

APPENDIX E

OVERVIEW OF STATE REGULATORY APPROACHES

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1. OVERVIEW OF PROGRAMS E-1

1. Overview of Programs

Many state/tribal agencies have, over the past decade, emerged as leaders in the area of mining regulation. An effective EPA approach should build on the exemplary accomplishments of states and tribes in various media program areas and encourage and facilitate sharing of information and training procedures between federal, state, and tribal co-regulators. This requires an understanding of relevant State programs.

While EPA staff must be, and are, knowledgeable of state programs, this framework will not develop up-to-date descriptions of each state's mining programs. This appendix provides an overview of state programs and approaches. Other sources have compiled this information in greater detail [e.g., *State Regulation of Mining Waste: Current State of the Art*, Environmental Law Institute (ELI), November 1992 for Arizona, California, Colorado, Florida, Idaho, Missouri, Montana, Nevada, South Carolina, and South Dakota; March 1995 survey of Alaska, Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, South Dakota, Utah, Washington, and Wyoming; or *An Overview of Metallic Mineral Regulation in Wisconsin*, Special Report 13, 1991, Wisconsin Geological and Natural History Survey, with a 1993 update from 1991 and 1992 legislative sessions]. On July 8, 1992, Greg Conrad, Interstate Mining Compact, stated that the ELI study presented a "fair and comprehensive overview of the ten state regulatory programs reviewed." Examples of state program components in the subsection that follows come from the 1992 ELI study, and may not be representative of current programs.

In developing an EPA mining framework, it is important that EPA identify those areas of federal environmental law for which the states have lead implementation authority, as well as those areas in which states have developed programs which do not have a federal analogue. Most states have active programs that deal with existing and proposed mines, and several states have developed programs to deal specifically with inactive and abandoned mines (IAMs)..

Active and Proposed Sites. States are often authorized to administer several federally mandated environmental programs (e.g., NPDES). A common requirement of such authorizations is that the state regulations and procedures must be at least as stringent as their federal counterparts. In addition, states often have additional features in their regulatory programs that arise from state specific statutes, regulations, or policies. In assessing a particular state's programs for regulating mining activities, it is therefore important to understand the authorization status of the program and any state-specific requirements or practices. There are a great variety and complexity of state mine waste programs. In terms of this mining framework, several features of these programs bear mention. The Environmental Law Institute's (ELI, 1992), in its evaluation of state programs, noted the following:

- Many state regulatory programs are "relatively" new and still evolving. In most cases major regulatory provisions, and sometimes the primary programs, are fewer than ten

years old. Examples of major changes include Nevada's zero discharge program and its 1990 reclamation program, Idaho's cyanidation regulations, Montana's 1990 custom milling and reprocessing regulations, and Arizona's and New Mexico's reclamation programs.

- Mining waste is regulated primarily by either a reclamation-based program or a water pollution-based program. Colorado, Idaho (except for cyanidation facilities), Missouri, Montana, and South Dakota rely chiefly on their reclamation programs for most mining waste regulation. Arizona, California, Florida, Idaho, Michigan, Nevada, and South Carolina rely primarily on water quality programs. Wisconsin, however, has a multi-media regulatory approach that relies heavily on both reclamation and water pollution based programs.
- Varying levels of overlap and coordination occur among the agencies with jurisdiction. In most states, there is a division of labor which is primarily based on the state's governmental organization and on when programs were enacted or regulations adopted. Recently, there has been increasing movement toward unification of these regulatory programs. In Nevada, for instance, both reclamation and water quality are located within the same unit of the Division of Environmental Protection.
- Under RCRA, the states (except for Missouri) regulate both process units and waste units under unified schemes despite the federal regulatory distinction between a "waste management unit" and a "process unit."
- Regulation of existing mines is, in many states, proceeding more slowly than regulation of new mines and new units. This is partly a result of the newness of many of the programs or changes to the regulations under these programs (e.g., Arizona's aquifer protection permit program) and the difficulty of overlaying new requirements on units that have been operated for years and that have a continuing useful operating life. It is also due, to some extent, from the result of exemptions for existing operations (which in turn can be due to the difficulty noted here).

State regulations of active and proposed mining also have some common technical features that are also relevant to EPA's mining framework. These include:

- **Standard setting.** All states are required by the Clean Water Act to adopt water quality standards, which set forth designated uses of the waters within their states and numeric and narrative criteria to protect those uses. [states are increasingly utilizing water quality-based effluent limits (WQBEL) for permitting]. States having specific design or

performance standards tend to be in such areas as drainage control structures and other construction standards, such as those for liners.

- **Financial assurance.** These vary significantly from state to state. The kinds of costs that can be covered include reclamation, and discharge contingencies. Costs also range from actual reclamation costs (e.g., Colorado¹ and Nevada), to reclamation plus contingency and closure costs (e.g., California). Other states have specified per-acre amounts.
- **Closure.** Detoxification is subject to differing standards in those states that specify standards. Water availability also plays a major role in the various detoxification approaches. Some states defer decisions in this area until closure is imminent. Closure plans are usually required as part of the original application, but are often at a conceptual level until the end of the mine's life. Post-closure care of some sort is required in some (e.g., AZ, CA, MO, NV) but not all states.

The following paragraphs provide some indication of the variability of state programs and approaches.

