



KANSAS GEOLOGICAL SOCIETY

# BULLETIN

Volume 94 Number 4

July - August 2019

Established 1925

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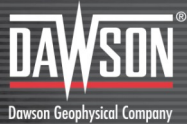
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c. David F. Coppedge



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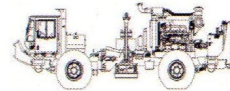
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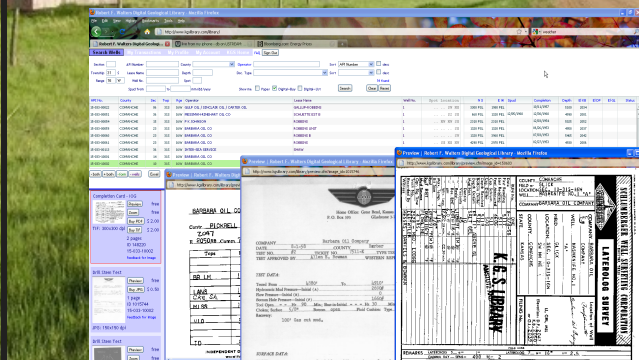
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## **ON THE COVER:**

The White Pocket area in Arizona has a really awesome geology – forget the usual horizontal layers, here we see swirls, folds, faults, offsets, all filled out with the craziest colors you could imagine. Understanding what's happening here and the complex processes that gave birth to these fantastic shapes makes it all even more beautiful.

Taken from "*17 pictures that will make you want to become a geologist*" web page.  
Photo credit to David F. Coppedge

## **CALL FOR PAPERS**

The Kansas Geological Society Bulletin, which is published bimonthly both in hard-copy and electronic format, seeks short papers dealing with any aspect of Kansas geology, including petroleum geology, studies of producing oil or gas fields, and outcrop or conceptual studies. Maximum printed length of papers is 5 pages as they appear in the Bulletin, including text, references, figures and/or tables, and figure/table captions. Inquiries regarding manuscripts should be sent to [manager@kgslibrary.com](mailto:manager@kgslibrary.com) or mailed to 212 N. Market, Ste. 100, Wichita, KS 67202. Specific guidelines for manuscript submission appear in each issue of the Bulletin, which can also be accessed on-line at the Kansas Geological Society web site at <http://www.kgslibrary.com>

# SOCIETY Technical Meetings

Technical talks will restart in September



**2nd Annual KGS Brewery Meet**  
**Friday August 16, 2019**  
**At Aero Plains Brewing**  
**117 N. Handley St., Wichita, KS**  
**In the Delano District**

Please join friends and colleagues for a few hours of socializing and networking

Please remember to check the website for the most up to date information on Technical Talks  
<http://www.kgslibrary.com/techtalks.cfm>

*Tech Talks are held at Landmark Square  
212 N. Market—4th floor  
In the Wisdom Center*



*Note: For those geologists who need 30 points to renew their licenses, there will be a sign-in sheet at each presentation and also a certificate of attendance.*

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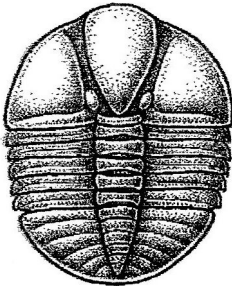
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**Randy Lilak correctly identified  
The last one as: Harpides**

**Bulletin committee members and PhD's in  
Paleontology are prohibited from entering.**



### ***Kansas Geological Society (KGS) Medallion for Scientific Distinction and Excellence***

The Kansas Geological Society (KGS) Medallion for Scientific Distinction and Excellence may be given annually for peer-recognized, sustained significant scientific contributions to all facets of applied Kansas geology, including work either in Kansas or in surrounding states if the latter contributions pertain directly and significantly to Kansas geology. No more than one award may be given each year, an award does not have to be given every year, and members of the KGS Awards Committee that handle nominations for this award cannot nominate themselves for this award. The candidates need not be active KGS members, and they must be living at the time of selection. The primary consideration in the selection of a candidate shall be his or her sustained, published, significant contributions to any facet of Kansas geology. Contributions may be varied in form such as development of geologic concepts, advancement in discovery thinking, and recognized leadership in exploration concepts. Oral and/or written publications in peer-reviewed geological venues is a requisite criterion for any candidate for this award. The name of a candidate shall be presented by the Awards Committee to the KGS Board of Directors for their approval. Once approved, the recipient shall be presented an appropriate award in the form of a medallion or plaque recommended by the Awards Committee and approved by the Board of Directors at the annual business meeting of the society. This is a new award given by the KGS for distinction and achievement in Geological research in Kansas.

Awards Committee members are Sal Mazzullo, Mike Dealy and Alfred James.

# President's Letter

Dear KGS members and friends,

Summer is in full swing now, as our Kansas monsoon period comes to an end. Heavy rains across the state of Kansas put operators, contractors and service companies in a real bind trying to get wells drilled. Delays of two to three weeks waiting for locations to dry out were common.

There are no technical talks through the summer, but they will restart again in September. Many thanks to our program chair, Doug Davis, for his continuing efforts to get speakers for our society. My good friend from Colorado, Mike Bair, emailed me awhile back asking if it would not be possible to live stream our technical talks or post them to YouTube. I have asked that technical members of the board look into this possibility. There may be some hurdles to overcome in regard to speakers not wanting their talks recorded, but will shall see. Doing this in some fashion would allow out of town members to get pdhs for their Kansas certification.



I am glad to announce that Madison Moore, our latest staff member at the KGS, has agreed to go full time effective June 1. She has proven to be a significant help to both Rhonda and Angela in their jobs. She has been cross training on various aspects of Rhonda and Angela's positions here at the KGS.

Prior to our society's hosting of the AAPG Mid-Continent Section meeting in October, our society has three events in August and September. On Friday, August 16, 2019, Beth Isern has set up our second annual KGS Brewery Meet at Aero Plains Brewery from 5:00-8:30 PM in Wichita's Delano District. Last year we had about 70 members and friends get together at the inaugural event. By all accounts it was well received. I encourage everyone to attend this year to network with other geologists, geophysicists, and engineers. Details are in this issue of the bulletin. A mass email will also go out in a few weeks.

