



INTERNATIONAL MINE WATER ASSOCIATION

## 2013 Annual Conference Golden, Colorado USA



### Short Course #6

#### Passive Treatment of Mine Drainage: Effective Technologies and Design

Passive Treatment is a highly cost-effective remedial option when properly applied and implemented. Successful implementation requires the collection of useful discharge data, the selection of appropriate treatment technologies, proper design, proper construction, and sustained maintenance. This workshop will provide the participants with an understanding of these components of passive treatment.

The workshop will be taught by Bob Hedin, who has 20 years of experience with coal mine drainage and limestone-based technologies, and Jim Gusek who has 25 years experience with bioreactors and sulfate reducing systems. The data and case studies presented will represent coal mine and metal mine drainages from sites around the world. The goals of the workshop are to describe the latest advances in passive treatment technologies, present data from existing systems, and provide the participants with a basic understanding of design procedures.

The full day workshop is organized into seven modules:

- Treatment Chemistry
- Discharge Characterization
- Tools and Technologies
- System Design
- Operation and Maintenance
- Case Studies

Bob and Jim will tag-team in each module, presenting sometimes different ways to solve the same problem as well as synergistic methodologies that can be combined in a holistic and sustainable approach to mine water treatment.

#### Instructors

**Dr. Robert Hedin** worked for six years as a research scientist with the US Bureau of Mines and has owned/operated Hedin Environmental for the last 18 years. Hedin Environmental has designed 42 passive treatment systems. While most of Bob's experience is in the coal fields of the eastern US, recently he has been applying passive technologies to metal mines around the world.

**Jim Gusek** is a mining engineer with Sovereign Consulting Inc. and is based in Golden, Colorado. He is a registered professional engineer and specializes in mine closure design, mine land reclamation, and the design of passive treatment systems for mining influenced water.

**Other Information**

A web site will be established previous to the conference where workshop participants will be able to access relevant papers. The PowerPoint presentation will be provided to the workshop participants at the end of the workshop.