

**TITLE:** ABANDONED MINE CLOSURE CONCEPTS  
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**ABSTRACT:**

The U.S. Bureau of Mines, with the cooperation of several state and federal agencies, prepared mine closure concepts for adits and shafts at the request of the National Park Service. Eleven "Closure Concepts" have been completed and 10 more are in preparation. The information includes description of the closure methods as well as suggestions for where they can be used and technical illustrations for construction. Multiple closure options, by type of mine opening, were prepared as one-page field guides to assist field personnel in determining the most appropriate closure method for a given field situation. The mine concepts completed include design information provided by the Colorado Mined Land Reclamation Division, Montana Abandoned Mine Reclamation Bureau, National Park Service, and United Kingdom National Coal Board. Concepts available include adit backfill, bat gate, cable net closure, concrete block bulkhead, concrete bridge channels cap, concrete shaft cap, hollow-core shaft closure, native rock bulkhead, PUF shaft closure, riprap bulkhead, and shaft or slope backfill.

**TITLE:** MIDNIGHT DUMPING OF HAZARDOUS WASTE IN THE CALIFORNIA DESERT  
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**ABSTRACT:**

With the dramatic increase of hazardous waste disposal costs (more than 50 million tons annually), many areas are experiencing problems with illegal hazardous waste disposal. This "midnight dumping" is especially a problem in remote areas of public land located in the California Desert. Some southern California industrial facilities have not been able to find, afford or have been trying to avoid paying for proper storage or disposal of hazardous waste that they generate. As a result, waste is stockpiled in their own facilities or disposed of illegally. Wastes have been found in locations such as sand and gravel quarries, mining facilities, sewage lagoons, pits, landfills, along streams and roadways, in dry washes, in large and small abandoned containers. Over time these hazardous materials containers may begin to leak and release their products into the surrounding soil, water, and air. In addition, southern California has a great deal of clandestine drug laboratory manufacturing activity that produces a surprising amounts of toxic/hazardous waste. The costs of properly disposing of these wastes can be very high, but improper disposal can be exceedingly expensive to the affected communities in terms of cleanup, human distress, safety, and health of the public as well as the environment.

U.S. DEPARTMENT OF THE INTERIOR  
CONFERENCE ON THE  
ENVIRONMENT AND SAFETY

APRIL 24-28, 1995

ABSTRACT BOOK

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