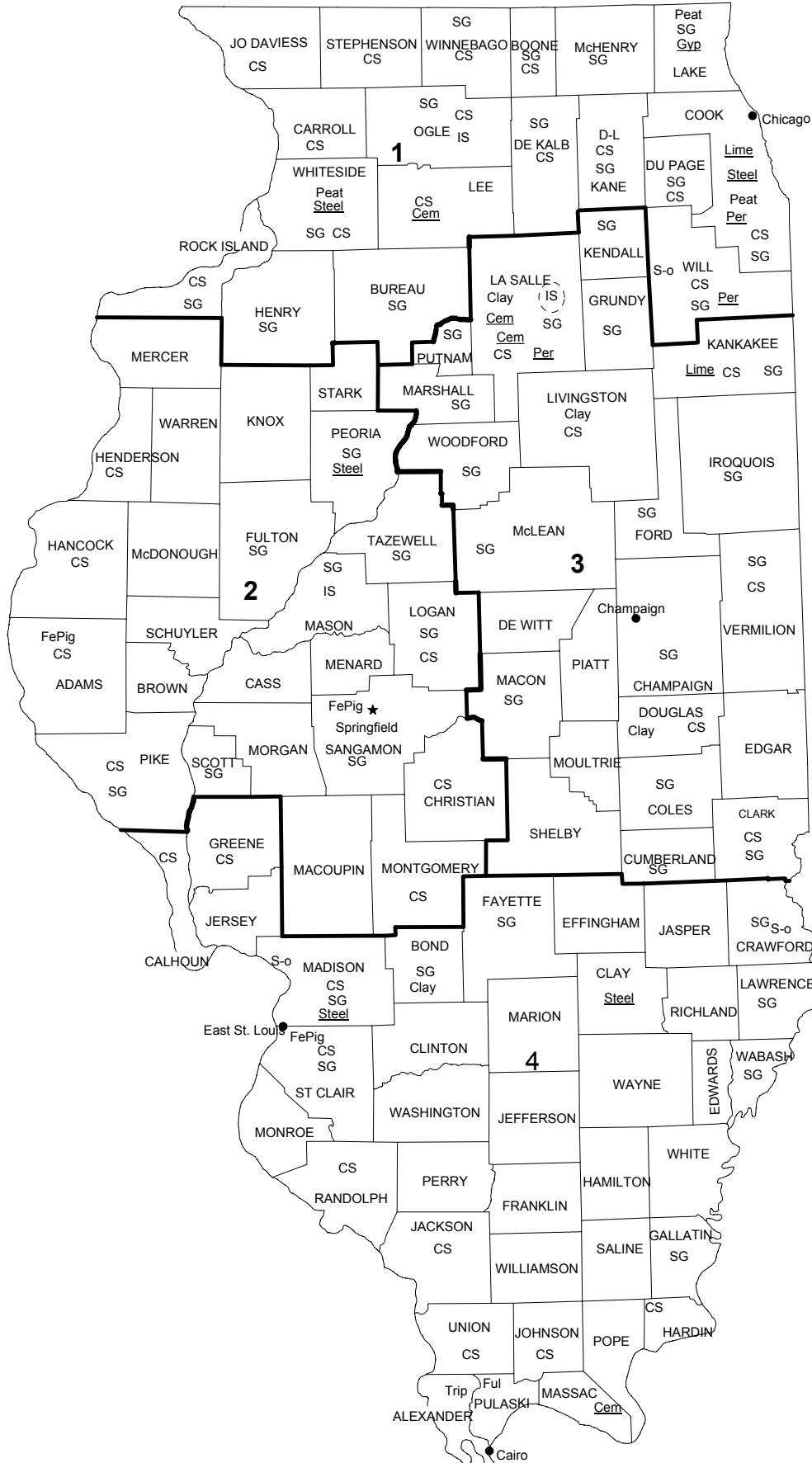


# ILLINOIS



## LEGEND

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

## MINERAL SYMBOLS (Major producing areas)

- Cem Cement plant
- Clay Common clay
- CS Crushed stone
- D-L Dimension limestone
- FePig Iron oxide pigments
- Ful Fuller's earth
- Gyp Gypsum plant
- IS Industrial sand
- Lime Lime plant
- Peat Peat
- Per Perlite plant
- S-o Sulfur (oil)
- SG Construction sand and gravel
- Steel Steel plant
- Trip Tripoli
- Concentration of mineral operations



