

INFORMATION

CIRCULAR 31

The Mineral Industry of Maryland

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

By Joseph A. Sutton¹ and Marilyn N. Dimmitt²

Maryland's mineral production increased in value in 1976 to \$185 million, about 12% above the \$165 million for 1975. The increase was brought about mostly by value increases for coal and stone.

Bituminous coal was again the most valuable mineral commodity produced in the State and accounted for about 33% of the State's mineral wealth. In response to increased demand for fuel, coal production was 9% above that of 1975.

Stone continued to be the second most valuable mineral commodity produced and accounted for 26% of the State's mineral wealth. The total value of stone produced in 1976 was \$47.7 million, 11% above the 1975 value of \$43.1 million.

Sand and gravel contributed 17% to the mineral wealth of the State. Production of sand and gravel increased about 10% to 12.9 million tons, and value increased 8% to \$31.9 million.

Portland and masonry cement contributed significantly to the economy of the State, but actual figures must be concealed to avoid disclosing company proprietary data. However, there were modest increases in both tonnage and value of cement in 1976.

¹ State Liaison Officer—Maryland and Delaware, Bureau of Mines, Washington, D.C.

² Program assistant—Maryland and Delaware, Bureau of Mines, Washington, D.C.

Table 1.—Mineral production in Maryland¹

Mineral	1975		1976	
	Quantity	Value (thousands)	Quantity	Value (thousands)
Clays ² -----thousand short tons--	580	\$1,450	702	\$1,817
Coal (bituminous) -----do-----	2,606	50,502	2,830	61,974
Lime -----do-----	15	434	16	494
Natural gas -----million cubic feet--	93	25	75	24
Peat -----thousand short tons--	2	39	2	W
Sand and gravel -----do-----	11,786	29,477	12,942	31,914
Stone -----do-----	14,796	43,110	15,709	47,669
Value of items that cannot be disclosed:				
Cement, clays (ball), gem stones, and values indicated by symbol W -----	XX	39,882	XX	41,026
Total -----	XX	164,919	XX	184,918
Total 1967 constant dollars -----	XX	65,258	XX	P 66,478

^P Preliminary. ^W Withheld to avoid disclosing company proprietary data; included with "Value of items that cannot be disclosed."

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

² Excludes ball clay; included with "Value of items that cannot be disclosed."

Table 2.—Value of mineral production in Maryland, by county ¹
(Thousands)

County	1975	1976	Minerals produced in 1976 in order of value
Allegany -----	W	W	Coal, stone.
Anne Arundel -----	\$3,118	\$3,118	Sand and gravel.
Baltimore ² -----	W	W	Stone, sand and gravel, clays.
Caroline -----	--	3	Sand and gravel.
Carroll -----	W	W	Cement, stone, clays.
Cecil -----	8,693	10,395	Stone, sand and gravel.
Charles -----	W	W	Sand and gravel.
Dorchester -----	372	W	Do.
Frederick -----	W	W	Cement, stone, clays, lime.
Garrett -----	W	W	Coal, stone, sand and gravel, peat.
Harford -----	W	W	Stone, sand and gravel, clays.
Howard -----	W	1,322	Stone.
Kent -----	W	W	Clays.
Montgomery -----	5,765	W	Stone.
Prince Georges -----	11,464	14,264	Sand and gravel, clays.
St. Marys -----	W	254	Sand and gravel.
Washington -----	W	W	Cement, stone, clays.
Wicomico -----	W	W	Sand and gravel.
Worcester -----	395	860	Do.
Undistributed ³ -----	135,111	154,702	
Total -----	164,919	⁴ 184,918	

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

¹ Calvert, Queen Annes, Somerset, and Talbot Counties are not listed because no production was reported.

² Includes Baltimore City.

³ Includes some natural gas, gem stones, and values indicated by symbol W.

⁴ Data do not add to total shown because of independent rounding.

