2007 Minerals Yearbook

ILLINOIS [ADVANCE RELEASE]

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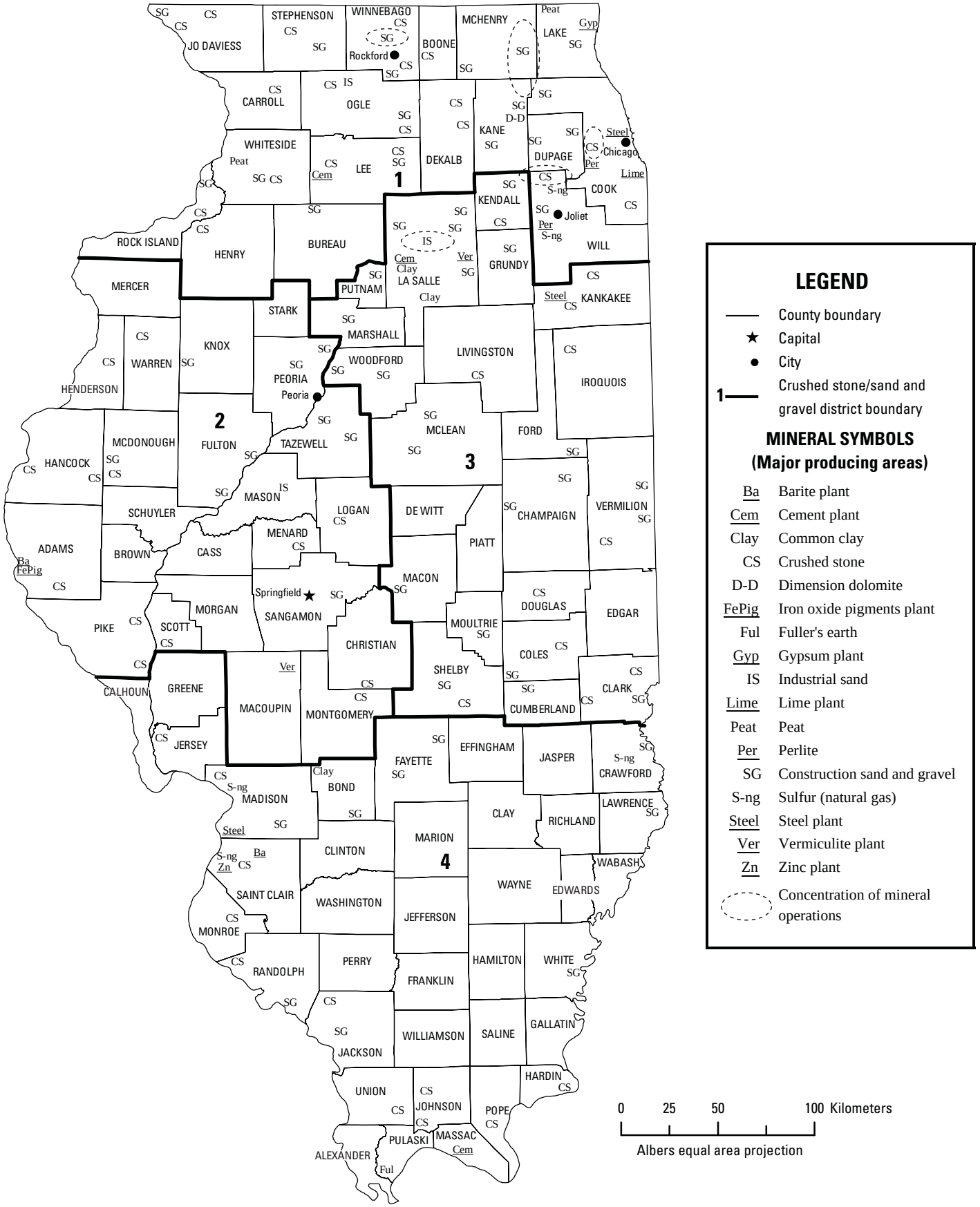
ILLINOIS



Source: Illinois State Geological Survey/ U.S. Geological Survey (2007).

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 2007, Illinois' nonfuel raw mineral production[1] was valued at $1.22 billion, based upon annual U.S. Geological Survey (USGS) data. This was a $30 million, or 2.4%, decrease from the State's total nonfuel mineral value in 2006, which then had increased by $40 million, up 3.3% from that of 2005. The State remained 20th in rank among the 50 States in the total nonfuel raw mineral production value and accounted for 1.7% of the U.S. total.

