HGS FEBRUARY CALENDAR

[Meetings only]

FEBRUARY 20, 1989 (HGS/NAK Joint Dinner Meeting)
"If At First You Don't Succeed" Forrest E. Hoglund, Enron Corp., Houston
Marriott-Galleria, 1750 West Loop South
Social Period 5:30 PM, Dinner and Meeting 6:30 PM
Reservations made by name only, telephone 785-6402. Must be made or cancelled by noon Friday, February 17.

FEBRUARY 22, 1989 (Dinner Meeting)
HGS INTERNATIONAL EXPLORATIONISTS
"Oil Occurrence in Oman Oil-bearing Sediments of Gondwana Glaciation"
Bruce K. Levell, Shell Western E&P, Houston
Westin Galleria Hotel, 5060 Alabama
Social Period 5:30 PM, Dinner and Meeting 6:30 PM
For reservations by advance ticket purchase only (see page 8).
Purchase tickets by Monday, February 20.

FEBRUARY 22, 1989 (Luncheon Meeting)
Robert M. Sneider, AAPG Distinguished Lecturer
"Geosynclines and Giant Oilfields"
Wyatt's Chophouse, 811 Rusk
Social Period 11:30 AM, Luncheon and Meeting 12:00 Noon
Reservations made by name only, telephone 785-6402. Must be made or cancelled by noon Monday, February 20.

FEBRUARY 22, 1989 (Committee Meeting)
ENVIRONMENTAL AND ENGINEERING GEOLOGISTS
"Subsidence and Collapse at Boling Salt Dome"
Wyatt's Cafeteria, Sharpstown Shopping Mall, Bellaire
6:00 PM, no reservations necessary, responsible for your own meal.
"Support those who support our Society."

THIS SPACE AVAILABLE

For More Information

Contact

W. Don Neville

655-9666
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PRICE SCHEDULE—FEBRUARY MEETINGS
(Non-members: add $2.00 to the meal price)
Marriott-Galleria Hotel, February 20
Dinner .............................................................. $18.00
Houston Club, February 22
Luncheon ........................................................... $15.00
INTL EXPLORATIONISTS
Westin Galleria Hotel, February 22
Dinner .............................................................. $20.00

RESERVATIONS POLICY
Reservations are made by calling the HGS office
(713-840-2402). At the meeting, names are checked against
the reservation list. Those with reservations will be sold
tickets immediately. Those without reservations will
be asked to wait for available seats, and a $2
surcharge will be added to the price of the ticket. All
who do not honor their reservations will be billed
for the price of the meal. If a reservation cannot be
kept, please cancel or send someone in your place.

The Houston Geological Society office is
located at 7171 Harwin, Suite 314, Houston,
Texas 77036. The telephone number is (713)
785-6402.

OU R COVER PHOTO
Eagle Springs field, Railroad Valley, Nevada.
Discovered by Shell Oil in 1954, the Eagle Springs
field produces a high pour point waxy oil derived
from paleocene lacustrine rocks. Reservoir age is
Tertiary. Other Railroad Valley oils are derived
from marine paleozoic rocks. Grant Ranch in the
background. (Photo courtesy Deet Schumacher)
The Houston Geological Society Bulletin is published monthly, September through June, by the Houston Geological Society, 7171 Harwin, Suite 314, Houston, Texas 77036. Subscription to the Bulletin is included in membership dues ($15.00 annually). Subscription price for non-members within the contiguous U.S. is $15.00 per year and $30.00 per year for those outside the contiguous U.S. Single copies are $2.50. Subscriptions received after March 1 will be applied to the remainder of the fiscal year (ending with the June issue) and also to the following year.

The Houston Geological Society was founded in 1913 and incorporated in 1915. The Society's objectives are to stimulate interest and promote the advancement of geology in this area to disseminate and facilitate discussion of geological information, and to enhance professional relationships among geologists. The Society includes nearly 4,500 members locally and publishes special scientific publications in addition to a monthly Bulletin. The HGS also provides student scholarships and continuing education programs for professional geologists.

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PRESIDENT'S COMMENTS

Dead for 11,000 years and still a recipient of the Golden Fleece Award. No, I'm not talking about the University of Arizona professor I referred to last month. Rather, I'm referring to one of his research interests, the long-extinct Shasta ground sloth. This furry, 6-8 foot tall vegetarian roamed over much of the Southwest during the Late Pleistocene and his remains, especially the sloth's dung balls, constitute one of the most remarkable fossil deposits known. This deposit is found in Rampart Cave, deep in Arizona's Grand Canyon, and consists of a four-foot thick accumulation of stratified dung balls. These grapefruit-sized objects look (and smell) so fresh that early paleontologists had difficulty believing the animal wasn't still lurking somewhere in the dark recesses of the cave. Being composed of dried vegetable matter, the dung balls provide ideal material for radiocarbon dating as well as for reconstructing the sloth's dietary habits and the region's vegetation and climate history. You may not share Dr. Paul Martin's enthusiasm for this unique scientific treasure, but you can imagine his dismay when a careless camper set fire to the deposit. At the urging of Dr. Martin and others, the National Park Service flew in firefighters to this remote canyon site in a costly but successful effort to save this remarkable fossil deposit. Senator Proxmire apparently did not place the same value on this prehistoric treasure as the scientists did and awarded the rescue effort a Golden Fleece Award.

February brings us to the midway mark in the HGS year. Our various committees and their chairmen have been hard at work to bring you technical meetings (Bill Tidwell, Denise Stone), field trips (Martin Oldani), continuing education programs (John Biancardi), environmental and engineering geology events (Sheryl Lentini), and various social functions (Bob Ahlborn). These committees have done a superb job and have already begun to think about next year. If you have any suggestions for future events (Fun Run? Geologic Float Trip? etc.) call the appropriate chairman. Better yet, volunteer to work with the committee on the project. We aim to please, but first we need to know what pleases you.

A full slate of activities awaits you this month including four technical presentations, one of which is a joint meeting with our colleagues in the HAPL, a short course on structural styles and balanced cross sections, and the ever popular HGA Couples Party. Details about these and other events can be found elsewhere in your Bulletin. Please note that the meeting with the HAPL will be held on the 3rd Monday of the month rather than on our normal Monday night.

