

KANSAS GEOLOGICAL SOCIETY

BULLETIN

Volume 84 Number 3

May-June 2009

IN THIS ISSUE

Member Profile:

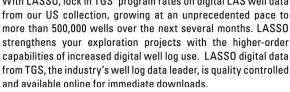
Judson Hipps

Geo Scenes — page 14

KGS—OCGS
Field Trip Photos - page 12







For more information about LASSO, contact your TGS account representative or call 1- (888) LOG-LINE.









www.tgsnopec.com

Table of Contents

Features:

Member Profile:	
Jud Hipps	10
KGS—OCGS Field Trip photos	12
GeoScenes	14

Departments & Columns:

President's Letter	
From the Manager	9
Professional Directory	19
Advertiser's Directory	17
KGS Tech Talks	4
Kansas Geological Foundation	23
Exploration Highlights	21
KGF Memorials	26

ON THE COVER:

View to the west from New Paltz, New York of Shawangunk Mountain with its steep escarpment of the light-colored, Silurian Shawangunk Conglomerate. Read more about this area in Geo-Scenes on page 14.

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 Technical Editor Dr. Sal Mazzullo at salvatore.mazzullo@wichita.edu, whose mailing address is Department of Geology, Wichita State University, Wichita, Kansas 67260. 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

SPRING 2009

May 5— Dr. Raef— "CO2 Sequestration & Production Enhancement in KS"

May 19—John Lorenz, President-Elect, AAPG

May 26— Dr. George Clark, Kansas State University

There will be no technical meetings over the summer months of June, July & August. Schedule will resume in September.

Location for Technical Meetings

All KGS technical presentations are held at 12:30 p.m. at the **Wichita Bar Association**, located at **225 N. Market**, ground floor conference room, unless otherwise noted.

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.

KANSAS GEOLOGICAL SOCIETY



BOARD OF DIRECTORS

PRESIDENT PRESIDENT-ELECT

Lynn Watney Rick Saenger

SECRETARY TREASURER

Dave Clothier Beth Isern

DIRECTORSADVISORSErnie MorrisonJon CallenSteve FrankampPaul Gunzelman

Robert O'Dell

COMMITTEE CHAIRMEN

Advertising Kent Scribner
Advisory Jon Callen

Paul Gunzelman Annual Banquet Doug Davis Sal Mazzullo Bulletin Continuing Education Robert Cowdery **Distinguished Awards** Ernie Morrison **Directory** Larry Richardson Environmental Kent Matson Field Trip Larry Skelton Fishing Tournament Randy Teter

Future Plans

Golf David Barker
Historian Larry Skelton
Investment Beth Isern
Library Roger Martin
Ted Jochems

MembershipLarry FriendNomenclatureJohn H. Morrison, IIIPicnicMarjorie CranePublic RelationsRobert CowderyShooting TournamentLarry Richardson

Technical Program Robert Cowdery
Ticket Sales Bill Shepherd

A.A.P.G. DELEGATES

Ernie Morrison Robert Cowdery Alan DeGood 2010 2009 2009

BULLETIN STAFF

EDITOR

Sal Mazzullo

salvatore.mazzullo@wichita.edu (316) 978-7211

ADVERTISING

Kent Scribner

Stelbar Oil Corp. (316) 264-8378

PROFILES/MEMORIALS

Robert D. Cowdery

Consultant (316) 267-9030

EXPLORATION HIGHLIGHTS

John H. Morrison, III

Independent O&G (316) 263-8281

STATE SURVEY

Rex Buchanan

KS Geological Survey (785) 864-3965

SOCIETY NEWS

KGS Library (316) 265-8676

EDITOR EMERITUS

Wes Hansen (316) 863-7313

K.G.S. LIBRARY

PHONE 316-265-8676 FAX 316-265-1013

email: frontdesk@kgslibrary.com or

Web: www.kgslibrary.com

LIBRARY MANAGER

Rebecca Radford 265-8676 manager@kgslibrary.com

The KGS *Bulletin* is published bi-monthly by the Kansas Geological Society, with offices at 212 North Market, Wichita, Kansas 67202 Copyright 2006, The Kansas Geological Society. The purpose of the *Bulletin* is to keep members informed of the activities of the Society and to encourage the exchange and dissemination of technical information related to the Geological profession. Subscription to the *Bulletin* is by membership in the Kansas Geological Society. Limited permission is hereby given by the KGS to photocopy any material appearing in the *KGS BULLETIN* for the non-commercial purpose of scientific or educational advancement. The KGS, a scientific society, neither adopts nor supports positions of advocacy, we provide this and other forums for the presentation of diverse opinions and positions. Opinions presented in these publications do not reflect official positions of the Society.



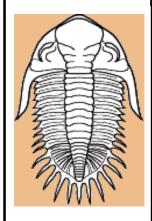
Eleven Trucks Serving Kansas - Colorado - Texas Nebraska - Illinois

Slickline services using the same Alpine Electronic Pressure Guages as used on DST's

Back pressure testing (G1 & G2)

DST's

1-800-728-5369



FAX: 1-785-625-5620 trilobite @eaglecom.net

SHOPS LOCATED IN:

Hays, KS

Scott City, KS

Pratt, KS

Hugoton, KS

Clay City, IL

CAN YOU NAME THE CRITTER?

Sponsored by Trilobite Testing, Inc.

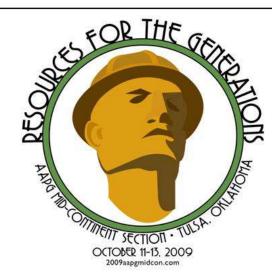
Is your paleo up to date?

If you know the name of the trilobite, submit your guess via e-mail to manager@kgslibrary.com

Remember that Trilobite Testing is sponsoring your efforts, so be sure to thank Paul Simpson the next time that you see him.

Yes—Frank Mize guessed it again—here's a new one!

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



RAPS MID-CONTINENT SECTION MEETING

TULSA MARRIOTT SOUTHERN HILLS

OCTOBER 11-13, 2009

www.2009aapgmidcon.com

Now, in the 21st Century, we and future generations must develop every available energy resource at our disposal. The AAPG is welcoming an entirely new generation of geoscientists into our ranks, and it is our responsibility as a professional organization to provide the intellectual resources to these new hires (and old hands alike) so that they can develop the new energy resources for generations yet to come.

