

# MARYLAND

By L. J. Prosser, Jr.

STATE OF MARYLAND  
MARYLAND GEOLOGICAL  
SURVEY

INFORMATION CIRCULAR • 48

**1988**

**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

1988

## Contents

Trends and Developments .....	1
Legislation and Government Programs .....	1
Review by Nonfuel Mineral Commodities .....	2
Industrial Minerals .....	2
Cement .....	2
Sand and Gravel .....	2
Stone .....	2
Other Industrial Minerals .....	3
Metals .....	3
Aluminum .....	6
Copper .....	6
Iron and Steel .....	6

## Tables

Table 1.—Nonfuel Mineral Production in Maryland .....	1
Table 2.—Maryland: Construction Sand and Gravel Sold or Used in 1988, by Major Use Category .....	2
Table 3.—Maryland: Construction Sand and Gravel Sold or Used by Producers in 1988, by Use and District .....	3
Table 4.—Principal Producers .....	7

## Centerfold Map

Principal Mineral-Producing  
Localities in Maryland

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

# 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.<sup>1</sup>

The value of nonfuel mineral production in Maryland increased for the seventh consecutive year in 1988. The total nonfuel mineral value of \$363 million was the highest ever reported for the State.

Crushed stone, the leading mineral commodity produced in Maryland, accounted for more than 45% of the value of mineral production. Significant gains in crushed stone output during the past 6 years have been directly responsible for the growth in the State's total value of nonfuel mineral production. Output of 32.7 million short tons of crushed stone in 1988 was more than double the 15.1 million tons produced in 1982. Similarly, the value of all minerals produced in the State increased from \$171.5 million in 1982 to the record value of 1988.

## TRENDS AND DEVELOPMENTS

Production records for Maryland

show that, in 1967, crushed stone output surpassed sand and gravel output and it has continued to increase at a greater rate than sand and gravel since then. Urban development has removed or restricted land available for mining of both stone and sand and gravel resources, but has affected sand and gravel production more severely. Sand and gravel operations typically utilize more surface area per ton of material mined than do stone quarries. Encroachment of urban regions has also become an increasing concern for crushed stone producers. In most cases, the expansion of existing quarries or opening of new quarries in Maryland was opposed by area residents.

## LEGISLATION AND GOVERNMENT PROGRAMS

Opposition by residents to the opening or expansion of quarries in Carrol County was the impetus for introduction of House bill 407. The bill would

have assumed a quarry operator to be liable for damages to properties within a 3-mile radius of the quarry. The bill was defeated in committee. Two of the State's leading producers, one of crushed stone and the other of cement, have operations in Carrol County, both near Union Bridge. In March, Carrol County also adopted revised zoning ordinances requiring extensive environmental impact studies before land can be zoned for use as a quarry.

Land use conflicts also prompted action at the level of local government. In September, Charles County Commissioners formed a sand and gravel task force because of mining controversies during the year. The task force was expected to examine the economic, environmental, and neighborhood safety impact of sand and gravel pits and to establish guidelines for the county's Board of Zoning Appeals. In addition, the task force was charged with determining general policy for road maintenance, truck traffic, and taxation of sand and gravel producers. Results of the task force findings were expected by

TABLE 1  
NONFUEL MINERAL PRODUCTION IN MARYLAND<sup>1</sup>

Mineral	1986		1987		1988	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Cement (portland) thousand short tons	1,785	\$89,799	1,829	\$90,020	1,808	\$89,083
Clays short tons	<sup>2</sup> 361,729	<sup>2</sup> 1,757	383,054	1,940	394,443	2,016
Gem stones	NA	5	NA	5	NA	5
Lime thousand short tons	10	546	9	486	6	329
Peat do.	W	W	W	W	7	W
Sand and gravel (construction) do.	18,173	86,925	<sup>e</sup> 19,600	<sup>e</sup> 92,900	19,266	95,169
Stone:						
Crushed do.	<sup>e</sup> 26,400	<sup>e</sup> 126,000	30,136	151,579	<sup>e</sup> 32,700	<sup>e</sup> 167,000
Dimension short tons	<sup>e</sup> 20,505	<sup>e</sup> 1,286	22,843	1,516	<sup>e</sup> 20,729	<sup>e</sup> 1,515
Combined value of cement (masonry), clays (ball clay, 1986), sand and gravel (industrial), and values indicated by symbol W	XX	7,027	XX	6,688	XX	7,804
<b>Total</b>	<b>XX</b>	<b>313,345</b>	<b>XX</b>	<b>345,134</b>	<b>XX</b>	<b>362,921</b>

<sup>e</sup>Estimated. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" figure. XX Not applicable.

