

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 2000, the estimated value¹ of nonfuel mineral production for Nevada was \$3 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was a 4.2% increase from that of 1999² and followed a 9.1% decrease in 1999 from 1998. The State continued to be second in the Nation in nonfuel mineral production value, of which Nevada accounted for more than 7.5% of the U.S. total.

Nevada, the Nation's leading State in gold production and silver production, provided 76% and 37% (up from nearly 31% in 1999) of the Nation's gold and silver, respectively. The "Silver State" has been first in silver production since 1987, as well as first in gold since 1981. In 2000, gold accounted for more than 80% of Nevada's nonfuel mineral value, as well as the largest portion of the State's rise in value. The total value of gold increased by \$100 million owing to increased production; although there were significant fluctuations, the overall average price of gold was about \$280 per troy ounce in both 1999 and 2000. Other nonfuel minerals that had significant increases included construction sand and gravel, up \$36 million; and silver, up \$28 million (table 1). Increases ranging between \$3 million and \$1 million occurred in barite, gypsum, portland cement, and diatomite (descending order of change). A more than \$40 million decrease in the production value of copper, about \$5 million in that of lithium minerals, and about \$2 million in lime accounted for nearly all decreases in the State's nonfuel minerals commodities. Copper production and value significantly decreased as a result of the closing of BHP Copper Co.'s Robinson Mine, which ceased production at the end of June 1999. All other nonfuel minerals showed changes in value of less than \$1 million.

In 1999, decreases in the values of gold, copper (down more than \$70 million), and silver (descending order of change in value), totaling about \$360 million, accounted for most of the State's decrease in value for the year (table 1). These decreases

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or 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 2000 USGS mineral production data published in this chapter are preliminary estimates as of July 2001 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. A telephone listing of the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

²Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to the revision of preliminary 1999 to final 1999 data. Data for 2000 are preliminary and are expected to change; related rankings may also change.

were offset somewhat by a \$28 million rise in the value of construction sand and gravel, increases of more than \$5 million each in lime, lithium minerals, and portland cement, an increase of about \$4 million in crushed stone, and increases of about \$2 million each in diatomite, gypsum, and brucite. All other nonfuel minerals showed changes in value of less than \$1 million.

Based upon USGS estimates of quantities produced in the 50 States during 2000, Nevada was the only State to produce magnesite, lithium minerals, brucite, and mercury (descending order of value). The State remained first of three barite-producing States, second of four diatomite-producing States, fourth in gypsum, and sixth in perlite. While Nevada rose in rank to 9th from 12th in construction sand and gravel and to 5th from 8th in kaolin, it decreased to 8th from 7th in the production of lime. Additionally, significant quantities of industrial sand and gravel and gemstones (listed in descending order of value) were produced in the State.

The following narrative information was provided by the Nevada Bureau of Mines and Geology (NBMG).³ Production data in the following text are those reported by the NBMG, based upon its own surveys, estimates, and information gathered from company annual reports. The NBMG data are reported by that agency to be nonproprietary data and may differ from some USGS preliminary estimates and production figures as reported to and estimated by the USGS.

Metals

Nevada produced 267,000 kilograms (kg) of gold in 2000 along with 722,000 kg of silver. Production of both metals was higher than that of 1999. Nevada maintained its place as the leading gold- and silver-producing State in the United States with 28 mines reporting gold production and 25 mines producing silver during 2000. Newmont Mining Corp.'s Nevada operations, which include Twin Creeks and the Lone Tree Complex as well as all of Newmont's Carlin Trend mines and half of the production from the Rosebud Mine (50%-owned by Hecla Mining Co.), reported production of 92,992 kg of gold in 2000, easily maintaining its place as the largest gold producing company in Nevada. Barrick Gold Corp., with production of 76,277 kg of gold, remained in second place in Nevada output. Barrick Gold's Betze-Post Mine reclaimed its place as the largest Nevada gold mine, producing 51,216 kg in 2000. Placer Dome Inc.'s Cortez operation (Pipeline Mine) dropped into second place in 2000 with 31,414 kg. Barrick's Meikle underground mine reported 2000 production of 25,061 kg, down from the 1999 figure of 30,399 kg. Newmont's Twin Creeks Mine produced 24,232 kg. Other major gold producers in 2000 included Smoky Valley Common Operation's Round

³Joseph V. Tingley, Daphne D. La Pointe, and Stephen B. Castor, Research Geologists, co-authored the text of mineral industry information provided by the Nevada Bureau of Mines and Geology.

