

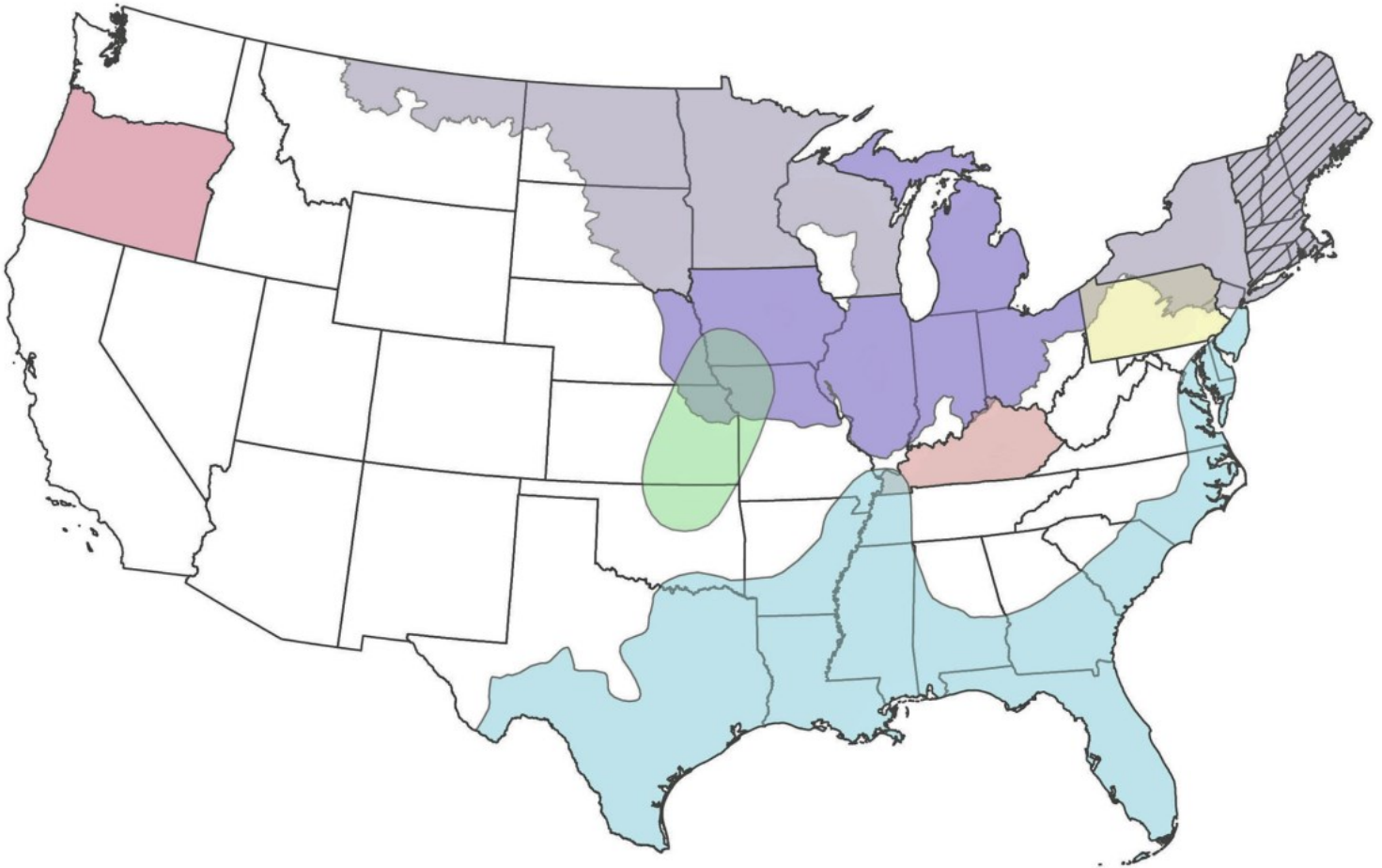
MISSISSIPPI GEOLOGICAL SOCIETY

*e***BULLETIN**

Volume 73

No. 3

November 2024



NOVEMBER SPEAKER

Dwayne Purvis - Purvis Energy Advisors

TEXAS BUREAU OF ECONOMIC GEOLOGY - WEST GULF COAST PROJECT

Dr. David Dockery III, RPG

MGS QUIZ

Steve Walkinshaw



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PRESIDENT'S LETTER



Dear MGS Members,

Can you believe it is already November?

