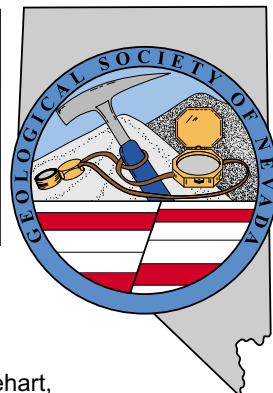


# GSN NEWSLETTER

Geological Society of Nevada, PO Box 13375, Reno, NV 89507 USA, 775/323-3500, www.gsnv.org  
Office location: Laxalt Mineral Research Center, Rm 266, UNR. Hours: Mon thru Fri, 1-4 pm



April 2007, Vol. 22, No. 4

Published monthly except June and July

## PRESIDENT

**Ellie Davie Leavitt**  
Western Energy Development Corp.  
zoraccdavie@aol.com

## VICE PRESIDENT

**Gregory Hill**  
Harvest Gold Corp. (US)  
hillgreg@charter.net

## SECRETARY

**Leslie Olmstead**  
Agnico-Eagle (USA) Limited  
lilmstead@agnico-eagle.com

## TREASURER

**Camille Prenn**  
Mine Development Associates  
cami@mda.com

## MEMBERSHIP CO-CHAIRS

**Greg McN. French**  
Consulting Geologist  
GMcNFrench@aol.com

## Opal Adams

Enviroscientists, Inc.  
ofadams@enviroincus.com

## PUBLICATION CO-CHAIRS

**Marilyn Miller**  
Consulting Geologist  
marilyn.miller1@sbcglobal.net

## Debbie Schneider

Schneider and Schneider Assoc  
dschneider41@charter.net

## OFFICE MANAGER

**Laura Ruud**  
gsn@mines.unr.edu

## CALENDAR OF GSN EVENTS

**April 11  
Wednesday**

WINNEMUCCA CHAPTER MEETING. Speaker: Greg Arehart, Professor, Geological Sciences, University of Nevada, Reno. Title: "Thermal and Isotopic Profiling of the Pipeline Hydrothermal System: Application to Exploration for Carlin-type Gold Deposits". The Martin Hotel, W. Railroad and Melarkey Streets. Drinks at 6:30 pm, talk at 7 pm. Contact Ivan Johnston, Chapter President, for more info, 775/635-4292, Ivan.Johnston@Newmont.com.

**April 12-13  
Thursday &  
Friday**

GSN SPRING 2007 FIELD TRIP. "Geology of the Nevada Test Site, Yucca Mountain, and the Searchlight District". In cooperation with GSN's Southern Nevada Chapter. REGISTRATION IS CLOSED.

**April 17  
TUESDAY  
(NOTE CHANGE!)**

GSN MEMBERSHIP MEETING. Speaker: Sooz DeYoung, Graduate Research Assistant, Geological Sciences, University of Nevada, Reno. Title: "A Sulfur Isotope Study of Granitic Plutons in the Great Basin, Western USA: Implications for Magma-Crust Interaction and Crustal Architecture". Reno Elks Lodge, 597 Kumle Ln, Reno, NV. Drinks at 6 pm, dinner at 7 pm (\$17), talk at 8 pm. Contact Laura Ruud for reservations, 775/323-3500, gsn@mines.unr.edu.

**April 19  
Thursday**

ELKO CHAPTER MEETING. Speaker: Thomas John, Robinson Nevada Mining Company. Topic: Rebirth of the Robinson Company. Western Folklife Center, 501 Railroad Street, Elko, NV. Drinks at 6:00 pm, talk at 7:00 pm. Contact Richard Reid, Chapter President, at 775/778-3912, Richard.Reid@newmont.com for more information.

**April 26  
Thursday**

SOUTHERN NEVADA CHAPTER MEETING. Speaker: Wayne Belcher, U.S. DOE. Title: "Death Valley Regional Groundwater Flow Model". For more information, please contact Bruce Hurley, Chapter President at 702/295-1284, rocks2bwh@aol.com.

## FROM THE PRESIDENT

Ellie Davie Leavitt, GSN President 2006-2007

Spring has sprung and field work is in full swing with the warm weather. Over the past year, GSN membership meetings have hosted talks on intra- and extra-Nevada geology and commodities. March's talk on zinc provided an excellent glimpse into life and mining in rural China. Scenes of older districts (up to 800 years old, and more) and smaller scale mining operations were reminiscent of historic photos of Virginia City during its heyday. As the talk highlighted, cultural, economic, and political factors have led to a style of exploration and development distinct from that in the U.S. Evolution of the mining industry in China, and its future impact on commodity prices remain to be seen. Many thanks to Bob Page for an excellent and insightful talk. CGS, Inc. provided an opportunity to combine the meeting with shopping for a variety of field gear, and sponsored the bar, adding to a fun and informative evening.

