



# 2005 Minerals Yearbook

---

## KANSAS

---



# THE MINERAL INDUSTRY OF KANSAS

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

In 2005, Kansas' nonfuel raw mineral production was valued at \$870 million, based upon annual U.S. Geological Survey (USGS) data. This represents an increase of \$102 million, or 13.3%, from the State's total nonfuel mineral production value of 2004, following a 10.3% increase from that of 2003 to 2004. The State remained 23d in rank among the 50 States in total nonfuel mineral production value, of which Kansas accounted for nearly 1.6% of the U.S. total. Yet, per capita, the State ranked 12th in the Nation in its minerals industry's value of nonfuel mineral production; with a population of about 2.75 million, the value of production was about \$317 per capita.

Portland cement, Grade-A helium, crushed stone, and salt were Kansas' leading nonfuel mineral commodities in 2005, accounting for about 28%, 26%, 18%, and 16%, respectively, of the State's total nonfuel mineral production value, and collectively about 88%. In 2005, increases in the production and values of crushed stone, Grade-A helium, and portland cement led the State's increase in nonfuel mineral value. The quantity of crushed stone produced increased by 7% resulting in a \$37 million increase in value, a more than 30% increase from that of 2004. The value of Grade-A helium also rose by \$37 million, up by nearly 20% from 2004; production was up by nearly 10%. The value of portland cement increased by \$32 million, up by 15% from that of 2004, resulting in a more than 7% increase in its production. Also showing significant increases were salt and construction sand and gravel. Although the production of salt did not increase and that of construction sand and gravel increased only slightly, their values rose by \$8 million and more than \$4 million, respectively. The largest decreases in value took place for crude helium, down by about \$12 million, and in common clays. Although common clay production showed a 5% increase, its value dropped by about \$3 million, down by nearly 39% (table 1).

In 2005, Kansas continued to be the Nation's leading producer of Grade-A helium and crude helium (first of 2 producing States); it also remained 5th in the production of salt. Additionally, significant quantities of portland cement, crushed stone, construction sand and gravel, crude gypsum, and common clays (in descending order of value) were produced in the State. Production of nonfuel minerals in Kansas has consisted entirely of industrial minerals since 1970, following nearly a century (since 1877) of metallic mineral mining in the State. The last zinc and lead mining operation closed in 1970 owing in part to low zinc prices, low-grade ore, and the high operating costs of required pollution control systems.

The following narrative information was provided by the Kansas Geological Survey (KGS). The Kansas State Conservation Commission reported that 31 new surface mines opened in 2005 (Dr. Dennis Baker, written commun., January 8, 2007). Of these mines, 16 were private producers

and 15 were county operations. Also during 2005, 21 surface mines and 2 underground mines closed. The number of private producers was 143, and they operated 506 sites. Additionally, 59 counties and government agencies operated 589 sites. Just about 810 hectares (ha) (2,000 acres) were affected by surface mining in the State and 67 ha (165 acres) were reclaimed.

## Employment

Data from the Labor Management Information Services of the Kansas Department of Labor indicated that the annual average employment in all aspects of the mining and the oil and gas industry during 2005 was 7,569 people. This represents an 8% increase from the average employment of the entire mining industry, as was reported in 2004. The majority of these people (84%) were employed in the oil and gas industry, with the remainder employed in industrial mineral and coal operations. The industrial mineral and coal mining operations averaged 1.2 persons in the extraction and support sector (consulting and permitting) of the industry. Mining, excluding oil and gas, employed approximately 1,164 people, with an annual average salary of \$40,162. This represents a 6.5% increase in the number of employees and a 0.2% increase in average salary reported, compared with respective values in 2004. All other mining support activities employed 4,346 employees at an annual average salary of \$42,045 per year in 2005.

## Commodity Review

### *Industrial Minerals*

**Stone, Crushed.**—The Inland Quarry in Wyandotte County announced that it will be closing. The mine is primarily an underground operation mining limestone. A portion of the mine was operated as an underground storage facility for several years. Hunt Midwest Mining, Inc. closed 15 quarries in Kansas. Hunt Midwest Mining, Inc. and Martin Marietta Materials, Inc. merged their Kansas City operations. The new company, Hunt Martin Materials, LLC, will produce and market crushed limestone. Lafarge North America Inc. acquired the Ritchie Companies of Wichita. The Ritchie Companies were suppliers of construction materials, operated sand and gravel mines, and did paving contracting.

### **Mine Reclamation Awards**

The Kansas Governor's Mined Land Reclamation Award for 2005 went to Bayer Stone Inc. in St. Marys, a city in Pottawatomie County, KS.

## Legislation and Government Programs

The Kansas Legislature in 2005 passed and the Governor signed House Bill 2103 that extends the exception from scale tolerances for weighing vehicles transporting aggregates and extends the current scale tolerance of  $\pm 100$  pounds until 2011.

