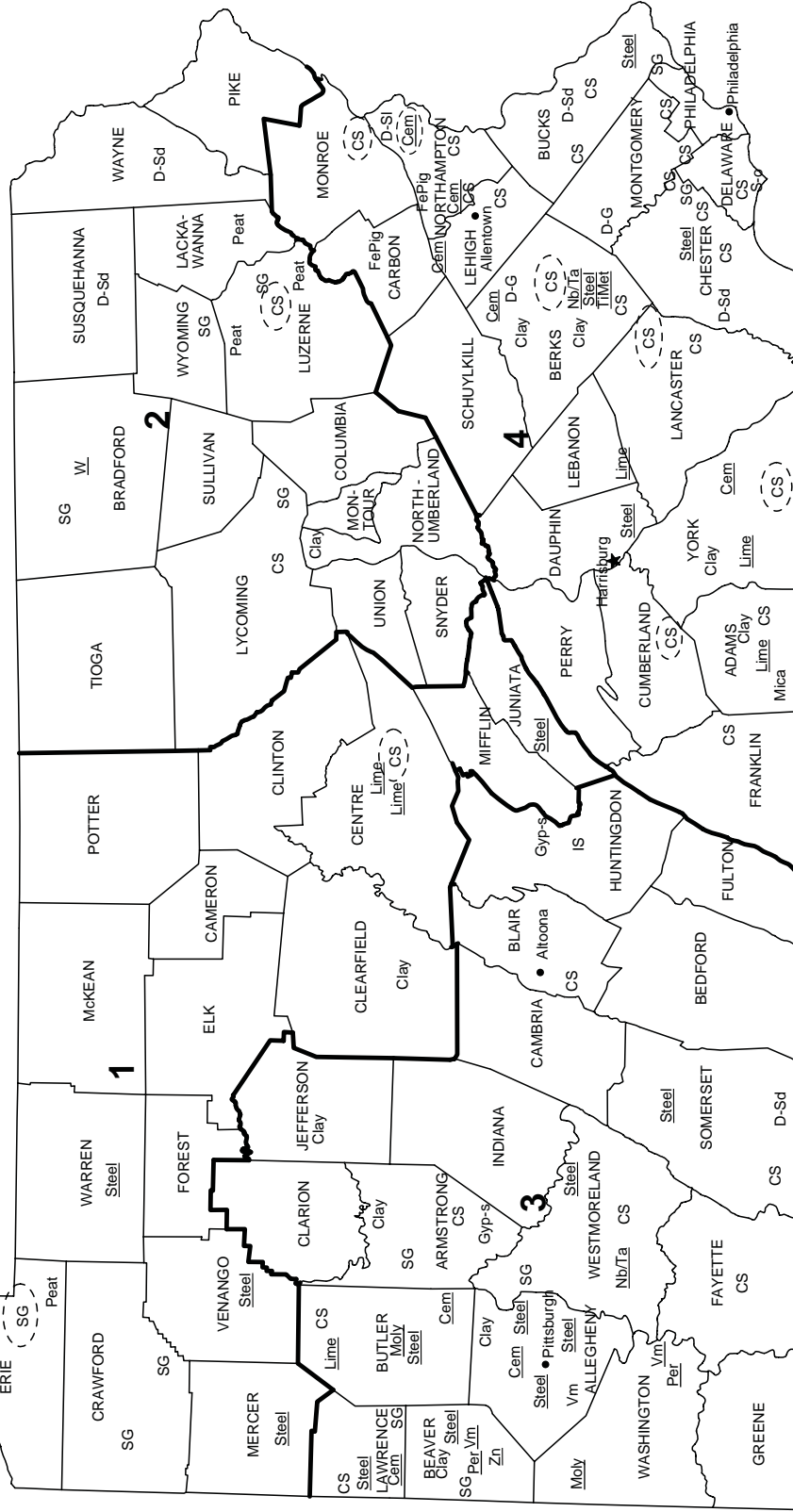




2005 Minerals Yearbook

PENNSYLVANIA

PENNSYLVANIA



MINERAL SYMBOLS (Major producing areas)

LEGEND

1	County boundary	IS	Industrial sand	SG	Construction sand and gravel
★	Capital	Lime	Lime plant	Steel	Steel plant
•	City	Mica	Mica	TiMet	Titanium metal plant
—	Crushed stone/sand and gravel districts	Moly	Molybdenum plant	Tr	Tripoli
		Nb/Ta	Columbium (niobium) and tantalum plant	Vm	Vermiculite plant
		Peat	Peat	W	Tungsten plant
		Per	Perlite plant	Zn	Zinc plant
		S-o	Sulfur (oil)	CS	Concentration of mineral operations

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 2005, Pennsylvania's nonfuel raw mineral production was valued¹ at \$1.55 billion, based upon annual U.S. Geological Survey (USGS) data. This was a 9.9%, or an \$140 million, increase from the \$1.41 billion total value for 2004, which also had increased, up 11% (also up \$140 million) from 2003. Pennsylvania was 12th in rank (11th in 2004) in the Nation in total nonfuel mineral production value and accounted for nearly 3% of the U.S. total value. [The actual totals for 2003 and 2005 are higher than those shown in table 1; industrial sand and gravel (2003) and tripoli (2003 and 2005) data have been withheld (company proprietary data) from the combined values in that table.]

