

MISSISSIPPI GEOLOGICAL SOCIETY

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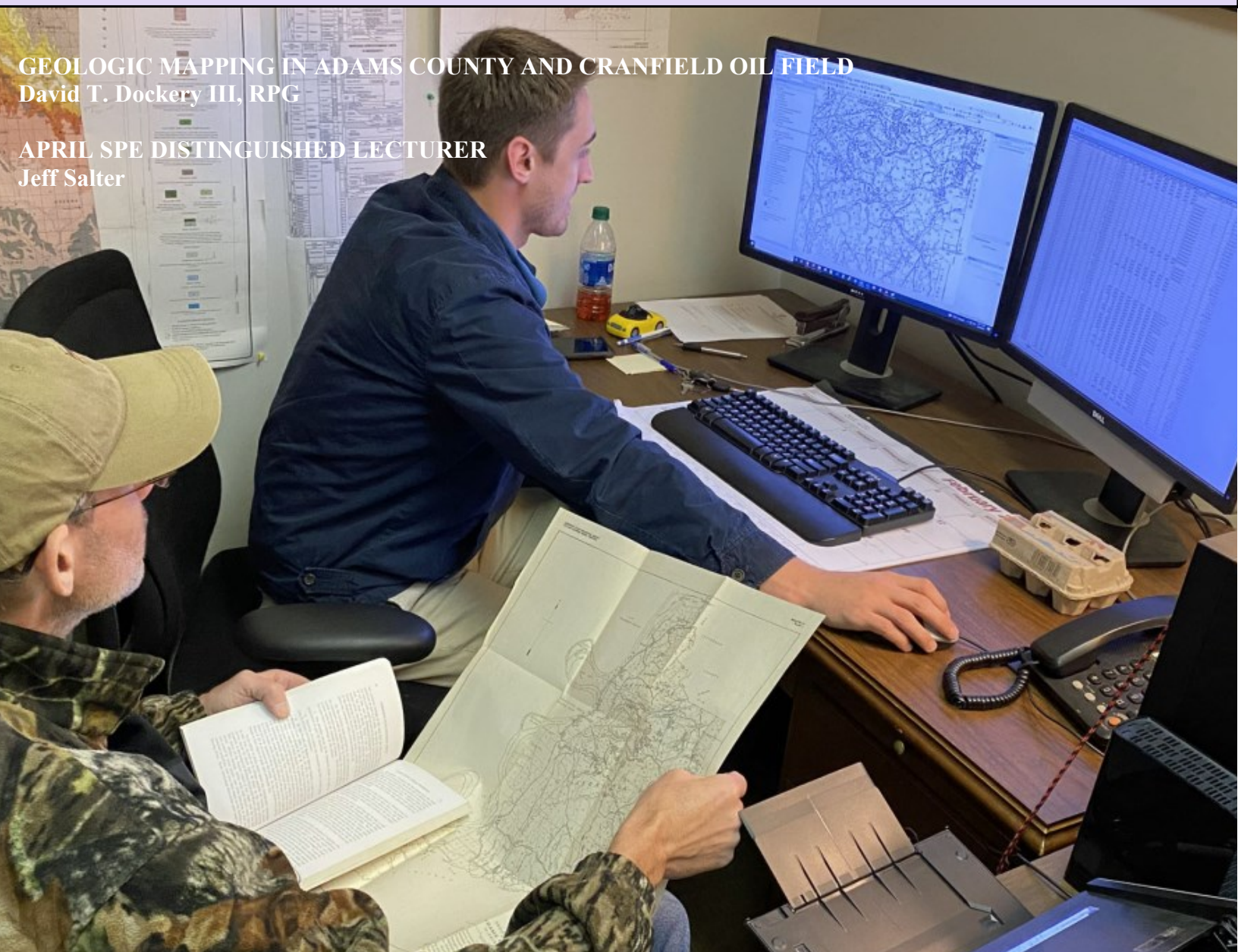
March 2022

GEOLOGIC MAPPING IN ADAMS COUNTY AND CRANFIELD OIL FIELD

David T. Dockery III, RPG

APRIL SPE DISTINGUISHED LECTURER

Jeff Salter



www.missgeo.com



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PRESIDENT'S LETTER

David Snodgrass, MSOGB



Dear MGS Membership,

At no time EVER has drilling for oil/gas and transportation (pipelines) been more environmentally safe than it is today. That should be the business of environmental groups, not the destruction or dismantlement of an energy sector that everyone is reliant on.