Session Topics Include:

- The Woodford Formation
- Applications for 3-D Seismic: Structure, Stratigraphy, & Fracture Identification
- Horizontal Plays in the Mid-Continent: Geologic Opportunities, Drilling and Completion Techniques
- Fractures & Microfractures: Importance to Resource Plays
- Professional Development for Geoscientists: New Hires to Old Hands, Concepts to Completions
- Mid-Continent Petroleum Systems
- Unconventional Technology in Mature Fields
- Shale and Coalbed Reservoirs in the Mid-Continent
- New Oil and Gas Ventures: Dare-Dream-Do
- Geology of the Mid-Continent

Visit us online at

www.2009aapgmidcon.com

for updated technical program, field trip, short courses, student awards, and sponsorship information!



Registration opens July 1, 2009!

Presented by the Tulsa Geological Society

President's Letter

Greetings from Lawrence.

The first quarter of 2009 will be memorable if it isn't already. As I write the official rig count in Kansas has fallen from 52 in January to 17 in March (*Independent Oil and Gas Service*, *iogsi.com*). Oil and gas exploration is down 50% nationwide. Alternative energy companies have also similarly felt the impact of this international economic crash with investments plummeting. In a rare occurrence, no energy sector has been left untouched.

While the icy economy appears to be thawing a little as we go into spring, a proposed 2010 federal budget could remove tax incentives and add taxes for the oil and gas industry. Scott Tinker, speaking as AAPG President, summarizes the issues in the April '09 AAPG Explorer,

"In an effort to wean the American people from foreign oil, the President has asked Congress to remove vital tax incentives for high-risk exploration and add additional taxes onto the oil and gas industry. Compounded with crushingly low energy prices, tight capital markets and lack of drilling access, this new "policy" likely will put many independent producers out of business, causing jobs to fall faster than oil rigs, accelerate



U.S. production decline, decrease the federal tax base, expose U.S. resources to purchase by foreign interests and make the United States even more dependent on foreign sources of oil and natural gas further risking national security. Low energy prices will eventually help the economy recover. Recovering economies need energy, which will be in even shorter supply if we pursue the proposed energy policies, and cause oil price to bounce up once again — likely way up. Extreme highs and extreme lows are extremely unhealthy. Wise policy should work to mitigate volatility, not enhance it."

I echo his concerns and his call for an energy policy that promotes stability in the energy economy. The viability of the domestic petroleum industry is crucial to economic recovery, at least for the 16 or so major oil and gas producing states, and the ultimate goal of eliminating foreign oil. The ability of the petroleum industry to meet the demand forecasted for petroleum liquids and natural gas through 2030 by EIA-DOE, representing approximately 65% of our energy supply (EIA, http://www.eia.doe.gov/oiaf/forecasting.html), will certainly be challenged with the deliberate weakening of the domestic petroleum industry. The "carrot and stick" approach to realign energy sources ignores hard realities, and the capabilities and contributions of the existing domestic energy industry.

As a geological society, an important part of our mission is to promote and emphasize geoscience solutions and facilitate and encourage dissemination of technology. The success in employing these technologies in the exploration and development to produce more oil and gas depends on favorable and less volatile produce prices and costs. We can do our part to create a more positive dialog by being prepared everyday to convey what you and the petroleum industry are doing to contribute toward meeting current and future domestic energy needs. The dialog on energy policy should be inclusive of all the energy sectors working in concert.

Let me conclude on an affirmative note. The doors to the Kansas Geological Society Library and web access to the WDL are open and ready to serve you. The KGS is actively cooperating and partnering with local and national societies including AAPG national and Mid-Continent Section, PTTC, Kansas Geophysical Society, KIOGA, EKOGA, our own KGF, and other sister societies and energy libraries in other states. The electronic log initiative in Kansas involved a concerted effort among all of us. The Chase Group Field Trip led by Sal Mazzullo and Jim Chaplin in April is another example of this cooperation, organized in cooperation with the Oklahoma City Geological Society. Members are actively involved in our K-12 earth science education in Kansas including recent field trips and celebration of Earth Day. Realizing the risk of being repetitive, I continue to marvel at Bob Cowdery's energy and organization as he carries out one of the most active technology transfer venues in the country through his weekly (except those weeks that the board meets), well attended, technical programs with industry and academic speakers alike. Thanks to all of you who are contributing to this excellent program. Our Walter's Digital Library is undergoing a renewal from the inside out to provide members with improved services and new software features to meet future needs. The board is keenly interested in the viability of this critical aspect of our business.

The KGS social activities abound including the KGS fishing tournament at El Dorado Lake held April 24th and the upcoming Golf Tournament on June 22nd. Go out, have fun, and celebrate Spring and the simple pleasures that continue to be plentiful in Kansas in spite of the rough economic conditions. My thanks to all of our volunteers and society library staff members for all that you do and to our members who participate in the activities.

Respectfully submitted, W. Lynn Watney



Would you like to increase your production?



Well Enhancement Services, LLC is jetting laterals utilizing new technology and coiled tubing. Operating across Kansas, we have perfected the lateral jetting process with the ability to place acid hundreds of feet away from the well bore. This technology is revolutionizing the oil industry across the nation. It has firmly established itself by repeatedly increasing production in both new and existing wells. Contact us for more information, questions or to schedule your next well with WES.



Tap into success....with WES

Please Contact Us:

Phone: (785) 625-5155 Fax: (785) 625-4151

wesofhays@hotmail.com www.wellenhancement.com

Box 87 Schoenchen, KS 67667

From The Manager

Dear Members,

As we move through these wonderful Kansas spring months, the KGS library is seeing more members using the library, primarily because they are not out in the field. We hope things turn around soon for all of you and in the meantime, we keep adding the new data into our files for you.

If you are so inclined, since life in the oil patch is moving a little slowly lately, we are considering having a few "volunteer nights" to help get more



data into our files. We quickly run out of room in our file cabinets with the larger suite of logs that many companies are running now and we need to do a complete file stretch in both East and West files. If I can spark enough interest, I would like to stay open late a few nights and would offer to provide some pizza or similar edible creation and of course, "beverages" to encourage some of you to come down and help! Let me know if you would be interested and what time frame would work for you.

We have our annual Golf Tournament coming up on Monday, June 22nd and we will hope for a bright sunny day this year. We kind of got partially rained out last year but you golfers, you are a special breed because you stuck it out! David Barker is chairing this event again this year so if Dave calls you for a donation or help, please chip in. Registration form is included in the printed edition of this Bulletin but if you read on-line, look under "Events" tab and you will find a registration form to print out.