On September 13, 2019, the 35th Annual KGS Fishing Tournament will be held at El Dorado Lake in Butler County, Kansas. Randy Teter and Jon Christensen are the co-chairs of the event. Details for this event are in the bulletin. Lastly, Rob Patton, has set up our golf tournament for Monday, September 23, 2019 at Terradyne Country Club. This year he plans to have 4 man teams (select your own team) in a best ball scramble format. Details are in the bulletin.

I am also reminding our AAPG members as well as any other geologists to please attend the AAPG Mid-Continent Section meeting from October 5-8. Information is also in this issue of the Bulletin on page 13. Short courses, technical presentations and a field trip to look at Mississippian outcrops related to the SCOOP and STACK plays in Oklahoma are on the agenda. I hope to see many of you at these various events.

Sincerely,

Wes





ANNOUNCEMENT  
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Per a Notice that was distributed to owners of seismic data that has been stored under the auspices of the Kansas Seismic Exchange (KSE), circumstances have occurred such that the storage of those contents have had to be removed from that library, as of December 31, 2018.

In the interest of preservation of the unique data, gathered over many decades, and which has inherent value, the Kansas Geological Foundation (KGF) became involved in a process to assist in the transfer of the data out of KSE facilities. As of December 31, 2018, the KSE relocated all seismic data in their library to the Wichita facility of Underground Vaults and Storage (UVS), located at 707 E. 33rd St. North, Wichita, KS 67219.

The owners of the data had the option, via Notice, to either recover their records/data, or make a tax deductible contribution related to that data to the KGF. If, at the end of a two year period ending December 31, 2020, data is not claimed by respective owners, it will automatically be transferred as to ownership from the owners of the KSE to the KGF.

The KSE has agreed to release index files, plat maps, and other reference items that relate to the stored data to the KGF. The KGF plans to relocate these reference files to a facility within the Kansas Geological Society and Library (KGS). Library members will be able to access these files and, for fees yet to be determined, obtain copies of plats, etc, such that if they wish to access actual data at the UVS facility, that can be accomplished by individuals who have access codes, which will be controlled by UVS and the KGF.

Various elements related to these processes are still being worked out, and the KGF will provide updates in the near future as to additional details. For those members of the KGF who have supported its efforts such as the major accomplishments related to the development of the Walters Digital library and the ongoing integration project, the KGF Board wishes to express deep gratitude. We will also closely monitor progress of this new undertaking and carefully evaluate cost/benefit of it into the future. Should it become infeasible to continue, we will exercise options to discontinue our involvement with the activity.



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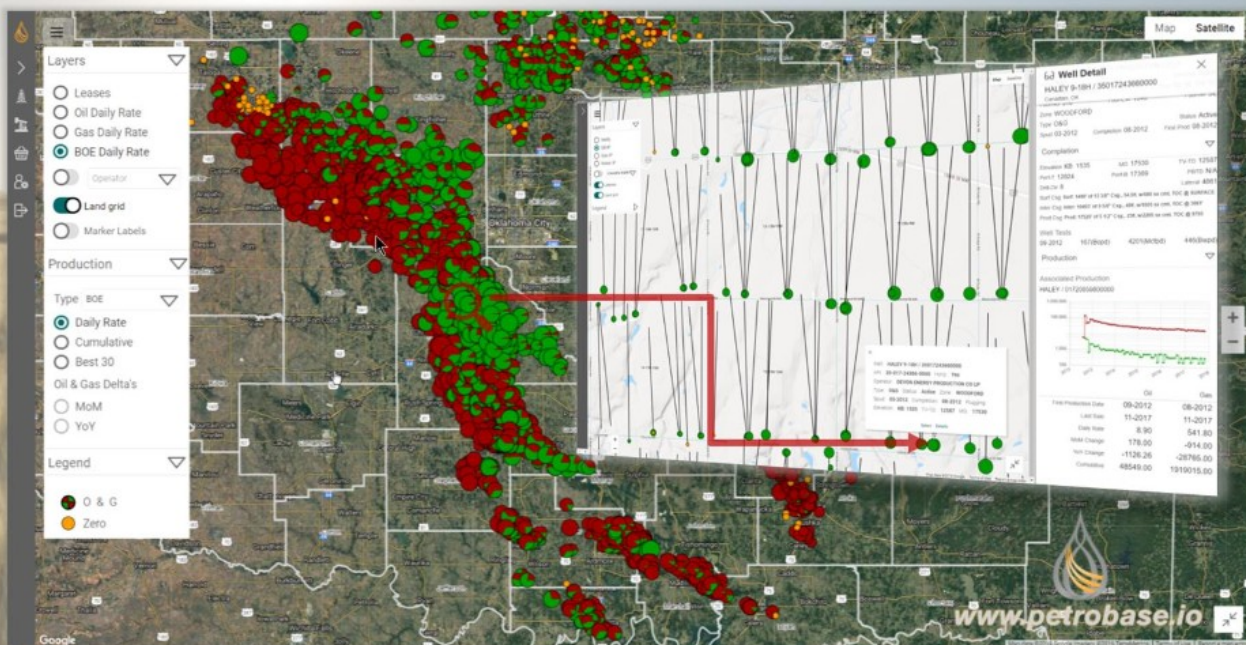
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# 35th Annual KGS Fishing Tournament

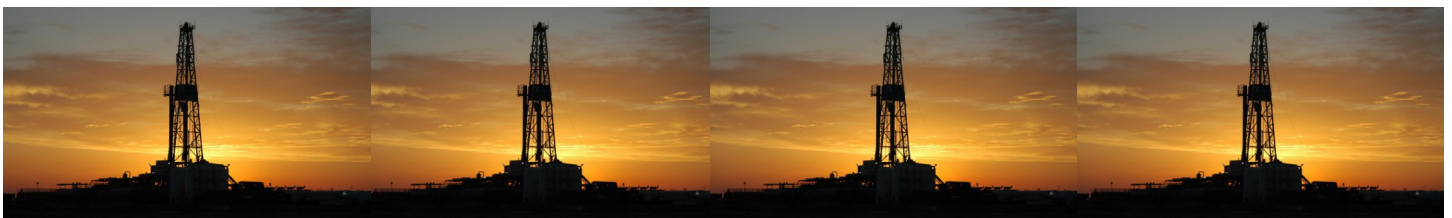
El Dorado Reservoir  
Friday, September 13, 2019

Check in: 7:30 AM @ Shady Creek Marina

A Late Lunch Will be Served at 3:00 PM  
Beer, sodas, and water will also be provided

Entry Fee is \$10.00 for KGS members and sponsors  
All others are \$20.00

Please see the enclosed flyer to sign up.  
Forms also available at the front desk of the KGS Library



# An Open Invitation to Young Geologists to Join AAPG

I would like to extend a special invitation to recent graduates and other young geological professionals to join AAPG. There are many young geologists outside the Wichita area that I have never met. They may work out of Great Bend or Hays, Kansas working with smaller oil and gas producers or working on their own as well site geologists. Kansas does have a future for at least a few more years for exploration and development. I'm not sure, however, if it extends much more than another 10 years or so. The time is now to meet others from larger regional companies to forge a relationship for future employment. Young minds will be needed to replace those retiring and that other bad option.

