University of Kansas
State Geological Survey of Kansas

Prepared by Geological Survey, United States Department of the
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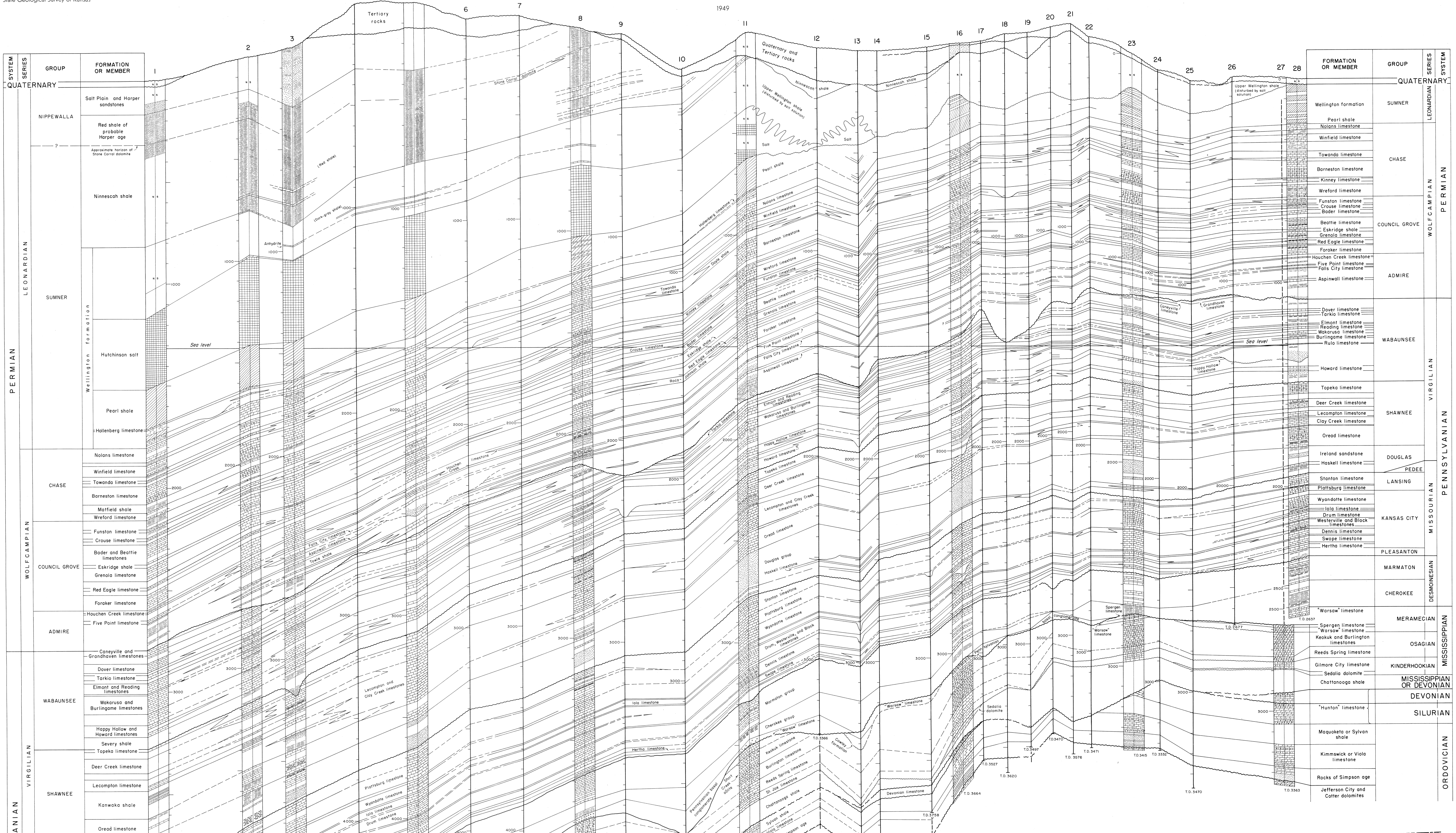
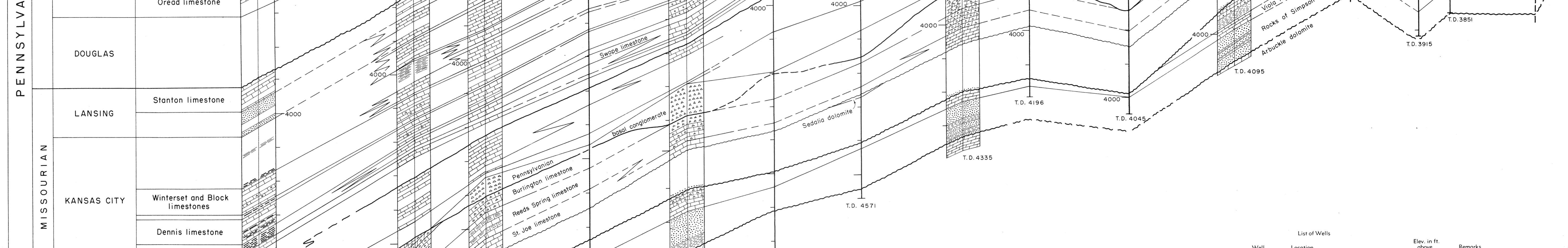
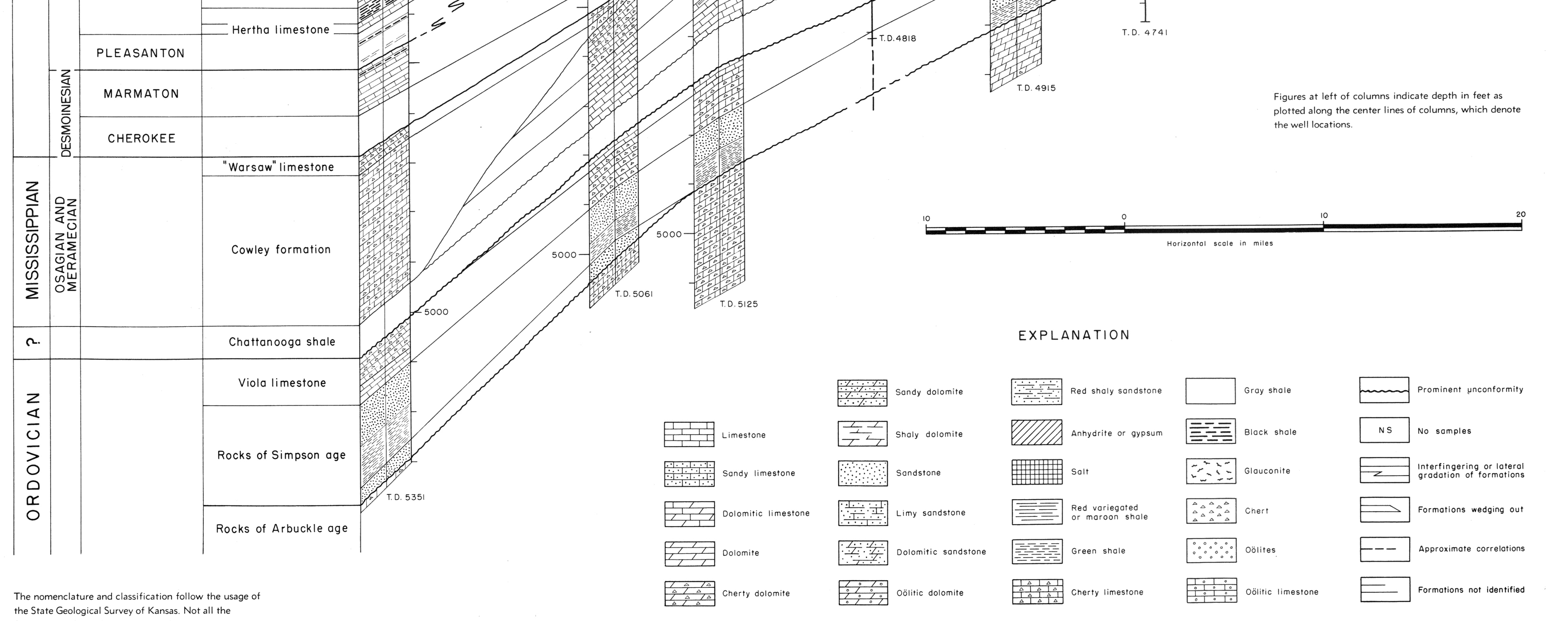
Oil and Gas Investigations No. 8
Preliminary Cross Section


