

# THE MINERAL INDUSTRY OF ILLINOIS

**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 State Geological Survey, Illinois Department of Energy and Natural Resources, for collecting information on all nonfuel minerals.**

In 1996, for the seventh year in a row and the ninth in the last 11 years, Illinois ranked 16th 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 \$816 million, around a 1% decrease from the \$828 million achieved in 1995. This followed a marginal increase in 1995 (based on final 1995 data) from that of 1994. The State accounted for more than 2% of the U.S. total nonfuel mineral production value.

Virtually all of Illinois' total nonfuel mineral value in 1996 resulted from the production of industrial minerals. In terms of nonfuel mineral value, crushed stone was the State's leading commodity, accounting for about 45% of the total, followed by portland cement with 21%, and construction sand and gravel with 17%. In 1996, an 8.5% increase in the estimated value of crushed stone, in part, offset the combined moderate decreases in lime, fluorspar, zinc, and both construction and industrial sand and gravel. The values of the following commodities also showed small decreases in 1996: portland cement, common clays, and gemstones.

Compared with USGS estimates of the quantities of minerals produced in the other 49 States, Illinois remained first in industrial sand and gravel and tripoli in 1996; third in peat; fourth in fuller's earth clays; fifth in crushed stone; and seventh in lime. The State dropped from seventh to eighth in the production of construction sand and gravel and from eighth to ninth in portland cement. Illinois, the only fluorspar-producing State, had one-sixth as much production as in 1995 as part of the closing of its last two remaining fluorspar mines. Only a small quantity of zinc was still produced in the State. Raw steel was produced in Illinois, but it was processed from materials obtained from other domestic and foreign sources. Illinois rose from fifth to fourth in the Nation in the manufacture of raw steel with an estimated output of 7.4 million metric tons (8.2 million short tons), according to the American Iron and Steel Institute.

The following narrative information was provided by the Illinois State Geological Survey<sup>2</sup> (ISGS). The record 17-inch rainfall of July 17, 1996, that fell in Aurora (40 miles west of Chicago) caused extensive water damage in the northeastern part of the State, and was very costly to the aggregate industry. At Conco Western Stone Co.'s underground dolomite mine, north of Aurora, a dike broke

which allowed water from a drainage ditch to partially flood the mine. Equipment was damaged and the mine flooding cost the company 10 weeks of production time. Other quarries that also had to shut down for an extended time included Vulcan Material Co.'s Joliet and Bollingbrook quarries, Material Service Corp.'s Romeoville quarry, and Elmhurst-Chicago Stone Co.'s Barbers Corner quarry. In general, small companies were more adversely affected than large companies which had multiple extraction sites because the latter were able to make up lost production by increasing production at other operations.

Also, in northeastern Illinois, Vulcan Materials Co. converted its lime kiln at the site of its McCook quarry in Cook County to the production of high calcium quicklime using stone shipped in from Lake Michigan sources. Vulcan had a new kiln under construction at the site of their Manteno quarry in Kankakee County that will produce dolomitic quicklime from local quarry rock. Marblehead Lime Co., a subsidiary of Calcitherm Nederland NV., idled its lime plant at Thornton, Cook County. Stone from Material Service Corp.'s (also a division of General Dynamics) Thornton quarry was shipped to Marblehead Lime's South Chicago kiln to produce dolomitic quicklime. Other products of this operation included high calcium quicklime, hydrated lime, and pulverized high-calcium quicklime.

Most of Illinois' industrial sand operations mined the St. Peter Sandstone deposit in LaSalle County. During 1996, U.S. Silica Co. in Ottawa was sold by U.S. Borax Inc., a subsidiary of RTZ Corp., to the D. George Harris Co. Through a merger agreement, Kirtland Capital Partners obtained the majority share of Fairmount Minerals Ltd., the owner of Wedron Silica Co. in Wedron. Unimin Corp. idled the mining portion of its operation at Troy Grove.

In southernmost Illinois, Ozark-Mahoning Co. (OMC), a subsidiary of Elf Atochem North America, Inc., continued to close its fluorspar operations in Hardin County. The company was down to one employee, who supervised environmental remediation work and the sale of company property and other assets. Hastie Mining and Trucking Co., a local quarry company, leased OMC's mineral drying and bagging facilities in order to process fluorspar purchased from the National Defense Stockpile.

By making a calcined product, they will probably service some of OMC's former customers.

Also, in southernmost Illinois, the U.S. Army Corps of Engineers began work on its lock and dam project on the Ohio River at the town of Olmsted in Pulaski County. The locks were undergoing construction inside a coffer dam that occupied 16 hectares of the river channel on the Illinois side. Being the Corps' largest inland waterway project in history, it will consume significant amounts of construction aggregate, portland cement, and steel. It will replace Locks and Dams 52 and 53 (completed in 1929), the last of the original series of locks and dams on the Ohio River, and will provide more efficient transportation of commodities, including construction aggregates and many other minerals and mineral products.

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 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>The State contact, Mr. Masters, authored the text of State minerals information provided by the Illinois State Geological Survey.

<sup>1</sup>The terms "nonfuel mineral production" and related "values"

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1994		1995		1996 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement (portland)	2,590	151,000	2,560	169,000	2,540	168,000
Clays	494 3/	1,170 3/	504	1,220 3/	792	627 3/
Gemstones	NA	376	NA	269	NA	W
Sand and gravel:						
Construction	37,900	150,000	36,100	147,000	35,400	142,000
Industrial	4,420	65,700	4,410	67,500	4,360	62,600
Stone (crushed)	62,600 4/	353,000 4/	61,400	335,000	65,000	364,000
Combined value of barite, cement [masonry (1994)], clays (fuller's earth), copper (1994-95), fluorspar, lead (1994-95), lime, peat, silver (1994-95), stone [crushed miscellaneous (1994), dimension dolomite (1994)], tripoli, zinc, and value indicated by symbol W	XX	102,000	XX	107,000	XX	40,500
Total	XX	823,000	XX	828,000	XX	777,000

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/ Excludes certain clays; kind and value included with "Combined value" data.

