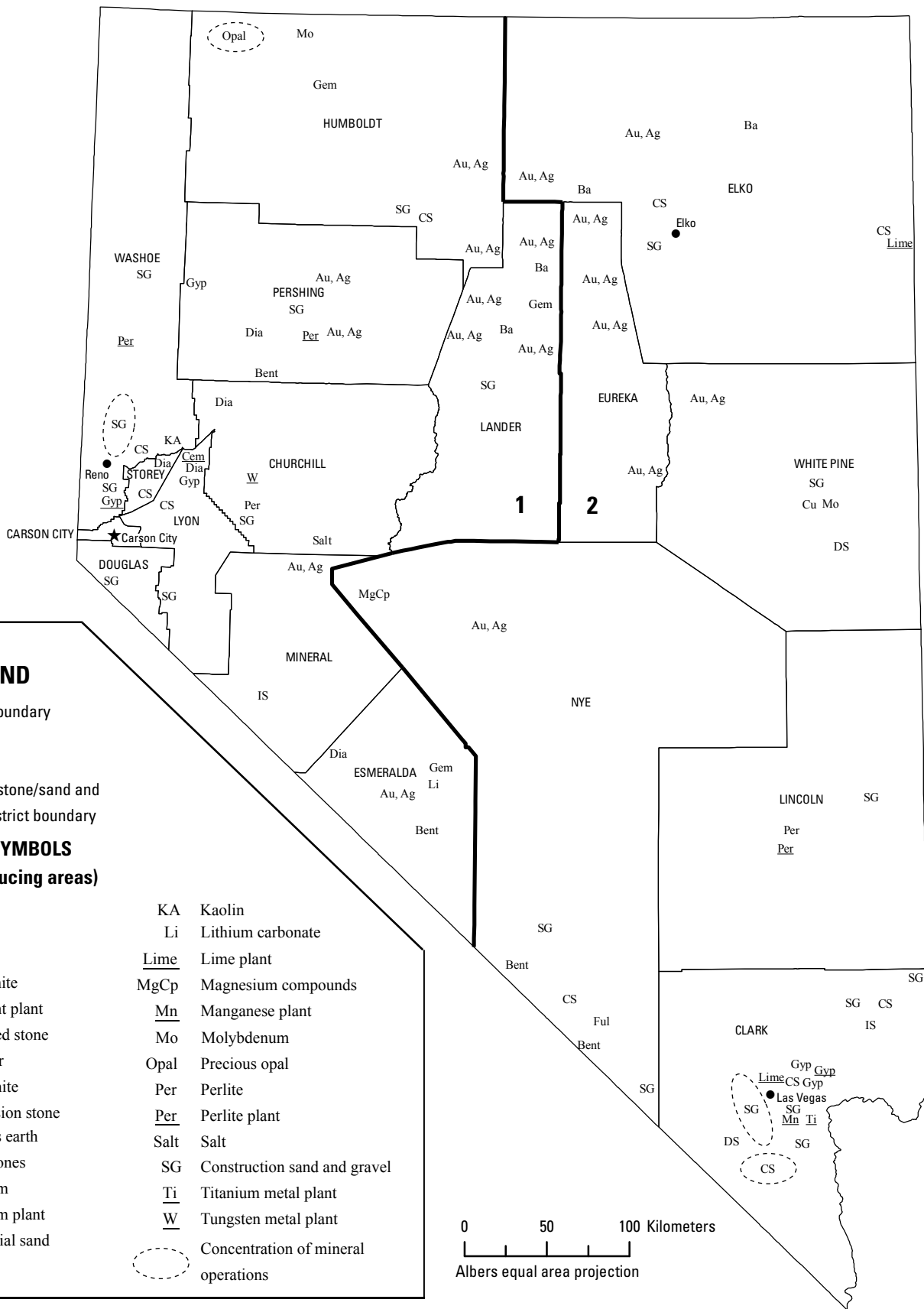




2009 Minerals Yearbook

NEVADA

NEVADA



LEGEND

- County boundary
- ★ Capital
- City
- 1 — Crushed stone/sand and gravel district boundary

MINERAL SYMBOLS

(Principal producing areas)

Ag	Silver	KA	Kaolin
Au	Gold	Li	Lithium carbonate
Ba	Barite	<u>Lime</u>	Lime plant
Bent	Bentonite	MgCp	Magnesium compounds
<u>Cem</u>	Cement plant	<u>Mn</u>	Manganese plant
CS	Crushed stone	Mo	Molybdenum
Cu	Copper	Opal	Precious opal
Dia	Diatomite	Per	Perlite
DS	Dimension stone	<u>Per</u>	Perlite plant
Ful	Fuller's earth	Salt	Salt
Gem	Gemstones	SG	Construction sand and gravel
Gyp	Gypsum	<u>Ti</u>	Titanium metal plant
<u>Gyp</u>	Gypsum plant	<u>W</u>	Tungsten metal plant
IS	Industrial sand		
		○	Concentration of mineral operations

0 50 100 Kilometers
Albers equal area projection

Source: Nevada Bureau of Mines and Geology/U.S. Geological Survey (2009).

