

MARYLAND

By L. J. Prosser, Jr.

STATE OF MARYLAND
MARYLAND GEOLOGICAL
SURVEY

1989

INFORMATION CIRCULAR 50

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

MARYLAND



U.S.
DEPARTMENT
OF THE
INTERIOR

Manuel Lujan, Jr.
Secretary



BUREAU
OF
MINES

T S Ary
Director

May 1991

Contents

Trends and Developments 1
Regulatory Issues 1
Legislation and Government
Programs 4
Review by Nonfuel Mineral
Commodities 4
Industrial Minerals 4
 Cement 4
 Sand and Gravel 4
 Stone 4
Metals 5
 Aluminum 5
 Iron and Steel 5

Tables

Table 1.—Nonfuel Mineral
Production in Maryland 1
Table 2.—Maryland: Crushed
Stone Sold or Used by Producers
in 1989, by Use 5
Table 3.—Maryland: Crushed
Stone Sold or Used by Producers
in 1989, by Use and District 6
Table 4.—Principal Producers 7

State Map

Principal Mineral-Producing
Localities in Maryland

COVER PHOTO:
*The Maryland Capitol
Building in Annapolis
symbolizes the
cooperative working
relationship between the
Bureau of Mines and
the mineral agencies of
the State.*

*For comments or further information,
please contact
Pittsburgh Regional Office of State
Activities
Box 18070
Pittsburgh, PA 15236
Telephone: (412) 892-4423;
FTS 723-4423*

THE MINERAL INDUSTRY OF MARYLAND

This chapter has been prepared under a Memorandum of Understanding between the Bureau of Mines, U.S. Department of the Interior, and the Maryland Geological Survey for collecting information on all nonfuel minerals.

By L. J. Prosser, Jr.¹

The value of nonfuel mineral production in Maryland in 1989 was about \$342 million. Value of mineral output declined for the first time in 6 years, primarily resulting from a moderation in demand for construction aggregates. Although the quantity and value declined, production of crushed stone, the State's leading mineral commodity, remained above the 30-million-short-ton level for the third consecutive year.

TRENDS AND DEVELOPMENTS

Maryland's mineral industry expanded significantly during the decade of the 1980's despite the slight decline in value in 1989. Compared with 1980 production, output in 1989 of sand and gravel increased by 57% and crushed stone by 63%. In the decade of the 1980's, the total value of nonfuel min-

eral production in Maryland was about \$2.6 billion. Production of crushed stone and sand and gravel accounted for about \$1.9 billion of the total or 73%.

The strong demand for construction aggregates in Maryland reflected an expanding economy and a population that increased from 4.2 million in 1980 to 4.7 million in 1989. New roads, homes, and commercial buildings were needed, and aggregates were an essential raw material used in this construction. However, the pronounced increase in construction resulted in opposition to mine development, particularly in areas where residential development existed. Local and State government officials were faced with numerous land use decisions involving the opening or expansion of mining operations.

According to a report by the University of Maryland, "Future development in the State, along with long-term maintenance of highways and buildings, signifies potentially serious aggregate cost problems arising from having to go in-

creasing distances between point of production to point of use. Distances of more than a few tens of miles greatly increases the overall cost of the aggregate material because of its high bulk mass and low bulk value."² Other concerns for the aggregate industry identified in the report were encroachment on prime mineral deposits by urban and suburban growth. Also noted were land use conflicts that occur because of insufficient buffer zones between residential developments and mining areas.

REGULATORY ISSUES

In June, Maryland's leading steel producer, Bethlehem Steel Corp., began a 5-year, \$92 million air pollution control program at its Sparrows Point plant. The program is expected to reduce total emissions by nearly 60% from coke oven, chemical recovery, and hot-metal-dumping operations. Bethle-

