HGS SEPTEMBER CALENDAR

September 8, 1980 (Dinner Meeting)
Galleria Plaza Hotel
Hunter Yarborough
Hunter Yarborough & Associates, Inc., Houston
“Orogenic Belts, Collision Tectonics, and Major Hydrocarbon Accumulations”
Social Period - 5:30 PM, Dinner and Meeting - 6:30 PM
Reservations (telephone only, 771-8315) must be made or cancelled by Friday, September 5, 1980.

September 24, 1980 (Luncheon Meeting)
Marriott West Loop (780 West Loop South)
Harry J. King
Conoco Inc., Midland, Texas
“North Tidewater Oil Mine, Johnson Co., Wyoming”
Social Period - 11:00 AM, Luncheon and Meeting - 12:00 Noon
Reservations (telephone only, 771-8315) must be made or cancelled by noon Monday, September 22, 1980.

September 27, 1980
HGS Field Trip
“Tectonic of the Llano River Valley”
See Index for details.
EXECUTIVE BOARD

President
First Vice President
Second Vice President
Secretary
Treasurer
Executive Committeeman
Executive Committeeman
Executive Committeeman
Past President

President
Chester A. Baird, Dow Chemical USA 978-3610
William F. Binson, Tenneco Oil Company 767-5443
Peggy J. Rice, Conoco Inc. 905-2923
Matthew W. Dauro, Transcontinental Gas Pipe Line Corp. 871-6000
Gerald A. Cooley, Phillips Petroleum Company 680-2600
Robert W. Bybee, Exxon Company USA 860-5424
Wendell L. Lewis, Independent Geologist 652-5426
James A. Ragsdale, Blocker Exploration Company 977-5200
Tommy M. Thompson, Highland Resources Inc. 239-4901
William A. Fowler, Phillips Petroleum Company 689-5813

COMMITTEE CHAIRMEN

Louise Durham, Consultant 497-8790
Fred Baker, Great Western Drilling Company 261-4162
Jerry A. Watson, W. L. Tudor & Associates 577-2625
Don P. Keith, Arco Oil & Gas Company 965-8125
Jerry Sides, Sidemount Oil & Gas Company 656-3200
Gregory K. Burns, Cities Service Company 850-9193
S. Camille Yarbrough, Terra Resources 960-1040
Robert S. Harvill, Exxon Company USA 680-5462
Thomas Hesseman, Amoco Production Company 682-2411
Dan E. Duggan, Exploration Company 970-1100
Jim McMurray, Transco Exploration Company 971-0000
Arthur T. Treill, South Petroleum Company 446-5852
Andrew W. Hamish, Davis Brothers 224-8224
Robert J. Moses, First City National Bank 684-5166
O. Lyle Austin 681-2154
Evelyn Willis Moody, Consultant 654-0072
John H. Hefner, Exxon Company USA 965-7427
William A. Fowler, Phillips Petroleum Company 669-3613
Richard McLeod, Gulf Oil Exploration & Production Company 236-2427
William A. Bishop, Tenneco Oil Company 669-3613
David Levin, Gulf Oil Exploration & Production Company 236-1295
Julie Majkowski, Guardian Oil & Gas Company 654-6975
Walter A. Boyd, Jr., Columbia Gas Development Corp. 636-8090
Phillip T. Fowler, Texas Gulf Oil & Gas Company 688-9851
Peggy J. Rice, Conoco Inc. 969-2625
David M. Eggleston, Gannop Paydour & Soudler 972-1018

SPECIAL REPRESENTATIVES

Adviser, Museum of Natural Science
Morgan J. Davis, Jr., Pennzoil Producing Company 236-7406

AAPG Representative
William A. Fowler, Phillips Petroleum Company 689-3013

GEOSS Delegate Chairman
Chester A. Baird, Dow Chemical USA 978-8310

AAGP Group Insurance
Merton M., "Ozpie," Osborne, Transco Gas Company 523-1181
John Bremerstaller, Insurance Consultant 688-0810
Robert J. Schrock 497-4411

HOUSTON GEOLOGICAL SOCIETY

EXECUTIVE BOARD

President
First Vice President
Second Vice President
Secretary
Treasurer
Executive Committeeman
Executive Committeeman
Executive Committeeman
Past President

President
Mrs. Andrew (Norman Jene) Bache 454-9247
Mrs. Claudia (Nancy) Russel 457-1682
Mrs. John (Pat) Hefner 468-9485
Mrs. Mack (Bob) Miller 782-1363
Mrs. Jim (Margery) Ambrose 497-3413
Mrs. David (Gayle) Sheidler 482-6013
Mrs. Ben (June) Brooks 494-1701
Mrs. Russell (Mary Lou) Bowers 789-7958

COMMITTEE CHAIRMEN

Louise Durham, Consultant 497-8790
Fred Baker, Great Western Drilling Company 261-4162
Jerry A. Watson, W. L. Tudor & Associates 577-2625
Don P. Keith, Arco Oil & Gas Company 965-8125
Jerry Sides, Sidemount Oil & Gas Company 656-3200
Gregory K. Burns, Cities Service Company 850-9193
S. Camille Yarbrough, Terra Resources 960-1040
Robert S. Harvill, Exxon Company USA 680-5462
Thomas Hesseman, Amoco Production Company 682-2411
Dan E. Duggan, Exploration Company 970-1100
Jim McMurray, Transco Exploration Company 971-0000
Arthur T. Treill, South Petroleum Company 446-5852
Andrew W. Hamish, Davis Brothers 224-8224
Robert J. Moses, First City National Bank 684-5166
O. Lyle Austin 681-2154
Evelyn Willis Moody, Consultant 654-0072
John H. Hefner, Exxon Company USA 965-7427
William A. Fowler, Phillips Petroleum Company 669-3613
Richard McLeod, Gulf Oil Exploration & Production Company 236-2427
William A. Bishop, Tenneco Oil Company 669-3613
David Levin, Gulf Oil Exploration & Production Company 236-1295
Julie Majkowski, Guardian Oil & Gas Company 654-6975
Walter A. Boyd, Jr., Columbia Gas Development Corp. 636-8090
Phillip T. Fowler, Texas Gulf Oil & Gas Company 688-9851
Peggy J. Rice, Conoco Inc. 969-2625
David M. Eggleston, Gannop Paydour & Soudler 972-1018

SPECIAL REPRESENTATIVES

Adviser, Museum of Natural Science
Morgan J. Davis, Jr., Pennzoil Producing Company 236-7406

AAPG Representative
William A. Fowler, Phillips Petroleum Company 689-3013

GEOSS Delegate Chairman
Chester A. Baird, Dow Chemical USA 978-8310

AAGP Group Insurance
Merton M., "Ozpie," Osborne, Transco Gas Company 523-1181
John Bremerstaller, Insurance Consultant 688-0810
Robert J. Schrock 497-4411

HOUSTON GEOLOGICAL AUXILIARY

OFFICERS
PRESIDENT’S COMMENTS

The Executive Board and the Chairmen, and members of the twenty-three committees of The Houston Geological Society welcome you to the beginning (for you) of the 57th year of the Society. As will be evident to you, as you read the various announcements of activities for September and October and realize this issue of the Bulletin was put together in July, the administrative year of your society began much earlier for a number of your professional peers. John Hefner and Milt Johnson of Exxon Company USA, and Clyde Beckwith of Conoco Inc., have seen to the transfer of all operations of the Society to our new location. The voice you generally hear when calling the Society’s office belongs to Terry Mendoza. All that now remains is your acceptance and participation in these events. In a metropolitan area such as we live and work in, it is easy to get out of the habit of attending professional functions, technical or social. We will make every effort to get you back in the habit of attending your society’s events. In the vernacular of the day - Enjoy!

One of the few, but most important, individual requests we will make of each of you happens early on ...the timely renewal of your membership and indication of which committees you might have an interest in working with. Committee chairmen are always interested to know someone might help - that they aren’t alone in the world. I say “might help” because we are aware of the demands on your time. There isn’t a committee listed on the inside of the front cover that couldn’t use your ideas, your enthusiasm, and your help. At least give us a chance to ask. “No experience,” you say. Not many of us had experience in whatever it was we were first asked to do for the Society, but there was a lot of help and somehow we have survived. I am fortunate in that many of the committee chairmen agreed to serve another year - most wanting to carry through on ideas they had up with, and the new committee chairmen have landed running. To paraphrase an old show biz axiom... “Call us if we don’t call you.”

The 1980 Photo Directory, through the combined efforts of Bruce Archinal (Photo Directory Committee Chairman) and his committee, Fred Baker (Advertising Committee Chairman), and John Hefner (Membership Committee Chairman), has been printed and is available at the Society’s office. A truly Herculean effort which, from inception to product, was finished and was mailed during the first part of August. If, for some reason, you have not received your Directory please send a copy of your check or receipt to the new HGS business office and we’ll get a copy in the mail to you. Those members who did not pay for mailing may pick up their copies at Four Star Printing, 6916 Ashcroft. There are still a few copies of the Photo Directory left if any members still wish to order one. An order blank can be found elsewhere in the Bulletin.

ANTHONY S. COLEY
President

SOCIETY CALENDAR FOR OCTOBER

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 3, 1980</td>
<td>HGS Annual Shrimp Peel</td>
</tr>
<tr>
<td></td>
<td>Knights of Columbus Hall</td>
</tr>
<tr>
<td>607 E. Whitney</td>
<td></td>
</tr>
<tr>
<td>October 6, 1980</td>
<td>HGS Evening Meeting</td>
</tr>
<tr>
<td>Location to be</td>
<td>Stephen E. Collins</td>
</tr>
<tr>
<td>announced</td>
<td>“Dallas Exploration, Inc. “</td>
</tr>
<tr>
<td>October 25-26, 1980</td>
<td>South Texas Meteor Impact Site</td>
</tr>
<tr>
<td></td>
<td>and Exhumed Asphalt Carbonate Reservoir</td>
</tr>
<tr>
<td>October 29, 1980</td>
<td>HGS Luncheon Meeting</td>
</tr>
<tr>
<td>Location to be</td>
<td>Tim Schowalter</td>
</tr>
<tr>
<td>announced</td>
<td>Mosbacher and Pruett</td>
</tr>
<tr>
<td></td>
<td>“Hydrocarbon Shows—Proximity Indicators for Stratigraphic Traps”</td>
</tr>
</tbody>
</table>

ANNUAL DUES NOTICE

Dues notices were mailed to members in August. Please take care of this obligation promptly so that we will not have to send out second notices in October. If you did not receive a dues notice, please notify the HGS office. As stated in the Bylaws, members not paid by November 15, will be dropped from the membership roll.

Gerald A. Cooley
Treasurer

PHOTO DIRECTORY

After several delays, the H.G.S. Photo Directory has been finished and was mailed during the first part of August. If, for some reason, you have not received your Directory please send a copy of your check or receipt to the new H.G.S. business office and we’ll get a copy in the mail to you. Those members who did not pay for mailing may pick up their copies at Four Star Printing, 6916 Ashcroft. There are still a few copies of the Photo Directory left if any members still wish to order one. An order blank can be found elsewhere in the Bulletin.

