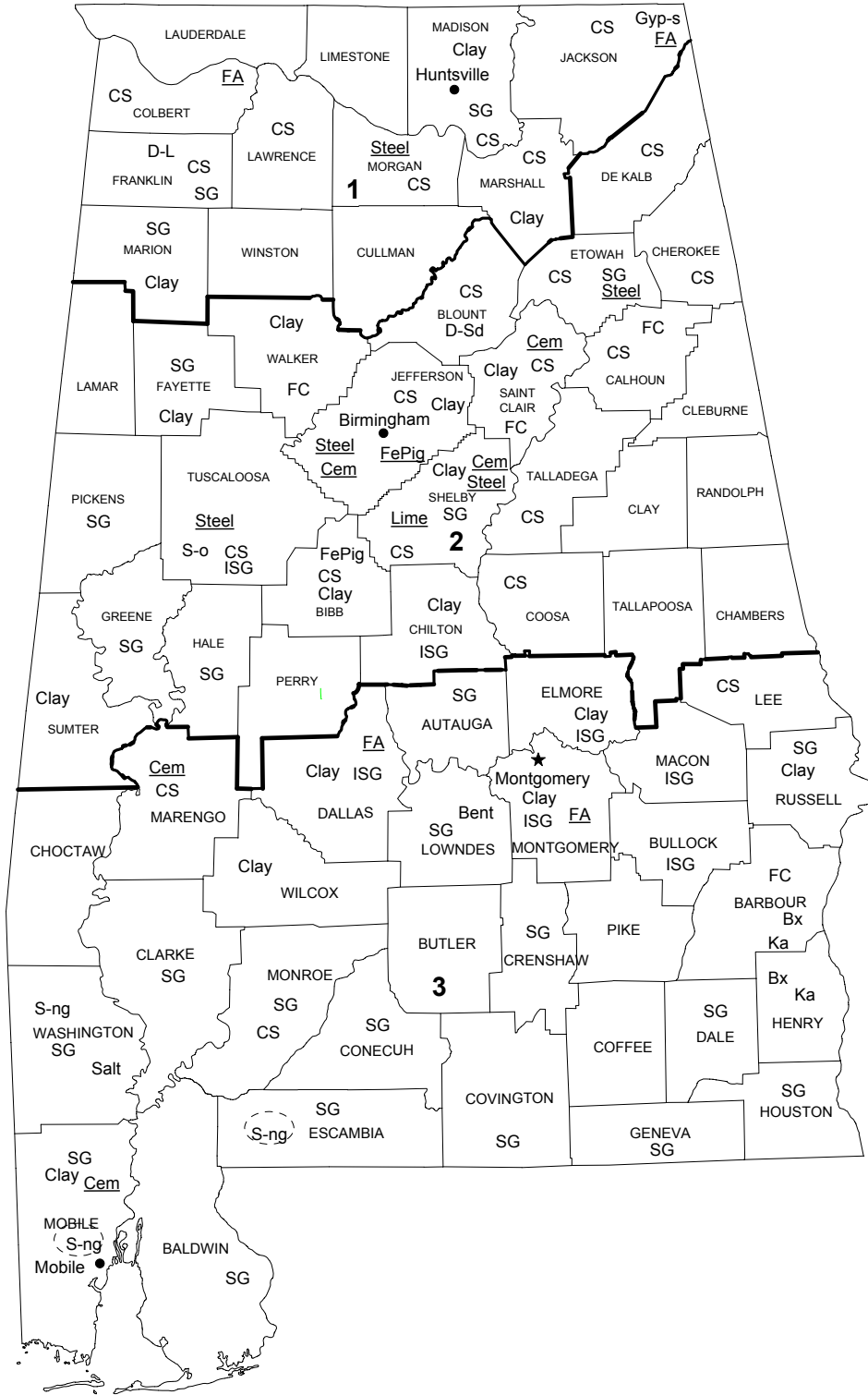


ALABAMA



LEGEND

- County boundary
- ★ Capital
- City
- 1** — Crushed stone/sand and gravel districts

MINERAL SYMBOLS (Major producing areas)

- Bent Bentonite
- Bx Bauxite
- Clay Common clay
- Cem Cement plant
- CS Crushed stone
- D-L Dimension limestone
- D-Sd Dimension sandstone
- FA Ferroalloys plant
- FC Fire clay
- FePig Iron oxide pigments
- FePig Iron oxide pigment plant
- Gyp-s Synthetic gypsum
- ISG Industrial sand and gravel
- Ka Kaolin
- Lime Lime plant
- S-ng Sulfur (natural gas)
- S-o Sulfur (oil)
- Salt Salt
- SG Construction sand and gravel
- Steel Steel plant
- Concentration of mineral operations

0 50 Kilometers

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 2001, the estimated value¹ of nonfuel mineral production for Alabama was \$938 million, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 1% increase from that of 2000,² following a 6% decrease from 1999 to 2000. The State remained 16th among the 50 States in total nonfuel mineral production value, of which Alabama accounted for almost 2.5% of the U.S. total.

