

THE MINERAL INDUSTRY OF PENNSYLVANIA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Pennsylvania Bureau of Topographic and Geologic Survey for collecting information on all nonfuel minerals.

In 2000, the estimated value¹ of nonfuel mineral production for Pennsylvania was \$1.25 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 1.6% increase from that of 1999.² For the fifth consecutive year, the State was 11th in the Nation in total nonfuel mineral production value, of which Pennsylvania accounted for more than 3% of the U.S. total. (Data for industrial sand and gravel and tripoli have been withheld from table 1 for 1999 and 2000 to protect company proprietary data, resulting in total values that are less than the actual totals for those years.)

In 2000, Pennsylvania continued to be among the Nation's

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon 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 2000 USGS mineral production data published in this chapter are preliminary estimates as of July 2001 and are expected to change. For some mineral commodities, such as 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. A telephone listing of the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

²Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to the revision of preliminary 1999 to final 1999 data. Data for 2000 are preliminary and are expected to change; related rankings may also change.

leading States that produce crushed stone, portland cement, lime, and masonry cement (descending order of value); these four commodities accounted for nearly 90% of the State's total nonfuel mineral production value. Construction sand and gravel, Pennsylvania's other major nonfuel mineral, accounted for most of the remaining 10%. In 1999, increases in the production and value of portland and masonry cements, up a combined \$27 million, accounted for the largest additions to the State's mineral economy. A significant increase also occurred in dimension stone production and value, while industrial sand and gravel and peat also showed small increases in value (descending order of change). These were offset in part, mostly by decreases in the (production and) values of crushed stone and lime. Smaller decreases also occurred in common clays, construction sand and gravel, kaolin, and tripoli (table 1).

Based upon USGS estimates of the quantities produced in the 50 States in 2000, Pennsylvania remained second in crushed stone, third in portland cement, fourth of 4 States that produce tripoli, sixth in lime and masonry cement, and eighth in dimension stone. Additionally, significant quantities of construction sand and gravel, industrial sand and gravel, and common clays were produced in the State (descending order of value).

Pennsylvania is exclusively an industrial mineral- and coal-producing State; metals that were produced in the State in 2000, especially steel, were processed from materials acquired from foreign and other domestic sources. Pennsylvania continued to be the Nation's third leading raw-steel-manufacturing State, with an estimated output of almost 7.2 million metric tons of raw steel, as reported by the American Iron and Steel Institute.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	319	31,100 e/	330	35,800 e/	330	35,800 e/
Portland	6,140	457,000 e/	6,690	479,000 e/	6,700	475,000 e/
Clays, common	886	2,270	816	1,760	816	1,760
Gemstones	NA	1	NA	1	NA	1
Lime	1,390	97,800	1,340	94,300	1,410	95,900
Peat	6	154	6	185	6	185
Sand and gravel, construction	19,200	116,000	18,600	115,000	19,300	120,000
Stone:						
Crushed	94,500	504,000	92,500	490,000	94,000	510,000
Dimension metric tons	45,200	9,480	50,800	12,600	62,200	12,100
Combined values of clays [kaolin, (1998)], sand and gravel (industrial), tripoli	XX	11,800	XX	W	XX	W
Total	XX	1,230,000	XX	1,230,000 3/	XX	1,250,000 3/

e/ Estimated. p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

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

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

3/ Partial total, excludes values that must be concealed to avoid disclosing company proprietary data.

TABLE 2
PENNSYLVANIA: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1998				1999			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	127 r/	59,200 r/	\$324,000 r/	\$5.46 r/	120	57,000	\$298,000	\$5.24
Dolomite	13 r/	12,200 r/	60,200 r/	4.93 r/	14	11,400	65,500	5.76
Granite	7	3,710	19,000	5.11	7	5,330	27,600	5.18
Marble	2 r/	W	W	W	2	W	W	W
Sandstone and quartzite	42 r/	7,410 r/	39,400 r/	5.32	39	6,820	35,200	5.17
Traprock	10 r/	3,860 r/	19,300 r/	5.00 r/	10	3,840	19,500	5.07
Slate	1	W	W	W	1	W	W	W
Miscellaneous stone	18 r/	7,420 r/	39,100 r/	5.27 r/	18	7,290	38,100	5.23
Total or average	XX	94,500	504,000	5.34	XX	92,500	490,000	5.30

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 3
PENNSYLVANIA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 1999, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Macadam	364	\$2,340	\$6.43
Riprap and jetty stone	864	6,240	7.22
Filter stone	232	1,130	4.87
Other coarse aggregate	827	4,270	5.16
Total or average	2,290	14,000	6.11
Coarse aggregate, graded:			
Concrete aggregate, coarse	4,530	25,800	5.70
Bituminous aggregate, coarse	6,180	34,800	5.64
Bituminous surface-treatment aggregate	1,200	7,880	6.58
Railroad ballast	522	2,600	4.98
Other graded coarse aggregate	3,770	22,200	5.90
Total or average	16,200	93,300	5.77
Fine aggregate (-3/8 inch):			
Stone sand, concrete	1,750	8,070	4.60
Stone sand, bituminous mix or seal	2,740	14,900	5.43
Screening, undesignated	912	5,150	5.64
Other fine aggregate	1,940	11,200	5.79
Total or average	7,350	39,300	5.36
Coarse and fine aggregates:			
Graded road base or subbase	8,170	41,200	5.05
Unpaved road surfacing	1,310	6,880	5.26
Terrazzo and exposed aggregate	W	W	5.46
Crusher run or fill or waste	1,540	6,860	4.45
Light weight aggregate (slate)	W	W	6.62
Other coarse and fine aggregates	6,430	28,900	4.49
Total or average	17,500	83,900	4.80
Other construction materials	484	2,910	6.01
Agricultural, agricultural limestone	(3/)	(3/)	10.21
Chemical and metallurgical:			
Cement manufacture	7,520	36,300	4.83
Lime manufacture	(3/)	(3/)	4.69
Flux stone	99	424	4.28
Sulfur oxide removal	232	2,890	12.47
Special:			
Mine dusting or acid water treatment	(3/)	(3/)	15.13
Asphalt fillers or extenders	674	5,340	7.92
Whiting or whiting substitute	195	7,390	37.89
Other fillers or extenders	128	1,660	12.94
Other miscellaneous uses and specified uses not listed	(3/)	(3/)	5.76
Unspecified: 4/			
Reported	27,100	143,000	5.26
Estimated	12,000	51,000	4.38
Total or average	38,700	193,000	5.00
Grand total or average	92,500	490,000	5.30

