KANSAS GEOLOGICAL SOCIETY

BULLETIN

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IN THIS ISSUE

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ON THE COVER

Foraminiferal sand shoals in Chetumal Bay, northern Belize; Brian Wilhite for scale. The shoals, with their inherent high interparticle and intraparticle porosity, are analogs of producing reservoirs in the Lansing and Kansas City Groups. Registration forms are available at the Kansas Geological Society Library for the July 2005 field seminar to Belize.

A. A. P. G. Delegates

Ernie Morrison	2008
Robert Cowdery	2006
Alan DeGood	2006

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KANSAS GEOLOGICAL SOCIETY TECHNICAL PROGRAMS

SPRING SCHEDULE

May 4—Dr. Rolfe Mandel, *"Search for Pre-Clovis Archaeological Sites in the Midcontinent: A Geo-archaeological Approach" (see photo on page 7)*
May 11—Ethics Panel
May 18—Tom Hansen, *"Global Warming and Global Cooling"*

All KGS technical meetings are held at 12:30 p.m. in the Bank of America Auditorium 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.

NON-KGS SEMINARS

Oct 14—Fort Hayes State University, *"Geology-Electrical Resistivity-An integrative applied geophysics workshop designed for working Kansas geologists seeking earned credit ..."*
(For more information go to: http://www.fhsu.edu *or* Ken Neuhauser @ 785-628-5349; kheuhausefhsu.edu)

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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

EDITOR'S LETTER

Dear KGS members and friends,

If you listen closely, you will hear the "fat lady" singing. It is with mixed emotions that I inform each of you that this will be my last issue as editor of the Bulletin.

Several years back, a decade at least, I offered to take over as editor of the Bulletin from Larry Richardson. My thought at the time was that someone would come forward in about 2 years to take over the position. That wishful thinking did not pan out. I tried begging and bribing to find someone to take over the job, but was not successful. Several months back, Kimberly Dimmick-Wells, offered to help with the Bulletin. She has worked most Thursday nights at the KGS Library setting up the issues and inserting articles, working alongside Rebecca. Recently, I was informed that Kimberly was willing to take over the job, with Sal Mazzullo offering to be technical editor and advisor. I would have been a fool to say no to this offer.

I have enjoyed the challenge of being editor, but must admit there were plenty of times that the task of trying to get the Bulletin out on time interfered with other duties or relaxation. I always said that I would not abandon my post until a willing person came forward. Many a past KGS President was relieved to hear me agree to continue in my job as Bulletin editor.

Before I ramble on too long, I best thank and acknowledge some people who have made this job easier over the years. If I forget to mention someone, please corner me later and I will buy you a beer. Heck, I will buy you a beer even if I do remember your efforts. In the early years of my service I owe a big thanks to Larry Richardson and even a bigger thanks to Linda Richardson for the help they gave me. Linda put out several issues while I was gone making a living. Her strong English background helped me learn many rules of grammar and punctuation. Over the years some people have served as advertising chairmen for the Bulletin. Kent Scribner has served in that capacity for the past several years. I remember Kent Crisler doing that duty also, but feel that I am missing someone from earlier years. Our KGS manager, Rebecca Radford, has done much of the work putting out the Bulletin from the time she was hired by the Society. Of course, I owe the many members of the KGS staff a thank you for putting on the mailing labels in the earlier years. Our previous Business Manager, Tim Dugan, made sure the copies were taken to the post office.

I must of course thank Bob Cowdery. Bob has for many years submitted his member profiles, "Where are They Now" series, memorials and other articles and announcements of interest to the membership. The man does not sleep. Tyler Sanders, I did not forget you. You were the one responsible for getting the Bulletin on-line. I know personally that you worked many hours on each issue to make sure that it looked right on the web. The HTML format has not been up to snuff since you stopped volunteering your time.

I apologize again if I forgot to mention someone. To Kimberly and Sal I wish only the best. I really hope the membership will respond to Sal's efforts to get articles submitted for publication. I will still offer to help proofread from time to time.
At long last goodbye,

— *Wes*

A note from the manager: Wes, I want to thank you on behalf of all of the KGS membership. You have put countless hours into this publication and have taken great care in making sure every thing was done correctly. I know in the past few years your time was very limited and I was glad I could fill in and help you out . It has been a great joy to work with you on this publication!

—— Rebecca Radford

PRESIDENT'S LETTER

The Constitution of the Kansas Geological Society states in Article II sec 1 (1/3/84):
"The object of the Society shall be the promotion of the science of geology among the men and women engaged primarily in the geology of petroleum, gas, and environmental geosciences in the State of Kansas and surrounding territory."

In March a ballot was mailed to you asking the membership's opinion on your Board of Directors' unanimous statement regarding science education standards in Kansas K-12 public schools. Of 538 ballots mailed to members, 167 were returned. Of those, 129 voted approval, 38 voted disapproval. The approval plurality is 77 percent. The disapproval as percent of votes is 23%, as percent of all ballots sent is 7%. At your Board of Directors' meeting May 11, the following statement was approved:

The Kansas Geological Society in a membership ballot has endorsed the following : AS GEOLOGISTS, WE RECOGNIZE THAT EVOLUTION IS A UNIFYING THEORY THAT MUST BE INCLUDED IN SCIENCE EDUCATION. WE FEEL IT IMPROPER TO INCLUDE NON-SCIENCE CURRICULA SUCH AS RELIGION, PHILOSOPHY, OR POLITICS INTO STATE SCIENCE STANDARDS. Many distinguished Kansas scientists have decided to boycott the state Board of Education hearings.

Three members of the Kansas Board of Education will be holding hearings in May on this subject. None of these three have scientific credentials, and no credentials will be required of those who attend and speak. All three are of the board majority that opposes evolution teaching. Among those calling for a boycott are Dr. Steven Case, chairman of the 26 person science committee of the Kansas Board of Education, also Dr. Keith Miller and Dr. Lee Allison, both recent speakers at KGS; and the Kansas Academy of Sciences, among many other distinguished members of the Kansas scientific community. Kansas Citizens for Science has stated "Let the board take responsibility for its actions without dignifying these actions with the appearance of academic rigor."

In January, Dr. Keith Miller, Kansas State University paleontologist, spoke at KGS and pleaded that we scientists are not the enemy, and there is no essential conflict between science and religion. And, I add…unless one makes a religion out of science, which also does not belong in the science classroom.

Having often in my life been among the minority of opinions, I respect the right, even duty to disagree. There are a few who believe this issue will divide the KGS membership. My sincere hope is that the majority will actively defend our science as they see fit, while honoring the rights of those valued colleagues who might believe differently.

