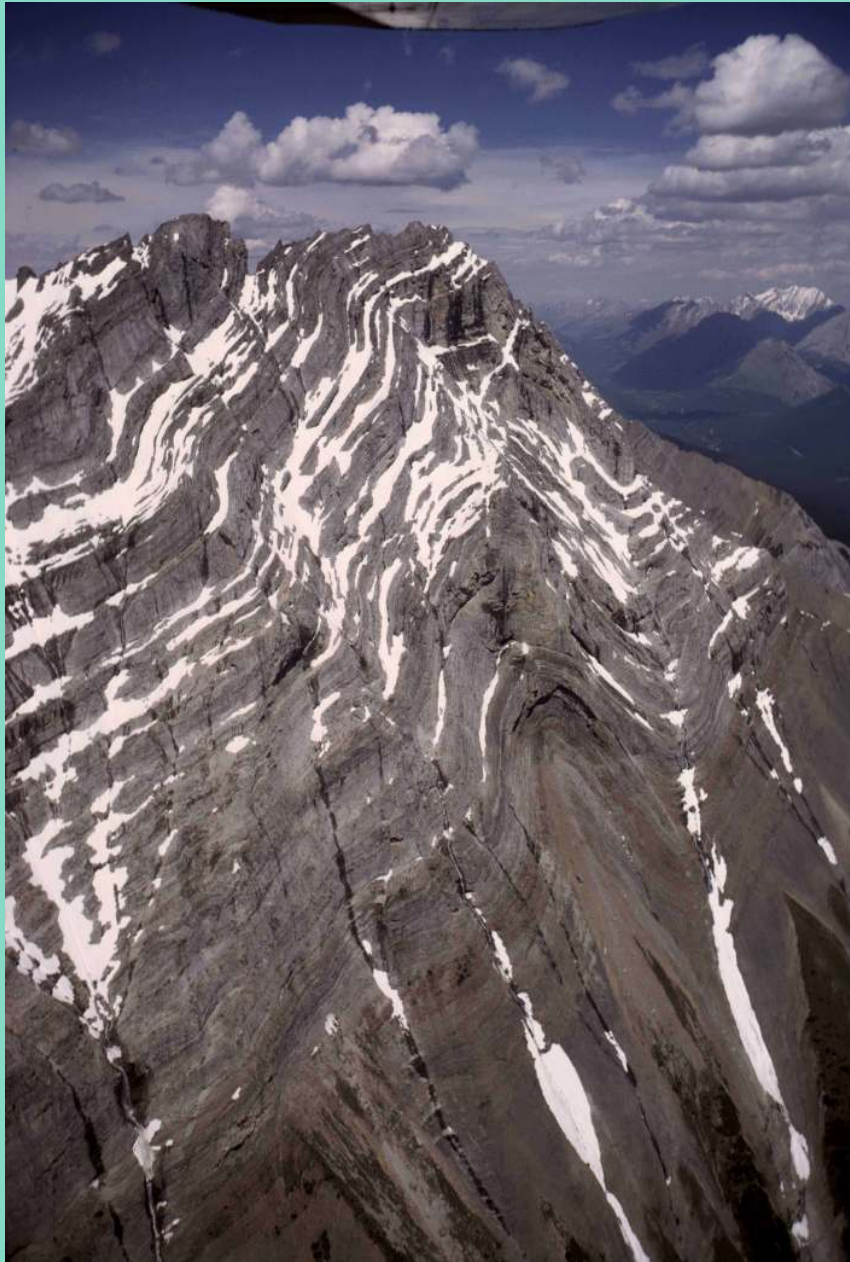


# NOGS LOG



January 2012

Volume 52, Number 7



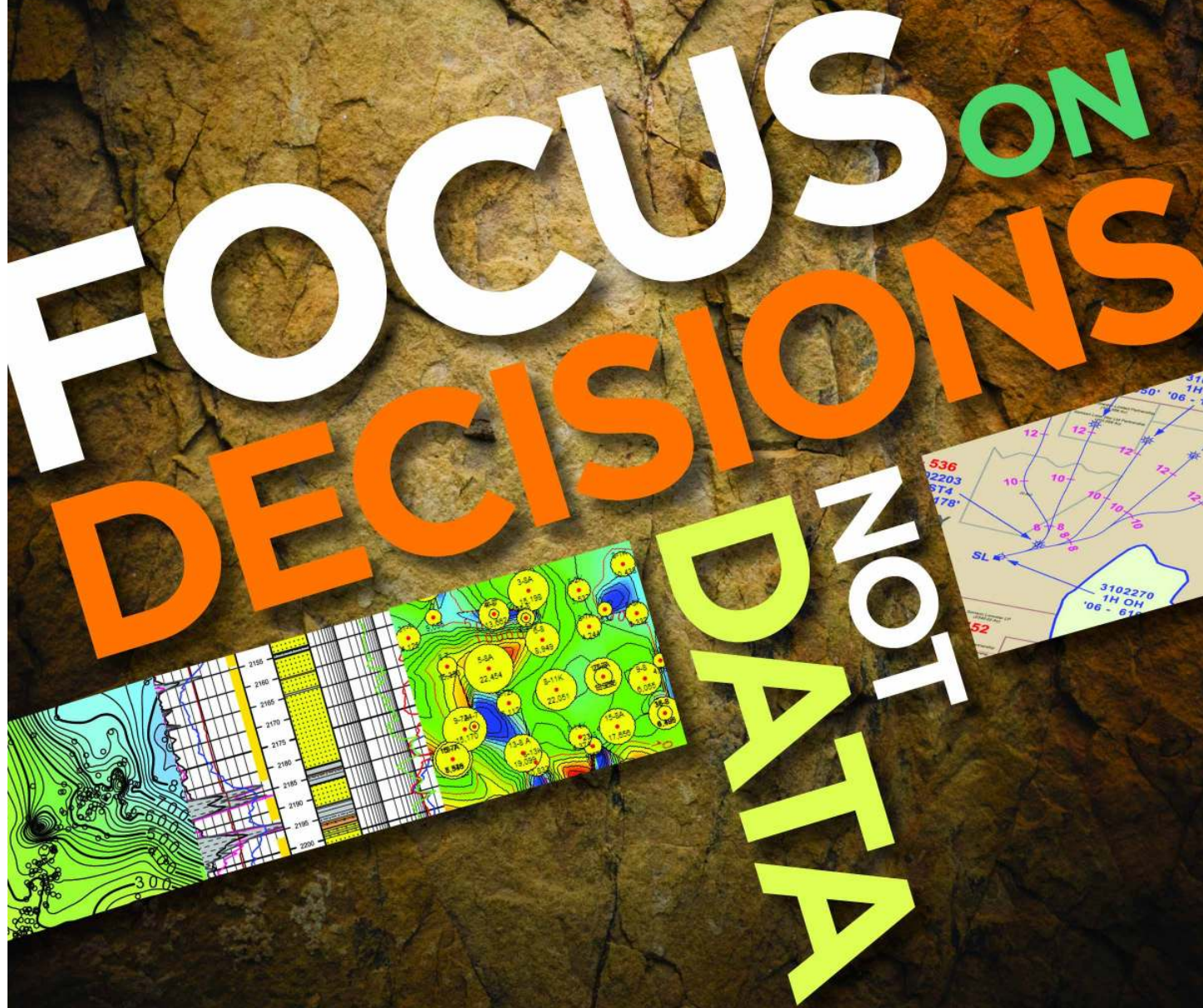
## **January 12 - SGS-NOGS Joint Luncheon**

Presentation: The Use of Seismic Emission Tomography (SET) for the Direct Mapping of  
Frac-Induced Fracture Networks and Their Connection to the Natural Permeability Field

Guest speaker: Laird B. Thompson of UF3 (Utah Faults, Fractures and Fluids) in Auburn, California

See page 9 for more information

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# NOGS LOG

Published monthly by the New Orleans Geological Society. This issue was sent to press on December 15, 2011.

