

ASSOCIATION OF ENVIRONMENTAL AND ENGINEERING GEOLOGISTS

"Serving Professionals in Engineering, Environmental, and Ground-Water Geology"

THE ROCKY MOUNTAIN SECTION NEWSLETTER

www.aegrms.org

MEETING DATE

**THURSDAY
APRIL 13th, 2006**

TIME

5:45 p.m. Social Hour
6:30 p.m. Dinner
7:30 p.m. Presentation

LOCATION

**Berthoud Hall, Colorado
School of Mines
1516 Illinois St.
Golden, CO 80401
See map below**

COST

\$20 Members
\$22 Non-members
**Students, Free first time,
then \$10**

RESERVATIONS

c/o AEG Reservation Line
(303) 264-1030
meetings@aeqrms.org
**BY NOON, TUESDAY
APRIL 11TH**

Highway 6 Emergency Rockslide Repair

Minal Parekh and Kent Pease
Lyman Henn

In June of 2005, approximately 1,300 CY of rock were released from an existing rock cut on U.S Highway 6 in one slide event. The highway was closed to through-traffic for 83 days to reconfigure and stabilize the cut, a closure which is the longest in Colorado state history. This presentation reviews the components of the incident and the resulting project, including the original rockslide and history of mitigation at the site, the ground conditions, the engineered stabilization, and construction. Ground conditions which led to the rockslide and were key components to the engineered stabilization, consisted of foliated gneiss and schist with two prominent secondary joint sets and pegmatite intrusions. This presentation will describe how a planar pegmatite intrusion along a secondary joint led to the instability and initial rockfall, and how the natural jointing and the pegmatite intrusion were used as the basis for the stabilization measures implemented.

Words from the Chair

What a wonderful Student Night! Turnout was great, the talks were informative, and the sponsors were generous. Thanks to one and all for helping to make this a successful event.

This month's talk returns to a theme common to many of us. Almost all natural hazards involve geology in some form or another. Much of our mission as engineering geologists, environmental geologists, and

**BOARD OF
DIRECTORS**

Chairperson

Dwaine Edington
303.470.1263

chair@agrms.org

Chair-elect

Liv Bowden
CTL Thompson

chair-elect@agrms.org

Secretary

Margit Kurka
Michael W. West &
Associates, Inc.
720.529.5300

aeg_rms_secretary@yahoo.com

Treasurer

Steve Compton
Lafarge West, Inc.
720.201.4914

treasurer@agrms.org

Membership

Sean Harvey
Lyman Henn

membership@agrms.org

Newsletter

Kristi Ainslie
GEI Consultants, Inc.
303.662.0100

newsletter@agrms.org

Website

Jill Carlson
Colorado Geological
Survey

webmaster@agrms.org

Past Chair

Ben Arndt
Yeh and Associates
303.781.9590

past-chair@agrms.org

Student Chair

Diana Sitze

student-chair@agrms.org

Website

www.agrms.org

hydrogeologists is to help protect and ensure the health and safety of the public. I, for one, feel proud that I can play a role in helping to make our world a better place.

Be sure to clear your calendars for our upcoming events. We have three field trips in the works as well as the Section picnic. Two of these field trips are modeled on RMAG's "On the Rocks Field Trips" which are done in a "bring your own" style. That is, participants provide their own transportation (carpools encouraged) and lunches. We provide the leaders and logistical support. The first of these is this month (see elsewhere in this newsletter for additional information). More details will be forthcoming, so check those emails.

Student Night Sponsors

AEG-RMS again would like to thank the following sponsors for their generous support for the annual student night:

AEG
Advanced Terra Testing
All Service Septic
Apex Consulting Services
Becky Roland
Brierley & Associates
Church Onsite Wastewater Consultants
Colorado Geological Survey
CTL/Thompson
Deere & Ault
Dwaine Edington
Peggy Ganse
GEI Consultants
GeoBrugg
Golder Associates
J.A. Cesare & Associates
Lyman Henn
MFG
Michael W. West & Associates
Montgomery Watson Harza
Paul Santi
RJH Consultants
Susan Steele-Weir
Tetra Tech RMC
Zonge Geophysics

Upcoming Events

Field Trips:

Debris Flows, Landslides and Potentially Unstable Slopes in Colorado Springs

Date: Saturday, April 29th

Time: 8:00 AM

Field Trip Leaders:

- Jonathan White - Colorado Geological Survey
- Thomas Terry - CTL/Thompson, Inc.

