

NEWSLETTER

Serving the Petroleum and Geothermal Community

Nevada Petroleum and Geothermal Society; P. O. Box 11526; Reno, NV 89510

Visit our NPS Homepage: <http://www.nbmgs.unr.edu/nps/>

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Dinner Meeting: Thursday, Apr 3, 2014

- Speaker:** Dr. James E. Faulds, NBMG Director-State Geologist / Professor, Nevada Bureau of Mines and Geology, University of Nevada, Reno
- Topic:** Why is Nevada in Hot Water?
New Approaches to Understanding and Harnessing Nevada's Vast Geothermal Resources
- Place:** Ramada Reno Hotel
1000 East 6th Street, Reno, Nevada

Cocktail Reception 6:30; Skyline Room, 14th Floor

HOSTED BY:



Dinner Served at 7:00 PM

Dinner Costs:

NPGS Members \$ 20; Non-Members \$23; Students \$10

RSVP with the following link to make reservations for the Apr 3rd Dinner Presentation.

<https://docs.google.com/forms/d/1XaQ8bJu5Ktmd6DZH0D2Xdqj9pAEWbPejPSIJDuQnFgE/viewform>

Keep in mind that NPGS is charged for every meal that is reserved.

SEE CALENDAR Page 19 for upcoming meetings

► **NPGS Monthly Dinner Meeting –Apr 3, 2014**

**NEVADA PETROLEUM AND GEOTHERMAL SOCIETY
THURSDAY, April 3 DINNER MEETING**

Why is Nevada in Hot Water?

New Approaches to Understanding and Harnessing Nevada's Vast Geothermal Resources

James Faulds, Nevada Bureau of Mines and Geology, University of Nevada, Reno

Although conventional geothermal systems have been successfully exploited for electrical production and district heating in many areas, exploration and development of new systems is commonly hampered by the risk of unsuccessful drilling. A major problem in selecting the best sites for geothermal development has been a lack of characterization of structural-stratigraphic controls for known systems. We have therefore completed a comprehensive inventory of the structural settings of all known geothermal systems (426 total) in the Great Basin region of the Basin and Range province (western USA), combining conventional tools of detailed mapping and structural analysis with innovative techniques of 3D modelling and slip and dilation tendency analysis. Characterization of known fields is especially important for discovering blind or hidden systems (i.e., with no surface expressions such as hot springs), which probably comprise the bulk of geothermal resources in any region.

Abundant geothermal activity in the Great Basin region is intimately related to the tectonic setting. Interestingly, volcanism plays only a minor role, as it generally ceased in late Miocene time. Thus, upper crustal magma chambers generally do not supply heat for the geothermal activity. Instead, most geothermal systems are fault controlled. Geothermal activity is concentrated in areas with the highest strain rates along or proximal to the eastern and western margins of the Great Basin, with high temperature systems clustering in transtensional areas of highest strain in the NW Great Basin. In the western Great Basin, a system of NW-striking dextral faults known as the Walker Lane accommodates ~20% of the North American-Pacific plate motion and is kinematically linked to N- to NNE-striking normal fault systems throughout the region. Enhanced extension in the NW Great Basin probably results from the NW termination of the Walker Lane and the related transfer of dextral shear into WNW-directed extension. The capacity of geothermal power plants correlates with strain rates, with the largest (hundreds of MW) along the Walker Lane and San Andreas fault systems, where strain rates are ≥ 1 cm/yr. Lesser systems (tens of MW) reside east of the Walker Lane, where strain rates are much less. Our inventory of structural settings of known geothermal systems in the Great Basin shows that most reside in 1) step-overs (or relay ramps) in normal fault zones (32%), which are characterized by overlapping fault strands, increased fracture density, and thus enhanced permeability; 2) normal fault terminations (25%), where horse-tailing generates a myriad of closely-spaced faults and thus increased permeability; 3) fault intersections (22%), where multiple minor faults typically connect major faults and fluids can flow readily through highly fractured, dilational quadrants; and 4) accommodation zones (9%), which contain multiple fault tips and intersecting faults. Our 3D models of several systems indicate that geothermal upwellings in these settings are focused in pipe-like bodies of higher fault density oriented approximately perpendicular to the least principal stress. Further, many higher enthalpy systems are actually hybrids and contain more than one type of favorable setting (e.g. fault tip in accommodation zone). Quaternary faults lie within or near most geothermal systems. Geothermal fields are rare along major range-front faults due to reduced permeability in thick zones of clay gouge and periodic release of stress in major earthquakes. The favorable settings correspond to long-term, critically stressed areas, where fluid pathways are more likely to remain open in breccia-dominated fracture networks.

Similar findings in other extensional settings (e.g., western Turkey) bodes well for developing systematic exploration strategies in continental rifts worldwide. This also demonstrates that relatively inexpensive geologic studies should be conducted and integrated with geophysical data to define the structural setting prior to expensive

drilling. Systematic workflow can reduce the risks in geothermal exploration and ultimately facilitate extensive development of what may be the world's most readily available form of energy.

► **About the Speaker:**

Dr. James E. Faulds, NBMG Director-State Geologist / Professor, Nevada Bureau of Mines and Geology (NBMG), University of Nevada, Reno (UNR)

Jim has been with NBMG (Nevada's geological survey) since 1997, originally as a Research Professor and since 2012 as Director and State Geologist. He specializes in structural geology, tectonics, and geothermal systems. He has studied crustal deformation in many parts of the world, including several regions of the western U.S. and western Turkey. Much of his research has focused on how fault systems initiate and evolve through time. He has published widely on extensional and strike-slip tectonics and the structural controls on geothermal activity. For the past 10+ years, he has been analyzing geothermal systems in the western U.S. and western Turkey and recently completed a catalogue of the structural settings of >400 geothermal systems in the Great Basin region. His geothermal work included a one-year sabbatical fellowship from the Le Studium program in France that facilitated work in Turkey. His research has contributed to developing more sophisticated exploration strategies for geothermal systems. He has also taught courses in structural geology, tectonics, geothermal exploration, and field geology, including directing UNR's geology field camp for 5 years. He has served as advisor for about 25 graduate students. He also previously served as President of the Nevada Petroleum and Geothermal Society and is a Fellow with the Geological Society of America.

Jim earned his B.S. (with highest honors) at the University of Montana, his M.S. at the University of Arizona, and his Ph.D. at the University of New Mexico. Following completion of his education, he held postdoctoral research positions at the University of Nevada, Las Vegas and at the University of Southern California. He was on the faculty at the University of Iowa for several years before coming to UNR.