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## ON THE COVER

Photo Taken by: Tom Klekamp

Folds in the Rundle Group (Mississippian),  
Canadian Rockies near Banff, Alberta.  
Aircraft was a Cessna 180.

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## FROM THE EDITOR

Happy New Year everyone! I hope everyone enjoyed the holidays. Daisy has a very interesting discussion in her President's Column on the Louisiana Board of Professional Geoscientists. Ed Picou has submitted an article highlighting the memorial that was dedicated to former NOGS Member Dr. Bill Ward.

Just a reminder for members: this month's NOGS luncheon will be held as a joint event with Southeastern Geophysical Society. The luncheon will be held on January 12th at the LePavillon Hotel. Again, please send in your most interesting geological pictures for the *NOGS LOG* cover.



Thanks, David Tatum - *NOGS LOG* Editor

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*from the President*

As most of you may or may not be aware, Professional Geoscience registration has been enacted this year in Louisiana. During the 2010 regular session the legislature voted and passed Senate Bill 788, "The Louisiana Professional Geoscience Act". It was signed June 17, 2010 by Governor Bobby Jindal, becoming Act 974. The bill was to be effective January 1, 2011 but things have fallen behind schedule. The State Boards of commissions contacted NOGS on October 7th 2011 requesting nominations. The NOGS nominations committee, chaired by Scott Wainwright has nominated Eric Zimmerman, and myself representing the First and Second congressional districts. Governor Bobby Jindal has recently appointed Dr. M. B. Kumar as the Chairman of the Louisiana Board of Professional Geoscientists.

If you are interested in reading the 27-page Act 974, you can go to this website <http://www.legis.state.la.us/> and search using 2010 regular session, ACT 974 or Senate Bill 788. There are exemptions to the ACT so that some areas of the geosciences will not require a license to perform at this time. I will only mention a few exemptions I found to be notable. First, any work performed by a geoscientist which is for archeological purposes. Secondly, research performed through an academic institution, local, state or federal governmental agency. Third, work performed exclusively in the exploring for and the development of oil, gas or other energy resources, base metals, or precious or non-precious minerals including sand, gravel or aggregate, if the work is done in and for the benefit of private industry. Finally, geoscientific work conducted by an employee or a subordinate of a license holder provided the work does not include the responsible

charge of geoscientific work and is performed under the direct supervision of a licensed geoscientist who is responsible for the work.

Even though some of you may work exclusively in an area that does not require registration, you should still consider joining during this grandfathering period. Surely after this period there will be a examinations and a more rigorous application process. There is no guarantee that these exemptions will remain in the future.

According to the Act, anyone applying before January 1, 2012, will not be required to submit examination results, provided they meet certain statutory requirements. Since the Board has not been appointed, there is no application process set. What you can do at this time is write a letter to Dr. M.B. Kumar, stating your intent to apply for professional geology licensure including your personal information. He will consider that as an application so you can be included in the grandfathering clause.

Physical Address: Dr. Madhurendu Kumar  
LADNR-Office of Conservation  
617 N. Third, 9th Floor  
Baton Rouge, LA 70802  
Email: [madhurendu.kumar@la.gov](mailto:madhurendu.kumar@la.gov)

Happy New Year! Speaking of the New Year, have you made a New Year resolution? If not, maybe you should consider "remain or become an active member of NOGS."

*Daisy*

**NOGS Office**

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# **Upcoming Events and Activities**

## **January 12 - SGS-NOGS Joint Luncheon**

\*\*\* At LePavillon Hotel \*\*\*

Guest speaker: Laird B. Thompson of UF3 (Utah Faults, Fractures and Fluids) in Auburn, California, will present: The Use of Seismic Emission Tomography (SET) for the Direct Mapping of Frac-Induced Fracture Networks and Their Connection to the Natural Permeability Field

(See page 9 for Abstract and Biography)

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## **February 6 - NOGS Luncheon**

Holiday Inn Downtown Superdome. Guest speaker and topic to be announced.

## **February 20-21 - HGS: Applied Geoscience Mudrocks Conference**

The Westin Houston Hotel, Houston. Information: [www.hgs.org](http://www.hgs.org).

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--- continued from previous page ---

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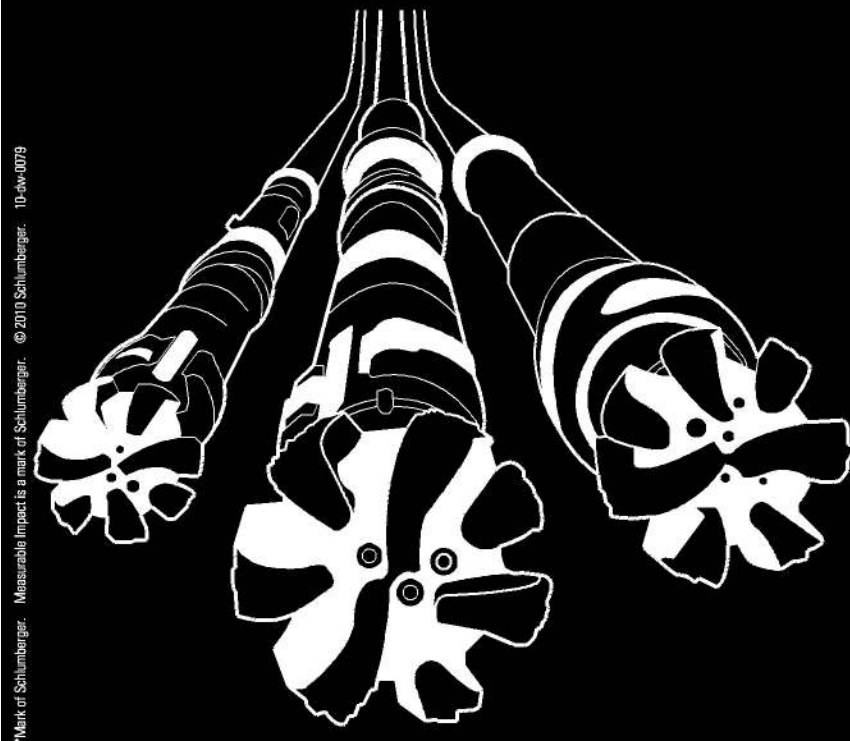
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# January 12 SGS-NOGS Joint Luncheon Presentation

\*\*\*At LePavillon Hotel \*\*\*

## The Use of Seismic Emission Tomography (SET) for the Direct Mapping of Frac-Induced Fracture Networks and Their Connection to the Natural Permeability Field

presented by

**Laird B. Thompson, Ph.D.\***

UF3 (Utah Faults, Fractures and Fluids) - Auburn, California

### ABSTRACT

A microseismic study was conducted in a shale gas reservoir in the eastern US in order to monitor a nitrogen frac job and to determine if direct observation could be made of the frac growth and of the natural fault and fracture fairways that are the main producing features in the reservoir. Using data from a series of frac stages, combined with an array of other data sets including field-wide pressure monitoring, interference testing as well as chemical and radioactive tracer testing, a 3D volume rendering of the reservoir production system has been attained. It is further shown that imaging micro-seismic acoustic energy can yield

results that give significant insights into reservoir performance and that crustal deformation theory which predicts fracture control on permeability attributes appears sound. When interpreted using seismic tomographic processing principles, analyzed using crustal-physics based techniques and integrated with other data sets, micro-seismic data provide a powerful tool for optimizing production management in complex and unconventional reservoirs.