Industrial minerals continued to account for all of Illinois' nonfuel mineral production in 2007; metals were last produced in 1996, when small quantities of copper, lead, silver, and zinc were produced from mines in the State. In 2007, crushed stone, by value, remained Illinois' leading nonfuel mineral commodity, accounting for more than 48% of the State's total nonfuel mineral production value, followed, in descending order of value, by portland cement, with more than 25%; construction sand and gravel, more than 14%; industrial sand and gravel, 7%; and lime, tripoli, and fuller's earth clay with most of the remaining 5%. All other nonfuel minerals each accounted for less than one-half of 1% of the State's total value (table 1).

In 2007, decreases in the values of industrial sand and gravel, down by $15.2 million, crushed stone, down by $5 million, lime, down by about $1.5 million, and tripoli, down by $1 million, led to the State's decrease in total nonfuel mineral production value for the year. The only mineral commodity to show an increase for the year was portland cement, up by $1 million. The decreases in value were mostly the result of decreases in the production of each mineral commodity, while the unit values of most had small to moderate increases (table 1).

In 2007, Illinois continued to be first in the quantities of industrial sand and gravel produced and first among four States that produced tripoli, seventh in fuller's earth clays, and ninth in the production of portland cement. Despite a 5% decrease in the production of crushed stone, the State rose to sixth from seventh in that mineral commodity, while a significant decrease in peat production resulted in a decrease to fifth from fourth in that mineral commodity. Illinois continued to be a significant producer of construction sand and gravel and lime. Raw steel was produced in Illinois, but it was processed from ores and scrap metal obtained from other domestic and foreign sources. The State remained one of the Nation's leading raw steel-producing States, with an estimated output of nearly 3.9 million metric tons (Mt), down about 3.5% from the 4 Mt that were produced in 2006, as reported by the American Iron and Steel Institute (American Iron and Steel Institute, 2008, p. 74).

The following narrative information was provided by the Illinois State Geological Survey[2] (ISGS).

Overview

Of the industrial minerals mined or manufactured in Illinois, those that had the highest value included crushed stone, cement, construction sand and gravel, and industrial sand and gravel. Crushed stone and construction sand and gravel aggregate materials combined rose slightly in value to account for nearly 63% of Illinois' nonfuel raw mineral production value. Dolomite, mined from the Silurian and Ordovician carbonates in northern Illinois, accounted for most of the total stone production.

Road and residential and industrial building construction and maintenance were major sources of demand for the State's crushed stone, construction sand and gravel aggregate, and portland cement. As determined by the Illinois Department of Transportation (IDOT), Illinois has the third-largest network of State and local roads and the sixth-largest interstate highway system in the Nation. The State also had more than 26,000 bridges, nearly 8,230 of which were in the State highway system and are heavily used. A significant number of bridges were in need of repair or replacement, as were many stretches of the Illinois' interstate highway system and many State and secondary highways and roads. Large amounts of construction aggregates were required to keep interstate highways in top condition, maintain major highways, and improve congested urban and rural highways (Illinois State Geological Survey, 2009).

Northeastern Illinois was one of the leading aggregate-producing and aggregate-consuming regions in the country and was considered by the ISGS to remain into the future. Here, thick strata of Silurian and Ordovician dolomite were the primary sources of crushed stone aggregate, the older Ordovician typically being the deeper stone aggregate resource. In the western and southern parts of the State, limestones of the Mississippian System were extracted for cement manufacture, construction aggregate, and other related purposes. Limited amounts of Pennsylvanian limestone occurred in the central part of the State and were quarried near the surface. In these areas, underground mining may become necessary in order to meet the region's crushed-stone needs because near-surface limestone beds were of limited areal extent or thin, and generally were unsuitable for use in concrete highways.

[1]The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the 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 2007 USGS mineral production data published in this chapter are those available as of June 2009. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL http://minerals.usgs.gov/minerals.

[2]Zak Lasemi, Geologist and Head, Industrial Minerals and Resource Economics Section, and Donald G. Mikulic, Geologist, coauthored the text of State mineral industry information provided by the Illinois State Geological Survey.

Construction sand and gravel deposits were widely distributed throughout Illinois but were most abundant and of highest quality in northeastern Illinois. Such deposits were primarily extracted from glacial deposits in the central and northeastern parts of the State. Production of sand and gravel, however, has not increased significantly since the late 1960s, probably because of the better quality and larger reserves of crushed stone aggregate and difficulties in securing permits for new sand and gravel operations owing to public opposition.