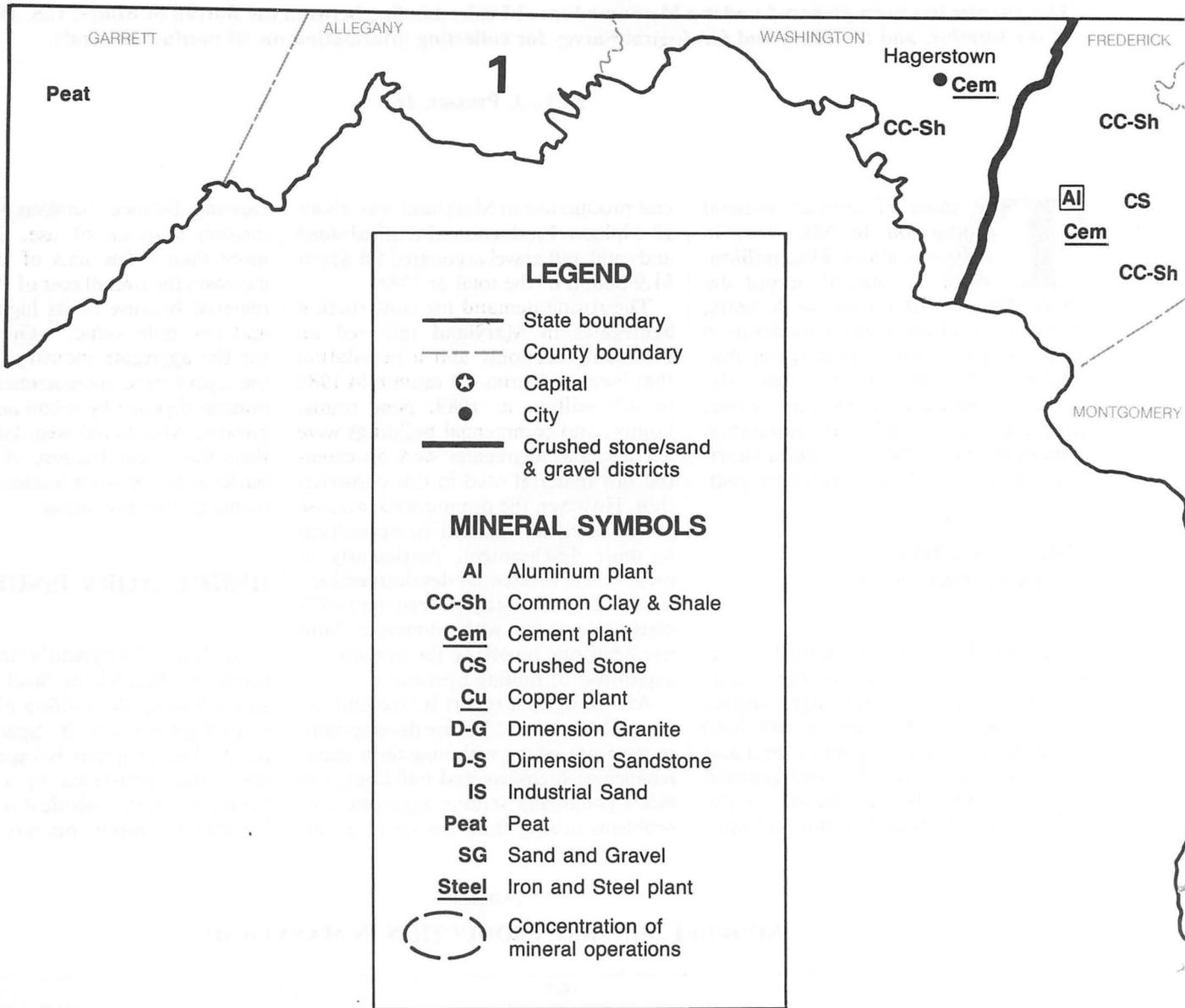
TABLE 1
NONFUEL MINERAL PRODUCTION IN MARYLAND¹

Mineral	1987		1988		1989	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Cement (portland) thousand short tons	1,829	\$90,020	1,808	\$89,083	1,871	\$94,002
Clays metric tons	347,501	1,940	357,833	2,016	351,464	1,882
Gem stones	NA	5	NA	5	NA	3
Lime thousand short tons	9	486	6	329	—	—
Peat do.	W	W	7	W	3	W
Sand and gravel (construction) do.	^c 19,600	^c 92,900	19,266	95,169	^c 16,900	^c 84,500
Stone:						
Crushed do.	30,136	151,579	^c 32,700	^c 167,000	30,841	153,375
Dimension short tons	22,843	1,516	^c 20,729	^c 1,515	27,529	2,072
Combined value of other industrial minerals and values indicated by symbol W	XX	6,688	XX	7,804	XX	6,216
Total	XX	345,134	XX	362,921	XX	342,050

^c Estimated. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" figure. XX Not applicable.

