS-3720, Release 3-329, 7/17/2006)
  http://www.blm.gov/nhp/efoia/wo/manual/3720.pdf
- *Acquisition* (MS-1510, Release 1-1664, 6/15/2000)
  http://www.blm.gov/nhp/efoia/wo/manual/1510.pdf
- *Cost Recovery* (MS-1270-2, Release 1-1639, 6/23/1994)
  http://www.blm.gov/nhp/efoia/wo/manual/1270-2.pdf
- *External Access to BLM Information* (MS-1278, Release 1-1627, 11/26/1993)
  http://www.blm.gov/nhp/efoia/wo/manual/1278.pdf
- *Hazard Management and Resource Restoration* (MS-1703, Release 1-1704, 10/3/2006)
  http://www.blm.gov/nhp/efoia/wo/manual/1703.pdf
- *Identifying and Evaluating Cultural Resources* (MS-8110, Release 8-73, 12/3/2004)
  http://www.blm.gov/nhp/efoia/wo/manual/8110.pdf

[36] Although the *Underground Mine Entry Policy Handbook* was being developed at the time this AML Handbook was written, it is not listed above because only handbooks that were finalized and approved at the time this AML Handbook was written are listed. See http://www.blm.gov/nhp/efoia/wo/handbook/handbook.html for the *Underground Mine Entry Policy Handbook* and other handbooks that have been approved after this AML Handbook was written.

- *Land Use Planning* (MS-1601, Release 1-1666, 11/22/2000) http://www.blm.gov/nhp/efoia/wo/manual/1601.pdf
- *Memorandums of Understanding* (MS-1786, Release 1-1597, 8/8/1991) http://www.blm.gov/nhp/efoia/wo/manual/1786.pdf
- *Planning for Uses of Cultural Resources* (MS-8130, Release 8-76, 12/3/2004) http://www.blm.gov/nhp/efoia/wo/manual/8130.pdf
- *Safety* (MS-1112-1, Release 1-1665, 6/16/2000) http://www.blm.gov/nhp/efoia/wo/manual/1112.pdf
- *Special Status Species Management* (MS-6840, Release 6-121, 1/19/2001) http://www.blm.gov/nhp/efoia/wo/manual/6840.pdf
- *Surface Management* (MS-3809, Release 3-118, 07/26/1985)
- *The Foundations for Managing Cultural Resources* (MS-8100, Release 8-72, 12/3/2004) http://www.blm.gov/nhp/efoia/wo/manual/8100.pdf
- *Volunteers* (MS-1114, Release 1-1654, 4/15/1996) http://www.blm.gov/nhp/efoia/wo/manual/1114.pdf
- *Wild and Scenic Rivers - Policy And Program Direction For Identification, Evaluation, and Management* (MS-8351, 8-61, 5/19/1992) http://www.blm.gov/nhp/efoia/wo/manual/8351.pdf

BLM Resource Notes

In addition to those listed below, other Resource Notes developed after the preparation of this Handbook may be available at http://www.blm.gov/nstc/resourcenotes/resnotes.html.

- *Airborne LIDAR for Remediation of Abandoned Mine Lands* (Issue 68, by Russell Jackson, 5/17/04) http://www.blm.gov/nstc/resourcenotes/rn68.html
- *Efficient Permanent Closure of Abandoned Mine Safety Hazards on BLM-Managed Lands* (Issue 73, by Christopher Ross, 8/27/2004) http://www.blm.gov/nstc/resourcenotes/rn73.html
- *Monitoring the Effectiveness of Bat Compatible Mine Gates* (Issue 18, by Michael Herder, 6/1/2000) http://www.blm.gov/nstc/resourcenotes/rn18.html
- *Potential Responsible Party Search* (Issue 57, by Janet Youngdahl, 1/7/02) http://www.blm.gov/nstc/resourcenotes/rn57.html
- *The Use of Aerial Photography and Historical Records to Assist Land Managers* (Issue 20, by Michael Marchase, 6/27/2000) http://www.blm.gov/nstc/resourcenotes/rn20.html
- *Use of Tracer Injections to Measure Discharge and Quantity Pollutant Loading* (Issue 47, by William P. Carey, 4/18/2001) http://www.blm.gov/nstc/resourcenotes/rn47.html

BLM Technical Notes

In addition to those listed below, other Technical Notes developed after the preparation of this Handbook may be available at http://www.blm.gov/nstc/library/techno2.htm.