Thank you to Toddy Guidry from Core Laboratories for presenting last month on “Planning the Analytics for CCUS, Waste Injection, Water Production, and Monitoring Wells.”

On November 13, Dwayne Purvis, P.F., from Purvis Energy Advisors will present “Economic Surprises of Late Life Production.” Join us at 11:30 am for lunch at The River Hills Club in Jackson, Mississippi. This will be our last meeting of 2024.

We will not hold our monthly meeting at River Hills this December. Instead, we are sponsoring The Oil and Gas Industry Christmas Party on December 12 at 5:30 PM at the Jackson Yacht Club. Membership renewal forms will be available at the door. We hope you can attend.

Tim Palmer and I attended the GCAGS meeting Wednesday, November 6 virtually. There was much talk about smaller societies hosting the GCAGS conference, GEOGULF, and Mississippi was mentioned many times as a possibility.

GEOGULF2025 in Nacogdoches is calling for abstracts for April 6-8, 2025. Submission is open until December 1 (likely to be extended). Sessions include:

- Gulf Coast Geology
- Lithium and Critical Minerals
- Haynesville, Eagle Ford & Other Shale Plays
- Deepwater GOM
- CCUS, Geothermal
- Special Session: East Texas Basin
- ML, AI & Data Analysis
- And more

For more information, visit www.geogulf2025.org or email Kurt.Ley@kingwoodexploration.com.

If you have a topic or are interested in presenting at our meetings, please let me know. We are always looking for speakers and subjects for our spring schedule.

Thank you for your ongoing commitment to the Mississippi Geological Society.

Best regards,

Jonathan R. Leard, RPG

MDEQ-Office of Geology

Surface Geology Division

Phone: (601)-961-5352



2024-2025 MGS MEETING SCHEDULE

When	What/Who	Where
September 11	The Ice Ages in Mississippi - James Starnes	River Hills - 11:30am
October 9	Toddy Guidry - Core Lab	River Hills - 11:30am
November 13	Dwayne Purvis P.E	River Hills - 11:30am
December 12	Christmas Party	JYC - 5:30am
January 8		River Hills - 11:30am
February 12		River Hills – 11:30am
March 12		River Hills – 11:30am
April 9		River Hills - 11:30am
May	Spring Fling	TBD

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SEPTEMBER SPEAKER

Dwayne Purvis P.E



“Economic Surprises of Late-Life Production”

Dwayne Purvis, P.E.

Purvis Energy Advisors

Wednesday, November 13, 2024

11:30 am Lunch/ 12:00pm Discussion

**The River Hills Club
Jackson, Mississippi**

Abstract:

For years, decommissioning costs were an after-thought to decision-making. They did not affect cash flows or business plans, and sometimes reserve reports did not even include them. Now, many legacy fields both within the U.S. and globally are declining to their final life stage. Even with many producing years remaining and a positive net present value, the total future cash flow can be – surprisingly – negative.

Operators may not be ready for the unexpected reality since our industry has spent too little forethought on quantifying the scope of decommissioning, estimating its costs, ensuring security for the long term, and especially preparing funds for the surprisingly early onset of those costs. Though the price boom of recent decades delayed and distracted from the inevitable, natural depletion and the outlook for declining oil demand bring the issue to front. Now the industry finds itself with insufficient nomenclature, knowledge, or practices to handle decommissioning well.

This presentation explains the unexpected late-life economic dynamics, the dangers they create, and how to foresee and avoid financial and environmental traps.