Later this year, the HGS Executive Committee will again honor those among us who have completed 25 or 50 years of membership in the HGS. If you have attained this remarkable milestone, let us know so that you can be honored at the June guest night meeting. In the meantime, we look forward to seeing you at the February meetings.

Deet Schumacher

DEET SCHUMACHER
MEETINGS

JOINT HGS-HAPL DINNER MEETING—
FEBRUARY 20, 1989
FORREST E. HOGLUND—Biographical Sketch

Forrest E. Hoglund is chairman and chief executive officer of Enron Oil & Gas Company, a subsidiary of Enron Corp.

Prior to his appointment with Enron Oil & Gas in September 1987, Mr. Hoglund was president of Texas Oil & Gas (TXO), a Dallas-based subsidiary of USX Corporation. He became president of TXO in 1977, chief operating officer in 1979, and chief executive officer in 1982. Since 1986 when TXO merged with USX, he has served as a director of USX.

Earlier in his career, Mr. Hoglund worked for Exxon Corporation from 1956 to 1977 in various capacities, including vice president of Esso Middle East and as corporate vice president of natural gas and gas liquids.

He was born July 1, 1933 and received a B.S. degree in mechanical engineering from the University of Kansas. He is a director of the Mid-Continent Oil & Gas Association, a member of the Texas Independent Producers and Royalty Owners Association (TIPRO), the Society of Petroleum Engineers, and the Independent Petroleum Association of America (IPAA). He is also an Associate Member of the Board of Visitors of the University Cancer Foundation.

LUNCHEON MEETING—
FEBRUARY 22, 1989
ROBERT M. SNEIDER—Biographical Sketch

Mr. Robert M. Sneider is a partner in the firm Richardson, Sangree and Sneider and an AAPG Distinguished Lecturer for 1989. He graduated from Rutgers University in 1951 with a BS in Geology. He received his PhD in Geology and Mining Engineering from the University of Wisconsin at Madison in 1957. Mr. Sneider joined Shell Oil Co. in 1957 and worked as a Senior Staff Geological Engineer, a Research Supervisor and Area Production Geologist. In 1974, he became President and Partner in Sneider and Meckel Associates. In 1981, he formed Robert M. Sneider Exploration Inc. and has been a partner in Richardson, Sangree and Sneider since 1986.

RESERVOIR DESCRIPTION FOR EXPLORATION AND DEVELOPMENT: WHAT IS NEEDED AND WHEN

The biggest challenge for geologists, geophysicists, and petroleum engineers now and in the decades ahead is to significantly improve hydrocarbon recovery from all new and previously discovered reservoirs. Keystone of the methodology required to improve oil and gas production, as well as to evaluate and delineate new reserves, is a detailed reservoir description. This is a characterization of the reservoir and nonreservoir rock fluid system that is appropriate in content and detail for the particular stage of exploration and production. The type and amount of data required for a proper reservoir description are diverse, from several disciplines, and depend upon where the reservoir is in its E & P cycle. The E & P cycle is viewed as a continuous series of overlapping stages from discovery, through appraisal, planning, development, and reservoir management. The concepts and data needed to define and exploit

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We welcome submittals of prospects from independent geologists. Submittals may either be in the form of geological ideas which need to be leased or ready-to-drill prospects. Only prospects with 100% interest available are requested—no fractional interests please. Onshore non-pipe tests with development potential are preferred.

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reservoirs become more complex and quantitative as production becomes more mature. Concepts, data, and models developed during the production phases, when reapplied to exploration, provide important guides to the explorationists for evaluating trapping elements, seals, reservoirs become more complex and quantitative as production becomes more mature. Concepts, data, and models developed during the production phases, when reapplied to exploration, provide important guides to the explorationists for evaluating trapping elements, seals, reservoir quality, and risks in basin and wildcat evaluation.

When one looks at the question "When is a reservoir description needed?" the answer is simple. The need starts once a discovery is made and the discovery is being appraised as to the best estimates of hydrocarbon in place, recoverable reserves, and rates of production. As a field or reservoir goes through its typical "life cycle" of discovery, appraisal, planning, development, and reservoir management, a more complete description is both necessary and possible. Key concepts and methodology for reservoir description appropriate to the history and stage of field/reservoir depletion are illustrated by case studies from several basins around the world. Check lists that outline reservoir description needs and timing are discussed in the context of the stage of field/reservoir exploitation.

A critical first step in the reservoir description process is the recognition of any correlative reservoir subzones or layers and any intervening dense, impermeable, or low-permeability strata. Knowledge of the depositional/diagenetic processes controlling reservoir and nonreservoir rock is essential to determine ones ability and degree of confidence in correlating these units. Seismic sequence, lithologic, and fluid analyses and well-documented outcrop studies can add significantly in establishing interwell correlations. Recognizing and mapping all vertical or horizontal fluid-flow barriers, as well as "thief" zones or zone of unusual permeability contrast and faults, are critically important to all recovery processes. Flow-test data dovetailed with knowledge of the reservoir and nonreservoir framework based on geology/ geophysics provides the best reservoir description of continuity/discontinuity.

Structural and stratigraphic maps, cross sections, and fence and block diagrams are the illustrations used to convey the three-dimensional geometry, distribution, and continuity of the reservoir, nonreservoir, and aquifer. A variety of computer programs aid in preparing these illustrations. Isopach maps without the accompanying detail correlation sections have been the "pitfall" of many projects. Net pay isopach maps drawn to provide the basis for determining hydrocarbons-in-place have "tricked" many petroleum engineers into believing a reservoir is more continuous, more homogeneous, and less stratified than it actually is. The importance of discontinuous shale barriers of limited areal extent on coning and the drainage of oil from a gas-invaded area are illustrated.

The recognition, selection, and description of reservoir units or layers and then the communication of this "picture" to the petroleum engineers are fundamental contributions and the responsibility of the geologists/geophysicists team members. A coordinated data-acquisition program can greatly improve the probabilities of correct assessments in discovery, appraisal, planning, development, and reservoir management.

In exploration ventures, detailed reservoir description studies made during the production stages provide the critical data needed by the explorationist to estimate reservoir and seal quality from seismic, well logs, and samples.
Chairman's Column

“VIVA PETROLEOS!” is the theme of the 74th Annual AAPG Convention in San Antonio, coming up April 23-26. Numerous International Exploration sessions are planned in the three days of technical programs. These include: Exploration in South America; Petroleum Geology of China; and Mesozoic Sediments of Northwestern Australia Offshore. The majority of the papers focus on field studies, depositional environments, new technologies and computer applications to exploration.