Prior to the June Golf Tournament, the KGS/KGF/WDL will have a booth at the Annual AAPG Convention in Denver, Colorado. That convention runs June 7 –10 and we will be in booth 457. Please stop by the booth if you are attending the convention. I hope to see several of you Colorado members there.

The KGS and the OCGS co-sponsored a field trip this past month and thanks to the Oklahoma group, we have some photos of that weekend trip — look on pages 11 & 12. Sal Mazzullo (Wichita State University) and Jim Chaplin (Oklahoma Geological Survey) led this field trip to look at the Chase Group in SE Kansas and NE Oklahoma and I have heard very good comments by some of those who attended.

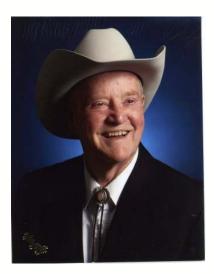
Also, you will notice some photos from the Grand Canyon throughout this issue (like the one on the opposing page). These are from Bob Bayer, who took a hiking trip earlier this spring. If you are out on any interesting treks this summer, be sure to share you photos with us.

Enjoy the spring!

Rebecca Radford

Profile

Judson Hipps



This is the profile of a member who spent a number of years working in Wichita and recently received his 50-year member pin awarded by the Kansas Geological Society.

F. Judson Hipps was born March 8, 1929 in Ashville, NC and since has returned to his "roots:", now residing in Brevard, NC near Ashville. His father was a lifelong resident of North Carolina working for Southern Bell Telephone and Telegraph Company. His mother, after the death of her first husband, attended Western Carolina University where she obtained a Teacher's Certificate and later taught English.

Jud had five siblings: Phoebe Creasman Hall, Ralph Dixon Creasman, Floyd Russell Creasman, Rosemary Carolyn Brosius and Nancy June Green. Nancy is the only one still living.

Shortly after his birth in 1929, the infamous crash occurred and the family lost their farm and moved to rural Haywood County in the shadow of Cold Mountain. In retrospect, Jud says that he lived a boyhood of poverty, but his boyhood was enriched by the guidance and books of his mother. He started school at Bethel Elementary, but during the third grade his father obtained steady employment and the family moved to West Ashville, NC. He then attended Aycock Elementary, Hall Fletcher Junior High and Lee H. Edwards, which is now Ashville High School. Jud was student body president at all of these schools and he played football in high school.

Jud attended the University of North Carolina at Chapel Hill, N.C. and graduated with a BS degree in Geology in 1951. None of his classmates are members of the KGS, in fact, very few graduates from UNC ever worked in the "oil patch." He attributes his decision to be a geologist to: a need to juggle schedules, Divine guidance and complete fascination with Historical Geology. Following graduation he obtained employment with the Oceanographic arm of the John Hopkins University known as Chesapeake Bay Institute.

In 1950, he married Dottie Sorrells and Jud says that they lived a great life together until her death in 2004. Jud and Dottie had three children: Vickie Sheedy who resides in Santee, SC, Alan Hipps who lives in Little Rock, Ark and Lisa Lacy who resides in Lenexa, KS.

After a couple of years with the Chesapeake Bay Institute, Jud realized that his call was to be an oil seeker. He ac-

cepted an offer from Cities Service Oil Company and began his employment with that company in 1953. At various times, he was stationed in Springfield, CO; Amarillo, TX,Bartlesville, OK; Wichita, KS: and Oklahoma City, OK. In Oklahoma City, he was Regional Exploration Geologist for the Mid-Continent Region. Jud says he has the only 14 ½ year service pin ever issued by CSO which was issued at his request. During his tenure with CSO there were many KGS members that he worked with, but his longest association with any of them was with his best friend, Dan Bowles.

While employed at CSO, Jud had the most interesting experience of his career. It was in Bartlesville, home office of CSO at that time, where Jud mapped the regional sub-crop of Devonian aged Hunton under the tutelage of CSO geologists, Mabry Hoover and Murray Wells. CSO decided to make a play in non-productive Northeast Kansas. CSO at the time that they were Indian Territory Illuminating Oil Company was among the first companies to map structure of outcropping rocks. Jud says that he believes he and Dan Bowles wee among the last. They did the work that resulted in the discovery of the Yeage field in Riley County, Kansas. When oil was found, they thought they could repeat it 12 to 15 times. Jud says not another drop of oil from the Hunton was encountered on that play.

Jud was then employed by Pickrell Drilling, where he renewed his association with Dan Bowles who had become the Lead Geologist after Jerry Pike resigned. Jud and Dan had four good years together at Pickrell and then Jud joined Chuck Mayfield at Thunderbird Drilling. After a couple of years there, he worked he worked with Bob Beren along with KGS members, Don Beauchamp, Max Houston, and John James. Then he found his niche with A. Scott Ritchie. He says they really had a good run together until 1982. Jud says that Scott was the fellow geologist that exerted the most influence in that he taught him to become an "oilman" in a much more complete manner than only a petroleum geologist.

Jud believes that being a geologist was the best possible work to enjoy, be excited by and also rewarded. He says that the next time around, he would be happy to do it all over again. In his career as a geologist, just as many of his fellow geologists, he believes that the biggest character he encountered was V. Richard Hoover.

Jud is a lifelong member of and has been very active in the Episcopal church where he currently serves as a Lay Reader, Chalice Bearer, and as an assistant at the weekly healing service. Another service to his community has been his work for the past 25 years with the Habitat for Humanity in constructing houses. He also has done needed renovation of homes in Brevard. Jud, over the years, has enjoyed outdoor activity of all kinds, particularly fly fishing for local trout and fishing with his son in Arkansas and Alaska. He feels blessed to have a super new friend, Vonnie Heinkamp to travel with and enjoy the opportunities that life presents.

Jud as previously indicated, has maintained a 50 year relationship with the KGS. He is also a member of the Kansas Geological Foundation and the AAPG.

He has set as goals: "to live a long time without getting old" and to continue enjoying life with Vonnie. This has been a remarkable career for one of our 50-year members.

