

Appendix A

2001: Reserves and Resources on known mineral properties, Lander County.
From The Nevada Mineral Industry 2001, Nevada Bureau of Mines and Geology Special Publication MI-2001

This report, twenty-third of an annual series, describes mineral, oil and gas, and geothermal activities and accomplishments in Nevada in 2001: 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.

LANDER COUNTY

Mine/Property	Reserves/ Resources	Production
Austin Gold Venture (Birch Creek district)	1986: 1.75 million tons, 0.16 opt Au 1989: mined out 1999: 154,000 oz Au resource	1986–88: 141,000 oz Au 1989: 50,000 oz Au
Battle Mountain Complex (Battle Mountain district)	1992: 500,000 oz Au 1995: resource (overall Battle Mountain 632,739 oz Ag complex)—60.2 million tons, 0.036 opt Au, including reserves—46.6 million tons, 0.040 opt Au 1999 (Phoenix): 5,680,000 oz Au proven and probable; 1.5 million oz Au additional mineralization 2000: 175.2 million tons, 0.034 opt Au proven and probable reserves	1994–98: 274,741 oz Au, Eocene 1999: 8,322 oz Au, 19,526 oz Ag 2000: 1,509 oz Au, 1,756 oz Ag 2001: see Phoenix
Buffalo Valley Gold Project (Buffalo Valley district)	1988: 1.5 million tons, 0.05 opt Au 1994: 4.8 million tons, 0.07 opt Au 1997: 600,106 oz Au resource; 100,797 oz Au, other mineralized material	1988–90: 39,668 oz Au
Cortez Joint Venture (Bullion district) CJV includes original Cortez Mine, Pipeline, and South Pipeline	1968: 3.6 million tons, 0.279 opt Au (Cortez deposit) 1987: 4.8 million tons, 0.105 opt Au 1999: 189.4 million tons, 0.050 opt Au proven and probable; 119.1 million tons, 0.035 opt Au mineralized material 2000: 151.3 million tons, 0.047 opt Au proven and probable; 60.0 million tons, 0.047 opt Au mineralized material 2001: 191.1 million tons, 0.044 opt Au proven and probable; 76.6 million tons, 0.040 opt Au resources 2000: 1,009,992 oz Au 2001: 1,184,732 oz Au	1942–84: 2.4 million tons, 0.13 oz Au/ton; 2 million tons, 0.041 opt Au leached. Little Gold Acres: 800,000 tons, 0.124 opt Au 1988: 42,322 oz Au (includes Horse Canyon) 1989: 39,993 oz Au, 12,234 oz Ag (includes Horse Canyon) 1990–91: 107,445 oz Au, 16,750 oz Ag 1992–93: 141,850 oz Au 1995–98: 1,817,273 oz Au, 31,332 oz Ag 1999: 1,328,525 oz Au

**Crescent Pit
(Bullion district)**

1994: 1.97 million tons mill grade, 0.125 opt Au,
2.2 million tons heap-leach, 0.029 opt Au
1997: included in Cortez Joint Venture

**Crescent Valley
(Bullion district)**

1994: placer reserve—8 million cu yd, 0.031 oz
Au/cu yd
1995: placer resource—6 million cu yd, 0.03 oz
Au/cu yd

**Dean
(Lewis district)**

1995: proven reserve—11,000 oz Au
possible to probable resource—240,000 oz Au

**Elder Creek
Project/Shoshone
(Lewis district)**

1989: 91,500 oz Au
1990: 1.5 million tons, 0.041 opt Au

1990–91: 20,102 oz Au

**Fire Creek (northeast
of Bullion district)**

1982: 350,000 tons, 0.06 opt Au

1983–84: 767 oz Au

**Fortitude Complex
(Battle Mountain district)**

1984: 16 million tons,
0.15 opt Au, 0.57 opt Ag

1986: 253,000 oz Au, 902,000 oz Ag
1987: 255,000 oz Au
1988–93: 985,616 oz Au
1,707,992 oz Ag (includes Surprise)
1994: 50,000 oz Au, 95,000 Ag
(Reona Mine)
1995: see Battle Mountain Complex
2001: see Phoenix