An added treat in San Antonio is the Alamo IMAX Theater located directly across from the Convention Center. Available only in a few cities nationally, IMAX theaters use “the most advanced projection technology available to the public”. Films are projected from a ‘fish eye’ lens onto a giant 70x70 foot hemispherical screen. Going to an IMAX Theater is a must if you’ve never been. Featured films during the convention are “Grand Canyon, The Hidden Secrets” and “Alamo”.

The South Texas Geological Society is hosting the convention this year, supported, as always, by the invaluable resources of AAPG, SEPM and SEG. Ten short courses, thirteen field seminars, numerous social events and local tours of what San Antonio has to offer are planned. Preparations are being made to include something for everyone. Plan to be part of it!

DENISE M. STONE

INTERNATIONAL EXPLORATIONISTS
DINNER MEETING—FEBRUARY 22, 1989
BRUCE K. LEVELL—Biographical Sketch

Bruce K. Levell, Geology Manager of Mid-Continent Division of Shell Western E&P Inc. received his B.A. and PhD. degrees at Oxford University. Dr. Levell’s dissertation was on the Sedimentology of Late Pre-Cambrian rocks from Finnmark, North Norway.

Bruce K. Levell joined KSEPL (Shell) Rijswijk as a research geologist in 1978 working on the Seismostratigraphy of Brunei and Perm- Carboniferous glacial sediments of Oman. Bruce was transferred to Miri, Sarawak as an exploration geologist for Sarawak Shell Bhd in 1983. His responsibilities included offshore acreage acquisitions, regional geology and seismic interpretation of Sabah and Sarawak. He was transferred to Shell Western E&P Inc. in 1986 as a project leader of Anadarko Basin, Mid-Continent Division. Bruce Levell heads the geology group in the Mid-Continent Division since 1987.

OIL OCCURRENCE IN OMAN: OIL-BEARING SEDIMENTS OF GONDWANA GLACIATION

More than 3.5 billion bbl of oil in place have so far been discovered in reservoirs of the Al Khata Formation of the Permian-Carboniferous lower Haushi Group in South Oman.

Glacially striated pavements and boulders in exposures at Al Khata in east-central Oman confirmed previous interpretations that the formation is, at least partly, of glacial origin. Core and wireline-log data from some 500 wells that penetrate the formation show that glacial facies are widespread in the subsurface. Shales with varve-like laminations and dropstones are present in two main layers which extend over the larger part of south Oman and are perhaps the most diagnostic facies. Diamictites are also widespread, and some, which can be correlated as sheets over thousands of square kilometers, are interpreted as true tillites. Other diamictites are interbedded with shales with varve-like laminations or unbedded siltstones and are interpreted as subaqueous glacial deposits.

Ten sedimentary facies have been described in cores and outcrops. An important result of this study is a formal scheme to interpret these facies from wireline logs using quantitative analysis of density and neutron logs and qualitative information from other logs.

Lateral facies relationships are complicated by syn-depositional salt withdrawal and dissolution, paleorelief on the basal unconformity, and intraformational unconformities beneath regionally extensive tillites. At least three glacial phases can be recognized; an early phase, represented only by erosional remnants of diamictites, and two later phases, the last of which extended over the whole of Oman south of the Oman Mountains. Deglaciation is represented by a regional shale bed sharply overlying the diamictite sheet of this last glaciation.

Oil occurrence can be related to three northwest-southeast striking facies belts. (1) In the South Oman salt basin, deposits consist of sands, pebbly sands, and diamictites deposited in glacioluvial environments. This sequence lacks good seals. (2) In the down dip part of the basin’s eastern flank, interbedded sands, silts, shales with varve-like laminations, and diamictites represent glacio-lacustrine deposition at ice margins and in meltwater deltas. This belt contains interbedded reservoirs and seals, and includes the largest number of oil accumulations. (3) Updip in the eastern flank area, several-hundred-meter thick siltstones and claystones with thin turbiditic sandstones represent a belt of persistent glacio-lacustrine deposition, probably in the axis of a salt dissolution syncline. This belt contains few oil accumulations.
INTERNATIONAL EXPLORATIONISTS
MEETING INFORMATION
Westin Galleria Hotel, February 22
Dinner (5:30 PM) ......................... $20.00

Admission to all International meetings is by advance
ticket purchase only. Tickets may be purchased from
representatives in the International departments of most
companies or by sending a check for $20.00 and a
stamped, self-addressed envelope to:
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7171 Harwin, Suite 314
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directed between 8:00 AM and 4 PM.

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Chairman’s Column

Recently, the Environmental and Engineering Geology Committee rewrote its bylaws. Since the original bylaws were written, the industries employing environmental and engineering geologists have grown as have the number of environmental and engineering geology members in HGS. We feel the proposed new bylaws take into account these changes and better define the purpose of the committee so that members, and others, reading it in the directory will understand what the committee is all about. You will be asked to vote on many proposed changes in the bylaws. We hope you will take the time to consider these particular changes.

This month our committee will be hosting a dinner meeting. Mr. William F. Mullican, III, of the Bureau of Economic Geology will be speaking on solid waste disposal in salt domes. This can be a controversial topic and is often the subject of legal disputes. While Mr. Mullican will be talking about this in general and not about any particular examples, his presentation should be informative and educational to those concerned or curious about waste disposal in salt domes. We look forward to seeing you there.

Next month will be our second field trip of the year. Dr. Saul Aronow and the field trip committee are planning a one day environmental trip to North Harris and Montgomery counties on Saturday, March 18th. Sign up—see what’s up there!

The next meeting of the Environmental and Engineering Geology Committee will be Wednesday, February 8, 1989, at the usual place (Charlies Hamburgers, 2222 Ella Blvd. off the North Loop) at the usual time—6:00 p.m. In addition to taking care of business, we almost always have some sort of informal presentation—we just don’t know what it will be in time to get it printed here. All HGS members are always invited.

