

GEOLOGICAL SOCIETY OF NEVADA NEWSLETTER

Geological Society of Nevada, 2175 Raggio Parkway, Room 107, Reno, NV 89512
(775) 323-3500 - Hours Monday -- Friday 8-3 Website: www.gsnv.org • E-mail: gsn@gsnv.org



January 2011, Vol. 26, No. 1

Published monthly except June and July

CALENDAR OF GSN EVENTS

GSN EXECUTIVE COMMITTEE

President

Peter Vikre

US Geological Survey

Vice President

William (Bill) Howald

Rye Patch Gold US Inc.

Secretary

Steve Carroll

Schlumberger Water Services

Treasurer

Bob Kastelic

Consulting Geologist

Membership Chair

Dave Emmons

Kinross Gold USA, Inc

Publications Chair

Mary Stollenwerk

ALS Chemex

GSN Office Manager

Kathy Sestanovich

GSN BOARD OF DIRECTORS

Chairman

David Shadrack

GSN President

Peter Vikre, Current

Most Recent Past GSN President

Mike Ressel

Elko Chapter President

Joe Becker

So. Nevada Chapter President

Josh Bonde

Winnemucca Chapter President

Rebecca Morris

Class A, 2009-2012

Lynne Volpi

Kim Craig

Class B, 2010-2013

David Caldwell

Marcus Johnston

Class C, 2008-2011

David Shadrack (Chairman)

Camille Prens

**January 12
Wednesday**

WINNEMUCCA CHAPTER *(Every 2nd Wednesday of the month)*

The monthly meeting will be held at the Martin Hotel, 94 West Railroad Street. Drinks and appetizers at 6:30 PM, speakers at 7:00 PM. Sponsor for the evening will be Major Drilling, Nguyen Do. Speaker for the evening will be Dennis Bryan. His talk is titled, "Western Lithium's Nevada Hectorite, a New Source of Lithium for the Electrification of Transportation". (see abstract on page 9). For more information contact Rebecca Morris at (775) 304-2661.

**January 20
Thursday**

ELKO CHAPTER *(Every 3rd Thursday of the month)*

The monthly meeting will be held at the Western Folk Life Center, 501 Railroad Street. Refreshments at 6:00 PM, talk at 7:00 PM. Speaker for the evening to be announced. Sponsor for the evening to be announced. For more information contact Joe Becker at (775) 778-4071.

**January 21
Friday**

GSN MEMBERSHIP MEETING *(Every 3rd Friday of the month)*

The monthly meeting will be held at the Reno Elks Lodge, 597 Kumle Lane, Reno, NV. Drinks at 6:00 PM, dinner at 7:00 PM, and talk at 8:00 PM. Sponsor for the evening will be Timberline Drilling, Inc. Speaker for the evening will be Alan R. Coyner, Administrator, Nevada Division of Minerals. His talk is titled "Update on Geothermal Activity in Nevada". (see abstract on page 3). Dinner reservations must be made by 1:00 PM Wednesday, January 19. Contact Kathy Sestanovich at (775) 323-3500 or e-mail gsn@gsnv.org for reservations.

**January 27
Thursday**

SOUTHERN NEVADA CHAPTER *(Every Last Thursday of the month)*

The monthly meeting will be held at the Lilly Fong Geoscience building at UNLV, Room 105. Social hour begins at 6:45 pm with the speaker starting at roughly 7:15 pm. For date and more information contact Josh Bonde at 702-468-2500.



GSN JANUARY MEETING SPONSORS



Corporate 208-665-7211

Elko 775-777-1100

www.timberline-drilling.com

FROM THE PRESIDENT

Peter Vikre, *GSN President 2010-2011*

Makeovers

In this world of ostensibly limitless technological and social upheaval, one enduring constant is that Big Bang legacy, the Periodic Table of the Elements. Although threats to Table stability come from physicists and regulators whose life missions are subdivision and elimination of matter, respectively (Pb comes to mind), the Table has worked out just fine for the rest of us since it contains the essence of life and well being. Several Table loners (Fe, Cu, Au) and close associates (SiO_2 , CaCO_3) are cultural mainstays with properties that built and destroyed civilizations, and now sustain the survivors. Poor-cousin and backwater Table residents, like Ag and Li, have been reborn in modern times, with technology the faith-healer.

Silver, essential to photography, has lost 60% of that market share to digital imagery since 1999; demand for Ag coins, jewelry, and silverware has also slackened over the past few years. So why is Ag dancing around \$30/oz? Silver applications on the rise include bandages, batteries, brazing, and bearings, catalytic converters, cell phone covers, solar cells, and circuit boards. For the unwashed, thirsty, unstable, and vain, Ag deodorizes clothing and shoes, purifies water, retards wood rot and tooth decay recurrence (dental amalgam), and provides real life imaging. Silver antennas, a Big Brother device, now alert casinos, toll booths, customs agents, and gas stations, among others, to your presence (USGS 2010 mineral commodity summary for Ag). These usages build upon the conductive and bactericidal properties of Ag. Silver is also experiencing investment surge in the form of exchange-traded funds which require physical metal inventories. Silver demand and supply are viewed as inelastic in that the small amounts of Ag in most products do not significantly influence product price; thus, Ag price increases are not expected to suppress demand.

