

SAN DIEGO ASSOCIATION OF GEOLOGISTS

www.sandiegogeologists.org

SDAG MEETING ANNOUNCEMENT

WEDNESDAY, November 16, 2016

The Sustainable Groundwater Management Act
and Some Challenges to Groundwater Use

Presented by:
Chuck Houser

Where: **Marina Village - Catalina Room** See map on next page
1936 Quivira Way, San Diego, 92109

When: 5:30 pm - Social Hour
6:30 pm - Dinner
7:30 pm - Program

Directions: FROM INTERSTATE 5: Take the SEA WORLD DRIVE exit. From SEA WORLD DRIVE, take WEST MISSION BAY DRIVE on your right. When you see the large green sign that says QUIVIRA ROD, get in the farthest left of the two left turn lanes. Turn left, go one very short block and turn left again. Drive about one half mile and MARINA VILLAGE will be on your right.

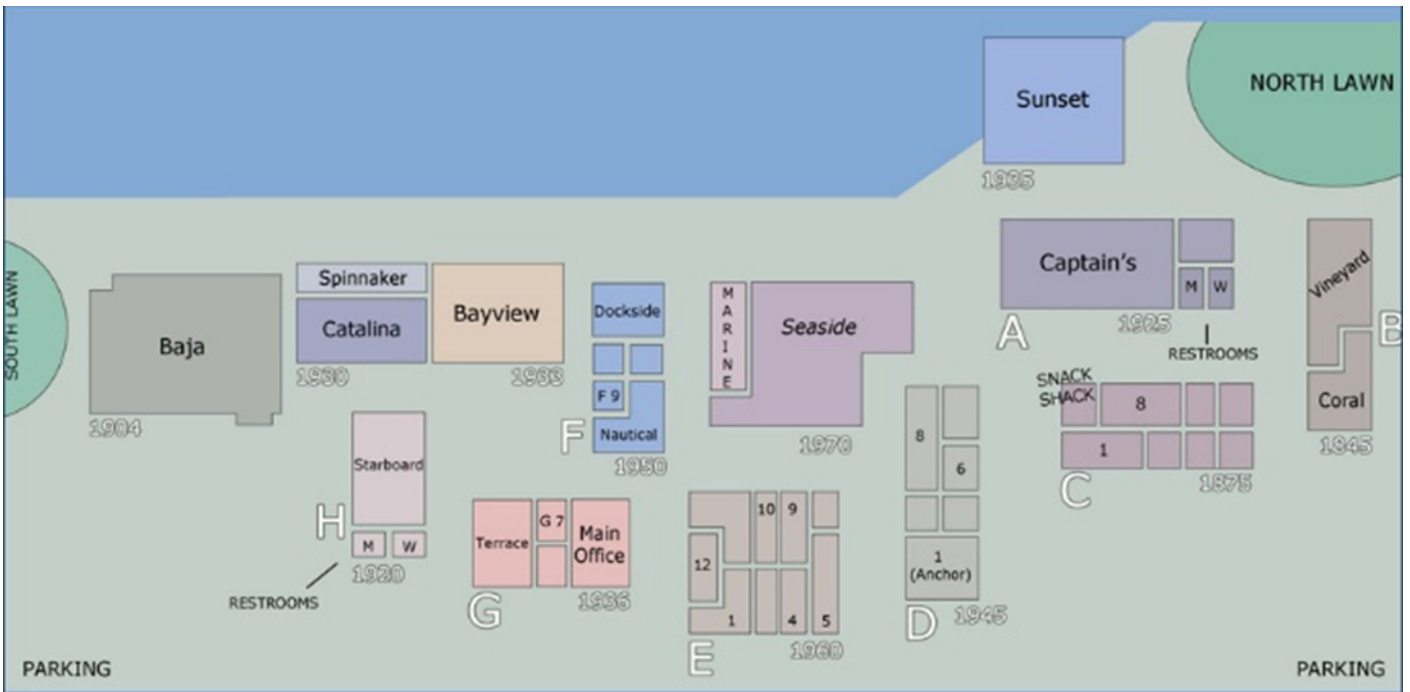
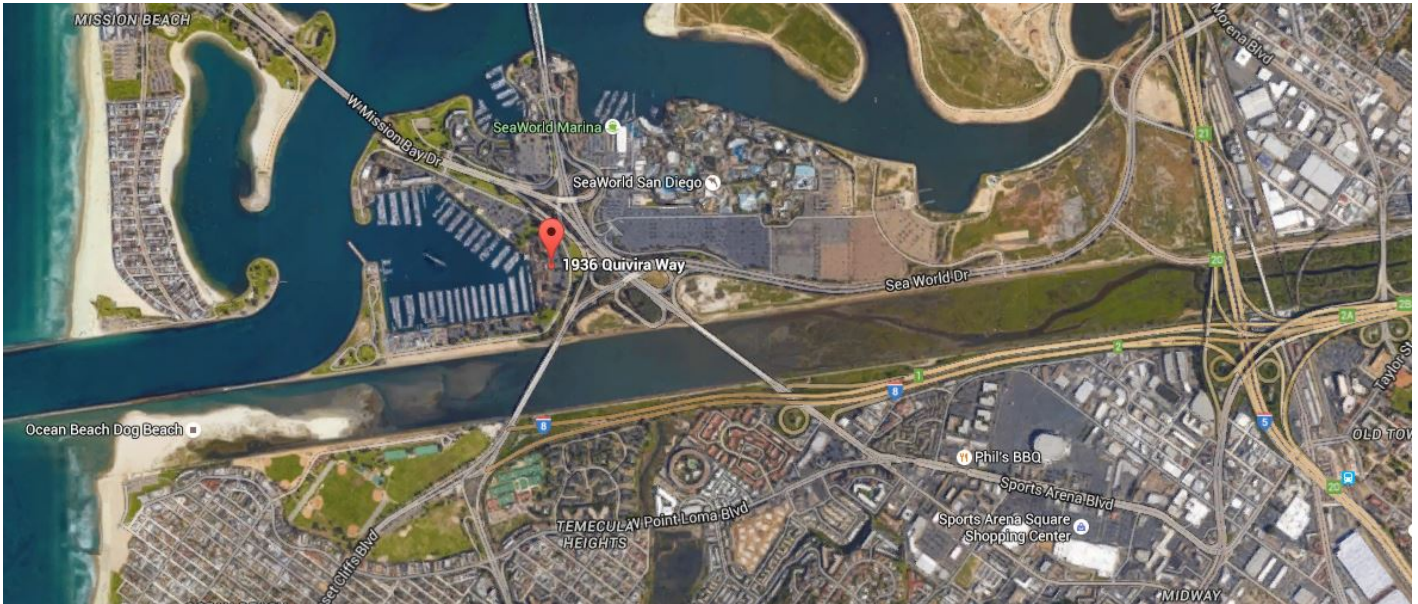
FROM INTERSTATE 8: Take the WEST MISSION BAY DRIVE exit to the right. You will be on INGRAHAM STREET for a short distance from which you will take the next exit marked WEST MISSION BAY DRIVE on your right. When you see the large green sign that says QUIVIRA ROAD, get in the farthest left of the two left turn lanes. Turn left, go one very short block and turn left again. Drive about one half mile and MARINA VILLAGE will be on your right.