Table 3.—Indicators of Maryland business activity

	1975	1976 ^p	Change, percent
Employment and labor force, annual average:			
Total civilian labor force -----	thousands-- 1,842	1,900	+3.1
Unemployment -----	do-- 127	128	+8
Employment (nonagricultural):			
Mining -----	do-- 1.7	1.8	+5.9
Manufacturing -----	do-- 230.7	231.6	+4
Contract construction -----	do-- 90.9	93.7	+3.1
Transportation and public utilities -----	do-- 78.3	78.1	-3
Wholesale and retail trade -----	do-- 355.3	362.3	+2.0
Finance, insurance, real estate -----	do-- 79.8	80.1	+4
Services -----	do-- 279.6	288.0	+3.0
Government -----	do-- 366.0	371.9	+1.6
Total nonagricultural employment -----	do-- 1,482.3	1,507.5	+1.7
Personal income:			
Total -----	millions-- \$26,117	\$28,514	+9.2
Per capita -----	do-- \$6,336	\$6,880	+8.6
Construction activity:			
Number of private and public residential units authorized--	19,661	26,994	+37.3
Value of nonresidential construction -----	millions-- \$306.6	\$365.5	+19.2
Value of State road contract awards -----	do-- \$92.2	\$98.0	+6.3
Shipments of portland and masonry cement to and within the State -----	thousand short tons-- 1,196	1,289	+7.8
Mineral production value:			
Total crude mineral value -----	millions-- \$164.9	\$184.9	+12.1
Value per capita, resident population -----	do-- \$40	\$45	+12.5
Value per square mile -----	do-- \$15,592	\$17,483	+12.1

^p Preliminary.

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

Legislation and Government Programs.—During the 1976 regular session of the General Assembly of Maryland there were a number of amendments and additions to the National Resources Article covering open pit mining on State land and deep-mining control. Among these were amendments to Section 7-505b authorizing the Secretary of Natural Resources to issue or renew an open pit mining permit on State lands if in conjunction with the reclamation of abandoned mines (Senate Bill 575) and public construction projects (Senate Bill 602). A new Section 7-5A01 through 7-5A15 provided for licensing and regulating underground mining operations and owners, and guaranteed reclamation of land surface affected by deep-mining operations.

The Department of the Interior held its first Outer Continental Shelf oil and gas lease sale in August 1976. However, the issuance of leases to oil companies willing to pay \$1.1 billion in bonus bids was held up during the year by a lawsuit filed by local governments and environmental groups.

A Particulate Mineralogy Unit was established at the Federal Bureau of Mines Metallurgy Research Center, College Park. The unit was established to identify particulates connected with environmental problems related to the activities of a number of Federal regulatory agencies. During the year attempts were made by the unit to clarify the ambiguities surrounding the mineralogy of and terminology used for asbestiform minerals and other mineral particles.

REVIEW BY MINERAL COMMODITIES

NONMETALS

Cement.—Output of portland and masonry cement was 1% above that of 1975, and the overall value was up 3%.

Clays.—Clay production (excluding ball clay) increased 21% in tonnage, to 702,000 short tons in 1976; value was \$1,817,000, 25% above that of 1975. About 94% of the clay produced in the State was used to make brick and other clay products, and most of the clay was mined in Frederick, Washington, and Prince Georges Counties.

Gem Stones.—Production of semiprecious stones was limited to small quantities collected by dealers and amateur collectors.

Gypsum.—United States Gypsum Co. and National Gypsum Co. calcined gypsum at Baltimore in Baltimore County. The quantity and value of output in 1976 increased 26% and 37% respectively over the 1975 totals.

Lime.—S. W. Barrick & Sons, Inc., produced lime in Frederick County for agricultural purposes in 1976. Output increased 7% above the 1975 level. The lime was consumed in Maryland, Virginia, Delaware, and Pennsylvania.

Peat.—Only one company produced peat in Maryland in 1976, and its output was the same as in 1975. The peat was sold in both bulk and packaged form for soil improvement.