— **Fred James**

Rolfe Mandel, archaeological geologist with the Kansas Geological Survey, is examining 12,300 year-old mammoth bones at the Sherman County Paleoindian site (photograph by Travis Heying, Wichita Eagle). **Dr. Mandel will be the KGS's featured speaker on Wednesday, May 4th** at the Bank of America Auditorium.

Dr. Mandel leaning over mammoth bone

FROM THE MANAGER'S DESK

Dear Members,

Ah Spring! Today is just one of those perfect Kansas days, no wind, 70°, sunny …..just perfect. Spring always starts the year of events for the KGS.

The first one up will be the **Fishing Tournament on Friday, May 20th.** This is being held back at Kingman State Fishing Lake again this year. Get those rods dusted off and plan on winning some prizes. The flyer / sign-up sheet is enclosed in this issue and can also be picked up in the KGS library or printed from the KGS website.

The Wednesday before this, **May 18th, is the Foundation's Spring Mixer** (see the enclosed flyer on this.) This is a really nice evening. It will be held at the Petroleum Club again and the food & drinks are free! That alone is cause for a geologist to attend! Please plan to come if you are in town. It is a very casual evening, a lot of fun and a chance to bring a friend and introduce them to the wonderful world of geology!

June 13th, a Monday, is the KGS Golf Tournament, again to be held at Hidden Lakes Golf Club near Derby. What a beautiful course and we have had superb weather the last several years, so if you are a golfer, please plan on this event. Again, a flyer is enclosed for sign-up and directions. You all are working so hard these days, remember to take some time to play!

The KGS Picnic will be right around the corner also. We will be setting the date soon but you can plan on a Friday in August again, I am pretty sure.

This year seems to be flying by. Talking about all of these events makes me realize how fast we move through year. We have only three tech talks left before our summer break and I want to take this moment to thank **Bob Cowdery** for once again bringing us such excellent speakers. We have had a good variety of talks, covering many aspects of the petroleum industry as well as environmental. We are also having another Ethics Panel session on May 11th, brought back for a second year by demand.

Other news, we just stay very busy around the library and the Walters Digital Library is growing each week, both in membership and in data that becomes available. If you haven't tried this out yet, do yourself a favor and check it out!

Respectfully submitted,
Rebecca Radford

SHARE YOUR PHOTOS

We would like to publish any photos that you may have taken that would be of geological interest to our membership. The idea is to share any geology you may have had the opportunity to see that the rest of us could enjoy. Here is an example:: 60 miles west of Moab, Utah you can see the hogbacks of Navajo Sandstone of the San Rafael Swell. To find out more geological history go to: www.utahmountainbiking.com/goodies /geology/sanrafael.htm

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ATTENTION !!!

Kansas Geological Foundation's
Annual Spring Mixer
Petroleum Club
Wednesday, May 18th
4:30 - 8:00 pm

(See Insert for more details)

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SUBUNCONFORMITY PLAYS IN MISSISSIPPIAN STRATA IN KANSAS

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Department of Geology
Wichita State University
Wichita, Kansas 67260

INTRODUCTION

Carbonate reservoirs associated with *unconformity* or *subunconformity* traps (Levorsen 1967; Chenowith 1972; Rittenhouse 1972), including those that have been affected by karst processes, comprise major hydrocarbon reservoirs in the midcontinent US and elsewhere in the world (Moody et al. 1970; North 1985; Dolson et al. 1994a; Mazzullo & Chilingarian 1996). Such subunconformity-trap reservoirs, including those in Mississippian strata throughout Kansas, generally fall into either one sub-category of entrapment style, or more commonly, they are combinations of such, which include: (i) buried hills, including "karst towers"; (ii) erosional truncation traps; and (iii) caverns. Such trap types, particularly buried hills and truncation traps, commonly are referred to as *paleogeomorphic traps* (Martin 1966; Halbouty 1972) because they comprise integral elements of paleotopographic surfaces – that is, buried landscapes, whose degree of geomorphologic development depends on ancient climate, duration of exposure, and types of rocks present. Geologic mapping of subsurface unconformity surfaces is a mind-set exercise in mapping ancient topography, albeit which later may be at least somewhat structurally modified, rather than mapping structures *sensu stricto*. During the exploration process, distinguishing true structures, paleotopographic features, and structurally-modified paleogeomorphology is very critical in evaluating an area for its hydrocarbon potential, particularly in mature areas where mostly subtle traps may remain. A proverbial red-flag waves vigorously when the occurrence and distribution of producing fields in given subunconformity strata in an area can not be readily explained solely as a result of structural and/or depositional-diagenetic entrapment (e.g., Bindley Field, Hodgeman Co., KS: see fig. 8 in Johnson, 1994), or conversely, when many "structures" seemingly are inexplicably tight and non-productive, and lows and/or relatively flat areas locally are productive (Fig. 1). Said situations virtually scream out that paleogeomorphic traps of different types are present (Fig. 2). Without recognizing subunconformity traps for what they are, by default the exploration geologist is not considering the full range of potential reservoir plays present in a given area.

The occurrence, characteristics, and relationship to petroleum reservoirs of buried caverns beneath major unconformities in carbonate rocks have been discussed by many authors (e.g., citations in Mazzullo & Chilingarian 1996; Dolson et al. 1994a,b; and Candelaria & Reed 1992). Accordingly, the present paper focuses mainly on buried hills and erosional truncation entrapment styles and their role in, and potential for, petroleum entrapment in Mississippian rocks in Kansas. The concepts discussed herein are equally applicable to reservoirs in Arbuckle and Silurian-Devonian age strata in Kansas as well (e.g., Walters 1946, 1958; Walters & Price 1948; Newell et al. 1987).

Sal Mazzullo is professor of geology at Wichita State University, where he's been since 1987. Prior to that time he was Manager of Stratigraphic Exploration for Union Texas Petroleum Corp. in Midland and Houston, Texas, and thereafter consulting petroleum geologist and exploration geologist. He is an AAPG-certified petroleum geologist. He can be reached at his university address above or via e-mail at salvatore.mazzullo@wichita.edu.