- *Abandoned Mine Waste Repositories – Site Selection, Design, and Cost* (Technical Note 410), April 2004 http://www.blm.gov/nstc/library/pdf/TN410.PDF
- *Hazardous Waste Site Sampling Basics* (Technical Note 414), December 2004 http://www.blm.gov/nstc/library/pdf/HazWaste414.pdf

- *Microclimate Effects from Closing Abandoned Mines with Culvert Bat Gates* (Technical Note 416), March 2005 http://www.blm.gov/nstc/library/pdf/BatGate1TN416.pdf
- *Passive Treatment Systems for Acid Mine Drainage* (Technical Note 409), April 2003 http://www.blm.gov/nstc/library/pdf/TN409.PDF
- *Risk Management Criteria for Metals at BLM Mining Sites* (Technical Note 390), October 2004 http://www.blm.gov/nstc/library/pdf/TN390v04.pdf

Other DOI/BLM Documents[37]

- AML National Strategic Plan http://www.blm.gov/nhp/efoia/wo/fy06/im2006-145attach1.pdf
- *Bat Conservation and Mining: A Technical Interactive Forum* (November 14-16, 2000) http://www.mcrcc.osmre.gov/Forum.htm
- *Bat Gate Design Forum: A Technical Interactive Forum* (March 4-6, 2002) http://www.mcrcc.osmre.gov/Forum.htm
- *Desk Guide to Cooperating Agency Relationships* http://www.blm.gov/planning/cadg/CAGUIDE05.pdf
- *Guide to Agreements* http://www.blm.gov/natacq/tools/ib2005118.htm

Other Documents and Resources

- *Abandoned Mine Site Characterization and Cleanup Handbook* (EPA 910-B-00-001, August 2000) http://www.epa.gov/superfund/resources/remedy/pdf/amscch.pdf
- *Bats and Mines: 1994 Workshop Proceedings. Biological Resources Research Center, University of Nevada, Reno.*
- *Bats and Mines Handbook* (BCI, 1998) (this document is out of print and was being revised at the time this Handbook was written) http://www.batcon.org/home/index.asp?idPage=53&idSubPage=87
- *Brochure - Evaluating Abandoned Mines for Bats: Recommendations for Survey and Closure* (BCI and Natural Resources Conservation Service) http://www.batcon.org/news2/mines/nrcs_brochure.pdf
- *CERCLA Potentially Responsible Party Search Guide* (USDA, June 2001) http://BML_AML/pdfs/USDA_PRPSearchGuide.pdf
- *Cleaning Up Abandoned Hardrock Mines in the West – Prospecting for a Better Future* (Center of the American West, 2005) http://www.centerwest.org/cawabandonedmines.pdf
- *Code of Federal Regulations (CFR)* http://www.gpoaccess.gov/cfr/retrieve.html (to search for a specific citation) or http://www.access.gpo.gov/nara/cfr/cfr-table-search.html#page1 (to browse CFR titles)
- *Construction Handbook* (California Stormwater Quality Association, 2004) http://www.cabmphandbooks.com/Construction.asp
- *Handbook of Western Reclamation Techniques* (University of Wyoming/OSMRE, December 1996) http://www.ott.wrcc.osmre.gov/library/hbmanual/westrecl.htm#downloadhandbook

[37] At the time this handbook was written, the Solid Minerals Division was developing underground site entry guidance. Filed personnel should follow the most recent available guidance for underground site entry.

