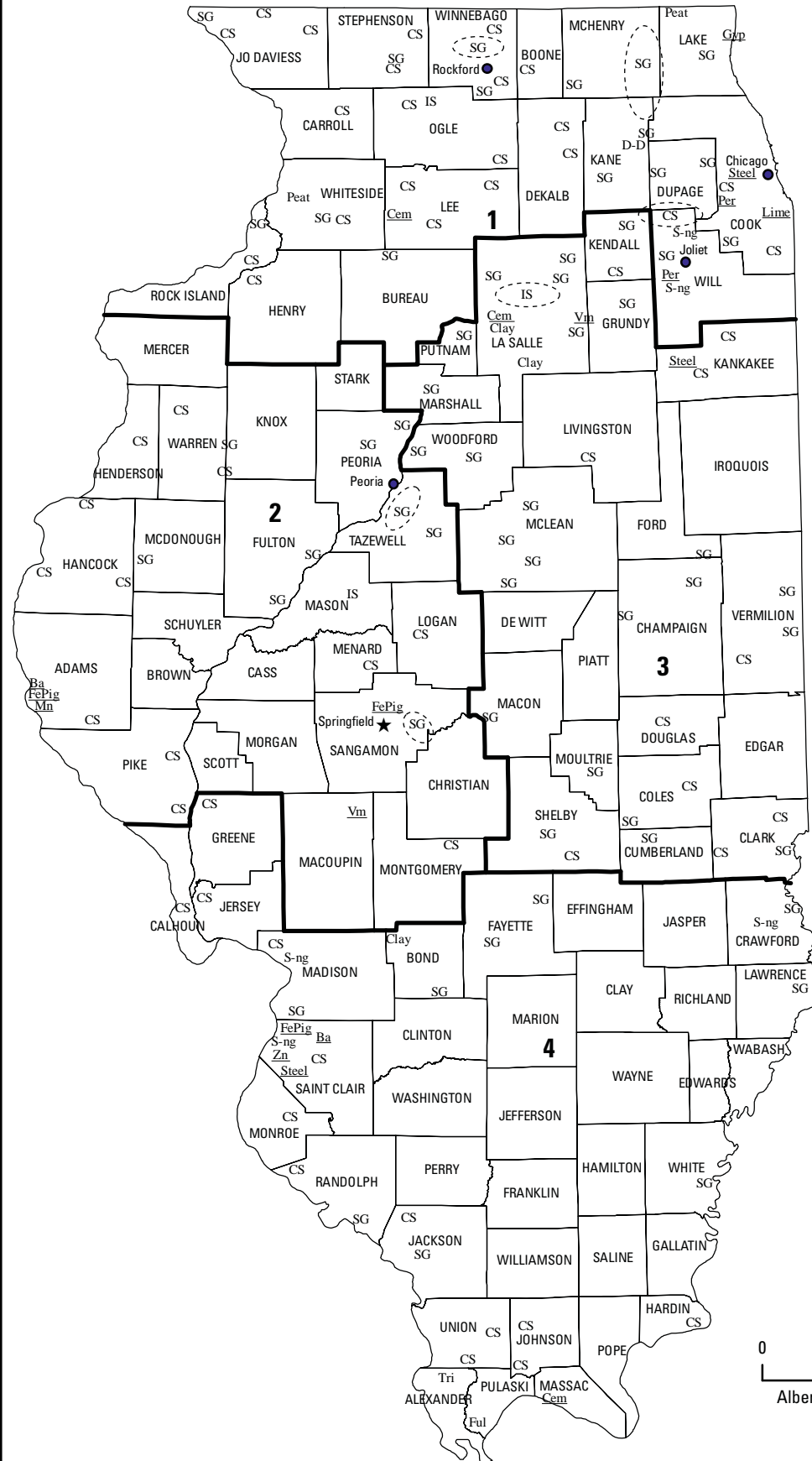




2006 Minerals Yearbook

ILLINOIS

ILLINOIS



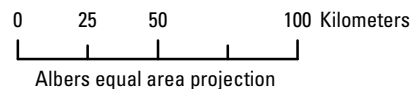
LEGEND

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

**MINERAL SYMBOLS
(Major producing areas)**

- Ba Barite plant
- Cem Cement plant
- Clay Common clay
- CS Crushed stone
- D-D Dimension dolomite
- FePig Iron oxide pigments plant
- Ful Fuller's earth
- Gyp Gypsum plant
- IS Industrial sand
- Lime Lime plant
- Mn Manganese dioxide plant
- Peat Peat
- Per Perlite
- SG Construction sand and gravel
- S-ng Sulfur (natural gas)
- Steel Steel plant
- Tri Tripoli
- Vm Vermiculite plant
- Zn Zinc plant

○ Concentration of mineral operations



Source: Illinois State Geological Survey/ U.S. Geological Survey (2006).

