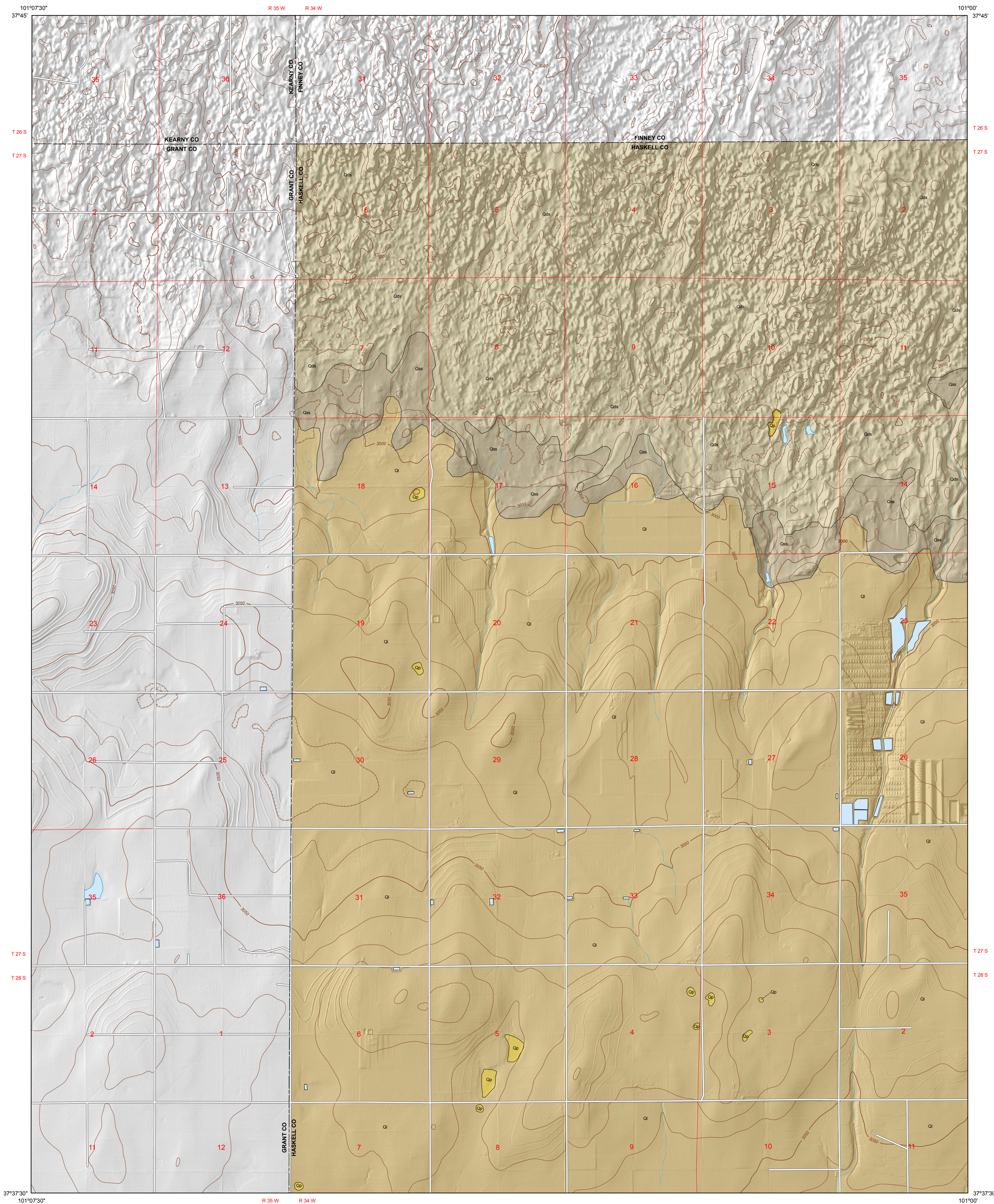


PRELIMINARY SURFICIAL GEOLOGY OF THE HASKELL COUNTY PORTION OF THE HICKOK NE QUADRANGLE, KANSAS

Geology by Jon J. Smith
2015

Computer compilation and cartography by John W. Dunham and Hillary C. Crabb

Funded in part by the
USGS National Cooperative
Geologic Mapping Program

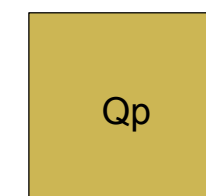


Units and Descriptions from
McLaughlin (1946) and field notes.

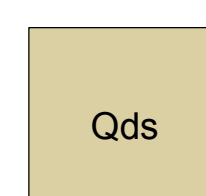
CENOZOIC ROCKS

Quaternary

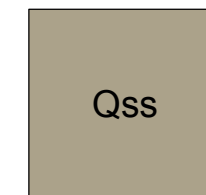
Upland intermittent lake (playa) deposits — Shallow basins developed in upland loess deposits ranging in area from less than one acre to tens of acres and filled with silt and fine sand up to 5 feet thick. A carbonate layer may be present in larger basins a few feet below the basin floor. The basins probably range in age from Pleistocene to Holocene.



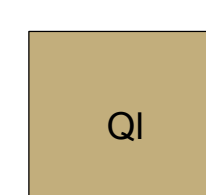
Dune sand — Sand dunes composed of very fine- to medium-grained sand derived from Pleistocene terrace deposits of the Arkansas River valley and occurring primarily in the northern portion of the county and south of the Arkansas River. Dunes may reach a height of about 70 feet.