Later the same weekend, GSN sponsored the third annual ski day. Spring skiing and fine food was enjoyed at Mt. Rose Ski Area. Laura and Eric Ruud continue to conjure

## APRIL MEETING SPONSOR



**INSPECTORATE**

### INSPECTORATE

#### Precious Metals

605 Boxington, Suite 101, - Sparks, NV 89434

Tel: (775) 359-6311

Fax: (775) 359-2944

#### David A. Williams

Director Americas

e-mail: dave.williams@inspectorate.com

up a really fun GSN event. Talks at chapter meetings added to a full roster of GSN events in March. Upcoming GSN events include the Spring Field Trip to Yucca Mountain and

*continued on page 2*



## News and Announcements

### FROM THE PRESIDENT *continued from page 1*

the Searchlight mining district, and talks in Reno, Winnemucca, Elko, and Las Vegas. This issue also includes part 2 on Mongolia, abstracts of April talks and a PDAC wrap-up.

It is time to vote on the slate of officers for the 2007/2008 membership year that begins June 1<sup>st</sup>. Laura will be emailing (or mailing) ballots to all members around April 2<sup>nd</sup>.

April's membership meeting will host a talk by Sooz DeYoung, M.S. graduate of UNR, titled "A sulfur isotope study of granitic plutons in the Great Basin, Western USA: Implications for magma-crust interaction and crustal architecture". Her recent M.S. defense was well-attended (standing room only), and we're happy to provide the opportunity to her to present her results to GSN. **Don't forget the membership meeting will be on Tuesday, April 17<sup>th</sup> due to a scheduling conflict at the Elk's Lodge.** **Inspectorage** is the sponsor. See you soon!

### PDAC IN TORONTO – A HUGE SUCCESS

The GSN was well represented in Toronto during the 75<sup>th</sup> Annual Prospectors and Developers Association of Canada's Annual Meeting. The GSN booth was manned by Laura Ruud and many volunteers during the 3<sup>1/2</sup> day show. The GSN owes a huge amount of gratitude to **Tony Taylor, Hillary Vonich and Ruth Carraher of Gold Summit Corp. USA.** Their generosity in packing publications, shipping the booth, and especially Hillary who carried an extra bag full of t-shirts, hats and books with her luggage, was beyond any normal volunteer work. Ruth even set the booth up before Laura's flight arrived. THANK YOU! Others who carried books in their suitcases were Eric Struhsacker, Bob Lunceford, David Bending and Clancy Wendt (who brought a whole suitcase full of books with him) – THANKS! We also need to recognize the many people that worked in the booth.... Tom Callicrate, Opal Adams, Rich DeLong, Dan Laux, Dave Shaddrick, Dieter Krewedl, Ruth Carraher, Tony Taylor, Kel Buchanan, Mike Johnson, Clancy Wendt, Bob Lunceford, Eric Struhsacker and in particular Peter Maciulaitis who showed up every morning when the booth opened and worked any hours

that Laura needed help. He also helped Ruth in setting up the booth on Saturday.

The GSN appreciates the people who covered some of Laura's expenses and helped defer the cost to GSN. Greg Cox and Marco Montecinos paid for Laura's cab from the airport, Dave Shaddrick bought Laura's lunch on Sunday and her dinner on Monday, and Kel Buchanan bought Laura's dinner on Tuesday. One other person that helped to make the booth a success (without even being there!) is Marcus Johnston. He donated five fine mineral specimens from Nevada which we proudly displayed at the front of the booth and captured the eyes of many passer-bys. We sold raffle tickets for \$1 each and netted almost \$400 for the GSN Foundation. This really did help draw people into the booth. Clancy Wendt also donated a Mineral Trends of Nevada map which we had on display in the booth and did a business card draw at the end of the show.

Interest in Nevada is definitely in the forefront of people's minds in Canada right now. We saw many friends from Nevada, but some were so busy that they didn't have time to even walk through the exhibits. The Investors Exchange aisles had people crammed in them from opening to closing each day. Attendance was estimated at +15,000 people, and I think just about every one of them stopped by the booth to ask questions about Nevada.

The GSN booth at this show really helps to get the word out that Nevada is still the place to be for gold exploration and a great place for Canadians to invest their dollars.



GSN member Peter Maciulaitis of Boulder, CO volunteers in the GSN booth at PDAC.

***Thanks to CGS, Inc. for hosting the March meeting.***

# *GSN April 17, 2007 Membership Meeting*

---

**Date (note change):** Tuesday, April 17, 2007

**Time:** Social-6:00, Dinner-7:00 (\$17), Meeting-8:00

**Reservations:** 775/323-3500; fax 323-3599,  
e-mail gsn@mines.unr.edu

**Deadline:** Reserve by 1 pm Monday, April 16<sup>th</sup>

**Location:** Elks Lodge, 597 Kumle Lane, Reno, NV

**Directions:** Across (W) from the Reno-Sparks Convention Center (S Virginia St), behind the Les Schwab Tire Center

**Speaker/topic:** Sooz DeYoung, Greg B. Arehart, Simon R. Poulson, Steven I. Weiss, and Jill S. Heaton. See abstract below.

