ASSOCIATION OF ENGINEERING GEOLOGISTS

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

THE ROCKY MOUNTAIN SECTION NEWSLETTER

www.aegrms.org

MEETING DATE

THURSDAY
FEBRUARY 14, 2002

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

LOCATION
CSM Student Center
1600 Maples St
A-B Ballroom 2nd floor
Golden, CO
See Map Below

COST
$20 Members
$22 Non-members
Free for Students

RESERVATIONS
c/o AEG Reservation Line
(303) 790-2161 x 243 or
meeting@aegrms.org
BY NOON, FRIDAY
FEBRUARY 8th

STUDENT NIGHT

This year's student night will have three presentations, two from South Dakota School of Mines and Technology and one from Colorado School of Mines. Micah Keller, a Junior in Geological Engineering and Heidi Sieverding, a graduate in Geological Engineering will present from SDSM&T. Bradley Crenshaw will present from CSM. Social hour begins at 5:45 with the presentations starting at 7:30.

Data Support for Detecting Environmental Controls on Fish Spawning Habitat, Spearfish Creek, Black Hills, SD

Micah L. Keller, Junior, Geological Engineering
South Dakota School of Mines & Technology, Rapid City, SD

Spearfish Creek, located in the northern Black Hills, South Dakota, hosts the only naturally reproducing Rainbow trout population in the region. Its waters emanate from Mississippian Limestone springs, and are supersaturated in calcium and magnesium. Observed yearly fluctuations in rainbow trout populations have concerned fish biologists and a detailed study was conducted to identify potential environmental controls on fish spawning. Results showed that a calcitic rind on channel bottom sediments was controlled by temperature and biological factors. Seasonal temperature changes promote cycles of bottom sediment cementation that inhibits a spawning habitat. Warm summer water temperatures cause the precipitation of a calcite rind, however, cold water temperatures in winter aids in partially dissolving the rind, allowing fish to actively spawn.

In addition to water temperature, collected data includes stream discharge, pH, specific conductivity, total and calcium hardness, and seasonal full chemical ion suites. Analysis will continue into the foreseeable future. Three sediment transport beds were created and located in potentially erosive locations. These will be used to determine critical velocities for use in sediment transport models. Data collection and analysis will continue into the foreseeable future.

Identification of a Spring Source in Deadman Gulch, Black Hills, SD

Heidi L. Sieverding, Graduate Student, Geological Engineering
South Dakota School of Mines & Technology, Rapid City, SD

A refraction survey and analysis was performed in Deadman Gulch to determine the depth to the water table and to locate the source waters of a small surface spring. The study area was in an alluvial valley located in the N ½, Sec. 27, T. 2 S, R. 7 E in the Hayward Quadrangle, west of Hermosa, South Dakota on the P. Wright ranch. Graduate students from SDSM&T conducted the refraction survey in October 2001. Using ViewSeis, a seismic refraction analysis system, the data were collected and stored for later interpretation on the Bison portable computer housed at SDSM&T. 24 16-mHz Geophones were spaced 3 meters apart in two separate lines, one within a dry channel bed of an ephemeral stream striking ~ N10°W and one perpendicular to the channel striking N65°W. A total of twenty refraction shot points were collected in two lines. The VeiwSeis program uses the generalized reciprocal method of refraction interpretation. From the refraction data, the water table was located at a depth of approximately 3 meters. The survey also revealed the presence of a previously unidentified subsurface fault in the underlying Pennsylvanian Minnekahta Formation. The primary source of the water for the spring is believed to be upwelling from the Minnekahta Formation through the fracture system. A secondary water source was determined to be from shallow groundwater in the alluvial aquifer.

Landslide Stabilization and Modeling, Meeker Colorado

Bradley A. Crenshaw and Paul M. Santi, Colorado School of Mines,
Golden Colorado, 80401

Remediation of an active landslide was carried out in June of 2001 at a site north of Meeker, CO along the western embankment of State Highway 13. This remediation was accomplished through the installation of approximately 1900 ft of horizontal drains into the landslide. The drains were made of geosynthetic wick material and were installed using a method developed at the University of Missouri-Rolla.

