

# On the Rocks



## *A Newsletter of the Michigan Basin Geological Society*

E-mail version

2002-2003 Number 4

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

November 2002

## EVENTS

**October 22-25, 2002:** 9th Annual International Petroleum Environmental Conference, in Albuquerque, New Mexico. For a copy of the brochure contact: The University of Tulsa, CESE, Phone: 918-631-3088; E-mail: [cese@utulsa.edu](mailto:cese@utulsa.edu)

**October 23, 2002:** AIPG Michigan Chapter meeting at the Fetzer Center, Western Michigan University. Dr. Alan Kehew, Geosciences Department, Western Michigan University, will give a presentation titled: "Stratigraphic Framework and Glacial Dynamics of the Eastern Margin of the Lake Michigan Lobe: New Interpretations from STATEMAP Mapping in Van Buren County."

**October 25-27, 2002:** 2002 Central Michigan Lapidary & Mineral Society Show at the Ingham County Fairgrounds in Mason, MI.

**November 4-6, 2002:** Joint Ontario – New York Oil & Gas Conference and Trade Show in Niagara Falls.

**November 14, 2002:** Joint MBGS-SPE Meeting at the Holiday Inn South, Lansing Michigan ***NOTE THAT THE MEETING IS ON THURSDAY.*** The topic is "Gas Hydrates in Industry and Nature" by Yuri F. Makogon of Texas A&M University – Petroleum Engineering Department.

**December 11th, 2002:** MBGS Meeting The speaker will be Ray Vugrinovich and his topic is: "Mineral Wells Through The Ages".

**May 11-14, 2003:** AAPG 88<sup>th</sup> Annual Meeting Salt Lake City, Utah. The theme is: "Energy-Our Monumental Task".

# **MBGS-SPE Meeting**

**November 14, 2002**

Location: Holiday Inn (South)  
6820 S. Cedar St., Lansing, MI.

Schedule: 5:00 to 6:00 PM Social Hour  
6:00 PM Dinner  
Presentation after dinner

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

Topic: "Gas Hydrates in Industry and Nature"

By  
Yuri F. Makogon

Texas A&M University – Petroleum Engineering Department

## MBGS Dinner Meeting Reservation

Name \_\_\_\_\_

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

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

Please make your check out to the SPE and return to Frank Kuri by November 11, 2002

Send to: Frank Kuri  
El Paso/ANR Pipeline  
27725 Stansbury Blvd. Suite 200  
Farmington Hills, Michigan 48334  
Ph: 248-994-4047 Fax: 248-994-4040.  
E-mail: [frank.kuri@elpaso.com](mailto:frank.kuri@elpaso.com)

## **2002-2003 MBGS Officers**

**President:** Milt Gere  
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**Past President:** Leonard Espinosa  
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Vacant

**Electronic Publications:** Mark Wollensak  
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**Web Manager:** Greg Varnum.  
[me@gregvarnum.com](mailto:me@gregvarnum.com)

## **AAPG Nominating Committee**

AAPG Nominating Committee is looking to the membership to nominate new national AAPG officers for President-elect, V.P., Treasurer, Secretary and Editor. The Committee will consider candidates in May, 2003.

Milt Gere has set of the nomination forms if someone needs one or they are on the web at:  
[www.aapg.org/business/officer\\_norm/index.shtml](http://www.aapg.org/business/officer_norm/index.shtml).

The nominee must fill out a Commitment Statement by Potential Candidates' form. Submissions of nominations, etc., are due by Feb. 1, 2003.

## **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. 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.

## **Joint Ontario – New York Oil & Gas Conference and Trade Show**

NOVEMBER 4, 5, 6, 2002 in Niagara Falls.

Our combined registrations are up over 250 now, and there are just a few more weeks to go. Program, Abstracts and Registration details are now online.

Further program information, registration forms and profiles of our unique Geological Tour of the Niagara Wine Region can be reviewed or downloaded at: [http://www.ontpet.com/ontario\\_newyork.html](http://www.ontpet.com/ontario_newyork.html)

Steve Fletcher  
Executive Director  
Ontario Petroleum Institute  
555 Southdale Road East, London, ON N6E 1A2  
519-680-1620  
519-680-1621 (fax)  
<http://www.ontpet.com>  
<http://www.ogsrlibrary.com>

### **Abstract**

#### **Gas Hydrates in Industry and Nature**

Yuri F. Makogon

*Texas A&M University – Petroleum Engineering Department*

Gas hydrates are solid compounds (minerals), whose formation, stable existence and decomposition depend upon pressure, temperature, and composition of gas and water. Gas hydrates are economically important to the oil and gas industry. On one hand, gas hydrates are a complicated and costly problem in plugging pipelines and well production equipment. On the other hand, gas hydrates present a very large source of natural gas that may prove to be commercially exploitable.