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

<sup>2</sup> Excludes certain clays; kind and value included with "Combined value" data.

yearend 1989. Charles County produced the third highest quantity of sand and gravel among the counties in Maryland.

## REVIEW BY NONFUEL MINERAL COMMODITIES

### Industrial Minerals

Portland cement, construction sand and gravel, and crushed stone accounted for \$351 million, or nearly 97% of Maryland's nonfuel mineral production (table 1). Land use issues involving the question of mine development versus conservation continued to be a major concern of the industries producing these mineral commodities.

Other industrial minerals produced in Maryland included masonry cement, clays, lime, peat, dimension stone, and industrial sand. For the most part, these industries were small, long established, and stable operations; for these commodities, land use conflicts were not an issue.

**Cement.**—Portland cement was produced at three plants, and slag cement was produced at one plant. All four of the operations are less than 75 miles from markets in the Washington, DC, and Baltimore area. Because of strong demand, production remained at about 95% of capacity. In addition, about 411,000 short tons of imported cement was received at the Port of Baltimore in 1988, a 17% increase over the amount received during the previous year.

Lehigh Portland Cement Co. sought approval to open a new limestone quarry near New Windsor for use in cement manufacture at its Union Bridge plant. The State's Department of Natural Resources, Water Resources Administration, needed to approve the permit because groundwater is removed before mining the limestone. Public hearings on the matter were scheduled for 1989 and, pending permit approval, quarrying was expected to begin in 1990.

**Sand and Gravel.**—Construction sand and gravel production is surveyed by the U.S. Bureau of Mines for even-numbered years only; data for odd-numbered years are based on annual company estimates. This chapter contains actual data for 1986 and 1988 and estimates for 1987.

Maryland construction sand and gravel statistics are compiled by geographical districts as depicted in the centerfold map. Table 3 presents end-use data for the State's three districts.

Output of 19.3 million short tons in 1988 was slightly lower than 1987 levels. Despite the decline, production in 1988 was still the third highest total reported in the past 25 years. In 1988, sand and gravel was produced by 54 companies at 89 pits in 14 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. In the past 8 years, the price of sand and gravel has increased from \$3.13 per ton to \$4.94 per ton.

**Stone.**—Stone production is surveyed by the U.S. Bureau of Mines for odd-numbered years only; data for even-numbered years are based on annual company estimates. This chapter contains estimates for 1986 and 1988 and actual data for 1987.

Record-setting production of crushed stone in Maryland continued for the fifth consecutive year with a 1988 total of 32.7 million tons. The construction industry remained the most significant consumer of crushed stone in Maryland. In 1988, highway and heavy construction, as measured by contract awards, increased by 30% over 1987 levels. In Prince Georges County, an estimated \$10 billion in new construction work was underway or in the planning stages.<sup>2</sup>

During the year, Coplay Cement Co. requested permission from the Frederick County Planning Commission to expand operations at its limestone quarry near Buckeystown. The expansion was expected to enable the company to produce 850,000 tons of crushed limestone per year.<sup>3</sup> By yearend, Coplay had received

TABLE 2  
MARYLAND: CONSTRUCTION SAND AND GRAVEL SOLD OR USED  
IN 1988, BY MAJOR USE CATEGORY

Use	Quantity (thousand short tons)	Value (thousands)	Value per ton
Concrete aggregates (including concrete sand)	8,462	\$46,006	\$5.44
Plaster and gunite sands	335	872	2.60
Concrete products (blocks, bricks, pipe, decorative, etc.)	255	1,489	5.84
Asphaltic concrete aggregates and other bituminous mixtures	2,062	6,896	3.34
Road base and coverings <sup>1</sup>	950	2,295	2.42
Fill	661	1,397	2.11
Snow and ice control	24	78	3.25
Other <sup>2</sup>	133	714	5.37
Unspecified: <sup>3</sup>			
Actual	4,824	29,623	6.14
Estimated	1,561	5,801	3.72
<b>Total<sup>4</sup> or average</b>	<b>19,266</b>	<b>95,169</b>	<b>4.94</b>

<sup>1</sup> Includes road and other stabilization (lime).

<sup>2</sup> Includes filtration.

<sup>3</sup> Includes production reported without a breakdown by end use and estimates for nonrespondents.

<sup>4</sup> Data may not add to totals shown because of independent rounding.