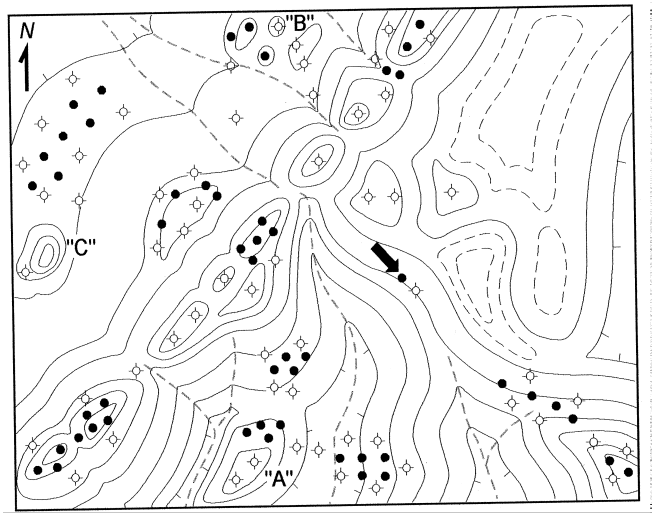

FIG. 1. Example of "structure" on the pre-Penn (top of Miss) unconformity; all producing or once-productive wells pay or paid from the Miss. Some fluvial channels (dashed lines) are shown. Note production on highs, in lows, and in relatively flat areas, and also dry holes on some of the highs, and apparent strike-control of production along the prominent NE-trending feature (a cuesta or hogback?) on the map. "A" and "B" are interfluve hills, and "C" is a monadnock. Where would you drill an offset to the arrowed producing Miss well, and specifically what type of trap would you be looking for? Is the area in the NE/4 of the map prospective from the Miss just because there may be highs present? This map would be much more geologically informative if superposed on it was a pre-Penn subcrop map.

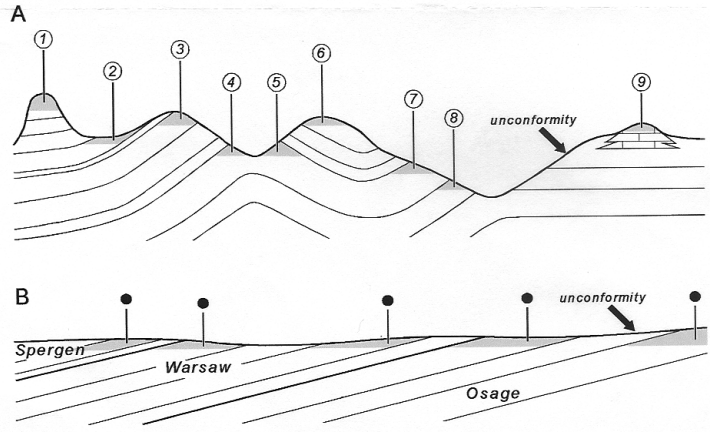

FIG. 2. A - Buried hill and subunconformity truncation traps where there is relief along unconformities. Trap 1 is a hill held up by horizontal to low-dipping strata; 3 and 6 are hills underlain by more tilted strata comprising opposite limbs of an anticline; and trap 9 is an exhumed reef. Traps 2, 4, 5, 7, and 8 are subunconformity truncation traps either in lows or well down the flanks of highs. Specifically, traps 4, 5 and 8 are on the crest of a breached anticline, and 7 is on the limb of a breached syncline. Vertical scale exaggerated. B - Typical Kansas Miss truncation traps in low-angle dipping subunconformity strata where there is little relief on the unconformity. This diagram could depict local or more regional aspects of Miss subcrop – in the latter case, for example, it could depict subcrops of Osage to Spergen westward from the Central Kansas Uplift. Of course, figures A and B are merely end-members of a spectrum of possibilities that exist in the subsurface. Note that production in both diagrams is from several reservoirs rather than from a single stratum beneath the unconformity.

BURIED HILLS AND SUBUNCONFORMITY TRUNCATION TRAPS

Buried Hills and Traps

In general, buried hills (Fig. 2A) are those features that stand in paleotopographic relief along unconformity surfaces and which can be mapped and/or otherwise recognized on seismic sections or by other remote sensing means. Such hills can develop in any types of rocks, but in the present paper I am discussing buried hills in carbonate rocks. Notwithstanding later structural reconfiguration, closure and hydrocarbon-column thickness in buried-hill traps variously are provided by paleotopographic relief and the thickness (apparent or otherwise) of reservoir strata. In all cases, buried hills (and subunconformity truncations, discussed below) beneath unconformities form during prolonged periods of subaerial exposure – that is, along major unconformities such as the pre-Penn unconformity on the Mississippian in Kansas – as a result of the differential weathering and erosion of subunconformity strata that have varying resistance to erosion based on their lithology, degree of induration, amount of porosity and permeability, fractures, and so forth. In the case of tilted subunconformity strata, differential erosion can readily result in the geomorphologic development of *hogbacks* in areas of relatively steep dip, or *cuestas* in areas of more gentle dip. Such ancient landforms usually are not isolated paleotopographic features, but rather, they commonly comprise elements of readily mappable or otherwise traceable trends that are linear because they are strike-controlled (Fig. 1). That is to say, where's there's one such feature, there likely are more along strike. Such features become

progressively more subtly expressed, and it is more difficult to discern specific trends, as the dip of subunconformity strata or topographic relief decrease; such features then merge into subunconformity truncated strata. Buried hills also are present in horizontal or very low-dipping strata within, for example, dissected interfluves ("A" and "B" in Fig. 1), where their occurrence and distribution seemingly are random. Truly isolated buried hills – otherwise known as "*monadnocks*" – that are not closely allied to fluvial channels also may be present along unconformities in areas of very low, prestructured topographic relief ("C" in Fig. 1), and their possible presence in the subsurface is very difficult to predict without seismic or other remote sensing means. Such features usually are encountered serendipitously by the drill bit.

"Tower karst" or "karst towers" are conspicuously steep-sided, buried hills formed in limestone or dolomite terrains as a result of the dissolution and/or physical erosion of less resistant surrounding strata (Fig. 3). So-called "cone karst" or "karst cones" are similar, but their slopes are less steep, and "pinnacle karst" or "karst pinnacles" are high, steep, and jagged features. For images of various types of tower and cone karst from various locations in the world see Purdy & Waltham (1999) and the web site at http://www.greatmirror.com/index.chaperid=131&countryid=129&picid=1). For a relatively recent reference on the subject, which includes examples of petroleum reservoir situations, refer to Purdy & Waltham (1999). Tower and cone karst differ from typical buried hills, which are more subtle features (Figs. 1 and 2A), in that they typically are conical and can be quite high. Conceptually there should be a spectrum of buried-hill types depending on duration of subaerial exposure, original porosity of the rocks being karsted, climate, and amount of soil cover. For example, high amounts of rainfall promote the development of high-relief karst land forms such as towers and cones, whereas instead, sinkholes and dolines dominantly form in areas of relatively low annual rainfall (Purdy & Waltham, 1999). Karsted surfaces beneath jungle soils tend to be more jagged and higher (i.e., karst towers) than in soil-poor areas because of the presence of large amounts of carbonic and organic acids generated in such soils. Logically, as amount of original porosity in host rocks increases, height and steepness of buried hills decreases. As duration of subaerial exposure increases, karst land forms tend to be reduced in size, and so, conceptually there could be an evolution over time from karst towers to karst cones to smaller and more subtle buried hills.

