



# AGS NEWSLETTER

ARIZONA GEOLOGICAL SOCIETY, INC. MARCH 2006

DINNER MEETING SPEAKER MARCH 7, 2006

**COROLLA HOAG, SRK CONSULTING**

GEOLOGY DEVELOPMENTS DURING FINAL DAYS OF THE SAN MANUEL MINE AND PLANT SITE

**ABSTRACT:** In the process of closing the San Manuel Mine and Plant Sites, BHP Copper has been required by regulatory agencies and its own corporate board to prepare detailed characterizations of groundwater, surface and bedrock geology, waste rock dumps, the heap and tailings facilities, cover materials, and potentially impacted soil in the vicinity of the smelter/concentrator. Modeling has been completed to assess long-term groundwater quality at both sites and to predict the timing and quality of a future pit lake at the Mine. The various studies were incorporated into the engineering design plans for closure and addressed potential long-term environmental risks.



New geology developments at the Plant Site include the first updated surface geology map in more than 30 years and the discovery of a horst block beneath the tailings facility that extends the proven length of the San Manuel Fault to more than 15 miles. Detailed geochemical characterization of the tailings show that the residual sulfides are encapsulated in quartz and pose little risk of producing acidic leachate that would jeopardize water quality in the San Pedro River Basin. Groundwater and pit lake characterization studies at the Mine affirm the need for mine geologists to collect geochemical and hydrological data during all phases of exploration and development to support environmental programs during the mining life cycle. Major closure activities at the Mine will be completed in April 2006 and by June 2007 at the Plant. The talk will highlight new geologic discoveries and give an update on the timetable for the remaining remediation and reclamation activities. Cori Hoag can be contacted at [choag@srk.com](mailto:choag@srk.com) or (520) 544-3688.

## Dinner Meeting Schedule:

**Inn Suites Hotel:** 475 N. Granada Ave. in Tucson

Cash Bar @ 6 pm Dinner @ 7 pm Talk @ 8 pm

Cost: With reservation: Members \$20, Guest \$22, Students \$7 Without reservation \$2 additional. Please call (520) 663-5295 by 5 pm **March 3rd**. Indicate if a low-salt or vegetarian meal is required. Please cancel if you are unable to attend.

## CALENDAR OF EVENTS:

- Mar. 24-26 AGS Spring Field Trip
- Mar. 15 Symposium Committee meeting, 5:30 pm at ENRB Rm. 335
- Mar. 30 AGS Exec. Comm. Mtg. 5:30 pm
- April 4 AGS Dinner Meeting Amanda Clarke, ASU, Physical Volcanology
- May 2 AGS Dinner Meeting Jon Fuller, Arizona Flood Hazards

## Member News:

Welcome to new members **Brad Brum**, Tucson, **Christopher Pratt**, Wickenburg, and **Alan Wright**, Scottsdale. Current membership is 383.

Dues for 2006 calendar year are due if your mailing label says "05" on it. Please consider a donation to the Courtright Scholarship Fund or to support the AGS Symposium in 2007 while you are filling out the renewal. Students - please update your mailing information.



### Ores and Orogenesis: Circum-Pacific Tec- tonics, Geologic Evolution, and Ore Deposits

Hilton Tucson El Con-  
quistador Golf & Tennis  
Resort

24-30 September 2007

## AGS SYMPOSIUM UPDATE

The AGS Symposium Committee is pleased to announce that there is a new co-sponsoring organization for the symposium, the Society for Mining, Metallurgy, and Exploration (SME). The Tucson Section of SME will develop a full day of technical talks on the technical and business aspects of the future of mining, as well as organize a luncheon. SME is the fourth co-sponsoring organization, joining the U. S. Geo-

logical Survey (USGS), the Society of Economic Geologists (SEG), and the Geological Society of Nevada (GSN).

In other recent news, the Scarritt Group of Tucson is now assisting the society with planning the meeting. The Publicity subcommittee has mailed a flier with the **First Announcement and Call for Papers** to thousands of geologists worldwide. We now have a tentative day-by-day schedule for the entire

symposium.