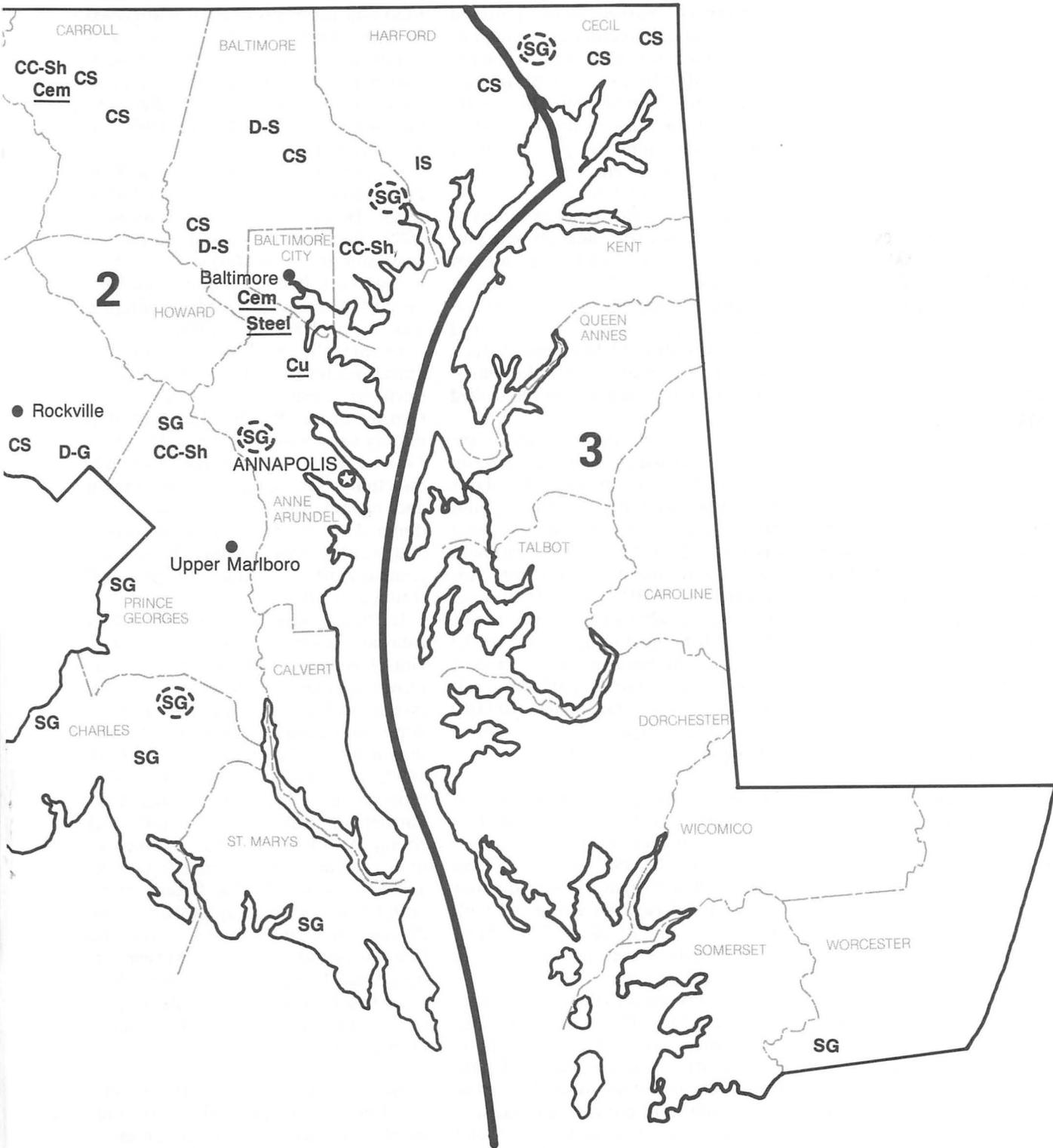
¹ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

MARY



Principal Mineral-Producing Localities

LAND



hem Steel agreed to the program with the Maryland Department of the Environment and the Baltimore County Department of Environmental Protection and Resource Management as a way to continue to improve the environment around the Sparrows Point plant.

Polymer Resource Group Inc. opened Maryland's first plastic bottle recycling plant near Baltimore. Used bottles were converted into plastic pellets, which were sold to Proctor & Gamble Co. for use in making detergent containers. Initial plant capacity allowed for recycling of 1,200 tons to 1,500 tons of plastic bottles per year. Plant capacity can be expanded by Polymer Resources to 7,000 tons per year. The primary objective of the plastic recycling was to save solid waste landfill space.

