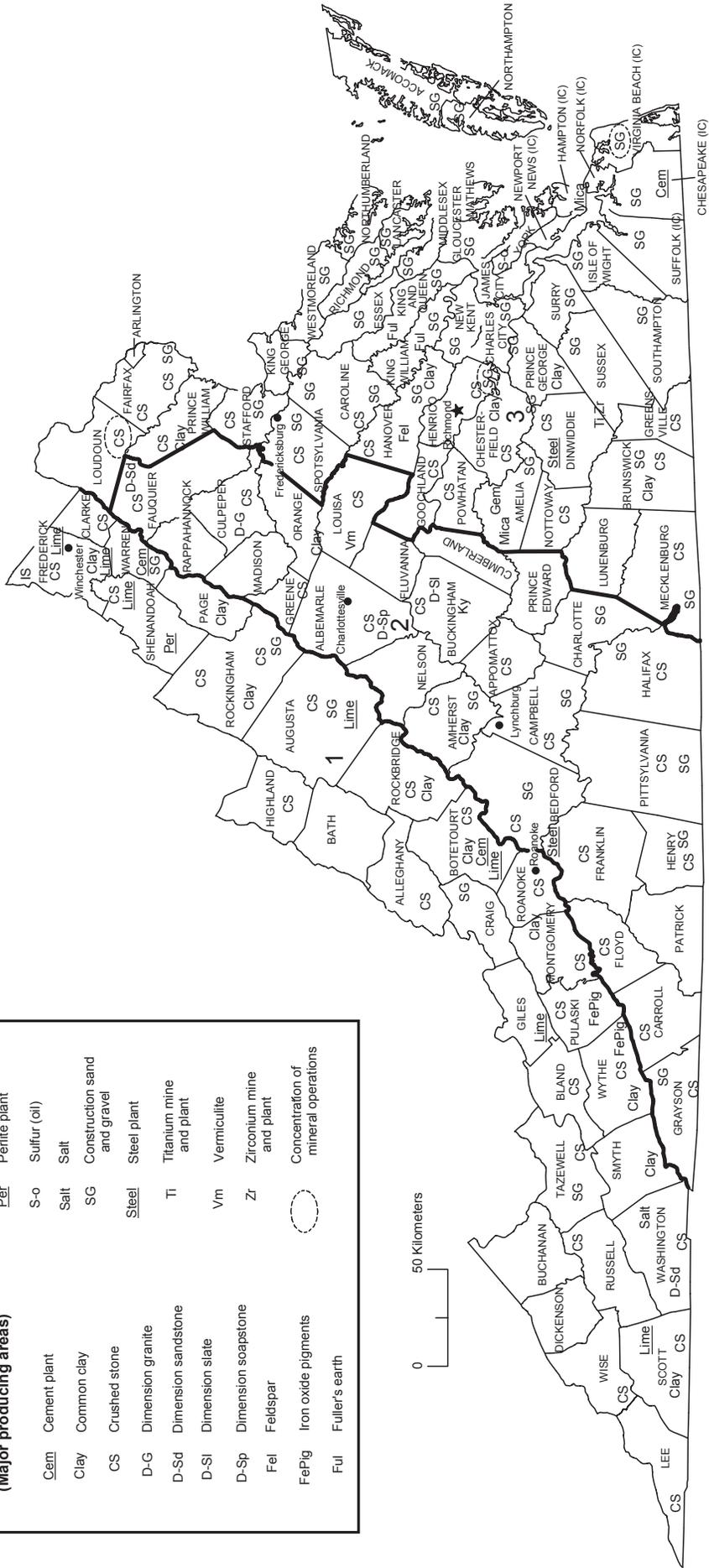


VIRGINIA

LEGEND

—	County boundary	Gem	Gemstones
(IC)	Independent City	IS	Industrial sand
★	Capital	Ky	Kyanite
•	City	Lime	Lime plant
1	Crushed stone/sand and gravel districts	Mica	Mica
		Mica	Mica plant
		Per	Perlite plant
		S-o	Sulfur (oil)
		Salt	Salt
		SG	Construction sand and gravel
		Steel	Steel plant
		Ti	Titanium mine and plant
		Vm	Vermiculite
		Zr	Zirconium mine and plant
		Fel	Feldspar
		FePig	Iron oxide pigments
		Ful	Fuller's earth
			Concentration of mineral operations

MINERAL SYMBOLS (Major producing areas)



THE MINERAL INDUSTRY OF VIRGINIA

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

In 2004, Virginia's nonfuel raw mineral production was valued¹ at \$894 million, based upon annual U.S. Geological Survey (USGS) data. This was a nearly 14% increase from the State's total nonfuel mineral value for 2003,² which was up 13.9% from 2002. Virginia was 19th in rank (18th in 2003) among the 50 States in total nonfuel raw mineral production value and accounted for nearly 2% of the U.S. total value.