THE MINERAL INDUSTRY OF NEVADA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Nevada Bureau of Mines and Geology for collecting information on all nonfuel minerals.

In 2009, Nevada's nonfuel raw mineral production¹ was valued at \$6.02 billion, based upon annual U.S. Geological Survey (USGS) data. This was a decrease of \$268 million, or 4%, from a total production value of almost \$6.29 billion in 2008, which had followed an \$887 million, or 16%, increase from a total production value of \$5.4 billion in 2007. The State rose in rank to first in the Nation in total nonfuel mineral production value in 2009, which followed rankings of second in 2006–2008 and third in 2005. The State was either first or second in the Nation from 1993–2004. Nevada accounted for 10.2% of the U.S. total nonfuel value in 2009.

Nevada produced 161,000 kilograms (kg) of gold, accounting for 72% of the Nation's total gold production of 223,000 kg. The State has led the Nation in gold production since 1981. Gold accounted for 84% of the State's total nonfuel raw mineral production value in 2009, followed by copper (actual data withheld—company proprietary data), construction sand and gravel, lime, silver, and crushed stone. Nevada, for the eighth consecutive year, ranked second in silver production (first from 1987–2001), accounting for 16%, or about 203,000 kg, of the Nation's total silver production—1,250,000 kg. Silver production in the State continued on a downward trend since 2000; production declined by 59% from 734,000 kg in 2000 to approximately 300,000 kg in 2004, but since then has decreased on average by 8% annually.

The largest increase in production value took place with gold, up by \$43 million, or less than 1%, from that of 2008, although production of gold was down by 17,000 kg, or by 10%. Other increases in the production value of mineral commodities produced in the State included (in descending order of production value) lime, magnesite, dimension stone, gemstones, crude perlite, salt, and zeolites (all data withheld—company proprietary data). The largest decrease in production value took place with copper, down by 37% from the production value of 2008 (actual data withheld—company proprietary data). Significant decreases took place with the production values of construction sand and gravel, down by \$25 million, or 51%; silver, down by \$17 million, or 15%; barite, down by \$11 million, or 61%; and, crushed stone, down by \$4.5 million, or 5%. Lithium carbonate, cement, molybdenum concentrates, and industrial sand gravel saw significant production value

¹The terms “nonfuel mineral production” and related “values” encompass variations in meaning, depending upon the mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2009 USGS mineral production data published in this chapter are those available as of September 2011. Data in this report are rounded to three significant digits and percentages are calculated from unrounded data. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

decreases from 2008 to 2009 (actual data withheld—company proprietary data).

In 2009, Nevada continued to be the only State to produce magnesite and lithium carbonate minerals and continued to rank first of two barite-producing States, second in silver and diatomite, and fifth in the production of kaolin and pumice and pumicite. The State rose to third from fourth in copper and rose to fifth from sixth in lime production. Nevada also rose from thirteenth to twelfth in the production of gemstones (ranked based upon value). The State dropped to 5th from 4th in crude gypsum production, to 13th from 10th in the production of construction sand and gravel, and remained a producer of significant quantities of crushed stone and industrial sand and gravel. Mercury was recovered as a byproduct of gold-silver processing at several mines, but no data were reported to the USGS.

The following narrative information was provided by the Nevada Bureau of Mines and Geology² (NBMG). Production data in the text that follows were those reported by the NBMG as measured by mine shipments, sales, or marketable production (including consumption by producers). They were compiled by the Nevada Commission on Mineral Resources, Division of Minerals (NDM) and the Nevada Bureau of Mines and Geology, based upon the surveys, canvasses, and estimates made by those State agencies, including information gathered from company annual reports. The NDM and NBMG data were reported by those agencies to be nonproprietary and may differ from some USGS production figures as reported to and estimated by the USGS.

Exploration and Development Activities

Industrial Minerals

Barite.—Spirit Minerals LP continued to keep its claims current and staked new ones in 2009. In May 2009, Spirit Minerals was acquired by National Oilwell Varco Inc. (Houston, TX) and renamed NOV Minerals (National Oilwell Varco Inc., 2010, p. 9). Prior to 2009, Spirit Minerals had staked 42 lode claims adjacent to earlier claims in T12 and T13N, R46E in the Northumberland district in Nye County. These were in the area that includes the Monitor and Bluestone barite deposits described in NBMG Bulletin 98, Barite in Nevada (Kapke, 1984).

Cement.—Eagle Materials Inc. (Dallas, TX) received permits from the State for its planned expansion of the Fernley facility, but the downturn in the economy caused the company to put

²Jonathan G. Price, Director and State Geologist, David A. Davis, Geologic Information Specialist, and John L. Muntean, Research Economic Geologist, coauthored the text of the State mineral industry information provided by the Nevada Bureau of Mines and Geology.

the expansion plans on hold. Once started, the project will take 18 to 24 months to complete (Eagle Materials Inc., 2010, p. 7).