SHERYL H. LENTINI
Chairman

ENVIRONMENTAL COMMITTEE
DINNER MEETING—FEBRUARY 22, 1989
WILLIAM F. MULLICAN, III—Biographical Sketch

William F. Mullican, III is currently a Research Scientist Associate at the Bureau of Economic Geology at The University of Texas at Austin. Mullican has been with the Bureau since 1983. Before moving to Austin, Mullican worked as an exploration geologist for Tenneco Oil Company in its Texas Gulf Coast Division in Houston. He received his B.S. (1978) in broad field science education and M.S. (1981) in geology, both from Texas Tech University.

Mullican’s research interests have focused on the geologic and hydrologic processes that may affect the suitability of a region or site for waste disposal. His efforts have included a two-year study on the feasibility of using solution-mined caverns in salt domes as permanent repositories for the disposal of toxic-chemical waste. During this period his research concentrated on subsidence and collapse over salt domes and the potential impact these processes may have on a storage facility. The results of this work were published by the Bureau as Geological Circular 88-2, “Subsidence and Collapse at Texas Salt Domes.” Currently Mullican’s research time is spent on site characterization of the proposed Texas low-level radioactive waste disposal facility located 50 miles southeast of El Paso.

SUBSIDENCE AND COLLAPSE
AT BOLING SALT DOME
THE RESULTS OF MULTIPLE RESOURCE RECOVERY
AND POTENTIAL IMPACT
ON TOXIC WASTE DISPOSAL

Subsidence and collapse at several salt domes in Texas have been investigate to determine the causes and potential impact such processes may have on the suitability of a dome for use as a site for toxic waste disposal. Boling salt dome, located in Wharton and Fort Bend Counties, was of particular interest during these investigations because of several factors: extensive recovery of multiple resources including sulfur, oil, gas, salt, and groundwater, extensive areas of subsidence and collapse resulting from the removal of these resources, and its consideration as a candidate for a toxic waste disposal facility. Boling Dome has undergone more subsidence and collapse than any other salt dome in Texas. The greatest vertical movement is 35 feet (based on the Boling 7.5-minute topographic map, last surveyed in 1953). Most of the subsidence (83%) can be attributed to sulfur production, and a minor amount (11-12%) can be attributed to oil and gas production. The remaining volume (5-12%) may be attributed to groundwater production, original porosity, subsidence yet to reach the surface, or error in measurement. Both reservoir compaction, resulting from hydrocarbon production, and trough subsidence, collapse, and piping resulting from sulfur production are present over the crest of Boling Dome. The structural and hydrologic stability of the surface and subsurface at Boling Dome is compromised by these active deformation processes. Research such as that conducted at Boling Dome emphasizes the importance of considering the potential for subsidence and collapse before selecting a site for toxic waste disposal. The potential for subsidence and collapse should be a primary consideration in the selection of sites for the disposal of toxic waste in solution-mined caverns in salt domes.

The man who is too old to learn was probably always too old to learn.
FAMILY GEO-TRIPS

by GEORGE KRONMAN and KES BARCAS

It's late Friday afternoon and you are beginning to wind down from a hectic work week. Your mind starts to wander and drift toward weekend activities. What am I going to do? Mow the lawn? ... No, fortunately not at this time of year. Paint the house? ... Inside? ... Outside? ..... Maybe next year. How about a mini field trip? Where can I take the family within a few hours of Houston and not spend a mint? Perhaps key-in on a few areas of geological interest and maybe stir the geological souls of my youngsters. I know they have one somewhere inside them. They must, since they came from such outstanding Geo-stock.

Most of us have faced such a dilemma at one time or other. Some of us may be relatively recent arrivals to this part of the country or for that matter, this part of the world. With this in mind, the PERSPECTIVES staff has outlined some Geo-Trip ideas within a three to four hour driving radius of Houston with a geological flavor in mind.

GALVESTON: This Holocene shoreline sand complex is one of the most cited examples of a barrier island/prograding shoreface sequence. The island exhibits a beach-dune ridge topography which can be readily observed on the way to some of the more remote beaches on the western fringes of the island.

Almost everyone has visited Galveston at least once, but how many people have taken the time to enjoy a walk down the beaches on the western side of the island? An enjoyable day trip can be planned to one of the beaches at a modest cost. Kids can enjoy shell collecting, surf fishing, swimming and a variety of beach sports (tar ball stomping - one of their favorites). There is nothing like a family walk down a quiet Galveston beach in the early evening to revitalize the spirit. Another interesting sight on the island is San Luis Pass on the extreme western edge of the island. This tidal inlet is well known for its fishing. Both camping and motel facilities are readily available, especially near the city of Galveston.

HIGH ISLAND: An interesting day trip can be made around a visit to High Island, a shallow piercement salt dome with surface expression, and Bolivar Peninsula. Quite often after a hard storm, a beachcomber can find many interesting artifacts on the beach. One oil scout reported finding prehistoric Indian artifacts that washed up after a summer thunderstorm. After several hours on the beach, it is fun to catch the Bolivar ferry to Galveston. The ride takes about 25-30 minutes across the Galveston Bay inlet. Subtle variability of beach sands and beach ridges between Bolivar Peninsula and Galveston Island provide good examples of coastal processes.

CAVES: We mean fair-weather, short sleeve, bare headed spelunking here. There are several tour-guided caves in the hill country. Natural Bridge Caverns and Longhorn Cavern are two of the favorites.

Natural Bridge Caverns is privately owned and offers an hour long tour along a well maintained trail within the cave. Guides accompany groups of 20 to 30 and are friendly and well informed. Although the tour is not cheap, it is educational and entertaining. After the tour, one can visit the nearby farm ranch. A family can drive around a three mile loop feeding and observing exotic animals that roam the ranch. On first impulse, the cost of the animal farm appears high but it has been reported to be worth the price. From Natural Bridge Caverns, one can travel to Austin or San Marcos for an overnight stay. While traveling on I-10, check out Joel's Barbecue on the north side of Flatonia exit (about 70-80 miles west of Houston). One HGS member claims this is the best barbecue he has had in Texas.

Longhorn Cavern is a state park with daily cavern tours throughout the summer months. Cut in the Ellenburger formation, the cave is one of the largest around. Guided tours not only offer interesting geological facts but also local historical Texas insights. Besides the educational aspects, a constant 68 degree temperature is quite a relief after camping out at nearby lakes or in state parks during the hot summer months. Camping facilities are not available at Longhorn Cavern. The state parks' 639 acres are limited to the cavern and picnicking sites only.