Biography:

Dwayne Purvis, P.E. has spent nearly 30 years in reservoir engineering and executive leadership as a consultant and operator. He has led or participated in hundreds of engineering and strategic studies over dozens of basins in the United States and abroad. Mr. Purvis leads Purvis Energy Advisors, and he frequently teaches, speaks, and writes for industry organizations and for Texas Christian University. Dwayne is a registered professional engineer in the state of Texas, member of SPEE, AAPG, SEG, SIPES and an active, 25-year member of SPE. He has also recently completed a Master of Arts in sustainable energy at Johns Hopkins University.



THE OIL & GAS INDUSTRY

Christmas Party

5:30PM
12TH DECEMBER

JACKSON YACHT CLUB

We can't wait to see you!



CURRENT PRICES

Market Watch

Crude Oil WTI (NYM \$/bbl) Front Month

[+ WATCHLIST](#)

☀ OPEN

Last Updated: Nov 12, 2024 at 10:06 a.m. EST - Delayed quote

\$ **68.76**

▲ 0.72 1.06%

SETTLEMENT PRICE 11/11/2024

\$68.04

< Advanced Charting 1M ▼ \$ % VOL



Natural Gas Continuous Contract

[+ WATCHLIST](#)

☀ OPEN

Last Updated: Nov 12, 2024 at 10:07 a.m. EST - Delayed quote

\$ **2.981**

▲ 0.061 2.09%

SETTLEMENT PRICE 11/11/2024

\$2.920

< Advanced Charting 1M ▼ \$ % VOL





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MONTHLY POST

Dr. David Dockery III RPG

The Texas Bureau of Economic Geology Hosted the Third Meeting of the West Gulf Coast Project (of Stratigraphic Reconciliation).

David T. Dockery III, RPG

The U.S. Geological Survey and the Association of American State Geologists are working together through cooperative agreements focusing on stratigraphy. The goal is for State Geological Surveys to provide assistance in addressing local and regional stratigraphic nomenclature issues within a state and between adjacent States. Figure I shows the current focus areas for stratigraphic reconciliation. The blue area includes the Gulf and Atlantic Coastal Plain, exclusive of New York and New England. The Alabama Geologic Survey has taken the initiative for cooperative work in the Gulf Coastal Plain with two projects, the East Gulf Coast Project, including Mississippi, Alabama, and Florida (largely complete at this time), and the West Gulf Coast Project, including Texas, Louisiana, Arkansas, Tennessee, Mississippi, and Alabama (in progress).

