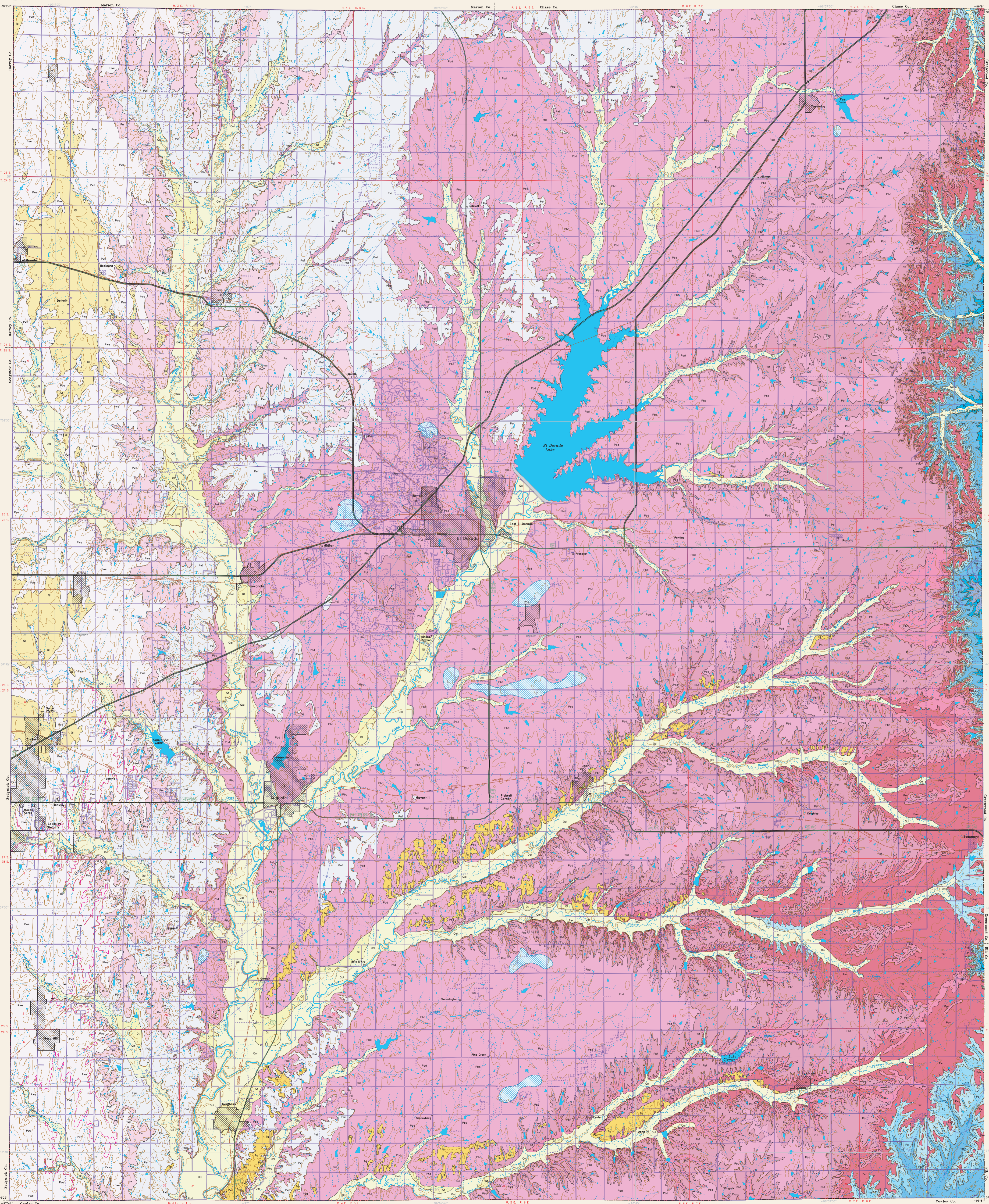


# GEOLOGIC MAP OF BUTLER COUNTY, KANSAS

1994  
Geology mapped by  
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Computer compilation and cartography  
by  
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Composite Stratigraphic Section	Member	Formation	Group	PERMIOGENE			QUATERNARY
				LEONARDIAN	WELLINGTON	CHASSAULT	
Qal	Alluvium		Quaternary				
Qt	Terrace Deposits		Quaternary				
Ol	Loess		Quaternary				
Ig	Hollenberg Ls.		Pliocene				
Unnamed		Wellington	Wellington				
Pwe	Wellington		Wellington				
Pn	Herington Ls. Popock Sh. Crider Ls.	Nolans Ls. Odeli Sh.	Nolans				
Pwi	Cresswell Ls. Ligon Sh. Stovall Ls.		Winfield				
Pbd	Gage Sh. Towanda Ls. Holmesville Sh.	Doyle Sh. Fort Riley Ls.	Chassaault				
Pbf	Oakto Sh.	Barneston Ls.	Barneston				
Pm	Florence Ls. Blue Springs Sh. Kinney Ls.	Matfield Sh.	Wolfcampian				
Pwr	Wynore Sh. Schroyer Ls. Havensville Sh. Threemile Ls.	Wreford Ls.	Wolfcampian				
Pf	Spaiser Sh. Funston Ls. Blue Rapids Sh. Crouse Ls.	Early Creek Sh.	Chassaault				
Pc	Chassaault		Chassaault				
Pbe	Middleburg Ls. Hooper Sh. Liss Ls. Morrill Ls. Hickoria Sh. Cottonwood Ls.	Bader Sh. Stearns Sh. Beattie Ls.	Council Grove				
Pe	Beattie Ls.	Esbridge Sh.	Beattie				
Pg	Salem Point Sh. Burr Ls. Lignon Sh. Soylards Ls.	Grenola Ls. Roca Sh.	Virgilian				
	Howe Ls. Bennett Sh. Glenrock Ls.	Red Eagle Ls.	Virgilian				

Approximate Scale 1 inch = 75 feet

### EXPLANATION


Geologic unit boundaries	Geologic structure	Hydrology and Topography
1 - Observed geologic contact	1 - Fault	1 - Intermittent stream
2 - Inferred geologic contact	2 - Anticline	2 - Perennial stream
3 - Concealed geologic contact*	3 - Syncline	3 - Arroyo hydrology
