

NOGS LOG



FEBRUARY 2018

Volume 58, Number 8



FEBRUARY 8 - NOGS/SGS JOINT LUNCHEON PRESENTATION

**Enhancing Our View of the Reservoir: New Insights in Deepwater Gulf of Mexico
Fields Using Frequency Decomposition**

Guest Speaker: Michael Murat • Chevron • Covington, LA

**Automated Fault Interpretation and Extraction Using Improved
Supplementary Seismic Datasets**

Guest Speaker: Trevor Bollmann • Chevron • Covington, LA



APRIL 7, 2018

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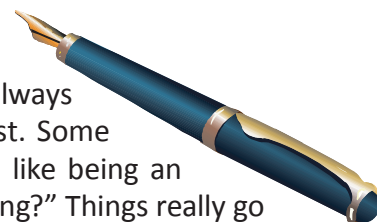
on the cover

Cover photo by Shutterstock

Night time eruption of Mayon Volcano — Philippines

This month's cover image features the ongoing eruption of Mayon Volcano, an 8,077 ft. stratovolcano on the island of Luzon in the Philippines. Part of the Ring of Fire encircling the Pacific Ocean, Mayon results from the subduction of the Philippine Sea Plate beneath the Philippine Mobile Belt. Stratovolcanoes like Mayon are often noted for their striking symmetry and classic volcano shape but also for their potential for catastrophic eruptions. With the occurrence of mafic, felsic, and intermediate lavas, Mayon can experience several different eruptive styles. The cone shape of the volcano itself arises from the alternating layers of low viscosity basaltic flows and the pyroclastic material from felsic and intermediate melts. With such variations in chemistry for magma and lava, Mayon typically experiences smaller Strombolian eruptions related to intermediate lavas. Strombolian activity is moderately explosive with the occurrence of pyroclastic materials like bombs and cinders. However, Mayon is also capable of producing violent Vulcanian eruptions with devastating pyroclastic flows like those experienced in the 1984 eruptions. As of this writing, over 75,000 people have evacuated the area around Mayon after an increase in intense activity prompted warnings from the Philippine Institute of Volcanology and Seismology that a hazardous eruption could be imminent.

From the Editor



I'm not sure if it's a function of my age, gender, or where I happen to live, but I always seem to elicit the most unusual responses whenever I tell people I'm a geologist. Some recent replies of note include, "Oh my goodness! How academic," or "So that's like being an engineer, right?" or "Wow. So then do you know a lot about crystals? Like for healing?" Things really go off the rails when you try to explain what an environmental geologist works on. No, I don't find oil. No, I don't particularly like dinosaurs. No, I don't work with volcanoes. No, I don't work at this truck stop or know if they offer free air. (Though in the last questioner's defense, I was opening a well vault next to a pump island when she happened to drive up.) Against all odds, explaining what a geologist does remains harder than explaining actual geologic concepts. But luckily for us, kids in particular tend to quickly recognize that geologists are, well, the best. I'm not saying that blowing the minds of 7-year olds with the power of science should inspire you to immediately email Tom Bergeon at tom.bergeon@upstreamexp.com and volunteer for 2018 Super Science Saturday on April 7 at the Louisiana Children's Museum...but it certainly wouldn't hurt.

Laura
Laura Sorey, Editor



FROM THE
PRESIDENT
CHRIS MCLINDON

Walter Alvarez started his professional career in the oil and gas industry working for American Overseas Petroleum Limited in Libya but left shortly after Colonel Gaddafi's revolution. Following a brief stint studying archeological geology in Italy, Alvarez moved to Lamont-Doherty Geological Observatory of Columbia University to get involved with another revolution – plate tectonics. Alvarez had earned a Ph.D. in Geology from Princeton University and was obviously not ready to give up academic research. He was particularly interested in the field of paleomagnetism and its role in understanding plate tectonics.