Lithium, the lightest metal, is a veteran transformative with a broad range of historic and modern usages including mood drug, 7 Up component, glass additive, high temperature lubricant, aircraft alloy, desiccant, fusion-fission favorite, rocket and torpedo propellant, CO_2 -absorbant, and pyrotechnic colorant. Currently Li is battery-element-*du jour*, poised to power cars and already powering innumerable, seemingly indispensable electrical widgets. Lithium, as an essential component of cell phone batteries and optical displays, can be viewed as the chief culprit of the demise of verbal communication. World production, more than 25,000 tonnes in 2008, has increased about 25% over the past 7

years because of battery demand which is forecast as the main market growth. World resources, brines and lesser pegmatites mostly in Bolivia, Chile, Argentina, China, and the U.S., are estimated at 23 Mt (USGS 2010 mineral commodity summary for Li).

Comprehensive presentations on Ag and Li are scheduled for the February and March dinner meetings.

Succession

Well, Big Management, which pervaded the GSN several years ago, has commandeered the front page of the NL. FTP is relegated to second page status (sniff) but is still before the classifieds and comics; another consolation is that on the front page P is listed twice (!) More seriously, the GSN luminaries listed are fully engaged in the near and long term governance of GSN, and 95% of those listed are volunteers. GSN management careers vary from a personally manageable one to three consecutive years; these term limits eliminate entrenched incumbency but require a supply stream of dedicated volunteer managers to ensure the longevity of the GSN and to continue the many services the GSN provides to members. The GSN is built around geoscience and social interaction. The GSN membership embodies a vast range of experience and perspectives, a mix of which is essential to the vitality of management. When management succession beckons please consider what GSN has done for you and what you can do for GSN.

January dinner meeting presentation

At the January dinner meeting Alan Coyner will present an overview of the geothermal business in Nevada. Alan is Administrator of the Nevada Division of Minerals.

Better Times aHead,
Peter Vikre



***Thanks to ALS Minerals, Agnico-Eagle (USA) Limited
& Mine Development Associates
For Hosting the December Meeting***

GSN January 21, 2011 Membership Meeting

Reservations Are Required - Please Cancel if You Are Unable to Attend

GSN CAN NO LONGER GUARANTEE DINNER SEATING WITHOUT ADVANCE RESERVATIONS.
Please call 775-323-3500, Fax 775-323-3599 or e-mail gsn@gsnv.org by 1:00 PM, Wednesday, January 19, 2011.
Social Hour: 6:00 PM – Dinner: 7:00 PM – Speaker: 8:00 PM
\$17.00 per person

Location: Elks Lodge, 597 Kumle Lane, Reno, NV
Directions: across (W) from the Reno-Sparks Convention Center
(S. Virginia Street, behind the Les Schwab Tire Center)

**Prepaid dinner reservations will only be accepted for the current monthly meeting.
Cancellations must be received two days before the meeting in order for your money to be refunded.**
Download the prepayment form from the GSN website: <http://www.gsnv.org/membership.html>

Update on Geothermal Activity in Nevada

Speaker: Alan R. Coyner, Administrator
Nevada Division of Minerals, 400 W. King St. #106, Carson City, NV 89703
acoynr@govmail.state.nv.us

Abstract

Exploration and development of geothermal resources in Nevada has increased significantly in the past several years. The important factors driving this increase are: 1) the favorable geology of the Great Basin, 2) a favorable regulatory climate which allows timely permitting of projects, 3) a Renewable Portfolio Standard which requires 20% of all electricity generated in Nevada be derived from renewable sources by the year 2015, 4) the location of leading geothermal companies in Nevada, 5) significant amounts of funding from the U.S. Department of Energy, and 6) advanced geothermal research by the Nevada Bureau of Mines and Geology and the Great Basin Center for Geothermal Energy (GBCGE) at the University of Nevada Reno.

In 2009, geothermal electrical production in Nevada was 2,181,460 MWh (megawatt hours) gross and 1,669,056 MWh net. The difference between gross and net represents the parasitic load used to operate the power plants. This was a 24% increase in gross and 21% increase in net power production over 2008. According to the Nevada Department of Taxation, the gross proceeds from geothermal power production was approximately \$111 million in 2009, a 17% increase over 2008. Geothermal producers pay the Nevada Net Proceeds of Minerals Tax and in 2009 paid a total tax of \$897,384.

Geothermal energy is produced in Nevada from 18 different power plants located at 11 sites, mostly in the northwestern part of the state. The nameplate capacity of the turbines at the 11 existing sites increased from 294 MW (megawatts) in 2007, to 337 MW in 2008, and 425 MW in 2009. The state's largest producer of geothermal power is Ormat Nevada, Inc., and other producers include Terra-Gen, US Geothermal Power, Nevada Geothermal Power, Enel North America, Magma Energy Corp., and Homestretch Geothermal.

Nevada's geothermal production is increasingly based on lower temperature hot water systems using binary technology, rather than higher temperature steam flash plants. Binary systems involve the movement of significant quantities of geothermal fluids and require large diameter well bores drilled by oil field drill rigs. Most of the wells are drilled to 6,000 to 10,000 feet at a cost of \$3 to \$5 million each. The Nevada Division of Minerals is responsible for regulating all geothermal well operations in Nevada. Activity continues to be strong, as measured by permits issued by NDOM for power production wells, with 245 permits issued and 126 wells drilled during the period 2007 to 2010.

Geothermal producers face many of the same challenges as the mining industry with regards to permitting projects. Nevada law requires that all produced geothermal fluids must be reinjected, requiring an Underground Injection Control permit from the Nevada Division of Environmental Protection. Since many of the projects involve public land, federal permits for the wells, plant site, and transmission corridors are necessary. With the rapid growth in the number of geothermal projects (and other renewable energy projects) and mining projects, the potential for permitting delays is possible.