Mountain Mine, 19,910 kg; Independence Mining Co.'s Jerritt Canyon Mine, 10,723 kg; Franco-Nevada Mining Corp.'s Ken Snyder Mine, 6,152 kg; Florida Canyon Mining Co.'s Florida Canyon Mine, 5,402 kg; Echo Bay Minerals Co., 5,063 kg from its McCoy/Cove operation; and Homestake Mining Co.'s Ruby Hill Mine, 3,894 kg (Tingley and LaPointe, 2001).

Echo Bay's McCoy/Cove Mine was Nevada's largest silver producer in 2000, producing 383,454 kg. The Rochester Mine, owned by Coeur D'Alene Mines Corp., produced 192,692 kg of silver, and Franco-Nevada Mining Corp.'s Ken Snyder Mine produced 60,293 kg. Other large silver-producing operations included the Denton-Rawhide Mine, 20,700 kg; the Round Mountain Mine, 14,445 kg; Barrick Gold Corp.'s Meikle Mine, 8,187 kg; and the Rosebud Mine, operated by Hecla Mining Co., 7,711 kg (Tingley and LaPointe, 2001).

No new precious metals mines came into production in Nevada in 2000, but both Newmont Mining Corp. and Barrick Goldstrike Mines announced plans for new operations in 2001. Newmont planned to begin operations at Deep Post with annual production of 12,000 kg of gold, and Barrick planned to begin production at its Rodeo Property, which is expected to produce 11,000 kg of gold per year. Placer Dome Inc. announced plans for a substantial production increase at its Pipeline Complex (Cortez Joint Venture) and planned to resume production at its Getchell Property. Golden Phoenix Minerals Inc. also planned to begin production during 2001 at its newly acquired Mineral Ridge Mine. Nevada's sole producer of copper, Equatorial Tonopah, Inc., produced 5,294 metric tons (t) of copper in 2000 from the Tonopah Copper Mine in Nye County (Tingley and LaPointe, 2001).

Industrial Minerals

The total value of industrial minerals produced in Nevada in 2000, an estimated \$395 million, was about 3% more than the value in 1999. In order of estimated value, the most important industrial minerals in 2000 were construction aggregate, lime, diatomite, cement, gypsum, barite, lithium, magnesia, silica, and clay, each valued at more than \$5 million. Commodities with values of less than \$5 million were dolomite, limestone, perlite, dimension stone, salt, brucite, and semiprecious gemstones (opal and turquoise). Colemanite and zeolite were processed in Nevada but mined nearby in California. Data used for these estimates and data reported for individual commodities below were obtained from the Nevada Division of Minerals or directly from companies that produced the industrial minerals.

In 2000, construction aggregate production in Nevada had an approximate total value of \$126 million, far less than that of gold but higher than that of silver among the State's mined commodities. For 2000, State aggregate production was estimated at 25 million metric tons (Mt), slightly less than that of 1999. Aggregate produced from sand and gravel deposits accounted for about 80% of aggregate production statewide, with crushed stone and lightweight aggregate making up the balance. Aggregate produced in the Las Vegas area, estimated at 17 Mt, decreased slightly from that of 1999. Production in the Reno-Sparks-Carson City area, at about 5 Mt, was slightly higher than that of 1999.

