

THE MINERAL INDUSTRY OF OHIO

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

In 1997, for the third consecutive year, Ohio ranked 14th in the Nation in total nonfuel mineral production value,¹ according to the U.S. Geological Survey (USGS). The estimated value for 1997 was \$984 million, up from \$969 million in 1996. This followed an increase of nearly 8.8% from 1995 to 1996 (based on final 1996 data). The State accounted for 2.5% of the U.S. total nonfuel mineral production value.

In 1997, a decrease in the value of salt was more than balanced by the increase in the value of crushed stone (*table 1*). The remainder of Ohio's increase in nonfuel mineral value was mostly attributable to increases in construction sand and gravel, portland cement, and common clays, in descending order of relative increase. During 1996, nearly all nonfuel mineral commodities increased in value, led by significant increases in salt, crushed stone, and construction sand and gravel. Only lime showed a somewhat significant drop in value for the year.

Compared with USGS estimates of the quantities produced in the other 49 States during 1997, Ohio remained second in fire clays, third in salt, one of the top three lime-producing States, fourth in construction sand and gravel and common clays, and ninth in industrial sand and gravel. The State climbed to sixth from seventh in the production of crushed stone and was a significant producer of masonry cement.

The State's mines exclusively produce industrial minerals and coal; metals, such as steel and aluminum produced in the State are processed from materials received from other domestic and foreign sources. Ohio continued to be the Nation's second leading raw steel-manufacturing State in 1997 with an estimated output of almost 14.2 million metric tons of raw steel, as reported by the American Iron and Steel Institute. Based on USGS data, the State remained the fourth leading producer of primary aluminum in the Nation in 1997. LTV Corp. announced plans to build a \$66

million tubing mill in Marion, OH. This location was selected because of its proximity to major interstate highways, rail lines, and prospective customers. North Star BHP, in Delta, OH, rolled its first steel coil in February 1997. The \$512 million flat-rolling minimill, a joint venture of North Star Steel Co. and Australia's Broken Hill Proprietary (BHP) Ltd., has an annual capacity of 1.5 million tons.

The following narrative information was provided by the Ohio Department of Natural Resources, Division of Geological Survey² (DGS). Based on DGS estimates for 1997, Ohio's combined output of construction aggregates—crushed limestone, crushed sandstone, and sand and gravel—is expected to reach 127 million tons. This record-setting production level is attributed to an increase in construction of commercial buildings and an increase in construction of and repairs to highways.

The DGS is currently in the process of developing limestone availability maps for Ohio. They are also working towards developing maps of the surficial deposits of the State. Surficial deposits include clay, gravel, peat, and sand. The limestone availability maps and the maps of the surficial materials will be very beneficial to the development of Ohio's industrial mineral industries.

Regarding business, Cargill, Inc. purchased the North American salt operations, including those of Ohio, of Akzo-Nobel Salt, Inc. Martin Marietta Aggregates purchased the limestone and sand and gravel operations of American Aggregates Corp. Also, France Stone Co. changed its name to Benchmark Materials.

Two major issues affected Ohio's aggregate industry in 1998. The first was pending legislation on "farmland preservation." This legislation may restrict where pits and quarries can be located. Simultaneously, an issue between Martin Marietta Aggregates and Clinton County zoning officials may cause future local restrictions on the locations of pits and quarries.

Ohio's aggregate industry once again changed leadership. The Ohio Aggregates Association (Ohio's trade association for aggregate producers) is now under the leadership of a former DGS geologist who worked alongside Ohio's mineral industries for the previous 14 years while being employed with the Ohio Department of Natural Resources.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on 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 1997 USGS mineral production data published in this chapter are estimates as of January 1998. For some commodities (for example, 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. Call MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset, and request Document # 1000 for a telephone listing of all mineral commodity specialists, or call USGS information at (703) 648-4000 for the specialist's name and number. This telephone listing may also be retrieved over the Internet at <http://minerals.er.usgs.gov/minerals/contacts/comdir.html>. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved by way of MINES FaxBack or over the Internet at <http://minerals.er.usgs.gov/minerals/>.

