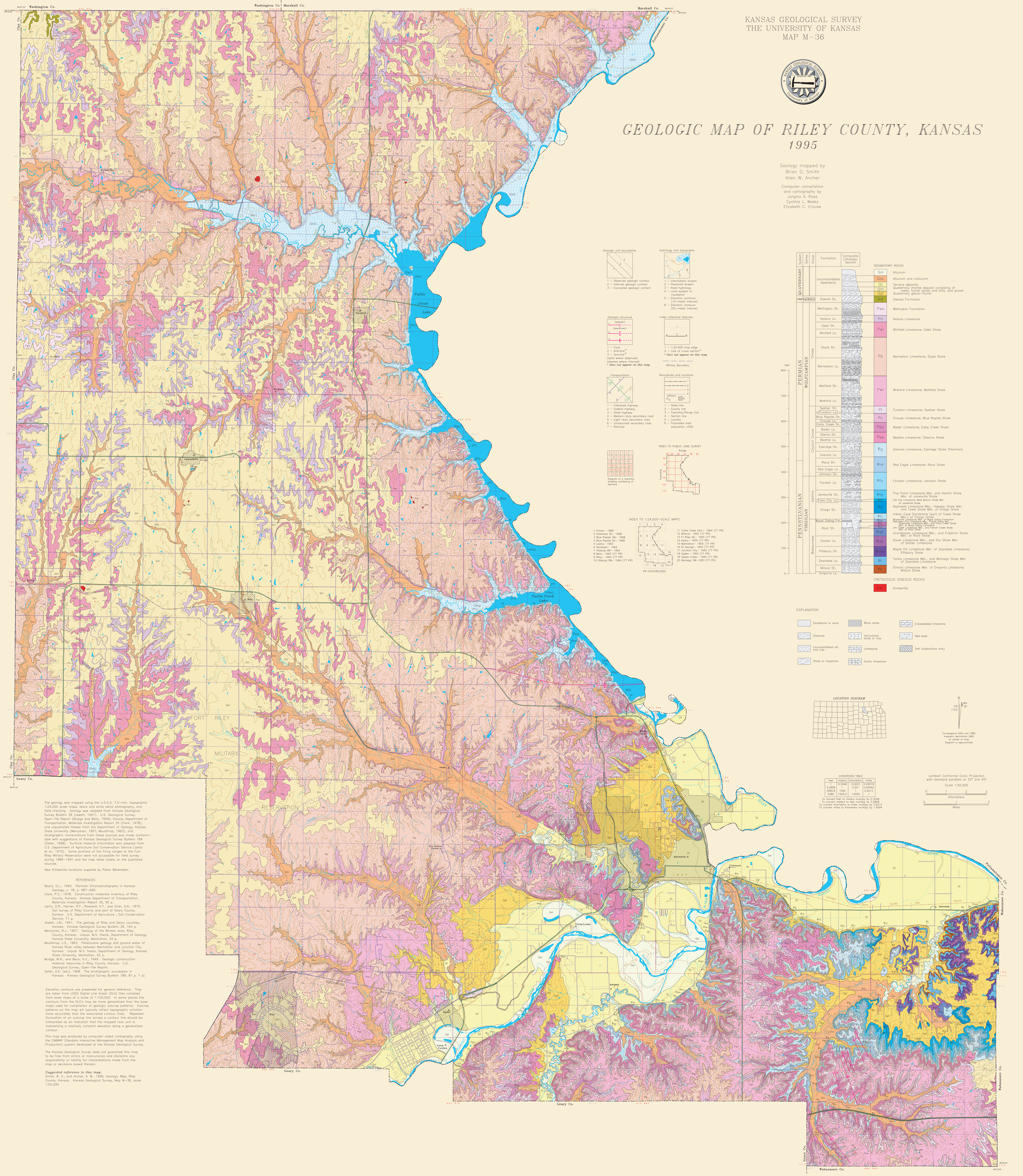


GEOLOGIC MAP OF RILEY COUNTY, KANSAS 1995

Geology mapped by
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Computer compilation
and cartography by
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Geologic unit boundaries