Nevada has been called "The Saudi Arabia of Geothermal Energy" because of its great geology and exploration potential, favorable regulatory climate, good infrastructure, large areas of land open to exploration, and network of knowledgeable exploration geologists, organizations, and agencies. As the demand for renewable energy increases, Nevada will play an increasingly important role in providing this valuable base load energy to the nation's energy supply.

Thank you to our generous donors

GSN FOUNDATION

PLATINUM LEVEL DONORS \$1,000+

W. L. Wilson

GOLD LEVEL DONORS \$500-\$999

SILVER LEVEL DONORS \$100-\$499

Fred Breit

Ann Carpenter

Graeme Davis

Goldcorp USA Inc.

Frank S. Howell

Joseph A. Laravie

Karl Marlowe

Brian Metzenheim

A. D. Rovig

Howard P. Shafer

Thomas N. Westervelt

BRONZE LEVEL DONORS \$1-\$99

Steven Carroll

David E. Colburn, Jr.

Radu Conelea

Rachel Dolbier

Anthony C. Dorff

Maureen Leshendok

Shea Clark Smith

STUDENT DINNER FUND

Jeffrey T. Abbott

Ann Carpenter

Boies Hall

Joseph A. Laravie

Richard Lorson

Patrick Mohn

Ronald L. Parratt

Nancy Richter

John Schaff

Michael Skopos

Charles Sulfrian

John E. Zimmerman

STUDENT FIELD TRIP FUND

Jeffrey T. Abbott

Glenn Asch

Mark A. Bradley

David L. Colburn, Jr.

Steve Garwin

Ron Kieckbusch

Richard Lorson

Jon Powell

Richard R. Redfern

Jason Rizzolo

Charles Robbins

John Schaff

Charles Sulfrian

John E. Zimmerman

ROCK TALK

A new section in the GSN Newsletter for members

This note is intended to mark the passing of the DeLaMare, or Mackay Mines library, as we knew it. This unique collection of economic geology literature is being dismantled and dispersed among the UNR storage facilities at Stead and the new Mathewson-IGT Knowledge Center, with only the USGS publications, newer geology texts, and Nevada and California state geology publications remaining in the Mackay building. All other state survey publications and various geological society guidebooks will go into the MARS robotic storage facility in the new library, along with all books and bound journals that are considered low-use items, such as the first 62 volumes of Economic Geology, which are now in storage. Only volumes sixty-three (1968), through the most recent issue, remain on the shelves in the basement of the Mackay building. Old texts and historic journals, such as the Mining and Scientific Press, and the Engineering and Mining Journal will be in the Special Collections room on the third floor of the new library. This fragmentation process started several years ago when all the SEPM Special Publications, the Geological Society of America, and AAPG Special Papers and Memoirs were dispersed through the stacks according to subject and editors. These radical changes were implemented with apparently no input, or consultation with the geologists who use and depend upon this resource. According to Dr. Colegrove, the Head of the DeLaMare Library, the university does not have the resources to maintain a special collection for industry. It is assumed that this rearrangement will facilitate the use of the newer periodicals and geologic publications by making it easier for students to obtain Xerox copies and access articles on-line. The fact that the Mackay collection was unique, and a valuable source of future mineral prospects, was not a consideration. The Mackay mines library was a jewel whose setting has been preserved at great cost, while the gem it held has been crushed to produce newer, but less valuable pieces. Good luck in your research, and don't be shocked to find that the DeLaMare library is now a study hall.



FACES OF GSN

*Dieter A. Krewedl, Truckee, California
Krewedl Mineral Exploration*

I am one of the fortunate members of the GSN who was able to retire after a long career as a minerals exploration geologist, but still continue to remain active in my profession during my retirement. My profession allowed me to work in many beautiful areas, learn some fascinating geology and make some wonderful friends along the way. Allow me to give you a quick overview of my 40 plus year career.

I am of German descent, born in the region of Yugoslavia now called Croatia during World War II and immigrating to the United States as a war refugee in 1949. I grew up on the glaciated landscape of southwestern Ohio and decided in high school to major in geology at the University of Dayton because of my interest in science and the love of the outdoors. The highlight of my undergraduate years was taking a summer job as a “mucker” at the Gilman lead-zinc mine in the Colorado Rockies, which convinced me not only that I wanted to be a field geologist but also to live in the West. Upon graduation, I went on to get a Masters degree at Bowling Green State University under Joe Mancuso. He was a wonderful teacher and mentor, who really got me interested in economic geology.



However, it was difficult to get a minerals exploration job in the West after graduating from a university located in the Midwest in 1967. So I took a job in New Orleans with Texaco doing offshore oil exploration in the Gulf of Mexico. Unfortunately, I worked mostly on the 22nd floor of a downtown skyscraper reviewing electric logs and seismic surveys. The job did not fulfill my basic requirements of doing field work and being outdoors. I lasted just one year before deciding to go out West and get a Ph.D. degree at the University of Arizona.

It was an exciting time to be at Arizona in the late 60s and early 70s when lots of original work in economic geology was underway. I studied porphyry copper deposits under Spencer Titley and worked with Charles Park Jr. of Stanford University one summer in the Magdalena Mountains of west-central New Mexico on a mapping project that eventually became my dissertation. Most importantly, I met my wife, Beth, who was willing to move frequently and allow me to travel for extended periods of time while she took care of our four children.