It wasn't too long before Alvarez was back in Italy pursuing this new line of research. The Scaglia limestone in the Umbria-Marche Apennines offered an unusual opportunity to study paleomagnetism. It is a deepwater limestone with a nearly continuous historical record of the Late Cretaceous and Palaeogene, undisturbed by erosional gaps. The Scaglia is a pelagic limestone with abundant plankton (calcareous nannofossils and planktonic foraminifera), an excellent tool for age-dating the strata. Some portions of the stratigraphic section also contain layers of volcanic ash which allowed for the application of radiometric age-dating. These deepwater limestone layers recorded the pole of the earth's magnetic field at the time of deposition. It was originally the intent of Alvarez, working with his colleague William Lowerie, to study the tectonic aspects of paleomagnetism to work out the rotations of Corsica and Sardinia, but in a classic case of scientific serendipity, they uncovered a

pattern of paleomagnetic reversals recorded in the layers of the Scaglia formation. Alvarez and Lowerie soon began collaborating with other geologists to correlate patterns of magnetic polarity stratigraphy between sedimentary basins.

Studies of these deepwater limestones showed that their pattern of magnetic pole reversals matched the polarity record based on marine magnetic anomalies from the oceanic basalts. It soon became clear that two high resolution magnetic tape recorders are operating in the Earth, one in the ocean crust and the other in pelagic limestones. Once the patterns of the reversals were matched, it was possible to use the ages of the limestone sequences to date each magnetic stripe in the ocean crust, and thereby to put dates on the corresponding positions of the continental plates. This was a significant scientific accomplishment, but Alvarez's work soon led him to what would become one of the most significant, and certainly the coolest, scientific discoveries of the twentieth century.

The limestone strata of the Scaglia formation also revealed another striking pattern. There was a dramatic difference in the size and diversity of the foraminifera between the layers of the upper Cretaceous and those of the lower Tertiary. The older upper Cretaceous strata held larger forams representing many more species, while the forams of younger lower Tertiary were smaller and less diverse. The two bounding layers were separated by a thin layer of clay that appeared to extend across the area. This sequence was an exquisite record of the great K-T extinction event. Alvarez sought to further investigate the boundary layer that marked this event. He wanted to know how long it took to deposit the thin layer of clay – was it a short event or a long span of time? What he needed was something to measure the span of time represented by the clay layer.

This is where it helps to have a father with a Nobel Prize in Physics. Luis Alvarez had received the Nobel in 1968 and was working at the Lawrence Laboratory at the University of

(continued from page 4)

California at Berkeley. Luis suggested that Walter measure the concentration of iridium, a metal from the platinum group, which could be used as a kind of cosmic timekeeper. Iridium comes to earth from extraterrestrial sources, and it is a component of the constant rain of "space dust" that falls to earth. The concentration of iridium in a deepwater sedimentary layer, which his laboratory could measure in parts per billion, would indicate the time span of the deposition. What they found was stunning.

Luis was able to convince Frank Asaro and Helen Michel at the Lawrence Berkeley lab to examine samples of the bounding clay layer. They found concentrations of iridium thirty times higher than they had expected to find. The concentration was so high that it appeared to require some other explanation. The team also sought out samples of K-T boundary sediments from other areas of the world to corroborate the findings, which

they did. They ultimately determined that this intense concentration of iridium in a single clay layer had to indicate a major impact on earth from an asteroid. Luis calculated that the asteroid would have to be about 6 miles in diameter.

In 1980 the team published the seminal paper "Extraterrestrial Cause for the Cretaceous-Tertiary Extinction: Experiment and Theory." Their findings have since been supported by a wide base of evidence for this event including the location and mapping of the Chicxulub impact crater in the Yucatan. The process which led Walter Alvarez to this amazing discovery was one of persistence, serendipity, collaboration and creative thinking. These tend to be the basic elements of all great scientific discoveries.

Chris McLindon



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February 8 • NOGS/SGS Joint Luncheon



Holiday Inn Downtown Superdome

\$3.00 validated parking in hotel garage



Enhancing Our View of the Reservoir: New Insights in Deepwater Gulf of Mexico Fields Using Frequency Decomposition

Guest Speaker: Michael Murat • Chevron - Covington, LA

Automated Fault Interpretation and Extraction Using Improved Supplementary Seismic Datasets

Guest Speaker: Trevor Bollmann • Chevron - Covington, LA

See pages 8 & 9 for Abstracts and Biographies

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Check with concierge or front desk for location.
Lunch served at 11:30 am

ADMISSION:

With reservation..... \$30.00
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February 5-9

NAPE Summit Week 2018

George R. Brown Convention Center • Houston, Texas

For more info: <http://napeexpo.com/summit>

February 20

SIPES Luncheon

Andrea's • Metairie, Louisiana

For more info: Carol St. Germain, 504-267-3466

February 21

New Orleans Geological Auxilliary (NOGA) Luncheon

Walnut Room, Lakefront Airport • New Orleans, Louisiana

Invitation Only - Spouses and Guests Welcomed

April 7

Super Science Saturday

Louisiana Children's Museum • New Orleans, Louisiana

For more information: tom.bergeon@upstreamexp.com

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VOLUNTEERS NEEDED!

