



KENNY C. GUINN
Governor

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
DIVISION OF MINERALS
400 W. King Street, Suite 106
Carson City, Nevada 89703
(775) 684-7040 • Fax (775) 684-7052
<http://minerals.state.nv.us/>

Las Vegas Branch:
1771 E. Flamingo Rd.
Suite #120-A
Las Vegas, Nevada 89119
(702) 486-4343
Fax (702) 486-4345

ALAN R. COYNER
Administrator

NEVADA GEOTHERMAL UPDATE

September 2003

NOTE - UPDATES AND NEW ITEMS ARE HIGHLIGHTED IN YELLOW

CURRENT POWER OPERATIONS

<u>Plant/Operator (year on-line)</u>	<u>Nameplate Capacity *</u>	<u>Location</u>
Beowawe Power Plant (1985) Beowawe Power LLC/Caithness Operating	16.6 MW	S13, T31N R47E
Bradys Power Plant (1992) Brady Power Partners/ORMAT	21.1 MW	S12, T22N R26E
Desert Peak Power Plant (1985) Brady Power Partners/ORMAT	12.5 MW	S21, T22N R27E
♦ ORMAT Nevada Inc. (ORNI 3, LLC); Permit #519PA for a geothermal project area issued March 7, 2003; Includes 8 production wells, 3 injection wells, and 2 observation wells; Project area includes sections 13-16 and 21-29, T22N R27E, Churchill County.		
♦ ORMAT Nevada Inc. (ORNI 3, LLC); Permit #521; API #27-001-90267 for Industrial Well "43-21" issued May 12, 2003, SE/4 NW/4, Section 21, T22N R27E; Desert Peak, Churchill County; PTD 5500'; Will be used to generate power for sale to Nevada Power; Spud June 20, 2003; C and L Drilling Rig #6; Reached TD August 3, 2003; Testing.		
♦ ORMAT Nevada Inc. (ORNI 3, LLC); Permit #529; API #27-001-90298 for Industrial Well "27-15" issued Aug 11, 2003, SW/4 SW/4, Section 15, T22N R27E; Desert Peak, Churchill County; PTD 5500'; Second production well location in the Desert Peak Project Area; Spud August 8, 2003; C and L Drilling Rig #6; Drilling.		
Dixie Valley Power Plant (1988) Caithness Dixie Valley/Caithness Operating	62.0 MW	S7, T24N R37E S33, T25N R37E
Empire Power Plant (1987) Empire Energy LLC	4.8 MW	S21, T29N R23E

Soda Lake No. 1 (1987) R28E Soda Lake No. 2 (1991) Constellation Operating Services	26.1 MW	S33, T20N
--	----------------	------------------

Steamboat I, IA (1986)	10.8 MW	S29, T18N R20E
Steamboat II, III (1992) S B Geo, Inc./Far West Capital	47.8 MW	

Steamboat Geothermal Power Plant/Caithness Power Plant (1988) Yankee-Caithness JVLP	14.41 MW	S5, 6, T17N R20E
--	-----------------	-------------------------

- ◆ Yankee Caithness Joint Venture, LLC: Permit #525, API 27-031-90219 for Industrial Production Well # 21B-5 issued July 14, 2003; NW/4 NW/4; Section 5, T17N R20E; Steamboat Springs, Washoe County, Nevada; PTD 5000'; Spud July 19, 2003, Nabors Rig #58, Drilling.
- ◆ Yankee Caithness Joint Venture, LLC: Permit #530, API 27-031-90220 for Industrial Injection Well # 64-32 issued September 17, 2003; SW/4 NE/4; Section 32, T18N R20E; Steamboat Springs, Washoe County, Nevada; PTD 1850'; Replacement well for the Coxi-1 well; New Location.

Stillwater (1989) Stillwater Holdings, LLC	21.0 MW	S1, T19N R30E
---	----------------	----------------------

Wabuska (1984) Homestretch Geothermal LLC	2.2 MW	S15, 16, T15N R25E
--	---------------	---------------------------

* Nameplate Capacity as reported to the Division of Minerals for 2002.