CALVERT-HGS SCHOLARSHIP FUND

On June 30, 1980 the Calvert-HGS Scholarship Fund received two contributions totaling $215. One contributor was the Houston Geological Society Remembrance Committee in the memory of Donald M. Davis, a former president of our society. The other contribution represented bond interest.

PRICE SCHEDULE—HGS MEETINGS

<table>
<thead>
<tr>
<th>Location</th>
<th>Event</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dinner</td>
<td>$16.00</td>
</tr>
<tr>
<td>Marriott West Loop</td>
<td>Luncheon</td>
<td>$10.00</td>
</tr>
</tbody>
</table>

RESERVATIONS (771-8315)

Please make reservations for the Monday evening meeting by the preceding Friday, and for the Wednesday noon meeting by the preceding Monday noon.

Chet Baird
President
EVENING MEETING—SEPTEMBER 8, 1980
HUNTER YARBOROUGH—Biographical Sketch

Hunter Yarborough, a geologist and geophysicist of Hunter Yarborough & Associates, Inc., attended the University of Texas, receiving a degree in geology with highest honors and minors in physics and petroleum engineering. Two years were spent in graduate studies. During World War II, he served as an officer and aviator of the U.S. Navy, in both the Atlantic and Pacific theaters. Following the war, Mr. Yarborough worked for Exxon conducting geological, geophysical, and geochemical programs in the exploration for oil and gas. He has been active in all phases of geological, geophysical, and geochemical research, and has traveled over much of the earth working and consulting with active exploration groups.

Mr. Yarborough is a Certified Petroleum Geologist, a member of The American Association of Petroleum Geologists, a Fellow of The Geological Society of America, a member of The American Geophysical Union, a Registered Professional Engineer, and a member of Sigma Gamma Epsilon and Rho Kappa. He has served as Distinguished Lecturer for AAGP and has given technical addresses on oil finding and energy and mineral problems to many universities and geological and geophysical societies in the United States. In addition to many professional awards and recognitions, he is a two-time recipient of AAPG’s A. I. Levorsen Memorial Award. Mr. Yarborough is a member of the Governor’s Energy Advisory Council for the State of Texas and Executive Vice-President of Global Exploration, Inc.

OROGENIC BELTS, COLLISION TECTONICS, AND MAJOR HYDROCARBON ACCUMULATIONS (Abstract)

Classic concepts of the origin of orogenic belts are being challenged, primarily as a result of the recent development of new geophysical and geological data.

The geosynclinal concept, in which a thick prism of sediments is postulated to have been uplifted vertically without crustal shortening and the sedimentary mass to have been deformed in patterns of symmetrical and asymmetrical gravity-sliding away from the uplifted swell, appears invalid except in very unusual circumstances.

Excluding Andean-type volcanic belts and volcanic island arcs, orogenic belts are formed by: (A) continent-continent collision, resulting from convergence of two or more lithospheric plates; (B) island arc-continent collision, resulting from the collision of offshore volcanic arcs and the sediments and crust of associated back-arc basins with the parent continent; (C) “flat plate” subduction, resulting in crustal shortening with faulting, folding, and shortening of continental crust and/or sediments commonly located hundreds of kilometers within the continent from the subduction zone; and (D) strike-slip (transform, shear, wrench) deformation.

Structural styles A and C usually exhibit crustal shortening and tectonically telescoped crust and sediments. Style B does not necessarily shorten continental crust; however, oceanic crust of the back-arc basin is usually shortened and commonly obducted on the adjoining continent.

Both style and intensity of deformation are in part controlled by the type of crust and sediment being deformed; the rigidity and ductility of the crust are primarily functions of competency, fabric, fluid (pore) pressures, and temperature of the crust.

Orogeny involving compression and crustal shortening is not a simple suturing process in which soft rocks are squeezed between rigid plates. Much ductile deformation is involved. Large sialic blocks in fold belts may occur as “orogenic float” rigid crustal blocks supported by masses of low-velocity material. Such “rootless,” structurally detached masses remain “afloat” while the underlying lithosphere is being subducted. Compressional forces may dominate in the “float” while the underlying, downgoing lithosphere is bent, resulting in extensional deformation.

The thrust sheets of tectonically telescoped cores and margins of orogenic belts are usually the most visible and obvious scars of collision (and compression). However, the most significant hydrocarbon accumulations may be trapped by structures created by zones of strike-slip deformation formed by the compression and occurring contemporaneously with the main compressive orogeny. Pre-orogeny basins commonly are deformed complexly by large zones of synthetic and antithetic strike-slip faults. Not only are large en-echelon antilines and synclines, “chopped” folds, half domes, and fault splays formed, but also, where major strike-slip faults and fault zones “lock” and “unlock,” huge horst blocks and deep rift-valley basins develop.

The ancestral early and middle Paleozoic “Oklahoma” and “Texas” basins of pre-collision times were simple cratonic sags, probably “rooted” with Precambrian and/or early Cambrian rift basins (auclacogens?).

The Quachita-Marathon Carboniferous “collision” orogeny created the remarkable structural “overlays” that are responsible for trapping most of the oil and gas in these basins. The “Arbuckle-Ardmore” and the “Amarillo-Wichita-Anadarko” systems were superimposed over the Oklahoma basin, and the “Central Basin Platform Delaware” system was superimposed over the Texas basin. In a similar genesis, the “Moorman La Salle” system was superimposed over the ancestral Illinois basin.

Equally striking is the magnitude of the area and the volume of crust (and sediments) that may be deformed by collision orogenies. The “Pennsylvanian” (ancestral) Rocky Mountains are classic products of crustal compression and shearing resulting from collision. Deep rift-valley basins and large fault-block uplifts characterize the “Pennsylvania” Rockies. Deformation extended northward from the Quachita-Marathon collision margin over 600 miles into the North American continent. The “Uncompahgre-Paradox” structural complex is typical of these “fault-block uplift/rift-valley basin systems.”

The hydrocarbon potential of orogenic belts is controlled by the fundamental geological and geochemical factors that control all oil and gas accumulations: (1) structural and/or stratigraphic traps, (2) source rocks of adequate richness and maturation, (3) favorable reservoir rocks, (4) effective sealing rocks, and (5) time of migration of hydrocarbons.
HARRY J. KING—Biographical Sketch

Harry J. King is Director of Exploratory Projects for Conoco Inc. in Midland, Texas. Prior to this assignment, he worked in Houston as Area Geologist and in Casper, Wyoming, as Geoscience Supervisor. He received his B.S. from the University of Missouri at Columbia and an M.S. from St. Louis University. After several years with the Standard Oil Co. of California organization, he left industry to pursue a Ph.D. at the University of Missouri at Rolla. From 1968 to 1974, Dr. King was Assistant Professor of Geology at Southwest Missouri State University. In 1974, he joined Conoco in Casper.

During his academic career, Dr. King was awarded a NATO scholarship for continental-drift studies in Europe and an NSF grant for carbonate studies in the Caribbean.

NORTH TISDALE OIL MINE, JOHNSON CO., WYOMING (Abstract)

The North Tisdale anticline was drilled by Conoco Inc. first in 1952. Unfortunately, the structure had been breached by erosion and the solution gas had escaped long before. Many million barrels of oil had been left behind without sufficient energy to enter a borehole. The increasing value of oil made recovery of this oil viable, and a unique method of liquid oil recovery was begun.

An adit was driven into the reservoir and the liquids drained into a gallery for recovery. Color slides provide the opportunity to view the inside of this producing oil reservoir. Also, revealing information about perforating and cementing techniques can be gained by studying the results in this mine. The practicality of mining liquid oil, despite the problems associated with such an operation, adds another dimension to recovery methods.

GEOWIVES MEETING

Geowives will have its first meeting Wednesday, September 17, 1980. It will be a coffee starting at 10:00 am at the home of Mrs. John C. Langford, 5830 Pine Arbor, Houston, Texas, 77066.

HGS FIELD TRIP

The Houston Geological Society will host a one-day field trip to examine the Tertiary of the Brazos River Valley on September 27, 1980. Trip leaders will be Dr. Robert Stanton and Dr. Karl Koenig of Texas A & M. The cost of the trip will be $40 per person which will include guidebooks, sack lunch, refreshments and transportation. Mail check for reservation by September 22, 1980 to:

Moin Hussain
Dow Chemical U.S.A.
P. O. Box 4322
Houston, TX 77210
Ph. (713) 978-3803

Field trip is being planned for 80 people. Buses will leave Houston Dow Center parking lot, 400 West Belt South at 6:00 a.m., and will return the same day around 9:15 p.m.

The field excursion will visit outcrops showing:
1. The Mesozoic-Cenozoic Contact (Midway-Navarro)
2. The Carrizo-Reklaw Contact
3. The Classical Stone City Exposures, Classic Eocene Locality
4. Deltaic Deposits of the Yegua
5. The Yegua-Jackson Contact

HGS FIELD TRIP

October 25-26, 1980
SOUTH TEXAS METEOR IMPACT SITE
AND EXHUMED ASPHALT CARBONATE RESERVOIR

The Houston Geological Society will host an October weekend field trip to a newly discovered impact site in South Texas. This 3 KM crater was discovered in 1979 by Feather Wilson and published in the March 1979 issue of Geology. Thrust faulting and complex folding are features of this highly deformed Wilcox area. This is the only "soft rock" example of an impact site in the world. The nearest analog is on the planet Mars. The rims and interior of the crater will be visited. The South Texas brush country offers a different but rugged view of the Gulf Coast.

The second portion of the field trip will involve an excursion to an exhumed oil field which is now an asphalt mine. Oil was originally trapped at an unconformable surface in an Upper Cretaceous carbonate beach deposit. The subtle differences in porosity and permeability may be viewed within the walls of the mine. It provides an unusual outcrop cross-section of a carbonate reservoir.

The trip leader is Feather Wilson (William Feathergail Wilson) from Placid Oil Company in San Antonio. It is scheduled for the weekend of October 25-26, 1980. Details and costs will be announced in the October Bulletin.

CORRECTIONS FOR THE JUNE BULLETIN:

The following people were inadvertently omitted from the Spring Field Trip article and were members of the Field Trip Committee: Alan Stubenrauch, James D. Murphy, Douglas Harrington and Mary Ann Rafle.

In June's Professional and Organizational News, Dudley South was incorrectly identified as Doug Smith.

Also, Sabin W. Marshall was not Chairman of the HGS Abnormal Pressure Study Group in 1970 as was mistakenly reported in his biography.
1980-81 HGS PROGRAMS

This year's Program Committee is going to try to provide the membership with a series of stimulating talks on many facets of geology over a variety of geographic areas. Hunter Yarborough—a name probably familiar to all of you—will start the year off on September 8 with a broad picture of orogenic belts and collision tectonics as related to major hydrocarbon accumulations around the world. The noon program in September will feature a talk by Harry J. King on an oil mine in Wyoming where one can "walk into" the reservoir. See details of these talks elsewhere in this Bulletin.