America needs to pursue an all-of-the-above approach to energy and we need to do it now. This is not an either-or scenario – it means simultaneously growing renewable energy without compromising dispatchable baseload power, harnessing advancements in nuclear power, deploying carbon capture, developing next-generation technologies in the form of hydrogen, and continuing to extract fossil fuels in the most responsible way possible.

On the lighter more fun side... We're Back. We are still on track to have our 11:30am luncheon meetings at the River Hills Club in April, with a speaker provided by SPE and again in May, with a speaker provided by MGS. PLEASE attend if you can and bring a friend if you like. The cost to you is only \$20/per and you will get a great speaker and a full belly. I know Boland Scholarships are awarded in May but this year I would like to do both Boland and the May luncheon meeting since we stalled out in 2020. We will break for summer and pick back up in September with a luncheon and our annual BBQ. Those details will be forthcoming at the April luncheon. So please stay tuned and stay well. Many thanks for your continued support.

Kindest Regards,

David H. Snodgrass, MGS President

2021-2022 MGS MEETING SCHEDULE

When	What/Who	Where
September	Fall BBQ	Cancelled
October	Cancelled	Cancelled
November	TBD	Cancelled
December 8	SPE Distinguished Lecturer	Online - 11:30am
January	TBD	River Hills - 11:30am
February	David F. Allen Challenges and Solutions of Low Resistivity Pay	River Hills – 11:30am
March	TBD	River Hills – 11:30am
April 13	Geoff Salter Making Better Upstream Acquisitions - The Role of Engineer and Why its Different from the Day Job	River Hills - 11:30am
May	Boland Scholarship Awards	TBD

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MGS SCHOLARSHIP AWARDS

Faculty & Students,

This year is almost over and the Mississippi Geological Society along with the Boland Scholarship Fund would like to remind you that we want to honor the most outstanding overall students for the 2021-2022 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.

We look forward to a great year and hope to see you at our monthly meetings.

Best Regards,

Matt Caton
Editor



THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI

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COLLEGE



MONTHLY POST

David T. Dockery III, RPG

GEOLOGIC MAPPING IN ADAMS COUNTY AND CRANFIELD OIL FIELD

David T. Dockery III, RPG

James Starnes and Jonathan Leard are working on the geology of Adams County (Figure 1) and are trying to resolve a published statement in *Mississippi Geological Survey Bulletin 100* on page 62 that said, “The Tinsley dome, from which flowed the first oil production in Mississippi on a commercial scale, was discovered and described by a Survey geologist, as was the Cranfield dome soon afterward.” MGS geologist Fred Mellen discovered Tinsley Dome in February of 1939, while mapping the geology of Yazoo County, but the attribution of Cranfield Dome, a large oil and gas field in Adams and Franklin counties, to a MGS geologist is less certain. The subterranean dome had to be expressed in surface outcrops during the geologic mapping of Adams County by Franklin E. Vestal in 1940-1942, who is also the source of the above quote in *Bulletin 100*. However, Vestal did not mention a Cranfield Dome in the Adams County geology bulletin. Also, Dudley Hughes in his book on *Oil in the Deep South* (page 204) stated, “A large anticline had been found near Cranfield by a seismic program in the late 1930s. It appeared to be a large, deep-seated salt dome some 15 miles east of the town of Natchez.”