**Fortitude
Extension
(Battle Mountain district)**

1992: 500,000 oz Au
1993: geologic resource—900,000 oz Au
1996: included in Battle Mountain Complex

Hilltop (Hilltop district)	1984: 10.3 million tons, 0.073 opt Au 1989: 10 million tons, 0.049 opt Au
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Klondike property	1989: 100,000 oz Au equivalent
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McCoy/Cove (McCoy district)	1981: 2.5 million tons, 0.08 opt Au, 1 opt Ag (McCoy) 1987: 14 million tons, 0.05 opt Au (McCoy); 4 million oz Au, 250 million oz Ag (Cove) 1989: proven and probable reserves 2.9 million oz Au, 128 million oz Ag geologic resource—3.5 million oz Au, 1.50 million oz Ag 1999: 11.8 million tons, 0.043 opt Au, 2.387 opt Ag proven and probable reserves; 100,000 tons, 0.350 opt Au, 2.0 opt Ag other mineralization 2000: 4.7 million tons, 0.034 opt Au, 2.309 opt Ag proven and probable reserves 2001: 430,000 tons, 0.031 opt Au, 2.624 opt Ag proven and probable reserves	1986: 50,000 oz Au 1987–98: 3,046,660 oz Au, 85.79 million oz Ag 1999: 124,500 oz Au, 8.43 million oz Ag 2000: 162,784 oz Au, 12,328,297 oz Ag 2001: 94,633 oz Au 6,451,425 oz Ag
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Mud Springs (Bald Mtn. Zone) (Bullion district)	1993: geologic resource—42,000 oz Au
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Mule Canyon (Argenta district)	1992: 8.5 million tons, 0.136 opt Au 1996: 9 million tons, 0.112 opt Au	1996: 6,743 oz Au 1999: 55,392 oz Au, 10,022 oz Ag 2000: 40,027 oz Au, 5,856 oz Ag 2001: 33,616 oz Au, 3,100 oz Ag
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**Phoenix
(Battle Mountain
district)**

2001: 174.2 million tons, 0.034 opt Au proven and probable reserves; 156.3 million tons, 0.17% Cu proven and probable reserves; 73.8 million tons, 0.026 opt Au mineralized material; 99.6 million tons, 0.14% Cu mineralized material

2001: 5,641 oz Au, 6,468 oz Ag

**Pipeline
(Bullion district)**

1991: geologic resource—11.3 million tons, 0.237 opt Au
1996: 136.7 million tons, 8.7 million oz Au measured resource, includes South Pipeline
1997: included in Cortez Joint Venture

included in Cortez Joint Venture

**Robertson
(Bullion district)**

1988: 11 million tons, 0.04 opt Au
1999: Porphyry zone, 254,678 oz Au proven and probable reserves; Lucky Boy, 33,000 oz Au measured; Altenburg Hill, 21,300 oz Au measured; Widows Mine, 37,300 oz Au inferred; Gold Pan, 91,400 oz Au measured

1989: 3,700 oz Au

**Slaven Canyon property
(Bateman Canyon
district)**

1994: 50,000 oz Au

**South Pipeline
(Bullion district)**

1992: 9 million tons, 0.082 opt Au
1994: geologic resource—76.5 million tons, 0.048 opt Au
1996: see Pipeline
1997: included in Cortez Joint Venture

Surprise (Battle Mountain district)	1987: 225,000 oz Au 1988–91: production and reserve included in Fortitude figures 1994: mined out	1987: 2,000 oz Au
Toiyabe	1988: 813,400 tons, 0.066 opt Au	1988: 32,000 oz Au, 10,300 oz 1990–91: 20,480 oz Au, 15,125 oz Ag
Victorine (Kingston district)	1992: 915,000 tons, 0.304 opt Au 1995: proven and probable reserves—256,000 tons, 0.36 opt Au, plus Broad Canyon additional geologic resource—31,160 oz Au 2000: 120,000 oz Au proven and probable sequence reserves; 200,000 oz Au possible reserves	