Other programs scheduled for this year are on Cotton Valley and Smackover reservoirs in the Ark-La-Tex area, by Stephen E. Collins of Dallas Exploration, Inc., an AAPP Distinguished Lecturer; hydrocarbon shows as proximity indicators for stratigraphic traps, by Tim Schowalter of Mosbacher and Pruett; deltaic and deep-sea Plio-Pleistocene, offshore Gulf Coast, by David K. Davies of Davies, Almon and Associates; and some aspect of Gulf Coast geology, by the current AAPG president, Robey H. Clark of Diamond Shamrock Corporation. Dr. H. W. Menard, Director of the U.S. Geological Survey, will speak to the Society in January. We also hope to schedule programs on the evaporitic environment as a source of petroleum, on clastic depositional models, and on the Ouachita fold belt. Also, two joint meetings are planned—one with the Houston Association of Petroleum Landmen and one with the Geophysical Society of Houston.

We are trying to arrange meeting facilities that will accommodate our larger turnouts and that will provide reasonably good food at a reasonable price (but don't expect cheap!). Location, parking, and audio-visual facilities also must be considered. We may not find the perfect place, but we'll keep trying.

Please show your support of your Society by attending as many of the meetings as possible. Also, please help us to conduct the programs as expeditiously and as economically as possible by making reservations by the date required and then honoring those reservations.

There is no reason we cannot have 1000 members present for the first meeting on September 8—and I hope we do (but not if only 500 make reservations!).

Peggy J. Rice
2nd Vice President/Program Chairman

LIBRARY HIGHLIGHTS
THE GEOLOGICAL COLLECTION IS READY

The Library Committee of the Houston Geological Society is pleased to announce that the previously inaccessible books in the Geological Section collection at the Houston Public Library are now available to the public on the second floor in the Science section of the man library downtown. This group of geological and other related books has always been housed on the fifth floor of the main library with its contents relatively unknown. These books include the major portions of the Dumble, Barton and DeWolf Collections acquired by the Houston Geological Society and donated to the Houston Public Library as well as other useful and fascinating publications. They are now all catalogued on cards which are in drawers on the second floor in the Science section of the Library. These cards are being systematically integrated into the newer microfilm catalogue system of the library but it is still necessary to look in both catalogue systems for particular publications.

Placing these books on the second floor in the open stacks by the library has eliminated the need for the Houston Geological Society Library Committee to inventory and publish the contents of the collection. For several years the HGS Library Committee has been trying to determine exactly what was contained in the GS collection on the fifth floor. Attempts at inventories by several different methods used by the HGS Library Committee were all found to be time consuming and unsuccessful. The HPL, tried to retrieve this information stored on cards but it was too difficult. It was not in their immediate program to move the books to the second floor but finally plans were changed and work was begun. Preparing and moving those books has entailed a great deal of extra effort by the dedicated HPL library personnel. We are deeply appreciative to them for this tremendous job that they have done for us. It was well worth the trouble, and now there are many treasures on the second floor ready for your discovery. Thank you, Houston Public Library! Some of you may be concerned about valuable old books being placed in the open stack reference shelves. The HPL has evaluated each book in the collection and removed the rare books for safekeeping. The ones on the shelves are working books. Come, see, enjoy!

Evelyn Wilie Moody
Chairman

THE PUBLICATION SALES COMMITTEE

The Houston Geological Society is a very diverse organization designed to cater to the various professional needs of its members. One area in which the HGS is particularly active is publications. The HGS publishes works which are intended to aid the geologist in his scientific pursuits.

The Publication Sales Committee serves the important function of providing HGS members easy access to these publications. This year the committee is broadening its scope. The HGS Executive Board has designated a Publication Sales Committee budget for this purpose.

A three fold program to educate the public about the services we offer is scheduled for this year. Reviews of our publications are to appear in the leading petroleum journals as well as the HGS Bulletin. Most of the budget is intended for advertisements in major journals of the industry and related professional societies. The publications table at HGS monthly meetings will be continued and expanded to include the meetings of other local petroleum industry professional societies. The Publication Sales Committee will also maintain exhibition booths at the upcoming GCAGS and AAPG conventions, as well as distribute the new photo directory.

The Publications Sales Committee is looking for new members. This committee offers a lot of fun and career expanding opportunity through publications in major periodicals, as well as the chance to meet and know many other industry professionals. The Publication Sales Committee will prove a rewarding experience for the ambitiously oriented geologist. HGS members interested in joining should contact committee chairman David Levin at 226-1392 or 226-1904.

David Levin
Chairman
HGS PUBLICATIONS

<table>
<thead>
<tr>
<th>NAME</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALTERNATE ENERGY RESOURCES</td>
<td>$15.00</td>
</tr>
<tr>
<td>DELTA MODELS FOR EXPLORATION</td>
<td>$12.00</td>
</tr>
<tr>
<td>ABNORMAL SUBSURFACE PRESSURE</td>
<td>$1.00</td>
</tr>
<tr>
<td>STRATIGRAPHIC CROSS SECTIONS</td>
<td>$25.00</td>
</tr>
<tr>
<td>HGS MEMBERSHIP PHOTO DIRECTORY</td>
<td>$5.00</td>
</tr>
<tr>
<td>OIL FIELDS &amp; SUBSISTENCE IN HOUSTON</td>
<td>$5.50</td>
</tr>
<tr>
<td>TERTIARY BRAZOS RIVER</td>
<td>$10.00</td>
</tr>
<tr>
<td>LIGNITE RESOURCES E.C. TEXAS</td>
<td>$6.50</td>
</tr>
<tr>
<td>DAMON MOUND, TEXAS</td>
<td>$7.50</td>
</tr>
<tr>
<td>LA. CHENIER PLAIN</td>
<td>$6.00</td>
</tr>
</tbody>
</table>

The conference will be limited to 80 participants on a first-come, first-served basis. If you are interested in participating, write Sondra Biggs, Convention Manager, AAPG, P. O. Box 979, Tulsa, Oklahoma, 74101 as soon as possible.

ELEVENTH UNDERWATER MINING INSTITUTE

The Eleventh Underwater Mining Institute will be held on November 11-13, 1980, in Savannah, Georgia. The program will include papers on the following topics: deepsea metal-bearing muds, spreading centers and marine mineral deposits, geophysical exploration techniques for locating marine minerals, new coring devices, nuclear exploration methods, long-range metal requirements and new marine metal sources, new sand and gravel exploitation projects, geophysical assessment of underwater sand deposits, a high-level review of the U. N. Law of the Sea and U. S. marine mining, and a report on new opportunities in emerging nations for developing marine mining in coastal waters.

To obtain information on registration, costs, hotel accommodations and a copy of the program of speakers and topics, please write:

Dr. Gregory Hedden
Sea Grant Institute
1815 University Avenue
Madison, Wisconsin 53706

For information on the technical program, please write:

Dr. J. Robert Moore
The Marine Science Institute
P. O. Box 7999
University Station
Austin, Texas 78712

Please note that the program will commence in the early afternoon of November 11th, and will end at noon on November 13th, thus allowing for more convenient travel arrangements of attendees.

HGS ENTERTAINMENT FUND

The contributions made by these companies to the 1980-81 Houston Geological Society Entertainment Fund enabled your Society to provide the membership an opportunity to participate in several social functions at a greatly reduced cost. The HGS would like to thank these companies for their continued support. Please express your thanks to these companies and individuals. We know we can count on your support in the 1981-82 HGS year.

The Analysts
D. Armstrong Company
Data-Log
Big "6" Drilling
John Bremsteller
R. Brewer & Company
Jack Colle & Associates
Cambe Log Library
Core Laboratories
Core Services
Dresser Industries
First City National Bank
Geomap Company
Georex Data, Inc.
Geosource, Inc
Go-Wireline Services
GTS Corporation

Gulf Coast Geo Data
Indexgeo and Associates, Inc.
Three K Enterprises, Inc.
NL Petroleum Services
Pennington Seismic Exchange, Inc.
Petrogeophysical Exploration Corp.
Richardson Seismic
Schlumberger Well Services, Texas
Coast Drw.
Seiscom Delta, Inc.
Service Photocpy, Inc.
Sidney Shaffer & Associates, Inc.
Stratigraph Corporation
Teledyne Exploration Company
Tobin Research, Inc.
Western Geophysical Company
James Wilson

Houston Geological Society Bulletin, September 1980
SHREVEPORT GEOLOGICAL SOCIETY

The Shreveport Geological Society announces the publication of Reference Volume VI, Selected Oil and Gas Fields of North Louisiana and South Arkansas. This Volume includes reports on the following 30 fields:

Bayou D’Arbonne Lake  Mount Vernon
Bayou Middle Fork  North Big Island
Bethany-Longstreet (Rodessea)  Northwest Colquitt
Black Lake  Oaks
Calvin  Panther Creek
Chalybeat Springs  Parker Lake
Choudrant-Tremont  Rawson Creek
Clear Branch  Ruston
Cotton Valley (Gray Sand)  Sailes and West Bryceland
Cummings  South Drew
Days Creek  South Sarepta
Lake Curry  Sugar Creek
Leatherman Creek  Tubal
Lewisville  Walker Creek
Mount Olive  Welcome

The Reference Volume series is the single most important source of information on the petroleum geology of North Louisiana and South Arkansas. Volume VI continues this long tradition.

You may reserve your copy at the reduced, pre-publication price of $30.00 by completing the attached form and returning it with your payment. This represents a $5.00 savings over the regular price of $35.00. Publication is expected by August 1, 1980.

SHREVEPORT GEOLOGICAL SOCIETY
P. O. Box 750
Shreveport, Louisiana 71162

GULF COAST SECTION-SEPM FIRST ANNUAL RESEARCH CONFERENCE GEOLOGY OF THE WOODBINE-TUSCALOOSA TREND

The Gulf Coast Section - SEPM is planning a research conference on the Geology of the Woodbine - Tuscaloosa Trend to be held December 1, 2, 3, 1980 in Houston at the Marriott Hotel near the Galleria. Presentations by invited speakers and selected authors of submitted papers will cover the geology, stratigraphy, paleontology and economics of this trend. The deadline for abstracts is September 1, 1980. To submit an abstract or for more information please contact:

Gene B. Martin
Arco Oil & Gas
P. O. Box 1346
Houston, TX 77001

Mary Ann Rafle
Secretary, GCS - SEPM

1981 AAPG CONVENTION
SAN FRANCISCO — MAY 31-JUNE 3
POST CONVENTION TRIP (HAWAII)
JUNE 4-JUNE 11

Group space has been reserved for AAPG members planning to fly to San Francisco for the 1981 annual meeting. Additionally, group space is being arranged for a post convention trip to Hawaii. More specific details will be published in the Bulletin in January, 1981.