The job market in precious and base metals exploration was still not good in 1973 when I graduated from Arizona. So I took a job as a uranium geologist with Utah International and its uranium spin-out company, Pathfinder Mines Corporation. I was with the company for almost 23 years, which was long enough to become vested in the retirement plan, but required moving my family 5 times. I was initially based out of Riverton, Wyoming from '73 to '76, followed by Bavaria, Germany from '76 to '79, then Albuquerque, New Mexico from '79 to '84, St. George, Utah from '84 to '90 and finally Reno, Nevada from '90 to '95 when the company got involved in gold exploration in the western US. I assumed more responsibility with each move and ultimately becoming the VP of Exploration.

The Pathfinder exploration team was able to discover lots of uranium during those years, most of which remains unmined due to the low uranium price. The uranium price collapsed following the Three Mile Island accident in 1979, which brought an end to most uranium exploration in the United States except in the breccia pipe province of northern Arizona. Pathfinder's exploration program survived during the 80s because the company was purchased by the French government controlled company Areva, which wanted to discover more uranium no matter what the price was.

(Continued on page 6)

(Continued from page 5)

During this period in my life, I was lucky enough to explore for uranium throughout the western United States and Germany. Highlights include flying and hiking into the Grand Canyon to study the exposed uranium breccia pipes and exploring for uranium throughout Germany, primarily in the Black Forest and Bavaria.

My transition from a uranium geologist to a precious metals geologist began in the early 90s. As a result, an exciting new world of geology and geography opened up for me. What began as exploration for gold in Nevada expanded to the entire western United States and eventually to five continents. The GSN played an important role in this transition primarily through providing me the opportunity to meet and network with fellow gold geologists during the monthly meetings and on field trips. I knew that someday I would give back to this organization.

I left Pathfinder in 1996 to join Echo Bay Mines as its VP of Exploration based out of Denver, Colorado. Echo Bay had gold projects throughout the world, but unfortunately the company was on hard times due in part to the low gold price and the job was over in 1998.

I then joined Coeur d'Alene Mines based out of Coeur d'Alene, Idaho as its Senior VP of Exploration exploring for precious metals primarily in the United States, South America and Australia. The highlight of my tenure with Coeur was the exploration team discovering high grade gold and silver veins in the Patagonia region of southern Chile and Argentina that saved the company from bankruptcy.

In 2004, I decided to retire and move to Truckee where I currently reside. I was then able to give back to the GSN by serving as its President for two consecutive years from 2004 to 2006. This offered me the opportunity to become re-acquainted with my GSN colleagues as well as establish new friendships. I feel that my most significant contribution to the GSN was the establishment of the GSN Board of Directors in 2005 that has helped to co-ordinate the activities of the three chapters in Winnemucca, Elko and Las Vegas with the GSN. I served on the GSN Board of Directors from 2005 to 2010 and was its Chairman from 2008 to 2010. I have also served on the GSN Foundation's Board since 2005.

My involvement with minerals exploration continues as well by serving on the Board of Directors of various junior uranium and gold exploration companies such as AuEx Ventures. Presently, I am actively involved with a private company exploring for uranium in Argentina.

Exploring for minerals just does not get old or boring. I have the same passion today for discovery and adventure as I did when I graduated from college. I will never really retire from minerals exploration. It is just too much fun.

Upcoming Events

**Jan. 10
Monday** The Northern Nevada Section of the Society for Mining, Metallurgy, and Exploration
Monday, January 10th, 2010
Social Hour 6 PM
Dinner 6:45 PM and Technical Session, at 7:30 PM
Circus - Circus Hotel and Resort, Mandalay Room in Convention Center
(Casino Entrance at the corner of 5th Street and North Sierra Street.)
500 N Sierra Street, Reno, NV

Members \$22/person and Non-Members \$25/person payable at the door
RSVP Required by noon, THURSDAY, January 6th 2011
Call Neville Rhoden at (775) 746-4856
or email: hrhoden61@gmail.com

The Copperstone Mine , La Paz County Arizona
Joe Fabrizio - American Bonanza Gold Corp
www.smennv.org

GSN Foundation Raffle and Silent Auction

To all of our donors to this year's Raffle and Silent Auction, we sincerely thank you! With your gifts, we were able to raise more than \$10,000 for the GSN Foundation, which will go to support a variety of educational activities. We'd also like to thank everyone who bought tickets and made bids. Without your support, we couldn't do what we do! Happy New Year to everyone.

2010 GSN Foundation Raffle and Silent Auction Donors

Opal Adams and Rich DeLong, Enviroscientists, Inc
Ric Allison, A & A Equipment
Tom Anderson
Susan Austin, Wild Horse Resort and Spa
Liz Ball, Mackay School of Earth Sciences and Engineering
Barrick Gold North America
Melissa Bell, UNR College of Science
Jim Bright estate
Dennis Bryan, Western Lithium Corp
Holly and Kel Buchanan
Tom Callicrate and April Barber
Jon Carpenter, Ruen Drilling
Alan Coyner, NDOM
Tim Crowley, Nevada Mining Association
Ken Cunningham and Phyllis Brock, Miranda Gold
Alan Day
Greg and Lacey French
Ross Grunwald
Fred Holabird
Jack Hursh
Ana John
Susan Judy, Stone Quilt Designs
Dan Kappes, Kappes Cassidy & Associates
Dana Sue Kimbal, Coeur Rochester Mine

D.D. LaPointe
GSN Foundation Trustee
Nevada Bureau of Mines and Geology/MS178
University of Nevada, Reno
Reno, NV, 89557-0178

