

NOGS



SEPTEMBER 2019

Volume 60 No. 3

SEPTEMBER MEETING

Levee Assessment in New Orleans: A Use For Near-Surface Geophysics?

Presented by:

Juan M. Lorenzo PhD



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NEW LOOK

Exciting changes for your NOGS LOG!

MARK YOUR CALENDARS! UPCOMING EVENTS

SEPTEMBER 2019

September 9, 2019 - NOGS LUNCHEON PRESENTATION
Levee Assessment in New Orleans: A Use for Near-Surface Geophysics?
Presented by Juan Lorenzo



September 28, 2019 - Girl Scouts B.I.G Event
Volunteers Needed - Contact Tom Bergeon 504/832-3772 or email
tom.bergeon@upstreamexp.com



OCTOBER 2019

October 7, 2019 - NOGS LUNCHEON PRESENTATION
Topic To Be Announced



October 12, 2019 - Dig Into Nature - Super Science Saturday - Dinosaurs
& Chemistry Volunteers Needed - Contact Tom Bergeon 504/832-3772 or email
tom.bergeon@upstreamexp.com



October 18-19, 2019 - Louisiana Geosciences Symposium
LSU Energy, Coast & Environment Building



October 13-19, 2019 - Earth Science Week
www.earthsciweek.org



October 19, 2019 - New Orleans Pelicans & New Orleans Saints Chevron
STEM Fest Benefiting Core Element
Volunteers Needed - Contact Tom Bergeon 504/832-3772 or email
tom.bergeon@upstreamexp.com



October 23-25 2019 - GEOGULF19 - Houston Texas
For registration and information: <http://2019.geagshouston.com>

NOVEMBER 2019

November 4, 2019 - NOGS LUNCHEON PRESENTATION
Deepwater Discoveries Offshore Guyana
Presented by John Dribus

DECEMBER 2019

December 2, 2019 - NOGS LUNCHEON PRESENTATION
A Higher Resolution Look at Lower Tertiary, Deep Water Gulf of Mexico
Presented by Jim Booth



IN THIS ISSUE



The Garden of The God's National Park is located in Colorado Springs, CO. It is a unique geological melting pot where the grasslands of the Great Plains meet the pinon-juniper woodlands characteristic of the American Southwest and merge with the mountain forest of the 14,115-foot Pikes Peak - America's Mountain. The 300 million years of geological history of the Garden of the Gods reveal one of the most extensive pictures of earth history found anywhere in the United States. It is a true geological wonder. Annually an estimated 6 million visitors per year from all 50 states and more than 60 countries discover the beauty and history of the 1,367-acre Garden of the Gods Park, which has been designated as a National Natural Landmark. This photo was taken by Charlie Miller during his recent visit in July 2019.



From the Editor...

There are a lot of exciting events coming up in the near future such as the Deepwater Symposium (August 26-28), BOEM Gulf of Mexico Lease Sale 253 (August 21), GeoGulf19 in Houston (Oct 23-25) and many wonderful NOGS luncheons too. These are great opportunities for everyone to expand their knowledge and network with others in the industry.

For this September 2019 *NOGS LOG* issue, we have added an extra feature on the NOGS website to view the *LOG* called PDF Flip that will allow members the option to view our *LOG* as an interactive PDF flip utility. NOGS is embracing newer technology currently being offered by many other larger organizations that allows you to view the *LOG* as a magazine style website. For those that like the PDF format, we will continue to also maintain this as well on the NOGS *LOG* page.

If you have any suggestions for future issues or have an article/photos to contribute, please email me at nogseditor@gmail.com. We would certainly love your input and additional *LOG* content to be considered that may be of interest to NOGS members.