\*Co-Authors: Geiser, P., Vermilye, J., Lacazette, A., Thompson, L., Hellman, S. and Dricker, I.

### BIOGRAPHY

**Dr. Laird Thompson** has more than 40 years of experience in the oil & gas industry, starting with Mobil Oil in 1975 in Dallas. He spent the first 15 years working stratigraphic and sedimentological problems for exploration and production assets at Mobil. In the late 1980s he started working with borehole image technology for aiding downhole geological analysis and became interested in the fractures that show up in virtually every image log. In following this area of interest, Laird worked his way to becoming the head of Mobil Oil's R&D program on Fractured Reservoir Characterization from 1995 to 2000 - a study group of about 15 participants with an annual budget approaching \$1MM. Declining an opportunity to work for ExxonMobil, Laird set up a consulting firm with colleagues to work on fractured reservoirs and for the past 10 years has been a managing partner for UF3 (Utah Faults, Fractures and Fluids), has consulted on reservoirs world-wide including offshore Vietnam, Argentina, the Middle East and North America. He has taught an industry seminar on fractured reservoirs through

Nautilus GTA, has published a SPE Primer on fractured reservoirs with Wayne Narr and David Schechter, and has published two versions of a CD publication on borehole imaging technology through AAPG.

Laird became interested in microseismics in 1999 when presented the initial theory and application by Dr. Peter Geiser and has been working with Peter & associates for the past 10 years to bring this technology to commerciality. Laird's specialty is in integrating TFIs (Tomographic Fracture Images) with other geological and engineering aspects of fractured reservoirs for optimizing reservoir management of these complex reservoirs - in both conventional and unconventional systems.

Laird earned a B.S. degree from Stanford, a M.S. from the University of California at Davis and a PhD from the University of Texas at Dallas. He currently serves as an adjunct professor of geology at Utah State University and has been an active participant in AAPG, SPE and SPWLA.

**THE LUNCHEON RESERVATION DEADLINE IS JANUARY 7 - CONTACT THE NOGS OFFICE**

### “And Looking Ahead . . .”

The next luncheon will be held on February 6th. Guest speaker and topic to be announced. Contact the NOGS office at 561-8980, or use the PayPal link on the NOGS website ([www.nogs.org](http://www.nogs.org)) to make your reservation.



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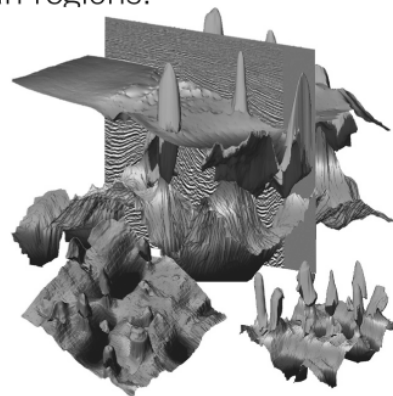
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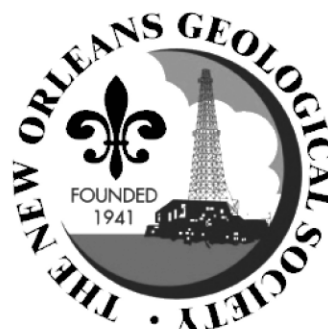
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# 2011 Oil History Symposium – Marietta, Ohio

## Plans for 2012 - Houston

The Petroleum History Institute (PHI), in collaboration with the Ohio Oil and Gas Energy Education Program, held its 2011 annual symposium and field trip at historic Marietta, Ohio, on the banks of the Ohio River. Participants were treated to a wide variety of talks and poster presentations ranging from the history of oil and gas in Ohio to the many contributions to the industry from Baku. On the field trip, the group visited the Thorla-McKee Well, a salt water well drilled in 1814 that produced the first commercial oil in Ohio as well as seeing an old, but still operating, natural gas engine attached to a very large band wheel driving several pump-jacks (shackle line) – still producing Ohio crude after about 100 years, and a wonderful stop at the Parkersburg Oil and Gas Museum in Parkersburg, West Virginia. The trip ended with a tour of the Petroleum Engineering Department at Marietta College. **The next Oil History Symposium and Field Trip will be held in Houston, Texas, March 8-10, 2012.**

In the past, we have held the symposium in Oil City, PA, Long Beach, CA, Wichita, KS, Shreveport, LA, Lafayette, LA, Oil Springs, Ontario, and in WV.

**Mission of PHI:** To pursue the history, heritage, and development of the modern oil industry from its 1859 inception in Oil Creek Valley, Pennsylvania, to its early roots in other regions in North America and the subsequent spread throughout the world to its current global status. See the following web site for more information: [www.petroleumhistory.org](http://www.petroleumhistory.org).

PHI also publishes a yearly journal, *Oil-Industry History*. Our membership includes geoscientists, engineers, historians, museum curators, authors, etc.

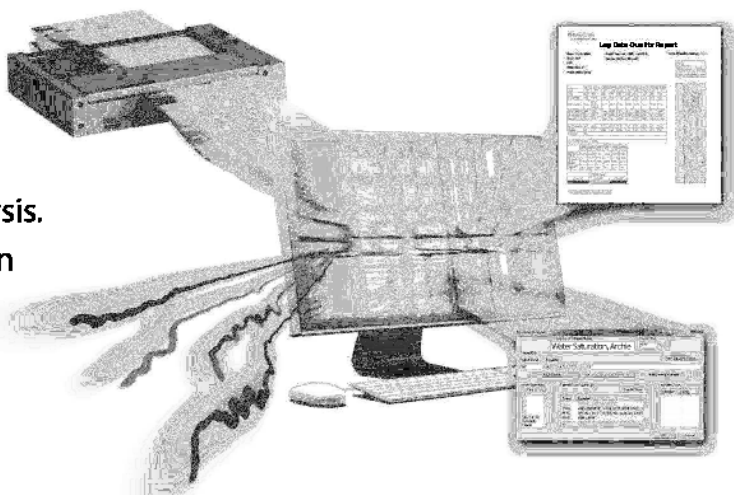
We look forward to another stimulating symposium next year at the Houston meeting, March 8-10, 2012. The abstract deadline is January 15, 2012, so start thinking about your subject, and send the abstract to Bill Brice, [wbrice@pitt.edu](mailto:wbrice@pitt.edu). For more information, contact Jeff Spencer ([spencerj320@gmail.com](mailto:spencerj320@gmail.com)). Plans are to hold a meeting soon for those interested in serving on the 2012 Oil History Symposium Committee.