► **Cocktail Reception 6:30 Hosted by Timberline Drilling:**



Cody Unger

Business Development

Timberline Drilling

Cell 775-385-5015, Office 775-777-1100

cunger@timberline-drilling.com

► **WELCOME NEW NPGS MEMBERS:**

Carter, Clifford	Student, UNR & TMCC	Virginia City, NV
Raydon, Gerald	Geologist ACIC Management	Reno, NV
Sels, Andrew	National Oilwell Varco	Mound House, NV
Zlotkowski, Jay	Horizon Well Logging, Inc.	Lompoc, CA

► **NPGS Officer Elections 2014-2015 (Jun 1-May31):**

According to the NPGS Bylaws (ARTICLE II - Officers, SECTION 6. Election of Officers), "... in the event that only one candidate for Vice President/President-Elect, one candidate for Secretary, and one candidate for Treasurer are present on the ballot, then these candidates can be elected by a majority vote of the members eligible to vote at the regularly scheduled meeting ..."

As there is only one candidate for each of these three offices for the 2014-2015 term, a vote will be held at the regularly scheduled April dinner meeting for the election of these officers.

The candidates are:

Vice President/President-Elect	John Snow, Chief Operating Officer, Standard Steam
Secretary	Jerry Walker, Geologist
Treasurer	Steve Foster, Geophysicist/Geologist

► **Donations for 2014 Graduate Student Research Awards:**

Special thanks to all those members who augmented their membership renewals with a little extra hard cash for the NPGS graduate student research awards. Because of their generosity, the NPGS raised \$710 in donations for scholarships to students who are researching topics on the bedrock geology of the Great Basin. This amount is a \$120 increase over the donations received for the 2013 awards.

GOLD LEVEL

Lou Bortz
Marl Coolbaugh
John Louie

BRONZE LEVEL

Gary Pelka
Thomas Callicrate
Michael Barber
Scott Bechard
Sean Long
Diane Phillips
John Tuttle
Jerry Walker

COPPER LEVEL

Tom Anderson
Dave Fitch
Randy Gardner
Andrew Hanson
Scott McDonald
Jim Faulds
Steve Foster
Alan Glaser
Tom Graham
James Henderson
Nick Hinz
Mark Pahler
Forrest "Barney" Poole
Lowell Price
Rick Stucker
Dan Sturmer
Richard Zehner

SILVER LEVEL

Marilyn Miller
Judy Kareck

► **2014 NPGS Graduate Student Research Awards:**

The NPGS received nine proposals for its Graduate Student Research Awards in Geosciences in 2014. This is a decrease of two proposals from last year's 11. Five thousand three hundred and fifty dollars in grants, a decrease of \$150 from 2013, were made to eight student applicants.

- 1) **Michael Evans** (M.S. candidate at the University of Nevada, Las Vegas), **\$1,000** – *Structural development and tectonic role of the Arrowhead Mine Fault, Pahranaagat Shear Zone, Nevada*
- 2) **Shaimaa Abdelhaleem** (M.S. candidate at the University of Nevada, Las Vegas), **\$1,000** – *Kinematics and timing of the eastern part of Las Vegas Valley Shear Zone, Nellis Dunes area, Nevada*
- 3) **Chad Carlson** (Ph.D. candidate at the University of Nevada, Reno), **\$750** – *Strain transfer at the northern termination of the central Walker Lane, Terrill Mountains, western Nevada*
- 4) **Holly McLachlan** (Ph.D. candidate at the University of Nevada, Reno), **\$750** – *Determining the subsurface stratigraphy and modeling first order structural controls on basin floor topography and fluid flow in the Carson Sink Basin, northwestern Nevada*
- 5) **Sarah Evans** (Ph.D. candidate at the University of Nevada, Las Vegas), **\$500** – *Sedimentology and geochronology of late Eocene to early Oligocene conglomerates, east-central Nevada and west-central Utah*
- 6) **Nicholas Paasche** (M.S. candidate at the University of Nevada, Reno), **\$500** – *A sensitivity analysis of parameters controlling heat flow in a geothermal reservoir*
- 7) **Stephen Angster** (Ph.D. candidate at the University of Nevada, Reno), **\$500** – *The big step: a neotectonic link between Cascadia and the Walker Lane*
- 8) **Andrew Sadowski** (M.S. candidate at the University of Nevada, Reno), **\$350** – *Structural controls of the Black Warrior geothermal system, Truckee Range, Washoe County, Nevada*

Congratulations to all the students. Thanks to Jim Trexler, Chair of the Scholarship Committee this year, for organizing this important annual event. Thanks also to Bill Ehni, Alan Wallace, and Jerry Walker for their work on the Committee this year. Finally, special recognition is in order for the members who contribute to the NPGS Scholarship program during the membership renewal, enabling the NPGS to distribute additional funding to these students.

► **Upcoming Nevada BLM Geothermal Lease Sale; Sep 9, 2014:**

http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal0/ggeothermal_leasing.html

► **Scheduled BLM Oil & Gas Lease Sales: Parcel listings are available.**

***Nevada's Competitive Oil & Gas Lease Sale Schedule
(Tentative)***

Sale Date	Parcels Offered for District Office at Sale	*EOIs Due	Sale Posting Date	Protest Deadline
June 24, 2014	Elko/Southern Nevada	June 13, 2013	March 21, 2014	April 20, 2014
July 17, 2014	Battle Mountain	September 13, 2013	April 14, 2014	May 16, 2014
September 9, 2014	Winnemucca/Carson City	December 13, 2013	June 11, 2014	July 11, 2014
December 9, 2014	Ely	March 14, 2014	September 10, 2014	October 10, 2014

*EOI = Expression of Interest

NOTE: For a listing of parcels for the June & July sale, use the following link:

http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/oil_gas/oil_and_gas_leasing.html

► ***AAPG Rocky Mountain Section Annual Meeting:***

July 20-22, 2014 – Denver Convention Center, Denver CO

Earlybird registration begins April 2014. Flyer in this newsletter.

www.aapgrms.org/2014

► ***News from Nevada Bureau of Mines & Geology:***

From: Charlotte Stock

The following information is taken directly from emails provided by Charlotte Stock, Nevada Bureau of Mines & Geology

Stay Informed about NBMG

Subscribe to our email list by sending an email to webmaster@nbgm.unr.edu with “subscribe to Publications mailing list” in the subject line

Subscribe to our blog <http://nbgm.wordpress.com/>

“Like” our Facebook page <https://www.facebook.com/pages/Nevada-Bureau-of-Mines-and-Geology/106397989390636>

You can place an order for other publications or check for shipping charges through our shopping cart at

<http://www.nbgm.unr.edu/Departments/PubSales/PubSales.html>

>Nevada Mineral Industry 2012

MI-2012: The Nevada Mineral Industry 2012, by John L. Muntean, David A. Davis, Lisa Shevenell, and Benjamin McDonald, 2014

Starting in 1979, NBMG has issued annual reports that describe mineral and geothermal activities and accomplishments in Nevada, and include statistics of known gold and silver deposits.

This report describes mineral, oil and gas, and geothermal activities and accomplishments in Nevada in 2012: production statistics, exploration and development including drilling for petroleum and geothermal resources, discoveries of orebodies, new mines opened, and expansion and other activities of existing mines. Statistics of known gold and silver deposits, and directories of mines and mills are included.