GULF/ATLANTIC SYMPOSIUM 1980

What is the origin of the Gulf of Mexico? With plate tectonics as a common basis for discussion, approximately 150 geologists and geophysicists converged on Louisiana State University for a symposium of 22 oral presentations by 34 authors dealing with various aspects of the question. The symposium, held March 3 - 5, 1980, was sponsored by the Department of Geology, LSU, and the Louisiana Geological Survey. Topics of discussion provided a spectrum of constraints on plate tectonic models for the evolution of the circum-Gulf region. While a complete consensus on even the broadest model for late Paleozoic - early Mesozoic Gulf tectonics could not be reached, and would have been an unrealistic expectation in any case, a remarkable convergence evidenced by several speakers provided a grossly consistent hypothesis for the origin of the crust beneath the central Gulf of Mexico.

Marine seismic and refraction studies by the University of Texas Galveston Geophysics Laboratory, reported by Richard Buffler, A. K. Ibrahim, and Jeanne Shaub together with previously published data, distinguish an oceanic type crust, beneath the central Gulf from "transitional" crust which rims the Gulf. In addition to crustal thickness and velocity contrasts between the two crustal types, the Galveston group argued that the character of reflections from the apparent basement surface differs significantly between the two crustal types. They concluded that the area within the Gulf underlain by oceanic crust is significantly smaller than previously thought.

Both the Galveston Group and Amos Salvador of Exxon suggested that salt deposition in and around the Gulf ceased when the Gulf was rifted wide enough for seafloor spreading to begin. Crude correspondence between the boundary between oceanic and transitional crust and the apparent limits of salt was cited as major supporting evidence for this suggestion. As cessation of evaporite deposition in the circum - Gulf region is marked by the onset of marine sedimentation, Salvador further suggested that the beginning of seafloor spreading in the Gulf was accompanied by permanent linkage of the Gulf with the world ocean, in Callovian time, or about 150 my ago.

The direction of seafloor spreading in the Gulf inferred by Buffler and Salvador was shown by Kim Klitgord of the U.S. Geological Survey to be quite consistent with the direction of relative motion between North America and Africa between about 150 - 130 my B.P. From combination of Klitgord's study and geometrical constraints, a major transform structure, linking the central North Atlantic and the Gulf across Florida, was inferred to have been active while the Central Gulf was opening by seafloor spreading, as previously suggested by Pilger in 1978.

Indirect evidence for effects of continental rifting, in the form of sedimentation on cooling continental margins was discussed by Mike Steckler of Lamont-Doherty. Mike noted that application of his techniques to the margin of the Gulf could provide valuable information concerning its early evolution. Coincidently E. G. Anderson of the Louisiana Geological Survey provided an introduction to his newly published study (by the LGS) of Mesozoic sedimentation of the northern Gulf Coast - a valuable basis for the kind of study envisaged by Steckler.

Considerable discussion centered on the fits of the three major continents, Africa and North and South America, and
the microcontinents of Middle America and the Caribbean prior to opening of the Gulf. Klitgord reported several lines of marine evidence in support of a slight modification of the pre-Atlantic Bullard, Everett and Smith fit. The two major problems with the fit, overlap of Middle and South America and a partially “open” Gulf were “solved” in several ways. A number of authors invoked the famed left-lateral megashear of Silver and Anderson as a means of eliminating the overlap of Middle and South America. Tom Anderson of Pittsburgh reviewed evidence for the megashear and presented his version of a pre-Gulf fit. Rob Van der Voo (Michigan), Bill Dickinson and Peter Coney (Arizona), and Rex Pilger (LSU) incorporated the megashear into their schemes and Wulf Gose (Texas - Galveston) provided paleomagnetic data from Mexico which seemed to be compatible with the megashear model.

On a somewhat grander scale, Ted Irving (Canadian Earth Physics Branch) and Rob Van der Voo (Michigan) presented disparate models for the position of Atlantic continents in the Late Paleozoic, presumably before the Gulf formed. Irving’s grand right-lateral megashear seemed to stun the audience, which might have been more comfortable with Van der Voo’s more “conventional” plate evolutionary scheme. Nothing more typified the oft heard plea for more work and better data.

Jim Case and Walter Mooney both of the U.S. Geological Survey (Menlo Park) provided a southern perspective on Middle and Southern American constraints on the early evolution of the Gulf - Caribbean region. Jim’s wide experience provided a valuable cutting edge for the disparate models spun by the various tectonicians present.

Jim Garrison (Texas - Austin) presented a strong case for Late Paleozoic island arc activity in eastern Mexico, while Jack Walper (Texas Christian), Stan Cebull and S. E. Shubert (Texas Tech.), and George Viele (Missouri) provided their perspectives on the late Paleozoic evolution of the northern Gulf Coast and Ouachitas - critical areas for any model of the opening of the Gulf.

A proceedings volume, with nine articles and 11 abstracts provided additional documentation of the meeting and is available post paid for $15 from the School of Geoscience, LSU, Baton Rouge, LA 70803.

For the first tectonics conference at LSU, the Gulf/Atlantic symposium was an excellent success, warranting a return engagement a few years down the road.

Rex H. Pilger, Jr.
Covenor

PROCEDURES REVISED FOR UNITIZATION OF OCS OIL AND GAS OPERATIONS

Final rules revising regulations governing the unitization of operations under Outer Continental Shelf (OCS) oil and gas leases have been announced by the Department of the Interior. The revisions, being published in the Federal Register, establish June 30, 1980, as the effective date.

Unization denotes the joint operation of separately owned leases. Under unitized operations, exploration and development may be conducted in the most economically feasible manner by one operator on behalf of several companies owning competing interests.

The new regulation establishes specific procedures for review of proposals to unitize operations and for issuance of orders requiring unization. The regulation emphasizes that unit operator’s responsibility for the prompt and efficient conduct of exploration, development, and production activities.

The rulemaking spells out specific procedures for decision-making on the part of the Director of the U.S. Geological Survey in instances where he approves a request for unitization or orders the execution of an oil and gas unit agreement. The more formal approach established by the new regulation, as compared to previous procedures, is desirable because mandatory unitization often involves conflicting interests of many parties.

Opportunities for hearings and appeals concerning unit agreement decisions by the USGS director continue to be provided in the new rulemaking as assurances that the interest of each party is duly recognized.

The new rule recognizes three different situations under which unitization may occur:

- Voluntary unitization (all lessees execute unit agreement).
- Compulsory unitization initiated by less than all affected leases.
- Compulsory unitization initiated by the USGS director.

The new rule changes were developed as the result of review of past and current criteria for the unitization of operations under OCS oil and gas leases.

Further information concerning the revised regulations may be obtained from Gerald D. Rhodes, U.S. Geological Survey, 640 National Center, Reston, Va. 22092, telephone (703) 860-7531.

PROFIT SHARE BID SYSTEM TO BE USED IN OCS SALE #A62

Secretary of the Interior Cecil D. Andrus announced that a fixed net profit share bidding system will be used on 40 tracts in the proposed Outer Continental Shelf (OCS) Gulf of Mexico oil and gas lease sale #A62, tentatively scheduled for September 1980.

“This marks the first time that the Federal government has used this system in offering OCS tracts for lease,” said Secretary Andrus. “This is a further implementation of the OCS Lands Act Amendments and satisfies a primary intent of Congress that there be experimentation with various alternative bidding systems.”

Secretary Andrus has sent a proposed Notice of Sale concerning Sale #A62 to the Governors of Louisiana, Mississippi, and Alabama asking for their comments within 60 days. The Notice was published in the Federal Register on May 30, 1980.

The proposed lease sale consists of 192 tracts covering 915,000 acres offshore Louisiana. Forty tracts would be offered using a cash bonus bid with a fixed net profit share rate of 50 percent and a 1.25 capital recovery factor. This system is now allowed by the new Department of Energy regulations (10 CFR 390) issued on May 14, 1980. The regulations provide the basis for calculating the net profit share payment.

Fifty-nine tracts will be offered under a cash bonus with a sliding scale royalty formula which is a slight modification of the sliding scale system that has been used in previous sales. Twenty-two tracts will be offered on a cash bonus basis with a 33-1/3 percent fixed royalty. The remaining 71 tracts will be offered on a cash bonus bid basis with a fixed royalty of 16-2/3 percent, the conventional bidding system most often used in OCS oil and gas lease sales.
PROFESSIONAL AND ORGANIZATIONAL NEWS

Because it is necessary to have approximately five weeks to prepare the Bulletin for the Houston Geological Society, it is not always possible to have the Professional and Organizational News in a specific issue as desired. Therefore, news for the November, 1980 issue should be sent by September 20th, to Mrs. Virginia Lee Bick, 2534 Yorktown, Suite 156, Houston, 77056 or telephoned to her at 840-9562 or 961-0406.

Edward R. Killian has been elected Vice President of onshore exploration for Transco Exploration Company, a subsidiary of Transco Companies, Inc. He will be responsible for the development and management of the onshore exploration program operated by Transco. (871-8000.)

Mr. Killian formerly had been Gulf Coast Exploration Manager for J. M. Huber Corp. for four years and prior to that a geologist supervisor for Texaco. He earned a B.A. in Geology from the University of Texas in 1967 and since that time has been involved in Gulf Coast and foreign exploration activities.

He is a member of the HGS and AAPG.

Rex E. Olsen has been appointed Exploration Planning Director for Transco Exploration Company. In his newly created position, Olsen is studying exploration prospects outside of Transco Exploration’s current drilling activities in the Gulf Coast and Atlantic Coast areas. During twenty years as a geologist with Exxon, his exploration efforts were concentrated in Alaska onshore, offshore California, the Overthrust Belt, and Gulf of Mexico. (871-8000)

For the past three years he was with Home Petroleum Corp. as the Northern Region Exploration supervisor. Mr. Olsen has his B.A. in Petroleum Geology from the University of California (Berkeley). He is a member of AAPG, AIPG, and GSA.

Omni Exploration, Inc. of Radnor, Penna. is pleased to announce the opening of its Gulf Coast Division Office and that Bud McDaniel, Jr., an exploration geologist with more than thirty years experience has joined Omni as Division Exploration Manager, Houston, Texas. Prior to joining Omni, Bud was Onshore District Geologist with Michigan Wisconsin Pipeline, Houston. Before that he was employed by Phillips Petroleum Company for more than twenty four years.

Omni’s new offices are at 1212 Main Bldg., Suite 965, Tel. No. 650-0016.

Mr. McDaniel is a member of the HGS and AAPG. His degree in Geology is from the University of Mississippi.

Bruce Ellison, formerly Exploration Manager for Trinity Resources, Inc. has been promoted to Vice President. Mr. Ellison previously was with Ladd Petroleum, and before that with Union of California. Mr. Ellison is a member of AAPG and HGS. Mr. Ellison received his B.S. in Geology from Portland State University and his M.S. from Oregon State University.