Diatomite.—In 2009, Global Silica, LLC (Las Vegas, NV) staked 106 placer and two lode claims adjacent to 52 placer claims they staked in 2008. These claims were located in T4N, R37E in the Monte Cristo Range in northern Esmeralda County. The company planned to mine diatomite in section 26 and to process and sell it as amorphous silica. The U.S. Department of the Interior's Bureau of Land Management (BLM) was working on an environmental assessment, and production was tentatively scheduled for 2011.

Lithium.—Canada Lithium Corp. (Toronto, Ontario, Canada) and Gold Summit Corporation USA (Reno, NV) formed the Great Basin Joint Venture in 2008 to explore Gold Summit's Paymaster property, which encompassed about 3,100 hectares (ha) about 16 km northeast of the Chemetall Foote Co. operation at Silver Peak. Based on surface assays of up to 140 ppm lithium, a 370-m exploration hole was drilled to locate intrabasinal aquifers and to sample any brines found in 2009. Conductive layers were intersected between 325 and 338 m, and between 347 m and the total depth. Assays on brines between 149 m and total depth ranged between 130 and 940 ppm lithium with an average of 316 ppm. Because of the low values, Canada Lithium withdrew from the joint venture (Canada Lithium Corp., 2009). At the end of 2009, Gold Summit decided to concentrate on their gold and silver resources and made arrangements to sell their lithium assets to American Lithium Minerals, Inc. (Henderson, NV). American Lithium owned the Borate Hills Project, which encompassed more than 1,380 ha between 24 and 32 km west-northwest of Silver Peak. The Borate Hills project consisted of three separate claim blocks: North Borate Hills and South Borate Hills in the northern Silver Peak Range in T1S, R37E and Fish Lake Deep on the east edge of Fish Lake Valley in T1S, R36E.

In 2009, Black Hawk Exploration (Fox Island, WA) formed the subsidiary Blue Lithium Energy (Fox Island, WA) and afterwards acquired the BMP Placer Claims. The BMP group consisted of 56 placer claims covering 450 ha in Clayton Valley just north of Chemetall Foote Corp.'s (a subsidiary of Chemetall GmbH of Frankfurt, Germany) Silver Peak operation. Blue Lithium Energy received a permit from the BLM to drill an exploration hole.

In 2009, TNR Gold Corp. (Vancouver, British Columbia, Canada) signed a letter of agreement to acquire up to a 100% interest in the Sarcobatus Flats lithium brine property from Tonogold Resources, Inc., of La Jolla, CA. The property consisted of 105 placer claims covering 1,080 ha, and was located about 282 km south of Tonopah. A preliminary sampling program of surface sediments contained assays ranging between 210 and 340 ppm lithium (TNR Gold Corp., 2009).

Zeolites.—Nevada Specialty Minerals, LLC leased 518 ha to explore and develop the Lovelock zeolite deposit 21 km northwest of Lovelock in the Trinity Range in the Gold Butte district of Pershing County. The Lovelock zeolite deposit contained ferrierite and mordenite with an outcrop area about 1,200 m long from north to south, averaging 600 m wide, and up to 17 m thick near the center. The host rock was a series of Miocene or Pliocene unnamed sedimentary rocks and tuffs.

Metals

Exploration for metallic ores in Nevada slowed considerably in 2009 due to the economic crisis that began in the fall of 2008. Nevada county recorders registered more than 190,000 claim filings in 2009, a 14% decrease from the total number of claims in 2008. These included new claims and annual maintenance of existing claims. The BLM listed about 15,700 new active claims, a 24% decrease from the total number of claims in 2008. Companies that staked the most claims in 2009 were Fronteer Development Group Inc. (Vancouver, British Columbia, Canada) with 950 claims; Western Lithium Corp. (Reno, NV) with 826 claims; Infrastructure Materials Corp. (Reno, NV) with 808 claims, mostly for limestone; Kinross Gold Corp. (Toronto, Ontario, Canada) with 720 claims; and, Renaissance Exploration Inc. (Reno, NV) with 678 claims. Barrick Gold Corp. (Toronto, Ontario, Canada) and Newmont Mining Corp. (Greenwood Village, CO) staked only 113 and 34 claims, respectively. Only 64 drilling projects were reported in 2009, compared to 123 in 2008.

Only 4 of the 64 projects that reported drilling were for metals other than gold: Quadra Mining Ltd.'s (Vancouver, British Columbia, Canada) Robinson Mine in the Yerington district for copper; PacMagMetals Ltd.'s (West Perth, Australia) Ann Mason project, also in the Yerington district, for copper; Golden Predator Royalty and Development Corp.'s (now Americas Bullion Royalty Corp., of Whitehorse, Yukon Territory, Canada) Taylor Mine south of Ely for silver; and Western Uranium Corp.'s (Vancouver, British Columbia, Canada) Kings Valley project near McDermitt for uranium and gold. Additional nongold projects that did not report drilling in 2009 included: General Moly Inc.'s (Lakewood, CO) Mount Hope molybdenum project north of Eureka, which was waiting on final permits before commencing production; General Moly's Liberty molybdenum mine north of Tonopah, where operations were suspended until Mount Hope begins production; Nevada Copper Corp.'s (Vancouver, British Columbia, Canada) Pumpkin Hollow copper project in the Yerington district; and Quatterra Resources Inc.'s (Vancouver, British Columbia, Canada) MacArthur copper project in the Yerington district.

