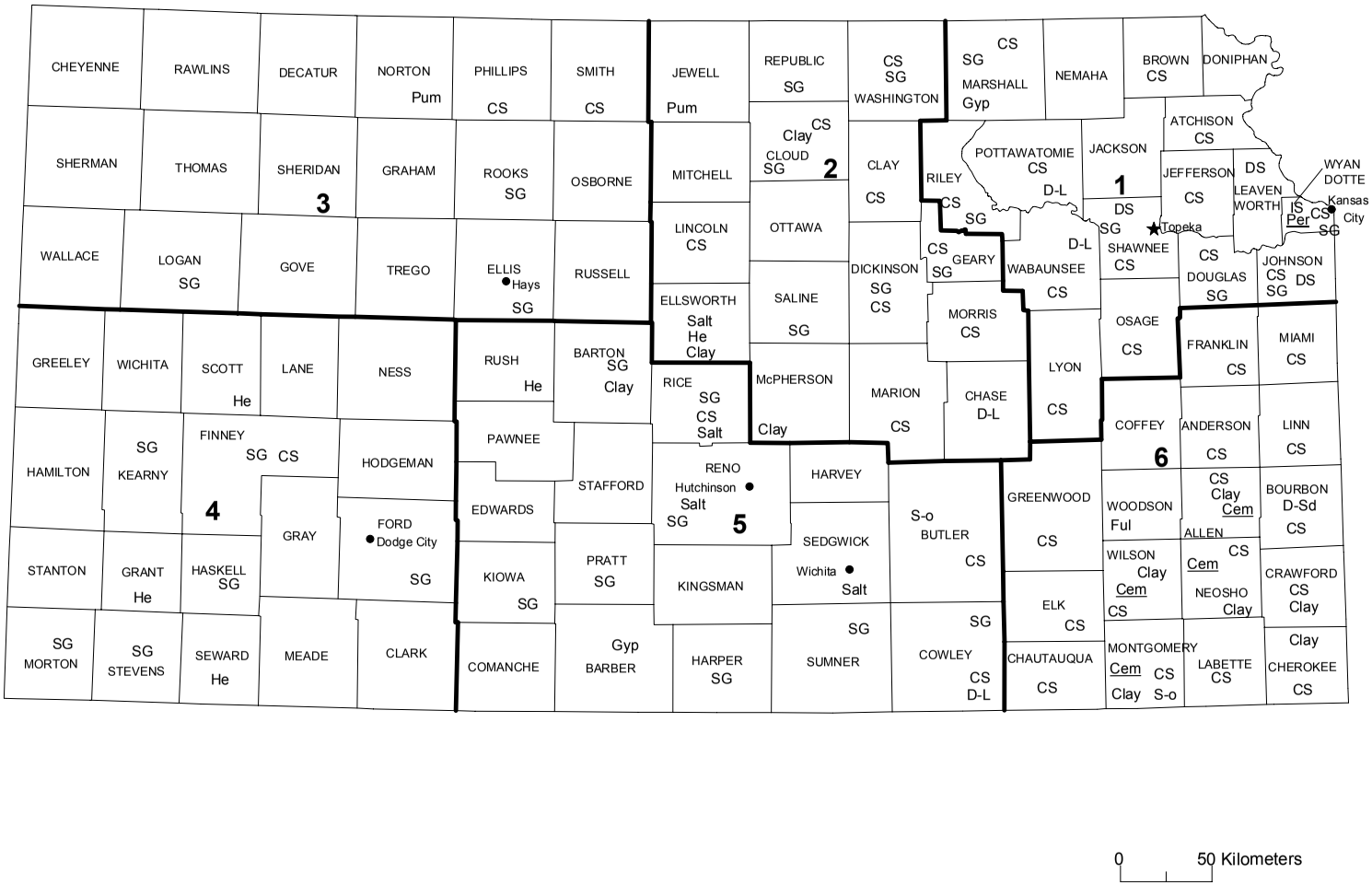
KANSAS



LEGEND

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

MINERAL SYMBOLS (Major producing areas)

Cem	Cement plant
Clay	Common clay
CS	Crushed stone
D-L	Dimension limestone
D-Sd	Dimension sandstone
DS	Dimension stone
Ful	Fuller's earth
Gyp	Gypsum
He	Helium
IS	Industrial sand
Per	Perlite plant
Pum	Pumice and pumicite
S-o	Sulfur (oil)
Salt	Salt
SG	Construction sand and gravel

Source: Kansas Geological Survey/U.S. Geological Survey (2001)

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 2001, the estimated value[1] of nonfuel mineral production for Kansas was $640 million, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 2% increase from that of 2000[2] and followed a 4.7% increase from 1999 to 2000. The State remained 23d in rank among the 50 States in total nonfuel mineral production value, of which Kansas accounted for about 1.5% of the U.S. total.