Two major trends evident in the aggregate industry during the previous few years continued into 2007, these being primarily, but not exclusively, in the Chicago area. These trends involved adjustments to the Illinois aggregate industry's approach to exploration and mine development, with long-term effects on the sources and the production of the State's aggregate resources, especially for the areas of Chicago metropolitan and northeastern Illinois. This approach included a renewed perspective of not only exploring for resources that could be mined by surface methods, but underground mining methods as well. Secondly, significant business transactions in the region increasingly involved the acquisition of aggregate producers, several of these involving major producers.

Exploration and Development Activities

Industrial Minerals

Sand and Gravel, Construction, and Stone, Crushed.—In past years, most noteworthy has been the source of the aggregates for the Chicago metropolitan area and surrounding region of northeastern Illinois, which has long been one of the largest producers and consumers of aggregates in the country. Historically, these resources have been derived from surface quarries developed in the Silurian dolomites that underlie the area. During the mid- and late 19th century, considerable amounts of lime and building stone were produced from these rocks. While most of these resources were used within the region, the building stone was also exported throughout the Midwest. At the beginning of the 20th century, crushed stone became the primary product from these quarries and remains so into the present. Depletion of existing reserves and the increasing difficulty in obtaining permits to develop new surface quarries has encouraged producers to begin searching for and developing more deeply buried Ordovician dolomites that underlie the entire region. The Elmhurst-Chicago Stone Co. in the Chicago suburb of Elmhurst opened the first of these mines in the 1970s. Although this specific mine has since closed, a growing number of other such mines have been opened, while others have been under development.

The ISGS has noted considerable interest in exploration for additional underground mine sites. To date, existing underground mines had been sited either in depleted quarries or in sand and gravel pits, but one mine under development in 2007 was located at a property that had not previously been owned by an aggregate producer, nor had it been the site of any mineral resource extraction. Although the primary target for most of these new mines has been Ordovician dolomite, in some areas around Chicago, considerable amounts of Silurian dolomite could also be extracted by underground mining method. In summary, the long-term trend for this area was a replacement of Silurian dolomite with Ordovician dolomite as the primary source of locally produced aggregates in the Chicago region; these new sources were to be extracted by underground mining methods. Many small- to medium-sized surface quarries mining Silurian dolomite were likely to be depleted of reserves in a relatively short time although a few of the largest operations were likely to have sufficient reserves lasting for at least a few more decades.

High-Calcium Limestone.—Because of the importance of high-calcium limestone as the scrubbing agent in coal-fired powerplant flue gas desulfurization (FGD) scrubber systems, these materials were increasingly being sought. Sources for these raw materials, especially those sources nearby to the plants, were needed for existing as well as for new coal-fired powerplants. The FGD systems were installed mainly in response to environmental regulations set by the State and Federal governments requiring plants to reduce sulfur dioxide (SO_2) emissions and other pollutants.

Commodity Review

Industrial Minerals

Sand and Gravel, Construction.—Several of the major developments in the aggregate mining industry were acquisitions, primarily in the Chicago area. The largest acquisition included Material Service Corp. by Hanson PLC in June 2006, which was soon followed by the acquisition of Hanson PLC by HeidelbergCement AG of Germany in 2007. Material Service was started by the Crown family in 1919 and merged with General Dynamics Inc. in 1959. Material Service was the 13th largest producer of construction aggregates in the country and owned 11 stone quarries and three construction sand and gravel pits in Illinois and Indiana, including the Thornton Quarry near Chicago, the sixth leading quarry in the Nation in 2007.

In early March, Lafarge North America Inc. completed the purchase of Feltes Sand and Gravel Co. in Elburn, IL, about 80 kilometers (km) (50 miles) west of Chicago. This addition increased the company's annual aggregate sales in the Chicago market area to approximately 10 Mt (11 million short tons). Lafarge's combined operations included three underground aggregate mines, three quarries, three construction sand and gravel operations, an Illinois River dock, and decorative and landscape stone sales yards.

In other acquisitions, Aggregate Industries (a wholly owned subsidiary of Holcim, Ltd.) purchased Meyer Material Co., which operated six construction sand and gravel operations, mainly in McHenry County, northwest of Chicago, and Vulcan Materials Co. purchased the Avery Gravel Co. quarry in Kendall County, approximately 80 km west of Chicago.

