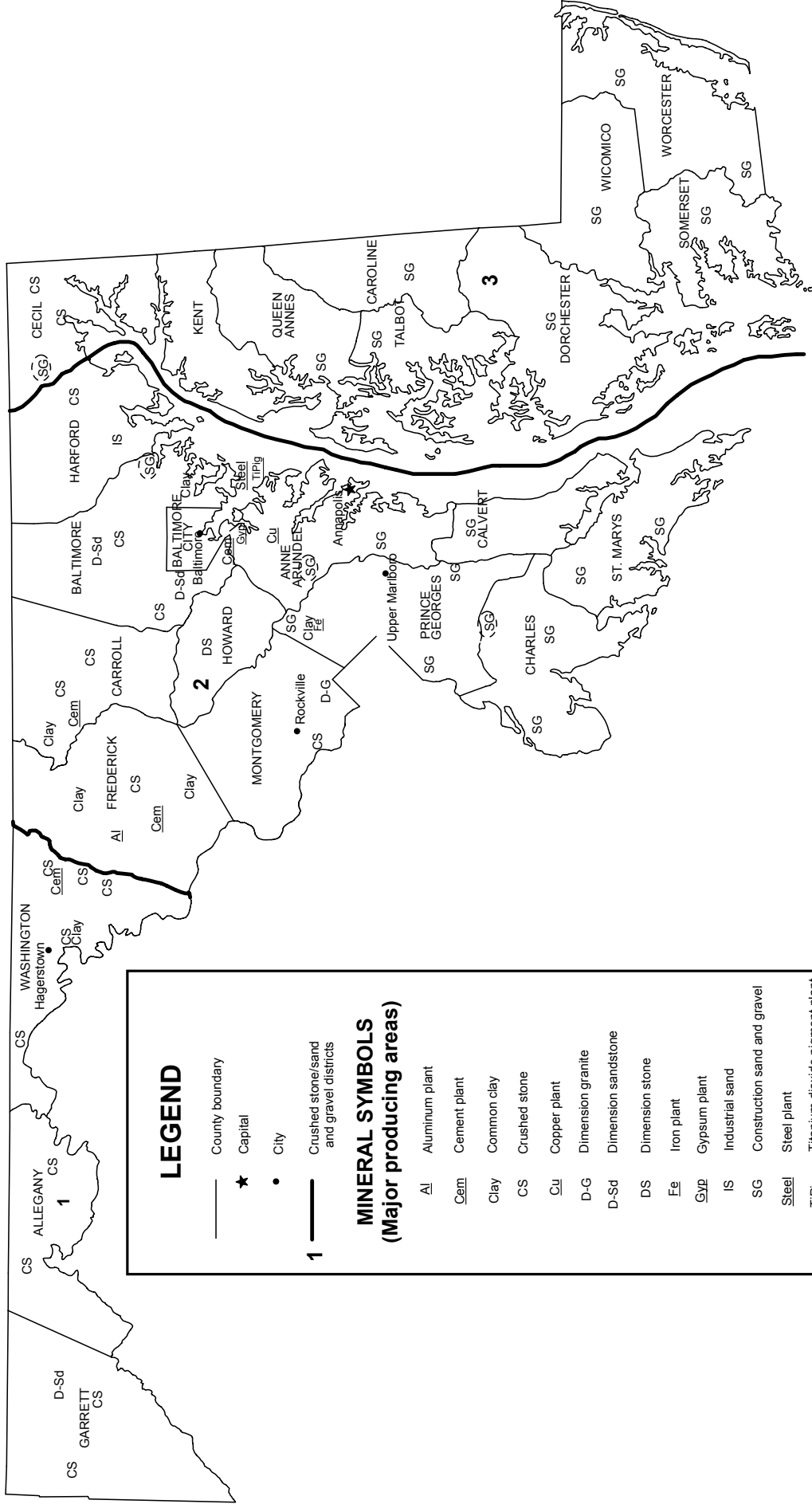


MARYLAND



LEGEND

- County boundary
- ★ Capital
- City

1 — Crushed stone/sand and gravel districts

MINERAL SYMBOLS (Major producing areas)

- Al Aluminum plant
- Cem Cement plant
- Clay Common clay
- CS Crushed stone
- Cu Copper plant
- D-G Dimension granite
- D-Sd Dimension sandstone
- DS Dimension stone
- Fe Iron plant
- Gyp Gypsum plant
- IS Industrial sand
- SG Construction sand and gravel
- Steel Steel plant
- TiPig Titanium dioxide pigment plant
- Concentration of mineral operations



THE MINERAL INDUSTRY OF MARYLAND

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Maryland Department of the Environment, Minerals, Oil, and Gas Division, for collecting information on all nonfuel minerals.

In 2002, the estimated value¹ of nonfuel mineral production for Maryland was \$375 million, based upon preliminary U.S. Geological Survey (USGS) data. This was a 5% increase from that of 2001² and followed a 3.5% increase in value in 2001 from 2000. The State ranked 32d (33d in 2001) among the 50 States in total nonfuel raw mineral production value, of which Maryland accounted for 1% of the U.S. total. Because data for crushed marble, shell, and traprock and industrial sand and gravel have been withheld to protect company proprietary data, the actual total values for 2000-2002 are somewhat higher than those reported in table 1.