TABLE 3  
**MARYLAND: CONSTRUCTION SAND AND GRAVEL SOLD OR USED BY PRODUCERS IN 1988,  
 BY USE AND DISTRICT**

(Thousand short tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products <sup>1</sup>	53	330	6,704	39,788	2,295	8,248
Asphaltic concrete aggregates and other bituminous mixtures	—	—	1,455	4,898	607	1,998
Road base and coverings <sup>2</sup>	—	—	783	1,974	167	321
Fill	—	—	332	674	329	722
Snow and ice control	—	—	22	72	2	6
Other miscellaneous <sup>3</sup>	11	97	122	616	( <sup>4</sup> )	1
Other unspecified <sup>5</sup>	—	—	6,011	34,134	375	1,290
<b>Total<sup>6</sup></b>	<b>63</b>	<b>427</b>	<b>15,428</b>	<b>82,156</b>	<b>3,775</b>	<b>12,587</b>

<sup>1</sup> Includes sand and gravel for plaster and gunite sands.

<sup>2</sup> Includes sand and gravel for road and other stabilization (lime).

<sup>3</sup> Includes sand and gravel for filtration.

<sup>4</sup> Less than one-half of a unit.

<sup>5</sup> Includes production reported without a breakdown by end use and estimates for nonrespondents.

<sup>6</sup> Data may not add to totals shown because of independent rounding.

permission to construct a crushing facility; however, due to local opposition, the Planning Commission postponed a decision on the rezoning permit that was necessary before mining development could occur. Crushed stone producers attempting to open or expand operations in Carrol and Montgomery Counties were also involved in legal actions relating to zoning ordinances. Typically, these court cases take years to resolve and indirectly add to the cost of stone products.

**Other Industrial Minerals.**—The mineral commodities discussed below collectively accounted for about 3% of Maryland's value of nonfuel mineral production. Production of common clays increased for the third consecutive year as demand for brick used in construction remained strong. In 1988, clay was mined at six pits, the same number as in 1987. Baltimore Brick Co., one of the State's leading clay producers, completed a \$3 million renovation project that increased production capacity for sand-cast bricks to 40 million brick per year at its Rocky

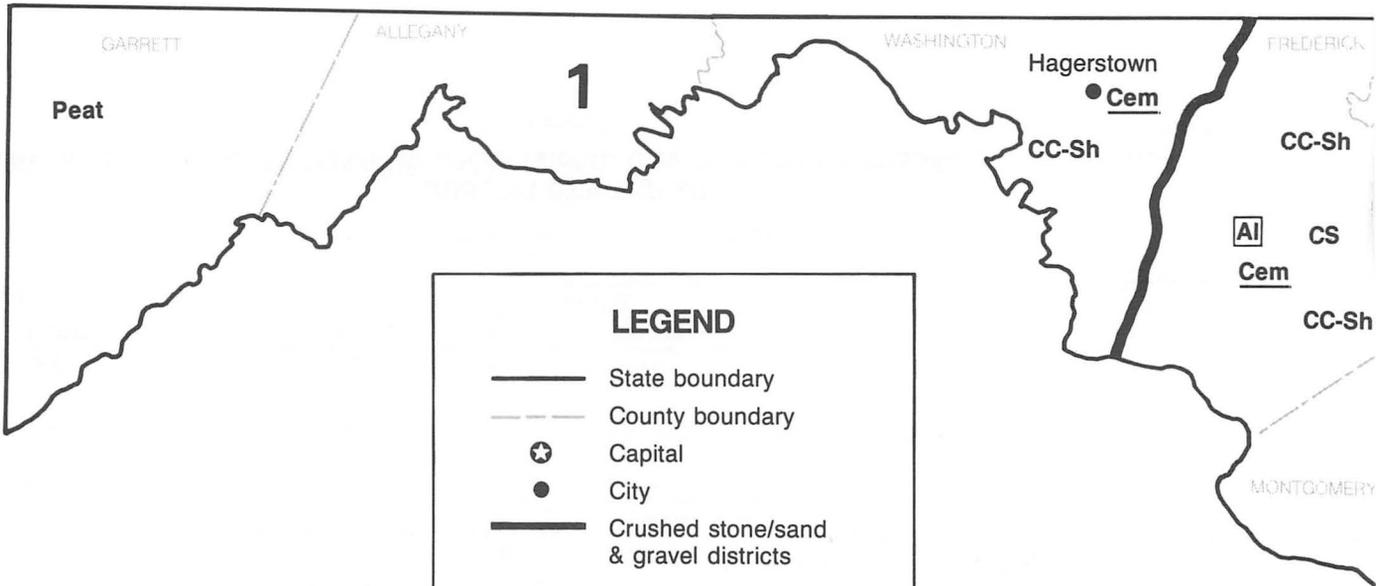
Ridge plant.<sup>4</sup> The renovation project was undertaken because of architectural trends that showed that consumers prefer colonial-style construction, for which sand-cast bricks are used. Baltimore Brick is a division of Boral Bricks Inc., which is a subsidiary of Boral Ltd. of Sydney, Australia. S. W. Barrick & Sons Inc., at Woodsboro, the State's only lime producer, was purchased by Laurel Sand & Gravel Inc. in 1987 and ceased lime manufacturing in 1988. About 6,000 short tons of lime was sold from stockpile by Laurel in 1988. About 21,000 short tons of dimension granite, sandstone, and quartzite was produced at seven quarries. Most of the output was granite quarried in Montgomery County and sold as rough blocks. Two of the State's four portland cement producers also manufactured masonry cement at plants in Hagerstown and Union Bridge. One company produced industrial sand at a pit in Joppa, and one firm mined peat at a bog near Accident.