LLANO: The Llano/Austin area offers so many attractions that it would be difficult, if not futile, to list them all. Where else in Texas can one see igneous, metamorphic, and sedimentary rocks ranging in age from Pre-Cambrian to Cretaceous in varied lithofacies in close proximity to one another. Add to this the beauty of the Hill Country and the shimmering blue waters of the Highland Lakes and you can't miss.

A geologist described to us a family weekend trip taken through this region. They spent Friday night in Austin and visited the LBJ ranch Saturday morning. The ranch/park contains a visitors center, museum, working farm and a guided tour of the ranch. The farm was a hit with the children. Volunteers patiently explained the workings of an early twentieth century farm. Following the visit, the family traveled to Fredericksburg. This early German settlement town offers the visitor a variety of activities. After a gourmet lunch of sausage and sauerkraut, the next stop was Enchanted Rock State Natural Area, north of Fredericksburg. Along the route from Fredericksburg is Balanced Rock, a fascinating geological phenomenon. Unfortunately Balanced Rock has fallen prey to some pranksters and is no longer balanced on three points. In any event, Enchanted Rock, a granitic exfoliation dome and inselberg, rises several
hundred feet above the surrounding valley. A hike to the top
of the dome can be challenging for those in poor shape.
From Enchanted Rock, a number of routes are available to
Llano, San Marcos, Marble Falls, or Pedernales Falls etc.

A somewhat dated handbook “Gem Trails of Texas”,
available at local rock shops, list a number of collecting sites
in the area. Armed with some topographic maps, panning
for placer gold along the Little Llano River and Sandy Creek
provides an interesting pastime. The Bureau of Economic
Geology Mineral Resources Circular #56 “Gold and Silver in
Texas” notes some kick-off points for panning in several
local streams.

HOUSTON and NEARBY STATE PARKS: A person
does not have to travel far from Houston to enjoy a rustic
outdoor setting. Several state parks are within an hour drive
of Houston, Huntsville, Stephen F. Austin and Brazos Bend
to name a few. The 2.3 mile trail leading to the Brazos River
in Stephen F. Austin State Historical Park is one of the best
local family trails. The park also has a very nice golf course
with some welcome up and down topography and challen-
ging tight fairways. Set along the banks of the Brazos River,
Stephen F. Austin and Brazos Bend offer a variety of
attractions. Besides serving as an outstanding example of
an active meandering river system, the Brazos River
provides a natural habitat for wildlife, from alligators to
waterfowl.

For more information on state parks, the Texas Parks
and Wildlife Department will gladly send you free informa-
tion on the parks system. Call toll-free (800) 792-1112 or
write: 4200 Smith School Rd., Austin, Texas 78744.

In town, the Houston Arboretum in Memorial Park is
uniquely refreshing while walking along the banks of Buffalo
Bayou behind Barker reservoir dam offers insight into flood
control on Buffalo Bayou.

Observing geological processes and features in the field
generally holds greater value and importance to the more
geologically experienced. On the other hand, the Houston
Museum of Natural Science Sam Perkin’s Gem and Mineral
Exhibit equally fascinates the geologically experienced and
inexperienced alike. This premier collection is a must-see
for all. Taking a leisurely paced tour through the many
mineral displays, geological souls will not only be stirred,
they will be aroused to the point of brushing off and perusing
their nearly forgotten ancient editions of Dana’s Textbook
of Mineralogy. The collection is touted to contain some of
the finest specimens ever found.
PROPOSAL FOR A GEOLOGIST RESERVE PROGRAM

by Richard H. Sams

Background

The two-year-old downturn in the oil and gas industry has once again focused attention on the cyclic demand for petroleum geologists. Company cut-backs have followed the same depressing path as in the past. Lay-offs and early retirements have affected many of those within our profession, and just as in the past, the shock-wave of declining employment opportunities has found its way back to academia where student undergraduate enrollment is again reaching an all time low.

A repeat of the upward swing to this cycle is as predictable as the present downturn. The likelihood of a shortage of well qualified and experienced oil-finders is equally predictive when the free world once again finds itself out of easily accessible, politically stable oil supplies. During downturn cut-backs, much experienced oil-finding talent is lost forever as geologists turn to more lucrative endeavors or certainly more secure jobs in other lines of work. Many good, qualified geologists, particularly younger but less experienced hands, are caught up in these cut-backs. While not necessarily wishing to leave their profession, they are forced by lack of opportunity to seek employment elsewhere.

The AAPG, and in particular the Division of Professional Affairs, is in a unique position to help alleviate the future shortfall of experienced petroleum geologists, and at the same time provide a needed service for this segment of its membership. In fact, AAPG members should expect some positive action on the part of the Association with regard to the growing problem of unemployed and underemployed geologists. The following proposal is designed to help maintain a manpower resource for critical future times in which our oil supplies are threatened or cut-off.

Geologists Reserve

It is proposed that AAPG (through its DPA) establish a Geologist Reserve Program similar in many ways to the military reserve programs. Participation in such a program would be on a voluntary basis by those member geologists who have now found themselves unemployed or underemployed within the geological field. The program would provide for intensive training on a two (2) weeks-per-year basis utilizing the Continuing Education Program already in existence. In return for this participation, the geologist would receive point credit and a qualification rating or ranking among his colleagues. His name and rank would be maintained on a periodically up-dated roster to be made available to company personnel departments and employment agencies throughout the country. By remaining on the “active” roster, the geologist would be expressing his intention to re-enter the profession at the first available opportunity. He or she would also be indicating a desire to stay technically qualified within this field. He would also have a standing among professionals based upon training.

Through its Continuing Education Program, AAPG would insure that reserve geologists are kept up-to-date on technological advances as well as proven methods of oil finding. Certain participating companies would provide a workplace for these reserve geologists to perform on-the-job training during alternate two week annual reserve training “duty”.

Minimal compensation for such a two week annual tour of occupational training might possibly be funded through a Federal grant or subsidy available to AAPG or an agency formed by it for this purpose. On the other hand, it will be the geologist’s own initiative and desire to remain professionally qualified that will be the driving force for participation in such a Reserve Program - not compensation.

