

Topography by U. S. Geological Survey by  
multiplex methods from aerial photographs

Geology by E. V. Post and D. W. Lane, 1956

PRELIMINARY GEOLOGIC AND STRUCTURE MAP OF THE EAST-CENTRAL PART OF THE CASCADE SPRINGS QUADRANGLE, FALL RIVER COUNTY, SOUTH DAKOTA

By  
Edwin V. Post and Donald W. Lane

Scale 1:7200

1000 0 1000 2000 3000 Feet

Contour interval 10 feet  
Datum is mean sea level

1959

MINERAL INVESTIGATIONS  
FIELD STUDIES MAP MF-210

EXPLANATION

Qal

Alluvium

Qtg

Terrace gravel

Ql

Landslide

Km

Mowry shale

Medium-gray marine shale. Sandstone dike indicated  
by crenulated line

Ksc

Skull Creek shale

Dark-gray marine shale

Kfr

s m ssf

Fall River formation  
s, sandstone; m, mudstone; ssf, sandstone and silt-  
stone interbedded

Klf

m

Fuson member

m, mudstone

Klm

Minnewaste limestone member

Thin medium-gray sandy limestone

Klu

m sm S<sub>2</sub>

Unnamed lower unit  
m, mudstone; sm, sandstone and mudstone inter-  
bedded; S<sub>2</sub> is a prominent fine-grained yellowish-  
gray to moderate-red crossbedded sandstone, the  
top of which is marked locally by a prominent 5-  
foot red sandstone. S<sub>2</sub> thins and interfingers  
with mudstone eastward, and locally fills scours  
cut into underlying Unkappa sandstone

Ju

Unkappa sandstone  
White to pale-red fine-grained argillaceous indistinctly  
crossbedded sandstone. Top locally grades into clay-  
stone

Jsr

Jsl

Jsh

Jssb

Jscs

Sundance formation  
Jsr, Redwater shale member, gray marine shale, silt-  
stone, thin fossiliferous limestones, yellowish-gray  
sandstone, glauconitic at top; Jsl, Lak member, mod-  
erate reddish-brown siltstone; Jsh, Huett sandstone  
member, fine-grained pale grayish-orange ripple-  
marked thin-bedded sandstone, thin gray shale and  
siltstone at top; Jssb, Stockade Beaver shale mem-  
ber, olive-gray fossiliferous calcareous shale; Jscs,  
Canyon Springs sandstone member, pale-orange to  
moderate reddish-brown fine-grained friable sandstone,  
lower part massive, upper part thin-bedded

RPs

RPs

RPs

Spearfish formation  
Dark reddish-brown siltstone, RPs, prominent gyp-  
siferous units consisting of 10- to 40-foot beds of  
gypsum separated by 5-foot siltstone beds, RPs.  
Uranium is present at two localities at base of  
lower gypsiferous unit

Pm

Minnekahta limestone  
Light brown-gray to pale-red slabby limestone with  
intricately undulating bedding

Contact

Dashed where approximately located

Indefinite or inferred contact

Top and bottom contacts of Inyan Kara group

Dashed where approximately located

Contact within Inyan Kara group

Dashed where approximately located

Limit of exposure  
"e" indicates exposure. Exposures mapped only in Inyan  
Kara group, Unkappa sandstone, and Sundance formation

4100

Structure contour

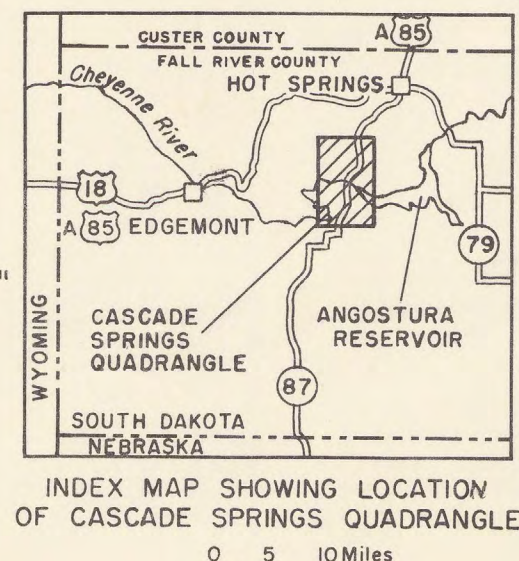
Drawn on top of unnamed lower unit of Lakota formation;  
interval 50 feet; datum is mean sea level. Long dashes  
where unnamed lower unit of Lakota formation is buried,  
dotted where eroded

X

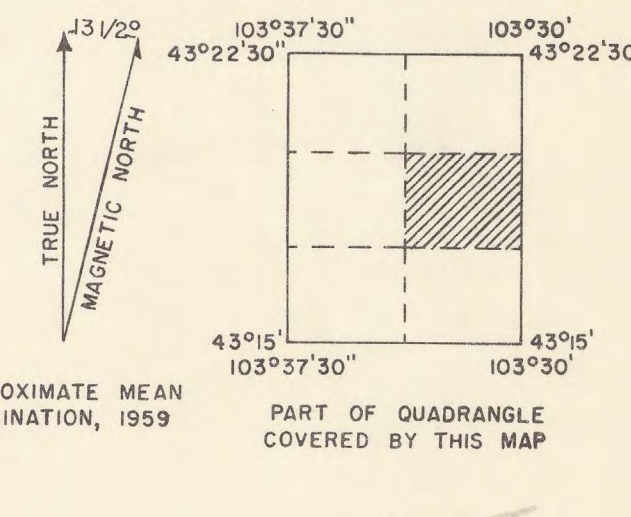
Uranium occurrence

△ △ △

Silica cement



INDEX MAP SHOWING LOCATION  
OF CASCADE SPRINGS QUADRANGLE



APPROXIMATE MEAN  
DECLINATION, 1959

PART OF QUADRANGLE  
COVERED BY THIS MAP

0 10 Miles

3 1818 00178909 6

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