# 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 2001, the estimated value<sup>1</sup> of nonfuel mineral production for Illinois was \$911 million, based upon preliminary U.S. Geological Survey (USGS) data. This was a marginal decrease from that of 2000<sup>2</sup> and followed a 1.6% increase from 1999 to 2000. 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 2001 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 46% of the total, followed by portland cement with almost 25% and construction sand and gravel with about 14%. In 2001, increases in crushed stone and portland cement were not quite enough to offset decreases in fuller's earth, lime, and construction sand and gravel (descending order of change), resulting in the State's slight decrease in total nonfuel mineral value for the year. In 2000, rising values in fuller's earth (up more than \$16 million), crushed stone (up \$6 million), portland cement (up \$3 million), plus smaller increases in lime, industrial sand and gravel, and common clays had more than offset decreases in construction sand and gravel, tripoli, and peat (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 2001, Illinois remained first in industrial sand and gravel, first among 4 States that produce tripoli, and fifth in crushed stone and peat. The State rose to 8th from 9th in lime and dropped to 4th from 3d in fuller's earth and to 10th from 9th in portland cement. In addition, Illinois 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 output of 4.72 million metric tons, according to the American Iron and Steel Institute.

The following narrative information was provided by the Illinois State Geological Survey<sup>3</sup> (ISGS). The Illinois aggregate industry has faced a year of change and challenge. Increased construction generated by Illinois FIRST (the State's Fund for Infrastructure, Roads, Schools, and Transit) and the Illinois Coal Revival Initiative has created sharply increased demand for high-quality aggregate. At the same time, the rapid expansion of the suburban Chicago area has expropriated prime stone and sand-and-gravel reserves and has increased resistance to development of new pits and quarries. Improvements have continued in the industry: new uses are being sought for fines that are the byproduct of the crushed stone industry, wetland protection and mine reclamation efforts continue to see better results, new legislation has reduced unnecessary burdens on aggregate producers, and companies in the brick industry have continued to expand. Research has continued on developing the portable infrared mineral analyzer (PIMA) as a tool for quality control and exploration in the mining industry, on the feasibility of mining feldspar from Illinois dune sands, and on the benefits of the State's geologic mapping program.

The aggregate industry and Illinois Department of Transportation (IDOT) district engineers reported a significant increase in demand for construction aggregate in the State in 2001. In its second year, the Illinois FIRST construction program, a \$12 billion, 5-year program sponsored by the Governor and passed by the General Assembly in 1999, resulted in increased construction and repair of roads, highways, bridges, and other transportation projects throughout the State. To upgrade critical infrastructure, the State allocated \$2.3 billion for a highway improvement program for fiscal year 2001, which was 18% higher than the previous year's program and more than 200% higher than the appropriations in 1999 and earlier. The increased funding for the bond was generated by increases in passenger car registration fees and large-truck license fees.

According to IDOT's Fiscal Year 2001 Annual Report, Illinois' interstates are among the oldest in the Nation. Nearly 85% of the interstate system is at least 21 years old, past the 20-year design cycle when major rehabilitation and upgrade may be needed. The State highway system has an even higher percentage of roads built or reconstructed more than 20 years ago—nearly 96%. In 2001, a total of 2,670 kilometers of highway and 295 bridges were constructed or improved, and more than 55,000 private sector jobs were supported in the highway construction projects.

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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 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>.

<sup>2</sup>Values, 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.

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<sup>3</sup>Zak Lasemi, Geologist, in collaboration with other members of the ISGS Industrial Minerals Section, authored the text of the State mineral industry information submitted by that State agency.

Increased demand is also expected for high-purity limestone as a result of the Illinois Coal Revival Initiative enacted in 2001. This initiative offers tax and other financial incentives to promote the construction and operation of new electrical generating plants using Illinois coal. Dozens of development prospects have surfaced, and two major companies have plans to build mine-mouth coal-fired powerplants. More high-purity limestone will be needed for the plants' flue gas desulfurization scrubbers. The ISGS has responded to numerous requests to help locate the necessary high-purity limestone.

