

# THE MINERAL INDUSTRY OF ILLINOIS

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

In 2000, the estimated value<sup>1</sup> of nonfuel mineral production for Illinois was \$907 million, based upon preliminary U.S. Geological Survey (USGS) data. This was a 1.2% increase from that of 1999<sup>2</sup> and followed a 2.4% increase from 1998 to 1999. For the third consecutive year, Illinois was 17th in rank among the 50 States in total nonfuel mineral production value, of which the State accounted for more than 2% of the U.S. total.

All of Illinois' total nonfuel mineral production value in 2000 resulted from the production of industrial minerals; no metals have been produced from mines in the State since 1996 when small quantities of copper, lead, silver, and zinc were produced. Crushed stone, by value, was the State's leading commodity, accounting for about 45% of the total, followed by portland cement with almost 24%, and construction sand and gravel with about 15%. In 2000, increases in crushed stone, up \$22 million, and those of portland cement and lime, up a combined \$7 million, more than offset decreases that occurred in construction sand and gravel and fuller's earth (table 1). Small to marginal decreases occurred in peat and tripoli. In 1999, rising values in crushed stone (up \$16 million), portland cement (up \$8 million), and tripoli (up about \$3 million) were significantly greater than the decreases in fuller's earth and construction sand and gravel (descending order of change), resulting in the overall increase for the year (table 1).

Compared with USGS estimates of the quantities of minerals produced in the other 49 States in 2000, Illinois remained first in industrial sand and gravel and first among 4 States that produce tripoli; fourth in crushed stone; fifth in peat; eighth in portland cement; and ninth in lime. The State dropped to eighth from seventh in fuller's earth and continued to be a significant construction sand and gravel-producing State. Raw steel was produced in the State, but it was processed from materials obtained from other domestic and foreign sources. Illinois remained fifth in the Nation in the manufacture of raw steel with

an estimated output of 6 million metric tons (Mt), according to the American Iron and Steel Institute.

The following narrative information was provided by the Illinois State Geological Survey<sup>3</sup> (ISGS). Crushed stone production increased to about 79 Mt in 2000 from 76.7 Mt in 1999, an increase of about 3%. Construction sand and gravel production decreased to about 30.7 Mt in 2000 compared to 34.1 Mt in 1999, a decrease of about 10%. For the most part, the large decrease in sand and gravel production was probably caused by the depletion and closing of three or four of the most productive sand and gravel operations in Illinois, all in the metropolitan Chicago area, probably requiring more expensive aggregates to be brought into Chicago from elsewhere in Illinois or from out of State in 2001.

Influenced by the Illinois FIRST (Fund for Infrastructure, Roads, Schools, and Transit) construction program, sponsored by the Governor and passed by the State legislature in 1999, Illinois Department of Transportation (IDOT) predicted that increased construction and repair of roads, highways, bridges, and other transportation projects would probably increase the demand for high-quality construction aggregates by about 40% in 2000 with similar increases in 2001 and 2002. The preliminary production data for 2000 indicated that the predicted increase did not occur possibly because of such factors as the economic slowdown, slower than anticipated implementation of major projects, greater importation of aggregates from out of State, and closing of depleted mining sites. However, the FIRST program has stimulated exploration for and development of new construction aggregate reserves in 2000, especially in, or as near as possible to, major project regions such as the metropolitan Chicago area and the East St. Louis metropolitan area.

The growth of crushed stone production and the decrease in sand and gravel production largely reflected the conditions that affected aggregate production in the metropolitan Chicago region (northeastern Illinois) in 2000. In that area, it was very difficult to open new pits or quarries because of intense public opposition and the construction of housing and industrial development over known deposits of high-quality stone and sand and gravel. Stone production grew there by increasing production at large quarries that operate in thick, high-quality Silurian age dolomites. Many of these quarries continued to be highly productive even after their reserves of Silurian age dolomite were quarried out by going underground to produce large tonnages of high-quality Ordovician age dolomite as Conco-Western Stone Co. is did at North Aurora in Kane County. Such room-and-pillar mining generated underground space that could become very valuable for storing various types of manufactured goods and frozen foods at constant temperature and humidity.

