

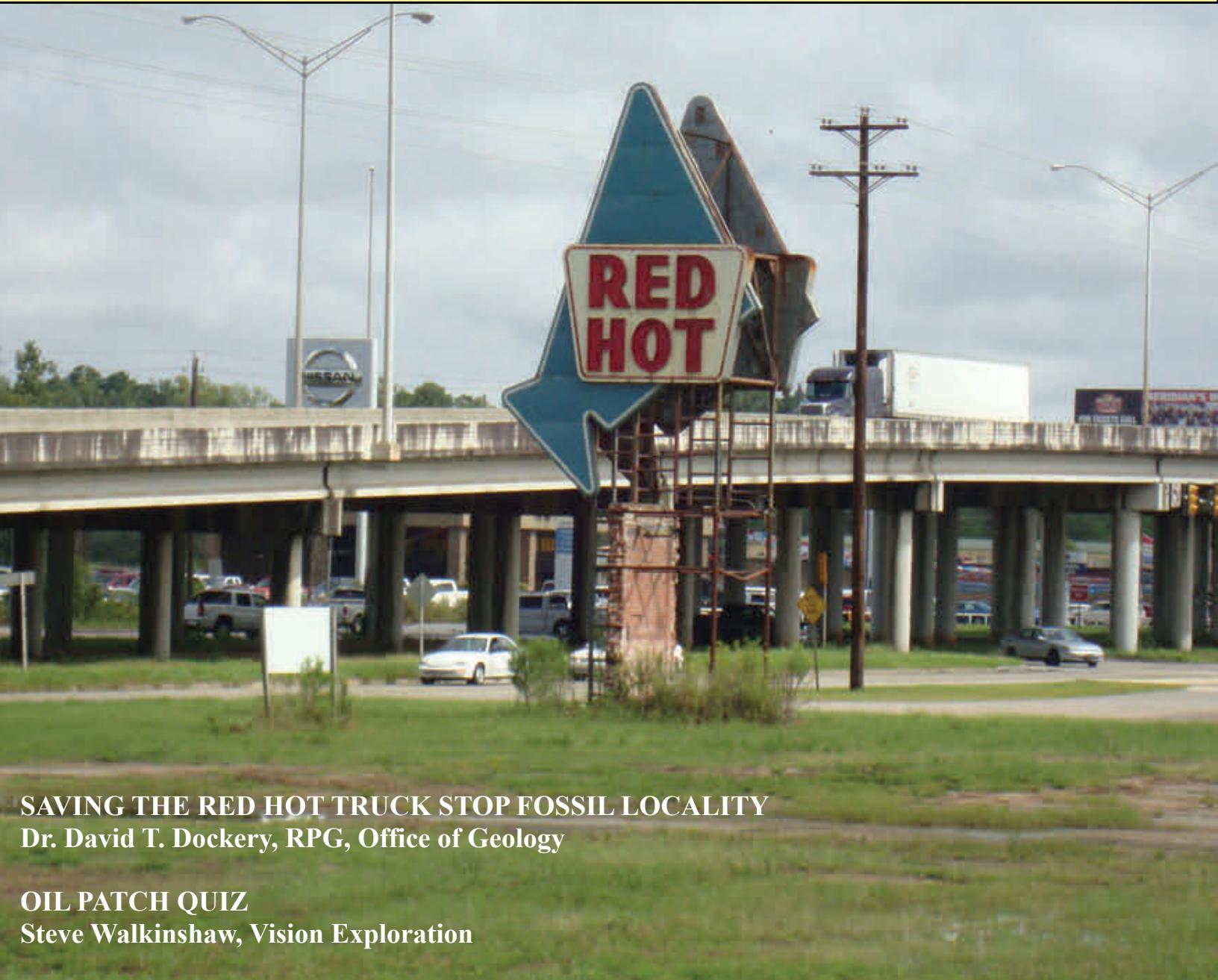
MISSISSIPPI GEOLOGICAL SOCIETY

eBULLETIN

Volume 69

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SAVING THE RED HOT TRUCK STOP FOSSIL LOCALITY

Dr. David T. Dockery, RPG, Office of Geology

OIL PATCH QUIZ

Steve Walkinshaw, Vision Exploration



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PRESIDENT'S LETTER

David Snodgrass, MSOGB



The ongoing headline everywhere, “Covid-19 Pandemic” is what’s going on. Well the grip is not as tight as it was before. Be that as it may, the Mississippi Geological Society (MGS) has been met with much disappointment during our 2020-21 events calendar this year. Essentially, every planned social event scheduled, including our technical luncheons, was cancelled with the hopes of continuing our traditions “next” year.