Available free on the Web:

<http://www.nbgm.unr.edu/dox/mi/12.pdf>

>Special Publication MI-2012, 177 pages (includes 19 pages in color)

Active Mines and Energy Producers Map

OF14-1: Nevada active mines and energy producers, by John Muntean and David A. Davis, 2014

Site locations and information on this map were obtained from a variety of published and non-published sources with the last updates made in December 2013. All sites shown on this map have had some form of production activity during 2012 and 2013.

This map was prepared in cooperation with the Nevada Division of Minerals.

Available free on the Web:

<http://www.nbgm.unr.edu/dox/of141.pdf>

Purchase:

<http://www.nbgm.unr.edu/sales/pbsdtls.php?sku=OF14-%201>

Open-File Report 14-1, 32x36-inch color plate, scale 1:1,000,000, \$16.00

>Calendar Contest Deadline – now June 30, 2014

Do you have an amazing photo of Nevada geology that you would like to see in the next 2015 Nevada Geology Calendar? Entries are still being accepted for this photo contest! The deadline has been extended to June 30, 2014.

Here is information about the current published 2014 calendar: <http://www.nbgm.unr.edu/sales/pbsdtls.php?sku=CAL2014>

Nevada Petroleum and Geothermal Society; Apr 2014

Here are the details for the 2015 calendar contest:

- Deadline for entries is now June 30, 2014.
- Photos need to be taken in Nevada. A location description and/or GPS coordinates should accompany submissions along with description.
- High-quality, high-resolution photo files of at least 300 dpi are required for quality printing.
- You may enter as many photos as you wish.
- E-mail submissions to Jack Hursh (jhursh@unr.edu).
- NBMG Cartographers will make the final decision on the winning photos.

•Prizes will be awarded for first-, second-, and third-place winners.

http://www.nbmq.unr.edu/docs/2015_Calendar_photo_contest.pdf

>BLM Job Announcement

We are pleased to announce a new, exciting position available at BLM - BUREAU OF LAND MANAGEMENT. It is our hope that qualified, career oriented individuals at your organization or other professionals known to you will actively consider this position and apply accordingly. Efforts on your part to disseminate this information are greatly appreciated.

Position Information:

Job Description: Planning and Environmental Coordinator

Announcement Number: WY-Merit-2014-0058

Location(s) of position: Cody, WY, US

Salary: \$57,982 - \$75,376

Applications will be accepted until: 04/03/2014.

For additional information on this job posting, please go to:

<https://jobs.mgsapps.monster.com/blm/vacancy/viewVacancyDetail!execute.hms?orgId=3&jnum=109504>

>GSN Field Trip – May 2-4, 2014

GSN SPRING 2014 FIELD TRIP - May 2-4, 2014

Humboldt Range, Majuba Hill, and Trinity Range (Au, Ag, Cu, Sn, W, Be, Hg, Sb, B).

From GSN Newsletter, March 2014: Register now for the GSN's Spring Field Trip coming up on Friday May 2 to Sunday May 4, 2014! Jonathan Price, GSN V.P. and field trip leader has laid out a great itinerary for the 3-day trip. We will overnight in Lovelock, Nevada both nights. This trip will be a bit different as we will be riding in 4WD vehicles so we can visit places that a bus just can't get to. Bring your rock hammers and questions and join your fellow geologists on this one-of-a-kind adventure.

Contact Laura Ruud, GSN Office Manager, for more information: gsn@gsnv.org.

>GSN Symposium 2015; May 14–24, 2015

John Ascuaga's Nugget Hotel and Casino in Sparks, Nevada

"Even as much as the world has become available for exploration over the past decade, miners continue to return to Nevada. Why? Political stability, transparent regulatory environment, good infrastructure and GREAT GEOLOGICAL POTENTIAL. Miners return to focus on Nevada's geology and its important mineral deposit types: Carlin, epithermal and intrusion-related gold and silver, as well as other deposit types (porphyry Cu and Mo, IOCG and industrial materials) are also rising in importance."

A message from Laura Ruud, GSN Office Manager: The GSN 2015 Symposium Committee has been hard at work for months now organizing the next magnificent GSN Symposium to be held May 14-24, 2015! [Please see link below for] the first announcement flyer, and we encourage you to read and share with any colleagues you wish that may not be GSN members and who will want to participate. The Committee has already started lining up the field trip itineraries, speakers, exhibitors, posters, a core-shack, and a joint GSN-SEG Forum to be held on May 17, 2015 the day before the Symposium technical sessions begin.

Questions regarding the meeting can be directed to Molly Hunsaker, Symposium Chair, at mollymhunsaker@2015gsnsymposium.org. If you have questions about submitting an abstract, or an idea for a technical paper, the Technical Program Chairs are John Muntean and Moira Smith.

Nevada Petroleum and Geothermal Society; Apr 2014

Co-hosts for the GSN Symposium 2015 are Society of Economic Geologists, Nevada Bureau of Mines and Geology, and U.S. Geological Survey.

GSN Symposium 2015 flyer:

http://www.nbmq.unr.edu/docs/GSN_2015_Symposium.pdf

>Department of Geological Sciences and Engineering—Seminar Dates

Below is the current University of Nevada, Reno DGSE seminar schedule for Spring 2014.

Spring 2014 Seminar Dates

When: from 4 to 5pm

Where: Davidson Mathematics and Science Center 105 (please note room change)

<http://www.unr.edu/around-campus/facilities/davidson>

4/07/2014 Kenjo Agustsson/Kate Zeiger
4/14/2014 Connor Newman/Dylan Baldwin
4/21/2014 Tyler Seaman/Erica Key
4/28/2014 Tim Cramer/Corina Forson
5/05/2014 John Wakabayashi

For more information, please contact:

Wendy Calvin

Prof. Geophysics & Remote Sensing

Director, Great Basin Center for Geothermal Energy

Univ. Nevada – Reno, wcalvin@unr.edu, 775-784-1785

Charlotte Stock

NBMG Publication Sales, University of Nevada, mailing address for US Mail, Fed Ex, and UPS:

Nevada Bureau of Mines and Geology

Great Basin Science Sample and Records Library

2175 Raggio Parkway

Reno, NV 89512

phone (775) 682-8766, fax (775) 784-6690

[Directions to office](#), www.nbmq.unr.edu

► **Letter from RMS-AAPG President – C. Elmo Brown:**

The Role of the Rocky Mountain Section

C. Elmo Brown, President RMS-AAPG

Until I was asked to become an officer of the Rocky Mountain Section of the American Association of Petroleum Geologists (RMS-AAPG or Section), I really didn't know what constituted the Section or the role it plays in the region. I am finding as I visit a number of the affiliated societies that I was not alone in this ignorance.

So, what is the RMS-AAPG and what is its role in relation to its affiliated societies? According to the RMS-AAPG bylaws, the sole purpose of the Section is to hold an annual meeting specifically for members of the American Association of Petroleum Geologists (AAPG) in a 12-state region covering an area from the Canadian border south to the Mexican border and east from the California border through Minnesota and South Dakota (Figure 1). However, the way the RMS-AAPG is organized and acts actually broadens that scope quite a bit so that all of the members of the 11 geological societies affiliated to the AAPG benefit from the Rocky Mountain Section.