I joined AAPG late in my career, much to my regret. I now serve voluntarily as a delegate for the Mid-Continent Section representing the Kansas Geological Society. Please come to our meeting this Fall. Go on the field trip or take a short course to expand your knowledge. One might be fortunate enough to find me in a buying mood for an adult beverage one of those convention evenings. I cannot stress enough that you do have a need to expand your contact base.

Respectfully yours,

Wesley D. Hansen  
Bulletin Editor and 2019 KGS President

## Financial Support for the Mid-Continent Section Meeting

Every six years the Kansas Geological Society hosts the AAPG Mid-Continent Section Convention. It will be held at the DoubleTree by Hilton October 3-8, 2019. The convention will have between 500 and 700 geologists, geophysists, and petroleum engineers attending from across the entire country. Also there will be both local and national companies exhibiting.

The Finance Committee respectfully requests both company and individual financial support. Please contact us at your convenience with any questions that you may have.

Respectfully submitted,

Douglas Davis, Finance Chair

doug5696@gmail.com

316-641-4469

James Beilman Finance Co-Chair

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# 2019 AAPG Mid-Continent Section Meeting

## October 5-8, DoubleTree by Hilton, Wichita, KS

### Hosted by the Kansas Geological Society

General Chair: Toby Eck, KGS President: Wes Hansen



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or Doug Davis (316)641-4469, [doug5696@gmail.com](mailto:doug5696@gmail.com)

#### October 3-4 Field Trip

Meramecian-Chesterian strata of Oklahoma in outcrop and core  
Led by Dr. Cory Godwin and Dr. James Puckette, OSU

#### October 5-6 Short Courses

Seismic Attributes, led by Dr. Kurt Marfurt (Full-Day)  
Geochemistry, led by Dr. Wahid Rahman (Full-Day)  
Machine Learning in Oil and Gas, with several presenters (Full-Day)  
Digital Borehole Geology, led by Dr. John Doveton (1/2-Day)

#### October 6 Opening Ceremonies and Icebreaker

#### October 7 Technical Sessions Begin

##### All-Convention Luncheon

Cretaceous Revenant in Arctic Alaska - Giant Oil Accumulations Hidden in Plain Sight  
Dr. David Houseknecht, USGS

##### YP/Student and Mentor 'Meet and Greet'

#### October 8 Technical Sessions Continue

##### Division of Professional Affairs Luncheon

Interactive Ethics Presentation, John Jordan

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# Arkoma Basin | Delivering Value per Horizontal Foot

Kyle Stephenson, PetroBase

Horizontal well development in Hughes County, located in the Arkoma Basin, primarily targets the Woodford Shale. This basin predominantly produces gas, but oil does come into play in western Hughes. Due to oil's lack of significant value, oil's contribution will be ignored in this review. Provided below is a Woodford Shale initial potential BOE bubble map which gives context of Arkoma Woodford Shale development in relationship to the STACK & SCOOP plays located west and south of Oklahoma City.

\*Barrel of Oil Equivalent (15mcf per barrel used)