Field Trip Photos

On April 18th & 19th, the Kansas Geological Society and the Oklahoma City Geological Society conducted a joint field trip to view the Chase Group (Permian, Wolfcampian) in southeastern Kansas and northern Oklahoma. This trip was led by Sal Mazzullo, Wichita State University Geology Department and Jim Chaplin from the Oklahoma Geological Survey. See the following photos on this page and the next, for a good view of what the group saw on this two day excursion. (More photos on next page)













Security for AAPG Members & Their Families
Through Group Insurance

Life
Health
Dental
Disability
Auto and Homeowner
Supplemental Plans

AAPG's
GeoCare Benefits Insurance Program
P. O. Box 189
Santa Barbara, CA 93102-0819
800-337-3140
E-mail: geocarebenefits@agia.com

www.geocarebenefits.com



KGS Annual Golf Tournament

When? Monday, June 22nd Where? Hidden Lakes—Derby

Cost? \$55.00

See Insert for Entry Form Or Print on-line at www.kgslibrary.com



"Setting The New Service Standard"

Burt Gowdy

Technical Sales Engineer

Open Hole Wireline Services Servicing KS, OK, TX & AR

2409 South Purdue Drive Oklahoma City, OK 73128 Fax: (405) 601-5737 Cell: (405) 514-0643 24 hr. Dispatch 1-918-645-1091

Email: Burt.Gowdy@TuckerEnergy.com http://www.TuckerWireline.com



~The TOP CHOICE for 3D SEISMIC~

John H Beury III ~ Pres John Aguilar ~ Op. Mgr.

PHONE (316) 636 - 5552 FAX (316) 636 - 5572

3500 N. Rock Rd., Bldg 800, Suite B Wichita, KS 67226

paragon@paragongeo.com

Geo Scenes

Flysch, Plate Collision, and Molasse

In this issue of the KGS Bulletin I'm taking a slight detour from my usual Geo-Scenes contributions, most of which have featured Kansas geology. Instead, this note focuses on some fantastic geology that we "mid-continent geological types" rarely get a chance to see up-close and personal. The present contribution was hatched over last Thanksgiving, when we (my wife Chellie and I) went to visit relatives in southern upstate New York near New Paltz, in the lower Hudson River Valley. This area was one of my favorite geological hunting grounds when I was a young, aspiring college student. In addition to visiting relatives, and of course, educating (boring?) them about the geology of the area in which they lived, I fleshed out the geology of the terrain around us for this contribution.



Figure 1—view to the west from New Paltz, New York of Shawangunk Mountain with its steep escarpment of the light-colored, Silurian Shawangunk Conglomerate. The conglomerates are underlain by the Upper Ordovician Normanskill Group.

Figure 1 is a view looking west from New Paltz toward Shawangunk Mountain. In the foreground are the beautiful fall colors of the trees (see cover photo), and in the background is the prominent resistant escarpment held up by the Silurian Shawangunk Conglomerate. Along the base of the escarpment, and elsewhere throughout the area, are many outcrops of, and some quarries in, the Upper Ordovician Normanskill Group, which underlies the rocks comprising Shawangunk Mountain. Figure 2 shows the typical disposition of the Normanskill strata in the southern Hudson River Valley – that is, they are complexly folded and faulted, and nearly vertical at this locality. The Normanskill Group, which is as much as 5 miles thick, comprises dominantly black, typically graptolite-bearing shales interbedded with thick turbidite sandstones. These rocks were deposited as "flysch" that is, they are deep-water deposits laid down to the immediate west of a volcanic island arc-subduction zone complex that existed seaward (eastward) of the carbonate-dominated North American craton in this area of New York State (Figure 3). The sandstones in the Normanskill Group contain abundant igneous rock fragments and interparticle clays, and they are referred to as being mineralogically immature. They would not make good hydrocarbon reservoirs in the subsurface because of poor porosity development. The deep seaway in which the Normanskill was deposited is referred to as the western Iapetus Ocean, and it existed during the Cambrian and Ordovician between North America and Europe. The Normanskill Group was thrust westward onto the North American craton, and was complexly deformed, when westward subduction along a plate boundary resulted in collision of the island arc with the North American continent in latest Ordovician time. The suture zone of the two involved plates subsequently became a highland area of igneous and metamorphic rocks to the immediate east of the southern Hudson River Valley (Figure 3).

Coarse, quartz-pebble gravels were shed westward from the crystalline-rock highland, and in this part of New York were deposited during the Early Silurian as the Shawangunk Conglomerate (Figure 4). Maximum thickness of these rocks is approximately 1700 ft. Insofar as these Silurian rocks are post-orogenic deposits, they are referred to as "molasse". There is very little porosity in these rocks because the component quartz gravels and sands are tightly cemented by interparticle quartz. The Shawangunk was deposited as braided stream deposits and debris-flow deposits on broad alluvial fans, and they are variously massive bedded to cross-stratified (Figure 5).



Figure 2—Quarry along the base of Shawangunk Mountain exposing nearly vertically-disposed black shales in the Upper Ordovician Normanskill Formation. Chellie Mazzullo for scale.

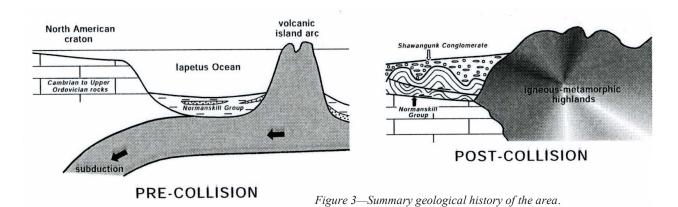


Figure 4—Sample of the gravelly Shawangunk Conglomerate. Pen for scale.



Figure 5—Cross-stratified Shawangunk sandy conglomerate deposited in a braided stream on an alluvial fan. Scale on lower right is 6" in length.

Of course, the setting of Kansas during the Early Paleozoic was completely unlike that of southern New York in that the Kansas instead was located in the more stable interior of the North American craton. Hence, there are no beds analogous to the deep-water flysch of the Normanskill Group here. In Kansas and the surrounding mid-continent area, however, there are molasse-type deposits analogous in terms of their post-orogenic origin to the Shawangunk Formation in New York. Around the Central Kansas Uplift, for example, there are Cherokee-age, coarse conglomerates and associated sandstones derived from erosion of the uplift. Likewise, outcrops in the Arbuckle Mountains of Oklahoma include similar coarse, alluvial fan and graben-fill conglomerates and some sandstones (the lower Pennsylvanian Collings Ranch Conglomerate) in matrices of red shale. These rocks were eroded from the uplifted Arbuckles during the Early Pennsylvanian. The Cherokee conglomerates and sands in the subsurface of Kansas locally are important hydrocarbon reservoirs.