In many parts of the State, especially in densely populated northeastern Illinois, it has been very difficult to open new pits or quarries because of intense public opposition and suburban expansion building over prime reserves of stone and sand and gravel. Northeastern Illinois is one of the largest producers and consumers of aggregates in the country and will likely remain so far into the future. Stone resources have historically been obtained locally from high-quality Silurian dolomites that occur at the bedrock surface throughout most of northeastern Illinois. Stone production grew by increasing production at large existing quarries. Ordovician rocks, which underlie the Silurian throughout the region, are becoming a significant potential source of stone as the accessible Silurian dolomite reserves continue to be depleted. The uppermost Ordovician (Maquoketa Group) consists primarily of shale, up to 91 meters thick, and forms the floor of the quarries in the overlying Silurian dolomites. Underlying the Maquoketa are the Galena and Platteville Groups, which are mostly dolomites and limestones up to 91 meters in thickness. In the 1970s, the first underground mine opened in these rocks attracted considerable interest in the Ordovician carbonates as a target for mining throughout the region. Plans to mine Ordovician rocks through underground mining or other methods accelerated in 2001. Elmer Larson LLC began stripping the thick Ordovician shale below the floor of its quarry near Sycamore (De Kalb County) in order to quarry the Galena Group dolomites. In Will County, Joliet Sand and Gravel Co. opened a new underground mine at its quarry near Joliet, and Vulcan Materials Co. continued with plans to develop an underground operation mining the Galena Group dolomites at its Lemont Quarry site. In addition, several sites under depleted gravel pits have been investigated that could be used to directly access the Galena by inclines constructed through the Maquoketa Shale.

Material Service Corp. reopened a sand and gravel pit at Channahon in Will County, but several other companies continued to battle for permission to expand existing pits and quarries or open new ones. U.S. Silica requested permits for expansion of its industrial sand mining operations to south of the Illinois River in Ottawa, IL (La Salle County). A 102-hectare (ha) site has received a permit for mining from the Illinois Department of Natural Resources, Office of Mines and Minerals. The plan includes construction of a tunnel under the river to transport the sand to its existing processing plant. Archeological and environmental concerns need to be addressed before proceeding with the mine expansion (Aubry, 2001§<sup>4</sup>). Monticello Inc. of Carol Stream requested that 107 ha

east of Illinois 178 and north of the Illinois River in Utica, La Salle County, be rezoned from residential to heavy industrial for gravel mining. The issue was considered at several court hearings and remains unresolved. The agency that promotes tourism along the Illinois & Michigan Canal argued that added noise, dust, and truck traffic from the mine could discourage tourists (Feinman, 2001§). Grundy County issued an operating permit to a local sand and gravel mining company (Morris Sand & Gravel) near Morris. Issuing this permit has angered nearby residents who have been battling against the project for 3 years. The residents have filed a lawsuit that they hope will force the county to shut down the project (Pelkie, 2001§). The Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) planned to sign contractual agreements with a mining company to have it extract and sell limestone/dolomite from the property, and the MWRDGC would subsequently use the open pit for temporary storage of storm water. To help the parties negotiate the terms of an agreement based on objective market information, the ISGS conducted a study that addressed the stone quality and reserves compared to existing nearby quarries and assessed potential economic benefits to the MWRDGC.

Companies mining aggregates are increasingly looking for ways to use their byproducts and overburden fines. The best use is in current products, but beyond this, companies are evaluating limestone and dolomite fines as agricultural amendments, fill and flowable fill, manufactured sand, underground utility markers, ceramics, foundry sand, portland cement raw materials, wastesite cover-barriers, and liquid and gaseous scrubbers and neutralizing agents for acid waste streams.

The aggregate industry continued cooperating with local and State agencies in protecting wetlands and by contributing to reclamation of mined-out sites. The State of Illinois bought 27 ha of wetland property in Lake County in the Hills Fen Nature Preserve in McHenry County. This allows the State to buffer or to preserve the rare wetland area. The preserve is a series of gravel hills overlooking a large complex of wetlands. The area is known for its scenic beauty, native grasses, and many rare wildflowers with 19 endangered or threatened species of plants and animals. Material Service Corp. voluntarily ceased mining sand and gravel at the site a year earlier to protect the preserve and donated more than 32 ha of land to establish the original nature preserve. In addition to selling the land, the company donated \$2.5 million to the State (Sharp, 2001§).