Dinner: Baron of Beef and Roasted Chicken, Scalloped Potatoes, California Blend Vegetables, Tossed Green Salad, Baked Bread/Rolls, and Cookies & Brownies for dessert. Cash bar

Cost: \$30 per person, \$5 discount for members, STUDENTS and PROFESSORS: \$15. Add \$5 if you did not make a reservation.

Reservations: Make your reservation online at www.sandiegogeologists.org **no later than noon, Monday November 14th**. Reservations cannot be guaranteed after Monday at noon; but are always preferred over walk ins. Reservations well before the deadline are MUCH appreciated.

Maps:



ABSTRACT AND BIO

The Sustainable Groundwater Management Act and Some Challenges to Groundwater Use

*Presented by: **Chuck Houser***

California is about to enter its sixth year of an historic drought and, after a less-than-expected rainfall from the “Godzilla” El Nino, it will take years of at least average rainfall for California to recover. For some regions of the State, like southern and some parts of eastern California, periodic droughts, affecting both surface waters and groundwater, have been a normal part of weather cycles from time immemorial. And through it all, more and more people are born or move into the State, and the need for clean drinking water becomes greater and greater...

The Sustainable Groundwater Management Act (SGMA), passed by the California legislature in 2014, imposes requirements on certain areas of California that groundwater be sustainably managed. The act requires the formation of local groundwater sustainability agencies (GSAs) that must assess conditions in their local water basins and adopt locally-based management plans. Its passage and implementation highlights the challenges to groundwater use that exist in California. Not only do such challenges include typical problems of groundwater quantity, problems with groundwater contamination, natural and man-made, have also become increasingly important.

California’s reality: SGMA. Implementation of SGMA is occurring in several steps. By mid-2017 (just around the corner), basins subject to SGMA are required to complete formation of their GSAs and to set sustainability area boundaries. Though some areas already have functioning groundwater management plans and likely will only need to re-address or “tweak” their existing work, in other areas this agency formation and boundary determination will be starting “from scratch,” a process that may look more like herding cats, or even the Hatfields and the McCoys. Sustainability for a region may, indeed will, require sacrifices and agreements, between parties that may have conflicting interests, to try to provide good water for everyone, when it may not seem there is fundamentally enough good water for everyone.

Once sustainability agencies and boundaries have been established, groundwater sustainability plans (GSPs) must be submitted...by the beginning of 2020 for critically overdrafted basins and by the beginning of 2022 for all other basins subject to SGMA. Once the GSPs are completed and approved by the State Water Resources Control Board (SWRCB), the last phase of SGMA is a 20 year implementation period, sustainable groundwater for everyone affected within 20 years!

Naturally-occurring groundwater impacts occur in many portions of California, from iron and manganese to chromium 6 to uranium and gross alpha. Groundwater is known to exceed the MCL (maximum contaminant level) for these elements in numerous places. Anthropogenic sources of contaminants also pose significant challenges to groundwater use and sustainability. Regarding leaking underground and above-ground fuel storage tanks, the fuel additive methyl tertiary butyl ether, or MTBE (an oxygenate added to raise octane level and reduce “knocking”), has contributed to groundwater contamination plumes and made them generally longer and harder to clean up than was the case prior to around 1980 when MTBE went into widespread use.

Water quality objectives (WQOs) have been exceeded for nitrate in groundwater due to anthropogenic activities such as farming, livestock ranching, even sewage treatment plants with unlined settling ponds. Leaking underground tanks constitute a “point-source” release (as defined by the Clean Water Act) and, as such, the source zone is generally relatively easy to characterize and effect source control. Nitrogen legally applied to produce crops can convert to nitrate and enter groundwater if not properly managed. Nitrate may also come from ranching and can likewise enter groundwater. These types of activities can be ubiquitous over large areas, constituting “non-point-source” pollution that is much more difficult to characterize and control, let along clean up, and may affect large areas of groundwater.

This will be a busy time for hydrogeologists in California. Every basin will have its own challenges, the GSA boundaries will have to account for challenged areas, the GSPs will have to address the challenges, natural and man-made, and the implementation will have to mitigate the challenges to provide that safe drinking water for everyone. If your main challenge is water quantity, you might consider yourself lucky. If groundwater contamination, natural or man-made, is among your challenges, you may anticipate a lengthy and, quite possibly, costly process to solve your challenges.

SPEAKER BIO

Chuck Houser is a geologist and project manager with SCS Engineers in San Diego. He has a Bachelor of Science degree from San Diego State University from 1986, and a Master’s degree from SDSU from 1997. His undergraduate thesis was on structural controls and mineralogical indicators for the formation of pockets in the Elizabeth R Mine in Pala, and his master’s thesis was on the tectonic geomorphology and Quaternary history of the Old Woman Springs fault in the western Mojave Desert in San Bernardino County.

His practice has included an emphasis in assessment and remediation of leaking underground storage tank sites. He has worked on numerous leaking UST sites in San Diego County, and has achieved closure of at least 20 cases over the past decade.

UPCOMING MEETINGS

Meetings are usually held on the 3rd Wednesday of the month but may change to accommodate the speaker and meeting place schedules. Check the SDAG web site for updates.

December 14, 2016	FEATURING Tom Demere starring LIVE @ THE SAN DIEGO NATURAL HISTORY MUSEUM (one showing only)
January 18, 2017	TBD
February 15, 2017	TBD

2016 SDAG EXECUTIVE COMMITTEE

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ANNOUNCEMENTS

Call for Papers, Speakers, and Spectators

SDAG Fall 2017 Fieldtrip

San Diego is a county with abundant points of interest. There is active faulting, landslides, great weather, and mountains that overlook majestic landscapes. Julian, California encompasses all of these traits and more! The 2017 fieldtrip will focus on points of interest in the region, including gold mining and faulting; however the trip is in the early stages of planning and is subject to change in direction and core focus. Thus, submit your abstracts, articles, and ideas early!