Mineral commodities processed in Maryland included those that were imported and those shipped from domes-

tic sources. Crude gypsum imported from Canada was calcined for manufacturing wallboard by National Gypsum Co. and USG Corp. at plants in Baltimore. In 1988, about 652,000 short tons of gypsum was imported at the Port of Baltimore, according to data published by the Maryland Port Administration. SCM Chemicals Inc. operated one of eight domestic titanium dioxide plants in Baltimore. SCM also produced byproduct gypsum, which was sold locally for use in wallboard manufacture. W. R. Grace & Co., at Muirkirk in Prince Georges County, exfoliated crude vermiculite that was mined in South Carolina. Other mineral commodities imported into Maryland at the Port of Baltimore included iron ore (8.1 million short tons), bauxite (377,000 tons), salt (279,000 tons), ferroalloys (245,000 tons), clays (55,000 tons), and manganese ore (35,000 tons).<sup>5</sup>

#### Metals

Metals discussed in this section were processed from materials received from both foreign and domestic sources. No



**LEGEND**

- State boundary
- - - County boundary
- ★ Capital
- City
- Crushed stone/sand & gravel districts

**MINERAL SYMBOLS**

- Al** Aluminum plant
- CC-Sh** Common Clay & Shale
- Cem** Cement plant
- CS** Crushed Stone
- Cu** Copper plant
- D-G** Dimension Granite
- D-S** Dimension Sandstone
- IS** Industrial Sand
- Peat** Peat
- SG** Sand and Gravel
- Steel** Iron and Steel plant
- Concentration of mineral operations

**Principal Mineral-Producing Localities**



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.

**Aluminum.**—Eastalco Aluminum Co., a subsidiary of Alumax Inc., continued to produce aluminum at its smelter near Frederick. In 1988, the company operated at its full capacity of 160,000 metric tons per year.<sup>6</sup> The United States produced over 3.9 million tons of aluminum during the year, approximately 99% of domestic capacity, reflecting strong demand and higher prices for aluminum nationwide.

**Copper.**—Cox Creek Refining Co. at Baltimore began limited production at the 180,000-short-ton-per-year-capacity refinery that it purchased from Kennecott Refining Corp. in 1987. Cox Creek

joined Mitsubishi Metal America, Halstead Industries Inc., and Southwire Co. (each of these 3 owning a 20% interest in the company) to reopen the refinery, which had been closed since 1983.

**Iron and Steel.**—Maryland's iron and steel industry was dominated by one producer, Bethlehem Steel Corp., at Sparrows Point. In 1988, demand for steel increased along with production. Bethlehem's facility at Sparrows Point set a production record with output of 3.2 million short tons of steel. In addition, the company exceeded the design capacity (2.9 million tons) of its two-strand continuous slab caster.<sup>7</sup>

Cyclops Industries Inc. purchased Eastern Stainless Steel Co. in Baltimore for a reported \$58 million.<sup>8</sup> Cyclops continued production of stainless steel plate and expected to restart sheet op-

erations in 1989. The company also planned to increase output of stainless hot rolled coils for processing at its Coshocton, OH, plant.

<sup>1</sup> State Mineral Officer, Bureau of Mines, Pittsburgh, PA.

<sup>2</sup> American Metal Market. Increased Product Prices Offset Ferrous Costs: N. J. Steel. V. 96, No. 202, Oct. 14, 1988, p. 10.

<sup>3</sup> Frederick (MD.) Post. Coplay Expansion Decision Postponed. Aug. 25, 1988, p. 4.

<sup>4</sup> The Daily Record (Baltimore, MD). Old Bricks Make New Business. Sept. 20, 1988, Sec. C, p. 3.