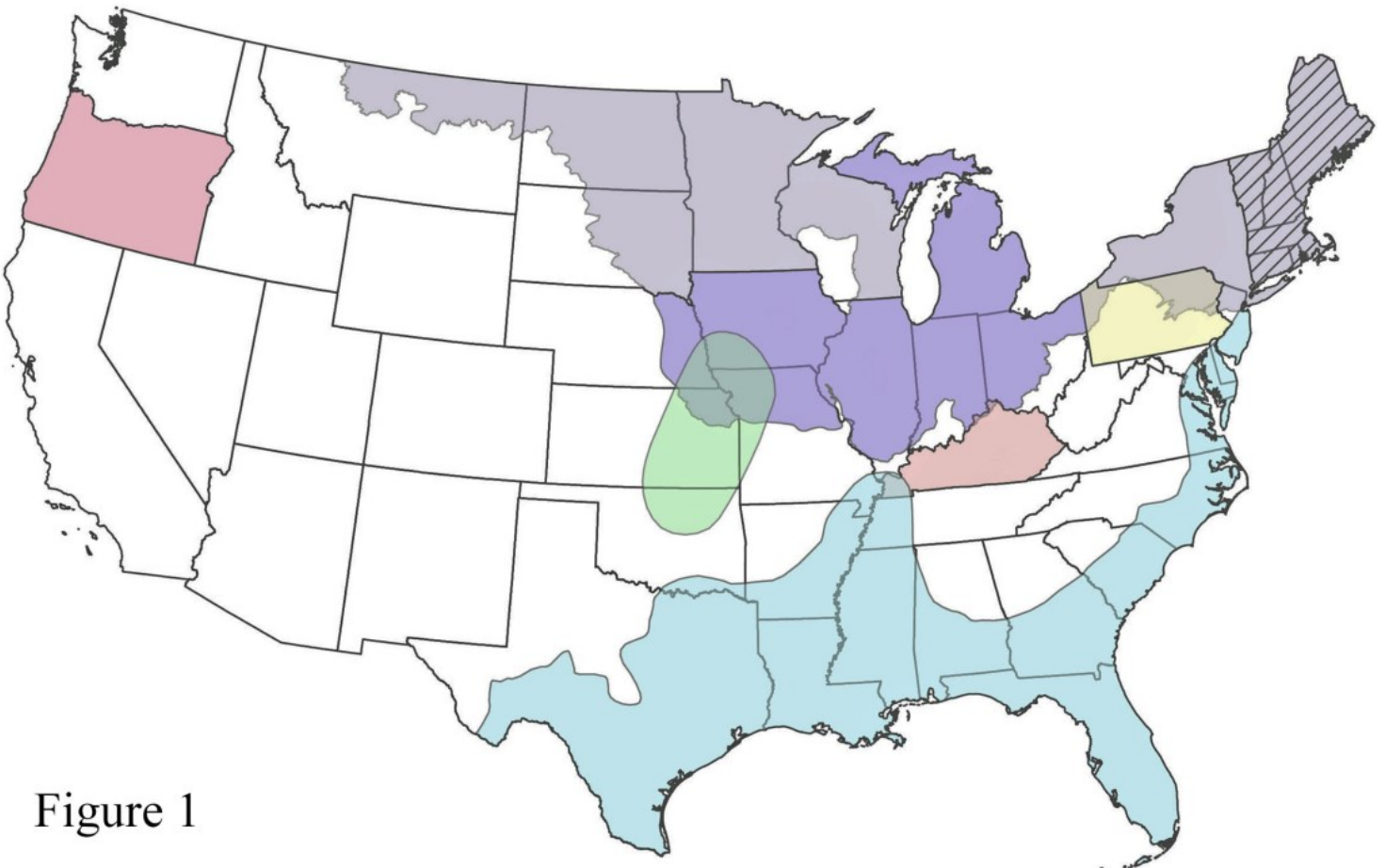


Figure 1



MONTHLY POST

Dr. David Dockery III RPG

The first WGCP in person meeting was hosted by the Louisiana Geological Survey in Baton Rouge, Louisiana. The second was hosted by the Arkansas Geological Survey in El Dorado, Arkansas. The third meeting was hosted by the Texas Bureau of Economic Geology in Austin, Texas, on October 8-10, 2024. The first day of the meeting was at the sprawling core and sample facility in Austin. Figure 2 at top shows cores from Wilcox producing zones in Texas; at middle is a panoramic view of the facility, and at bottom right and middle is the location of the sample that started the Eagle Ford trend, and at right it is a salt core in a climate-control section of the core facility.



Figure 2. Inside the Texas Bureau of Economic Geology's Austin Core Research Center. At top is a Wilcox core of the Rockdale Delta System. At middle is a panoramic view of the facility. At bottom left and middle is the sample that started the Eagle Ford Shale play. At bottom right Lorena Moscardelli holds a crystal-clear salt core, one of many in a temperature-control section of the facility.

The first article I did in my present monthly Bulletin series was on the *Value of a Core and Sample Library* in the January 2014 MGS Bulletin. One example in that article was geologist Gregg Robertson being named the *Caller-Times* 2012 Newsmaker of the Year for his role in the development of the Eagle Ford Shale-Oil play. Robertson examined drill cuttings from a dry hole drilled in the Eagle Ford Shale in 1952. These samples were stored on Row 57, Bay H, Shelf 4, at the Texas core and sample library at Austin. Robertson's fresh look at cuttings led to an oil boom that "transformed sleepy villages into boomtowns, poured millions of dollars into rural school, city and church coffers, turned struggling ranchers into millionaires and gave thousands of people new careers across South Texas." On October 8, 2024, I had the opportunity to see those samples as held by Lorena Moscardelli in the middle of the bottom row of Figure 2; the *Caller-Times* article on Gregg Robertson is posted at the sample storage site (Figure 2, at right on bottom row).