DIRECT USE OPERATIONS

Empire Group LLC; Empire, Washoe County, Nevada
<http://www.empirellc.com>

Gilroy Foods, A ConAgra Food Ingredients Company; Onion Dehydration Plant; Fernley, Nevada
<http://www.gilroyfoods.com/aboutus.html>

Commenced seasonal onion dehydration processing operations on May 15, 2003. The plant will operate this season until the end of October.

OTHER ACTIVE AREAS

Gerlach KGRA (T32N R23E), Washoe County

Salt Wells KGRA (T16-17N R30-31E), Churchill County

Hot Sulphur Springs (Tuscarora), Elko County

- ◆ Earth Power Resources, Inc.; State Permit #526PA issued Aug 5, 2003 for a geothermal project area to include 8 production wells (PTD 4000'), 6 injection wells (PTD 4000'), and 10 observation wells (PTD 4000'); The project area will encompass sections 4,5,8,9,16,& 17, T41N R52E; Hot Sulphur Springs, near Independence Valley and Tuscarora, Elko County, Nevada. The purpose of the project area is to supply a 25 MW power plant for a power purchase contract awarded by Sierra Pacific; Project Area.

- ◆ Earth Power Resources, Inc.; State Permit #527 for Industrial Production Well #46-8 issued Aug 8, 2003; API #27-007-90027; SW/4, NE/4, Section 8, T41N R52E; Hot Sulphur Springs, Elko County, Nevada; Projected total depth 4000'; 1st production well location in Project Area 526PA; New Location.
- ◆ Earth Power Resources, Inc.; State Permit #528 for Observation Well #67-8 issued Aug 8, 2003; API #27-007-90028; NE/4, SE/4, Section 8, T41N R52E; Hot Sulphur Springs, Elko County, Nevada; Projected total depth 4000'; 1st observation well location in Project Area 526PA; NEW LOCATION.

Rye Patch/Humboldt House KGRA, Pershing County (Rye Patch Power Plant, 12 MW, 90% complete)

- ◆ Presco Energy/Department of Energy (DOE) National Renewable Energy Laboratory funded Thermal Gradient Wells; "Renewable Energy Advancement in Nevada"; contact Gina Tempel gina@mines.unr.edu.
- ◆ Presco Energy completed their five well program July 12, 2003. Presco began their drilling program in May 2003 in the Humboldt House KGRA (Known Geothermal Resource Area) southwest of Winnemucca, Nevada using drilling contractor, Layne Christensen Company. Presco drilled five sites in the area to evaluate the lifetime and current potential of the Humboldt House geothermal system, Pershing County, Nevada.
 - Presco Energy LLC.; Permit 511, API #27-027-90061 for Thermal Gradient Well "P 3-1" issued January 22, 2003; NE/4 NW/4 S3, T31N R33E; PTD 1000 ft.; Spud June 4, 2003.
 - Presco Energy LLC.; Permit 512, API #27-027-90062 for Thermal Gradient Well "P 5-1" issued January 22, 2003; SW/4 NE/4 S5, T31N R33E; PTD 1000 ft.; Spud July 2003.
 - Presco Energy LLC.; Permit 513, API #27-027-90063 for Thermal Gradient Well "P 10-1" issued January 22, 2003; SW/4 NE/4 S10, T31N R33E; PTD 1500 ft.; Spud May 21, 2003.
 - Presco Energy LLC.; Permit 514, API #27-027-90064 for Thermal Gradient Well "P 32-1" issued January 22, 2003; SW/4 NE/4 S32, T32N R33E; PTD 1000 ft.; Spud July 2003.
 - Presco Energy LLC.; Permit 515, API #27-027-90065 for Thermal Gradient Well "P 32-2" issued January 22, 2003; NE/4 SW/4 S32, T32N R33E; PTD 500 ft.; Spud May 21, 2003.

Fly Ranch Geothermal Prospect Area; West Black Rock Desert, Washoe County

Recent BLM Geothermal Leases Filed

- ◆ For more information on BLM leases in Nevada, see the website: <http://www.blm.gov/lr2000>. This information has been provided courtesy of the "Nevada Oil Reporter".