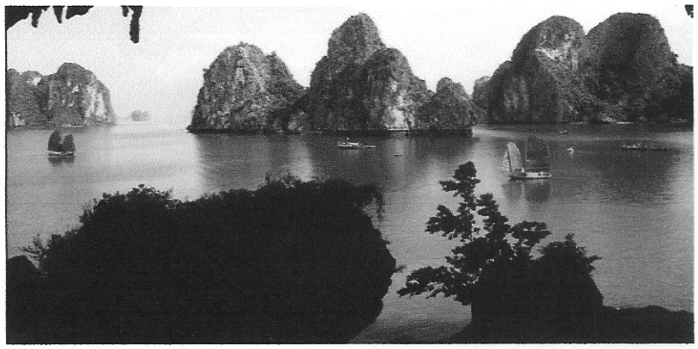

FIG. 3. Partly transgressed tower karst, southeast Asia.

Conversely, there may a lateral gradation in specific types of buried hills present along an unconformity in an area that reflects areal differences in micro-climate, original porosity of the rocks, amount of soil present, and other factors.Inasmuch as karst towers and their relatives represent relatively resistant erosional remnants, it is not surprising that they may be non-porous or only somewhat porous and of low permeability. An example of tight and non-productive tower karst in Mississippian rocks in Sumner County, Kansas is shown in Figure 4. Those subsurface karst towers in which porosity may have formed later, after subaerial exposure and during progressive burial (see Mazzullo, 2004), may have better-developed porosity and permeability. Although not always the case, karst towers commonly occur in clusters (Fig. 3) rather than as isolated features (Fig. 4).

Erosion of less resistant strata surrounding barrier or fringing reefs exposed along unconformities can result in the formation of topographic ridges that resemble cuestas or hogbacks in their linear and seemingly strike-oriented trends (Fig. 2A). Conversely, patch reefs may remain as isolated buried hills after erosion of encasing or surrounding softer rocks (Fig. 2A). In both cases, these resulting paleotopographic features actually represent somewhat erosionally-modified, exhumed depositional topography. Accordingly, in exploring for such features the petroleum geologist should primarily search for reef-facies trends and secondarily for the paleogeomorphic features that remain along unconformities within such trends. In other words, exhumed reefs can not be found in areas where reefs were not present during deposition.

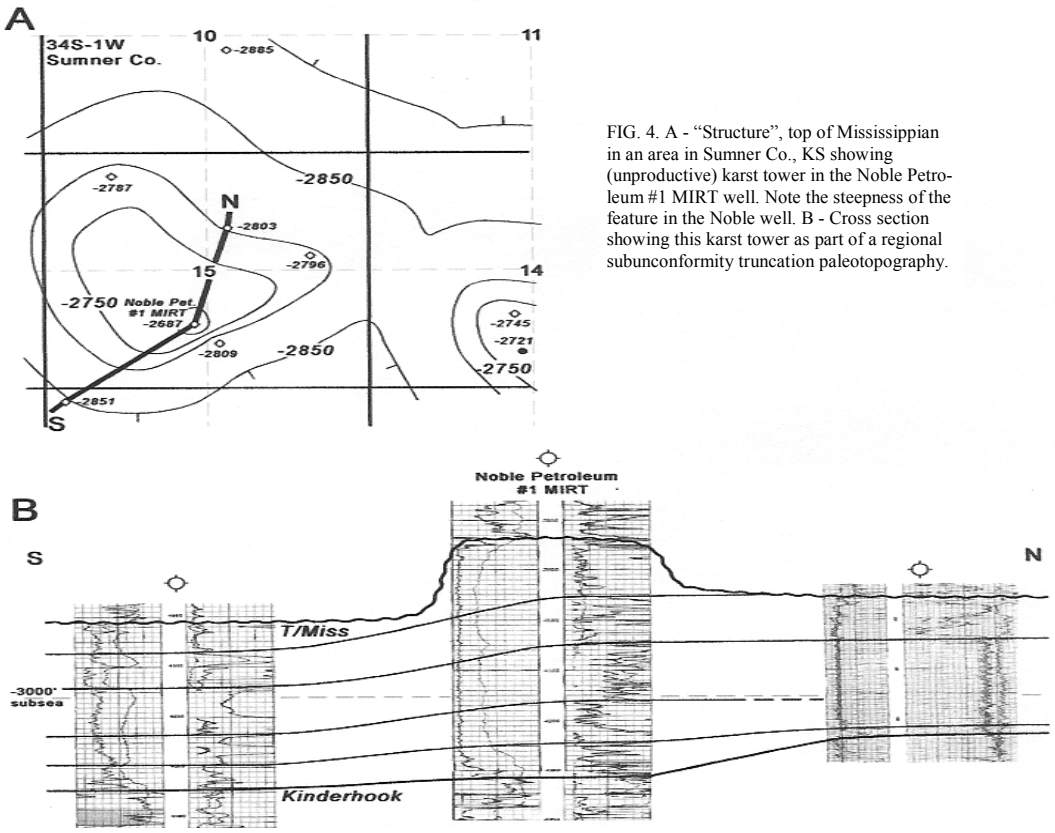

FIG. 4. A - "Structure", top of Mississippian in an area in Sumner Co., KS showing (unproductive) karst tower in the Noble Petroleum #1 MIRT well. Note the steepness of the feature in the Noble well. B - Cross section showing this karst tower as part of a regional subunconformity truncation paleotopography.

Subunconformity Truncations and Traps

By definition, subunconformity truncation results in subcrops of different layers of gently to steeply-dipping strata beneath beveled unconformity surfaces of low paleotopographic relief (Fig. 2). Mississippian rocks are known to be structured in many areas in Kansas, and even low-amplitude folds can generate significant subcrop patterns, and therefore, truncation-trap possibilities. Without knowledge of the structural configuration beneath unconformities and the lithostratigraphy of the section (e.g., Fig. 2A versus 2B), and of superimposed subcrop distributions derived therefrom, then maps on the unconformity by itself (e.g., Fig. 1) are geologically incomplete. Among some others, Johnson (1994), described an example of the importance of subunconformity truncation subcrops on Miss production in Bindley Field in Hodgeman Co., Kansas. The identification and exploration for subunconformity truncation traps is particularly exciting geologically because the possibilities for entrapment are numerous, even in cases when the unconformity surface has not been structurally modified. Consider the trap possibilities that may be present in areas with some relief and some

folding of subunconformity strata (Fig. 2A), and also in areas with little to no relief and low-dipping subunconformity strata (Fig. 2B). Traps may be present: (1) in lows, highs, or flat areas along unconformity surfaces; (2) within strata of uniform dip direction or in folded strata; and (3) in the case of even subtly-folded strata, associated with erosionally-truncated anticlines and synclines. Most importantly, note in Figure 2 that different units may be productive rather than just one unit. It is well known that in Kansas, for example, the Osage, different units within the Meramec (e.g., Johnson, 1994), and younger units all are variously productive in given areas, so why limit exploration to just beds that are "structurally" high?