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# New Orleans Geological Society Calendar

## January 2012

■ US Holidays  
 ■ AAPG  
 ■ NOGS Events

December 2011	January 2012	February 2012
S M T W T F S	S M T W T F S	S M T W T F S
1 2 3	1 2 3 4 5 6 7	1 2 3 4
4 5 6 7 8 9 10	8 9 10 11 12 13 14	5 6 7 8 9 10 11
11 12 13 14 15 16 17	15 16 17 18 19 20 21	12 13 14 15 16 17 18
18 19 20 21 22 23 24	22 23 24 25 26 27 28	19 20 21 22 23 24 25
25 26 27 28 29 30 31	29 30 31	26 27 28 29

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 New Year's Day	2 New Year'...observed	3	4	5	6	7
8	9	10	11 11:00 AM NOGS-SGS Joint Luncheon - La Pavillion	12	13	14
15	16 Martin Lu...ng, Jr. Day	17	18	19	20	21
22	23	24 AAPG GTW Houston	25	26	27	28
29	30	31	1 Groundhog Day	2	3	4

Central Time Time Zone

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## February 2012

■ US Holidays  
 ■ AAPG  
 ■ NOGS Events

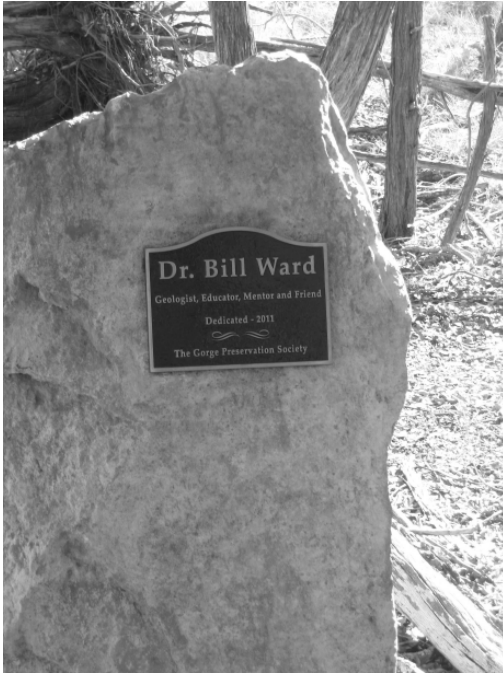
January 2012	February 2012	March 2012
S M T W T F S	S M T W T F S	S M T W T F S
1 2 3 4 5 6 7	1 2 3 4	1 2 3
8 9 10 11 12 13 14	5 6 7 8 9 10 11	4 5 6 7 8 9 10
15 16 17 18 19 20 21	12 13 14 15 16 17 18	11 12 13 14 15 16 17
22 23 24 25 26 27 28	19 20 21 22 23 24 25	18 19 20 21 22 23 24
29 30 31	26 27 28 29	25 26 27 28 29 30 31

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	31	1 Groundhog Day	2	3	4
5	6 11:00 AM NOGS Lun- cheon	7	8	9	10	11
12 Lincoln's Birthday	13	14 Valentine's Day	15	16	17	18
19	20 HGS: Applied Geoscie...nce - Memorial City, TX President's Day	21	22 Washington's Birthday	23	24	25
26	27	28	29	1	2	3

Central Time Time Zone

Page 1/1

# Memorial Dedicated to Dr. Bill Ward at Canyon Lake Gorge, Texas



Dr. Bill Ward's plaque on memorial rock; photo by Jeff Spencer

On Saturday, November 5, 2011, members of the Gorge Preservation Society held a plaque dedication ceremony at the Canyon Lake Gorge, located northwest of New Braunfels, honoring the memory of Dr. Bill Ward for his many years of unselfish service for the promotion and preservation of the gorge. Although the ceremony was sponsored by the Gorge Preservation Society, members of many naturalist groups from the Texas Hill Country area participated in the event. Several in attendance spoke of their fondness for Dr. Ward and how he always found time to meet with them and give presentations to their groups.

Dr. Ward passed away on January 8, 2010. He was a long-time NOGS member and participated in many NOGS activities, from editing the *GCAGS Transactions* to leading field trips. A Memorial for him was published in the February, 2011, issue of the *NOGS LOG*. Appreciation is expressed to Jeff Spencer for providing information about the dedication event and for photos.

Ed Picou



Bill Ward in his office at UNO, c. 1990



Dr. Ward's poster; photo by J. Ladd with the Canyon Preservation Society

Memorial rock and Dr. Ward's poster; photo by J. Ladd with the Canyon Preservation Society



# **SUPER SAURUS SATURDAY**

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Needed**

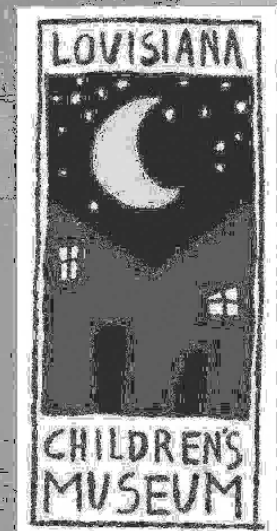


**March 24, 2012**

**11:00 AM - 3:00 PM**

**To volunteer contact: Tom Bergeon  
[tom.bergeon@centuryx.com](mailto:tom.bergeon@centuryx.com)**

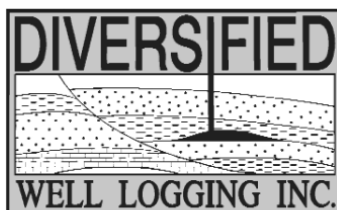
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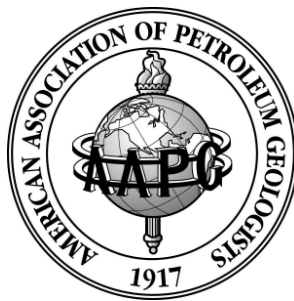


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## **Very Large Oligocene Age Frio Reservoirs at Great White Field in the Ultra-Deepwater of the Gulf of Mexico Offer Significant Development Challenges and Long-Term Growth Potential**

Eikrem, Vern<sup>1</sup>; Thompson, Jill<sup>1</sup>; McKee, Bryce<sup>1</sup>; Li, Ruijian<sup>1</sup>; Keller, James<sup>2</sup>; Hamilton, Yulia<sup>2</sup>; Gray, Gary<sup>1</sup>

(1) Shell Exploration & Production Co., Houston, TX.

(2) Shell International Exploration & Production Co., Houston, TX.

The Great White Field is located in the Perdido Foldbelt in the western Gulf of Mexico, 200 miles south of Freeport, Texas. Water depth in the field is 8000ft. Great White was discovered in 2002 by exploratory well AC857-1. A total of three oil-bearing formations have been penetrated in the field: M. Oligocene age M. Frio Fm. Sands, L. Eocene U. Wilcox Fm. Sands, and L. Paleocene L. Wilcox Fm. Sands.

The Great White Field is one of a number of northeast-southwest trending, compressional structures in the Perdido foldbelt and is just south of the prominent Sigsbee Escarpment. The structure is a complexly faulted, four-way closure. The main structure is a fold-thrust that is fully offsetting at depth, but dies out into a fold at the Oligocene level.

The oil bearing M. Frio Sands at Great White have been buried to a depth of about 1500 to 3500ft below the mudline. Low overburden pressure and reservoir temperature result in the M. Frio sands remaining highly unconsolidated and uncompacted. These six, low pressure reservoirs contain biodegraded, low GOR, 18 degree API oil.