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<sup>1</sup>The 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 of 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.

<sup>2</sup>Values, 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 change.

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<sup>3</sup>John M. Masters, Geologist, authored the text of State minerals industry information provided by the Illinois State Geological Survey.

In 2000, increasing sand and gravel production in northeastern Illinois was difficult because existing pits generally did not have the capacity to greatly increase their production and, as the bigger pits became depleted and were forced to close, such as Material Service Corp.'s Dundee and Vulcan Material Co.'s Crystal Lake properties, both in McHenry County, not enough new pits were being opened to replace the lost production. Most pits, even in the gravel-rich deposits of this area, contained more fine aggregate than coarse. In 2000, most operators sold all the gravel they could produce and stockpiled the resulting excess sand production. In many instances, this sand was left behind when the gravel reserves were depleted. However, even this stockpiled material began to sell as the construction boom continued.

Strong public opposition mostly prevented new pits from being opened, even in the remaining undeveloped areas with reserve potential; however, perseverance paid off in one case. After many hearings and lawsuits, including an attempt by opponents to take their case to the U.S. Supreme Court, Meyer Material Co. opened a large operation on company-owned land on the south side of Crystal Lake, McHenry County.

Whenever possible, Illinois aggregate producers extended the life of existing operations by acquiring adjacent land where additional reserves existed. In northeastern Illinois, Material Service Corp. extended the life of its Federal Quarry in Cook County by proving new reserves on a newly acquired property on its south side. In northwestern Illinois, Moline Consumers Co. followed this trend by acquiring new reserves adjacent to existing quarries and pits even as the company continued to modernize operations. The company also expanded its market area by adding a fourth barge terminal on the Mississippi River. In Clinton County in south-central Illinois, although Keyesport Sand & Gravel's existing deposit was nearly depleted, by exploring along the trend of the deposit, the company extended the life of the pit many years by acquiring an adjacent property.

Larger companies continued to buy up smaller operations rather than explore for and attempt to open new (greenfield) mine sites. New site development required large investments of money and time to meet regulatory and zoning requirements. Such projects often ended up in court, requiring more time and money, with results still uncertain. The Prairie Group acquired new reserves with the purchase of sand and gravel pits in Champaign, Ford, and McLean Counties. Attempting to add significant reserves to one of these operations, the Prairie Group presented a proposal to the local forest preserve's board to extend its pit, which operated on leased private land, to an

adjacent property owned by the forest preserve. This property was leased out to the farmer who was also the landowner of the pit property and who helped put the mining plan together. Prairie proposed to reclaim both properties as mining progressed, ultimately creating two or three spring-fed fishing lakes for the preserve. When the project was completed, both properties would be integral parts of the preserve. The preserve's board rejected the proposal because the present landscape would be altered.

Material Service Corp. was awarded the Paleontological Society's Presidential Citation (Pit & Quarry, 2000). This award by the society seeks to give public recognition to private companies, landowners, and others for their significant contributions to scientific research and education. During the last 60 years, Material Service has consistently provided access to its quarry in Thornton for scientists, students, and school groups and has generously provided facilities, information, and assistance in support of such educational activities.

IDOT, working with the portland cement concrete industry and the Illinois Association of Aggregate Producers, announced a revision of their stone sand specification that allowed washed stone sand products to be sold without blending in natural sand when they are to be used in portland cement concrete.

Interest in mineral exploration in the Shawnee National Forest persisted. A decision is expected in the summer or autumn of 2001 on applications to renew two lapsed prospecting permits for fluorspar in Hardin County. However, work was suspended on applications for four prospecting permits for base metals in Alexander County because of a request from the U.S. Bureau of Land Management that the U.S. Forest Service clarify the terms and conditions required for issuing such permits.