Charlie

CHARLES MILLER, III
Editor

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Published monthly by the New Orleans Geological Society. Interested in contributing to the NOGS LOG? Please submit items by the 1st Friday of the month to nogseditor@gmail.com. Advertising requests please contact admin@nogs.org

SEPTEMBER NOGS MEETING

MONDAY, SEPTEMBER 9, 2019 11:30 AM
HOLIDAY INN DOWNTOWN SUPERDOME



JUAN M. LORENZO PHD

Juan Lorenzo is a Spanish-Australian American geophysicist, living in Louisiana. He became a geologist through the University of Barcelona in 1983. His interest in geophysics was kindled after a summer internship in Italy with Western Geophysical in 1982. The following year he came to the US as a Fulbright scholar where he concentrated on Marine Seismology for his graduate degrees at the Lamont-Doherty Observatory of Columbia University. For his Ph.D. he worked on the structure and mechanics of continental transform margins. He has participated in seven marine geophysical and drilling cruises in all the major oceans except the Arctic.

He commenced his first land-seismic field experiments in 2001, while on sabbatical from LSU and with a Fulbright Award, to conduct research and teach at the University of Chile, in Santiago. Since then, he has developed three seismic facilities that encompass a broad range of seismic resolution: (1) a hydraulic fracturing lab that investigates scaled microearthquakes down to MHz (2) a robotic seismic sand tank for hydrogeophysics in the kHz (< 1 m) range; and (3) a mobile field laboratory vehicle, nicknamed the 'Seismeauxbile', that allows near-surface seismic investigations down to 30 m (2 Hz - 100 Hz range).

His former graduate students (5 Ph.D., 17 M.S.) are now employed at all levels of industry by national and international companies or have their own company. He teaches annually at the seismic field experimentation and seismic processing at the IRIS (Incorporated Research Institutions for Seismology) Undergraduate Internship Program (2014, 2017, 2018, 2019) in Socorro, New Mexico.

LEVEE ASSESSMENT IN NEW ORLEANS: A USE FOR NEAR-SURFACE GEOPHYSICS?

PRESENTED BY JUAN LORENZO

ABSTRACT

Recently we investigated three sites along levees in the New Orleans area: Industrial Canal, London Avenue Canal, and 17th Street Canal using both active and passive surface-wave methods.

These sites sustained damage from Hurricane Katrina in 2005 and have since been rebuilt. The shallow geophysical methods include active and passive surface-wave methods and electrical resistivity profiling. Passive seismic methods record "city noise" on wireless seismic data acquisition units with vertical-component, 2-Hz geophones. Derived dispersion curves are generally consistent with those obtained from active surface wave methods and L-shaped arrays. The interpretation focuses on identifying zones beneath the levees or canal walls having low S-wave velocities, corresponding to saturated, unconsolidated sands or low-rigidity clays. Resultant S-wave velocity profiles are generally consistent with existing drilling logs and the results of laboratory tests. Comparison to active surface-wave methods at the Industrial Canal site display similar results. Results generated using active methods show higher resolution in the upper few meters, but seismic passive methods are able to cover more ground in less time. At some sites we co-locate electrical resistivity and the seismic surface-wave lines. By using established empirical relationships between sediment grain size, electrical resistivity and shear-wave velocity values we can infer lateral changes in sediment composition.

In the aftermath of hurricane Katrina (2005) professional organizations including the New Orleans Geological Society, Southeast Louisiana Flood Protection Authorities West and East, API-Delta Chapter- New Orleans, and the Southeastern Geophysical Society seeded new geophysical research into non-invasive methods for levee inspections by supporting graduate students at Louisiana State University and University of New Orleans. We briefly summarize how the resultant funds were boosted by additional external grants and helped test and develop near-surface geophysical techniques.

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**FROM THE
PRESIDENT**
ROBERT M. ROONEY

I hope everyone had a wonderful summer! Late August and September brings students back to class, and the routines of classwork, homework, new and renewed friendships after a long 3-month break. It also brings back school zones and pedestrians, so please keep safety in mind during the morning commute.

Unlike many local professional societies who take off for summer, NOGS maintains operation all year long. I would like to commend our Board of Directors, who as volunteers, continued to hold and attend the luncheon meetings, board meetings, and meet deadlines that our Society demands. Also, thanks to you, the members, who continue to support our activities by your attendance and volunteer efforts.

