

Acid drainage issues at the old Buck Mine in Iron River bring to graphic display
the concerns with Pyrite in the waste rock at the proposed Penokee Mine

Gentlemen:

It took me ages to get these two photos to come up together - but it's probably worth it.

Wetlands warrior Rich Sloat sent them to us from his haunts around Iron River Michigan to show what acid drainage looks like close to home.

Both of the old Buck and Dober mines are close to the river. Both made money on direct shipping iron ore, not taconite. Both operated in a black shale environment, containing pyrite and a host of other minerals. Water running over the waste rock generates sulfuric acid, which dissolves other trace metals in the shale.

The Buck puts out around 440 gallons per minute, the Dober somewhat less.

Tests showed these metals to be present in the water: Aluminum, copper, iron, lead, manganese, nickel, cadmium, chromium, silver and mercury - and, of course sulfur, which is not a metal.

In 1997 MDEQ set up "Interim response systems" to treat the water. Basically - the water is gathered and caused to flow over and through crushed limestone - which neutralizes the acid and forms a slimy gypsum, the stuff of which drywall is made. Most of the metals drop out in the sludge, which settles out in ponds.

From the ponds the water passes through wetlands and into the Iron River, to be diluted and to go another 5 miles to the Brule River.

The [air photo \(view photo\)](#) shows the acid drainage water, orange, at the Dober mine, in a pond, then a ditch, through a culvert and over the limestone, from which it emerges somewhat less polluted, to filter through wetlands.

The [other photo \(view photo\)](#) shows a settling pond, still rusty. After 10 years or so 17,000 tons of toxic sludge was excavated from the ponds and trucked to a hazardous dump at a cost to the state exceeding \$1,000,000. This interim treatment will go on indefinitely.

This what we can expect if millions of tons of pyritic Tyler shale are dumped on the forests and wetlands at the proposed Penokee mine site.

Thank you Rich.

Cousin Jack Parker