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Feb 8 NOGS/SGS Luncheon Presentation

☆☆☆ at the Holiday Inn Superdome ☆☆☆

Enhancing Our View of the Reservoir: New Insights into Deepwater Gulf of Mexico Fields Using Frequency Decomposition

Presented by

Michael Murat

Chevron • Covington, Louisiana

ABSTRACT

Color-blended frequency decomposition is a seismic attribute that can be used to deduce or draw out and visualize geomorphological features enabling a better understanding of reservoir architecture and connectivity for both exploration and field development planning.

Color-blended frequency decomposition was applied to seismic data in several areas of interest in the Deepwater Gulf of Mexico. The objective was stratigraphic characterization to better define reservoir extent, highlight depositional features, identify thicker reservoir zones and examine potential connectivity issues due to stratigraphic variability.

Frequency decomposition is a technique to analyze changes in seismic frequency caused by changes in the reservoir thickness, lithology and fluid content. This technique decomposes or separates the seismic frequency spectra into discrete bands of frequency limited seismic data using digital filters. The workflow consists of frequency (spectral) decomposition, RGB color blending of three frequency slices, and horizon or stratal slicing of the color blended frequency data for interpretation.

Patterns were visualized and identified in the data that were not obvious on standard stacked seismic sections. These seismic patterns were interpreted and compared to known geomorphological patterns and their environment of deposition. From this we inferred the distribution of potential reservoir

sand versus non-reservoir shale and even finer scale details such as the overall direction of the sediment transport and relative thickness.

In exploratory areas, stratigraphic characterization from spectral decomposition is used for prospect risking and well planning. Where well control exists, we can validate the seismic observations and our interpretation and use the stratigraphic/geomorphological information to better inform decisions on the need for and placement of development wells.

BIOGRAPHY

Michael Murat is a Geophysical Consultant with the Gulf of Mexico Applied Reservoir



Management Geophysics team at Chevron North America Exploration and Production Company. He has 26 years with Chevron working on reservoir properties from seismic, AVO, DHI risking and 4-D time lapse analysis.

Robert holds a M.S. degree in Geophysics from Indiana University and was a Fulbright Fellow Warsaw University and Polish Academy of Sciences, 1988-1989. He also holds a BS degree in Geophysics from Saint Louis University.

Feb 8 NOGS/SGS Luncheon Presentation

☆☆☆ at the Holiday Inn Superdome ☆☆☆



Automated Fault Interpretation and Extraction Using Improved Supplementary Seismic Datasets

Presented by

Trevor Bollmann

Robert Shank - Coauthor

Chevron • Covington, Louisiana

ABSTRACT

During the interpretation of seismic volumes, it is necessary to interpret faults along with horizons of interest. With the improvement of technology, the interpretation of faults can be expedited with the aid of different algorithms that create supplementary seismic attributes, such as semblance and coherency. These products highlight discontinuities, but still need a large amount of human interaction to interpret faults and are plagued by noise and stratigraphic discontinuities. Hale (2013) presents a method to improve on these datasets by creating what is referred to as a Fault Likelihood volume. In general, these volumes contain less noise and do not emphasize stratigraphic features. Instead, planar features within a specified strike and dip range are highlighted. Once a satisfactory Fault Likelihood Volume is created, extraction of fault surfaces is much easier. The extracted fault surfaces are then exported to interpretation software for QC. Numerous software packages have implemented this methodology with varying results. After investigating these platforms, we developed a preferred Automated Fault Interpretation workflow.

"And Looking Ahead . . ."

The next luncheon will be the Joint NOGS Luncheon held on March 5. Our guest speaker will be Richard Campanella of Tulane University. Contact the NOGS office at 504-561-8980 or use the PayPal link at www.nogs.org to make your reservation.