As we have communicated in the past, our *LOG* publication costs have become unsustainable. The NOGS Board of Directors has continued to seek ways of keeping the *LOG* in circulation. In last month's Board meeting, Christy Himel and *NOGS LOG* Editor Charlie Miller presented a web-based version of the *LOG* that allows the Society to maintain the high quality of the publication, enhance its functionality with embedded links, provide unlimited pages, and saves the Society money. A motion was made and accepted to have Christy publish the *LOG*, and this is presented in the current issue. Christy joined NOGS as Administrator in 2018 and continues to improve our website and online functionality as we move forward into the digital age. We hope that you will enjoy this new "PDF-Flip" version of the *NOGS LOG*. Thank you Christy and Charlie for taking the initiative in helping NOGS move forward. Continued thanks also to Fran Wiseman and Ed Picou for their dedication and volunteering to edit the *LOG*!

We recognize that updating to a digital platform can cause a temporary disruption in communication via email and other digital communication and registration processes, so the Board has agreed to extend the grace period for dues payment to October 1st in order to give us time to individually contact the membership for renewal.

On another note, I made a motion in our last meeting, which was seconded and accepted, to form a committee to review the NOGS Constitution and Bylaws. This committee will be chaired by John Dribus and will report its progress monthly to the Board of Directors. Our Constitution is a well-prepared document which has benefited me as a blueprint for running the organization. It is my intent to not make major changes to the functionality of the Constitution, but to clarify items that require updating. Any proposed changes or updates to the Constitution will be compiled by the President with a written explanation to be mailed to all members. These proposals will then be submitted to the membership at the following regularly scheduled monthly meeting with the opportunity for discussion. Then, a ballot will be mailed to all voting members, and a 2/3 affirmative vote of all ballots returned within thirty days of mailing shall be sufficient to amend the Constitution. We expect a proposal sometime in the first half of 2020.

Possible amendments to the Bylaws will also be reviewed by the committee. The Constitution (rev. June 2006) and Bylaws (rev. May 2002) can be found on the NOGS website. I wish to extend thanks to Chris McLindon for taking the lead role in organizing the Deep Water Technical Symposium - Geoscience Opening Seminar – Mesozoic Overview Northern Gulf of Mexico Basin that was held on August 26th at the Downtown Marriott at the Convention Center. We had great attendance and the seminar sold out. Thanks to all who attended.

NOGS appreciates the social media advertisement of the Mesozoic Seminar by members who took the initiative to share the Mesozoic Overview registration link and flier through their LinkedIn contacts. I encourage members to use this important professional networking platform to increase awareness of the valuable sharing of technical industry presentations through seminars and monthly luncheons.

NOGS is in the planning phase for our Kick-off Party and Membership Drive, and our Christmas Party. These events require planning and some pre-commitment of funds for venues and catering. We hope to make these social events festive and well-attended. In the past NOGS members have graciously offered to open their homes for a party event, and if you would like to hold an event in your home, please contact Christy Himel at the NOGS office.

Thank you for your membership, have a great September and stay safe.


Robert M. Rooney

AUGUST LUNCHEON



**SPEAKER:
JON R. ROZIEN**

**STRATIGRAPHIC
ANALYSIS OF
SEDIMENT GRAVITY
FLOW DEPOSITS AND
IMPLICATIONS**



Top Photo: Speaker Jon Rozien and NOGS President-Elect John Dribus.
Middle Photo: NOGS President John Dribus, Treasurer Dave Culpepper and President Robert Rooney
Bottom Photo: NOGS Past President Mike Fein, Kevin Reese, John Dribus and Speaker Jon Rozien



Louisiana Geosciences Symposium

October 18-19, 2019



October 18-19, 2019

The Louisiana Geological Survey's 2019 coastal symposium will be held on October 18 and 19th, 2019, at Louisiana State University in the auditorium of the Energy, Coast, and Environment Building

This year's focus will be on coastal geoscience, specifically including coastal geology, geophysics, geomorphology, and geography.