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 2006, Illinois' nonfuel raw mineral production¹ was valued at \$1.22 billion, based upon annual U.S. Geological Survey (USGS) data. This was a \$10 million, or nearly 1% increase from the State's total nonfuel mineral value in 2005, which then had increased by \$160 million, up more than 15% from that of 2004. The State was 20th in rank (16th in 2005) among the 50 States in the total nonfuel raw mineral production value and accounted for about 1.8% of the U.S. total.

Industrial minerals continued to account for all of Illinois' nonfuel mineral production in 2006; metals were last produced in 1996, when small quantities of copper, lead, silver, and zinc were produced from mines in the State. In 2006, crushed stone, by value, remained Illinois' leading nonfuel mineral commodity, accounting for 47% of the State's total nonfuel mineral 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, nearly 8.4%; and fuller's earth clay, lime, and tripoli, 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 2006, increases in the values of crushed stone, up by \$24 million, portland cement, up by \$22 million, and lime, up by more than \$8 million, more than offset decreases that took place in construction sand and gravel, down by \$34 million, fuller's earth, down by about \$12 million, and industrial sand and gravel, down by \$2 million. Increases also took place in the values of tripoli and common clays (descending order of change) (table 1).

In 2006, Illinois continued to be first in the quantities of industrial sand and gravel produced and first among four States that produced tripoli, fourth in the production of peat, seventh in crushed stone, and ninth in portland cement. While the State decreased to seventh from sixth in fuller's earth clay, it 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 4 million metric tons (Mt), down about 3.6% from 4.14 Mt that were produced in 2005, as reported by the American Iron and Steel Institute (American Iron and Steel Institute, 2007, p. 74).

¹The 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 2006 USGS mineral production data published in this chapter are those available as of March 2008. 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>.

The following narrative information was provided by the Illinois State Geological Survey² (ISGS).

Overview

Illinois has the third-largest network of State and local roads and the third-largest Interstate highway system in the country. The State also has more than 26,000 bridges, 8,227 of which are in the State highway system (Illinois Department of Transportation, 2007, p. 17). A significant number of bridges need repair or replacement, as do many areas of the Interstate highway system, and many State and secondary highways and roads. Significant quantities of crushed stone and sand and gravel aggregate are required to keep Interstate highways in top condition, maintain major highways, and improve congested urban and rural highways. Construction aggregate constitutes approximately 80% of concrete pavement and more than 90% of asphalt. Thus, the State's aggregate resources are an important source of raw materials for construction and maintenance of the State's highway infrastructure. However, because of the depletion of reserves in existing quarries and pits, the encroachment of suburban developments atop existing resources, and the opposition to opening new mining and quarrying sites, the State is likely to face enormous challenges regarding how and where it can economically acquire the materials needed for building and rehabilitating its aging infrastructure.

Northeastern Illinois continued as one of the leading aggregate-producing and aggregate-consuming regions in the United States. Thick layers of Silurian and Ordovician dolomite are found in the area near Chicago, providing a primary source of crushed stone aggregate that accounted for most of the total stone production in the State in 2006. In the western and southern parts of the State, limestone of the Mississippian Period was extracted for construction aggregate, cement manufacture, and other related purposes. Limited amounts of Pennsylvanian Period limestone occur in the central part of the State and were quarried near the surface. In these areas, underground mining of the underlying Mississippian limestone may be necessary to meet the region's crushed stone needs because the near-surface Pennsylvanian limestone beds are limited in area or in depth, and generally are unsuitable for use in concrete for highway construction. Sand and gravel deposits are widely distributed throughout the State but are most abundant and of highest quality in northeastern Illinois. They are primarily extracted from glacial deposits in the central

²Zak 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.

and northeastern parts of the State. Production of sand and gravel, however, has not increased significantly since the late 1960s, likely because of the better quality and larger reserves of crushed stone aggregate, and the difficulty in securing permission for new sand and gravel operations owing to public opposition.

