Connection between coal mines, water

By RICHARD SHAW
Sun Advocate publisher

It is a typical problem in area coal mines; water. And it's also one of the reasons many mines don't end up being played out. Water is a big problem in mining.

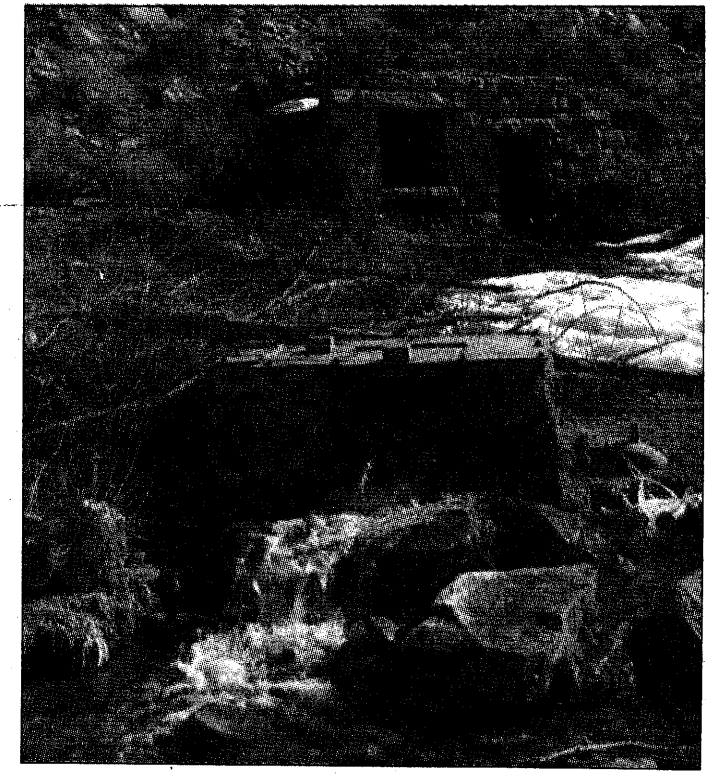
It can also be a problem after a mine closes or is shuttered.

In February 2008 Dana Dean, associate director of mining, from the Utah Division of Oil, Gas and Mining reported on discharge of water from the Crandall Canyon mine, which had been shut down ever since the disaster that killed nine miners and rescuers. Where stoppings had been put in place there was water leaking around them and flowing out of the mine.

The water flowed into Crandall Creek and then into the Huntington River. The samples taken at the time indicated that zinc and nickle in the discharge were over the legal limits, but were trending down.

It was apparent that the mine needed to change its reclamation plan to include the water discharge. The total dissolved solids were under compliance and the water quality was improving however. The discharge of water at the time was about 600-700 gallons per minute.

All parties were notified of the discharge so they could be alert for any possible flooding. It was determined that it was important to know where the water is coming from and if any streams had been affected. The water has always been there, there was just a change in its point of discharge.



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Water flows freely from the area around Mohrland, where coal mining activity went on for many years. Many mine reclamation plans have been altered because of the chemical makeup of mine waste water.

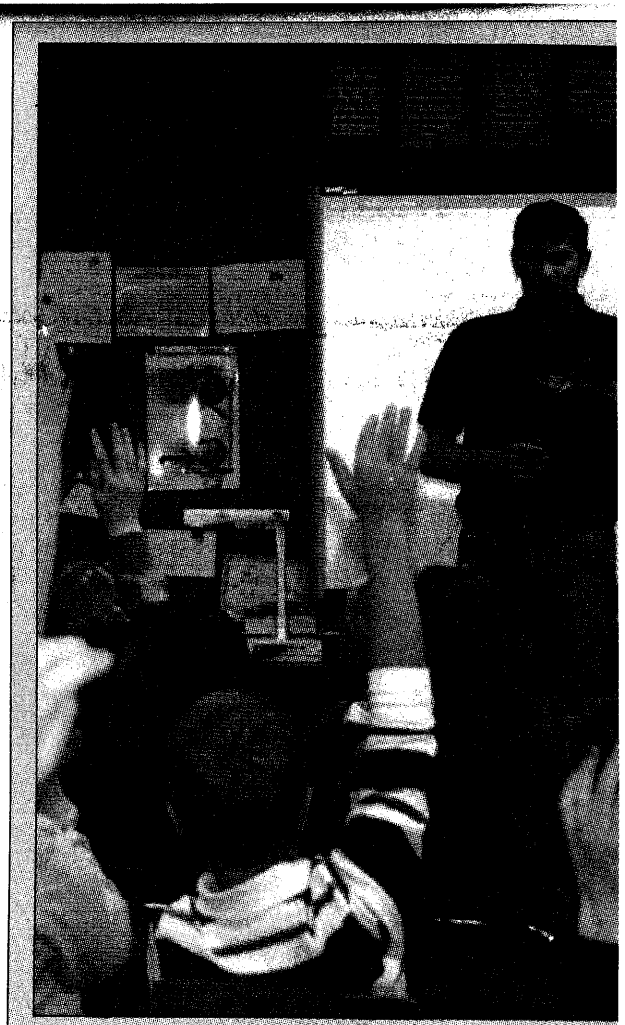
Obviously DOGM and other agencies had been doing their job in monitoring the water quality coming out of the closed mine and this is just one example of what can happen with a closed mine. But even active mines must pump water out of them.

