Depth to Top of Minnelusa Formation, Blackhawk Quadrangle

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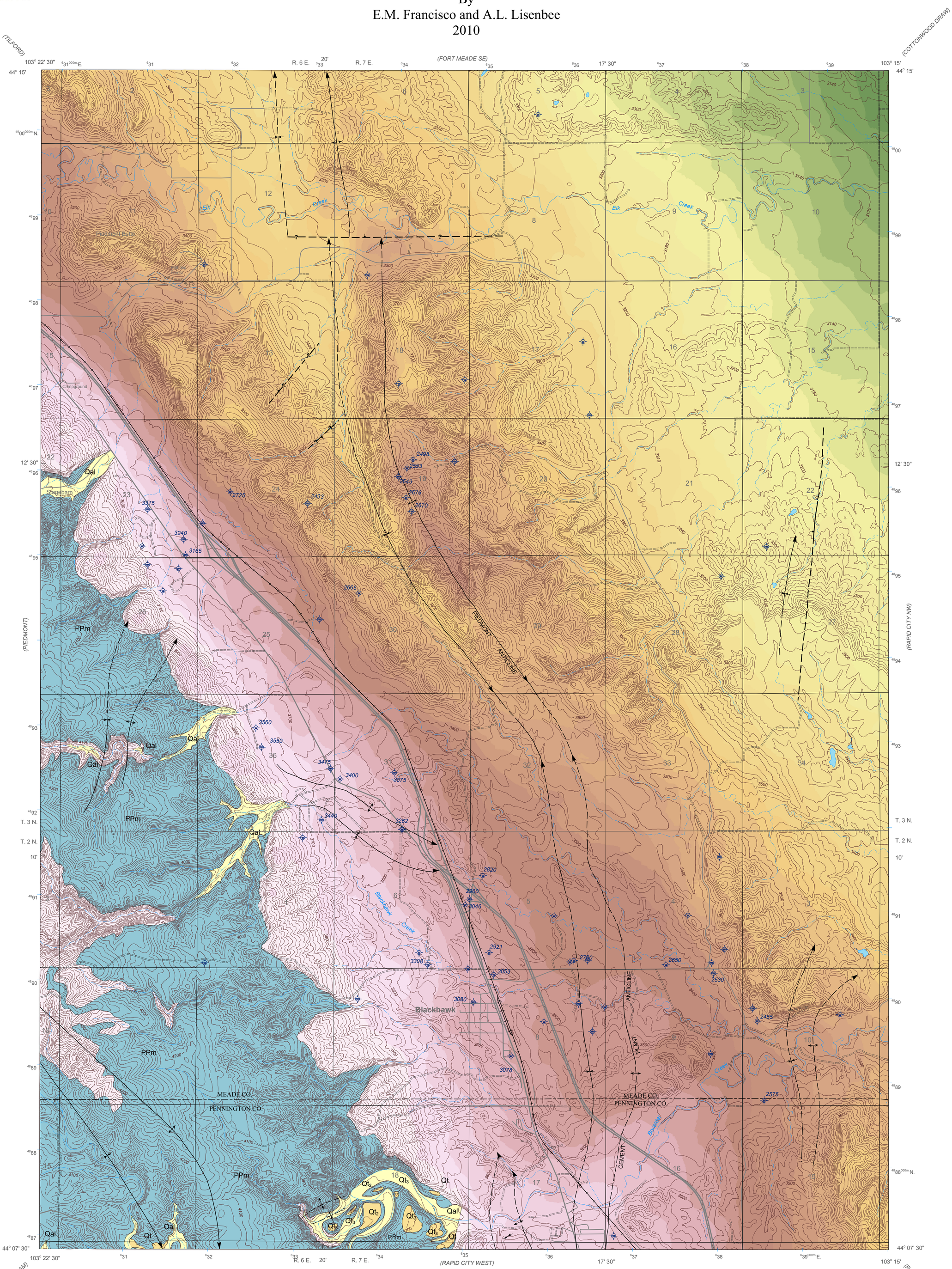

Map base modified from U.S.G.S. 1:24,000-scale Blackhawk digital line graph.
Geology layer from A.L. Lisenbee and R.G. Hargrave, 2005.
Water well data digitized from Water well data collected and digitized from SD Dept. of Environment & Natural Resources "Online Oil/Gas/Injection Well Data" database.
Projection is Universal Transverse Mercator, Zone 13, North American Datum 1983.

Digital Cartography: E. Franscisco, 2006 and S.L. Saxton, 2009.
Department of Geology and Geological Engineering
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REFERENCE SCALE 1:24,000

1 0.5 0 1 Miles

1,000 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

1 0.5 0 1 Kilometers

TOPOGRAPHIC CONTOUR INTERVAL 20 FEET

NORTH

UTM GRID AND 1971 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

Quadrangle location

The preparation of this map was funded by the West Dakota Water Development District in association with the Department of Geology and Geological Engineering South Dakota School of Mines and Technology

Depth to Top of Minnelusa Formation In Feet below Land Surface

0 - 100	901 - 1,000	1,801 - 1,900
101 - 200	1,001-1,100	1,901 - 2,000
201 - 300	1,101 - 1,200	2,001 - 2,100
301 - 400	1,201 - 1,300	2,101 - 2,200
401 - 500	1,301 - 1,400	2,201 - 2,300
501 - 600	1,401 - 1,500	2,301 - 2,400
601 - 700	1,501 - 1,600	2,401 - 2,500
701 - 800	1,601 - 1,700	2,501 - 2,600
801 - 900	1,701 - 1,800	2,601 - 2,700
		2,701 - 2,800

Depths are approximate; actual depths could vary by 100 feet or more.

EXPLANATION

3565 Wells penetrating the Minnelusa aquifer
Number indicates elevation of top of Minnelusa Fm, in feet

Trail
Unimproved Road
Paved Road
Highway
Interstate
Railroad
Lake
Intermittent Stream
Perennial Stream

Contact
Solid where location certain; dashed where approximately located.

Fault
Solid where location certain; dashed where approximately located; queried where uncertain. Bar and ball on downthrown side.

Anticline
Showing crestline and direction of plunge. Solid where location certain; dashed where approximately located.

Syncline
Showing troughline and direction of plunge. Solid where location certain; dashed where approximately located.

Monocline - Anticlinal bend
Axis located on steepest part of structure. Solid where location certain; dashed where approximately located.

Monocline - Synclinal bend
Axis located on steepest part of structure. Solid where location certain; dashed where approximately located.

Geologic Units

Quaternary

Qal — **Surficial Deposits**
Includes alluvium (Qal)

Qt — **Surficial Deposits**
Includes terrace deposits (Qt, Qt_2, Qt_3)

Unconformity

Pennsylvanian

PPm — **Minnelusa Formation**
Beige, white, and gray unit, dominanted by carbonates and anhydrite with an upper sandstone unit.

Minnelusa Formation Absent