Companies in the Las Vegas area that produced more than 1 Mt of aggregate in 2000, ranked in approximate order of tonnage produced, were Nevada Ready Mix Corp., Las Vegas

Paving Corp., CSR America Inc. (formerly WMK Transit Mix Inc.), Hanson Aggregates Las Vegas (formerly Bonanza Materials Inc.), Hanson Aggregates Nevada (formerly Blue Diamond Materials Co.), and Frehner Construction Co., Inc. Other important producers were Wells Cargo Inc. and Gornowich Sand and Gravel, Inc. Nevada Ready Mix Corp. mined most of its aggregate from an open pit in an alluvial fan in the Lone Mountain area. Las Vegas Paving Corp. produced sand and gravel from the Las Vegas landfill, a pit in the Lone Mountain area, and chat from the Chemical Lime operation at Apex. Hanson Aggregates Las Vegas shut down its sand and gravel operation in Henderson in 1999 and produced exclusively from crushed granite mined near Railroad Pass in 2000. Its sister company, Hanson Aggregates Nevada, operated the Blue Diamond Pit. Both were part of the holdings of Hanson PLC, an English company that is ranked as the world's largest producer of construction aggregate. Community pits and other aggregate mining facilities administered by the Bureau of Land Management (BLM) and operated by several companies provided about 2.7 Mt to the Las Vegas area total in 2000.

Sand and gravel operations accounted for about 85% of the aggregate used in the Las Vegas metropolitan area in 2000, with crushed stone and lightweight aggregate making up the balance. The most important source of sand and gravel aggregate for Las Vegas was the Lone Mountain area northwest of Las Vegas, which accounted for more than 5.4 Mt in 2000. Significant production came from sand and gravel pits in the long-productive Buffalo Road area in the southwest part of Las Vegas. The Las Vegas landfill in Apex northeast of Las Vegas became an important sand and gravel production site in 2000. Major crushed stone producers in the Las Vegas area were Hanson Aggregates Las Vegas near Railroad Pass and Frehner Construction Co. at Sloan. The Southern Nevada Lightweight operation near Jean mainly produced aggregate for lightweight cement block and sand for use in stucco.

In the Reno-Sparks-Carson City area, Granite Construction Co., Rocky Ridge Inc., and All-Lite Aggregate Co. produced more than a 900,000 t of aggregate in 2000. Rilite Aggregate Co., Paiute Pit Aggregates, Frehner Construction, and A&K Earthmovers, Inc. were also important producers. Crushed rock continued to be an important source of aggregate in this area; crushed rock operations of Granite Construction, Rocky Ridge Inc., and Frehner Construction and lightweight rhyolite aggregate from All-Lite Aggregate Co., Rilite Aggregate Co., and Naturalite Aggregate Corp. accounted for nearly 70% of the aggregate used in 2000 in the Reno-Sparks-Carson City area.

Nevada barite production increased in 2000 mainly because of increases in North American gas well drilling, and barite shipments were an estimated 435,000 t, about 35% more than that of 1999. Although Nevada barite production was far less than the boom years of 1977-82 when more than 900,000 metric tons per year (t/yr) were produced, there was reason for optimism because of energy price increases in 2000 and the State's large unexploited resources. Active Nevada barite producers numbered 4 in 2000, compared with more than 20 companies in the early 1980s. Low-priced Chinese barite imports into the Gulf Coast are the main reason for the long-term Nevada decline, although Nevada barite is highly competitive for drilling uses in terms of specific gravity and chemical purity.

M.I. Drilling Fluids Co., which is jointly owned by Smith

International Inc. and Schlumberger Ltd., was again the largest Nevada barite producer in 2000, with combined production of more than 270,000 t of screened and crushed high-grade ore from the Greystone Mine and ground and bagged barite from its Battle Mountain plant, both in Lander County. Baroid Drilling Fluids Division, a subsidiary of Halliburton Co., mined barite from the Rossi Mine in Elko County and processed it at the Dunphy Mill in Eureka County. Baker Hughes INTEQ, a division of Baker Hughes Inc., produced barite from its Argenta property (previously a Millpark operation) near Battle Mountain in Lander County. Standard Industrial Minerals Inc. shipped a small amount of barite in 2000 from a deposit of white, paint-grade barite at the P and S Mine in Nye County to a processing plant in Bishop, CA.