Gold.—Gold continued to be the primary mineral commodity for exploration activities in Nevada in 2009. Exploratory drilling occurred mainly on existing mine sites by major companies. Barrick carried out major drill programs at its Cortez, Turquoise Ridge, Bald Mountain, South Arturo, and Goldstrike Mines. Newmont's exploration programs focused mainly in and around its mines on the northern Carlin trend and at its Phoenix Mine, whereas Goldcorp drilled nearly 91,000 m on its Marigold Mine property. The only other drill programs carried out by large companies outside of their active mine areas were Barrick's exploration program at Spring Valley, a joint venture with Midway Gold Corp., and Newmont's exploration programs at Sandman, a joint venture with Fronteer Development Group Inc., and at Buffalo Valley, a joint venture with Fairmile Goldtech Inc. (Vancouver, British Columbia, Canada).

Several smaller companies carried out intensive exploratory programs on other gold projects. Fronteer Development Group Inc., with AuEx Ventures Inc., continued to explore the Long

Canyon project in northeastern Nevada, drilling several high-grade oxide intercepts. Agnico-Eagle Mines Ltd., (Toronto, Ontario, Canada) in a joint venture with AuEx Ventures Inc., drilled more than 15,000 m at the adjacent West Pequop project, encountering several high-grade intercepts in several areas.

Commodity Review

Industrial Minerals

Barite.—According to data from the NDM, Nevada's barite production decreased 20% to 432,000 metric tons (t) from 540,000 t shipped in 2008 (Driesner and Coyner, 2010, p. 22). Although this was still considerably more than the recent low production of 342,000 t in 2002, it was far below the 2.25 million metric tons (Mt) high in 1981. The difference in reported production was that the U.S. Geological Survey reported run-of-mine, flotation, or other beneficiated material that was sold or used by the producer, while the NDM reported what was shipped and can include some material from stockpiles. About 95% of the barite sold domestically was used as a weighting agent in oil and gas well drilling fluids. According to the U.S. Geological Survey, shipments of ground barite from Nevada mostly went to Colorado, Utah, and Wyoming gas drilling customers.

M-I SWACO (Houston, TX), a subsidiary of Schlumberger Ltd. (Houston, TX), was the leading Nevada barite producer in 2009. Their production decreased 31% to 200,000 t from 289,000 t shipped in 2008 of crude and ground barite from the Greystone Mine and Battle Mountain plant, both in Lander County (Driesner and Coyner, 2010, p. 12). Except for 185,000 t shipped in 2002, this was the lowest production since 81,600 t were shipped in 1994. A small amount of barite was also taken from old stockpiles in the nearby Mountain Springs Mine for blending at the plant. The barite of the Greystone Mine was in black chert and minor argillite and shale of the Middle to Late Devonian Slaven Chert.

Baroid Drilling Fluids (Houston, TX), a subsidiary of Halliburton Co. (Dallas, TX), was the second leading producer in Nevada. Their production decreased 8% to 155,000 t from 170,000 t shipped in 2008 (Driesner and Coyner, 2010, p. 15). The company mined barite from the Rossi Mine in Elko County and processed it at the Dunphy Mill in Eureka County. Heemskirk Consolidated, Ltd. (Melbourne, Australia) used barite from the Dunphy Mill for their Lethbridge, Alberta, plant. The barite was then supplied to the western Canadian drilling mud market. The barite occurred in chert of the Ordovician Vinini Formation. Baker Hughes INTEQ (Houston, TX) shipped 82,000 t of barite from its Argenta operation near Battle Mountain in Lander County (Driesner and Coyner, 2010, p. 12).

Cement.—The only cement producer in Nevada was the Nevada Cement Co. (a subsidiary of Eagle Materials, Inc., of Dallas, Texas), whose plant was in Fernley, Lyon County. The plant was built in 1964 with a rated annual clinker capacity of 460,000 t, and produces Type I/II, low alkali, moderate sulfate-resistant cement, and IP-blended cement (Nevada Cement Co., 2014). The cement was manufactured from Tertiary lacustrine limestone mined a few miles south of Fernley, and from other

raw materials that come from northern Nevada and elsewhere. Most of the cement went to the northern Nevada market with a minimal amount going to California. Both markets were adversely impacted by the housing slowdown. Though production from the Fernley facility was confidential, Eagle Materials reported its overall cement sales revenues were down 16% in 2009 (Eagle Materials Inc., 2010, p. 25).

