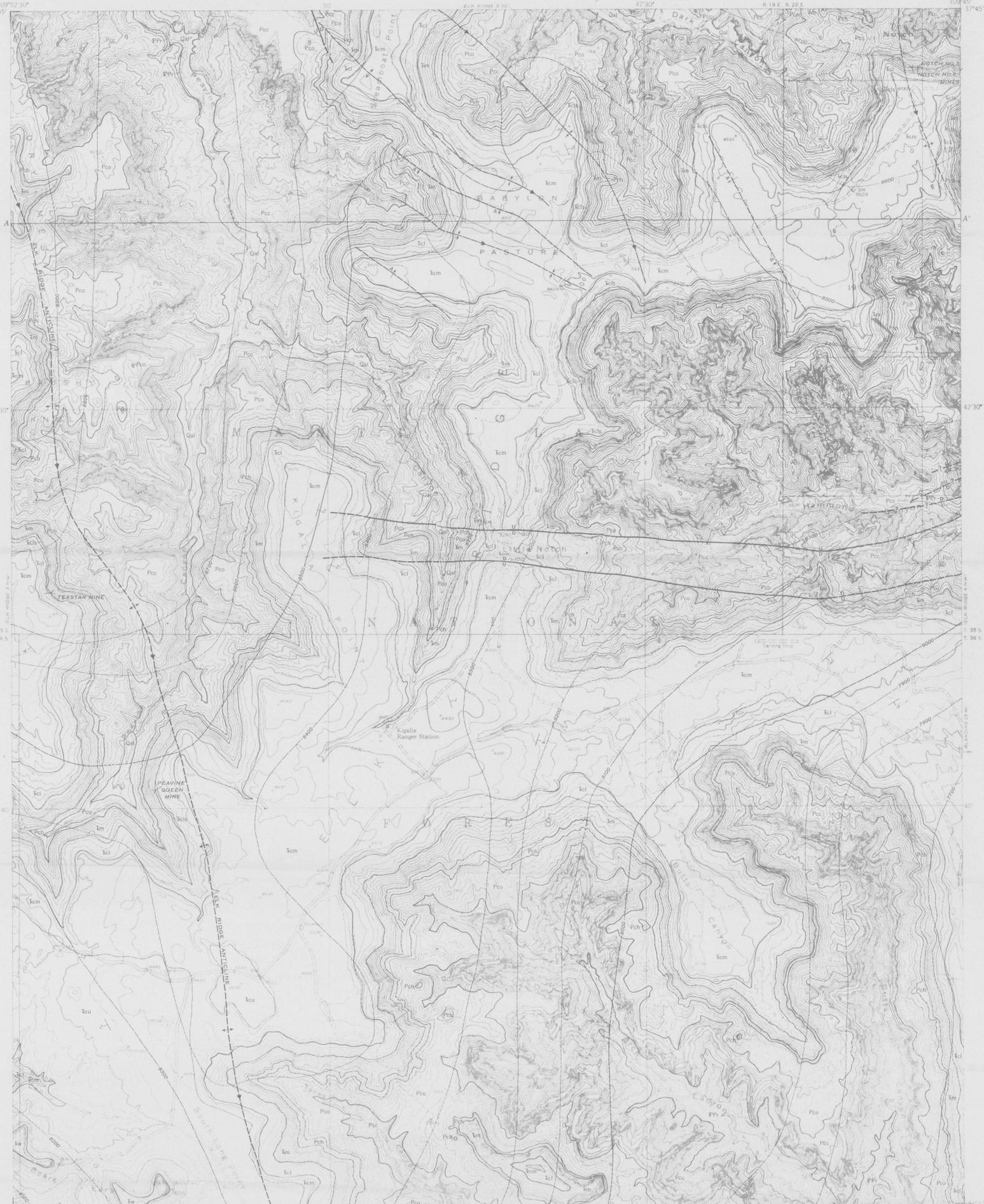


Preliminary edition Pending completion of 1:88,000 15 minute maps covering this area

1200 TW 7777 760 888

EXPLANATION U.S. GEOLOGICAL SURVEY AUG 17 1963 LIBRARY GEOLOGIC DIVISION



Stream deposited silt, sand, and gravel; locally carbonaceous material and charcoal. Recent downcutting has formed terraces and locally removed the alluvium from the stream beds.

UNCONFORMITY

Rw

Wingate sandstone

Red to buff massive and thick-bedded cross-laminated medium- to fine-grained quartz sandstone. Generally well sorted but with small stringers and lenses of coarse quartz grains particularly abundant near the base. Present only in isolated patches capping erosional remnants standing above the general level of the main ridge.

Rcu

Rcm

Rcl

Rcls

Chinle formation

Upper Chinle, Rcu, red, gray, and brown sandstone interbedded with thin-bedded gray and purple mudstone and limy siltstone; a thick zone of prominent thick-bedded maroon sandstone at the top generally forms a steep slope or cliff with the Wingate above. The upper Chinle intertongues with both the Wingate and the underlying Moss Back member. Measured section on north side of Bears Ears was 533 feet thick. Moss Back member, Rcm, gray to brown thick- to thin-bedded cross-laminated medium- to coarse-grained quartz sandstone, and conglomeratic sandstone. Section at north side of Bears Ears measured a total thickness of 170 feet with about 5 feet of coarse limestone and chert conglomerate at the base. Forms a prominent cliff and caps most of Elk Ridge proper. Intertongues and intergrades with the overlying upper Chinle, Rcu, and the lower Chinle, Rcl. Lower Chinle, Rcl, blue, gray, and red massive and lenticular mudstone and siltstone with some medium- to fine-grained sandstone, and conglomeratic sandstone. Generally forms a vegetation covered slope beneath the Moss Back cliff. Measured section was on north side of Bears Ears, 128 feet thick. Sandstone lenses of the lower Chinle, Rcls, discontinuous, deposited in shallow scours and channels cut into the erosion surface in the top of the Moenkopi. In part equivalent to sandstone lenses mapped as the Shinarump member in the White Canyon-Deer Flat area. This unit contains scattered uranium deposits. The sandstone (Rcls) is similar, in all respects, to higher sandstone lenses within the lower Chinle (Rcl).

