



AGS NEWSLETTER

ARIZONA GEOLOGICAL SOCIETY, INC., TUCSON, ARIZONA

February 2009

FEBRUARY 3, 2009 DINNER MEETING

China and India's Ravenous Appetite for Natural Resources

Dr. Vince Matthews

Director, Colorado Geological Survey

ABSTRACT—During the 1990s, China and India were unleashed from Communist and Socialist regimes respectively. China's GDP is now growing at more than 10 percent per year and India's at 7-9 percent. Both are drastically increasing their use of all natural resources. Although China has large resources of its own, they are insufficient to fill the internal demand.

Because the world's mineral and energy resources are being strained to supply these exploding economies, the price of nearly every natural-resource commodity has dramatically escalated since 2003. Not only has the price of commodities increased, but the competition to simply obtain a share of these natural resources has become intense. Colorado is already suffering

from a shortage of several mineral commodities. From cement, to petroleum, to precious metals; the scramble for a piece of the worldwide pie is in a state the world has never known. As world commodities such as oil reach their peak ability to produce and begin to decline, the world travels into unknown territory.

Colorado is, and will be, significantly affected by this new world disorder. Colorado's mineral and energy industry produced \$12.2 billion in revenue in 2005 and \$11.6 billion in 2006. Because Colorado is so rich in natural resources, the increased pressure to produce this natural wealth will probably result in increasing conflicts among various constituencies.

Digest 22 Update

Jon Spencer, Digest 22 editor, reports the proofs will be going to local printers the end of January for bids. As soon as a printer is selected, the digest will go to press.

REMINDER FEBRUARY DINNER MEETING

Four Points by Sheraton
University Plaza
1900 E. Speedway Blvd.
Tucson

2009 EVENTS CALENDAR

03/3/09

Mike Clarke, Augusta Resource Corp.: *Geology of the Rosemont Cu-Mo-Ag deposit*

04/7/09

Bill Chavez, New Mexico Tech: *Geochemical Controls on the Intensity and Maturity of Development of Supergene Enrichment Profiles*

05/5/09

Michael A. McKibbin, UC Riverside: *Hydrothermal Mineralization in the Salton Trough, Ancient and Modern*

06/2/09

Keith Long, USGS, *Petro-realities: Why Gas Prices Are So High*

To reserve your place for dinner, PLEASE call 520-663-5295 before 5 pm, Friday, January 30, 2008.

Cost: Members \$24, Guests \$27, Students \$10 (+\$3 for late registration)

Cash Bar @ 6 pm

Dinner @ 7 pm

Talk @ 8 pm

For dinner selection, indicate if a low-salt or vegetarian meal is required. Please cancel if you are unable to attend.

AGS CAN NO LONGER GUARANTEE DINNER SEATING FOR THOSE WHO SHOW UP WITHOUT A RESERVATION.

A NNOUNCEMENTS

AGS Welcomes New Member

C. Jason Arnold, Sacramento Valley Services Inc.

Albert Copley, Truman State Univ., retired
Bob Corrigan, Sacramento Valley Services Inc.

Nina Fitzgerald, Southern Utah University
Jim Kanelos, Sacramento Valley Services Inc.

Sylvia Ross, Rono Environmental

Joe Sidell, Sacramento Valley Services Inc.

Val Starr, Sacramento Valley Services Inc.

Jeff Thistle, Sacramento Valley Services Inc.

Jason Vires, Sacramento Valley Services Inc.

Lee Allison, Arizona State Geologist, AGS 2008 President, and AIPG AZ Section member, talked live with host Ira Flatow on NPR's *Science Friday* on Friday, Jan. 2, 2009. The title of the program was "Looking Forward to a Year of Science." Dr. Allison is an organizer of a "Year of Science 2009," a celebration of scientific methods and discoveries. The program can be heard on the Internet at the NPR site. The URL is www.npr.org and the story ID is 98947075.

Arizona Hydrological Society, Phoenix Section, Lunch Hour Presentation

Tuesday, January 27, 12 pm – 1 pm
4341 East Broadway, Phoenix, AZ

Speaker: Nick Melcher, USGS retired
Topic: Communicating Science to Policymakers

RSVP: Ted Lehman, 480-222-5709 or ted@jefuller.com.