BIOGRAPHY

Trevor Bollmann is a Technical Geophysicist with the Gulf of Mexico Applied Reservoir Management Geophysics team, Chevron North America Exploration and Production. He has 2.5 years with Chevron working on reservoir properties from seismic, AVO, and



seismic inversions and supplementary volume creation. Trevor has previous experience with tomographic inversion of teleseismic body waves. He holds a M.S. degree in Earth and Planetary Sciences from

Northwestern University and a B.S. degree in Geology and Geophysics from Missouri University of Science and Technology.

**THE FEBRUARY LUNCHEON RESERVATION
DEADLINE IS FEBRUARY 2.
CONTACT THE NOGS OFFICE**



CALENDAR OF EVENTS: FEBRUARY- MARCH 2018

If you know of upcoming seminars or academic events that may be of interest to our members, please email the event details to Laura Sorey at nogseditor@gmail.com to be included in the monthly calendar.

2018	EVENT	LOCATION	CONTACT / INFO
8 Feb	Joint NOGS/SGS Luncheon Presentation Speakers: Michael Murat and Trevor Bollmann • Chevron	Holiday Inn Superdome	annette@nogs.org or 504-561-8980
5-9 Feb	NAPE Summit Week	Houston, TX	http://napeexpo.com/summit
13 Feb	Mardi Gras		
14 Feb	Valentine's Day		
20 Feb	SIPES Luncheon	Andrea's - Metairie	Carol St. Germain, 504-561-8980
28 Feb	Abstracts Due: 12th Annual Louisiana Water Conference	LSU Baton Rouge	https://easychair.org/cfp/lawater_2018
5 Mar	NOGS Luncheon Presentation "Bienville's Dilemma" Speaker: Richard Campanella • Tulane University	Holiday Inn Superdome	annette@nogs.org or 504-561-8980
27-28 Mar	12th Annual Louisiana Water Conference	LSU Baton Rouge	https://easychair.org/cfp/lawater_2018
2 Apr	NOGS Luncheon - Speaker TBA	Holiday Inn Superdome	annette@nogs.org or 504-561-8980
17-19 May	2018 History of Oil Symposium - Petroleum History Institute	Salt Lake City, Utah	www.petroleumhistory.org
20-23 May	AAPG-SEPM (ACE 2018 Annual Convention & Exhibition)	Salt Lake City, Nevada	http://ace.aapg.org/2018



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Petroleum Doubloons

by Jeff Spencer, GCAGS Historian

As another Mardi Gras approaches, I happened to be cleaning out a file cabinet drawer filled with odds and ends from my time living and working in New Orleans (1980-1989). My wife and I were enthusiastic parade-goers, especially during those first few years, and like many we grabbed as many doubloons as we could. As both of us worked in the petroleum industry (an Amoco geologist and an Amoco geophysicist), doubloons with petroleum themes were of special interest. Some of these were not true Mardi Gras parade doubloons, but were adopted by industry and organization to commemorate events.

So, with some nostalgia, here are a few of those petroleum-related Mardi Gras doubloons:

1) AAPG 1985. OK, these doubloons were for the Annual AAPG Convention in late March and Mardi Gras was on February 19th that year, but these doubloons handed out (thrown) to attendees were a great idea. Figure 1 shows the green and purple anodized varieties and a heavier bronze version, all with Crusty the Crawfish and Geologic Jambalaya.

2) Plaquemine Parish Sheriff's Posse 1971 "Salute to the Oil Industry."

3) A 1972 Shell Oil Company "doubloon" commemorating Shell's first well in Louisiana (Hunter No. 1 near Vinton, 1916) and One Shell Square on the reverse. Anyone know anything about this well?

4) A set of seven 1989 Amoco doubloons commemorating the 100th year of the company, and sadly, the year many of the New Orleans Amoco employees were either cut loose or transferred to Houston.

Other oil-related doubloons in my collection include two 1981 Krewe of Jeffersonians "Honoring the Oil & Gas Industry," a 1977 gold Krewe of Louisianans Washington (DC) Mardi Gras Ball – "Louisiana Naturally," and 1982 doubloons from Lafayette's Southwest Louisiana Mardi Gras Association – "All for Oil."