Commodity Review

The year 2006 was highlighted by the continuation of two major trends in the industrial minerals mining and quarrying industries. First, there were several noteworthy acquisitions of major aggregate producers, primarily in the Chicago area. Hanson plc, London, United Kingdom, completed the purchase of Material Service Corp. in June. Material Service was the 19th ranked producer of construction aggregates in the United States and owned 11 stone quarries and 3 sand and gravel pits in Illinois and Indiana, including the Thornton Quarry near Chicago, which is one of the largest quarries in the United States. Material Service sold about 18 million metric tons (Mt) of aggregates in 2005 and was estimated to have nearly 1.4 billion metric tons of aggregate reserves. Lafarge North America Inc., Herndon, VA, completed the acquisition of several operations around the Chicago area, and in north-central Illinois. These companies included Aux Sable Stone Company, Conco-Western Stone Company, Fox River Stone Company, Joliet Sand and Gravel, Utica Stone Company, and Western Sand & Gravel Company, all of which had been locally owned. The combined operations provided Lafarge with three underground aggregate mines, three quarries, two sand and gravel operations, an Illinois River dock, and decorative and landscape stone sales yards. Lafarge's North American operations are the leading diversified suppliers of construction materials for residential, commercial, institutional, and public works construction projects in the United States and Canada. Lafarge (a wholly owned subsidiary of Lafarge S.A., Paris, France) is a leading global supplier of aggregates, cement, concrete, and gypsum. In other related actions, Aggregate Industries Inc., Derwood, MD., completed an agreement with U.S. Equity Partners, L.P. and Park Avenue Equity Partners, L.P. to purchase Meyer Material Company in northeastern Illinois at a cost of \$231 million. Meyer operated 6 sand and gravel pits, as well as 25 ready-mix concrete plants, and a concrete paving products manufacturing facility. Meyer has 113 Mt of reserves at its sand and gravel pits, and additional underground resources which may be considered for future development.

The second trend was the continued progression of major changes in the Illinois aggregate industry that were likely to have a long-term impact on sources and production of aggregate resources. Most noteworthy were the changes taking place in the source of aggregates for the Chicago metropolitan area and the surrounding region of northeastern Illinois. Historically, these resources have been derived from surface quarries developed in the Silurian Period dolomites which 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 today. Depletion of existing reserves and the increasing difficulty in obtaining permission to develop new surface quarries has encouraged producers to begin mining the more deeply buried Ordovician Period dolomite that underlies the entire region. The Elmhurst-Chicago Stone Company in the Chicago suburb of Elmhurst opened the first of these mines in the 1970s. Although this specific mine has since been closed, an increasing number of other mines have been opened, while others are under development. There also has been considerable interest in exploration for additional underground mine sites. Existing underground mines were opened in depleted quarries or sand and gravel pits. However, one mine was currently under development on property that neither had been owned previously by an aggregate producer nor had been the site of any mineral resource extraction. The primary target for these new underground mines has been the Ordovician dolomite but in some areas around Chicago considerable amounts of Silurian dolomite potentially could be extracted from underground mines. In summary, the long term trend for this area was likely to be the replacement of Silurian dolomite with Ordovician dolomite as the primary source of locally produced aggregates in the Chicago region, and these new sources would be extracted using underground mining methods. Many small- to medium-sized surface quarries of Silurian dolomite were likely to be depleted of reserves in a relatively short time, although a few of the largest quarry operations could have sufficient reserves to last for a few more decades.

Stringent pollution control regulations set by State and Federal governments have accelerated installation of limestone-based flue-gas desulfurization (FGD) systems to reduce sulfur oxide (SO₂) emissions and other pollutants at coal-fired powerplants. Consequently, the demand for high-calcium limestone scrubbing agent used in the FGD systems continued to increase. The U.S. Clean Air Interstate Rule, to be implemented in 2010, requires significant SO₂ emission caps for all coal-fired powerplants (Dickerman and Sewell, 2007). This rule will affect large coal-fired powerplants burning high-sulfur coal as well as smaller plants that burn low- to medium-sulfur coal. Most of the plants affected are in the States east of the Mississippi River.