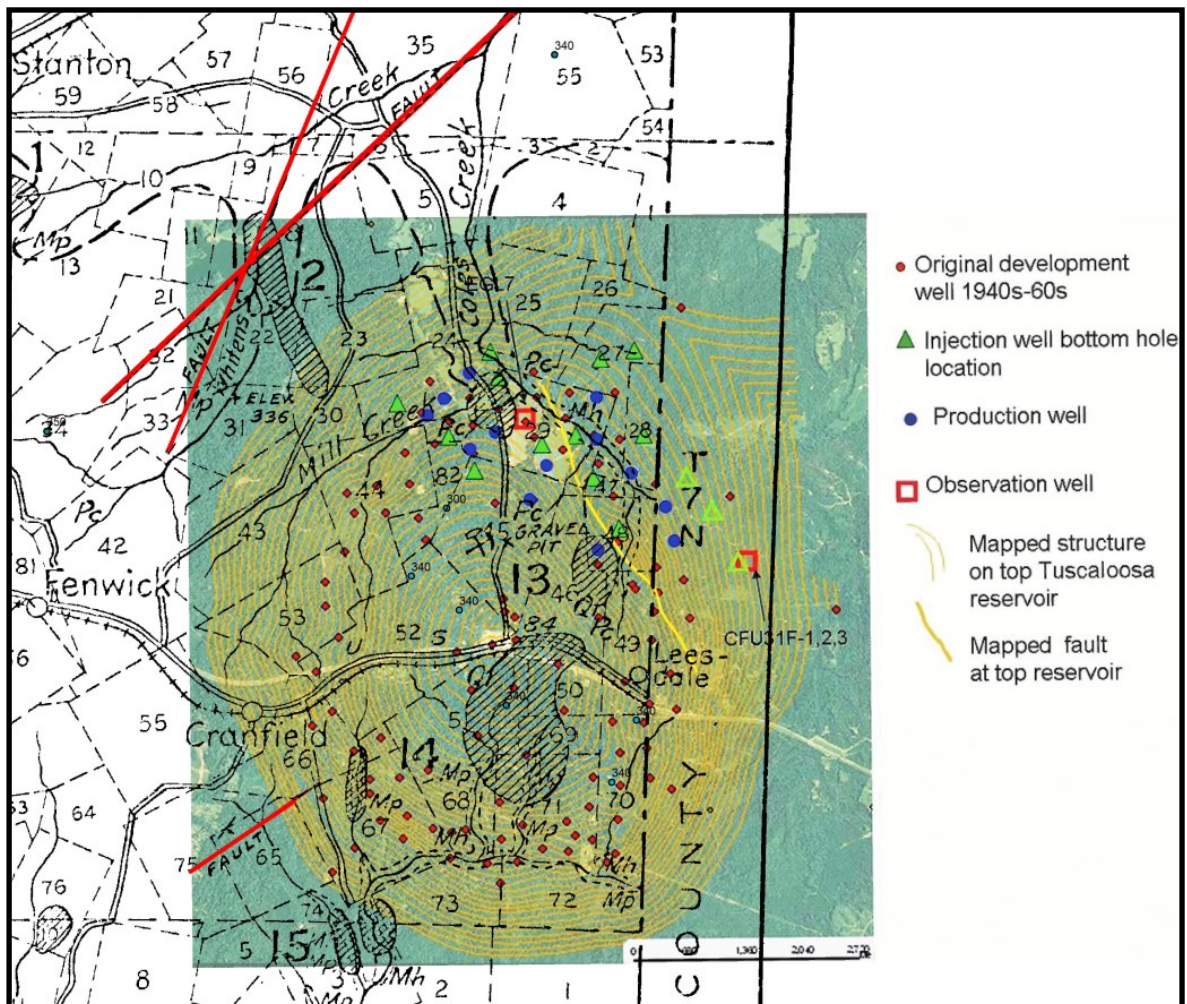




MONTHLY POST

David T. Dockery III, RPG

Vestal stated in *MGS Bulletin 47* on the geology of Adams county (page 89), under the heading “Oil and Gas,” that: “The structural features of the county, discussed in the section on ‘Structure,’ seem to be an east-west anticline of which the axis is about the latitude of Natchez, and some faulting and abnormally steep dips, probably connected with the larger structure, in the central and eastern parts.” He then suggested that: “On the basis of the very limited surface data which have been assembled by reconnaissance field work, the opinion is expressed that the east-central part of the county, somewhere near U.S. Highway 84 west of Leesdale, would have advantages over other parts of the county for the location of a test well.” The latter statement places his recommendation in the center of Cranfield Dome, where the discovery well was drilled. Figure 2 is an overlay by Jonathan of the structure map of Cranfield Dome and oil and gas field over the GIS rectified black and white Adams County geology map of Vestal (1942) with the faults cited by Vestal in red.