But it is not all bad news. MGS was represented at the Gulf Coast Association of Geological Societies 70th Annual Convention that was successfully held in Lafayette, LA September 30th to October 2nd, 2020. This was hosted by the Lafayette, New Orleans and Baton Rouge Geological Societies and included short courses on day one followed by two days of oral presentations on a variety of contemporary issues and one day of field trips.

Also, during these difficult times, MGS has been able to keep up with its monthly geological bulletin publications. We have also combined our efforts in some areas with the Society of Professional Engineers (SPE). Our partnership with the SPE will allow us to continue providing great learning opportunities each month for our respective memberships in these trying times and beyond.

The MGS has always served an essential role to the discipline where our resources have proven important for education, scholarship and partnerships within various private businesses and state agencies. I am happy to report this year we were still able to complete the interview process for eligible scholarship candidates to receive monies from our Boland Scholarship fund. Some interviews were done remotely while others were, remarkably, completed in person. Those interviewed included students from the University of Mississippi, Mississippi State University, the University of Southern Mississippi and at Millsaps College. An individual from each of these colleges will be selected to receive a scholarship from the MGS in April 2021.



PRESIDENT'S LETTER

David Snodgrass, MSOGB

Unfortunately, out of an abundance of caution, this year's Spring Fling in May will not be possible. However, as the pandemic continues to loosen its grip over the coming months, I would like for us all to consider attending this year's annual Fall BBQ in September. Until further notice, the Fall BBQ in September is going to happen.

This month, the SPE is putting on a live virtual distinguished lecture event on April 13th at 11:30am. This information was circulated among the membership and those that elected to participate will receive an email with instructions prior to the event. The topic is, "Science vs The Art of Gas Lift" presented by Kenneth Decker. Either in May or hopefully by July the MGS will have a virtual lecture event on gas storage cavern development presented by Maurice Gilbert of Sempra LNG. Stay tuned for more information.

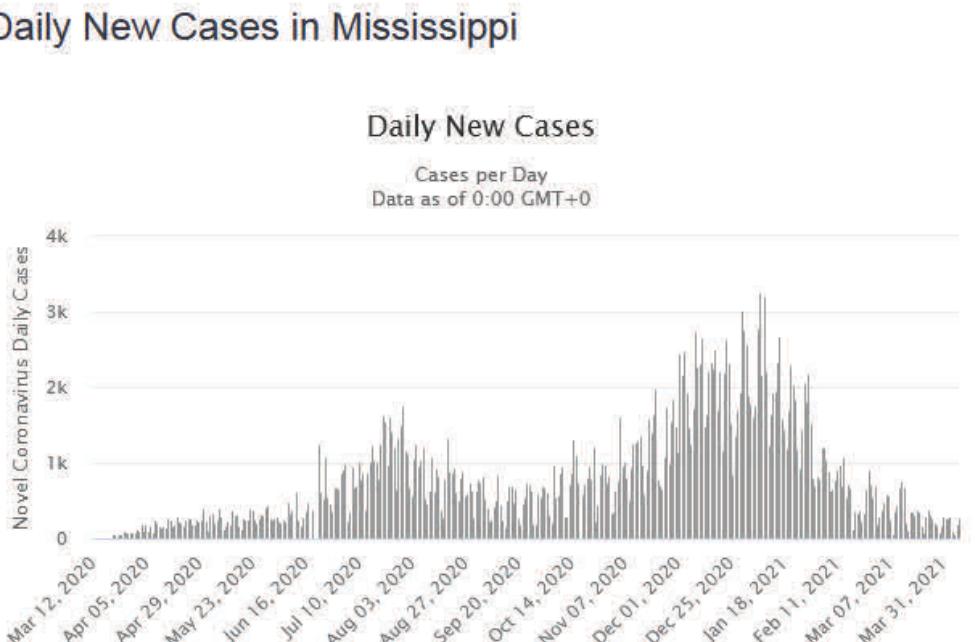
I would like to conclude by saying that the officers in the MGS have served faithfully for many years and continue to do so. So I would especially like to thank them all for their continued service and support as we move forward to our "new normal". One final thought...I have found that one area that is frequently talked about is volunteer service. Specifically, I am referencing the leadership role of President of the MGS. Some organizations have a robust selection process, most however are lacking a formal strategy and simply rely on volunteers to come forward. Volunteers are the lifeblood of this organization. As such and regrettably, I must pass on the torch. It has been an honor serving and I have done my best given the hardships we have all endured this past year. Going forward, due to great personal and professional commitments, I will have limited time to devote to such a position. If you are interested, please contact any of the MGS officers listed on our website <http://www.missgeo.com> to express your interest in volunteering your time to this great organization.