## Oklahoma Woodford Shale Horizontal Well Completions

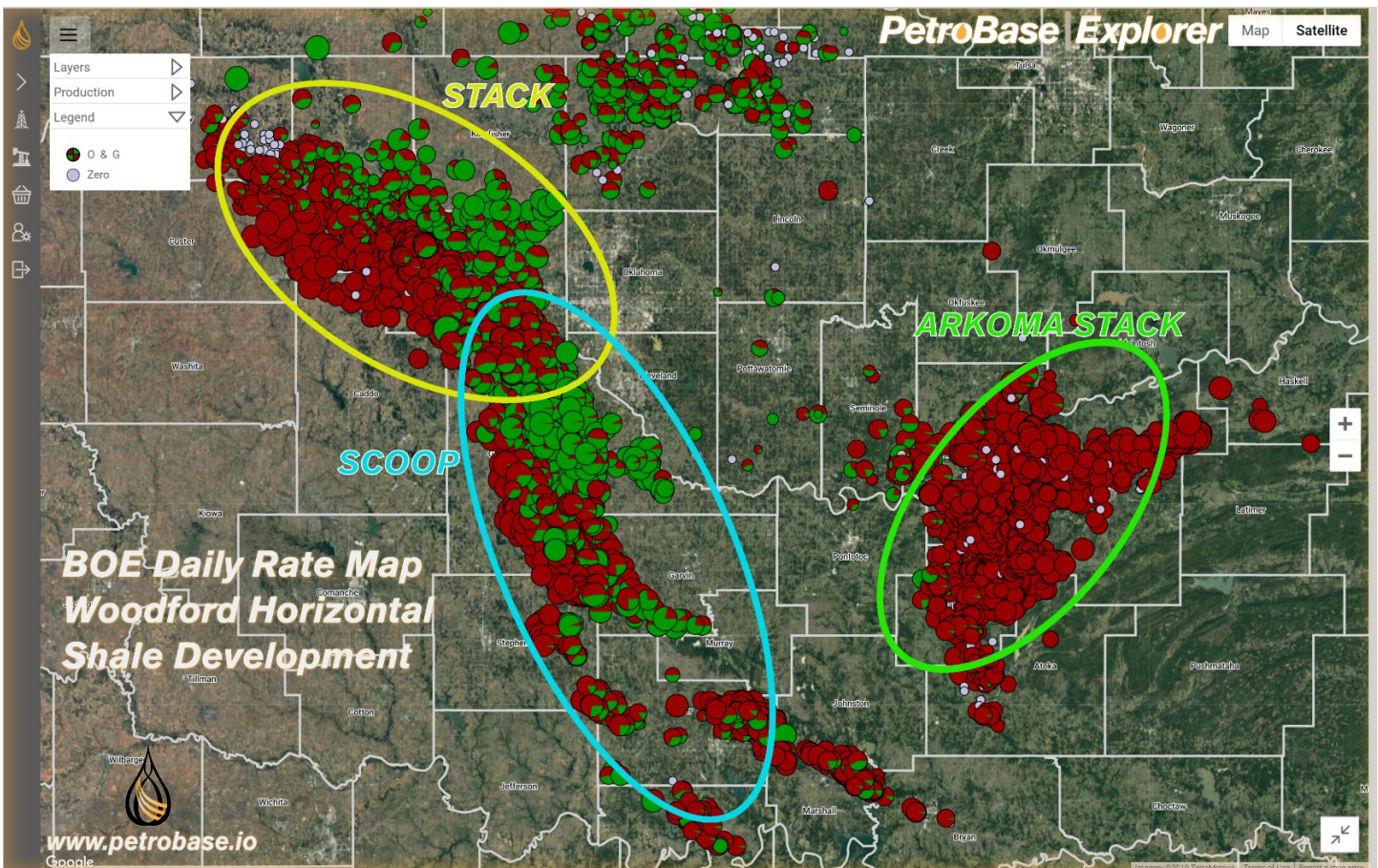


Figure 1. Reported Initial Potential BOEPD bubble map for Woodford Shale horizontal wells (15 MCF/BO used).

## Hughes County Horizontal Crux

Horizontal development in Hughes County began in 2004, peaked in 2008, and has remained active. The current rate bubble map<sup>fig.2</sup> illustrates horizontal activity. Wells completed since March 2016, are highlighted. Early development was clustered in the south and southeast portions. Current development is more central with emphasis along the eastern edge. Hughes County does offer some distinct relative advantages:

- The Woodford Shale is at a shallower depth
- Costs at a shallower depth are less
- Production characteristics are predictable

Trending with the newer completions are longer horizontal laterals which have resulted in higher production volumes. This behavior is also true in a handful of older wells that have above average lateral length. There does appear to be a relationship between lateral length and reported initial potential rates, but the correlation is less predictable.

### Well Study Projects

1. Wells prior to March 2016 with horizontal lengths less than 8,000
2. Wells prior to March 2016 with horizontal lengths greater than 8,000'
3. Horizontal wells completed after March 2016

## Delivering Value per Horizontal Foot

Normalized type curves were generated for each project along with a decline curve and economic analysis. A normalized type curve is an average single well production plot for a data set normalized on date and horizontal length when elected.

What stands out for these projects is the relationship between lateral length to peak production rates, first year production volumes, and ultimate reserves. *Higher production volumes are associated with longer lateral lengths.* Decline curve parameters for the three projects are similar. These similar characteristics yield greater reserves at longer lateral lengths.

Worth noting is the improved total well cost for project 3, which is the result of a more competitive pricing environment for drilling and completions. The median cost for projects 1 & 2, from 2009 and 2010, equal \$1,098/lateral foot and \$1,093/lateral foot respectively. The more recent wells in project 3 have a median cost of \$425/lateral foot. This significant drilling and completion cost savings yield improved cash flow and rate of return values.

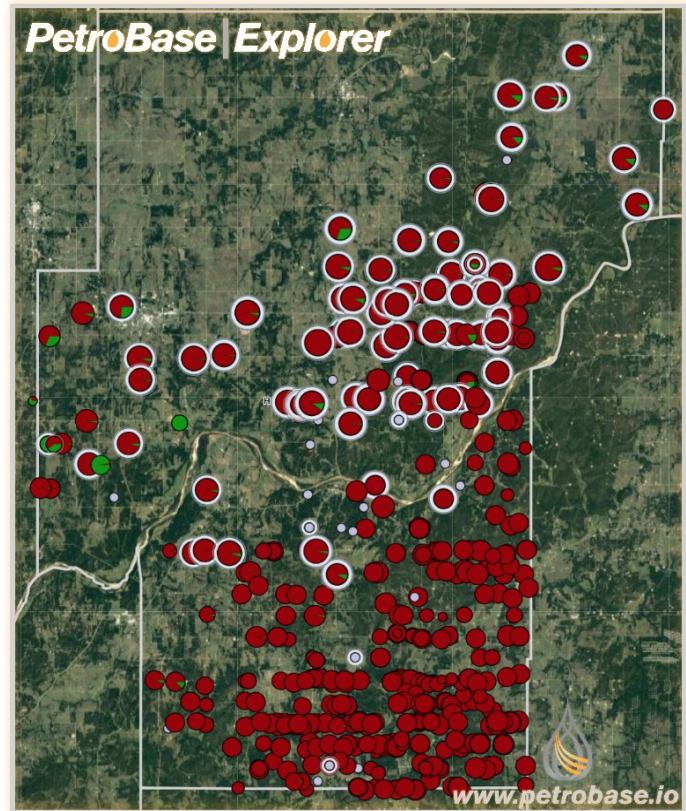


Figure 2. Current Rate BOE Per Day bubble map for Hughes County Woodford Shale Horizontal Wells. Activity since March 2016 is highlighted.

## Project Normalized Type Curves & Decline Analysis



Figure3. Type curve, decline curves and economic analysis performed in PetroBase Explorer. Cost data provided by Oseberg using their Alta technology.