---

## **A SULFUR ISOTOPE STUDY OF GRANITIC PLUTONS IN THE GREAT BASIN, WESTERN USA: IMPLICATIONS FOR MAGMA-CRUST INTERACTION AND CRUSTAL ARCHITECTURE**

Susan DeYoung, Greg B. Arehart, and Simon R. Poulson,  
Dept. of Geological Sciences and Engineering, University of Nevada, Reno  
Steven I. Weiss, Glamis Exploration  
Jill S. Heaton, Dept. of Geography, University of Nevada, Reno

Sulfur isotope data from Jurassic, Cretaceous, and Tertiary plutons provide important information about the crustal architecture of the Great Basin, which complements interpretations developed using other isotopic systems (i.e., Sr, Pb, Nd, O). Major-element geochemical analyses and whole-rock sulfur isotope analyses were conducted for 283 granitoid samples collected in the Great Basin. Rock geochemistry data indicate that the samples are dominantly metaluminous, I-type granitoids. Values of Aluminum Saturation Index [ASI = molar  $\text{Al}_2\text{O}_3/(\text{CaO} + \text{Na}_2\text{O} + \text{K}_2\text{O})$ ] are predominantly very close to the metaluminous/peraluminous boundary, and the distribution of values is fundamentally the same for each age group.  $\delta^{34}\text{S}$  values range from -3.2 to +20.7‰, with a mean value of +6.4‰. There is little difference in the  $\delta^{34}\text{S}$  ranges and mean values among each of the three age categories. In addition to sulfur, oxygen isotope data were obtained on quartz from a subset of the pluton samples, and these data combined with the data of King et al. (2004) range from +4.8‰ to +13.5‰, with a mean value of +10.0‰.

Kriged maps of ASI,  $\delta^{34}\text{S}$ , and  $\delta^{18}\text{O}$  values show very similar patterns in which the greatest concentration of plutons with the highest isotope and ASI values occurs in eastern Nevada, forming a circular high with lower values on all sides. The  $^{87}\text{Sr}/^{86}\text{Sr}_i = 0.706$  line (Kistler and Peterman, 1973) generally falls between the highest isotope and ASI values to the east, and the lower values to the west. The similarity in kriged patterns suggests that plutons in east-central Nevada, and likely throughout the Great Basin, were generated as the result of crustal anatexis rather than through contamination of an ascending mantle melt. These patterns further indicate that the Great Basin can be separated into four distinct crustal domains, thus clarifying the crustal architecture of the region.



THE GSN WISHES TO GIVE A SPECIAL THANKS TO GOLD SUMMIT CORP. USA FOR HELPING SO MUCH WITH GETTING THE GSN BOOTH AND PUBLICATIONS TO TORONTO FOR THE PDAC LAST MONTH!

## GSN SKI DAY REPORT – 2007



The group.

GSN's third annual Ski Day, was held March 18, 2007 and drew a small but enthusiastic group of skiers. (Several people who were no-shows were probably sidelined by the previous night's St. Patrick's Day activities!) Zoom Zoom Cuffney, Richard Bedell, Eric Ruud and Don Hudson were there on time and got in a bunch of runs before the late comers even arrived. Eric Struhsacker had to work, but was able to join the group for lunch in the upper parking lot at Mt. Rose. Eric Ruud provided his usual fair of burgers and beverages with the others rounding out the menu with salads & desserts. (We missed you this year Phyllis Brock!) Rick Walker brought ice cream, but the group was skiing on the Slide Side when he arrived so we didn't all get to imbibe in that.

Unfortunately, The Chutes weren't open this year so we didn't have the same personal challenges as last year. Although, there was one run where several of the "men" went off the jumps and almost wiped out. The snow was less than perfect, but we couldn't have asked for better weather. Some years you just have to take what you get!



Eric, Bob, and Don.

## GSN MEMBERS' PERSONAL NOTES & NEWS

### Career Related Moves

► **Elizabeth Zbinden** has accepted a position as Senior Resource Geologist at Sepon Copper-Gold Mine, in Laos. Sepon is owned by Lane Xang Minerals, Ltd. which is in turn owned by Oxiana, Ltd, an Australian company. If you want to know more about the deposit, check out **The Sepon Gold Deposits, Laos: Exploration, Geology, and Comparison to Carlin-type Gold Deposits** by Smith, Olberg, and Manini, in your copy of the proceedings of GSN Symposium 2005. Expect more stories and pictures in future GSN newsletters!

► Goodsprings Development Corporation has been acquired by Denroy Resources of Toronto. The company has new offices at 1201 Terminal #221, Reno, NV 89502, Tel 775/323-6677. **Ken Brook** is President and **John Schaff** is the Exploration Manager. Goodsprings has been active in gold exploration since 1988 and has a portfolio of ten Nevada projects, which will be actively explored. Denroy anticipates becoming publicly traded in Toronto under the name of Nevoro, Inc. later this year.

**Members are encouraged to keep us informed about their own career related moves and awards, and deaths of GSN colleagues. Your information needs to be received by Laura at [gsn@mines.unr.edu](mailto:gsn@mines.unr.edu) by the 21<sup>st</sup> of each month.**

*Thank you to our generous donors*

**Bronze Level—\$1-\$99**

Michael Skopos

**VISIT THE GSN WEBSITE AT:  
[www.gsnv.org](http://www.gsnv.org)**

## MapInfo / Discover Training

### For Geologists

#### Reno

Apr 2-3 Introduction to MapInfo /  
Discover for Geologists

Apr 4-5 Intermediate MapInfo /  
Discover for Geologists

Apr 6 Discover 3D

#### Tucson

Apr 23-24 Introduction to MapInfo /  
Discover for Geologists

Apr 25-26 Intermediate MapInfo /  
Discover for Geologists

Apr 27 Discover 3D

800 663-1334 • 520 744-4457

www.tetrad.com • info@geografxworld.com

Sponsored by: Tetrad Computer Applications Inc. & GeoGRAF X GIS Services



## Carlin Trend Mining Supplies & Service

www.carlintrend.com

369 5th St., Elko, NV 89801

(775) 778-0668, Fax: (775) 778-0687, carlintrend@frontiernet.net

Geological Consulting - Claim Staking - Soil Sampling  
Geology & Drafting Supplies - AutoCad & GIS  
Temporary Employees In All Fields