Crushed stone was, by value, Virginia's leading raw nonfuel mineral, accounting for about 61% of the State's total nonfuel mineral value. From 1990 through 2004, the State produced nearly 894 million metric tons (Mt) of crushed stone, or an average of nearly 60 million metric tons per year (Mt/yr) during that 15-year period. During the past 5 years, on average, Virginia's quarries have produced about 67 Mt/yr of crushed stone. Cement (masonry and portland) was the second leading nonfuel mineral commodity, followed by construction sand and gravel and lime. These four mineral commodities represented about 85% of the State's total nonfuel mineral value.

In 2004, increases in the production of crushed stone (value up \$65 million), zirconium mineral concentrates (zircon), cement, construction sand and gravel (value up \$10.3 million), and lime (listed in descending order of change) accounted for most of Virginia's increase in total nonfuel mineral value. Smaller yet significant increases in value also took place in titanium mineral concentrates (ilmenite), common clays, and fuller's earth. The largest decreases in value were those of industrial sand and gravel and crude vermiculite.

In 2003, increases in the values of crushed stone (up \$86 million), industrial sand and gravel, and construction sand and gravel (up \$5.5 million) accounted for most of the State's increase in value for the year, further supported by smaller yet significant increases in the values of lime, fuller's earth, and ilmenite (descending order of change). These were offset in part by decreases in the values of cement, zirconium concentrates, and common clays. All other changes in value were significantly smaller and inconsequential to the net result (table 1).

In 2004, Virginia continued to be the only State to mine and produce kyanite. It also continued to be: 2d of 2 zirconium-producing States, 2 ilmenite-producing States, and 2 crude vermiculite-producing States; 2d in the quantities of feldspar produced; 4th in fuller's earth and iron oxide pigments; and 10th in lime. The State rose to 7th from 9th in the production of crushed stone, to 10th from 11th in common clays, and was a producer of significant quantities of cement, construction sand and gravel, and industrial sand and gravel (descending order of value). Although the only producing kyanite mine and calcined kyanite (mullite) facilities in the United States were in Virginia, synthetic mullite, which, in USGS terminology is a calcined bauxitic kaolin, was produced in one other State. About 90% of the U.S. kyanite and mullite output was used in refractories for the smelting and processing of a variety of metals and in glass and high-temperature ceramics manufacturing.

The following narrative information was provided by the Virginia Division of Mineral Resources³ (VDMR) of the Commonwealth of Virginia's Department of Mines, Minerals and Energy (DMME).

Commodity Review

Industrial Minerals

Clay.—Two operators in Virginia produced fuller's earth for cat box litter and industrial absorbents. Bennett Mineral Co., King and Queen County, and Nestlé Purina Petcare, King William County, extracted montmorillonite clay from the Tertiary-age Calvert Formation. Although the combined total of the companies' production was down more than 15% in 2004, the total value rose by about 5%.

Crushed Stone.—Crushed stone production was up in 40 of 52 producing counties in 2004. Total statewide production increased by more than 8% to nearly 73 Mt. Vulcan Construction Materials LP remained the leading producer of crushed stone in the State, reporting a total of 22 Mt in 2004. Vulcan's Manassas Quarry in Prince William County was the single largest producing operation, reporting approximately 3.9 Mt for the year. Loudoun County led the State in crushed stone production, with more than 9 Mt (18% more than 2003). Rockydale Quarries Corp. was making preparations for a 14-hectare (ha) expansion of its crushed stone operation in the City of Roanoke that could extend the life of its quarry by 20 to 40 years and place the company in position to serve the proposed construction of Interstate 73. As part of the expansion, the company will set aside 4 ha for conservation.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the 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 2004 USGS mineral production data published in this chapter are those available as of December 2005. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2003 may differ from the Minerals Yearbook, Area Reports: Domestic 2003, Volume II, owing to the revision of preliminary 2003 to final 2003 data. Data and rankings for 2004 are considered to be final and are not likely to change significantly.

