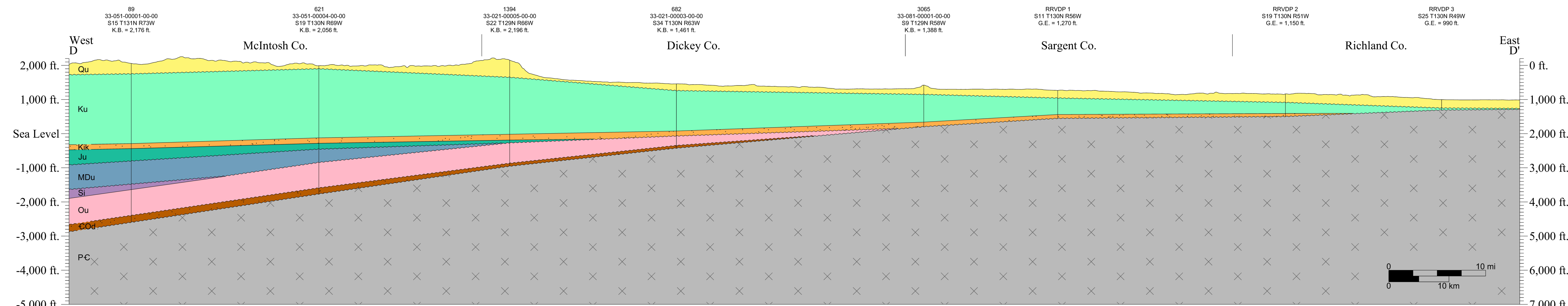
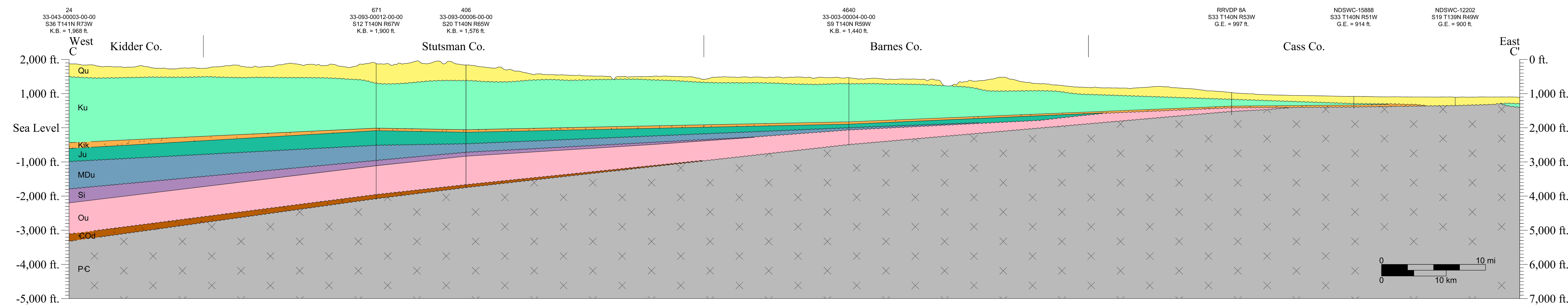
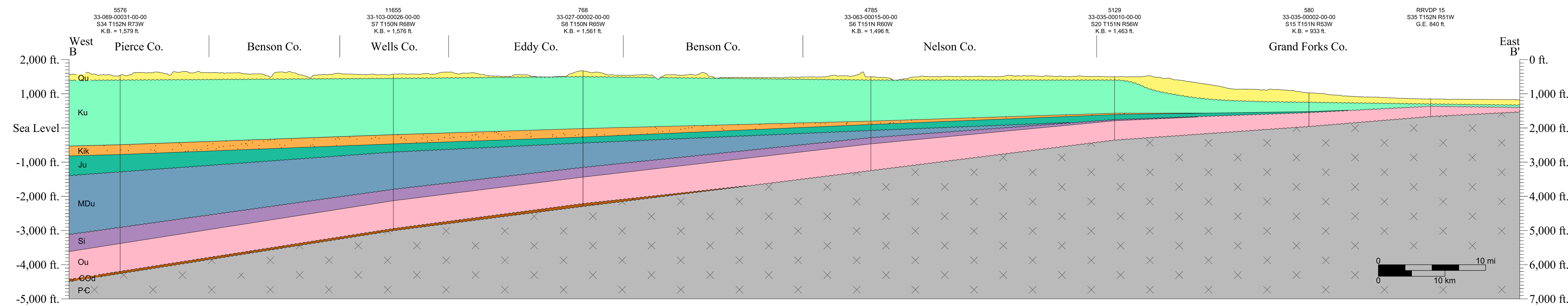
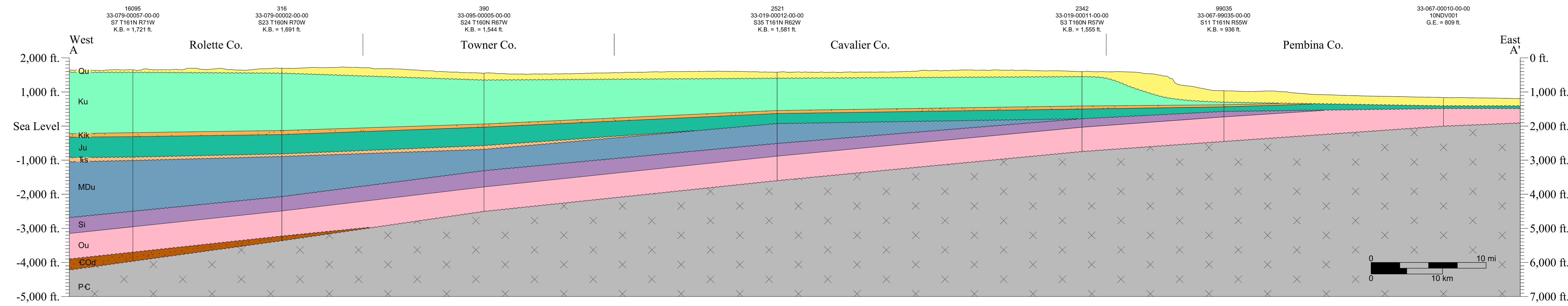
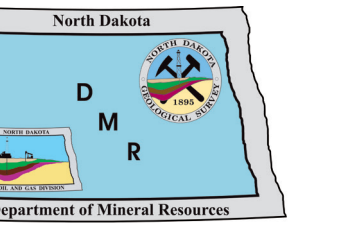