LEGISLATION AND GOVERNMENT PROGRAMS

Citizens perceiving mining as detracting from their quality of life organized groups seeking legislation to restrict or ban mining. Public opposition, particularly in Carroll County, resulted in the introduction of four bills aimed at restricting or increasing regulation of mining. All four of the bills were defeated in 1989, but similar measures were expected to be reintroduced in 1990.

Beginning in 1991, nontidal wetlands legislation becomes effective. Grading, filling, and dredging in nontidal wetlands will require a permit from the State Department of Natural Resources. Public hearings were conducted on the regulations in 1989. It is possible that these regulations will restrict some sand and gravel mining.

The Maryland Geological Survey (MGS) conducted geologic and mineral-related studies at facilities in Baltimore. In 1989, the MGS continued preparation of mineral resource maps for eight counties along the Eastern Shore. A directory of nonfuel mineral producers in Maryland was scheduled for publication in 1990, updating the 1986 version. The MGS also continued a cooperative study with the U.S. Geological Survey on the geologic framework and resources of the State's coastal environments. A complete list of publications is available from the MGS (see Mineral-Related Government Agencies).

REVIEW BY NONFUEL MINERAL COMMODITIES

Industrial Minerals

Output of crushed stone, portland cement, and construction sand and gravel accounted for \$332 million, about 97% of Maryland's value of nonfuel mineral production in 1989. The remaining 3% of the State's value of nonfuel minerals was from the production of clays, masonry cement, peat, dimension stone, and industrial sand.

In addition to the minerals mined in Maryland, other raw materials were processed in the State and manufactured into products. W. R. Grace & Co., at Muirkirk in Prince Georges County, exfoliated crude vermiculite that was mined in South Carolina. SCM Chemicals Inc., Baltimore, operated one of eight domestic titanium dioxide plants in the United States.

Crude gypsum imported from Canada was calcined by National Gypsum Co. and USG Corp. at wallboard plants in the Baltimore area. In 1989, about 860,000 short tons of crude gypsum was received at the Port of Baltimore according to the Maryland Port Administration (MPA). The 1989 total represented a 32% increase over that of 1988. Other minerals imported at the Port of Baltimore included cement (420,000 tons), clays (62,000 tons), salt (347,000 tons), and slag (209,000 tons).³ These figures were compiled and published by the MPA.

Cement.—Output of portland cement in Maryland exceeded 1.8 million short tons in each of the past 3 years. Also during the 1987-89 period, the State's cement producers utilized about 90% of plant capacity compared with the national rate of about 75%. Most of the portland cement was used in ready-mixed concrete.

Lehigh Portland Cement Co. continued to seek State Department of Natural Resources approval to expand limestone quarrying operations at Union Bridge. The limestone would be used as a raw material in cement manufacture. Public hearings were held in 1989, and Lehigh Portland also contributed to a \$200,000 study on the impact of mining on the area. Local citizens were concerned that the quarrying would eventually result in sinkhole damage or

affect ground water supplies. At yearend, a decision on the quarry remained pending.

Sand and Gravel.—Construction sand and gravel production is surveyed by the Bureau of Mines for even-numbered years only; data for odd-numbered years are based on annual company estimates. This chapter contains estimates for 1987 and 1989 and actual data for 1988.

Output of sand and gravel in 1989 dropped by 12% compared with that of 1988. However, from 1985 through 1989, the average annual output of sand and gravel in Maryland was 18.2 million tons. In comparison, from 1975 to 1984, the average yearly production was about 11.8 million tons.

During the year, some sand and gravel producers began proceedings to open or expand mining operations. Genstar Stone Products Inc. proposed mining sand and gravel at a site about ½ mile from the Jug Bay Wetlands Sanctuary. On completion of mining and reclamation, the land would be donated to the State for a recreation and wildlife area. County, State, and company officials studied the proposal throughout the year.

In Prince Georges County, near Piscataway, Southern Maryland Sand & Gravel received local government approval to mine on a 360-acre site. However, a local citizens group appealed the approval decision to the Circuit Court, thus delaying the mining until at least 1990. In Charles County, a mining proposal by CMDC-St. Charles Ltd. Partnership was denied by the local zoning board. CMDC had planned to mine sand and gravel from a deposit on a 60-acre site near Waldorf. Later in the year, CMDC received approval to mine 20 acres at a site adjacent to the one that was previously denied. At yearend, no mining had occurred as both decisions had been appealed by the respective parties involved, CMDC and a local citizens group.

