

# 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 2000, the estimated value<sup>1</sup> of nonfuel mineral production for Kansas was \$624 million, based upon preliminary U.S. Geological Survey (USGS) data. This was a 4% increase from that of 1999<sup>2</sup> and followed an 8.9% increase from 1998 to 1999. The State remained 24th in rank among the 50 States in total nonfuel mineral production value, of which Kansas accounted for more than 1.5% of the U.S. total.

Portland cement, crushed stone, Grade-A helium, and salt were Kansas' leading nonfuel mineral commodities, accounting for about 25%, 21%, 20%, and 18%, respectively, of the State's total nonfuel mineral production value. In 2000, increases in the values of crushed stone (up \$15 million), Grade-A helium (up \$6 million), portland and masonry cements (up an estimated \$4 million), and crude helium (up about \$3 million) accounted for most of the State's rise in value (table 1). Smaller increases also occurred in gypsum, dimension stone, and pumice and pumicite, in descending order of change in value. Only salt (down \$4 million) and industrial sand and gravel (down a little more than \$1 million) showed any significant drop in value. Construction sand and gravel and fuller's earth values were down slightly. In 1999, increases in crude helium of more than \$30 million and in Grade-A helium and portland cement of \$11 million each led Kansas' rise in value for the year. A \$1 million increase in crushed stone was offset by a slightly larger decrease in gypsum. The only significant decrease was that of a \$5 million drop in the value of salt.

Production of nonfuel minerals in Kansas consisted entirely of industrial minerals; no metals were mined in the State. Based upon USGS estimates of the quantities produced in 2000 in the 50 States, Kansas continued as the Nation's leading producer of crude and Grade-A helium and remained fifth in salt, sixth of six States that produce pumice and pumicite, and ninth in gypsum. Additionally, significant quantities of portland cement,

crushed stone, and common clays (descending order of value) were produced in the State.

The following narrative information was provided by the Kansas Geological Survey<sup>3</sup> (KGS). According to the Labor Market Information Services of the Kansas Department of Human Resources, an average of nearly 6,800 persons were employed in all aspects of mining during the 12 months from October 1999 through September 2000. The majority were employed in the oil and gas extraction sector of the mining industry with the remainder in coal and industrial mineral mining operations. Industrial mineral operations averaged 1,274 employees with an average annual salary of \$32,855.

Company mergers and acquisitions continued to occur, commonly for the purpose of creating more efficient operations. In the industrial minerals sector, CorCrete and Lies Merge combined their concrete operations in April, and the new company will be named Concrete Materials Co. The Ritchie Corp. purchased Hershey Ready Mix, Inc. of Derby, KS. Hershey had operated since 1954. The company will now operate as Hershey Concrete, Inc., a division of Ark Valley Ready Mix, Inc., which is a subsidiary of Ritchie Corp.

On October 26, an escape shaft portion of a salt mine, abandoned in 1947 and plugged in 1949, at Kanopolis, Ellsworth County, failed. The shaft underlies the property of the present Acme Brick Plant. Upon failure, the pressurized air blew bricks from a waste pile about 30 meters (m) into the air and as far away as 150 m. The flying debris damaged the roof of the packaging building, broke windows in the office, and damaged cars in the parking lot. This marked the second failure at this mine. In 1972, the main shaft collapsed forming a sizable sinkhole.

## Industry Issues and Legislation

According to the KGS, two issues involving county and city governments and sectors of the private mineral industry continued unresolved. The aggregate industry contended that county and city governments that operated their own aggregate operations were intruding into the private sector. Four counties in the eastern part of the State have their own rock crushing facilities, while in the western portion there is city and county ownership of sand and gravel and asphalt facilities. The Kansas Aggregate Producers Association (KAPA) and the Kansas Ready Mix Concrete Association (KRMCA) opposed government-owned and government-operated aggregate operations. At issue were (1) the legality of government entities competing with private industry and (2) the potential for further growth of government facilities in Kansas as well as in other States. The associations also contended that county government operations of these types would place a very high tax burden on the citizens of these counties.

<sup>3</sup>David A. Grisafe, an Associate Scientist with the Kansas Geological Survey, authored the text of the minerals industry information submitted by that agency.

<sup>1</sup>The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2000 USGS mineral production data published in this chapter are preliminary estimates as of July 2001 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. A telephone listing of the specialists may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>, by using MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset (request Document #1000 for a telephone listing of all mineral commodity specialists), or by calling USGS information at (703) 648-4000 for the specialist's name and number. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>; facsimile copies may be obtained from MINES FaxBack.

<sup>2</sup>Values, percentage calculations, and rankings for 1999 may vary from the Minerals Yearbook, Area Reports: Domestic 1999, Volume II, owing to the revision of preliminary 1999 to final 1999 data. Data for 2000 are preliminary and are expected to change; related rankings may also change.