Meeting location: RTD park-n-ride parking lot at the southwest side of C-470 and University Blvd. (8392 S. Burnley Ct.) in Highlands Ranch.

Colorado Springs is a plains city with mountain problems, especially on the flank of Cheyenne Mountain. The first stop of the day will be the recently constructed debris-flow detention structures on the flank of Cheyenne Mountain. We'll stop for lunch at a local eatery, but those who want to bring their own lunch are free to do so. The afternoon will consist of visiting various landslides and/or potentially unstable slopes in an urban setting, debris flow hazard areas, and/or the large landslide deposit at the NORAD facility.

A maximum of 5 cars will be permitted on this field trip – this means there is a field trip cap of 25 people. The caravan will leave promptly at 8:00AM from the RTD park-n-ride parking lot at the southwest side of C-470 and University Blvd. (8392 S. Burnley Ct.) in Highlands Ranch. We plan to return to the park-n-ride at Highlands Ranch by 6:00 pm.

A large cooler with ice will be provided by the field trip leaders, but it's up to the attendees to fill the cooler – it's strictly BYO.

There is no cost for this field trip, but there is a minimum attendance of 8 people. Please register for the trip with Eileen Dornfest **no later than April 20th**. Eileen can be reached at eileen.dornfest@mfgenv.com or 970/223-9600.

Saturday July 29th – Hot Springs in central Colorado. This trip will be led by Judy Hamilton. The logistics have not yet been decided, so stay tuned and more information will follow as the date gets closer.

September 15th – 17th – Formal trip to Durango. This trip will be led by Doug Boyer. Again, more information will follow as it becomes available.

AEG-RMS Family Picnic:

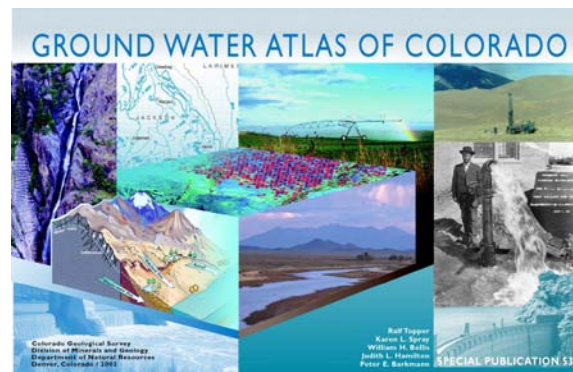
We will be having a family picnic on Saturday May 20th at Lyons Park in Golden. Plan to attend and bring the family for an afternoon of fun in the sun! Stay tuned for more information.

Upcoming 2005-2006 Presentations

May 11th - Mike West of Michael W. West & Associates: **Quaternary Surface Fault Rupture, Saddle Mountains Anticline, near the Hanford Reservation, Washington**

TBD - Jerry Higgins, Jahns Lecture.

Colorado Geological Survey Web Site for the Ground Water Atlas of Colorado – New Web Site Offers Synopsis of Ground Water in Colorado



Since its publication by the Colorado Geological Survey, the *Ground Water Atlas of Colorado* has received tremendous recognition and acclaim by

professional organizations, water managers, educators, politicians, and the public. Most recently, the authors Ralf Topper, Karen L. Spray, William H. Bellis, Judith L. Hamilton, and Peter E. Barkmann received the Geological Society of America's 2005 E. B. Burwell, Jr. Award from its Engineering Geology Division, recognizing this distinguished contribution to the sciences.

The Colorado Geological Survey has now developed a web site that features a synopsis of the *Ground Water Atlas*. Like the original publication, the web site contains introductory chapters on the state's ground-water resource, as well as specific discussions on each of the state's major aquifers. The web site version consists of 3-4 pages of text and graphic materials for each of the original 7 chapters of the publication. In addition, the web site contains the complete glossary, and download capability of high-resolution graphic files displayed as figures on the web pages. The synopsis of the *Ground Water Atlas of Colorado* can be viewed at <http://geosurvey.state.co.us/wateratlas/>.