The RMS-AAPG executive committee that runs the organization is composed of a representative from each of the affiliated organizations within the Section boundaries plus five officers selected by the affiliated societies. Since each of the affiliated societies in the Rocky Mountain Section has a very diverse membership ranging into all aspects of geology from industry (petroleum, geothermal, mining, and environmental) to government to academia, each executive committee member to the RMS-AAPG represents this diverse membership. In the last few years, the actions of the Section have also expanded from just promoting an annual meeting. This expansion has occurred through the creation of regional awards; through support of students and young professionals; through recognition of excellent earth science teachers in the region; and through direct financial support of the local affiliates. Plus, the RMS-AAPG is one of the few sections within the AAPG umbrella that has a corresponding foundation which also provides financial support to the activities of the affiliated societies.

AWARDS – Last year, the Section implemented three new awards that recognize the accomplishments of geologists in the Rocky Mountain area. The first award, the Robert J. Weimer Lifetime Contribution Award, recognizes an individual whose research and achievements have promoted understanding of the geology of the Rocky Mountain region. Dr. Robert Weimer, Professor Emeritus of the Colorado School of Mines, was the first recipient of this in recognition of his contributions in understanding the stratigraphy of the Front Range and Denver Basin of Colorado. Another award, the Rocky Mountain Landmark Publication Award, recognizes authors or editors of a publication in the last decade that had an exceptional influence on the understanding of geology. In 2013, Susan Landon, Mark Longman and Barbara Luneau were recognized for this award for a pair of publications that characterized the Niobrara Formation in the Cretaceous Western Interior Seaway. And the third award recognizes long and devoted service to the RMS-AAPG. Last year the RMS-AAPG Distinguished Service Award was presented to Lou Bortz for his long involvement with the Section and the RMS-AAPG Foundation.

An existing award that should be of interest to the members of the affiliated societies is the Teacher of the Year Award given annually to a teacher who has exhibited excellence in the K-12 classroom. Candidates are chosen by RMS officers from a slate of nominees provided by the affiliated societies. Although the Section would love to have a nominee from each of the 11 affiliated societies, right now there are only three or four societies who provide a candidate. All nominees provided to the Section by the affiliates, but not winning the award, receive a \$300 check while the winning teacher receives a plaque, a \$2000 check, and is nominated to the national AAPG Teacher of the Year Award competition where another \$5000 is possible.

STUDENTS AND YOUNG PROFESSIONALS - The RMS-AAPG recognizes that the students and young professionals of today will be replacing our seasoned geologists in our Rocky Mountain community and is actively promoting learning and social opportunities to this group through field trips and special events at the

annual meeting. In fact, the organizing committee at this year's meeting in Denver consists primarily of young professionals under the age of 35 and with less than 10 years experience.

For students, the RMS-AAPG has financially supported the International Barrel Award (IBA) where teams from regional universities vie in a competition testing their competence in petroleum exploration. The money the Section provides to the IBA helps fund transportation and housing for the event. The Section also supports transportation to and from the Student Chapter Leadership Council where leaders of the student chapters get together and share best practices.

FINANCIAL SUPPORT - Every year, after the RMS-AAPG meeting is held, the net proceeds of the meeting are divided between the Section and the affiliated societies. While the RMS-AAPG retains fifty percent, forty percent of the net income goes to the host society, or societies, and the other ten percent is divided equally between the others. For several of the affiliated societies, this percentage take from the RMS-AAPG annual meeting is the bulk of their annual income.

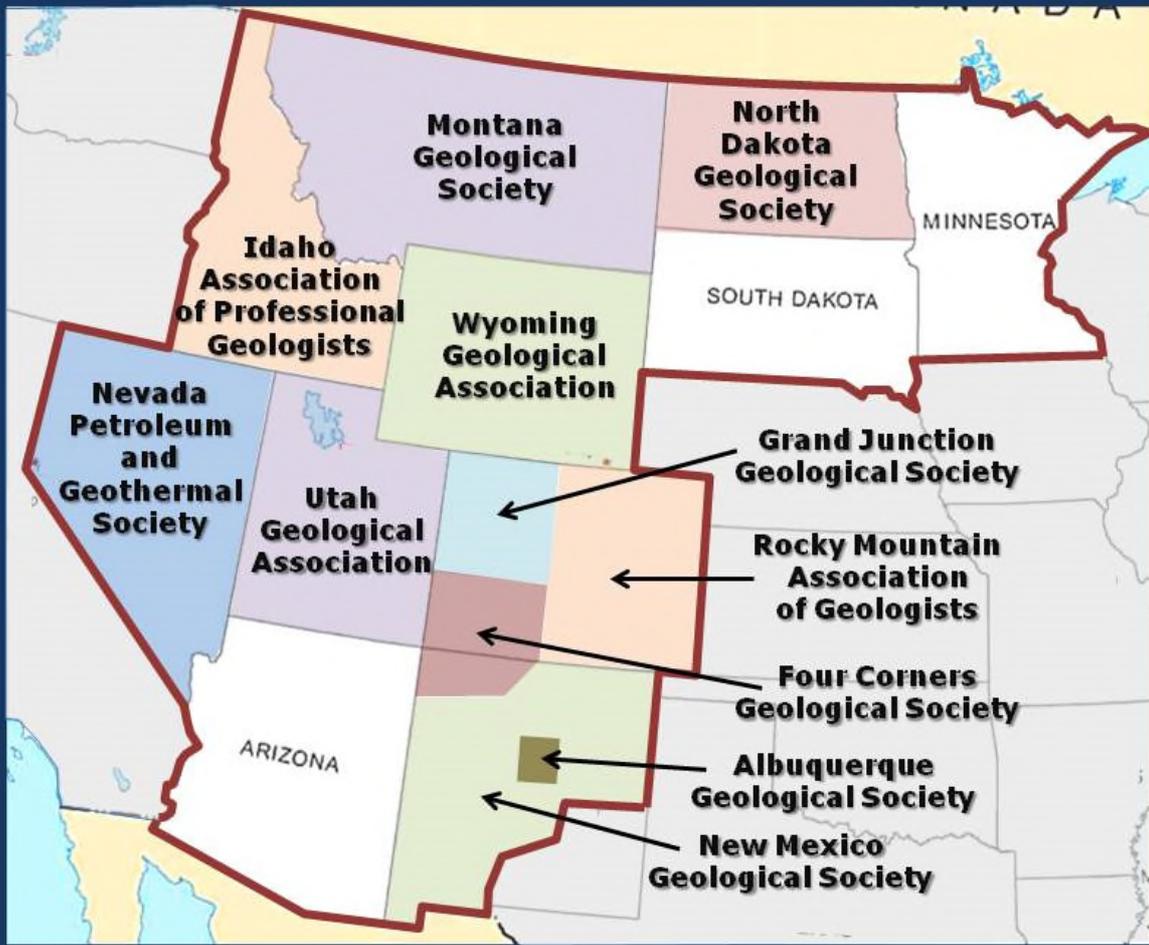
The RMS-AAPG Foundation also provides targeted monetary support for the affiliates through funding of specific project requests. These grants have supported guest speakers, field trips, publications, student chapters at area universities, K-12 teacher and student activities, and such nonhydrocarbon-related endeavors as displays at the natural history museum in Albuquerque or funding of the state geologic map through the State of Idaho.