With kindest regards,

David H. Snodgrass, MGS President

2020-2021 MGS MEETING SCHEDULE

When	What/Who	Where
Cancelled	Cancelled	Jackson Yacht Club-5:30pm
TBD	Cancelled	River Hills – 11:30am
TBD	Cancelled	River Hills – 11:30am
TBD	Merry Christmas	
January 13, 2021	Rick Aldred Looking at Old Logs in New Ways	Online: 12:30pm
TBD	TBD	River Hills – 11:30am
TBD	TBD	River Hills – 11:30am
TBD	Boland Scholarship Awards	TBD
TBD	Spring Fling	Jackson Yacht Club– 5:30pm



Worldometers



BOLAND SCHOLARSHIP WATCH

Faculty & Students,

This month the Mississippi Geological Society along with the Boland Scholarship Fund would like to honor the most outstanding overall students for the 2020-2021 year.

Each year, the Boland Scholarship awards 1 student from each institution a check that rewards students for their hard work and dedication to the Geosciences and their community.

Best Regards,

Matt Caton
Editor



THE UNIVERSITY OF
SOUTHERN
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CURRENT PRICES

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

[+ WATCHLIST](#)

OPEN

Last Updated: Apr 8, 2021 at 11:16 a.m. EDT - Delayed quote

\$ **59.46**

▼ -0.31 -0.52%

SETTLEMENT PRICE 04/07/2021

\$59.77



Advanced Charting

1M



\$

%

VOL



Natural Gas Continuous Contract

[+ WATCHLIST](#)

OPEN

Last Updated: Apr 8, 2021 at 11:16 a.m. EDT - Delayed quote

\$ **2.517**

▼ -0.003 -0.12%

SETTLEMENT PRICE 04/07/2021

\$2.520



Advanced Charting

1M



\$

%

VOL





MONTHLY POST

Dr. David T. Dockery III RPG

SAVING THE RED HOT TRUCK STOP FOSSIL LOCALITY

David T. Dockery III, RPG

The Red Hot Truck Stop locality has been a fieldtrip favorite since the 1950's when a creek diversion behind the Red Hot Truck Stop in Meridian created a bluff behind the dinner's parking lot, exposing the Tuscaloosa-Bashi-Hatcheigbee section of the Early Eocene of Mississippi. Carved foot holes, and sometimes a rope, helped fossil collectors up the steep bluff in the Tuscaloosa Formation to a layer of concretionary boulders in the Bashi Formation. A concentration of shark and ray teeth were present in a sandy lag deposit beneath the boulders. Collectors would dig caves beneath the boulders and use screens to sieve the sands for shark teeth (Figure 1).

