# THE MINERAL INDUSTRY OF WEST VIRGINIA

**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 West Virginia Geological and Economic Survey for collecting information on all nonfuel minerals.**

West Virginia ranked 40th among the 50 States in total nonfuel mineral production value[1] in 1996, according to the U.S. Geological Survey (USGS). The estimated value for 1996 was $191 million, a 5.5% increase from that of 1995. The State accounted for 0.5% of the U.S. total nonfuel mineral production value. Crushed stone and portland cement, in descending order of value, were West Virginia's two leading nonfuel minerals. The rise in the State's nonfuel mineral value in 1996 resulted from increased crushed stone (including crushed dolomite) and lime values. Nonfuel minerals that decreased in value included portland cement, salt, construction sand and gravel, masonry cement, and common clays.

In 1995, there was virtually no net change in the State's total nonfuel mineral value from that of 1994 (based on final 1995 data), although there were distinct changes in various sectors of the industry *(see table 1)*. In 1995, a $24-million decrease in the value of crushed stone and a relatively small decrease in industrial sand and gravel were, for the most part, offset by a large increase in portland cement and smaller increases in construction sand and gravel, lime, and salt.

Based on USGS estimates of quantities produced in the 50 States in 1996, West Virginia rose in rank from 10th to 9th in salt. Additionally, significant quantities of cushed stone and industrial sand and gravel were produced in the State. West Virginia mines produced only industrial minerals and coal; no metals were mined in the State. Primary aluminum and raw steel were produced in the State, but both metals were processed from materials acquired from foreign and other domestic sources. West Virginia was 11th in the Nation in primary aluminum production in 1996.

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[1]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 1996 USGS mineral production data published in this chapter are estimates as of February 1997. For some commodities (for example, 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

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN WEST VIRGINIA 1/ 2/

(Thousand metric tons and thousand dollars)

| | 1994 | | 1995 | | 1996 p/ | |
|---|---|---|---|---|---|---|
| Mineral | Quantity | Value | Quantity | Value | Quantity | Value |
| Clays | 138 | 291 | 184 | 365 | 167 | 306 |
| Gemstones | NA | 1 | NA | 1 | NA | 1 |
| Sand and gravel (construction) | 1,380 | 5,970 | 1,800 | 7,650 | 1,550 | 6,360 |
| Stone (crushed) 3/ | 12,300 | 99,300 | 11,800 | 75,000 3/ | 13,000 | 81,900 |
| Combined value of cement, lime, peat, salt, sand and gravel (industrial), and stone (crushed dolomite, dimension sandstone) | XX | 75,500 | XX | 97,700 | XX | 102,000 |
| Total | XX | 181,000 | XX | 181,000 | XX | 191,000 |

p/ Preliminary. NA Not available. XX Not applicable.
1/ Production as measured by mine shipments or marketable production (including comsumption by producers).
2/ Data are rounded to three significant digits; may not add to totals shown.
3/ Excludes certain stones; kind and value included with "Combined value" data.

TABLE 2
WEST VIRGINIA: 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 | $6.52 |
| Riprap and jetty stone | 187 | $1,230 | 6.60 |
| Filter stone | 64 | 475 | 7.42 |
| Coarse aggregate, graded: | | | |
| Concrete aggregate, coarse | 458 | 2,820 | 6.15 |
| Bituminous aggregate, coarse | 330 | 1,880 | 5.70 |
| Bituminous surface-treatment aggregate | 289 | 1,520 | 5.27 |
| Railroad ballast | W | W | 6.65 |
| Other graded coarse aggregate | W | W | 4.65 |
| Fine aggregate (-3/8 inch): | | | |
| Stone sand, concrete | 67 | 378 | 5.64 |
| Stone sand, bituminous mix or seal | 273 | 1,460 | 5.36 |
| Screening, undesignated | 102 | 563 | 5.52 |
| Coarse and fine aggregates: | | | |
| Graded road base or subbase | 842 | 4,940 | 5.87 |
| Unpaved road surfacing | 83 | 554 | 6.67 |
| Crusher run or fill or waste | 811 | 4,170 | 5.15 |
| Other coarse and fine aggregates | W | W | 4.10 |
| Other construction materials 3/ | 400 | 2,380 | 5.95 |
| Agricultural: Agricultural limestone | 5 | 27 | 5.40 |
| Chemical and metallurgical: | | | |
| Cement manufacture | (4/) | (4/) | 4.27 |
| Sulfur oxide removal | (4/) | (4/) | 5.35 |
| Unspecified: 5/ | | | |
| Actual | 4,410 | 33,200 | 7.52 |
| Estimated | 1,780 | 12,000 | 6.79 |
| Total | 11,800 | 75,000 | 6.38 |