American Borate Co. mined borate minerals from an underground operation in Death Valley, CA, in 2000. The ore was processed at the Lathrop Wells mill in Nye County, but because the ore was from out of State, this production was not included in the estimate of total value of Nevada minerals.

The Nevada Cement Co., a subsidiary of Centex Construction Products, Inc., produced portland cement at a plant at Fernley in Lyon County. In 2000, annual production exceeded 450,000 t of cement. Limestone was mined from Cenozoic lacustrine deposits south of Fernley, and other ingredients came mostly from northern Nevada.

In 1999, Royal Cement Co. restarted an idle plant near Logandale in Clark County. Limestone was mined at a site near the plant, and other raw materials were purchased from regional suppliers. Production from this operation in 2000 was about 110,000 t.

Nevada clay production was slightly more in 2000 than that of 1999. IMV Nevada, owned by Mud Camp Mining Co., produced about 30,400 t of sepiolite and saponite from deposits in lacustrine sediments in the Ash Meadows area of Nye County. The company had a processing plant in Amargosa Valley and exported a variety of clay products worldwide. It was the only producer of sepiolite and saponite in the United States in 2000.

The Art Wilson Co. sold less than 90 t of montmorillonite from the Jupiter Mine in Lyon County in 2000. The company also mined halloysite clay from a deposit in Washoe County for Nevada Cement Co.; however, the halloysite was not reported as clay in Nevada's mineral production figures because it was included in portland cement.

Two companies mined and shipped relatively minor amounts of Nevada clay from several sites for use in high-cost specialty products. Vanderbilt Minerals Co. shipped small amounts of clay from several Nevada deposits for use in pharmaceutical and cosmetic products. The clay included white bentonite that was mined underground from the New Discovery Mine near Beatty in Nye County where the company also stockpiled clay from other sites. American Colloid Co. did not mine clay in Nevada in 2000 but made some shipments from stockpiles in Lovelock. The clay, white bentonite from Coal Canyon in Pershing County and hectorite from the Disaster Peak deposit in Humboldt County, went to the company's plant in Belle Fourche, SD, to be blended into specialty clay products.

The Moltan Co. mined clay near Empire in northern Washoe County for use with diatomite in clumping cat litter that is produced at a plant near Fernley. In 2000, Oil-Dri Corp., the world's largest manufacturer of cat litter, proceeded with

development of a montmorillonite deposit with 270 Mt of proven reserves in Hungry Valley north of Reno. The BLM ruled that the clay is a locatable mineral. The clay, which is mainly composed of calcium montmorillonite, occurs in beds as much as 29 meters thick and is considered to be an excellent material for clumping cat litter. The company, which planned to ship about 180,000 t/yr of product, planned to employ about 100 people at the Hungry Valley mine and plant. The company was in the process of getting Federal, State, and local approvals to operate, and predicted production startup for late 2002.

Eagle-Picher Minerals, Inc., a division of Eagle-Picher Industries, Inc., a wholly owned subsidiary of Granaria Holdings Ltd. of the Netherlands, was the second largest diatomite producer in the United States. It produced most of Nevada's diatomite at three different operations that have estimated combined annual production of 180,000 t. The most productive was the Colado operation in Pershing County, which consisted of a plant at Lovelock that made diatomaceous earth filtration products from diatomite mined northwest of Lovelock. The company also produced diatomite that was mainly used in fillers and absorbents at its Clark plant and mine in Storey County and diatomite that was used in insulation; it produced from a pit near Hazen in Lyon County.