Non-Competitive Geothermal BLM Lease Applications, Pending:			
Stillwater Holdings	NVN 77158; 2271.30 acres	T18-19N R30E (5,6)	
ORMAT Nevada Inc.	NVN 77208; 640 acres	T23N R26E (34)	
ORMAT Nevada Inc	NVN 77217; 640 acres	T24N R32E (6)	Churchill Co.
ORMAT Nevada Inc	NVN 77218; 1920 acres	T24N R31E (10,12,14)	Churchill Co.
Western Geothermal Ptnrs	NVN 77247; 1260 acres	T24N R43E (33,34)	
Western Geothermal Ptnrs	NVN 77248; 1280 acres	T24N R33E (28,34)	Carson Sink
Western Geothermal Ptnrs	NVN 77249; 651 acres	T26N R35E (35)	Buena Vista Vly
Western Geothermal Ptnrs	NVN 77250; 640 acres	T23N R33E (4)	Carson Sink
ORMAT Nevada Inc	NVN 77296; 1920 acres	T24N R26E (20,30,32)	Churchill Co.
ORMAT Nevada Inc	NVN 77297; 1920 acres	T23N R25E (12) T23N R26E (6) T24N R25E (36)	Churchill Co.
Western Geothermal Ptnrs	NVN 77435; 1260 acres	T18N R31E (30,31)	Salt Wells
Western Geothermal Ptnrs	NVN 77436; 2560 acres	T18N R30E (25,34-36)	Salt Wells
ORMAT Nevada Inc.	NVN 77481; 1920.0 acres	T27N R40E (15,16,20)	Pershing/Lander Co.
ORMAT Nevada Inc.	NVN 77482; 1920.0 acres	T26N R40E (3,4,5)	Pershing/Lander Co.
ORMAT Nevada Inc.	NVN 77483; 2560.0 acres	T27N R40E (21,22,27,34)	Pershing/Lander Co.
Western Geothermal Ptnrs	NVN 77538; 2660.0 acres	T38N R62E (4,16,18,20,30)	Wells, NV, Elko Co.
Western Geothermal Ptnrs	NVN 77550; 1036.57 acres	T38N R62E (6,28,32,34)	Wells, NV, Elko Co.
Western Geothermal Ptnrs	NVN 77551; 160.0 acres	T38N R62E (32)	Wells, NV, Elko Co.
Western Geothermal Ptnrs	NVN 77552; 160.0 acres	T38N R62E (28)	Wells, NV, Elko Co.
Western Geothermal Ptnrs	NVN 77600; 1280.0 acres	T11N R25E (27)	East of Smith Vly, Lyon Co.
Western Geothermal Ptnrs	NVN 77602; 1311.2 acres	T10N R25E (2,3)	East of Smith Vly, Lyon Co.
Geo-Energy Partners	NVN 77627; 2560.0 acres	T01S R36E (14,15,21,22)	Fish Lake Vly, Esmeralda Co.
Geo-Energy Partners	NVN 77628; 2556.24 acres	T01S R36E (3,10,11,13)	Fish Lake Vly, Esmeralda Co.

Geothermal BLM Leases Issued:			
NGP Power Corp.	7 leases; 16,552 acres	T17N R30E	Salt Wells, Churchill Co.
NGP Power Corp.	2 leases; 4837 acres	T18N R30E	Salt Wells, Churchill Co.
NGP Power Corp.	2 leases; 3244 acres	T16N R30E	Salt Wells, Churchill Co.
Barrick Goldstrike	1 lease; 725.127 acres	T36N R49E	Eureka Co.
Sierra Nevada Geo	1 lease; 651 acres	T26N R35E	New York Cyn, Pershing Co.
Vulcan Power Co.	NVN 66738; 655.0 acres	T17N R30E (15)	Salt Wells, Churchill Co.
PSG Resources LLC	NVN 77112; 628.3 acres	T2S R39E (3)	Silverpeak, Esmeralda Co.
PSG Resources LLC	NVN 77113; 640.0 acres	T1S R39E (34)	Esmeralda Co.
ORMAT Nevada Inc.	NVN 76209; 2560.0 acres	T24N R47E (10,15,16,20)	Grass Valley, Lander Co.
ORMAT Nevada Inc.	NVN 76210; 2563.0 acres	T24N R47E (2,3,4,9)	Grass Valley, Lander Co.
ORMAT Nevada Inc.	NVN 76211; 2560.0 acres	T24N R47E (21,22,28,29)	Grass Valley, Lander Co.
PSG Resources LLC	NVN 77110; 640.0 acres	T02S R39E (15)	Silverpeak, Esmeralda Co.
PSG Resources LLC	NVN 77111; 640.0 acres	T02S R39E (10)	Silverpeak, Esmeralda Co.