May 15-19, 2006 27th Annual Short Course on Grouting Fundamentals & Current Practice

Colorado School of Mines

Detailed Course Information:

www.mines.edu/outreach/cont_ed/

Technical Inquiries: Scott Kieffer (303) 273-3714 skieffer@mines.edu

The Colorado School of Mines will host the 27th annual short course on *Grouting Fundamentals and Current Practice*. This course covers injection grouting as a method to improve soil settlement characteristics and strength properties, and to decrease permeability of soil and rock masses. Geological site investigations, equipment and procedures for cement grouting, structural chemical grouting of soil, grouting rock under dams, chemical grouting for water control, grouting of rock anchors, compaction grouting, lifting and leveling, slab jacking, soil nailing, and grouting for underground structures are major

topics covered. Principles and case histories are presented, and there is a field demonstration of compaction and permeation grouting, flow of ultrafine cement grout in sand cylinders, grout mixing, rock drilling and packers, and testing grout mobility.

The course content is directed toward Owners, Engineers and Contractors that have interest in the capabilities of grouting to solve a broad array of geotechnical and structural problems. Course presentations are made by recognized authorities in the field of grouting. For attendance of the entire course, 3.5 Continuing Education Units will be awarded.

Conferences and Symposium, Call for Abstracts on the Website

Information, dates, and website links for the following conferences/symposiums can be found on our website at www.aegrms.org. Also look to the calendar of events on the website for an organized listing and dates of the many upcoming events.

- **First North American Landslide Conference**
- **40th Annual Symposium on Engineering Geology & Geotechnical Engineering**
- **57th Highway Geology Symposium Breckenridge, CO**
- ***GEO-volution: The Evolution of Colorado's Geological and Geotechnical Engineering Practice***

2006 Roy J. Shlemon Specialty Conference

The 2006 Roy J. Shlemon Specialty Conference is being held May 3-5, 2006 in Durango, Colorado at the Historic Strater Hotel. The conference subject is "Mass Wasting in Disturbed Watersheds" chaired by Bill Haneberg, Sue Cannon, Paul Santi, and Jeff Coe.

To receive more information and to register for the conference, go to the web site:

www.haneberg.com/watersheds or go to AEG's web site (www.aegweb.org) and click on the Mass Wasting logo.

The objective of the conference is to bring together practitioners and researchers in order to define the current state of practice and identify unresolved problems with regard to the prediction and mitigation of mass wasting in disturbed watersheds.

Be sure to submit your abstracts to Julie Keaton at aegjuliek@aol.com

To make hotel reservations, call the Strater Hotel at 970-247-4431 and let them know that you are a participant in the "AEG Shlemon Specialty Conference" and receive your group rate.

If you have any questions, do not hesitate to contact Bill Haneberg at bill@haneberg.com.

Invited guest speakers include:

1. Tom Koler of the U.S. Forest Service speaking about "Progress in forest engineering geology in the late 20th century and early 21st century -- the integration of engineering geology within ecosystem management of forested lands."
2. Laura Vaugeois of the Washington Department of Natural Resources speaking about "Washington's landslide hazard zonation project: a process for addressing risk to resources."
3. Charlie Luce of the U.S. Forest Service speaking about "Mass wasting following forest

fires: processes at multiple scales."

4. Sue Cannon of the U.S. Geological Survey speaking about "Tools for assessing post-wildfire debris flow probabilities and magnitudes."

5. Jon Major of the U.S. Geological Survey speaking about "Mass wasting in volcanically disturbed watersheds: primary events, landscape responses, and geologically-ecological interactions."

6. Bill Laprade of Shannon & Wilson speaking about "Effects of urbanization on mass wasting -- detrimental and beneficial."

7. Bill Haneberg of Haneberg Geoscience speaking about "Landslides, lasers, and logarithms: the role of emerging technologies in watershed-scale slope stability assessment."