Results of recent investigations showed that limestone-based FGD systems also are capable of removing flue-gas mercury at coal-fired powerplants. As a result, the use of limestone-based FGD systems and its associated demand for good quality, high-calcium limestone resources takes on added significance. The Clean Air Mercury Rule issued by the U.S. Environmental Protection Agency requires that coal-fired powerplants reduce mercury emissions 47% by 2010 and 79% by 2018. A more stringent rule proposed by the State of Illinois requires a 90% reduction in mercury emissions from powerplants in the State by mid-2009.

Because of the importance of high-calcium limestone as a scrubbing agent, it is essential that issues associated with the transport, availability and suitability of high-calcium limestone resources for use in FGD powerplants be addressed. Nearby sources of suitable limestone raw material must be found to

feed existing and new scrubber installations, and to aid in the selection of proper resources for desulfurization systems in the future.

Illinois has abundant limestone and dolomite resources. However, high-calcium limestone is not readily available throughout the State. The suitability of limestone for FGD applications varies and the most suitable limestone resources are not widely available. Through grants from the Illinois Clean Coal Institute, the ISGS recently conducted a statewide inventory and characterization of limestone and dolomite resources. The results indicated that limestone containing more than 95% calcium carbonate (CaCO₃) commonly occurs in the western and southern parts of Illinois along the Mississippi and Ohio Rivers. These materials currently are extracted from the Mississippian Period deposits in existing quarries close to the rivers, but a potential for mining high-calcium limestone also exists in rocks of the Ordovician, Silurian, and Devonian Periods exposed in the southern part of the State. Limited amounts of Pennsylvanian Period high-calcium limestone deposits are present in the central part of the State, and these rocks are mined at a few locations. The limestone is variable in purity but in some cases may contain between 90% and 95% CaCO₃. Dolomite predominates in northern Illinois, especially in the Chicago area, and this material is ill-suited for use in FGD scrubbers.

Interest in fluorspar mining was renewed in the Illinois-Kentucky Fluorspar Districts in 2006, as a result of diminishing supplies in the National Defense Stockpile (NDS) and uncertain availability of supplies from import sources. Fluorspar had not been mined in Illinois since 1995, except for a small quantity recovered by Hastie Mining and Trucking Co. as a byproduct of limestone quarrying that was stockpiled for future processing. Since the mid-1990s, Hastie has supplied fluorspar to several domestic markets using fluorspar purchased from the NDS. Hastie owns the mineral rights to several former fluorspar properties in Illinois and planned to produce about 20,000 metric tons per year (t/yr) of acid-grade fluorspar and 30,000 t/yr of metallurgical grade fluorspar from its mine and quarry operations (Miller, 2008).

A proposal by Prairie Material Sales Inc., Bridgeview, to develop a new 49-hectare (ha) dolomite quarry site in Kendall County, northeastern Illinois was rejected by the 10-member Kendall County Board voting in special session. The county board's decision followed similar verdicts from the Kendall County Zoning Board of Appeals and the Kendall County Regional Planning Commission.

Legislation and Government Programs

On the national level, Illinois fared well under a new, multiyear Federal highway bill, SAFETEA-LU (Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users) passed in 2005. Illinois received the 10th largest percentage increase and the 5th largest net increase in guaranteed Federal highway funding. Illinois also receive approximately \$662 million in additional Federal highway funding beyond these guaranteed levels for key State highway and bridge projects. In order to continue with maintenance and development of highways and bridges, the Illinois Department

of Transportation (IDOT) expected a combined total of State and Federal funding in the range of \$12.1 to \$20.3 billion would be needed during fiscal years 2004 to 2009. According to the Illinois Association of Aggregate Producers (IAAP), IDOT proposed spending \$10.43 billion in State funds for the fiscal years 2007 to 2012 to maintain the current State highway system. However, the continued State budget crisis and impasse on authorizing any major capital funding for transportation and other needs in recent years has significantly affected the implementation of this program. There was concern that the State could lose a significant amount of matching funding from the Federal highway program if the budget impasse continued.

