

Association of Environmental and Engineering Geologists

The Rocky Mountain Section Newsletter

SEPTEMBER 2007

MEETING DATE

**THURSDAY
SEPTEMBER 13TH,
2007**

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

**\$25 Members
\$27 Non-members
\$10 Retired members
Students, Free first
time, then \$10**

RESERVATIONS

Kristi Ainslie
(303) 440-5236
or
meetings@aegrms.org
or
WWW.AEGRMS.ORG

**BY NOON,
TUESDAY
SEPTEMBER 11TH**

Rolling Rocks in Peru for Calibration of the CRSP Model

Nancy C. Dessenberger, P.E., P.G.
Golder Associates Inc., Lakewood, Colorado

Michael Skurski, P.E.
Newmont Mining, Minera Yanacocha S. R. L., Peru

The Colorado Rockfall Simulation (CRSP) program has become a standard tool for analysis of rockfall in the Transportation industry. It also is well applied in other venues where rockfall is of concern, as it was for the development of a plastic-lined reservoir beneath 330 to 564-foot (100 to 172 meters) high mine pit highwalls in Peru. In this assignment, CRSP was used as a tool for optimizing the pond crest width to satisfy the intent of maximizing rockfall capture and mitigating rockfall damage to the ponds' interior lining.

One of the most challenging aspects of utilizing the CRSP model is the assignment of parameters which characterize the nature of the slope along which the rockfall bounces, rolls, or comes to rest. The CRSP manual provides some guidance and ranges of typical values to be used for the coefficients of restitution parameters (tangential and normal coefficients), which are the most difficult to define, since they are not readily measured. The range of parameters has been defined based on calibration to various rockfall tests, by comparison to observed velocity and energy. We believe that a rock rolling test conducted on the actual slopes to be modeled provides a much higher level of confidence in the parameters used in the model for analysis of a given site.

A rock rolling test was conducted as part of the rockfall evaluation for the San Jose pit highwall at the Yanacocha Mine in northern Peru. Observations of the behavior of the rocks, made during the test, and measurements of rollout distances of the individual rocks, were used to "back calculate" parameters for use in modeling a series of alternatives for rockfall mitigation.

This paper describes the methods used in the rock rolling test, and how the results were used to calibrate the CRSP model for subsequent use in mitigation design for the project. Also discussed are the anticipated effects of bench in-filling on rockfall as the wall "ages", and how this was handled in the model.

Words From the Chair

I hope everyone has had a great summer full of wonderful vacations and interesting projects. Blink and you missed it. September is here and it's time to get back together and catch up with friends and colleagues. Nancy Dessenberger, P.E., P.G. with Golder Associates Inc. has graciously accepted an invitation to kick off the new season with her presentation "Rolling Rocks in Peru for Calibration of the CRSP Model". Be sure to check out the Speaker Abstract in this month's newsletter and the lineup of this season's speakers. Be sure to RSVP as soon as possible as this allows us to control costs and plan a more enjoyable evening for all. Also mark your calendars for the Annual Meeting coming up in Los Angeles this year. It looks to be one of the best ever. I am putting a call out to all Rocky Mountain Section members for volunteers to put together a poster board representing our section. Please contact myself or your Chair-Elect, Steve Compton See you at the September meeting same time, same place.



Liv Bowden, P.G.
Chair AEG-RMS

2007-2008 Upcoming Meeting Presentations

Below is the tentative schedule of speakers for the 2007-2008 season. We will be adding presentation titles to future newsletters. As seen we have a few openings. If you are interested in giving a presentation please contact Steve Compton or Liv Bowden at chair@aegrms.org.

- Oct 11, 2007 - Jahn's Lecture
- Nov 8, 2007 - Dr. Noe
- Dec 13, 2007 - *Open*
- Jan 10/11, 2008 - President's Night
- Feb. 7, 2008 - Scott Walker
- Mar 13, 2008 - *Open*
- Apr 10, 2008 - Student Night
- May 8, 2008 - *Open*

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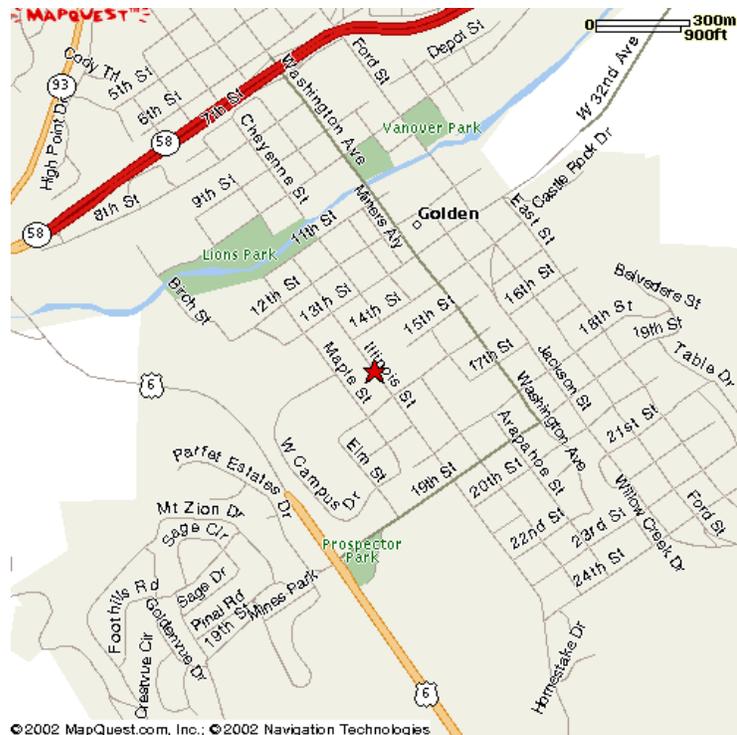
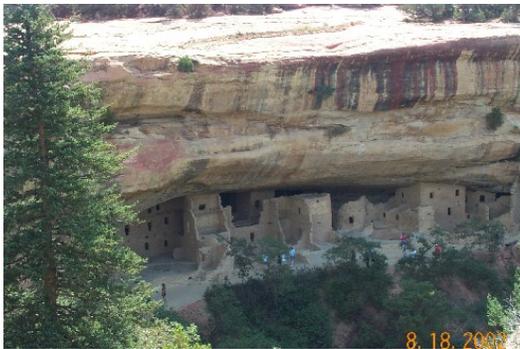
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GEI Consultants, Inc.
Attn: Kristi Ainslie
1790 38th Street #104
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Colorado School of Mines - Berthoud Hall
1516 Illinois Street
Golden, CO 80401