- 1 - Observed geologic contact
- 2 - Inferred geologic contact
- 3 - Concealed geologic contact

Hydrology and topography

- 1 - Intermittent stream
- 2 - Perennial stream
- 3 - Canal
- 4 - Land subject to local flooding
- 5 - Elevation contours (10-meter interval)
- 6 - Elevation contours (50-meter interval)

Index reference features

- 1 - 1:24,000 map edge
- 2 - Line of cross section
- 3 - Section line
- 4 - Section line
- 5 - Section line
- 6 - Section line
- 7 - Section line
- 8 - Section line
- 9 - Section line
- 10 - Section line

Transportation

- 1 - Interstate highway
- 2 - Federal highway
- 3 - State highway
- 4 - Medium-duty secondary road
- 5 - Light-duty secondary road
- 6 - Unimproved secondary road
- 7 - Railroad

Boundaries and locations

- 1 - State line
- 2 - County line
- 3 - Township/Range line
- 4 - Section line
- 5 - Locality
- 6 - Population over 500

INDEX TO PUBLIC LAND SURVEY

INDEX TO 1:24,000-SCALE MAPS

- 1 Kincaid - 1908
- 2 Coward - 1908
- 3 Blue Rapids SW - 1908
- 4 Blue Rapids SE - 1908
- 5 Judd - 1908
- 6 Hamilton - 1904
- 7 Kincaid - 1904
- 8 Blue - 1905 (77 PR)
- 9 Riley - 1905 (77 PR)
- 10 DeSoto - 1904 (77 PR)
- 11 Tuttle Creek Dam - 1904 (77 PR)
- 12 Miller - 1905 (77 PR)
- 13 Ft. Riley NE - 1905 (77 PR)
- 14 Baxter - 1905 (77 PR)
- 15 Hamilton - 1905 (77 PR)
- 16 St. George - 1905 (77 PR)
- 17 Ogden - 1905 (77 PR)
- 18 Spear - 1905 (77 PR)
- 19 Spear - 1905 (77 PR)
- 20 Warsaw SW - 1905 (77 PR)

Period	Formation	Composite Lithologic Section	Remarks
NEOTERCIARY	Unconsolidated Sediments	Qs	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qa	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qm	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qd	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qc	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qb	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qa	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qs	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qd	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
	Unconsolidated Sediments	Qc	Quaternary deposits consisting of terrace deposits, alluvial fans, and gravel.
CRETACEOUS	Washington Sh.	W	Washington Formation
	Hoars Ls.	Ho	Hoars Limestone
	Osler Sh.	Os	Osler Shale
	Winfield Ls.	Wf	Winfield Limestone; Osler Shale
	Doyle Sh.	Do	Doyle Shale
	Barnston Ls.	Ba	Barnston Limestone; Doyle Shale
	Winfield Sh.	Wv	Winfield Limestone; Winfield Shale
	Funston Ls.	Fu	Funston Limestone; Speiser Shale
	Crowe Ls.	Cr	Crowe Limestone; Blue Rapids Shale
	Early Creek Sh.	ECS	Early Creek Shale
PERMIAN	Stearns Ls.	St	Stearns Limestone; Stearns Shale
	Beatle Ls.	Be	Beatle Limestone; Stearns Shale
	Granola Ls.	Gr	Granola Limestone; Eklridge Shale (Permian)
	Red Eagle Ls.	RE	Red Eagle Limestone; Red Shale
	Foraker Ls.	For	Foraker Limestone; Johnson Shale
	Five Point Ls.	FP	Five Point Limestone; Hamilton Shale
	Farley Ls.	Far	Farley Limestone; Red Branch Shale
	Applegate Ls.	Ap	Applegate Limestone; Applegate Shale
	Applegate Ls.	Ap	Applegate Limestone; Applegate Shale
	Applegate Ls.	Ap	Applegate Limestone; Applegate Shale
PENNSYLVANIAN	Stiller Ls.	St	Stiller Limestone; Stiller Shale
	Phillips Ls.	Ph	Phillips Limestone; Phillips Shale
	Zandale Ls.	Za	Zandale Limestone; Zandale Shale
	Willard Ls.	Wi	Willard Limestone; Willard Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
VIRGINIAN	Stiller Ls.	St	Stiller Limestone; Stiller Shale
	Phillips Ls.	Ph	Phillips Limestone; Phillips Shale
	Zandale Ls.	Za	Zandale Limestone; Zandale Shale
	Willard Ls.	Wi	Willard Limestone; Willard Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
	Emporia Ls.	Em	Emporia Limestone; Emporia Shale
CRETACEOUS IGNEOUS ROCKS	Kimberlite	K	Kimberlite