ANNUAL MEETING - Which brings us to the annual meeting to be held on July 20-22 at the Colorado Convention Center in Denver where there will be two full days of technical talks and poster presentations. The theme of the convention, *Cracking the Source*, emphasizes hydrocarbon source rock characterization and maturation. However, there will also be presentations focusing on nonpetroleum-related subjects including stratigraphy and structure of the Rockies. Field trips and short courses before and after the convention will focus on shale reservoirs and on the Cretaceous and Paleozoic stratigraphy of the Front Range. There also will be a special field trip just for students and young professionals highlighting the stratigraphy of the region, as well as a special course for K-12 earth science teachers.

Registration for the meeting opens in mid-April and, at the time of this writing, exhibit and sponsorship opportunities still remain. So, plan on coming to Denver this July and enjoy, not only the technical and social aspects of the meeting, but Denver's unique cultural and geographic setting at the foot of the Colorado Rocky Mountains. By participating, you will not only increase your geologic knowledge, but also monetarily benefit your own local society.

For more information, go to www.aapgrms.org and for information specific to the annual meeting go to www.aapgrms.org/2014 or email the convention committee at RMS.AAPG.2014@gmail.com

Rocky Mountain Section





**Rocky Mountain Section—AAPG
Annual Meeting**

July 20-22, 2014 in Denver, CO
at the Colorado Convention Center

Visit www.aapgrms.org/2014 to register!

SAVE \$100!

Early Bird Registration

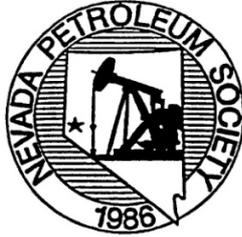
ends June 1, 2014!

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The RMS-AAPG Annual Meeting Highlights:

- Two, full days of technical presentations (oral and poster)
- Three short courses emphasizing unconventional science and technology
- Four field trips, one especially for YPs and students
- Two different core sessions (Williston, Powder, and DJ basins)
- Teacher's Program at Dinosaur Ridge
- All-Convention Luncheons
- Rocky Mountain Geo-Legends Theater
- A Night at the Denver Museum of Nature & Science
- Social and Networking Events



For more information, visit: www.aapgrms.org/2014



APPLICATION FOR MEMBERSHIP

Name _____

Occupation/Title _____

Company/Affiliation _____

Work Address _____
Street City State Zip Code

Residence Address _____
Street City State Zip Code

Preferred Mailing Address? WORK -or- RESIDENCE

Work Phone _____ Residence Phone _____ Fax _____

Mobile Phone _____ Email _____

Member of AAPG? YES -or- NO

Professional References – list two references with phone numbers and addresses

1) Name _____ Phone _____

Address _____
Street City State Zip Code

2) Name _____ Phone _____

Address _____
Street City State Zip Code

Education – list colleges and universities attended, degree(s) received, and date of degree(s) (OPTIONAL)

Membership Type

- ACTIVE \$20.⁰⁰/year
- ASSOCIATE \$15.⁰⁰/year
- STUDENT \$10.⁰⁰/year
- LIFE \$200.⁰⁰ (one-time payment)

Signature _____

Date _____

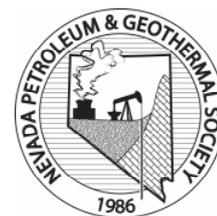
Please make check payable to:

Nevada Petroleum Society
P.O. Box 11526
Reno, NV 89510-1526

DO NOT COMPLETE
For NPS Membership Committee Signatures Only

Nevada Petroleum and Geothermal Society

Publication Price List - October 2013



Paper	CD-ROM	Download from Dropbox	Title
SPECIAL VOLUMES			
NPS1 n/a	NPS1c \$80.00	NPS1y \$65.00	Oil Fields of the Great Basin (1994) R.A. Schalla and E.H. Johnson, editors, 31 papers on regional and field specific geology, 5 plates, soft cover with plastic comb binding, 380 p.
NPS2 n/a	n/a	n/a	Membership Directory (only available free on the Web at http://www.nbmg.unr.edu/nps/membershipdir.htm)
NPS15 \$20.00 \$5.00	n/a	n/a	TerraScan's Geologic Map of the Eastern Great Basin, Nevada and Utah (1978, rev. 1987) compiled and edited by E.L. Howard, 3 sheets (includes cross-sections) \$20.00/NPS or \$25.00/non-NPS, order by phone for discounted price of \$5.00
NPS21 n/a	NPS21c \$35.00	NPS21y \$20.00	Carboniferous–Permian (Late Paleozoic) Hydrocarbon System, Rocky Mountains–Great Basin Region, U.S., Major Historic Exploration Objective (2001, updated 2003) J. Peterson, RMAG Open-File Report, 54 p., 45 illustrations
FIELD TRIP GUIDEBOOKS			
NPS3 n/a	NPS3c \$35.00	NPS3y \$20.00	Oil Fields, Production Facilities and Reservoir Rocks of Northern Nye Co, Nevada (1989) compiled by W.J. Ehni and D.M. Evans, 8 abstracts and papers, 30 p.
NPS4 \$15.00	NPS4c \$35.00	NPS4y \$20.00	Oil Fields and Geology of the Pine Valley, Eureka County Area, Nevada (1990) D.M.H. Flanigan, L.J. Garside, and M. Hansen, editors, 15 papers and abstracts, 74 p. (xerox copy only – unbound)
NPS5 n/a	NPS5c \$35.00	NPS5y \$20.00	Geology of White River Valley, the Grant Range, Eastern Railroad Valley and Western Egan Range, Nevada (1991) D.M.H. Flanigan, M. Hansen, and T.E. Flanigan, editors, 10 papers and abstracts, 74 p.
NPS6 \$25.00	NPS6c \$40.00	NPS6y \$25.00	Structural Geology and Petroleum Potential of Southwest Elko County, Nevada (1992) J.H. Trexler, Jr., T.E. Flanigan, D.M.H. Flanigan, M. Hansen, and L.J. Garside, editors, 9 papers, 2 plates, 96 p.
NPS7 \$33.00	NPS7c \$48.00	NPS7y \$33.00	Structural and Stratigraphic Relationships of Devonian Reservoir Rocks, East Central Nevada (1993), C.W. Gillespie, editor, 15 papers, 3 plates, 203 p.
NPS8 n/a	NPS8c \$40.00	NPS8y \$25.00	Dating of Pre-Tertiary Attenuation Structures in Upper Paleozoic and Mesozoic Rocks and the Eocene History in Northeast Nevada and Northwest Utah (1994) C.H. Thorman, C.J. Nutt, and C.J. Potter, editors, 11 papers, 125 p.
NPS9 n/a	NPS9c \$55.00	NPS9y \$40.00	Structural and Stratigraphic Investigations and Petroleum Potential of Nevada, with Special Emphasis South of the Railroad Valley Producing Trend (1994) S.W. Dobbs and W.J. Taylor, editors, two volumes bound as one, 13 papers, 22 plates, 281 p.