Appendix B

Geothermal Lease Information
Battle Mountain Field Office and BLM State Office

Geothermal Lease Information – BLM Personal Communications

GEOHERMAL LEASOR	GEOHERMAL AREA	TOWNSHIP	RANGE	SECTIONS	BLM LEASE NUMBER
Beowawe Power LLC	Beowawe Area	31N	47E	14	010916
CE Geothermal	Beowawe Area	31N	47E	22	048276
Beowawe Power LLC	Beowawe Area	31N	47E	24	010916
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	13	074869
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	14	074869
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	22	074865
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	23	074868
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	24	074868
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	25	074868
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	26	074868
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	27	074865
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	34	074865
Ormat Nevada	Buffalo Valley Hot Springs	29N	41E	35	074865
Placer Dome US Inc	Pipeline Gold Mine Area	28N	47E	31	061283
Placer Dome US Inc	Pipeline Gold Mine Area	28N	47E	32	061283
Cortez	Pipeline Gold Mine Area	27N	47E	5	073991
Cortez	Pipeline Gold Mine Area	27N	47E	6	073991
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	2	076210
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	3	076210
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	4	076210
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	9	076210
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	10	076209
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	15	076209
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	16	076209
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	20	076209
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	21	076211

GEOHERMAL LEASOR	GEOHERMAL AREA	TOWNSHIP	RANGE	SECTIONS	BLM LEASE NUMBER
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	22	076211
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	28	076211
Ormat Nevada	Grass Valley & Walti Hot Springs	24N	47E	29	076211
??? Henkle & Associates	James Lister Well - NE of Iowa Canyon	24N	43E	33	077247
??? Henkle & Associates	James Lister Well - NE of Iowa Canyon	24N	43E	34	077247
Henkle & Associates	James Lister Well - NE of Iowa Canyon	23N	43E	4	076676
Henkle & Associates	James Lister Well - NE of Iowa Canyon	23N	43E	5	076676
Ormat Nevada	Smith Creek Valley Hot Springs	17N	40E	19	074867
Ormat Nevada	Smith Creek Valley Hot Springs	17N	40E	30	074856
Ormat Nevada	Smith Creek Valley Hot Springs	17N	40E	31	074856
Ormat Nevada	???Smith Creek Valley Hot Springs	17N	39E	2	074866
Ormat Nevada	???Smith Creek Valley Hot Springs	17N	39E	3	074866
ART LLC	Smith Creek Valley Hot Springs	17N	39E	23	074847
ART LLC	Smith Creek Valley Hot Springs	17N	39E	24	074847
Ormat Nevada	Smith Creek Valley Hot Springs	17N	39E	25	074852
ART LLC	Smith Creek Valley Hot Springs	17N	39E	26	074847
Ormat Nevada	Smith Creek Valley Hot Springs	17N	39E	34	074866
Ormat Nevada	Smith Creek Valley Hot Springs	17N	39E	35	074851
Ormat Nevada	Smith Creek Valley Hot Springs	17N	39E	36	074851
Ormat Nevada	Smith Creek Valley Hot Springs	16N	39E	2	074866
Ormat Nevada	Smith Creek Valley Hot Springs	16N	39E	3	074866
Tuckee, Charles??	Big Smoky Valley, near Millet Ranch	14N	43E	34	074360

Appendix C

Text and Reference for SB 372

From The Nevada Mineral Industry 2001, Nevada Bureau of Mines and Geology Special
Publication MI-2001

SB 372 - Sec. 10. 1. For each provider of electric service, the commission shall establish a portfolio standard for renewable energy. The portfolio standard must require each provider to generate or acquire electricity from renewable energy systems in an amount that is:

- (a) For calendar years 2003 and 2004, not less than 5 percent of the total amount of electricity sold by the provider to its retail customers in this state during that calendar year.
- (b) For calendar years 2005 and 2006, not less than 7 percent of the total amount of electricity sold by the provider to its retail customers in this state during that calendar year.
- (c) For calendar years 2007 and 2008, not less than 9 percent of the total amount of electricity sold by the provider to its retail customers in this state during that calendar year.
- (d) For calendar years 2009 and 2010, not less than 11 percent of the total amount of electricity sold by the provider to its retail customers in this state during that calendar year.
- (e) For calendar years 2011 and 2012, not less than 13 percent of the total amount of electricity sold by the provider to its retail customers in this state during that calendar year.
- (f) For calendar year 2013 and for each calendar year thereafter, not less than 15 percent of the total amount of electricity sold by the provider to its retail customers in this state during that calendar year.

2. In addition to the requirements set forth in 1, the portfolio standard for each provider must require that:

- (a) Of the total amount of electricity that the provider is required to generate or acquire from renewable energy systems

during each calendar year, not less than 5 percent of that amount must be generated or acquired from solar renewable energy systems.

(b) If the provider acquires electricity from a renewable energy system pursuant to a renewable energy contract with another party:

(1) The term of the renewable energy contract must be not less than 10 years, unless the other party agrees to a renewable energy contract with a shorter term; and

(2) The terms and conditions of the renewable energy contract must be just and reasonable, as determined by the commission. If the provider is a public utility and the commission approves the terms and conditions of the renewable energy contract between the provider and the other party, the renewable energy contract and its terms and conditions shall be deemed to be a prudent investment and the provider may recover all just and reasonable costs associated with the renewable energy contract.

3. If, for the benefit of one or more of its retail customers in this state, the provider has subsidized, in whole or in part, the acquisition or installation of a solar thermal energy system which qualifies as a renewable energy system and which reduces the consumption of electricity, the total reduction in the consumption of electricity during each calendar year that results from the solar thermal energy system shall be deemed to be electricity that the provider generated or acquired from a renewable energy system for the purposes of complying with its portfolio standard.

In Section 4 and Section 13 number 3, allowable renewable energy sources are listed:

Section. 4. "Biomass" means any organic matter that is available on a renewable basis, including, without limitation:

1. Agricultural crops and agricultural wastes and residues;
2. Wood and wood wastes and residues;
3. Animal wastes;
4. Municipal wastes; and
5. Aquatic plants.

Section 13, number 3. As used in this section:

(a) "Biomass" has the meaning ascribed to it in section 4 of this act.

(b) "Renewable energy" means a source of energy that occurs naturally or is regenerated naturally, including, without limitation:

- (1) Wind;
- (2) Solar energy;
- (3) Geothermal energy; and
- (4) Biomass.

The term does not include coal, natural gas, oil, propane or any other fossil fuel, or nuclear energy.

The complete text of this bill can be viewed on the Web at

"[http://www.leg.state.nv.us/71st/Reports/history.cfm?ID=4214.](http://www.leg.state.nv.us/71st/Reports/history.cfm?ID=4214)"

Appendix D

Tables from National Mining Association
Mineral Consumption
Foreign Reliance

Per Capita Consumption of Minerals - 2002
(Pounds)



Aluminum (bauxite)	65
Cement	842
Clays	275
Coal	7,301
Copper	21
Iron Ore	429
Lead	12
Natural Gas	7,021
Petroleum Products	7,473
Phosphate Rock	289
Potash	43
Salt	384
Sand, Gravel, Stone	21,116
Soda Ash	48
Sulfur	83
Zinc	11
Manganese	5
Uranium	0.25
Other Metals	20
Other Nonmetals	572
Total	48,010

SOURCES: [US Geological Survey EIA](#)
2002 data are preliminary.

