

# THE MINERAL INDUSTRY OF NEVADA

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

Nevada, the Nation's leading State in gold and silver production, overall ranked second in 1995 in nonfuel mineral production value,<sup>1</sup> according to the U.S. Geological Survey (USGS). The estimated value for 1995 exceeded \$2.9 billion, a decrease of more than 4% from that of 1994. This followed a substantial 9% increase in 1994 from 1993. Nevada mines provided 65% and 46% of the Nation's gold and silver, respectively. Overall, the State accounted for almost 8% of the U.S. total nonfuel mineral production value.

Gold accounted for 86% of Nevada's nonfuel mineral value; industrial minerals, 9%; and silver, copper, and mercury, the remaining 5%. In 1995, a 5% decrease in the estimated value of gold accounted for most of the drop in the State's nonfuel mineral value. Small decreases occurred in the values of construction sand and gravel, lime, and portland cement. In 1994, \$200 million gold and \$17 million silver value increases fueled a 9% increase in Nevada's nonfuel mineral production value that year (based on final 1994 data). Compared with 1994, the value of the following commodities increased in 1995: silver, diatomite, crushed stone, copper, lithium minerals, industrial sand and

gravel, gypsum, bentonite, and gemstones. Decreases occurred in gold, construction sand and gravel, lime, portland cement, barite, magnesite, fuller's earth, perlite, and salt.

Based on USGS estimates of quantities produced in the 50 States during 1995, Nevada remained first in gold, silver, barite, and mercury and the only State having magnesite and brucite production. The State retained its 1994 ranking in a number of other mineral commodities—it was second in diatomite and lithium minerals, fourth in perlite, fifth in gypsum, and eighth in copper. Nevada moved up from seventh to sixth in kaolin clay production. In addition, significant quantities of construction and industrial sand and gravel and lime were produced at mines and manufacturing plants in the State.

According to the Nevada Bureau of Mines and Geology (NBMG),<sup>2</sup> stability in the price of gold during 1995 helped the Nevada gold mining industry sustain high levels of production. Nevada's gold production, more than seven times that of the next highest State, helped bolster the United States' world position as second in gold production. Only South Africa produces more. NBMG stated that the

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN NEVADA<sup>1 2</sup>

Mineral	1993		1994		1995 <sup>p</sup>	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Barite metric tons	242,000	\$9,100	<sup>3</sup> 284,000	<sup>3</sup> \$5,020	447,000	\$9,600
Clays <sup>4</sup> thousand metric tons	16	3,430	7	2,860	28	3,380
Copper <sup>5</sup> metric tons	W	W	6,450	15,800	6,800	21,000
Gemstones	NA	660	NA	160	NA	364
Gold <sup>5</sup> kilograms	211,000	2,450,000	<sup>6</sup> 214,000	<sup>6</sup> 2,650,000	<sup>6</sup> 210,000	<sup>6</sup> 2,520,000
Sand and gravel:						
Construction thousand metric tons	<sup>6</sup> 24,900	<sup>6</sup> 108,000	22,700	106,000	20,000	95,000
Industrial metric tons	480,000	W	572,000	W	640,000	W
Silver <sup>5</sup> do.	713	98,500	673	115,000	683	116,000
Stone (crushed) thousand metric tons	1,070	12,500	2,310	20,600	2,500	22,600
Combined value of brucite, cement (portland), clays (fuller's earth, kaolin), diatomite, fluorspar (1993), gypsum (crude), lime, lithium minerals, magnesite, mercury, perlite (crude), salt, and values indicated by symbol						
W	XX	144,000	XX	<sup>1</sup> 153,000	XX	135,000
Total	XX	2,820,000	XX	<sup>3</sup> 3,070,000	XX	2,920,000

<sup>1</sup>Estimated. <sup>p</sup>Preliminary. <sup>r</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. XX Not applicable.

<sup>2</sup>Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

<sup>3</sup>Data are rounded to three significant digits; may not add to totals shown.

<sup>4</sup>Excludes certain barites; kind and value included with "Combined value" data.

<sup>5</sup>Excludes certain clays; kind and value included with "Combined value" data.

<sup>6</sup>Recoverable content from ores, etc.