Fire Assay  
ICP - OES  
ICP - MS  
AAS  
Custom Preparation  
Bullion Analyses  
BLEG

**Corporate Office**  
1500 Glendale Avenue  
Sparks, NV U.S.A. 89431-5902  
Telephone (775) 356-0606  
Fax (775) 356-1413

Chris Ioannakis, Managing Director,  
Analytical Services

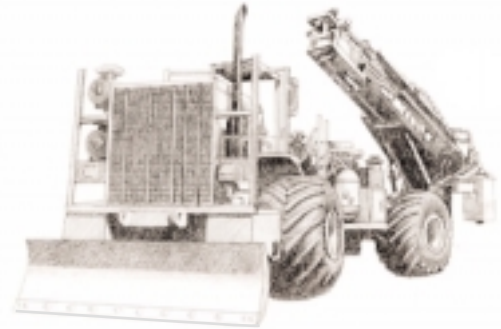
**Elko Office**  
2320 Last Chance Road  
Elko, NV U.S.A. 89801-4852  
Telephone/Fax (775) 738-9100

E-mail: AALADMIN@aallabs.com  
Website: www.aallabs.com

## American Assay & Environmental Laboratories



## DIVERSIFIED DRILLING, LLC



*Providing Drilling Services To The  
Mining/Metals Industry Since 1980*

3650 Grant Creek Road  
Missoula, Montana 59808

Phone: (406) 542-1010 Fax: (406) 542-5065  
www.diversifieddrilling.com



## CGS | Personnel™

**DIXIE BULLOCK**  
DISTRICT MANAGER

390 East Moana Ln., Ste. 2  
RENO, NV 89502

**WILMA HATTER**  
SERVICE REPRESENTATIVE  
HATTERW@SOSSTAFFING.COM

T. 775.331.5227 F. 775.323.7772  
WWW.SOSSTAFFING.COM

*A Division of SOS Staffing Services, Inc.*

## Big Sky Geophysics

Clark Jorgensen, M.Sc.  
Geophysicist

*Field Work  
Processing  
Interpretations*

P.O. Box 353  
Bozeman, MT 59771  
USA

Phone: (406) 587-6330  
Fax: (406) 587-6394  
Mobile: (406) 580-9718  
clark@bigskygeo.com

**For more details, my background, and case studies,  
visit my webpage at [www.bigskygeo.com](http://www.bigskygeo.com)**

## MINERAL EXPLORATION SERVICES

**SOIL SAMPLING  
CLAIMSTAKING  
PROPERTY EVALUATION  
MINE HAZARD FENCING**

5655 Riggins Ct., #15, Reno, NV 89502  
Tel: (775) 954-1082 Fax: (775) 829-6882  
email: day@mineralexploration.com

## ALS Chemex



We are a global analytical testing company serving the mining and mineral exploration industry in Nevada and around the world.

**We specialise in:**

- Assaying and geochemical analysis for mining and mineral exploration projects
- On-site contract mine laboratory management
- Environmental monitoring of mining operations
- Acid mine drainage studies

Contact our laboratories in Nevada to find out how we can help you with all of your project's analytical needs.

**RENO, NV**  
Phone: 775 356 5395

**ELKO, NV**  
Phone: 775 738 2054

**WINNEMUCCA, NV**  
Phone: 775 625 4192

[www.alschemex.com](http://www.alschemex.com)

*Right solutions....  
....Right partner*



## Enviroscientists, Inc.

4600 Kietzke Lane, Suite C 129, Reno, Nevada 89502  
Phone: (775) 826-8822 Fax: (775) 826-8857

**Notices, Plans of Operations,  
Cost Estimates, TRI, Biological Surveys,  
Air Quality Permits & Audits**

Info@enviroincus.com [www.enviroincus.com](http://www.enviroincus.com)

## sample Bags

HUGE INVENTORY  LOW, LOW PRICES

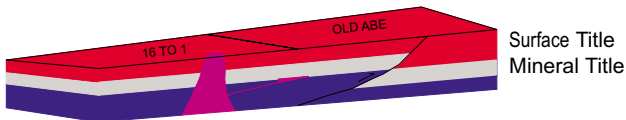
**NEW ADDRESS!**  
**LEGEND, INC.**

988 Packer Way  
Sparks, NV 89431

Off Glendale east of McCarran  
phone: (775) 786-3003  
fax: 786-3613  
[www.Lmine.com](http://www.Lmine.com)  
email: info@Lmine.com

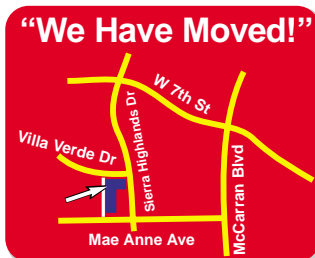
## GIS Land Services

Greg Ekins M.S. R.L.P. #32306 President  
Mineral Landman - GIS Cartographer



**"From Courthouse Records to Final Map"**

- Land Status Maps
- AutoCad Map
- Geologic
- Arc Map
- Geo Chem
- Mapinfo
- Discover
- Power Point