Diatomite.—EP Minerals, LLC (Reno, NV), a subsidiary of Golden Gate Capital (San Francisco, CA), and the second leading diatomite producer in the world, produced most of Nevada's diatomite. The Colado operation in Pershing County was the company's most productive Nevada operation, primarily making filtration products from diatomite mined about 24 km to the northwest in the Velvet mining district. The diatomite occurred in thick beds interbedded with freshwater tuffaceous sedimentary rocks of probable Miocene age. The company also produced diatomite used in fillers and absorbents at its Clark plant and mine in the Clark mining district in Storey County, about 32 km east of Reno, and diatomite used in insulation from a pit near Hazen in Lyon County. The diatomite at Clark occurred with diatomaceous shale and thin beds of volcanic tuff within the Miocene-Pliocene Kate Formation and consisted of about 90% of the diatom *Melosira granulata*.

Celite Corp. (Lompoc, CA) operated a plant in Fernley that produces diatomite fillers and mined its Nightingale deposit north of Fireball Ridge in Churchill County. The Hazen Pit was placed on standby and not mined in 2009. Celite was a subsidiary of Imerys Filtration Minerals (Paris, France), the world's leading diatomite producer, itself a subsidiary of Imerys S.A. (Paris, France), a large French industrial minerals company.

Moltan Co. (Memphis, TN) shipped absorbent products, cat litter, and soil conditioner under several labels from a mine and plant complex in Churchill County about 32 km northeast of Fernley in the Desert mining district. Diatomite deposits in western Churchill County were interbedded with Pliocene lacustrine tuffaceous shale, sandstone, and limestone and siliceous tuff. Dicalite-Dicaperl Minerals Inc.'s (Bala Cynwyd, PA, formerly Grefco Minerals, Inc.) diatomite operation near the Esmeralda/Mineral County line was small relative to other Nevada diatomite companies but has been producing diatomite for many years for fillers. The deposit was in Miocene-Pliocene lacustrine sedimentary rocks consisting of diatomite, argillaceous and calcareous diatomite, clay, sand, and volcanic ash, and the main diatoms were *Melosira granulata*, *Stephanodiscus aslraea*, and *Eunotia robusta*.

Gemstones.—Precious opal was produced from several mines in the Virgin Valley area of northern Humboldt County. Virgin Valley was a well-known source of gemstones in North America. The best known mines were the Royal Peacock, Rainbow Ridge, Bonanza, and Hidden Valley Mines. In 2009, the Bonanza, Rainbow Ridge, and Royal Peacock Mines together produced about 45 kg from pay-to-dig operations. In 2009, less than 45 kg of turquoise was shipped from the Blue Ridge Mine, a family-owned property in the Bullion district of Lander County.

Gypsum.—According to data from NDM, Nevada's gypsum production decreased 14% to an estimated 1 Mt, which was the sixth consecutive annual decline (Driesner and Coyner,

2010, p. 22). PABCO Gypsum (Newark, CA) in Clark County northeast of Las Vegas was the leading Nevada producer in 2009. Production fell 14% to about 649,000 t in 2009 from about 753,000 t of crude gypsum in 2008. This was the fourth annual decline and a drop of 58% since 2005, when production peaked at 1.5 Mt (Driesner and Coyner, 2010, p. 21). PABCO Gypsum processed the gypsum into wallboard at a plant adjacent to its mining operation.

U.S. Gypsum Corp. (Chicago, IL), the Nation's leading wallboard producer, was the second leading Nevada producer in 2009. Production decreased 24% to 183,000 t in 2009 from 240,000 t in 2008. This was the third annual decline and a drop of 45% since 2006, when production last peaked at 335,000 t (Driesner and Coyner, 2010, p. 8). The company mined gypsum in western Pershing County and processed it into wallboard and plaster at a plant at Empire in Washoe County.

Lithium.—Nevada was the only State with domestic production of lithium raw materials, and as this production was from one company, actual production and consumption figures were withheld to protect company proprietary data. Chemetall Foote Co. owned and operated the Silver Peak lithium facility in Esmeralda County about 48 km from Tonopah. The company produced lithium carbonate, lithium hydroxide monohydrate, and lithium hydroxide anhydrite. The lithium chemicals were produced by solar evaporation preconcentration and subsequent refining techniques from brine that was pumped from beneath Clayton Valley playa. Lithium brine varied between 100 and 300 ppm.

Magnesium (Magnesite).—In 2009, Molycor Gold Corp. (White Rock, British Columbia, Canada) published a Canadian National Instrument 43–101 technical report on their Tami-Mosi magnesium property in the western foothills of the Schell Creek Range between Tamberlain and Mosier Canyons about 10 km southeast of Ely in White Pine County. The property consisted of about 140 claims covering 1,150 ha and the company reported an inferred resource of about 237 Mt of virtually pure dolomite grading 10% magnesium (more than 23 Mt of magnesium) (Nevada Clean Magnesium, Inc., 2009). The rock was in the Simonson Dolomite unit of the Devonian Guilmette Formation.

Perlite.—Nevada had large perlite resources, and several deposits of perlite in central Pershing, northern Lincoln, and southern Clark Counties have been mined extensively over the preceding decades. However, in 2009, the State produced only minor amounts of perlite. Current perlite production in Nevada was restricted to relatively small-scale mining of two deposits for niche markets. Wilkin Mining and Trucking Inc. (Caliente, NV) mined perlite from the Tenacity Perlite Mine in the South Pahroc Range Mining district about 40 km west of Caliente in Lincoln County. The company has been mining perlite in the area for more than 25 years. Wilkin had a small popping plant in Caliente, and sales were almost exclusively of expanded perlite that was used for horticultural purposes. The deposit consisted of a large, flat-lying 6-meter-thick perlite flow with obsidian pellets in Tertiary rhyolitic volcanic rocks.