## Summarized Production and Economic Values by Project

Project	Lateral Len (Ft.)	Peak Rate (MCFPM)	Production 1 <sup>st</sup> Year	Median Cost (\$/Lateral Ft)	Reserves (MMCF)	Cash Flow (M\$)	DCFROR (%)
<b>1</b>	<b>3,764</b>	<b>72,880</b>	<b>497,244</b>	<b>1,098</b>	<b>2,984</b>	<b>1,213</b>	<b>4.8</b>
<b>2</b>	<b>9,524</b>	<b>139,088</b>	<b>1,070,628</b>	<b>1,093</b>	<b>7,792</b>	<b>7,017</b>	<b>6.5</b>
<b>3</b>	<b>8,888</b>	<b>114,131</b>	<b>867,624</b>	<b>425</b>	<b>7,677</b>	<b>13,416</b>	<b>31.3</b>



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The screenshot displays the website's search interface and a detailed well log for well 15-033-10002. The search results table is as follows:

API No.	County	Sec	Top	Rge	Operator	Lease Name	Well No.	Spot	Location	NS	E/W	Spud	Completion	Depth	El 1B	El 2F	El 3F	Status
15-033-0002	COMANCHE	66	315	SEW	GLAF OIL / SINGLAR OIL / CARTER OIL	GALLUP-ROBBINS	1	...	SE	3300 FSL	1900 FEL	10/11/2167	5100	2034				
15-033-00051	COMANCHE	36	315	SEW	MESSEMAN-HENDHART OIL CO	SCHMETTE EST B	1	...	SE	660 FSL	1320 FEL	12/06/2160	4910	2001				
15-033-00054	COMANCHE	15	315	SEW	F K JOHNSON	ROBBINS	1	...	SE	2310 FSL	2310 FEL	12/01/2164	5025	2052				
15-033-00059	COMANCHE	23	315	SEW	BARBARA OIL CO	ROBBINS LHET	1	...	SE	1320 FSL	1320 FEL	07/01/2163	4980	2007				
15-033-00063	COMANCHE	23	315	SEW	BARBARA OIL CO	ROBBINS	1	...	SE	1320 FSL	3960 FEL	07/01/2163	545	2042				
15-033-00061	COMANCHE	23	315	SEW	BARBARA OIL CO	ROBBINS	1	...	SE	4290 FSL	2470 FEL	02/27/2163	4810	2006				
15-033-00013	COMANCHE	36	315	SEW	INTER-SEA SERVICE	SHAW												
15-033-10001	COMANCHE	10	315	SEW	BARBARA OIL CO													
15-033-10002	COMANCHE	10	315	SEW	BARBARA OIL CO													

The detailed well log for well 15-033-10002 includes the following information:

- Well No.:** 15-033-10002
- County:** COMANCHE
- Section:** 10
- Top:** 315
- Rge:** SEW
- Operator:** BARBARA OIL COMPANY
- Lease Name:** BARBARA OIL COMPANY
- Well No.:** 15-033-10002
- Spot:** 1000
- Location:** 10-315-10N
- NS:** 1000
- E/W:** 1000
- Spud:** 10/11/2167
- Completion:** 5100
- Depth:** 2034
- El 1B:** 5100
- El 2F:** 2034
- El 3F:**
- Status:**

The well log also includes a table of test data and a section for surface data.

TEST NO.	TICKET NO.	COUNTY	WELL	TYPE	TEST APPROVED BY
02	1911-K	Barber	15-033-10002	TYPE TEST	Allen E. Bowman

TEST DATA:

- Tested From: 1,550' To: 1,510'
- Hydraulic Mud Pressure—Initial (A): 2,050'
- Flow Pressure—Initial (A): 0
- Bottom Hole Pressure—Initial (F): 1,660'
- Tool Open: -- Hr: 50 Min; Shut-in Initial: -- Hr: 30 Min
- Chokes: Surface: 5/8" Bottom: open
- Recovery: 100' Gas out mud.

SURFACE DATA:

- Well No.:
- County:
- Section:
- Top:
- Rge:
- Operator:
- Lease Name:
- Well No.:
- Spot:
- Location:
- NS:
- E/W:
- Spud:
- Completion:
- Depth:
- El 1B:
- El 2F:
- El 3F:
- Status:

---

---

## **SAVE THE DATE**

**Rob Patton, golf committee chairman for 2019, has announced the date for this year's KGS Golf Tourney.**

**Monday, September 23, 2019 at Terradyne CC**



**The tournament will consist of 4 man teams (best ball) in a scramble format. Pick your own teams.**

**Limited to 144 players**

**Entry fee is \$100.00 per person payable to the KGS  
Prizes will be awarded to 1st, 2nd, 3rd, and 4th flights.  
Additional prizes for closest to the pin, longest drive and  
longest putt on various holes.**

### **Sponsors Needed**

**Please see the flyer in this issue to sign up.  
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#### **BULLETIN CONTENT POLICY**

Effective January 1, 2018, only ads for service companies and geologists offering their services will be permitted in the KGS Bulletin. Furthermore, only content of geologic interest or official KGS functions (technical talks, annual banquet, golf tourney, picnic etc.) will be permitted in this bulletin. This policy is in keeping with maintaining a professional standard for this publication. Any interpretation of this policy rests solely with the editor of this bulletin.



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The KGF has an extensive collection of videos available for check-out at no charge.

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These are ideal for classroom or general public viewing.

See the web for titles & descriptions  
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Call 316-265-8676

Ask for Rhonda or Wes to check out videos

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### **NOTICE!!!!**

#### **WSU GEOLOGY CLUB & Papa John's Pizza**

Papa John's offered WSU student organizations an opportunity to raise monies for their organizations.

The **WSU Geology Club** is participating  
And **YOU** can help them!

When ordering pizza from Papa John's,  
Use this code: **WSU004**  
(those are zero's, not letter O)

With this code, the customer will receive 40% off their entire online order and WSU's AAPG Student Chapter will receive 10% of the money spent on the order.

**Eating pizza tonight?  
Let's help WSU Geology Club!**

Monies raised will be used towards gas money to travel to local schools when they promote the geosciences to grade schools, registration costs for workshops, seminars and AAPG Student Expos, and social and academic events like an upcoming "Lunch and Learn" series next fall.