- *Evaluation of Bat Use in Abandoned Mines* in *Species Conservation Assessment and Conservation Strategy for the Townsend's Big-eared Bat. Idaho Conservation Effort (*Altenbach, J.S.; D. Genter; B.L. Keller; and K. Navo, 1999)
- Federal Remediation Technologies Roundtable (FRTR) provides information on a wide range of remediation technologies, not just for AML sites http://www.frtr.gov/
- *Guidelines for Identifying, Evaluating, and Registering Historic Mining Sites* (by Bruce J. Noble, Jr. and Robert Spude, revised 1997) provides the criteria for determining if a mining site should be considered an historic property and the process for documenting and registering a site. http://www.cr.nps.gov/nr/publications/bulletins/nrb42/
- *Managing Complex Systems Simply: Understanding Inherent Variation in the Use of Roosts by Townsends's Big-Eared Bat* in *Wildlife Society Bulletin* 31(1):62-72 (Sherwin, R.E.; W.L. Gannon; and J.S. Altenbach, 2003)
- *PRP Search Manual* (EPA, September 2003) http://BML_AML/pdfs/EPA_PRPSearch.pdf
- Public Law (PL) http://www.gpoaccess.gov/plaws/browse.html (to browse the public law by Congressional year)
- *Technologically Enhanced Naturally Occurring Radioactive Materials from Uranium Mining Volume 1: Mining and Reclamation Background* (EPA 402-R-05-007, January 2006). http://www.epa.gov/radiation/docs/tenorm/402-r-05-007.pdf
- University of Wyoming – American Heritage Center, Anaconda Geological Documents Collection (http://ahc.uwyo.edu/about/departments/anaconda/default.htm). This collection is the scientific product of the Anaconda Company's 90-year program of mining exploration and development work throughout the United States and in 110 foreign countries. Its 1.8 million documents provide a wealth of material useful in exploration, development, and environmental studies. The documents include mining and exploration studies, prospect reports, geological data, maps, and general files.
- *United States Code (USC)* http://origin.www.gpoaccess.gov/uscode/ (to search for a specific citation) or http://origin.www.gpoaccess (to browse the USC)

10.2. Links to Other AML and Related Programs

BLM State Offices

Alaska http://www.blm.gov/ak/ak940/aml/amlindex.html
Arizona http://www.blm.gov/az/mines/mines.htm
California http://www.blm.gov/ca/pa/aml/
Colorado http://www.co.blm.gov/mines/mine.htm
Idaho http://www.id.blm.gov/aml/index.htm
Montana http://www.mt.blm.gov/aml/
Nevada http://web.nv.blm.gov/4minerals/aml/index.htm
New Mexico http://www.nm.blm.gov/nmso/aml/aml_home.htm
Oregon/Washington http://www.or.blm.gov/abandonedmines.htm
Utah – At the time this Handbook was written, the Utah State Web page was not available. When the Utah Web pages have been posted, the link to the site can be found at http://www.blm.gov/aml/aa_office.htm.
Wyoming http://www.wy.blm.gov/aml/

BLM Offices and Programs
Division of Solid Minerals http://www.blm.gov/nhp/pubs/brochures/minerals/
Geospatial Data Clearinghouse http://www.blm.gov/nhp/what/geospatial/clearinghouse.htm
Hazardous Materials Management http://www.blm.gov/nhp/what/g_hazmat.html
Land and Minerals Records-LR2000 Reports http://www.blm.gov/lr2000/
National Acquisition Homepage http://www.blm.gov/natacq/
National Landscape Conservation System http://www.blm.gov/nlcs/index.html
National Science & Technology Center (NSTC) http://www.blm.gov/nstc/
National Training Center http://www.blm.gov/nhp/efoia/ntc/ntcdir.htm

10.3. Links to Other Agencies

EPA http://www.epa.gov
MSHA http://www.msha.gov/
OSHA http://www.osha.gov/
OSM http://www.osmre.gov/
USACE http://www.usace.army.mil/
USDA http://www.usda.gov/
USFS http://www.fs.fed.us/

Appendix A – GLOSSARY

The following glossary provides definitions for terms and descriptions for acronyms that are used in this Handbook (H-3720-1). This glossary does not supersede definitions in relevant laws or regulations.