Updated: March 2003

Commodity	Percent	Major Sources (1998-01) ¹
Arsenic (trioxide)	100	China, Chile, Mexico
Asbestos	100	Canada
Bauxite and Alumina	100	Australia, Guinea, Jamaica, Brazil
Columbium (niobium)	100	Brazil, Canada, Germany, Estonia
Fluorspar	100	China, South Africa, Mexico
Graphite (natural)	100	China, Mexico, Canada, Brazil
Indium	100	China, Canada, France, Russia
Manganese	100	South Africa, Gabon, Australia, Mexico
Mica, sheet (natural)	100	India, Belgium, Germany, China
Quartz Crystal (Industrial)	100	Brazil, Germany, Madagascar
Strontium	100	Mexico, Germany
Thallium	100	Belgium, Canada, France, Russia, United Kingdom
Vanadium	100	South Africa, Canada, China, Czech Republic
Yttrium	100	China, Japan, France, United Kingdom
Gemstones	99	Israel, Belgium, India
Bismuth	95	Belgium, Mexico, China, United Kingdom
Platinum	93	South Africa, United Kingdom, Germany, Russia
Diamond (natural industrial stone)	89	Switzerland, Russia, United Kingdom, Ireland
Stone (dimension)	88	Italy, Canada, India, Spain
Titanium Mineral Concentrates	82	South Africa, Australia, Canada, Ukraine
Potash	80	Canada, Russia, Belarus, Germany
Tantalum	80	Australia, China, Japan, Thailand
Tin	79	Peru, China, Indonesia, Brazil, Bolivia
Bartite	76	China, India, Canada, Thailand
Iodine	76	Chile, Japan, Russia
Cobalt	75	Finland, Norway, Russia, Canada
Tungsten	70	China, Russia
Palladium	69	Russia, South Africa, United Kingdom, Belgium
Chromium	63	South Africa, Kazakhstan, Zimbabwe, Russia, Turkey
Silver	61	Canada, Mexico, Peru, United Kingdom
Zinc	60	Canada, Mexico, Kazakhstan
Rhenium	59	Chile, Kazakhstan, Germany, Russia
Beryllium	55	Kazakhstan, Russia, Brazil, Philippines
Magnesium Metal	54	Canada, China, Russia, Israel
Titanium (sponge)	54	Japan, Russia, Kazakhstan
Rare Earths	53	China, France, Japan, Estonia
Peat	50	Canada
Silicon	47	Norway, South Africa, Russia, Canada
Nickel	43	Canada, Norway, Russia, Australia
Antimony	41	China, Mexico, Belgium, South Africa, Hong Kong
Aluminum	39	Canada, Russia, Venezuela, Mexico
Copper	37	Canada, Chile, Peru, Mexico
Magnesium Compounds	35	China, Australia, Canada, Israel
Nitrogen (feed), Ammonia	29	Trinidad and Tobago, Canada, Ukraine
Garnet (industrial)	28	Australia, India, China
Pumice	28	Greece, Italy, Turkey
Diamond (dust, grit, and powder)	27	Ireland, China, Ukraine
Gypsum	25	Canada, Mexico, Spain
Mica, scrap and flake (natural)	24	Canada, India, China, Finland
Perlite	23	Greece
Cement	19	Canada, Thailand, China, Venezuela, Greece
Lead	18	Canada, Mexico, Australia, Peru
Salt	18	Canada, Chile, Mexico, The Bahamas
Sulfur	15	Canada, Mexico, Venezuela
Iron and Steel	14	European Union, Canada, Japan, Mexico
Iron Ore	11	Canada, Brazil, Australia, Venezuela
Tak	8	China, Canada, France, Japan
Iron and Steel Slag	6	Italy, Japan, Canada
Phosphite Rock	6	Morocco

Note: Excludes mineral fuels.

¹ In descending order of importance.

SOURCE: [USGS, Mineral Commodity Summaries, 2002](#)

Updated: March 2003.