Pam Klessig, Western Uranium Corp
Dieter Krewedl
Paul Lechler
Mark Lewis, Legend Inc.
Mackay Rockhounds – Erica Romero
Marilyn Miller and Patrick Mohn
Mike Owens, Stone Age Quarry
Cami and Neil Prens
Beth and Jon Price
Becky Purkey
Ena and H. Neville Rhoden
Dan and Maureen Rovig
Leslie Rumph
Debbie Russell
Laura and Eric Ruud
Janette Steele, CGS
Roger Steininger
Mark Stock, Global Hydrologic Services, Inc.
Mary Stollenwerk, ALS Chemex
Debra and Eric Struhsacker
Lance Taylor, Geotemps Inc.
Mack Taylor
Peter Vikre
Scott Werschky, Miners Lunchbox

Rachel Dolbier
GSN Foundation Trustee
W.M. Keck Museum/MS 0168
University of Nevada, Reno
Reno, NV, 89557-0168



"The Nevada Mineral Exploration Coalition is the voice of Exploration in Nevada politics.

We need your help to insure that the Exploration Community is not ignored again.
Go the www.nvmec.org and download a membership form - be part of the solution!"

2010 Field Trip to Nevada

We were going on a field trip from Germany to the western United States. We wanted to see great geology as well as ore deposits and modern mining technology. So I thought: what better way to show the students amazing geology, modern-day mining, and a world-class economic district than visiting Nevada!

Kathy Sestanovich from the GSN, with help from Lynne Volpi, was kind enough to help me establish contact with several mines and on September 23rd we arrived at the *Round Mountain Gold Mine*. Terry Jennings from **Kinross/Round Mountain Gold Corp.** kindly agreed to provide us with a tour. After a whirlwind introduction to the local geology and mineralization by Craig Pickens, who slowed down just for us, and the donning of proper attire, we headed out to the edge of the pit to witness a scheduled blasting. Many questions were asked while we waited for the bang and very comprehensive answers given in return. Once the dust had settled we jumped onto the company bus and drove into the pit to stop at several locations to examine the different types of volcanic rock, their properties, alteration, and mineralization potential. There was excitement in the air as the students tried hard to find the elusive gold nuggets rumoured to exist around here.



Checking out the rocks and looking for gold in the Round Mountain pit.

After touring the various rock units and getting a primer on the heap leaching sites we were privileged to get to visit the mill. Everybody was impressed with the operation of this high-tech facility and the fact that five people run the entire processing unit. The viewing of spectacular gold specimens at the end of the tour will forever be remembered by all. Having experienced the sights, sounds, and knowledge of Round Mountain we headed northeast towards Elko into a beautiful sunset.

The next day found us in Elko where we met Joseph Becker from **Newmont Mining Corp.**, in front of the Newmont offices. We boarded a proper tour bus and headed out to the *Gold Quarry deposit*. Standing on the edge of the open pit Joseph Becker provided a comprehensive account of and valuable insight into the geology of the deposit, its operation, and the intricacies of running such a mining operation. He was willing and able to answer all of our questions and also talk about gold exploration and mine management in general, a rare and valuable insight for many students.

Then we were presented with a Caterpillar 793 D mining truck, which had been parked there just for us! We had a chance to get up close and personal with this behemoth of a machine. It properly illustrated just how much labour it takes to mine, move, and process all that rock to get the gold out. It did not take us that much work to enjoy the lunch that Newmont kindly provided for us.

On the way back we stopped at the processing plant to see how the ore is processed. Especially interesting was to hear how much of every dollar extracted from the ground has to be invested into infrastructure, salaries, and equipment to keep a gold mine running. We learned that there are a lot more expenses and costs than meet the eye.

During our visits we received expert guidance, information, and valuable insight into modern gold mining and the logistics and economics that drive the business. We felt privileged to visit the Nevada mining community and two very interesting and modern mines and would like to express our gratitude to Newmont and Kinross for hosting us.



That is one big mining truck you got there!

Christian Schardt
Assistant Professor
Department of Mineralogy and Economic Geology
RWTH Aachen University, Aachen, Germany



GSN Winnemucca Chapter Meeting January 12, 2011

WESTERN LITHIUM'S NEVADA HECTORITE A NEW SOURCE OF LITHIUM FOR THE ELECTRIFICATION OF TRANSPORTATION

Dennis Bryan
Senior VP Development
Western Lithium Corporation

ABSTRACT

Western Lithium Corporation (WLC) is undertaking the development of a world class domestic lithium deposit in response to the general acceptance of lithium as the battery of choice to power the electric vehicles of the future. Lithium demand, in the form of lithium ion batteries, is expected to increase by orders of magnitude by the end of the decade as portable devices requiring lithium measured in grams morphs into vehicle batteries with lithium measured in kilograms.

Western Lithium's deposit is a lithium-rich smectite clay, including hectorite, found in Late Tertiary lacustrine and volcanoclastic sediments associated with the McDermitt Caldera in Northern Humboldt County, Nevada. The clays are incorporated in lacustrine "moat" sediments formed within the collapsed caldera between the outer caldera wall and interior resurgent rhyolite domes. The lithium was believed to be introduced into the sediments by hot springs associated with hydrothermal leaching of the nearby rhyolites which are anonymously high in lithium.

Lithium was originally identified in the area by the USGS in the late 1970's. Chevron Resources, exploring for uranium in the area at the time, became interested in the lithium potential and during the early 1980's initiated a drilling and evaluation program which delineated a potential deposit of approximately 2 million tons of lithium.