Dicalite-Dicaperl Minerals Inc. (Bala Cynwyd, PA, formerly Noble Perlite) produced expanded perlite from a plant in Fallon. They have eight placer claims about 32 km south-southeast of

Fallon on the south side of the White Throne Mountains, but these claims were not mined in 2009. Noble purchased ore in New Mexico, which was brought in by truck and train. Most of their processed perlite was microspheres used for fillers. EP Minerals, LLC produced a small amount of expanded perlite that was marketed as a filter aid from its Colado diatomite plant in Pershing County. Plant capacity was 10,800 t/yr, but 2009 production was not available (EP Minerals, LLC, 2014). The crude perlite came from the Popcorn Mine about 24 km south of Fallon in Churchill County, which was usually mined a week or two per year.

Potash.—The Rulco LLC (Igancio, CO) potassium sulfate project was temporarily shut down throughout 2009, but claims were kept current. Between 2001 and 2008, small amounts of potassium alum (kalinite) were shipped from the deposit in Esmeralda County about 16 km north of Silver Peak. The kalinite, which occurred with sulfur as veins and stringers in rhyolitic rock, was being marketed for horticultural use.

Pozzolan.—In 2009, the Fernley Planning Commission approved a special use permit for Nevada Cement Co. to operate their proposed Mustache Pozzolan Quarry on 10 ha of BLM land about 5 km southwest of Fernley in section 28, T20N, R24E. The quarry was proposed to operate for 25 years and produce up to 907,000 t of material (reported as 1 million short tons). The site was largely in Miocene to lower Pliocene Chloropagus Formation, which mainly consisted of basaltic and andesitic lava flows and breccias interbedded with rhyolitic tuffs and minor sedimentary rocks. Shale would be mined at the rate of up to 20 dump truck loads, averaging 18 to 27 t/d, 6 days per week, and hauled to the Nevada Cement Co. plant to be heated and turned into pozzolan. This locally produced pozzolan would reduce the company's costs by reducing the need to bring in fly ash from coal-fired power plants or tuff from elsewhere in the State or from California, which were being used as pozzolan (City of Fernley Planning Commission, 2009).

Sand and Gravel, Industrial.—According to data from NDM, Nevada's major silica producer, Simplot Silica Products (a subsidiary of J. R. Simplot Co., of Boise, ID) at Overton, Clark County, shipped about 375,000 t of silica sand in 2009, a decrease of 17% from 2008 (Driesner and Coyner, 2010, p. 21). The sand was mined from a large open pit in the relatively friable Cretaceous Baseline Sandstone, washed in the pit, and transported via an 8-km slurry pipeline to a plant where it was screened and bagged. The facility produced four grades of sand based on coarseness—AFS 55, 60, 70, and 100. AFS 70, which was used mainly in manufacturing glass and foundry castings, was the primary product. Simplot proposed to expand its pit and, in 2009, BLM issued an environmental assessment (U.S. Bureau of Land Management, 2009). Simplot estimated that silica sand resources in the current direction of mining would be exhausted in 6 months, and the expansion would enable operations to continue another 30 to 40 years.

Metals

Copper and Molybdenum.—Nevada produced 66,100 t of copper, a 17% decrease, and 136 t of molybdenum, a 7.8% increase, from that of 2008. Quadra Mining Inc.'s Robinson

Mine near Ely in White Pine County produced 84% of Nevada's copper in 2009, amounting to 55,300 t, or a 24% decrease, from that of 2008 (Driesner and Coyner, 2010, p. 15). Newmont's Phoenix Mine near Battle Mountain in Lander County made up the balance of the 2009 copper production, producing 10,800 t, a 50% increase from that of 2008 (Driesner and Coyner, 2010, p. 12). Win-Eldrich Mines Ltd. (Toronto, Ontario, Canada) reopened the Ashdown Mine in Humboldt County and reported 97 t of molybdenum production in 2009. Quadra reported 40 t of molybdenum from its Robinson Mine (Driesner and Coyner, 2010, p. 15).

Gold and Silver.—Nevada produced 160,000 kg (5 million troy ounces) of gold and 230,000 kg (7 million troy ounces) of silver in 2009 (Driesner and Coyner, 2010, p. 22). Production was down from 2008, by almost 12% for gold, and by 8% for silver. Fifty percent of the gold production in 2009 came from mines on the Carlin trend, helping Barrick Gold Corp. and Newmont Mining Corp. to continue their dominance of Nevada's gold production. Barrick and Newmont accounted for 89% of production in 2009 (Driesner and Coyner, 2010).