M. Frio sands are composed of fine grained, feldspathic litharenites. There is an abundance of unaltered, volcanic glass fragments. The presence of glass and the lack of mechanical compaction or chemical alteration of the original sediment results in very porous, compressible reservoir sands. In addition, these reservoirs are highly faulted. The unusual characteristics of these reservoirs mean that significant uncertainties remain in predicting Frio development well performance; including: the strength of reservoir drive, the risk of compaction-related well failure, uncertain initial permeability distribution, and the degree of permeability degradation with depletion.

M. Frio reservoir quality deteriorates north of the crest of the structure. Well AC813-1 penetrated poor quality, wet M. Frio. The few thin sands that were present had little volcanic glass and abundant clinoptilolite, a zeolite that is an alteration product of volcanic glass.

The M. Frio Sand reservoirs at Great White contain approximately two billion stb of OIP, making these reservoirs a key long-term target for development. However, development presents significant challenges. Thus, we plan a staged development of the Frio to better assess the upside potential and the risks of drilling and producing these reservoirs.

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# South Louisiana and Offshore Gulf of Mexico

## Exploration and Production Activities

LOUISIANA DISTRICT, ONSHORE AREA

By Carlo C. Christina

Within the last month 40 new permits to drill have been approved in the Lafayette District, Onshore Area, with emphasis on deep Wilcox tests and deep extensions to old depleted fields. The Tuscaloosa Marine Shale play continues to attract new drilling with the approval of 1 deep horizontal well and the requests for 3 new units. Following is my report on the TMS activities in the Florida Parishes.

### TUSCALOOSA MARINE SHALE REVIEW

- 1 - East Feliciana Parish - #1 Lane-T3S-R1E - TD 15,528 feet - The operator has diamond cored, set casing to total depth, perforated, fracked, and shut in the well. (243108)
- 2 - East Feliciana the Devon #1 Beech Grove Land-(H) - T2S-R2E - TD 17,153 - The well has been perforated and fracked in 12 stages. It is flowing back 120 BOPD and 312 BWPD. (243337)
- 3 - East Feliciana - Devon #1 Richland Farms-(H) - T1S-R2 E - Proposed 19,000' test. Location - (244122)
- 4 - East Feliciana - Devon - Request for unit - T2S-R3E
- 5 - St. Helena Parish - Encana #1 Weyerhaeuser 73 (H) - T1S-R4E - TD 18,160 - The well has been perforated and fracked in 16 stages, and is waiting on tests. (243414)
- 6 - Tangipahoa - Devon - #1 Soterra - (H) -T3S-R7E -The well was cored 12460 to 12641, and is drilling at 12,667feet. (243765)
- 7 - West Feliciana - Devon - Request for unit - 1S-3W
- 8 - West Feliciana - Devon - Request for unit - 1S-3W

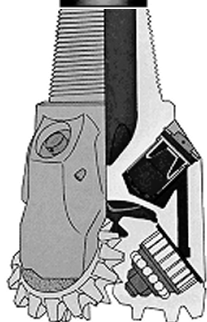
### NEW LOCATIONS

In Allen Parish, Midstates will drill in the depleted **Pilgrim Church Field**, (A), the #1 Bel Minerals in Sec. 18, 5S-4W to test deep Wilcox sands. The well will be drilled to 16,000 feet, located 1 mile northeast of the abandoned Cockfield wells. The field was discovered in 1957 with drilling limited to 10,000 feet or less and very little oil and gas produced until 1992 when the field went off production. (244062)

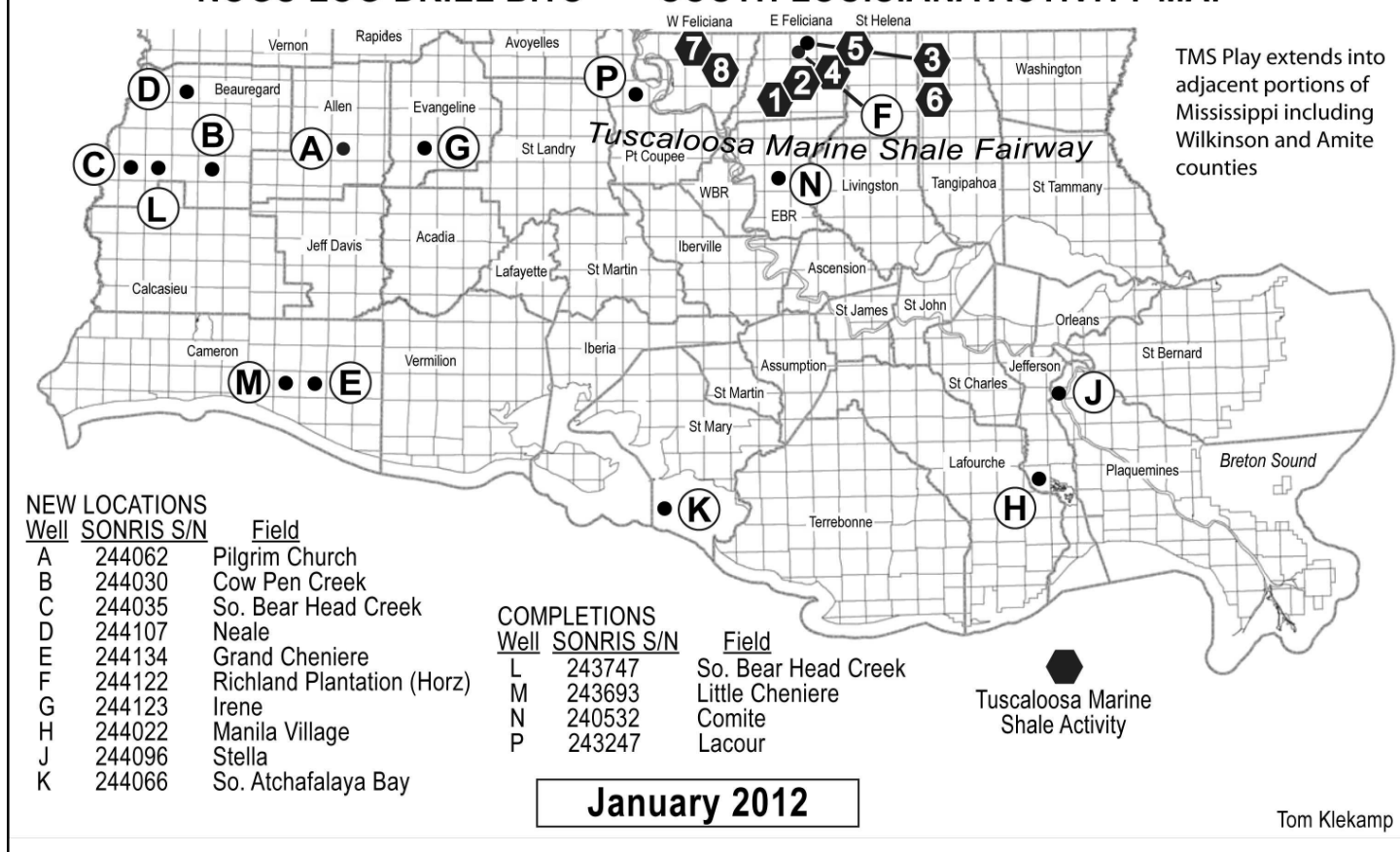
El Paso will drill the #1 Crosby Land in Beauregard Parish in **Cow Pen Creek Field**, (B), in Sec. 7, 6S-9W. The well will be drilled to a depth of 15,000 feet to test deep Wilcox sands on the northwest flank of the shallow field which depleted in 2000. The field was discovered in 1951 and produced from the Frio and Cockfield sands between 7000 feet and 9000 feet. The deepest test was drilled to 12,000 feet in 1977, until El Paso drilled its #1 Sherry Miller last month to a depth of 14,265 feet, and is presently waiting on a completion rig. The #1 Miller is located on the east flank of the field, approximately 4 miles east of the proposed #1 Crosby Land location. (244030)