8. Rod Silde of Kyoto University (title to be announced)

Technical Articles Needed for AEG NEWS

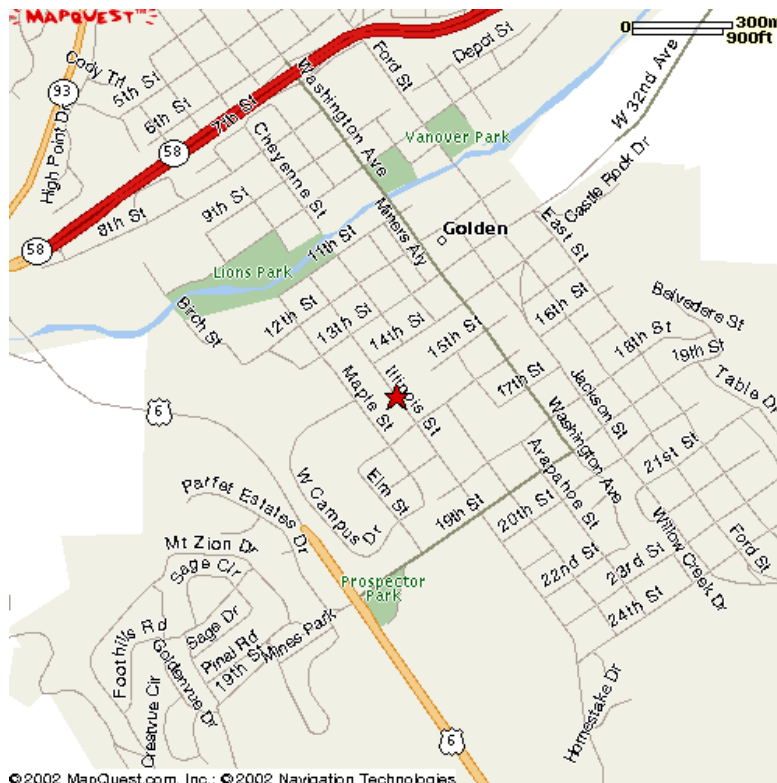
We are always on the alert for short technical articles for the AEG NEWS. Length about 850 words on nearly any subject of interest to the AEG members: Landslides, contaminant plumes, groundwater investigations, dams, etc. In fact we need a technical article for the March issue. Photos are welcome as long as they are reproducible at the scale needed. Ask our section members. Send your submittal to Allen Shaw and to Andi Ptak. Addresses inside the front cover of the NEWS.

Case Histories/Member Contributions

We are always looking for individuals to provide their knowledge and experience to the AEG-RMS community through case histories and articles of interest. Please contact Kristi Ainslie at newsletter@aegrms.org if you have anything you would like to share. We have had good success with this in the past, so keep it going.

AEG 2006 Annual Meeting

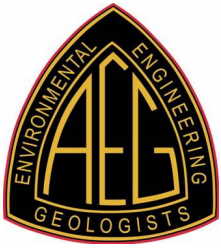
MARK YOUR CALENDARS: AEG-2006 "Northeast Engineering Geology: From Till to Fill" in Boston, Massachusetts; October 30 through November 4 at the Boston Park Plaza Hotel. **Abstracts are due May 1!** Special events include: 2 symposia (Big Dig in Boston; and New England State Geologists' Panel -- with the State Geologists from MA, VT, ME, NH, RI, and CT); 4 field trips (The Concord-Lexington Battle of April 19, 1775: A Clash of Continents and Cultures; Geology of Boston Harbor; Influence of Geology on Engineering Design in Boston; and Engineering Geology of the Combined Sewer Overflow Project, Providence, RI); and a Special Event -- Cape Cod Clambake including a tour of Wood's Hole Oceanographic Institute. For more information, contact Dick Sherman (General Chair) at Dick.Sherman@m-e.aecom.com



© 2002 MapQuest.com, Inc.; © 2002 Navigation Technologies

COLORADO SCHOOL OF MINES – BERTHOUD HALL

**1516 Illinois St.
Golden, CO 80401**



DAM REMEDIATION SHORT COURSE:

Pittsburgh, PA
April 1st, 2006

State of the Art in Dam Design, Construction and Remediation: Rock Grouting, Rock Anchors, Cut-off Walls, and Crisis Management

Dr. Donald Bruce (President, Geosystems) and David B. Wilson (Vice President, Gannett Fleming)

Date & Time: Saturday, April 1st, 2006 from 8:00 a.m. to 5:00 p.m. (Registration from 7:30 a.m. to 8:00 a.m.)

Cost: By March 22, 2006 After March 22, 2006 thru March 29, 2006
 \$175 for members of AEG; \$195 for members of AEG;
 \$195 for non-members; \$215 for non-members;
 \$35 for college students (must include a copy of college ID w/ form) No student rate shall be offered after 3/29

Attendees that register after 3/29 or at the door on 4/1 will be required to pay \$225.00, so please register early!

