

THE MINERAL INDUSTRY OF PENNSYLVANIA

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 Pennsylvania Bureau of Topographic and Geologic Survey, Department of Environmental Resources, for collecting information on all nonfuel minerals.

Pennsylvania ranked 11th among the 50 States in total nonfuel mineral production value² in 1996, up from 12th in 1995, according to the U.S. Geological Survey (USGS). The estimated value for 1996 was \$1.04 billion, about 4% less than that of 1995. This followed a more than 11% increase from 1993 to 1994 and approximately a 7% increase from 1994 to 1995 (based on revised data for 1993 and 1994 and final 1995 data). The State accounted for almost 3% of the U.S. total nonfuel mineral production value.

Pennsylvania continued to be among the Nation's leading producers of crushed stone, portland cement, lime, and masonry cement (in descending order of value); these four commodities accounted for 91% of the State's total nonfuel mineral production value. In 1996, crushed stone increased in value by \$14 million (*see table 1*). But this was more than compensated for by a \$35 million (10%) decrease in the value of portland cement, a \$15 million (16%) drop in construction sand and gravel, and an \$8 million (8%) decrease in lime. Other nonfuel minerals that decreased included masonry cement, common clays, and peat. A combined increase of \$81.5 million in the values of portland cement, crushed stone, and lime led the way to Pennsylvania's significant increase in 1995.

Based on USGS estimates of the quantities produced in the 50 States in 1996, Pennsylvania remained second in crushed stone, fourth of four States that produce tripoli, fifth in lime, and sixth in dimension stone. The State dropped from third to fourth in the production of portland

cement and from fifth to sixth in masonry cement. Additionally, significant quantities of construction and industrial sand and gravel and common clays were produced in the State. Pennsylvania is exclusively an industrial mineral- and coal-producing State; metals that were produced in the State, especially steel, were processed from materials received from other domestic or foreign sources. Pennsylvania continued to be the Nation's third leading raw steel-manufacturing State with an estimated output of almost 7.6 million metric tons (8.4 million short tons) of raw steel, as reported by the American Iron and Steel Institute.

¹An additional contact is Dr. Donald Hoskins, State Geologist, same address and fax number as Mr. Berkheiser, telephone: (717) 787-2169.

²The 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>

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1994		1995		1996 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	245	19,300	267	21,200	255	20,000
Portland	5,630	315,000	5,610	355,000	5,070	320,000
Clays	811	4,040	750	3,250	679	2,970
Gemstones	NA	1	NA	1	NA	1
Lime	1,590	95,500	1,640	107,000	1,510	98,700
Peat metric tons	10	296	11 3/	294 3/	5 3/	164 3/
Sand and gravel (construction)	15,900	89,700	17,100	93,100	14,900	78,200
Stone:						
Crushed	76,700	462,000	80,900	492,000	81,700	507,000
Dimension metric tons	43,700 4/	7,280 4/	57,600	12,300	61,600	12,300
Combined value of other industrial minerals	XX	13,300	XX	(5)	XX	(5)
Total	XX	1,010,000	XX	1,080,000 6/	XX	1,040,000 6/

p/ Preliminary. NA Not available. 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.

3/ Data series changed to production beginning in 1995; prior years shipment data may not be comparable.

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

5/ Value excluded to avoid disclosing company proprietary data.

6/ Partial total; excludes values which must be concealed to avoid disclosing company proprietary data.

TABLE 2
PENNSYLVANIA: 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):			
Riprap and jetty stone	650	\$4,680	\$7.19
Filter stone	226	1,330	5.86
Other coarse aggregate 3/	717	4,490	6.26
Coarse aggregate, graded:			
Concrete aggregate, coarse	5,650	34,200	6.06
Bituminous aggregate, coarse	6,840	38,500	5.63
Bituminous surface-treatment aggregate	2,350	13,700	5.83
Railroad ballast	757	4,420	5.84
Other graded coarse aggregate	3,880	25,300	6.51
Fine aggregate (-3/8 inch):			
Stone sand, concrete	527	3,170	6.01
Stone sand, bituminous mix or seal	2,970	16,900	5.69
Screening, undesignated	1,290	7,280	5.65
Other fine aggregate	332	2,440	7.36
Coarse and fine aggregates:			
Graded road base or subbase	11,900	61,500	5.17
Unpaved road surfacing	1,440	6,690	4.65
Terrazzo and exposed aggregate	147	3,550	24.12
Crusher run or fill or waste	1,460	6,840	4.69
Other coarse and fine aggregates	3,720	24,200	6.50
Other construction materials 4/	2,780	24,800	8.92
Agricultural:			
Agricultural limestone	579	6,620	11.42
Poultry grit and mineral food	67	1,550	23.10
Other agricultural uses	W	W	11.22
Chemical and metallurgical:			
Cement manufacture	6,470	31,800	4.93
Lime manufacture	679	4,560	6.72
Flux stone	27	409	15.15
Sulfur oxide removal	275	3,320	12.07
Special:			
Mine dusting or acid water treatment	W	W	25.43
Asphalt fillers or extenders	503	5,120	10.18
Whiting or whiting substitute	41	1,810	44.07
Other fillers or extenders	71	1,050	14.83
Other specified uses not listed	360	4,700	13.04
Unspecified: 5/			
Actual	12,400	76,700	6.18
Estimated	11,800	70,700	6.01
Total	80,900	492,000	6.09

W Withheld to avoid disclosing company proprietary data; included with "Other specified uses not listed."

