

# THE MINERAL INDUSTRY OF IOWA

**This chapter has been prepared under a Memorandum of Understanding between the U.S. Bureau of Mines, U.S. Department of the Interior, and the Geological Survey Bureau, Division of Energy and Geological Resources, Iowa Department of Natural Resources, for collecting information on all nonfuel minerals.**

In 1996, Iowa moved up one place in rank to 28th among the 50 States in total nonfuel mineral production value,<sup>1</sup> according to the U.S. Geological Survey (USGS). The estimated value for 1996 was \$486 million, about a 7% increase from that of 1995. This followed a 1% increase from 1994 to 1995 (based on final 1995 data). The State accounted for more than 1% of the U.S. total nonfuel mineral production value.

Crushed stone remained the leading commodity, accounting for more than 42% of the State's total nonfuel mineral value, followed by portland cement with nearly 38% and construction sand and gravel with almost 14%. Most of Iowa's increased nonfuel mineral production value was the result of a \$24 million increase in portland cement and about a \$10 million increase in construction sand and gravel. Compared with 1995, the other mineral commodity values that increased in 1996 were crude gypsum and peat. Decreases occurred in crushed stone, lime, masonry cement, and common clays.

Compared with USGS estimates of quantities produced in the other 49 States, Iowa remained second in crude gypsum. The State rose from 10th to 8th in portland cement. Additionally, the State was a significant producer of crushed stone, construction sand and gravel, and common clays. No metals were mined in Iowa; all of the State's metal production resulted from the processing of materials acquired from other domestic and foreign sources.

The following narrative information was provided by the Geological Survey Bureau<sup>2</sup> (GSB) of the Iowa Department of Natural Resources. In 1996, 238 licensed operators produced nonfuel minerals from 1,064 registered mine and quarry sites compared with 1,044 registered sites during 1995. County governments accounted for 31 of the 238 operators.

Throughout the year, Vulcan Materials Co. continued to close sites which had not been transferred to Wendling Quarries Inc. during Wendling's 1995 acquisition of Vulcan's Iowa operations.

As part of the GSB's participation in the USGS-sponsored State map program, the GSB published a new map delineating aggregate resources in the fast-growing Linn County area. The publication, entitled *Aggregate Resources of the Cedar Rapids North and Marion*

*Quadrangles Linn County Project Map #3*, was available from the Bureau's Iowa City office for \$5.

In spring, the Community Economic Betterment Division of the Iowa Department of Economic Development awarded a forgivable loan (\$87,500) and a no-interest loan (\$87,500) to Sioux City Brick & Tile Co. to assist the company in a \$12 million new plant upgrade. The forgivable loan was dependent on the company maintaining 70 full-time employees at the Sergeant Bluff plant and 102 full-time employees at the Adel plant. The company envisioned the plant renovation to be a 2-year project with start date of March 1, 1996.

Dodger Industries, Inc. opened Grell's Quarry, the first independently owned gypsum quarry in the Fort Dodge gypsum district in decades. After 3 years of plans and tests, the owner began mining a 24-hectare gypsum field that lies under the rolling hillsides south of the Des Moines River. He anticipated mining 1,100 to 1,800 metric tons-per-day and marketing the gypsum rock to Georgia Pacific Corp.'s wall board plant. Gypsum at the site is up to 10 meters deep in places and has an average thickness of about 5 meters. When running at full capacity, Grell's quarry was expected to become a reliable source of gypsum, especially for a number of local plants which are always looking for new sources of gypsum.

In May, Guardian Industries Corp. began construction of a float glass plant in Dewitt, IO. Float glass as well as tempered glass will be manufactured at the large-scale \$110 million facility. Other value-added fabricated glass products are also likely to be produced at the plant in the future. The new float glass manufacturing line will be Guardian's seventh U.S. float line and will provide a strong complement to Guardian's existing U.S. facilities. Guardian owns 15 plants worldwide. The plant will create approximately 250 to 300 new jobs. Hundreds of additional jobs will be created due to the plant's contribution to the local and regional economy. The plant's high quality float glass will be used by customers in the manufacture of such items as windows, doors, tabletops, mirrors, skylights, and commercial building curtain walls. Some of the silica sand used in the glass production process may be sourced from high purity silica sand deposits in Iowa and adjacent Illinois.

