

Emergency!



Jim Fulton, chief of OSM's Denver Field Division, surveys the damage caused by mine subsidence to the driveway of a Marshall, Colorado, residence. OSM's Denver Field Division reclaimed the pit quickly. Hazards like this can happen anywhere underground mining has occurred.

Over the years, the emergency program has been responsible for abating of hundreds of landslides, subsidence events, mine fires, refuse fires, mine related floods and mine blowouts.

Congress established Section 410, the "Emergency Powers" part of the Surface Mining Act to address the potential for any type of crisis resulting from past mining practices. Section 410 provides for immediate response to emergency situations related to mine hazards that may adversely affect life, safety and health when no other agency has the authority to act.

Under the Surface Mining Act emergency problems are defined as abandoned coal mine hazards that present an immediate danger to the public health, safety, or general welfare and are caused by coal mines abandoned before August 3, 1977.

Typically, emergency abandoned mine land problems include: landslides, open portals and shafts, subsidence, and waste bank and underground mine fires discovered near houses, roadways, and populated areas. Because health, safety, and property can be seriously threatened by Abandoned Mine Land emergency problems, rapid response is critical.

Not Much Fun Here
A huge subsidence void appeared in a high-density recreation area when the roof collapsed in an abandoned mine near Indiana Township in Allegheny County, PA. The resulting pit covered an area of approximately 2,400 sq. ft. with a depth of 60 feet. OSM's Federal Emergency Redamation Program Division responded by backfilling the void with durable rock followed by site restoration.



Since 1977, OSM has addressed 5,099 Abandoned Mine Land emergencies, while the States and Tribes have dealt with 2,764.



Kentucky

The "KY-06-025" landslide in Cranks, Harlan County, KY, before (left) and after (right) restoration.

Quick Action Stops Dangerous Slide

In April 2006 a sudden landslide occurred behind a home in Cranks, KY. The landslide damaged a carport and a utility building adjacent to the home. Large deposits of soil, rock, trees and mud were in the backyard and driveway of the home.

The landslide impacted an area of approximately 5,000 square feet. The cause was attributed to water from an abandoned coal mine saturating surface mine spoil on the hillside above the residence.

Investigation confirmed that the sudden event was the result of pre-SMCRA coal mining activities and that the landslide posed a significant threat to life, safety and health.

Within a week of the landslide event, exploratory and monitoring activities had been approved and reclamation design work began.

The unstable material was excavated and hauled to an approved fill location. An 80 ft. long, 10 ft. high reinforced concrete retaining wall was constructed at the base of the slope behind the residence. A number of surface and subsurface drainage control structures were installed behind the wall and on the hillside above the home.

The disturbed areas around the home were revegetated. The forest areas that had been impacted were replanted with a mixture of hardwoods, pines and ornamentals. All work was completed by July and cost approximately \$151,000.

Some States have voluntarily assumed responsibility for their emergency programs. In Fiscal Year (FY) 2006 the following States had emergency programs: Alabama, Alaska, Arkansas, Illinois, Indiana, Iowa, Kansas, Missouri, Montana, North Dakota, Ohio, Oklahoma, Virginia, and West Virginia. These emergency programs are Federally funded.

OSM provides direct emergency response on AML hazards in the States of California, Colorado, Georgia, Kentucky, Louisiana, Maryland, Michigan, Mississippi, New Mexico, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Washington, and Wyoming, as well as for all Indian Tribes.

During 2006, OSM handled 143 emergencies while the States and Tribes took care of 125.

St. Louis: Just Making Sure

The Missouri Land Reclamation Program received a complaint about a home's foundation shifting causing cracks in the outer shell. An investigation was initiated to confirm if the cracks were caused by mine subsidence or another mechanism. The area has a history of underground clay mining. However, exploratory drilling revealed neither coal nor voids. This information was useful to the homeowner for planning his own foundation stabilization measures.

Clint Bishop of the Missouri Land Reclamation Program (lower left) with crew drilling to look for mine voids.



Missouri

Wyoming

Coal seam fire



In late December 2005 the Wyoming AML Program investigated a newly-discovered fire in an abandoned coal mine. It had already been burning for quite a long time, (left), but had not manifested itself to the surface. When it came through to the surface, it did so with a flourish (below).



First large subsidence holes opened around a power line, threatening to engulf the line.

Then the vent shaft burned through to the surface.



By good fortune the vegetation at the shaft was sparse and the breakout did not start a range fire.



The Wyoming AML Program took quick action to control the fire, and within a few weeks had the fire under control. More work will be needed before the project is complete, but the threat from the fire is now greatly reduced.

Gas Attack!

Agencies Respond To Dangerous Methane leak

The Illinois AML Emergency Program leapt into action when dangerous concentrations of methane gas were reported seeping into homes and sewer lines in the Illinois community of Belleville.

The problem occurred when a driller was boring a hole for the installation of a geo-thermal heating system and the boring intersected an abandoned underground coal mine filled with methane gas. The driller took immediate precautions and plugged the hole, however, the gas began to seep through the utility lines into homes and sewers in the neighborhood.

Emergency agencies responded by evacuating residents, installing a vent pipe, and permanently grouting the hole to ensure that gas could not reach homes or utilities. Fans were used to dilute gas concentrations around workers while a water mist was sprayed to prevent accidental electrostatic discharges.

Illinois Adam Drive Gas Leak Emergency Belleville, Illinois



Cooperative agencies respond to methane gas leak in Belleville, IL.



The area is sprayed to prevent accidental electrostatic discharges.



Subsidence damages a mobile home in Wilkes-Barre, PA.

Pennsylvania Subsidence event Wilkes-Barre, Pennsylvania

Mine cave-in Forces family From home

On June 28, 2006, the residents of a mobile home in Wilkes-Barre, PA, were awakened by the sound of a loud crash. They discovered a large hole adjacent to the mobile home and evacuated the trailer.

OSM personnel reviewed mine maps, determined the subsidence had occurred over an abandoned mine and immediately began emergency procedures.