In 2004, Pennsylvania continued to be among the Nation's leading States in the production of crushed stone, cement (portland and masonry), and construction sand and gravel (descending order of value). These mineral commodities accounted for slightly more than 91.5% of the Pennsylvania's total nonfuel raw mineral production value. Lime accounted for about 6.7% of the value (table 1), followed by industrial sand and gravel and dimension stone. In 2005, led especially by portland cement and crushed stone, most of the State's mineral commodities increased in value. Although production of portland cement was up only 1% and crushed stone production actually decreased by 6%, the commodities' total values increased significantly. The value of portland cement rose 17%,

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the 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 2005 USGS mineral production data published in this chapter are those available as of December 2006. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

up by \$81 million, and crushed stone value increased more than 10%, up \$65 million, (table 1). Other mineral commodities with significant increases in value were masonry cement, lime (up \$4 million), industrial sand and gravel, and dimension stone (up nearly \$2 million). The only large decrease in value took place in construction sand and gravel; a nearly 13% decrease in production led to a \$16 million drop in the commodity's total value (table 1).

In 2005, Pennsylvania continued to be ranked third in the Nation in the quantity of portland cement produced, fourth of four States that produced tripoli, and sixth in masonry cement, while also the State dropped in rank to third from second in the production of crushed stone and to seventh from sixth in lime. Additionally, substantial quantities of construction sand and gravel, industrial sand and gravel, dimension stone, and common clays were produced in the State.

With regard to raw minerals and mineral materials, Pennsylvania is exclusively an industrial mineral- and coal-producing State, producing no primary metals from ores mined within the State; metals that were produced in the State, principally steel, as well as, columbium, tantalum, titanium, and zinc, were processed from materials acquired from foreign and other domestic sources. Pennsylvania ranked fourth in the Nation (third in 2004) in the production of raw steel in 2005, with an output of 5.9 million metric tons (Mt), down slightly from the 6.26 Mt produced in 2004 (American Iron and Steel Institute, 2006, p. 74).

Reference Cited

American Iron and Steel Institute, 2006, Table 24—Raw steel production by States, in American Iron and Steel Institute, AISI 2005 ASR: Washington, DC, American Iron and Steel Institute, 140 p.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN PENNSYLVANIA^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2003		2004		2005	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	342	35,900 ^e	W	W	399	49,700 ^e
Portland	5,720	421,000 ^e	6,230	473,000 ^e	6,290	554,000 ^e
Clays, common	750	2,240	822	3,270	705	3,460
Gemstones	NA	1	NA	1	NA	1
Lime	1,190	90,100	1,220	100,000	1,100	104,000
Peat	8	219	11	307	7	210
Sand and gravel:						
Construction	18,400	115,000	20,000	127,000	17,000	111,000
Industrial	W	W	W	W	711	15,400
Stone:						
Crushed	104,000	597,000	113,000 ^r	639,000 ^r	106,000	704,000
Dimension	32	10,400	33	10,100	35	11,800
Combined values of tripoli and values indicated by symbol W	XX	(³)	XX	55,800	XX	(³)
Total	XX	1,270,000	XX	1,410,000 ^r	XX	1,550,000

^eEstimated. ^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data. XX Not applicable.

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

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

³Value withheld to avoid disclosing company proprietary data.

TABLE 2
PENNSYLVANIA: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2004			2005		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone ²	102	67,200 ^r	\$378,000 ^r	106	62,100	\$420,000
Dolomite	14	15,400 ^r	86,100 ^r	13	12,400	79,700
Marble	1	W	W	1	W	W
Granite	7	5,110 ^r	29,200 ^r	7	6,450	40,700
Traprock	8	5,710	34,000	9	4,670	31,200
Sandstone and quartzite	35	10,800 ^r	63,500 ^r	37	10,300	70,800
Slate	1	W	W	1	W	W
Miscellaneous stone	13	7,540 ^r	43,300 ^r	15	8,870	57,800
Total	XX	113,000 ^r	639,000 ^r	XX	106,000	704,000