Although fluorspar is no longer mined commercially in southeasternmost Illinois, Hastie Mining and Trucking Co., a quarry company in Hardin County, operated mineral drying and bagging facilities in Rosiclare where the company reprocessed fluorspar purchased from the National Defense Stockpile for resale.

In 2000, Unimin Specialty Minerals in Alexander County was the only company in Illinois that mined and processed tripoli. However, other companies began to explore for new mine sites in 2000.

### Reference Cited

Pit and Quarry, 2000, Thornton Quarry cited by Paleontological Society: Pit and Quarry, v. 93, no. 4, October, p. 16.

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

(Thousand metric tons and thousand dollars)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	2,690	207,000 e/	2,940	215,000 e/	3,000	217,000 e/
Clays, common	123	560	134	616	134	616
Gemstones	NA	8	NA	8	NA	8
Sand and gravel:						
Construction	34,100	150,000	34,100	147,000	30,700	137,000
Industrial	4,580	71,100	4,460	71,100	4,460	71,100
Stone, crushed 3/	72,100	371,000	76,700	387,000	79,000	409,000
Combined values of clays (fuller's earth), lime, peat, stone (crushed sandstone), tripoli	XX	75,400	XX	75,100	XX	73,500
Total	XX	875,000	XX	896,000	XX	907,000

e/ Estimated. p/ Preliminary. NA Not available. 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.

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

TABLE 2  
ILLINOIS: 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/	129	55,600 r/	\$293,000 r/	\$5.26 r/	126	60,500	\$309,000	\$5.10
Dolomite	20	16,500 r/	78,100 r/	4.74 r/	23	16,200	78,800	4.87
Sandstone	1	W	W	W	1	W	W	W
Total or average	XX	72,100	371,000	5.14	XX	76,700	387,000	5.05

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

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

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

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

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Construction:</b>			
<b>Coarse aggregate (+1 1/2 inch):</b>			
Macadam	1,440	\$8,450	\$5.88
Riprap and jetty stone	469	4,060	8.66
Filter stone	520	2,790	5.37
Other coarse aggregate	487	1,770	3.62
Total or average	2,910	17,100	5.86
<b>Coarse aggregate, graded:</b>			
Concrete aggregate, coarse	6,410	38,100	5.94
Bituminous aggregate, coarse	4,850	33,400	6.89
Bituminous surface-treatment aggregate	1,840	11,000	5.98
Railroad ballast	351	2,050	5.85
Other graded coarse aggregate	1,660	6,280	3.78
Total or average	15,100	90,800	6.01
<b>Fine aggregate (-3/8 inch):</b>			
Stone sand, concrete	733	3,230	4.41
Stone sand, bituminous mix or seal	493	2,330	4.73
Screening, undesignated	1,300	4,630	3.57
Other fine aggregate	6	27	4.50
Total or average	2,530	10,200	4.04
<b>Coarse and fine aggregates:</b>			
Graded road base or subbase	11,900	55,900	4.69
Unpaved road surfacing	2,320	11,000	4.72
Terrazzo and exposed aggregate	2	7	3.50
Crusher run or fill or waste	353	1,690	4.78
Roofing granules	17	96	5.65
Other coarse and fine aggregates	1,600	6,040	3.79
Total or average	16,200	74,600	4.61
Other construction materials	917	5,890	6.42
<b>Agricultural:</b>			
Agricultural limestone	1,980	8,050	4.06
Poultry grit and mineral food	W	W	17.18
Other agricultural uses	61	763	12.51
Total or average	2,040	8,810	4.31
Chemical and metallurgical, cement manufacture	(3/)	(3/)	5.92
<b>Special:</b>			
Mine dusting or acid water treatment	(3/)	(3/)	12.38
Asphalt fillers or extenders	(3/)	(3/)	12.95
Other fillers or extenders	(3/)	(3/)	5.78
Other miscellaneous uses and specified uses not listed	18	325	18.06
<b>Unspecified: 4/</b>			
Reported	25,000	121,000	4.84
Estimated	9,000	40,000	4.52
Total or average	33,900	161,000	4.76
Grand total or average	76,700	387,000	5.05

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

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

2/ Includes dolomite, limestone, limestone-dolomite, and miscellaneous stone; excludes sandstone to avoid disclosing company proprietary data.