Ron Free, formerly with Home Petroleum, has accepted a position as Exploration Geophysicist with the newly formed Houston Exploration of Omni Exploration, Inc. Mr. Free has his B.S. from West Virginia University.

Arthur J. Link has accepted the position of Regional Exploration Manager for the Energy Division of W. R. Grace and Company. Mr. Link received his B.S. from City College of New York in Geology with his PhD from Northwestern University. Mr. Link was previously associated with Petrofina Company, Home Petroleum and Texaco.

Robert S. Young has accepted a position as Offshore Exploration Manager for Kerr McGee. His office are at 3 North Point, and telephone number is 448-4800. Young was formerly offshore Exploration Manager for Getty Oil. His B.S. in Geology is from the University of California, LA. He is a member of the AAPG and HGS.

Sam M. Penn, Exploration Geophysicist, is now the Houston representative for Consolidated Oil and Gas, Inc. Their offices are at 1900 W. Loop, South, 3/D International Bldg. in the Galleria area. (622-5246)

Martin Jones has joined The Ballard and Cordell, Corp. as Manager of Exploration. His new address is Oil Center, P.O. Box 52151, Lafayette, 70505. (1-318-232-3181)

Arthur John Blair has joined Horizon Exploration Company as Exploration Geologist. He was formerly with Chevron and Reserve Oil. His B.S. in Geology is from the University of Alabama and M.S. from the University of Oklahoma.

Paul Mayes has joined Pioneer Production Company, One Allen Center (659-3406) as of July 1st. He has a B.S. in Geology from the University of Houston. He previously was with Williams Exploration Company in Tulsa.

Benchmark Oil and Gas Company of Houston has been completely reorganized. Geologist Robert E. Pledger is the company’s new President and attorney Cletus A. (Cowboy) Davis is secretary and treasurer, a post he held prior to the reorganization. Pledger was formerly vice president of Benchmark in charge of exploration. He has a B.S. from Lamar University and a M.S. from the University of Dallas. The new corporate offices are located in Suite 455, North Bldg., 11177 Katy Freeway, Houston (496-4760). Mr. Pledger is a member of the HGS and AAPG.

Joe B. McAdams, President of Continental Laboratories, Inc. announces the promotion of Dan Spencer, a native of British Columbia. Spencers received his B.S. in Geology from the University of Br. Columbia. Prior to this promotion, he was Well Analyst and Field Supervisor for the company’s Canadian and Mid-Continent operations. He was employed by Amoco in Canada and Australia before joining Continental Laboratories.

SEPM SHORT COURSE. The Society of Economic Paleontologists and Mineralogists will offer a one-day course on the principles and applications of coal petrology. The course will be conducted by Russell R. Dutcher and John C. Crelling of Southern Illinois University, Carbondale and will be held on Friday, November 21, in the Marriott Hotel, Atlanta, Georgia, following the annual meeting of the Geological Society of America.

Fees are $50.00 for professionals and $40.00 for students. Persons wishing further information should contact the SEPM office, P.O. Box 4756, Tulsa, Okla. 74104. (1-918-932-5720)

Participants will receive short course lecture notes on the meeting. These notes will also include a list of the major coal petrographic laboratories in North America as well as a fairly complete bibliography on applied coal petrology.

Tom Joeckel has accepted a position as Exploration Geologist with Texoil Company. Mr. Joeckel is a graduate of the University of Nevada, Las Vegas and will be participating in the generation of prospects in the Texas-Louisiana Gulf Coast area. Mr. Joeckel was formerly with Peltex Oil Company.

Trinity Resources, Inc. has announced appointment of
Craig Earl Moore as Chief Geophysicist. He will be working out of the Company's offices in Houston. Moore, a geophysical engineering graduate of Colorado School of Mines (Class of 1969), formerly was Chief Geophysicist for a large exploration and pipeline company, and has worked in a variety of exploration and advisory positions in the Gulf Coast Area, Rocky Mountain, West Texas-Oklahoma, and overseas in Japan, Taiwan, Indonesia, Thailand, Australia and Nigeria.

Coral Petroleum Development, Inc. is pleased to announce that Mr. J. B. Moore has joined its staff as Exploration Manager for oil and gas operations throughout the U.S.

Prior to joining Coral, Cox was Exploration Manager for First Energy Corp. of Mississippi in Houston. During his 31 years as a geologist, mainly in the Gulf Coast area, Mr. Cox has spent several years as a consultant and has served in various industry management positions. Mr. Cox is a graduate of Oklahoma University and Texas Tech.

Vic Pernoud has taken early retirement from Mobil and has organized Pernoud Exploration located in The Main Building, Suite 848, (650-1298). Mr. Pernoud spent 22 years with General Crude Oil in south Louisiana and offshore exploration manager and is an University of Houston graduate with a B.S. in geology. The major effort of the new company will be to generate investment opportunities in south Louisiana.

Stewart L. Henry has recently been promoted to Region Exploration Manager for Tenneco Gulf Coast Division. Mr. Henry has a B.S. in geology from L.S.U. and is a member of HGS, AAPG and NOGS.

THE SOCIETY OF INDEPENDENT PROFESSIONAL EARTH SCIENTISTS

A UNIQUE ORGANIZATION FOR INDEPENDENTS ONLY

In this world of plural professional societies there is only one organization that is designed especially for the independent or consulting earth scientist — The Society of Independent Professional Earth Scientists. The name says it all. They are geologists, geophysicists, engineers, geochemists, professors and other earth scientists who are professionally certified by the Society for their experience, expertise and ethics. They have been independents, consultants or professors for at least twelve years (some of this requirement may be fulfilled by B.S., M.S. or Ph.D. degrees). They must be self-employed. In fact, their letterhead reads "SIPES - the only world-wide organization of self-employed Geologists, Geophysicists and Engineers - Consultants to the Mineral Industries."

Their local Houston chapter has over one hundred members and the National organization is reaching toward one thousand. The new officers of the Houston chapter are:

  Evelyn Wilie Moody - Chairman
  James L. Young - Vice Chairman
  Robert L. Smith - Treasurer
  Burton L. Young - Secretary

All are members of the Houston Geological Society. The new national president of the Society of Professional Earth Scientists is John J. Amaruso, a past president of the Houston Geological Society and W. L. Champion has been elected a national director.

SIPES was founded in 1963 in order to form an organization of independent earth scientists who could establish liaison and offer services to industry, government, civic organizations and educational institutions; who could protect the public with a strict Code of Ethics and Certification of members; who could improve the status of the independent; who could provide professional advice to legislative bodies and who could tell the public and the government the facts about the independent.

On July 17, 1980, the Chairman of the Public Information Committee of the Houston chapter Lucius C. Geer, testified at the Windfall Profit Tax Hearing of the U.S. Senate Finance Committee held in Austin, Texas. He said: "Our members average over 30 years of experience in their lifelong chosen professions . . . . Each of these 1000 members average drilling or cause to be drilled some seven exploratory wells per year which is 57% of the national total and 67% of the total exploratory wells drilled by all independents . . .. We welcome the opportunity to address ourselves to certain aspects of the new excise tax styled Windfall Profits Tax, the largest single tax ever levied upon America . . . . consider the professional who gets no salary for his efforts . . . . who has just been given a payout of about 35% simply because he happens to be in the oil producing business . . .. We in SIPES feel that domestic oil exploration and production is vital to the Nation's severe balance of payments problem . . .. Accordingly, we heartily endorse legislation that would remove the Windfall Profits Tax from the first 1000 barrels of oil per day of production for Independent Operators, Landowners and Royalty Owners . . . .

If this is not done, Independents will be forced to drill fewer wells, find less oil . . . . which will further our dependence on foreign crude."

SIPES meets the third Thursday of each month (even in the summer) at the Houston Petroleum Club for lunch and to hear a pertinent speaker (everything from geochemistry to taxes). It is an enthusiastic group who are good friends. It is a real plus for an independent.

ALASKA MINERS ASSOCIATION, INC.

The 1980 Annual Alaska Miners Association Convention and Trade Show has been scheduled for Oct. 23-25 at the Hotel Captain Cook in Anchorage.

A growing exploration boom in the state, particularly for gold and other noble metals, is expected to make it the largest gathering in the association’s history.

One reason for that expectation is the fact that nearly 500 persons attended a recent placer mining conference cosponsored by the AMA, nearly double the number that attended the 1979 AMA convention.

While the greatest interest is probably in the more valuable metallic minerals, exploration is being conducted for nearly every commercial mineral. Some of the world’s largest deposits of copper, molybdenum, and nickel have been discovered here in recent years and are being assessed for their mining feasibility.

Tentative plans for the trade show this year call for an exhibit of large equipment items in an outdoor exhibit adjacent to the convention site, according to Riz Bigelow, president of WGM Inc. and convention chairman.

More information on the trade show and convention may be obtained by writing the Alaska Miners Association, 509 W. 3rd., Suite 17, Anchorage, AK 99501 or calling (907) 276-0347.
IN MEMORIAM
JOHN W. INKSTER
(1904-1980)

John W. Inkster, a member of the Houston Geological Society for over 30 years, died in Houston on June 4, 1980. He was 75 years old. He is survived by his wife, Mrs. John W. Inkster, son and daughter-in-law, John F. and Bernice Inkster of Tulsa, Oklahoma, son and daughter-in-law, David and Judy Inkster of Houston and three grandchildren. John was a “dyed-in-the-wool” Nebraska cornhusker. He attended high school in Omaha and received his degree in geology at the University of Nebraska in 1928. Also in 1928, two days after he graduated, another great thing happened to John Inkster. He married Pauline Bandholtz of Guthrie Center, Iowa. Just two years ago John and Pauline celebrated their 50th wedding anniversary at Lake Side Country Club in Houston. Dozens of Pauline and John’s friends from all over the country were invited to this most delightful occasion. In 1929 John was employed as a geologist by T.I.T.O. - The Indian Territory Illuminating Oil Company. He worked in the Kansas-Oklahoma area for this organization for seven years.

In 1935 he joined the Shell organization in Tulsa. During his early career with Shell he worked mainly in Kansas and Oklahoma. In 1948 John was transferred to the Shell Regional staff in Houston and in 1953 he returned to Tulsa as Area Exploration Manager. He held this very important post until 1959 when he was transferred back to Houston as Exploration Manager of Shell’s Houston Area Office. John accepted a special assignment with Royal Dutch Shell in The Hague in 1961. His main responsibility in The Hague was to coordinate Shell’s operations in the USA. However, John’s activities in The Hague extended well beyond his office duties. He and Pauline became unofficial “ambassadors of goodwill” to all the USA Shell families on temporary assignment in The Hague. They welcomed and assisted everyone. Upon his return to Houston in 1963 John accepted an assignment as Chief Recruiter for Shell’s Exploration Department. He held this important post until he retired in 1969. John’s very friendly personality, his genuine interest in people and his sound judgement provided him with all the essential ingredients of a great recruiter. There was no doubt that he was assigned to this important position because Shell fully recognized his outstanding capabilities. A very large number of Shell geologists and geophysicists, including the President, several Vice-Presidents and Exploration Managers were hired by John.

