

THE MINERAL INDUSTRY OF NEBRASKA

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 University of Nebraska-Lincoln, Nebraska Geological Survey, for collecting information on all nonfuel minerals.

In 1996, for the 3d consecutive year, Nebraska ranked 41st among the 50 States in total nonfuel mineral production value,¹ according to the U.S. Geological Survey (USGS). The estimated value for 1996 was \$147 million, a less than 1% increase from that of 1995. The State accounted for a little less than 0.5% of the U.S. total nonfuel mineral production value. In 1996, all nonfuel mineral production values increased slightly except for crushed stone and lime, both of which experienced similarly small decreases. Metals produced in the State, mostly raw steel and lead, were processed from materials acquired from other domestic and foreign sources. Uranium was in situ leach mined at one location in northwestern Nebraska but is not included in USGS statistics because it is a fuel mineral.

The following narrative information was provided by the Nebraska Geological Survey² (NGS). For the past several years, the NGS has taken part in a joint exploration study of the Missouri River Basin. Together with geologists from nine other States and the USGS, the NGS continued to focus on three main areas of concern: the geology and mineral and water resources in the urban-rural corridor from Omaha to Kansas City, MO; related mining issues; and the effect of agriculture on the area. These studies were initiated because of increasing concerns about the interactions and potential effects of modern industry, mining, agriculture, and society on this busy urban-rural corridor. The joint effort will result in a large database, with maps and references, that will include a variety of information about the basin, including details about soil, rock formations, and water. The other participating State Geological Surveys include: Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, North Dakota, South Dakota, and Wyoming.

ASARCO Incorporated's planned shutdown of its Omaha lead refinery was still in progress at yearend. The Omaha plant began operations in 1899, principally refining lead bullion produced by the company's facility in East Helena, MT.

Potash Corp. of Saskatchewan (PCS) acquired 100% of Texasgulf Inc. for a total of \$810 million. Texasgulf has

operated an underground limestone mine near Weeping Water since 1975. PCS also agreed to pay about \$1.18 billion in cash and stock to acquire all outstanding common stock of Arcadian Corp., which was based in Memphis, TN, and has operations in Nebraska.

Interest was developing to reopen an old chalk mine in the central part of the State as a tourist attraction. Mining operations there dated from 1869 to the early 1950's. The mine was left open for picnickers and tourists until 1978 when the entrance collapsed.

Crow Butte Resources, Inc. proposed an expansion of its uranium mining facility near Crawford in northwestern Nebraska. Production from this in situ mining operation totaled approximately 373,000 kilograms (822,000 pounds) of yellow cake as of December 31, 1996.

Whereas little nonfuel mineral exploration was reported to occur during 1996, exploration for oil and gas continued in the western and southwestern parts of the State. In 1996, Nebraska's energy mineral production averaged 9,707 barrels of oil per day and 683 million cubic feet of casinghead gas and 1.3 billion cubic feet of dry gas per year. The State had 1,402 producing oil wells and 77 producing gas wells in 18 counties as of Dec 31, 1996.

¹The 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 1996 USGS mineral production data published in this chapter are estimates as of February 1997. For some commodities (e.g., 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. Call MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset, and request Document # 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. This telephone listing may also be retrieved over the Internet at <http://minerals.er.usgs.gov/minerals/contacts/comdir.html>

²Raymond R. Burchett authored the text of mineral industry information submitted by the Nebraska Geological Survey.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

| Mineral | 1994 | | 1995 | | 1996 p/ | |
|---|----------|---------|----------|---------|----------|---------|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Clays | 206 | 867 | 232 | 1,130 | 235 | 1,140 |
| Lime | 24 | 904 | 20 | 803 | 18 | 737 |
| Sand and gravel (construction) | 15,000 | 49,200 | 13,700 | 47,100 | 13,900 | 48,000 |
| Stone (crushed) | 6,890 | 41,600 | 6,590 | 41,800 | 6,400 | 40,900 |
| Combined value of cement, gemstones, and sand and gravel (industrial) | XX | 53,600 | XX | 55,500 | XX | 56,200 |
| Total | XX | 146,000 | XX | 146,000 | XX | 147,000 |

p/ Preliminary. XX Not applicable.