Stone.—Stone production is surveyed by the Bureau of Mines for odd-numbered years only; data for even-numbered years are based on annual company estimates. This chapter contains actual data for 1987 and 1989 and estimates for 1988.

Maryland stone statistics are com-

piled by geographical districts as depicted in the State map. Table 3 presents end-use statistics for Maryland's three districts.

By 1989, production of crushed stone accounted for almost one-half of Maryland's total value of mineral production. From 1980 through 1983, an average of 17.5 million tons of crushed stone was produced annually. In 1984, production of 22.1 million tons of crushed stone surpassed the previous record output of 21.6 million tons in 1979. Each year since, a new production record for stone had been established, until 1989, when output declined by less than 2 million tons. Despite the decline in 1989, production had averaged 31.2 million tons for the past 3 years.

This high level of crushed stone demand brought about a corresponding level of interest in opening and expanding stone operations in the State. Output of crushed stone in Maryland averaged 6.4 tons per person in 1989 versus 4.5 tons per person in 1980. As a result of the increase in production, more

people were exposed to mining.

The need for mining to generate the raw materials used in construction was generally accepted by the public. However, for the most part, people did not want mining in the community where they lived. Thus, most proposals for opening or expanding quarries were delayed at the local government level through court cases.

Metals

Metals discussed in this section were processed from materials received from both foreign and domestic sources. No metallic ores were mined in Maryland. Production and value data for these processed metals, which are not included in table 1, are given if available.

Metals were imported into Maryland primarily through the Port of Baltimore.⁴ The leading import in 1989 was iron ore at 6.7 million short tons, a decline from 8.1 million tons in 1988. Imports of ferroalloys also dropped, from 245,000 tons to 193,000 tons. Shipments of bauxite from overseas increased to 369,000 tons from 346,000

tons in 1988; manganese ore shipments also were higher in 1989 at 76,000 tons compared with 35,000 tons in 1988. These data were published by the MPA in a report on foreign commerce.

Aluminum.—Eastalco Aluminum Co., a subsidiary of Alumax Inc., continued to produce aluminum at its smelter near Frederick.

Iron and Steel.—Maryland's iron and steel industry was dominated by one producer, Bethlehem Steel Corp., at Sparrows Point. In 1989, the firm began an air pollution control program in cooperation with State and Federal environmental agencies (see Regulatory Issues).

The Sparrows Point plant, which covers approximately 3,500 acres, is along the Chesapeake Bay near Baltimore. The principal products of the Sparrows Point plant are hot- and cold-rolled sheets, tin mill products, coated sheets, plates, and semifinished steel products. Principal markets included service centers and the container, construction, and appliance industries. Facilities included a sintering plant, three coke oven batteries, four blast furnaces, two basic oxygen furnaces, a four-furnace open-hearth operation with a combined annual raw steel production capability of 5.5 million tons, a 45- by 90-inch slabbing mill, a 54-inch blooming mill, and a 30- by 24-inch billet mill. Also included were a two-strand continuous slab caster with an annual production capability of 2.9 million tons, a 60-inch universal plant mill, a 160-inch sheared plate mill, a 68-inch hot strip mill, four cold reducing mills (66-, 56-, 48-, and 42-inch), continuous and batch annealing facilities, a galvanizing line, two Galvalume lines, and tin mill facilities.⁵

¹ State Mineral Officer, Bureau of Mines, Pittsburgh, PA. He has covered the mineral activities in Maryland for 5 years. Assistance in the preparation of the chapter was given by Sally J. Stephenson, editorial assistant.

² Tuthill, D. F. and J. Fellows. Natural Resources in Maryland. Dep. of Agriculture and Resource Economic, Univ. of Md., College Park, MD 20742, Oct. 1989, p. 29.

³ Maryland Port Administration. Foreign Commerce Statistical Report 1989. World Trade Center, Baltimore, MD 21201-3041, 311 pp.

⁴ Work cited in footnote 3.

⁵ Bethlehem Steel Corp. 1989 10-K and Annual Report, p. 10.