But you might ask "Who in their assumed right mind would purposely drill a well in a low along an unconformity, and worse, within a syncline beneath that low?" Consider the situation illustrated in Figure 1, where Mississippian production clearly has no consistent relationship to "structure" on the pre-Pennsylvanian unconformity. Although some of this production may actually be from Miss chert gravel reworked during the early Pennsylvanian, how much of it can be categorized into the different subunconformity trap types illustrated in Figure 2? How many entrapment possibilities should the explorationist be considering? *The fact is that Figure 1 is taken from a portion of a map of the Miss in central Kansas, and it shows that actual production from various types of subunconformity traps as shown in Figure 2 is a reality and not just an academic exercise in possibilities.* Might analogous subtly-expressed traps exist in this area or elsewhere, particularly in overlooked low acreage-cost areas that have been deemed un-potential because they are "structurally" low? Only hard work and Wallace Pratt's (1952) adage that "Oil is found in the minds (sic) of explorationists" will tell.

CONCLUSIONS

Seismic exploration for Mississippian subunconformity traps in Kansas commonly is hampered by constraints imposed by limited thickness and seismic contrast of involved strata beneath unconformities. Accordingly, the explorationist must work extra hard to fully explore for such traps and to generate geologically inclusive prospects that can be shown to management or investors. Such work necessitates determination not only of "structure" maps on the unconformity, but also determination of the structural attitude, stratigraphy and lithology (by analyzing samples) of subunconformity strata, and generation of subcrop maps of potential units along the unconformity utilizing predictive and explanatory principles of geomorphology.

REFERENCES

Candelaria, M.P. & Reed, C.L., eds., 1992, Paleokarst, Karst Related Diagenesis and Reservoir Development: Examples from Ordovician-Devonian Age Strata of West Texas and the Mid-Continent; Permian Basin Section SEPM, Publ. 92-33, 202 pp.

Chenowith, P.A., 1972, Unconformity traps, in R.E. King, ed., Stratigraphic Oil and Gas Fields -- Classification, Exploration Methods and Case Histories; AAPG Memoir 16, p. 42-46.

Dolson, J.C., Shanley, K.W., Hendricks, M.L. & Wescott, W.A., 1994a, A review of fundamental concepts of hydrocarbon exploration in unconformity related traps, in reference cited immediately below, p.1-22.

Dolson, J.C., Hendricks, M.L. & Wescott, W.A., eds., 1994b, Unconformity-Related Hydrocarbons in Sedimentary Sequences; Rocky Mountain Assoc. Geologists, 298 pp.

Halbouty, M.T., 1972, Rationale for deliberate pursuit of stratigraphic, unconformity, and paleogeomorphic traps; AAPG Bull., v. 56, p. 537-541.

Johnson, R.A., 1994, Distribution and architecture of subunconformity carbonate reservoirs: Lower Meramecian (Mississippian) subcrop trend, western Kansas, in Dolson, J.C., Hendricks, M. L. & Wescott, W.A., eds., Unconformity-Related Hydrocarbons in Sedimentary Sequences; Rocky Mountain Assoc. Geologists, p. 231-244.

Levorsen, A.I., 1967, Geology of Petroleum (2nd ed.); Freeman & Co., 724 pp.

Martin, R., 1966, Paleogeomorphology and its application to exploration for oil and gas (with examples from western Canada); AAPG Bull., v. 50, p. 2277-2311.

Mazzullo, S.J., 1997, Stratigraphic exploration plays in Ordovician to Lower Permian strata in the Midland Basin and on the Eastern Shelf, in W.D. De Mis, ed., Permian Basin Oil and Gas Fields: Turning Ideas into Production; West Texas Geol. Soc., Publ. 97-102, p. 1-37.

Mazzullo, S.J., 2004, Overview of porosity evolution in carbonate reservoirs; published in two parts in Kansas Geological Society Bulletin – v. 79 no. 1, p. 22-28 (part 1) and v. 79 no. 2, p. 22-27 (part 2). Reprinted in 2004 as paper #40134 in AAPG's on-line journal "Search and Discovery" (can be ccessed at *http://www.searchanddiscovery.com/documents/2004/mazzullo/index.htm*).

Mazzullo, S.J. & Chilingarian, G.V., 1996, Hydrocarbon reservoirs in karsted carbonate rocks, in G. V. Chilingarian, S.J. Mazzullo, & H.H. Rieke, eds., Carbonate Reservoir Characterization: A Geologic - Engineering Analysis, Part II; Elsevier Publ. Co., p. 797-865.

Moody, J.D., Mooney, L.W. & Spirak, J., 1970, Giant oil fields of North America, in M.T. Halbouty, ed., Geology of Giant Petroleum Fields; AAPG Memoir 14, p. 8-17.

Newell, K.D., Watney, W.L., Cheng, S.W. L. & Brownrigg, R.L., 1987, Stratigraphic and spatial distribution of oil and gas production in Kansas; Ks Geol. Survey, Subsurface Geol. Ser. 9, 86 pp.

North, F.K., 1985, *Petroleum Geology*; Unwin Hyman Publ. Co., 631 pp.

Pratt, W.E., 1952, Toward a philosophy of oil-finding; AAPG Bull., v. 36, p. 2231-2236.

Purdy, E.G. & Waltham, D., 1999, Reservoir implications of modern karst topography; AAPG Bull., v. 83, p. 1774-1793.

Rittenhouse, G., 1972, Stratigraphic trap classification, in R.E. King, ed., *Stratigraphic Oil and Gas Fields – Classification, Exploration Methods and Case Histories*; AAPG Memoir 16, p. 14-28.

Walters, R.F., 1946, Buried pre-Cambrian hills in northeastern Barton County, central Kansas; AAPG Bull., v. 30, p. 660-710.

Walters, R.F., 1958, Differential entrapment of oil and gas in Arbuckle Dolomite of central Kansas; AAPG Bull., v. 42, p. 2133-2173.

Walters, R.F. & Price, A.S., 1948, Kraft-Prusa field, Barton County, Kansas, in J.V. Howell, ed., *Structure of Typical American Oil Fields*; AAPG Symp., v. 3, p. 249-280.

For Guidelines to submitting technical papers please refer to page 31

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Profile of the First Commercially Successful Well west of the Mississippi River

Oil had been discovered in Kansas in 1860 near Paola, Kansas, but not in commercial quantities.

In 1891, four local Neodesha businessmen contacted William Mills of Pennsylvania who had drilled successful gas wells in SE Kansas. They hoped to develop a gas supply for Neodesha.. The test, #1 Norman was drilled on a 4-acre garden plot owned by a local blacksmith.