Moltan Co. of Tennessee was the second largest diatomite miner in Nevada, producing absorbent products, cat litter, and soil conditioner at a mine and plant complex in Churchill County northeast of Fernley. Moltan, a family-owned Tennessee company, shipped diatomaceous earth products under several labels, of which a Napa Auto Parts brand is the most important. The company produced two cat litter types in Nevada, a nonclumping product made of diatomite and a clumping product composed of diatomite and clay. Other companies that produced diatomite in Nevada in 2000 were CR Minerals Corp. at Hazen in Lyon County and Grefco Inc. at its Basalt operation near the Esmeralda/Mineral County line. CR Minerals produced a high-brightness product that was used in paints and coatings and provided 40% of the diatomite used in paint to control gloss. In 2000, the parent company, Canyon Resources Corp., sold CR Minerals to a group of Texas investors. Grefco built a small plant to produce filtration products at its Basalt operation in 2000, although there was considerable local opposition because it was near residences.

Las Vegas Rock produced flagstone, ashlar, and crushed landscape rock from its Rainbow Quarries near Goodsprings about 32 kilometers southwest of Las Vegas. The stone is quartz-cemented sandstone that is part of the Jurassic Aztec Sandstone, which outcrops extensively in Clark County but typically is more friable. The company marketed cut stone and planned to produce polished slabs and custom stone shapes.

In December of 1999, Mount Moriah Stone, of Baker, NV, filed a plan of operations with the U.S. Forest Service to renew production of quartzite from a quarry in southeastern White Pine County. The plan called for production of 540 metric tons per month of hard quartzite in naturally split slabs as large as 1.5 meters (m) by 2.4 m and 10 centimeters thick. Quarrying of the stone, which has been sold in the past for flagstone and other uses, began in 2000. Two other companies, American Stone and Dunbar Stone, also began to split and palletize similar quartzite from nearby quarries on land administered by the BLM, which also oversaw a community pit in the same material.

Building Stone Associates has been developing a slate deposit in Egan Canyon near Cherry Creek in White Pine County. It is expected that the stone will bring a premium price because of its unique blue mottled color.

Gypsum production in Nevada decreased to about 1.6 Mt in 2000 from 1.9 Mt in 1999 because of a glut in the wallboard market, a result of recently expanded national production capacity. PABCO Gypsum (a division of Pacific Coast Building Products Inc.) in Clark County northeast of Las Vegas was the largest producer, mining nearly a 900,000 t of ore in 2000; however, actual finished gypsum production was less because the ore must be beneficiated to produce gypsum concentrate. PABCO processed most of this gypsum into wallboard in a plant adjacent to the mine but also made plaster. The Blue Diamond operation of James Hardie Gypsum southwest of Las Vegas in Clark County was the second largest producer at about 520,000 t. In 2000, the company purchased the large Western Mining and Minerals gypsum mine that straddles the Utah-Arizona border southwest of Saint George, UT, and was negotiating the sale of its Nevada property with Las Vegas developers. The Blue Diamond mining area, on a mesa that overlooks Las Vegas and the site of gypsum mining since 1925, may now be worth more as a site for upscale residence construction than as a source of high-grade gypsum. Georgia Pacific Corp., which operated a wallboard plant northeast of Las Vegas at Apex, stopped mining in Nevada several years ago and purchased gypsum from the Western Mining and Minerals Mine. USG Corp., which is the nation's largest wallboard producer, mined gypsum in northern Pershing County and processed it into wallboard and plaster at its Empire plant at Gerlach in Washoe County; it was the third largest producer in 2000 at about 450,000 t. The Art Wilson Co. of Carson City shipped about 120,000 t of gypsum and anhydrite from the Adams Mine in Lyon County for use in cement and agricultural markets; the company's sales of agricultural gypsum fell off strongly in the fourth quarter of 2000 owing to abnormally dry weather in California.