-A-

Abandoned Mine: An abandoned hardrock mine on or affecting public lands administered by the BLM, at which exploration, development, mining, reclamation, maintenance, and inspection of facilities and equipment, and other operations ceased as of January 1, 1981 (the effective date of the BLM's Surface Management regulations codified at 43 CFR 3809) with no evidence demonstrating that the miner intends to resume mining. For many abandoned mines, no current claimant of record or viable potentially responsible party exists. Abandoned mines generally include a range of mining impacts, or features that may pose a threat to water quality, public safety, and/or the environment.

Abandoned Mine Land (AML) Program: The BLM's program that focuses on reclaiming hardrock abandoned mine lands on or affecting public lands administered by the BLM. The primary goal of the program is to remediate and reduce actual or potential threats that pose physical safety risks and environmental degradation. The BLM applies risk-based criteria and uses the watershed approach to establish project priorities. The program also works to return mine-impacted lands to productive use(s).

Applicable and Relevant and Appropriate Requirements (ARARs): ARARs are State, local, and Federal standards that are directly applicable or may be considered relevant and appropriate to the circumstances on the site. ARARs include clean-up standards, standards of control, and other environmental protection requirements, criteria, or limitations. These standards are an inherent part of the scoping process, but will affect the long-term remediation, especially in the setting of clean-up standards and meeting other land use regulations.

-C-

Categorical Exclusion: A category of actions (identified in agency guidance) that do not individually or cumulatively have a significant effect on the human environment and for which neither an EA nor an EIS is required (40 CFR 1508.4).

-E-

Environmental and Disposal Liability (EDL): An anticipated future outflow or other sacrifice of resources (e.g., costs) associated with cleanup due to past or current operations that have environmental closure requirements or a release of hazardous substances, pollutants, and contaminants on the BLM's lands or facilities.

-G-

Geographic Information System (GIS): A computer system capable of storing, analyzing, and displaying data and describing places on the earth's surface.

Government Performance and Results Act (GPRA): The GPRA (PL-103-62, Aug. 3, 1993, 107 Stat. 285) holds Federal agencies accountable for using resources wisely and achieving program results. GPRA requires agencies to develop plans for what they intend to accomplish, measure how well they are doing, make appropriate decisions based on the information they have gathered, and communicate information about their performance to Congress and to the public.

-H-

Hardrock: This term is used here strictly in the context of the AML program and has traditionally been used by the BLM and other agencies to apply to non-coal mining environments where environmental risks such as acid-mine drainage, heavy metal contamination, and threats to water quality and the environment are of concern. Hardrock minerals in this context, generally include, but are not limited to gold, silver, copper, lead, zinc, magnesium, nickel, molybdenum, tungsten, uranium, and select other minerals where priority AML problems may occur. Most hardrock minerals are locatable under the Mining Law of 1872. Non-hardrock minerals include coal (which is addressed by the Office of Surface Mining and State coal reclamation programs) and some common-variety mineral materials, such as sand and gravel.

Hazardous Substances: CERCLA term identifying those substances designated pursuant to section 1321(b)(2)(A) of Title 33, or 42 USC 9602, or listed in 40 CFR 302 or 355.

Hazardous Substance Release: Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant).

Hazardous Waste: Refers to a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may pose a substantial threat to human health and the environment.

-M-

Mine: An underground opening or open pit used for the purpose of extracting minerals. Mines commonly include features, such as shafts, adits, pits, trenches, tunnels, waste rock dumps, tailings, and structures including, but not limited to, mills, buildings, head frames, hoists, and loading chutes.

-P-

Potentially Responsible Party (PRP): Any individual or entity, including current and past owners, operators, transporters, arrangers, or generators who may be liable for clean-up costs for hazardous substances under CERCLA Section 107(a) or for injuries to natural resources on public lands from hazardous substance releases under section 311(f) of the CWA and CERCLA Section 107(f).

Project: The investigation, cleanup of safety risks, stabilization, or reclamation of an abandoned mine land site or sites. A project may include one or more individual abandoned mines. The project area may be based on geologic, geographic, hydrologic, watershed, ownership, or other legal boundaries, or based on practical or logistical convenience, and is often contiguous.

-R-

Remedial Action: Permanent remedy taken to prevent or minimize the release of hazardous substances into the environment. Long-term actions are necessary to return a site to its original conditions.