1) AAPG 1985



2) Plaquemine's Sheriff's Posse 1971



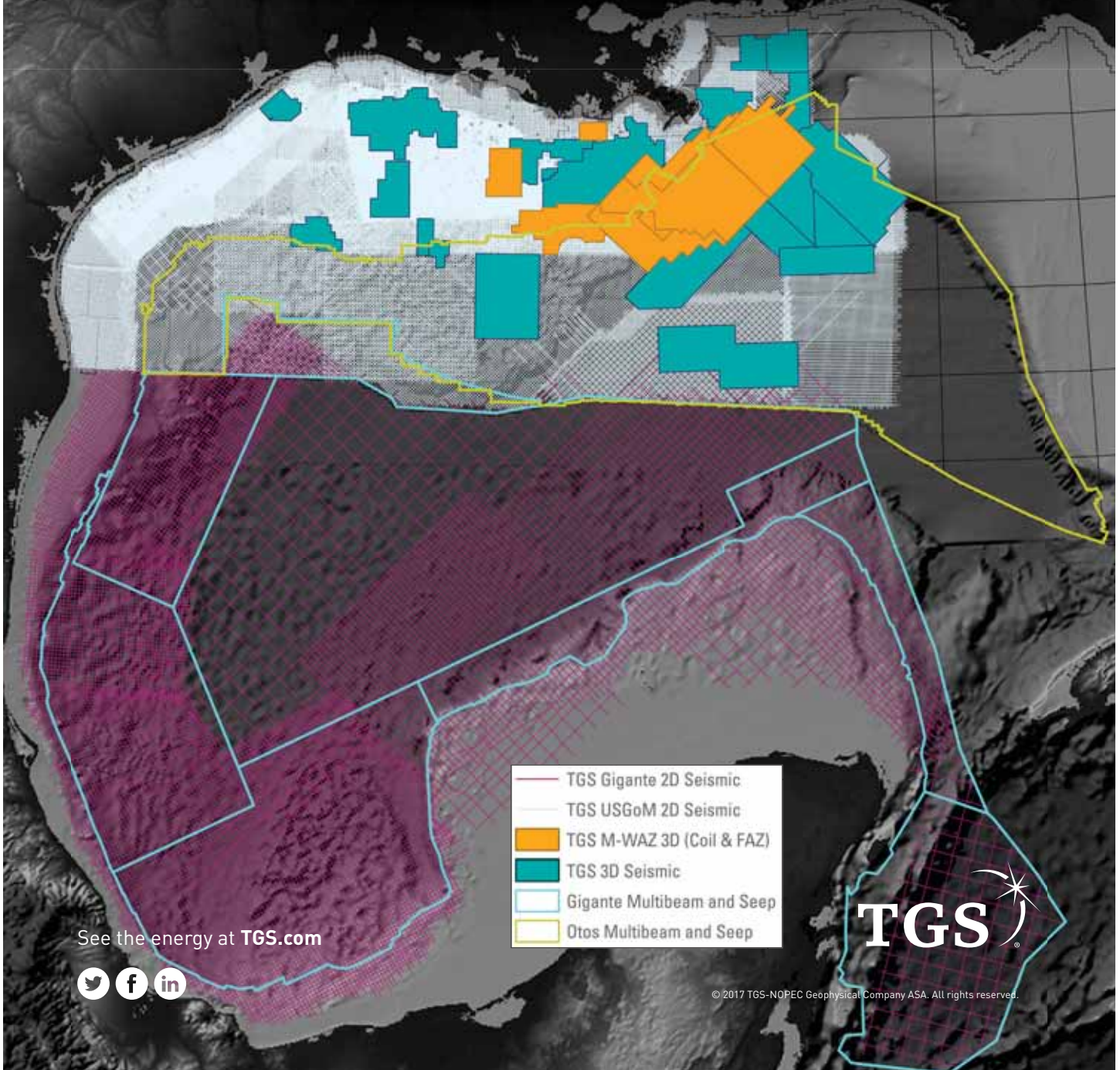
3) Shell Oil Company 1972



4) Amoco 1989

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In Memory of James Austin Hartman



James “Jim” Austin Hartman, 89, passed away peacefully on Wednesday, January 17, 2018, in West Des Moines, Iowa. He was a few weeks shy of his 90th birthday. He grew up in Mount Carroll, Illinois, and graduated from Mount Carroll High School in 1945. After high school Jim joined the Army and served with General MacArthur in the occupation of Japan during WWII.