A former gravel mine near Libertyville, Lake County, has been converted into a forest preserve park (Independence Grove Forest Preserve), which opened on June 2, 2001. The 445-ha preserve features a 47-ha lake and will offer the widest variety of recreational activities of any single Lake County preserve—including the only swimming beach on a forest preserve lake. The district first considered the gravel pit as a potential preserve in the 1970s. In 1982, the county purchased the site from Lake County Grading Co. in Libertyville and entered into a 15-year contract with the company. Under the agreement, Lake County Grading would continue mining until 1997 and, in return, would set aside a portion of its profits for the cost of preserving the site. The company had set aside \$6.8 million for the project and agreed to complete about \$8 million in earthmoving work for the project at no cost (Ryan, 2001).

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<sup>4</sup>References that include the section twist ( ) are found in the Internet References Cited section.

The Illinois Association of Aggregate Producers (IAAP) partnered with the Illinois Environmental Protection Agency to create proposed air permitting rules for portable emission sources.

On January 11, 2001, the Governor signed into law Public Act 91-938, the IAAP's surface mining reform bill. The act makes three important changes in Illinois' surface mining laws. It increases the aggregate surface mine permit term from 3 to 10 years. The 10-year permit term promotes more efficient mining and will allow operators to permit larger tracts of land.

Second, the law creates a formal permit transfer procedure that promotes the orderly transfer of mine properties while ensuring that no gap in reclamation bond coverage occurs.

Finally, the law prohibits local governments from requiring reclamation bonds for mines already bonded by the State and ends the double bonding requirement. A local government cannot require a mining company that has a State reclamation bond to submit another bond for the same tract of land.

The IAAP Safety Committee initiated a "Rock Solid Safety" Awards Program to publicly recognize IAAP members who set high safety and health standards in the conduct of their operations. Illinois had zero nonmetal industry fatalities for 2001—the first time this has happened since 1995.

IAAP and IDOT have increased preregulation "partnering" on a number of issues. Two important recent efforts were skid resistant testing (variable speed friction test) for aggregates in the asphalt top layer in roads and a new aggregate gradation control system. The latter program was established through joint IAAP-IDOT working groups, and it mandates specifications and certified wet screen particle-size analyses for a number of crushed stone products. For skid-resistance measurements, IDOT chose a circular tire tester of polishing rates of limestones, dolomites, gravels, sandstones-quartzites, slags, and related materials. These test data were used with Illinois traffic density maps to establish limits on the amount of limestone, dolomite, and crushed gravel in high-traffic asphalt roads. Generally, twice as much dolomite as limestone can be used, and a higher friction material must form the rest of the mix. Gravels vary according to their composition, but many in northern Illinois are dolomitic. These and other IAAP-IDOT efforts are increasingly aimed at creating practical and realistic specifications for current and planned 30- to 40-year roads and bridges and at finding adequate high-quality aggregate supplies for these structures.

Moline Consumers Co., a privately held company with crushed stone, sand and gravel, ready-mixed concrete and building materials operations in Illinois, Iowa, and Missouri, announced its new corporate name—RiverStone Group, Inc.

Glen-Gerie Brick Co. completed the purchase of Global Clay Products at Marseilles, IL. Global had recently completed a second tunnel kiln to double its capacity to more than 100 million bricks per year. Richards Brick Co. near East St. Louis has just about completed replacing its beehive periodic kilns with a continuous tunnel kiln. If operated continuously, modern, computer-controlled tunnel kilns reduce labor and energy costs, provide more uniform firing, and generally use less plant space. Colonial Brick Co. in Cayuga, IN, continues to operate the only beehive kilns in the region, and it will probably continue to take advantage of the batch mode, variable production rate, and

customized firing that are possible with the periodic kilns.