The 2005 Kansas Field Conference led by the Kansas Geological Survey took State legislators to the Vonada Stone Company quarry in Lincoln County. The Vonada Stone Company quarries the Fencepost limestone bed of the Cretaceous-age Greenhorn Formation and produces the finished stone product for decorative signs, mailbox posts, and outdoor furniture. The field conference guidebook is available from the Kansas Geological Survey (Sawin and others, 2005).

Geologic mapping continued with Federal matching funding from the STATEMAP program, a component of the USGS National Cooperative Mapping Program, which is congressionally mandated by the National Cooperative Geologic Mapping Program (NCGMP). The USGS distributes Federal funds through NCGMP to support geologic mapping efforts utilizing a competitive funding process. The NCGMP has three

primary components: FEDMAP, which funds Federal geologic mapping projects, STATEMAP, which is a matching-funds grant program with State geological surveys, and EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers. One county geologic map was completed during 2005: a digital upgrade map of Wabaunsee County (KGS M-111). Geologic field mapping continued during the year in Geary, Pawnee, Saline, and Washington Counties. Preliminary geologic maps of Geary County were released along with reports on coalbed methane, ground water, energy resources, geophysics, and other geology-related studies. A total of 55 open-file reports were filed with the library at the Kansas Geological Survey.

## Reference Cited

Sawin, R.S., Buchanan, R.C., Evans, C.S., and McCauley, J.R., 2005, Kansas Field Conference, field guide, 2005 field conference, central Great Plains, water, recreation, and economic development: Kansas Geological Survey Open-File Report 2005-17, variously paginated.

TABLE 1  
NONFUEL RAW MINERAL PRODUCTION IN KANSAS<sup>1, 2</sup>

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2003		2004		2005		
	Quantity	Value	Quantity	Value	Quantity	Value	
Cement, portland	2,270	173,000 <sup>e</sup>	2,690	212,000 <sup>e</sup>	2,890	244,000 <sup>e</sup>	
Clays, common	632	10,000	621	7,460	654	4,590	
Gemstones	NA	1	NA	1	NA	1	
Helium, Grade-A	million cubic meters	77	179,000	82	189,000	90	226,000
Salt		2,770	123,000	2,890	127,000	2,890	135,000
Sand and gravel, construction		10,700	34,900	9,930	32,800	10,100	36,900
Stone:							
Crushed		20,700	111,000	20,600 <sup>r</sup>	122,000 <sup>r</sup>	22,100	159,000
Dimension		15	1,640	14	1,730	13	1,590
Combined values of cement (masonry), clays (fuller's earth), gypsum (crude), helium (crude), pumice and pumicite, sand and gravel (industrial)		XX	65,100	XX	75,300	XX	63,100
Total		XX	696,000	XX	768,000 <sup>r</sup>	XX	870,000

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available. XX Not applicable.

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

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

TABLE 2  
KANSAS: CRUSHED STONE SOLD OR USED, BY KIND<sup>1</sup>

Kind	2004			2005		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Limestone	107 <sup>r</sup>	20,100	\$120,000	114	21,500	\$155,000
Quartzite	2	521	2,130	2	599	4,310
Total	XX	20,600 <sup>r</sup>	122,000 <sup>r</sup>	XX	22,100	159,000

<sup>r</sup>Revised. XX Not applicable.

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

TABLE 3  
KANSAS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE<sup>1</sup>

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Macadam	W	W
Riprap and jetty stone	193	1,420
Filter stone	180	1,830
Other coarse aggregate	127	1,080
Total	500	4,320
Coarse aggregate, graded:		
Concrete aggregate, coarse	(2)	(2)
Bituminous aggregate, coarse	(2)	(2)
Bituminous surface-treatment aggregate	(2)	(2)
Railroad ballast	(2)	(2)
Other graded coarse aggregate	181	1,200
Total	855	6,080
Fine aggregate (-¾ inch):		
Stone sand, concrete	(2)	(2)
Stone sand, bituminous mix or seal	(2)	(2)
Screening, undesignated	225	1,190
Total	284	1,610
Coarse and fine aggregates:		
Graded road base or subbase	1,100	6,110
Unpaved road surfacing	439	1,240
Crusher run or fill or waste	176	981
Other coarse and fine aggregates	768	5,080
Total	2,480	13,400
Other construction materials	2	6
Agricultural limestone	(3)	(3)
Chemical and metallurgical, cement manufacture	3,260	28,600
Unspecified: <sup>4</sup>		
Reported	10,400	74,300
Estimated	4,300	31,000
Total	14,700	105,000
Grand total	22,100	159,000

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

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

<sup>2</sup>Withheld to avoid disclosing company proprietary data; included in "Total."

<sup>3</sup>Withheld to avoid disclosing company proprietary data; included in "Unspecified: Reported."