submitted by Sal Mazzullo

VACATION photos courtesy of Bob Bayer Look for more throughout this issue







ADVERTISER'S DIRECTORY

	page
Allied Cementing Company, Inc	18
Duke Drilling	18
GeoCare Services AAPG	13
Kansas Geological Foundation	23
Lockhart Geophysical	18
LogSleuth	25
MBC Well logging	18
Murfin Drilling Company, Inc	18
PARAGON Geophysical Services, Inc	13
Professional Directory	19
Sunrise Oilfield Supply	18
TGS-NOPEC Geophysical Company	2
Trilobite Testing	6
Tucker Wireline Services	13
Walters Digital Library	8
Weatherford	27
Well Enhancement Services, LLC	8

ADVERTISER'S RATES: 2008

Full Page 6 issues 3 issues	B&W \$2,000 \$1,080	Color \$2,500 \$1,325
1 issue	\$480	\$525
1/2 Page		
6 issues	\$1,000	\$1,500
3 issues	\$540	\$825
1 issue	\$225	\$350
1/4 Page		
6 issues	\$600	\$900
3 issues	\$325	\$525
1 issue	\$150	\$250
1/8 Page		
6 issues	\$300	\$500
3 issues	\$175	\$325
1 issue	\$75	\$185
Professional Ad (Bu	siness Card)	
6 issues	\$90	\$180

For one-time ads, call Rebecca at 316-265-8676

WESTERN KANSAS SOUTHERN NEBRASKA



EASTERN COLORADO OKLAHOMA & TEXAS PANHANDLES

10 Well Service Rigs & **Roustabout Services**

For contract information, please contact: Alan Hays, Well Service Sprvsr. 785-421-2103 or 785-567-8739 (cell)

East Highway 24—Hill City, KS 67642

10 Drilling Rigs

For contract information, please contact: **Blaine Miller / Drilling Department** 316-858-8607 (Direct) or 316-267-3241

250 N. Water #300—Wichita, KS 67202





Great Bend (620) 793-5861

Ness City (785) 798-3843 Medicine Lodge (620) 886-5926



Acidizing Available at Medicine Lodge District

Russell (785) 483-2627

Oakley (785) 672-3452

Lockhart Geophysical Company

Call (303) 592-5220 FAX (303) 592-5225 Or E-mail lockden@xpert.net

> 2D & 3D Seismic Acquisition Vibroseis Specialists



JAPEX GDAPS-4 Distributed System

We'll give you seismic excellence

MBC

WELL LOGGING & LEASING **UNMANNED GAS DETECTORS**

MUD LOGGING CERTIFIED INSTRUMENT TECH SERVING THE KAN-O-TEC AREA SINCE 1990

AUSTIN GARNER

MARLA GARNER

24-HOUR PHONE (620) 873-2953 MEADE. KANSAS



With Pump Shop

Offering New & Used

Pipe, Equip. & Fittings

Employee Owned

New Office

STORES

Ness City, KS 800-589-5733

El Dorado, KS 316-321-9323

Garden City, KS

877-976-1700

Spivey, KS 316-532-5261

Hugoton, KS 620-428-6604 McCook, NE 308-345-154

Wichita, KS 800-777-7672

Great Bend, KS 316-792-3130 Mob: 316-786-4255

PROFESSIONAL DIRECTORY

Kirk Rundle

Consulting Geophysicist

3D Seismic Design, Acquisition to Processing QC., Interpretation and Analysis, Subsurface Integration 7340 W. 21st. N., Ste. 100 Wichita, Kansas 67205

Office: 316-721-1421 Fax: 316-721-1843 Home: 316-721-8962 Email:krundle@swbell.net

DON V. RIDER

Consulting Petroleum Geologist Well Site Supervision Geological Studies Completions

8910 W. Central Park Ct. Wichita, KS 67205

Office PH: 316-729-4445 Cell PH: 316-706-7199

Tel.: (972) 712-9036 Fax: (972) 712-0258 Cell: (214) 223-1784

> LANG J. FUQUA **Certified Petroleum Geologist**

> > 4201 Tanglewood Ln. Frisco, Texas 75035

WESLEY D. HANSEN

Consulting Geologist

Well site Supervision Geologic Studies 212 N. Market, Ste 257 Wichita, Kansas 67202 Off: (316) 263-7313 Mobile: (316) 772-6188

KEVIN L. KESSLER

INDEPENDENT/CONSULTING PETROLEUM GEOLOGIST

WELLSITE SUPERVISION • GEOLOGIC RESEARCH OIL & GAS PROSPECTS KANSAS & EASTERN COLORADO

MAILING ADDRESS

1199 N. PONDEROSA RD. BELLE PLAINE, KS 67013 PHONE RES.: (316) 522-7338 MOBILE: (316) 706-6636

EMAIL: KKESSLER1 199@AOL.COM

KGJ ENTERPRISES

Contract Oil & Gas Accounting & Office Management

Kathryn G. James, MBA 4278 SW 100th ST. Augusta, KS 67010

(316) 775-0954 (316) 250-5989 kgjames@onemain.com

ROGER L. MARTIN

Independent Petroleum Geologist

501 W. 9th • Winfield, Kansas 67156

Office 316-833-2722 Cell: 316-250-6970

> KS Field Cell: 316-655-1227 Home/Fax: 620-402-6301 Email: rogermartingeo@yahoo.com

ALFRED JAMES III

Petroleum Geologist Kansas - Colorado - Alaska

SIPES #1111 Wichita, Kansas 67202 Off: (316) 267-7592

M. Bradford Rine

Honorary Life Member—Kansas Geological Society

Licensed Geologist—KS. #204 Registered Professional Geologist—Wyo. # 189 Certified Geologist—A.A.P.G. # 2647 S.I.P.E.S. # 1584 S.P.E. #109833-4

S.I.P.E.S. # 1584 S.P.E. #107005 T

PROSPECT EVALUATION • PROSPECT GENERATION

WELLSITE SUPERVISION • EXPERT TESTIMONY • OPERATIONS

PROPERTY EVALUATION • RESERVOIR STUDIES

DRLG./COMP. CONSULTATION

Office: (316) 262-5418

Fax: (316) 264-1328

a, KS 67202 Cell: (316) 772-6829

Suite 415 100 S. Main Wichita, KS 67202



Paul Gunzelman President/Geologist

Wichita, Kansas 316.634.6026 email p.gun@sbcglobal.net

ROBERT J. GUTRU

Geologist

300 Farmers & Bankers Bldg. 200 East First Street Wichita, Kansas 67202 Off: (316) 265-3402

MELLAND ENGINEERING

Petroleum Engineering & Geological Consulting

James E. Melland, P.E.