Once the war was over, Jim returned home and enrolled at Beloit College and met Zoe Wiley. He received his Bachelor’s Degree in Geology and later was bestowed a Master’s in Mining Geology at University of Wisconsin, Madison. Jim and Zoe were married after graduation and the young couple relocated to Jamaica where Jim worked for Reynolds Wrap for their three year “honeymoon.” He returned to University of Wisconsin and completed a PhD in Geology and celebrated the birth of their daughter, Victoria Lynn Hartman. The family moved to Suriname, South America, where Jim trekked the jungles looking for manganese for Union Carbide. After nine months overseas, he and his wife returned to the mid-west and celebrated the birth of their son, Lester James Hartman.

Jim worked for Shell Oil Company as an exploration geologist for 30 years and upon retirement, he joined Greenhill Petroleum and was successful in producing new oil in dried out oil fields. In 1996, Zoe Hartman passed away after 47 years of marriage. While at his 60th high school reunion, Jim reunited with his childhood friend Marilyn “Molly” Gerlich. The friendship quickly grew into a romance and after Hurricane Katrina, they were married on December 31, 2005. They lived in Panora, Iowa, and then moved into a retirement community in West Des Moines, Iowa, where they spent a wonderful 10 years married.

Jim was very active and enjoyed life to the fullest. He loved collecting shells and cowries. He was a member of St. Augustine Episcopal Church in Metairie, Louisiana, served as Secretary of the American Association of Petroleum Geologists,

was President of the New Orleans Geological Society, and was active with his son in the New Orleans Gem and Mineral Society. Jim enjoyed spending time with his family, traveling, making jewelry, touring the battlefields his father fought in during World War I, and watching his beloved Chicago Cubs. As one of his final trips, he was able to attend his first World Series game in his late 80s.



Jim was a family man and education was one his most important accomplishments. He took pride in attending his children and grandchildren’s graduations along with supporting them in all of their academic accomplishments. He was supportive of his family’s philanthropic passions and assisted with any necessary donations.

Jim also was able to take several amazing trips in his life with his son, daughter, grandchildren and extended family members. His most memorable trips were to Antarctica, Amsterdam, Australia/New Zealand and touring the WWI battlegrounds his father fought on. He cherished all the memories from these trips.

Jim’s greatest pride in life was his grandchildren and great grandchildren along with the amazing relationships he had built with his family and friends.

A memorial service and celebration of life will be held at Lake Lawn Cemetery on Saturday, February 17, 2018, at 10:00 a.m. in Metairie, Louisiana, and a burial service immediately following.

Celebrate Life Iowa has been entrusted with the care of Jim and his family.

Modified from The Times Picayune 1/21/2018





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South Louisiana and Offshore Gulf of Mexico Exploration and Production Activities

LAFAYETTE DISTRICT, ONSHORE AREA

By Carlo C. Christina and Kevin J. Trosclair

The Baker-Hughes United States rig count for the month of December:

North Louisiana Rigs:	39
South Louisiana Rigs:	6
Land	4
Inland Waters	2

During the month of December, the Louisiana Department of Conservation issued **14** permits to drill oil or gas wells in the Lafayette District. Of interest, **3** locations were for wells in the **Skinner Lakes Field** in Beauregard Parish in T6S-R13W.

BREAKING NEWS III

As reported in *Business Wire* January 03, 2018, “Amelia Resources announced today that it has sold 85,000 net acres of newly acquired leases in the Louisiana Austin Chalk play to an undisclosed large U. S. based operator for \$87 million.”

Amelia’s President, Kirk Barrell, said, “With the rapid emergence of this exciting new play, this focused package of leases presents a large new player an excellent acreage foundation to build upon.”

As previously reported in *Drill Bits*, this new phase of the Austin Chalk play in Louisiana was set off by the completion of the EOG #1 Eagles Ranch, in North Bayou Jack Field, in Avoyelles Parish. It was completed on September 11, 2017, flowing 1120 BOPD and 1157 MCFD. The well produced **26,896 barrels of oil in September** and **27,609 barrels of oil in October**, for a **total of 54,505 barrels of oil in less than 50 days.** (Note: to review a complete summary of the recent Austin Chalk activities, please refer to the *Drill Bits* reports in **June 2017, October 2017 and November 2017**).