The top four nonfuel mineral commodities produced in Alabama in 2001 (based upon preliminary data) 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 cement (portland and masonry) and crushed stone represented nearly 76% of the total (table 1). In 2000, the State's overall drop in value resulted mostly from the decrease in crushed stone, down \$54 million, and the lowered values of portland cement and construction sand and gravel, down \$7 million and \$5 million, respectively. The largest increases occurred in lime, up about \$7 million, and kaolin.

Nonfuel mineral production in Alabama consisted entirely of industrial minerals. Compared with USGS estimates of the quantities produced in the other 49 States in 2001, Alabama remained second in kaolin; third in lime, common clays, and bentonite; fourth of six iron oxide pigment-producing States; was one of the top five masonry cement-producing States; and remained eighth in salt. While the State rose to third from fifth in masonry cement, it went from fifth to sixth in portland cement. Additionally, Alabama was a significant producer of crushed stone, construction sand and gravel, and industrial sand and gravel. No metals were mined in the State. All metal

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 2001 USGS mineral production data published in this chapter are preliminary estimates as of August 2002 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. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2000 may differ from the Minerals Yearbook, Area Reports: Domestic 2000, Volume II, owing to the revision of preliminary 2000 to final 2000 data. Data for 2001 are preliminary and are expected to change; related rankings may also change.

production in the State, especially that of raw steel, was the result of processing materials acquired from other domestic and foreign sources. Production of a natural mixture of bauxite (no longer used to produce primary aluminum) 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. In 2001, there were 112 companies or operations involved in the mining and production of industrial mineral resources. This included 45 limestone-dolomite operations for crushed stone that were active in the State. In addition, granite, sandstone, and quartzite operations for crushed stone were active. Marble operations were active for the production of micronized calcium carbonate and building stone. There were 17 clay (common clay, bentonite, fuller's earth, kaolin, fire clay) operations active in the State, along with 48 sand and gravel operations. Other operations include chalk, building stone (marble, limestone, and sandstone), salt, and recovered sulfur.

Mineral exploration in Alabama has continued to focus on industrial resources with several large expansions in the State. The Alabama Development Office reported recent capital investment in new or expanding industrial mineral operations to be more than \$20 million. This included crushed stone, common clay (for brick and tile), and fire clay (Alabama Development Office, 2001). Another record in the production of crushed stone (limestone, dolomite, granite, marble, sandstone, and quartzite) in Alabama was reported for 2001. Birmingham, Alabama-based Vulcan Materials Co. remained the largest construction aggregate producer in the country. The State's newest dimension stone operation was inactive during the year due to litigation (Faulk, 2001). This operation was the first to market Silurian age varicolored limestone quarried in Lauderdale County, AL.

More information on geology, hydrology, occurrence, mining history, and general economics of specific mineral resources in Alabama is available from the Geological Survey of Alabama.

References Cited

- Alabama Development Office, 2001, Alabama Development Office 2000 Industry Report: Montgomery, AL, Alabama Development Office, 32 p.
Faulk, Kent, 2001, Marble quarry in Lauderdale a real gold mine: The Birmingham News, January 25, p. 1A.

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

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1999		2000		2001 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	429	47,600 e/	401	45,600 e/	420 e/	47,200 e/
Portland	4,300	349,000 e/	4,340	342,000 e/	4,360 e/	344,000 e/
Clays:						
Bentonite	W	W	W	W	174	5,300
Common	2,300	23,700	2,090	23,200	2,090	23,300
Gemstones	NA	76	NA	108	NA	108
Lime	1,930	114,000	1,950	121,000	1,830	111,000
Sand and gravel:						
Construction	15,500	68,900	14,500	63,700	13,000	58,100
Industrial	687	9,780	731	10,100	836	12,300
Stone:						
Crushed	49,100	354,000	49,100	300,000	50,500	318,000
Dimension metric tons	7,210	2,380	W	W	W	W
Combined values of clays (kaolin), iron oxide pigments (crude), salt, and values indicated by symbol W	XX	20,400	XX	24,400	XX	19,000
Total	XX	990,000	XX	930,000	XX	938,000