In 2000, lime production continued at record levels, increasing nearly 15% more than that of 1999. The lime was produced from Devonian limestone deposits that were at nearly opposite ends of the State. The Continental Lime, Inc. Pilot Peak high-calcium lime operation near Wendover in Elko County shipped the most lime in 2000, mainly to Nevada gold-mining operations for use in pH control. The Pilot Peak plant, which began as a one-kiln operation in 1989, now has three kilns with a combined capacity of more than 640,000 t/yr of quicklime and a hydrated lime plant capable of producing 320 metric tons per day.

Chemical Lime Co. produced lime at Apex northeast of Las Vegas. The operation mainly produced high-calcium quicklime used in metallurgical processing, paper manufacturing, and environmental markets. The company also produced dolomitic lime and hydrated high-calcium lime at Apex mainly for use in construction. The Chemical Lime dolomite quarry at Sloan and the lime kilns at its Henderson plant have ceased operation, although hydrated lime was still produced at the Henderson plant in 2000.

In addition to lime, both Continental Lime and Chemical Lime Co. ship crushed limestone. Other carbonate rock producers in Nevada are Min-Ad, Inc. and Nutritional Additives Corp., producers of agricultural dolomite near Winnemucca.

Min-Ad, the larger of the two, shipped about 67,000 t of ground dolomite in 2000, a 15% increase more than that of 1999.

Chemetall Foote Co., a subsidiary of giant international Metallgesellschaft AG, produced lithium carbonate, lithium hydroxide monohydrate, and lithium hydroxide anhydrite at Silver Peak in Esmeralda County. The operation produced these chemicals from brine that is pumped from beneath Clayton Valley playa and evaporated in nearby ponds.

Production of magnesia from magnesite at Gabbs in Nye County by Premier Chemicals LLC (formerly Premier Services Corp.) increased for the second year in 2000 and was about 8% more than that of 1999. A relatively small amount of brucite was also shipped from the operation in 2000.

Magnesium minerals have been mined in the Gabbs area since 1937 when magnesia was shipped to Henderson as a raw material for magnesium metal production. From the 1950s to the 1980s, mining and processing was by Basic Industries, an important producer of refractory magnesia. Because of the impact of low-cost Chinese refractory magnesia, production at Gabbs was switched to light-burned (caustic) magnesia. The commodity is mainly marketed for water and sewage treatment under the name Aquamag, a slow-release pH-control product that has had steadily increasing sales since its introduction about 5 years ago. In 2000, the company increased plant capacity to 140,000 t/yr in response to growing demand for waste water treatment products. In 2000, agriculture use was the second most important market for magnesia from this operation.

The global markets for perlite have been strong in recent years, and although Nevada has abundant resources, only small amounts of perlite were produced from two deposits. Wilkins Mining and Trucking Inc. mined perlite from the Tenacity Perlite Mine (formerly the Mackie Mine) in Lincoln County. In the past, most of the perlite was shipped as crude; however, the company built a small perlite "popping" plant, now referred to as the Tenacity Perlite Mill, in Caliente in 1987, and sales in 2000 were almost exclusively of expanded perlite. Shipments in 2000 totaled about 1,800 t, mainly of perlite for horticultural uses. Eagle-Picher Minerals Inc. produced expanded perlite at its Colado diatomite plant in Pershing County from perlite that was mined at the Popcorn Mine in Churchill County. The perlite was marketed as a filter aid, and plant capacity was reportedly about 7,300 t/yr.

Advanced Mining LLC submitted a plan of operations to the BLM for the Dawson perlite claims east of Henderson in Clark County in May 2000. The plan called for taking bulk samples for testing; mining at 45,000 t/yr was planned if test results were positive.

The Huck Salt Co. produced 12,000 t of salt in 2000. The salt, mined from a playa east of Fallon in Churchill County, was mainly used for deicing roads. Salt has been harvested from this deposit more or less continuously since the 1860s when it was hauled to the mills that processed Comstock silver and gold ore.

Minor production of opal comes from Virgin Valley in Humboldt County, and small amounts of turquoise are produced near Austin in Lander County.