Abstracts will be submitted for approval using EasyChair. There will also be a poster session, and graduate student posters/presentations are welcome.

Additional information and registration coming this fall!

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LOUISIANA GEOLOGICAL SURVEY - HAMMER@LSU.EDU
VICE CHAIR – CHRIS MCLINDON, PAST-PRESIDENT, NEW ORLEANS
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The New Orleans Geological Society was organized on October 3, 1941, as a non-profit organization for the purpose of facilitating the development of the profession and science of Geology, with specific emphasis to exploration and production of petroleum and natural gas. Secondary related objectives include the dissemination of pertinent geological and environmental technological data, and the maintenance of a high standard of professional conduct of its members. The full history of the Society can be found at nogs.org.

The NOGS LOG is now a digital magazine with live links to your site to reach NOGS Members and support your Society. Please contact Christy Himel admin@nogs.org for placement availability. Full page NOGS LOG advertisers will have their Company LOGO posted on the NOGS Website front page. All advertisers are included on the Society's monthly PowerPoint and listed on the website with a link to their home page. Please check out our website www.nogs.org

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Small fossils with big applications -- the BP Gulf of Mexico time scale

Boulder, Colo., USA: Geologic time scales are critical to understanding the timing, duration, and connection of geologic events. They are not static, and can be improved with research, integration, and refinements realized from biostratigraphic repetitive analysis. Over the past century they have proven important tools in petroleum exploration and studies of climatic and geologic events. Still, many geologists may not know the importance of microfossils to the construction of time scales and biostratigraphy.

Biostratigraphy was first applied by the petroleum industry nearly a century ago in the U.S. Gulf of Mexico (GoM) to help understand the geology of this structurally and stratigraphically complex basin. Nevertheless, only a few industrial time scales have been published for this region. BP conducted a multi-decade microfossil research program (circ. 2000) to produce an integrated planktonic foraminifera and calcareous nannofossil deep-water GoM time scale. This integrated framework was constructed from the heritage time scales of BP (Amoco, Arco) and the analyses of hundreds of GoM wells over several decades.

Today, the culmination of this research is the BP Gulf of Mexico Neogene Astronomically-Tuned Time Scale (BP GNATTS) that spans the past 25 million year record from the Late Oligocene (25.05 million years ago) to recent time. This time scale was primarily calibrated utilizing an orbitally tuned composite section from Ocean Drilling Program Leg 154 on Ceará Rise and provides a stratigraphic resolution (number of events per unit of geologic time) of 144 thousand years. This is approximately double that of published GoM time scales and a fivefold increase over the highest resolution global calcareous microfossil timescales. The resolution of this time scale has provided a valuable aid in seismic correlations between GoM mini-basins. When applied and integrated with geological and geophysical data it has helped reveal subsurface details through detection of unconformities (missing time), sediment redeposition, slumps, faults, and sand to sand correlation.



*Representative Image: The best-preserved fossil of the group includes the skull, forelimbs, part of a backbone and a partial hind limb of a small, juvenile frog now known as *Electrorana limoae*. Next to its hindlimb is an unidentified beetle. Credit: Lida Xing/China University of Geosciences. [Click HERE to Read more](#)*

The BP GNATTS has been successfully tested outside of the GoM in the Mediterranean Sea, and with a resolution comparable to eccentricity (~120 thousand years), it lends itself as a possible tool for better calibration of global records of sea level and paleoclimatic events. One of the most compelling results of this work is best illuminated in the paper's final sentence.

"Results presented here lend conviction to the promise that microfossil biostratigraphy is far from the end of its constructive growth, rather it is a discipline with great current utility and with a realistic expectation for developing new and exciting applications."

Source: American Association for the Advancement of Science

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OUTREACH TIME!

Each year NOGS holds outreach events in the spring and fall to teach students and parents about STEM events (Science, Technology, Engineering and Math) in the area community. As more groups have expanded to build extensive STEM programs the demand increases. This year NOGS will be involved in 4 major STEM events in the greater New Orleans area. We will need faithful volunteers to help educate the kids so please consider volunteering for one or more events.