<sup>7</sup>Placer canvassing discontinued beginning 1994. May include placer data from other sources.

mining of known reserves should be sufficient to sustain gold production at substantial levels for at least 20 years. According to State officials, the current boom in gold production is unprecedented in U.S. history, both in duration and amount. During the 1990's, Nevada will have produced more gold than any other state during any gold boom in U.S. history.

The Nevada Division of Minerals (NDM) of the State's Department of Business and Industry conducted a study of the State's active mining and exploration companies and concluded that gold exploration would likely continue at strong levels for the foreseeable future. The survey revealed that new discoveries continue to be made each year, both in established mining districts and in new areas. However, these new ore bodies are often at greater depths, where exploration and mining costs have been higher than average in recent years. Additionally, the study revealed that several current operations are producing substantial amounts of ore from underground rather than the more common open pit mines.

Silver production continued at high levels, chiefly as a byproduct or coproduct of gold. By producing more than three and one-half times as much as the next highest State, Nevada mines helped the State easily retain its nickname of the "Silver State."

Nevada is one of the fastest growing States in the Nation in terms of percentage increase in population. As a result, there is an increasing demand for raw construction materials to fulfill the needs of the expanding population. Production of crushed stone and gypsum (used to make sheetrock or wallboard) continued at relatively consistent levels.

Every February, the NDM, in cooperation with the NBMG, produces a booklet identifying the State's active

mining operations. "Major Mines of Nevada" contains a directory of mines that were active the previous year, individual company production and employment statistics, and a series of maps showing the locations of the State's mines, geothermal plants, and petroleum fields. The booklet also includes some analysis of the data. "Major Mines" is supplemented by more complete statistics and analysis in "The Nevada Mineral Industry," a report that NBMG produces each summer. This publication contains an executive summary addressing exploration and production activity for the previous year, complete with numerous charts and graphs. It also includes individual chapters on metals, major precious metal deposits (including discoveries that have not been put into production), industrial minerals, geothermal energy, and oil and gas. This is followed by a directory of mining and milling operations with precise locations and contacts. Both publications are available in paper or in electronic form. The printed publications may be purchased directly from NBMG, or an electronic copy may be obtained for free via the Internet at the NBMG's Home Page on the World Wide Web (<http://www.nbmg.unr.edu>).

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<sup>1</sup>The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on 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 1995 USGS mineral production data in this chapter are estimates, as of Dec. 1995. For some commodities, especially construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most recent information please contact the appropriate USGS mineral commodity specialist. Call MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset and request Document No. 1000 for a telephone listing of all mineral commodity specialists or call USGS information at (703) 648-4000 for the specialist's name and number.

<sup>2</sup>The remaining narrative portion of this report was based on information provided by the NBMG.

TABLE 2  
NEVADA: CRUSHED STONE<sup>1</sup> SOLD OR USED BY PRODUCERS IN 1994, BY USE<sup>2</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	208	\$833	\$4.00
Other construction materials <sup>3</sup>	615	5,570	9.05
Other miscellaneous uses: <sup>4</sup>	800	11,300	14.20
<b>Unspecified:<sup>5</sup></b>			
Actual	648	2,660	4.11
Estimated	35	203	5.80
Total	2,310	20,600	8.93

<sup>1</sup>Includes dolomite, granite, limestone, miscellaneous stone, traprock, and volcanic cinder and scoria.

<sup>2</sup>Data are rounded to three significant digits; may not add to totals shown.

<sup>3</sup>Includes concrete aggregate (coarse), stone sand (concrete), screening (undesignated), and waste material.

<sup>4</sup>Includes dead-burned dolomite manufacture, lime manufacture, mine dusting or acid water treatment, poultry grit and mineral food, other agricultural uses, and sulfur oxide removal.

<sup>5</sup>Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 3  
NEVADA: CRUSHED STONE SOLD OR USED, BY KIND<sup>1</sup>

Kind	1993				1994			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	5	'593	'\$2,320	'\$3.91	7	1,380	\$13,000	\$9.37
Dolomite	4	379	4,400	11.60	6	251	1,590	6.35
Granite	2	W	W	11.10	2	W	W	12.20
Trap rock	'2	W	W	'4.52	2	W	W	4.87
Volcanic cinder and scoria	1	W	W	16.60	1	54	W	2.20
Miscellaneous stone	2	W	W	4.69	2	W	W	4.79
Total	XX	1,610	12,500	7.80	XX	2,310	20,600	8.93

<sup>1</sup>Revised. W Withheld to avoid disclosing company proprietary data; included with "Total." XX Not applicable.