Western Uranium Corporation acquired the property several years ago and three years ago spun off WLC to pursue and develop the property. WLC has undertaken an extensive drilling and evaluation program that- has further confirmed some of Chevron's original historical resource estimates. WLC has refined the deposit model and ore types present and extensive metallurgical testing and engineering evaluation is currently underway to assess the economics of producing lithium from the hectorite clay.

The vast majority of the World's lithium currently comes from brine deposits from salars high in the Andes of South America. WLC believes that as lithium demand greatly expands in the coming decade the Kings Valley Lithium deposit is positioned to be a viable domestic player in the lithium market.



WINNEMUCCA CHAPTER JANUARY MEETING SPONSOR

MAJOR

Drilling America, Inc.

2200 South 4000 West 801-908-1032
Salt Lake City, UT 84120 Fax: 801-973-2994

www.majordrilling.com

**Thanks to Carlin Trend Mining Supplies & Services and Golder Associates
for Sponsoring the Winnemucca Chapter's December Meeting**

Activity Update

Mike Brady, November 2010

Nevada

www.activityupdate.com

Navaho Gold Pty. Ltd. announced that it acquired an option to earn a 75% interest in the Taz Property from Miranda Gold Corp. for \$4,000,000 in exploration expenditures over 4 years. *Press Release:* November 5

Western Lithium Corp. announced that based on recent drill results at the Kings Valley/Stage 1 Project, resources aggregate 11,000,000 tons @ 0.43% Li indicated and 11,000,000 tons @ 0.42% Li inferred. *Press Release:* November 18

Timberline Resources Corp. announced that recent drill results at the South Eureka Project include 265-595 feet @ 0.031 opt Au (BHSE-035); 130-165 feet @ 0.092 opt Au (BHSE-034); 220-290 feet @ 0.016 opt Au (BHSE-034) and 140-165 feet @ 0.196 opt Au (BHSE-032). (resource = 4,753,000 tons @ 0.020 opt Au measured) *Press Release:* November 15

Rye Patch Gold Corp. announced that recent drill results at the North Jessup Project include 170.7-175.3 meters @ 0.012 opt Au (JR10-050); 47.2-70.1 meters @ 0.022 opt Au (JR10-051) and 33.5-53.3 meters @ 0.014 opt Au (JR10-052). *Press Release:* November 23

Rye Patch Gold Corp. announced that recent drill results at the Jessup/San Jacinto Project include 27.4-36.6 meters @ 0.008 opt Au (JR10-048) and 80.8-85.3 meters @ 0.066 opt Au (JR10-057). (resource = 8,571,000 tons @ 0.015 opt Au, 0.25 opt Ag measured) *Press Release:* November 23

Midway Gold Corp. announced that recent drill results at the Pan Project include 28.0-74.3 meters @ 0.042 opt Au (PN10-06C); 18.3-108.2 meters @ 0.022 opt Au (PN10-09C) and 1.5-72.5 meters @ 0.013 opt Au (PN10-14C). (resource = 34,650,000 tons @ 0.018 opt Au measured+indicated) *Press Release:* November 8

Frontier Gold Corp. announced that recent drill results at the Long Canyon Project include 50.4 meters @ 0.359 opt Au (LC577C); 49.2 meters @ 0.184 opt Au (LC568C); 32.9 meters @ 0.214 opt Au (LC591C) and 28.5 meters @ 0.211 opt Au (LC588C). (resource = 13,464,000 tons @ 0.050 opt Au measured+indicated) *Press Release:* November 15

Evolving Gold Corp. announced that recent drill results at the Jake Creek Project include 210.3-256.0 meters @ 0.028 opt Au (JC-05). *Press Release:* November 18

Entrée Gold Inc. announced that recent drill results at the Blue Hill Project include 18.29-182.88 meters @ 0.18% Cu (EGBH10-01); 39.62-51.82 meters @ 0.23% Cu (EGBH10-02); 7.62-68.58 meters @ 0.19% Cu (EGBH10-03) and 88.39-121.92 meters @ 0.17% Cu (EGBH10-04). *Press Release:* November 17

Entrée Gold Inc. announced that recent drill results at the Blackjack Project include 444-448 meters @ 0.44% Cu (EGB10-01); 218-230 meters @ 0.18% Cu (EGB10-03); 136-156 meters @ 0.20% Cu (EGB10-04) and 96-106 meters @ 0.12% Cu (EGB10-07). *Press Release:* November 23

Corvus Gold Inc. announced that recent drill results at the North Bullfrog/Jolly Jane Project include 54.9-103.6 meters @ 0.008 opt Au (NB10-42); 51.8-59.4 meters @ 0.011 opt Au (NB10-43); 74.7-112.8 meters @ 0.010 opt Au (NB10-44) and 53.3-123.4 meters @ 0.010 opt Au (NB10-45). *Press Release:* November 18

Max Resource Corp. announced that recent drill results at the Diamond Peak Project include 155-180 feet @ 0.017 opt Au (DP-2). *Press Release:* November 24

Allied Nevada Gold Corp. announced that recent drill results at the Hycroft/Vortex Project include 309-542 meters @ 0.021 opt Au, 1.96 opt Ag (H10D-3896) and 295-487 meters @ 0.015 opt Au, 0.61 opt Ag (H10D-3503). *Press Release:* November 23

Allied Nevada Gold Corp. announced that recent drill results at the Hycroft/Brimstone Project include 124-148 meters @ 0.016 opt Au, 1.77 opt Ag (H10R-3996); 137-174 meters @ 0.027 opt Au, 0.60 opt Ag (H10R-3997); 166-183 meters @ 0.014 opt Au, 1.46 opt Ag (H10R-3999) and 178-218 meters @ 0.021 opt Au, 2.19 opt Ag (H10R-4000). (resource @ Hycroft = 510,918,000 tons @ 0.014 opt Au, 0.36 opt Ag measured+indicated) *Press Release:* November 19



Each month the GSN Newsletter features a member in "Faces of GSN". Please consider nominating a colleague for this highlight by submitting a biographic write-up and an appropriate photograph of the nominee to Kathy at the GSN Office gsn@gsnw.org.