5365 Mae Anne Ave B-14A  
Reno, NV 89523  
P:775-746-8803  
P:775-746-2110  
F:775-746-8802  
E:greg@gislandservices.com

[www.gislandservices.com](http://www.gislandservices.com)

## Stephen D. Lappin



Consulting  
Landman

- Claim Staking
- Mapping
- Land Status
- Title

Cell: (970) 260-0293

Fax: (970) 241-9523

Email: Lappins@earthlink.net

2830 North Ave., C5B #164

Grand Junction, CO 81501



**ENVIRONMENTAL SERVICES  
FOR THE MINING INDUSTRY**

- Baseline Studies
- Environmental Permitting
- Monitoring & Compliance
- Reclamation & Closure Plans
- Investigation & Remediation

**Elko Location  
775-738-8766**

[www.jbrenv.com](http://www.jbrenv.com)

Reno and Salt Lake City locations



**JOSEPH R. ANZMAN**

*Exploration Geophysicist*

- consulting
- interpretation
- project management
- geophysical surveys
- domestic & foreign

P.O. Box 370526  
 Denver, Colorado 80237  
 303-337-4559  
 telephone/fax

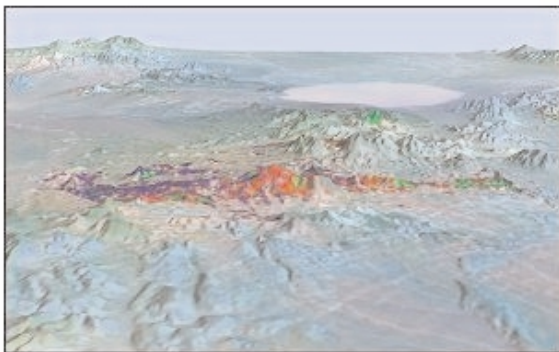


**WESTERN RECON**  
 and  
**Mineral Exploration Inc.**

**Claim Staking / Soil Sampling / Grids**  
**Experienced / Dependable/ Trimble GPS**  
 Gary Castagne 775-250-4879  
 John Fernandez 775-815-2587

**www.westernrecon.com**

**EXPLORATION with ASTER**



*Alteration Image, Goldfield, Nevada*

- **CUSTOM CORRECTED DATA**
- **ALTERATION IMAGERY**
- **EXTENSIVE GLOBAL ARCHIVES**

WWW.ASTERIMAGES.COM  
 email: pusa@rmi.net  
 dwc@overhill-imaging.com

**RENT A PIMA!!**



IDENTIFY and MAP ALTERATION  
 MINERALS IN THE FIELD and CORE  
 CONTACT US FOR Rentals and Services

*Spectral International, Inc*  
 303 403 8383 pusa@rmi.net  
 www.specmin.com

**CANDIDATES FOR 2007/2008 GSN OFFICERS & DIRECTORS**

The GSN Board of Directors and the GSN Executive Committee are recommending the following slate of candidates to serve as Officers and Directors for 2007/2008:

**Class B: Three Year Elected Term (2007 to 2010) on the GSN Board of Directors**

David Caldwell and Dieter Krewedl

**Officers for the 2007/2008 GSN Executive Committee**

**President** - Greg Hill  
**Treasurer** - Camille Prenn

**Vice President** - Marcus Johnston  
**Membership Chair** - Opal Adams

**Secretary** - Leslie Olmstead  
**Publications Co-chairs** -  
 Marilyn Miller and Debbie Schneider

During the first week in April a ballot will be sent to all GSN members. Those members, who receive their GSN Newsletter by email, will receive their ballot by email and those GSN members, who receive their Newsletter in the mail, will receive their ballot in the mail. The ballot must be returned to the GSN office within ten working days of the date it was distributed. Results of the election will be published in the May GSN Newsletter.

# ACTIVITY UPDATE

Mike Brady, February 2007

www.activityupdate.com

## NEVADA

Nevada Copper Corp. announced recent drill results at the Pumpkin Hollow Project include 126.5-339.9 meters @ 1.04% Cu, 0.003 opt Au (NC06-01). (resource = 204,930,000 tons @ 0.57% Cu, 11.4% Fe measured+indicated and 252,670,000 tons @ 0.50% Cu, 7.83% Fe inferred) *M.J.: January 19*

Victoria Resource Corp. announced it acquired an option to earn a 100% interest in the Summit Property from Taminco Inc. (private) for \$25,000 cash and future, yet to be determined considerations. *Press Release: February 2*

Queenstake Resources Ltd. and YGC Resources Ltd. announced they would merge on a 10 shares Queenstake/1.0 share YGC basis. (reserve @ Jerritt Canyon = 3,700,000 tons @ 0.237 opt Au proven+probable) *Press Release: February 5*

Great Basin Gold Ltd. announced it acquired an additional 50% interest (to now hold 100%) in the Ivanhoe/Hollister Development Block Property from Hecla Mining Co. for \$45,000,000 cash and 7,800,000 shares. (resource = 717,200 tons @ 1.295 opt Au, 7.03 opt Ag inferred) *Press Release: February 21*