Owner Office: (620) 241-4621 Fax: (620) 241-2621

Cell Phone: (661) 319-5950 Email: jemelland@sbcglobal.net Jamesm@mellandengineering.com

P.O. Box 841, McPherson, KS 67460

PROFESSIONAL DIRECTORY



Free To Good Home (or office)

Geophysical Journals
AAPG Bulletins
Economic Geology
Mining Engineering
Journal of Sedimentary Petrology
Shale Shakers

Contact: Library 316-265-8676

Microfiche Logs For Sale

The **Kansas Geological Foundation** is offering electric logs and other information on microfiche for sale. This data is from 10 western states. The microfiche will be sold as is, in bulk, by state (no cherry picking).

Prices are proportionate to the number of fiche available (~ 45,000 fiche Wyoming, 20,000 fiche for Montana, Utah, and N. Dakota.)

Prices are firm, you haul or pay for shipping

Wyoming—\$250.00
North Dakota—\$200.00
Montana—\$200.00
Utah—\$200.00
Colorado—\$50.00
South Dakota—\$50.00
New Mexico—\$25.00
Idaho—\$25.00
Arizona—\$25.00
Oklahoma—\$25.00

Interested parties call: 316-265-8676

Help Wanted! Integration Project

If you have <u>any</u> time you could give to the
Library, we have
projects that could move a little faster
with some
<u>Expert Professional</u>
Geologists

Just a few hours a week would make such a difference.

<u> প্রতামিত্রামিত্রামাত্রামাত্রামাত্রামাত্রামাত্র</u>

To volunteer, please contact Ted Jochems or Rebecca at the Library
265-8676

THE ON-LINE BULLETIN IS NOW IN PDF FORMAT

Check out the complete KGS Bulletin on our web site www.kgslibrary.com

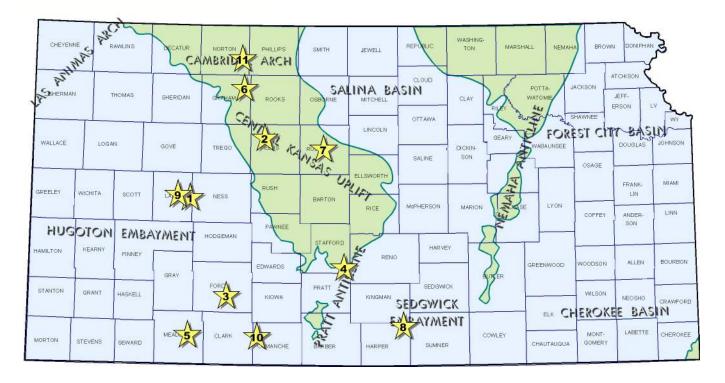
A simple way to help your Society save money would be to let us know if you like viewing the Bulletin on line. This would allow us to reduce our mailing & printing costs of sending the Bulletin to every member.

We are glad to keep mailing it to you but if you are satisfied with reading on-line, please just let us know.

316-265-8676

Exploration Highlights

By John H. Morrison, III Independent Oil & Gas Service



- (1) In Lane county, Pintail Petroleum LTD has established a new unnamed oil field with the completion of the #1-2 Mauch (JL). Located in the NW/4 of section 2- T18s- R27W, the wildcat well is on pump at an undisclosed rate about ten miles northeast of Dighton, Kansas. Operator found the new reserves over three-quarters mile west of Lansing-Kansas City oil production in the Delos Southwest oil field in sections 1 and 2. Marmaton and Mississippian production is also present in other nearby fields. Producing formation at the Mauch well is not available. The new field has not been named.
- (2) Tomlinson Operating, LLC produced an average of 16 barrels oil per day on pump tests taken in November 2008 at the #1 Pfeifer Farms, spotted in the SW/4 of section 31- T12s- R19W, Ellis county. The wildcat well is producing crude from undisclosed perforations in the Lansing-Kansas City formation. L.D. drilling tools bottomed the well at a total depth of 3901 ft. The new unnamed pool opener lies over one-half mile north of the multipay Schoenthaler Southwest oil field, about four miles northeast of Ellis, Kansas. A field name has not been given to the new discovery at this time.
- (3) A new Morrow gas field has been discovered in southern Ford county by Vincent Oil Corporation. The firm's Hitz #1-35 was completed in November last year at site located in the SW/4 of section 35- T28s- R23W. No flow rate is available. Operator drilled the well to a total depth of 5437 ft. using VAL Energy rig

- #1. The new unnamed field is located over two and one-half miles from Pennsylvanian Conglomerate and Mississippian gas production in the Great Mogul Canyon field in section 22. Closest Morrow production lies over six miles from the Hitz lease.
- (4)Reif Oil & Gas Company, LLC is producing an unknown amount of oil from the Arbuckle formation at the Zink #1, SW/4 of section 20- T25s- R11W, Stafford county. The new unnamed oil field is located three-quarters mile north of the AJT oil field that was opened in 1993 and has produced over 23,000 barrels of oil from the Mississippian and over 267 MM cuft gas from both the Mississippian and Viola zones. The Zink discovery was placed on pump on February 25, 2009.
- (5) EOG Resources is producing on average 350 barrels of oil per day, no water, plus 1,518 Mcf gas per day, at the #27-3 Central Plains in Stevens county. The 6,000 foot deep well is a northeasterly stepout of the Renee field, which lies to the west in Morton county. The field was established by EOG Resources in early 2008. The Central Plains well has produced over 28,000 barrels of crude during the first three months on production, as well as over 116 MMcf of gas. Production formation is the Morrow. Drill site is located in the SW/4 of section 27- T33s-R39W, about thirteen miles southwest of the city of Hugoton, Kansas.