Removal Action: Short-term actions necessary to remove or mitigate a release or threat of release of hazardous substances.

-S-

Site: The area identified as being impacted by physical safety and/or environmental hazards. This can include any area where hazardous substances have been released or have migrated. The area size is influenced by the extent of the investigation, migration, evaluation, and past, current, and future clean-up activities.

Special Status Species: Includes proposed species, listed species, and candidate species under the ESA; State-listed species; and the BLM's State Director-designated sensitive species (see the BLM's Manual Section 6840, *Special Status Species Management*).

Strategic Plan: A plan that establishes the overall direction for the BLM. This plan is guided by the requirements of GPRA, covers a 5-year period, and is updated every 3 years. It is consistent with FLPMA and other laws affecting the public lands.

-T-

Total Maximum Daily Load (TMDL): Pursuant to the Clean Water Act, an estimate of the total quantity of pollutants (from all sources: point, nonpoint, and natural) that may be allowed into waters without exceeding applicable water quality criteria.

-W-

Watershed: This term, when used generically, is the land area that drains water to a particular stream, river, or lake. It is a land feature that can be identified by tracing a line along the highest elevations between two areas on a map, often a ridge.

Watershed Approach: Refers to the methodology of working within the geographic boundaries of a watershed with partners (Federal, State, private, and Tribes) to jointly resolve problems that affect the physical, chemical, and biological quality of that watershed. A scientific approach is used to prioritize sites, develop clean-up action plans, and evaluate effectiveness of actions in the watershed. Partnering agencies and organizations share and exchange information, collaborate on project management, and reduce costs through fund leveraging and avoiding duplication of efforts and conflicting actions.

Appendix B – ACRONYMS

AA	Assistance Agreement
ACHP	Advisory Council on Historic Preservation
AMD	Abandoned Mine Discharge
AML	Abandoned Mine Land
ARAR	Applicable or Relevant and Appropriate Requirements
BCI	Bat Conservation International
BLM	Bureau of Land Management
BPS	Budget Planning System
CA	Cooperative Agreement
CASQA	California Stormwater Quality Association
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHF	Central Hazardous Materials Fund
CWA	Clean Water Act
CX	Categorical Exclusion
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
DOL	U.S. Department of Labor
EA	Environmental Assessment
EDL	Environmental Disposal Liability
EE/CA	Engineering Evaluation/Cost Analysis
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FMD	Federal Mining Dialogue
FRTR	Federal Remediation Technologies Roundtable
FY	Fiscal Year
GIS	Geographic Information System
GPRA	Government Performance and Results Act
GPS	Global Positioning System
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response Standard
I-A	Intra-agency Agreement
IA	Interagency Agreement

MOU	Memorandum of Understanding
MSHA	Mine Safety and Health Administration
MSL	Mine-Scarred Lands
NAAMLP	National Association of Abandoned Mined Land Programs
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NFHAP	National Fish Habitat Action Plan
NGO	Non-Governmental Organization
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System
NMA	National Mining Association
NOHVCC	National Off-Highway Vehicle Conservation Council
nPA	national Programmatic Agreement
NPS	National Park Service
NRC	National Response Center
NRCS	Natural Resources Conservation Service
NRDAR	Natural Resource Damage Assessment and Restoration
NSTC	National Science and Technology Center
NTC	National Training Center
OAR	[EPA] Office of Air and Radiation
OEPC	Office of Environmental Policy and Compliance
OHV	Off-Highway Vehicle
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
OSMRE	Office of Surface Mining Reclamation and Enforcement (a.k.a. Office of Surface Mining – OSM)
OSWER	[EPA] Office of Solid Waste and Emergency Response
PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Investigation
PL	Public Law
PPE	Personal Protective Equipment
PRP	Potentially Responsible Party
RAMS	Restoration of Abandoned Mine Sites
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
SAP	Sampling and Analysis Plan
SCF	Special Clean-up Fund
SI	Site Investigation
SMCRA	Surface Mining Control and Reclamation Act

TMDL	Total Maximum Daily Load
UMTRA	Uranium Mill Tailings Radiation Control Act of 1978
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
WGA	Western Governors Association