

# THE MINERAL INDUSTRY OF NORTH CAROLINA

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 Division of Land Resources, North Carolina Department of Environment, Health, and Natural Resources, for collecting information all nonfuel minerals.

In 1995, for the fourth year in a row, North Carolina ranked 17th nationally in total nonfuel mineral production value,<sup>1</sup> according to the U.S. Geological Survey (USGS). The estimated value for 1995 was \$742 million, a 5% increase from that of 1994. This followed a gain of almost 15% from 1993 to 1994 (based on final data). The State accounted for 2% of the U.S. total nonfuel mineral production value.

The increased values of crushed stone and phosphate rock had the most impact on the changing values of the past 2 years. The value of crushed stone was up more than 8% in 1995, following an almost 18% gain in 1994. Phosphate rock value increased 11% in 1995, following an increase of more than 26% in 1994. Compared with 1994, the other mineral commodity values that increased in 1995 were as follows: feldspar, dimension stone, gemstones, and talc and pyrophyllite. Decreases occurred in lithium minerals, construction and industrial sand and gravel, common clays, crude mica, and olivine. In 1994, all

commodities increased in value except for construction sand and gravel, which had a small decrease.

Compared with USGS estimates of the quantities produced in the other 49 States, North Carolina remained first in feldspar and crude mica; first of two States that produced lithium minerals and olivine; third in phosphate rock; fifth in talc and pyrophyllite; and seventh in industrial sand and gravel. While the State ranked sixth in peat production, it climbed from eighth to sixth in kaolin and dropped from first to fifth in common clays. North Carolina mines have been producers of industrial minerals exclusively since the early 1970's, particularly since the 1971 closing of the Tungsten Queen Mine, an underground tungsten mine in Vance County. However, significant exploration for gold has occurred during the past several years.

<sup>1</sup>The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on the minerals or mineral products. Production

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

Mineral	1993		1994		1995 <sup>p</sup>	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Clays <sup>3</sup> thousand metric tons	2,380	\$11,200	2,530	\$12,500	2,250	\$10,100
Feldspar metric tons	472,000	16,700	488,000	17,600	483,000	17,700
Gemstones	NA	546	NA	565	NA	4,490
Mica (scrap) thousand metric tons	51	2,700	68	3,270	68	3,220
Peat metric tons	W	162	21,000	W	W	W
Sand and gravel:						
Construction thousand metric tons	<sup>e</sup> 11,100	<sup>e</sup> 53,800	11,100	50,700	10,700	50,300
Industrial metric tons	1,340,000	18,600	1,460,000	24,200	1,460,000	16,100
Stone:						
Crushed thousand metric tons	<sup>4</sup> 47,800	<sup>4</sup> 298,000	<sup>4</sup> 53,900	<sup>4</sup> 351,000	57,200	380,000
Dimension metric tons	31,700	12,300	<sup>4</sup> 33,700	<sup>4</sup> 12,500	46,300	14,100
Combined value of clays (kaolin), lithium minerals, olivine, phosphate rock, stone [crushed quartzite, sandstone, slate, and miscellaneous (1994), crushed quartzite, slate, and volcanic cinder (1993), dimension quartzite, sandstone, slate, and miscellaneous (1994)], talc and pyrophyllite, and values indicated by symbol W						
	XX	204,000	XX	<sup>2</sup> 236,000	XX	246,000
Total	XX	617,000	XX	<sup>2</sup> 709,000	XX	742,000

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

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

<sup>3</sup>Excludes certain clays; value included with "Combined value" data.

<sup>4</sup>Excludes certain stones; value included with "Combined value" data.

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 are estimates, as of Dec. 1995. Estimates for some commodities, especially construction sand and gravel and

crushed stone, 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 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.

TABLE 2  
NORTH CAROLINA: 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 aggregate (+1 1/2 inch):</b>			
Macadam	467	\$2,320	\$4.97
Riprap and jetty stone	557	4,450	7.98
Filter stone	384	2,590	6.74
Other coarse aggregate	W	W	5.65
<b>Coarse aggregate, graded:</b>			
Concrete aggregate, coarse	3,690	26,200	7.10
Bituminous aggregate, coarse	2,320	17,500	7.57
Bituminous surface-treatment aggregate	320	2,170	6.79
Railroad ballast	1,320	6,250	4.72
<b>Fine aggregate (-3/8 inch):</b>			
Stone sand, concrete	152	685	4.51
Stone sand, bituminous mix or seal	407	2,130	5.22
Screening, undesignated	2,160	10,600	4.88
Other fine aggregate	W	W	8.43
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	8,030	42,400	5.27
Unpaved road surfacing	326	2,060	6.33
Terrazzo and exposed aggregate	W	W	22.00
Crusher run or fill or waste	923	5,020	5.44
Other coarse and fine aggregates	W	W	5.41
Other construction materials	1,260	8,970	7.11
<b>Agricultural:</b>			
Agricultural limestone	10	53	5.30
Poultry grit and mineral food	10	278	27.80
Other specified uses not listed	36	400	11.10
<b>Unspecified:<sup>3</sup></b>			
Actual	30,600	210,000	6.88
Estimated	979	6,500	6.64
Total	53,900	351,000	6.51