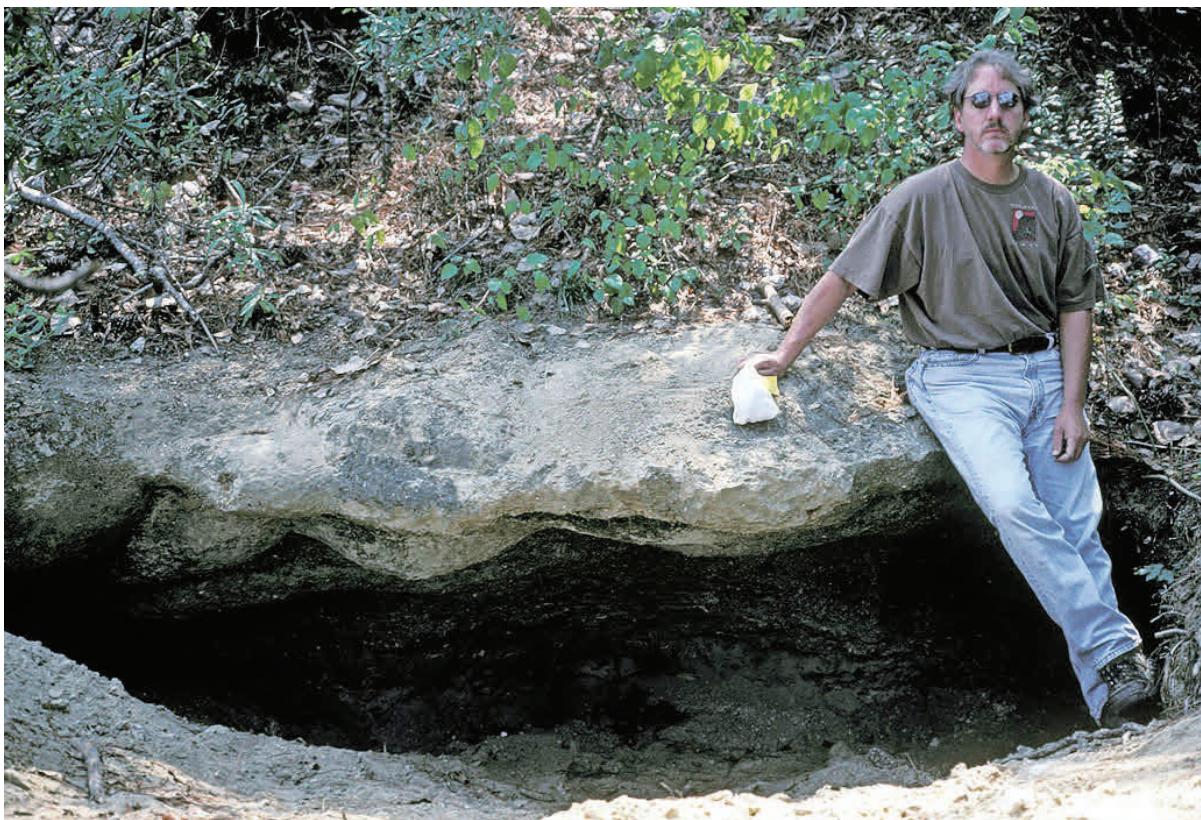


Figure 1. David Thompson resting on a concretionary boulder in the marine Bashi Formation at the Red Hot Truck Stop locality (MGS locality 19) adjacent the Walmart construction site. Shark-tooth collectors have excavated the sand beneath the boulder, creating a small cave. The developer agreed to preserve this locality, which is now surrounded by a parking lot. Picture was taken on August 18, 2000.



MONTHLY POST

Dr. David T. Dockery III RPG

The Red Hot Truck Stop is catalogued as Mississippi Geological Survey locality 19 and is Stop 87 in the *Geological Society of America Centennial Field Guide—Southeastern Section* (1986). Former State Geologist Willian H. Moore remembered Mississippi Geological Society field trips to the site in 1950 and 1959.

When a developer planned a large Walmart store at the Red Hot Truck Stop locality, saving the site became local news. The site was saved, though the Red Hot Truck Stop was demolished, leaving only the iconic sign (Figure 2).



Figure 2. The Red Hot Truck Stop is gone but, the sign was saved as a landmark when the surrounding property was purchased as a site for the new Walmart Supercenter. Picture was taken on September 15, 2009.



MONTHLY POST

Dr. David T. Dockery III RPG

Four truck-loads of shark-tooth-laden Bashi marine sand (Figure 3) and three large concretionary boulders were excavated from the site and carried to the grounds of the Mississippi Museum of Natural Sciences in Jackson, Mississippi.