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

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

2/ Includes dolomite, granite, limestone, marble, miscellaneous stone, sandstone and quartzite, slate, and traprock.

3/ Withheld to avoid disclosing company proprietary data; included in "Grand total."

4/ Reported and estimated production without a breakdown by end use.

TABLE 4
PENNSYLVANIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1999,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1 1/2 inch) 2/	W	W	W	W	W	W
Coarse aggregate, graded 3/	W	W	W	W	W	W
Fine aggregate (-3/8 inch) 4/	W	W	W	W	W	W
Coarse and fine aggregate 5/	W	W	W	W	W	W
Other construction materials	--	--	25	112	348	2,120
Agricultural 6/	(7/)	(7/)	W	W	W	W
Chemical and metallurgical 8/	--	--	149	1,880	1,740	11,400
Special 9/	--	--	W	W	W	W
Other miscellaneous uses and specified uses not listed	--	--	--	--	--	--
Unspecified: 10/						
Reported	1,030	5,410	3,750	19,600	3,370	17,800
Estimated	1,500	6,500	1,500	6,600	2,200	9,300
Total	2,790	13,100	8,380	43,000	18,500	105,000
	District 4		Unspecified districts			
	Quantity	Value	Quantity	Value		
Construction:						
Coarse aggregate (+1 1/2 inch) 2/	1,460	8,930	--	--		
Coarse aggregate, graded 3/	10,800	59,700	--	--		
Fine aggregate (-3/8 inch) 4/	5,250	29,000	--	--		
Coarse and fine aggregate 5/	11,900	55,200	--	--		
Other construction materials	100	636	10	41		
Agricultural 6/	W	W	--	--		
Chemical and metallurgical 8/	6,490	28,800	--	--		
Special 9/	W	W	--	--		
Other miscellaneous uses and specified uses not listed	W	W	--	--		
Unspecified: 10/						
Reported	18,900	99,600	--	--		
Estimated	6,400	28,000	--	--		
Total	62,800	328,000	10	41		

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

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

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

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

5/ Includes crusher run (select material or fill), graded road base or subbase, light weight aggregate (slate), terrazzo and exposed aggregate, unpaved road surfacing, and other coarse and fine aggregate.

6/ Includes agricultural limestone.

7/ Less than 1/2 unit.

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

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

10/ Reported and estimated production without a breakdown by end use.

TABLE 5
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	3,970	\$27,700	\$6.98
Gunitite and plaster sands	49	323	6.59
Concrete products (blocks, bricks, decorative, pipe, etc.)	444	3,920	8.84
Asphaltic concrete aggregate and other bituminous mixtures	1,300	8,870	6.81
Road base and coverings 2/	1,560	9,360	6.00
Fill	1,300	5,380	4.15
Snow and ice control	215	1,300	6.02
Other miscellaneous uses 3/	1,010	4,510	4.48
Unspecified: 4/			
Reported	4,220	29,700	7.02
Estimated	4,500	24,000	5.33
Total or average	18,600	115,000	6.20

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes road and other stabilizations (cement).

3/ Includes railroad ballast and roofing granules.

4/ Reported and estimated production without a breakdown by end use.

TABLE 6
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999, 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 (including concrete sand)	915	5,660	652	4,100	943	6,900	1,460	11,000
Concrete products (blocks, bricks, decorative, pipe, etc.) 2/	W	W	157	1,490	W	W	186	1,520
Asphaltic concrete aggregate and other bituminous mixtures	471	4,200	443	2,760	W	W	W	W
Road base and coverings 3/	856	5,290	194	995	398	2,200	114	881
Fill	169	588	183	966	434	2,610	512	1,210
Snow and ice control	W	W	45	410	57	273	W	W
Other miscellaneous uses 4/	160	938	34	187	441	2,420	371	967
Unspecified: 5/								
Reported	1,180	7,710	606	5,130	2,200	15,800	188	906
Estimated	1,400	6,200	1,100	6,100	2,000	11,000	30	300
Total	5,280	31,500	3,410	22,200	6,870	43,600	2,960	17,700
	Unspecified districts							
	Quantity	Value						
Concrete aggregate (including concrete sand)	--	--						
Concrete products (blocks, bricks, decorative, pipe, etc.) 2/	--	--						
Asphaltic concrete aggregate and other bituminous mixtures	--	--						
Road base and coverings 3/	--	--						
Fill	--	--						
Snow and ice control	--	--						
Other miscellaneous uses 4/	--	--						
Unspecified: 5/								
Reported	42	70						
Estimated	--	--						
Total	42	70						

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes gunitite and plaster sands.

3/ Includes road and other stabilizations (cement).

4/ Includes roofing granules and railroad ballast.

5/ Reported and estimated production without a breakdown by end use.