The Earthquake Engineering Research Institute (EERI) San Diego Chapter, the University of California San Diego (UCSD) Extension and the GeoInstitute San Diego Chapter are organizing the 2nd Workshop on Geotechnical Earthquake Engineering with the topic "Dealing with the Consequences of Liquefaction" on Wednesday-Thursday, March 29-30, 2017 in UCSD campus, San Diego, California. As you may remember, the first workshop in 2014 was a success with almost 300 attendees (<https://sandiego.eeri.org/?p=203>).

The second workshop will honor the lifetime achievements and contributions of Prof. Kenji Ishihara to the field of geotechnical earthquake engineering. The afternoon session of the second day of the

workshop ([Thursday, March 30, 2017](#)) will be entirely devoted to honor Prof. Ishihara and the session will be hosted by Prof. I.M. Idriss. We will have distinguished speakers from US, Japan, New Zealand, Europe and South America sharing with us their experiences with liquefaction mitigation, recent major earthquakes and highlighting the contributions of Prof. Kenji Ishihara. We are in the process on preparing the final program and the website for the workshop. A one-day short course before the workshop on Tuesday, March 28 is also in the plans.

We would much appreciate your participation in this workshop. Please mark your calendars and save the dates.

Hope you will be able to join us and be part of this big event.

If you have any question, feedback or wish to sponsor this event, please feel free to contact the Chair of the Organizing Committee, Dr. Jorge Meneses, at jmenesesl@gmail.com

Thanks and looking forward to seeing all of you in beautiful San Diego,

Jorge

President, EERI San Diego Chapter

PROF. KENJI ISHIHARA



Prof. Kenji Ishihara was born in Chiba, Japan in 1934. He started his studies in Civil Engineering at the University of Tokyo, obtaining BS-degree in 1957, MS-degree in 1959, and Ph.D-degree in 1963.

During one-year period from 1966 to 1967, he was a Visiting Research Associate at the University of Illinois in Urbana, U.S.A. under the guidance of late Professor R. B. Peck. He has been affiliated with the University of Tokyo since then, taking the position of professorship in geotechnical engineering since 1977. On his retirement from the University of Tokyo in 1995 he took up the position of Professor of Geotechnical Engineering at the Tokyo University of Science and then at Chuo University in 2001.

He served for ISSMFE as secretary of the Japanese National Committee for the period of 7 years between 1970 and 1976 during which time he attended the Executive Committee meeting of ISSMFE in Sydney, 1971 as a voting member representing the Japanese National Society. Since then, he often represented Japan in several Executive Committee Meetings of ISSMFE and those of Asian region. He acted as Vice-President of Asian region of ISSMFE during the period of 1989-1993.

His major research interest covers problems in soil dynamics associated with earthquakes, such as liquefaction of sandy deposits, and seismic stability of slopes and earth structures. He wrote about 250 papers on the these subjects.

He has served on various occasions as consultant or adviser to UNESCO projects (Balkan region, India) and UNDP project (Chile, India, Iran). He has participated in the geotechnical investigations of earthquakes worldwide such as those in Romania (1977), Yugoslavia (1979), Chile (1985), Mexico (1985), Ecuador (1986), Soviet Armenia (1988), Soviet Tajik (1989), Philippines (1991) and Iran (1991). He is the author of the book "Fundamentals of Soil Dynamics" (1974) and the textbook "Soil Mechanics" (1988) both in Japanese. He recently published from Oxford Press an English book entitled "Soil Behaviour in Earthquake Geotechnics"

He has received the honor by being assigned on many occasions to deliver lectures worldwide including the theme lecture in the 11th ICSMFE in San Francisco and the 33rd Rankine Lecture of the British Geotechnical Society in 1993. He acted as chairman of the Technical Committee TC4 on Earthquake Geotechnical Engineering in ISSMFE for the two tenures of office from 1985 to 1993. His incessant endeavor in TC4 has led to the periodical holding of the International Conference on Earthquake Geotechnical Engineering of which the first in a series was held in Tokyo in 1995 and the second in Lisbon in 1999. He has also received honor by being awarded the H. B. Seed Gold Medal in 1998 from the American Society of Civil Engineers. For his significant contribution, title of Honorary Doctorate was given to him from Technical University of Bucharest, Romania in 1995 and from Istanbul Technical University, Turkey in 1999. In 2000, he was honored by being bestowed the most prestigious Japan Academy Prize. In 2010, he was elected to Foreign Associate of the United States Academy of Engineering.