Comment

Clearly, there are many facets to such a program that need to be thought out and planned for, particularly financing; but the program could have a very positive impact on members of our profession who often ask: What does AAPG do for me? Certainly this program will have a strong and positive impact upon a manpower shortage should foreign oil suddenly be cut off from the U.S. Let’s not lose these trained oilfinders from our geological profession.
PROSPECT ACQUISITION IN TODAY’S OIL PATCH

by Donald G. Prior

The economic situation in the energy business has been less than bright for the last two years. The lack of investment funds in all branches of the industry has affected the basic operations of many companies. Although all facets of the industry have been hit hard, the marketing of prospects has been particularly affected.

Network System

The marketing and acquisition of prospects and producing properties has undergone massive upheaval and philosophical changes over the last two years. Historically, a drilling prospect would be developed by a qualified senior geologist who specialized in a specific area. This man was usually well known in his area or had a reputation for being an “oil finder”. When his latest prospect was ready, he would contact approximately five companies with which he regularly did business. They would review his prospect and usually take a small percentage. Billey Williams in Corpus Christi, for example, would have a prospect sold by talking to less than 10 companies. Each geologist would have a network of buyers or investors with whom they regularly did business.

This network system worked very well for both parties. The geologist sold his prospect without investing too much time in marketing. The investor or buyer had a constant supply of prospects from a geologist whom he knew and trusted. Both parties were happy with the situation. A new geologist or prospecting company would have to develop their own network of buyers. They could then devote most of their time to prospecting and not selling. Jim Richards, who now reviews prospects for Weeks Exploration Company in Houston, said that if he could not sell his prospect by showing it to 4 or 5 companies, he would assume that something was wrong and restructure his deal. This was how the network system worked.

Lack of Communication

The advantages of the network system also caused its downfall. Sellers didn’t feel the need to make new contacts while prospect buyers discouraged new prospect generating geologists from establishing themselves. It became a closed system — one that could not react to change. With the fall of oil prices, some investors lacked the cash flow to continue buying prospects. The prospect generating geologist would find some members of his network dropping out, leaving him with unsold portions of the deal. If the seller could not sell 100% of the prospect on a timely basis, then buyers who had already committed might drop out to participate in a deal that would drill quickly. This would leave the geologist with no deal.

Likewise, many buyers could not find quality prospects at a reasonable price. Well established geologists had their own network and did not sell to outsiders while junior geologists did not have the required track record or lacked quality in their prospects to entice new investors. This left the buyer in the unfortunate position of having nothing to buy and the seller not knowing where to locate buyers.

The October ‘87 stock market crash made many disenchanted investors realize that if they are going to expose themselves to risks, they should have a higher rate of return. They are beginning reconsider the oil investment deal in terms of a recognized risk — one that can be measured, evaluated, and accepted as having a suitable rate of return.

With new investors considering the oil industry and senior prospectors trying to sell their prospects, the industry should be looking up. Unfortunately, the two sides are still looking for each other. Dan Smith, Executive Vice President of Texoil, said that geologists today are showing their prospects up to 50 times in Houston. Lee Billingsly of Sandia Oil and Gas Corp in San Antonio has been showing prospects 30 to 40 times before selling 100%. Harvey White with Oil and Gas Properties in Corpus Christi has shown his current prospect 26 times to sell 45%. Good prospects sell for more “up front” money today than during the boom days. Buyers are crying out for higher quality prospects. Instead, they must settle for mediocre ones. They simply are not meeting enough high quality sellers.

New Marketing Tool

This communication problem between industry participants has created the need for a new type of service company. These new service companies bring buyers and sellers together through monthly reports and online computer services. The service is supplied to the prospect buyer for a nominal fee of usually less than $1000 per year. The buyer then receives a regular monthly report which contains a current summary of all known prospects and producing properties for sale. The computer online service is similar to the hard copy report. Some include production data on producing properties or properties near the drilling prospect. Prospect buyers can now find from a single source the available properties and prospects in a given area. This reduces the time needed to acquire a prospect substantially. It permits more time for evaluation and less time for searching. Some companies like Petroleum Registry of San Antonio regularly host a “presentation of properties” meeting each quarter where they invite their members to meet with qualified sellers.

This appears to be the new method for buyers and sellers to meet. The individual does not have to maintain a large contact list of buyers or sellers. Sellers can reserve a spot at a presentation and meet the most aggressive buyers in the industry today. At the same time, buyers can review a large number of high quality prospects and producing properties all at the same location. Where else could an aggressive buyer review 10 or more quality items in one day? Likewise, where could a generator assemble over 50 buyers in one location to review his prospect or property? This may be the marketing tool of the future.
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LET'S CELEBRATE!

SPRING KICKOFF
Saturday, March 11, 1989

1. HGS TENNIS TOURNAMENT
LOST FOREST COUNTRY CLUB
5775 Lost Forest Drive (1 block off Tidwell)
11 AM - 5 PM
DIVISION A & B PRIZES
COST - $20.00 includes tennis, lunch, refreshment & trophies
Entry Deadline March 7, 1989
Send check, along with name, phone no. and rank (A or B) to the HGS office or
Ben Hull @ Core Lab, 5295 Hollister Rd., Houston, Texas 77040, 460-9600
or Bill Howell, 621-8241

2. HGS BARBECUE AND WESTERN DANCE
WESTERN MUSIC AND TOP 40
KNIGHTS OF COLUMBUS HALL
607 EAST WHITNEY
HOUSTON, TEXAS
6:00 PM until
TICKETS:
$12.00 (Advance - per person, prior to March 6, 1989)
$20.00 (At door - per person)

INFORMATION AND TICKETS
HGS Office: 7171 Harwin, Ste. 314, Houston, Texas 77036, 785-6402
Andy Bagot @ Palm Petro., 1301 Leeland, Houston, Texas 77002, 658-9992
Robby Robinson @ Tenneco, 1100 Louisiana #1516, Houston, Texas 77002, 757-7787
Kent Brock @ Strand Petro., 920 One Allen Center, Houston, Texas 77002, 658-8096

Make checks payable to HGS ENTERTAINMENT FUND.
Enclose a self addressed, stamped envelope for orders by mail.
## FEB.
### CALENDAR of EVENTS 1989

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### GEO-EVENTS

#### MEETINGS

**IN HOUSTON**

- **Oil & Gas SIG HAL-PC**, M.D. Anderson Hall, University of St. Thomas, 7 PM, Feb. 1.
- **HGS Environmental Committee Meeting**, Charlie’s Hamburger Joint, 2222 Ella Blvd., 6 PM, Feb. 8.
- **SPE Dinner**, Whitehall Hotel, 7:00 PM, Feb. 9.
- **SPWLA Cased Hole Luncheon**, Marriott-Galleria, 11:30 AM, Feb. 15.