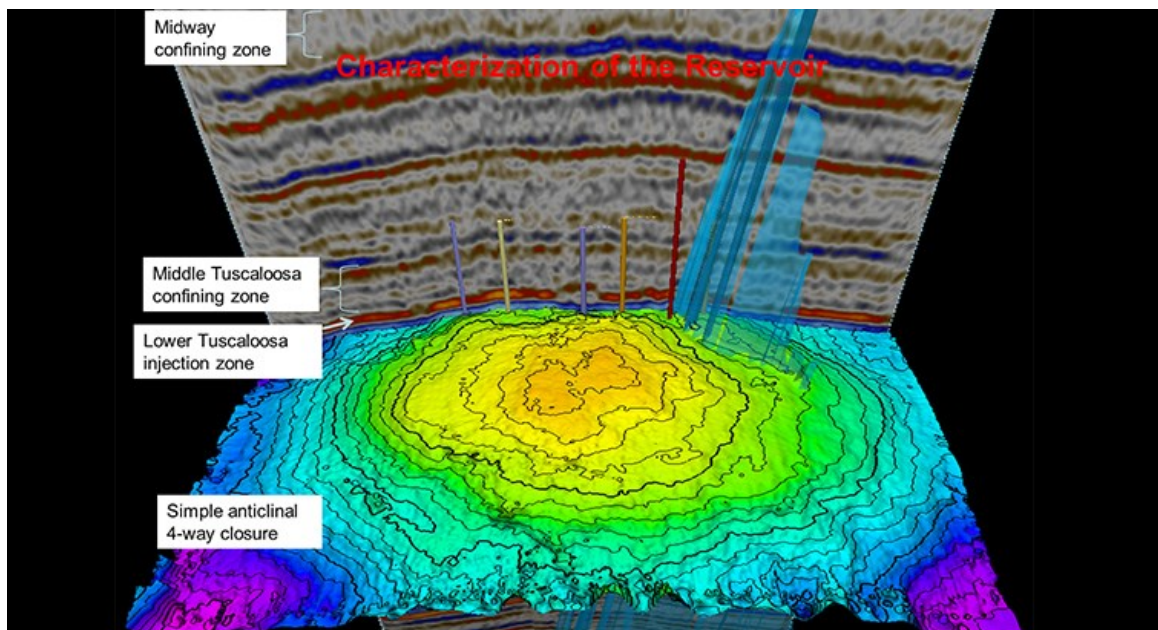


MONTHLY POST

David T. Dockery III, RPG

Vestal's recommendation for a test well over Cranfield Dome as published in 1942 predates the field's discovery well. So, what field evidence led Vestal to pick his recommended locality. On pages 70-71 of his report in *Bulletin 47*, Vestal recognized two faults along the western flank of Cranfield Dome (see red lines in Figure 2). The southern one he placed as a fault trace about 0.5 miles southeast of Cranfield: "This trace strikes northeast-southwest across two forks of the branch [right headwater tributary of Sandy Creek] a little above their junction. In both forks the outcrops show highly tilted yellow strata forming low ridges parallel to the fault trace, and dark-blue to dark-gray or almost black beds nearby tilted at various angles." He concluded, "These north-east-southwest faults, considered in connection with the elevations of key horizons, are believed to have some significance." So, perhaps Vestal's recommendation along with the seismic survey mentioned by Hughes convinced California Company to drill its discovery well at Cranfield, which on October 4, 1943, was officially completed and producing oil from the Tuscaloosa "Massive Sand."

The Texas Bureau of Economic Geology Gulf Coast Carbon Center (GCCC) in conjunction with the Southeast Regional Carbon Sequestration Partnership (SECARB) is currently conducting a \$34 million multi-year field study of sequestration and monitoring strategies for long-term carbon dioxide. This study is supported by the National Energy Technology Laboratory and the U.S. Department of Energy. One of their projects, in cooperation with Denbury Resource, Inc, is a two-stage field experiment in monitoring at Denbury Onshore Cranfield Field CO₂ enhanced oil recovery from the Lower Tuscaloosa Formation. Figure 3 is a 3D seismic image of the field from the GCCC website.



Don't miss this SPE Distinguished Lecturer!

**Making Better Upstream Acquisitions The role of
the Petroleum Engineer and Why its Different
from the Day Job**

Geoff Salter

11:30 AM

Wednesday, April 13, 2022

Mississippi Section

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GEOLOGY POST

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Gifts are tax-deductible. Checks can be made out to Millsaps College with Richard R. Priddy Endowed Scholarship Fund in the memo and mailed to:

Millsaps College
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You can also donate online to
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Dr. Richard R. Priddy

This solicitation is submitted by Millsaps Geoscience alumni, Rev. Torrey Curtis ('67), Steve Franks ('68), Wayne Upchurch ('68), Clayton Breland ('70), and David Williamson ('72). We are not official representatives of Millsaps College.



CURRENT PRICES

Marketwatch

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

[+ WATCHLIST](#)

☀ OPEN

Last Updated: Mar 18, 2022 at 3:03 p.m. EDT - Delayed quote

\$ **104.85**

▲ 1.87 1.82%

SETTLEMENT PRICE 03/17/2022

\$102.98



Natural Gas Continuous Contract

[+ WATCHLIST](#)

☀ OPEN

Last Updated: Mar 18, 2022 at 3:04 p.m. EDT - Delayed quote

\$ **4.922**

▼ -0.099 -1.97%

SETTLEMENT PRICE 03/17/2022

\$5.021





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

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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2021-2022

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(Note: Please contact Steve Walkinshaw at (601) 607-3227 or mail@visionexploration.com for details concerning placing your ad on the MGS web site.)

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