7TH GIRL SCOUT B.I.G. BELIEVE IN GIRLS EVENT - LSU SEPTEMBER 28TH



The girls are exposed to many STEM careers including NASA and Audubon Institute. We are looking for women geology role models for the girls where we will teach the "how an oil field forms" set of stations. The stations include how oil is formed, the properties of oil, structures, porosity and migration into traps. Everything is very hands on. This is a wonderful event where the girls really get a chance to move as a group and take in the concepts with hands on learning.

The most important things about the Girl Scouts event is that the girls get to see women geologists as role models and give them inspiration for the career in the earth sciences.

Last year a very impactful event occurred when the Coast Guard landed a helicopter on an open field at UNO and two women pilots allowed the girls to get in the cockpit and told them rescue stories. How impressive is that!

DIG INTO NATURE EVENT - LOUISIANA CHILDREN'S MUSEUM - OCTOBER 12



This fall the eagerly anticipated new Louisiana Children's Museum at City Park will open August 31st. The museum most likely will be extra crowded during the first month and their first big outreach event will be October 12th when NOGS and the American Chemistry Society will join in as the museum highlights the new Dig Into Nature exhibit. We will have a scaled down version of Super Science Saturday with dinosaurs and an oil station inside and some fun stations outside. The exhibit includes a state of the art stream table with synthetic sand and a turbidite wave generator. Upstairs the 100 ft. long Mississippi River flowing model will also be incorporated into the geology theme. In the future we will be putting on energy day with groups from other energy sources. This would be an ideal time to see the museum for kids of all ages.

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GEM & MINERAL SHOW OCTOBER 11-13



Also on the weekend of October 11-13th the Gem and Mineral Society of Louisiana will host the 49th Annual New Orleans Gem and Mineral Show at the Alario Center in Westwego. There are many impressive minerals, rocks and fossils for purchase and fun events like geode cracking and fluorescent mineral display. If you haven't been this is a wonderful event. There is a broad range of exciting specimens to line your shelves with. See Dave Cope for more details.

SAINTS & PELICANS STEM DAY OCTOBER 19TH



October 19th Core Element STEM of New Orleans will be hosting the Community Saints and Pelicans STEM Day in the Louisiana Superdome. Previous years the event has been at the Saints training center on Airline Highway. This event is open to families and typically attracts over 1,000 people. As usual the same 30 or so STEM associations will be present and perhaps NASA will attempt to launch a rocket to the ceiling of the dome. We will be showing the "how an oil field forms" stations at this event.

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STEM QUEST - CHILDREN'S MUSEUM OF ST. TAMMANY - NOVEMBER 16TH

Finally on November 16th NOGS will be a key player at the Children's Museum of St. Tammany 3rd annual STEM QUEST event at the museum located on the Trace. NOGS will feature dinosaur and oil exhibits and the ever popular oil finder game.



**Please consider marking
off your calendar and
volunteering
for one of more outreach
events. Bring your
children or grandkids or
tell a friend. Thank you!**

**To volunteer
contact**

Tom Bergeon at
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OFFSHORE GULF OF MEXICO SHELF AND DEEPWATER ACTIVITIES

BY AL BAKER

During July 2019, the U.S. Department of the Interior Bureau of Safety and Environmental Enforcement (BSEE) approved 100 Gulf of Mexico (GoM) drilling permits. Seventeen of these were for shelf wells, and 87 were for deepwater wells. Of the total number of permits, there were 4 new well permits; 2 were issued on the shelf and 2 were in deepwater.

Byron Energy received a shelf new well permit for their exploration well, the South Marsh Island 58 #11. A development new well permit was issued to Fieldwood Energy for their Eugene Island 329 #A-19 well.

The 2 deepwater new well permits were for exploration wells. Anadarko Petroleum was awarded a new well permit for their Green Canyon 562 #8 well. Murphy Exploration & Production Company obtained the other new well permit for their Mississippi Canyon 122 #1 well.