Simplot Silica Products in Clark County shipped 609,000 t of silica sand in 2000, a slight decrease from that of 1999. The sand was mined from an open pit in the relatively friable Cretaceous Baseline Sandstone, washed in the pit, and transported via a slurry pipeline to a plant near Overton where it was screened and bagged.

Las Vegas Rock, which produced decorative and dimension stone from resistant sandstone southwest of Las Vegas, negotiated with an undisclosed silica producer to provide an estimated 180,000 t/yr of glass-grade silica sand as a byproduct of stone production.

In 2000, vermiculite deposits in the Gold Butte area of Clark County were explored because they contained high-quality vermiculite and were near potential markets in Southern California. International Vermiculite LLC, a joint venture between Nevada Vermiculite and Stansbury Holdings Corp., announced plans to drill a deposit near Mica Peak.

Ash Meadows Zeolite LLC, a subsidiary of Badger Mining Corp., shipped 900 to 1,800 t/yr of clinoptilolite from a plant in Amargosa Valley in Nye County; this facility was formerly owned by American Resource Corp. The clinoptilolite, which was used in water filtration, odor control, and nuclear cleanup, was mined in California in 2000 from a large deposit that averaged more than 90% clinoptilolite and extended into Nevada. The company was evaluating plans for mining green clinoptilolite for use in cat litter from the Nevada portion of the

deposit. Moltan Co., which primarily marketed diatomaceous-earth products, also shipped some mordenite from its plant near Fernley. The mordenite came from a deposit in the Trinity Range in Churchill County.

Mineral exploration in Nevada continued to decline in 2000. The major gold-producing companies explored mainly along the trends, Battle Mountain, Carlin, Getchell, and Midas. Several companies pursued what they hoped would become high-grade vein targets, such as feeder-vein systems beneath the former Hog Ranch open pit mine in Washoe County and the Hollister open pit mine in Elko County. Companies explored for platinum-group metals in the southern part of the Manhattan district of Nye County and in the Bunkerville and Goodsprings districts in Clark County.

Reference Cited

Tingley, J.V., and LaPointe, D.D., 2001, Nevada, in Annual review 2000: Mining Engineering, v. 53, no. 5, May, p. 82-86.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NEVADA 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays:						
Bentonite	W	W	6	W	6	W
Fuller's earth	W	W	25	3,580	--	--
Gemstones	NA	159	NA	205	NA	205
Gold 3/	273,000	2,590,000	257,000	2,310,000	268,000	2,410,000
Sand and gravel, construction	26,400	114,000	31,700	142,000	38,600	178,000
Silver 3/	670	110,000	597	101,000	762	129,000
Stone, crushed	6,320	34,000	7,090	37,900	7,000	38,300
Zeolites	(4)	NA	--	--	--	--
Combined values of barite, brucite, cement (portland), clays (kaolin), copper, diatomite, gypsum (crude), iron ore (usable), lime, lithium minerals, magnesite, mercury (1999-2000), perlite (crude), salt, sand and gravel (industrial), and values indicated by symbol W	XX	320,000	XX	286,000	XX	247,000
Total	XX	3,170,000	XX	2,880,000	XX	3,000,000

p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" data. XX Not applicable. -- Zero.

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

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

3/ Recoverable content from ores, etc.

4/ Withheld to avoid disclosing company proprietary data.

TABLE 2
NEVADA: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1998				1999			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	6 r/	4,040 r/	\$17,200 r/	\$4.25 r/	6	4,690	\$17,400	\$3.71
Dolomite	4 r/	W	W	32.82 r/	3	W	W	82.13
Granite	2	W	W	7.72	1	W	W	5.24
Traprock	2	34	152	4.47 r/	2	118	456	3.86
Volcanic cinder and scoria	2	W	W	4.23	2	W	W	4.58
Miscellaneous stone	4	1,630	11,000	6.77 r/	4	1,330	10,300	7.75
Total or average	XX	6,320	34,000	5.38	XX	7,090	37,900	5.34