Paper	CD-ROM	Download from Dropbox	Title
NPS10 \$25.00	NPS10c \$40.00	NPS10y \$25.00	Mississippian Source Rocks in the Antler Basin of Nevada and Associated Structural and Stratigraphic Traps (1995) M.W. Hansen, J.P. Walker, and J.H. Trexler, Jr., editors, 16 papers and 7 abstracts, 166 p.
NPS11 \$25.00	NPS11c \$40.00	NPS11y \$25.00	Cenozoic Structure and Stratigraphy of Central Nevada (1996) W.J. Taylor and H. Langrock, editors, 11 papers, 122 p.
NPS12 \$25.00	NPS12c \$40.00	NPS12y \$25.00	The Roberts Mountains Thrust, Elko and Eureka Counties, Nevada (1997) A.J. Perry and E.W. Abbott, editors, 4 papers, 2 abstracts and reference papers/abstracts, 86 p.
NPS13 n/a	NPS13c \$40.00	NPS13y \$25.00	Hydrocarbon Habitat & Special Geologic Problems of the Great Basin (1998) D.E. French and R.A. Schalla, editors and co-chair
NPS14 \$35.00	NPS14c \$50.00	NPS14y \$35.00	Cenozoic Geology of the Northern Colorado River Extensional Corridor, Nevada and Arizona: Economic Implications of Extensional Segmentation Structures (1999) J.E. Faulds, editor, 183 p., 3 color plates
NPS16 \$30.00	NPS16c \$45.00	NPS16y \$30.00	Structure & Stratigraphy of the Eureka, Nevada Area (2001) Marilyn S. Miller and Jerome P. Walker, editors, 108 p., 11 color plates
NPS17 n/a	NPS17c \$50.00	NPS17y \$35.00	Detachment and Attenuation in Eastern Nevada and its Application to Petroleum Exploration (2002) W. Ehni and J. Faulds, editors, 163 p.
NPS18 \$25.00	NPS18c \$40.00	NPS18y \$25.00	Oil, Gas, and Geothermal Occurrences in Northwestern Nevada (2003) S. Foster, editor, 102 p.
NPS19 n/a	NPS19c \$50.00	NPS19y \$35.00	Megabreccias and Impact Breccias of East Central Nevada (2004) C.W. Gillespie and S. Foster, editors
NPS20 n/a	NPS20c n/a	NPS20y n/a	Great Basin Paleozoic Carbonate Platform: Facies, Facies Transitions, Depositional Models, Platform Architecture, Sequence Stratigraphy, and Predictive Oil and Gas Reservoir and Mineral Host Models (2006) H.E. Cook and J.J. Corboy, 129 pages, out of print (report from USGS Open-File Report 2004-1078, free on Web at http://pubs.usgs.gov/of/2004/1078/)
NPS22 n/a	NPS22c \$40.00	NPS22y \$25.00	Geology, Geothermal Resources and Petroleum Exploration of Neogene Basins in the Reno, Nevada Area (2007, 2nd ed., includes two papers not in 1st ed.) S. Limerick, editor, 7 papers, 3 reprints, and roadlog, 140 p.
NPS23 \$25.00	NPS23c \$40.00	NPS23y \$25.00	Sedimentology and Tectonic Setting of the Late Cretaceous to Eocene Sheep Pass Formation in the Southern Egan Range (2008) P. Druschke, trip leader; J. Trexler, Jr., editor
NPS24 \$30.00	NPS24c \$45.00	NPS24y \$30.00	Geothermal and Petroleum Developments in Several Extensional Basins of the Central Walker Lane, Nevada (2013) L.J. Garside, editor, 11 papers, 131 p.

These publications are only available from the Nevada Bureau of Mines and Geology (NBMG). If a publication is out of print or unavailable, it is marked "n/a" (not available). **Please check with us for the most current prices.** Thanks.

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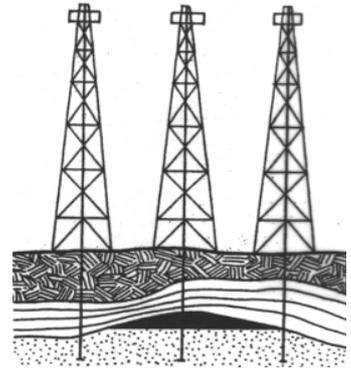
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Oil and gas resources from NBMG

The following publications are available from the Nevada Bureau of Mines and Geology. **NBMG publications that are underlined are also available free on the Web at <http://www.nbmj.unr.edu/>.**



Oil and gas information page on the NBMG website
<http://www.nbmj.unr.edu/Oil&Gas/index.html>

Bulletins

B104 Oil and gas developments in Nevada: **Garside, Hess, Fleming and Weimer (1988), \$15.00, for updates, see OF01-7, OF04-1, and M162**

Educational Series

E-6 **Oil and gas in Nevada** (Student book for grades 4-8, 23 pages) \$3.45
E-24 **Nevada oil**: Division of Minerals (Brochure, 1996) free

Lists

L-8 **List of oil and gas wells drilled in Nevada since 1907**: Hess, Davis, and Boldi (2001, updated 2003) *superseded by OF04-1, see also OF01-7*

L-12 **Nevada oil and gas well catalog (NVOILWEL)**, *superseded by OF04-1, see also OF01-7*
Complete list of Nevada oil and gas well exploration data, 1906-present. Listed logs and cuttings are housed at NBMG. Shows, geologic tops and tests are given when available.

Maps

M162 **Petroleum data map of Nevada**: Garside and Hess (2007), 1:1,000,000, \$15.00

Mineral Industry Series

The Nevada Mineral Industry is **published annually**, beginning in 1979. Each volume has a **section on oil and gas in Nevada**. Most of these reports are available *free on the Web* at <http://www.nbmj.unr.edu/>.