The ISGS, in cooperation with the University of Illinois Department of Natural Resources and Environmental Sciences and the Illinois Clean Coal Institute, has demonstrated the use of fly ash in making fired bricks. The fly ash is produced as a byproduct in the combustion of coal. It is estimated that the Illinois brick industry could use up to about 360,000 metric tons per year of fly ash. The team is currently working with utilities and brick companies to perform full-scale commercial demonstrations at several brick companies.

Research has continued in the field of industrial minerals in Illinois. Recent projects include developing procedures for using the PIMA for product quality control and exploration in the aggregate mining industry and for other applications, for investigating the feasibility of using Illinois dune sand as a feldspar resource, and for assessing the economic benefits of detailed geologic mapping. The ISGS has begun a multiyear study to explore the applications of the PIMA for industrial minerals research and development and for routine mine planning and quality control at mine sites. The PIMA's one-analysis-per-minute speed, lack of sample preparation, and customized standards libraries suggest many applications. Current focus is on analysis of impurities in aggregates for roadways, ceramic clay deposits, mining byproducts, and mineral standards that match Illinois deposits better than the PIMA's standards. The ISGS has demonstrated that round or sawed cores, hand specimens, powders, and thin sections with or without a cover slip can be analyzed. The PIMA's 1.25-centimeter analysis window makes it possible to analyze very small features that are lost in bulk analyses.

The ISGS report entitled "Feldspar and Quartz from the Dunes of Kankakee, Illinois" presents flow diagrams and a preliminary economic analysis of potential uses of the sand in glass, ceramics, and foundry industries (Bhagwat and others, 2001). In bulk sand or as a flotation separate, the feldspar in the sand could replace feldspar for glass and ceramics manufacture that currently must be imported from North Carolina or Canada.

The ISGS's Special Report 3, Economic Benefits of Detailed Geologic Mapping to Kentucky, has been released. This study, carried out in cooperation with the Kentucky Geological Survey, estimated the value of geologic maps as a "public good" to society (Bhagwat and Ipe, 2000). A statistical survey of 2,200 map users indicated that the economic benefits of having detailed 7.5-minute geologic maps available outweighed the cost of the mapping program by a ratio of at least 25:1. The public is generally unaware of the fundamental importance of geologic information although it is vital to all planning and public health in modern industrial environments. This lack of awareness leads to a reluctance to invest taxpayer money in the generation of geologic information and in making it available in the form of maps. Kentucky was chosen for the study because it is the only major State to have completed mapping of the entire State at 1:24,000 scale. The ISGS study of the economic value of Kentucky's detailed geologic maps to its users demonstrated the benefits of the detailed geologic mapping program now underway in Illinois in identifying water and mineral resources, protecting its environment, and improving the quality of life for its citizens.

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

(Thousand metric tons and thousand dollars)

| Mineral   | 1999      |            | 2000     |            | 2001 p/  |            |
|---|-----------|------------|----------|------------|----------|------------|
|   | Quantity  | Value      | Quantity | Value      | Quantity | Value      |
| Cement, portland  | 2,940     | 215,000 e/ | 2,860    | 218,000 e/ | 2,940 e/ | 224,000 e/ |
| Clays, common   | 134       | 616        | 200      | 905        | 200      | 910        |
| Gemstones   | NA        | 8          | NA       | 8          | NA       | 8          |
| Sand and gravel:  |           |            |          |            |          |            |
| Construction  | 34,100    | 147,000    | 30,300   | 132,000    | 29,500   | 130,000    |
| Industrial  | 4,460     | 71,100     | 4,430    | 71,600     | 4,430    | 71,600     |
| Stone, crushed 3/   | 76,900 r/ | 388,000 r/ | 76,000   | 394,000    | 78,000   | 417,000    |
| Combined values of clays (fuller's earth), lime, peat, stone (crushed sandstone), tripoli | XX        | 77,000     | XX       | 96,200     | XX       | 67,600     |
| Total   | XX        | 899,000    | XX       | 913,000    | XX       | 911,000    |

e/ Estimated. p/ Preliminary. r/ Revised. 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             | 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/     | 128 r/             | 60,800 r/                       | \$310,000 r/      | \$5.09 r/  | 119                | 58,600                          | \$307,000         | \$5.23     |
| Dolomite         | 23                 | 16,200                          | 78,800            | 4.87       | 17                 | 17,400                          | 87,600            | 5.05       |
| Sandstone        | 1                  | W                               | W                 | W          | 1                  | W                               | W                 | W          |
| Total or average | XX                 | 76,900 r/                       | 388,000 r/        | 5.05       | XX                 | 76,000                          | 394,000           | 5.19       |