Barrick produced the most gold, with production from its 75% share of Bald Mountain, Cortex, Goldstrike, Ruby Hill, and Turquoise Ridge Mines, plus its 50% share of the Round Mountain Mine's production and its 33% share of the Marigold Mine's, totaling about 76,000 kg (2.4 million troy ounces) of gold, a 14.1% decrease from 2008 (Driesner and Coyner, 2010). Newmont produced 62,500 kg (2 million troy ounces) of gold, a 9.4% decrease from 2008. It reported production from its Carlin trend mines and from the Lone Tree, Midas, Phoenix, and Twin Creeks Mines, plus its 25% share of the Turquoise Ridge Mine (Driesner and Coyner, 2010). Newmont was the leading silver producer in 2009, producing 98,200 kg (3 million troy ounces), primarily from its Midas and Phoenix Mines (Driesner and Coyner, 2010, p. 7–15). Coeur d'Alene Mines Corp. recovered 67,900 kg (2 million troy ounces) of silver from the leach pads at its Rochester Mine, where mining stopped in 2007 (Driesner and Coyner, 2010, p. 8). Several gold projects were in the permitting stage during 2009, including Newmont's Genesis Mine expansion north of Carlin and Emigrant Gap deposit south of Carlin; Kinross Gold Corp. and Barrick Gold's Gold Hill deposit near the Round Mountain in Nye County; Atna Resources Ltd.'s Reward Mine, near Beatty in Nye County; and

Imperial Metal Corp.'s Sterling Mine, also near Beatty in Nye County.

Iron Ore.—In 2009, the Saga Exploration Company shipped iron ore from stockpiles at the old Nevada Barth Mine in Eureka County. The iron consisted mostly of hematite and some magnetite, and was used in the manufacture of cement.

References Cited

- Canada Lithium Corp., 2009, Canada Lithium focuses on advanced Quebec project; relinquishes interest in grassroots Nevada brines play: Toronto, Ontario, Canada, Canada Lithium Corp. press release, November 5. (Accessed February 18, 2014, at http://www.canadalithium.com/s/NewsReleases.asp?ReportID=370062&_Type=News-Releases&_Title=Canada-Lithium-Focuses-on-Advanced-Quebec-Project-Relinquishes-Interest-in-...)
- City of Fernley Planning Commission, 2009, Minutes of the Fernley Planning Commission meeting: Fernley, NV, City of Fernley Planning Commission meeting minutes, February 11. (Accessed February 18, 2014, at <http://www.cityoffernley.org/ArchiveCenter/ViewFile/Item/852>.)
- Driesner, Doug, and Coyner, Alan, 2010, Major mines of Nevada 2009—Mineral industries in Nevada's economy: Nevada Bureau of Mines and Geology Special Publication P-21, 30 p. (Accessed February 18, 2014, at <http://minerals.state.nv.us/forms/mining/MajorMinesOfNevada/mm2009.pdf>.)
- Eagle Materials Inc., 2010, Form 10-K—2009: U.S. Securities and Exchange Commission, March 31, 207 p.
- EP Minerals, LLC, 2014, EP Minerals History: Reno, NV, EP Minerals, LLC. (Accessed February 18, 2014, at <http://epminerals.com/about/history>.)
- Kapke, K.G., 1984, Barite in Nevada: Reno, NV, Nevada Bureau of Mines and Geology Bulletin 98, 125 p.
- National Oilwell Varco Inc., 2010, Form 10-K—2009: Securities and Exchange Commission, February 26, 95 p.
- Nevada Cement Co., 2014, About Nevada Cement Co.: Fernley, NV, Nevada Cement Co. (Accessed February 18, 2014, at <http://www.nevadacement.com/about/>.)
- Nevada Clean Magnesium, Inc., 2009, NI 43-101—236 million tonnes magnesium resource: Vancouver, British Columbia, Canada, Nevada Clean Magnesium, Inc., press release, July 7. (Accessed February 18, 2014, at <http://www.nevadacmi.com/ni-43-101-236-million-tonne-magnesium-resource/>.)
- TNR Gold Corp., 2009, TNR Gold / International Lithium increase Nevada position, Sarcobatus Flats lithium brine project: Vancouver, British Columbia, Canada, TNR Gold Corp. press release, November 10. (Accessed February 18, 2014, at <http://www.tnrgoldcorp.com/index.php/news/2009-news/187-tnr-gold-international-lithium-increase-nevada-position-sarcobatus-flats-lithium-brine-project>.)
- U.S. Bureau of Land Management, 2009, Simplot Silica mine expansion project-Environmental Assessment: Las Vegas, Nevada, U.S. Bureau of Land Management Environmental Assessment, June. (Accessed February 18, 2014, at <http://clearinghouse.nv.gov/public/Notice/2010/E2010-028.pdf>.)