Grade-A helium, portland cement, salt, and crushed stone were Kansas' leading nonfuel mineral commodities in 2001, accounting for about 26%, 23%, 19%, and 17%, respectively, of the State's total nonfuel mineral production value. In 2001, the largest increases in production and value, being those of Grade-A helium, salt, and crude helium (descending order of change), were greater than the most significant decreases that occurred in portland cement and crushed stone, resulting in the State's rise in value (table 1). In 2000, the most significant increases were those in Grade-A helium (up $32 million), portland cement (up $6 million), and gypsum (up $3 million). The most significant decreases were those of crude helium (down about $5 million) and construction sand and gravel and crushed stone (down about $3 million each).

Based upon USGS estimates of the quantities produced in 2001 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 and fuller's earth. Additionally, significant quantities of portland cement, crushed stone, construction sand and gravel, common clays, and dimension stone (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 down 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[3] (KGS). According to the Labor Market Information Services of the Kansas Department of Human Resources, an average of nearly 6,900 persons were employed in all aspects of mining during 2001. The majority were employed in the oil and gas extraction segment of mining, with the remainder in coal and nonmetallic, nonfuel mining operations. The nonfuel industrial mineral operations averaged 1,300 persons with an average salary of $39,740 per year. These figures are derived from the North American Industrial Classification System (NAICS), which Kansas intends to use in the future.

Mergers and acquisitions to create more efficient operations continued. The quarries of long-time aggregate producer Walker Stone Co. were acquired by Martin Marietta Corp. Walker Stone had quarries in Geary, Dickinson, Butler, and Greenwood Counties. Brick producer Cloud Ceramics (Cloud County) acquired the operations of Kansas Brick and Tile (Barton County).

In 2001, the State concluded two contentious issues from the past several years. In the eastern part of the State, four counties that have their own rock-crushing facilities to produce aggregate for county roads also had been selling their excess capacity on the open market and thereby allegedly competing directly with private industry. Expansion of public ownership was opposed by the Kansas Aggregate Producers Association-Kansas Ready Mix Concrete Association (KAPA-KRMCA). The KAPA-KRMCA sponsored legislation that was passed by the State legislature during 2001 that banned the sale of paving materials by county operations to the public.

Another issue continuing from 2000 involved counties' rights to impose severance taxes on mineral producers. Previously, this was thought to be resolved with the passage of House bill 2584 in 1998, which prohibited counties from imposing severance taxes on mineral extraction. However, in 2000, Dickinson County continued to pursue the severance tax on the grounds that the legislature's actions should not affect taxes established prior to the passage of legislation. However, apparently the prospect of a lengthy court battle settled the issue (at least for the time being) as no further action was taken by the county during 2001.

In 1999, a 10-year Comprehensive Transportation Program (CTP) was approved for Kansas. By early 2000, it became apparent that State revenues were declining and that program cuts were likely. The Governor recommended cuts of $27 million for fiscal year (FY) 2000 and $40 million for FY 2001. The total for the 2 years, $67 million, was nearly as much as the $72 million that was to be raised by the new fuel tax passed to raise revenue for the CTP. During FY 2002, State revenues continued to decline, and the CTP took another cut of $90

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

All 2001 USGS mineral production data published in this chapter are preliminary estimates as of August 2002 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL http://minerals.usgs.gov/minerals/contacts/comdir.html; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL http://minerals.usgs.gov/minerals.

[2] Values, percentage calculations, and rankings for 2000 may differ from the Minerals Yearbook, Area Reports: Domestic 2000, Volume II, owing to the revision of preliminary 2000 to final 2000 data. Data for 2001 are preliminary and are expected to change; related rankings may also change.

[3] David A. Grisafe, an Associate Scientist with the Kansas Geological Survey, authored the text of the mineral industry information submitted by that agency.

million. The Kansas Department of Transportation (KDOT) officials think the cuts will not disrupt the program, although another fuel tax increase may be required as a means to provide additional funding.

