

State of Maryland
Department of Natural Resources
MARYLAND GEOLOGICAL SURVEY
Kenneth N. Weaver, Director

THE MINERAL INDUSTRY OF MARYLAND IN 1986

by

L. J. Prosser, Jr.



Information Circular No. 46

Prepared in Cooperation with U. S. Bureau of Mines

Preprint from the 1986

BUREAU OF MINES MINERALS YEARBOOK

The Mineral Industry of Maryland



UNITED STATES DEPARTMENT OF THE INTERIOR



UNITED STATES DEPARTMENT OF THE INTERIOR • Donald Paul Hodel, Secretary

BUREAU OF MINES • T S Ary, Director

This publication is a chapter from the current Bureau of Mines Yearbook, comprising *Volume I, Metals and Minerals*; *Volume II, Area Reports: Domestic*; *Volume III, Area Reports: International*. The separate volumes of the Yearbook are sold by the Superintendent of Documents, Washington, DC 20402.

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 1986 was about \$313 million. Continued strong demand for raw materials used in construction resulted in a record-high value in 1986 and the fourth consecutive year in which value of mineral production increased.

Crushed stone production was at an all-

time high in Maryland in 1985 and again in 1986. Output of crushed stone accounted for about two-fifths of the State's total value of mineral production. Also, approximately 10% of Maryland's crushed stone production was used in manufacturing cement, the State's second leading commodity in terms of value.

Table 1.—Nonfuel mineral production in Maryland¹

Mineral	1984		1985		1986	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Cement (portland) — thousand short tons...	W	W	W	W	1,785	\$89,799
Clays ² -----do-----	347	\$1,484	336	\$1,647	362	1,757
Gem stones-----do-----	NA	^e 2	NA	^e 2	NA	5
Lime ----- thousand short tons...	7	419	10	608	10	546
Peat -----do-----	5	W	W	W	W	W
Sand and gravel (construction) -----do-----	14,234	46,671	^e 17,000	^e 58,000	18,173	86,925
Stone:						
Crushed -----do-----	^e 22,100	^e 94,000	24,406	98,584	^e 26,400	^e 126,000
Dimension -----do-----	^r e16	^r e1,065	18	1,218	^e 21	^e 1,286
Combined value of cement (masonry), clays (ball clay), sand and gravel (industrial), and values indicated by symbol W -----do-----	XX	98,261	XX	98,215	XX	7,027
Total -----do-----	XX	241,902	XX	258,274	XX	313,345

^eEstimated. ^rRevised. NA Not Available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" figure. XX Not applicable.

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

²Excludes ball clay; value included with "Combined value" figure.

Table 2.—Nonfuel minerals produced in Maryland in 1985, by county¹

County	Minerals produced in order of value
Allegany	Stone (crushed).
Baltimore	Stone (crushed), stone (dimension), clays.
Carroll	Cement, stone (crushed), clays.
Cecil	Stone (crushed).
Frederick	Cement, stone (crushed), clays, lime.
Garrett	Stone (crushed), peat, stone (dimension).
Harford	Stone (crushed), sand (industrial).
Howard	Stone (dimension).
Kent	Stone (dimension), clays.
Montgomery	Stone (crushed), stone (dimension).
Prince Georges	Clays.
Queen Annes	Stone (crushed).
Washington	Cement, stone (crushed), clays.
Undistributed ²	Sand and gravel (construction), gem stones.

¹No production of nonfuel mineral commodities was reported for counties not listed.

²Data not available by county for minerals listed.

