

VERTICAL EXAGGERATION: 1:1

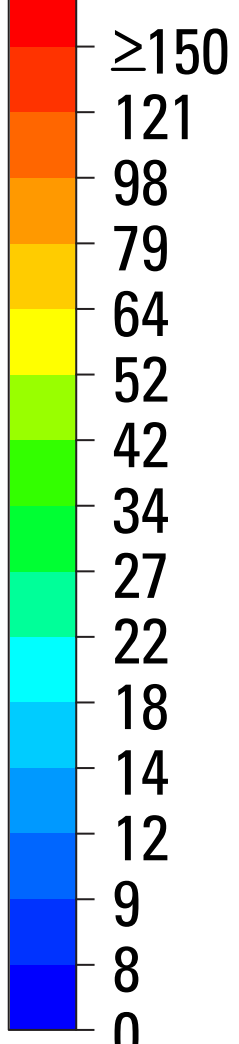
## EXPLANATION

### Geologic units from Redden and DeWitt (2009)

- Qal Quaternary alluvial deposits
- Qt Quaternary terrace gravel and alluvial-fan deposits
- Kp Cretaceous Pierre Shale

### Ellsworth Air Force Base

### Electrical resisitivity, in ohm-meters



- Electrical resistivity tomography (ERT) transect
- Delineated Pierre Shale contact from horizontal-to-vertical spectral ratio (HVSr) and ERT results
- Unnamed ephemeral streams from U.S. Geological Survey (2018)
- HVSr site
- ▼ 1A\_001
- HVSr surface location—Transect number is first part of the label, followed by the station identifier
- Pierre Shale depth from HVSr data—Circle size is based on a quality score (table 1); no circle indicates unable to score data using categorical rating system
- |               |               |
|---------------|---------------|
| ○ 1 Very poor | ○ 4 Good      |
| ○ 2 Poor      | ○ 5 Excellent |
| ○ 3 Moderate  |               |

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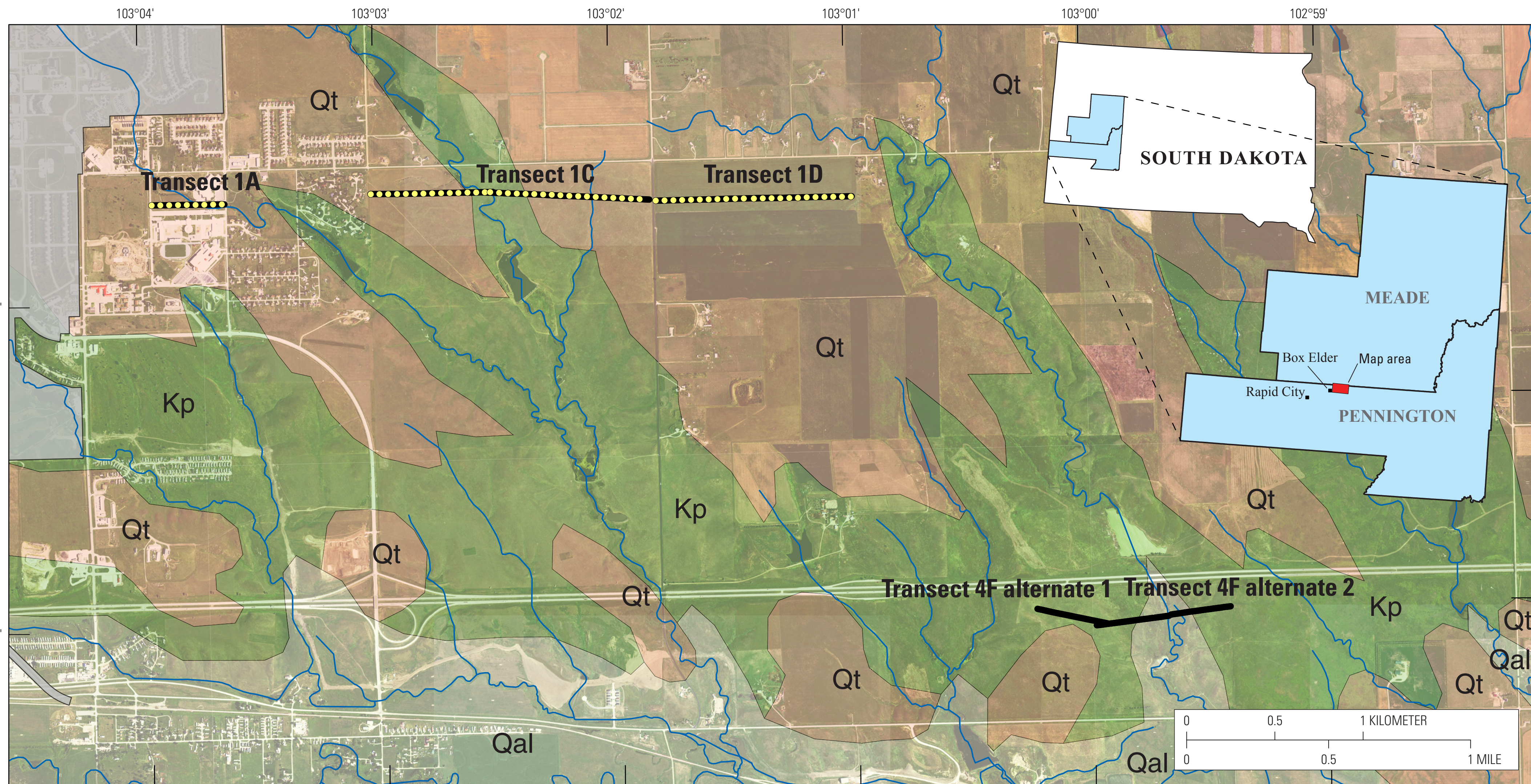
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Base from U.S. Geological Survey digital data and the U.S. Department of Agriculture National Agriculture Imagery Program, 3.75-minute by 3.75-minute imagery, 2014 World Geodetic System of 1984, Universal Transverse Mercator, Zone 13 North projection, central meridian 105° W.

## Depth to Pierre Shale from Electrical Resistivity Tomography Inversion and Horizontal-to-Vertical Spectral Ratio Results for Transects 1A, 1C, 1D, 4F Alternate 1, and 4F Alternate 2, Ellsworth Air Force Base, South Dakota

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