

Oregon's Abandoned Mine Cleanups Complicated by High Cost and Lack of Funding



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Environmental
Quality

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Introduction

This fact sheet describes the challenges posed by abandoned and inactive hardrock mines throughout Oregon, and outlines the Oregon Department of Environmental Quality (DEQ) approach to cleaning up mines that are a high risk to human health and the state's land and water quality.

Public health and Environmental Impacts

Some abandoned mines have caused significant human health and environmental impacts, including acid mine drainage and heavy metal contamination. Impacts include contamination of drinking water supplies, direct human exposure to toxic mine wastes, and degradation of aquatic habitat including habitat for threatened and endangered fish.

In some cases, these problems occur far downstream from a mine site. For example, releases of mercury from abandoned mines in the Willamette Basin are a contributing source of elevated mercury levels in fish caught in downstream reservoirs. This has resulted in angler fish consumption advisories.

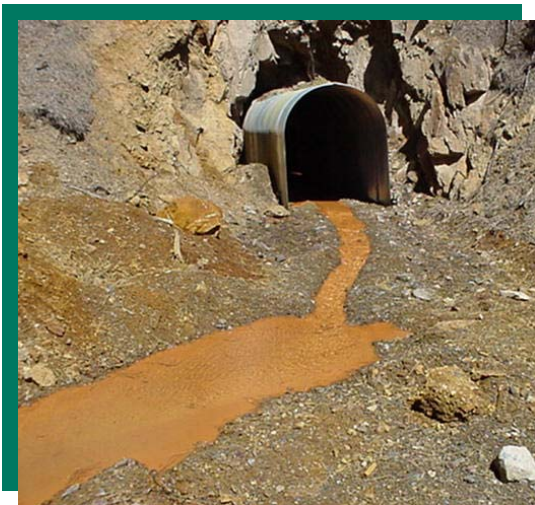
DEQ's role in cleaning up abandoned mines

DEQ normally relies on responsible parties, such as property owners or operators, to pay for cleanup of contaminated sites. But in the case of many abandoned mines, the mine operators cannot be found and made to pay for cleanup. In some cases private parties who purchased an abandoned mine property are unable to pay the typically large costs required to clean up these sites.

DEQ relies on a special state fund called the Orphan Site Account (OSA) to pay for clean up of contaminated sites, including abandoned mines, where the responsible party is unknown, unable, or unwilling to perform cleanup. However, state OSA funds have decreased significantly over the past several years.

With decreasing OSA funds, DEQ has focused its cleanup efforts on those sites posing the greatest human health risk. DEQ's efforts since 2005 have been to stabilize contaminated sites and prevent high-risk human exposure to contaminants (e.g., treat or replace impacted drinking water supplies). The decreasing availability of Orphan Site Account funds requires that DEQ delay the cleanup of other orphan sites impacting the environment but not causing immediate human health impacts.

Given these constraints, for abandoned mines DEQ will continue to:



Oregon has hundreds of abandoned and inactive metal mines. Some of these mines pose environmental threats to the public.

Legacy mining sites

Abandoned and inactive mines are found throughout Oregon, including historic mining districts in eastern Oregon, southwest Oregon and the Willamette Basin. Over the last century minerals and metals such as gold, silver, copper, zinc, and mercury have been extracted from these mines. Over 140 mines in Oregon have been identified by state and federal agencies for possible further investigation or cleanup. About 95 have undergone at least initial assessment. Some of these abandoned mines are found on public lands such as national forests and land managed by the federal Bureau of Land Management. Others are located on private land. A few mines are located on both public and private land.

- Prioritize sites based on risks they pose to human health and the environment. Higher priority is assigned to sites directly impacting human health;
- Limit the use of OSA funds to stabilize sites and reduce human exposure to contaminants; and,
- Work closely with federal agencies (U.S. EPA, U.S. Forest Service, and federal Bureau of Land Management) to try to secure cleanup funds for abandoned mines that are located on both public and private land.

Examples of abandoned mine cleanup sites in Oregon

Abandoned mines considered to be orphan sites by DEQ include:

- **Formosa Mine (Douglas County).**
This copper and zinc mine operated in the early 1900's, then reopened in 1989 and operated until 1993. The primary impact is acid mine drainage and metal contamination that has eliminated about 18-stream miles of prime habitat for the threatened Oregon Coast coho salmon and steelhead. This mine does not pose a risk downstream to human health. DEQ's 2004 evaluation of cleanup options for the site indicated that cleanup could cost more than \$10 million dollars. DEQ has spent over \$1 million since 2000 to investigate and undertake interim cleanup actions to minimize the environmental damage caused by the mine. Due to limited state orphan funds and absence of human health risks, DEQ is unable to undertake further cleanup. Instead, DEQ is working closely with the U.S. Environmental Protection Agency (EPA), the U.S. Bureau of Land Management, and the U.S. Department of Interior to find alternative funding to complete the cleanup.
- **Black Butte Mine (Lane County).**
Located 10 miles southeast of Cottage Grove, this former mercury mine operated intermittently from 1890 through the 1960's. Contamination from the mine includes mercury and arsenic, which drain into Cottage Grove Reservoir and the Coast Fork of the Willamette River. Fish in Cottage Grove Reservoir contain unsafe levels of mercury. Oregon Health Division has posted signs warning anglers to limit their consumption of fish caught

from the reservoir. Because the current human exposure is reduced through warning signs, DEQ orphan funds are not available for cleanup at this time. DEQ has attempted to secure funds through federal legislation but has been unsuccessful. An EPA-funded removal assessment is currently underway to determine appropriate interim cleanup actions. We will continue to support federal involvement to clean up the mine.

- **Golconda Mine (Baker County).** This is a historic gold mine near Sumpter. Heavy metal discharges from the mine are entering a tributary of Silver Creek and Cracker Creek, both of which provide habitat for the threatened bull trout species. In addition, several open shafts, adits and pits pose a threat to site visitors. A site investigation and removal assessment has been conducted by DEQ, and DEQ has partially stabilized the site to prevent exposure to physical hazards. Lack of funding will limit further actions in the near term.
- **Bonanza Mine (Douglas County).**
This historic mercury mine operated primarily between 1930 and 1960 on private property east of Sutherlin. Elevated levels of arsenic, lead and mercury have been detected in soil, and arsenic has been detected in well water near five residences located at or near the site. DEQ has spent about \$500,000 to investigate the site and remove the most contaminated soil around the former mill. The Oregon Health Division assessed mercury, arsenic and lead exposures for nearby residents and determined levels are within a normal range. In the absence of significant human health risks and the removal of the most contaminated soils DEQ has postponed cleanup of remaining contamination in favor of work needed at higher priority orphan sites.

For more information:

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