The second issue was related to Kansas House bill 2584, passed in 1998, which prohibits counties from imposing severance taxes on mineral extraction. Early in 2000, Dickinson County maintained that it would continue to pursue the severance tax on the grounds that the action by the legislature was ex post facto and should not affect taxes established prior to the passing of the legislation.

Both of these contested matters involved significant legal fees to be paid by the KAPA and the KRMCA. The associations previously obtained a favorable ruling in the Kansas Supreme Court regarding a similar case in *Alsop Sand v. the Kansas Department of Revenue*.

In 1999, a 10-year Comprehensive Transportation Program (CTP) was approved for Kansas. A new fuel tax, projected to raise \$72 million, was passed to raise revenue for the CTP. By early 2000, it became apparent that State revenues were declining and that program cuts were likely. The State Governor recommended cuts to the CTP of \$27 million for fiscal year (FY) 2000 and \$40 million for FY 2001 for a total for the 2 years of \$67 million. This raised questions as to whether the fuel tax, in the end result, would be funding the transportation program for which it was intended or general government. The Kansas Department of Transportation said it believed that the cuts would not have a great impact on the program, while KAPA and KRMCA intended to make efforts to get the proposed cuts restored.

## Government Programs

The KGS continued work on its multiyear State-mapping

program. Map preparations and field mapping were ongoing for Barber, Bourbon, Cherokee, Comanche, Crawford, Douglas, Ford, Gray, Hamilton, Hodgeman, Kearney, Marshall, Neosho, Osborne, Republic, Sedgwick, and Washington Counties. Digital updates were underway for Pottawatomie County and essentially complete for Johnson, Osage, and Shawnee Counties.

A total of 85 open file reports (OFR), covering the results of a variety of projects primarily performed by KGS staff, were filed with the library of the KGS. Of particular interest were the multiyear project OFR 2000-03, which is a complete list of abandoned nonfuel mining pits and quarries in Kansas, and OFR 2000-21, -22, and -23 that contain geologic field maps for portions of Crawford, Barber, and Gray Counties, respectively. Among the maps issued were M-93, a State map showing the locations of the abandoned pits and quarries in the entire State; M-51, a geologic map of Wilson County; and M-59, a geologic map of Coffey County. Other KGS publications of interest included Public Information Circular 16, entitled "Kansas Kimberlites," and KGS Bulletin 244, part 3, covering the relation between geology and landslide hazards in and near Atchison, KS.

During the latter half of 2000, mine maps were transferred from the Kansas Department of Human Resources to the KGS in accordance with a new State law, Kansas Statute 49-201. July 1, 2001, marked the end of the first full year in which every coal or underground rock or limestone mine in the State annually will be required to submit to the State Geologist at the KGS an updated mine map or plan of the entire workings, a copy of which is to be kept at the mine office.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1998		1999		2000 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement, portland	1,800	138,000 e/	1,970	149,000 e/	2,050	153,000 e/
Clays, common	585	2,510	592	2,770	592	2,770
Gemstones	NA	29	NA	21	NA	21
Helium, Grade-A million cubic meters	56	110,000	61	121,000	64	127,000
Salt	3,090	120,000	2,780	115,000	2,670	111,000
Sand and gravel, construction	10,800	31,400	10,800	31,300	10,500	31,000
Stone:						
Crushed	21,800	115,000	23,600	116,000	26,000	131,000
Dimension metric tons	15,800	1,240	16,100	1,640	16,800	1,780
Combined values of cement (masonry), clays (fuller's earth), gypsum (crude), helium (crude), pumice and pumicite, sand and gravel (industrial)	XX	31,400	XX	63,700	XX	66,600
Total	XX	551,000	XX	600,000	XX	624,000

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

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

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

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

Kind	1998				1999			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone 2/	144	21,800	\$109,000	\$5.15	120	22,800	\$112,000	\$4.90
Sandstone and quartzite	3	W	W	W	3	W	W	W
Miscellaneous stone	1	W	W	W	1	W	W	W
Total or average	XX	21,800	115,000	5.28	XX	23,600	116,000	4.92

