



**MONTANA GEOLOGICAL SOCIETY**

# NEWSLETTER

**MAY 2008**

MGS Vol. 52 No. 5

**Thursday May 22<sup>nd</sup>**  
Tongue River Information  
Program presentation  
by Neal Fehringer and  
Tom Osbourne.  
(For an overview,  
see page 4.)

All MGS meetings are  
held at the Billings  
Petroleum Club at  
11:45 a.m. unless  
otherwise noted.  
Members who do  
not receive an  
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**A geologist out standing by a river ... San Antonio.**

## **MGS Prez Letter May 2008**

In the past I have endeavored to steer away from discussing anything even vaguely controversial on this page (at least I think I have). Suddenly I feel I am being swept up in something like a seismic sea wave overwhelming everything in its path. I was going to steer my way around this topic as well, but in the end decided that I had to say something.

If you haven't guessed, the topic in question is global climate change. It is a fascinating topic but I will refrain from using this space to review the data or make an attempt to summarize the various points of view, except to say I have an opinion. One of the reasons I am bringing this up is that last month the AAPG Division of Professional Affairs (DPA) conducted a survey of its membership regarding this topic. This is because the AAPG recently formed a new committee chaired by Dr. Priscilla Grew, to review Global Climate Change. DPA representative and committee member, Bob Shoup, wanted to make sure he would be representing the views of the DPA membership and not just his own when the committee convened. The DPA questionnaire contained 9 questions addressing various aspects of the current debate, with the opportunity to choose a multiple choice response and/or add your own comment. The one-line summary of the survey results is that a super-majority of the DPA respondents felt that climate change was largely a natural process and that human activity might be contributing to it, but the amount of this contribution is unknown. (Continued on page 2.)

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(President's letter continued from page 1.)

All of this is very interesting to me in light of the fact that people have been discussing/debating climate change for a long time. Is it global warming or global cooling or global staying pretty much the same? The reason I decided to bring this up right now is that the debate has finally come around to where the cross hairs are now aimed at the oil and gas industry, and the State of Montana, with the potential to adversely impact the Society's membership. The first issue that was brought to my attention is a protest filed by environmental groups charging that the BLM is offering lands in Colorado for oil and gas leasing without considering the impact that oil and gas operations have on the global climate.

The protesters contend that oil and gas drilling is one of the largest sources of greenhouse gas pollution in Colorado. Apparently they are protesting not only the carbon dioxide laden emissions from those big diesel engines that run the mud pumps and turn the rotary table, they are also concerned that methane, a greenhouse gas 21 times more potent than carbon dioxide, could leak from a wellhead or pipeline, or be intentionally vented by an operator, during testing for example. A similar protest was launched in Montana by the Western Environment Law Center on behalf of the Natural Resources Defense Council and two other groups, and other groups have filed protests in New Mexico as well. All of these protests are under review by the BLM and although lease sales have and will take place, no leases will be issued until the protests are dealt with. Should this type of protest gain traction and prove to be a basis for slowing or preventing leasing and drilling activity on Federal lands, I am not sure what comes next.

Another issue related to these protests is that thanks to Governor Schweitzer's Climate Change Advisory Committee, the Montana Legislature when it reconvenes will be considering all sorts of laws to help get Montana on the Climate Change bandwagon. Many of these initiatives I fear could be economically painful to not only natural resource industries, but to the average tax payer as well; without addressing the issue at hand in any meaningful way. This view was reinforced the other day when I received a questionnaire from my State Representative. The first question he asked was my view on the climate change debate and what role government should play in dealing with this issue. Obviously, this is going to be a serious topic for the next legislature and it is an issue that MGS members should voice their opinions about; clearly and directly to our representatives in Helena.

Interestingly, it seems I am not the only one in a local society wondering about all of this stuff, the last two issues of the Wyoming Geological Association's Newsletter included a "President's Message" on climate change, as did the April 2008 Denver Geophysical Society's newsletter. I have heard of people comparing "warming skeptics" to Holocaust Deniers. There is a problem here, the Holocaust is a historical fact, and anthropogenic climate change is a theory that attempts to predict future events. Whether you are a "believer" or a skeptic, this sort of rhetoric should be a concern. In conclusion, all I can say is that we all need to pay attention, and despite what some people would like you to believe, the debate is not over, nor should it be, because that is how science works.

*FREE*

## Geology of Billings Area Field Trip

Friday May 16<sup>th</sup>

This "road trip" geology field trip of the Billings area is being offered free by the Montana Geological Society. All routes are paved and everyone is welcome so please feel free to invite guests from outside the society to tag along.

We will meet in the airport observation parking lot on Airport Road just east of the airport across from Black Otter Trail at 12:30pm. We will then decide which cars we will take on the outing. Please bring your own refreshments for the day.

**First stop** will be just across Airport Road from the parking lot. Regional perspective: structure, stratigraphy, and Yellowstone River/Pryor Creek drainage history. We will also examine the Eagle SS, jointing, rockfalls, and landslides at this location.

