

**Statement of
Jim Abbott
Acting California State Director
Bureau of Land Management
Department of the Interior**

**House Natural Resources Committee
Subcommittee on Energy and Mineral Resources
Oversight Field Hearing:
“Abandoned Mines and Mercury in California”
November 23, 2009**

Introduction

Mr. Chairman, members of the subcommittee and guests, welcome to California and thank you for the opportunity to appear here today. I am Jim Abbott, Acting State Director for the Bureau of Land Management (BLM) in California and am pleased to be here to discuss the BLM’s Abandoned Mine Lands (AML) program.

Nationally, the AML program is one of the BLM’s most challenging due to the sheer number of AML sites, their associated safety and environmental hazards, and uncertainties surrounding these estimates. However, the agency is committed to continuing to address these hazardous sites. It has taken a number of steps to build a comprehensive and aggressive AML program, including a substantive effort in identifying sites. Together with the collaborative efforts of the agency’s AML partners, the BLM is making progress to remove these hazards left from the nation’s mining legacy.

BLM’s AML Program

To date, the BLM’s AML inventory contains over 25,000 sites across the country with approximately 66,000 “AML features” such as portals (mine entrances) or rock dumps (piles of rock dumped by miners digging the mine). The inventory number will increase as BLM updates the inventory with field data that is continuously collected about additional sites and features. A majority of these sites pose safety hazards while 5 to 10 percent pose environmental hazards. Environmental and human health hazards include mercury contamination in discharge from placer gold mines and mercury mines, and sediment from asbestos mines; arsenic and lead contamination from mine tailings; deadly gases within the mines; and acidic mine drainage from large sulfide mines. AML sites also contain physical hazards, such as open mine shafts and pits; unstable rock and decayed support beams; and explosive and toxic chemicals. We would like to emphasize that the sites with the highest potential for harm to public health and safety have already been identified by the various Federal, State, and Tribal partners and are being addressed with existing resources.

The BLM AML funding comes from a variety of funding streams, such as the AML Program appropriations, DOI’s Central Hazardous Material Fund, the Special Clean Up Fund, and Natural Resource Damage Assessment program. The BLM prioritizes which sites receive funding based

upon AML National Level Evaluation Criteria found in the BLM AML Program's Strategic Plan, which weighs several different criteria for both environmental and physical safety sites.

Currently, 20 percent of the identified AML sites have been remediated, or are undergoing remediation. BLM is in the process of updating its AML Strategic Plan with a projected completion date of 2010. The Strategic Plan will provide additional, long-term direction for the AML remediation program.

The BLM environmental cleanup or remediation activities cover a broad spectrum, and are guided by important public laws such as: the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Federal Land Policy and Management Act (FLPMA), and the National Environmental Policy Act (NEPA). AML environmental sites can include those adversely affected by poor water quality and by substances such as arsenic, mercury, and base metals. AML environmental sites include tunnels that may discharge contaminated water, or tailing piles that may discharge various hazardous materials or substances. Through the application of those laws, the agency addresses the impacts from the associated hazards along with the proposed mitigation work necessary to remediate a site.

The Office of the Inspector General (OIG) found in a 2008 report entitled, *Abandoned Mine Lands in the Department of Interior*, that "...BLM and NPS are putting the public's health and safety at risk by not addressing hazards posed by abandoned mines on their lands." The OIG audit concluded, "As it stands, public safety is at risk because physical and environmental hazards at abandoned mine lands have been ignored by DOI for decades. Abandoned mine lands programs in DOI are in need of a firm commitment to protect the public, sustained funding, and dedicated staff."

The BLM takes seriously the findings and recommendations of the OIG, along with its responsibility to protect both public health and safety, as well as the environment. As a result, the agency has taken a number of steps to build a comprehensive and aggressive AML program that include: initiating a revision of the BLM AML Strategic Plan; initiating an AML Inventory Feasibility Study; implementing the "Fix a Shaft Today" program to encourage volunteers to participate in inventory and safety closure projects; and developing guidance to encourage increased stakeholder involvement and improved coordination with AML partners at the Federal, state and local level.

California's Mining Legacy

In California, the BLM faces a particularly challenging situation due not only to its historic mining legacy, but also to its growing population, which now stands at 38 million. Gold was discovered not far from here at Coloma, starting the famous California Gold Rush. For over a century and a half, miners scoured hillsides and mountains, dug mines, and subsequently abandoned them with little or no reclamation, creating the pollution and public safety issues we face today. Over one hundred years of mining have left thousands of dangerous shafts, portals, and other hazards. Most of these hazards are located in the Sierra Nevada Mountain and Klamath Mountain Provinces of Northern California and the Mojave and Colorado Desert Regions in Southern California. The historic use of mercury in gold mining operations has led to the pollution we see today in scores of watersheds and even in some of our major waterways in

the Sierra Nevada Range, the Central Valley, and even the San Francisco Bay Delta. Abandoned mercury mines in the Coast Range are also a significant source of mercury contamination. The Sacramento watershed is the BLM's highest priority for clean-up, followed by the American, Bear, Nacimiento, Salinas, Trinity, Yuba, and Russian River watersheds. AML remediation work is either underway or proposed for all eight areas.