On November 28, 1982, when drilling had reached 832 feet, the test began to flow oil. Mills plugged the well and rushed to Pittsburgh, Pennsylvania with samples. This so encouraged his backers, Guffey and Galey that they leased a million acres while the well was plugged. After the plug was drilled 9 months later the well was completed for 12 BOPD. It produced until 1919 when it was permanently plugged.

The #1 Norman opened the Mid-Continent Field which became the major oil producing region in the United States through the late 1930's.

The Norman No. 1 is a National Historic Landmark and is listed on the National Register of Historic places. A museum, the Norman # 1 Museum has been built in the city park It has a collection of indoor and outdoor exhibits that includes a replica of the # 1 Norman. It is located at First and Main in Neodesha.

Picture courtesy of Norman #1 Museum

◆ ◆

IN SEARCH OF THE MOHO

The Integrated Ocean Drilling Program recently drilled 4,644 feet below the seafloor in an effort to reach the bottom of the earth's crust. According to the National Science Foundation, the data will lend new information about the "planets composition" and "provide important information as to how the Earth's crust was formed. Though this well was about 1000' off target, plans for another attempt are being discussed.

FOR ADDITIONAL INFORMATION GO TO:
http://livescience.com/technology/050407_earth_drill.html

Picture and story by: Robert Roy Britt. LiveScience Senior Writer

EARTH DAY ACTIVITIES

The Kansas Geological Society, Kansas Geological Foundation & Kansas Geological Survey sponsor a booth every year at the Earth Day activities at the Sedgwick County Zoo. This year, the booth was all about plant fossils. Larry Skelton, Tom Hansen, Bob Cowdery and Greg Armstrong met with a constant crowd of hungry minds. The kids got to see some excellent plant fossils and learn about the carbon cycle.

Memorial: Donald Hoy Smith

With the death of Don Hoy Smith, the industry lost one of their "true gentlemen" and the profession lost an outstanding member and one of its stalwarts.

Don was born in 1919 in the Riverside area of Wichita. His father operated a small printing plant and Don recalled difficult times during the "Great Depression" but his family provided enough to eat and eventually most of the funds for a college education for Don and his only sibling Sam Jr.

After attending Riverside Elementary School, Central Intermediate School, he graduated from North High School in 1938. Enrolling at the University of Wichita in 1938, he graduated Cum Laude with a Batchelor of Arts degree in Geology. While attending the University, Don worked as a student assistant to Dr. Walter Ver Weibe and indicated he had a lot of respect and admiration for this renowned educator. His last two years at the University, Don worked in the Geological Department of Skelly Oil under the supervision of Harold Smedley, who he described as a very likable, but no-nonsense boss.

Don then accepted a position in June of 1942 with Hollow Drilling, but left the company in 1943, as he said the "chemistry" of the company just didn't seem right, to accept a position with The Texas Company. It appeared that he would be drafted before joining The Texas Company, but a hernia, which he was burdened with for years, prevented this.

What Don thought would be a one-month assignment to The Texas Company's Mattoon, Illinois office turned, out to be four years. While assigned to this office he also worked in West Virginia and Ohio.

Finally in March of 1947, Don was transferred back to the Wichita office. In 1948, to quote Don, "I did one of the smartest things I ever done when I married Ruth Monroe" who had been a secretary to Don Rounds, District Landman for The Texas Company in the Mattoon office. Ruth and Don had three children: Arden Smith Murrillo, Donald Hoy Smith Jr., and David A. "Tod" Smith all of whom survive. There are also nine grandchildren.

Don entered the consulting field in 1950 and remained a consultant until 1966 when during a particularly depressed interval for the oil industry he joined Boeing as an Engineers Assistant in the Flight Test department. He remained at Boeing until 1968.

From 1975 until 1984, Don did subsurface mapping and prospect generation for Murfin Drilling Company.

During a conversation with Don, he observed what a fascinating business with its many colorful characters, that all of us have been fortunate in which to be involved. You certainly came away with the feeling that after looking back, Don wouldn't have done much to change his life.

All who knew him professionally or otherwise will miss him. The family has established a memorial with "Feed the Children", PO Box 36, Oklahoma City, Oklahoma 73101. A memorial will also be established with the Kansas Geological Foundation.

KANSAS GEOLOGICAL 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.

Videotape Library - The KGF maintains a 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.

New Slides on Energy from AAPG - 14 slides are available from the Speaker's Bureau on energy. Please contact Bob Cowdery at 267-9030 to check out the slides.

The Kansas Geological Foundation was founded in March of 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
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Millennium Club	$1000 to $5000
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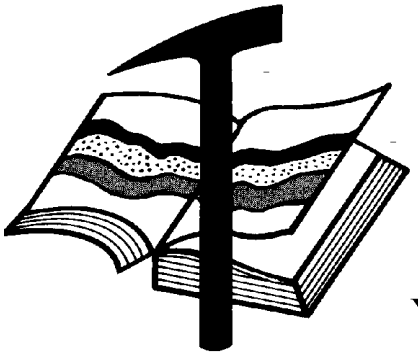

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MEMBER PROFILE: Bob Vincent

It seems appropriate to profile the very successful career of a non-petroleum geologist at this time

Bob's story commences in Salina in January, 1932. His father was a successful businessman who was killed in an accident at a relative young age. He had, at one period, owned the Plymouth-DeSota agency in Marysville, KS along with an Oliver Tractor Agency

During one period, Bob's mother was County Treasurer of Cloud, County. Bob has two brothers; Ray, presently residing in Dover Kansas. Ray has a degree in geology, but has been engaged in the insurance industry. Ray served with the Armed Forces in Korea. His other bother Dale, lives in Milwaukee, Wisconsin and is involved with copying machines. Dale saw service with the Armed Forces in Viet Nam.

Elementary education for Bob involved three localities: Salina, Kansas, Concordia, Kansas and Omaha, Nebraska. From 8th grade thru high school, he attended school in Marysville, Kansas culminating in his graduation from Marysville High School in 1950.

Following graduation, he went to work on a "pick and shovel crew" for the Kansas Highway Department. While working on the crew, the District Superintendent stopped by and as a result of their conversation, Bob commenced working in the Wamego office keeping track of books and seeing that the engineers were paid.. During this period, the department in which Bob worked was responsible for highway maintenance.

Bob determined that it was permissible for him to enroll in college while employed by the Highway Department. He found that the Dean of Arts and Science at Kansas State College was a friend of his Dad's and after conferring with the Dean, he registered for a class in geology. He was working an average of 35 hours a week while attending K-State by doing bookwork from 6:00 PM until midnight. After transferring from Maintenance to Design within the Highway Department he was able to work on the crew that did the geology on the first section of the new Interstate. I-70.

