

THE MINERAL INDUSTRY OF ALABAMA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Geological Survey of Alabama for collecting information on all nonfuel minerals.

In 2000, the estimated value¹ of nonfuel mineral production for Alabama was \$1.07 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 7.8% increase from that of 1999,² following a 1.7% decrease from 1998 to 1999. The State rose in rank to 13th from 16th among the 50 States in total nonfuel mineral production value, of which Alabama accounted for more than 2.5% of the U.S. total.

The top four nonfuel mineral commodities produced in Alabama in 2000 were, in descending order of value, cement (portland and masonry combined), crushed stone, lime, and construction sand and gravel, accounting for 94% of the State's total production value. The combined value of crushed stone and cement (portland and masonry) represented nearly 76% of the total. Of the State's overall increase in value from 1999 to 2000, about 73% of it resulted from the increases in crushed stone and portland cement of \$28 million each and about a \$5 million increase in lime (table 1). More moderate increases (in descending order of change) occurred in construction sand and gravel, fire clay, kaolin, and masonry cement. All other nonfuel minerals had slight increases in value or remained the same. In 1999, the State's decrease in value resulted mostly from the drops in crushed stone, which was down \$25 million; lime, down \$5 million; and portland cement, down \$4 million. These decreases were offset somewhat by masonry cement, which was up \$8.5 million, construction sand and gravel, up \$4.8 million, plus relatively smaller increases in kaolin and salt.

Nonfuel mineral production in Alabama consisted entirely of industrial minerals. Compared with USGS estimates of the quantities produced in the other 49 States in 2000, Alabama was one of the top four masonry cement-producing States, remained second in lime and common clays, third in bentonite, fourth of six iron oxide pigment-producing States, and sixth in portland cement. While the State rose to second from third in kaolin production and to seventh from eighth in salt, Alabama was

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or 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 2000 USGS mineral production data published in this chapter are preliminary estimates as of July 2001 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. A telephone listing for the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

²Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to the revision of preliminary 1999 to final 1999 data. Data for 2000 are preliminary and are expected to change; related rankings may also be subject to change.

third of five fire clay-producing States because production of those materials resumed in 2000.

No metals were mined in the State. All metal production in the State, especially that of raw steel, was the result of processing materials acquired from other domestic and foreign sources. Bauxite is no longer mined in Alabama to produce primary aluminum. Production of a natural mixture of bauxite and bauxitic clay with a very low iron oxide content has been reported to the USGS since 1995 as kaolin; it is primarily used to make refractory products.

The Geological Survey of Alabama³ provided the narrative information that follows. Continued demand is expected for industrial minerals in Alabama, especially for those near urban areas where the need for construction materials is greatest. Blue Circle Cement Co. continued its \$230 million investment in building a new plant at its operation in Shelby County. The National Cement Co., Birmingham, announced plans to invest more than \$180 million in its Ragland plant in St. Clair County during the next 5 years to improve and update its entire operation. The largest beach replenishment project along coastal Alabama was initiated in 2000 when the City of Gulf Shores began pumping more than 1.1 million cubic meters of offshore sand deposits from the Gulf of Mexico. The sand will be spread along a 5-kilometer length of beach in Baldwin County (Mitchell, 2000).

Mineral exploration in Alabama has continued to focus on industrial minerals with several large expansions in the State. The Alabama Development Office reported recent capital investment in expanding industrial mineral operations to be more than \$87 million. This included crushed stone, brick clay, calcium carbonate, lime, and silicon (Alabama Development Office, 2000). A record production of crushed stone (dolomite, granite, limestone, marble, quartzite, and sandstone) in Alabama was reported for 2000. Production of crushed stone has trended upward since 1994 and likely will continue to increase in the future.