At the State level, the IAAP briefed the Illinois General Assembly leadership and key appropriations and transportation committee members about infrastructure issues. The importance of adequate transportation infrastructure funding and the actions necessary to restore the vitality of Illinois' road program were highlighted in a Transportation for Illinois Coalition publication entitled "Rough Roads Ahead." Additionally, legislation was passed to eliminate some road fund diversion, thus returning \$21 million to the road fund. Some other State bills that could have adversely affected the aggregate industry also were eliminated. IAAP Environmental Committee members worked with the Illinois Environmental Protection Agency (IEPA) to develop new lifetime general operating permits for both small and large aggregate processing plants. Committee members also worked with the IEPA on National Pollutant Discharge Elimination System (NPDES) permit changes, and proposed regulations for operations that accept clean construction or demolition debris. Aggregate producers obtain NPDES permits from the IEPA to ensure that water discharged from pits and quarries does not harm the environment. Section 12.5 of the Illinois Environmental Protection Act requires aggregate producers to pay the State of Illinois a \$5,000 annual fee for every NPDES discharge permit in force. Legislation was sponsored to reduce the annual NPDES fees while ensuring that the State continued to receive the annual revenues necessary to implement the IEPA clean water regulatory program for aggregate mines. IAAP legislative committee members developed and expanded communication links with State legislators to promote uniform, proactive communication about aggregate issues. Members of the Specifications/Technical Committee negotiated with IDOT regarding the increased use of Reclaimed Asphalt Pavement (RAP) in Hot Mix Asphalt as well as the use of RAP as aggregate. The IAAP also formed part of a working group developing proposed changes to IDOT's Alkali-Silica Reactivity policy. The AgLime Sub-Committee manned a booth during the University of Illinois' Agronomy Day where members provided information promoting this product. Finally, the IAAP worked with the National Stone, Sand and Gravel Association on a Regional Technology Seminar relating to aggregate research topics of interest to IDOT (Illinois Association of Aggregate Producers, 2007).

Reclamation and Natural Resources Programs

The City of Chicago began development of a new park at the site of the historic Stearns Quarry in the Bridgeport area of the city. The site had been used as a landfill since 1970. After filling

most of the 115-meter-deep pit, the city preserved a portion of the upper quarry as part of a unique new city park which would highlight the geology and industrial history of the quarry. Operations were begun at the quarry about 1833 when stone from the site was used in the construction of the first piers at the mouth of the Chicago River. By the 1850s, the privately owned quarry had become a major lime production center in Chicago. The quarry was sold in the 1930s and subsequently operated by Material Service Corporation until 1970 when it was sold to the city of Chicago.

Unimin Corporation partnered with Bat Conservation International, the Illinois Department of Natural Resources, Southern Illinois University, the U.S. Fish & Wildlife Service, and the U.S. Forest Service to survey the abandoned underground Magazine silica mine and carefully document the bat population at the site. Native Illinois bat species including the big brown bat, little brown bat, Indiana bat, northern long-eared bat, and the eastern pipstrelle were documented in and around the mine.

This effort by Unimin and its employees, which was directed toward protecting resources critical to bat reproduction and hibernation, strengthened and promoted a conservation ethic that benefited not only bats, but the surrounding fragile Shawnee National Forest ecosystem as a whole. To further enhance the value of the property for local wildlife species, the wildlife team at Unimin implemented a project to convert about 4 hectares (ha) of fescue grassland into a native wildflower and grass meadow. Two test sites, prepared and seeded earlier, were expanded and reseeded and now bloom with colorful stands of wildflowers and sunflowers. The plant types will increase the diversity and numbers of pollinators, such as bees, butterflies, and songbirds. Other projects included the planting of native hardwood trees, the eradication of kudzu, and the management of the wild turkey population. The wildlife team also worked on wildlife rehabilitation by reintroducing animals at suitable locations on Unimin property in concert with FREE AGAIN, Inc.

Public Outreach

Members of the IAAP Public Information and Education Committee participated in a number of outreach activities, including: Earth Stewardship Day; the National Science Teachers Association Midwest Conference; the Ninth Annual Science Teachers Workshop, and several mine tours. The annual Science Teachers Workshop allows teachers to refresh their knowledge of science and learn about the importance of various minerals and aggregates. Thirty-two elementary and high school teachers attended lectures and participated in hands-on activities presented by academic professionals, government, and industry. Each activity explored Illinois geology, fossils, aggregate mining, or minerals in our everyday lives (Illinois Association of Aggregate Producers, 2007).