Adopting geology as his major, Bob found that he was exposed to a number of excellent instructors in the department including Dr. Joseph Chelikowsky, Dr. Claude Shenkel and Dr. Henry Beck. Among his classmates was Fred Stump who later was to persuade him to become a member of the KSU Advisory Council, Dept. of Geology that Bob chaired from 1993 until 1995,

In 1952, Bob married JoAnne McMahon , a former classmate at Marysville High School. JoAnne and Bob have three children; Linda, who resides in Olathe, Kansas; Brad who works with his father and lives in Goddard; and Eric who lives in Woodland, California and manages Layne Western's office.

Bob graduated from Kansas State University in 1955 and worked from August of 1955 until May of 1956 with the Department of Transportation as a geologist doing field geology for the purpose of highway design. Bob had joined R.O.T.C. while at K-State and received a commission upon graduation. He was offered a choice of active duty for 6 months with an 8-year obligation or 2 years of active duty. Eventually the Army made the choice for him and he served for 6 months at Ft. Bliss, Texas and was discharged in September 1968 as a Captain. Later in his career while working in Wichita, he served the Army

Reserves as Headquarters Company Commander of the 89th Division. After 12 ½ years of service, active duty and Reserves, Bob retired, as at this point in his career, he was working in Garden City and there wasn't a place in the Reserves

After completing active duty, Bob returned to the Department of Transportation for another 4 months, but in March of 1957, he joined Layne-Western Company in Wichita as a Sales Engineer and Geologist. He remained in Wichita until March of 1969 when he was transferred to Garden City as District Manager and Geologist to start the office in that area. During his tenure in Garden City from 1969 until December 1978, the office grew to the point that 45 individuals were employed.

In January 1978, Bob became District Manager and Geologist of the E. E. Luhdorf Division of Layne-Western headquartered in Woodland, California where he was responsible for all ground water projects in California and Nevada. Bob returned to Wichita in 1983 as District Geologist-Hydrologist. In 1985 he formed Ground Water Associates where he serves as President and Chief Hydrogeologist. At the time that he formed his firm he stated its mission and in his words ' I believe a need exists for a consulting organization which could assist individuals, engineering firms, municipalities, water districts, and industrial concerns in the planning of ground water systems or in problem solving where low yield or contamination is involved. It seems apparent that and organization should be formed to offer the developer practical methods of upgrading construction specifications and monitoring actual construction practice in the field to insure that optimum water wells and water quality could be achieved. This is the principal goal of my organization."

During the period of July 1985 through March 2003, Bob has served as consultant to 165 cities, and rural water districts, 170 legal and industrial concerns and 18 engineering firms. Bob has found "good water" for the communities of Maize, Colwich, Cheney and Kingman along with other communities.

When asked the standard question, "Who was the biggest character you have encountered in your business?" Bob, instead of naming an individual, named a group, "the Water Witchers." Bob says that for the most part, he has gotten along well with the "witchers", but that the experiences tend to be amusing. One particular "witcher" that he encountered while attempting to find an adequate and high quality water supply for one town led the town council with his extremely positive attitude to a number of the wrong places. Bob with his scientific expertise located the supply they were looking for. Bob admits that they do occasionally drill a "dry hole" the same as his petroleum brethren. In other words, they either find inadequate supply or unsuitable water, perhaps too high in Nitrates.

Bob has been extremely active in professional organizations. He has been a member of the Kansas Geological Society since 1957 and the individual that influenced him to join was Bob Euwer. He is a Certified Professional Geologist by the American Institute of Professional Geologists, a Certified Professional Hydrogeologist by the American Institute of Hydrology. He has served as President of the Kansas Ground Water Association and he has participated in numerous technical seminars as an instructor.

Bob has also been active in the communities in which he has lived. He is a member of the Metropolitan Baptist Church and has served the church as a Deacon. He has been a member of the Rotary Club in Wichita, Garden City and Woodland, California. Bob has been active in the Boy Scouts serving on the Board of Directors of the Quivera Council.

It is evident that Bob has really enjoyed his profession and his work in groundwater. There isn't any doubt in his mind that he would follow geology as a profession, if he had his career to do over. His sound advice to a young geologist entering the field is "go to work for somebody already in the business that you are interest in, don't go on your own immediately following graduation"

After a very successful career, Bob does not have particular plans for retirement other than to work as long as possible and carry out what he sees as his mission, which he stated when he formed his company. It appears that he has been very successful in doing just that.

DIGITAL ARCHIVING NEWS

The following is a listing of where we are at on the scanning project:

- **Completion Cards**—West Ranges COMPLETED
- **Plotted Geologist's Reports**— West Ranges COMPLETED
- **Well Logs**— West Ranges Should be COMPLETED by May 1st
- **Srip Logs**— West Ranges— 21S—34S
- **Laughlin-Simmons Cards**— West Ranges, COMPLETED
- **Typed Geologist's Reports**—West Ranges COMPLETED
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- Rebecca Radford

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John Brewer	10/89	1990
Robert Gebhart	01/90	1990
George Bruce	09/90	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
Benton Brooks	09/92	1992
Robert C. Armstrong	01/93	1993
E. Gail Carpenter	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	02/95	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	08/95	1995
Lee Cornell	09/95	1995
John Graves	10/95	1995
Wilson Rains	11/95	1995
Heber Beardmore, Jr.	10/96	1996
Donald F. Moore	10/92	1997
Elmer "Lucky" Opfer	12/96	1997
Gerald J. Kathol	03/97	1997
Raymond M. Goodin	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	1/98	1998
Bus Woods	1/98	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