**SPWLA Luncheon**, Petroleum Club, 11:30 AM, Feb. 28.

#### SCHOOLS AND FIELD TRIPS


#### OTHER EVENTS

**HGA Tea Dance**, Houston Racquet Club, 4-8 PM, Feb. 25.
HGS FIELD TRIPS

NORTH HARRIS COUNTY - SOUTH MONTGOMERY COUNTY
ENVIRONMENTAL FIELD TRIP

DATE & LOCATION: March 18, 1989
Meet at Greenspoint Mall in the corner of the parking lot closest to Beltway 8 and IH-45 no later than 8:00 AM. We will return to the mall at approximately 5:00 PM.

TOPICS AND STOPS: Toxic waste site in Conroe; Willis Formation; sand and gravel, iron ore deposits and the major recharge zone for the Evangeline Aquifer; Conroe Dam; and active faults (neo-fractures).

SPEAKERS: Saul Aronow, Carl Norman, Ken Richardson, Arlin Howles, Henry Wise and others. Field trip coordinator is John Blankenship.

COST: $30.00 HGS members, $40 non-members.
Bring your own lunch, softdrinks will be provided

SEISMIC DATA ACQUISITION

DATE & LOCATION: April 15, 1989, 8:15 AM.
Location to be announced.

SCOPE OF TRIP: This trip will provide the opportunity to observe a seismic crew in action. We will view first hand the recording of data, the use of dynamite or vibrator energy sources, jug hustling, and surveying.

TRIP LEADER: To be announced.

COST: Free, but you must furnish your own lunch and transportation.
(Information Contact: Bill Baehr 271-9131)

REGISTRATION FORM

NAME: ____________________________________________
ADDRESS: ________________________________________

PHONE (home)______________ (work)______________

I am registering for (please check):

☐ North Harris County
☐ South Montgomery County
☐ Seismic Data Acquisition

Enclose check payable to HOUSTON GEOLOGICAL SOCIETY.
Return with this form to: Houston Geological Society, 7171 Harwin, Suite 314, Houston, Texas 77036

CALL FOR PAPERS
Sinkholes and the Engineering and Environmental Impacts of Karst

This highly successful conference brings together engineers, geologists, hydrologists, and geographers from all over the world to share their practical experience solving engineering and environmental problems in karst terranes. The third meeting of this multidisciplinary group will be held on the beach at St. Petersburg, Florida, Oct. 1-4, 1989, at the luxurious Tradewinds hotel. Ver advantageous rates have been negotiated for the Conference.

Papers are invited on all subjects related to applied karst geology and hydrology, but are particularly encouraged in the engineering field. All authors will be expected to present a 20 minute talk and a written manuscript for publication in a professionally published proceedings volume. At this time, please submit a prospective title. Abstracts will be due by April 17, 1989, and manuscripts by June 30, 1989. Send to: 3rd Multidisciplinary Conference, Florida Sinkhole Research Institute, University of Central Florida, Orlando, Florida 32816.

RICE UNIVERSITY TO PRESENT ENVIRONMENTAL COURSE

Lawyer James Blackburn, a specialist in environmental law, will explain federal environmental laws and regulations to civil, chemical and environmental engineers, chemists, consulting engineers, government officials, business managers, compliance personnel, and staff attorneys seeking detailed training in environmental law. Mr. Blackburn will pay special attention to recent amendments to the hazardous waste and superfund programs and their implications for future compliance. Other topics include the Federal Clean Air Act, the Federal Clean Water Act, hazardous waste and hazardous materials requirements, federal resource management statutes, federal strip mining requirements, and water law.

When: Tuesdays and Thursdays, February 6-March 2, 3:30-5:30 PM.

FOR MORE INFORMATION AND A FREE BROCHURE call the Rice University Office of Continuing Studies, (713) 520-6022.
1989 CONTINUING EDUCATION COURSE SURVEY

The purpose of this questionnaire is to find out what you, the members of HGS, desire in the way of short courses and seminars. Our goal is to provide quality courses that meet your educational needs, as economically as possible. Please take a few minutes now to fill out this questionnaire and mail it back to the HGS office by March 1st. Thank you!

Have you ever attended an HGS Continuing Education Seminar?
- Yes ______ No ______

Does your employer allow time off to attend HGS daytime courses?
- Yes ______ No ______ Depends on ____________________________

Does your employer pay the course fee?
- Yes ______ No ______

What are the more practicable times for you to attend?
Daytime: Mon. ( ) Tues. ( ) Wed. ( ) Thurs. ( ) Fri. ( ) Sat. ( )
Preferences: 1/2 day ( ) 1 day ( ) 2 days ( ) 3 days ( )
Evenings: Mon ( ) Tues. ( ) Wed. ( ) Thurs ( )
(3.5 hours incl. refreshments)
For same week: 1 evening ( ) 2 eve’s ( ) 3 eve’s ( )
Successive evenings ( ) Alternate: Mon-Wed ( ) Tues-Thurs ( )
Same day successive weeks ( ) Other: __________________________

TOPICS OF POSSIBLE INTEREST, check titles.

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<td>Applied Organic Geochemistry ( ) Sequence Stratigraphy ( )</td>
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<td>Remote Sensing of Geologic Data ( ) Passive Continental Margins ( )</td>
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<td>West Texas basins ( ) Jurassic of Eastern Gulf Coast ( )</td>
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<td>Rocky Mountain Foreland basins ( ) Oklahoma basins ( )</td>
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<td>Project/People Management ( ) Business Side of Oil &amp; Gas ( )</td>
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<td>Vadose Zone Monitoring ( ) Groundwater Contamination Assessment ( )</td>
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<td>Underground Storage Tank Issues ( ) Other Topics: __________________________</td>
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Suggested speakers, with topics: ____________________________________________

Other suggestions, comments, complaints: __________________________________

If you wish to have notices of continuing education programs sent to organizations or individuals, please print the name and mailing address below; for organizations this should be to the attention of a specific individual or office.