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

<sup>1</sup>Includes calcareous marl, dolomite, granite, limestone, miscellaneous stone, quartzite, slate, 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 production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 3  
NORTH CAROLINA: 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	9	3,450	\$23,600	\$6.84	12	4,290	\$30,000	\$6.98
Dolomite	1	179	1,250	7.01	1	245	1,680	6.87
Calcareous marl	3	60	257	4.28	3	111	738	6.65
Granite	70	38,400	236,000	6.16	68	41,300	265,000	6.41
Trap rock	4	3,930	24,700	6.29	7	3,930	25,800	6.57
Slate	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	3	W	W	6.95
Volcanic cinder and scoria	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	1	W	W	7.04
Quartzite	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	1	W	W	5.38
Miscellaneous stone	3	1,790	11,400	6.35	3	1,370	9,260	6.77
Total	XX	47,800	298,000	6.23	XX	53,900	351,000	6.51

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

<sup>2</sup>Data are rounded to three significant digits.

<sup>3</sup>Excludes quartzite, slate, and volcanic cinder and scoria from State total to avoid disclosing company proprietary data.

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

(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) <sup>2</sup>	W	W	W	W	680	3,500
Coarse aggregate, graded <sup>3</sup>	W	W	W	W	1,230	8,020
Fine aggregate (-3/8 inch) <sup>4</sup>	690	4,470	W	W	W	W
Coarse and fine aggregate <sup>5</sup>	3,000	17,400	W	W	W	W
Other construction materials	2,620	17,300	12,200	72,400	1,940	10,100
Agricultural <sup>6</sup>	10	53	10	278	—	—
Other miscellaneous uses <sup>7</sup>	36	400	—	—	—	—
Unspecified <sup>8</sup>						
Actual	2,370	14,900	17,200	117,000	11,000	78,500
Estimated	—	—	907	5,950	72	546
Total	8,720	54,600	30,300	196,000	14,900	101,000

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

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

<sup>2</sup>Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregate.

<sup>3</sup>Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, and railroad ballast.

<sup>4</sup>Includes stone sand (concrete), stone sand (bituminous mix or seal), screening (undesignated), and other fine aggregate.

<sup>5</sup>Includes graded road base or subbase, terrazzo and exposed aggregate, unpaved road surfacing, crusher run (select material or fill), and other coarse and fine aggregates.

<sup>6</sup>Includes agricultural limestone, poultry grit, and mineral food.

<sup>7</sup>Includes other specified uses not listed.

<sup>8</sup>Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 5  
**NORTH CAROLINA: 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)	3,720	\$13,800	\$3.70
Plaster and gunite sands	55	206	3.75
Concrete products (blocks, brick, pipe, decorative, etc.)	879	2,440	2.77
Asphaltic concrete aggregates and other bituminous mixtures	772	2,290	2.97
Road base and coverings <sup>2</sup>	1,270	7,270	5.71
Fill	572	1,160	2.03
Railroad ballast	289	1,340	4.63
Other <sup>3</sup>	182	513	2.82
Unspecified: <sup>4</sup>			
Actual	2,730	19,700	7.22
Estimated	614	2,020	3.29
Total or average	11,100	50,700	4.57

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

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

<sup>3</sup>Includes filtration.

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

TABLE 6  
**NORTH CAROLINA: 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		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products <sup>2</sup>	349	2,240	1,850	5,950	2,460	8,210
Asphaltic concrete aggregates and road base materials <sup>3</sup>	645	3,600	596	3,870	1,380	3,250
Railroad ballast	289	1,340	—	—	—	—
Other miscellaneous uses <sup>4</sup>	—	—	110	243	71	271
Unspecified: <sup>5</sup>						
Actual	645	2,960	640	9,190	1,450	7,560
Estimated	29	62	311	1,050	274	906
Total	1,960	10,200	3,510	20,300	5,620	20,200

<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 fill, road and other stabilization (lime), and snow and ice control.

<sup>4</sup>Includes filtration.

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



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