Table 3.—Indicators of Maryland business activity

	1984 ^f	1985	1986 ^p	
Employment and labor force, annual average:				
Population	thousands	4,348	4,393	4,463
Total civilian labor force	do	2,243	2,261	2,358
Unemployment	percent	5.4	4.6	4.5
Employment (nonagricultural):				
Mining total	thousands	1.7	1.7	1.6
Coal mining ¹	do	.9	.8	.7
Manufacturing total	do	219.4	217.2	209.8
Primary metal industries	do	18.9	15.7	13.4
Stone, clay, and glass products	do	7.3	7.0	6.1
Chemicals and allied products	do	12.5	12.7	12.8
Petroleum and coal products ¹	do	.8	.9	1.0
Construction	do	116.0	128.8	138.8
Transportation and public utilities	do	89.2	90.5	90.9
Wholesale and retail trade	do	451.5	473.5	496.6
Finance, insurance, real estate	do	103.8	109.7	117.4
Services	do	444.5	472.8	503.5
Government and government enterprises	do	387.9	393.6	392.2
Total	do	1,814.0	1,887.8	1,950.8
Personal income:				
Total	millions	\$64,569	\$70,050	\$75,272
Per capita		\$14,849	\$15,948	\$16,864
Hours and earnings:				
Total average weekly hours, production workers		41.0	40.3	40.5
Total average hourly earnings, production workers		\$9.5	\$9.7	\$10.0
Earnings by industry: ²				
Farm income	millions	\$332	\$318	\$364
Nonfarm	do	\$41,418	\$45,257	\$49,022
Mining total	do	\$135	\$176	\$174
Nonmetallic minerals except fuels	do	\$18	\$19	\$17
Coal mining	do	\$36	\$32	\$29
Manufacturing total	do	\$5,835	\$6,126	\$6,145
Primary metal industries	do	\$740	\$682	\$543
Stone, clay, and glass products	do	\$204	\$211	\$201
Chemicals and allied products	do	\$376	\$404	\$431
Petroleum and coal products	do	\$28	\$30	\$33
Construction	do	\$3,071	\$3,539	\$4,043
Transportation and public utilities	do	\$2,686	\$2,857	\$2,998
Wholesale and retail trade	do	\$7,237	\$7,932	\$8,636
Finance, insurance, real estate	do	\$2,376	\$2,690	\$3,210
Services	do	\$10,128	\$11,428	\$12,814
Government and government enterprises	do	\$9,777	\$10,297	\$10,757

See footnotes at end of table.

Table 3.—Indicators of Maryland business activity —Continued

	1984 ^F	1985	1986 ^P
Construction activity:			
Number of private and public residential units authorized ³	38,551	42,137	42,378
Value of nonresidential construction ³	millions... \$1,473.9	\$1,873.6	\$1,825.7
Value of State road contract awards	do... \$331.0	\$421.0	336.0
Shipments of portland and masonry cement to and within the State ⁴ thousand short tons	1,480	1,642	1,810
Nonfuel mineral production value:			
Total crude mineral value	millions... \$241.9	\$258.3	313.3
Value per capita	\$56	\$59	\$70

^PPreliminary. ^FRevised.

¹Bureau of Economic Analysis, Regional Economic Measurement Division, U.S. Department of Commerce.

²Includes wages and salaries, proprietors' income, and other labor income; cannot be directly related to employment because of inclusion of proprietors' income.

³Construction Review, International Trade Administration, U.S. Department of Commerce, May-June 1987, pp. 26-27, 35-36.

⁴Highway and Heavy Construction Magazine, Jan. 1986, p. 32.

Sources: U.S. Department of Commerce, U.S. Department of Labor, Highway and Heavy Construction Magazine, and U.S. Bureau of Mines.

Trends and Developments.—Attesting to the State's enhanced demand for minerals, Maryland in 1986 ranked 25th nationally in the value of mineral production compared with 34th in 1981. During the same period, Maryland increased its share of total U.S. mineral production value from 0.71% to 1.34%. Also in 1986, Maryland replaced Florida as the State with the highest value of mineral production per square mile.

The State's economy and construction industry continued to expand for the fourth consecutive year, paralleling gains in mineral production and value. The gains recorded in construction activity indicators (table 3) reflected the strong demand for industrial minerals by that industry. Additionally, employment in mining and construction contributed to the State's low unemployment rate of less than 5% or more than 2%

below the U.S. rate.

Legislation and Government Programs.—The Maryland Geological Survey (MGS) continued geologic and mineral-related studies at facilities in Baltimore. During the year, the MGS updated a 1983 directory of the State's mineral producers. More than 200 active mining operations will be included in the directory scheduled for publication in 1987.

In 1986, the U.S. Bureau of Mines closed its research center in Avondale, Prince Georges County. The Bureau had operated a research installation in Maryland since 1937. Ongoing research projects, including ones on characterization of ocean floor minerals, rapid scrap identification, and determination of silica particle-size distribution in respirable mine dust samples, were transferred to other Bureau facilities.

REVIEW BY NONFUEL MINERAL COMMODITIES

INDUSTRIAL MINERALS

In addition to the commodities listed in table 1, the production and value of some processed or manufactured mineral commodities were also surveyed by the U.S. Bureau of Mines. Gypsum (byproduct and calcined), iron and steel slag, titanium dioxide pigments, and vermiculite (exfoliated) were shipped from domestic or foreign sources into Maryland. The companies processing these commodities and their locations are included in the principal producers table.