Sheet sand — Sand occurring in sheets or subdued undulating swells derived from Pleistocene terrace deposits of the Arkansas River valley and occurring primarily in the northern portion of the county south of the Arkansas River. Sheet sand thickness may reach up to 20 feet.



Loess — Wind-deposited silt with minor amounts of clay and fine sand which mantles the uplands of the county. Loess deposits are Pleistocene to late Holocene in age. The loess is generally buff colored, calcareous, and ranges from 0 to 30 feet thick.



EXPLANATION

Boundaries and Locations

- County boundary
- Township/range line (hidden)
- Section line

Transportation

- Local road

Geologic Unit Boundaries

- Observed contact

Hydrology and Topography

- Intermittent stream
- Water body
- Water body - manmade shoreline
- Elevation contour (50-foot interval)
- Elevation contour (10-foot interval)
- Depression contour (50-foot interval)
- Depression contour (10-foot interval)

Elevation contours are presented for general reference. Used in the U.S. Geological Survey's current US Topo 1:24,000-scale topographic map series, they were generated from hydrographically-improved 1/3 arc-second National Elevation Dataset (NED) data, and smoothed during processing for use at 1:24,000 scale. In some places the contours may be more generalized than the base data used for compilation of geologic outcrop patterns. Outcrop patterns on the map will typically reflect topographic variation more accurately than the associated contour lines. Repeated fluctuation of an outcrop line across a contour line should be interpreted as an indication that the mapped rock unit is maintaining a relatively constant elevation along a generalized contour.

2012 U.S. Department of Agriculture - Farm Services Agency (USDA-FSA) National Agriculture Imagery Program (NAIP) digital imagery and 2002 USDA-FSA digital black and white orthophotos were used as reference in the digital mapping. USGS 7.5-min 1:24,000-scale topographic maps and USDA Natural Resources Conservation Service (NRCS) soil surveys were used to supplement the mapping.

Roads and highways are shown on the base map as represented by data from the Kansas Department of Transportation (KDOT), U.S. Census Bureau, and other sources. U.S. Department of Agriculture - Farm Services Agency (USDA-FSA) National Agriculture Imagery Program (NAIP) imagery also was used to check road locations.

Shaded relief is based on 1-meter hydroflattened bare-earth DEMs from the State of Kansas LiDAR Database. The DEM images, in ERDAS IMAGINE format, were mosaicked into a single output DEM, downsampled to 5-meter resolution, and reprojected to decimal degrees. The output DEM was then converted to a hillshade, a multidirectional shaded-relief image using angles of illumination from 0°, 225°, 270°, and 315° azimuths, each 45° above the horizon, with a 4x vertical exaggeration.

This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program, award number G14AC00226 (FY2014).

This map was produced using the ArcGIS system developed by Esri (Environmental Systems Research Institute, Inc.).

This map is a preliminary product and has had less scientific and cartographic review than the Kansas Geological Survey's M-series geologic maps. KGS does not guarantee this map to be free from errors or inaccuracies and disclaims any responsibility or liability for interpretations made from the map or decisions based thereon.

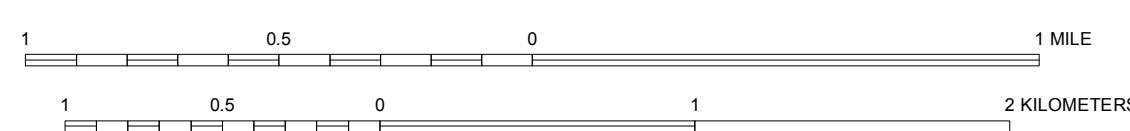
REFERENCE

McLaughlin, T.G., 1946, Geology and ground-water resources of Grant, Haskell, and Stevens counties, Kansas, with analyses by H.A. Stoltenberg; Kansas Geological Survey, Bulletin, no. 61, 221 p.

SUGGESTED REFERENCE TO THE MAP

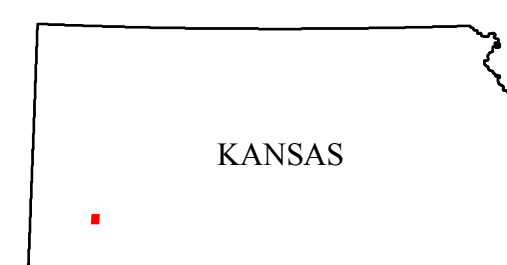
Smith, J. J., 2015, Preliminary surficial geology of the Haskell County portion of the Hickok NE quadrangle, Kansas; Kansas Geological Survey, Open-file Report 2015-15, scale 1:24,000, unpublished.

SCALE 1:24 000



UNIVERSAL TRANSVERSE MERCATOR PROJECTION, ZONE 14
NORTH AMERICAN DATUM OF 1983

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 2015



1	2	3	4
5	6	7	8
9	10	11	12

HASKELL COUNTY QUADRANGLES

- 1 Hickok NE
- 2 West of Wild Horse Lake
- 3 Wild Horse Lake
- 4 Copeland NW
- 5 Hickok SE
- 6 North of Satanta
- 7 West of Copeland
- 8 Copeland
- 9 Ryus
- 10 Satanta
- 11 Sublette
- 12 Plains NW