The future scheduled meetings of the AGS Symposium Committee are on Wednesday evenings, **15 March, 19 April, and 17 May 2006** at 5:30 pm at 353 ENRB (USGS Building) on the U of A campus. You are welcome to attend and get involved. Please send agenda items to Eric Seedorff at [Seedorff@geo.arizona.edu](mailto:Seedorff@geo.arizona.edu).

## AGS SPRING FIELD TRIP

### Investigation of Breccia Pipe and Shear Zone Systems in West Central Arizona

Dates: Friday March 24  
to Sunday March 26

#### Field Trip Leaders:

Rich Lundin, Carothers  
Environmental, Patrick  
O'Hara, Caaterskill Explo-  
ration, Jon Spencer, AZGS.

#### Trip Plan:

Friday: The field trip will begin at the Yarnell Community Center with a Poster Session and Social Hour from 7:00 p.m. to 9:00 p.m. on Friday, March 24th. Moderate-low price motels and campgrounds are available in Yarnell (other facilities available in Wickenburg and Prescott - see lodging/camping info at the March 7th dinner meeting).

Saturday: The Field Trip begins at 7:00 a.m. at the Community Center in Yarnell. Drive to Skull Valley

Community Center in Yarnell with a drive to Skull Valley and the Copper Basin Breccia Pipes with a picnic lunch at the site. After lunch, motor through Congress to Wickenburg (change into 4WD vehicles) and then to Constellation to see the Breccia Pipes there, leaving Constellation in late afternoon, through Wickenburg for arrival at around 6 p.m. to Robson's Mining World (see [www.robsonsminingworld.com](http://www.robsonsminingworld.com)) or other nearby hotel in Wickenburg.

Robson's Mining World is near Aguila, Arizona and west of Wickenburg with rustic but very clean B & B rooms (double occupancy). Twelve regular rooms have been reserved on a "first come, first served" basis and include a choice of 1 Queen size bed/room or 1 double & 1 twin bed/room. The price is \$90.30 room/night including a full breakfast; they take cash or

checks only - no credit cards. Other accommodations are available in Wickenburg or Aguila. Dry camping is available on site for \$5.

Robson's is an interesting museum of mining artifacts and technology and a restful place where Yavapai College has taught mining history and technology classes for the past 8 years. There is a \$5 entry fee to Robson's if you are not a guest in the lodge.

Dinner at Robson's will begin at 6:30 p.m. and include a steak fry for the group (\$10/person for oven baked chicken and \$14 for mesquite-barbequed steak). Dinner includes rolls, salad, veggies, and stuffed baked potatoes. From ~7:00-9:00 p.m., we will have time to look around the museum grounds and hear a lecture on the geology of the area by Jon Spencer of the Arizona Geological Survey.

Sunday: For the folks staying at

Robson's, breakfast is at 8 a.m. and they will provide fixings to make your own sandwich after breakfast. Leave Robson's at 9:00 a.m. to drive to Congress. Other trip members will meet group in Congress. The Field Trip resumes at 9:45 a.m. at the Congress Store with a trip to the Breccia Pipes in the Date Creek and Weaver Mountains. Snacks/sodas will be provided. The trip will end at Yarnell at 2:00 p.m.

Guidebook: The field trip guidebook will cover the past history, occurrence and genesis of the breccia systems; their similarity to other breccia systems in Arizona and the economic potential of these types of systems for Cu, Au, Mo, W, and U mineralization.

Lodging: Motels and campgrounds are available in Yarnell, Wickenburg, and Pres-

## AGS SPRING FIELD TRIP (CONT.)

cott (more details will be available soon and will be emailed to the participants).

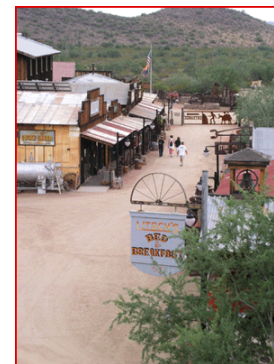
**Transportation:** High clearance vehicles are required for this trip. We will use participant vehicles and carpool from Tucson and Phoenix areas. Please let Rich know if you can drive and have space to take passengers, or if you will need a ride. Passengers should assist the driver with gas money. Carpool locations in Tucson

and Phoenix will be set once we have a list of participants.