Cement.—Through acquisitions made last year, the State's four cement plants were 100% foreign owned. Nationally, about 49% of U.S. cement capacity was in foreign ownership. The Bureau of Mines identified that the most fundamental reason behind the growth in foreign investment in the U.S. mineral industries (particularly since 1981) has been that an increasing proportion of U.S. mineral firms and assets have been for sale, while foreign mineral companies have been the ones most willing and able to purchase these firms and/or their assets.²

Maryland's cement industry continued to operate at full capacity for the third consecutive year, reflecting continued demand from the construction industry. Parent companies and locations of the State's cement plants are listed in the "Principal producers" table.

Clays.—In Maryland, five companies produced common clay and shale, and one company mined ball clay. Brickmaking, lightweight aggregate, and cement manufacture were the uses for the common variety, and the ball clay was used primarily in ceramics, animal feed, and adhesives.

Lime.—The State's sole lime producer continued operations at Woodsboro in Frederick County.

Peat.—One company mined peat near Accident in Garrett County.

Sand and Gravel.—*Construction.*—Construction sand and gravel production is surveyed by the U.S. Bureau of Mines for even-numbered years only; this chapter contains actual data for 1984 and 1986 and estimates for 1985. Data for odd-numbered years are based on annual company estimates.

Output of construction sand and gravel remained at record-high levels of about 17 million short tons in 1985 and 18.2 million tons in 1986. In the 10 years previous (1975-84), annual production averaged about 11.9 million tons. The State last reported output in excess of 16 million tons in 1965.

In 1986, sand and gravel was produced by 62 companies at 92 pits in 16 of Maryland's 23 counties. Prince Georges County led the State in output, followed by Anne Arundel and Charles Counties. Sand and gravel used for concrete aggregates accounted for more than one-half of the total sales.

Table 4.—Maryland: Construction sand and gravel sold or used by producers in 1986, by major use category

Use	Quantity (thousand short tons)	Value (thousands)	Value per ton
Concrete aggregates (including concrete sand) -----	9,536	\$49,491	\$5.19
Plaster and gunitite sands -----	W	W	7.67
Concrete products (blocks, bricks, pipe, decorative, etc.) -----	621	2,601	4.19
Asphaltic concrete aggregates and other bituminous mixtures -----	588	2,048	3.48
Road base and coverings -----	1,326	4,691	3.54
Fill -----	716	2,025	2.83
Snow and ice control -----	W	W	5.85
Roofing granules -----	W	W	6.44
Other -----	128	622	4.86
Other unspecified ¹ -----	5,259	25,447	4.84
Total or average -----	² 18,173	86,925	4.78

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

¹Includes production reported without a breakdown by end use and estimates for nonrespondents.

²Data do not add to total shown because of independent rounding.

Industrial.—One company in Joppa, Harford County, marketed a specialty sand for water treatment applications and as a skid-resistant sand used in airport runway construction.

Stone.—Stone production is surveyed by the U.S. Bureau of Mines for odd-numbered years only; this chapter contains estimates for 1984 and 1986 and actual data for 1985. Data for even-numbered years are based on annual company estimates.

Crushed.—The State's leading crushed stone producer, Genstar Stone Products Inc., at Hunt Valley, was sold for about \$318 million to Redland Aggregates Ltd., a United Kingdom building products group. The purchase included nine aggregate production sites in Maryland with estimated reserves of more than 1.5 billion short tons, or nearly 50% of the State's total aggregate reserves.³ In 1985, another British firm, London & Northern America Inc., purchased Rockville Crushed Stone Inc., the State's third leading crushed stone producer. At the time of the purchase, the company was attempting to have a 530-acre tract rezoned to quarry stone for use as a skid-resistant roadbuilding material; however, the request was denied. Foreign investment in the State's stone industry was not expected to affect operations or production.

Since 1983, demand from the State's expanding economy and the resultant construction activity boosted crushed stone production by 37% or about 7 million tons. During that same span, U.S. output increased by nearly 20%.

With the increased mining activity, a reciprocal heightening of environmental concern related to noise, dust, and land use occurred. Local zoning ordinances, for example, prohibited mining or quarry expansions at sites in Boyds, Montgomery County; Boonsboro, Washington County; and Elk Mills, Cecil County. In each case, the rulings were appealed and remained pending

at yearend. Even if these rulings are overturned, the producers are faced with increased costs from the legal proceedings and from delays in production. In some instances, these costs are passed on to the consumer through higher roadbuilding costs. The price per ton of crushed stone in Maryland in 1986 was \$4.77 compared with \$4.16 nationally.

Dimension.—The State's dimension stone industry produced less than 1% of the U.S. total output. Granite gneiss and quartzite were quarried, mostly in Baltimore and Montgomery Counties.

