Subsurface Geophysical Cross Section of Pennsylvanian-Aged Strata (Upper Cherokee Through Basal Shawnee Groups) in Eastern Kansas Extending from North-Central Osage County, Kansas, to South-Central Bates County, Missouri

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Datum = top of Hushpuckney Shale Member

Note: See text for further discussion of group boundaries.

Northwest
B
Southeast
B′
Nomenclature (revised herein)
Shawnee Group
Douglas Group
Lansing Group
Kansas City Group
Zarah Subgroup
Linn Sgp.
Bronson Sgp.
Pleasanton Group
Marmaton Group
Cherokee Group
Osage County
15-139-00009
Driller's Log Notes in Red
15-139-00010
15-139-20057
15-139-20082
15-139-20083
Main Pass
Heebner
undifferentiated Lane Shale
Franklin County
Cross Section G-G′ Intersect
15-059-22495
Anderson County
15-003-24236
Driller's Log Notes in Red
Cross Section H-H′ Intersect
15-003-25835
Driller's Log Notes in Red
15-003-24689
15-003-25051
15-003-25315
15-003-24385
undifferentiated Lane Shale
Thayer Coal
Chanute Shale
Nellie Bly Formation
Fontana Shale
Stark Shale
Hushpuckney Shale
Mound City Shale
Mulberry coal
Linn County
15-107-23788
15-107-22573
(no scale on log)
15-107-23790
Cross Section I-I′ Intersect
15-107-23220
(no scale on log)
15-107-24140
15-107-20957
LiDAR map of T. 22 S., R. 24 E. Linn County, Kansas
Transect B-B′
Barnes #1
Ezra Moon #4
Patton #1
Composite Section used by Heckel and Watney (2002, Fig. 8)
1 mile
N
middle Sniabar shale
Kansas City Group
Bronson Subgroup
Sw.
Hertha Ls.
Bethany Falls
M.C.
Hush.
Elm Branch
Sniabar Limestone Member
Mound City
undifferentiated
Lenapah Limestone
fissile shale
DISCONFORMITY ABOVE AND BELOW
covered
South Cut
North Cut
Outcrop
Subsurface (start of driller's log)
exposed in road ditch
Bates County, MO
MO-013-20374
MO-013-20025
(no scale on log)
MO-013-20023
(no scale on log)
MO-013-20375
MO-013-00008
(no scale on log)
MO-013-00070
(no scale on log)
Missouri
Kansas
Oklahoma
A
A′
B
B′
C
C′
D
D′
E
E′
F
F′
G
G′
H
H′
I
I′

Generalized Sections see Heckel & Watney (2002) and text accompanying cross sections for more detailed discussion

Barnes #1
NW NE SE NW
sec. 8 T. 22 S., R. 24 E.

Ezra Moon #4
2295′ W, 700′ S of c. E. line
sec. 15 T. 22 S., R. 24 E.
Driller's log used by Padgham (1956, pg. 73)

Ray Patton #1
SE 40, NE/4
sec. 24 T. 22 S., R. 24 E.

Composite section modified from Heckel and Watney (2002, fig. 8) and proximal driller's log data. Datasets overlap between 0′ and -3′.

Note: Nomenclature is herein revised to reflect the findings of this investigation. Compare this location to southeast end of cross section D. Heckel and Watney (2002) used this composite in defining the principal reference section of the Shale Hill Formation and type section of the Mantey Shale Member

Abbreviations:

Fm.	Formation
L.	Lower
Ls.	Limestone
Mbr.	Member
Sh./sh.	Shale
Sgp.	Subgroup
Crk.	Creek
D.	Dewey Limestone
E.B.	Elm Branch Shale
Gales. Sh.	Galesburg Shale
Her. / H.	Hertha Limestone
Hickory	Hickory Creek Shale Member
Hush.	Hushpuckney Shale Member
Isl.	Island Creek Shale Member
K. C.	Kansas City Group
Liberty	Liberty Memorial Shale
M. C.	Middle Creek Limestone Member
Mun.	Muncie Creek Shale Member
Platts.	Plattsburg Limestone
Ray.	Raytown Limestone Member
Sw.	Swope Limestone
Wy.	Wyandotte Limestone

CROSS SECTION LEGEND

🟦 Predominantly carbonate interval. Some intervals may include black fissile shales (i.e., highstand shale).

⬜ Intervals in which accommodation is predominantly filled by argillaceous and/or arenaceous shale lithologies. These intervals may include carbonate lenses (e.g., Cherryvale and Chanute Shale formations).

⬛ Coal

★ Indicates an intersect with another cross section.

— Group and/or subgroup boundary

▤ Argillaceous Shale
▨ Arenaceous Shale
░ Sandstone
▦ Black Fissile Shale
▥ Carbonate

Modified for publication. Petrophysical cross section originally released in non-peer reviewed open-file report:

Oborny, S. C., and Hasiuk, F., 2022, Lithostratigraphic correlations of the upper Desmoinesian and Missourian stages (Pennsylvanian) in eastern Kansas: Kansas Geological Survey, Open-File Report 2022-2, 9 p., 10 plates.