In commemoration of his long-time contribution to the profession, the International Conference on Earthquake Geotechnical Engineering held in Istanbul by the efforts of Professors A. Ansal and M. Sakr, published two volumes of selected papers containing major publications by Prof. Kenji Ishihara.

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Jorge F. Meneses, PhD, PE, GE, [D.GE](#), F.ASCE

CALL FOR ARTICLES

SDAG invites members to submit articles on their current research or an interesting project they are working on for publication in the monthly newsletter. The article should be no more than 1 page in length. Photos are welcomed; too. Please submit articles to the SDAG secretary via email.

SDAG RESEARCH TOOL

SDAG RESEARCH TOOL - A comprehensive listing of all papers published by SDAG, whether as annual field trip guidebooks or special publications, is now available on our website. Entries are sorted by primary author, or chronologically by date of publication, from our first guidebook in 1972, up the San Luis Rey River in 2013, from Coast to Cactus in 2014, and finally over the edge to the Coyote Mountains in 2015. These can be accessed or downloaded as .pdf files. They are fully searchable in Adobe Reader or Acrobat, so if you are researching a topic, "tsunami" for example, you can search for that keyword. This listing will be updated as new books are published. Thanks to Greg Peterson and Hargis + Associates, Inc., for making this possible. See the links below:

http://www.sandiegogeologists.org/SDAG_Pubs_authors.pdf

http://www.sandiegogeologists.org/SDAG_Pubs_chronological.pdf

SDAG MONTHLY PHOTO COMPETITION

This month's photo is incorporated into Mike Hart's article publication at the rear of this newsletter. Do you have an interesting or unique photo? Submit the photo to the secretary's email address:

secretary@sandiegogeologists.org

This month's photos are from the "Geology and Geologic Hazards of Northwestern Baja's Gold Coast and the Agua Blanca Fault" fieldtrip last October. The fieldtrip was a great success from the collaboration of Rupert Adams (SDAG Vice President), John Minch, James Ashby, Peter Gold, the fieldtrip committee, guest (speakers) from CICESE, and many others (please excuse me, if I did not mention you).



Nothing to see here people, just some great roadside geology!



Wine-in-geology
Photograph of the MD Winery.
The cellar is excavated into the granitic hillside



The usual suspects in a fault trench line up. The fault trench was excavated by heavy equipment in preparation of our arrival, generously funded by Geocon, Inc.

Photo courteously provided by Rob Hawk

REQUEST for 2016 SDAG/SDGS and PUBLICATION SPONSORS

On behalf of the San Diego Geological Society, Inc. (SDGS), a public benefit 501(c)3 nonprofit educational corporation, we would like to request tax deductible Donations for our San Diego Association of Geologists (SDAG) group. The list of paid Sponsors and the forms to become a Sponsor are located on the SDAG web site at: <http://www.sandiegogeologists.org/Sponsors.html>.

Your donation will further the SDGS mission to promote geology and related fields in the greater San Diego region, operating through the San Diego Association of Geologists (SDAG), a committee of SDGS. To achieve our primary educational objective, we organize frequent field trips and maintain a program of monthly meetings featuring speakers on current geological topics. We also publish field trip guidebooks and other publications related to geology and natural history. We encourage scholarship and research by awarding scholarships from the elementary through graduate levels. With your \$100 "EMERALD" donation, your name/business will be listed as a sponsor on the SDAG web site (<http://www.sandiegogeologists.org/>) and in the monthly SDAG meeting newsletters. With your \$500 "RUBY" or \$1,000 or more "DIAMOND" level donation, your business card will also be included on the SDAG web site and in the monthly SDAG meeting newsletters. In addition, as a "\$1,000 or more DIAMOND" level donation you will be presented with a thank you plaque.

Should you have any questions regarding a Sponsorship, please contact our non-profit SDGS Secretary (Diane Murbach) at 619-865-4333.



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