NEW LOCATIONS

In Beauregard Parish, **Skinner Lakes Field, (A)**, Will-Drill Production has drilled the Indigo II to a total depth of 10,270 feet in Sec. 3, 6S-13W and set 5 1/2 inch casing at that depth. The rig was released on January 4 and is waiting on a completion rig. (250680)

Clearly Petroleum will drill a significant deep test located on the east flank of the prolific **North Maurice Field, (B)**, Lafayette Parish in Sec. 19, 10S-4E. It will be drilled to **18,200 feet** to test Nonion struma sands approximately three-quarters of a mile from Bol mex 3 production at **15,300 feet.** (SN 250672)

In Jefferson Davis Parish, Texas Petroleum Investment will drill the #5 Amoco Fee in the **Jennings Townsite Field, (C)**. It will be drilled to 14,000 feet, located in Sec.2, 10S-3W. (250699)

COMPLETIONS

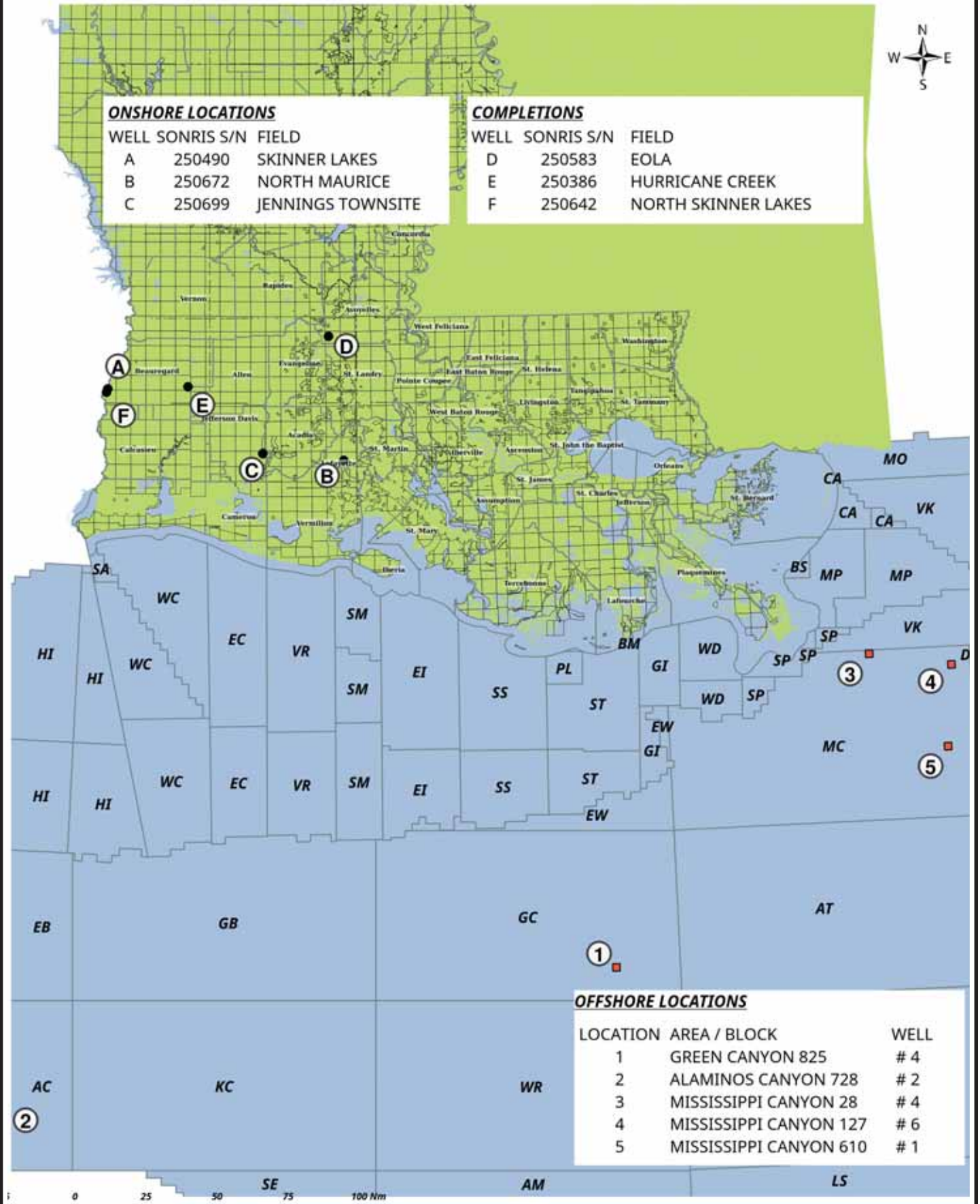
In Avoyelles Parish, **Eola Field, (D)**, Petro-Guard Production has plugged and abandoned its #1 WMT 8 at a total depth of 8100 feet. The well was drilled in Sec. 8, 2S-3E. (SN 250583)