On July 26th, IHS-Petrodata reported that the GoM mobile offshore rig supply stood at 73, which is 1 greater than last month. The marketed rig supply consisted of 43 rigs, of which 37 were under contract. The marketed rig supply and the contracted rig supply numbers are also 1 greater than last month. The marketed contracted versus total rig supply utilization rate stood at 50.7%, and the marketed contracted versus marketed supply utilization rate stood at 86.1%. By comparison, the July 2018 total fleet utilization rate stood at 43.6% (versus 50.7% today) with 34 rigs under contract out of the 78 rigs in the fleet.

As of July 26th, BakerHughes indicated that there were 23 active mobile offshore rigs in the GoM, which is 62.2% of the rigs under contract mentioned above. This active rigs number is 3 less than reported last month. Of the 23 rigs, 5 are located on the shelf, and 18 are situated in deepwater. At the same time last year, there were 15 mobile offshore rigs operating in the GoM representing a 53.3% increase in active rigs year over year.

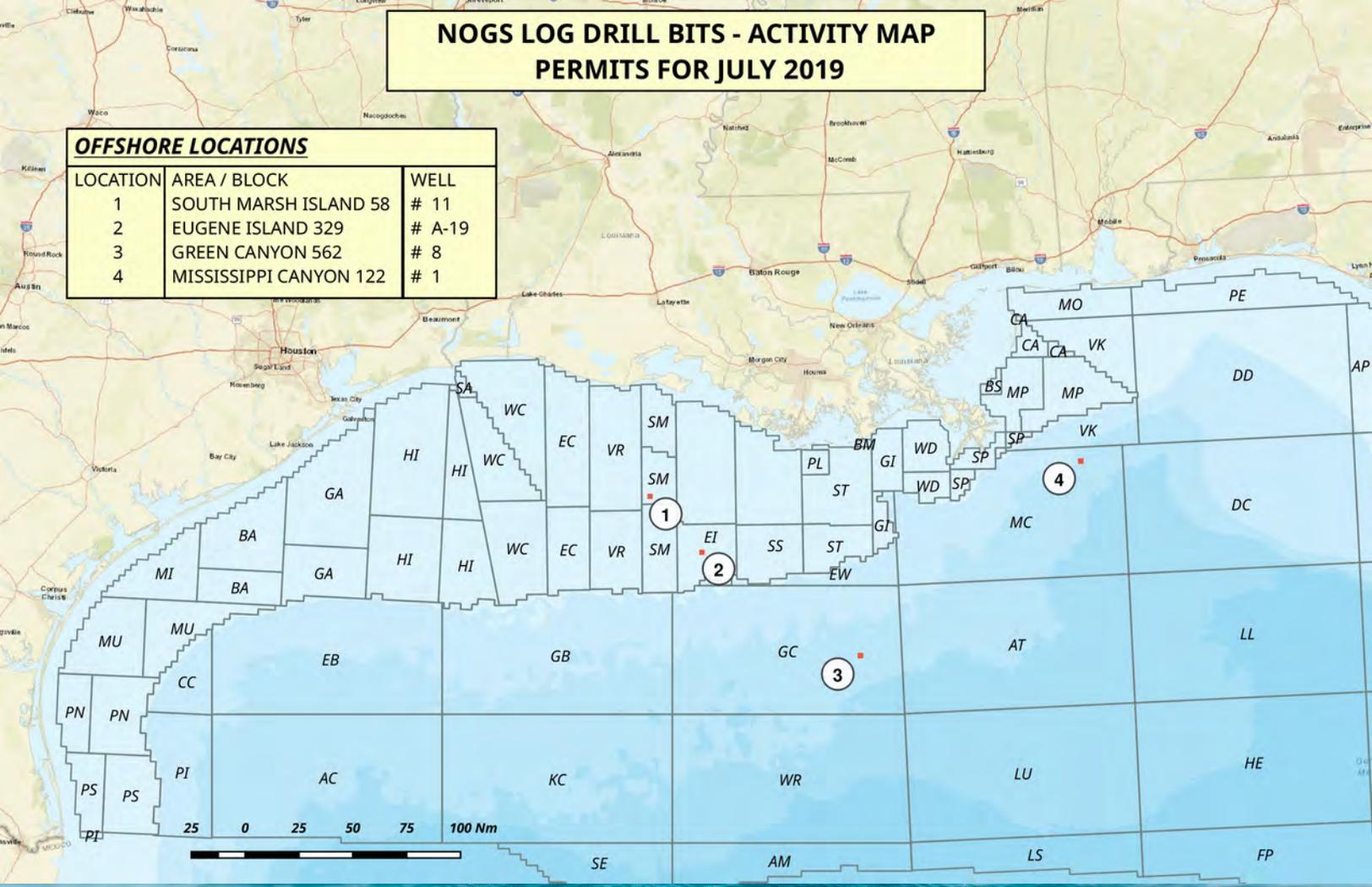
As of July 26th, the BakerHughes total U.S. rig count stood at 946 rigs, which are 21 fewer rigs than reported at the end of June 2019. Of the 946 rigs, 776 (82%) are oil rigs and 169 (18%) are gas rigs. A year ago, there were 1048 rigs working in the U.S. Thus, the current rig figure represents a 9.7% decrease in rigs year over year. Texas always has the largest number of rigs currently with 454, which is slightly under half (48%) of the total number of rigs in the U. S. Louisiana has a total of 62 rigs, down 10 rigs from last month. The majority (82.3%) of the Louisiana rigs are located in the Haynesville, which has 51 rigs.