In September, McHenry County Board members, city and township officials, and a State Senator were provided with an

educational tour of three sites, including a sand and gravel plant, an asphalt plant, and a clean construction and demolition debris fill site. The tour was organized by the McHenry County Gravel Advisory Council, formed in 2003 to provide a forum for the County, townships, and municipalities to discuss mine-related issues impacting their communities. The Council consists of the chief elected official of each unit of local government and the chief corporate official of each company producing aggregates within McHenry County. Discussions during the tour noted the importance of continuous land reclamation as a requirement for receiving mining permits. Several locations were cited where land reclamation had transformed previous mining operations into commercial and residential areas.

Vulcan Material Company held its biannual open house at McCook Quarry in September, hosting 6,000 guests who toured the 100-year-old quarry. The event offered several science, geology, and engineering related educational activities for families, led by company geologists and specialists. A Children's Workshop provided an opportunity for the young children to learn about rocks and geology.

Award

Employees at Unimin Corporation's Tamms/Elco Plant in southern Illinois distinguished themselves by winning the Wildlife Habitat Council's 2005 Corporate Habitat of the Year Award, which is presented to one recertified program each year. Employees and volunteers took advantage of the opportunities created by the site's mining and reclamation program to incorporate wildlife management projects for a variety of native species covering nearly 800 ha. Because most of the Tamms/Elco land holdings serve as suitable bluebird habitat, the wildlife team maintained a bluebird nest box monitoring project. Approximately 67 nest boxes were erected on the site, several of which were constructed by the employees. Employees monitored and maintained the boxes, and removed wasp nests or other possible invaders from the boxes. The program has succeeded in significantly increasing the population of bluebirds in the area, with more than 60% of the nest boxes being occupied.

References Cited

- American Iron and Steel Institute, 2007, Table 24—Raw steel production by States, *in* American Iron and Steel Institute—AISI 2006 ASR: Washington, DC, American Iron and Steel Institute, 126 p.
- Dickerman, J. and Sewell, M., 2007, Is it time to rethink SO₂ control technology selection?: *Power Engineering*, November, p. 132.
- Illinois Association of Aggregate Producers, 2007, 2006 in review: Illinois Association of Aggregate Producers Update, December, 10 p.
- Illinois Department of Transportation, 2007, Inside & out—Annual report—2006: Springfield, IL, Illinois Department of Transportation, 53 p. (Accessed February 11, 2009, at <http://www.dot.state.il.us/siteindex.html>.)
- Miller, M.M., 2008, Fluorspar, *in* Metals and minerals: U.S. Geological Survey Minerals Yearbook 2006, v. I, p. 26.1–26.11. (Accessed December 10, 2008, at <http://minerals.usgs.gov/minerals/pubs/commodity/fluorspar/myb1-2006-fluor.pdf>.)

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN ILLINOIS^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2004		2005		2006	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	3,010	233,000 ^e	3,240	286,000 ^e	3,110	308,000 ^e
Clays:						
Common	247	1,390	119	667	116	700
Fuller's earth	218	W	225	W	112	W
Gemstones, natural	NA	70	NA	14	NA	34
Sand and gravel:						
Construction	38,700	203,000	37,400	210,000	32,500	176,000
Industrial	4,950	86,200	5,510	104,000	5,410	102,000
Stone, crushed	75,300	462,000	76,400 ^r	549,000 ^r	75,400	573,000
Combined values of lime, peat, stone [dimension dolomite (2005)], tripoli and values indicated by the symbol W	XX	65,000	XX	64,500	XX	62,700
Total	XX	1,050,000	XX	1,210,000	XX	1,220,000

^eEstimated. ^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data. Withheld values included in "Combined values" data. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

TABLE 2
ILLINOIS: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2005			2006		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone ²	111 ^r	56,800 ^r	\$404,000 ^r	108	54,000	\$395,000
Dolomite	14	19,500	144,000	11	20,300	168,000
Sandstone	2	125	1,200	3	1,160	9,960
Total	XX	76,400 ^r	549,000 ^r	XX	75,400	573,000

^rRevised. XX Not applicable.