ETOCO has completed its #1 Doornbos in **Hurricane Creek Field, (E)**, Beauregard Parish as a gas well flowing 528 MCFD and 58.8 BCPD through perforations 8907 to 8913. The well was drilled to a total depth of 9200 feet, located in Sec. 26, 5S-8W. (SN 250386)

First Energy has plugged and abandoned the #1 Columbia Land in **North Skinner Lakes Field, (F)**, Beauregard Parish, located in Sec. 33, 5S-13W. The well was drilled to a total depth of 8000 feet to test Yegua sands. (SN 250642)



Onshore & Offshore Activity Map for South Louisiana FEBRUARY 2018



OFFSHORE GULF OF MEXICO SHELF AND DEEPWATER ACTIVITIES

by Al Baker

During **December 2017**, the **BOEM** approved **77** Gulf of Mexico drilling permits. **Twelve** of these were for shelf wells, and **65** were for deepwater wells. Of the total number of permits, there were **5 new well permits, all in deepwater.**

The five deepwater new well permits were for **2 development wells** and **3 exploration wells.** The two development well permits were given to **BP Exploration & Production** for their **Green Canyon 825 #4** well and to **Stone Energy** for their **Mississippi Canyon 28 #4** well. The three exploration well permits were awarded to **Anadarko Petroleum** for their **Mississippi Canyon 127 #6** well, to **Chevron U.S.A.** for their **Mississippi Canyon 610 #1** well and to **Shell Offshore** for their **Alaminos Canyon #2** well.

On December 29th, **IHS-Petrodata** reported that the Gulf of Mexico mobile offshore rig supply stood at **94**, which is the **same as** last month. The marketed rig supply consisted of **55** rigs, of which **35** were under contract. The marketed rig supply number increased by **2**, while the contracted rig supply number remained the same compared to the previous month. The marketed contracted versus total rig supply utilization rate remains

at **37.2%**, and the marketed contracted versus marketed supply utilization rate stands at **63.6%**. By comparison, the December 2016 total fleet utilization rate stood at 46.7% (versus 58.5% today) with 49 out of the 105 rigs under contract.

As of December 29th, **BakerHughes** indicated that there were **18** active mobile offshore rigs in the Gulf of Mexico, which is **51.4%** of the rigs under contract mentioned above. This active rigs number is **4** less than reported last month. Of the 18 rigs, **2** are located on the **shelf**, and **16** are situated in **deepwater.** At the same time last year, there were 22 mobile offshore rigs operating in the Gulf of Mexico.

As of December 29th, the **BakerHughes** total U.S. rig count stood at **929** rigs, which is **6 additional** rigs than at the end of November. Of the 929 rigs, **747 (80.4%)** are **oil rigs** and **182 (19.6%)** are **gas rigs.** A year ago, there were 658 rigs working in the U.S. Thus, the current rig figure represents a **41.2% increase** year over year. Texas still has the largest number of rigs with 453, which is slightly less than half (48.8%) of the total number of rigs in the U.S.

The next offshore lease sale is **OCS Sale 250**, which will be held in New Orleans on **March 21, 2018.** OCS Sale 250 will be the first of two area-wide Gulf of Mexico lease sale offerings that the BOEM has planned for 2018. According to the latest BOEM press release, OCS Sale 250 will be largest offshore acreage offering in lease sale history.

NOGS JANUARY LUNCHEON

Rob Rooney presenting a NOGS memento to speaker Dwayne Purvis (right)





Proceedings will be published in *Oil-Industry History*

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Field Trip (May 19, Saturday)
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The Symposium will be held just before the AAPG's 101 Annual Convention in Salt Lake City.

*Have a
Safe and Happy
Mardi Gras!*

From the staff of the *NOGS LOG*



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