Denroy Resources Corp. announced it would acquire Goodsprings Development Corp. for \$150,000 cash and 24,400,000 shares. Goodsprings holds 10 separate properties in Nevada including the St. Elmo, Silver King and Cross projects. *Press Release: February 9*

Agnico-Eagle Mines Ltd. announced it purchased 400,000 shares of AuEx Ventures Inc. in a private placement for \$813,500. *Press Release: February 14*

Boxxer Gold Corp. announced it acquired an option to earn a 100% interest in the Boyer Ranch Property (Cu) from private interests for \$500,000 cash over 1 year. *Press Release: February 19*

Bravo Venture Group Inc. announced recent drill results at the Signal Project include 66-78 meters @ 0.013 opt Au (SI06-01); 58-105 meters @ 0.011 opt Au (SI06-02); 91-131 meters @ 0.019 opt Au (SI06-04); 6-24 meters @ 0.010 opt Au (SI06-05) and 146-186 meters @ 0.019 opt Au (SI06-09). *Press Release: February 1*

Gateway Gold Corp. announced it acquired an option to earn a 100% interest in the CE Property from Genesis Gold Corp. for \$450,000 cash, 1,000,000 shares and \$3,000,000 in exploration expenditures over 5 years. *Press Release: February 6*

Midway Gold Corp. announced recent drill results at the Spring Valley/Limerick Basin Project include 115-120 feet @ 0.026 opt Au (LM06-03); 500-505 feet @ 0.011 opt Au (LM06-05); 40-45 feet @ 1.986 opt Au (LM06-07); 635-640 feet @ 0.021 opt Au (LM06-12); 15-25 feet @ 0.627 opt Au (LM06-14) and 0-20 feet @ 0.072 opt Au (LM06-15). (resource = 10,030,000 tons @ 0.024 opt Au measured+indicated) *Press Release: February 7*

Miranda Gold Corp. announced recent drill results at the Horse Mountain Project include 1,140-1,145 feet @ 0.015 opt Au (BHM-003); 2,780-2,800 feet @ 0.013 opt Au (BHM-003) and 925-

1,015 feet @ 0.022 opt Au (BHM-005).

*Press Release: January 24*

Great Basin Gold Ltd. announced recent underground drill results at the Hollister Development Block Project include 140-144 feet @ 0.243 opt Au, 0.27 opt Ag (HDB-060); 205.9-221.6 feet @ 0.192 opt Au, 0.30 opt Ag (HDB-066); 302.1-307.2 feet @ 15.287 opt Au, 32.34 opt Ag (HDB-067); 207.1-209.6 feet @ 0.863 opt Au, 16.51 opt Ag (HDB-069); 235.1-236.7 feet @ 0.972 opt Au, 2.94 opt Ag (HDB-070); 293-297 feet @ 0.214 opt Au, 0.19 opt Ag (HDB-071) and 225.6-228.4 feet @ 0.523 opt Au, 2.49 opt Ag (HDB-072). (resource = 717,200 tons @ 1.295 opt Au, 7.03 opt Ag inferred) *Press Release: February 26*

## WINNEMUCCA CHAPTER APRIL 11<sup>th</sup> MEETING

### Thermal and Isotopic Profiling of the Pipeline Hydrothermal System: Application to Exploration for Carlin-type Gold Deposits

Greg B. Arehart and Raymond A. Donelick

New exploration techniques are vital to the search for new orebodies in mature terranes, as well as for extensions of existing orebodies. Low-temperature dating techniques (primarily apatite fission-tracks) and stable isotope measurements (carbon and oxygen in carbonate rocks) in and around the Pipeline deposit and the Bald Mountain area illustrates that these techniques can provide exploration vectors that should be used in conjunction with other geologic, geochemical, and geophysical techniques in the exploration for Carlin-type (and other) deposits.

At Pipeline, geochronometry and stable isotope measurements yield a clear indication of the elevated temperatures and fluid flows associated with the fossil hydrothermal system. The pattern is one of a central target (Pipeline deposit) with decreasing thermal and oxygen isotopic effects as far as several kilometers laterally from the known ore zone. Carbon isotopes do not show a pattern. Because of the irregular nature of fluid flow through fractures, a significant number of samples is required to discern this pattern, but the pattern is quite clear from the ~100 samples in and around the Pipeline pit. From these data, it is clear that thermal and stable isotopic measurements on rocks at a significant distance from the known Pipeline hydrothermal system record the passage of hot fluids through the rock. Both techniques provide a footprint of the Pipeline system that is several diameters larger than the ore zone (as presently known). Although these techniques do not provide a direct indication of the metal content of the fossil hydrothermal fluids, they do provide an indication of the robustness of fluid flow and the potential size of a hydrothermal system. In addition, the data suggest an age of the mineralization near 40 Ma, consistent with other Carlin-type deposits.



# SOUTHERN NEVADA CHAPTER FEBRUARY 24<sup>th</sup> FIELD TRIP Dinosaur Tracksite Field Trip

On Saturday, February 24, a group of ten dinosaur trackers departed the parking lot of the Speedway Casino in North Las Vegas for the Warner Valley and Johnson Farm dinosaur tracksites near St. George, Utah. The group arrived at Warner Valley before midday and was rewarded with cool but sunny and calm weather. As a previous group of visitors was just departing the site, the GSN party had complete access to the trackway for the duration of their stay.