Competitive Sale Geothermal BLM Lease Applications, Pending:			
Western Geothermal Ptnrs	NVN 77268; 1662.05 acres	T32N R23E (15,16,21,22)	Gerlach
NGP Power Corp	NVN 77269; 1346.92 acres	T16N R30E (1) T16N R31E (6)	Salt Wells
NGP Power Corp	NVN 77270; 1360 acres	T16N R30E (2,3)	Salt Wells
Nevada Geothermal Spec	NVN 77271; 2520 acres	T17N R30E (23-26)	Salt Wells
Nevada Geothermal Spec	NVN 77272; 1274 acres	T17N R31E (35,36)	Salt Wells
Western Geothermal Ptnrs	NVN 77273; 1865.64 acres	T17N R31E (19,30,31)	Salt Wells

OTHER NEWS

GeoPowering The West Conference, September 18-21, 2003

- ◆ “Renewable Geothermal Energy Options for Sustainable Economic Development”; September 18-21, 2003; Delta-Montrose Electric Association Headquarters, 11925 6300 Road, Montrose, Colorado. “A three-day event intended to increase awareness and acceptance of geothermal technologies as compelling energy options for sustainable economic growth across the Western region” – <http://www.dmea.com/news/geopwrbroch1.pdf>.

Carson City Signs Contract for Renewable Energy Development

- ◆ August 21, 2003 - Carson City signed a contract with Princeton Development Corp., 4151 Shafter Ave., Oakland, California 94609, authorizing a “feasibility period to develop a renewable energy strategy and to exclusively assess the viability of projects and to propose mutually acceptable business arrangements with the city and its potential partners”. Princeton plans to open an office in Carson City and set up a website soon.

Western States Renewable Energy Summit, October 8, 2003

- ◆ “Join U.S. Senator Harry M. Reid for the First Annual Western States Renewable Energy Summit focusing on the effects of adding renewable energy to the grid, the impact of aggregating western states for maximum leverage, and negotiating in the rapidly changing arena of national energy policy”; Atlantis Casino Resort, Reno, Nevada Wednesday October 8, 2003 7:30 AM – 6: 30 PM;
<http://www.renewableenergysummit.com>

Geothermal Resources Council’s 2003 Annual Meeting, October 12-15, 2003

- ◆ "International Collaboration for Geothermal Energy in the Americas"; October 12-15, 2003 • Morelia, Michoacan • Mexico. Registration & Preliminary Technical Session's Brochure;
<http://www.geothermal.org/meet.html>

POWER-GEN International 2003, December 9-10, 2003 Las Vegas, Nevada

- ◆ Conference and Exhibition, Las Vegas Convention Center, with 20,000 attendees and more than 1,200 exhibiting companies; Visit website for Call for Papers, Program, and Registration information:
<http://pgi03.events.pennnet.com>.

POWER-GEN Renewable Energy Conference and Exhibition, March 1-3, 2004

- ◆ PennWell Corporation and the American Council for Renewable Energy (ACRE) have formed a partnership for the creation of POWER-GEN Renewable Energy. The conference will be held at the Flamingo Hotel in Las Vegas, Nevada on March 1-3, 2004. The purpose of the conference is to bring together all sectors of the energy industry to discuss issues and plan for the future. Abstract deadline for papers is August 1, 2003. See the website for more information: <http://pgre04.events.pennnet.com>