From here the trip route will be SE on Highway 87 East to Pryor Creek Road. SW on Pryor Creek Road to Blue Creek Road and back to town with several stops along the route as described below.

**Second stop** will be on the Yellowstone River/Pryor Creek drainage divide on Highway 87 East to examine gravels and the Judith River SS in outcrop.

**Third stop** along Pryor Creek to view Eagle SS and faulting associated with Fromberg Fault system.

**Fourth stop** on Blue Creek Road at Blue Creek crossing, Fromberg Fault System discussion.

**Fifth stop** near Blue Creek School; Mowry Shale.

**Sixth stop** Collier Road; Belle Fourche Shale and Briarwood Subdivision overlook.

**Seventh stop** behind Blue Basket; Greenhorn and Carlile Shale.

This will be the end of the trip but the Yellowstone River terraces can be pointed out as we drive back to airport road.

Please join us for an afternoon of roadside geology.

For additional information, contact David Lopez at [DLopez@mtech.edu](mailto:DLopez@mtech.edu) or 406-657-2632. No need for reservations.

## **Tongue River Information Program Presentation at May MGS Meeting**

Please join us on Thursday, May 22nd at 11:30 am at the Billings Petroleum Club, for a presentation from Neal Fehringer, Fehringer Agricultural Consulting, and Tom Osborne, HydroSolutions, Inc., regarding a study designed to assess the impact of coalbed natural gas (CBNG) discharge water on crops, soils and river water downstream from CBNG water discharges.

The study, titled 'The Tongue River Information Program (TRIP)', is currently funded by the Montana Board of Oil and Gas, which is an agency of the Department of Natural Resources (DNRC). The first 3 years of the soil and crop testing work was funded by Fidelity Exploration and Production.

The TRIP project is a multi-year comprehensive program that is collecting soils and crops data within the Tongue River Drainage to determine if the CBNG water being discharged into the Tongue River is causing any changes in soil chemistry, and if so, are those changes causing an impact. The TRIP also includes a hydrology analysis, relying on analyzing hydrologic data that exists at either the state or federal level.

Basically, the results show no negative impacts have occurred to crops, soils and Tongue River water as a result of CBNG discharges on the properties tested.

The 2007 report of data collection and analysis on 12 properties along the Tongue River Drainage shows crop yields are comparable to local county averages showing relatively consistent soil salinity or sodicity over time (on the properties where samples and analysis were conducted)," said Neal Fehringer. Mr. Fehringer also points out that two reference fields outside the Tongue River drainage are also studied in the same manner to see if trends are exclusive to the Tongue River drainage area or area wide.

The TRIP hydrologic component was specifically designed to assess whether CBNG discharges have a measureable effect on irrigation water quality drawn from the Tongue River (Tongue River Hydrology Report). "Water quality analysis of existing data shows that salt content (as defined by electrical conductivity - EC and sodium absorptions ratios - SAR) remains relatively constant at comparable stream flow rates before and after the beginning of CBNG discharges in 1999," reports Mr. Osborne. MBOGC engaged HydroSolutions, Inc., as its principal contractor, along with Fehringer Agricultural Consulting, K.C. Harvey Associates, and Schafer Ltd.

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To view the USGS water monitoring stations, visit <http://tonguerivermonitoring.cr.usgs.gov>.

To view the 2007 TR Hydrology Report, go to the MBOGC website and click on the reports or [http://bogc.dnrc.mt.gov/PDF/TRIPpdfFiles/MBOGC01\\_TongueR\\_HydroRpt\\_053107.pdf](http://bogc.dnrc.mt.gov/PDF/TRIPpdfFiles/MBOGC01_TongueR_HydroRpt_053107.pdf).

To view the 2007 Progress Report, TR Agronomic Monitoring and Protection Program, go to the MBOGC website and click on reports or [http://bogc.dnrc.mt.gov/PDF/TRIPpdfFiles/2007ProgressReport\\_Fnl%2053107.pdf](http://bogc.dnrc.mt.gov/PDF/TRIPpdfFiles/2007ProgressReport_Fnl%2053107.pdf)

### **Presenter Bios:**

Neal Fehringer has been self-employed as a consulting agronomist since 1981. His business is Fehringer Agricultural Consulting, Inc. Mr. Fehringer is a Certified Professional Agronomist (C.P.Ag) and Certified Crop Consultant (C.C.A.), both designations of the American Society of Agronomy. Until 2001, Mr. Fehringer primarily consulted to farmers in south central and southeastern Montana. He has also provided expert witness services and performed contract research. From 2002 to present, Mr. Fehringer has worked with coalbed natural gas (CBNG) producers on managed irrigation, which utilizes CBNG produced water for irrigating crops. Since 2003, Mr. Fehringer has been the agronomist for the TRIP team.