Government Programs

The multiyear State mapping program at the KGS continued. Geologic maps were issued for Shawnee (M-95) and Anderson (M-100) Counties. A geologic map (M-99) was also issued for the Tallgrass Prairie National Preserve. Map preparations and field mapping are ongoing for Kearney, Hamilton, Bourbon, Comanche, Neosho, Cherokee, Ford, Republic, Douglas, Hodgeman, Gray, Barber, Crawford, Washington, Marshall, Osborne, and Sedgwick Counties. Digital updates are underway for Pottawatomie County and are essentially complete for Johnson and Osage Counties.

A total of more than 70 open-file reports (OFR) were filed with the library of the KGS. These reports cover a variety of project results, primarily by KGS staff. Many of the year's reports include geologic maps. For example, OFR 2001-12 contains field geology maps for additional portions of Crawford County; 2001-15 contains preliminary geology field maps for portions of Hodgeman County; 2001-24 through 2001-31 include geologic maps of the Cottonwood Falls, Homestead, Matfield Green, Gladstone, Staffordville, Thrall NW, Hymer, and Elmdale quadrangles in Chase County; 2001-53 and 2001-54 are geologic maps of the Osage City and Osage City SE, respectively, in Osage County; and 2001-64 contains preliminary geologic maps of Pottawatomie County.

Among other open-file reports of interest are OFR 2001-21, a stratigraphic bibliography through 2000, arranged by geologic period; OFR 2001-37, summary of STATEMAP geologic mapping program in the United States and the National Cooperative Geologic Mapping Program in 2001; and OFR 2001-74, case history of the collapse, eruption, and emergency backfilling and grouting of the abandoned Crystal Salt Mine shaft, Ellsworth County, Kansas. This collapse is the October 2000 event described in a previous report (U.S. Geological Survey, 2002). All publications, maps, and open-file reports are available on the Internet at URL http://www.kgs.ukans.edu/.

Reference Cited

U.S. Geological Survey, 2002, The mineral industry of Kansas, *in* Area reports—Domestic: U.S. Geological Survey Minerals Yearbook 2000, v. II, p. 18.1-18.5.

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

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral		1999 Quantity	1999 Value	2000 Quantity	2000 Value	2001 p/ Quantity	2001 p/ Value
Cement, portland		1,970	149,000 e/	1,980	155,000 e/	1,840 e/	144,000 e/
Clays, common		592	2,770	594	3,970	594	3,970
Gemstones		NA	21	NA	12	NA	3
Helium:							
Crude	million cubic meters	W	W	W	W	45	48,700
Grade-A	do.	61	121,000	77	153,000	85	169,000
Salt		2,780	115,000	2,770	114,000	3,120	121,000
Sand and gravel, construction		10,800	31,300	10,000	28,200	10,200	29,100
Stone:							
Crushed		23,700	116,000	23,300	113,000	21,400	107,000
Dimension	metric tons	16,100	1,640	14,100	1,890	14,000	1,800
Combined values of cement (masonry), clays (fuller's earth), gypsum (crude), helium (crude), pumice and pumicite, sand and gravel (industrial)		XX	63,700	XX	59,800	XX	15,900
Total		XX	601,000 r/	XX	629,000	XX	640,000

e/ Estimated. p/ Preliminary. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary 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
KANSAS: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1999 Number of quarries	1999 Quantity (thousand metric tons)	1999 Value (thousands)	1999 Unit value	2000 Number of quarries	2000 Quantity (thousand metric tons)	2000 Value (thousands)	2000 Unit value
Limestone 2/	120	W	W	W	111	W	W	W
Sandstone and quartzite	3	W	W	W	3	W	W	W
Total or average	XX	23,700 r/	$116,000	$4.92	XX	23,300	$113,000	$4.85