Name	Dc'd Dte	M'l Est.
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Joseph E. Rakaskas	01/99	1999
Charles W. Steincamp	02/99	1999
Robert and Betty Glover	10/86	1999
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
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Eric H. Jager	03/00	2000
Kenneth W. Johnson	03/00	2000
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Don L. Calvin	03/02	2002
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Claud Sheats	02/02	2002
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Elwyn Nagel	04/03	2003
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J. Mark Richardson	02/02	2004
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Robert J. “Rob” Dietterich	08/96	2004
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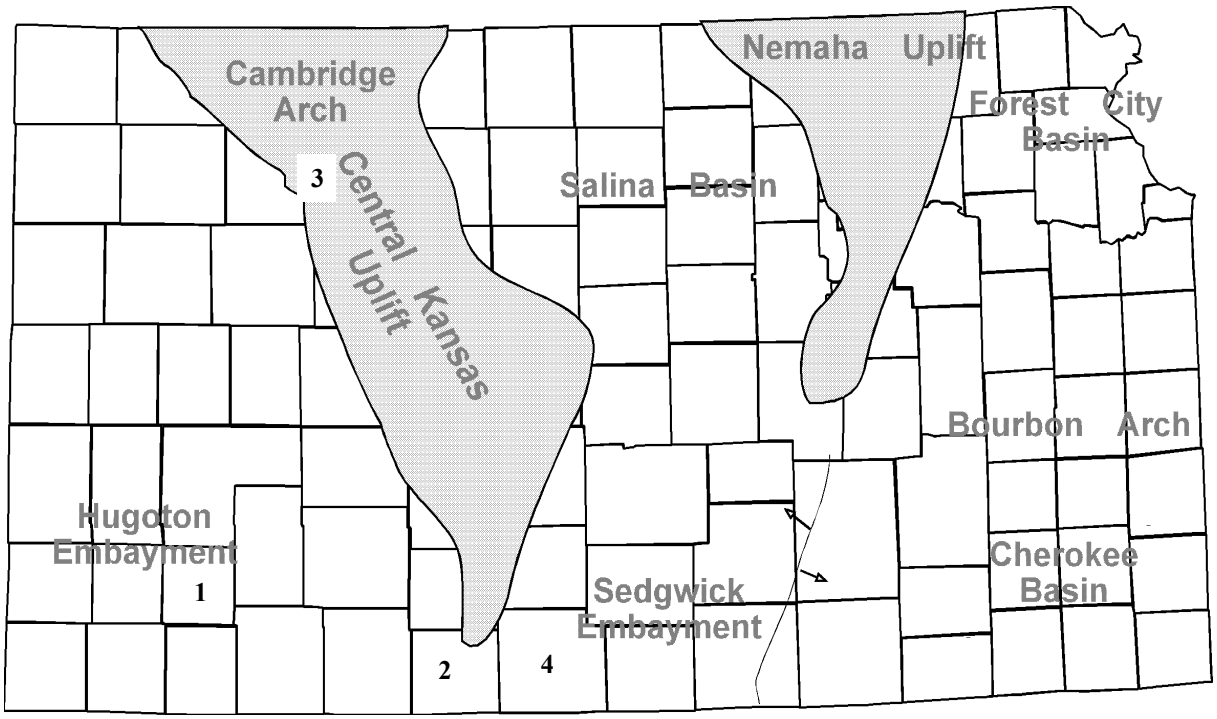
Donald Hoy Smith	03/05	2005

EXPLORATION HIGHLIGHTS

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



(1) Abercrombie Energy, LLC Opens New Gas Field (Wichita, KS - IOGsi News Service 3/28/2005) - Abercrombie Energy, LLC, of Wichita (KS), has discovered a new unnamed gas field in Haskell County, southwest Kansas. The Barbee-Granger #1-14, spotted in approximately W/2 SE of section 14-T28s-R33W, is flowing an unknown amount of gas from the Marmaton Limestone formation. Site is located over three miles northwest of Marmaton production in the multipay Santa Fe East Field. The new discovery was drilled about one-quarter mile northwest of Barbee #1 "show hole", a well drilled and plugged in 1987 with good shows of oil and gas in the Marmaton from 4824 to 4854 ft. The new field is located 8-1/4 miles north and 2-1/2 miles west of Sublette, Kansas. This is the second new gas field to be established for Abercrombie companies since opening the Lee Ranch Gas Field in Barber County in 2001. They have established over 70 new oil fields in the state over the years.

(2) R. J. Patrick Completes Well for 480 BOPD (Wichita, KS - IOGsi News Service 3/28/2005) - R. J. Patrick Operating Company, of Liberal (KS), is flowing 480 barrels of oil and 460,000 cubic feet of gas per day, no water, at their Jacob Colter #2-1 well, located in approximately NW NE SE in section 1-T33s-R19W in Comanche County. The Colter pool development well is producing oil and gas from four perforation holes in the Viola Limestone from 5898 to 5899 feet. First production began on March 10, 2005. This is R. J. Patrick's second successful completion in the Colter Field since exploration began in 2003. Their Jacob Colter #1 was completed for 3,231 Mcf gas daily from the Marmaton and Mississippian zones. Patrick has staked their #3 prospect about one-eighth mile to east of the #2 well and are scheduled to drill sometime in June. Field area is located about four miles south of Coldwater, Kansas.

(3) John O. Farmer, Inc. Opens New Pool (Wichita, KS - IOGsi News Service 04/18/2005) -A new unnamed Arbuckle oil field has been discovered in Graham County by independent oil producer John O. Farmer, Inc. of Russell, Kansas. Discovery was made at the firm's Buss 'C'#1 well, located in approximately SE SE SW of section 2-T9s-R22W, about five miles southwest of

the city of Bogue, Kansas. The well was put on the pump in February at an undisclosed production rate. Operator reports that pay comes from perforations in the 'A', 'B', and 'C' zones in the Arbuckle formation. Discovery Drilling tools bottomed the well at a total depth of 3295 ft. Randall Kilian served as well-site geologist. The new deposits were located nearly 1-1/4 miles north of oil wells in the Van field that produce Lansing-Kansas City and Arbuckle oil.

(4) R & B Oil & Gas Confirms New Field (Wichita, KS - IOGsi News Service 04/18/2005) -In Barber County, R & B Oil & Gas has successfully confirmed Shawnee production in the newly established Amber Creek East Field in eastern Barber County. R & B discovered the field in late 2003 when the Chain Ranch #1 flowed over 200 Mcf gas daily from the Toronto Limestone member at a depth of 3678 to 3682 ft. New Elgin Sand oil and gas production has been produced at the field's first confirmation well. Field area lies about six and one-quarter miles north of the town of Medicine Lodge, Kansas. Operator stepped-out of the field slightly over one-half mile to the southeast of the pool opener to washdown the Chain #1-32, a show hole that was plugged in 1982. The 4457 ft. deep well is located in the C SW SW of section 32-T30s-R11W. Hole was cleaned out and 4-1/2" casing was landed at 3661 ft. The Elgin Sand was perforated from 3566 to 3576 ft. In January, the well was placed on the pump making 25 barrels of oil , 1 barrel of water and 3 Mcf gas daily. Tim Pierce, geologist, called the log top of the Elgin Sand at 3561 (-1771 KB). The Amber Creek east Field has produced over 61 million cubic feet of gas since it's discovery.

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—— Doris Day

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—— Ellen DeGeneres

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—— Garrison Keillor

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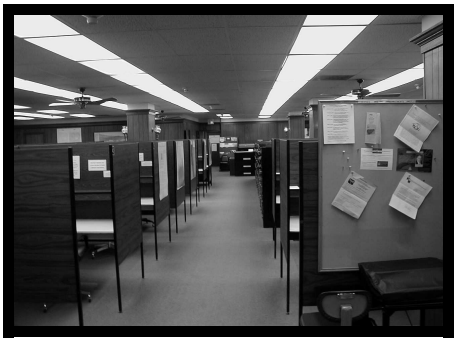

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May—June 2005

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