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

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

TABLE 4  
ILLINOIS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 1999, BY USE AND DISTRICT 1/ 2/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
<b>Construction:</b>								
Coarse aggregate (+1 1/2 inch) 3/	1,610	9,690	148	1,010	610	3,920	549	2,450
Coarse aggregate, graded 4/	8,310	55,100	W	W	3,460	21,100	W	W
Fine aggregate (-3/8 inch) 5/	W	W	W	W	539	2,230	W	W
Coarse and fine aggregate 6/	9,500	44,700	530	2,590	2,910	14,500	3,240	12,800
Other construction materials	821	5,300	--	--	1	6	94	587
Agricultural 7/	443	1,380	279	1,350	642	3,830	679	2,240
Chemical and metallurgical 8/	W	W	--	--	W	W	--	--
Special 9/	--	--	W	W	W	W	--	--
Other miscellaneous uses	--	--	--	--	18	325	--	--
<b>Unspecified: 10/</b>								
Reported	13,200	62,200	2,800	13,500	1,610	7,530	7,360	37,800
Estimated	3,400	15,000	1,500	7,000	1,600	7,200	2,400	11,000
Total	39,600	204,000	6,140	30,700	13,200	71,600	17,700	81,000

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 dolomite, limestone, limestone-dolomite, and miscellaneous stone; excludes sandstone to avoid disclosing company proprietary data.

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

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

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

6/ Includes crusher run (select material or fill), graded road base or subbase, roofing granules, terrazzo and exposed aggregates, unpaved road surfacing, and other coarse and fine aggregates.

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

8/ Includes cement manufacture.

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

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

TABLE 5  
ILLINOIS: 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)	6,270	\$25,400	\$4.05
Plaster and gunite sands	431	1,910	4.44
Concrete products (blocks, bricks, pipe, decorative, etc.)	685	3,860	5.63
Asphaltic concrete aggregates and other bituminous mixtures	1,340	6,280	4.69
Road base and coverings	3,750	19,000	5.06
Road and other stabilization (cement and lime)	636	2,600	4.09
Fill	2,550	8,620	3.38
Snow and ice control	24	110	4.58
Other miscellaneous uses 2/	67	530	7.91
<b>Unspecified: 3/</b>			
Reported	10,500	44,000	4.18
Estimated	7,800	35,000	4.49
Total or average	34,100	147,000	4.32

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

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

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

TABLE 6  
ILLINOIS: 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		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	2,490	11,000	1,030	3,970	2,270	8,690	479	1,770
Concrete products (blocks, bricks, pipe, decorative, etc.) 2/	769	4,070	W	W	333	1,640	W	W
Asphaltic concrete aggregates and other bituminous mixtures	857	3,950	W	W	441	2,010	W	W
Road base and coverings	2,470	12,800	314	1,330	662	396	307	871
Road stabilization (cement and lime)	598	2,480	W	W	W	W	--	--
Fill	1,040	3,740	578	1,530	645	2,490	292	855
Snow and ice control	18	93	W	W	W	W	(3/)	(3/)
Other miscellaneous uses 4/	33	314	89	610	40	126	1	4
Unspecified: 5/								
Reported	7,600	32,400	1,510	7,550	1,340	3,740	71	319
Estimated	3,300	16,000	510	2,300	1,900	7,500	2,100	8,900
Total	19,100	87,100	4,040	17,300	7,620	30,200	3,280	12,700

W Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous uses." -- Zero.

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

2/ Includes gunite and plaster sands.

3/ Less than 1/2 unit.

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

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