When it became mandatory for John to retire at age 65, I had the good fortune of being selected by Shell to make all arrangements for John’s retirement party and also prepare his “retirement book”. I was very busy preparing this book for a period of several months. The material provided by John’s friends from all over the world, consisting of photographs and personal messages, were finally compiled in a very beautiful, four inch thick, leather bound book which I had the pleasure of presenting to John at his retirement party. John’s favorite desk, which he had used for many years with Shell, was also presented to him by his Shell friends. This desk and retirement book occupied an important place in John’s den during his 11 years of retirement. John took great pleasure in showing his desk and book to all his friends that were invited to attend the famous Inkster Dinner Parties at 234 Chimney Rock in the Memorial Area. All of the members of this Society and everyone else who knew John will miss him very much. I personally hope that his lovely and most devoted wife, Pauline, who has been very active in the Houston Geological Auxiliary as President and member of various committees for many years, will continue her close association with our Society during the coming years.

Rufus J. Le Blanc
June 1980

IN MEMORIAM
DAVID A. HINERMAN
(1926-1980)

Dave Hinerman has died of cancer. Since the early fifties he was active in the Society and in our industry. He seldom missed a Society meeting, and seldom could his big laugh be missed during the social hour.

Much of his early training was with the American Republics Corporation, and even then he was achieving the professional standards which characterized his later work with Union Texas, Natomas and others. A mark of Dave the scientist was the skill with which he would attack each assignment he was given, whether it was examining a Cockfield core or interpreting seismic data from the Middle East. A mark of Dave the man was the doggedness with which he would pursue each problem to its conclusion.

He shared his experience and expertise with younger people entering the business and encouraged them to do the same in turn. Some of this newer group of scientists are now showing themselves to be of the same caliber and enthusiasm as Dave Hinerman of thirty years ago. Could there be a better legacy?

John N. Grissett

PASSAGES

Dr. Milton B. Dobrin, 65, died May 22, 1980. Dr. Dobrin was Professor of Geophysics at the University of Houston. A contribution has been made in his memory to the Milton B. Dobrin Scholarship Fund.

Donald M. Davis died January 1, 1980 in Houston. He was retired. Mr. Davis was a former president of the Houston Geological Society. A contribution has been made in his memory to the Memorial Scholarship Fund.

John D. Marr, 75, died in November 1979. Mr. Marr was a consultant and former vice-president of Seismic Explorations, Inc. A contribution has been made to the American Cancer Society.

H. L. Thompson, Jr., 53, died June 23, 1980. Mr. Thompson was retired and was formerly a Senior Geophysicist with Pennzoil Company.

Try to eliminate unnecessary trips in your car. If every automobile took one less ten mile trip per week, the Nation could save 3½ billion gallons of gasoline in one year.
HOUSTON GEOLOGICAL SOCIETY
EXECUTIVE BOARD
1980-1981

L-R: Gerald A. Cooley, Treasurer; Tommy M. Thompson, James A. Regasdele, Wendal L. Lewis, Robert W. Bybee, Executive Committee member; William A. Fowler, Jr., Past President; Peggy J. Rice, Second Vice President; William F. Bishop, First Vice President; Chester A. Baier, President; Matthew W. Dauna, Secretary (not present).
LAISSE LE
BON TEMPS ROULER*

1980 GCAGS-SEPM
CONVENTION
LAFAYETTE, LOUISIANA
OCTOBER 15 - 17

The 1980 GCAGS-SEPM Convention will meet in the heart of Acadiana - Lafayette, Louisiana.

Make plans now to attend. Here are highlights of events scheduled:

- DISTINGUISHED TECHNICAL PROGRAMS
  Outstanding Technical Papers
  Annual GCAGS-SEPM Meetings
  Field trips through Bayou Country and Guatemala

- FOR THE LADIES
  Thursday: Luncheon and Style Show at Evangeline Downs
  Friday: Brunch and private shopping at Goudchaux and Acadiana Mall
  Friday: Field trip to historic Acadiana homes

- SPORTS ACTIVITIES (Men & Women)
  Golf Tournament
  Tennis Tournament
  Cross Country Run

- IAGNAIPPE (Social Events)
  Wednesday Night: Icebreaker Cocktail Party at Evangeline Downs
  Thursday Night: Dinner and Dance Acadiana Style

Come to the 1980 GCAGS-SEPM Convention in Bayou Country - Lafayette, Louisiana

For Information write:
1980 GCAGS-SEPM Convention
P. O. Box 51388
Lafayette, Louisiana 70505

"Let the Good Times Roll."
NATIONAL PARK MAPS AVAILABLE

Millions of Americans will be traveling to U.S. parks and many will be using U.S. Geological Survey, Department of the Interior, topographic maps as guides to getting around in the nation’s scenic getaways.

The colorful USGS maps, which can also serve as souvenirs of a pleasant trip, not only show familiar cultural features such as roads, buildings, and highways, but they also portray the lay of the land — the topography — in highly accurate, scientific renditions.

According to Rupert B. Southard, chief of the Survey’s National Mapping Division, “Our special-edition park maps emphasize features that are particularly helpful to vacationers such as campgrounds, campfires, trails, scenic viewpoints and other useful information. They also show land elevations, streams, forests, lakes, bridges, ranger stations, state and local boundaries and parking areas.”

According to Southard, the USGS has produced approximately 45 maps of the most popular U.S. parks, monuments and seashores, including the Grand Canyon, Yosemite, Grand Teton, Yellowstone, Arches and Great Smoky Mountains national parks. Many of the maps are rendered in shaded relief, which gives a three-dimensional picture of the area, as if the viewer were looking down on the area from an airplane.

The USGS special-edition park maps vary in scale from 1:960 (1 inch on the map represents about 80 feet on the ground) for the Franklin D. Roosevelt National Historic Site in New York, to 1:250,000 (1 inch represents about 4 miles) for the map of Mount McKinley National Park in Alaska. Map sizes also vary from about 18x18 inches for the map of Arches National Park in Utah, to 46x61 inches for the map of Canyonlands National Park in Utah.

In addition to these special-edition park maps, coverage is also available for most national parks, as well as most state parks, using the Survey’s standard 1:24,000-scale (1 inch represents about 2,000 feet) topographic maps, the basic outdoor hiking map for the nation’s backpackers. The American Hiking Society, for example, is using Survey topographic maps to guide its coast-to-coast Hike-A-Nation venture, a 3,000-mile trek from San Francisco to Washington, D.C.

The USGS is the nation’s largest civilian mapping agency and has over 60,000 topographic and other maps available. In 1979, the Survey sold approximately 6½ million maps to scientists, engineers and land-use planners, as well as to campers, hikers, fishermen and other outdoor enthusiasts.

Both special-edition park maps and standard Survey topographic maps are available at national parks and monuments or from area retailers who are authorized USGS map dealers. Dealer prices may vary from those charged by government outlets.

According to the USGS, while the maps undergo periodic revisions, they may not always reflect the latest changes in parks status such as new boundaries and full park titles. USGS national park, monument, seashore and recreational area maps can also be obtained for areas west of the Mississippi for $2.00 each (standard topographic maps are $1.25 each; however, several of these maps are normally required to cover the same area covered by one special-edition park map) from the USGS, Branch of Distribution, Box 25286, Federal Center, Denver, Colo. 80225, and for areas east of the Mississippi from the USGS, Branch of Distribution, 1200 South Eads St., Arlington, Va. 22202. Orders must include check or money order payable to the U.S. Geological Survey. In addition, an index showing what park maps are available can be obtained free upon request from either of the two USGS distribution centers.
Tertiary Jeff Conglomerate. Underlying the above is the easily eroded upper Cretaceous Penn Formation. In the background, Tertiary basaltic sills have intruded into Tertiary ash flows. This area is southwest of Agua Fria Mountain, about 20 miles north of Lajitas, Brewster County, Texas.

PHOTO COURTESY OF GLENN HATCHER.

HOUSTON GEOLOGICAL SOCIETY

The Houston Geological Society was founded in 1923 and incorporated in 1975. Its objectives are to stimulate interest and promote advancement in geology for this area, to disseminate and facilitate discussion of geological information, to enhance professional interrelationships among geologists in the area, and to aid and encourage academic training in the science of geology.

The Bulletin is published monthly except July and August. Subscription price for nonmembers is $15 per year. Single copy price is $1.50. Claims for nonreceipt in the contiguous U.S. should be made within 2 months of the date of issue; claims from elsewhere within 4 months.

Communication about manuscripts and editorial matters should be directed to the Editor. Inquiries concerning advertising rates should be directed to the Advertising Chairman. Applications for membership in the Houston Geological Society may be obtained from the Society office, 6916 Ashcroft, Houston, Texas 77081.