Finally, Keyesport Sand and Gravel Co. in Salem purchased two active and one inactive limestone quarries in southern Illinois, including the Cypress Quarry and the Jonesboro Quarry, from Vulcan Materials Co. (an Illinois Association of Aggregate Producer's member). These quarries were to be operated under

the name of Shawnee Stone LLC. In addition, Keyesport acknowledged that the company was also operating the Brenda Kay Sand, LLC operation in Missouri.

Silica (Sand and Gravel, Industrial).—The Unimin Corp.'s Tamms/Elco industrial sand facility was located on 800 hectares (2,000 acres) in Alexander County. Unimin operated several mines and a processing plant for microcrystalline silica used in house paint, pool cue chalk, and lens polish.

Legislation and Programs

To enable continued maintenance and development of highways and bridges, IDOT estimated that a combined total of State and Federal funding in the range of about $12 billion to $20 billion would be needed during fiscal years 2004–09. As acknowledged by the Illinois Association of Aggregate Producers (IAAP), IDOT had proposed that about $10.5 billion would be needed for the fiscal years 2007–12 to maintain the current State highway system. The IAAP was a trade association representing owners and operators of stone quarries, sand and gravel pits, and recycling facilities that produce construction aggregates. The IAAP also had a nonaggregate mining division for companies that produced silica sand, clay, cement, and other minerals and mineral products, essentially representing all sectors of Illinois' noncoal mining industry (Illinois Association of Aggregate Producers, 2006). However, a continued State budget crisis and political impasse for authorizing major transportation capital funding for the past several years significantly affected the implementation of such a program, which also raised a concern of the State potentially losing a significant amount of matching funding from the Federal highway program if the budget impasse were to continue.

The ISGS and the Transportation for Illinois Coalition (TFIC) were active in communicating to the State legislature the urgent need for additional funding of its transportation infrastructure. The TFIC was an independent diverse consortium or group of Statewide and regional business, organized labor, industry, governmental, and not-for-profit organizations that were joined together in a united and focused effort to support a strong transportation alliance for the State of Illinois to include all modes of transportation, including air, highways, mass transit, rail, and water (Transportation for Illinois Coalition, 2009). The importance of adequate transportation infrastructure funding, additional to that which was in place, and the many actions necessary to restore the vitality of Illinois' road program were highlighted in a TFIC publication entitled "Rough Roads Ahead" (Transportation for Illinois Coalition, 2006, p. 20). The State Senate approved a bill for an $8 billion increase for highway and bridge construction and repair during the next 5 years, including $6 billion mostly slated for the State highway program. Within the bill was about $1 billion to fund a major initiative for local as well as State bridge repairs and reduce structurally deficient IDOT bridges, $1 billion to replace worn out Interstates, and a $1 billion increase in resurfacing to keep IDOT roads in good condition.

Environmental Issues and Minerals Availability

The U.S. Clean Air Interstate Rule

The U.S. Clean Air Interstate Rule (CAIR), set to be implemented in 2010, will require significant SO_2 emission caps for all coal-fired powerplants in 28 Eastern States and the District of Columbia (U.S. Environmental Protection Agency, 2010). This rule will affect both large coal-fired powerplants burning high-sulfur coal and smaller plants that burn low- to medium-sulfur coal. The pollution control requirements were accelerating the installation of limestone-based FGD systems in coal-fired powerplants. This trend toward increasing numbers of FGD units was expected to continue into the future. Because of the importance of high-calcium limestone as a scrubbing agent, the issues of availability, suitability, and transport of high-calcium limestone resources for use in FGD equipped powerplants were becoming increasingly important and in current need of being addressed.

Illinois State Geological Survey

High-Calcium Limestone Studies.—Illinois has abundant limestone and dolomite resources, but high-calcium limestone occurs in only certain parts the State. The suitability of the State's various limestones for FGD applications varies with the most suitable limestone resources generally not widely available. Through grants from the Illinois Clean Coal Institute (ICCI), the ISGS recently conducted a Statewide inventory and characterization of limestone and dolomite resources. The results of the ISGS study indicated that limestone containing more than 95% calcium carbonate ($CaCO_3$) commonly occurs beneath Pennsylvanian rocks in the western and southern parts of Illinois along the Mississippi and Ohio Rivers. At existing quarries, these materials were being extracted from the Mississippian units, but a potential for mining high-calcium limestone was also known to be in rock units from the Ordovician, Silurian, and Devonian Systems in the southern part of the State. Limited amounts of Pennsylvanian limestones were present in the central part of the State and were being mined at a few locations. These limestones were variable in purity, but in some cases may contain between 90% and 95% $CaCO_3$. Dolomite predominates in northern Illinois, especially in the Chicago area, where this material is ill-suited for use in FGD scrubbers because of low reactivity.