On August 21st, the U.S. Department of Interior Bureau of Ocean Energy (BOEM) will hold the next offshore lease sale, OCS Sale 253, in New Orleans.

NOGS LOG DRILL BITS - ACTIVITY MAP PERMITS FOR JULY 2019

OFFSHORE LOCATIONS

LOCATION	AREA / BLOCK	WELL #
1	SOUTH MARSH ISLAND 58	# 11
2	EUGENE ISLAND 329	# A-19
3	GREEN CANYON 562	# 8
4	MISSISSIPPI CANYON 122	# 1



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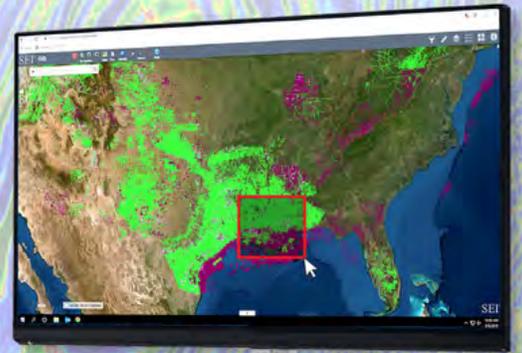


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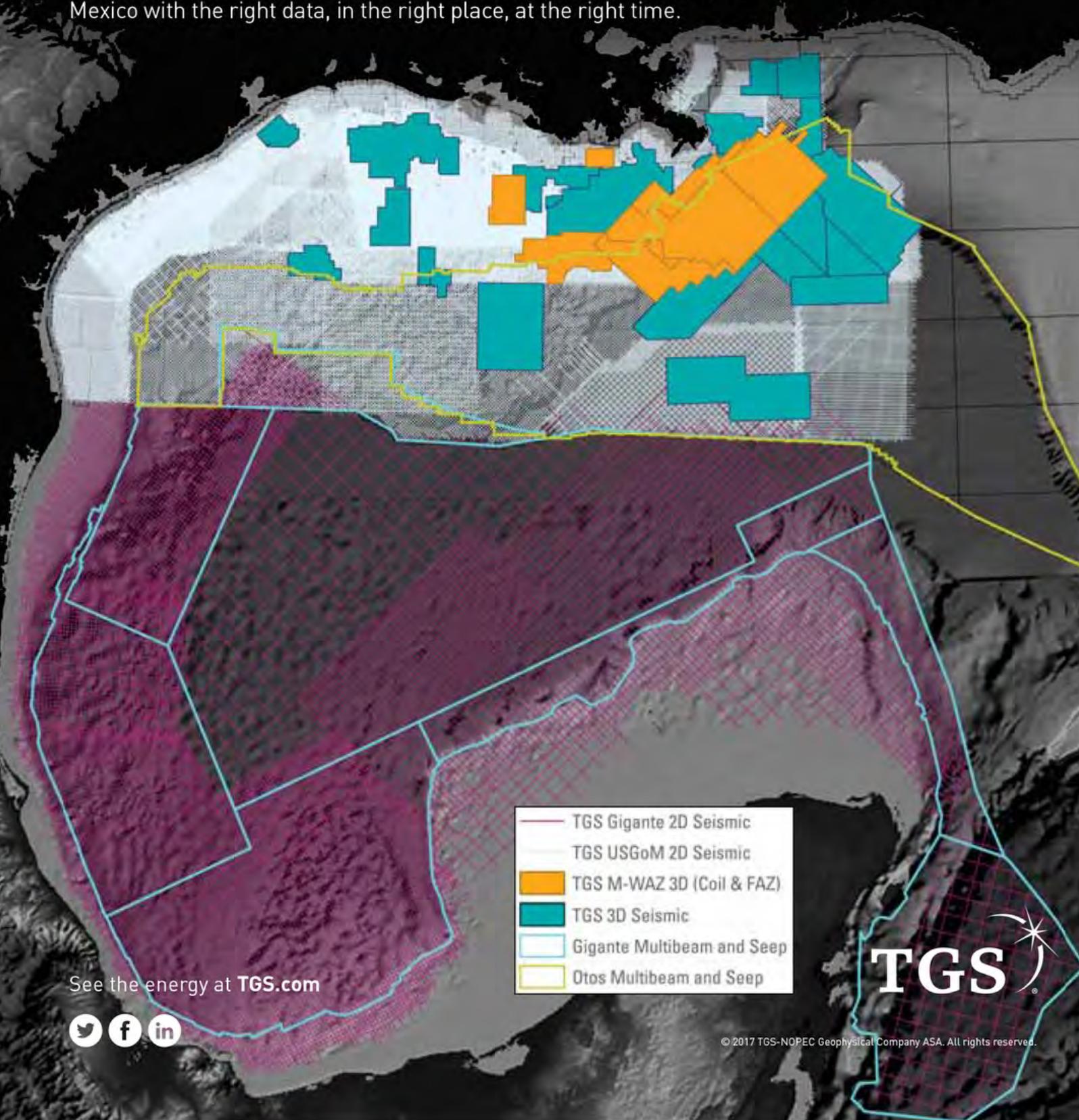
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1998-1999 NOGS Board: From left, Bob Douglass, Director; Mike Ledet, Vice president; Ed Picou, Director; Jeanne Phelps, Secretary; Gene Brumbaugh*, President-elect; Irion Bordelon, President; and Al Baker, Director; Not present, Tom Bergeon, Treasurer

Note: Photo taken at the Kick Off Party at the Steak Knife Restaurant

(*Deceased)



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DON'T EXPECT
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FROM GEOLOGISTS;
THEY ALL HAVE
THEIR FAULTS.

JOKE OF THE MONTH

Have a joke or other tidbits to share in the NOGS LOG? Share with us! Send to admin@nogs.org

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Business Phone: 504.267.9138

Email: jimzot38@zotoil.com

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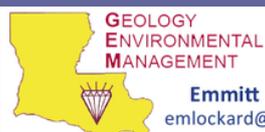
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GEOLOGY
ENVIRONMENTAL
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GEM Consulting, LTD

Emmitt Lockard
emlockard@yahoo.com

Michael Louis Merritt
admin@gemconsultingltd.com



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LaBay Exploration Co., L.L.C.

1080 West Causeway Approach
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(985) 951-2011

www.labayexploration.com



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