TRIALS AND TRIBULATIONS OF THE LEADVILLE TUNNEL MINE POOL[1]

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Abstract: As a part of the remediation of the acid rock drainage (ARD) at the California Gulch Superfund site, located in Leadville, Lake County, Colorado, the U.S. Environmental Protection Agency (EPA) is storing the low pH surface waters in the mine pool that is drained by the Leadville Mine Drain Tunnel (LMDT) and treated at a water treatment plant operated by the Bureau of Reclamation. However, due to blockages and clean water sources entering the tunnel the management of mine pool has presented numerous hydrologic and engineering challenges.

EPA has recently completed a detailed hydrologic assessment of the sources and flow pathways of ground water impacting the mine pool and LMDT using tracer studies, and end member mixing analysis (EMMA). The results of this investigation supported the development of a design manual for the long term management of the mine pool and surface waters that will control potential tunnel blowouts, as well as reduce water treatment costs at the site.

[1] Paper was presented at the 2006 Billings Land Reclamation Symposium, June 4-8, 2006, Billings MT and jointly published by BLRS and ASMR, R.I. Barnhisel (ed.) 3134 Montavesta Rd., Lexington, KY 40502.

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