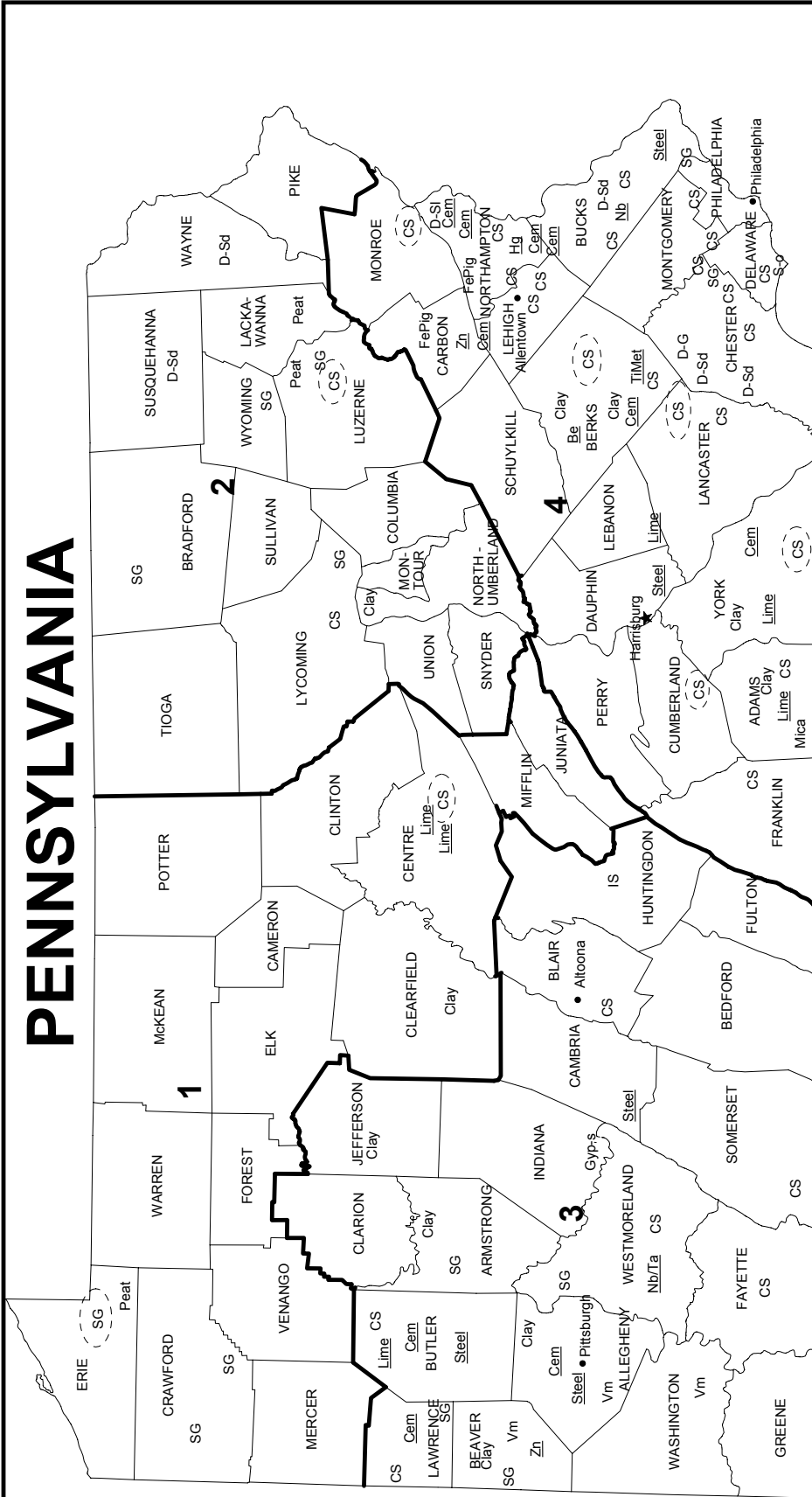


# PENNSYLVANIA



## MINERAL SYMBOLS (Major producing areas)

County boundary	—
Capital	★
City	•
Crushed stone/sand and gravel districts	1
Beryllium plant	Be
Cement plant	Cem
Common clay	Clay
Crushed stone	CS
Dimension granite	D-G
Dimension sandstone	D-Sd
Dimension slate	D-Sl
Iron oxide pigments	FePig
Gypsum	Gyp-s
Synthetic gypsum	S-o
Mercury plant	Hg
Industrial sand	IS
Lime plant	Lime
Mica	Mica
Columbium (niobium) plant	Nb
Columbium (niobium) and tantalum plant	Nb/Ta
Peat	Peat
Sulfur (oil)	S-o
Construction sand and gravel	SG
Steel plant	Steel
Titanium metal plant	TiMet
Vermiculite	Vm
Zinc plant	Zn
Concentration of mineral operations	(Dashed circle)

Source: Pennsylvania Bureau of Topographic and Geologic Survey/U.S. Geological Survey (2001)

# 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 2001, the estimated value<sup>1</sup> of nonfuel mineral production for Pennsylvania was \$1.27 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 2% increase from that of 2000.<sup>2</sup> For the sixth 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 to protect company proprietary data, resulting in total values that are less than the actual totals for those years.)