The BLM and the California Department of Conservation's Office of Reclamation estimate there are approximately 47,000 abandoned mines in California, two-thirds of them on Federal lands. The BLM-administered public lands in California have an estimated 20,000 abandoned mines, of which 1,000 likely affect water quality, and over 3,000 contain hazardous mine openings. However, much of the data comprises legacy records which are often incomplete. BLM-California has not completed its AML inventory; many of these estimated sites are not included in the national AML inventory total. Of the 20,000 estimated abandoned mines, BLM-California has characterized or evaluated 1,820 abandoned mine sites, including 60 mines affecting water resources within 17 priority watersheds, and over 120 mining districts with physical safety hazards. BLM AML program funding is being used to further efforts at indentifying AML sites, and addressing the highest priority remediation work.

The problem of physical hazards is equally important given California's large population. Urban sprawl and increased recreation on public lands have put more people at risk from AML hazards. The sites with the highest potential for harm to public health and safety have already been identified by the various Federal, State, and Tribal partners and are being addressed with existing resources. In California during 2009, there have been at least two AML-related deaths on the public lands. However, significant progress is being made to address physical hazards as well. Nearly 300 priority physical safety hazard sites in California have been secured in the past few years, and dozens more are scheduled to be closed in 2010.

USGS Study of Mining-Related Mercury Contamination in California

The principal types of abandoned mines responsible for mercury contamination in California are mercury mines and gold mines.

California's Coast Range was the location of several of the most productive mercury mines in North America. Mercury mining took place in California between 1846 and 1981, resulting in production of about 75% of the total mercury production in North America.

The processing of gold ores by mercury amalgamation prior to 1920, when cyanide treatment became the dominant method used for gold extraction, led to the release of additional millions of pounds of mercury to the environment.

A key aspect of mercury geochemistry is the formation of methylmercury, a potent neurotoxin. Methylmercury concentrations tend to increase systematically as one moves up the food chain. A potentially harmful pathway of mercury exposure for people and wildlife is through consumption of top predator fish, such as freshwater bass species.

A major focus of the research done by USGS on mercury in California and elsewhere in the United States in the past decade has been determining the environmental factors that control the methylation of mercury in various environments. Wetland environments are well known to be important places for mercury methylation, and the USGS, in cooperation with State partners, has studied this phenomenon. A theme that has emerged from these studies and related work elsewhere is that methylmercury concentrations tend to be higher in seasonal wetlands, such as floodplains and high marsh areas that are only wetted a few times per year, compared with permanent wetlands and low marsh areas that do not dry out completely. Additional research is needed to improve understanding of mercury cycling in wetlands, which should help resource managers to manage mercury in the context of wetland restoration efforts in sensitive ecosystems.

California's Partnerships

The BLM and other public agencies recognize that AMLs create numerous hazards and the BLM is working cooperatively with our partners to address them. BLM-California collaborates with more than 20 Federal, state and local agencies, as well as private organizations and industry to address AML hazards. One of our primary partners is the California Department of Conservation's Office of Reclamation. As part of the BLM's 2009 National Reclamation and Sustainable Mineral Development Awards, the Department of Conservation's efforts were recognized by BLM Director Robert Abbey recently in Washington, D.C. as a recipient of the BLM's 2009 "Fix a Shaft Today" award.

Through partnerships such as these, the BLM has achieved several successes in California. For example, the remediation of the Boston Mine's sluice tunnel in Northern California, identified by the U.S. Geological Survey as a mercury contamination site, was recognized with an "Environmental Achievement Award" from the U.S. Department of the Interior's Office of Environmental Policy and Compliance. Agency efforts to identify and mitigate physical safety hazards at Red Mountain in Kern County have progressed significantly over the past two years. With the help of an industry partner, the BLM has completed fencing, backfilling, and building covers to secure over 80 mine shafts and deep trench sites near this populated and high-use recreational area.

The BLM meets frequently with the State Water Board, the Department of Conservation AML Unit, the U.S. Forest Service AML Program, the California Department of Toxic Substance Control, and others to discuss, collaborate on, and rank AML sites. In addition, the BLM has worked with Federal and State partners, as well as locally based organizations, to hold public workshops to promote AML awareness.

Conclusion

Mr. Chairman, the challenges presented by abandoned mines are immense, both here in California and across the nation. The BLM recognizes and understands these challenges and has made it a priority to continue to improve its AML program. With the help of our partners in California, who are known for innovative solutions, we are making progress and are committed to making the AML program in California a success. Thank you and I am happy to answer any questions.