A crew comprised of Colorado Department of Transportation employees and students from UMR installed the drains during a one-week work period. Drain lengths, attitude, and placement were carefully documented in the field, so that exact drain location would be known. From this data, a site map was generated, which was used to evaluate the effective coverage of the horizontal drains. A slope profile was then generated along a representative drain's length, and the slope was evaluated for stability before remediation and after remediation under both normal and high phreatic surface conditions. Phreatic surface profiles under drained conditions were generated based on laboratory research done at UMR where phreatic surfaces were observed along a drain's length under various recharge conditions and rates. STEDwin/PCSTABLE was then used to evaluate the improvement in slope stability resulting from the remediation effort.

Vail 2003 Meeting at Chads

The next planning meeting for the Vail 2003 national convention will be Monday, February 4th at 6:00 pm at Chads in Lakewood (6th and Union). At the meeting we will vote on the Theme for the Vail Meeting, discuss: 1) dates for the committee meeting at Vail, 2) key project, 3) theme for technical sessions, 4) booth & advertising at Reno 5) entertainment at annual banquets, 6) gifts, and 7) publications.

Spring 2002 Speakers and Locations

March 14th – CSM Museum – Myles Carter, AEG President

April 11th – CSM Museum – Dr. Perry Rahn, South Dakota School of Mines, AEG Jahns Distinguished Lecturer

May 9th – CSM Museum – Vince Matthews, Colorado Geological Survey, Should We Be Concerned About Earthquakes in Colorado?

Please let Peggy Ganse or Tim Petz know if you or someone you know would be interested in giving a talk at an upcoming RMS meeting.

Continued Mammoth Turnouts for Meetings

Again we had an enormous turnout for the January meeting. These numbers are amazing and are bolstering our section. Thanks to Robert Schuster of the U.S. Geological Survey for his informative and entertaining presentations.

Student Night Booths

The RMS section officers will be contacting prospective exhibitors to display your product, service, or company at student night for only $100. ***There is still a few booths available***. If you would like a booth contact Jim Wright at chair-elect@aegrms.org. A FREE dinner is included with each booth. There is a limited number of spaces. We had some space constraints last year, although we assure you this will not be a problem for Student/Career Night 2002.

Buy a Student a Dinner

For $25 you or your company can purchase a dinner for a student to attend the student night. Please contact Jim Wright at chair-elect@aegrms.org to make your worthy contribution to the next generation of professionals.

Rocky Mountain Section Outreach Program

The Rocky Mountain Section is attempting to increase the involvement of the outlying areas of the section. The first program will be a visit to South Dakota School of Mines and Technology in Rapid City South Dakota. A team of professionals will present a discussion on possible professions in the industry and important things to learn in college to students in geology and geological engineering. The discussion will occur on Friday

February 22, at 4:00 pm on the Campus of SDSM&T in the Mineral Industries Building, Room 222 and is open to industry professionals in the area. Happy hour will follow at the Fire House. If you would like to participate in this discussion, please contact Ed Friend at webmaster@aegrms.org.

If you have ideas on how to increase involvement in the outlying areas, please contact Tim Petz at chair@aegrms.org.

Symposium at Rocky Mountain GSA Meeting 2002

An engineering geology symposium entitled, "Hillslope and Mountain Slope Hazards in the Rocky Mountains" will be held at the 2002 Rocky Mountain Section meeting of the Geological Society of America on May 7-9, 2002 in Cedar City, Utah. The goal of the symposium is to gather those geologists and engineers in the region who are dealing with all varieties of slope issues to share experiences, research, and solutions. Information on the meeting can be found at http://www.geosociety.org/sectdiv/rockymtn/02rmmtg.htm. Abstracts are currently being accepted for the symposium, so if you are interested in speaking, please contact one of the symposium organizers (Paul Santi, psanti@mines.edu 303 273-3108 or Francis Ashland, fashland.nrugs@state.ut.us 801 537-3380).

Tunneling Symposium at AEG 2002 Reno

Peggy Ganse will be chairing a half-day symposium on behalf of the AEG Tunneling Committee at the upcoming Annual Meeting in Reno this fall. The symposium content and speakers list is still under development, so any interested parties can contact Peggy pastchair@aegrms.org with input.