³Amy K. Gilmer, Geologist Specialist with the Virginia Division of Mineral Resources, authored the text of the State mineral industry information provided by that State agency.

Iron Oxide Pigments.—Production of iron oxide pigments remained level from 2003 through 2004. Hoover Color Corp. produced pigments from one pit in residuum over the Shady Dolomite in Pulaski County. One operator resumed production in Goochland County, where Minerals and Chemicals Corp. produced ochrous oxides from soil developed on amphibolitic gneiss.

Kyanite.—Kyanite Mining Corp. is currently the only U.S. producer and reportedly the world's largest producer of kyanite and calcined kyanite (mullite). Two pits are operated simultaneously at its Willis Mountain—East Ridge complex in Buckingham County. A portion of the kyanite was trucked 13 kilometers (km) to a separate facility in Dillwyn where it is calcined to produce mullite. The company recently installed a wireless communication system that will link all processing plants with the lab and office. The system allowed real-time centralized monitoring of mining, processing, sales, and shipping activities, as well as pollution-control devices.

Salt.—In Washington County, the Virginia Gas Co. continued to expand the gas storage capacity of an old brine field in Mississippian age evaporite deposits. Salt is extracted from pumped water in an onsite evaporation plant. Salt production was up 15% to about 62,000 metric tons per year.

Titanium and Zirconium.—In 2004, Virginia was one of three States mining titanium and zircon sands. Iluka Resources Inc.'s Old Hickory Mine, in Dinwiddie County, produced ilmenite and zircon concentrates from Tertiary-age beach sands. Production has increased steadily since a major expansion of the operation in 2002. In 2004, production of the company's heavy-mineral concentrates was 337,000 metric tons (t), an increase of 39% more than 2003.

Vermiculite.—Virginia Vermiculite, LLC in Louisa County is the Nation's second ranking producer of vermiculite. The soft ore is excavated with earth moving equipment and processed onsite. Production was estimated to be about 32,000 t for 2004. A new processing plant, currently under construction, will replace the existing milling, washing, drying, and screening facility in the second half of 2005.

Metal

Gold.—Only one metal mine permit has been active in Virginia in recent years, the Gold Crown Mining Company's Kentuck Mine, a small open pit gold mine in Pittsylvania County. Although exploratory work was carried out, no substantial production has ever been reported. Reclamation of the site by the operator will be completed in early 2005.

Government Programs

The VDMR served as the Commonwealth's geological survey. During 2004, the Division continued its geological and mineral resources programs, as well as cooperative programs with Federal agencies in coal research, geologic mapping, and mine safety. With cooperative funding from the USGS's STATEMAP program, geologic mapping and digital map compilation were being focused along the Interstate 81 (I-81) corridor, a nearly 500-km (300-statute mile) highway slated for expansion. The VDMR has been an active participant in the STATEMAP program. STATEMAP is a component of the congressionally mandated National Cooperative Geological Mapping Program (NCGMP), which distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: FEDMAP, which funds Federal geologic mapping projects; STATEMAP, which is a matching-funds grant program with State geological surveys; and EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers.

New work on the Mineral Resources of Virginia project, a survey of active and abandoned mine sites across the State, was also being focused along I-81. In a major coal mine safety initiative, DMME sought mine maps from coal companies, State and Federal agencies, consultants, and the general public. The maps were being scanned, cataloged in a database, and georeferenced in a Geographic Information System (GIS). This work was supported with a grant from the Mine Safety and Health Administration. Two coal resource studies are also underway, with cooperative funding from the USGS.