PAID ADVERTISEMENTS

DRIFT EXPLORATION DRILLING INC,S
 NEW MAXIDRILL
 SAFE HANDS FREE PIPE HANDLING
 40 000 LBS PULLBACK
 500 PSI/1150 CFM COMPRESSOR

THIS UNIT IS CAPABLE OF
 1500' . DRILL WILL BE IN
 NEVADA THE 1ST OF
 SEPTEMBER 2010



CLASSIFIED ADVERTISEMENT

Older geophysical gear for sale: magnetometers, IP receiver, scintillometers, differential dual frequency GPS receivers, walkie-talkies. Visit www.bigskygeo.com for further details or call Clark at 1-406-587-6330.



**GSN Newsletter
 Monthly Advertising Rates**

Business Card Size (3 ¹ / ₂ x 2")	\$50.00
Quarter page (3 ¹ / ₂ x 4 ³ / ₄ ")	150.00
Half Page (4 ³ / ₄ x 7 ¹ / ₂ ")	300.00
Classified ads (per line) (up to business card size)	10.00

For an advertising form, call the GSN office at 775-323-3500, fax 323-3599, email gsn@gsnv.org, or download the form from the GSN website:
<http://www.gsnv.org/membership.html>

Digital or text ads must be received by the 20th of the month to appear in the following month's newsletter.

There will be a 10% discount on all orders for 10-months or more.



A CORE DIFFERENCE

- Support for active mine operations and mine development projects.
- Underground and surface drilling capabilities.
- Maximum returns on client investments
- Uncompromised safety and stewardship.
- Unparalleled customer service



Coeur d'Alene, Idaho – 208.665.7211
Elko, Nevada – 775.777.1100

www.timberline-drilling.com



Serving Mining in Nevada Since 1992

General Engineering Contractor
Drill Pads
Road Building
Reclamation
Earthwork

Office: 775-753-5832
Mobile: 775-778-1681
Mobile: 775-934-1315
www.legarza.com

NV License #35480
CA License #804120



Fire Assay, ICP-OES/MS,
XRF, LECO, Custom Prep,

Chris Ioannakis, Managing Director, Analytical Services

Corporate Office
1500 Glendale Avenue
Sparks, NV USA 89431-5902
Telephone: (775) 356-0606
Fax: (775) 356-1413

Elko Office
2320 Last Chance Road
Elko, NV USA 89801-4852
Telephone/Fax : (775) 738-9100

E-mail: AALADMIN@aallabs.com

**We provide the tools,
supplies and support
to help you do the
job right!**

Safety
Signs
SWPPP
Sales
Support
Rentals

1055 Glendale Ave.
Sparks, NV 89431
Tel: 775.355.3424
www.GraniteConstructionSupply.com



North American Exploration

Providing service to the Mining industry since 1964



With over 45 years of experience, we will complete any exploration project, Anytime! Anywhere!

Project Management
Geochemical Sampling
Claim Staking
Land Status
Research/Permitting
Drill Design
Environmental Services
Geology
Hydrology
 Call us any time!

801-544-3421

North American Exploration, Inc.
 447 North 300 West, Suite #3
 Kaysville, Utah 84037
 Email: nae@nae-exploration.com



The Global Leader in Analytical Data Service for the Mining Industry.

WE SPECIALIZE IN:

- Assaying and geochemical analyses for mining and mineral exploration projects
- ISO 9001:2008 and 17025:2005 accredited analysis methods
- Updated Webtrieve™ on-line and state-of-the-art web data access system
- Digital mineralogy services with MLA
- New lower detection limits for geochemical studies

Contact us to discuss a cost effective solution to your exploration analysis requirements.

ClientServicesUSA@alsglobal.com
775-356-5395

USA LOCATIONS

Elko | Reno | Winnemucca | Fairbanks

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



At Timberline Drilling, Inc. we have a fleet of drills to meet every need. We specialize in both underground and surface core drilling in support of active mining operations, mine development projects and exploration.

Timberline Drilling, Inc. - Corporate
 Martin Lanphere: 208.755.1938
mlanphere@timberline-drilling.com

Timberline Drilling, Inc. - Mexico Operations
 Paul Elloway: 52.662.151.0426
pelloway@wwemexico.net

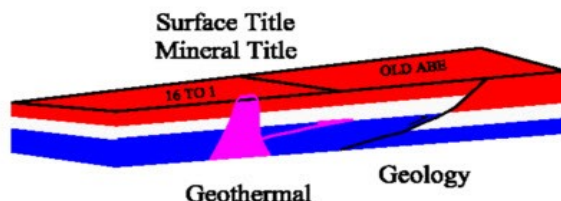
Timberline Resources Corp.
 Randy Hardy: 208.664.4859
hardy@timberline-resources.com

Visit Us At:
www.timberline-drilling.com
 for detailed information on all of our available drill rigs.