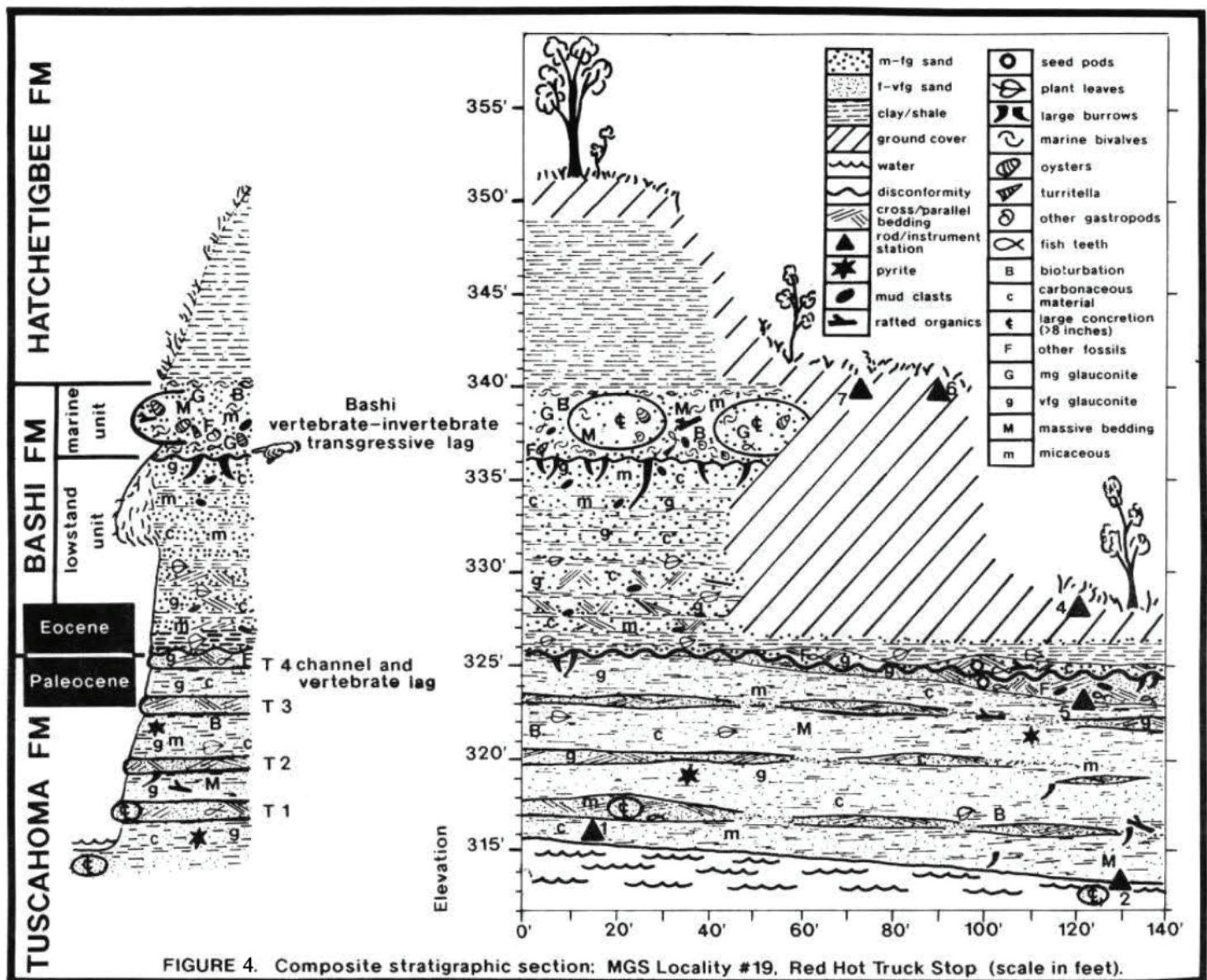
Figure 3. Left, George Phillips kneeling, with French family brothers, from left to right, Jack (on all fours searching), Justin, J. Andrew, and Jensen collecting fossils in the Bashi Formation sandbox at the Mississippi Museum of Natural Science. Right, J. Andrew signs papers to donates two fossils he found in the sandbox to the museum.



MONTHLY POST

Dr. David T. Dockery III RPG

Former Mississippi Geological Society President Steve Ingram published a measured section of the site in 1991 with surveyed elevations (Figure 4).





MONTHLY POST

Dr. David T. Dockery III RPG

In this section, Steve labeled a fossiliferous glauconitic sand at the top of the Tuscaloma section as the T-4 Sand. Prior to Ingrams section, shark-tooth specialist Gerald Case happened upon this sand in 1979, while trying to find the overlying Bashi Formation. The T-4 Sand contained shark teeth, so Case made a collection and went no further up the section. Case deposited his collection at the Yale Peabody Museum, where Chris Beard of the Carnegie Museum of Natural History viewed the collection and found tiny mammal teeth. With the help of Case, a field crew from Carnegie excavated the T4 Sand in November of 1990. Four other excavations followed in April 1991, March 1992, September 1994 (Figure 5), and November 2000.