### **The Following Are For Sale**

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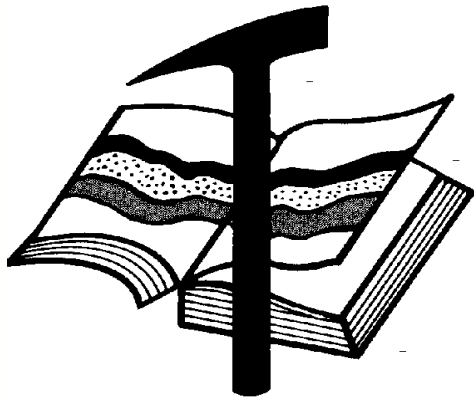
*Microfiche Electric Logs*

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### **Geological Office Furniture:**

- 8-drawer completion card cabinets
- 7-drawer cabinets
- Map cabinets—metal—2 available
- Map racks—different sizes

**Call: 316-265-8676**  
**Ask for Ted**



# Kansas Geological Foundation

*Web Site: [www.kgfoundation.org](http://www.kgfoundation.org)*

**212 North Market  
Wichita, Kansas 67202**

A not-for-profit educational and scientific corporation

## **GOALS:**

- promote geology and earth science
- preserve geological records
- establish memorials and endowments
- support field trips and seminars
- financial aid and grants to students

**PLEASE HELP SUPPORT THE FOUNDATION**

## **Kansas Geological Foundation Services**

The Kansas Geological Foundation provides the following services as a part of the organization's commitment to educate the public regarding earth science.

### **Speaker's Bureau**

A list of speakers available to talk about various aspects of geology may be obtained by contacting Wes Hansen at the KGS Library, 265-8676. This service is free to the public.

### **DVD/Videotape Library**

The KGF maintains a DVD & videotape library focused primarily on the various fields of earth science. These tapes may be checked out without charge by the public. To obtain a list of tapes, please contact the KGS Library, 212 N. Market, Ste. 100, Wichita, KS 67202, or call Wes Hansen at 265-8676.

The Kansas Geological Foundation was founded in March, 1989 as a not-for-profit corporation under the guidelines of section 501(c)(3) of the tax code to provide individuals and corporations the opportunity to further the science of geology. It is dedicated to providing charitable, scientific, literary and educational opportunities in the field of geology for the professional geologist as well as the general public.

KGF can receive in-kind donations through which the donor may receive a tax deduction. Of equal importance, the KGF provides the financial resources to sort, process and file this data at the KGS library. If you have a donation to make, please contact the KGF at 265-8676.

Your tax-deductible membership donation helps to defray the cost of processing donations and to support public education programs about the science of geology. Annual membership begins at \$50.00 per year. Donations of \$100.00 or more are encouraged through the following clubs:

<b>Century Club</b>	\$ 100 to \$ 499
<b>\$500 Club</b>	\$ 500 to \$ 999
<b>Millennium Club</b>	\$1000 to \$5000
<b>President's Club</b>	\$5000 and over

# *Kansas Geological Foundation*

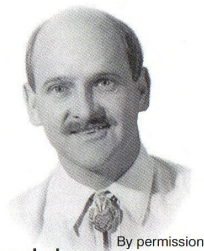
## *Cornerstone*

### *Kansas Geological Foundation News*

#### Spring 2019 Scholarship Recipients

Applicant	University	Scholarship	Amount
Ethan Reid	Fort Hays State Uni-	KGF Scholarship	\$500
Mikaela Radar	Kansas State Univer-	KGF Scholarship	\$750
Luke Rijfkogel	Kansas State Univer-	Robert Cowdery KGF Scholarship	\$1000
Rhowe Stefanski	Kansas State Univer-	KGF Scholarship	\$750
Isaac Allred	University of Kansas	KGF Scholarship	\$750

### **The Kansas Geological Foundation Needs You!**



The KGF provides the financial resources to sort, process and file, in-kind donations of geological data at the KGS library. Due in large part to the KGF this unique and rare well of information is being made available to all. Please consider telling your company management and colleagues about the benefits of a library that continues expanding in part because of the KGF.

**We very much value and need your financial support.**

#### **KGF Officers and Board Members**

**President- Dennis Hedke**  
**Vice President - Brian Fisher**  
**Treasurer - Bryce Bidleman**  
**Secretary - Ted Jochems**

#### **Board Members**

**Dave Callewaert**      **Michel Runnion**  
**Ken Leblanc**        **Larry Friend**  
**Corey Baker**

---

**Scholarships - Maurice Korphage**  
**Publicity - Wes Hansen**



# *Kansas Geological Foundation News*

Students: The KGF awards scholarships each December and May. Check with your department chairs for applications. You must submit complete applications by the deadline.

## **Scholarship Applications for the Spring semester will be due by December 1, 2019.**

Grants to help with research on Kansas related geology are also considered for aid.

If you are in the KGS Library and see Ted Jochems or any of the integrators, give any of them a great big thanks for their efforts in continuing the tedious process of examining, scanning and integrating new logs and geologist's reports etc. into our library and the WDL.

---

As of January 1, 2019, the Foundation has **two full time employees** working on well log integration: Helen Cruz and Shuyao Li (a.k.a. Emily) along with Ted Jochems. They work forty hours per week, with Ted Jochems putting in 20-30 hours. More than a dozen other part-time integrators have worked on the project since 2010.

---

## **Grant Request Recipients**

**Dr. Hendratta Ali - Fort Hays State University \$1,000.00**

## **Integration Update May 31, 2019**

From 01 January to 31 May of 2019, 11,207 well logs were examined by the integrators. 2,670 (23.8%) were new logs for the Walters Digital Library. 1,082 logs were re-scanned to replace poor existing digital images.

Over the eight year history of the integration project, 186,699 well logs have been examined. 54,453 (29.2%) were new to the WDL, with 3,978 logs re-scanned to replace poor existing images.

With Shuyao Li (Emily) and Helen Cruz becoming full time KGF employees, the estimated wages and benefits for these two ladies for 2019 is \$71,230. Ted Jochems requests that the KGF board continue to allocate \$15,000 for his services as a contractor/consultant. The total estimated cost of well log integration for 2019 is \$86, 230.

Thank you to Randy Wolf and Gore Oil Company for their recent donation of data and cabinets.