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

TABLE 4  
KANSAS: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2005, BY USE AND DISTRICT<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
<b>Construction:</b>						
Coarse aggregate (+1½ inch) <sup>3</sup>	W	W	W	W	--	--
Coarse aggregate, graded <sup>4</sup>	W	W	W	W	--	--
Fine aggregate (-¾ inch) <sup>5</sup>	W	W	W	W	--	--
Coarse and fine aggregate <sup>6</sup>	761	4,980	W	W	128	394
Other construction materials	--	--	--	--	--	--
Agricultural <sup>7</sup>	W	W	W	W	--	--
Chemical and metallurgical <sup>8</sup>	--	--	--	--	--	--
<b>Unspecified:<sup>9</sup></b>						
Reported	3,510	25,200	1,680	12,100	--	--
Estimated	2,200	16,000	--	--	23	167
Total	7,200	51,100	3,380	22,700	151	561
	District 5		District 6			
	Quantity	Value	Quantity	Value		
<b>Construction:</b>						
Coarse aggregate (+1½ inch) <sup>3</sup>	W	W	W	W		
Coarse aggregate, graded <sup>4</sup>	--	--	W	W		
Fine aggregate (-¾ inch) <sup>5</sup>	W	W	W	W		
Coarse and fine aggregate <sup>6</sup>	W	W	W	W		
Other construction materials	--	--	2	6		
Agricultural <sup>7</sup>	W	W	W	W		
Chemical and metallurgical <sup>8</sup>	--	--	3,260	28,600		
<b>Unspecified:<sup>9</sup></b>						
Reported	222	1,590	4,840	34,800		
Estimated	906	6,500	1,100	8,200		
Total	1,290	9,150	10,100	75,300		

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

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

<sup>2</sup>No crushed stone was produced in District 4.

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

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

<sup>5</sup>Includes screening (undesignated), stone sand (bituminous mix or seal), and stone sand (coarse).

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

<sup>7</sup>Includes agricultural limestone.

<sup>8</sup>Includes cement manufacture.

<sup>9</sup>Reported and estimated production without a breakdown by end use.

TABLE 5  
KANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005,  
BY MAJOR USE CATEGORY<sup>1</sup>

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,310	\$9,690	\$4.20
Concrete products (blocks, bricks, pipe, decorative, etc.) <sup>2</sup>	39	147	3.77
Asphaltic concrete aggregates and other bituminous mixtures	545	3,080	5.65
Road base and coverings <sup>3</sup>	1,820	5,530	3.04
Fill	1,180	2,610	2.21
Snow and ice control	87	364	4.17
Other miscellaneous uses	3	58	20.72
Unspecified: <sup>4</sup>			
Reported	1,350	5,630	4.16
Estimated	2,720	9,750	3.58
Total or average	10,100	36,900	3.66

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

<sup>2</sup>Includes plaster and gunite sands.

<sup>3</sup>Includes road and other stabilization (lime).

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

TABLE 6  
KANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2005, BY USE AND DISTRICT<sup>1,2</sup>

(Thousand metric tons and thousand dollars)

Use	District 1		Districts 2 and 3		District 4	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	1,040	4,610	225	998	226	1,530
Concrete products (blocks, bricks, pipe, decorative, etc.) <sup>3</sup>	W	W	6	25	W	W
Asphaltic concrete aggregates and other bituminous mixtures	165	781	157	731	101	774
Road base and coverings <sup>4</sup>	W	W	562	1,560	568	1,580
Fill	156	531	127	451	54	124
Snow and ice control	W	W	40	180	11	30
Other miscellaneous uses	64	349	3	57	6	17
Unspecified: <sup>5</sup>						
Reported	3	16	30	111	134	1,280
Estimated	938	3,360	491	1,760	512	1,830
Total	2,360	9,650	1,640	5,870	1,610	7,160
	Districts 5 and 6		Unspecified districts			
	Quantity	Value	Quantity	Value		
Concrete aggregate (including concrete sand)	815	2,540	5	20		
Concrete products (blocks, bricks, pipe, decorative, etc.) <sup>3</sup>	23	90	--	--		
Asphaltic concrete aggregates and other bituminous mixtures	89	601	33	194		
Road base and coverings <sup>4</sup>	643	2,140	W	W		
Fill	834	1,480	8	17		
Snow and ice control	17	52	W	W		
Other miscellaneous uses	(6)	1	7	24		
Unspecified: <sup>5</sup>						
Reported	1,190	4,220	--	--		
Estimated	781	2,800	--	--		
Total	4,390	13,900	52	256		

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

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

<sup>2</sup>Districts 2 and 3, and 5 and 6 are combined to avoid disclosing company proprietary data.

<sup>3</sup>Includes plaster and gunite sands.

<sup>4</sup>Includes road and other stabilization (lime).

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

<sup>6</sup>Less than ½ unit.