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

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

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

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

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
<b>Construction:</b>			
Coarse aggregate (+1 1/2 inch):			
Macadam	2	\$8	\$4.00
Riprap and jetty stone	150	1,160	7.73
Filter stone	127	850	6.69
Other coarse aggregate	164	543	3.31
Coarse aggregate, graded:			
Concrete aggregate, coarse	513	3,350	6.54
Bituminous aggregate, coarse	379	2,380	6.28
Bituminous surface-treatment aggregate	18	93	5.17
Other graded coarse aggregate	711	2,900	4.07
Fine aggregate (-3/8 inch):			
Stone sand, bituminous mix or seal	220	793	3.60
Screening, undesignated	564	2,180	3.87
Other fine aggregate	173	669	3.87
Coarse and fine aggregate:			
Graded road base or subbase	810	3,570	4.40
Unpaved road surfacing	579	2,700	4.66
Crusher run or fill or waste	219	802	3.66
Other coarse and fine aggregates	452	2,640	5.85
Other construction materials	469	1,930	4.11
<b>Agricultural:</b>			
Agricultural limestone	84	427	5.08
Other agricultural uses	W	W	W
<b>Chemical and metallurgical:</b>			
Cement manufacture	W	W	W
Lime manufacture	W	W	W
Special, roofing granules	W	W	W
<b>Unspecified: 3/</b>			
Reported	12,200	63,500	5.23
Estimated	3,200	15,000	4.68
Total or average	23,600	116,000	4.92

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/ Includes limestone, limestone-dolomite, miscellaneous stone, and sandstone and quartzite.

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

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

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
<b>Construction:</b>										
Coarse aggregate (+1 1/2 inch) 3/	96	586	W	W	--	--	W	W	126	440
Coarse aggregate, graded 4/	1,300	5,990	W	W	--	--	W	W	28	111
Fine aggregate (-3/8 inch) 5/	499	1,850	W	W	--	--	W	W	34	132
Coarse and fine aggregate 6/	895	4,490	W	W	W	W	232	1,110	649	2,530
Other construction materials	--	--	--	--	--	--	--	--	469	1,930
Agricultural 7/	46	280	W	W	--	--	W	W	15	50
Chemical and metallurgical 8/	--	--	--	--	--	--	--	--	2,460	9,700
<b>Unspecified: 9/</b>										
Reported	6,810	35,400	W	W	--	--	W	W	3,330	17,400
Estimated	900	4,200	W	W	W	W	--	--	1,800	8,500
<b>Total</b>	<b>10,500</b>	<b>52,800</b>	<b>2,930</b>	<b>16,900</b>	<b>210</b>	<b>865</b>	<b>1,020</b>	<b>4,780</b>	<b>8,910</b>	<b>40,700</b>

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/ No crushed stone reported for District 4.

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), and other graded coarse aggregate.

5/ Includes screening (undesignated), stone sand (bituminous mix or seal), 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 lime manufacture.

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

TABLE 5  
KANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,  
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,760	\$8,070	\$2.93
Plaster and gunite sands	73	224	3.07
Concrete products (blocks, bricks, decorative, pipe, etc.)	53	473	8.92
Asphaltic concrete aggregates and other bituminous mixtures	1,120	4,180	3.72
Road base and coverings 2/	2,750	7,580	2.75
Fill	1,230	2,370	1.92
Snow and ice control	44	162	3.68
Railroad ballast	3	29	9.67
Other miscellaneous uses 3/	12	35	2.92
<b>Unspecified: 4/</b>			
Reported	219	907	4.14
Estimated	2,500	7,300	2.92
<b>Total or average</b>	<b>10,800</b>	<b>31,300</b>	<b>2.91</b>

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

2/ Includes road and other stabilization (lime).

3/ Includes filtration.

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

TABLE 6  
KANSAS: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1999,  
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	W	W	378	1,630	W	W
Concrete products (blocks, bricks, decorative, pipe, etc.) 2/	W	W	W	W	7	23
Asphaltic concrete aggregates and other bituminous mixtures	W	W	246	981	W	W
Road base and coverings 3/	82	514	228	807	490	935
Fill	209	496	203	474	W	W
Snow and ice control	3	16	W	W	W	W
Railroad ballast	3	29	--	--	--	--
Other miscellaneous uses 4/	--	--	1	5	--	--
Unspecified: 5/						
Reported	146	707	--	--	25	73
Estimated	1,500	4,600	170	410	17	29
Total	2,570	8,460	1,240	4,430	790	1,810
Use	District 4		District 5		District 6	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	208	648	1,510	3,760	--	--
Concrete products (blocks, bricks, decorative, pipe, etc.) 2/	9	29	W	W	--	--
Asphaltic concrete aggregates and other bituminous mixtures	122	875	578	1,690	--	--
Road base and coverings 3/	1,020	2,710	932	2,620	--	--
Fill	165	285	W	W	--	--
Snow and ice control	8	27	15	55	--	--
Railroad ballast	--	--	--	--	--	--
Other miscellaneous uses 4/	--	--	11	29	--	--
Unspecified: 5/						
Reported	16	66	32	61	--	--
Estimated	230	640	570	1,500	25	95
Total	1,780	5,280	4,380	11,300	25	95

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 gunite sands and plaster.

3/ Includes road and other stabilization (lime).

4/ Includes filtration.

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