SYSTEM
SERIES
GROUP
FORMATION OR MEMBER
QUATERNARY
PERMIAN
LEONARDIAN
NIPPEWALLA
Salt Plain and Harper sandstones
Red shale of probable Harper age
Approximate horizon of Stone Corral dolomite
Ninnescah shale
SUMNER
Wellington formation
Hutchinson salt
Pearl shale
Hollenberg limestone
WOLFCAMPIAN
CHASE
Nolans limestone
Winfield limestone
Towanda limestone
Barneston limestone
Matfield shale
Wreford limestone
COUNCIL GROVE
Funston limestone
Crouse limestone
Bader and Beattie limestones
Eskridge shale
Grenola limestone
Red Eagle limestone
Foraker limestone
ADMIRE
Houchen Creek limestone
Five Point limestone
PENNSYLVANIAN
VIRGILIAN
Caneyville and Grandhaven limestones
WABAUNSEE
Dover limestone
Tarkio limestone
Elmont and Reading limestones
Wakarusa and Burlingame limestones
Happy Hollow and Howard limestones
Severy shale
SHAWNEE
Topeka limestone
Deer Creek limestone
Lecompton limestone
Kanwaka shale
Oread limestone
DOUGLAS
MISSOURIAN
LANSING
Stanton limestone
KANSAS CITY
Winterset and Block limestones
Dennis limestone
Hertha limestone
PLEASANTON
DESMOINESIAN
MARMATON
CHEROKEE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
Tertiary rocks
Quaternary and Tertiary rocks
Stone Corral dolomite
(Red shale)
(Dark-gray shale)
Anhydrite
Sea level
Upper Wellington shale (disturbed by salt solution)
Salt
Ninnescah shale
NS
1000
2000
3000
4000
Houchen Creek limestone
Falls City limestone
Aspinwall limestone
Towle shale
Towanda limestone
Doyle shale
Kinney limestone
Roca-Johnson shale
Lecompton and Clay Creek limestones
Plattsburg limestone
Wyandotte limestone
Iola limestone
Drum limestone
Swope limestone
Douglas group
Haskell limestone
Drum, Westerville, and Block limestones
Caneyville limestone
Grandhaven limestone
Happy Hollow limestone
Spergen limestone
"Warsaw" limestone
basal conglomerate
Pennsylvanian
T.D. 2677
T.D. 2637
2500
FORMATION OR MEMBER
GROUP
SERIES
SYSTEM
QUATERNARY
Wellington formation
Pearl shale
SUMNER
LEONARDIAN
Nolans limestone
Winfield limestone
Towanda limestone
Barneston limestone
Kinney limestone
Wreford limestone
CHASE
Funston limestone
Crouse limestone
Bader limestone
Beattie limestone
Eskridge shale
Grenola limestone
Red Eagle limestone
Foraker limestone
COUNCIL GROVE
WOLFCAMPIAN
PERMIAN
Houchen Creek limestone
Five Point limestone
Falls City limestone
Aspinwall limestone
ADMIRE
Dover limestone
Tarkio limestone
Elmont limestone
Reading limestone
Wakarusa limestone
Burlingame limestone
Rulo limestone
Howard limestone
WABAUNSEE
Topeka limestone
Deer Creek limestone
Lecompton limestone
Clay Creek limestone
Oread limestone
SHAWNEE
VIRGILIAN
Ireland sandstone
Haskell limestone
DOUGLAS
PEDEE
Stanton limestone
Plattsburg limestone
LANSING
Wyandotte limestone
Iola limestone
Drum limestone
Westerville and Block limestones
Dennis limestone
Swope limestone
Hertha limestone
KANSAS CITY
MISSOURIAN
PLEASANTON
MARMATON
CHEROKEE
DESMOINESIAN
PENNSYLVANIAN
"Warsaw" limestone
MERAMECIAN
Spergen limestone
"Warsaw" limestone
Keokuk and Burlington limestones
Reeds Spring limestone
OSAGIAN
Gilmore City limestone
Sedalia dolomite
KINDERHOOKIAN
MISSISSIPPIAN
Chattanooga shale
MISSISSIPPIAN OR DEVONIAN
DEVONIAN
"Hunton" limestone
SILURIAN
Maquoketa or Sylvan shale
Kimmswick or Viola limestone
Rocks of Simpson age
Jefferson City and Cotter dolomites
ORDOVICIAN
T.D. 3363
T.D. 3470
T.D. 3415
T.D. 3332
T.D. 3576
T.D. 3471
T.D. 3497
T.D. 3470
T.D. 3620
T.D. 3527
T.D. 3664