Tom Osborne is President of HydroSolutions, Inc and a Professional Hydrologist, who has successfully completed hundreds of hydrologic and environmental projects for private and governmental entities. He has worked throughout the Pacific Northwest and Upper-Midwestern United States. Tom conducts both surface water and groundwater investigations, and specializes in the application of physical and chemical methods and models to identify and solve water related issues. He is routinely engaged as a hydrology expert in civil actions and regulatory compliance cases. Tom's experience includes quantifying soil water balance, groundwater recharge, runoff, stream flows, soil loss, water chemistry, and point and non-point sources of contamination. He is experienced in conducting research and applications of best management practices to improve water quality. Tom Osborne has 31 years of professional experience.

## **Montana Fish, Wildlife and Parks Multi-State Sage-Grouse Document Summary**

The Montana Fish, Wildlife and Parks has released a multi-state document reviewing the effect of oil and gas production on the sage-grouse population. The following are main points of the document:

- No perspective is presented on the magnitude of Montana's oil and gas activity relative to other factors, such as weather and reduction in habitat from cropland conversion.
- The document's fundamental premise that much of the loss of habitat function is a result of oil and gas development gas activity is refuted by available information.
  - The net footprint of oil and gas within Montana's sage-grouse habitat is 0.047%
  - The gross footprint of all sections of land with two or more wells within Montana's sage-grouse habitat is only 2.34%
- Available information shows no correlation between increases in oil and gas activity and Montana's sage-grouse population. Population is increasing along with activity increases.
- The document's premise that oil and gas development will rapidly spread over much of the eastern range of sage-grouse is not evident in Montana and is not supported by available oil and gas information.
- The document presents information that demonstrates virtually no difference in lek persistence from increased NSO buffers between ¼ and 2 miles.
- FWP's concern over rapid CBNG development in Montana on a scale similar to Wyoming is refuted by available geologic information.
- A fundamental issue for Montana remains unaddressed in the report. The footprint of oil and gas, even including the recent increases in development activity, is so small that impacts to the population and distribution of sage-grouse are not evident. Inhibiting or preventing energy activity therefore could not be expected to have a measurable impact.

## MGS Sponsoring Science Fair Winners

The Montana Geological Society is helping sponsor the winners of the regional science fair by providing funds for their trip to the International Science Fair in Atlanta.

Winners of the MGS awards at the regional science fair were:

Morgan Jones, Huntley Project 5<sup>th</sup> grader, "Wind Power"

Jesse Sontag, St. Labre Academy 8<sup>th</sup> grader,  
"Earthquake Magnitude: Recording Ground Movements Using a Geophone"

Quinn Abbot and Jonathan Van Neidla, Absarokee, 9<sup>th</sup> and 10<sup>th</sup> grades respectively,  
"The Effects of the Derby Fire on Cutthroat Trout: Year Two"

Congratulations and good luck to all the participants!

## Wyoming Geological Association Tooke Mudlog Collection

The Wyoming Geological Association has mudlogs in the Rocky Mountain areas of Wyoming, Colorado and Utah that have been scanned. We are in the process of scanning other areas with the help of industry that contribute towards this project with their financial contributions. If you would like to see what is available please use our database located on our website at [www.wyogeo.org](http://www.wyogeo.org) and click on Mudlogs. The logs cost \$12.50 each and can be emailed to you if the log is small enough. Deeper well depths or several logs will require CD or DVD media for an additional fee. For more information contact Mary at [info@wyogeo.org](mailto:info@wyogeo.org) or call 307-237-0027.

## EXPLORATION GEOLOGIST NEEDED

### Job Description:

A small Montana based exploration company is seeking an exploration geologist/prospect generator. The company owns over 500,000 acres leasehold in the Rockies. We own a large paper and digital log database. We need a person to join our team to help generate prospects; to prepare maps, presentations and brochures; to assist in prospect sales to industry partners. Other responsibilities include: computer aided geologic & geophysical interpretation, geologic database management, permitting and APD preparation, field work/well site logging jobs and geo-tech duties.

### Position Requirements:

2 to 15 years experience

Willing to relocate

A motivated, independent worker

Excellent written & oral presentation skills

Excellent computer skills

Experience with Petra, Petraseis, Neuralog, IHS data, All Topo Maps, Canvas and MS Word/Excel a plus

### Additional Information:

Work in Red Lodge, Montana. A wonderful family town of 2,500, located 60 miles south of Billings. The area provides many outdoor diversions in and around the Beartooth Mountains. Ski in the winter. Fish, camp & hike in the summer. Hunt in the fall. 15 minutes to the local ski mountain. 2.5 hours to Big Sky.

Please call or email Matt Gose for further information.




Phone: 406-446-1568 x100

Email: [mattgose@retamco.com](mailto:mattgose@retamco.com)

## REMINDERS

- May 4-6** IOGCC Mid-Year Meeting, Calgary
- May 16** MGS Billings Area Field Trip
- May 22** MGS Meeting, Petroleum Club, Billings
- June 16-18** MPA Planning Meeting, River Rock Lodge, Big Sky, Montana
- July 9-11** RMS-AAPG/COGA Meeting, Denver, CO
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