

Financial Assurance for Long-Term Reclamation¹

D. Sutton*, D. Herrera²

Abstract: Resistance to new mines is growing, especially in cases where sulfide minerals are present and there is a real or perceived risk of long-term water contamination. There is a movement afoot to ban any type of mining that might require ongoing or long-term water treatment. Recent catastrophic tailings dam failures have added fuel to the resistance to opening new mines or expanding existing mines considering the perpetual liability. Higher living standards and a growing world population will increase the demand for metal. How will the higher demand for metal be met if the supply is curtailed by prohibiting mining? This paper touches on the experience Spectrum Engineering has had as the operator of six water treatment plants at the orphaned Zortman, Landusky, Kendall, and Gilt Edge mines, and our recent experience assisting the Minnesota DNR and PolyMet mining company. Spectrum assisted in determining the amount and type of financial assurance required for PolyMet's proposed polymetallic sulfide mine in Northern Minnesota where long term water quality is an issue. The financial assurances for disturbed land reclamation are straightforward; however, when geochemistry and waste streams become more complex and the long-term water chemistry is less certain, the mining company's financial assurance becomes very complicated. What does a mining company need to do to justify the science and financial assurances to satisfy the public and regulators? What does the public and regulators need to know to ensure compliance? What type of financial assurance is appropriate? How long will it be required? How will it be estimated? How will it be managed? How will the uncertainty be quantified? An attempt will be made to answer these questions.

Additional Key Words: Financial Assurance, Bonding, Geochemistry, Trust, Risk, Economics.

-
1. Oral paper presented at the 2019 National Meeting of the American Society of mining and Reclamation, Big Sky, MT. Welcome Back to Montana: The Land of Reclamation Pioneers, June 3-7, 2019. Published by ASMR, 1305 Weathervane Dr., Champaign, IL 61821.
 2. Don Sutton P.E. and Drew Herrera P.E. (* presenters), Mining and Civil Engineers, Spectrum Engineering, 1413 4th Ave North, Billings MT, 59101.