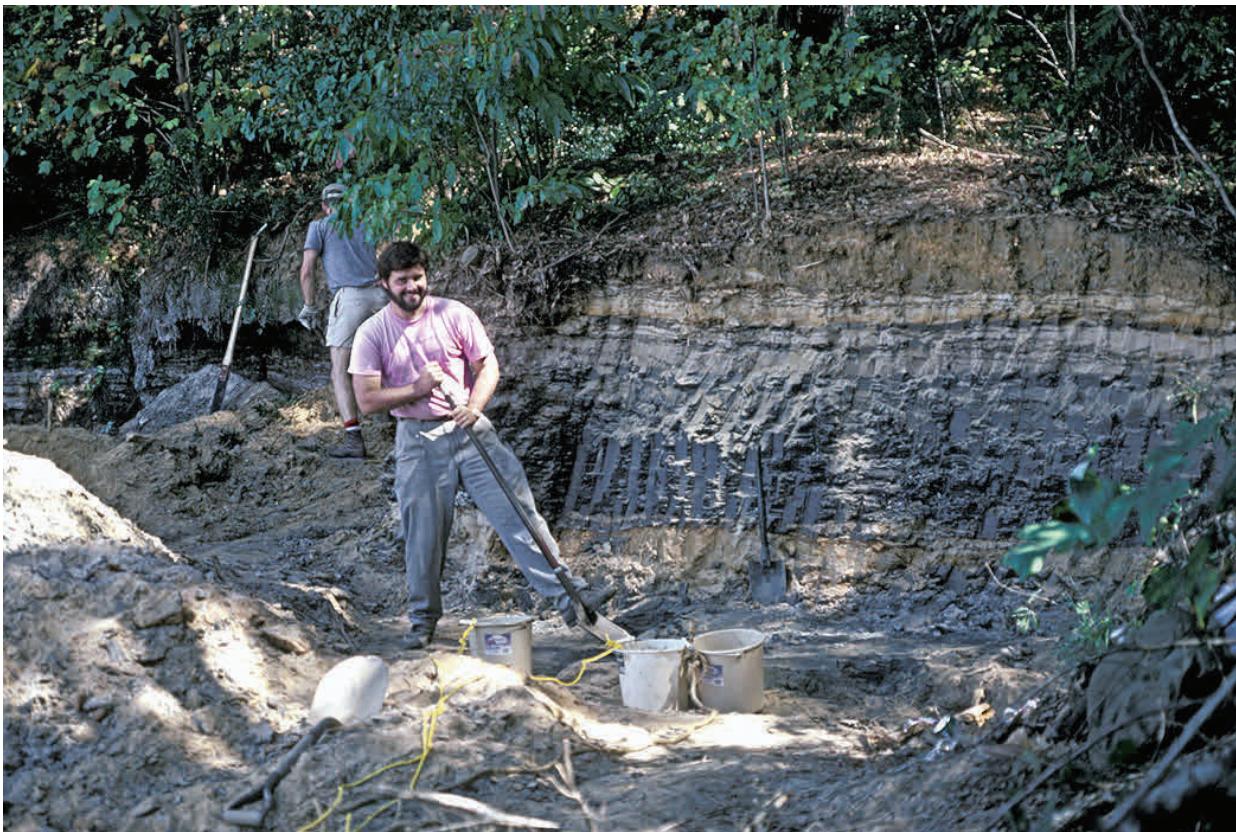


Figure 5. Chris Beard excavating the T-4 sand at the top of the Tuscaloma Formation at the Red Hot Truck Stop locality in Meridian, Mississippi. In the excavation face above are Early Eocene fossil-leaf-bearing clays of the Bashi lowstand deposit. Picture was taken on September 28, 1994.



MONTHLY POST

Dr. David T. Dockery III RPG

The last excavation in 2000 included Melissa Hendricks, a writer for *Johns Hopkins Magazine*, who was present to cover the excavation (Figure 6).



Figure 6. Melissa Hendricks, writer for the *Johns Hopkins Magazine*, and Chris Beard, vertebrate paleontologist and recipient of the MacArthur Foundation “genius” award in 2000, leading a field trip for a local school to collect fossils among Bashi boulders removed from the Walmart Supercenter construction site. Picture was taken on November 13, 2000.



MONTHLY POST

Dr. David T. Dockery III RPG

The occasion was that Chris Beard, a Ph.D. alumnus of John Hopkins, had recently received a MacArthur Foundation Fellowship (a \$500,000 Genius Award) for his work with fossil primates. Hendrick's article appeared in the April 2001 issue of *Johns Hopkins Magazine*, pages 15-21, the last page showing the Red Hot Truck Stop sign. Beard described a new primate species from the T-4 Sand, which he named *Teilhardina magnoliana* after the Magnolia State, Mississippi (Figure 7).



Figure 7. Artist reconstruction of *Teilhardina magnoliana*, an early primate from the T4 sand at the Red Hot Truck Stop locality at Meridian, Mississippi.



MONTHLY POST

Dr. David T. Dockery III RPG

What became national news on March 4, 2008, appearing in newspapers across the country, was the reported conclusions that this species was not only the oldest primate from North America, but was the second oldest known primate on earth. The *Pittsburgh Tribune Review* (March 4, 2008, edition) described *T. magnoliana* as a wide-eyed primate small enough to fit in the palm of a child's hand. Boston.com (March 3, 2008) said the animal was so tiny that one could loll in a tablespoon. *The New York Times* (March 4, 2008, edition) cited Beard as saying it was about the size of the pygmy mouse lemur of Madagascar, the tiniest living primate. *The San Diego Union-Tribune* (March 6, 2008, edition) compared the appearance of *T. magnoliana* with that of "the big-eyed tarsiers of Southeast Asia or a small monkey."