r/ Revised. W Withheld to avoid disclosing company proprietary data. 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 2000, BY USE 1/ 2/

| Use  | Quantity<br>(thousand<br>metric tons) | Value<br>(thousands) | Unit<br>value |
|--|---------------------------------------|----------------------|---------------|
| <b>Construction:</b>                                   |                                       |                      |               |
| Coarse aggregate (+1 1/2 inch):                        |                                       |                      |               |
| Macadam  | 1,050                                 | \$6,500              | \$6.18        |
| Riprap and jetty stone                                 | 297                                   | 3,300                | 11.12         |
| Filter stone   | 487                                   | 2,700                | 5.54          |
| Other coarse aggregate                                 | 228                                   | 1,130                | 4.97          |
| Total or average                                       | 2,060                                 | 13,600               | 6.61          |
| Coarse aggregate, graded:                              |                                       |                      |               |
| Concrete aggregate, coarse                             | 6,400                                 | 41,500               | 6.49          |
| Bituminous aggregate, coarse                           | 3,900                                 | 29,700               | 7.62          |
| Bituminous surface-treatment aggregate                 | 1,260                                 | 8,740                | 6.91          |
| Railroad ballast                                       | 377                                   | 2,190                | 5.81          |
| Other graded coarse aggregate                          | 1,310                                 | 5,030                | 3.84          |
| Total or average                                       | 13,200                                | 87,200               | 6.58          |
| Fine aggregate (-3/8 inch):                            |                                       |                      |               |
| Stone sand, concrete                                   | 7.23                                  | 3,410                | 4.72          |
| Stone sand, bituminous mix or seal                     | 237                                   | 1,150                | 4.84          |
| Screening, undesignated                                | 992                                   | 3,590                | 3.62          |
| Other fine aggregate                                   | 71                                    | 342                  | 4.82          |
| Total or average                                       | 2,020                                 | 8,490                | 4.20          |
| Coarse and fine aggregates:                            |                                       |                      |               |
| Graded road base or subbase                            | 10,300                                | 49,300               | 4.77          |
| Unpaved road surfacing                                 | 3,150                                 | 14,600               | 4.64          |
| Crusher run or fill or waste                           | 239                                   | 1,130                | 4.74          |
| Other coarse and fine aggregates                       | 1,320                                 | 5,180                | 3.93          |
| Total or average                                       | 15,000                                | 70,200               | 4.67          |
| Other construction materials                           | 805                                   | 5,520                | 6.85          |
| <b>Agricultural:</b>                                   |                                       |                      |               |
| Agricultural limestone                                 | 1,610                                 | 6,370                | 3.95          |
| Other agricultural uses                                | 19                                    | 73                   | 3.84          |
| Total or average                                       | 2,040                                 | 8,810                | 4.31          |
| <b>Chemical and metallurgical:</b>                     |                                       |                      |               |
| Cement manufacture                                     | W                                     | W                    | 7.89          |
| Dead-burned dolomite manufacture                       | W                                     | W                    | 4.95          |
| Special, other fillers or extenders                    | W                                     | W                    | 5.66          |
| Other miscellaneous uses and specified uses not listed | W                                     | W                    | 7.08          |
| <b>Unspecified: 3/</b>                                 |                                       |                      |               |
| Reported   | 24,900                                | 119,000              | 4.78          |
| Estimated  | 13,000                                | 60,000               | 4.63          |
| Total or average                                       | 37,800                                | 179,000              | 4.73          |
| Grand total or average                                 | 76,000                                | 394,000              | 5.19          |