The U.S. Geological Survey's National Cooperative Geologic Mapping Program has significantly enhanced the Geological Survey of Alabama's ability to produce new 1:24,000-scale geologic maps in Alabama. Priority areas mapped or currently being mapped include the Birmingham-Shelby County area, Anniston area, Birmingham-Tuscaloosa corridor, north Birmingham growth corridor, the new Honda auto plant area in Talladega County, and the Huntsville-Decatur area. This new geologic map information is being used in a variety of ways in these rapidly urbanizing parts of the State. For example, geologic mapping aids in the identification of supplies of industrial mineral resources (crushed stone, dimension stone, gravel, or sand) that support construction and infrastructure development. In addition, the information will be incorporated

³Lewis S. Dean, a geologist at the Geological Survey of Alabama, authored the text of the State mineral industry information provided by that agency.

into decisionmaking on a variety of issues that include protecting ground water, locating new municipal water wells, siting waste-disposal facilities and will address a broad spectrum of land-use concerns.

The Geological Survey of Alabama published its annual minerals industry summary, which provides details of the occurrence, mining history, and general economics of specific mineral resources in Alabama. More information on geology, hydrology, and environmental considerations related to these

resources is available from the Geological Survey of Alabama at <http://www.gsa.state.al.us/>.

References Cited

- Alabama Development Office, 2000, Alabama Development Office 1999 Annual Report: Montgomery, AL, Alabama Development Office, 30 p.
 Mitchell, Garry, 2000, Gulf Shores plan for beaches seen as "buying time": The Birmingham News, May 30, p. 4B.

TABLE 1
 NONFUEL RAW MINERAL PRODUCTION IN ALABAMA 1/ 2/

(Thousand metric tons and thousand dollars)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	371	39,100 e/	429	47,600 e/	442	49,100 e/
Portland	4,310	353,000 e/	4,300	349,000 e/	4,700	377,000 e/
Clays, common	2,400	23,100	2,320	23,700	2,320	23,700
Gemstones	NA	76	NA	76	NA	77
Lime	1,960	119,000	1,930	114,000	2,030	119,000
Sand and gravel:						
Construction	14,400	64,100	15,500	68,900	15,900	72,000
Industrial	757	9,910	687	9,780	687	9,780
Stone:						
Crushed	48,900	383,000	49,400	358,000	52,000	386,000
Dimension metric tons	W	W	7,210	2,380	7,490	2,390
Combined values of clays [bentonite, fire (1998, 2000), kaolin], iron oxide pigments (crude), salt, stone [dimension limestone and sandstone (1998)]	XX	18,500	XX	20,400	XX	25,600
Total	XX	1,010,000	XX	993,000	XX	1,070,000

e/ Estimated. p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; included in "Total".

XX Not applicable.

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

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

TABLE 2
 ALABAMA: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1998				1999			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	52 r/	42,700 r/	\$284,000 r/	\$6.66	54	41,400	\$233,000	\$5.62
Dolomite	3	W	W	5.54	3	W	W	8.11
Marble	4	2,240	76,300	34.09	4	3,450	91,100	26.42
Sandstone	3	W	W	5.50	5	1,000	6,220	6.14
Granite	4 r/	W	W	5.51	5	W	W	7.38
Slate	1	W	W	5.79	1	W	W	5.83
Miscellaneous stone	1	67	477	7.12	3	57	401	7.04
Total or average	XX	48,900	383,000	7.83	XX	49,400	358,000	7.24