Sierra Pacific Resources Evaluating Bids for New RFP

- ◆ Sierra Pacific Resources’ two Nevada subsidiaries issued a new Request for Proposals for energy generated by renewable energy fuel sources. Responses were due to the utilities and bidding was closed on August 18, 2003. For more information see the website at:
<http://www.sierrapacificresources.com/company/renewables/>
News release: <http://www.sierrapacificresources.com/news/releases/spr/1056956400.html>

Geothermal Energy Report Released

- ◆ The DOE Energy Efficiency and Renewable Energy and Department of Interior Bureau of Land Management (BLM) have released a geothermal energy report entitled “*Opportunities for Near-Term Geothermal Development on Public Lands in the Western United States.*”
<http://www.nrel.gov/docs/fy03osti/33105.pdf>
The report identifies 35 sites in the Western U. S. as having the greatest potential for short-term development of geothermal power. Ten of these sites are in Nevada: Fish Lake, Beowawe, Salt Wells, Soda Lake, Steamboat, Stillwater, Dixie Valley, Brady, Rye Patch, and San Emidio.

Rep Jim Gibbons Introduces Bill to Amend Geothermal Steam Act

- ◆ Representative Jim Gibbons introduced Bill H.R.2772 July 17, 2003 “To amend the Geothermal Steam Act of 1970 to promote the development and use of geothermal resources in the United States”. Referred to the House Committee on Resources July 17, 2003. - <http://thomas.loc.gov>

Senator Harry Reid Introduces Legislation to Secure Funding for Nevada

- ◆ U.S. Senator Harry Reid’s legislation includes millions of dollars for safety, energy development, and water systems in Nevada. Senator Reid said, “With this money, Nevada will continue to lead the nation in developing renewable energy...” See a list of the projects on the website. - <http://mygov.governmentguide.com/mygov/bio/pr/?id=370&pr=07172003091346>

House Bill H.R.6, Energy Policy Act of 2003 Passed by the Senate, July 31, 2003

- ◆ “To enhance energy conservation and research and development, to provide for security and diversity in the energy supply for the American people, and for other purposes” -
http://energy.senate.gov/legislation/108/bill_details.cfm?id=2040,
http://energy.senate.gov/legislation/108/bill_details.cfm?id=2041

Governor Signs Bills Regarding Renewable Energy

- ◆ AB296; <http://www.leg.state.nv.us/72nd/Reports/history.cfm?ID=643>
Provides multiplier for electricity generated by certain renewable energy systems for purpose of calculating compliance with portfolio standard for renewable energy. (BDR 58-1163)
- ◆ AB398; <http://www.leg.state.nv.us/72nd/Reports/history.cfm?ID=814>
Establishes alternative procedure pursuant to which certain performance contracts for cost-savings energy measures in buildings occupied by governmental entities are bid. (BDR 27-1115)
- ◆ AB429; <http://www.leg.state.nv.us/72nd/Reports/history.cfm?ID=900>
Makes various changes relating to net metering and renewable energy. (BDR 58-779)
- ◆ AB431; <http://www.leg.state.nv.us/72nd/Reports/history.cfm?ID=904>
Establishes program to provide incentives for installation of certain solar energy systems. (BDR 53)

Great Basin Center for Geothermal Energy

- ◆ Great Basin Center Contact Information:
 - Dr. Jane C. S. Long, Professor of Hydrologic Sciences; Director, Great Basin Center for Geothermal Energy; Director, Department of Geological Sciences, University of Nevada, Reno, MS 172, Reno, NV 89557-0138.
 - Dr. Lisa Shevenell, Associate Director, Great Basin Center for Geothermal Energy, Nevada Bureau of Mines and Geology, University of Nevada, Reno, MS 178, Reno, NV 89557-0057
 - Contact information for the Great Basin Center for Geothermal Energy
Email: geothermal@mines.unr.edu
Phone: (775) 784-7018
Department of Geological Sciences, University of Nevada, Reno, MS 172, Reno, NV 89557-0138.