Generalized Geologic Cross-sections of Eastern North Dakota

Timothy O. Nesheim



Explanation

These generalized west-east cross-sections depict the subsurface geology of eastern North Dakota. Each cross-section has been vertically exaggerated 21 times (the vertical section has been stretched 21 times greater than the horizontal) in order to reasonably depict the architecture of the geologic strata in the subsurface. Geologic formation tops from Red River Valley Drilling Project wells (labeled RRVDP on the cross-section well information) were reviewed and partially incorporated from Moore (1978). The geologic tops for the North Dakota State Water Commission wells (NDSWC wells on cross-section C-C') remained consistent with Anderson (2012). The Cretaceous undifferentiated top was determined using the Pierre Formation structure contour map from Carlson (1982). The Cretaceous Inyan Kara Formation and Jurassic undifferentiated (Swift Formation) tops were reviewed and sometimes modified slightly from the formation tops database of LeFever (2015). The remaining geologic formation tops were compiled from the North Dakota Oil and Gas Division database (NDOGD, 2015), examined through building stratigraphic cross-sections with available wireline logs across eastern North Dakota, and compared with example formation log tops within Bluemle et al. (1986). The lateral extent of each geologic unit was compared with various maps from previous North Dakota Geological Survey publications, including: Ordovician Undifferentiated (Winnipeg Formation extent - Anderson, 1974), Silurian Undifferentiated (Interlake Formation extent - Carlson and Eastwood, 1962), Mississippian-Devonian Undifferentiated (Bottineau Interval and Dawson Bay Formation extents - Anderson, 1974), and Cretaceous undifferentiated, Inyan Kara Formation, and Jurassic undifferentiated (Bluemle, 1983). The well information posted above each cross-section well was extracted from NDOGD (2015) and Moore (1978). Cross-section C-C' was modified from Anderson (2012).

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Explanations

- Quaternary undifferentiated
- Cretaceous undifferentiated
- Cretaceous Inyan Kara Formation
- Jurassic undifferentiated
- Triassic Spearfish Formation
- Mississippian-Devonian undifferentiated
- Silurian Interlake Formation
- Ordovician undifferentiated
- Cambrian-Ordovician Deadwood Formation
- Precambrian Basement (Superior Province)
- Unconformity

5576 NDIC Well #
33-069-00031-00-00 API Well #
S34 T152N R73W Section Township Range
K.B. = 1,579 ft. Kelly Bushing Elevation**

* RRVDP = Red River Valley Drilling Project
NDSWC = North Dakota State Water Commission
** G.E. = Ground Elevation