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NEVADA^{1,2}

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2007		2008		2009		
	Quantity	Value	Quantity	Value	Quantity	Value	
Barite	W	W	641	29,500	377	18,500	
Gold ³	kilograms	186,000	4,170,000	178,000	5,000,000	161,000	5,040,000
Sand and gravel, construction		34,800 ^r	180,000	29,500 ^r	163,000 ^r	21,400	138,000
Silver ³	kilograms	243,000	105,000	235,000	113,000	203,000	95,900
Stone, crushed		12,700	111,000	10,200 ^r	95,100 ^r	8,290	90,500
Combined values of brucite (2007), cement (portland), clays (bentonite, fuller's earth, kaolin), copper, diatomite, gemstones (natural), gypsum (crude), lime, lithium carbonate, magnesite, molybdenum concentrates, perlite (crude), pumice and pumicite, salt, sand and gravel (industrial), stone (dimension), zeolites, and value indicated by symbol W		XX	831,000 ^r	XX	893,000 ^r	XX	639,000
Total		XX	5,400,000 ^r	XX	6,290,000 ^r	XX	6,020,000

^rRevised. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Recoverable content of ores, etc.

TABLE 2
NEVADA: CRUSHED STONE SOLD OR USED, BY TYPE¹

Type	2008			2009		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone	7	3,520	\$36,300	7	2,890	\$36,300
Granite	7	1,290	7,650	6	189	1,430
Sandstone and quartzite	2 ^r	899 ^r	8,370 ^r	2	670	7,380
Volcanic cinder and scoria	2	212	2,020	2	149	1,440
Miscellaneous stone	13 ^r	4,290 ^r	40,700 ^r	13	4,390	44,000
Total	XX	10,200 ^r	95,100 ^r	XX	8,290	90,500

^rRevised. XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 3
NEVADA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2009, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	25	287
Filter stone	W	W
Other coarse aggregate	W	W
Coarse aggregate, graded:		
Concrete aggregate, coarse	567	6,270
Bituminous aggregate, coarse	282	3,560
Bituminous surface-treatment aggregate	W	W
Railroad ballast	W	W
Other graded coarse aggregate	10	106
Fine aggregate (-¾ inch):		
Stone sand, concrete	W	W
Other fine aggregate	W	W
Coarse and fine aggregates:		
Graded road base or subbase	207	1,220
Unpaved road surfacing	W	W
Crusher run or fill or waste	W	W
Roofing granules	W	W
Agricultural:		
Limestone	W	W
Other agricultural uses	W	W
Chemical and metallurgical:		
Cement manufacture	W	W
Lime manufacture	W	W
Other miscellaneous uses and specified uses not listed	24	873
Unspecified: ²		
Reported	2,360	24,700
Estimated	2,500	25,600
Total	8,290	90,500

W Withheld to avoid disclosing company proprietary data; included in "Total."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Reported and estimated production without a breakdown by end use.

TABLE 4
NEVADA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2009,
BY USE AND BY DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2	
	Quantity	Value	Quantity	Value
Construction:				
Coarse aggregate (+1½ inch) ²	W	W	W	W
Coarse aggregate, graded ³	W	W	W	W
Fine aggregate (-¾ inch) ⁴	--	--	W	W
Coarse and fine aggregates ⁵	W	W	W	W
Other construction materials	--	--	259	1,220
Agricultural ⁶	W	W	--	--
Chemical and metallurgical ⁷	W	W	W	W
Other miscellaneous uses	--	--	24	873
Unspecified: ⁸				
Reported	428	3,420	1,930	21,300
Estimated	35	359	2,470	25,300
Total	1,240	22,600	7,050	68,000

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes filter stone, riprap and jetty stone, and other coarse aggregate.

³Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregate.

⁴Includes stone sand (concrete) and other fine aggregate.

⁵Includes crusher run or fill or waste, graded road base or subbase, roofing granules, unpaved road surfacing, and other coarse and fine aggregates.

⁶Includes limestone and other agricultural uses.

⁷Includes cement and lime manufacture.

⁸Reported and estimated production without a break down by end use.

TABLE 5
NEVADA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates and concrete products	3,540	\$30,800	\$8.68
Plaster and gunite sands	417	3,570	8.55
Asphaltic concrete aggregates and other bituminous mixtures	1,170	12,400	10.62
Road base and coverings	3,320	19,200	5.76
Fill	630	3,190	5.07
Snow and ice control	68	357	5.25
Other miscellaneous uses ²	254	4,310	16.98
Unspecified: ³			
Reported	6,130	23,000	3.75
Estimated	5,830	40,900	7.01
Total or average	21,400	138,000	6.44

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Includes filtration, railroad ballast, and roofing granules.

³Reported and estimated production without a breakdown by end use.

TABLE 6
NEVADA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2009, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	522	4,280	3,440	30,100	--	--
Asphaltic concrete aggregates and road base materials	561	3,790	3,930	27,700	--	--
Fill	266	1,620	364	1,570	--	--
Other miscellaneous uses ³	190	3,400	132	1,280	--	--
Unspecified: ⁴						
Reported	650	5,830	1,360	8,500	4,120	8,630
Estimated	1,080	7,360	4,750	33,500	--	--
Total	3,270	26,300	14,000	103,000	4,120	8,630

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes plaster and gunite sands.

³Includes filtration, railroad ballast, roofing granules, and snow and ice control.

⁴Reported and estimated production without a breakdown by end use.