Perlite.—Relatively small amounts of crude perlite from the Western United States were processed in 1976 at a plant in Baltimore County. The expanded perlite produced was utilized as aggregates in plaster.

Sand and Gravel.—Production of sand and gravel increased 1.2 million tons to 12.9 million tons, reflecting the increase in construction activity that took place during the year. Sand and gravel used for commercial purposes accounted for 73% of the total output, and sand and gravel used for government purposes accounted for the remainder. The average unit value of sand and gravel was \$2.47 per ton, 3 cents below that of 1975. The major part of the sand and gravel used for commercial purposes went into building and highway construction; the remainder was used for fill and miscellaneous purposes.

The four top-ranking counties, in order of production of sand and gravel, were Prince Georges, Cecil, Anne Arundel, and Baltimore.

Legislation (HB 1867) was introduced into the General Assembly which would impose a severance tax on the removal of sand and gravel from certain lands in the State by commercial producers. It was reviewed by committee, but was not reported out of committee.

Table 4.—Maryland: Construction sand and gravel sold or used¹ in 1976
(Thousand short tons and thousand dollars)

Use	Quantity	Value
Construction:		
Sand -----	8,310	19,148
Gravel -----	4,631	12,766
Total -----	² 12,942	31,914

¹ Sand and gravel figures for 1976 cannot be compared with 1975 data because of the new canvassing format used.

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

Stone.—Eight companies quarried dimension stone for rough construction, rubble, house stone veneer, and other uses. Dimension stone output increased about 10% to 25,560 tons valued at \$699,200. Leading producers were Stoneyhurst Quarries and M and S Stone Quarries. Crushed stone was produced by 24 companies at 32 quarries for roadstone, bituminous aggregate, cement, and other uses. Output increased 6% to 15,683,000 tons valued at \$47 million. Leading stone producers were The Flintkote Co., Rockville Crushed Stone, Inc., and Lehigh Portland Cement Co.

Among the States, Maryland led in output of dimension miscellaneous stone and ranked fifth in dimension sandstone.

Talc.—Harford Talc Co. ceased talc mining in Harford County in 1974. How-

Table 5.—Maryland: Construction sand and gravel sold or used in 1976, by major use category¹
(Thousand short tons and thousand dollars)

Use	Quantity	Value
Concrete aggregate (non-residential, residential, highways, bridges, dams, waterworks, airports, etc.) -----	5,130	14,068
Concrete products (cement blocks, bricks, pipe, etc.) -----	1,975	5,299
Asphaltic concrete aggregates and other bituminous mixtures -----	736	1,846
Roadbase and coverings -----	3,554	7,674
Fill -----	873	1,503
Other uses -----	671	1,524
Total -----	² 12,942	31,914

¹ Sand and gravel figures for 1976 cannot be compared with 1975 data because of the new canvassing format used.

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

ever, the company imported crude talc from Africa and the Western United States and processed it for use in the manufacture of electrical insulators.

Vermiculite (Exfoliated).—Dimension Construction Products of W. R. Grace & Co., Prince Georges County, processed raw vermiculite into the exfoliated product at Muirkirk. The finished material was utilized primarily for concrete aggregates and for fireproofing.

Table 6.—Maryland: Production of crushed stone,¹ by use
(Thousand short tons and thousand dollars)

Use	1975		1976	
	Quantity	Value	Quantity	Value
Roadstone -----	4,434	11,760	4,971	14,120
Bituminous aggregate -----	2,454	6,114	2,361	6,494
Cement manufacture -----	1,868	2,331	2,092	2,533
Concrete aggregate -----	1,886	5,240	1,733	5,073
Macadam aggregate -----	1,596	4,711	1,658	4,993
Dense-graded roadbase stone -----	1,534	4,008	1,506	4,520
Riprap and jetty stone -----	243	850	400	1,435
Surface treatment aggregate -----	269	733	294	850
Railroad ballast -----	110	244	169	411
Lime manufacture -----	W	W	32	74
Other uses ² -----	379	6,505	469	6,490
Total ³ -----	14,772	42,498	15,683	47,000

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

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

² Includes stone used in whitening, soil conditioning, agricultural limestone, refractory stone, abrasives, other fillers and extenders, mineral food, filter stone (1976), asphalt filler (1976), flux stone, other uses, and uses indicated by symbol W.