Submitted by Ted Jochems

# Kansas Geological Foundation Memorials

KGS Member	Date Deceased	Memorial Established
Dan Bowles	09/89	1990
John Brewer	10/89	1990
George Bruce	08/89	1990
Robert Gebhart	01/90	1990
Ray Anderson, Jr.	11/90	1990
Harold McNeil	03/91	1991
Millard W. Smith	08/91	1991
Clinton Engstrand	09/91	1991
M.F. "Ted" Bear	10/91	1991
James & Kathryn Gould	11/91	1991
E. Gail Carpenter	06/91	1993
Benton Brooks	09/92	1992
Robert C. Armstrong	01/93	1993
Nancy Lorenz	02/93	1993
Norman R. Stewart	07/93	1993
Robert W. Watchous	12/93	1993
J. George Klein	07/94	1994
Harold C.J. Terhune	01/95	1995
Carl Todd	01/95	1995
Don R. Pate	03/95	1995
R. James Gear	05/95	1995
Vernon Hess	06/95	1995
E. K. Edmiston	06/95	1995
Jack Rine	07/95	1995
Lee Cornell	08/95	1995
John Graves	10/95	1995
Wilson Rains	10/95	1995
Heber Beardmore, Jr.	09/96	1996
Elmer "Lucky" Opfer	12/96	1996
Raymond M. Goodin	01/97	1997
Donald F. Moore	10/92	1997
Gerald J. Kathol	03/97	1997
James D. Davies	08/88	1997
R. Kenneth Smith	04/97	1997
Robert L. Dilts	05/97	1997
Delmer L. Powers	06/72	1997
Gene Falkowski	11/97	1997
Arthur (Bill) Jacques	01/98	1998
Bus Woods	01/98	1998
Frank M. Brooks	03/98	1998
Robert F. Walters	04/98	1998
Stephen Powell	04/98	1998
Deane Jirrels	05/98	1998
William G. Iversen	07/98	1998
Ann E. Watchous	08/98	1998
W.R. "Bill" Murfin	09/98	1998
Donald L. Hellar	11/98	1998
Joseph E. Rakaskas	01/99	1999
Charles W. Steincamp	02/99	1999
Robert and Betty Glover	10/96	1998
Howard E. Schwerdtfeger	11/98	1999
W. W. "Brick" Wakefield	03/99	1999
V. Richard Hoover	01/00	2000
Warren E. Tomlinson	01/00	2000
James A. Morris	01/00	2000
Eric H. Jager	03/00	2000
Kenneth W. Johnson	03/00	2000

# Kansas Geological Foundation Memorials

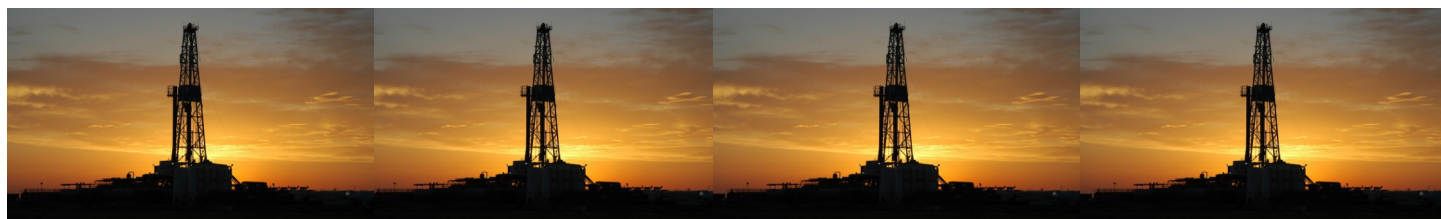
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Jerry A. Langrehr	07/00	2000
Clark A. Roach	07/00	2000
Floyd W. "Bud" Mallonee	10/00	2000
Ralph W. Ruuwe	09/00	2000
Robert L. Slamal	02/01	2001
Jerold E. Jespersen	06/01	2001
William A. Sladek	06/01	2001
Harlan B. Dixon	06/01	2001
Edward B. Donnelly	08/01	2001
Richard P. Nixon	02/02	2002
Robert W. Frensley	12/01	2002
Gerald W. Zorger	01/02	2002
Don L. Calvin	03/02	2002
Claud Sheats	02/02	2002
Merle Britting	2002	2002
Harold Trapp	11/02	2002
Donald M. Brown	11/02	2003
Elwyn Nagel	03/03	2003
Robert Noll	09/03	2003
Benny Singleton	09/03	2003
Jay Dirks	2003	2003
J. Mark Richardson	02/04	2004
John "Jack" Barwick	02/01	2004
Richard Roby	03/04	2004
Ruth Bell Steinberg	2004	2004
Gordon Keen	03/04	2004
Lloyd Tarrant	05/04	2004
Robert J. "Rob" Dietterich	08/96	2004
Mervyn Mace	12/04	2004
Donald Hoy Smith	04/05	2005
Richard M. Foley	06/05	2005
Wayne Brinegar	06/05	2005
Charles B. Moore	09/96	2005
Jack Heathman	05/06	2006
Charles Kaiser	09/06	2006
Rod Sweetman	08/06	2006
Karl Becker	10/06	2006
Frank Hamlin	10/06	2006
Marvin Douglas	12/06	2006
Robert W. Hammond	04/07	2007
Eldon Frazey	04/07	2007
Pete Amstutz	05/07	2007
Charles Spradlin	05/07	2007
Donald R. "Bob" Douglass	09/07	2007
Vincent Hiebsch	11/07	2007
Glen C. Thrasher	03/08	2008
Peg Walters	06/08	2008
Theodore "Ted" Sandberg	07/08	2008
James Ralstin	11/08	2008
Earl Brandt	04/09	2009
Walter DeLozier	05/09	2009
Don D. Strong	1/10	2010
John Stone	02/10	2010

# Kansas Geological Foundation Memorials

KGS Member	Date Deceased	Memorial Established
Craig Caulk	03/10	2010
Joseph E. Moreland, Jr.	03/10	2010
Gene Garmon	03/10	2010
James F. Dilts	05/10	2010
Jerry Pike	05/10	2010
Donald Hollar	06/10	2010
Delbert Costa	08/10	2010
John Tanner	08/10	2010
William (Bill) Owen	09/10	2010
Harold (Hal) Brown	10/10	2010
Edmund G. Lorenz	11/10	2010
Thomas E. Black	05/11	2011
Wayne E. Walcher	07/11	2011
Henry F. Filson	07/11	2011
Thomas Ray	07/11	2011
Edgar E. Smith	09/11	2012
Marilyn Messinger	06/13	2013
Micheal Mitchell	09/13	2013
Orvie Howell	11/13	2013
James Thompson	11/13	2013
Dick Rowland	09/13	2014
Robbie Thompson	12/13	2014
Kris Kennedy	04/14	2015
Annette Hedke	02/15	2015
James Devlin	04/15	2015
Robert Gensch	09/15	2015
Jerald Rains	05/16	2016
Max Houston	05/16	2016
Robert "Gus" Messinger	01/17	2017
Jimmy Wayne Gowens	04/17	2017
Walter H. Martz Jr.	01/18	2018
Gary Sandlin	01/17	2018
Douglas McGinness	12/16	2018
Allen Siemens	06/18	2018
Ernest R. "Ernie" Morrison	09/18	2018
E. G. "Elbie" McNeil	12/18	2018
Robert Maxwell (Bob) Euwer	1/19	2019