METALS

Aluminum.—One company continued producing aluminum at its smelter in Buckeystown, Frederick County. The United States produced about 3 million metric tons of primary aluminum in 1986, with Maryland ranking 11th among the 14 producing States. Individual company data are proprietary.

Iron and Steel.—Maryland's iron and steel industry was dominated by one producer, Bethlehem Steel Corp., at Sparrows Point. In January, the firm began producing continuous cast steel at the Baltimore County facility. The 2.9-million-short-ton-per-year caster cost about \$260 million, and more than 2 million tons of steel was produced in 1986. Bethlehem Steel produced about 13% of the Nation's steel in 1986, with about one-third of it made at Sparrows Point. It is anticipated that the caster will increase efficiency and lower the cost of production.

¹State Mineral Officer, Bureau of Mines, Pittsburgh, PA.

²Sousa, L. J., E. H. Yaremchuk, and A. P. Graham. Foreign Direct Investment in the U.S. Minerals Industry. BuMines IC 9131, 1987, 24 pp.

³Industrial Minerals (London). Redland Buys Genstar Stone. Nov. 1986, No. 230, p. 19.

Table 5.—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., (Société des Ciments Français).	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. (Heidelberger Zement AG).	Box L Union Bridge, MD 21791	---do---	Carroll.
Slag: Blue Circle-Atlantic ¹ (Blue Circle Industries PLC).	Box 6687 Sparrows Point, MD 21219	Plant (slag cement).	Harford.
Clays: Ball clay: Cyprus Industrial Minerals Co., Cyprus Mines Corp.	9420 Pulaski Highway Baltimore, MD 21220 Box 188 White Marsh, MD 21162	Pit and plant	Baltimore.
Common clay and shale: Baltimore Brick Co. (Merry Co.)	9801 Rocky Ridge Rd. Rocky Ridge, MD 21778	Pits and plants	Baltimore and Frederick.
Maryland Clay Products Inc. (Borden Brick & Tile Co.).	7100 Muirkirk Rd. Beltsville, MD 20705	---do---	Frederick and Prince Georges.
Victor Cushwa & Sons Inc	Clearspring Rd. & Route 68N Box 160 WilliamSPORT, MD 21795	Pit and plant	Washington.
Gypsum: Byproduct: SCM Corp., SCM Pigments Div.	3901 Glidden Rd. Baltimore, MD 21226	Plant	Baltimore.
Calcined: National Gypsum Co., Gold Bond Building Products Div. USG Corp	2301 South Newkirk St. Baltimore, MD 21224 500 Quarantine Rd. Box 3472 Baltimore, MD 21226	---do---	Do. Do.
Iron and steel: Bethlehem Steel Corp	Sparrows Point, MD 21219	Mill (integrated)	Do.
C. J. Langenfelder & Sons	8427 Pulaski Highway Baltimore, MD 21221	---do---	Do.
Lime: S. W. Barrick & Sons Inc	Woodsboro, MD 21798	Quarry and plant.	Frederick.
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 Co. Inc.	Waldorf Industrial Center Box 548 Waldorf, MD 20601	Pits and plant	Anne Arundel, Charles, St. Marys.
Eastern Aggregates Inc.	10 South River Club House Rd. Harwood, MD 20776	Pits and plants	Anne Arundel and Prince Georges.
Inland Materials Inc	4714 St. Barnabas Rd. Temple Hills, MD 20748 Box 273 Leonardtown, MD 20650	---do---	Prince Georges.
Maryland Rock Industries (Florida Rock Industries Inc.)	Box 273 Leonardtown, MD 20650	Pit and plant	St. Marys.
York Building Products Co. Inc., Mason Dixon Sand & Gravel Div.	Pulaski Highway Perryville, MD 21403	---do---	Cecil.
Industrial: Harford Sands Inc	Box 25 40 Fort Hoyle Rd. Joppa, MD 21085	---do---	Harford.

See footnotes at end of table.

Table 5.—Principal producers —Continued

Commodity and company	Address	Type of activity	County
Stone:			
Crushed:			
The Arundel Corp. ² -----	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.	Marriottsville Rd. Marriottsville, 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.
Titanium dioxide (pigments):			
SCM Corp., SCM Pigments Div.	3901 Glidden Rd. Baltimore, MD 21226	Chemical plant.	Do.
Vermiculite (exfoliated):			
W. R. Grace & Co., Construction Products Div.	12340 Conway Rd. Beltsville, MD 20705	Plant-----	Prince Georges.

¹Also common clay and shale.²Also slag.³Also sand and gravel.