³ Data may not add to totals shown because of independent rounding.

MINERAL FUELS

Coal (Bituminous).—Production of bituminous coal in 1976 increased to 2,830,000 tons, about 9% above that of 1975. The coal was mined from six basins in the extreme western portion of Maryland. About 48% of the production came from the George's Creek Basin, 26% from the Potomac Basin, and 25% from the Casselman and the lower and upper Youghiogheny Basins. According to the Department of Energy there were 29 coal mines in Allegany County and 35 in Garrett County. Two of these mines were underground, 5 were auger-type mines, and 57 were open pit mines.

Surface mines accounted for 86% of the coal produced; underground mines, 6%; and auger mines, 8%.

In 1976, the acreage eligible for revegetation bond release totaled 961, of which 668 acres were released. The reasons for the large number of acres eligible for bond release follow: More acres were strip-mined in 1974, and many acres that did not meet the revegetation specifications were being held from previous years. The Land Reclamation Committee requires that vegetation go through two growing seasons before the planting is approved and that at least 80% cover of vegetation must be established in order for it to be approved. Saving topsoil and spreading it on the backfilled site has greatly improved the success of vegetation growth on the reclaimed sites.³

Coke and Coal Chemicals.—Bethlehem Steel Corp. produced coke for internal use at Sparrows Point. Byproducts recovered from the distillation of coal included oven coke gas, ammonia, crude light oil, benzene, toluene, xylene, oven coke tar, and other minor components in addition to the primary product, coke.

Natural Gas and Petroleum.—Natural gas production from fields in Garrett County during 1976 was 75 million cubic feet, a decrease of 19% from the 1975 production.

Columbia LNG Corp., a subsidiary of Columbia Gas System, Inc., was having a

liquefied natural gas import terminal constructed near Cove Point. The terminal, to be completed in 1977, had a designed send-out capacity of approximately 1 billion cubic feet of gas per day. Liquefied natural gas arriving from Algeria and stored at the terminal is to be regasified and transported by pipeline to markets served by the Columbia Gas System, Inc., and Consolidated Natural Gas Co.

Two small petroleum refineries near Baltimore converted crude oil into asphalt products, but none of the feedstock originated in Maryland.

METALS

Aluminum.—No bauxite or other aluminum ore was mined in Maryland, but there was a significant production of metallic aluminum at two facilities in the State, Eastalco Aluminum Co. (Howmet Corp.) in Frederick County and Tomke Aluminum Co. in Baltimore County.

Copper.—With the closing of the ASARCO, Inc., refinery in Baltimore in 1975, the Kennecott Refining Co. at Hawkins Point was the only plant operating in Maryland in 1976.

ASARCO opened a new 420,000-ton-capacity copper refinery at Amarillo, Tex., in 1976 to replace the older plants closed at Baltimore and at Perth Amboy, N.J.

Iron and Steel.—Bethlehem Steel Corp. at Sparrows Point continued to produce pig iron, raw steel, and semifabricated steel products from imported ore. A sinter plant was placed in full operation at Sparrows Point in 1976. It was designed to produce annually approximately 3.9 million tons of fluxed sinter for the blast furnaces from iron ore fines, flue dust, mill scale, iron-bearing pollution control sludges and dust, basic oxygen furnace slag, and limestone fines. This new single unit replaces six existing units.⁴

Lead.—Lead, lead alloys, and other alloys and products were produced at three plants in Baltimore. The plants utilized primary metals and scrap as raw materials.