Open-File Reports

OF83-5 **Nevada oil shale**: Garside, 10 pages, \$4.00 (for more oil shale information, see also USGS MF-1546 and MF-2091)

OF86-13 **Nevada petroleum production statistics, 1954-1986**: Hess, Loomis and Garside, 14 pages, \$5.00

OF92-5 **Nevada oil and gas source-rock database**: Hess, compilation of source-rock analyses performed on cuttings samples taken at varying depth intervals from oil and gas exploration wells in Nevada up to 1992, complete print-out, \$20.00

OF96-6c **Nevada oil and gas wells, 1907-1996**: 1:1,000,000 color digital map of Nevada showing major roads, county boundaries, and locations of oil wells drilled since 1907, original printout, \$20.00, *see also OF01-7, M162*

OF01-7 **Nevada oil and gas well database map**: Hess, CD and 4 page text, \$15.00

Contains the following: L-12; updated OF96-6, partial; L-8; B104 text; digital base layers of Nevada data in Shapefile and Arc/Info export file format designed for use at scale 1:1,000,000 (county, towns, roads, USGS topo boundaries for 1:100,000 and 1:24,000, Township and Range); georeferenced raster graphic of the Nevada state base map, B&W, scale 1:1,000,000; 18 USGS digital raster graphic maps (DRG), 1:250,000-scale, topo maps in tiffw format

OF00-2 **Hydrocarbon assessment of the Yucca Mountain vicinity, Nye County, Nevada**: French, 78 pages and 4 plates, \$44.40

OF04-1 **Nevada oil and gas well database (NVOILWEL)**: Hess (2004), \$86.40 for photocopy

OF07-7 **Assessment of the potential for carbon dioxide sequestration with enhanced oil recovery in Nevada**: LaPointe, Price, and Hess (2007), 24 pages, \$7.20

OF11-2 **Qualitative petroleum potential map of Nevada**: Garside and Hess (2011), plate 1:1,000,000 and text

OF11-6 **Oil and gas well information for Nevada – 2011 update**: Hess, Henson, David, Limerick, Siewe, and Niles; portable hard drive, 105 GB, 9643 files, \$115; free on web at <http://www.nbmj.unr.edu/Oil&Gas/NVWellInfo.html>

Reports

R51 **Preliminary assessment of the potential for carbon dioxide disposal by sequestration in geological settings in Nevada**: Price and others (2005), CD-ROM or paper copy, 35 pages, \$15.00

R52 **Assessment of the potential for carbon dioxide sequestration by reactions with rocks in Nevada**: Sturmer, LaPointe, Price, and Hess (2007) \$22.00 paper

USGS

Assessment of undiscovered oil and gas resources of the Eastern Great Basin Province, 2005, Fact Sheet

FS-2005-3053, free at <http://pubs.usgs.gov/fs/2005/3053/>

Basin and Range Carbonate Aquifer System Study:

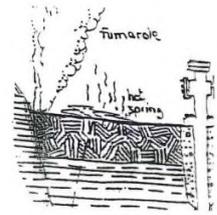
<http://nevada.usgs.gov/barcass/data.htm>

Ordering information for Nevada Bureau of Mines and Geology

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Phone: (775) 682-8766 Fax: (775) 784-6690 Web: <http://www.nbmj.unr.edu>

Geothermal resources in Nevada



Geothermal information page on the NBMG website

<http://www.nbmq.unr.edu/Geothermal/index.html>

The following publications on geothermal resources are available from the Nevada Bureau of Mines and Geology. NBMG items that are underlined are available **free on the Internet** and can be viewed at <http://www.nbmq.unr.edu/>.

Bulletins

- B65 Mineral and water resources of Nevada: Cornwall (1964) pp. 267-269, \$7.00
- B89 Geology and mineral deposits of Pershing County, Nevada: Johnson (1977) pp. 104-106, \$21.00
- B91 Thermal waters of Nevada: Garside and Schilling (1979) \$22.00, *for update see L-5*
- B97 Discovery and geology of the Desert Peak geothermal field—a case history: Benoit, Hiner, and Forest (1982), \$15.00 (*see also OF03-27*)
- B99B Mineral resources of northern Nye County, Nevada: Kleinhampl and Ziony (1984) pp. 37-38, \$19.00

Educational Series

- E-7 Geothermal resources in Nevada: Student reading/activity book for grades four through eight, 27 pp., \$4.05
- E-15 Nevada geothermal electric power production, brochure (1992) 2 pp., \$0.60
- E-35 Major mines, oil fields, and geothermal plants in Nevada
- E-46 Taking the pulse of the Earth
- E-51 Life's a beach: In search of ancient shorelines and volcanoes in the Grimes Point and Lahontan Mountains area

Lists

- L-5 Index to geothermal well files housed at NBMG: Davis and Hess (2009) *updates* App. 2 of B91, \$19.50

Maps

- M126 Nevada geothermal resources: Shevenell, Garside, and Hess (2000), *superseded by M161*
- M141 Nevada geothermal resources (second edition): Shevenell and Garside (2005), 1:750,000, \$16.00 for paper copy, *available folded or rolled, superseded by M161*
- M146 Geologic map of the Fraser Flat quadrangle and the west half of the Moses Rock quadrangle, Washoe Co., NV
- M151 Geothermal potential map of the Great Basin, western United States: Coolbaugh and others (2005), 1:1,000,000, \$30.00, *rolled only*
- M161 Nevada geothermal resources: Penfield, Shevenell, Garside, and Zehner (2010), 1:750,000, \$18.00, *folded or rolled, supersedes M126 and M141*

Mineral Industry Series

MI-1979 through current year—The Nevada mineral industry is published annually and has a section on geothermal activities, varies with year, MI-1994-current year available free on Internet at <http://www.nbmq.unr.edu/> and click on "Online Documents."

Newsletters

Nevada Geology Newsletter no. 19, page 3 (Summer 1993) "Low-temperature geothermal resources in Nevada" by Larry Garside, free

Open-File Reports

- OF83-6 Preliminary map of thermal wells in the Moana geothermal area, Reno, Nevada: Garside, \$8.00
- OF87-2 Mineral resource inventory – U.S. Navy master land withdrawal area, Churchill County, Nevada: Quade and Tingley, \$92.00
- OF94-2 Nevada low-temperature geothermal resource assessment: 1994: Garside, with a bibliography by Davis and Garside, \$40.00 for text and plate, or \$20.00 for text on disk, or \$7.00 for plate only
- OF96-2-9 Reconnaissance photogeologic map of young (Quaternary and late Tertiary) faults in Nevada: (Plate 9) 1:1,000,000, map and text, \$15.00
- OF03-27 Preliminary geologic map of the Desert Peak-Brady geothermal fields, Churchill County, Nevada: Faulds and Garside (2003), \$15.00 (*see also B97*)
- OF06-5 Mineral- and energy resource potential for White Pine County, Nevada
- OF06-6 Mineral- and energy resource potential for Pershing County, Nevada
- OF06-7 Mineral- and energy resource potential for Lyon County, Nevada
- OF06-12 Potential resources associated with proposed roadless areas in Nevada
- OF09-10 Preliminary geothermal potential and exploration activity in Nevada: Zehner, Coolbaugh, and Shevenell, 1:1,000,000-scale plate and text, \$20.00 (*supersedes OF09-1*)
- OF10-6 Preliminary geologic map of the Lee-Allen geothermal area, Churchill County, Nevada
- OF11-3 Preliminary geologic map of the Reese River geothermal area, Lander County, Nevada
- OF11-10 Descriptive logs, skeletonized samples, and photographs of core from Presco Energy's thermal gradient wells P3-1, P 10-1, and P 32-2 in the Rye Patch area, Pershing County, Nevada: Davis (2011, Web version only)

