

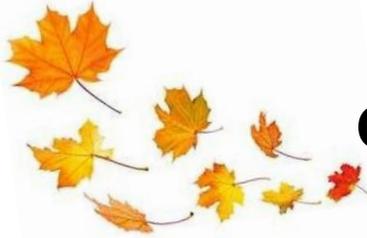


GeoSym14

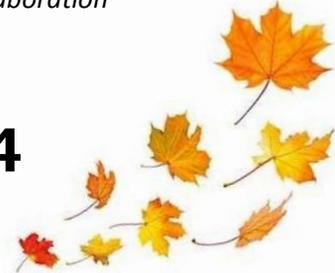


The Geology Symposium Mission: Improve communication and consistency in the application of geologic and hydrogeologic data by providing State geologists opportunities to share information, experiences and resources.

Vision: Promote sharing, inter-agency cooperation & collaboration



GeoSym—Fall 2014 Sign-up & Abstracts



The **GeoSym14** (Geology Symposium hosted by and for State geologists) planning committee is pleased to announce our next webinar on:

Thursday October 23, 2014 from 10 a.m. to noon

Topics and speakers:

Atmospheric Rivers (Rivers in the Sky); presented by John Kirk of the California Department of Water Resources

Unexpected Geological Issues During Construction, Calaveras Dam Replacement Project, Alameda County; presented by Jim Lessman of the California Department of Water Resources

An Integrated Approach to Groundwater Restoration in the Los Angeles Basin; presented by Scott Warren of the California Department of Toxic Substances Control

Register now through the Water Board Academy by using this link:

<http://www.trainingforce.com/sites/californiawater/lp/gowater.aspx?ot=9&otid=2079>

On the day of the webinar, please click on the following link:

<https://caltrans.adobeconnect.com/geosymconf/>

Listen to the audio via your computer (default) or

By calling: 1 (866) 745-4114. The passcode is: 536-49-79#

QUESTIONS ?

If you have any questions contact either **John Naginis** at JNaginis@dtsc.ca.gov or **Laurent Meillier** LMeillier@waterboards.ca.gov

Abstracts and Biographies

Atmospheric Rivers (Rivers in the Sky)

John H. Kirk, California Department of Water Resources

In a time of drought with potentially back to back dry years, it may seem odd to be discussing catastrophic flooding. However, recent (winter 2012) strong storms in Oregon/ Northern California and now in Southern California remind us that we live in a dynamic world. Additionally, there is no better time to prepare for a flood than when things are dry.

This is new science with rapidly developing new ideas. Atmospheric Rivers (AR's) are narrow conveyor belts of concentrated atmospheric moisture drawing warm Pacific air from the tropics. ARs carry abundant water (a single AR can carry more water than the Earth's largest river) and account for more than 90% of global water vapor transport. ARs are a part of California's unique climate system and hydrology and are NOT the typical cyclonic storms out of the Gulf of Alaska. They are responsible for ALL catastrophic flooding in California, operating like giant fire hoses on the State's environs.

This presentation will: 1) show what ARs look like by summarizing their impacts to people, property and the environment and, 2) show how they are more dangerous than a big earthquake. The talk will revisit the forgotten megaflood of 1861 which nearly flooded the extent of the Sacramento and San Joaquin Valleys. The talk will also discuss the USGS ARkStorm Scenario, describe AR recurrence and risk, and summarize AR disaster preparedness and response for the State and personal responsibility.

John H. Kirk, PG, CEG, CHG

Engineering Geologist with the California Department of Water Resources

John Kirk has more than 30 years experience as an engineering geologist and groundwater geologist including work for the California Department of Water Resources and in private consulting practice. Mr. Kirk's Professional experience extends into the fields of engineering geology, hydrogeology, and environmental contamination. He has instructed professional groups in engineering geophysics and statistics for groundwater studies. He specializes in conjunctive management of surface and groundwater, groundwater basin safe-yield analyses, development of water supply alternatives for impacted groundwater, regional subsidence studies, and seismic hazards.