MONTHLY POST

Dr. David Dockery III RPG

Figure 3 shows field trip stops at sections that show the contact of the Sabinetown Formation and overlying Carrizo Sand. For Mississippi this is equivalent to the Hatchetigbee Formation and overlying Meridian Sand and is the contact between the Wilcox and Claiborne groups in both Texas and Mississippi. At the end of the day, participants from Texas, Louisiana, Arkansas, Tennessee, Mississippi, and Alabama found lots of common ground in their stratigraphic correlations and a path toward stratigraphic reconciliation between the states.



Figure 3. Three field trip stops, showing the Carrizo Sand unconformably overlying the Sabinetown Formation. At top, fieldtrip group at left and a channel sand within the Carrizo at right. At middle, cross-bedded Carrizo sand above the carbonaceous, finer-grained sediments of the Sabinetown Formation. At bottom, a lignite seam at the top of the Sabinetown, with petrified logs at far right.



MONTHLY POST

Dr. David Dockery III RPG

Figure 4 at top shows Greg Guthrie at left on the last day of the meeting presenting the outline of the day's discussion and, on the screen at middle, edits to the West Gulf Coast Cenozoic Correlation Chart in yellow; at right the states review Cenozoic geophysical log correlations. Figure 4 at bottom right shows our Texas hosts at lunch. The Bureau's museum is featured at middle and right with an old-time geologists office and a really big dinosaur leg bone.



Figure 4. At top right, Greg Guthrie is presenting the meeting agenda; at middle is a projection of the West Gulf Coast Cenozoic Correlation Chart with edits in yellow; at right is a review of geophysical log correlations. At bottom right are our Texas Bureau of Geology hosts at lunch; at middle in the Bureau's museum is an old-time geologists office, at right in the museum, Carolyn stands by a dinosaur leg bone.



Abstract Submission Through Dec 1

Sessions Include:

- *Gulf Coast Geology*
- *Lithium and Critical Minerals*
- *Haynesville, Eagle Ford & Other Shale Plays*
- *Deepwater GOM*
- *CCUS, Geothermal*
- ***Special Session: East Texas Basin***
- *ML, AI & Data Analysis*
- *And more*

**For more information visit www.geogulf2025.org
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GEOLOGY POST

ARTICLES, PAPERS or NEWS?

ATTENTION!!!!!! Industry, Professors and Students:

I am looking for more content from the industry and our schools.

Submissions can include anything from professional papers, thesis abstracts, job opportunities to pictures. Anything!!!!

If you have any information or news you would like to share with the Society **PLEASE** email them to the MGS Editor at:

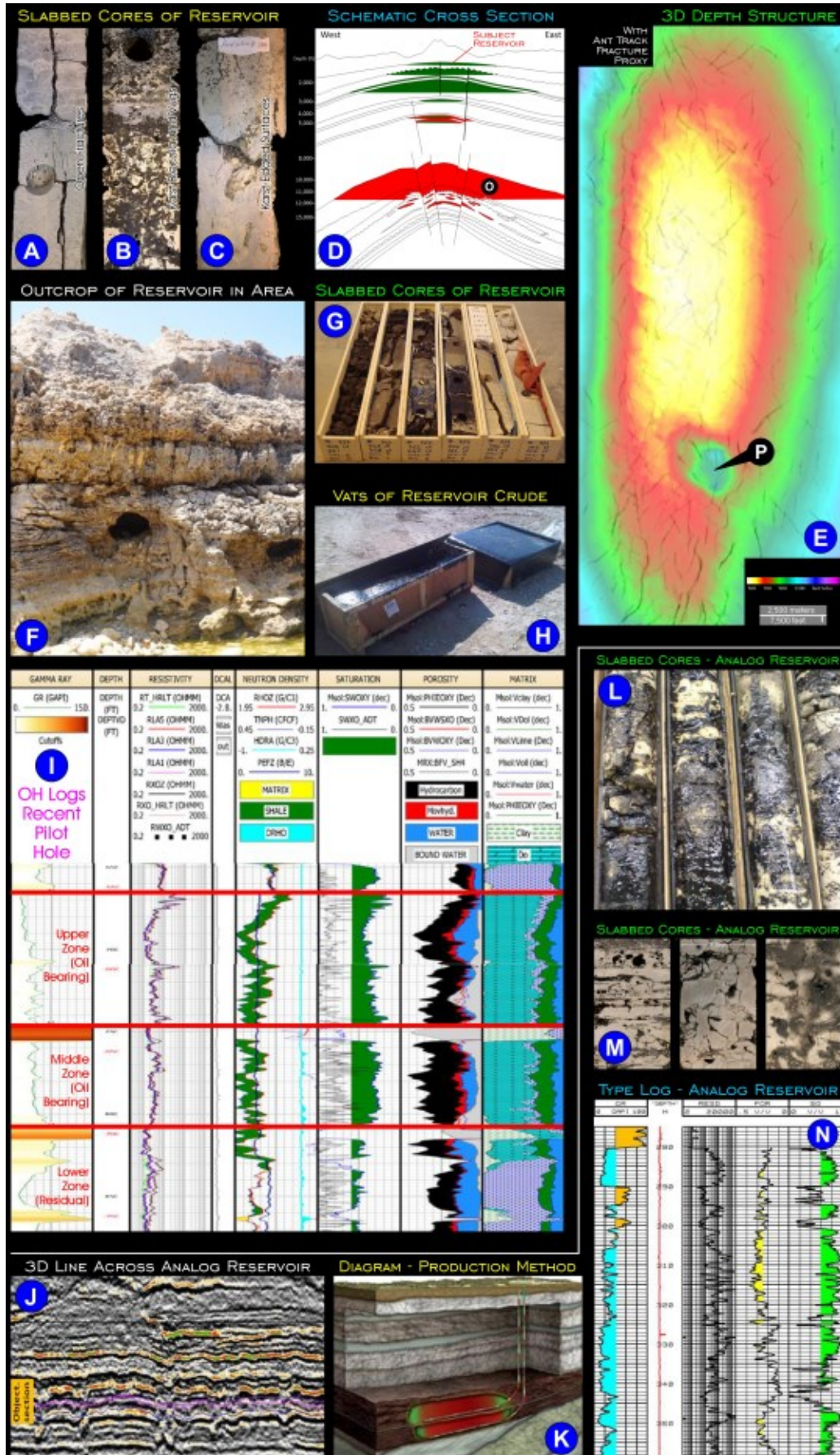
mcaton13@yahoo.com

Thanks & Regards,

Matt Caton
Editor

MGS QUIZ

Steve Walkinshaw





MGS QUIZ

Steve Walkinshaw

Oil patch quiz time. A shallow, highly karsted carbonate reservoir filled with very heavy crude, tar and bitumen is trapped atop a prolific field in this country (see panels "A" through "H"). Excluding large vugs, matrix porosity range is 10% to 37% and permeability ranges from 1 md to 1 darcy.

This reservoir is often compared to a carbonate reservoir in another country that is also relatively shallow and highly karsted (see panels "I" through "N"). The analogous reservoir is estimated to harbor 300 to 574 billion barrels of bitumen in place.

A new production method was recently attempted here; it had previously been implemented in the analogous field ("K").

|

Questions...

Part 1: What field am I referring to?

Part 2: What country?

Part 3: What's the (a) name and (b) age of the reservoir?

Part 4: Is the karsting of this reservoir considered mostly epigenetic or hypogenic?

Part 5: What's the informal name of its topseal?

Part 6: What's the (a) name and (b) age of the underlying reservoir "O"?

Part 7: What's the (a) name and (b) age of the analogous reservoir "N"?

Part 8: In what country is it located?

Part 9: Was the karsting of "N" mostly epigenetic or hypogenic?