1/ Includes dolomite, granite, limestone, limestone-dolomite, marble, miscellaneous stone, sandstone and quartzite, and traprock.

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

3/ Includes macadam.

4/ Includes building products and roofing granules.

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

TABLE 3
PENNSYLVANIA: 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 2/	111 r/	43,700 r/	\$255,000 r/	\$5.82 r/	125	46,000	\$271,000	\$5.90
Dolomite	18	14,900 r/	91,600 r/	6.15 r/	17	16,000	100,000	6.27
Sandstone and quartzite	35 r/	6,880 r/	44,500 r/	6.47 r/	35	5,230	33,200	6.35
Traprock	12 r/	4,000 r/	30,200 r/	7.55 r/	12	5,100	36,800	7.22
Granite	7	2,570	15,800	6.13	7	2,660	19,400	7.30
Marble	1	476	3,210	6.73	1	433	2,840	6.56
Miscellaneous stone	15	4,110 r/	21,800 r/	5.31	17	5,500	28,800	5.23
Total	XX	76,700	462,000	6.02	XX	80,900	492,000	6.09

r/ Revised. XX Not applicable.

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

2/ Includes "limestone-dolomite, " reported with no distinction between the two.

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

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:								
Coarse aggregate (+1 1/2 inch) 2/	W	W	W	W	498	3,400	842	5,590
Coarse aggregate, graded 3/	810	3,730	1,140	6,760	4,250	26,900	13,300	78,800
Fine aggregate (-3/8 inch) 4/	W	W	W	W	861	5,220	3,350	19,900
Coarse and fine aggregate 5/	W	W	W	W	3,380	19,800	12,700	71,300
Other construction materials 6/	1,190	4,320	2,660	13,900	1,510	9,820	1,200	14,600
Agricultural 7/	(8/)	(8/)	(8/)	(8/)	47	651	568	7,020
Chemical and metallurgical 9/	(8/)	(8/)	(8/)	(8/)	(8/)	(8/)	758	21,500
Special 10/	--	--	(8/)	(8/)	(8/)	(8/)	552	7,100
Other miscellaneous uses 11/	539	4,160	244	2,990	2,160	14,600	203	2,950
Unspecified: 12/								
Actual	234	1,400	1,120	7,200	2,240	15,500	8,830	52,600
Estimated	1,580	9,750	1,260	6,470	2,100	13,600	6,810	40,800
Total	4,360	23,400	6,420	37,300	17,000	109,000	53,100	322,000

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

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

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

3/ Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregate.

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

5/ 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.

6/ Includes building products and roofing granules.

7/ Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

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

9/ Includes cement manufacture, flux stone, lime manufacture, and sulfur oxide removal.

10/ Includes asphalt fillers or extenders, mine dusting or acid water treatment, other fillers or extenders, and whiting or whiting substitute.

11/ Includes other specified uses not listed.

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

TABLE 5
PENNSYLVANIA: 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 (including concrete sand)	4,800	\$33,700	\$7.03
Plaster and gunite sands	120	1,020	8.53
Concrete products (blocks, bricks, pipe, decorative, etc.)	214	1,560	7.30
Asphaltic concrete aggregates and other bituminous mixtures	1,910	12,600	6.60
Road base and coverings	2,130	11,500	5.41
Fill	2,030	5,540	2.72
Snow and ice control	250	1,440	5.76
Other 2/	528	3,650	6.92
Unspecified: 3/			
Actual	2,530	9,130	3.61
Estimated	2,600	12,900	4.96
Total or average	17,100	93,100	5.44

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

2/ Includes filtration, railroad ballast, and roofing granules.

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

TABLE 6
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1995, BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	402	3,960	1,190	8,020	1,420	11,000	1,820	13,300
Asphaltic bituminous mixtures	1,220	2,290	512	3,270	683	4,670	313	2,370
Road base and coverings	60	6,060	162	965	639	3,710	104	774
Fill	106	146	70	330	406	1,620	1,500	3,450
Snow and ice control	296	583	51	396	80	361	13	100
Other miscellaneous uses 3/		1,940	29	293	110	749	91	673
Unspecified: 4/								
Actual	207	443	106	681	836	3,890	1,380	4,110
Estimated	1,460	6,830	607	3,470	330	1,780	111	804
Total	4,540	22,300	2,730	17,400	4,510	27,800	5,320	25,600

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

2/ Includes plaster and gunite sands.

3/ Includes filtration, railroad ballast, and roofing granules.

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