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

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

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

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

TABLE 4  
ILLINOIS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2000, 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  |
| Construction:  |            |         |            |        |            |        |            |        |
| Coarse aggregate (+1 1/2 inch) 3/                      | 1,400      | 9,090   | 51         | 367    | 250        | 2,190  | 365        | 1,980  |
| Coarse aggregate, graded 4/                            | W          | W       | W          | W      | W          | W      | W          | W      |
| Fine aggregate (-3/8 inch) 5/                          | W          | W       | W          | W      | W          | W      | W          | W      |
| Coarse and fine aggregate 6/                           | 9,700      | 45,400  | 343        | 1,940  | 2,270      | 11,300 | 2,730      | 11,500 |
| Other construction materials                           | 785        | 5,420   | --         | --     | 5          | 19     | 14         | 81     |
| Agricultural 7/  | 592        | 1,930   | 106        | 556    | 395        | 1,910  | 537        | 2,040  |
| Chemical and metallurgical 8/                          | W          | W       | --         | --     | W          | W      | --         | --     |
| Special 9/   | --         | --      | W          | W      | --         | --     | --         | --     |
| Other miscellaneous uses and specified uses not listed | --         | --      | --         | --     | --         | --     | W          | W      |
| Unspecified: 10/                                       |            |         |            |        |            |        |            |        |
| Reported   | 14,400     | 68,000  | 2,300      | 11,000 | 1,450      | 6,810  | 6,760      | 33,200 |
| Estimated  | 3,300      | 15,000  | 2,200      | 11,000 | 2,800      | 14,000 | 4,500      | 20,000 |
| Total  | 40,500     | 214,000 | 5,560      | 27,500 | 12,600     | 73,200 | 17,300     | 79,700 |

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

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

7/ Includes agricultural limestone and other agricultural uses.

8/ Includes cement manufacture and dead-burned dolomite manufacture.

9/ Includes 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 2000,  
BY MAJOR USE CATEGORY 1/

| Use   | Quantity<br>(thousand<br>metric tons) | Value<br>(thousands) | Unit<br>value |
|---|---------------------------------------|----------------------|---------------|
| Concrete aggregate (including concrete sand)                | 5,670                                 | \$25,600             | \$4.51        |
| Plaster and gunite sands                                    | 436                                   | 1,960                | 4.50          |
| Concrete products (blocks, bricks, pipe, decorative, etc.)  | 495                                   | 2,480                | 5.01          |
| Asphaltic concrete aggregates and other bituminous mixtures | 887                                   | 3,590                | 4.05          |
| Road base and coverings                                     | 3,730                                 | 18,400               | 4.94          |
| Road and other stabilization (cement and lime)              | 181                                   | 705                  | 3.90          |
| Fill  | 1,850                                 | 6,830                | 3.69          |
| Snow and ice control  | 15                                    | 73                   | 4.87          |
| Other miscellaneous uses 2/                                 | 67                                    | 515                  | 7.69          |
| Unspecified: 3/   |                                       |                      |               |
| Reported  | 9,410                                 | 39,800               | 4.23          |
| Estimated   | 7,600                                 | 32,000               | 4.22          |
| Total or average  | 30,300                                | 132,000              | 4.35          |

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 2000,  
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)                  | 1,940      | 8,930  | 1,080      | 4,760  | 2,190      | 10,500 | 467        | 1,530  |
| Concrete products (blocks, bricks, pipe, decorative, etc.) 2/ | 407        | 2,010  | W          | W      | 399        | 2,000  | W          | W      |
| Asphaltic concrete aggregates and other bituminous mixtures   | 718        | 2,690  | W          | W      | W          | W      | W          | W      |
| Road base and coverings 3/                                    | 2,390      | 11,800 | 309        | 1,320  | 923        | 4,690  | 285        | 1,280  |
| Fill  | W          | W      | 391        | 1,130  | W          | W      | 129        | 403    |
| Other miscellaneous uses 4/                                   | 849        | 3,880  | 183        | 791    | 598        | 2,330  | 81         | 224    |
| Unspecified: 5/   |            |        |            |        |            |        |            |        |
| Reported  | 6,640      | 28,600 | 1,590      | 7,720  | 1,180      | 3,480  | --         | --     |
| Estimated   | 3,100      | 13,000 | 640        | 2,700  | 1,800      | 7,200  | 2,000      | 8,800  |
| Total   | 16,000     | 71,200 | 4,190      | 18,300 | 7,110      | 30,200 | 3,010      | 12,200 |

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 plaster and gunite sands.

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

4/ Includes filtration, railroad ballast, roofing granules, and snow and ice control.

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