<sup>1</sup>Data are rounded to three significant digits; may not add to totals shown.

TABLE 4  
**NEVADA: CRUSHED STONE<sup>1</sup> SOLD OR USED BY PRODUCERS IN 1994, BY USE AND DISTRICT<sup>2</sup>**

(Thousand metric tons and thousand dollars)

Use	District 1	
	Quantity	Value
Construction aggregates:		
Coarse aggregate, graded <sup>3</sup>	W	W
Fine aggregate (-3/8 inch) <sup>4</sup>	W	W
Coarse and fine aggregate <sup>5</sup>	208	833
Other construction materials <sup>6</sup>	615	5,570
Agricultural <sup>7</sup>	( <sup>8</sup> )	( <sup>8</sup> )
Chemical and metallurgical <sup>9</sup>	( <sup>8</sup> )	( <sup>8</sup> )
Special <sup>10</sup>	( <sup>8</sup> )	( <sup>8</sup> )
Other miscellaneous uses	800	11,300
Unspecified: <sup>11</sup>		
Actual	648	2,660
Estimated	35	203
Total	2,310	20,600

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

<sup>1</sup>Production reported in District 2 was included with "District 1" to avoid disclosing company proprietary data.

<sup>2</sup>Data are rounded to three significant digits; may not add to totals shown.

<sup>3</sup>Includes concrete aggregate (coarse).

<sup>4</sup>Includes stone sand (concrete) and screening (undesignated).

<sup>5</sup>Includes graded road base or subbase.

<sup>6</sup>Includes waste material.

<sup>7</sup>Includes poultry grit and mineral food and other agricultural uses.

<sup>8</sup>Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous uses."

<sup>9</sup>Includes dead-burned dolomite manufacture, lime manufacture, and sulfur oxide removal.

<sup>10</sup>Includes mine dusting or acid water treatment.

<sup>11</sup>Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 5  
**NEVADA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1994, BY MAJOR USE CATEGORY<sup>1</sup>**

Use	Quantity (thousand metric tons)	Value (thousands)	Value per ton
Concrete aggregate (including concrete sand)	4,370	\$27,200	\$6.22
Plaster and gunite sands	420	1,530	3.63
Concrete products (blocks, brick, pipe, decorative, etc.)	334	1,350	4.03
Asphaltic concrete aggregates and other bituminous mixtures	3,140	16,400	5.23
Road base and coverings <sup>2</sup>	5,160	19,300	3.73
Fill	1,040	3,170	3.05
Other	28	149	5.32
Unspecified: <sup>3</sup>			
Actual	6,490	29,800	4.60
Estimated	1,680	6,870	4.09
Total or average	22,700	106,000	4.67

<sup>1</sup>Data are rounded to three significant digits; may not add to totals shown.

<sup>2</sup>Includes road and other stabilization (cement and lime), and snow and ice control.

<sup>3</sup>Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 6  
**NEVADA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1994, BY USE AND DISTRICT<sup>1</sup>**

(Thousand metric tons and thousand dollars)

Use	District 1		District 2	
	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	1,530	7,600	3,600	22,500
Asphaltic/bituminous mixtures	903	6,820	<sup>3</sup> 2,240	<sup>3</sup> 9,620
Road base and coverings <sup>4</sup>	1,260	5,640	<sup>3</sup> 3,900	<sup>3</sup> 13,600
Fill	480	1,430	559	1,740
Other miscellaneous uses	28	149	—	—
Unspecified <sup>5</sup>				
Actual	—	—	6,490	29,800
Estimated	645	2,270	1,040	4,600
Total	4,850	23,900	<sup>3</sup> 17,800	<sup>3</sup> 81,900

<sup>1</sup>Data are rounded to three significant digits; may not add to totals shown.

<sup>2</sup>Includes plaster and gunite sands.

<sup>3</sup>Includes unspecified within all districts.

<sup>4</sup>Includes road and other stabilization (cement and lime), and snow and ice control.

<sup>5</sup>Includes production reported without a breakdown by end use and estimates for nonrespondents.



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