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DATE & LOCATION: February 24-25, 1989 (Fri. & Sat.) 8 AM - 5 PM both days.
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SCOPE OF COURSE: The course will cover elements of structural style for both thin-skinned and basement involved extensional terrains together with techniques for drawing balanced sections appropriate to the style. Applications will range from regional reconnaissance to prospect level. A workshop on section balancing is included. Participants are encouraged to bring their own cross sections and seismic lines for a discussion of styles and balancing techniques. Topics include half grabens, linking of faults in map view, and balancing.

INSTRUCTOR: Richard H. Groshong, Jr. is a Professor at the University of Alabama, Tuscaloosa, visiting Chaire d’honneur at Universite de Lausanne in Switzerland, and was previously a Senior Research Assistant with Cities Service Research Laboratory for 10 years. He recently authored a paper on extensional fault-bend folding and was co-author of a computer program for analytical modeling of balanced cross sections of thrust-fault-related folding. He is a frequent lecturer in industry courses on comparative structural geology.

COST: $135.00 for HGS member, $150 for non-members. Class size is limited to 40.
(Course Manager: Jim Lantz, Amoco, 713-556-4454)

PRODUCTION GEOLOGY AND RESERVOIR DESCRIPTION NEEDS IN FIELD DEVELOPMENT

DATE & LOCATION: Monday, March 27, 1989, 7:30 AM - 4:00 PM;
Auditorium, Exxon Building, 800 Bell, Houston, Texas.

SCOPE OF COURSE: This course surveys the responsibilities of the geologist during field development and production. Case studies and exercises are utilized to illustrate how the development plan and reservoir description can significantly improve hydrocarbon recovery from old and newly discovered fields. Part of the course will focus on the use of production-development data and concepts to provide important guidelines for the definition of seals and reservoir quality in wildcat and basin evaluations.

INSTRUCTOR: Robert M. Sneider, R. M. Sneider Exploration, Inc., Houston, TX.

COST:

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<td>Students</td>
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☐ Groshong Structural Geology Workshop
☐ Production Geology and Reservoir Description

Enclose check payable to HOUSTON GEOLOGICAL SOCIETY.

Return with this form to: Houston Geological Society, 7171 Harwin, Suite 314, Houston, Texas 77036
MEMORIAL

WILLIAM A. GORMAN
(1906-1988)

William A. Gorman died June 25, 1988, after a long and successful career as a Petroleum Geologist.

Bill was born March 9, 1906, in Minneapolis, Minnesota. His early education was obtained at St. Thomas Military Academy in Minneapolis. He earned his BA, MA, and PhD degrees in geology at the University of Minnesota.

Bill was an exploration geologist in Central Africa for Selection Trust Ltd. from 1928-1930. There, he was involved in discovering extensive copper deposits in Zambia. He was employed by Empire Oil & Refining Company as a geologist in 1933, and in 1938, he joined Skelly Oil Company as district geologist.

I first met Bill in 1938 when I first came to Houston and worked for the late Hershal Ferguson. In 1939, the Houston Geological Society conducted a field trip through East Texas into North Louisiana. Mr. Ferguson allowed me to go on the trip, and since I was young and inexperienced, he asked Bill Gorman to “watch over me” on the trip. This was the beginning of a friendly relationship with Bill which lasted until his death.

Bill worked for many companies such as Pan Am as division geologist, Royal Oil & Gas Corporation as manager of the Houston office, Rycade Oil Company as vice-president from 1952-1955, D & E Company as vice-president from 1955-1957, and Royal Oil & Gas Corporation as manager of exploration from 1957-1962. He served as president of Houston Royalty Company and advisor to the Executive Committee from 1962-1965. In 1965, Bill joined Dellwood Oil (MacPet) as an exploration executive, and in 1970 he became a consultant to MacPet. Bill was active in the Houston Geological Society, holding several offices including the presidency in 1960-1961.

Bill and his wife Sylvia, who preceded him in death by several years, had two children, William A. (Bill), Jr., of Houston and Barbara Wiggins of Cleveland, Mississippi. Bill remarried and is survived by his wife, Marjorie, his children, and several grandchildren.

Bill was highly respected by his peers as a geologist and as a man. His family and many friends will miss him.

JACK COLLE

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629-6600

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HOUSTON GEOLOGICAL AUXILIARY

The Houston Geological Auxiliary was organized to encourage social relations among the members of the Houston Geological Society and to assist the society in any manner they might request. Any female Geologist who is a member in good standing of the HGS is eligible for membership in the auxiliary. Four social activities are being planned, beginning in the fall, and you are cordially invited to join us for the coming year.

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Dues are $10.00 per year, payable upon application for membership. Make checks payable to: HOUSTON GEOLOGICAL AUXILIARY and mail with completed application form to:

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<th>Address/Contact Information</th>
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<tr>
<td>R. P. Akkerman</td>
<td>Geologist Exploration Engineer</td>
<td>3425 Bradford Place, Houston, TX 77025</td>
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<td>E. L. Burke</td>
<td>Pel-Tex Oil Company</td>
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<td>8302 Braesview, Houston, TX 77071</td>
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<td>Kenneth E. Nelson</td>
<td>Consulting Geophysicat</td>
<td>1210 Waterwood * Houston, Texas 77003</td>
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<tr>
<td>Cecil R. Rives</td>
<td>Petroleum Geologist</td>
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<td>Harry E. Otell, Jr.</td>
<td>Petroleum Consultant</td>
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<td>I. J. &quot;Pete&quot; Pitre</td>
<td>Consulting Geophysicist</td>
<td>3811 Tamarisk Lane</td>
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<tr>
<td>Martin M. Sheets</td>
<td>Geologist, Environmentalist</td>
<td>1703 W. Gray, Suite 4</td>
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<tr>
<td>John T. &quot;Ted&quot; Schulteberg</td>
<td>Consulting Geologist</td>
<td>2121 Sage Road, Suite 210</td>
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<tr>
<td>Leo Shishkevich</td>
<td>Stratco, Paleontologist</td>
<td>12422 Perishire</td>
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<td>Barry K. Van Sandt</td>
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<td>370-2241</td>
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<tr>
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