Also by means of a grant from the ICCI, the ISGS began investigating the suitability of limestone fines (ag-lime) from quarries as a potential source of sorbent for FGD. Byproduct fines were produced in all crushed stone quarries, and their utilization as a scrubbing agent could provide major cost-saving advantages. The fines, however, had not as yet been fully characterized, and their chemical, mineralogical, and physical properties and reactivities with respect to SO_2 capture were not known. To determine the quality and suitability of these potentially effective and low-cost sources of the scrubbing

agents, the ISGS was in the process of conducting a detailed characterization of the fines from a representative selection of quarries, focusing on those near existing and potential coal-fired powerplants. Results from this project would aid in selecting the best product at an affordable cost for each powerplant with specific sorbent needs.

Autoclaved Aerated Concrete.—Researchers at the ISGS successfully completed commercial-scale production of autoclaved aerated concrete (AAC) using Class C fly ash from the Baldwin powerplant in Randolph County. The compressive strength testing of the final blocks was conducted at a laboratory of the University of Illinois at Urbana-Champaign. The AAC blocks produced with Class C fly ash without additives met commercial quality standards. Further testing to evaluate the effect of silica sand additive on compressive strength of AAC blocks was in progress.

Environmental Awards

In recognition of outstanding efforts to conserve endangered wildlife, Unimin Corp.'s Tamms/Elco Facility in southern Illinois received the U.S. Department of the Interior's U.S. Fish and Wildlife Service's Corporate Wildlife Stewardship Award. On November 15, Unimin was recognized for its work to create and maintain a crucial hibernating habitat for the endangered Indiana bat at the company's Magazine Mine and several other sites in Alexander County. Unimin partnered with Bat Conservation International, the Illinois Department of Natural Resources (IDNR), U.S. Fish and Wildlife Service, U.S. Forest Service, and Wildlife Forever to accomplish this task. Since 2001, the number of Indiana bats hibernating in Magazine Mine had increased to more than 33,000 species, making it one of the species' most important hibernating sites and contributing significantly to recovery efforts for the bat (North American Quarry News, 2008).

Outlook

In summary, Illinois' nonfuel mineral industries had several challenging issues for the upcoming years: obtaining adequate government funding for continued transportation infrastructure improvements; supplying aggregate to rapidly growing regions such as Chicago and metropolitan East St. Louis; mining those and other needed natural resources while dealing with increasing public opposition to mining; and resolving the conflicting public demands for protection of the environment. The repair and maintenance of the highway system requires local availability of high-quality aggregate. With aggregate constituting approximately 80% of concrete pavement and more than 90% of asphalt, durable aggregate will continue to be in high demand throughout the State for years to come.

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TABLE 1

NONFUEL RAW MINERAL PRODUCTION IN ILLINOIS[1, 2]

(Thousand metric tons and thousand dollars)

Mineral	2005		2006		2007	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	3,240	286,000 e	3,110	308,000 e	3,120	309,000 e
Clays:						
Common	119	667	W	W	W	W
Fuller's earth	225	W	W	W	W	W
Gemstones, natural	NA	14	NA	34	NA	34
Sand and gravel:						
Construction	37,400	210,000	32,500	176,000	31,800	175,000
Industrial	5,510	104,000	5,410	102,000	4,090	86,800
Stone, crushed	76,400	549,000	78,300 r	596,000 r	74,500	591,000
Combined values of lime, peat, stone [dimension dolomite (2005)], tripoli, and values indicated by symbol W	XX	64,500	XX	63,400 r	XX	60,300
Total	XX	1,210,000	XX	1,250,000 r	XX	1,220,000

[e]Estimated. [r]Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data. 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.