Also in Beauregard Parish El Paso will drill the #1 WX RA Van Winkle in Sec. 22, 6S-12W, 3 miles west of production in **South Bear Head Creek Field**, (C). The well will be drilled to a proposed total depth of 15,100 feet, and offsets Cockfield producing wells which are permitted in Fields Field. The South Bear Head Creek Field has been one of the most active fields in the past 2 years with 14 deep Wilcox completions during that time. (244035)

DRILL BITS



## NOGS LOG DRILL BITS — SOUTH LOUISIANA ACTIVITY MAP



Riceland Petroleum Co. will attempt to extend production in **Neale Field**, (D), Beauregard Parish, with the #3 Phillips Trust, located in Sec. 20, 3S-10W. The proposed well is located 2 miles northeast of production and will be drilled to 12,000 feet. (244107)

In Cameron Parish, in **Grand Cheniere Field**, (E) Brammer Engineering, Inc. will drill the #1 Sturlese, 15000 RC, in Sec. 35, 14S-5W. The proposed well is located 1 mile south of production and will be drilled to 16,394 feet. (244134)

Devon Energy Production Co. will drill a Tuscaloosa Marine Shale horizontal well in East Feliciana Parish in **Richland Plantation Field**, (F), in Sec. 64, 1S-2E. The well will be drilled to a proposed depth of 19,000 feet, in a 5000' horizontal leg. (244122)

In East Baton Rouge Parish LLOG will drill the #1 Crumholt in **Irene Field**, (G), in Sec. 84, 5S-1W to a projected depth of 19,700 feet. This location offsets the #1 Kizer which was completed in 1978 and produced more than 20 years, producing more than 36.6 billion cubic feet of gas and 745,000 barrels of condensate. (224123)

In Jefferson Parish Castex will be drilling the #1 LL&E in **Manila Village Field**, (H), in Sec. 38, 18S-23E. The well will be drilled to 16,351 feet. (244022)

Wagner Oil Company will drill in **Stella Field**, (J), in Plaquemines Parish. The #1 Jeff-PlaQ Drainage District is located in Sec. 44, 15S-24E, approximately 1 mile west of production in the field, and will be drilled to 12,300 feet. (244096)

In St. Mary Parish, in **South Atchafalaya Bay Field**, (K), Apache Corporation will drill the #1 SL 20255 to a proposed depth of 22,500 feet, with the apparent objective section being the Cib op series. This well is located 1 mile south of the field which went off production in 2008. (244066)

--- continued on next page ---

### COMPLETIONS—

Midstates completed the #1 Charles James in **South Bear Head Creek Field**, (L), Beauregard Parish which extended production 1 1/2 miles northeast of the field. The well was drilled in Sec. 23, 6S-11W, to 15,129 feet and was completed as an oil well in the Lower Wilcox, flowing 400 BOPD and 1218 MCFD, through perforations 14,000 to 14,062 feet. (243747)

In Cameron Parish, **Little Cheniere Field**, (M), Smith Prod. Co. completed the #1 Mermentau Min. & Ld. In Sec. 13, 14S-6W. The well was completed in the Lower 7050' Sand flowing 1267 MCFD and 63 BCPD through perforations 7220 to 7227 feet. (243693)

In **Comite Field**, (N), East Baton Rouge Parish, Hilcorp (formerly BP) completed the #1 Edwards in Sec. 1, 6S-1E as a gas well in the 18000 TUSC RB Reservoir, flowing 8044 MCFD and 754 BCPD through perforations 18,524 to 18,536 feet., (corrected). The Edwards well was originally drilled and operated by BP, which drilled to total depth, set casing, and waited on a completion rig. Hilcorp has now acquired all BP holdings in the Tuscaloosa properties in the Baton Rouge area. (240532).

Anadarko has completed an excellent oil well in the Austin Chalk in **Lacour Field**, (P), Pointe Coupee Parish. The #1 Lacour was drilled to 21,994 feet and completed flowing 3000 BOPD and 2500 MCGD through perforations 14,955 to 21,920 feet. It was drilled in Sec. 43, 3S-8E, and located 1 mile southeast of the 1 well field which was completed in 1994 and produced only 87,000 barrels of oil before going off production in 2002. (243247)

## **OFFSHORE GULF OF MEXICO SHELF AND DEEPWATER ACTIVITIES**

By Al Baker

Between October 2<sup>nd</sup> and December 2<sup>nd</sup>, the BOEM issued 142 drilling permits, of which 74 were for Gulf of Mexico shelf wells and 68 were for Gulf of Mexico deepwater wells. Twenty-six of the above permits are for new wells; 13 permits are in shallow water, and 13 permits are in deepwater.

The shelf new well permits are for 5 exploratory wells and 8 development wells. The exploratory wells that are to be drilled include the High Island Block A-171 Walter Oil & Gas #1, the South Marsh Island 242 Marlin GOM #1, the Ship Shoal 134 Contango #1, the McMoRan South Timbalier 188 #3 and the Apache South Timbalier 318 #1. The shelf development activity includes two wells by Hall-Houston (West Delta 89 #D-2 and #D-4), 1 well by ANKOR Energy (Ship Shoal 218 #B-9), 1 well by Phoenix Exploration (Main Pass 59 #I-2), 1 well by Apache (Ship Shoal 189 #A-10), 1 well by Chevron (Vermilion 245 #G-6), 1 well by Black Elk Energy (East Cameron 160 #A-8), and 1 well by EPL (East Cameron 111 #2).

The deepwater new well permits are for 12 exploratory wells and 1 development well. Chevron/Union Oil will drill 8 of the exploratory wells in the Walker Ridge Area.

Their exploration tests include the Walker Ridge 758 #PS-1 and #PS-4, the Walker Ridge 634 #PN-1, #PN-2 and #PN-3, and the Walker Ridge 677 #PS-1, #PS-3 and #PS-4. LLOG plans to drill their #1 exploration test on Mississippi Canyon 431. BP will drill the Keathley Canyon 292 #2 exploration well. Anadarko is planning to drill their #SS-3 exploratory well on Green Canyon 903. Nexen will drill the Green Canyon 327 #1 exploratory well. Finally, Apache plans to drill a Nophlet development test on Mobile 830, offshore Alabama.

According to ODS-Petrodata, as of November 23<sup>rd</sup>, there were 67 rigs under contract out of the 115 rigs available in the Gulf of Mexico, which translates to 41.7% of the rig fleet remaining idle in the Gulf. On December 2<sup>nd</sup>, the BakerHughes Rig Counts indicated that there were 42 active rigs in the Gulf, which represents 62.7% of the total rigs under contract or a 5.6% increase from the last *NOGS LOG* report. The 42 active rigs compares to 23 active rigs during the same period last year. This represents a 91.3% increase in the active rig fleet on a year-to-year basis. Although activity is on the rise, GOM drilling still remains sluggish when compared to pre-moratorium rates.