Pennsylvanian
Burlington limestone
Reeds Spring limestone
St. Joe limestone
basal conglomerate
Sedalia dolomite
Marmaton group
Cherokee group
"Warsaw" limestone
Keokuk limestone
Burlington limestone
Reeds Spring limestone
St. Joe limestone
Chattanooga shale
Sylvan shale
Viola limestone
Rocks of Simpson age
Arbuckle dolomite
Pennsylvanian basal conglomerate
Short Creek oölite
Cowley formation
Devonian limestone
Iola limestone
Hertha limestone
T.D. 4818
T.D. 4741
T.D. 4571
T.D. 4335
T.D. 4196
T.D. 4045
T.D. 4095
T.D. 3366
T.D. 3915
T.D. 3851
T.D. 3758

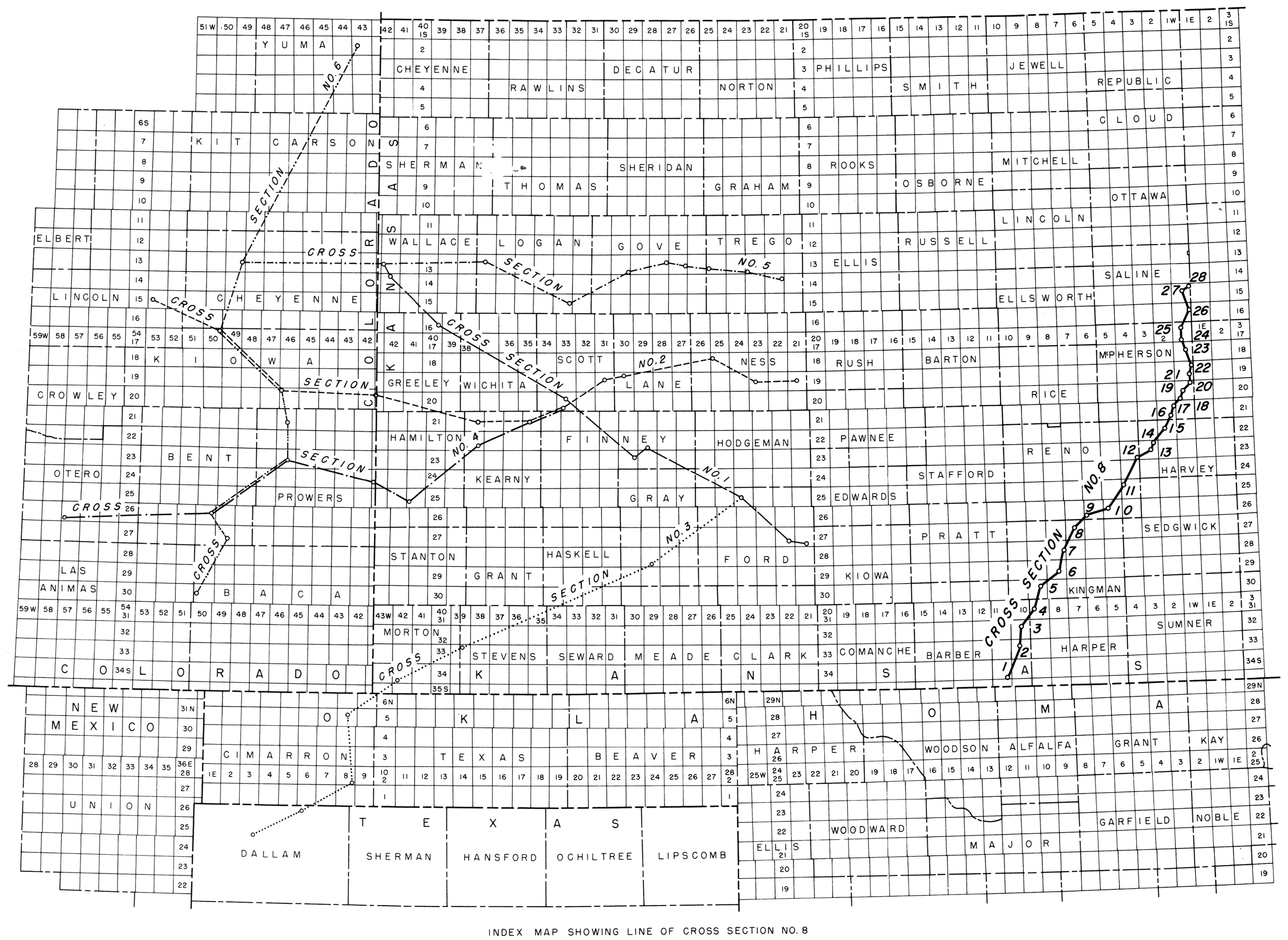

MISSISSIPPIAN
OSAGIAN AND MERAMECIAN
"Warsaw" limestone
Cowley formation
?
Chattanooga shale
ORDOVICIAN
Viola limestone
Rocks of Simpson age
Rocks of Arbuckle age
5000
T.D. 5351
T.D. 5061
T.D. 5125
T.D. 4915
10 0 10 20
Horizontal scale in miles
EXPLANATION
Limestone
Sandy limestone
Dolomitic limestone
Dolomite
Cherty dolomite
Sandy dolomite
Shaly dolomite
Sandstone
Limy sandstone
Dolomitic sandstone
Oölitic dolomite
Red shaly sandstone
Anhydrite or gypsum
Salt
Red variegated or maroon shale
Green shale
Cherty limestone
Gray shale
Black shale
Glauconite
Chert
Oölites
Oölitic limestone
Prominent unconformity
NS No samples
Interfingering or lateral gradation of formations
Formations wedging out
Approximate correlations
Formations not identified

Figures at left of columns indicate depth in feet as plotted along the center lines of columns, which denote the well locations.

The nomenclature and classification follow the usage of the State Geological Survey of Kansas. Not all the formation and member names are shown.

List of Wells

	Company	Farm name	Well No.	Location	Elev. in ft. above sea level	Remarks
1	Pryor and Lockhart, Inc.	Ishmael	1	Cen. S½ SE¼ SW¼ sec. 35, T. 34 S., R. 11 W., Barber County	1310	Sample log, rotary tools; Drillers log, 400 to 1000 ft.
2	Pure Oil Co.	William Palmer	1	SE¼ NE¼ SW¼ sec. 10, T. 33 S., R. 10 W., Barber County	1423	Sample log, rotary tools
3	Helmerich and Payne, Inc.	Winters	1	NW cor. SW¼ sec. 16, T. 32 S., R. 10 W., Barber County	1470	Sample log, rotary tools
4	R. G. Berry	Anthony	1	Cen. SW¼ SW¼ sec. 17, T. 31 S., R. 9 W., Harper County	1684	Drillers log, cable tools
5	Deep Rock Oil Corp.	L. C. Whitmer	1	NW cor. SE¼ sec. 10, T. 30 S., R. 9 W., Kingman County	1689	Sample log, rotary tools; Drillers log above 800 ft.
6	Phillips Pet. Co.	M. E. Bane	1	NE¼ SW¼ NW¼ sec. 22, T. 29 S., R. 8 W., Kingman County	1608	Drillers log, cable tools
7	Carter Oil Co.	G. H. Davis	1	Cen. E½ NE¼ NE¼ sec. 24, T. 28 S., R. 8 W., Kingman County	1625	Sample log, rotary tools; Drillers log above 320 ft.
