Structural Contour Map, Top of Inyan Kara Group
Hermosa NW Quadrangle

By
A.L. Lisenbee, A.D. Davis, M.H. Price and H.W. Tiruneh
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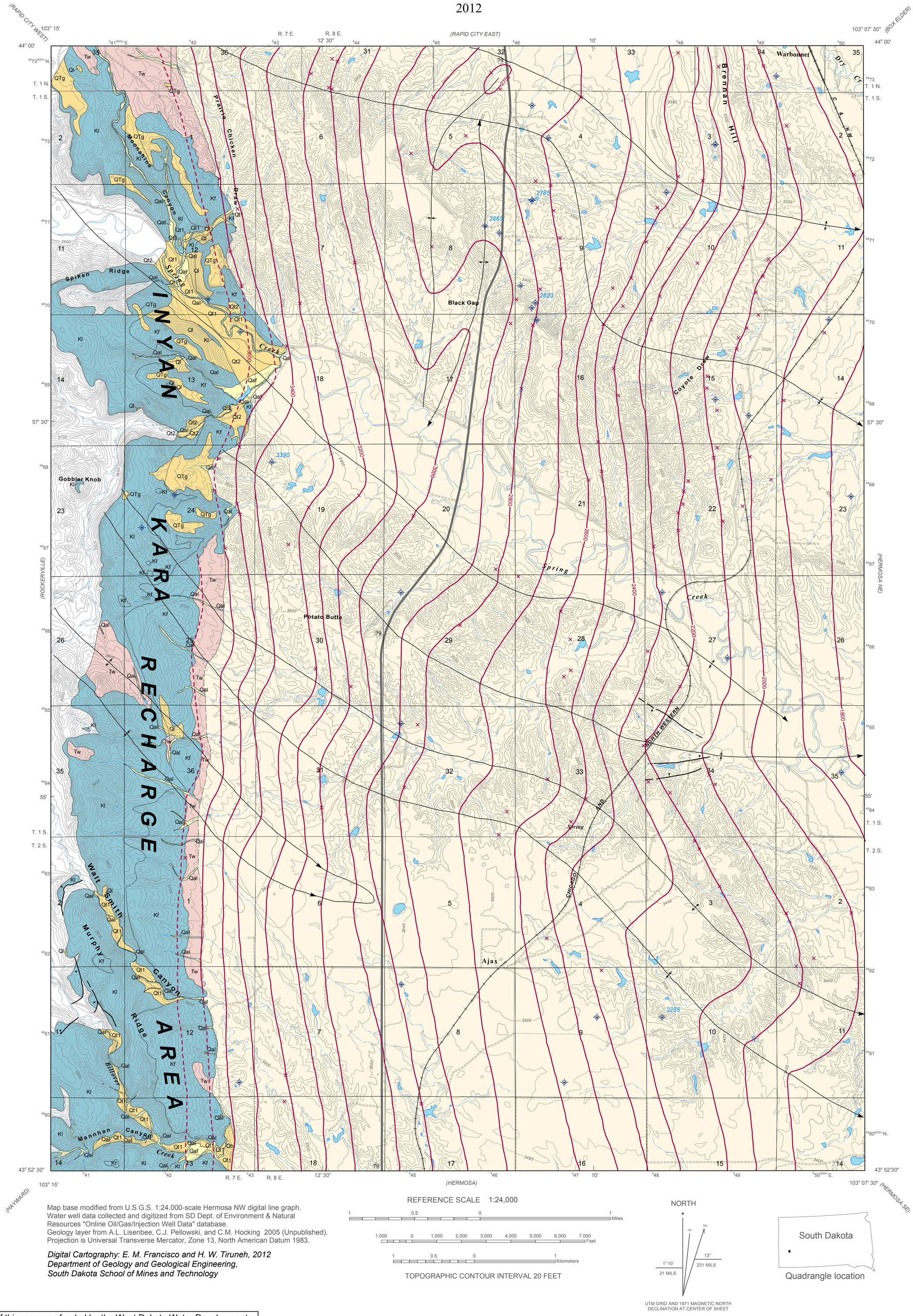

Map base modified from U.S.G.S. 1:24,000-scale Hermosa NW digital line graph.
Water well data collected and digitized from SD Dept. of Environment & Natural Resources "Online Oil/Gas/Injection Well Data" database.
Geology layer from A.L. Lisenbee, C.J. Pellowski, and C.M. Hocking 2005 (Unpublished).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

Digital Cartography: E. M. Francisco and H. W. Tiruneh, 2012
Department of Geology and Geological Engineering,
South Dakota School of Mines and Technology

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

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EXPLANATION

Structural Contours

Structural contours mark lines of equal elevation of the top of a geological formation. The contours help to define unseen folds and faults present below the land surface. Dashed where projected above surface. Number indicates elevation above sea level.

3400 Structural Contour on top of Inyan Kara Group

Structural Contour Interval 100 feet

3565 Water Wells penetrating Inyan Kara Group.
Number indicates penetrated elevation of top of Inyan Kara Group, in feet

Formation Contact

Data points where the elevation of the top of Inyan Kara aquifer is computed; elevation in feet above sea level is based on the difference between surface elevation and cummulate fomation thicknesses

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

Contact
Solid where location certain; dashed where approximately located.

Fault
Solid where location certain.Bar and ball on downthrown side.

Anticline
Showing crestline and direction of plunge. Solid where location.

Syncline
Showing troughline and direction of plunge. Solid where location certain.

Geologic Units

Quaternary

Qal — Floodplain Surficial Deposits
Includes alluvium (Qal) and alluvial fan deposits (Qaf). Increased potential for infiltration of water.

Qt — Other Surficial Deposits
Includes landslide (Ql), terracel deposits (Qt, Qbt), and terrace gravel (QTg). Decreased potential for infiltration of water.

Unconformity

Oligocene Eocene

Tw — White River Group
Mudstone (gray and brown), rose-colored siltstone; minor white, freshwater limestone, ledge-forming sandstone,and pebble and cobble conglomerate.

Lower Cretaceous

Kf / Kl — Inyan Kara Group - Recharge Area
Kf - Fall River Formation Kl - Lakota Formation. Interbedded, locally discontinous, gray to tan mudstone and sandstone. Sandstone percentages are 15% for the Fall River Formation and 66% for the Lakota Formation (Francisco, 2008). Approximate total thickness = 500 ft

Inyan Kara Group Absent

Inyan Kara Group Present in Subsurface