At Warner Valley, only casts of tracks themselves are now present, as foot impression casts were removed from this site some years ago. The tracks preserved at this locality are in a thin sandstone bed within the Moenave Formation of early Jurassic age. Two distinct types of tracks are present. The smaller tracks are believed to have been made by an early coelurosaur, while much larger tracks may have belonged to a prosauropod weighing as much as half a ton. Use of a broom exposed several small tracks previously covered by loose sediment, and all tracks were well examined and photographed.

After visiting Warner Valley, the group drove to the Johnson Farm Discovery Site in St. George, reaching the site just in time for a presentation by Dr. Jim Kirkland, the State Paleontologist for Utah. Dr. Kirkland spoke on recent Jurassic and Cretaceous dinosaur, bird, and mammal discoveries in China, especially those from Liaoning Province. He later compared recent Jurassic and Cretaceous dinosaur finds in Utah with those from China, and discussed potential interactions between these two dinosaur populations, through time.

Following Dr Kirkland's talk, members of the field trip were able to view the dinosaur, crocodylian and fish fossils found at Johnson Farm. These fossils are also hosted by the Moenave Formation. Among the most spectacular fossils here are impression casts from the sandstone layer overlying the clayey siltstone hosting the trackway. These impressions include scrape marks in the shallow lake bottom made by swimming dinosaurs, foot casts with claw and skin impressions, and tail drag marks. Other unusual fossils include large networks of fossil mudcrack impressions and an impression of mud splattered around a large dinosaur



foot cast. Smaller dinosaur tracks at Johnson Farm are thought to have again been made by coelurosaur, while much larger tracks may have been made by dilophosaurs as much as fifteen feet in length.

After completing their tour of the Johnson Farm Discovery Site, most trip members adjourned to the St. George Cracker Barrel Restaurant for a very-long-delayed lunch, before the drive home. Walking in the footsteps of dinosaurs can be an appetite-building experience!

## UPCOMING EVENTS

**Apr 1-4** - AAPG-Annual Meeting, Long Beach, CA, Long Beach Convention and Entertainment Center. Hosted by Pacific Section AAPG, [www.aapg.org](http://www.aapg.org).

**Apr 3, Tuesday** - Arizona Geological Society Dinner Meeting. Robert Powell, USGS, Tucson, AZ. Talk: "Geologic Constraints on the Evolution of the San Andreas Fault System, Southern California". Inn Suites Hotel: 475 N. Granada Ave., Tucson, AZ. 520/663-5295 for reservations.

**Apr 5, Thursday** - NV Petroleum Society. Speaker: Jim Faulds, NV Bureau of Mines and Geology, University of Nevada, Reno Title: "Characterizing Structural and Tectonic Controls of Geothermal Fields in the Northwestern Great Basin through Geologic and Geophysical Analyses". Austin's Restaurant, 7671 So. Virginia St, Reno, cocktails at 6:30 pm. Dinner at 7:00 pm. (\$17 for members; \$19 for non-members, \$10 for Students). RSVP by Noon Tues, Apr. 3 to Diane Phillips 775/267-4663 or [trailsend@pyramid.net](mailto:trailsend@pyramid.net). Reservations required.

**Apr 6, Friday**, Mackay Seminar in Economic Geology. Speaker: Mary Doherty, ALS Chemex. Topic: "Exploration Geochemistry through Cover in the Great Basin". Laxalt Mineral Research Bldg, Room 353, UNR.

**April 11** - WINNEMUCCA CHAPTER MEETING - Speaker: Greg Arehart, Professor, Geological Sciences, University of Nevada, Reno. Title: "Thermal and Isotopic Profiling of the Pipeline Hydrothermal System: Application to Exploration for Carlin-type Gold Deposits". The Martin Hotel, W. Railroad and Melarkey Streets. Drinks at 6:30 pm, talk at 7 pm. Ivan Johnston for more info, 775/635-4292, [Ivan.Johnston@Newmont.com](mailto:Ivan.Johnston@Newmont.com).

**April 12-13** - GSN SPRING 2007 FIELD TRIP: "Geology of the Nevada Test Site, Yucca Mountain, and the Searchlight District". In cooperation with GSN's Southern Nevada Chapter. REGISTRATION IS CLOSED.

**April 17, TUESDAY (NOTE CHANGE!)** - GSN MEMBERSHIP MEETING: Speaker: Sooz DeYoung, Graduate Research Assistant, Geological Sciences, University of Nevada, Reno. Title: "A Sulfur Isotope Study of Granitic Plutons in the Great Basin, Western USA: Implications for Magma-Crust Interaction and Crustal Architecture". Reno Elks Lodge, 597 Kumle Ln, Reno, NV. Drinks at 6 pm, dinner at 7 pm (\$17), talk at 8 pm. Contact Laura Ruud for reservations, 775/323-3500, [gsn@mines.unr.edu](mailto:gsn@mines.unr.edu).

**April 19** - ELKO CHAPTER MEETING: Speaker: Thomas John, Robinson Nevada Mining Co. Topic: "Rebirth of the Robinson Co." Western Folklife Ctr, 501 Railroad St, Elko, NV. Drinks at 6:00 pm, talk at 7:00 pm. Richard Reid at 775/778-3912, [Richard.Reid@newmont.com](mailto:Richard.Reid@newmont.com) for more information.

