



September 2018

## LOS ANGELES BASIN GEOLOGICAL SOCIETY MEETING ANNOUNCEMENT

*September 27 (Thursday) – 11:30 AM*

Weixing Tong, PhD, PG, CEG, CHG  
LARWQCB

### INTRODUCTION TO THE LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD'S OIL AND GAS – WATER QUALITY PROGRAM

#### Abstract

The State of California has been producing oil and natural gas (gas) for over 100 years, and currently is the third largest producer in the United States (US). In response to increasing concerns over potential impacts of oil and gas production operation to the water resources, the Los Angeles Regional Water Quality Control Board has recently established the Oil and Gas – Water Quality Program that manages water quality related issues involving oil and gas fields. This presentation introduces major tasks in the program, including hydraulic fracturing (also known as fracking) projects, underground injection control (UIC) and aquifer exemption application projects, surface sump/pit investigations, and surface spill enforcement.

Well stimulation treatments, which may enhance oil and gas production, include processes such as fracking, acid fracturing, and acid matrix stimulation. In response to concerns over potential impacts of well stimulation activities on water resources, in 2013, California's Governor Brown signed Senate Bill 4 (SB4), which amended the public resources and water codes relating to oil and gas well stimulation activities. This legislation set in place requirements for oil and gas operators, the Division of Oil, Gas, and Geothermal Resources (DOGGR), the State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (Regional Water Boards), and other agencies to implement when permitting or performing well stimulation treatments. On July 7, 2015, the SWRCB adopted methods and

requirements (known as "Model Criteria") for water quality monitoring in areas of oil and gas well stimulation. The Model Criteria set the standards for groundwater monitoring plans that oil and gas operators must submit for approval by the SWRCB prior to well stimulation activities, and outline the requirements for monitoring and sampling methods, chemicals to analyze, frequency of sampling, and areas to monitoring. The Model Criteria have the following three components: 1) area-specific oil and gas well operator required monitoring; 2) designated contractor sampling and testing requirements; and 3) a regional groundwater monitoring program to be implemented by the SWRCB. This presentation will discuss the details in the Model Criteria.

In California, the water portion of the fluid extracted by oil wells ("produced water") is either disposed of or treated and reused. Disposal of produced water occurs predominantly in injection wells, evaporation ponds, and percolation ponds. The federal UIC program was created under the Safe Drinking Water Act to protect underground sources of drinking water (USDW). UIC projects involve the injection of oil and gas production fluids through wells (Class II) into underground geologic formations for enhanced oil recovery or produced water disposal. Injection may only be permitted in an aquifer that does not qualify as an USDW. Since 1983, the DOGGR has the authority from the US Environmental Protection Agency (US EPA) to implement the Class II UIC program in California. The State and Regional Water Boards (Water Boards) and DOGGR have a signed Memorandum of Agreement (MOA) which was revised

in July 2018. The MOA is for administering the UIC program for Class II wells, regulating discharge to land of produced water from oil and gas operations, responding to incidents such as spills, and taking enforcement actions. The Regional Water Boards' role in the UIC program includes the following two parts: 1) the DOGGR consults with the Regional Water Boards in the review of UIC projects to ensure protection of groundwater; and 2) the Regional Water Boards are required to review any aquifer exemption proposal prepared by the DOGGR. SWRCB concurrence is required prior to DOGGR submitting the aquifer exemption proposal to the US EPA for review and possible approval.

## Speaker's Biography



**Dr. Weixing Tong, PhD, PG, CEG, CHG**

Dr. Weixing Tong received Bachelor of Science and Master of Science degrees in geology from Hefei University of Technology, China, and graduated from the University of California, Santa Cruz, with a PhD degree in Earth Sciences. He previously worked as a senior hydrogeologist and project manager in a consulting firm that specialized in groundwater development and management. He joined the Los Angeles Regional Water Quality Control Board (LARWQCB) in 1999, and currently works as a senior engineering geologist and unit chief. His team manages over 300 underground storage tank (UST) contamination cases in the Los Angeles coastal area. He is also a senior engineering geologist for the LARWQCB's Oil and Gas – Water Quality Program.