TABLE 2

ILLINOIS: CRUSHED STONE SOLD OR USED, BY TYPE[1]

Type	2006			2007		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone[2]	122 r	56,800 r	$417,000 r	118	51,800	$409,000
Dolomite	11	20,300	168,000	16	21,600	174,000
Sandstone	3	1,160	9,960	3	1,030	8,230
Total	XX	78,300 r	596,000 r	XX	74,500	591,000

[r]Revised. 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 2007, BY USE[1]

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	508	4,360
Filter stone	W	W
Other coarse aggregate	2,000	20,100
Coarse aggregate, graded:		
Concrete aggregate, coarse	1,910	17,300
Bituminous aggregate, coarse	982	8,030
Bituminous surface-treatment aggregate	422	3,530
Railroad ballast	18	181
Other graded coarse aggregate	15,800	132,000
Fine aggregate (-⅜ inch):		
Stone sand, concrete	128	854
Stone sand, bituminous mix or seal	114	793
Screening, undesignated	39	144
Other fine aggregate	3,940	34,000
Coarse and fine aggregates:		
Graded road base or subbase	4,610	28,800
Unpaved road surfacing	W	W
Terrazzo and exposed aggregate	133	477
Crusher run or fill or waste	154	1,010
Roofing granules	W	W
Other coarse and fine aggregates	3,670	23,300
Other construction materials	63	188
Agricultural:		
Limestone	2,480	9,660
Poultry grit and mineral food	39	657
Other agricultural uses	19	104
Chemical and metallurgical, cement manufacture	W	W
Special:		
Mine dusting or acid water treatment	W	W
Asphalt fillers or extenders	W	W
Other fillers or extenders	W	W
Unspecified:[2]		
Reported	20,200	163,000
Estimated	13,000	103,000
Total	74,500	591,000

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

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

[2]Reported and estimated production without a breakdown by end use.

TABLE 4

ILLINOIS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2007, BY USE AND DISTRICT[1]

(Thousand metric tons and thousand dollars)

Use	Districts 1 and 2[2]		District 3		District 4		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Construction:								
Coarse aggregate (+1½ inch)[3]	1,920	18,800	378	3,680	482	3,900	2	17
Coarse aggregate, graded[4]	12,400	105,000	3,750	30,800	2,740	22,800	238	1,690
Fine aggregate (-⅜ inch)[5]	W	W	W	W	216	1,610	--	--
Coarse and fine aggregates[6]	4,130	24,700	1,050	8,040	3,510	21,500	--	--
Other construction materials	61	168	2	20	--	--	--	--
Agricultural[7]	912	1,880	785	6,020	843	2,520	--	--
Chemical and metallurgical[8]	W	W	W	W	--	--	--	--
Special[9]	W	W	W	W	--	--	--	--
Unspecified:[10]								
Reported	16,400	130,000	907	7,220	2,890	25,100	--	--
Estimated	8,600	67,000	2,600	20,000	2,000	16,000	--	--
Total	49,500	394,000	12,100	103,000	12,700	93,200	240	1,700

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]Districts 1 and 2 are combined 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 (bituminous mix or seal), stone sand (concrete), screening (undesignated), and other fine aggregate.

[6]Includes crusher run or fill or waste, graded road base or subbase, roofing granules, terrazzo and exposed aggregate, unpaved road surfacing, and other coarse and fine aggregates.

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

[8]Includes cement manufacture.

[9]Includes asphalt fillers or extenders, mine dusting or acid water treatment, 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 2007, BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	9,710	$54,100	$5.57
Concrete products (blocks, bricks, pipe, decorative, etc.)[2]	530	2,310	4.35
Asphaltic concrete aggregates and other bituminous mixtures	1,590	7,820	4.91
Road base and coverings[3]	2,360	15,700	6.67
Fill	2,600	11,200	4.30
Snow and ice control	30	171	5.77
Other miscellaneous uses[4]	97	514	5.31
Unspecified:[5]			
Reported	2,770	16,600	5.99
Estimated	12,100	66,700	5.50
Total or average	31,800	175,000	5.51

[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 golf course and roofing granules.

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

TABLE 6

ILLINOIS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2007, 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]	5,560	31,200	1,200	5,570	2,170	13,200
Asphaltic concrete aggregates and road base materials[3]	1,610	10,000	431	2,650	1,510	8,190
Fill	1,160	5,200	312	1,260	916	3,970
Other miscellaneous uses[4]	18	147	89	360	13	72
Unspecified:[5]						
Reported	2,650	15,500	42	218	75	769
Estimated	5,470	30,100	2,270	12,500	4,150	22,900
Total	16,500	92,200	4,340	22,600	8,840	49,100

Use	District 4	
	Quantity	Value
Concrete aggregate and concrete products[2]	1,310	6,390
Asphaltic concrete aggregates and road base materials[3]	401	2,650
Fill	216	749
Other miscellaneous uses[4]	6,459	106
Unspecified:[5]		
Reported	3	62
Estimated	217	1,200
Total	2,160	11,200

[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 golf course, roofing granules, and snow and ice control.

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