<sup>1</sup>The 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 1996 USGS mineral production data published in this chapter are estimates as of February 1997. For some commodities, e.g., 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 phone 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>

<sup>2</sup>Robert McKay, Research Geologist, authored the text of minerals information provided by the Geological Survey Bureau of Iowa. He may be contacted at the same address and fax numbers as Mr. Koch, telephone: (319) 335-1588, E-mail: [rmckay@gsbth-po.igsb.uiowa.edu](mailto:rmckay@gsbth-po.igsb.uiowa.edu)

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1994		1995		1996 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement (portland)	2,390	153,000	2,340	161,000	2,690	185,000
Clays	384	1,520	322	1,590	301	1,450
Gemstones	NA	50	NA	57	NA	W
Gypsum (crude)	2,210	12,700	2,240	13,800	2,380	14,000
Peat	5	W	5 3/	77 3/	W	W
Sand and gravel (construction)	15,300	58,200	14,300	57,000	15,900	66,800
Stone (crushed)	36,600 4/	211,000	35,300	210,000	34,400	206,000
Combined value of cement (masonry), lime, sand and gravel (industrial), stone [crushed dolomite and miscellaneous (1994), dimension (1994), dimension dolomite and limestone (1996), dolomite and sandstone (1995)], and values indicated by symbol W	XX	14,800	XX	12,500	XX	12,500
Total	XX	451,000	XX	456,000	XX	486,000

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.

3/ Data series changed to production beginning in 1995, prior years shipment data may not be comparable.

4/ Excludes certain stones; value included with "Combined value" data.

TABLE 2  
IOWA: CRUSHED STONE 1/ SOLD OR USED BY PRODUCERS  
IN 1995, BY USE 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch):			
Macadam	332	\$1,300	\$3.91
Riprap and jetty stone	251	1,550	6.19
Filter stone	275	1,280	4.64
Other coarse aggregate	210	1,450	6.89
Coarse aggregate, graded:			
Concrete aggregate, coarse	1,550	10,100	6.52
Bituminous aggregate, coarse	580	3,660	6.31
Bituminous surface-treatment aggregate	121	795	6.57
Other graded coarse aggregate	226	1,540	6.82
Fine aggregate (-3/8 inch):			
Stone sand, concrete	59	182	3.08
Stone sand, bituminous mix or seal	97	388	4.00
Screening, undesignated	103	414	4.02
Other fine aggregate	95	505	5.32
Coarse and fine aggregates:			
Graded road base or subbase	2,650	15,700	5.92
Unpaved road surfacing	2,910	13,500	4.65
Crusher run or fill or waste	261	880	3.37
Other coarse and fine aggregates	675	4,410	6.53
Other construction materials 3/	213	1,630	7.63
Agricultural: Agricultural limestone 4/	1,320	10,600	8.01
Chemical and metallurgical:			
Cement manufacture	2,660	20,500	7.72
Lime manufacture	(5/)	(5/)	3.94
Flux stone	(5/)	(5/)	6.14
Glass manufacture	(5/)	(5/)	11.00
Special: Asphalt fillers or extenders	(5/)	(5/)	14.00
Unspecified: 6/			
Actual	8,410	54,700	6.51
Estimated	11,600	60,900	5.26
Total	35,300	210,000	5.96

1/ Includes dolomite, limestone, limestone-dolomite, and miscellaneous stone.

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

3/ Includes railroad ballast and roofing granules.

4/ Includes poultry grit and mineral food and other agricultural uses.