**New NOGS  
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December 2011**

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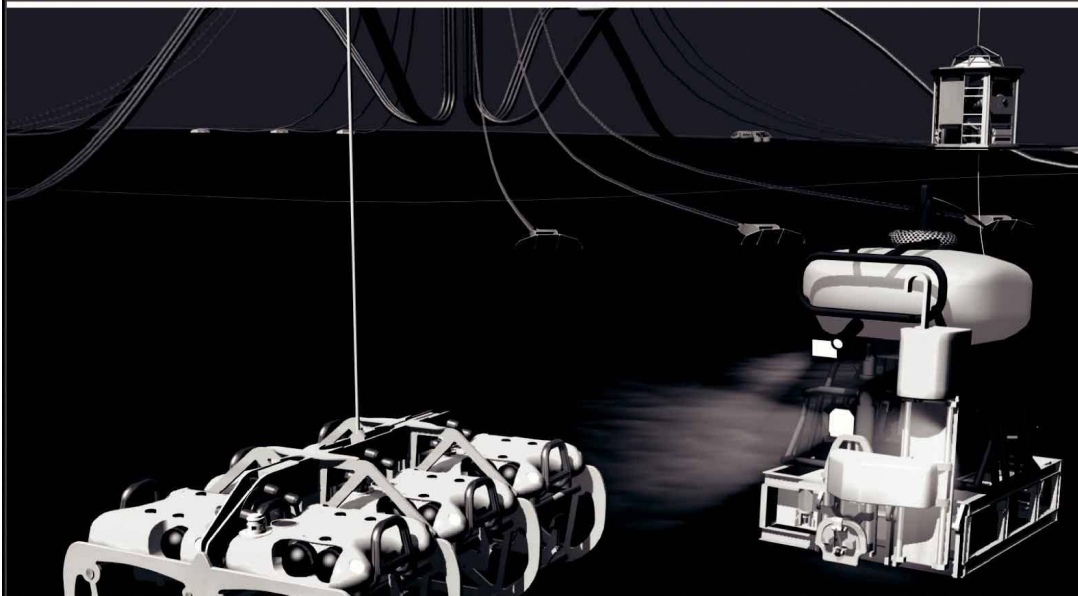
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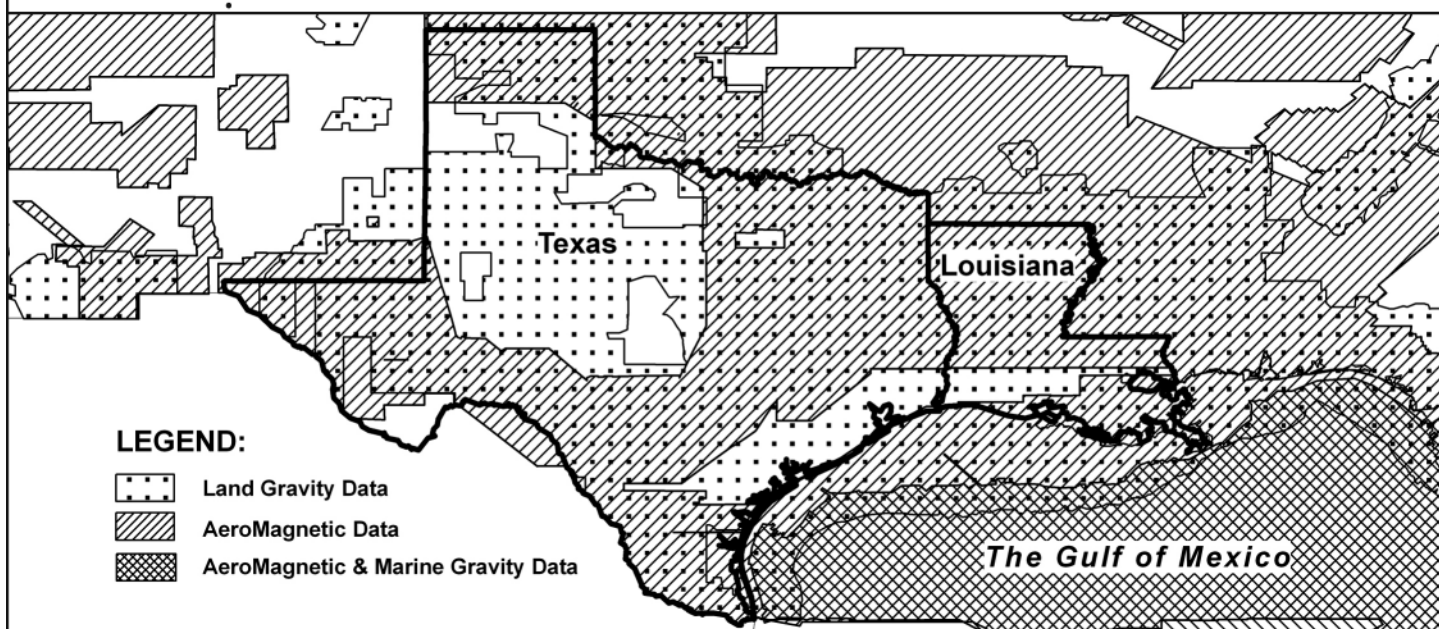
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*Angel Gonzalez—Dow Jones Newswires- “BP: Halliburton Destroyed Test Results On Deepwater Horizon Cement” December 5<sup>th</sup> 2011 [http://www.rigzone.com/news/article.asp?a\\_id=113120](http://www.rigzone.com/news/article.asp?a_id=113120)*

*BP on Monday accused oilfield-services giant Halliburton of destroying unfavorable results from tests on cement used to plug the leaking well in the Deepwater Horizon disaster.*

*Halliburton prepared the cement mix that BP had used to plug the deep-water well that blew out in April 2010, killing 11 and unleashing a huge oil spill. In a motion filed with a U.S. court in Louisiana, BP said that Halliburton’s own tests after the incident showed the cement slurry was unstable and claimed the company destroyed the results of the test and misplaced key data.*

*Halliburton destroyed the evidence “in part because it wanted to eliminate any risk that this evidence could be used against it at trial,” BP said in the filing. The U.K. oil company says it bases its motion on deposition testimony by Halliburton witnesses and internal documents. Halliburton didn’t immediately respond to requests for comment. BP’s salvo is the latest in a multipronged legal fight pitting one of the world’s largest oil companies against its contractors over their share of responsibility for the U.S. Gulf of Mexico oil spill. BP has said its contractors, including Halliburton, share part of the blame; Halliburton has said that BP directed all operations and is at fault. In September, Halliburton sued BP for defamation, and for providing inaccurate information before the cementing job in the Deepwater Horizon well.*

*According to BP’s filing, Halliburton told its employees in late April or early May 2010 to test a batch of the cement at a facility in Duncan, Okla. The testing showed that the solids in the cement mixture were separating from the liquids, a sign of instability, according to BP.*

*BP says that a Halliburton employee said under oath that “he destroyed test results in order to keep the information from being ‘misinterpreted’ in ways adverse to Halliburton in litigation.”*

