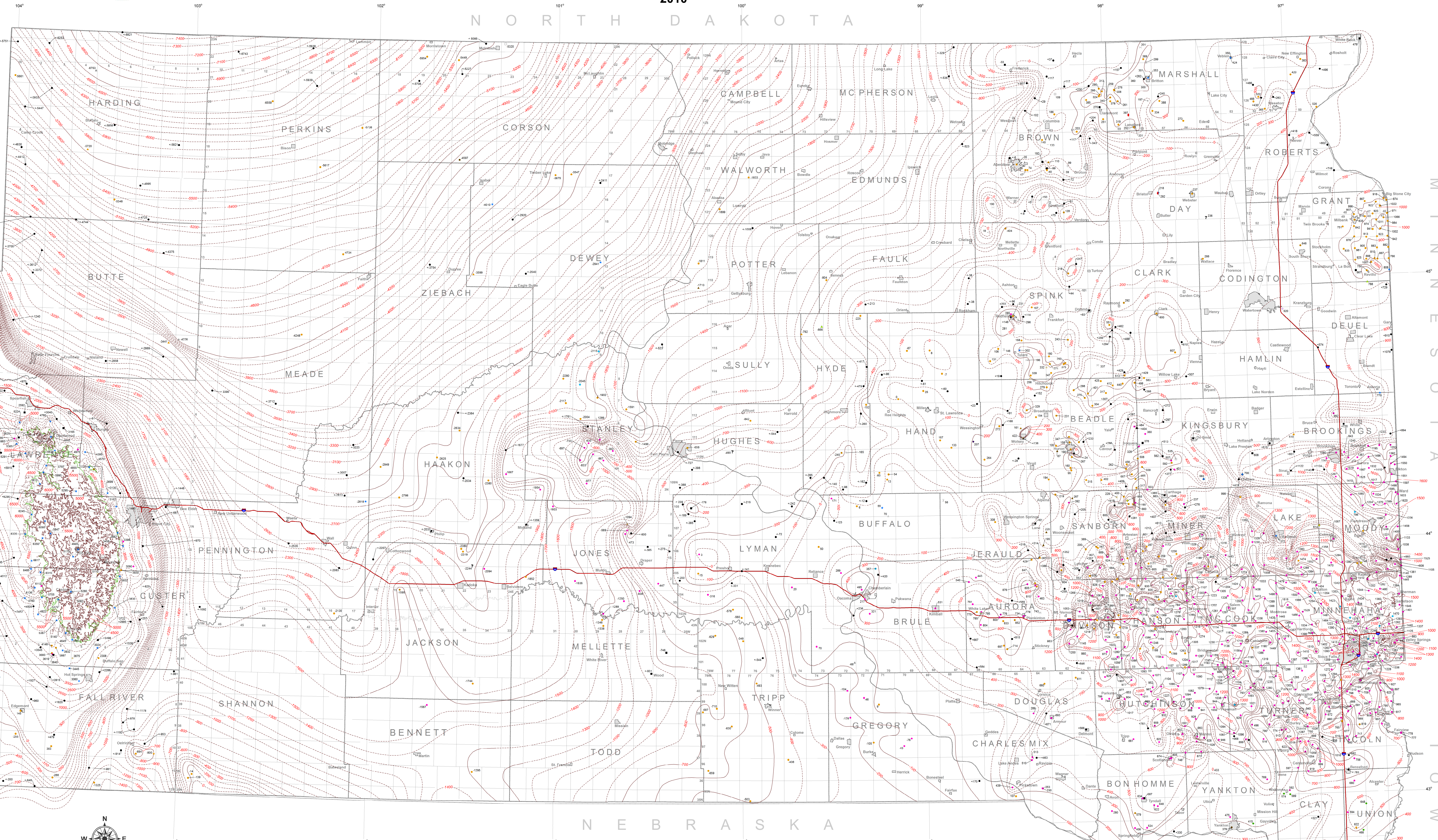


Elevation Contour Map of the Precambrian Surface of South Dakota

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STATE OF SOUTH DAKOTA
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DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
Steven M. Pirner, Secretary
DIVISION OF FINANCIAL AND TECHNICAL ASSISTANCE
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INTRODUCTION
The contour map of the Precambrian surface presented here is a revision of the Preliminary map of the Precambrian surface of South Dakota (Steele, 1961). Over the 48 years between publications, a significantly greater number of drill holes, many of which intersect the Precambrian basement of South Dakota, have been added and many of these are now converted to metric units. These digital elevations, in conjunction with geostatistical surface data now available for the display of spatial data, allow the revision of the Steele (1961) map to be more detailed and provide easy to download digital files.

DATA
The drill-hole database consists of 4,829 drill holes that intersect Precambrian rock and 2,094 drill holes that do not intersect the Precambrian basement. The database was compiled by the South Dakota Geological Survey, Department of Environment and Natural Resources, and the Minnesota Geological Survey. The database includes elevations of Precambrian basement rock in feet and meters, and elevations of the surface of the Precambrian basement in feet and meters. The database also includes elevations of the surface of the Precambrian basement in feet and meters. The database also includes elevations of the surface of the Precambrian basement in feet and meters.

DISCUSSION
The elevation contour map of the Precambrian surface of South Dakota was created using digital elevation data from 7,223 drill holes across South Dakota in conjunction with published data in the Precambrian basement and Precambrian rock types. The map was created using a geostatistical surface data set that was derived from the Steele (1961) map. The map was created using a geostatistical surface data set that was derived from the Steele (1961) map.

SELECTED REFERENCES
Adolphson, D.G., and Ellis, M.J., 1964. Base-Creek Lake-Medusa drainage basin. South Dakota Geological Survey Bulletin 18, 12 p.
Baker, C.W., 1947. Deep springs of western South Dakota. South Dakota Geological Survey Report of Investigations 57, 112 p. (Revised 1963.)
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ACKNOWLEDGMENTS
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CONTOURS
Number is elevation, in feet, relative to mean sea level.
Major: dashed where uncertain
Minor: dashed where uncertain
Depression: minor, dashed where uncertain

BASE DATA
Area enclosing Precambrian outcrop in the Black Hills
City
County
Interstate Highway
Township-Range grid

ROCK TYPE
Basement not intersected
Metamorphic not intersected
Possible schist, phyllite, or slate
Schist, phyllite, or slate
Schist and granite
Gneiss
Felsic gneiss or granite
Possible gneissite
Amphibole or talc
Possible pegmatite
Granite

EXPLANATION
Diabase and quartzite
Quartz, quartz vein, or chert
Possible quartzite
Possible quartzite
Soux Quartzite
Soux Quartzite
Banded iron formation
Possible banded iron formation
Basement intersected, rock type unknown
Possible basement intersection
Precambrian regolith
Questionable basement intersection

DRILL HOLES
Data point, number is elevation in feet relative to mean sea level. A "less than" symbol (<) indicates elevation is less than the number shown.

SCALE
1:500,000
0 5 10 20 30 40 Miles
0 5 10 20 30 40 Kilometers

Inset Locations
Black Hills Inset
Sioux Inset

Map Area
Map of South Dakota showing county boundaries and major cities.

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