- OF11-11 Preliminary geologic map of the northern Lake Range, San Emidio geothermal area, Washoe County, Nevada: Rhodes, Faulds, and Ramelli, scale 1:24,000, \$18.00
- OF12-3 Data tables and graphs of geothermal power production in Nevada: Shevenell, Price, and Hess (1985-2011, Web version only)

Reports

- R21 Geothermal exploration and development in Nevada through 1973
- R25 Evaluation of geothermal activity in the Truckee Meadows, Washoe County, Nevada: Bateman and Scheibach (1975), \$4.00
- R33 Papers on mineral deposits of western North America: (1979), presented at the Fifth Quadrennial Symposium of IAGOD, \$10.00
- R41 Precious-metal mineralization in hot springs systems, NV-CA: Tingley and Bonham (1986), \$15.00
- R43 Mineral resources of the Kumiva Peak 30' by 60' Quadrangle: Tingley (1989) pp. 16-17, \$5.00
- R44 Mineral resources of the Pahrnatag Range 30' by 60' Quadrangle: Tingley (1989) pp. 8-9, \$5.00
- R45 Mineral resources of the Overton 30' by 60' Quadrangle: Tingley (1989) pp. 12-13, \$5.00
- R46 Mineral resources of the Timpahute Range 30' by 60' Quadrangle: Tingley (1991) pp. 30-31, \$5.00
- R51 Preliminary assessment of the potential for carbon dioxide disposal by sequestration in geological settings in Nevada

Special Publications

- SP4 Geology of Nevada: a discussion to accompany the Geol. map of Nevada (see below): Stewart (1980), \$25.00
- 00001 Geologic map of Nevada: Stewart and Carlson, U.S.G.S. (1978) 1:500,000, *available rolled only*, \$20.00 *available free on the Internet at <<http://keck.library.unr.edu/>> and click on "Great Basin geoscience dataset" or at <<http://www.nbmj.unr.edu/dox/dox.htm>>, see SP4 for descriptive text*

Urban Map Series

- 3Ah Energy and mineral resources map of the Las Vegas SE Quadrangle: Papke and Bell (1973) *available rolled or folded*, \$2.00
- 4Ah Energy and mineral resources map of the Reno Quadrangle: Bingler, Bonham, and Luza (1973) *available rolled or folded*, \$2.00
- 5Ah Energy and mineral resources map of the Washoe City Quadrangle: Papke and Jones (1978) *available rolled or folded*, \$2.00

Nevada Petroleum Society

- NPS5 Geology of White River Valley, the Grant Range, Eastern Railroad Valley and Western Egan Range, Nevada
- NPS18 Oil, gas and geothermal occurrences in northwestern Nevada
- NPS22 Geology, Geothermal Resources and Petroleum Exploration of Neogene Basins in the Reno, Nevada Area

USGS Publications

- C1249 Geothermal energy – clean power from the earth's heat: Duffield and Sass, *free on the Internet at <<http://geopubs.wr.usgs.gov/circular/c1249/>>*
- I-1701 Bouguer gravity anomalies, depth to bedrock, and shallow temperature in the Humboldt House geothermal area, Pershing County, Nevada: Schaefer (1986), \$9.00
- OF74-271 Geothermal systems of northern Nevada: Hose and Taylor (1974), 30 pages, call for prices
- OF74-1066 The chemical composition and estimated minimum thermal reservoir temperatures of the principal hot springs of northern and central Nevada, call for prices
- OF81-918 Geothermal resources of the western arm of the Black Rock Desert, northwestern Nevada, part I, geology and geophysics: Schaefer, Welch, and Maurer (1983), 41 pages and 4 plates, call for prices
- OF02-374 A helicopter-borne magnetic survey over Dixie Valley geothermal field, Nevada: A web site for distribution: Pearson, deRidder and Johnson (2002), *available free on the Internet at <<http://pubs.usgs.gov/of/2002/ofr-02-0374/>>*, call for prices
- OF02-384 High-resolution aeromagnetic survey to image shallow faults, Dixie Valley geothermal field, Nevada: Grauch (2002), *<<http://pubs.usgs.gov/of/2002/ofr-02-0384/>>*, call for prices

Other Resources

Great Basin Center for Geothermal Energy is at <http://www.unr.edu/geothermal/>.

For more information, please contact:

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Nevada Petroleum and Geothermal Society Calendar: Year 2013-2014	
Apr 3, 2014	NPGS Monthly Dinner Meeting – Thursday Apr 3, 6:30 PM Ramada Reno Hotel, 1000 E 6 th St, Reno, NV <i>Speaker: James Faulds, Director/State Geologist, NBMG, UNR, Reno NV</i> <i>Topic: New Approaches to Understanding and Harnessing Nevada's Vast Geothermal Resources</i>
Apr 6-9, 2014	AAPG Annual Convention & Exhibition – Houston, TX George R Brown Convention Center. www.aapg.org
Apr 18-19, 2014	9th Annual GeoSymposium, UNLV Dept of Geoscience UNLV Science & Engineering Bldg (SEB) Lake Mead National Recreation Area, Valley of Fire State Park For more information, to donate or sponsor : http://geoscience.unlv.edu/GeoSymposium/ Melisa Bishop 702-774-1412 bishom1@unlv.nevada.edu
May 1, 2014	NPGS Monthly Dinner Meeting – Thursday May 1, 6:30 PM Ramada Reno Hotel, 1000 E 6 th St, Reno, NV <i>Speaker: Rick Stucker, Senior Geologist, Noble Energy, Denver CO</i> <i>Topic: Overview of Noble Energy's Current Drilling Program in Nevada</i> This is the last monthly NPGS meeting until September
May 2-4, 2014	GSN Spring Field Trip Humboldt Range, Majuba Hill, and Trinity Range Contact Laura Ruud gsn@gsnv.org
Jun 24, 2014	Nevada BLM Oil & Gas Lease Sale, Reno NV Elko, Southern NV District, posting date: Mar 21, 2014 http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/oil_gas/oil_and_gas_leasing.html
Jul 17, 2014	Nevada BLM Oil & Gas Lease Sale, Reno NV Battle Mtn District, posting date: Apr 14, 2014 http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/oil_gas/oil_and_gas_leasing.html
Jul 20-22, 2014	AAPG Rocky Mountain Section Annual Meeting Denver Convention Center, Denver, CO Registration begins April 2014. www.aapgrms.org/2014
Sep 9, 2014	Nevada BLM Geothermal Lease Sale, Reno NV http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal
May 14-24, 2015	GSN Symposium 2015 John Ascuaga's Nugget Hotel and Casino in Sparks, Nevada http://www.nbmgs.unr.edu/docs/GSN_2015_Symposium.pdf
2016	Rocky Mountain Section/Pacific Section Meeting – AAPG 2016 2016 joint RMS-AAPG/PS-AAPG annual meeting, Las Vegas, Nevada

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