²Sherry Weisgarber, formerly a Geologist and Mineral Statistician at the Ohio Division of Geological Survey, authored the text of Ohio minerals industry information.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	1,050	72,700	W	W	W	W
Clays:						
Common	1,840	7,560	1,960	7,450	2,020	9,890
Fire	89	3,140	103	3,230	80	3,050
Gemstones	NA	3	NA	153	NA	W
Lime	1,920	117,000	2,020	107,000	2,040	109,000
Sand and gravel:						
Construction	45,300	196,000	46,600	215,000	47,000	222,000
Industrial	1,270	28,800	1,270	29,800	1,270	30,600
Stone:						
Crushed	60,900	265,000	63,600	291,000	69,000	324,000
Dimension metric tons	17,900	1,670	19,800	2,060	19,900	2,070
Combined value of cement (masonry), gypsum (crude), peat, salt, silica stone (1996), and values indicated by symbol W	XX	200,000	XX	314,000	XX	284,000
Total	XX	891,000	XX	969,000	XX	984,000

p/ Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. XX Not applicable.

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

2/ Data are rounded to three significant digits; may not add to totals shown.

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

Kind	1995				1996			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	83	46,000	\$206,000	\$4.47	89	48,200	\$226,000	\$4.70
Dolomite	20	14,900	58,800	3.95	20	15,400	63,900	4.15
Sandstone	3	74	419	5.66	4	42	155	3.69
Total	XX	60,900	265,000	4.35	XX	63,600	291,000	4.57

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

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

TABLE 3
OHIO: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1996, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit Value
Coarse aggregate (+1 1/2 inch):			
Macadam	378	\$1,990	\$5.25
Riprap and jetty stone	645	3,040	4.71
Filter stone	11	60	5.45
Other coarse aggregate	640	2,940	4.59
Coarse aggregate, graded:			
Concrete aggregate, coarse	5,350	22,200	4.14
Bituminous aggregate, coarse	2,280	8,970	3.94
Bituminous surface-treatment aggregate	1,120	5,820	5.19
Railroad ballast	479	1,680	3.50
Other graded coarse aggregate	W	W	5.27
Fine aggregate (-3/8 inch):			
Stone sand, concrete	365	1,280	3.51
Stone sand, bituminous mix or seal	1,000	4,080	4.07
Screening, undesignated	198	925	4.67
Other fine aggregate	W	W	5.00
Coarse and fine aggregates:			
Graded road base or subbase	11,700	43,500	3.72
Unpaved road surfacing	4,200	21,100	5.04
Crusher run or fill or waste	781	3,810	4.87
Other coarse and fine aggregates	808	5,670	7.01
Other construction materials 3/	532	1,610	3.02
Agricultural:			
Agricultural limestone	1,050	5,680	5.43
Other agricultural uses	63	690	10.95
Chemical and metallurgical:			
Cement manufacture	(4/)	(4/)	2.77
Lime manufacture	215	888	4.13
Dead-burned dolomite manufacture	109	1,800	16.51
Flux stone	556	6,860	12.35
Glass manufacture	374	3,720	9.96
Sulfur oxide removal	26	203	7.81
Special:			
Asphalt fillers or extenders	(4/)	(4/)	10.18
Whiting or whiting substitute	(4/)	(4/)	11.89
Other fillers or extenders	305	2,760	9.05
Other specified uses not listed	(4/)	(4/)	4.58
Unspecified: 5/			
Actual	24,700	117,000	4.74
Estimated	4,190	17,200	4.10
Total	63,600	291,000	4.57

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

1/ Includes dolomite, limestone, limestone-dolomite, and sandstone.

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Includes building products.