Unexpected Geological Issues During Construction, Calaveras Dam Replacement Project, Alameda County

Jim Lessman, Division of Safety of Dams, Dept. of Water Resources

The Calaveras Dam Replacement Project resulted because the existing dam was determined by a 2005 seismic stability study likely to suffer significant deformation during the design earthquake on the adjacent Calaveras fault. The existing dam was built almost 100 years ago by hydraulic fill method, failed during construction, and was partially rebuilt with rolled earth fill. The owner, City of San Francisco, began construction in late 2011 of a replacement rockfill-earthfill dam of similar height immediately downstream.

The design exploration for the replacement dam included widely spaced boreholes on steep slopes. Geologic mapping was performed but few outcrops and limitations on ground disturbance resulted in a map with few solid lines. The presence of landslides on the right abutment (Franciscan rocks) and a fault through the left abutment (Miocene sandstone) were part of the design and construction sequence planning. Unrecognized landslides of the right abutment have caused delays during construction, additional excavation, and significant additional cost to the project. Over a million more cubic yards of sandstone were removed, over 10,000 (and counting) yards of backfill concrete placed, and over \$100,000,000 in cost.

Jim Lessman, PG, CEG

Senior Engineering Geologist with the California Department of Water Resources

Jim has 14 years of service with the Division of Safety of Dams at the California Department of Water Resources. He joined state service in 2000 following about 10 years of work as a consulting engineering geologist in the Sacramento region. Prior to that, he spent about 20 years as a metallic minerals geologist exploring in western North America (primarily Alaska), eastern Australia, and SW Pacific islands. He earned a professional degree in Geological Engineering from the Colorado School of Mines and a Masters in Geosciences from the University of Arizona (Economic Geology). He has four above average children and is looking forward to completion of the Calaveras Dam Replacement Project.

An Integrated Approach to Groundwater Restoration in the Los Angeles Basin

Scott Warren and Rick Fears, Department of Toxic Substances Control

Environmental regulators traditionally, focus on site specific hazardous waste releases. Although this approach is necessary, the Department of Toxic Substances Control (DTSC) is adding a regional perspective by using geographic information system (GIS) tools. The GIS tools are being used to prioritize areas based on the threat they pose to sensitive populations and groundwater resources. This broader approach has resulted in improved communication and collaboration between federal and state regulatory agencies, water managers and environmental justice organizations.

DTSC collaborated with the USEPA to develop a Spatial Prioritization Geographic Information Tool (SPGIT) to rank drinking water resource areas based on the degree of impact to the drinking water in wells. The tool employs a weighting process to rank grids containing public drinking water wells. The ranking process is based on four environmental indicators, which include:

1. *impacted public water supply wells with organic and inorganic analytes above Maximum Contaminant Levels (MCLs);*
2. *tons of halogenated waste generated in each grid between 2000 and 2009;*
3. *number of regulated sites in the grid (based on sites listed in DTSC, Water Board and USEPA databases) and*
4. *USEPA Social Vulnerability Index (environmental justice) criteria.*

The results are used to assign a relative score to each grid so regulators can prioritize the grids and deploy resources.

Scott Warren, PG, CHG

Senior Geologist with California Department of Toxic Substances Control

Scott has 30 years experience as an engineering geologist. He is a California PG, CEG and CHG and provides geological and GIS support for statewide projects in the Cypress Cleanup Program. He received his BS in Geology from UC Riverside in 1984, and an MA in Organizational Management from the University of Phoenix in 2004. Prior to joining DTSC in 2000 Scott worked in environmental consulting for 10 years, followed by 6 years at Lockheed Martin Environmental Safety and Health. Scott led the **P2dw** drinking water team and currently leads state and federal regulatory agency coordination with water managers and environmental justice groups in the LA Basin Groundwater Restoration project area.