

89264

oral

Observe, Orient, Decide, Act: Using the OODA Loop in long-term water management during mine closure and reclamation

T Hughes*, *KC Harvey Environmental, LLC, Bozeman, MT USA.*
thughes@kcharvey.com

Long-term water management during closure and reclamation requires ongoing evaluation of existing treatment processes for performance and efficiency as mine and process water quantity and quality change over time. This presentation describes decision-making strategies around long-term water management, using the OODA Loop as a model for continuous evaluation. The DeLamar Mine in Idaho is presented as a case study.

Evaluation should address regulatory requirements and anticipated future changes to regulations or existing permits, operational needs, capacity of the owner/operator to change existing systems, capital and operating costs of existing and updated systems, and best available technology including lessons learned from industry. This presentation examines the process of evaluating existing water management and treatment processes, tracking regulatory drivers, selecting candidate strategies, and developing cost comparisons.

Approval of changes to long-term water management requires effective coordination with regulatory agencies. Coordination strategies are described, with an emphasis on understanding agency perspectives and goals, using agency guidance on best management practices, and developing demonstration studies to support agency acceptance.

An opportunity exists at the DeLamar Mine to optimize the existing water management approach for drainage from an adit which averages over 10 million gallons per year. The adit is dewatered continuously using a pumping station, with dewatering volumes reporting to an onsite water treatment plant where they are commingled and treated with other mine and process water sources. This presentation examines long-term management of the adit dewatering volumes using the OODA Loop and supports the 2023 ASRS site tour of the DeLamar Mine.

Keywords: Long-term water management, DeLamar Mine