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."
1/ Includes limestone and sand stone; excludes dolomite from State total to avoid disclosing company proprietary data.
2/ Data are rounded to three significant digits; may not add to totals shown.
3/ Includes pipe bedding.
4/ Withheld to avoid disclosing company proprietary data; included in "Total."
5/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

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

| | 1994 | | | | 1995 2/ | | | |
|---|---|---|---|---|---|---|---|---|
| Kind | Number of quarries | Quantity (thousand metric tons) | Value (thousands) | Unit value | Number of quarries | Quantity (thousand metric tons) | Value (thousands) | Unit value |
| Limestone | 28 | 10,200 | $66,000 | $6.48 | 38 | 10,800 | $68,800 | $6.36 |
| Dolomite | 1 | (2/) | 19,200 | (2/) | -- | -- | -- | -- |
| Sandstone | 13 | 2,070 | 14,100 | 6.79 | 10 | 934 | 6,170 | 6.61 |
| Total | XX | 12,300 | 99,300 | 8.10 r/ | XX | 11,800 | 75,000 | 6.38 |

r/ Revised. XX Not applicable.
1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Excludes dolomite to avoid disclosing company proprietary data.

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

(Thousand metric tons and thousand dollars)

| Use | District 1 | | District 2 | | District 3 | |
|---|---|---|---|---|---|---|
| | Quantity | Value | Quantity | Value | Quantity | Value |
| Construction aggregates: | | | | | | |
| Coarse aggregate (+1 1/2 inch) 3/ | 49 | 331 | W | W | W | W |
| Coarse aggregate, graded 4/ | W | W | W | W | 564 | 2,970 |
| Fine aggregate (-3/8 inch) 5/ | 50 | 288 | W | W | W | W |
| Coarse and fine aggregate 6/ | W | W | W | W | 914 | 4,970 |
| Other construction materials 7/ | 862 | 4,840 | 842 | 5,320 | 626 | 3,660 |
| Agricultural 8/ | (9/) | (9/) | (9/) | (9/) | (9/) | (9/) |
| Chemical and metallurgical 10/ | (9/) | (9/) | (9/) | (9/) | -- | -- |
| Unspecified: 11/ | | | | | | |
| Actual | 3,250 | 24,400 | (9/) | (9/) | (9/) | (9/) |
| Estimated | 622 | 5,180 | 419 | 2,340 | 734 | 4,530 |
| Total | 4,980 | 36,600 | 3,280 | 18,300 | 3,510 | 20,100 |

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."
1/ Excludes dolomite from State total to avoid disclosing company proprietary data.
2/ Data are rounded to three significant digits; may not add to totals shown.
3/ Includes filter stone, macadam, and riprap and jetty stone.
4/ Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other coarse aggregate.
5/ Includes stone sand (concrete), stone sand (bituminous mix or seal), and screening (undesignated).
6/ Includes graded road base or subbase, unpaved road surfacing, crusher run (select material or fill), and other coarse and fine aggregate.
7/ Includes pipe bedding.
8/ Includes agricultural limestone.
9/ Withheld to avoid disclosing company proprietary data; included in "Total."
10/ Includes cement manufacture and sulfur oxide removal.
11/ Includes production reported without a breakdown by end use and estimates for nonrespondents.

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

| Use | Quantity (thousand metric tons) | Value (thousands) | Value per ton |
|---|---|---|---|
| Concrete aggregate and concrete products | 652 | $2,730 | $4.19 |
| Asphaltic concrete aggregates and road base materials 2/ | 240 | 865 | 3.60 |
| Unspecified, 3/ actual | 907 | 4,060 | 4.47 |
| Total or average | 1,800 | 7,650 | 4.25 |

1/ Data are rounded to three significant digits; may not add to totals shown.
2/ Includes fill and snow and ice control.
3/ Includes production reported without a breakdown by end use and estimates for nonrespondents.