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**CHIEFTAIN PHOTO/FILE**

**An old mine works sits on a hillside near Leadville. Mining drainage tunnels, which were used to dewater mines, have created expensive cleanup problems that are frustrating Lake County commissioners.**

## **Lake County worried by water contamination**

**Rising water tables are apparently leaching metals from old mines into the watershed.**

**By CHRIS WOODKA  
THE PUEBLO CHIEFTAIN**

Lake County commissioners are concerned that plugged mine drainage tunnels and rising water tables are leaching heavy metals into the Arkansas River, potentially creating water quality problems both locally and for downstream users.

Lake County Commission Chairman Ken Olsen is frustrated by proposed federal studies and is promoting a "local solution" that would tap into a collapsed tunnel that once provided Leadville with more fresh water during winter, in the process lowering water tables that experts say could be leaching minerals like zinc and cadmium into the watershed.

"These federal agencies will not work together, and appear to have the inability to interact with each other," Olsen said. "They're fiddling while Rome is burning."

The commissioners alerted Colorado's congressional delegation of the problem in November, but have received little response. They are also seeking state funds to deal with the problem.

Groundwater tables are rising in the old mining district east of Leadville, which has caused new springs to sprout throughout the area from August to November. Some are in California Gulch, below the Yak Tunnel Superfund site. Scientists suspect the tables are rising because of collapses in the Leadville Tunnel and other mining tunnels throughout the heavily mined area.

The Leadville Tunnel was constructed by the federal government to drain mines to spur metal production during World War II and the Korean War. It is managed by the Bureau of Reclamation. A water treatment plant was built in 1992 to treat flows from the tunnel.

The Yak Tunnel was built by mining companies from 1895-1906 to dewater mines. It was declared an Environmental Protection Agency Superfund site in 1983, and a treatment plant, also built in 1992, still operates in California Gulch.

Meanwhile, the Canterbury Tunnel, constructed by Leadville water users to deliver fresh water from the East Fork of the Arkansas River above the Leadville Tunnel, has experienced cave-ins as well, and its flow reduced by tenfold, Olsen said.

At meetings with federal officials last fall, commissioners learned that metal loading in the Leadville Tunnel has dropped considerably, and some believe the water is working its way south along geologic faults and old mine workings.

Levels of cadmium in California Gulch below the Yak treatment plant were 30 times previously recorded limits and zinc is more than 80 times what was previously found, when measured last fall. Olsen said it should be of concern to downstream water users when the heavy snowpack - about 4 feet as of Thursday - begins to melt in spring.

"What it's doing is leaching out and dissolving metals in areas not previously subject to leaching," Olsen said.

Olsen said the solution presented to commissioners by the federal agencies was to further block the Leadville Tunnel - which he said is the primary cause of the problem - and drill more wells. Before that is done, more studies would be required, he said.

"It's been a problem for 50 years, but all they want to do is open another study," Olsen said.

The local solution is to drill horizontally and drain the better water from the Canterbury Tunnel, removing it from interception by the Leadville Tunnel and reducing the pressure on groundwater tables.



**Ken Olsen**

"Eighty to 90 percent of the water on the east side is good, so the idea is to take the good water out and lower the water table," Olsen said.

In the letter to Congress, cost ranges of \$4.5 million to \$6.5 million for boring into the Canterbury Tunnel were suggested, while the Leadville Tunnel containment plan would cost \$4 million to \$4.5 million. Olsen said the cost of a permanent solution to the problem could be closer to \$40 million - about the same amount it has cost to build and operate the treatment plants since 1992.

By some estimates more than \$100 million has been spent to address mine drainage problems in the Leadville district over the last 50 years. Prior to construction of the treatment plants, the river was biologically dead in reaches below the drainage and would occasionally run orange during surges.