Chris Beard told me that I might be called on by journalists concerning the new primate find. I still remember taking off work early on Friday on February 29, 2008, to cut two large trees that had fallen across my in-laws wooded road. On a cool beautiful day, while cutting the downed trees, my wife Mary--the only one of us with a cell phone at the time--drove up in her Jeep and handed me her phone. It was Allison M. Heinrichs, a writer for the *Pittsburgh Tribune Review*, asking to talk with me about the Red Hot Truck Stop excavation and the new primate species. I thought at that moment, surrounded by forested wilderness and talking about Mississippi fossils with a paper in Pittsburgh on a cell phone, "I have a great job." The fossil primate was front page news on the paper's March 4, 2008, edition. I don't remember my conversation with Heinrichs, but the paper read: *Beard found the rice grain-sized fossils almost a decade ago with help from David Dockery (quote following). "This primate first appeared in China, and the next place they show up anywhere is behind this little Red Hot Truck Stop in the hillside," Dockery said. "There's a lot of distance between here and China, so it's puzzling, but we're proud of it."*

If you should travel on Interstate 20 through Meridian, Mississippi, passed the Walmart Store on the south side of the interstate, you will notice a large stand of pine trees between the two entrance and exit roads to the store's parking lot. These trees mark the area we saved for the Red Hot Truck Stop fossil locality.



GEOLOGY POST

ARTICLES, PAPERS or NEWS?

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

I am adding a dedicated section that includes 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



MONTHLY QUIZ

Steve Walkinshaw

OIL PATCH QUIZ

Oil patch quiz time. Images from a prolific field in this basin are shown. The producing reservoir is an intensely karsted carbonate; excellent outcrops of this reservoir occur along the north perimeter of this basin.

Numerous underground rivers are indicated by seismic and well control to have eroded this formation following burial. Image "D" illustrates the numerous karsted zones illuminated by one 3D seismic attribute.

Iridium levels spike at the top of this formation in this country, interpreted to be associated with a mass extinction event. This area was near the equator at that time.

Questions...

Part 1: What field am I referring to?

Part 2: What basin is it located in?

Part 3: What country?

Part 4: What is the age of the karsted reservoir?

Part 5: See log image "F". What color is associated with the karsted reservoir?

Part 6: How did the linear features labeled "K" contribute to reservoir development?

Part 7: What orogeny was principally responsible for this karstification?

Part 8: What fills the inclusions labeled "J" in "B"?

Part 9: What term describes this type of basin?

Part 10: What is the age of its principal source rocks?

Bonus:

Part 11: How can you tell when you've penetrated a cave with the bit?

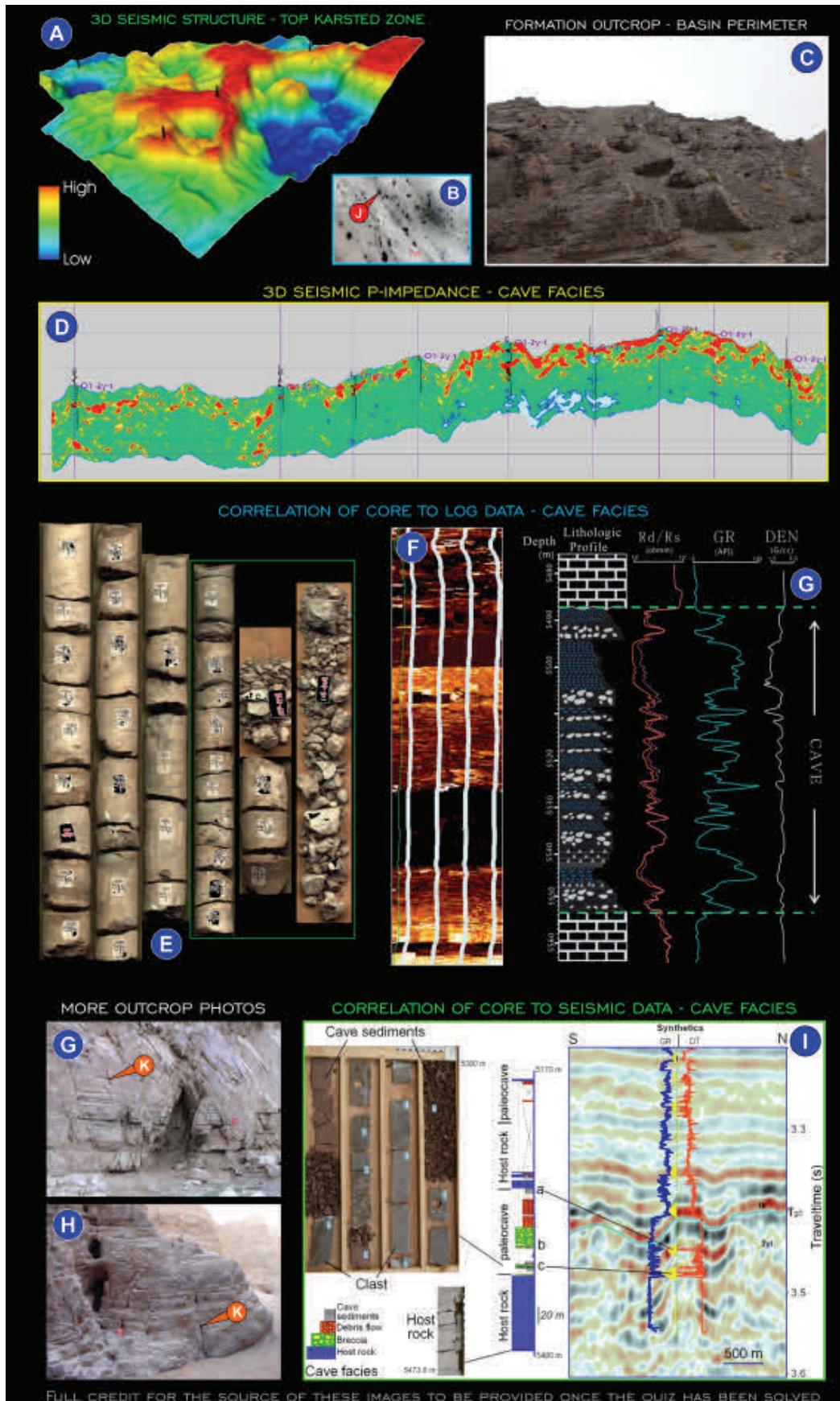
Part 12: How can you tell when you've reached the cave bottom?