Renew your AGS dues for 2009.

Please check your AGS newsletter mailing label to see if your dues are due. A two-digit number after your name on the label is the last year through which your dues are paid. If you owe dues, you should see "08-RENEW" on your label. Dues are \$20 for 1 yr, \$35 for 2 yrs, and \$50 for 3 yrs. Renewal forms can be found on the back of each newsletter or can be downloaded from the AGS web site.

AIPG ANNOUNCES a social hour and dinner on Friday, February 13, 2008 in Tucson with the AIPG National Executive Board. The meeting and dinner will be at the Guadalajara Grill, 1220 E. Prince Road, Tucson.

The social hour will start at 6:00 pm followed by dinner at 7:00 pm. Cost of the dinner is \$20 per person, payable at the door.

RSVP with your menu selection no later than February 9 to Erick Weiland, 520-629-8288 or EWeiland@pirnie.com

**FREE TO ANY INDIVIDUAL AGS MEMBER
STEEL 3' X 6' DRAFTING TABLE WITH TILT TOP
CONTACT CHARLES MILLER AT
520-297-0224**

The **Geological Society of Nevada** will be moving to the Great Basin Science Sample and Records Library at the Desert Research Institute campus in April - May 2009, along with the Nevada Bureau of Mines and Geology's Publication Sales and Information Offices.

NOTES FROM LEE ALLISON'S BLOG:

2009 forecast as one of worst for copper

"Low prices and expanding inventories, will make 2009 one of the worst years for copper for a long time, according to an analysis by *Blooms-bury Minerals Economics*. They project prices to be below \$3,000 per tonne for most of 2009, with slow recovery in 2010 and no strong recovery until 2011.

"The Chilean copper think tank CESCO predicted similar conditions, with copper prices ranging from \$1.50 to \$1.80 per pound for the year. That's actually an improvement over recent lows of around \$1.25. The uptick is attributed to stronger purchases from China in December.

(Con't Column 3)

WEB SITES TO VISIT

Tucson Gem and Mineral Show, Feb. 12-15, 2009 www.tgms.org/

2009 - Year of Science
www.copusproject.org/yearofscience2009/

Please make your AGS dinner-meeting reservation BEFORE Friday, January 30, 2009. Call 520-663-5295 today!

Allison (con't)

"These two forecasts assume there will be production cuts and cost efficiencies overall as companies cut back on their most expensive operations."

Cuts to Science Foundation Arizona

"On the same day President Obama proclaims "We will restore science to its rightful place," the Arizona State Senate held a hearing on shutting down Science Foundation Arizona (SFAz)."

FROM THE SFAz WEB SITE:

"Science Foundation Arizona (SFAz) was created in 2006 through the collaboration of three statewide CEO business organizations: Flagstaff 40, Greater Phoenix Leadership and the Southern Arizona Leadership Council to help diversify the Arizona economy with strategic research and development investments. The operating entity of SFAz was put in place in January 2007 with the hiring of the appropriate technical staff.

"Science Foundation Arizona is a 501(C)(3) non-profit organization that represents a public-private partnership unique for Arizona. The CEO groups are funding operating costs through 2012, enabling public and philanthropic funds to be used exclusively for investing in Arizona's future."

Commodity News from Around the World

Morgan Stanley raises gold price forecasts

LONDON, Jan 21 (Reuters) - Morgan Stanley raised their gold price forecasts on Wednesday, citing safe-haven demand for bullion amid turmoil in the banking sector and a gloomy outlook for the economy.

U.S. bank Morgan Stanley raised its 2009 gold price forecast to \$900 an ounce from \$750 previously, and its 2010 price view to \$1,000 from \$825.

"Gold prices are likely to be higher by year-end in the context of aggressive monetary stimulus and falling confidence in paper money," the bank said.

It added, however, that deflationary worries and a strong dollar could weigh on prices early in the year.

Copper and Gold Prices
(from infomine)



BHP to cut 550 jobs at Pinto Valley mine near Miami

SYDNEY, Australia, Jan 21 (AP) — Mining giant BHP Billiton announced plans Wednesday to slash 6,000 jobs — including about 550 at a mine near Miami, Arizona — as it rushes to cope with plummeting demand because of the global financial crisis.