Bonus:

Part 10: What production method is illustrated in "K"?

Part 11: What company operates field "E"?

ANSWERS AT END OF BULLETIN

GEO LINK POST

USGS TAPESTRY OF TIME AND TERRAIN <http://tapestry.usgs.gov> The CCGS is donating to all of the 5th and 6th grade schools in the Coastal Bend. Check it out—it is a spectacular map. You might want a framed one for your own office. The one in my office has glass and a metal frame, and it cost \$400 and it does not look as good as the ones we are giving to the schools. Call Owen 510-6224 if you want one for your office for \$150. Duncan, Mike, Chris, Dave, Bob Randy, Seb., Kevin, Ken, Craig, Patrick, Robert.

FREE TEXAS TOPO'S <http://www.tnris.state.tx.us/digital.htm> these are TIFF files from your state government that can be downloaded and printed. You can add them to SMT by converting them first in Globalmapper. Other digital data as well.

FREE NATIONAL TOPO'S [http://store.usgs.gov/b2c_usgs/b2c/start/\(xcm=r3standardpitrex_prd\)/.do](http://store.usgs.gov/b2c_usgs/b2c/start/(xcm=r3standardpitrex_prd)/.do) go to this webpage and look on the extreme right side to the box titled TOPO MAPS DOWNLOAD TOPO MAPS FREE.

<http://www.geographynetwork.com/> Go here and try their top 5 map services. My favorite is 'USGS Elevation Date.' Zoom in on your favorite places and see great shaded relief images. One of my favorites is the Great Sand Dunes National Park in south central Colorado. Nice Dunes.

<http://antwrp.gsfc.nasa.gov/apod/astropix.html> Astronomy picture of the day — awesome. I click this page everyday.

<http://www.spacimaging.com/gallery/ioweek/iow.htm> Amazing satellite images. Check out the gallery.

<http://www.ngdc.noaa.gov/seg/topo/globegal.shtml> More great maps to share with kids and students.

www.geo.org Don't forget we have our own web page.

<http://micro.magneet.fsu.edu/primer/java/scienceoptiscu/owersofl0/>

<http://asterweb.jpl.nasa.gov/galery/default.htm> Great satellite images of volcanoes

<http://terra.nasa.gov/gallery/> More here

www.ermapper.com They have a great free downloadable viewer for TIFF and other graphic files called ER Viewer.

www.drillinginfo.com This is an incredible (subscription) well and completion data service for independents. Can be demo'ed for free.

<http://terraserver.com/> Go here to download free aerial photo images that can be plotted under your digital land and well data. Images down to 1 meter resolution, searchable by Lat Long coordinate. Useful for resolving well location questions.

<http://www.fs.fed.us/gpnmf/volcanocams/msh/> This is a live cam of Mt. St. Helens refreshed every 5 minutes. At the bottom are old videos of past eruptions in this cycle. It is worth a watch especially now.



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		2023-Present	Jonathan Leard



MGS QUIZ

Steve Walkinshaw

Answers:

Part 1: What field am I referring to? Alawi Field

Part 2: What country? Bahrain

Part 3: What's the (a) name and (b) age of the reservoir? (a) Aruma Formation, (b) Maastrichtian (Upper Cretaceous)

Part 4: Is the karsting of this reservoir considered mostly epigenic or hypogenic? epigenic

Part 5: What's the informal name of its topseal? the Black Shale

Part 6: What's the (a) name and (b) age of the underlying reservoir "O"? Khuff Formation, Middle to Late Permian

Part 7: What's the (a) name and (b) age of the analogous reservoir "N"? (a) Grosmont Formation, (b) Upper Devonian

Part 8: In what country is it located? Canada (Alberta)

Part 9: Was the karsting of "N" mostly epigenic or hypogenic? While both clearly occurred, it appears most of the severe early karstification was probably hypogenic

Part 10: What production method is illustrated in "K"? steam EOR; SAGD stacked horizontal steam injector - heavy oil producer pair

Part 11: What company operates field "E"? Tatweer Petroleum