**April 19** - Mackay Awards Banquet. 5:30 p.m. The Siena Hotel, Reno NV. Contact Leslie Rumph for reservations, 327-2056.

**April 20** - Mackay Seminar in Economic Geology. Speaker: Mark Barton, University of Arizona. Title: "Iron-oxide-Copper-Gold (IOCG) Deposits: A Cordilleran Perspective". Laxalt Mineral Research Bldg, Rm 353, UNR.

**April 20-21** - 2<sup>nd</sup> Annual Las Vegas GeoSymposium sponsored by the UNLV Dept of Geoscience, Las Vegas, NV; Marjorie Barrick Museum of Natural History. To register or for more information visit their website: <http://geoscience.unlv.edu/gradsymposium.htm>.

**April 26** - SOUTHERN NEVADA CHAPTER MEETING. Speaker: Wayne Belcher, U.S. DOE. Title: "Death Valley Regional Groundwater Flow Model". Lily Fong Geoscience Building, Room 105, Refreshments at 6 pm, talk at approx. 6:30 pm. For more information, please contact Bruce Hurley, Chapter President at 702/295-1284, [rocks2bwh@aol.com](mailto:rocks2bwh@aol.com).

**Sept 24-30** - Arizona Geological Society -Ores & Orogenesis (Circum-Pacific Tectonics, Geologic Evolution, and Ore Deposits – a symposium in honor of William R. Dickinson). Full details on the symposium can be viewed at [www.agssymposium.org/](http://www.agssymposium.org/). **Abstract deadline is April 1, 2007.**

## Mongolian Experience Continued from the March Newsletter

by Elizabeth Zbinden

Here is an overview of Ulaanbaatar looking west. It is taken from a tourist spot on a hill south of town, a monument celebrating Soviet-Mongolian friendship. The colors in the upper left are a bit of the mosaic that decorates the monument. In the lower right is a golden Buddha about 50 ft tall. I think it is a gift from the people of South Korea to the people of Mongolia. The smokestacks in the center distance are the city's coal-fired power plants.



After finishing the report-writing, it seemed necessary to do a little touring before departing Mongolia for who-knows-how-long. So I hired a driver and an interpreter through a local tour company, and we set off for a week's drive.

In many places along the way there is a pile of rocks called an ovoos. Sometimes the pile of rocks is topped by one or more branches. For a safe journey, when you come to an ovoos you add some rocks to it and then walk around it three times, clockwise. Here Uyanga, my interpreter, is doing the circuit. If you like, you may add an offering besides the rock. A scarf called a khadag is a typical offering. Khadags come in many colors but the favorite color is blue in honor of the Eternal Blue Sky. The rectangle in the distance behind

Uyanga is the perimeter wall of a 17<sup>th</sup>-century Buddhist monastery called Erdene Zuu. The city is Kharkhorum, site of an ancient capital founded by Genghis Khan's sons.

Some ovoos are larger. Our driver Khur'le circles this one at the top of a tricky pass. Maybe it is bigger because more people here felt the need to offer something to ask for a safe journey. But also notice the crutches; I hope they were left because they were no longer needed.



Remember what I wrote above about a ger usually being completely disassembled before moving? Here a family's ger and other household goods are loaded onto yak carts, as they move from their autumn home to their winter home.



A residential neighborhood in Uliastai, capital of Zavkhan province. It has a different look than Ulaanbaatar does.

Here's me, riding a camel.



# GEOLOGICAL SOCIETY OF NEVADA



gsn@mines.unr.edu • www.gsnv.org  
Telephone (775) 323-3500 FAX (775) 323-3599  
Post Office Box 13375  
Reno NV 89507  
USA

NON PROFIT  
ORGANIZATION  
U.S. POSTAGE  
PAID  
RENO, NV  
PERMIT NO. 931



## PROFESSIONAL STAFFING FOR THE MINERALS INDUSTRY

**ENGINEERS      GEOLOGISTS      LABORERS      CLERICAL STAFF      TECHNICIANS**  
**EQUIPMENT OPERATORS      MANAGERIAL STAFFING      EXECUTIVE RECRUITMENT**

**AS THE ESTABLISHED LEADER IN PROFESSIONAL PERSONNEL SERVICES TO THE MINING AND MINERALS INDUSTRY, GEOTEMPS STANDS WITH THE INDUSTRY AT PUBLIC HEARINGS, IN GOVERNMENT LOBBY EFFORTS, FOR WRITE-IN CAMPAIGNS, WITH BUSINESS DONATIONS, AND WITH INDUSTRY ASSOCIATIONS.**

**RENO**  
775-746-7146  
970 CAUGHLIN XING  
SUITE 102, 89509  
FAX: 775-746-7156

**ELKO**  
775-738-4707  
557 WEST SILVER ST.,  
SUITE 201A, 89801  
FAX: 775-738-0409

**ELY**  
775-289-6448  
725 AVENUE K,  
SUITE B, 89301  
FAX: 775-289-6472

**TUCSON**  
520-292-1000  
4760 NORTH ORACLE RD.,  
SUITE 200, 85705  
FAX: 520-292-9100

**WINNEMUCCA**  
775-625-1555  
FAX: 775-625-1556  
**www.geotemps.com**  
**mining@geotemps.com**