COVER PHOTO

The hill in the foreground is made up of a remnant cap of Mitchell Mesa Rhyolite underlain by thin Pruett-Duff Tuff and Basal Tertiary Jeff Conglomerate. Underlying the above is the easily eroded upper Cretaceous Penn Formation. In the background, Tertiary basaltic sills have intruded into Tertiary ash flows. This area is southwest of Agua Fria Mountain, about 20 miles north of Lajitas, Brewster County, Texas. Photo courtesy of Glenn Hatcher.
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Address</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>R. P. Akkerman</td>
<td>Geologist Exploration Engineer Consultant</td>
<td>3425 Bradford Place, Houston, Texas 77025</td>
<td>(713) 659-6011</td>
</tr>
<tr>
<td>T. Wayne Campbell</td>
<td>Paleonto-geologist and Geologist</td>
<td>6619 Fleur, De Lis Drive, New Orleans, Louisiana 70124</td>
<td>(504) 488-3711</td>
</tr>
<tr>
<td>Donald P. Degen</td>
<td>Petroleum Geologist</td>
<td>6200 Savoy, Suite 450, Houston, Texas 77024</td>
<td>Area Code: 713</td>
</tr>
<tr>
<td>Paul H. Allen, Jr.</td>
<td>Consulting Geologist</td>
<td>1418 C &amp; I Building, Houston, Texas 77002</td>
<td>(713) 743-4386 (Office)</td>
</tr>
<tr>
<td>Pete W. Cawthon, Jr.</td>
<td>Petroleum Consultant</td>
<td>214 Southwest Tower, 707 McKinney, Houston, Texas 77002</td>
<td>(713) 658-8295</td>
</tr>
<tr>
<td>Gus B. Baker</td>
<td>Geologist</td>
<td>614 Southwest Tower, 707 McKinney, Houston, Texas 77002</td>
<td>(713) 759-0306</td>
</tr>
<tr>
<td>George Clark</td>
<td>Petroleum Geologist</td>
<td>201 Gordon Dr., Crockett, Texas 75835</td>
<td>(713) 544-8257</td>
</tr>
<tr>
<td>Evard P. Ellison</td>
<td>Geologist</td>
<td>1712 Main Street, Houston, Texas 77002</td>
<td>556-4951</td>
</tr>
<tr>
<td>Jack Colle</td>
<td>Consulting Geologists and Paleontologists</td>
<td>708 C &amp; I Building, Houston, Texas 77002</td>
<td>(713) 652-9555, 497-7298</td>
</tr>
<tr>
<td>Jack W. Craig</td>
<td>Consulting Geologist</td>
<td>1412 C &amp; I Building, Houston, Texas 77002</td>
<td>(713) 652-4960</td>
</tr>
<tr>
<td>W. F. Cooke, Jr.</td>
<td>President</td>
<td>6460 Wilkerson, Suite 800, Houston, Texas 77025</td>
<td>774-4566, 723-2498</td>
</tr>
<tr>
<td>Jack Colle &amp; Assoc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stewart H. Folk</td>
<td>Geologist</td>
<td>517 884-7212</td>
<td></td>
</tr>
<tr>
<td>Stewart &amp; Company, Inc.</td>
<td>Geologist, Geophysical, and Engineers</td>
<td>2200 South Post Oak Road, Houston, Texas 77027</td>
<td>(713) 622-7070, 713-912-2336</td>
</tr>
<tr>
<td>Forney &amp; Co.</td>
<td>Geologist</td>
<td>512 884-7271</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
<td>Address</td>
<td>Phone</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------</td>
<td>----------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>William E. Humphrey</td>
<td>Petroleum Exploration Consultant</td>
<td>Suite 700, 2200 South Post Oak Road, Houston, TX 77056</td>
<td>713/622-9700</td>
</tr>
<tr>
<td>W. B. McCarter</td>
<td>Independents</td>
<td>523-5733, 2522 Hazard, Houston, TX 77019</td>
<td>529-1881</td>
</tr>
<tr>
<td>Joseph N. Gragnon</td>
<td>President</td>
<td>1410 Americas Bldg., Houston, TX 77002</td>
<td>713-652-3837</td>
</tr>
<tr>
<td>Larry L. Jones</td>
<td></td>
<td>2200 South Post Oak Road, Houston, TX 77056</td>
<td>713/622-9700</td>
</tr>
<tr>
<td>Erwin E. Grimes</td>
<td>Oil &amp; Gas Exploration</td>
<td>1220 Southwest Tower, Houston, TX 77003</td>
<td>713/460-0179</td>
</tr>
<tr>
<td>Bobby G. Kerr</td>
<td>Consulting Geophysicist</td>
<td>Bus 977-3664, Res. 499-4003, Houston, TX 77002</td>
<td>713/650-6680</td>
</tr>
<tr>
<td>Frank S. Millard</td>
<td>Consultant</td>
<td>10633 Shadowwood Drive, Houston, TX 77043</td>
<td>713/468-6521</td>
</tr>
<tr>
<td>Karl F. Hagemeier</td>
<td>Petroleum Exploration Consultant</td>
<td>1700 E. 11th St., Houston, TX 77002</td>
<td>713/460-0179</td>
</tr>
<tr>
<td>Howard W. Kiatta</td>
<td>Petroleum Geologist</td>
<td>1200 S. Tower, Houston, TX 77003</td>
<td>713/460-0179</td>
</tr>
<tr>
<td>Daniel F. Lindow</td>
<td>Houston Manager</td>
<td>1020 S. Tower, Houston, TX 77003</td>
<td>713/460-0179</td>
</tr>
<tr>
<td>Michel T. Halboutry</td>
<td>Consulting Geologist</td>
<td>1700 E. 11th St., Houston, TX 77002</td>
<td>713/460-0179</td>
</tr>
<tr>
<td>Evelyn Wilie Moody</td>
<td>Consulting Geologist</td>
<td>888 Houston Club Bldg., Houston, TX 77002</td>
<td>281-2552</td>
</tr>
<tr>
<td>O. G. Lundstrom</td>
<td>Geologist</td>
<td>Res. 3614 Aberdeen Way, Houston, TX 77025</td>
<td>713/64-4397</td>
</tr>
<tr>
<td>George N. May</td>
<td>Petroleum Geologist</td>
<td>41 Still Forest Drive, Houston, TX 77024</td>
<td>713-654-0072</td>
</tr>
<tr>
<td>I. K. Nichols</td>
<td>Geophysicist</td>
<td>1212 Main St., Houston, TX 77002</td>
<td>713/654-0072</td>
</tr>
<tr>
<td>Robert H. Mayse</td>
<td>Vice President - Energy Resources</td>
<td>1121 Americas Bldg., Houston, TX 77002</td>
<td>713/654-6684</td>
</tr>
<tr>
<td>C. E. Nichols</td>
<td>Geophysicist</td>
<td>1212 Main St., Houston, TX 77002</td>
<td>713/654-6684</td>
</tr>
</tbody>
</table>

**Other Information:**
- **Pamale Petroleum Company**: Oil & Gas Producers
- **William M. Frew**: Exploration Manager
- **William E. Humphrey**: Petroleum Exploration Consultant
- **William E. Humphrey**: Independent Producer and Operator
- **Joseph N. Gragnon**: Consulting Geologist
- **Erwin E. Grimes**: Oil & Gas Exploration
- **Bobby G. Kerr**: Consulting Geophysicist
- **Frank S. Millard**: Consultant
- **Karl F. Hagemeier**: Petroleum Exploration Consultant
- **Howard W. Kiatta**: Petroleum Geologist
- **Daniel F. Lindow**: Houston Manager
- **Michel T. Halboutry**: Consulting Geologist and Petroleum Engineer
- **Evelyn Wilie Moody**: Consulting Geologist
- **George N. May**: Petroleum Geologist
- **I. K. Nichols**: Geophysicist
- **Robert H. Mayse**: Vice President - Energy Resources
- **George N. May**: Consulting Geologists and Paleontologists
- **Evelyn Wilie Moody**: Consulting Geologist
- **I. K. Nichols**: Petroleum Geologist
- **Robert H. Mayse**: Geophysicist
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELWIN M. PEACOCK</td>
<td>CONSULTING GEOPHYSICIST</td>
<td>910 C &amp; I BUILDING</td>
<td>713-652-5014</td>
</tr>
<tr>
<td>M. PEACOCK</td>
<td>CONSULTING GEOPHYSICIST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RICHARD L. PORTER</td>
<td>Petroleum Geologist &amp; Exploration Consultant</td>
<td>J &amp; E Petroleum, Inc.</td>
<td>(713) 227-7003</td>
</tr>
<tr>
<td>J &amp; E Petroleum, Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARTIN M. SHEETS</td>
<td>Consultant Energy Environment</td>
<td>910 C &amp; I BUILDING</td>
<td>713-523-1975</td>
</tr>
<tr>
<td>RICHARD L. PORTER</td>
<td>Petroleum Geologist &amp; Exploration Consultant</td>
<td>J &amp; E Petroleum, Inc.</td>
<td>(713) 227-7003</td>
</tr>
<tr>
<td>MARTIN M. SHEETS</td>
<td>Consultant Energy Environment</td>
<td>910 C &amp; I BUILDING</td>
<td>713-523-1975</td>
</tr>
<tr>
<td>J &amp; E Petroleum, Inc.</td>
<td>Oil &amp; Gas Interests</td>
<td>1514 Pine Gap</td>
<td>444-3546</td>
</tr>
<tr>
<td>FRED L. SMITH, JR.</td>
<td>Consulting Geologist Paleontologist</td>
<td>910 C &amp; I BUILDING</td>
<td>713-523-1975</td>
</tr>
<tr>
<td>ROY O. SMITH &amp; ASSOCIATES, INC.</td>
<td>Exploration Consultants</td>
<td>910 C &amp; I BUILDING</td>
<td>713-523-1975</td>
</tr>
<tr>
<td>ROY O. SMITH &amp; ASSOCIATES, INC.</td>
<td>Exploration Consultants</td>
<td>910 C &amp; I BUILDING</td>
<td>713-523-1975</td>
</tr>
<tr>
<td>CRAMON STANTON</td>
<td>Oil &amp; Gas Consultant</td>
<td>910 C &amp; I BUILDING</td>
<td>713-523-1975</td>
</tr>
<tr>
<td>S. BROOKS STEWART</td>
<td>INCORPORATED Consulting Geophysicist</td>
<td>910 C &amp; I BUILDING</td>
<td>713-523-1975</td>
</tr>
<tr>
<td>J. C. WALTER, JR.</td>
<td>Geologist and Petroleum Engineer</td>
<td>1100 Louisiana</td>
<td>830-3002</td>
</tr>
</tbody>
</table>
CAVALLA ENERGY EXPLORATION CO.

JAMES A. McCARTHY
President

HERMAN L. SMITH
Vice President

600 Jefferson Bldg. Suite 508
Houston, Texas 77002
713-652-0907

BILL FORNEY, INC.

OIL OPERATORS

(713) 621-0033

Bill Forney
President

Bill Forney, Jr.
Vice President
Geophysical Service Inc.

Telephone (713) 494-9061
Building #1
12201 Southwest Freeway
Stafford, Texas 77477

Mailing address:
P.O. Box 2803
Houston, Texas 77001

Robertson Research (U.S.) Inc.

Analytical and Consultancy Services

Petroleum Geochemistry, Biostratigraphy, Sedimentology
Multi-Client Reports

Greenbriar Square ● 16730 Hedgecroft ● Suite 306 ● Houston, Texas 77060 ● Tel: (713) 445-4587

PI/the full service information source

Petroleum Information is the leading gatherer and supplier of exploration-production data and services for the U.S. petroleum industry.

- Drilling and production data
- Special energy publications
- Logs and maps
- Data in microform
- Engineering and exploration consultation
- Photogeologic-geomorphic mapping
- Exploration and marketing statistics
- Computerized databases
- Digitizing services
- Archaeological services
- Location and elevation engineering

When the bottom line is performance, PI is the name to remember

Petroleum Information Corporation

A Subsidiary of A. C. Nielsen Company
Corporate Headquarters
Denver, Colorado
1375 Delaware
P.O. Box 2612 (80201)
303/625-2181

Houston, Texas
4150 Westheimer
P.O. Box 1702 (77001)
713/961-5660

mapco

EXPLORATION OIL & GAS

Suite 2680 ● Two Allen Center ● Houston, Texas 77002
(713) 659-6000

Brown and McKenzie

Oil & Gas Exploration

Five Greenway Plaza East, Suite 1704
Houston, Texas 77046
713-626-3300

C. F. Brown, Jr.
Michael McKenzie

Billy J. Neal
Jerry Webb
<table>
<thead>
<tr>
<th>Company</th>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>RALPH E. DAVIS ASSOCIATES, INC.</td>
<td>500 Jefferson Building-Suite 2031, Houston, Texas 77002</td>
<td>713-693-8835</td>
</tr>
<tr>
<td>R. BREWER &amp; CO., INC.</td>
<td>Houston</td>
<td></td>
</tr>
<tr>
<td>ATWATER CONSULTANTS, LTD.</td>
<td>424 Whitney Bank Building, New Orleans, LA 70130</td>
<td>(504) 581-6527</td>
</tr>
<tr>
<td>OIL AND GAS RESERVES, INC.</td>
<td>305 San Jacinto Building, Houston, Texas 77002</td>
<td>(713) 225-2225</td>
</tr>
<tr>
<td>SIDNEY SCHAFFER &amp; ASSOCIATES</td>
<td>Houston</td>
<td>(713) 529-8789</td>
</tr>
<tr>
<td>THE GEOPHYSICAL DIRECTORY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THE OIL AND GAS DIRECTORY</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comprehensive technical services for exploration and production.
- Total concept well logging
- Conventional well logging
- Core analysis

Corpus Christi: Houston

OIL AND GAS RESERVES, INC.