LINKS: USEFUL DATABASES AND GEOTHERMAL INFORMATION

- ◆ American Council for Renewable Energy (ACRE) – <http://www.americanrenewables.org/>
- ◆ **Black Rock-High Rock NCA (National Conservation Area) planning website –**
<http://www.blackrockhighrock.org>
- ◆ Bureau of Land Management – Nevada Geothermal Program -
<http://www.nv.blm.gov/minerals/geothermal/index.htm>
- ◆ Council of State Governments – TrendsAlert; Renewable Energy and State Economics –
<http://www.csg.org>. Summarizes issues and policy options for state officials, regarding economic potential of renewable energy.
- ◆ Geo-Heat Center, Oregon Institute of Technology, Klamath Falls, Oregon - <http://geoheat.oit.edu/>
- ◆ GeoPowering the West - <http://www.eere.energy.gov/geothermal/>
- ◆ GeoPowering the West, Geothermal Related Events Calendar –
<http://www.eere.energy.gov/geothermal/geocalendar.html>
- ◆ Geothermal Biz.com - <http://www.geothermal-biz.com/>
Geothermal biz.com was created to help the geothermal entrepreneur—companies, small businesses, Native American tribes, homeowners, and individuals—develop geothermal direct use and small power generation projects.
- ◆ Geothermal Education Office - <http://www.geothermal.marin.org/>
- ◆ Geothermal Energy Association - <http://www.geo-energy.org/>
- ◆ Geothermal Resources Council - <http://www.geothermal.org>

- ◆ **Great Basin Center for Geothermal Energy at the University of Nevada, Reno** - <http://www.unr.edu/geothermal/>
- ◆ **Idaho National Engineering and Environmental Laboratory (INEEL)** - <http://geothermal.inel.gov/>
- ◆ **National Renewable Energy Laboratory (NREL)** - <http://www.nrel.gov/geothermal>. Geothermal Program; Access reports and publications on geothermal energy by Gerald Nix, Charles Kutscher, Barbara Farhar, Keith Gawlik, Brandon Owens, Walter Short.
- ◆ **Nevada Bureau of Mines and Geology, MI-2001, “The Nevada Mineral Industry 2001”** - <http://www.nbmgs.unr.edu/hits.php?p=dox/mi/01.pdf>
- ◆ **Nevada Bureau of Mines and Geology, Geothermal Energy** - <http://www.nbmgs.unr.edu/geothermal/index.html>
- ◆ **Nevada Commission on Mineral Resources, Division of Minerals** - <http://minerals.state.nv.us/programs/ogg.htm>
- ◆ **Nevada State Office of Energy, Renewable Energy & Energy Conservation Task Force, including report by Mary Riddel “Potential Economic Impact of Nevada’s Renewable Energy Resources”** - <http://energy.state.nv.us/taskforce/default.htm>
- ◆ **Nevada Public Utilities Commission** - <http://www.puc.state.nv.us/>
- ◆ **Office of the Governor, Nevada State Energy Office** - <http://energy.state.nv.us/taskforce/default.htm>
- ◆ **Renewable Energy Policy Project & CREST (Center for Renewable Energy & Sustainable Technology)** - <http://www.repp.org/>
- ◆ **Sandia National Laboratories Geothermal Research Dept.** - <http://www.sandia.gov/geothermal>
- ◆ **Sierra Pacific Resources, Renewables RFP** - <http://www.sierrapacificresources.com/company/renewables/>
- ◆ **Southern Methodist University Geothermal Laboratory** - <http://www.smu.edu/geothermal/>
- ◆ **Stanford Geothermal Program** - <http://ekofisk.stanford.edu/geotherm.html>
- ◆ **U.S. Geological Survey, USGS Open-file Report 99-425 online version 1.0, “Geothermal Industry Temperature Profiles from the Great Basin”** - <http://geopubs.wr.usgs.gov/open-file/of99-425/webmaps/home.html>

Information compiled by the Nevada Division of Minerals with assistance from:

EHNI ENTERPRISES, INC.
P.O. Box 4228
Carson City, NV 89702-4228

Under USDOE Cooperative Agreement: SEP/CA/03/006 supporting GeoPowering the West.

For further information regarding GeoPowering Nevada or Nevada’s Geothermal Program contact John Snow, Geothermal Program Manager, Nevada Division of Minerals at 775-684-7045, Fax: 775-684-7052, or e-mail jsnow@govmail.state.nv.us