Freeport-McMoRan announces revised operating plans in response to weak market conditions

PHOENIX, AZ, Dec 3, 2008 — Freeport-McMoRan Copper & Gold Inc. (NYSE: FCX) announced today revised operating plans in response to the recent sharp decline in copper and molybdenum prices, to incorporate reduced production levels, operating and administrative costs, exploration costs and capital expenditures.

FCX operates six open-pit copper mines in North America (Morenci, Bagdad, Sierrita and Safford in Arizona and Chino and Tyrone in New Mexico). By-product molybdenum is produced primarily at Sierrita and Bagdad. The North America copper mining operations have long-lived reserves with significant additional development potential.

FCX's revised plans include a 25 percent reduction in the mining and milling rates at Morenci, a 50 percent reduction in the mining and stacking rates at the newly commissioned Safford mine, a 50 percent reduction in the mining rate at the Tyrone mine in New Mexico, and a suspension of mining and milling activities at the Chino mine in New Mexico.

The revised plans at each of the operations, including Sierrita and Bagdad, incorporate the impacts of lower energy, acid and other consumables; reduced labor costs and a significant reduction in capital spending plans. These plans will continue to be reviewed and additional adjustments may be made as market conditions warrant.

For 2008, FCX expects sales from North America copper mines to approximate 1.4 billion pounds of copper. For 2009, FCX expects sales from North America copper mines to approximate 1.3 billion pounds of copper, compared with October 2008 estimates of 1.5 billion pounds of copper. By-product molybdenum production is expected to total 32 million pounds in 2008 and 34 million pounds in 2009.

BHP slows down its Olympic Dam expansion

The Australian, Jan 22 - BHP Billiton has puts on hold plans to spend billions of dollars to create the world's biggest open-pit mine. It has scaled back its Olympic Dam expansion team, axing 200 jobs.

The Melbourne-based miner announced major global job losses and production cuts in its quarterly report yesterday and revealed that it would slow the expansion of its world-class Olympic Dam asset in outback South Australia.

BHP has consistently talked up the potential of the the copper-gold-uranium deposit during its failed \$135 billion bid for rival Rio Tinto, but plunging commodity prices and weak market conditions have prompted it to scale back action to more than double Olympic Dam's production capacity.

"Pending government approvals for the environment impact statement and consistent with the prevailing economic circumstances, project activity will be scaled back to that necessary to support the approvals process and the study of a number of mining and processing technology options," BHP said.

The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom.
—Isaac Asimov (1920-1992)

Freeport (con't)

The impact of the revised plans will be to reduce 2009 copper production by approximately 200 million pounds and 2010 by approximately 500 million pounds from October 2008 estimates, principally resulting from reduced operating rates at several of FCX's North America operations. The changes will enable FCX to achieve lower operating costs, greater efficiencies and preserve resources for anticipated improved market conditions longer term.



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ABOUT THE
ARIZONA GEOLOGICAL SOCIETY
AND UPCOMING EVENTS
VISIT OUR WEBSITE
www.arizonageologicalsoc.org

AGS books and maps are sold at the monthly dinner meeting and by the Arizona Geological Survey. Visit the AZGS website www.azgs.state.az.us and click on Non-AZGS Publications



As always, please keep us up to date as you move, change jobs, or change your e-mail address.

2009 AGS MEMBERSHIP APPLICATION OR RENEWAL FORM

Please mail check with membership form to: Arizona Geological Society, P.O. Box 40952, Tucson, AZ 85717. Dues (circle one): 1 year: \$20; 2 years: \$35; 3 years: \$50. (Full-time students receive free membership. The newsletter is by e-mail only, and a membership application form must be returned to AGS annually to remain on the membership list.)

Name: _____

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Please send the newsletter by e-mail only by regular mail only by e-mail AND regular mail

If registered geologist or engineer, indicate registration number and state: _____

If American Institute of Professional Geologists member, indicate registration number: _____

Enclosed is a _____ tax-deductible contribution to the J. Harold Courtright Scholarship Fund.