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

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

TABLE 3  
IOWA: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1994				1995			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	227 r/	36,600	\$211,000	\$5.77	223	35,200	\$210,000	\$5.97
Dolomite	3 r/	60 r/	(3/)	(3/)	4	W	W	3.83
Miscellaneous stone	5	(4/)	W	W	4	W	W	2.81
Total	XX	36,600	211,000	5.77 r/	XX	35,300	210,000	5.95

r/ Revised. W Withheld to avoid disclosing company proprietary data; included in "Total." 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.

3/ Excludes dolomite value from State total to avoid disclosing company proprietary data.

4/ Excludes miscellaneous stone quantity from State total to avoid disclosing company proprietary data.

TABLE 4  
IOWA: CRUSHED STONE 1/ SOLD OR USED BY PRODUCERS IN 1995, BY USE AND DISTRICT 2/

(Thousand metric tons and thousand dollars)

Use	District 2		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/	W	W	W	W	528	2,400	--	--	264	1,570
Coarse aggregate, graded 4/	W	W	W	W	1,010	6,550	--	--	768	4,700
Fine aggregate (-3/8 inch) 5/	W	W	W	W	173	577	--	--	104	526
Coarse and fine aggregate 6/	2,140	11,900	671	4,780	2,640	12,500	--	--	2,300	13,800
Agricultural 7/	(8/)	(8/)	(8/)	(8/)	346	1,690	--	--	428	2,260
Chemical and metallurgical 9/	(8/)	(8/)	(8/)	(8/)	(8/)	(8/)	--	--	--	--
Special 10/	--	--	--	--	(8/)	(8/)	--	--	--	--
Unspecified: 11/										
Actual	2,550 1/	18,300 12/	4,340	27,800	524	2,120	522	3,470	469	3,030
Estimated	1,790	9,860	59	166	2,720	12,300	6,180	36,600	852	2,040
Total	8,420	60,400	5,470	38,700	9,530	43,300	6,700	40,000	5,190	27,900

W Withheld to avoid disclosing company proprietary data; included with "Coarse and fine aggregate."

1/ Production reported in District 1 was included with "District 2" 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), other coarse and fine aggregates, other construction materials, and roofing granules.

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

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

9/ Includes cement manufacture, flux stone, glass manufacture, and lime manufacture.

10/ Includes asphalt fillers or extenders.

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

12/ Includes unspecified within all districts.

TABLE 5  
IOWA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1995,  
BY MAJOR USE CATEGORY 1/

Use	Quantity		
	(thousand metric tons)	Value (thousands)	Value per ton
Concrete aggregate (including concrete sand)	2,910	\$12,600	\$4.33
Plaster and gunite sands	110	513	4.66
Concrete products (blocks, bricks, pipe, decorative, etc.)	86	241	2.80
Asphaltic concrete aggregates and other bituminous mixtures	441	1,860	4.22
Road base and coverings 2/	2,300	7,240	3.15
Fill	951	2,450	2.58
Snow and ice control	161	552	3.43
Other 3/	42	353	8.40
Unspecified: 4/			
Actual	2,370	12,100	5.11
Estimated	4,890	19,100	3.91
Total or average	14,300	57,000	3.99

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 filtration, railroad ballast, and roofing granules.

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

TABLE 6  
IOWA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1995  
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/	783	2,840	675	3,350	301	1,470
Asphaltic concrete aggregates and road base materials 3/	1,070	3,230	781	3,140	1,150	3,430
Snow and ice control	56	138	36	109	29	127
Other miscellaneous uses 4/	2	20	21	227	7	23
Unspecified: 5/						
Actual	791	4,820	187	918	843	3,910
Estimated	1,540	5,310	156	636	2,730	11,300
Total	4,240	16,400	1,860	8,370	5,050	20,200
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	642	2,420	W	W	W	W
Asphaltic concrete aggregates and road base materials 3/	137	332	W	W	W	W
Snow and ice control	13	48	--	--	27	129
Other miscellaneous uses 4/	6	64	--	--	6	19
Unspecified: 5/						
Actual	319	1,270	--	--	228	1,190
Estimated	168	673	246	984	51	255
Total	1,290	4,810	393	1,410	1,430	5,850

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

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).

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

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