TABLE 2
MARYLAND: CRUSHED STONE¹ SOLD OR USED BY PRODUCERS
IN 1989, BY USE

(Thousand short tons and thousand dollars)

Use	Quantity	Value
Coarse aggregate (+ 1 1/2 inch):		
Macadam	439	1,922
Riprap and jetty stone	653	2,910
Coarse aggregate, graded:		
Concrete aggregate, coarse	2,372	10,537
Bituminous aggregate, coarse	866	4,569
Coarse and fine aggregates:		
Graded road base or subbase	2,429	13,667
Unpaved road surfacing	123	666
Crusher run or fill or waste	1,902	5,980
Other construction materials ²	851	3,794
Chemical and metallurgical: Cement manufacture	2,710	5,209
Other miscellaneous uses ³	285	18,248
Unspecified: ⁴ Actual	18,211	85,874
Total	30,841	⁵ 153,375

¹ Includes granite, limestone, miscellaneous stone, quartzite, shell, sandstone, and traprock.

² Includes stone used in filter stone, bituminous surface-treatment aggregate, railroad ballast, stone sand (concrete and bituminous mix or seal), and screening, undesignated.

³ Includes stone used in flux stone, whitening or whitening substitute, other fillers or extenders, roofing granules, and minor amounts used for building products and paper manufacture.

⁴ Data represents production reported without a breakdown by end use.

⁵ Data do not add to total shown because of independent rounding.

TABLE 3

MARYLAND: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1989, BY USE AND DISTRICT

(Thousand short tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:						
Coarse aggregate (+ 1 1/2 inch) ¹	47	W	726	2,539	329	W
Coarse aggregate, graded ²	205	1,043	W	W	1,100	W
Fine aggregate (- 3/8 inch) ³	W	W	W	W	100	625
Coarse and fine aggregates ⁴	731	W	1,855	6,274	1,870	W
Other construction aggregates	163	4,010	2,510	9,663	—	20
Chemical and metallurgical ⁵	(⁶)	(⁶)	(⁶)	(⁶)	—	—
Special ⁷	—	—	(⁶)	(⁶)	—	—
Other miscellaneous	783	2,061	2,210	21,186	—	—
Unspecified: Actual ⁸	1,762	6,369	16,098	76,695	351	2,810
Total ⁹	3,692	13,483	23,399	116,358	3,750	23,534

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

¹Includes macadam, riprap and jetty stone, filter stone, and other coarse aggregates.²Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, and railroad ballast.³Includes stone sand (concrete), stone sand (bituminous mix or seal), and fine aggregate (screening-undesignated).⁴Includes crushed stone for graded road base or subbase, unpaved road surfacing, crusher run or fill or waste, and building products.⁵Includes crushed stone for cement manufacture and flux stone.⁶Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous."⁷Includes crushed stone for whiting or whiting substitutes, other fillers or extenders, roofing granules, and paper manufacture.⁸Includes production reported without a breakdown by end use.⁹Data may not add to totals shown because of independent rounding.

TABLE 4
PRINCIPAL PRODUCERS

Commodity and company	Address	Type of activity	County
Aluminum:			
Eastalco Aluminum Co., (Alumax Inc.)	5601 Manor Woods Rd. Frederick, MD 21701	Reduction plant	Frederick.
Cement:			
Portland:			
Coplay Cement Co., (Societe des Ciments Francais)	4120 Buckeystown Pike Lime Kiln, Box D Frederick, MD 21701	Quarry and plant	Do.
Portland and masonry:			
Independent Cement Corp. (St. Lawrence Cement Inc.)	Box 650 Hagerstown, MD 21740	do.	Washington.
Lehigh Portland Cement Co. ¹ (Heidelberger Zement AG)	Box L Union Bridge, MD 21791	do.	Carroll.
Slag:			
Blue Circle—Atlantic (Blue Circle Industries PLC)	Box 6687 Sparrows Point, MD 21219	Plant (slag cement)	Harford.
Clays:			
Common clay and shale:			
Baltimore Brick Co.	9009 Yellow Brick Rd. Baltimore, MD 21237	Pit and plants	Frederick.
Maryland Clay Products Inc. (Boren Brick & Tile Co.)	7100 Muirkirk Rd. Beltsville, MD 20705	Pit and plant	Prince Georges.
Victor Cushwa & Sons Inc.	Clearspring Rd. and Route 68N Box 160 Williamsport, MD 21795	do.	Washington.
Copper:			
Cox Creek Refining Co.	Box 3407 Baltimore, MD 21226	Refinery	Anne Arundel.
Gypsum:			
Byproduct:			
SCM Chemicals Inc. ²	3901 Glidden Rd. Baltimore, MD 21226	Plant	Baltimore.
Calcined:			
National Gypsum Co., Gold Bond Building Products Div.	2301 South Newkirk St. Baltimore, MD 21224	do.	Do.
USG Corp.	500 Quarantine Rd. Box 3472 Baltimore, MD 21226	do.	Do.
Iron and steel:			
Bethlehem Steel Corp.	Sparrows Point, MD 21219	Mill (integrated)	Do.
Eastern Stainless Corp. (sub- sidiary of Cyclops Industries Inc.)	Box 1975 Baltimore, MD 21203	Melting furnace	Do.
Peat:			
Garrett County Peat Products	R.F.D. 1, Box 91 Accident, MD 21520	Bog and plant	Garrett.
Sand and gravel:			
Construction:			
Charles County Sand & Gravel Inc.	Box 322 Waldorf, MD 20601	Pits and plant	Anne Arundel, Charles, St. Marys.
Florida Rock Industries Inc.	Box 273 Leonardtown, MD 20670	Pits	Harford and St. Marys.
Genstar Stone Products Inc.	1000 Beaverdam Rd. Cockeysville, MD 21030	Pits and plants	Baltimore.