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

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

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Coarse aggregate (+1 1/2 inch):</b>			
Macadam	854	\$4,180	\$4.89
Riprap and jetty stone	557	4,490	8.06
Filter stone	156	688	4.41
Other coarse aggregate	356	1,690	4.75
<b>Coarse aggregate, graded:</b>			
Concrete aggregate, coarse	5,760	30,600	5.31
Bituminous aggregate, coarse	4,940	29,900	6.05
Bituminous surface-treatment aggregate	1,230	7,280	5.92
Railroad ballast	519	2,790	5.38
Other graded coarse aggregate	1,840	8,610	4.68
<b>Fine aggregate (-3/8 inch):</b>			
Stone sand, concrete	435	1,900	4.37
Stone sand, bituminous mix or seal	234	1,170	5.00
Screening, undesignated	682	2,320	3.40
Other fine aggregate	324	1,420	4.38
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	9,940	44,500	4.48
Unpaved road surfacing	2,560	11,200	4.38
Crusher run or fill or waste	366	1,290	3.52
Other coarse and fine aggregates	1,080	4,700	4.35
Other construction materials	43	135	3.14
<b>Agricultural:</b>			
Agricultural limestone	2,580	10,800	4.19
Poultry grit and mineral food	100	1,460	14.60
Other agricultural uses	6	18	3.00
<b>Chemical and metallurgical:</b>			
Cement manufacture	3,530	13,800	3.91
Flux stone	W	W	5.29
Chemical stone	433	2,050	4.73
Sulfur oxide removal	W	W	3.42
<b>Special:</b>			
Mine dusting or acid water treatment	14	147	10.50
Asphalt fillers or extenders	14	183	13.10
Whiting or whiting substitute	W	W	11.00
Other fillers or extenders	464	24,200	52.20
<b>Unspecified:</b>			
Actual	12,200	69,000	5.66
Estimated	9,650	51,800	5.37
<b>Total</b>	<b>61,400</b>	<b>335,000</b>	<b>5.46</b>

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

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

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

TABLE 3  
ILLINOIS: 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/	141 r/	49,600 r/	\$285,000 r/	\$5.75 r/	133	48,000	\$264,000	\$5.51
Dolomite	21 r/	13,000 r/	67,400 r/	5.20 r/	22	13,400	71,200	5.29
Miscellaneous stone	1	7	37	5.29	--	--	--	--
Total	XX	62,600	353,000	5.64	XX	61,400	335,000	5.46

r/ Revised. 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 4  
ILLINOIS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1995, BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction aggregates:								
Coarse aggregate (+1 1/2 inch) 2/	898	4,950	258	1,590	334	2,150	433	2,350
Coarse aggregate, graded 3/	7,200	41,200	W	W	3,150	18,900	W	W
Fine aggregate (-3/8 inch) 4/	918	3,760	W	W	308	1,150	W	W
Coarse and fine aggregate 5/	7,210	30,500	897	4,260	2,640	12,400	3,200	14,500
Other construction materials	41	128	1,150	5,540	1	7	3,250	15,400
Agricultural 6/	(7/)	(7/)	(7/)	(7/)	919	4,460	852	3,660
Chemical and metallurgical 8/	(7/)	(7/)	(7/)	(7/)	(7/)	(7/)	1,140	4,970
Special 9/	(7/)	(7/)	(7/)	(7/)	(7/)	(7/)	--	--
Unspecified: 10/								
Actual	8,660	45,300	2,510	17,300	970	6,020	56	327
Estimated	4,130	21,700	926	4,460	1,760	10,000	2,830	15,600
Total	30,800	154,000	7,200	62,500	11,700	62,100	11,800	56,800

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

1/ Data are rounded to 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, railroad ballast, and other coarse aggregate.

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

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

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

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

8/ Includes cement manufacture, chemical stone for alkali works, flux stone, and sulfur oxide removal.

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

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

TABLE 5  
ILLINOIS: 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)	7,200	\$27,400	\$3.81
Plaster and gunite sands	323	1,320	4.08
Concrete products (blocks, bricks, pipe, decorative, etc.)	895	3,720	4.15
Asphaltic concrete aggregates and other bituminous mixtures	1,850	7,510	4.06
Road base and coverings 2/	7,270	37,700	5.18
Fill	3,190	11,800	3.70
Snow and ice control	40	228	5.70
Filtration	17	113	6.65
Other 3/	289	1,400	4.85
Unspecified: 4/			
Actual	10,500	41,500	3.97
Estimated	4,600	14,500	3.16
Total or average	36,100	147,000	4.07

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

2/ Includes road and other stabilization (cement).

3/ Includes railroad ballast and roofing granules.

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

TABLE 6  
ILLINOIS: 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		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	4,350	17,600	1,010	3,580	1,940	7,300	1,120	3,930
Asphaltic concrete aggregates and road base materials 3/	8,490	42,200	912	3,290	1,800	8,220	1,150	3,550
Other miscellaneous uses 4/	219	1,030	19	120	69	364	--	--
Unspecified: 5/								
Actual	8,540	35,800	792	3,410	1,120	2,260	--	--
Estimated	2,120	6,850	472	1,260	1,240	3,460	772	2,960
Total	23,700	103,000	3,210	11,700	6,170	21,600	3,040	10,400

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 snow and ice control.