EXPLANATION

Sandstone or sand	Block shale	Crossbedded limestone
Siltstone	Varicolored shale or silt	Red beds
Unconsolidated silt and clay	Limestone	Silt (surface only)
Shale or claystone	Salt limestone	

LOCATION DIAGRAM

CONVERSION TABLE

Feet	Meters	Miles
1,000	0.3048	0.0001578
2,000	0.6096	0.0003156
3,000	0.9144	0.0004734
4,000	1.2192	0.0006312
5,000	1.5240	0.0007890
6,000	1.8288	0.0009468
7,000	2.1336	0.0011046
8,000	2.4384	0.0012624
9,000	2.7432	0.0014202
10,000	3.0480	0.0015780

To convert feet to meters multiply by 0.3048
To convert meters to feet multiply by 3.2808
To convert miles to feet multiply by 5,280
To convert feet to miles multiply by 0.0001578

Lambert Conformal Conic Projection with standard parallels at 35° and 45°
Scale 1:50,000

0 1 2 Kilometers
0 1 2 Miles

The geology was mapped using the U.S.G.S. 7.5-min. topographic 1:24,000 scale maps, black and white aerial photography, and field checking. Geology was adapted from Kansas Geological Survey Bulletin 30 (Lusk, 1941), Geological Survey Open-File Report (Mudge and Beck, 1949), Kansas Department of Transportation, Materials Investigation Report 35 (Clark, 1978), and unpublished thesis from the Department of Geology, Kansas State University (Merriman, 1957; Moulthrop, 1963), and stratigraphic nomenclature from these sources was made conformable with suggestions of Kansas Geological Survey Bulletin 189 (Zentgraf, 1960). Stratigraphic nomenclature was adopted from U.S. Department of Agriculture Soil Conservation Service (Zentgraf et al., 1973). Some portions of the Fort Riley Military Reservation were not accessible for field survey during 1989-1991 and the map relies totally on the published sources. New Kimberlite locations supplied by Peter Brenden.

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Elevation contours are presented for general reference. They are taken from USGS Digital Line Graph (DLG) files compiled from base maps on a scale of 1:100,000. In some places the contours from the DLG may be more generalized than the base maps used for compilation of geologic outcrop patterns. Outcrop patterns on the map will have greater topographic variation more accurately than the associated contour lines. Repeated fluctuations of an outcrop line across a contour line should be interpreted as an indication that the mapped rock unit is maintaining a relatively constant elevation along a generalized contour.

This map was produced by computer-aided cartography using the GEMAP (Geologic Map Production Analysis and Production) system developed at the Kansas Geological Survey. The Kansas Geological Survey does not guarantee this map to be free from errors or inaccuracies and disclaims any responsibility or liability for interpretations made from the map or decisions based thereon.

Suggested reference to this map:
Smith, B. D., and Archer, A. W., 1995. Geologic Map, Riley County, Kansas. Kansas Geological Survey, Map M-36, scale 1:50,000.