

RISE

R16E

R17E

T 9 S
T 10 S
T 11 S
T 12 S



MAP EXPLANATION

- Qal Alluvium
- Qn Newman terrace deposits
- Qb Back Creek(?) terrace deposits
- Qe Glacial drift
- (Pst) underlying formation identified where known
- Stutter Limestone
- Pilbury Shale
- Zeandale Limestone
- Willard Shale
- Emporia Limestone
- Auburn Shale
- Bern Limestone
- Scranton Shale
- Howard Limestone
- Severy Shale
- Topeka Limestone
- Calhoun Shale
- Deer Creek Limestone
- Lecompton Limestone
- Kanwaka Shale
- Oread Limestone

Contact
Dashed where approximately located; short dashed where inferred; dotted where contorted; quartered where continuity of bed is unknown

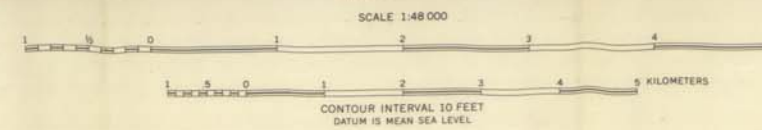
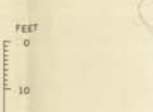
Structure contours
Drawn on base of Topeka Limestone. Dashed where approximately located; short dashed where datum is eroded. Contour interval 20 feet. Datum is mean sea level

USGS Permian and Carboniferous fossil locality
USGS foraminiferal collection locality
Dry and abandoned well
Reported location

NOTE: Minor deviations between the geologic contacts and topographic contours are due to slumping, changes in soil thickness, and variations in thickness of the shale units

STRATIGRAPHIC SECTION EXPLANATION

- Sandstone
- Siltstone
- Sandy siltstone
- Claystone
- Silty claystone
- Black fissile claystone
- Calcareous claystone
- Limestone
- Wavy-bedded limestone
- Angular limestone
- Channel deposit
- Fossil collection from mapped area
- Fossil collection from outside mapped area



GEOLOGIC MAP OF EASTERN SHAWNEE COUNTY AND PARTS OF ADJACENT COUNTIES, KANSAS

QUATERNARY
PENNSYLVANIAN
CARBONIFEROUS

SYSTEM	SERIES	GROUP	FORMATION	MEMBER	THICKNESS, IN FEET	LOCALITY
CARBONIFEROUS	PENNSYLVANIAN	Virgil	Stutter Limestone	Dry Shale	2-4	112967
				Dover Limestone	2-2.4	
			Pilbury Shale		40	
			Zeandale Limestone	Maple Hill Limestone	1.3-2.4	112971
				Warrego Shale	12	
			Willard Shale	Tarkio Limestone	1.8-4.5	112968 112991
			Emporia Limestone	Elmo Limestone	3.3-4.6	
				Harveyville Shale	10.5-14.4	
		Auburn Shale	Reading Limestone	1.8-2.6	112956A 19456-PC	
		Waboussae	Wakarusa Limestone	3-4.3	19457-PC (112975) 112990 112973	
			Soldier Creek Shale	2.6-15.2		
		Burlingame Limestone		1.6-11.8	112976 112978 112979	
		Silver Lake Shale		19-26		
		Rulo Limestone		0.2-4.1	19455-PC 19454-PC 19453-PC Elmo coal bed	
		Cedar Vale Shale		30-35		
		Happy Hollow Limestone		0.3-0.5		
		Scranton Shale			112992 113000 113001	
Howard Limestone	Utopia Limestone	5-7	19452-PC 19451-PC			
	Winezier Shale	0.9-8.8				
Church Limestone		1.1-2.2	19449-PC (112982) 112980			
	Aerde Shale	0.8-8	112981 Noaway coal bed 19450-PC			
Severy Shale		30-55				
Topeka Limestone	Coal Creek Limestone	4.5	19447-PC (112996) 19448-PC			
	Holt Shale	1.7-3.3				
Dy Bas Limestone		0.6-2.6				
	Turner Creek Shale	2.7-5.4				
Sheldon Limestone		1.3-3.5				
	Jones Point Shale	2.4-5.8				
Curzon Limestone		4.5-10.5	112998			
	Iowa Point Shale	0.1-1.5	112999			
Hartford Limestone		3.1-8.2	112995 Coal bed			
Calhoun Shale		30-40				
Dear Creek Limestone	Ervine Creek Limestone	13-18	19445-PC (112993) 112994			
	Bur oak and Larsh Shale	4				
Rock Bluff Limestone		1.8-2.8				
	Oskalossa Shale	6-8.5				
Ozarkie Limestone		6-10	19443-PC			
Tecumseh Shale		60-70				
Lecompton Limestone	Avoca Limestone	3-4				
	King Hill Shale	8-11				
Bell Limestone		8.5-10	19442-PC (112985)			
	Queen Hill Shale	2.3-3.6				
Big Springs Limestone		2-3	112986			
	Doniphan Shale	2-6				
Spring Branch Limestone		7.4-14	112987			
Stull Shale		20-35				
Clay Creek Limestone		3-4				
Kanwaka Shale		44-47				
Oread Limestone	Kareford Limestone	5-7	112988			
	Heumader Shale	4	19441-PC (112989)			
Plattsmouth Limestone		14-16				
	Heebner Shale	5.5-6				
Leavenworth Limestone		1.8				
	Snyderville Shale	6				

GENERALIZED STRATIGRAPHIC SECTION OF EXPOSED ROCKS