Gas hydrates commonly form in oil and gas wells and in pipelines. The oil industry spends over \$2 million every day on inhibitors alone to prevent formation of solid hydrate plugs. There are several ways to prevent problems associated with hydrate plugs. Each method differs in effectiveness, applicability, and cost.

Gas hydrates in nature represent an extremely large gas resource. Utilization of natural gas from hydrate deposits can significantly improve the energy balance of the world in coming decades. The potential reserves of hydrocarbon gases accumulated on earth in a hydrate state can be as much as  $14 \times 10^{12}$  tons oil equivalent (or  $1.5 \times 10^{16} \text{ m}^3$ ). Methane hydrate contains  $164.6 \text{ m}^3$  of methane per  $1 \text{ m}^3$  of hydrate. More than 98 % of the naturally occurring hydrates are located in offshore, mainly in continental shelf-oceanic slope transition zones below 200-500 m of water. Over 100 gas hydrate deposits have been found in the world with gas reserves over 500 trillion  $\text{m}^3$  ( $2 \times 10^7$  TBtu). More than 6 billion  $\text{m}^3$  of natural gas has been produced from the Messoyakhy gas hydrate field in Siberia. Many countries have a Government-sponsored program for research and development of these natural gas hydrates resources.

Natural gas hydrates also play an extremely important role in greenhouse effect and world climate changes. Properties of hydrate can be used for new effective technologies. The talk will conclude with the direction for additional research that will be required to fully understand the properties of and the potential of gas hydrates.

## **Biography**

Dr. Yuri F. Makogon is a world-renowned expert on gas hydrates. He joined the Texas A&M University as a Visiting Professor/Research Associate in 1992, and organized Gas Hydrate Laboratory. He is developing effective methods for prevention and removal of large hydrate plugs in wells and pipelines. Before coming to Texas A&M University, he played a major role in the elimination of large hydrate plugs in pipelines in Western and Eastern Siberia, the Ukraine, Uzbekistan, Czechoslovakia, UK and Norway, the North Sea.

He is recognized in the State Register of the USSR in 1969 for the scientific discovery of natural gas hydrates, the author of six books and more than 200 publications, and holds 28 patents. He has more than 40 years of experience in education and research for Gas-Oil industry. Dr. Makogon is a Member of Russian Academy of Natural Science. He was Director of Institute of Hydrocarbons and Environment from 1991 to 1997, and been first Chairman of International SPE, Moscow section, 1991-1993.

## **University Talks and Seminars**

For a list of interesting geoscience department seminars and talks, visit the web sites below:

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)

# **Reservoir Analysis from Drill Cuttings and Cores**

**November 22, 2002**

**9:00am - 4:30pm**

at the

**Michigan Basin Core Research Laboratory,  
West Hall, Western Michigan University, Kalamazoo, MI**

PTTC gratefully acknowledges that its primary funding comes through the [US Department of Energy's \(DOE\) Office of Fossil Energy](#) through the [National Petroleum Technology Office \(NPTO\)](#) and [Strategic Center for Natural Gas \(SCNG\)](#) within the [National Energy Technology Lab \(NETL\)](#).

## **Course Contents**

Basic concepts of cuttings and core analysis are presented, followed by hands-on exercises, looking first at artificial well cuttings prepared from cores. You'll gain confidence in the ability to recognize composition, texture, porosity, and hydrocarbon shows in very small samples.

Several examples of well cuttings are examined using a binocular microscope. We discuss pitfalls and problems, and ways to get the job done more effectively. Examples from Michigan's major producing formations will be examined.

**Who would benefit from this workshop** Operators, engineers, geologists, geophysicists, and consultants involved in exploring for or developing existing oil and gas reserves. Goals of the workshop are to acquaint the participant with fundamental concepts of oil and gas reservoir analysis using cuttings and core material and its application in Michigan.

## **Schedule of Activities**

8:30am	Registration, coffee and rolls	1:00pm	Workshop resumes
9:00am	Workshop begins	2:30pm	Coffee break (15 minutes)
10:15am	Coffee break (15 minutes)	2:45pm	Workshop resumes
10:30am	Workshop resumes	4:15pm	Summary, Questions
12:00	Lunch break (lunch provided)		

**Workshop Highlights** This is a full day, hands-on opportunity to see and apply the fundamental principles of geological reservoir analysis using basic rock data from drill cuttings and cores. You will: . . .