Early in 2004, DMR published the Geologic Map of Virginia on CD-ROM. The data files included a detailed raster image of the complete map, vector and polygon files in an industry-standard GIS format, and a searchable version of the expanded explanation, which contains descriptions of every map unit and literature reference. The Division also produced several open file reports, including digital and hard-copy geologic maps along the I-81 corridor and a geostatistical study of coal resources in Buchanan County.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN VIRGINIA^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2002		2003		2004	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays:						
Bentonite	--	--	--	--	5	W
Common	827	3,320	958	2,530	994	4,640
Kyanite ⁶	90	13,400	90	13,400	90	13,400
Sand and gravel, construction	10,500	60,000	11,300	65,500	12,800	75,800
Stone:						
Crushed	58,900	395,000	66,500	481,000	72,500	546,000
Dimension	6	651	6	651	5	594
Combine values of cement, clays (fuller's earth), feldspar, gemstones, iron oxide pigments (crude), lime, sand and gravel (industrial), talc (crude), titanium concentrates (ilmenite), vermiculite (crude), zirconium concentrates, and value indicated by symbol W	XX	218,000	XX	223,000	XX	253,000
Total	XX	690,000	XX	786,000	XX	894,000

⁶Estimated. W Withheld to avoid disclosing company proprietary data. Withheld value included in "Combined value" data. XX not applicable.

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

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

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

Kind	2002				2003				2004			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone ²	46	15,700 ^r	\$91,400 ^r	\$5.84 ^r	45	18,000	\$123,000	\$6.84	44	19,100	\$137,000	\$7.16
Dolomite	7 ^r	2,640 ^r	16,000 ^r	6.07 ^r	6	3,970	22,600	5.71	6	3,440	19,700	5.73
Marble	--	--	--	--	--	--	--	--	1	286	2,610	9.13
Granite	31 ^r	24,900 ^r	180,000 ^r	7.20 ^r	26	26,500	201,000	7.59	27	30,200	237,000	7.84
Sandstone and quartzite	5	970	3,750	3.87	5	1,450	10,100	6.97	5	2,040	14,300	7.02
Traprock	10	13,600	96,800	7.14	10	15,900	117,000	7.36	10	16,700	128,000	7.67
Slate	1	W	W	5.62	1	W	W	22.71	1	W	W	22.71
Miscellaneous stone	2 ^r	W	W	6.36 ^r	2	W	W	6.38	2	W	W	6.92
Total or average	XX	58,900	395,000	6.70	XX	66,500	481,000	7.23	XX	72,500	546,000	7.54

¹Revised. W Withheld to avoid disclosing company proprietary data; included in "Total or average." XX Not applicable. -- Zero.

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

²Includes limestone-dolomite reported with no distinction between the two.

TABLE 3a
 VIRGINIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Macadam	W	W	\$4.92
Riprap and jetty stone	1,390	\$14,800	10.65
Filter stone	1,270	10,600	8.29
Other coarse aggregates	1,630	10,000	6.15
Total or average	4,300	35,400	8.24
Coarse aggregate, graded:			
Concrete aggregate, coarse	11,300	91,700	8.08
Bituminous aggregate, coarse	2,800	29,100	10.39
Bituminous surface-treatment aggregate	2,440	20,500	8.42
Railroad ballast	1,310	9,380	7.15
Other graded coarse aggregates	2,260	19,200	8.50
Total or average	20,200	170,000	8.43
Fine aggregate (-¾ inch):			
Stone sand, concrete	824	7,070	8.58
Stone sand, bituminous mix or seal	1,050	9,210	8.78
Screening, undesignated	2,490	14,900	5.99
Other fine aggregate	1,640	11,400	6.95
Total or average	6,010	42,600	7.10
Coarse and fine aggregates:			
Graded road base or subbase	12,600	85,600	6.77
Unpaved road surfacing	1,310	10,400	7.92
Terrazzo and exposed aggregate	(2)	(2)	8.43
Crusher run or fill or waste	2,850	16,700	5.85
Other coarse and fine aggregates	3,420	22,400	6.55
Total or average	20,200	135,000	6.68
Other construction materials	469	1,980	4.21
Agricultural:			
Agricultural limestone	659	4,320	6.55
Poultry grit and mineral food	188	1,990	10.58
Other agricultural uses	52	356	6.85
Total or average	899	6,670	7.42
Chemical and metallurgical:			
Cement manufacture	(3)	(3)	3.31
Lime manufacture	(3)	(3)	6.48
Flux stone	(3)	(3)	8.82
Sulfur oxide removal	(3)	(3)	10.75
Special:			
Mine dusting or acid water treatment	(3)	(3)	6.70
Other fillers and extenders	(3)	(3)	12.03
Other miscellaneous uses:			
Lightweight aggregate (slate)	(3)	(3)	22.71
Abrasives	(3)	(3)	10.96
Other specified uses not listed	266	2,657	9.99
Unspecified:⁴			
Reported	6,780	43,400	6.41
Estimated	5,100	30,000	5.84
Total or average	11,800	73,000	6.17
Grand total or average	66,500	481,000	7.23

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

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 coarse and fine aggregates."