- (6) Keith F. Walker Oil & Gas Co., LLC has discovered Mississippian gas reserves at the Possum #9-1 well in Meade County. The wildcat test establishes the new Possum field in the NE/4 of section 9- T32s- R27W, about four miles east of Meade, Kansas. Operator placed the well on production in mid November last year. Unknown production volume of natural gas is being produced from the Mississippian Chester formation. Rotary total depth is 5,850 ft. The new source of supply lies over two miles east of gas production in the Meade field.
- (7) Independent producer John O. Farmer, Inc. has found new oil deposits in an undisclosed formation at the Frasca #1, located in the NE/4 of section 29- T7s- R21W, Graham county. The wildcat well started producing oil in December last year. The Lansing-Kansas City and Arbuckle zones were primary objectives. Operator used WW Drilling tools to drill the well to a total depth of 3,643 ft. The new unnamed field lies about a mile northeast of closest known production in the Holsman field, SE/4 of section 30, which John Farmer also discovered in October, 2007. The Holsman field produces oil from the Shawnee, LKC and Arbuckle zones.
- (8) In Russell county, about four and one-half miles northwest of the town of Bunker Hill, John O. Farmer, Inc. has discovered new oil deposits on the Dauber lease in the SW/4 of section 1-T13s- R13W. The #1-A well was completed in December last year for an undisclosed production rate. Producing zone is also unknown. Total depth is 3,375 ft. Lansing-Kansas City limestones were designated zones of interest. Site is located over three miles from the Waldo field which produces oil from the LKC zones. The new field has been named Backwater.
- (9) Murfin Drilling Company is producing an unknown amount of oil at their Helen #1-21, located in approximately C N/2 NW SW in section 21- T31s- R5W, Harper county. The Gerber North pool opener was drilled to a rotary total depth of 4,810 ft., and had targeted the Lansing-Kansas City, Simpson and Arbuckle formations as primary zones of interest. Well site is located nearly one and one-half miles northwest of production in the Gerber field, where the LKC and Simpson Sand produces oil. The new unnamed field lies about eight miles northeast of Harper, Kansas.
- (10) The Middle Stan oil field has been discovered in eastern Lane county by Mull Drilling Company. The firm's Kent #1-7, spotted in the SE/4 of section 7- T18s- R27W, is pumping crude at an undisclosed rate. Well site is located almost three-quarters mile southeast of established Lansing-Kansas City and Marmaton oil production in the Stan Northwest field, which was discovered by L. D. Drilling in 2004. Operator drilled the Kent well to a total depth of 4,650 ft. The new unnamed field lies about three miles northwest of Alamota, Kansas.
- (11) John O. Farmer, Inc. has discovered Morrow Sand gas reserves over one and one half miles southeast of the multipay

Exploration Highlights continued on pg. 24

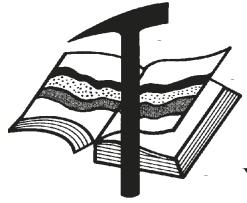
Vacation Photos

KGS member Bob Bayer went on a hiking trip in the Grand Canyon this spring & has shared all of his photos with us. Look throughout this issue for several and look forward to seeing some more this summer. Kind of makes you want to plan a road trip, doesn't it? View these on-line to really appreciate the colors!









Kansas Geological Foundation

Web Site: 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 Janice Bright 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 Janice Bright 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.

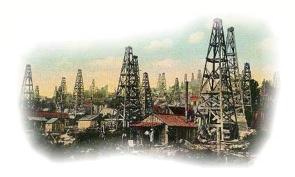
KGF can receive in-kind donations through which the donor may receive a tax deduction. Of equal importance, the KGF provides the financial resources to sort, process and file this data at the KGS library. If you have a donation to make, please contact the KGF at 265-8676.

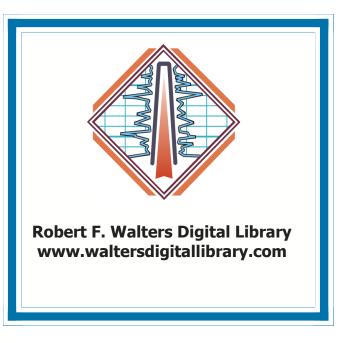
Your tax-deductible membership donation helps to defray the cost of processing donations and to support public education programs about the science of geology. Annual membership begins at \$50.00 per year. Donations of \$100.00 or more are encouraged through the following clubs:

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

Comanche oil and gas field in Comanche county. The Herd #1-A, spotted in the SW/4 of section 20- T32s- R20W, was drilled to a total depth of 5,250 ft., in the Mississippian formation. Operator completed the wildcat well late last year for an unknown amount of production. The newly named River Bend field is situated about two and one-half miles northwest of Protection, Kansas.

(12) Bach Oil Production is pumping 60 barrels of oil and 50 barrels of water per day from three zones within the Lansing-Kansas City formation at their Adee #1, spotted in the SW/4 of section 14- T4s- R21W, Norton county. The wildcat well found oil deposits in the LKC 'A', 'C' and 'D' zones from perforated depths of 3448 to 3450, 3479 to 3484 and 3496 to 3498 ft. respectively. All zones were given a 300 gallon acid job. Anderson Drilling tools were used to bottom the well to a rotary total depth of 3,724 ft in the Granite formation. Field area lies three-quarters mile southeast of the Hewitt Southwest field, about six miles northeast of Densmore, Kansas. The new field been given the name Big Dutchman East.





Foundation Video / DVD Collection 2 New DVDs

How The Earth Was Made—History Channel

This video plots the twisting course of Earth's amazing journey. Using groundbreaking special effects and traveling to remote locations where our planet still bears the scars of its violent history, this compelling documentary tells a story of unimaginable timescales, world-shattering forces, radical climates, and mass extinctions.

A Global Warning? - History Channel After 650 Million years of climate change, is global warming simply a naturally occurring phenomenon, or the result of human activity?

Arctic ice is melting, sea levels are rising, and glaciers are shrinking at alarming rates. The Earth is getting unmistakably warmer. But is this vast, potentially catastrophic, climate change the result of human behavior? Or is it simply the Earth's natural cycle of warming and cooling periods that have occurred since the planet formed? THE HISTORY CHANNEL® offers an in-depth study of the science behind this hot-button issue.

Environmental Geosciences—AAPG

2008 publication of the Environmental Division of the American Association of Petroleum Geologists

Call 316-265-8676 Ask for Janice to check out videos

> INTERESTED IN BUYING CARD SETS, CABINETS, ETC.??

Larry Friend and Ted Jochems invite you to submit your e-mail address to an automatic notification list when such things come up for sale.