Location: Holiday Inn, Greentree—Executive Ballroom, 401 Holiday Dr, Greentree, PA 15220
 (Located minutes from downtown Pittsburgh and convenient to the Pittsburgh airport)

Room Rate: Discounted room rates are available at the Holiday Inn for \$79.00 per night plus tax & fees.
 Ask to speak with Chaz Letzkus (412-922-8100) to receive the discounted AEG rate.

Seminar Description: Dr. Donald Bruce and David B Wilson, two authorities in the design of dams, will each spend a half of a day speaking on dam stability and current practices related to seepage and crisis management of dams. This short course is designed for geologists, engineers, designers and contractors who want to learn from case histories and cutting edge practices used to rehabilitate and stabilize dams. Participants will receive a copy of all course materials.

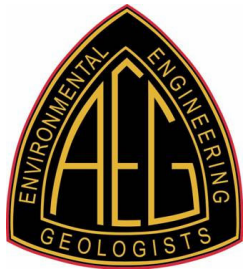
Course Topics:

- ❖ **Rock Anchors for Dams:** The results of a National Research Program, which has collated data from over 360 dams that have been anchored in North America since 1968. Evolution of practice as seen through the successive versions of "standards" is traced.
- ❖ **Cut-Offs for Embankment Dams.** This provides a review of the different seepage cut-off techniques which can be utilized, often in combinations.
- ❖ **Crisis Management - What Happens When Fast Flows Develop.** A brief step-by-step review of the eight basic steps to take for the logical management of a project which can be termed an emergency.
- ❖ **Dam Grouting Techniques: Typical Applications of Grouting, Recent Advances in Grouting Technology (Balanced Stable Grout Mixes and Computer Monitoring, Control, and Analysis), Rock Grouting Fundamentals, Quantitative Design of Grouting, Verification of Grouting Results.**
- ❖ **Recent Rock Grouting Case Histories: Dams, Environmental Applications, Karst Grouting.**

Course Instructors:

Dr. Donald Bruce, Ph.D., C.Eng., L.G., L.E.G., is President of Geosystems, L.P. He specializes in geotechnical construction processes, particularly anchoring (his Ph.D. dissertation topic), drilling and grouting. He has over 30 years experience in the dam anchoring business and works on projects throughout North America and four other continents. Donald is currently Chairman of the Geo-Institute's Grouting Committee, and Chairman of the International Workshop on Micropiles. He is also an active member of PTI's Committee on Rock and Soil Anchors and is a co-author of the past (1996) and new (2004) Anchor Recommendations. He has almost 200 publications and is co-author of a new book on *Dam Foundation Grouting*. He is the recipient of the Kapp and Baker Awards from ASCE.

David B. Wilson is a Vice President and Practice Leader for Gannett Fleming, Inc.'s Earth Sciences & Hydraulics Practice. He has a B.S. and M.S. from Lehigh University and has 33 years of professional experience. He is an active member of ASCE, ASDSO, SAME, and USSD. He has authored more than 30 technical papers dealing with dam design, grouting, seepage investigations & analyses, instrumentation, roller compacted concrete, and sinkhole remediation for structures. Mr. Wilson is one of four co-inventors of the IntelliGrout System; He has also been an instructor for the Corps of Engineer annual Embankment Dam Safety Course held at the Waterways Experiment Station in Vicksburg, MS.



Pittsburgh, PA
April 1st, 2006

DAM REMEDIATION SHORT COURSE -REGISTRATION FORM-

Please fill out the information below and submit it with your payment. Feel free to photocopy this form, if submitting payment for more than one attendee. Thank you.

Name: _____

Organization Member (circle): AEG / ASCE / Other: _____

Address: _____

City/State/Zip: _____

Phone: _____ Fax: _____

Email: _____

Amount Enclosed (\$): _____

To receive the discounted early registration rate, the payment and registration form must be post marked by **March 22, 2006**. Payments made after this date must be adjusted based on the criteria described in the "cost" section of this announcement.

Registration includes course materials as well as lunch and morning/afternoon refreshments.

Make check payable to:

**Association of Engineering Geologists –
AO Section**

Mail Registration Form and Check to:

**Gannet Fleming, Inc.
Attn: Matthew Morris, AEG Treasurer
Foster Plaza III, Ste. 200
601 Holiday Drive
Pittsburgh, PA 15220**

