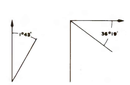
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

KINGDOM OF SAUDI ARABIA

U. S. Geological Survey
OPEN-FILE REPORT 83-377
PLATE I

Geology mapped by Cole (1981) and Young (1982). Aeromagnetic survey flown in 1966-1967 by a consortium of Aero Service Corporation, Hunting Geology and Geophysics Limited, and Arabian Geophysical and Surveying Company, under the supervision of Bureau de Recherches Geologiques et Minieres. NE-SW flight lines, spaced 800 m apart, flown at 150 m above ground

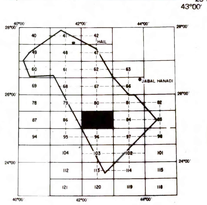


Mean Declination — Mean Inclination

For each block of 4 maps covering an area 1° N-S by 2° E-W
AS CARNEGIE TABLES OF 1948

TOTAL-INTENSITY AEROMAGNETIC AND GEOLOGIC MAP OF THE WADI AL JARIR AND AL JURDHAWIYAH QUADRANGLES, SHEETS 25/42 C AND 25/42 D, KINGDOM OF SAUDI ARABIA

compiled by
M. Dean Kleinkopf and James C. Cole
1983



EXPLANATION

a	SEDIMENTS, METASEDIMENTARY ROCKS, AND METAVOLCANIC ROCKS, UNDIVIDED--Quaternary: alluvial, colluvial, and eolian gravel, sand, and silt; saline deposits. Precambrian Al Jurdhawiyah group: andesite, tuff breccia, volcanic conglomerate, and sandstone and siltstone. Precambrian Nordmba group: metasiltstone, metasandstone, marble

AL JURDHAWIYAH QUADRANGLE, 25/42 D (Cole, 1981)

PRECAMBRIAN INTRUSIVE ROCKS

apg	ARFVEDSONITE-PERTHITE GRANITE--Locally fine-grained and granophyric near external contacts
pg	PERTHITE GRANITE--Locally coarse grained and granophyric; biotite and hornblende bearing
gdp	BIOTITE-HORNBLENDE GRANODIORITE PORPHYRY--Medium-grained, porphyritic, massive
bhgg	BIOTITE-HORNBLENDE GRANODIORITE GRANOPHYRE--Medium-grained, hypidiomorphic-inequigranular with granophyric groundmass; heavily altered (chlorite, sericite, epidote)
bhqd	BIOTITE-HORNBLENDE QUARTZ DIORITE--Medium-grained, trachytoid to massive hypidiomorphic-inequigranular
mg, dr, gbn, grdp, hmp, mag, mdp, PB?, PP, rp	MISCELLANEOUS SMALL INTRUSIONS--Mapped using individual unit symbols; see Cole (1981) for unit descriptions. Magnetic response varies from none to local small-amplitude anomalies

Ad Dawadimi Batholith

bhgd	BIOTITE-HORNBLENDE GRANODIORITE--Medium-grained, subporphyritic to hypidiomorphic-equigranular; massive
bht	BIOTITE-HORNBLENDE TONALITE--Medium- to coarse-grained, hypidiomorphic-inequigranular

PRECAMBRIAN DIKE ROCKS

- HORNBLENDE QUARTZ MONZODIORITE, HORNBLENDE-MAGNETITE QUARTZ LATITE
- AUGITE ANDESITE PORPHYRY
- PORPHYRITIC DIKES
- DIKES IN OLDER ROCKS--Andesite; biotite monzogranite porphyry to granite porphyry

WADI AL JARIR QUADRANGLE, 25/42 C (Young, 1982)

PRECAMBRIAN INTRUSIVE ROCKS

gdmg	GRANODIORITE AND MONZOGRANITE, UNDIVIDED--Fine- to medium- to coarse-grained
to	TONALITE--Fine- to medium-grained; severely saussuritized

PRECAMBRIAN DIKE ROCKS

- FELSIC DIKES--Granite and aplite; dashed where uncertain
- INTERMEDIATE DIKES--Granodiorite and dacite
- MAFIC DIKES--Latite and andesite
- DIKES, UNSPECIFIED--Dashed where uncertain
- ANDESITE OR LATITE PORPHYRY SILL

Contact

Outline of boundary of magnetic province inferred to reflect granitic (or granitoid) rock mass; queried where uncertain. Province number refers to text

Magnetic lineation inferred to reflect fault or fracture zone. Lineation number refers to text

Outlines of magnetic provinces and magnetic lineations derived from combined interpretations of plates 1 and 3

Gravity profile showing station locations

Magnetic contours showing residual total-intensity magnetic field of Earth (in nanoTeslas, nT) relative to arbitrary datum. Contour interval, 20 nT

Radiometric contour. At increments of 0.5 times background; lowest contour is twice background

Flight lines with fiducial points (shown only in northwestern quarter of map)

Ancient mine or prospect

Tungsten-mineralized area

D24 Location of rock sample measured for magnetic susceptibility (number refers to table 1)

REFERENCES CITED

Cole, J. C., 1981, Reconnaissance geology of the Al Jurdhawiyah quadrangle, sheet 25/42 D, Kingdom of Saudi Arabia: U.S. Geological Survey Saudi Arabian Mission Miscellaneous Map 44 (Interagency Report 374), scale 1:100,000.

Young, E. J., 1982, Reconnaissance geology of the Wadi al Jarir quadrangle, sheet 25/42 C, Kingdom of Saudi Arabia: Saudi Arabian Deputy Ministry for Mineral Resources Open-File Report USGS-OF-02-54, scale 1:100,000.

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.