Contact: KGS Library 265-8676





U.S.A. LOGS FOR:

ALABAMA ALASKA ARKANSAS ARIZONA CALIFORNIA COLORADO FLORIDA IDAHO ILLINOIS INDIANA KANSAS LOUISIANA MICHIGAN MISSOURI MISSISSIPPI MONTANA NEBRASKA NEVADA **NEW MEXICO** NORTH DAKOTA **OKLAHOMA** OREGON **SOUTH DAKOTA** TEXAS UTAH WASHINGTON WEST VIRGINIA WYOMING

CANADIAN LOGS FOR:

ALBERTA BRITISH COLUMBIA SASKATCHEWAN MANITOBA FEDERAL AREAS

Kansas Geological Foundation Memorials

KGS Member	Date Deceased	Memorial Established	KGS Member	Date Deceased	Memorial Established
Dan Bowles	09/89	1990	James A. Morris	01/00	2000
John Brewer	10/89	1990	Eric H. Jager	03/00	2000
George Bruce	08/89	1990	Kenneth W. Johnson	03/00	2000
Robert Gebhart	01/90	1990	Dean C. Schaake	03/00	2000
Ray Anderson, Jr.	11/90	1990	Fred S. Lillibridge	05/00	2000
Harold McNeil	03/91	1991	Jerry A. Langrehr	07/00	2000
Millard W. Smith	08/91	1991	Clark A. Roach	07/00	2000
Clinton Engstrand	09/91	1991	Floyd W. "Bud" Mallonee	10/00	2000
M.F. "Ted" Bear	10/91	1991	Ralph W. Ruuwe	09/00	2000
James & Kathryn Gould	11/91	1991	Robert L. Slamal	02/01	2001
E. Gail Carpenter	06/91	1993	Jerold E. Jesperson	06/01	2001
Benton Brooks	09/92	1992	William A. Sladek	06/01	2001
Robert C. Armstrong	01/93	1993	Harlan B. Dixon	06/01	2001
Nancy Lorenz	02/93	1993	Edward B. Donnelly	08/01	2001
Norman R. Stewart	07/93	1993	Richard P. Nixon	02/02	2002
Robert W. Watchous	12/93	1993	Robert W. Frensley	12/01	2002
J. George Klein	07/94	1994	Gerald W. Zorger	01/02	2002
Harold C.J. Terhune	01/95	1995	Don L. Calvin	03/02	2002
Carl Todd	01/95	1995	Claud Sheats	02/02	2002
Don R. Pate	03/95	1995	Merle Britting	2002	2002
R. James Gear	05/95	1995	Harold Trapp	11/02	2002
Vernon Hess	06/95	1995	Donald M. Brown	11/02	2003
E. K. Edmiston	06/95	1995	Elwyn Nagel	03/03	2003
Jack Rine	07/95	1995	Robert Noll	09/03	2003
Lee Cornell	08/95	1995	Benny Singleton	09/03	2003
John Graves	10/95	1995	Jay Dirks	2003	2003
Wilson Rains	10/95	1995	J. Mark Richardson	02/04	2004
Heber Beardmore, Jr.	09/96	1996	John "Jack" Barwick	02/01	2004
Elmer "Lucky" Opfer	12/96	1996	Richard Roby	03/04	2004
Raymond M. Goodin	01/97	1997	Ruth Bell Steinberg	2004	2004
Donald F. Moore	10/92	1997	Gordon Keen	03/04	2004
Gerald J. Kathol	03/97	1997	Lloyd Tarrant	05/04	2004
James D. Davies	08/88	1997	Robert J. "Rob" Dietterich	08/96	2004
R. Kenneth Smith	04/97	1997	Mervyn Mace	12/04	2004
Robert L. Dilts	05/97	1997	Donald Hoy Smith	04/05	2005
Delmer L. Powers	06/72	1997	Richard M. Foley	06/05	2005
Gene Falkowski	11/97	1997	Wayne Brinegar	06/05	2005
Arthur (Bill) Jacques	01/98	1998	Jack Heathman	05/06	2006
Bus Woods	01/98	1998	Charles Kaiser	09/06	2006
Frank M. Brooks	03/98	1998	Rod Sweetman	08/06	2006
Robert F. Walters	04/98	1998	Karl Becker	10/06	2006
Stephen Powell	04/98	1998	Frank Hamlin	10/06	2006
Deane Jirrels William G. Iversen	05/98 07/98	1998	Marvin Douglas Robert W. Hammond	12/06 04/07	2006
Ann E. Watchous	08/98	1998 1998		04/07	2007 2007
W.R. "Bill" Murfin	08/98	1998	Eldon Frazey Pete Amstutz	05/07	
Donald L. Hellar	11/98	1998	Charles Spradlin	05/07	2007 2007
Joseph E. Rakaskas	01/99	1998	Donald R. "Bob" Douglass		2007
Charles W. Steincamp	02/99	1999	Vincent Hiebsch	11/07	2007
Robert and Betty Glover	10/96	1999	Glen C. Thrasher	03/08	2007
Howard E. Schwerdtfeger	11/98	1999	Peg Walters	06/08	2008
W. W. "Brick" Wakefield	03/99	1999	Theodore "Ted" Sandberg	07/08	2008
V. Richard Hoover	01/00	2000	James Ralstin	11/08	2008
Warren E. Tomlinson	01/00	2000	Earl Brandt	04/09	2008





All Around You

Weatherford has always been driven by your needs.

Now, with the addition of Precision Energy Services we're continuing to build a world of skills, services and technologies that revolve – and evolve – around you.

The result?

An expanded global network of 25,000 people, 730 service bases and 87 manufacturing facilities in 100 countries.

This increased local knowledge and service is there to support you anywhere, anytime. From midday in the Middle East to midnight in the middle of nowhere.

And with greatly strengthened capabilities in the critical evaluation skills of directional drilling and wireline logging, we can do even more to improve the profitability and productivity of your wells.

To see how our sphere of services can work for you, visit **www.weatherford.com** or contact either your Weatherford or former Precision Energy Services representative.

Drilling | Evaluation | Completion | Production | Intervention

© 2006 Weatherford International Ltd. All rights reserved. Incorporates proprietary and patented Weatherford technology.

PRSRT STD US POSTAGE PAID WICHITA KS PERMIT NO 923

CHANGE SERVICE REQUESTED

KGS BULLETIN Mav—June 2009

May 2009						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5 Tech Talk	6	7	8	9
10	11	12 KGS Board	13	14	15	16
17	18	19 Tech Talk	20	21	22	23
24	25 Memorial Day—Library Closed	26 Tech Talk	27	28	29	30
31						
June~2009						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7 AAPG CONV	8 ENTION DENVE	9 R	10	11	12	13
14	15	16 KGS Board	17	18	19	20
21	22 KGS Golf	23	24	25	26	27