Geological Society of America National Meeting 2002

The 2002 GSA meeting will be held here in Denver next October 27-30. The Engineering Geology Division of GSA is beginning to assemble a program. General information on the meeting and the forms for submitting session proposals is available at http://www.geosociety.org. If you have questions for which you cannot find the answer on the web page, please contact Judy Ehlenor jehlen@tec.army.mil or Bill Haneberg, bill@haneberg.com.

Below is the last deadline:

July 16, 2002 Abstracts due by midnight, Mountain Daylight Time.

National Student Section Award

I was pleased to sit with many AEG student members and discuss the National AEG Student Section Award, available this year. This will be presented during the National Meeting in Reno, NV in 2002. Jessica Humble will be working to accomplish this. I think we have a great chance, as our student section is very strong and motivated. I thank the students whom were available to eat wings and drink soda and beer with me. It is hard to be president.....sometimes.

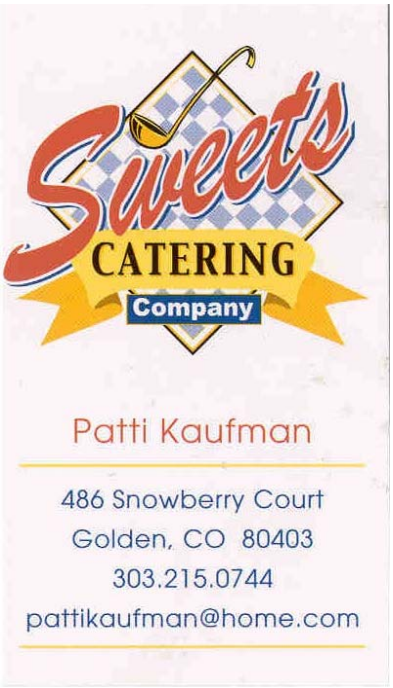
Tim Petz, Chair, RMS.

Aspiring Employees

Many resumes from students graduating in the very near future have been received. Employers, please contact Tim Petz chair@aegrms.org for information regarding potential employees for summer part-time or full-time work. Students can drop off your information with Tim at the meetings or via e-mail.

Your Business Card Here

The section is looking for companies or individuals who would like to advertise their products or services in the section newsletter and on the website. This is anything from a business card ($10/month), quarter page spread ($20/month), to a half page exposition ($40/month). If you are interested, contact Ed Friend webmaster@aegrms.org or Kristi McQuiddy newsletter@aegrms.org.



Section News

1. Jessica Humble is actively seeking speakers for the CSM Student Section. Please contact her at student-chair@aegrms.org if you are interested in sharing your knowledge and experience.

2. Please forward any newsworthy items to Kristi McQuiddy newsletter@aegrms.org by the 20th of the month.

Do you have E-mail?

Has your e-mail address changed recently? If you are receiving a paper copy of this Newsletter, we do not have a valid e-mail address for you (USBR employees excepted). Please help the AEG-RMS keep reproduction and postage costs down by providing us your e-mail address. Also, if you would prefer to receive the e-mail Newsletter at a different address, please let us know. Addresses/updates may be sent to Scott Walker (secretary@aegrms.org)

Section Chair's Corner

This will be a new and reoccurring feature in the newsletter. It will give our section chair a little time to address any important issues in the section and answer any questions.

We are half way through our 2001-2002 season. Time flies when you are talking tunnels, dams, landslides, and Antarctica. I want to commend our members for showing up in 'herds' to listen to our speakers. We are having an attendance of 50 people on a regular basis. I am very happy with our caterers, they seem to 'cater' to our large numbers quite well. Jim, Matt, Scott, Ed, Kristi, Peggy and I are exited to finish the year with a bang. Please continue your support, and we will see you for the BIGGEST meeting of the year - Student/Career Night on February 14th!

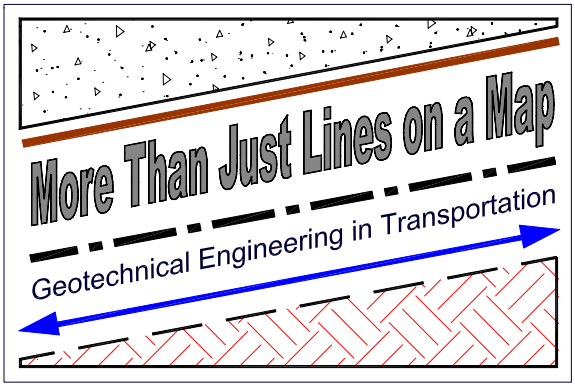
Thanks
Tim R. Petz, RMS Chair

CALL FOR PAPERS
2002 COLORADO GEOTECHNICAL SEMINAR

Geotechnical Engineering in Transportation
"More Than Just Lines on a Map."

