OREGON SECTION OF THE
ASSOCIATION OF ENVIRONMENTAL &
ENGINEERING GEOLOGISTS

December 2007

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The Official

OREGON SECTION AEG NEWSLETTER

December Meeting Details

Date: Tuesday, December 18

Location: Old Market Pub

6959 SW Multnomah

Portland, OR

6:00 pm Social

7:00 pm Dinner

8:00 pm Presentation

Dinner: Pizza & Salad

$14 Dinner ($7 Students)

Reservations: mwegner@cornforthconsultants.com with "AEG Reservation" in the subject line or 971-222-2047 by 4pm Thursday December 13th.

There is a $2 surcharge for those who do not reserve by the deadline.

Upcoming Meetings:

- **January 15: Joint Meeting with ASCE, TBA**
- **February 19, Ivan Wong, Seismicity in Oregon**

Decembers Meetings Guest Speaker Ken Cameron - Presentation: It's Not Nice To Fool Mother Nature: Highway Design and Debris Flows At White River, Mount Hood, Oregon

An intense storm crossed the Cascades during the first week of November, 2006. At Mt. Hood over 9 inches of rain was recorded during a three-day period ending on the 7th. Response to the rainfall in rivers heading on the mountain can generally be explained by the catchment area of the drainage and its orientation to the path of the storm.

The White River drainage was the exception. Despite its small aerial extent and near-perpendicular orientation to the path of the storm a very significant debris flow event was initiated. This flow transported a vast amount of very coarse debris, covering the Highway 35 bridge and cutting the highway at the east abutment. The amount of debris and the energy needed to transport it strongly suggests a "surge" type of event, probably a glacial outburst flood, not just the rising limb of a meteoric event.

The burial of the bridge and washout of the approach was greatly exacerbated by design of the highway. The historic depositional fan in the vicinity of the bridge is in excess of 500 meters across. A bridge that long would be inordinately expensive, so berms were built in from either side and a much smaller bridge installed. The width of the fan available for passage of water and debris dropped from over 500 meters to 30 meters.

Response by the ODOT to the November event was to work around the clock for 30 days to create a new channel and open the bridge. Some of the excavated material was used to create levees extending upstream from the bridge in a "V" shape, channeling all flow directly toward the bridge. The current manufactured configuration of the channel would appear to ensure that the next debris flow will plug and over-top the bridge immediately.

Bio: Ken Cameron, MS, RPG

Ken received his undergraduate and graduate degrees in geology from Portland State University. Between the degrees was two years of mineral assessment of proposed wilderness areas in the northern Rocky Mountain for the U. S. Bureau of Mines. Ken defended his thesis in volcanic stratigraphy two weeks before the eruption of Mt. St. Helens and went to work for the USGS, first doing erosion/deposition studies of the avalanche deposit and later working on the Quaternary eruptive and glacial history of other Cascade volcanoes. He went to work for DEQ in 1991 but continued working on Mt Hood on his own, concentrating on the fumaroles of Devil's Kitchen, seismicity, and glacial processes in the White Rive Basin. He has been a registered geologist with the state since 1983.

"Keen observation is at least as necessary as penetrating analysis"

Karl Terzaghi

Message From The Chair

"God help me, I love it so!" Gen. George Patton (in the movie, anyway)

December has come in with a couple of extra-tropical cyclones (just like I told my class about, a couple of weeks ago) – several inches of rain, wind (not as bad as they thought in the valley, worse on the coast), probably some snowmelt (57°F right now) – just the stuff to get an Oregon engineering geologist to don a slicker and head outside, for some fun (I mean, work!)

At this month's meeting, Ken Cameron of Oregon DEQ will tell us about some of the action surrounding last November's big storms, especially the debris flows that moved off Mt Hood. Put it on your calendar, and e-mail your reservation right away.

I was happy to see a great turn-out at the NW Lucky Lab last month, to send Dorian Kuper off on her national presidential travels. And to hand over that best-section plaque – it was classing my office up way too much.

Matt Brunengo

AEG Oregon Section Chair

PSU Winter Quarter Courses

Classes go from January 7 – March 14, 2008. Classrooms will be designated on December 15th.

1) G524, GIS for Natural Scientists, 4 credits, TuTh 16:00-17:00 & lab, Dave Percy
2) G543, Groundwater, 4 credits, TuTh, 10:00-12:00, Ben Perkins
3) G570, Engineering Geology, 4 credits, MW, 16:40-18:30, Scott Burns & lab F, 15:00-17:00
4) G510, Environmental Mineralogy, 4 credits, TuTh, 12:00-14:00, Georg Grathoff,
5) Geog 588, Intro to GIS, 4 credits, W, 17:30-21:10, M. Mertens & lab
6) Geog 592, GIS II, 4 credits, M, 17:30-21:10, Geofrey Duh & lab
7) CE 510, Soil and Groundwater Restoration, 4 credits, TuTh, 10-12, Gwyn Johnson
8) CE 510, Aquatic Chemistry, 4 credits, MW, 16:00-18:00, Bill Fish
9) CE 542, In-Situ Soil Testing, 4 credits, MW, 14:00-16:00, Trevor Smith
10) CE 565, Watershed Hydrology, 4 credits, TuTh, 12:00-14:00, H. Moradkhani

If anyone has questions, call Scott Burns at 503-725-3389 or email burnss@pdx.edu.

If anyone is planning on taking the CEG exam for Oregon or Washington, Scott's Engineering Geology class has always worked as an excellent review for the exam.

Thanks For Supporting AEG !

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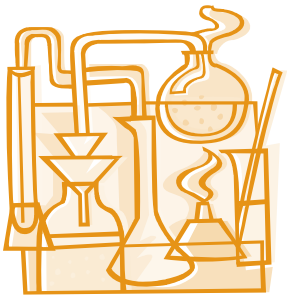

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Photos of the Month

The December photo is from John Martin from Cascade Earth Sciences. The photo sequence is of the removal of a small dam on the Calapooia River during summer-fall of 2007. The Brownsville Dam was an irrigation diversion structure that diverted water into a canal that returned remaining water to the river in Brownsville, OR after a 3-mile trip. The dam was approximately 100' x 14' wide x 5' high.

For more information on John see http://www.cascade-earth.com

To submit a photo, please email the picture in a JPEG or TIF format to bill.burns@dogami.state.or.us. Also include a short paragraph describing the photo and project.