In 2002, cement (portland and masonry) and crushed stone, each with a value of \$145 million, were Maryland's leading nonfuel raw minerals, followed by construction sand and gravel. These three mineral commodities accounted for nearly 99% of the State's total value (table 1). In 2001, virtually all of Maryland's rise in value resulted from increases in portland cement, up \$14 million, and crushed stone, up \$9 million. The only significant decrease was that of construction sand and gravel, down about \$4 million. In 2001, crushed stone led the State's increase, up \$13 million; all other changes were small relative to this (table 1).

Compared with USGS estimates of the quantities of minerals produced in the other 49 States during 2002, Maryland was a significant producer of all of its major nonfuel raw mineral commodities—crushed stone, cement (portland and masonry), construction sand and gravel, and dimension stone (in descending order of value). All nonfuel minerals mined in the State were industrial minerals. Metal production, especially that

of primary aluminum and raw steel, consisted of the processing and refining of materials received from other domestic and foreign sources. Based upon USGS data, the State remained ninth among 13 States in the production of primary aluminum.

The narrative information that follows was provided by the Maryland Department of the Environment's Mining Program.³ Maryland's nonfuel mineral mining has remained fairly constant in recent years; crushed stone is still the primary product produced followed by construction sand and gravel. Several new mines of significance opened in 2002. The H.B. Mellott Estate expanded its Beaver Creek quarry by adding 37 hectares (ha) of newly acquired property immediately adjacent to the existing quarry. The new property will supplement existing limestone reserves and allow for some plant relocations to improve efficiency of operations and safety of traffic. Chase Mining LLC (a subsidiary of Laurel Sand and Gravel, Inc.) applied late in 2002 for a new quarry in Howard County. The 105-ha site consists mainly of the Baltimore Gabbro, a very hard dense rock that is used extensively in highway construction. Permit reviews continued into 2003 with public hearings due in September.

York Building Products opened the Shockley and Cokesbury Mines in Cecil County. The Shockley site is 52 ha in size and will be mined primarily for sand to feed York's existing Perryville sand and gravel plant. The Cokesbury mine is 26 ha and contains more gravel and will feed the company's newly acquired Cecil sand and gravel plant.

Mine Reclamation

Several large reclamation projects were in process in Maryland that were formerly large aggregate sites and that have been mined out. Land value and an emphasis on redevelopment (reclamation) of mined lands have provided incentives to be creative in comprehensive land use planning.

In Baltimore County, the Arundel Corp. is reclaiming the former 102-ha Greenspring Quarry, which is within the mostly well-populated area inside the Baltimore Beltway (I-695). A 16-ha lake will be the focal point surrounded by upscale mixed residential and light commercial use. Arundel expects that its regrading of the site, stream enhancement, and coldwater discharge aspects of the project will be completed sometime in early 2004.

³C. Edmon Larrimore, Program Manager of the Mining Program of the Maryland Department of the Environment authored the text of the State mineral industry information provided by that agency.

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 2002 USGS mineral production data published in this chapter are preliminary estimates as of July 2003 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>.

²Values, percentage calculations, and rankings for 2001 may differ from the Minerals Yearbook, Area Reports: Domestic 2001, Volume II, owing to the revision of preliminary 2001 to final 2001 data. Data for 2002 are preliminary and are expected to change; related rankings may also change.

The former 140-ha Mardis sand and gravel pit located on the Patuxent River and operated by Chaney Enterprises opened in 2002 as Renditions Golf Course, which features replicas of famous holes from around the world.

Government Activities

The Mining Program at the Department of the Environment coordinated a workgroup to respond to the death of four bald eagles at Maryland Rock Industries' Goose Bay wash plant in Charles County. The workgroup, which included

representatives from the State and Federal Governments and company officials, developed a work plan that focused on frequent monitoring including during nonworking times, deterrents such as mylar taping on a grid across the waste ponds, and a rescue plan for any birds trapped in the wash ponds. The plan was developed in the summer of 2002 and has been successful thus far. One eagle has been trapped in the wash pond since the plan was implemented and was rescued, cleaned, and successfully released.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN MARYLAND^{1,2}
(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2000		2001		2002 ^P	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	78	7,140 ^e	77	7,070 ^e	80 ^e	7,000 ^e
Portland	1,760	125,000 ^e	1,720	124,000 ^e	1,920 ^e	138,000 ^e
Clays, common	271	982	266	560	277	561
Gemstones	NA	1	NA	1	NA	1
Sand and gravel, construction	13,100	84,700	12,500	84,800	11,600	80,500
Stone:						
Crushed	22,000 ^r	123,000 ^{r,3}	22,800 ³	136,000 ³	23,800	145,000
Dimension metric tons	28,700	3,560	27,500	3,440	26,800	3,480
Combined values of sand and gravel (industrial), and stone [crushed marble, shell, traprock (2000-2001)]	XX	(4)	XX	(4)	XX	(4)
Total	XX	344,000 ^r	XX	356,000	XX	375,000

^eEstimated. ^PPreliminary. ^rRevised. NA Not available. XX Not applicable.