8	W. C. McBride Inc.	Wooldridge	2	SW¼ NE¼ SE¼ sec. 16, T. 27 S., R. 7 W., Kingman County	1565	Sample log, cable tools; Drillers log above 1000 ft.
9	Frost Drilling Co.	H. Walters	1	SE cor. SW¼ sec. 30, T. 26 S., R. 6 W., Reno County	1537	Drillers log, cable tools
10	United Pet. Corp.	R. J. Stucky	1	SW cor. NW¼ sec. 17, T. 26 S., R. 5 W., Reno County	1458	Drillers log, cable tools
11	Westgate-Greenland et al.	Popp	1	SW cor. NE¼ sec. 7, T. 25 S., R. 4 W., Reno County	1537	Sample log, cable tools; Drillers log above 500 ft.
12	Dickey Oil and Refng. Co.	Boughman	1	Cen. NW¼ SW¼ sec. 36, T. 23 S., R. 4 W., Reno County	1463	Drillers log, cable tools
13	E. J. Shaffer et al.	Epp	1	SE cor. sec. 15, T. 23 S., R. 3 W., Harvey County	1449	Sample log, rotary tools
14	J. H. Liggett et al.	Regier	1	SE¼ NW¼ SE¼ sec. 2, T. 23 S., R. 3 W., Harvey County	1448	Drillers log, cable tools
15	Twin Drilling Co. and Bradley Bros.	Ruth	1	SW cor. sec. 16, T. 22 S., R. 2 W., Harvey County	1467	Drillers log, cable tools
16	Dickey Oil Co. et al.	Reusser	1	SE cor. sec. 26, T. 21 S., R. 2 W., McPherson County	1487	Sample log, rotary tools
17	Harris-Haun Corp.	O. C. Rupp	1	SW cor. sec. 12, T. 21 S., R. 2 W., McPherson County	1495	Drillers log, cable tools
18	J. H. Tatlock	Hoyer	1	SW¼ NE¼ sec. 32, T. 20 S., R. 1 W., McPherson County	1531	Drillers log, cable tools
19	J. B. Markey et al.	Farver	1	SW¼ SE¼ sec. 16, T. 20 S., R. 1 W., McPherson County	1537	Drillers log, cable tools
20	Shell Pet. Co.	Wenger	1	NE¼ NE¼ sec. 2, T. 20 S., R. 1 W., McPherson County	1565	Sample log, rotary tools
21	Henderson and Holden et al.	Sommerfield	1	Cen. NE¼ SW¼ sec. 23 T. 19 S., R. 1 W., McPherson County	1582	Drillers log, cable tools
22	Cling Drilling Co.	Dole	1	NE¼ NW¼ NE¼ sec. 12, T. 19 S., R. 1 W., McPherson County.	1515	Drillers log, cable tools
23	T. K. Simmons et al.	Bishop	1	Cen. NW¼ SW¼ sec. 15, T. 18 S., R. 1 W., McPherson County	1433	Sample log, cable tools
24	Johnson, Shell et al.	A. R. Johnson	1	SW¼ SW¼ NW¼ sec. 33, T. 17 S., R. 1 W., McPherson County	1352	Drillers log, cable tools
25	H. C. Becker	H. Mason	1	SW cor. NE¼ sec. 9, T. 17 S., R. 1 W., McPherson County	1302	Sample log, rotary tools
26	N. Appleman Co. et al.	Schwarz	1	Cen. S½ SW¼ SE¼ sec. 13, T. 16 S., R. 1 W., Saline County	1321	Drillers log, cable tools
27	Phil-Han Oil Co.	Currie	1	NW cor. SW¼ sec. 10, T. 15 S., R. 1 W., Saline County	1207	Sample log, rotary tools (Pre-Pennsylvanian only)
28	Mutual Oil and Royalty Co.	Bigler	1	Cen. SW¼ SE¼ sec. 1, T. 15 S., T. 1 W., Saline County	1311	Sample log, cable tools


