DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

THIS MAP CONCERNS WORK DONE BY THE U.S. GEOLOGICAL SURVEY ON BEHALF OF THE DIVISION OF RAW MATERIALS OF THE U.S. ATOMIC ENERGY COMMISSION

TRACE ELEMENTS
MEMORANDUM REPORT 925

Mapped by the Geological Survey 1954

Topography by multiplex methods from aerial photographs taken 1953

Geology mapped 1954-55.

SCALE 1:24000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

15°
TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1954

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

by

Frank G. Lesure and Fredrick Stugard, Jr.

EXPLANATION

QUATERNARY

Pleistocene and Recent

Qal

Alluvium

Silt, sand, and some interbedded gravel; 1 to 50 feet thick; forms alluvial plains and low terraces along Montezuma, Long, and Alkali Canyons.

Qls

Landslide deposits

Large sandstone blocks mixed with smaller rock fragments, sand, and clay; derived by sliding from adjacent upland in Montezuma and Long Canyons. Landslide deposits on Brushy Basin member not shown.

Ql

Loess

Well-sorted red silt and very fine sand, largely wind deposited, reworked partly by water; 0 to 25 feet thick; forms agricultural soil on uplands.

Qpg

Pediment gravel

Boulders, cobbles, and pebbles in sand matrix.

UNCONFORMITY

CRETACEOUS

Upper Cretaceous

Kd

Dakota sandstone

Light-brown and yellowish-brown sandstone with abundant plant fossils; interbedded, lenticular gray carbonaceous claystones and coal; thin conglomeratic sandstone at base locally; locally 80 feet thick; crops out at crest of "rim rock" cliff which separates upland from canyons.

UNCONFORMITY

Lower Cretaceous

Kbc

Burro Canyon formation

Light-colored conglomeratic sandstone; interbedded greenish lenticular mudstone; silicified sandstone and limestone near top locally; 100 to 180 feet thick; forms face of "rim rock" cliff which separates upland from canyons.

UNCONFORMITY

JURASSIC

Upper Jurassic

Jmb / Jmw / Jms

Morrison formation

Brushy Basin member, Jmb, variegated mudstone, some sandstone and conglomerate lenses; 240 to 440 feet thick; forms slope above steep-walled inner canyons; generally covered with landslides or colluvium. Westwater Canyon member, Jmw, yellowish- and greenish-gray, lenticular sandstone and interbedded green mudstone; 0 to 110 feet thick; present in southern part of quadrangle; forms intermediate slopes below gentle slope formed by the Brushy Basin and above steep cliff formed by the Salt Wash. Salt Wash member, Jms, light-colored lenticular sandstone interbedded with red mudstone; 340 to 420 feet thick; forms series of steep cliffs and narrow benches of inner canyon; massive sandstone lenses near the middle of the member locally contain uranium-vanadium deposits.

UNCONFORMITY

Middle and Upper Jurassic

San Rafael group

Js

Summerville formation

Orange-pink even-bedded sandstone, interbedded with reddish-brown siltstone and mudstone; 80 to 125 feet thick; forms steplike slope below steep canyon walls formed by the Salt Wash member of the Morrison formation.

Jec

Entrada sandstone and Carmel formation undifferentiated

Light-colored massive crossbedded Entrada sandstone at top of unit forms steep cliff along base of canyon walls in Montezuma Canyon and its tributaries; irregularly bedded red mudstone and siltstone of Carmel formation crop out locally beneath cliff formed by the Entrada.

UNCONFORMITY

Glen Canyon group

JURASSIC AND JURASSIC(?)

Jn

Navajo sandstone

Light-colored massive crossbedded sandstone; base not exposed; occurs only in a few scattered outcrops near creek level in Montezuma Canyon.

Contact

(Dashed where inferred or indefinite)

U / D

Fault

(Dashed where approximately located; dotted where concealed. U, upthrown side; D, downthrown side

Approximate strike and dip of beds

(Owing to low dips and lenticular nature of beds, attitudes were determined from preliminary structure contours drawn on the base of the Dakota sandstone; dip in degrees)

7000

Structure contour

Drawn on base of Dakota sandstone; dashed where approximately located; short dashes indicate projection above land surface. Contour interval 100 feet. Datum mean sea level.

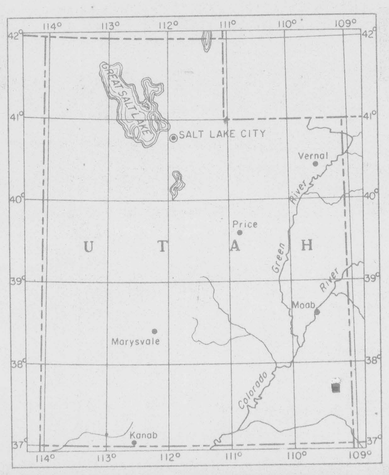
Adit

(Uranium-vanadium mine)

Small open cut or prospect

(Uranium-vanadium deposit)

Section corner located in the field



INDEX MAP OF UTAH SHOWING AREA OF THIS REPORT