r/ Revised. 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 2000, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Macadam	2	$7	$3.50
Riprap and jetty stone	130	1,390	10.71
Filter stone	154	1,160	7.51
Other coarse aggregate	166	893	5.38
Total or average	452	3,450	7.63
Coarse aggregate, graded:			
Concrete aggregate, coarse	370	2,730	7.38
Bituminous aggregate, coarse	270	1,390	5.16
Bituminous surface-treatment aggregate	W	W	6.00
Railroad ballast	5	22	4.40
Other graded coarse aggregate	1,560	7,600	4.86
Total or average	2,210	11,700	5.32
Fine aggregate (-3/8 inch):			
Stone sand, bituminous mix or seal	W	W	6.08
Screening, undesignated	645	2,550	3.96
Other fine aggregate	731	2,840	3.89
Total or average	1,380	5,400	3.92
Coarse and fine aggregate:			
Graded road base or subbase	466	2,290	4.92
Unpaved road surfacing	748	3,300	4.41
Crusher run or fill or waste	70	360	5.14
Roofing granules	W	W	6.78
Other coarse and fine aggregates	708	3,470	4.91
Total or average	1,990	9,430	4.73
Other construction materials	452	2,640	5.85
Agricultural limestone	101	500	4.95
Chemical and metallurgical:			
Cement manufacture	2,790	11,400	4.08
Lime manufacture	3	18	6.00
Unspecified: 3/			
Reported	10,800	53,400	4.94
Estimated	3,000	15,000	4.85
Total or average	13,900	68,300	4.92
Grand total or average	23,300	113,000	4.85

W Withheld to avoid disclosing company proprietary data; included with "Other."
1/ Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
2/ Includes limestone, limestone-dolomite, 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 2000, 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
Construction:										
Coarse aggregate (+1 1/2 inch) 3/	237	1,750	116	967	--	--	W	W	W	W
Coarse aggregate, graded 4/	1,530	7,550	W	W	--	--	W	W	W	W
Fine aggregate (-3/8 inch) 5/	814	3,140	W	W	--	--	W	W	W	W
Coarse and fine aggregate 6/	839	3,950	W	W	W	W	W	W	510	2,060
Other construction materials	19	74	--	--	--	--	--	--	433	2,570
Agricultural 7/	47	208	W	W	--	--	W	W	W	W
Chemical and metallurgical 8/	--	--	--	--	--	--	--	--	2,790	11,400
Unspecified: 9/										
Reported	5,520	27,700	590	2,860	--	--	767	3,580	3,950	19,300
Estimated	140	690	W	W	W	W	340	1,700	2,100	10,000
Total	9,140	45,100	2,230	12,400	216	891	1,540	7,520	10,100	46,900

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), railroad ballast, 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, roofing granules, unpaved road surfacing, and other coarse and fine aggregates.
7/ Includes agricultural limestone.
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 2000,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	2,480	$7,010	$2.82
Plaster and gunite sands	98	265	2.70
Concrete products (blocks, bricks, pipe, decorative, etc.)	30	335	11.17
Asphaltic concrete aggregates and other bituminous mixtures	1,450	5,060	3.48
Road base and coverings 2/	2,200	5,570	2.53
Fill	992	1,980	1.99
Snow and ice control	41	145	3.54
Other miscellaneous uses 3/	74	394	5.32
Unspecified: 4/			
Reported	473	1,180	2.48
Estimated	2,200	6,300	2.87
Total or average	10,000	28,200	2.81

1/ Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
2/ Includes road and other stabilization (cement).
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 2000, BY USE AND DISTRICT 1/ 2/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	846	2,440	274	1,190	98	309
Concrete products (blocks, bricks, pipe, decorative, etc.) 3/	W	W	W	W	3	12
Asphaltic concrete aggregates and other bituminous mixtures	W	W	W	W	103	309
Road base and coverings 4/	W	W	W	W	419	729
Fill	110	292	260	609	29	87
Snow and ice control	W	W	W	W	5	14
Other miscellaneous uses 5/	240	911	414	1,650	--	--
Unspecified: 6/						
Reported	190	660	--	--	25	75
Estimated	843	2,500	210	580	--	--
Total	2,230	6,850	1,160	4,030	683	1,540

	District 4		District 5	
	Quantity	Value	Quantity	Value
Concrete aggregate (including concrete sand)	176	469	1,090	2,600
Concrete products (blocks, bricks, pipe, decorative, etc.) 3/	20	56	86	423
Asphaltic concrete aggregates and other bituminous mixtures	154	1,030	894	2,580
Road base and coverings 4/	831	1,930	670	1,910
Fill	45	147	548	840
Snow and ice control	9	25	10	34
Other miscellaneous uses 5/	32	87	4	53
Unspecified: 6/				
Reported	223	369	36	71
Estimated	430	1,200	720	2,000
Total	1,920	5,340	4,050	10,500

W Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous uses." -- Zero.
1/ Data are rounded to no more than three significant digits; may not add to totals shown.
2/ No production reported in District 6.
3/ Includes plaster and gunite sands.
4/ Includes road and other stabilization (cement).
5/ Includes filtration and snow and ice control.
6/ Reported and estimated production without a breakdown by end use.