*Ross Kelly- Dow Jones Newswires -“Conoco Studying North America’s Gas Export Potential” December 8<sup>th</sup>, 2011 [http://www.rigzone.com/news/article.asp?a\\_id=113218](http://www.rigzone.com/news/article.asp?a_id=113218)*

*ConocoPhillips is studying North America’s potential to export natural gas, but it isn’t high on its priority list and any rush to build terminals on the U.S. coast could face opposition from Washington, Al Hirshberg, the company’s Senior Vice President, Planning and Strategy, said Thursday.*

*Production of shale gas, which is trapped in dense rock formations, is continuing to depress U.S. gas prices and some forecasters are predicting this could encourage U.S. gas producers to liquefy gas for export in large terminals to earn higher prices.*

*Cheniere Energy recently signed two long-term gas supply deals with offtakers, including BG Group, as it presses ahead with plans to build an LNG export terminal in Sabine Pass, La., which would be the first in the U.S.*

*Hirshberg said he expects some gas to be exported from the U.S., but he doesn’t expect the world’s biggest economy to become a major player in the global gas export market in the near term.*

*"I just don't see it," Hirshberg said. "Five years from now Queensland will be a major spot on the map, as well as Western Australia in terms of LNG export, and the U.S. Gulf coast won't be, that's my prediction."*

*Conoco is among a host of big oil companies planning to build about a dozen LNG projects in Australia's Queensland and Western Australia states, and its Northern Territory, to feed a projected surge in demand for cleaner-burning fuels from Japan, South Korea and rapidly industrializing economies like China.*

*Hirshberg said it could be in the U.S. government's interest to limit gas exports, as the current shale gas boom is assisting a fragile economy by keeping energy prices low.*

*"Canada's a little different," he told Dow Jones Newswires in an interview. "The gas in Canada is stranded, it really doesn't have access to a market so spending the money to liquefy it and get it ready for export is going to make long-term sense."*

*U.K.-based gas consultancy Wood Mackenzie says the U.S. could be exporting 20 million metric tons of LNG as early as 2018.*

*Qatar is the world's biggest exporter of LNG, with capacity to ship around 77 million tons each year. But if all the projects in Australia get build, it will produce well over 100 million tons a year, easily surpassing Qatar, which currently has all new LNG developments on hold.*

*Conoco wants to ship LNG from its US \$14 billion Queensland joint venture with Origin Energy and China Petrochemical Corp. by 2015.*

*It's also involved in a separate drilling campaign offshore northern Australia with Karoon Gas Australia.*

*The first stage of the campaign turned up promising results, and Hirshberg said the first well in the second phase will be spudded mid-January with more wells drilled soon afterwards.*

*Confirmation of large resource means the company could combine with other discoveries in the Browse Basin such as Caldita Barossa to expand the operating Conoco-operated LNG plant at Darwin, Hirshberg said, adding a smaller resource would be more suitable for a floating LNG facility.*



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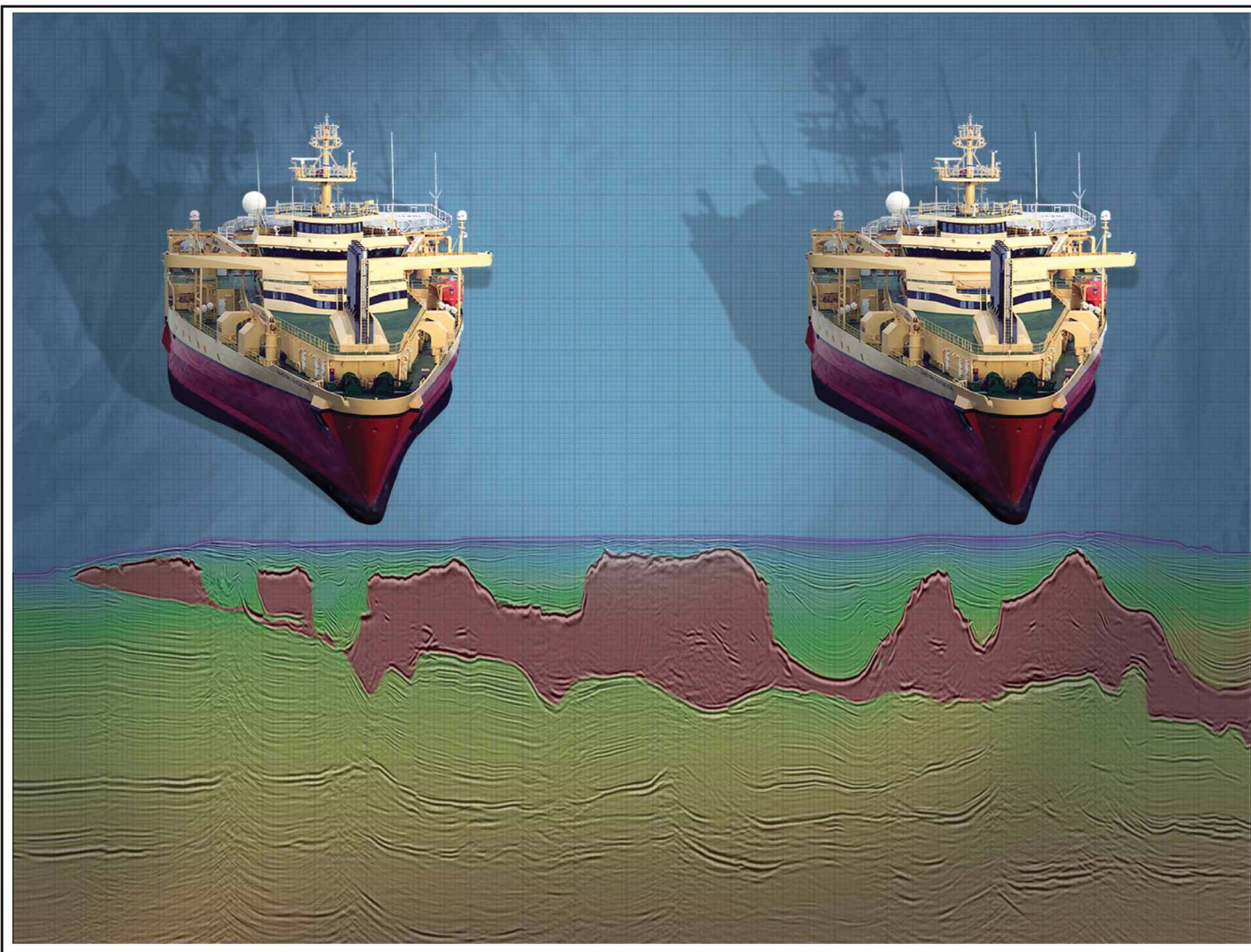
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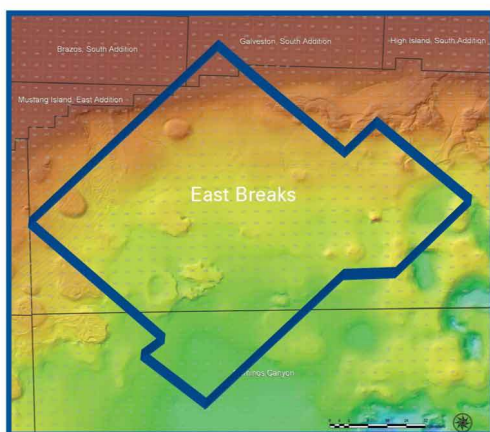
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