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

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

TABLE 3
PENNSYLVANIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	423	3,260
Riprap and jetty stone	1,020	7,550
Filter stone	527	3,830
Other coarse aggregates	2,320	18,300
Total	4,290	32,900
Coarse aggregate, graded:		
Concrete aggregate, coarse	3,260	22,900
Bituminous aggregate, coarse	5,880	40,800
Bituminous surface-treatment aggregate	2,580	19,300
Railroad ballast	821	6,180
Other graded coarse aggregates	6,600	48,200
Total	19,100	137,000
Fine aggregate (-¾ inch):		
Stone sand, concrete	827	4,580
Stone sand, bituminous mix or seal	3,500	23,600
Screening, undesignated	907	10,300
Other fine aggregates	3,520	24,200
Total	8,750	62,700
Coarse and fine aggregates:		
Graded road base or subbase	6,120	36,700
Unpaved road surfacing	1,000	6,600
Crusher run or fill or waste	1,500	6,900
Other coarse and fine aggregates	10,600	58,200
Total	19,200	108,000
Other construction materials ²	735	5,860
Agricultural:		
Agricultural limestone	526	5,810
Other agricultural uses	5	30
Total	531	5,840
Chemical and metallurgical:		
Cement manufacture	3,270	23,500
Lime manufacture	W	W
Flux stone	W	W
Sulfur oxide removal	446	3,680
Total	3,970	28,900
Special:		
Mine dusting or acid water treatment	W	W
Whiting or whiting substitute	W	W
Other fillers or extenders	W	W
Total	367	6,020
Other miscellaneous uses and specified uses not listed	2,250	15,300
Unspecified:³		
Reported	28,900	183,000
Estimated	17,000	120,000
Total	46,200	301,000
Grand total	106,000	704,000

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

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

²Includes drain fields.

³Reported and estimated production without a breakdown by end use.

TABLE 4
PENNSYLVANIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1½ inch) ²	303	2,270	574	4,170	1,290	10,600
Coarse aggregate, graded ³	925	6,510	1,260	8,750	4,760	36,100
Fine aggregate (-¾ inch) ⁴	W	W	W	W	W	W
Coarse and fine aggregates ⁵	766	4,440	1,470	8,320	3,540	21,900
Other construction materials ⁶	47	329	--	--	101	857
Agricultural ⁷	W	W	W	W	W	W
Chemical and metallurgical ⁸	W	W	W	W	W	W
Special ⁹	--	--	W	W	W	W
Other miscellaneous uses and specified uses not listed	--	--	25	175	1,230	9,810
Unspecified: ¹⁰						
Reported	1,390	8,360	2,390	14,900	5,060	30,100
Estimated	2,000	13,000	2,500	17,000	1,700	11,000
Total	6,310	41,600	9,280	61,100	21,500	149,000
	District 4					
	Quantity	Value				
Construction:						
Coarse aggregate (+1½ inch) ²	2,130	15,900				
Coarse aggregate, graded ³	12,200	86,100				
Fine aggregate (-¾ inch) ⁴	5,250	39,600				
Coarse and fine aggregates ⁵	13,500	73,700				
Other construction materials ⁶	587	4,670				
Agricultural ⁷	W	W				
Chemical and metallurgical ⁸	W	W				
Special ⁹	W	W				
Other miscellaneous uses and specified uses not listed	993	5,290				
Unspecified: ¹⁰						
Reported	20,000	129,000				
Estimated	11,000	76,000				
Total	68,400	452,000				

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

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

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

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

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

⁵Includes crusher run or fill or waste, graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

⁶Includes drain fields.

⁷Includes agricultural limestone and other agricultural uses.

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

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

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

TABLE 5
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	1,990	\$15,900	\$8.02
Plaster and gunite sands	9	107	11.89
Concrete products (blocks, bricks, pipe, decorative, etc.)	200	1,580	7.88
Asphaltic concrete aggregates and other bituminous mixtures	1,130	7,920	6.99
Road base and coverings	1,580	10,100	6.41
Fill	2,920	14,000	4.80
Snow and ice control	264	1,260	4.76
Other miscellaneous uses ²	420	4,200	10.00
Unspecified: ³			
Reported	2,940	20,500	6.98
Estimated	5,520	35,600	6.45
Total or average	17,000	111,000	6.55

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Includes filtration and railroad ballast.

³Reported and estimated production without a breakdown by end use.

TABLE 6
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005,
BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	647	4,970	W	W	W	W
Asphaltic concrete aggregates and other bituminous mixtures	614	5,160	W	W	192	743
Road base and coverings	759	4,810	W	W	W	W
Fill	295	1,230	200	1,020	242	1,120
Snow and ice control	144	693	W	W	W	W
Other miscellaneous uses ³	167	1,460	852	6,140	576	2,990
Unspecified: ⁴						
Reported	500	3,370	604	4,090	1,110	7,560
Estimated	1,080	6,930	631	4,070	3,460	22,300
Total	4,200	28,600	2,490	16,600	5,580	34,700
	District 4					
	Quantity	Value				
Concrete aggregates and concrete products ²	790	7,280				
Asphaltic concrete aggregates and other bituminous mixtures	W	W				
Road base and coverings	406	2,920				
Fill	2,180	10,700				
Snow and ice control	W	W				
Other miscellaneous uses ³	244	2,690				
Unspecified: ⁴						
Reported	718	5,470				
Estimated	355	2,290				
Total	4,700	31,300				

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses."

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

²Includes plaster and gunite sands.

³Includes filtration and railroad ballast.

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