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

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

TABLE 3
ALABAMA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 1999, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 ½ inch):			
Riprap and jetty stone	309	\$2,260	\$7.32
Filter stone	W	W	4.92
Other coarse aggregate	699	5,090	7.28
Total or average	1,010	7,350	7.29
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,770	7,980	4.50
Bituminous aggregate, coarse	1,110	6,870	6.19
Bituminous surface-treatment aggregate	108	543	5.03
Other graded coarse aggregate	7,500	46,100	6.13
Total or average	10,500	61,500	5.85
Fine aggregate (-3/8 inch):			
Stone sand, concrete	W	W	5.95
Stone sand, bituminous mix or seal	103	611	5.93
Screening, undesignated	197	1,120	5.69
Other fine aggregate	2,460	13,400	5.45
Total or average	2,760	15,200	5.49
Coarse and fine aggregates:			
Graded road base or subbase	822	4,670	5.68
Crusher run or fill or waste	1,250	3,700	2.96
Other coarse and fine aggregates	5,120	32,400	6.33
Total or average	7,120	40,800	5.67
Other construction materials	453	2,750	6.07
Agricultural, agricultural limestone	(3/)	(3/)	6.00
Chemical and metallurgical:			
Cement manufacture	(3/)	(3/)	3.43
Lime manufacture	(3/)	(3/)	3.48
Flux stone	(3/)	(3/)	6.08
Special:			
Mine dusting or acid water treatment	(3/)	(3/)	16.71
Whiting or whiting substitute	(3/)	(3/)	49.51
Other fillers or extenders	(3/)	(3/)	27.55
Unspecified: 4/			
Reported	13,300	97,200	7.29
Estimated	3,300	19,000	5.87
Total or average	16,600	116,000	7.01
Grand total or average	49,400	358,000	7.24

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

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

2/ Includes dolomite, granite, limestone, limestone-dolomite, marble, miscellaneous stone, sandstone, and slate.

3/ Withheld to avoid disclosing company proprietary data, included in "Grand total."

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

TABLE 4
ALABAMA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1999,
BY USE AND DISTRICT 1/

Use	District 1		District 2		District 3	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Construction:						
Coarse aggregate (+1-1/2 inch) 2/	W	W	W	W	W	W
Coarse aggregate, graded 3/	W	W	5,830	\$31,800	W	W
Fine aggregate (-3/8 inch) 4/	W	W	W	W	W	W
Coarse and fine aggregate 5/	W	W	3,420	16,300	W	W
Other construction materials	361	\$2,190	92	558	--	--
Agricultural 6/	W	W	W	W	W	W
Chemical and metallurgical	--	--	(7/)	(7/)	(7/)	(7/)
Special 8/	W	W	W	W	--	--
Unspecified: 9/						
Reported	1,470	11,300	10,200	72,100	1,660	\$13,700
Estimated	1,100	6,800	2,100	12,000	18	130
Total	12,100	72,900	33,100	253,000	4,150	32,000

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

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

2/ Includes filter stone, riprap and jetty stone, and other coarse aggregate.

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

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

5/ Includes crusher run (select material or fill), graded road base or subbase, and other coarse and fine aggregate.

6/ Includes agricultural limestone.

7/ Withheld to avoid disclosing company proprietary data; included in "Total."

8/ Includes mine dusting or acid water treatment, whiting or whiting substitute, and other fillers or extenders.

9/ Reported and estimated production without a breakdown by end use.

TABLE 5
ALABAMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand) 2/	3,280	\$12,200	\$3.72
Concrete products (blocks, bricks, pipe, decorative, etc.)	230	1,670	7.28
Asphaltic concrete aggregates and other bituminous mixtures	689	3,620	5.26
Road base and coverings	577	2,050	3.55
Road stabilization (lime)	39	192	4.92
Fill	256	284	1.11
Other miscellaneous uses 3/	24	55	2.29
Unspecified: 4/			
Reported	4,870	22,700	4.66
Estimated	5,500	26,000	4.73
Total or average	15,500	68,900	4.45

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

2/ Includes plaster and gunite sands.

3/ Includes snow and ice control.

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

TABLE 6
ALABAMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,
BY USE AND DISTRICT 1/

(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	2,800	10,300
Asphaltic concrete aggregates and other bituminous mixtures	W	W	W	W	545	2,920
Road base and coverings	W	W	W	W	497	1,750
Road and other stabilization (lime)	--	--	--	--	39	192
Other miscellaneous uses 3/	--	--	188	211	92	128
Unspecified: 4/						
Reported	540	2,640	1,200	4,400	3,140	15,700
Estimated	340	1,700	27	170	5,100	24,000
Total	1,210	6,290	2,020	7,340	12,200	55,200

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

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

2/ Includes plaster and gunite sands.

3/ Includes fill and snow and ice control.

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