UNCONFORMITY

Rm

Moenkopi formation

Red, brown, and buff thick- to thin-bedded discontinuous silty sandstone and sandy siltstone and shale. Locally argillaceous, with thick-bedded sandstone most common in the middle third of the unit where it commonly underlies a steep slope with intermittent cliff-forming ledges. Ranges from 230 to 250 feet in thickness in this area.

Pch

Pco

Pcc

Cutler formation

Hoskinnini tongue, Pch, red to buff, locally bleached white to gray massive and thick-bedded cross-laminated medium- to fine-grained silty sandstone; containing sparsely disseminated coarse well-rounded frosted sand grains; commonly forms blocky to rounded cliff. Ranges from 50 to 96 feet in thickness. Organ Rock tongue, Pco, red massive very fine grained sandstone and/or sandy siltstone. In the form of a steep dissected slope below the cliff formed of the Hoskinnini. Intertongues with the underlying Cedar Mesa sandstone member. Ranges from 13 1/2 feet in thickness on North Elk Ridge (north of this quadrangle) to a maximum of 240 feet in this quadrangle. Cedar Mesa sandstone member, Pcc, light-gray to tan thick-bedded to massive cross-laminated fine- to coarse-grained sandstone separated by thin red siltstone lenses which are particularly abundant near the base of the member in the southern part of the quadrangle.

IPPr

Rico formation

Gray thin limestone and limy sandstone lenses interbedded with red calcareous siltstone and medium- to fine-grained sandstone, locally contains abundant chert and cherty limestone, minor amounts of gypsum, and gray shale. In this area fossils are rare and poorly preserved. Rocks designated as Rico in Arch and Texas Canyons are in part equivalent to rocks designated as "lower soft Cedar Mesa" to the south. The base of the unit is not exposed in this area.

Contact

(Dashed where approximately located; short dashes where inferred)

High angle fault

(Dashed where approximately located, dotted where concealed; U, up-thrown side; D, downthrown side)

Doubtful or probable fault

(Showing inferred direction of displacement. U, upthrown side; D, downthrown side)

Anticline

(Showing trace of axial plane and direction of plunge of axis. Dashed where approximately located)

Syncline

(Showing trace of axial plane and direction of plunge of axis. Dashed where approximately located)

Anticlinal bend of monocline

(Showing trace of axial plane and direction of plunge of axis. Dashed where approximately located; Arrow barbed on side of steeper dip)

Strike and dip of beds

Structure contours

Drawn on the base of the Moss Back member of the Chinle formation. Dashed where approximately located, short dashes indicate projection above surface. Contour interval 100 feet. Datum is mean sea level.

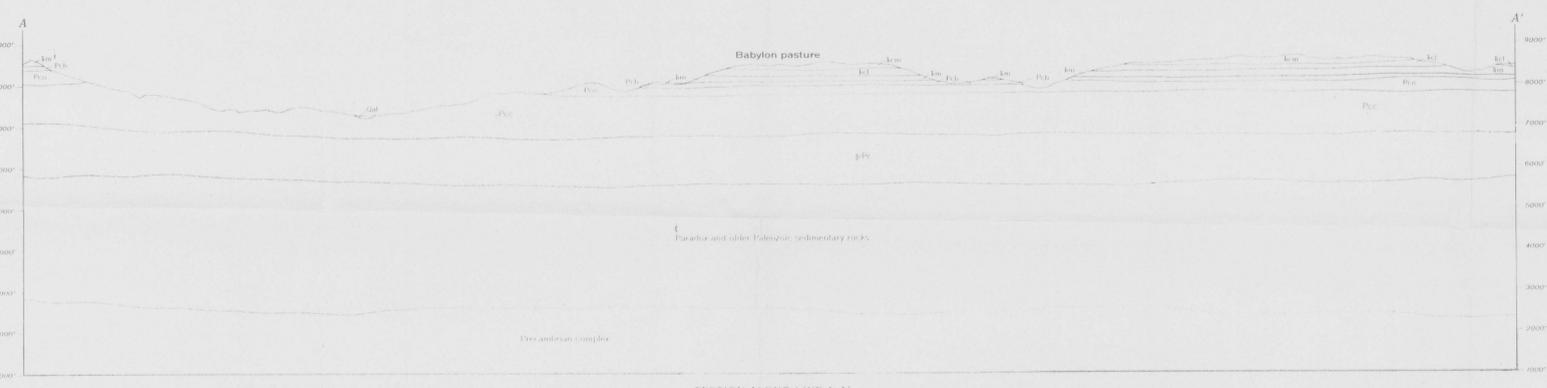
Uranium mine

Showing location of portal



INDEX MAP OF UTAH SHOWING AREA OF THIS REPORT

Geology mapped 1966



SECTION ALONG LINE A-A'

PRELIMINARY GEOLOGIC MAP OF THE ELK RIDGE 3 NE QUADRANGLE, SAN JUAN COUNTY, UTAH

BY RICHARD O LEWIS, SR., AND RUSSELL H. CAMPBELL