In some cases, modifying state mining programs can lead to improvements for new mining operations, while maintaining less protective practices at older units. For instance, in Arizona, discrete heap or dump leach units closed before January 1, 1986, at mines with other active operations were not required to have a permit. A 1992 draft state guidance identified optimal design systems for some precious metal leach pads as a double lining with a leak detection/collection system and run-on controls to manage a 100-year, 24-hour storm event. However, the state will not require retrofitting all existing impoundments and facilities. On the other hand, Nevada required mines in existence September 1, 1989, to receive a water pollution control permit within three years.

In addition, prescriptiveness of regulations may vary, and some states establish permit-specific standards based on customary practices. Montana issued regulations for mills, small placer and dredge miners, and small miner cyanide operations in 1990 and 1991 which are more detailed in siting, location, waste characterization, design, and performance than regulations for large operating mines, which were developed primarily in 1980. Older permits operating within permitted standards could be subject to modification when field inspections reveal "significant environmental problem situations." Idaho surface mining regulations specify soil erosion performance (drainage of a 20-year, 24-hour storm) and reclamation (cross-ditching and revegetation) standards for roads.

¹ The initial \$1.3 million reclamation assurances required in 1984 for the Summitville mine considered costs of surface grading, clay caps, and revegetation. After acquiring the authority to require bonding for water treatment, the state's Mined Land Reclamation Board increased the surety to \$7.2 million in 1992. Reclamation costs were estimated to exceed \$40 million when the owner filed for bankruptcy at the end of 1992. Note that water balances derived from using non-site meteorologic data underestimated the actual site water balance. (Knight Piesold)

Wildlife protection practices also differ from state to state. Citizen groups initially opposed siting a South Carolina gold mine in a populated area. The mine agreed to voluntarily supply \$10 million of financial assurance for environmental protection and enhanced technical performance. Despite the efforts of a full-time crew intensively hazing with cannons, pyrotechnics, and other techniques to prevent bird kills, the mine reported 193 dead birds from 1987 to mid-1990. On the other hand, Arizona guidelines for cyanide management for wildlife protection included treatment of process solutions to less than 30 mg/l weak acid dissociable cyanide (or to non-lethality) and netting of impoundments, noting that harassment techniques like cannons and rock music have not been effective. Nevada law required wildlife permits issued to all existing mines with industrial ponds by April 1, 1990. Nevada requires floating covers or nets, neutralization or dilution, but recognizes that hazing has not prevented bird deaths. Nevada requires wildlife mortality reporting and has imposed penalties for bird kills.

Differential treatment and availability of data at new and older operations highlights differences in identifying and resolving concerns. For instance, the California Surface Mining and Reclamation Act reclamation requirements do not apply to lands disturbed before January 1, 1976. Monitoring the unsaturated zone became required in California due to 1991 changes in regulations. Financial assurances posted by new and existing operations in California since 1992 include funds needed to cover closure, postclosure, and release activities. Likewise, older Idaho cyanidation processing units may not be subject to permitting (and \$25,000 to \$100,000 financial assurance) until expanded or modified. On the other hand, in 1990, South Dakota law required operators using cyanide leaching and other chemical and biological processes to have an additional surety of \$25,000 to \$500,000 to respond to accidental releases to the environment, and the amounts were reassessed in 1992. South Dakota's water pollution control program calls for monitoring and action after pollutants are detected in groundwater.

The amount of site data required by states can vary widely. Nevada permit applications have to contain hydrogeological information to depths at least 100 feet beneath point sources and historic monthly average rainfalls, and size of 24-hour storms for 10-, 25-, and 100-year events. Nevada water pollution control permit applications also require reports of ore, overburden, and waste rock samples and evaluations for potential pollutant releases. Further, compliance with minimum design criteria does not shelter the permittee from liability from any ensuing degradation of water. However, there are no financial assurance requirements in Nevada's water pollution control law or regulations.

Colorado demonstrates administrative flexibility in permit issuance. Passive treatment of mine drainage systems through voluntary cleanups of abandoned mines are not subject to the five-year Colorado Discharge Permit System requirements. Colorado reclamation permits are for the life of the mine and contain site-specific design, monitoring, and reclamation requirements to fulfill the narrative performance standards in the Colorado Mined Land Reclamation Act and regulations. Detailed guidance recommends double liners for systems in contact with cyanide solutions.

Florida Department of Environmental Regulation (DER) issues a single permit covering ground water and surface water when possible. Local government can administer permit programs if approved by DER as being no less stringent than the state program and having the necessary enforcement capabilities and resources. Nevada is required to send counties notices of permit application. South Carolina requires operators to submit their reclamation plans to the local soil and water conservation district.

Missouri's Metallic Minerals Waste Management Act (MMWMA) permits are for the life of the facility, but the state reviews closure and inspection-maintenance plans every 5 years. Permits are issued without public participation. The state has few standards for siting and location, so permits specify the requirements. The Financial assurances of \$1,000 per acre (but not less than \$20,000 per permit) may not cover all costs of reclamation.

Post-closure protection and financial assurance requirements vary widely. Idaho mining programs do not specify post-closure activities. Nevada specifies up to 30 years of post-closure ground water monitoring, and submission of final closure plans two years before closure. Financial assurance in Nevada only covers reclamation costs, not the costs of neutralization and closure required under the state water pollution control permits--unless required by a federal land manager. South Carolina gold mines are bonded for \$190,000 to \$2.5 million, based on the amount necessary for reclamation. In South Carolina, reclamation plans include closure, but not postclosure. Post-closure care extends for 30 years in South Dakota.