G.I.S. Land Services

Greg Ekins M.S. R.P.L. #32306 President
 Mineral Landman - Commissioned Abstractor
 "From Courthouse Records to Final Map"

Mineral Title, Geothermal Title,
 National Instrument (NI) 43-101 Title Review,
 Due Diligence
 3D AutoCad; ArcMap and MapInfo GIS



A professional firm of
Landmen, Geologists, Draftsmen and Technicians
 Providing Abstracts of Title, Land Status and
 Exploration Geology Services
 Utilizing AutoCad - ArcMap - MapInfo - PowerPoint
www.gislandservices.com

241 Ridge St., Suite 250
 Reno, NV 89501
 Ph: 775-746-8803 Fax: 775-746-8802
 email: greg@gislandservices.com



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



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



EXPLORATION DRILLING INC.

A subsidiary of:
ORBIT GARANT DRILLING

www.orbitgarant.com

RC Drilling, Core Drilling Surface & Underground
Contractors License # 59509

6120 Pedroli Lane Tel 403-652-5530
Winnemucca N.V. 89445 Fax 403-652-5578
Email infodriftdrilling@platinum.ca

Exploration & Mining Analytical Services



INSPECTORATE

INSPECTORATE AMERICA CORP.

605 BOXINGTON WAY, SUITE 101
SPARKS, NV 89434-8929
Phone: 775.359.6311 * Fax: 775.359.2944
<http://www.inspectorate.com>

Carmen Arbizo-Business Development Mgr
Carmen.Arbizo@Inspectorate.com
Mobile: 775.219.8657

Richard Thorneloe-General Mgr
Richard.Thorneloe@Inspectorate.com
Mobile: 775.691.5832

Dave Williams-Vice President
Dave.Williams@Inspectorate.com
Mobile: 775.848.8025

Chuck Whipple-Quality Assurance/Client Service Mgr
Chuck.Whipple@Inspectorate.com
Mobile: 775.830.4242

Brian Park-Li-Technical Manager
Brian.ParkLi@Inspectorate.com
Mobile: 775.691.5834

MINIMIZING RISK EVERY DAY
ISO 9001:2000 Certificate #30406



Quantec Geoscience

Global Geophysical Services

Surveys: IP/Resistivity, EM, Gravity, MT, TEM, CSAMT, Magnetics

Consulting: 2D & 3D Inversion, Project Design, Modelling

Leaders in Deep Exploration

Deep Earth Imaging Technology



Minesite Imaging: Exploration, Delineation, Condemnation

www.QuantecGeoscience.com 1.775.827.2611

Canada • USA • Botswana • Peru • Chile • Argentina • Australia



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

creating solutions for today's environment



Eric O. Ruud
Manager, Southwest USA
Region & Mining Sector

Geobrugg North America, LLC
Geobrugg Protection Systems
1500 Glendale Avenue
Sparks, Nevada 89431
USA

Phone (775) 626-7474
Fax (775) 626-7479
Mobile (775) 843-3424

info@us.geobrugg.com
www.geobrugg.com
eric.ruud@geobrugg.com

Big Sky Geophysics

Clark Jorgensen, M.Sc.
Geophysicist

*Field Work
Processing
Interpretations*

P.O. Box 353 Phone/Fax +1 (406) 587-6330
Bozeman, Montana 59771 Mobile +1 (406) 580-9718
USA clark@bigskygeo.com

For more details, my background, and case studies,
visit my webpage at www.bigskygeo.com

Jo Beth Allen Professional Graphics

*CAD Drafting/Geologic Data Maps
Digitizing/Presentation Graphics
PowerPoint/Plotting/Printing
Geologist*

1055 Joshua Drive
Reno, Nevada 89509

Phone: 775-324-7960
Fax: 775-324-7583

jobeth@yellowsub.net

HARD ROCK WHEELS, INC.

4WD Pickup Rentals

Howard J. Adams
14756 Pine Knolls Lane
Reno, Nevada 89521
(775) 852-2622
Fax (775) 852-2075

Taiga Ventures
2700 S. Cushman St.
Fairbanks, Alaska 99701
(907) 452-6631

hardrockwheels@yahoo.com

AERO TECH MAPPING PHOTOGRAMMETRIC SPECIALISTS



Providing superior quality mapping productions in a timely manner, while building strong working partnerships.

- » Digital Imagery & Airborne GPS
- » Digital Topographic Mapping
- » Digital Terrain Models (DTM)
- » Digital Ortho Photography
- » Mining Specialists
- » Mining Updates & Reclamation
- » Volumetric Calculations & Environmental Monitoring

www.atmlv.com

Reno Office
Gary Poland
Phone 775-853-0900
Fax 775-853-6899
garypoland@atmreno.com

Las Vegas Office
Leo Torres
Phone 702-228-6277
Fax 702-228-6753
leotorres@atmlv.com

Phoenix Office
Lyle Slater
Phone 623-242-7656
Fax 623-242-8939
lslater@atmaz.com



Sierra Environmental Monitoring
Analytical Testing Services

Water	Hazardous Waste (RCRA)
Wastewater	Mining Industry
Brines	Specialized Testing

Email: jnava@sem-analytical.com
Tel: 775-857-2400

Website: sem-analytical.com



GEOLOGICAL SOCIETY OF NEVADA



gsn@gsnv.org • www.gsnv.org
Telephone (775) 323-3500 Fax (775) 323-3599
2175 Raggio Parkway, Room 107
Reno, NV 89512
USA