One good local example is Skyline Mine, which in the early part of this decade found water flowing into its mine after workers hit an underground source, which literally flooded the mine and shut it down after some time. The mine had to pump that water out and to this day continues to control that water by using pumps.

The water that is pumped out is ground water; once out of the mines it becomes surface water. In the case of Skyline Mine, the water that ran out by the pumps eventually became part of Scofield Reservoir and Electric Lake. The water was welcome in Scofield at the time because a multiyear drought had plagued the area and the water pumped from the mine made almost a third of the water stored in 2002.

The production at Skyline Mine had to be shut down for

(Continued on page 2A)



TERRY WILLIS - SUN ADVO

Local author returns to alma mate

James Todd Cochrane wrote the book *Max and the Gatekeeper.* Th grade class at Sally Mauro is currently reading the book and Coch was in town do a reading and writing workshop. He was helping ki realize that they could write and publish their own stories. In his y he attended Sally Mauro in Kindergarten and the first grade.

Local official trains, certifies new cadaver dogs at Carbon County faciliti

Connection between:

(Continued from page 1A)
nearly a month in 2001 while the water was pumped down to the point where operations could begin. The company found that it was removing almost 8,000 gallons per minute from the mine.

"There is a lot of water there and it was a big problem," explained mine geologist Mark Bunnell during the next year's first meeting of the county water development board.

The water that flowed into Scofield was gladly accepted by a thirsty Carbon County which used it well for the next couple of years, at which point the drought started to ease up a bit. The water was used by agriculture, industry and residents for culinary purposes.

Water from mines and other sources is monitored by the state through State Ground Water Protection Regulations adopted in 1989. In addition to point source regulation, these rules outline a process for aquifer classification and establish corrective action procedures and ground water quality standards.

Water that flows into streams and reservoirs is considered to come from two sources. One is point source or a definite place the water came from. In other words a mine is a point source; so is a feed lot or a gas well.

The other source is called non-point source. Non-point source water comes from general areas like parking lots, watering of crops, even runoff from watering a residential yard.

According to the World Coal Institute, water pollution from coal mines is called acid mine drainage (AMD) and is metal-rich water formed from the chemical reaction between water and rocks containing sulpher-bearing minerals.

The runoff formed is usually acidic and frequently comes from areas where ore or coal mining activities have exposed rock containing pyrite, a sulpher-bearing mineral. AMD is formed when the pyrite reacts with air and water to form sulphuric acid and dissolved iron. This acid run-off dissolves heavy metals such as copper, lead and mercury into ground and surface water. But it is also important to remember that metal-rich drainage can also occur in mineralized areas that have not been mined.

Mines can use various methods that can minimize the problem, and often effective mine design can keep water away from materials that can cause acid development. Active treatment involves installing a water treatment plant specific for the situation. Often this is a plant that uses lime to neutralize the acid and then the water is passed through settling tanks or ponds to remove the sediment and particulate metals. Passive systems can also be designed to treat the effluent without having constant human supervision.

Editors note: This is the first in a three part series on water that comes from coal mines and coal mining areas.

Local official trains, certifies:

(Continued from page 1A)
handling, confidentiality and court room testimony.

"Either a dog and their handler have it or they don't," said officer Hendricks. "This

to give 100 percent."

Hendricks and his wife Tina have been training dogs for more than 30 years and Hendrick's current team operates solely for the Carbon and Salt Lake