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

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

TABLE 3
ILLINOIS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2006, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	30	322
Riprap and jetty stone	280	2,720
Filter stone	74	402
Other coarse aggregate	1,870	15,700
Total	2,250	19,100
Coarse aggregate, graded:		
Concrete aggregate, coarse	2,610	18,100
Bituminous aggregate, coarse	486	4,680
Bituminous surface-treatment aggregate	575	4,270
Railroad ballast	258	1,740
Other graded coarse aggregate	10,200	85,900
Total	14,100	115,000
Fine aggregate (¾ inch):		
Stone sand, concrete	145	755
Stone sand, bituminous mix or seal	186	1,150
Screening, undesignated	180	844
Other fine aggregate	2,000	10,900
Total	2,510	13,700
Coarse and fine aggregates:		
Graded road base or subbase	4,280	29,600
Unpaved road surfacing	1,220	7,610
Crusher run or fill or waste	267	1,750
Other coarse and fine aggregates	10,200	63,100
Total	15,900	102,000
Other construction materials	287	1,750
Agricultural:		
Limestone	W	W
Poultry grit and mineral food	W	W
Other agricultural uses	W	W
Chemical and metallurgical:		
Cement manufacture	2,520	23,500
Chemical stone	W	W
Special:		
Mine dusting or acid water treatment	W	W
Asphalt fillers or extenders	W	W
Other miscellaneous uses and specified uses not listed	6	164
Unspecified:²		
Reported	20,000	174,000
Estimated	16,000	110,000
Total	35,600	287,000
Grand total	75,400	573,000

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

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

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

TABLE 4
ILLINOIS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2006, BY USE AND DISTRICT¹

(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	1,230	11,000	284	2,760	740	5,340	--	--
Coarse aggregate, graded ⁴	7,650	66,000	2,660	21,200	3,600	26,000	226	1,540
Fine aggregate (-¾ inch) ⁵	1,680	9,110	465	2,180	365	2,390	--	--
Coarse and fine aggregates ⁶	9,210	57,000	2,020	12,100	4,720	32,900	--	--
Other construction materials	287	1,750	--	--	--	--	--	--
Agricultural ⁷	W	W	W	W	W	W	--	--
Chemical and metallurgical ⁸	W	W	W	W	W	W	--	--
Special ⁹	--	--	W	W	--	--	--	--
Other miscellaneous uses and specified uses not listed	--	--	--	--	6	164	--	--
Unspecified: ¹⁰								
Reported	15,500	135,000	2,190	19,100	2,300	20,400	--	--
Estimated	11,000	76,000	3,200	23,000	1,900	13,000	--	--
Total	47,600	362,000	12,900	103,000	14,700	108,000	226	1,540

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

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

²Districts 1 and 2 are combined to avoid disclosing company proprietary data.

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

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

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

⁶Includes crusher run or fill or waste, graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

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

⁸Includes cement manufacture and chemical stone.

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

TABLE 5
ILLINOIS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2006,
BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	10,600	\$55,300	\$5.20
Concrete products (blocks, bricks, pipe, decorative, etc.) ²	1,170	4,840	4.15
Asphaltic concrete aggregates and other bituminous mixtures	1,330	7,110	5.34
Road base and coverings ³	2,740	19,500	7.14
Fill	1,990	8,880	4.46
Snow and ice control	52	340	6.52
Other miscellaneous uses ⁴	79	474	6.03
Unspecified: ⁵			
Reported	2,850	15,700	5.51
Estimated	11,600	63,700	5.48
Total or average	32,500	176,000	5.42

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

²Includes plaster and gunite sands.

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

⁴Includes filtration and roofing granules.

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

TABLE 6
ILLINOIS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2006, BY USE AND DISTRICT¹

(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	5,970	30,400	849	4,060	3,560	19,000
Asphaltic concrete aggregates and road base materials ³	1,840	12,800	551	3,210	1,330	8,560
Fill	1,270	6,350	311	955	219	888
Other miscellaneous uses ⁴	27	199	73	352	31	260
Unspecified: ⁵						
Reported	1,940	10,800	90	376	813	4,470
Estimated	6,480	35,700	2,000	11,000	2,930	15,700
Total	17,500	96,200	3,870	20,000	8,890	48,900
	District 4					
Use	Quantity	Value				
Concrete aggregate and concrete products ²	1,420	6,700				
Asphaltic concrete aggregates and road base materials ³	348	2,120				
Fill	194	686				
Other miscellaneous uses ⁴	(6)	2				
Unspecified: ⁵						
Reported	2	31				
Estimated	225	1,240				
Total	2,180	10,800				

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

²Includes plaster and gunite sands.

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

⁴Includes snow and ice control, filtration, and roofing granules.

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

⁶Less than ½ unit.