

# On the Rocks



*A Newsletter of the Michigan Basin Geological Society*

**2003-2004 Number 5**

[www.mbgs.org](http://www.mbgs.org)

**December 2003**

## EVENTS

**December 10, 2003:** MBGS Meeting, the speaker is Dr. William R. Almon and his topic is "Sedimentology and Petrophysical Character of Cretaceous Marine Shale Sequences in Foreland Basins, Potential Seismic Response Issues"

**January 14, 2004:** MBGS-SPE Meeting The speaker is Dave Cramer and his presentation is: "Evaluating well performance & completion effectiveness in hydraulically fractured gas wells"

**February 4, 2004:** AAPG Distinguished Lecturer; 4:00pm, 1118 Rood Hall, Western Michigan University, Kalamazoo, Michigan: Dr. Luis Pomar (Universitat de les Illes Balears, Majorca, Spain) on: "Reservoir-scale Heterogeneity of Carbonate Platforms - Some Constraints from the Miocene of the Balearic Islands"

**February 11, 2003:** MBGS Meeting The speaker is Dr. Steven R. May, AAPG Distinguished Lecturer and his topic is: "Visualization and Volume Interpretation in Geoscience: 3-D Seismic and Beyond"

**April 18-21, 2004:** AAPG Annual Meeting, Dallas, Texas; for more information go online at [www.aapg.org/meetings/dallas04](http://www.aapg.org/meetings/dallas04).

**May 2004:** Conference/Field Excursion Gaylord, Michigan. For more information see the MBGS website at: [www.mbgs.org](http://www.mbgs.org).

**September 26-29, 2004:** Society of Petroleum Engineers annual meeting Houston, Texas

**October 3-5, 2004:** AAPG Eastern Section Meeting Columbus, Ohio.

# MBGS Meeting

**December 10, 2003**

Location: Mountain Jacks  
5800 W. Saginaw Highway, Lansing, Michigan

Schedule: 4:30-5:30 PM Executive Committee Meeting  
5:30-6:15 PM Cash Bar  
6:15-7:15 PM Dinner  
Presentation after Dinner

Cost \$25.00/member \$10.00 Student (includes dinner)

**Topic:** "Sedimentology and Petrophysical Character of Cretaceous Marine Shale Sequences in Foreland Basins, Potential Seismic Response Issues"

By Dr. William R. Almon

MBGS Dinner Meeting Reservation

Name \_\_\_\_\_

Number attending \_\_\_\_\_

Enclosed Registration Fee \_\_\_\_\_

Please make your check out to the MBGS by December 8, 2003 and send to:

Ms. Pat Poli  
Energy Operations Division  
6545 Mercantile Way  
Lansing, MI 48909  
Phone: 517-241-6141, Fax 517-241-6071  
E-Mail: [pmpoli@michigan.gov](mailto:pmpoli@michigan.gov)

## **2003-2004 MBGS Officers**

**The Executive Committee meeting minutes are available on the website.**

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ELECTRONIC PUBLICATIONS, MARK WOLLENSAK  
(see above)

WEBMASTER: GREG VARNUM  
[me@gregvarnum.com](mailto:me@gregvarnum.com)

## **University Talks and Seminars Websites**

Western Michigan University,  
[www.wmich.edu/geology/SeminarGeos.html](http://www.wmich.edu/geology/SeminarGeos.html)

Michigan State University,  
[www.glg.msu.edu/news/lectures.html](http://www.glg.msu.edu/news/lectures.html)

University of Michigan, Turner Lecture Series,  
[www.geo.lsa.umich.edu/announce/turner02b.html](http://www.geo.lsa.umich.edu/announce/turner02b.html)

Michigan AIPG Section website: [www.aipg-mi.org](http://www.aipg-mi.org).

## **MEETING CANCELLATION POLICY**

Monthly meetings will be automatically cancelled whenever the National Weather Service issues a "Storm Warning" for the Lansing area. If driving conditions are poor but a "Warning" has not been issued please contact any member of the Executive Committee for the status of the meeting.