Inverness Hotel, October 4, 2002

Denver, Colorado



Co-sponsors

The Geotechnical Group of the Colorado Section of the American Society of Civil Engineers has organized a one-day seminar on some aspect of geotechnology every other year since 1984. The Rocky Mountain Section of the Association of Engineering Geologists and the Colorado Association of Geotechnical Engineers will join us in organizing this event for 2002. The seminar is currently planned as a one-day event to be held on Friday October 4, 2002. The theme of the seminar will be "*Geotechnical Engineering in Transportation – More Than Just Lines on a Map.*" The focus will be on geotechnical engineering analysis and design in transportation projects. Such projects may include: **highways, runways, railways, subways, waterways, walkways, bikeways, bridges, tunnels, pipelines, utilities, conveyor systems, and related facilities.**

The seminar planning committee is requesting individuals interested in presenting a paper to submit a brief (approximately 200-word) abstract by February 15, 2002. This abstract is informal for committee review, not for publication. Selected authors will then be **notified by March 8, 2002** and asked to submit an electronic or photo-ready copy of the paper by June 1, 2002. The papers will be published in the seminar proceedings and distributed at the conference. The ideal paper will focus on solving practical problems using innovative or non-traditional approaches, and will include discussions of both the theoretical and construction aspects of projects.
Potential topics for presentations include, but are not necessarily limited to, the following:

- Project planning
- Project delivery systems (design/build)
- Innovative field investigation techniques
- New laboratory testing methods
- New sources of data (e.g., electronic media, Internet, etc.)
- Innovative methods of analyzing or interpreting data to solve geotechnical problems in transportation
- Application of practical (not necessarily traditional) techniques in selecting design properties
- State-of-the-art technical approaches in geotechnical analysis and design
- Seismic studies and retrofitting
- Rehabilitation, redevelopment and reevaluation of old systems

- Innovative geotechnical construction methods such as those related to:
  - Subgrade soil stabilization/modification
  - Subgrade design and drainage/Innovative pavement designs
  - Use of geosynthetics/lightweight fills/reinforced fills
  - Landslide/hillside/rockfall mitigation
  - Surface and/or ground water control/interesting excavation methods
  - Bridge foundations, tunnel linings and stability
  - Ground anchors and tieback walls, micropiles, soil nails
  - Mechanically stabilized earth (MSE) walls
  - Structure protection and security/work in the urban environment
- Innovative construction monitoring techniques
- Environmental issues such as:
  - Wetland exchange
  - Reuse or redevelopment of contaminated sites (brownfields)
- Value engineering
- Risk quantification and failure analysis
- Structure maintenance
- Instrumentation and monitoring including practical approaches, data collection methods, and validating data and/or interpretation
- Case histories, focusing on one or more of the following:
  - Use of the Observational Method
  - Colorado/Rocky Mountain experience (DIA, T-REX, CDOT)
  - Demonstrations of the significance of data interpretation
  - Shortcomings in data gathering
  - What didn't work

Individuals offering to make a presentation should be prepared to speak for approximately 20 to 30 minutes, provide graphics during the presentation (Power-Point, slides, overheads, etc.), and provide in advance a written summary paper or previously published paper that can be reproduced as part of the seminar proceedings.

Please e-mail your abstract (MS-WORD format) by 5:00 pm Mountain time Febuary 15, 2002, to Jim Gill at contourengineer@aol.com or fax to at (303) 697-2655. With the abstract, please indicate your name, your role in the subject matter, your daytime telephone number, and your return fax number or e-mail address. Respondents should expect a reply from the planning committee by March 8, 2002. Photo-ready or electronic (preferred) copies of the reports will be due by June 1 and published in the seminar proceedings.

Thank you in advance for your interest.

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Colorado School of Mines Student Center
1600 Maple Street
Golden Colorado