<sup>5</sup> Maryland Port Administration. Foreign Commerce Statistical Report 1988. World Trade Center, Baltimore, MD 21202-3041, 267 pp.

<sup>6</sup> American Metal Market. Aluminum Ingot Capacity. V. 96, No. 249, Dec. 23, 1988, p. 8.

<sup>7</sup> ——. Northeast Steel Production Climbs Almost 3.2%. V. 97, No. 18, Jan. 20, 1988, p. 8.

<sup>8</sup> ——. Eastmet's Eastern Stainless Bought by Cyclops for \$58M. V. 96, No. 150, Aug. 2, 1988, p. 16.

TABLE 4  
**PRINCIPAL PRODUCERS**

Commodity and company	Address	Type of activity	County
<b>Aluminum:</b>			
Eastalco Aluminum Co. (Alumax Inc.)	5601 Manor Woods Rd. Frederick, MD 21701	Reduction plant	Frederick.
<b>Cement:</b>			
<b>Portland:</b>			
Coplay Cement Co., (Société des Ciments Français)	4120 Buckeystown Pike Lime Kiln, Box D Frederick, MD 21701	Quarry and plant	Do.
<b>Portland and masonry:</b>			
Independent Cement Corp. (St. Lawrence Cement Inc.)	Box 650 Hagerstown, MD 21740	do.	Washington.
Lehigh Portland Cement Co. <sup>1</sup> (Heidelberger Zement AG)	Box L Union Bridge, MD 21791	do.	Carroll.
<b>Slag:</b>			
Blue Circle—Atlantic (Blue Circle Industries PLC)	Box 6687 Sparrows Point, MD 21219	Plant (slag cement)	Harford.
<b>Clays:</b>			
<b>Common clay and shale:</b>			
Baltimore Brick Co.	110 West Rd. Baltimore, MD 21204	Pit and plants	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. & Rt. 68N Box 160 Williamsport, MD 21795	Pit and plant	Washington.
<b>Copper:</b>			
Cox Creek Refining Co.	Box 3407 Baltimore, MD 21226	Refinery	Anne Arundel.
<b>Gypsum:</b>			
<b>Byproduct:</b>			
SCM Chemicals Inc. <sup>2</sup>	3901 Glidden Rd. Baltimore, MD 21226	Plant	Baltimore.
<b>Calcined:</b>			
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.
<b>Iron and steel:</b>			
Bethlehem Steel Corp.	Sparrows Point, MD 21219	Mill (integrated)	Do.
<b>Peat:</b>			
Garrett County Peat Products	R.F.D. 1, Box 91 Accident, MD 21520	Bog and plant	Garrett.
<b>Sand and gravel:</b>			
<b>Construction:</b>			
Charles County Sand & Gravel Inc.	Box 322 Waldorf, MD 20601	Pits and plants	Anne Arundel, Charles, St. Mary's.
Florida Rock Industries Inc.	Box 273 Leonardtown, MD 20670	Pits	Harford and St. Mary's.

See footnotes at end of table.

TABLE 4—Continued  
**PRINCIPAL PRODUCERS**

Commodity and company	Address	Type of activity	County
Genstar Stone Products Co.	1000 Beaverdam Rd. Cockeysville, MD 21030	Pits and plants	Baltimore.
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.
<b>Industrial:</b>			
Harford Sands Inc.	Box 25 40 Fort Hoyle Rd. Joppa, MD 21085	Pits	Harford.
<b>Stone:</b>			
<b>Crushed:</b>			
The Arundel Corp. <sup>3</sup>	110 West Rd. Baltimore, MD 21204	Quarries and plants	Baltimore, Frederick, Harford.
Genstar Stone Products Inc. <sup>3</sup>	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.
<b>Dimension:</b>			
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.
<b>Vermiculite (exfoliated):</b>			
W. R. Grace & Co., Construction Products Div.	12340 Conway Rd. Beltsville, MD 20705	Plant	Prince Georges.

<sup>1</sup> Also crushed stone.

<sup>2</sup> Also titanium dioxide (pigments).

<sup>3</sup> 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

### STATE

Environment Department  
Martin Walsh  
2500 Broening Highway  
Baltimore, MD 21224

Natural Resources Department  
Dr. Torrey C. Brown, Secretary  
Tawes State Office Bldg.  
Annapolis, MD 21401

Bureau of Mines  
Anthony Abar, Director  
Drawer C  
Westernport, MD 21562

Geological Survey  
Dr. Kenneth N. Weaver, Director  
2300 St. Paul St.  
Baltimore, MD 21218

Water Resources Administration  
Catherine Piper Stevenson, Director  
Tawes State Office Bldg.  
Annapolis, MD 21401