³Withheld to avoid disclosing company proprietary data; included in "Total or average."

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

TABLE 3b
 VIRGINIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1½ inch):			
Macadam	W	W	\$4.54
Riprap and jetty stone	1,080	\$13,200	12.22
Filter stone	1,320	11,500	8.69
Other coarse aggregates	1,430	9,820	6.85
Total or average	3,840	34,500	9.00
Coarse aggregate, graded:			
Concrete aggregate, coarse	9,620	81,800	8.50
Bituminous aggregate, coarse	2,050	26,800	13.10
Bituminous surface-treatment aggregate	2,690	23,200	8.66
Railroad ballast	1,020	7,620	7.47
Other graded coarse aggregates	2,550	21,700	8.53
Total or average	17,900	161,000	9.00
Fine aggregate (-¾ inch):			
Stone sand, concrete	834	7,700	9.23
Stone sand, bituminous mix or seal	533	4,690	8.80
Screening, undesignated	2,780	17,700	6.36
Other fine aggregate	1,350	8,790	6.53
Total or average	5,490	38,900	7.08
Coarse and fine aggregates:			
Graded road base or subbase	11,100	79,800	7.20
Unpaved road surfacing	1,650	13,500	8.16
Terrazzo and exposed aggregate	(2)	(2)	10.45
Crusher run or fill or waste	1,990	12,300	6.17
Other coarse and fine aggregates	1,970	13,200	6.68
Total or average	16,700	119,000	7.11
Other construction materials	20	78	3.90
Agricultural:			
Agricultural limestone	332	1,850	5.58
Poultry grit and mineral food	(3)	(3)	12.10
Other agricultural uses	405	4,520	11.16
Total or average	737	6,370	8.64
Chemical and metallurgical:			
Cement manufacture	(4)	(4)	3.31
Lime manufacture	(4)	(4)	7.99
Flux stone	(4)	(4)	15.44
Chemical stone	(4)	(4)	11.24
Sulfur oxide removal	(4)	(4)	7.11
Total or average	2,280	11,400	4.99
Special:			
Mine dusting or acid water treatment	(4)	(4)	7.06
Asphalt fillers or extenders	(4)	(4)	12.54
Other fillers and extenders	(4)	(4)	11.63
Total or average	103	1,180	11.45
Other miscellaneous uses and other specified uses not listed	2	312	156.00
Unspecified:⁵			
Reported	18,300	125,000	6.85
Estimated	7,100	48,000	6.79
Total or average	25,400	173,000	6.84
Grand total or average	72,500	546,000	7.54

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

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 coarse and fine aggregates."

³Withheld to avoid disclosing company proprietary data; included with "Other agricultural uses."

⁴Withheld to avoid disclosing company proprietary data; included in "Total or average."

⁵Reported and estimated production without a breakdown by end use.

TABLE 4a
 VIRGINIA : CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2003, 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 (+1½ inch) ²	W	W	W	W	2,220	21,800
Coarse aggregate, graded ³	3,400	31,200	2,970	25,600	13,700	112,000
Fine aggregate (-¾ inch) ⁴	1,950	14,300	1,200	9,780	2,860	18,600
Coarse and fine aggregate ⁵	4,350	26,700	3,670	23,900	12,300	85,100
Other construction materials	198	805	52	320	219	850
Agricultural ⁶	785	5,570	W	W	W	W
Chemical and metallurgical ⁷	W	W	--	--	--	--
Special ⁸	W	W	--	--	W	W
Other miscellaneous uses ⁹	W	W	W	W	W	W
Unspecified: ¹⁰						
Reported	403	2,430	981	6,390	5,390	34,600
Estimated	4,400	26,000	640	4,000	--	--
Total	19,500	128,000	10,300	79,400	36,700	274,000

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

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

²Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

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

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

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

⁶Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

⁷Includes cement manufacture, lime manufacture, flux stone, and sulfur oxide removal.