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

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

TABLE 4
OHIO: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1996, BY USE AND DISTRICT 1/ 2/

(Thousand metric tons and thousand dollars)

Use	District 1		District 3		District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:										
Coarse aggregate (+1 1/2 inch) 3/	321	1,200	585	2,500	57	342	W	W	W	W
Coarse aggregate, graded 4/	W	W	3,090	12,300	W	W	W	W	W	W
Fine aggregate (-3/8 inch) 5/	568	2,080	555	2,120	W	W	W	W	30	144
Coarse and fine aggregate 6/	W	W	4,100	17,700	W	W	1,670	10,600	W	W
Other construction materials 7/	1,350	50,500	26	111	3,840	17,000	685	4,430	1,460	7,580
Agricultural 8/	650	3,580	152	1,100	(9/)	(9/)	(9/)	(9/)	(9/)	(9/)
Chemical and metallurgical 10/	(9/)	(9/)	(9/)	(9/)	--	--	--	--	--	--
Special 11/	(9/)	(9/)	(9/)	(9/)	--	--	--	--	--	--
Unspecified: 12/										
Actual	7,860	33,300	5,540	26,300	(9/)	(9/)	(9/)	(9/)	(9/)	(9/)
Estimated	2,060	7,590	1,250	5,790	538	2,320	24	111	310	1,350
Total	27,000	113,000	16,500	74,400	11,700	58,800	2,670	16,600	5,860	27,400

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

1/ Production reported in District 2 was included with "District 3" to avoid disclosing company proprietary data.

2/ Data are rounded to three significant digits; may not add to totals shown.

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

4/ Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregate.5/

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

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

7/ Includes building products.

8/ Includes agricultural limestone and other agricultural uses.

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

10/ Includes cement manufacture, dead-burn dolomite manufacture, flux stone, glass manufacture, lime manufacture, and sulfur oxide removal.

11/ Includes asphalt fillers or extenders, other fillers or extenders, other specified uses not listed, and whiting or whiting substitute.

12/ Includes production reported without a breakdown by end use and with estimates for nonrespondents.

TABLE 5
OHIO: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1996,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Value per ton
Concrete aggregate (including concrete sand)	8,510	\$41,300	\$4.86
Plaster and gunite sands	177	724	4.09
Concrete products (blocks, bricks, pipe, decorative, etc.)	904	4,710	5.21
Asphaltic concrete aggregates and other bituminous mixtures	3,700	18,500	5.00
Road base and coverings 2/	3,600	18,200	5.07
Fill	4,870	20,400	4.19
Snow and ice control	148	537	3.63
Filtration	46	269	5.85
Other miscellaneous uses 3/	1,070	5,350	5.00
Unspecified: 4/			
Actual	18,200	80,200	4.41
Estimated	5,400	24,200	4.49
Total or average	46,600	215,000	4.60

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes road and other stabilization (cement and lime).

3/ Includes railroad ballast and roofing granules.

4/ Includes production reported without a breakdown by end use and with estimates for nonrespondents.

TABLE 6
OHIO: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1996,
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/	212	780	3,780	18,600	2,640	11,800
Asphaltic concrete aggregates and road base materials 3/	177	593	3,960	18,500	3,160	12,600
Other miscellaneous uses 4/	346	1,280	152	805	451	2,690
Unspecified: 5/						
Actual	16	71	2,310	11,900	11,600	49,200
Estimated	236	915	1,360	7,660	304	1,260
Total	986	3,640	11,600	57,500	18,200	77,400
	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	875	4,180	1,900	10,600	183	804
Asphaltic concrete aggregates and road base materials 3/	2,200	11,300	2,290	12,100	526	2,640
Other miscellaneous uses 4/	26	118	140	718	--	--
Unspecified: 5/						
Actual	2,270	11,300	307	1,530	1,640	6,340
Estimated	837	3,540	1,300	4,930	1,360	5,940
Total	6,210	30,400	5,940	29,800	3,720	15,700

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes plaster and gunite sands.

3/ Includes fill, road and other stabilization (cement and lime), and snow and ice control.

4/ Includes filtration, railroad ballast, and roofing granules.

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