See footnotes at end of table.

TABLE 4—Continued
PRINCIPAL PRODUCERS

Commodity and company	Address	Type of activity	County
Sand and gravel—Continued			
Construction—Continued			
Laurel Sand & Gravel Inc.	Box 719 Laurel, MD 20810	Pits	Anne Arundel and Prince Georges.
York Building Products Co. Inc.	Box 1708 York, PA 17405	Pit	Cecil.
Industrial:			
Harford Sands Inc.	Box 25 40 Fort Hoyle Rd. Joppa, MD 21085	Pits	Harford.
Stone:			
Crushed:			
The Arundel Corp. ³	110 West Rd. Baltimore, MD 21204	Quarries and plants	Baltimore, Frederick, Harford.
Genstar Stone Products Inc. ³	Executive Plaza 4 11350 McCormick Rd. Hunt Valley, MD 21031	do.	Baltimore, Carroll, Frederick, Harford.
Maryland Materials Inc.	Box W North East, MD 21901	Quarry and plant	Cecil.
Rockville Crushed Stone Inc.	Box 407 13900 Piney Meetinghouse Rd. Rockville, MD 20850	do.	Montgomery.
Dimension:			
Patapsco Natural Stone Quarry Inc.	Marriotsville Rd. Marriotsville, MD 21104	do.	Baltimore.
Stoneyhurst Quarries	Box 34463 8101 River Rd. Bethesda, MD 20817	do.	Montgomery.
Weaver Stone Co.	15027 Falls Rd. Butler, MD 21023	do.	Baltimore.
Vermiculite (exfoliated):			
W. R. Grace & Co., Construction Products Div.	12340 Conway Rd. Beltsville, MD 20705	Plant	Prince Georges.

¹ Also crushed stone.

² Also titanium dioxide (pigments).

³ Also sand and gravel.

MINERAL-RELATED GOVERNMENT AGENCIES

FEDERAL

U.S. Department of the Interior
Bureau of Mines
Pittsburgh Regional Office of State
Activities
L. J. Prosser, Jr., State Mineral Officer
Cochrans Mill Rd., Box 18070
Pittsburgh, PA 15236
Telephone: (412) 892-4423;
FTS 723-4423

STATE

Environment Department
Martin Walsh, Secretary
2500 Broening Highway
Baltimore, MD 21224
Telephone: (301) 631-3084

Natural Resources Department
Dr. Torrey C. Brown, Secretary
Tawes State Office Bldg.
Annapolis, MD 21401
Telephone: (301) 974-3041

Maryland Bureau of Mines
Anthony Abar, Director
Drawer C
Westernport, MD 21562
Telephone: (301) 689-4136

Maryland Geological Survey
Dr. Kenneth N. Weaver, Director
2300 St. Paul St.
Baltimore, MD 21218
Telephone: (301) 554-5503

Water Resources Administration
Catherine Piper Stevenson, Director
Tawes State Office Bldg.
Annapolis, MD 21401
Telephone: (301) 984-3877

