Objectives and Activities

INTRODUCTION

Mining is essential to meet the World’s minerals and energy needs. The proper management of water resources is critical to the success of any mining operation. In arid environments, such as in the western Unites States, one has to consider water conservation, high sodium concentrations, and other potential contaminants; in more humid environments, water quality issues related to pyrite oxidation and mineral dissolution can be highly problematic. However, water management involves more than simply meeting discharge regulations; one must also consider the potential effect of mining on the local (and sometimes regional) water table, and the effects that surface and ground water can have on a mine. Moreover, one must consider the long-term impacts that resource extraction can have on the water resources of an area, as well as whether mining and reclamation can be engineered to actually improve water quality within a watershed.

It should not be a surprise to anyone therefore that many papers are presented on water-related issues at every meeting of this Society, regardless of the meeting’s location. Topics include acid mine drainage, aquifer dewatering, hydrology, geochemistry, modeling, predicting probable hydrologic consequences of mining, active, passive, and semi-passive water treatment technologies, and wetlands (both as a water treatment technique and as a planned land use).

Papers range from the theoretical to the highly applied, from case studies at mine sites to smaller-scale laboratory studies. The water management division is interdisciplinary in scope and composition, and inclusionary in nature. It provides a communication vehicle for ASMR members who deal with and are concerned about the potential environmental effects that mining can have on a region and, in doing so, fosters collaboration and cooperation between researchers, practioners, and regulators.

OBJECTIVES

The Division’s goal is to develop new knowledge and to foster improved understanding contributing to environmentally sound and cost-effective water management at active, abandoned, and reclaimed mines. Subjects of interest to the Division include:

• Enhancing the functions and values of reclaimed wetlands and streams in mining environments;
• Restoring streams and wetlands after disturbance;

• Encouraging the acceptance and approval of ecologically-sound wetland reclamation and stream restoration plans by regulatory programs;

• Cost effective water treatment technology, whether it be passive, semipassive, or active;

• Conducting studies on the hydrology of underground and surface mines;

• Prevention or amelioration of acid mine drainage, sedimentation, trace metal contamination, and other water-quality problems associated with mining;

• Developing and evaluating novel cost-effective ways to solve water management problems, including the use of wastes or by-products from other industries;

• Planning and considering post-mining hydrology and water quality prior to and during active mining; and

• Establishing beneficial post-mining land uses involving water resources.

The Division will seek to achieve this goal by:

1. Stimulating, encouraging, and coordinating the presentation of papers on water management topics at ASMR’s annual meeting;

2. Providing opportunities for Division members to meet and become friends, find common ground, and explore opportunities for cooperation and collaboration;

3. Stimulating and encouraging Division members and the Society as a whole to see the mine environment from a broad perspective, considering ground water and surface water during the active mining, reclamation, and post-mining phases of mining operations; and

4. Providing a means of technology transfer, allowing advances in science and technology in the fields of mine hydrology, water treatment, wetland science, aquatic geochemistry, and mine drainage to be integrated into standard mining, reclamation, and post-mine management practice.