305 San Jacinto Building
Houston, Texas 77002
(713) 225-2225

Land and Geological Services

Steve Hill
Terry Richardson

R. BREWER & CO., INC.
Houston

SIDNEY SCHAFFER & ASSOCIATES
Geophysical Consulting
Offshore Gravity Data

THE GEOPHYSICAL DIRECTORY
THE OIL AND GAS DIRECTORY
HOUSTON, TEXAS 77019
PHONE (713) 529-8789
2200 WELCH AVENUE
PLAN YOUR CAREER MOVES NOW!

Don’t wait for your career to move, plan and seek professional assistance in career planning. Roddy and Associates have earned their excellent professional reputation by completely serving the needs of professionals who are planning for their careers in the oil and gas industry. Having owned the energy industry for over nine years, we are expert in our field and you are in ours. We have an excellent staff who deal specifically in your field. Your resume and any information shared with us is handled in a strictly confidential manner and with professional expertise. If you need assistance in the preparation of your resume, we can certainly prepare it for you.

Constantly in contact with top firms, both major and independent, we fill entry positions, before they can be advertised, from the excellent clientele in our files.

Let us assist you in your most important career plan. We know and understand your profession.

RODDY & ASSOCIATES
PERSONNEL SERVICES, INC.
2070 Westheimer, Suite 890
Suite 1140, 415 17th St. Blvd.
Houston, Texas 77006
Denver, Colorado 80202
713/881-1188
203/885-8940

Dorothy Roddy, President

NL Baroid Logging Systems reduce drilling costs.

MUD LOGGING SERVICE includes all the instruments and facilities needed to provide the following information:
- Baroid ppm LOG
- Direct determination of methane and total gas in mud
- Local combustible gas and methane in drill cuttings
- Liquid hydrocarbons (CN) in cuttings
- Oil fluorescence in mud and cuttings
- Drilling rate
- Baroid well record
- Mud weight and viscosity
- Other data pertinent to drilling operations

APPLIED DRILLING TECHNOLOGY provides all of the information obtained in Baroid’s Mud Logging Service and adds the equipment and experienced personnel to make pore pressure and drilling efficiency recommendations including:
- Pore pressure
- Fracture gradients
- Running speeds
- Hydraulics factors

COMPUTERIZED APPLIED DRILLING TECHNOLOGY provides all of the information obtained in Baroid’s MLS and ADT Services and utilizes an on-board computer to monitor drilling and mud system parameters, analyze and provide alarms on abnormal conditions, record data on tape for historical records, display data on CRT and print complete reports, perform complex calculations to derive pore pressures, ECD, delta chlorides, cuttings slip velocity, what-if hydraulics, surge and swab pressures, and many other on-line parameters and off-line user programs.

Your Baroid Logging Systems representative can help you select the service best suited to your needs. NL Baroid/NL Industries, Inc., P.O. Box 1675, Houston, Texas 77001. (713) 527-1100.
EXPLORING THE GULF COAST

PEL-TEX OIL CO., INC.

1100 MILAM
SUITE 3333
HOUSTON, TEXAS 77002
713-658-8284

NORTH AMERICAN ROYALTIES, INC.

OIL AND GAS EXPLORATION

HOUSTON DISTRICT, Suite 2630 Two Allen Center, Houston, Texas 77002. (713) 751-0034

THE GRUY COMPANIES

H. J. Gruy and Associates, Inc.

- Reservoir Engineering Studies
- Geothermal Energy Studies
- Secondary and Tertiary Recovery Studies
- Geologic Studies
- Market and Economic Analyses
- Pressure Transient Analyses
- Reservoir Simulation
- Computer Programming
- Application Expert Witness and Representation
- Automation Studies
- Technical Assistance and Training
- Investment Analyses
- Industrial Waste Subsurface Storage Studies
- Evaluation Reports

Gruy Management Service Co.

- Property Management
- Drilling and Completion Accounting
- Workover Operations
- Production Operations
- Pipeline Systems
- Secondary Recovery
- Disposal Systems
- Gas Compression
- Consultation

Gruy Federal, Inc.

- Oil-Gas Recovery Studies
- Environmental Studies
- Forecasting
- Computer Modeling
- Economic Analyses
- Risk Analyses
- Policy Analyses

Seiscom Delta Inc.

World's largest independently owned geophysical contracting and processing firm

Ralph G. Kennedy III
Vice President, Corporate Geophysical Marketing
P.O. Box 36928, Houston, Texas 77036
713/789-6020

Worldwide experience in gravity, magnetics, and photogeology

PhotoGravity Company
a division of Berry Industries Corporation
7000 Regency Square Blvd., Suite 130
Houston, Texas 77036
(713) 780-4911 • Telex: 76-2059
Develop Your Potential

"We Specialize in Finding the People Who Find Oil and Gas"

Our professional Exploration and Production division can offer a total of 80 years experience in the Oil and Gas industry. . . . . 50 years domestic and 30 years international work. We know the oil business, and we know the job market. Let us use our experience to help you take your next step upwards in your career. Or, if you are a manager in need of hiring a staff member, we can assist you in finding a qualified candidate for your present company's needs.

We employ an on-line, in-house computer to speed up our selection process. If a candidate prefers, we will discuss an opportunity with him/her prior to our presentation to an employer. We are not a resume mail-out service. We pride ourselves in providing quality, not quantity, and in maintaining discreet confidentiality.

Additional areas served by Burnett Personnel Consultants are:

Legal (our consultants are all attorneys), Financial, Data Processing (scientific and business applications), Refining, Petrochemicals, Construction, Energy Related Engineering Disciplines, Clerical, Temporaries, Contract, and Payrolling Personnel for Houston.

So if you need to add to your present staff, or wish to seek some upward mobility in your own career, or just want to stay current with today's rapidly changing job market and compensation packages . . . . . Call Us.

All Positions Are Fee Paid

Burnett Personnel Consultants
3300 S. Gessner #250, 77063
713-977-4777

J. R. Butler and Company
OIL AND GAS CONSULTANTS

Suite 130, 4605 Post Oak Place, Houston, Texas 77027
Telephone 713/627-7180  Telex: 910 881 4408

Affiliated with GeoQuest International, Inc.

BIG "6" DRILLING COMPANY

7500 San Felipe, Suite 666
Houston, Texas 77063

W. H. Smith, Chairman of Board
C. B. Benge, Jr., President-General Manager
THE STONE OIL CORP.
GULF COAST OIL & GAS EXPLORATION
3801 KIRBY DRIVE, SUITE 544
HOUSTON, TEXAS 77098
KARL H. ARLETH  B. W. KIMMEY
SAM G. OBOURN
(713) 526-8734

EXETER EXPLORATION COMPANY
2300 Lincoln Center Building
Denver, Colorado 80264
J. Allen Gardner, President
(303) 623-5141

Seismograph Service Corporation
3835 Hinterland, Houston, Texas 77098
A SUBSIDIARY OF RAYTHEON COMPANY
Box 1590  •  Tulsa, Okla. 74102  •  (918) 627-3330
DISTRICT OFFICES AND DATA PROCESSING CENTERS
HOUSTON  •  MIDLAND  •  DENVER

GeoQuest International, Inc.
EXPLORATION CONSULTANTS
Suite 130, 4605 Post Oak Place, Houston, Texas 77027
Telephone 713/627-7180  Telex 910 881 4408
Affiliated with J.R. Butler and Company

EXPLORATION CONSULTANTS
Trio Exploration Consultants
217 Southwest Tower
Houston, Texas 77002
(713) 659 9410
Frank Lovett res. 371-3444
Harry M. Perry res. 371-7272
W. E. Belt, Jr. res. 494-2026

petrophysics, inc.
exploration computing service

3000 Weslayan / 340 / Houston, Tx 77027 / 713/850-9361

SIERRA PRODUCTION COMPANY
1400 Capital National Bank Bldg.
Houston, Texas 77002
Byron F. Dyer  James P. Blackstone
MUD LOGGING

Still the oil man’s best bet.

Mud logging has benefited from improved procedures and is still the oil man’s best bet. Ragsdale Well Logging is taking advantage of innovations and providing them to customers without extra costs. Ragsdale uses the finest conventional mud logging equipment and a team of experienced loggers to insure economy and accuracy in direct measurement at the well site. Geologists and drilling superintendents from the Gulf Coast to the Rocky Mountains depend on Ragsdale to help them make the big decision.

For your free composite log sample and brochure, write or call:

RAGSDALE WELL LOGGING COMPANY
3801 Kirby, Suite 536
Houston, Texas 77098
(713) 526-7060
Analysis and Evaluation Services
- Conventional Core Analysis
- Sidewall Core Analysis
- Special Core Analysis
- Reservoir Fluid Analysis
- Gas Analysis
- Hydrocarbon Source Bed and Geochemical Evaluation
Contact: Milton Craft

Computerized and Conventional Hydrocarbon Well Logging
Contact: Peter Routledge

Engineering and Geological Consulting
- Reservoir Engineering Studies
- Reservoir Simulation Studies
- Enhanced Recovery Processes
- Geological Services
- Reserve and Evaluation Studies
- Drilling and Production Services
- Computing and Software Services
- Logistic and Product Utilization Studies

Contact: Milton Craft

Go Wireline Services
NOW IN TEXAS GULF COAST WITH COMPLETE OPEN HOLE SERVICES
Contact: REGIONAL MARKETING OFFICE (Houston) — 713/931-7992
GO WITH THE EXPERIENCE

- Hydrocarbon Source Rock Evaluation
- Crude Oil-Source Rock Correlation
- Crude Oil Characterization
- Geochemical Surface and Subsurface Prospecting
- Biostratigraphic Services
- Depositional Facies Analysis
- Contract Laboratory Services

Corporate Headquarters
1143-C BRITTMORE ROAD
HOUSTON, TEXAS 77043
Phone (713) 467-7011
TWX 910-881-1516