Characterizing, Predicting, and Modeling Water at Mine Sites

4 Days

Dates & Location:

Day 1, May 18, 2009
Day 2, May 19, 2009
Day 3, May 20, 2009
Day 4, May 21, 2009

Sacramento Marriott Rancho Cordova
11211 Point East Drive
Rancho Cordova, CA
8:30 – 5:00 p.m.

Information on the hotel and room registration will be sent with your registration confirmation.

Course Description:

This is a four-day series of classes for professionals involved with mine permitting issues.

Day 1: Acid Generation, Mine Site Overview, Mine Site Characterization

Day 2: Modeling

Day 3: Site Tour of Jamestown Mine

Day 4: Use of Prediction Information in Mine Permitting and Case Studies

(Please see draft class agendas below for a more detailed description on course content.)

Instructors:

Charles N. Alpers, U.S. Geological Survey
John Hillenbrand, U.S. EPA
James Kuipers, Kuipers & Associates
Ann Maest, Stratus Consulting
D. Kirk Nordstrom, U.S. Geological Survey
Connie Travers, Stratus Consulting

Registration Fees: There is no charge for attendance. The course is sponsored by the Water Board Academy and the United States Environmental Protection Agency and is open to employees of federal and state agencies and other selected guests.

Registration Note: This is series of four, one-day classes. You must register for each class individually.

To Register: Register on-line at www.waterboards.ca.gov/academy/ and click on "Schedule". Please contact the Training Academy Registrar, Jennifer Latham, at (916) 327-8198 for registration assistance. Questions concerning the class may be addressed to Rick Humphreys at (916) 341.5493 or rhumphreys@waterboards.ca.gov.

If you have special accommodations or language needs, please contact Shirley Moreno at (916) 324-7481 or smoreno@waterboards.ca.gov at least 5 working days prior to the class. TTY/DD/Speech to Speech users may dial 7-1-1 for the California Relay Service.

DRAFT AGENDAS

Characterizing, Predicting and Modeling Water at Mine Sites
A Series of Four, One-Day Classes

Day 1: ACID GENERATION, MINE-SITE OVERVIEW and MINE-SITE CHARACTERIZATION

- Course introduction and an overview of acid generation
- Overview of hardrock mines: mine operations, sources and transport of contaminants
- Site characterization: representative samples; baseline/background, hydrogeologic and geochemical characterization (geology; mineralogy; static, short-term leach, and kinetic testing), sources of uncertainty, characterization during different phases of mining.

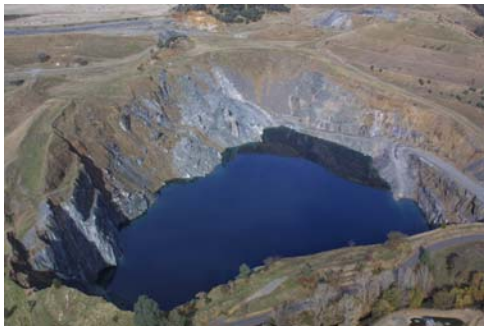
POST-SESSION RECEPTION AND INFORMAL POSTER SESSION

Day 2: MODELING

- Introduction to modeling: why model, when to model, definitions, examples
- Conceptual models: development; elements, examples
- From concept to quantification: hydrogeologic, geochemical, and coupled modeling
- Computer programs (codes) as conveyors of models: inputs, databases, use of model outputs
- Code selection: types of codes available for use at mine sites
- Calibration, sensitivity analysis, error propagation, standard reference test cases: model evaluation and documentation
- Model uncertainty: sources of uncertainty, recommendations for improvement
- Examples of modeling: hydrogeologic and geochemical modeling examples, steps for mine unit modeling.

Day 3: SITE TOUR OF JAMESTOWN MINE

The site tour will highlight major mine waste management features at the Jamestown Mine (now undergoing closure) and the mine pit lake. The instructors will discuss what modeling should be done to predict the effluent characteristics of the mine waste management units and mine pit and what mitigation measures are warranted by pre-mining water quality predictions.



Day 4: USE OF PREDICTION INFORMATION IN MINE PERMITTING AND CASE STUDIES

- Environmental Impact Statement analysis: water quality predictions, inherent factors affecting water quality, root causes of water quality impacts (characterization and mitigation failures)
- Case studies of water quality predictions and actual water quality at hardrock mines
- Conclusions: challenges regulators face in mine permitting and how to address them.