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<sup>1</sup>The 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 2001 USGS mineral production data published in this chapter are preliminary estimates as of August 2002 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. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

<sup>2</sup>Values, percentage calculations, and rankings for 2000 may differ from the Minerals Yearbook, Area Reports: Domestic 2000, Volume II, owing to the revision of preliminary 2000 to final 2000 data. Data for 2001 are preliminary and are expected to change; related rankings may also change.

In 2001, Pennsylvania continued to be among the Nation's leading States that produce crushed stone, cement (portland and masonry), and lime (descending order of value); these 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 2000, an increase in the production and value of crushed stone, up \$35 million, accounted for nearly all of the increase in the State's nonfuel minerals economy. Common clay was also up slightly. This was offset by a combined total of about \$11 million by decreases in the values of cement (portland and masonry) and construction sand and gravel. Smaller decreases also occurred in dimension stone and lime (table 1).

Based upon USGS estimates of the quantities produced in the 50 States in 2001, Pennsylvania remained second in crushed stone, third in portland cement, fourth of 4 States that produce tripoli, sixth in lime and masonry cement, and rose to eighth from ninth 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 2001 were processed from materials acquired from foreign and other domestic sources. Pennsylvania ranked fourth in the Nation (third in 2000) in the production of raw steel, with an output of 5.22 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	1999		2000		2001 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	330	35,800 e/	324	33,700 e/	330 e/	34,400 e/
Portland	6,690	479,000 e/	6,640	475,000 e/	6,660 e/	477,000 e/
Clays, common	816	1,760	840	1,870	840	1,870
Gemstones	NA	1	NA	1	NA	1
Lime	1,340	94,300	1,350	93,900	1,220	74,600
Peat	6	185	6	183	6	171
Sand and gravel:						
Construction	18,600	115,000	17,900	110,000	20,100	125,000
Industrial	W	(3/)	W	(3/)	W	(3/)
Stone:						
Crushed	91,300 r/	485,000 r/	97,900	520,000	101,000	553,000
Dimension	metric tons					
Tripoli	W	(3/)	W	(3/)	W	(3/)
Total	XX	1,220,000	XX	1,250,000	XX	1,270,000

e/ Estimated. p/ Preliminary. r/ Revised. 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/ Value excluded to avoid disclosing company proprietary data.

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

Kind	1999				2000			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	119 r/	55,800 r/	\$293,000 r/	\$5.25 r/	119	60,300	\$319,000	\$5.30
Dolomite	13 r/	10,800 r/	61,700 r/	5.71 r/	12	11,800	63,800	5.39
Granite	8 r/	5,480 r/	28,300 r/	5.17 r/	8	4,700	24,300	5.17
Marble	2	W	W	W	2	W	W	W
Sandstone and quartzite	40 r/	7,680 r/	40,500 r/	5.27 r/	44	9,130	49,500	5.42
Traprock	10	3,840	19,500	5.07	10	4,630	23,400	5.06
Slate	1	W	W	W	1	W	W	W
Miscellaneous stone	16 r/	6,810 r/	36,000 r/	5.29 r/	14	6,420	34,400	5.36
Total or average	XX	91,300 r/	485,000 r/	5.31 r/	XX	97,900	520,000	5.32

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.

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

TABLE 3  
PENNSYLVANIA: CRUSHED STONE SOLD OR USED BY PRODUCERS  
IN 2000, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Construction:</b>			
Coarse aggregate (+1 1/2 inch):			
Macadam	W	W	\$6.01
Riprap and jetty stone	1,300	\$9,190	7.07
Filter stone	360	2,070	5.76
Other coarse aggregate	1,000	6,050	6.01
Total or average	2,670	17,300	6.49
Coarse aggregate, graded:			
Concrete aggregate, coarse	3,430	20,500	5.98
Bituminous aggregate, coarse	5,430	33,600	6.18
Bituminous surface-treatment aggregate	1,340	8,610	6.43
Railroad ballast	739	3,620	4.90
Other graded coarse aggregate	3,220	18,700	5.83
Total or average	14,200	85,000	6.01
Fine aggregate (-3/8 inch):			
Stone sand, concrete	1,500	9,300	6.19
Stone sand, bituminous mix or seal	2,190	12,600	5.73
Screening, undesignated	880	5,170	5.88
Other fine aggregate	1,870	12,500	6.67
Total or average	6,450	39,500	6.13
Coarse and fine aggregates:			
Graded road base or subbase	6,960	35,800	5.14
Unpaved road surfacing	1,170	6,610	5.64
Terrazzo and exposed aggregate	97	690	7.11
Crusher run or fill or waste	1,530	6,710	4.38
Roofing granules	W	W	4.95
Light weight aggregate (slate)	W	W	5.88
Other coarse and fine aggregates	6,900	33,400	4.85
Total or average	16,700	83,200	5.00
Other construction materials	284	1,770	6.23
<b>Agricultural:</b>			
Agricultural limestone	503	5,230	10.39
Poultry grit and mineral food	59	294	4.98
<b>Chemical and metallurgical:</b>			
Cement manufacture	7,020	33,500	4.77
Lime manufacture	(3/)	(3/)	5.03
Flux stone	2	15	7.50
Sulfur oxide removal	250	1,710	6.83
<b>Special:</b>			
Mine dusting or acid water treatment	2	9	4.50
Asphalt fillers or extenders	706	5,670	8.04
Whiting or whiting substitute	248	7,270	29.31
Other fillers or extenders	208	1,590	7.63
Other miscellaneous uses and specified uses not listed	4	32	8.00
<b>Unspecified: 4/</b>			
Reported	30,700	154,000	5.02
Estimated	16,000	76,000	4.65
Total or average	47,100	230,000	4.89
Grand total or average	97,900	520,000	5.32