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**The costs for printing and mailing the bulletin far exceed the ad revenue. Advertising revenue received in 2018 totaled \$ 3,590.00. Printing and postage costs for 2018 totaled \$13,605.48. A shortfall of \$10,015.48. Currently, one can view the bulletin online from the Kansas Geological Society website and print from one's own computer. As editor and manager, I have decided to have the Bulletin be digital only effective January 2020.**



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**AAPG Needs You!**

**Professional geoscientists, share your world!**

The Mid Continent Section has **17 AAPG Student Chapters**, but only **3 Visiting Geoscientists**...which makes it almost impossible to have a professional geoscientist visit to each school at least once a year or even once every two years. The aim of AAPG's program is to give students a flavor of a professional life in energy resources. It also hopes to encourage dialog between industry and academia.

To be a Visiting Geoscientist bearing the AAPG flag, you are asked to have at least 5 years of experience and make at least one visit per year to a university. It can be a school with an AAPG Student Chapter, or a college/university without one. Your choice.

The Mid Continent schools with Student Chapters are: Missouri University, Fort Hays State University, Iowa State University, Kansas State University, Missouri State University, University of Nebraska, Northwest Missouri State University, Oklahoma State University, University of Oklahoma, University of Arkansas, University of Iowa, University of Kansas, University of Missouri, Columbia University of Tulsa and Wichita State University.

Contact Robbie Gries, co-Chair VGP committee, Denver, if you are interested in learning more. rrgries@aol.com



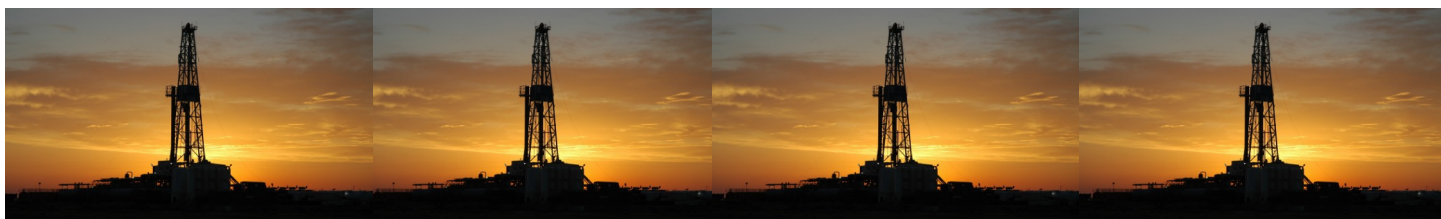
4.) Cobalt Energy LLC, Wichita (KS), is producing an undisclosed amount of crude oil from the Mississippian formation at the #1-5 JE Unit 'A' in Gove County. The 4348-ft deep well was drilled on an isolated structural feature in the SW/4 of section 5- T14s- R27W - just north of the Castle Rock North Field (1984). The Castle Rock North Field currently produces oil from both the Lansing - Kansas City and Mississippian formations. The well establishes the new Morning Glory Field approximately six miles south and seven miles east of Gove, Kansas.

5.) Pioneer Oil Company, Inc, Vincennes (IN), has established new Lansing - Kansas City oil production in the SW/4 of section 28- T8s- R28W with the completion of the #1-28 Schamberger. The Sheridan County well establishes a new unnamed oil field nearly one mile north of production in the Freda North Field. The field was discovered in 1991 by Bowman Oil Company. Pioneer Oil added Lansing - Kansas City pay to the field's resources in 2015. The Schamberger well was drilled to a total depth of 4200 ft by Discovery Drilling tools. Site is located two miles southwest of the town of Hoxie, Kansas.

6.) Arcadian Resources LLC, Hays (KS), has discovered oil deposits in the Pennsylvanian System Limestone at the #1-19 Liam, spotted in the NE/4 of section 19- T8s- R32W in Thomas County. Though the exact pay source is confidential, operator's objective zones of interest included the Lansing - Kansas City, Marmaton and Cherokee formations. Wellsite is located about 3/4-mile northeast of Marmaton (Altamont) oil production in the one-well Kindig Northwest Field (2007), and is one mile northwest of Cherokee oil production in the now abandoned, two-well Kindig Northeast Field (2008). Total depth of the Liam well is 4724 ft. Arcadian's latest find is located about two miles south and six miles east of the town of Colby, Kansas.

7.) L. D. Drilling, Inc, Great Bend (KS), has discovered oil deposits at a wildcat well drilled in Rooks County in the NW/4 of section 24- T6s- R18W, approximately four miles north of Stockton, Kansas. The #1-24 Terry was drilled to a rotary total depth of 3610 ft at site located over one mile south of the Faubion South Field. The field was established in 2007 by Trans Pacific Oil Corporation. It has produced nearly 15,000 bbls of oil from the Lansing - Kansas City formation. Production zone of L. D. Drilling's new discovery is unknown. The Arbuckle formation was also a targeted zone of interest by the operator. The new field has not been named.

8.) Landmark Resources, Inc, Houston (TX), reports new Marmaton oil production has begun at the #1-17 Double Bar X wildcat well in Wichita County. Spotted in the SW/4 of section 17- T17s- R36W, the new unnamed pool discovery is situated over one mile southeast of similar Marmaton pays (Altamont and Pawnee) in the Wilbur Field, which was discovered by Ritchie Exploration in 2018. Murfin Drilling tools were used to drill the Double Bar X to a total depth in the Mississippian at 4880 ft. Wellsite is located five miles north and one mile east of the City of Leoti, Kansas.



**CHANGE SERVICE REQUESTED**

KGS BULLETIN  
 July - August 2019

**July 2019**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4 KGS Closed	5	6
7	8	9 KGS Board	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

**August 2019**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13 KGS Board	14	15	16 2nd Annual KGS Brewery Meet	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31