Dr. Tong developed an analytical model for estimation of MTBE plume length. He has published several papers in professional journals. Also, he wrote a chapter in the recently published book entitled "Fundamentals of Environmental Site Assessment and Remediation." He is a licensed California Professional Geologist, Certified Hydrogeologist, and Certified Engineering Geologist. Also, he serves as a Subject Materials Expert for the California Board for

Professional Engineers, Land Surveyors and Geologists. He taught an upper level Hydrogeology class at California State University, Dominguez Hills, and served as a graduate student research advisor at the California State University Dominguez Hills and Los Angeles campuses. He is the chairman of the Los Angeles Environmental Forum Council. He served as the president of the Southern California Chinese American Environmental Protection Association (SCCAEPA) between 2010 and 2013, and presently serves as a current board member of the SCCAEP.

***Please join the LABGS for Weixing's informative presentation!***

## **ANNOUNCEMENTS (part 1):**

LABGS has expanded our meeting raffles. We would appreciate raffle prize donations! *Please bring item donations to the next meeting.*

*We need a new LABGS treasurer. If interested, please contact any of the current officers, and let us know a bit about you. The executive committee will select from the interested candidates.*

Groundwater Resources Association of California Southern California Branch dinner meeting:

*Topic: Proposed Huntington Beach Poseidon Resources Ocean Desalination Project*

*Tuesday Sept. 18, 2018 at 6 PM*

*At Orange County Water District Office, 18700 Ward Street, Fountain Valley, California 92708*

*For more information:*

<https://www.grac.org/events/211/>

California Board for Professional Engineers, Land Surveyors, and Geologists (BPELSG) California-Specific Exam Occupational Analysis Survey (please complete survey by 10/31/2018):

<https://www.prometricsurvey.com/se/123C457B2D2B599601>

BPELSG Professional Geologist and Geophysicist Licensing Public Outreach Video is now available at:

[https://youtu.be/Fu\\_eVbY1DSw](https://youtu.be/Fu_eVbY1DSw)

*(see additional announcement on next page)*

## Meeting Time, Place, Cost, and Reservations

### When:

**Thursday, September 27, 2018**

### Meeting Agenda

Lunch Served: 11:30 AM to 11:45PM  
Announcements: 11:45 AM to 12:00 PM  
Guest Speaker: 12:00 PM to 12:45 PM  
Questions/Close: 12:45 PM to 1:00 PM

### Place:

**The Grand at Willow Street Conference Center** located at 4101 East Willow Street, Long Beach, CA (562-426-0555). Take Lakewood Boulevard south from the San Diego Freeway (I-405), turn west onto Willow Street, and turn right onto Grand Avenue at the sign for the Center. Park for free in the multi-level garage structure.

### Cost:

Lunch and Speaker: \$30.00 with reservations  
\$35.00 without reservations  
Retired: \$25.00  
Student: \$10.00

**PAYMENTS IN CASH OR CHECK ONLY**

### Meeting Reservations:

**We encourage you to make your reservations using the LABGS web site, at [www.labgs.org](http://www.labgs.org)**

Or, call Wanjiru Njuguna at (818) 739-9154 or email her at [wanjiru.njuguna@gmail.com](mailto:wanjiru.njuguna@gmail.com).

**Reservations must be made by:**

**10:00 AM Tuesday September 25<sup>th</sup> to receive reservations discount price noted above**

**(this will be strictly adhered to)**

***But, as always, walk-ins are welcome!***

## LABGS Board Contact Information:

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### **OUR WEB SITE ADDRESS:**

**[www.labgs.org](http://www.labgs.org)**

### **ANNOUNCEMENTS (part 2):**

The [Geologic Maps Foundation](http://www.labgs.org) hosts and leads Geo-Hikes that may be of interest to LABGS members. Geo-Hikes involve hiking in geologically interesting areas. Participants include professional geologists, geology students, and hikers interested in learning more about geology. Geo-hikes are great exercise, get office-bound geologists back into the field, and provide public education and outreach about the geology profession in California. The Geo-Hikes Meetup page has information about past and future events, and it's free to join in: <https://www.meetup.com/Geo-hiking-trips-courses-Geologic-Maps-Foundation/>

*Please inform a LABGS Board member if you have a pertinent announcement.*