Answers at end of Bulletin



MONTHLY QUIZ

Steve Walkinshaw



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/iowebk/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.magnet.fsu.edu/primer/java/scienceoptiscu/owersof10/>

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

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

[www.ermapper.com](http://ermapper.com) They have a great free downloadable viewer for TIFF and other graphic files called ER Viewer.

[www.drillinginfo.com](http://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/gpnf/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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* deceased

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2020-2021

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Professional Listing/Link	\$100	\$ _____

(Note: Please contact Steve Walkinshaw at (601) 607-3227 or
mail@visionexploration.com for details concerning placing
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Total Remitted \$ _____

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1975-1976 Jerry E. Zoble	2016-2017 Cragin Knox
1976-1977 P. David Cate	2017-2018 David Hancock
1977-1978 Sarah Childress	2018-2019 Dr. David Dockery
1978-1979 Les Aultman	2019-2020 James O. Sparks
1979-1980 Philip R. Reeves	



MONTHLY QUIZ

Steve Walkinshaw

ANSWERS & CREDITS

Part 1: What field am I referring to? the Tahe Field

Part 2: What basin is it located in? the Tarim Basin

Part 3: What country? China

Part 4: What is the age of the karsted reservoir? Ordovician

Part 5: See log image "F". What color is associated with the karsted reservoir? black

Part 6: How did the linear features labeled "K" contribute to reservoir development? such faults and fractures created pathways for meteoric waters to follow and diagenetically alter, erode and karstify the limestone

Part 7: What orogeny was principally responsible for this karstification? Hercynian / Variscan

Part 8: What fills the inclusions labeled "J" in "B"? methane

Part 9: What term describes this type of basin? endorheic

Part 10: What is the age of its principal source rocks? Permian

Part 11: How can you tell when you've penetrated a cave with the bit? the bit drop and circulation is lost; no returns

Part 12: How can you tell when you've reached the cave bottom? the bit ceases dropping, WOB returns to "normal"; circulation resumes; cave floor sediments are circulated out

Here are the credits for / sources of the images shown in the montage.

Images "A", "C", "D", "E", "F", "G" and "H": "3D Modeling of the Paleocave Reservoir in Tahe Oil Field, China" (Ma Xiaoqiang, Hou Jiagen, Liu Yuming, and Zhao Bin), Search and Discovery Article #20153 (2012)

Image "B": "Investigate Hydrocarbon Charge History Using X-ray Micro CT, FM-SEM and Fluid Inclusion Techniques, An Example from the Kela-2 Giant Gas Field, Tarim Basin, China" (Shaobo Liu, Keyu Liu, Qingong Zhuo, Shihu Fang, and Xiaowen Guo), Search and Discovery Article #41004 (2012)

Image "I": "Seismic Geomorphology and Analysis of the Ordovician Paleokarst Drainage System in the Central Tabei Uplift, Northern Tarim Basin, Western China" (Hongliu Zeng, Robert Loucks, Xavier Janson, Quizhong Wang, Yiping Xia, Binheng Yuan and Ligui Xu), Search and Discovery Article #50468 (2011)

These are three good papers that cover various fields and topics of interest in the Tarim Basin.