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

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

TABLE 2
NEBRASKA: CRUSHED STONE 1/ SOLD OR USED BY PRODUCERS
IN 1995, BY USE 2/

| Use | Quantity (thousand metric tons) | Value (thousands) | Unit value |
|---|---------------------------------------|----------------------|---------------|
| Coarse aggregate (+1 1/2 inch): | | | |
| Macadam | W | W | \$7.63 |
| Riprap and jetty stone | 158 | \$1,460 | 9.25 |
| Coarse aggregate, graded: | | | |
| Concrete aggregate, coarse | 940 | 6,620 | 7.04 |
| Bituminous aggregate, coarse | W | W | 7.04 |
| Coarse and fine aggregates: | | | |
| Graded road base or subbase | W | W | 6.79 |
| Unpaved road surfacing | 330 | 2,650 | 8.02 |
| Crusher run or fill or waste | 513 | 3,550 | 6.92 |
| Other construction materials 3/ | 827 | 4,700 | 5.68 |
| Agricultural: Agricultural limestone 4/ | 295 | 2,620 | 8.87 |
| Chemical and metallurgical: | | | |
| Cement manufacture | (5/) | (5/) | 4.68 |
| Flux stone | (5/) | (5/) | 5.00 |
| Special: Asphalt fillers or extenders | (5/) | (5/) | 16.50 |
| Unspecified: Actual 6/ | 2,120 | 13,500 | 6.39 |
| Total | 6,590 | 41,800 | 6.34 |

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

1/ Includes limestone.

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

3/ Pipe bedding and screening (undesignated).

4/ Includes other agricultural uses.

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

6/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 3
NEBRASKA: CRUSHED STONE SOLD OR USED, BY KIND 1/

| Kind | 1994 | | | | 1995 | | | |
|-----------|--------------------|---------------------------------|-------------------|------------|--------------------|---------------------------------|-------------------|------------|
| | Number of quarries | Quantity (thousand metric tons) | Value (thousands) | Unit value | Number of quarries | Quantity (thousand metric tons) | Value (thousands) | Unit value |
| Limestone | 12 | 6,890 | \$41,600 | \$6.04 | 11 | 6,590 | \$41,800 | \$6.34 |

1/ Data are rounded to three significant digits.

TABLE 4
NEBRASKA: CRUSHED STONE 1/ SOLD OR USED BY PRODUCERS IN 1995, BY USE AND DISTRICT 2/

(Thousand metric tons and thousand dollars)

| Use | District 3 | |
|-----------------------------------|------------|--------|
| | Quantity | Value |
| Construction aggregates: | | |
| Coarse aggregate (+1 1/2 inch) 3/ | W | W |
| Coarse aggregate, graded 4/ | W | W |
| Coarse and fine aggregate 5/ | 843 | 6,170 |
| Other construction materials 6/ | 1,930 | 12,800 |
| Agricultural 7/ | 295 | 2,620 |
| Chemical and metallurgical 8/ | (9/) | (9/) |
| Special 10/ | (9/) | (9/) |
| Unspecified: Actual 11/ | 2,120 | 13,500 |
| Total | 6,590 | 41,800 |

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

1/ No crushed stone was produced in District 1 and 2.

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

3/ Includes macadam and riprap and jetty stone.

4/ Includes concrete aggregate (coarse) and bituminous aggregate (coarse).

5/ Includes unpaved road surfacing and crusher run (select material or fill).

6/ Includes graded roadbase or subbase, pipe bedding, and screening undesignated.

7/ Includes agricultural limestone and other agricultural uses.

8/ Includes cement manufacture and flux stone.

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

10/ Includes asphalt fillers or extenders.

11/ Includes production reported without a breakdown by end use.

TABLE 5
NEBRASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1995, BY MAJOR USE CATEGORY 1/

| Use | Quantity | Value (thousands) | Value per ton |
|---|------------------------|-------------------|---------------|
| | (thousand metric tons) | | |
| Concrete aggregate (including concrete sand) | 2,970 | \$10,400 | \$3.51 |
| Plaster and gunitite sands | 174 | 436 | 2.51 |
| Concrete products (blocks, bricks, pipe, decorative, etc.) | 127 | 356 | 2.80 |
| Asphaltic concrete aggregates and other bituminous mixtures | 828 | 3,080 | 3.72 |
| Road base and coverings 2/ | 2,440 | 7,040 | 2.88 |
| Fill | 598 | 967 | 1.62 |
| Snow and ice control | 86 | 259 | 3.01 |
| Other 3/ | 55 | 212 | 3.85 |
| Unspecified: 4/ | | | |
| Actual | 1,490 | 6,690 | 4.49 |
| Estimated | 4,960 | 17,700 | 3.56 |
| Total or average | 13,700 | 47,100 | 3.43 |

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

2/ Includes road and other stabilization (cement).

3/ Includes railroad ballast and roofing granules.

4/ Includes production reported without a breakdown by end use and estimates for nonrespondents.