- learn to avoid the pitfalls in cuttings examination
- learn the tricks of the trade in well cuttings descriptions
- learn to recognize bit-generated textures in cuttings
- learn to judge the sample quality of cuttings
- learn about thin-sections of cuttings
- learn to recognize basic rock types and pore types in cuttings
- go through a hands-on exercises with "ideal samples"
- walk through the poured cuttings of several wells
- look at a set of well cuttings and log a few hundred feet
- learn the difference between percentage logs and interpretive logs
- learn about near and far cavings
- compare drill cuttings and core samples from the same wells
- examine sample sets and cores from the major Michigan oil and gas reservoirs
- correlate cutting sets to wireline logs

### **Technical Program Presenters**

**Clif Jordan** holds a Ph.D. degree from Rice University in Houston, Texas, specializing in petrology of sedimentary rocks. He has worked for thirty years in the petroleum industry for Shell, Conoco, and Mobil. His assignments involved international exploration, production, research, and technical training. He has published extensively in the field of carbonate geology, especially with regard to sample examination techniques, reservoir facies relationships, and modern carbonate sediments. Several years ago, he founded Integrated Data Services, Inc., a consulting company at [www.carbonaterocks.com](http://www.carbonaterocks.com). He works with James Lee Wilson.

**William B. Harrison, III**, Professor of Geosciences at Western Michigan University, founded and now directs the Michigan Basin Core Research Laboratory. He has more than 20 years' experience in Michigan stratigraphy, sedimentary geology, and reservoir characterization of oil and gas fields. Through DOE-sponsored research, he has worked with industry partners to apply new technology. His research has been widely presented to academics and industry.

**Additional information** can be obtained from Dr. William B. Harrison, III at (616) 387-8633, or e-mail at [harrison@wmich.edu](mailto:harrison@wmich.edu).

**Course fee and registration deadline** If we receive your form and payment by **November 15, the fee is \$100. After that, the fee is \$125.** The registration form is on the next page.

**Please register early--We have space for only 25 participants. Because space is limited, we may not be able to take on-site registrations. So, if you haven't pre-registered, please call us at (616)387-8633 before you come--we don't want to disappoint anyone.**

**Cancellation** If we receive notice by November 18 that you are canceling your registration, we will refund your fee in full. After that, we'll refund your fee only if a paid participant takes your place.

**Travel Directions** From US 131, take the I-94 exit, going east toward Chicago. From I-94, take Exit #75, Oakland Drive, and go north 3.5 miles. Turn right at the black and gold "Lot 2" sign. **West Hall** is the second building on your left. Walk down a few steps--we're on the **ground floor**. Additional parking is in Lot 1, just before Lot 2. We'll give you a parking pass to put in your car upon your arrival, so you can park anywhere except at a meter or a reserved or maintenance spot (all are marked). Our telephone number is (616) 387-8633.

**To register by mail, please send your form and payment to:**

Department of Geosciences  
Western Michigan University,  
Kalamazoo, MI 49008-5241

**Course Fee** If we receive your form and payment by **November 15, the fee is \$100. After that, the fee is \$125.** Course materials, lunch and refreshments are included.

Please register early--We have space for only 25 participants. Because space is limited, we may not be able to take on-site registrations. So, if you haven't pre-registered, please call us at (616)387-8633 before you come--we don't want to disappoint anyone.

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## REGISTRATION FORM **Reservoir Analysis from Drill Cuttings and Cores**

**November 22, 2002, 9:00am - 4:30pm at the  
Michigan Basin Core Research Laboratory, Western Michigan University,  
Kalamazoo, MI**

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE (\_\_\_\_) \_\_\_\_\_ FAX (\_\_\_\_) \_\_\_\_\_

EMAIL \_\_\_\_\_

(please print) \_\_\_\_\_ I prefer vegetarian food

Additional registrant(s) \_\_\_\_\_

**Course Fee** If we receive your form and payment by **November 15**, the fee is **\$100**. After that, the fee is **\$125**. Course materials, lunch and refreshments are included.

### **PAYMENT FORM:**

\_\_\_\_\_ Check attached in the amount of \$\_\_\_\_\_ Please make checks payable to "Department of Geosciences, Western Michigan University."

\_\_\_\_\_ Credit Card: (You can register with a credit card by phone at (616) 387-8633).

Type of card (Visa, MasterCard, Discovery only) \_\_\_\_\_ \*

\*Sorry, we cannot take American Express cards

Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Name on card \_\_\_\_\_

Registrant(s) \_\_\_\_\_

Cardholder's signature \_\_\_\_\_