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

TABLE 3
NEVADA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 1999, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Macadam	W	W	\$3.20
Riprap and jetty stone	W	W	4.49
Filter stone	W	W	3.41
Coarse aggregate, graded:			
Concrete aggregate, coarse	W	W	14.79
Other graded coarse aggregate	W	W	3.39
Fine aggregate (-3/8 inch), stone sand, concrete	W	W	3.47
Coarse and fine aggregates:			
Graded road base or subbase	W	W	3.79
Unpaved road surfacing	W	W	3.67
Other construction materials	492	\$542	1.10
Agricultural, other agricultural uses	W	W	82.12
Chemical and metallurgical:			
Cement manufacture	W	W	4.21
Lime manufacture	W	W	3.43
Sulfur oxide removal	W	W	3.93
Special, mine dusting or acid water treatment	W	W	4.63
Unspecified: 3/			
Reported	1,820	9,220	5.07
Estimated	120	550	4.52
Total or average	7,090	37,900	5.34

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

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

2/ Includes dolomite, granite, limestone, miscellaneous stone, traprock, and volcanic cinder and scoria.

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

TABLE 4
NEVADA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1999,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2	
	Quantity	Value	Quantity	Value
Construction:				
Coarse aggregate (+1 1/2 inch) 2/	W	W	W	W
Coarse aggregate, graded 3/	W	W	W	W
Fine aggregate (-3/8 inch) 4/	W	W	W	W
Coarse and fine aggregate 5/	W	W	W	W
Other construction materials	--	--	492	542
Agricultural 6/	W	W	--	--
Chemical and metallurgical 7/	W	W	W	W
Special 8/	--	--	W	W
Unspecified: 9/				
Reported	999	5,230	819	3,990
Estimated	90	430	30	130
Total	2,790	17,000	4,300	20,900

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

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

2/ Includes filter stone, macadam, and riprap and jetty stone.

3/ Includes concrete aggregate (coarse) and other graded coarse aggregate.

4/ Includes stone sand (concrete).

5/ Includes graded road base or subbase and unpaved road surfacing.

6/ Includes other agricultural uses.

7/ Includes cement manufacture, lime manufacture, and sulfur oxide removal.

8/ Includes acid water treatment or mine dusting.

9/ Reported and estimated production without a breakdown by end use.

TABLE 5
NEVADA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand) 2/	2,420	\$13,800	\$5.70
Concrete products (blocks, bricks, pipe, decorative, etc.)	109	559	5.13
Asphaltic concrete aggregates and other bituminous mixtures	2,100	14,800	7.04
Road base and coverings 3/	3,420	12,800	3.76
Fill	709	2,430	3.43
Other miscellaneous uses 4/	649	2,520	3.88
Unspecified: 5/			
Reported	11,900	50,200	4.22
Estimated	10,000	45,000	4.50
Total or average	31,700	142,000	4.48

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

2/ Includes gunite sands and plaster.

3/ Includes road and other stabilization (cement).

4/ Includes ice and snow control.

5/ Reported and estimated production without a breakdown by end use.

TABLE 6
NEVADA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	1,060	5,780	1,470	8,580	--	--
Asphaltic concrete aggregates and other bituminous mixtures	1,140	6,970	750	6,780	210	1,010
Road base and coverings 3/	804	3,350	2,540	9,120	76	367
Fill	438	1,950	271	480	--	--
Other miscellaneous uses 4/	158	855	490	1,670	--	--
Unspecified: 5/						
Reported	57	95	9,380	44,700	2,450	5,400
Estimated	2,810	12,300	7,570	32,600	--	--
Total	6,460	31,300	22,500	104,000	2,740	6,780

-- Zero.

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

2/ Includes gunite sands and plaster.

3/ Includes road and other stabilization (cement).

4/ Includes ice and snow control.

5/ Reported and estimated production without a breakdown by end use.