

Tuesday, September 21, 2010

Crowne Plaza Hotel - Greenspoint (former Sofitel)  
425 North Sam Houston Pkwy E

Social 11:15 AM, Luncheon 11:30 AM

**Cost: \$31 pre-registered members; \$35 for non-members & walk-ups.**

**To guarantee a seat, you must pre-register on the HGS website and pre-pay with a credit card.**

**Pre-registration without payment will not be accepted.**

**You may still walk up and pay at the door, if extra seats are available.**

## HGS Northsiders Luncheon Meeting

*Mark McCaffrey*

# Quantitative Allocation of Commingled Oil Production from 2-6 Pay Zones Using an Inexpensive Geochemical Technique

We have made significant improvements to the previously published methods for geochemical allocation of commingled oil production and/or commingled gas production. This new method has allowed allocation of commingled production from wells at less than 2-5% of the cost of production logging. Four case studies are shown here. In the first two studies, commingling of the wells was subject to approval by the Alaska Oil and Gas Conservation Commission (AOGCC). Before agreeing to the use of geochemical allocation, the AOGCC required the well operator to perform multi-month trial studies in which the wells were monitored both by geochemical allocation and by production logging. The scientists performing the geochemical allocation were kept blind to the results of the production logging until the studies were completed. Close agreements between the geochemistry-based allocation values and the production-logging-based allocation values resulted in AOGCC approval of continued use of the geochemical method for oil production monitoring of these two wells. Two additional case studies presented here illustrate how geochemical allocation can be used to monitor the effects on production of (1) changes in water injection into nearby wells and (2) closing or opening perforations within a well. ■

### Biographical Sketch

MARK MCCAFFREY received his B. A. degree from Harvard University in geological sciences, and his Ph.D. in chemical

oceanography in the area of organic geochemistry from the Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program. He is a California Registered Geologist, a Texas Professional Geoscientist, and an AAPG Certified Petroleum Geologist. He is a senior or co-author of numerous papers on the application of geochemistry to petroleum exploration, petroleum reservoir management, oil biodegradation, hazardous waste remediation, paleoenvironmental reconstruction, and marine chemistry. Mark was the 1995 recipient of the Pieter Schenck Award from the European Association of Organic Geochemists. Dr. McCaffrey spent 10 years at Chevron and Arco integrating geochemistry, geology, and engineering data to solve a variety of oil and gas exploration and production problems. In 1999, he co-founded OilTracers LLC, a firm specializing in this type of work. In 2010, OilTracers was acquired by Weatherford Laboratories. He was a 2001-2002 distinguished Lecturer for the Society of Petroleum Engineers, and was the Chairman of the 2002 Organic Geochemistry Gordon Conference. Mark was Chairman (2006-2007) of the Geochemical Society Organic Geochemistry Division and is a PetroSkills instructor. Dr. McCaffrey has testified in federal and state court as an expert witness.