* Does not appear on this map	4 - Section line (solid where observed)	4 - Dam
	5 - Section line (dashed where inferred)	5 - Elevation contours (10-meter interval)
	* Does not appear on this map	6 - Elevation contours (50-meter interval)
		7 - Zones of numerous sinkholes

Transportation	Boundaries and locations	Index reference features
1 - Interstate highway	1 - State line*	1 - 1:24,000 map edge
2 - Federal highway	2 - County line	2 - Line of cross section*
3 - State highway	3 - Township/Range line	* Does not appear on this map
4 - Medium-duty secondary road	4 - Section line	
5 - Light-duty secondary road	5 - Locality	
6 - Unimproved secondary road	6 - Population >500	
7 - Railroad		

### INDEX TO PUBLIC LAND SURVEY

Range	41	42	43	44	45	46
Township	234	243	252	261	270	279

### INDEX TO 1:24,000-SCALE MAPS

19	20	21	22	23	24	25	26	27	28	29	30
19	20	21	22	23	24	25	26	27	28	29	30

### CONVERSION TABLE

Unit	Meters	Feet	Miles
1 Meter	3.2808	3.2808	0.00062137
1000 Meters	1000	3280.84	0.621371
1 Mile	1609.34	1609.34	1

To convert feet to meters multiply by 0.3048  
To convert meters to feet multiply by 3.2808  
To convert miles to meters multiply by 1609.34  
To convert miles to kilometers multiply by 1.60934

The geology was mapped using the U.S.S.S. 7.5-min. topographic maps...  
This map was compiled by computer-aided cartography using the GEMAP (Geologic Map Analysis Program) software developed at the Kansas Geological Survey...  
The Kansas Geological Survey does not warrant this map to be free from errors or inaccuracies and disclaims any responsibility for any damages or compensation resulting from map use or decisions based thereon.

REFERENCES  
Aber, J.S., 1981. Surficial geology of Butler County, Kansas. Kansas Geological Survey, Open-File Report 81-46. 21 p.