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, limestone-dolomite, 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 2000,  
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Construction:</b>						
Coarse aggregate (+1 1/2 inch) 2/	W	W	248	1,410	W	W
Coarse aggregate, graded 3/	W	W	W	W	4,290	26,900
Fine aggregate (-3/8 inch) 4/	W	W	W	W	1,930	11,300
Coarse and fine aggregate 5/	W	W	W	W	4,190	21,100
Other construction materials	--	--	16	78	178	1,080
Agricultural 6/	--	--	W	W	W	W
Chemical and metallurgical 7/	W	W	W	W	1,900	9,680
Special 8/	--	--	3	16	--	--
Other miscellaneous uses and specified uses not listed	--	--	--	--	--	--
Unspecified: 9/						
Reported	1,190	6,210	3,170	16,600	3,660	19,600
Estimated	1,900	8,400	1,900	8,500	4,500	20,000
Total	5,020	24,400	8,860	44,100	21,600	116,000
District 4						
	Quantity	Value				
<b>Construction:</b>						
Coarse aggregate (+1 1/2 inch) 2/	W	W				
Coarse aggregate, graded 3/	8,450	50,600				
Fine aggregate (-3/8 inch) 4/	3,590	23,500				
Coarse and fine aggregate 5/	10,900	55,100				
Other construction materials	91	610				
Agricultural 6/	W	W				
Chemical and metallurgical 7/	5,350	25,500				
Special 8/	1,160	14,500				
Other miscellaneous uses and specified uses not listed	4	32				
Unspecified: 9/						
Reported	22,700	112,000				
Estimated	8,100	39,000				
Total	62,400	336,000				

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), roofing granules, terrazzo and exposed aggregate, unpaved road surfacing, and other coarse and fine aggregate.

6/ Includes agricultural limestone and poultry grit and mineral food.

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

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

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

TABLE 5  
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000,  
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,200	\$15,800	\$7.21
Plaster and gunite sands	27	199	7.37
Concrete products (blocks, bricks, decorative, pipe, etc.)	24	121	5.04
Asphaltic concrete aggregate and other bituminous mixtures	1,170	6,580	5.61
Road base and coverings 2/	1,550	8,350	5.38
Fill	2,560	12,400	4.86
Snow and ice control	162	842	5.20
Filtration	15	130	8.67
Other miscellaneous uses 3/	843	3,580	4.24
Unspecified: 4/			
Reported	5,660	40,600	7.18
Estimated	3,700	21,000	5.70
Total or average	17,900	110,000	6.13

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.

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

TABLE 6  
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000, 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)	416	2,130	W	W	W	W	933	8,420
Concrete products (blocks, bricks, decorative, pipe, etc.) 2/	22	103	W	W	W	W	3	18
Asphaltic concrete aggregate and other bituminous mixtures	405	2,280	361	2,420	W	W	W	W
Road base and coverings 3/	823	4,360	341	1,840	239	1,100	148	1,050
Fill	172	572	49	137	301	1,330	2,030	10,400
Snow and ice control	40	185	28	229	83	354	11	75
Other miscellaneous uses 4/	226	1,300	825	5,250	503	2,030	587	2,510
Unspecified: 5/								
Reported	1,690	14,500	722	4,440	2,360	18,400	745	3,010
Estimated	1,400	6,500	400	2,500	1,800	11,000	87	610
Total	5,150	31,900	2,730	16,800	5,310	34,600	4,550	26,100
	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	147	244						
Estimated	--	--						
Total	147	244						

W Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous uses." -- Zero.

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

2/ Includes plaster and gunite sands.

3/ Includes road and other stabilizations (cement).

4/ Includes filtration and railroad ballast.

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