## **MICHIGAN BASIN GEOLOGICAL SOCIETY PUBLICATIONS**

**Historical CD #1: Nine out-of-print publications from 1949 through 1965 and 1998**, Devonian to Silurian Rock Fieldtrips to MI, WI, IL and Ontario, 2000, \$15

**Historical CD #2: Four out-of-print publications from 1947, 1959, 1983 and 1991**, Northern Devonian and UP Fieldtrips in MI, 2001, \$10

**Historical CD #3: Six out-of-print publications from 1947, 1959, 1983 and 1991**, Northern Devonian and UP Fieldtrips in MI, 2001, \$12

**Special Price - Historical CD #1, #2 & #3, \$30**

**Stratigraphic Lexicon for Michigan**, 2001, prepared by MBGS and published by DEQ, 56 pp., chart, \$2.65 picked up or \$4 mailed, Can be ordered from MBGS or Geological Survey Div. of the DEQ

Price Includes postage, handling and any applicable sales tax. MBGS Members receive a 10% discount on MBGS publications.

Orders for publications should be prepaid in U.S. Funds and addressed to:  
MBGS - Publications  
c/o Dept. of Geological Sciences  
206 Natural Sciences Building  
Michigan State University  
East Lansing, Michigan 48824-1115

## **MBGS Mug and Jacket Sale**

The Michigan Basin Geological Society is offering mugs and jackets with the society logo for sale. The mugs are \$5.00 each. The jackets are \$60.00 each plus postage. Please contact Dan McGuire at: Phone (517) 772-5219, Fax (517) 772-7021, or [danmcguire@sensible-net.com](mailto:danmcguire@sensible-net.com). Remember to include the correct size of the jacket and the quantity of each item. Checks should be made out to the MBGS.

## Biography

DR. WILLIAM R. ALMON - Senior Research Consultant and Texaco Fellow, Chevron-Texaco Exploration Technology Company, Houston, Texas. Bill Almon received his PhD in Geology from the University of Missouri in 1974 and joined Cities Service Oil Company. He subsequently worked as an independent consultant and for Anadarko Petroleum before joining Texaco in 1990 and Chevron-Texaco in 2001. He has worked and published extensively in the areas of reservoir characterization, application of siliciclastic diagenesis to reservoir management and seal/flow barrier characterization. Bill is a former AAPG Distinguished Lecturer and Petroleum Exploration Society of Australia Overseas Distinguished Lecturer.

### **Sedimentology and Petrophysical Character of Cretaceous Marine Shale Sequences in Foreland Basins – Potential Seismic Response Issues**

Development of predictive models to estimate the distribution and petrophysical properties of potential mudstone flow barriers can reduce risks inherent to exploration and exploitation programs. Such a predictive model, founded in sequence stratigraphy, requires calibration with outcrop and subsurface analogs. Detailed sedimentologic, petrophysical, and geochemical analyses of Lewis Shale (Lower Maastrichtian) samples from SE Wyoming reveal considerable variability in seismically significant rock properties. Lower Lewis strata represent late-stage transgressive deposits that include a distinctive condensed interval. The overlying progradational Lewis interval consists mostly of interstratified very silty shales and argillaceous siltstones. High-frequency sheet and lenticular sandstone bodies occur within the progradational Lewis package. Sealing capacity, as measured by mercury injection capillary pressure analysis (MICP), varies with fabric, texture, and compositional factors that are related to sequence stratigraphic position. Samples from the Lewis Shale transgressive interval have significantly greater MICP values (average 18,000 PSIA) and are markedly better seals relative to samples from the overlying Lewis Shale progradational package (average 3,000 PSIA). Transgressive shales with enhanced sealing capacity are characterized by higher total organic carbon and hydrogen index values, lower permeability, and less detrital silt content. These transgressive shales are enriched in iron-bearing clay minerals and authigenic pyrite. Greater shear wave velocities, larger shear moduli, and higher bulk density also characterize transgressive Lewis shales. The most promising seal horizons are laterally extensive, silt-poor, pyritic shales occurring in the uppermost transgressive systems tract. Stacking patterns of slow and fast shale horizons can yield seismic responses comparable to those interpreted as hydrocarbon-bearing reservoirs.

**POSITION OPENING** at Hamp, Mathews & Associates, Inc.

#### **Environmental Technician**

Two to five years experience in soil and groundwater sampling; operation, maintenance, and troubleshooting of groundwater remediation systems; use of spreadsheet and word processing software; CAD and database experience a plus. Must be able to work outdoors under various weather conditions. Associate degree required, B.S. degree in engineering/science/technology preferred. WWTP certifications for GAC and Air strippers desirable. Comprehensive benefits and competitive salary. Interested individuals may submit a resume to:

Mr. Alan R. Mathews, P.E.  
Hamp, Mathews & Associates, Inc.  
P.O. Box 335, Bath, Michigan 48808  
or e-mail to: [mathews@hampmathews.com](mailto:mathews@hampmathews.com)