³ Maryland Bureau of Mines. Annual Report, 1976.

⁴ Bethlehem Steel. 1976 Annual Report.

Table 7.—Principal producers

Commodity and company	Address	Type of activity	County
Cement:			
Portland:			
Alpha Portland Cement Co. ¹	15 South 3d St. Easton, Pa. 18042	Plant -----	Frederick.
Lehigh Portland Cement Co. ²	718 Hamilton St. Allentown, Pa. 18101	----do -----	Carroll.
Portland and masonry:			
Marquette Cement Manufacturing Co. ¹	First American Center Nashville, Tenn. 37238	----do -----	Washington.
Masonry: M. J. Grove Lime Co. ¹	Frederick, Md. 21701	----do -----	Frederick.
Clays:			
Baltimore Brick Co -----	501 St. Paul Pl. Baltimore, Md. 21202	Pits -----	Baltimore and Frederick.
Cyprus Industrial Materials Co.	555 South Flower St. Los Angeles, Calif. 90071	Pit -----	Baltimore.
Victor Cushwa & Sons, Inc.	201 West Potomac St. Williamsport, Md. 21795	Pit -----	Washington.
Coal:			
Buffalo Coal Co -----	Box 275 Bayard, W. Va. 26707	5 strip mines ----	Garrett.
Grafton Coal Co -----	Box 188 Mt. Lake Park, Md. 21550	3 strip mines ----	Do.
Moran Coal Co., Inc -----	Drawer E Westernport, Md. 21562	Strip mine -----	Do.
Winner Brothers Coal Co., Inc.	Box 300 Frostburg, Md. 21532	5 strip mines ----	Allegheny.
Gypsum (calcined):			
National Gypsum Co -----	325 Delaware Ave. Buffalo, N.Y. 14202	Plant -----	Baltimore.
United States Gypsum Co --	101 South Wacker Dr. Chicago, Ill. 60606	----do -----	Do.
Iron oxide pigments, finished (natural and manufactured):			
Minerals Pigments Corp --	7011 Muirkirk Rd. Beltsville, Md. 20705	----do -----	Prince Georges.
Lime: S. W. Barrick & Sons, Inc.	Woodsboro, Md. 21798	----do -----	Frederick.
Peat: Garrett County Processing & Packaging Corp.	R.F.D. No. 1 Accident, Md. 21520	Bog -----	Garrett.
Petroleum refineries:			
Amoco Oil Co -----	910 South Michigan Ave. Chicago, Ill. 60680	Refinery -----	Baltimore.
Chevron Asphalt Co -----	Baltimore, Md. 21200	----do -----	Do.
Sand and gravel:			
Campbell Sand and Gravel, Inc.	4911 Calvert Rd. College Park, Md. 20740	Pit -----	Prince Georges.
Charles City Sand & Gravel Co., Inc.	Waldorf Industrial Center Box 322 Waldorf, Md. 20601	Dredges -----	Charles.
Contee Sand & Gravel Co., Inc.	Box 460 Laurel, Md. 20810	Pit -----	Prince Georges.
Harry T. Campbell Sons Co., Div. of Flintkote Co.	Towson, Md. 21225	Pits -----	Baltimore.
York Building Products Co., Inc.	Box 1708 York, Pa. 17405	Pit -----	Cecil.
Stone:			
Arundel Corp -----	501 St. Paul Pl. Baltimore, Md. 21202	Quarries -----	Baltimore, Harford, Howard.
Martin-Marietta Aggregates.	66 Long Clove Rd. Congers, N.Y. 10920	Quarry -----	Washington.
Maryland Materials, Inc ---	Box W North East, Md. 21901	----do -----	Cecil.
Rockville Crushed Stone, Inc.	Box 407 Rockville, Md. 20850	----do -----	Montgomery.
D. M. Stoltzfus & Sons, Inc.	Talmage, Pa. 17580	Quarries -----	Cecil and Harford.

¹ Also stone.² Also clays and stone.