**Registration:** A reservation for the trip will be held by pre-payment by cash or check. The cost of the trip is \$50 including guidebook, two lunches, and snacks/sodas. Registration without guidebook is \$30. The fee for full-time students is \$10. Please pay at March 7th dinner meeting or by check to AGS P.O. Box 40952, Tucson, AZ 85717 prior to March 23. A

cancellation fee of 50% will be charged on AGS registration and 100% on hotel accommodations.

**Contact:** Please call or e-mail AGS VP Field Trips Rich Lundin at Carothers Environmental, LLC, toll-free, at (866) 203-9930 for further information. Additional updates will be given by E-mail and/or telephone once the details have been completely finalized.



Robson's Mining World



- March 4-9 Prospectors & Developers Association of Canada **PDAC 2006** at the Metro Toronto Convention Centre . See [www.pdac.ca](http://www.pdac.ca) for more details.
- March 26-29, 2006 **SME Annual Meeting and 7th ICARD** in St. Louis, Missouri. See [www.smenet.org/meetings/annualmeeting2006](http://www.smenet.org/meetings/annualmeeting2006) for additional details. It's not too early to submit abstracts for the SME Annual Conference in Denver in Feb. 25-27, 2007. See the first call for papers at [www.smenet.org/meetings/annualmeeting2007](http://www.smenet.org/meetings/annualmeeting2007).
- April 6-8 **34th Annual Geoscience Symposium GeoDaze 2006**, Ballroom A, Student Union Bldg., University of Arizona. Student presentations on April 6 & 7 and a field trip to the Tortilla Mountains area led by Drs. Mark Barton and Eric Seedorff on April 8. See [www.geo.arizona.edu/geodaz/2006](http://www.geo.arizona.edu/geodaz/2006) for information and on-line field trip registration.

### Sign Up Form - AGS Spring Field Trip

Payment	Price
<input type="checkbox"/> Registration	\$50.00
<input type="checkbox"/> Registration Spouse (no guidebook)	\$30.00
<input type="checkbox"/> Registration - Full-time student	\$10.00
<input type="checkbox"/> Robson's Mining World (1 Night Hotel & Bfast)	\$90.30

Total: \_\_\_\_\_

Method of Payment	Name _____
<input type="checkbox"/> Check or Cash at March dinner meeting	Address _____
<input type="checkbox"/> Check sent to AGS P.O. Box 40952 Tucson, AZ 85717	Phone _____

Email address for final field trip \_\_\_\_\_

Transportation

I have high-clearance vehicle or 4 x 4

I'm available to take \_\_\_\_\_ passengers

I need a ride from \_\_\_\_\_

Hotel Arrangements

I'm interested in sharing a hotel room with 2 single beds.



ARIZONA  
GEOLOGICAL SOCIETY

P.O. Box 40952  
Tucson, AZ 85717-0952

Phone: (520) 663-5295  
www.arizona Geological Soc.org

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For info on ordering AGS  
publications, visit  
www.arizona Geological Soc.org.  
AGS books & maps are sold at the  
dinner meetings and by the  
Arizona Geological Survey.

*George H. Kingdon, general manager of the United Verde Extension, has returned from a trip east as far as New York, where he saw "Jimmy" Douglas re-embark for France. Some new styles in flamboyant ties will be watched for. Mining World, December 1918, v. 2, no. 7.*

## 2006 AGS MEMBERSHIP APPLICATION OR RENEWAL FORM

Please mail check with membership form to: Arizona Geological Society, P.O. Box 40952, Tucson, 85717

Dues (check box)  1 year: \$15;  2 years: \$30;  3 years: \$40;  full-time student (membership is free)

Name: \_\_\_\_\_ Position: \_\_\_\_\_

Company: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Street City State Zip Code

Work Phone: \_\_\_\_\_ Home Phone: \_\_\_\_\_

Fax Number: \_\_\_\_\_ Cellular Phone: \_\_\_\_\_

E-Mail: \_\_\_\_\_ I wish to receive newsletter by E-mail

If registered geologist/engineer, indicate registration number and State \_\_\_\_\_

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

Enclosed is a \_\_\_\_\_ tax-deductible contribution for the 2007 AGS Symposium.