YUMA
CHEYENNE
RAWLINS
DECATUR
NORTON
PHILLIPS
SMITH
JEWELL
REPUBLIC
CLOUD
KIT CARSON
SHERMAN
THOMAS
SHERIDAN
GRAHAM
ROOKS
OSBORNE
MITCHELL
OTTAWA
LINCOLN
ELBERT
WALLACE
LOGAN
GOVE
TREGO
ELLIS
RUSSELL
SALINE
ELLSWORTH
LINCOLN
CHEYENNE
KIOWA
GREELEY
WICHITA
SCOTT
LANE
NESS
RUSH
BARTON
McPHERSON
RICE
CROWLEY
HAMILTON
KEARNY
FINNEY
HODGEMAN
PAWNEE
RENO
HARVEY
STAFFORD
OTERO
BENT
PROWERS
GRAY
EDWARDS
PRATT
SEDGWICK
LAS ANIMAS
BACA
STANTON
GRANT
HASKELL
FORD
KIOWA
KINGMAN
SUMNER
HARPER
BARBER
COMANCHE
CLARK
MEADE
SEWARD
STEVENS
MORTON
COLORADO
KANSAS
NEW MEXICO
UNION
CIMARRON
TEXAS
BEAVER
HARPER
WOODS
ALFALFA
GRANT
KAY
WOODWARD
MAJOR
GARFIELD
NOBLE
ELLIS
OKLAHOMA
TEXAS
DALLAM
SHERMAN
HANSFORD
OCHILTREE
LIPSCOMB
CROSS SECTION NO. 1
CROSS SECTION NO. 2
CROSS SECTION NO. 3
CROSS SECTION NO. 4
CROSS SECTION NO. 5
CROSS SECTION NO. 6
CROSS SECTION NO. 8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

INDEX MAP SHOWING LINE OF CROSS SECTION NO. 8
AND PREVIOUSLY PUBLISHED SECTIONS

0 10 20 30 40
Scale in miles

Drafting by Jane Koenig

SUBSURFACE GEOLOGIC CROSS SECTION FROM BARBER COUNTY TO SALINE COUNTY, KANSAS

BY WALLACE LEE