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

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

³Excludes certain stones; kind and value included with "Combined values" data.

⁴Value excluded to avoid disclosing company proprietary data.

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

Kind	2000				2001			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone ²	17 ^r	16,000 ^r	\$79,200 ^r	\$4.95 ^r	18	17,200	\$94,700	\$5.50
Granite	3	4,070	28,600	7.02	3	3,370	26,500	7.88
Marble	1	W	W	5.51	1	W	W	5.62
Sandstone	3	115	948	8.24	3	122	733	6.01
Shell	1	W	W	3.86	1	W	W	3.97
Traprock	2	W	W	4.19	3	W	W	4.62
Miscellaneous stone	2	1,840	14,300	7.76	2	2,110	14,200	6.74
Total or average	XX	22,000 ^r	123,000 ^r	5.58 ^r	XX	22,800	136,000	5.97

¹Revised. W Withheld from total to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

³Includes limestone-dolomite reported with no distinction between the two.

TABLE 3
MARYLAND: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Macadam	W	W	\$7.12
Riprap and jetty stone	385	\$3,800	9.88
Filter stone	W	W	5.51
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,810	12,700	7.00
Bituminous aggregate, coarse	737	6,450	8.75
Bituminous surface-treatment aggregate	1,040	7,080	6.81
Railroad ballast	221	1,710	7.75
Total or average	3,810	27,900	7.33
Fine aggregate (-3/8 inch):			
Stone sand, concrete	600	3,990	6.65
Stone sand, bituminous mix or seal	(2)	(2)	5.51
Screening, undesignated	346	2,050	5.93
Other fine aggregate	917	6,090	6.64
Total or average	1,860	12,100	6.51
Coarse and fine aggregates:			
Graded road base or subbase	2,020	15,200	7.54
Unpaved road surfacing	(2)	(2)	4.41
Crusher run or fill or waste	1,400	8,120	5.80
Other coarse and fine aggregates	578	3,530	6.10
Total or average	4,000	26,900	6.72
Other construction materials	889	5,860	6.59
Chemical and metallurgical:			
Cement manufacture	2,590	9,660	3.73
Sulfur oxide removal	W	W	5.51
Unspecified:³			
Reported	8,370	45,100	5.39
Estimated	580	3,000	5.13
Total or average	8,950	48,000	5.37
Grand total or average	22,800	136,000	5.97

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

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

²Withheld to avoid disclosing company proprietary data; included with "Other."

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

TABLE 4
MARYLAND: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, 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 (+1 1/2 inch) ²	23	139	418	3,090	171	1,960
Coarse aggregate, graded ³	94	464	2,710	17,100	1,000	10,400
Fine aggregate (-3/8 inch) ⁴	89	568	1,480	8,830	296	2,720
Coarse and fine aggregate ⁵	791	4,480	2,020	13,600	1,190	8,800
Other construction materials	--	--	889	5,860	--	--
Chemical and metallurgical ⁶	848	3,500	1,840	6,660	--	--
Unspecified: ⁷						
Reported	1,410	8,130	6,960	36,900	--	--
Estimated	240	1,300	340	1,700	--	--
Total	3,490	18,500	16,700	93,800	2,650	23,900

-- Zero.

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

²Includes filter stone, macadam, and riprap and jetty stone.

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

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

⁵Includes crusher run (select material or fill), graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

⁶Includes cement manufacture and sulfur oxide removal.

⁷Reported and estimated production without a breakdown by end use.

TABLE 5
MARYLAND: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY MAJOR USE CATEGORY¹

Use	Quantity	Value (thousands)	Unit value
	(thousand metric tons)		
Concrete aggregates (including concrete sand)	4,350	\$26,100	\$6.92
Concrete products (blocks, bricks, pipe, decorative, etc.) ²	637	4,160	4.94
Asphaltic concrete aggregates and other bituminous mixtures	171	427	4.94
Road base and coverings	103	236	1.71
Other miscellaneous uses ³	986	6,620	3.90
Unspecified: ⁴			
Reported	4,050	33,400	7.28
Estimated	2,200	14,000	4.78
Total or average	12,500	84,800	6.48

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

²Includes plaster and gunite sands.

³Includes fill, filtration, and snow and ice control.

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

TABLE 6
 MARYLAND: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	Districts 1 and 2		District 3	
	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products	2,030	13,700	2,960	16,600
Asphaltic concrete aggregates and road base materials	207	457	67	205
Other miscellaneous uses ²	875	6,270	111	347
Unspecified: ³				
Reported	4,050	33,400	--	--
Estimated	740	4,400	1,400	9,400
Total	7,900	58,200	4,560	26,500

-- Zero.

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

²Includes fill, filtration, and snow and ice control.

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