e/ Estimated. p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" data. 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	1999				2000			
	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/	41,100 r/	\$230,000 r/	\$5.58 r/	49	39,500	\$237,000	\$5.98
Dolomite	3	W	W	8.11	3	W	W	7.09
Marble	4	3,450	91,100	26.42	3	W	W	6.50
Sandstone	5	1,010 r/	6,220	6.14	6	2,310	15,500	6.71
Granite	3 r/	W	W	7.38	1	W	W	5.80
Slate	1	W	W	5.83	2	W	W	6.77
Miscellaneous stone	3	57	401	7.04	4	51	182	3.57
Total or average	XX	49,100 r/	354,000 r/	7.22 r/	XX	49,100	300,000	6.11

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 2000, BY USE 1/2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Macadam	W	W	\$7.74
Riprap and jetty stone	195	\$1,340	6.85
Filter stone	W	W	5.35
Other coarse aggregate	518	3,650	7.04
Total or average	713	4,980	6.99
Coarse aggregate, graded:			
Concrete aggregate, coarse	653	3,880	5.94
Bituminous aggregate, coarse	1,790	11,100	6.21
Bituminous surface-treatment aggregate	W	W	5.32
Other graded coarse aggregate	6,670	42,600	6.38
Total or average	9,110	57,500	6.32
Fine aggregate (-3/8 inch):			
Stone sand, concrete	222	1,410	6.33
Stone sand, bituminous mix or seal	226	1,480	6.54
Screening, undesignated	203	1,060	5.20
Other fine aggregate	2,780	14,200	5.10
Total or average	3,430	18,100	5.28
Coarse and fine aggregates:			
Graded road base or subbase	1,220	6,700	5.49
Unpaved road surfacing	W	W	5.00
Crusher run or fill or waste	W	W	5.33
Other coarse and fine aggregates	5,400	34,000	6.29
Total or average	6,630	40,700	6.14
Other construction materials	298	1,980	6.66
Agricultural, agricultural limestone	(3/)	(3/)	5.67
Chemical and metallurgical:			
Cement manufacture	1,810	5,180	2.86
Lime manufacture	(3/)	(3/)	5.10
Flux stone	(3/)	(3/)	6.43
Sulfur oxide removal	(4/)	(4/)	(4/)
Miscellaneous uses, refractory stone (including ganister)	(3/)	(3/)	4.13
Unspecified: 5/			
Reported	16,800	109,000	6.50
Estimated	7,600	49,000	6.47
Total or average	24,400	159,000	6.49
Grand total or average	49,100	300,000	6.11

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

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

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

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

4/ Less than 1/2 unit.

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

TABLE 4
ALABAMA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2000, BY USE AND DISTRICT 1/

Use	District 1		District 2		District 3		Unspecified districts	
	Quantity (metric tons)	Value (thousands)	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/	4,010	\$24,400	4,950	\$31,300	W	W	W	W
Fine aggregate (-3/8 inch) 4/	1,220	6,500	2,200	11,500	W	W	W	W
Coarse and fine aggregate 5/	3,280	17,000	2,770	15,900	W	W	W	W
Other construction materials	243	1,510	55	470	--	--	--	--
Agricultural 6/	W	W	W	W	--	--	--	--
Chemical and metallurgical 7/	--	--	3,120	11,900	--	--	--	--
Other miscellaneous uses 8/	--	--	W	W	--	--	--	--
Unspecified: 9/								
Reported	2,240	15,300	11,300	76,000	3,270	\$18,200	--	--
Estimated	750	5,000	6,800	44,000	--	--	--	--
Total	12,400	73,700	32,700	198,000	3,950	27,900	57	\$267

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

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

6/ Includes agricultural limestone.

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

8/ Includes refractory stone (including ganister).

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

TABLE 5
ALABAMA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand) 2/	4,870	\$18,600	\$3.81
Concrete products (blocks, bricks, pipe, decorative, etc.)	217	1,560	7.20
Asphaltic concrete aggregates and other bituminous mixtures	794	4,260	5.37
Road base and coverings	437	2,160	4.95
Road stabilization (lime)	16	69	4.31
Fill	402	1,280	3.17
Other miscellaneous uses 3/	349	1,580	4.52
Unspecified: 4/			
Reported	4,040	19,100	4.72
Estimated	3,300	15,000	4.56
Total or average	14,500	63,700	4.41

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.