⁸Includes mine dusting or acid water treatment and other fillers or extenders.

⁹Includes lightweight aggregate (slate), abrasives, and other specified uses not listed.

¹⁰Reported and estimated production without a breakdown by end use.

TABLE 4b
 VIRGINIA : CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2004, 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 (+1½ inch) ²	W	W	W	W	W	W
Coarse aggregate, graded ³	3,270	33,400	W	W	W	W
Fine aggregate (-¾ inch) ⁴	1,660	11,700	W	W	W	W
Coarse and fine aggregate ⁵	2,890	18,100	W	W	W	W
Other construction materials	15	39	5	39	--	--
Agricultural ⁶	W	W	W	W	W	W
Chemical and metallurgical ⁷	2,280	11,400	--	--	--	--
Special ⁸	103	1,180	--	--	--	--
Other miscellaneous uses	--	--	(9)	(9)	2	312
Unspecified: ¹⁰						
Reported	1,660	10,000	5,860	43,000	10,700	72,100
Estimated	6,300	40,000	770	8,200	--	--
Total	20,200	139,000	11,600	91,900	40,700	315,000

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

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

²Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

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

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

⁵Includes crusher run or fill or waste, graded road base or subbase, terrazzo and exposed aggregate, unpaved road surfacing, and other coarse and fine aggregates.

⁶Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.

⁷Includes cement manufacture, chemical stone, lime manufacture, flux stone, and sulfur oxide removal.

⁸Includes asphalt fillers or extenders, mine dusting or acid water treatment and other fillers or extenders.

⁹Less than ½ unit.

¹⁰Reported and estimated production without a breakdown by end use.

TABLE 5a
 VIRGINIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	4,420	\$33,500	\$7.57
Concrete products (blocks, bricks, pipe, decorative, etc.) ²	255	2,060	8.07
Asphaltic concrete aggregates and other bituminous mixtures	1,000	5,440	5.44
Road base and coverings	546	2,790	5.11
Fill	888	2,910	3.28
Other miscellaneous uses ³	134	784	5.85
Unspecified: ⁴			
Reported	1,800	8,100	4.51
Estimated	2,300	9,900	4.30
Total or average	11,300	65,500	5.78

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

²Includes plaster and gunite sands.

³Includes roofing granules, and snow and ice control.

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

TABLE 5b
 VIRGINIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate and concrete products ²	5,540	\$43,400	\$7.85
Asphaltic concrete aggregates and other bituminous mixtures	855	4,560	5.33
Road base and coverings	420	2,410	5.74
Fill	1,950	5,990	3.08
Snow and ice control	66	387	5.83
Other miscellaneous uses ³	71	507	7.09
Unspecified: ⁴			
Reported	2,010	9,630	4.80
Estimated	1,900	8,900	4.66
Total or average	12,800	75,800	5.92

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

²Includes plaster and gunite sands.

³Includes roofing granules.

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

TABLE 6a
 VIRGINIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2003,
 BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ²	W	W	W	W	4,470	33,700
Asphaltic concrete aggregates and road base materials	W	W	W	W	1,240	5,970
Fill	26	193	47	345	815	2,370
Other miscellaneous uses ³	486	3,990	61	367	104	567
Unspecified: ⁴						
Reported	40	276	9	49	1,750	7,770
Estimated	300	1,300	700	3,600	1,300	4,900
Total	843	5,790	864	4,390	9,630	55,300

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

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

²Includes plaster and gunite sands.

³Includes roofing granules and snow and ice control.

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

TABLE 6b
 VIRGINIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2004,
 BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	W	W	W	W	5,290	41,200
Asphaltic concrete aggregates and other bituminous mixtures	W	W	W	W	526	2,160
Road base and coverings	--	--	--	--	420	2,410
Fill	2	10	1	5	1,940	5,970
Other miscellaneous uses ³	433	3,700	153	1,010	121	801
Unspecified: ⁴						
Reported	35	249	--	--	1,970	9,380
Estimated	330	1,700	740	3,800	830	3,300
Total	800	5,670	897	4,860	11,100	65,300

W Withheld to avoid disclosing company proprietary data; included in "Other miscellaneous uses." -- Zero.

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

²Includes plaster and gunitite sands.

³Includes roofing granules and snow and ice control.

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