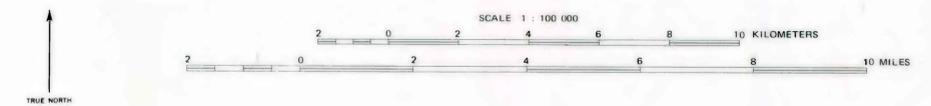


- DESCRIPTION OF ROCK UNITS**
- Qa** WADI ALLUVIUM - Sand, silt, and minor gravel along floodplains and channels of Wadi Habawah and Wadi Najran
 - Qcw** COLLUVIUM AND PEDIMENT DEPOSITS - Poorly sorted, unconsolidated, sand- to boulder-sized fragments of Wajid Sandstone; includes eolian sand in climbing and transverse dunes and in infilled depressions
 - Qfp** FAN AND PEDIMENT DEPOSITS - Locally derived, unconsolidated, poorly sorted, generally angular clasts that are extremely variable in shape, size, and composition; includes alluvium along tributary streams of larger wadis, colluvium, and minor amounts of eolian sand
 - Qd1₁** COMPLEX LINEAR SAND DUNE DEPOSITS - Fine- to very fine grained, red to brown, round to subrounded sand in compound and complex linear seif (irq) dunes with associated feathered dunes; dune fields consisting of smaller linear, transverse, and simple crescentic dunes commonly tangential to larger longitudinal dunes; sand aprons; and sheet sand; may show crest lines interpreted from aerial photography
 - Qd1₂** LINEAR SAND DUNE DEPOSITS - Fine- to very fine grained sand in low, narrow, mostly straight linear sand dunes separated by areas of thin sheet sand and gravel plain or gravel terrace deposits; may show crest lines interpreted from aerial photography
 - Qdt** TRANSVERSE SAND DUNE DEPOSITS - Fine- to medium-grained, buff to light-brown, well-rounded sand in low discontinuous crescentic to sinuous dunes and dune complexes with south-facing slip faces that trend normal or nearly normal to linear dunes; slip faces indicate southerly direction of movement; many dunes covered by sparse vegetation; isolated lobate and linear dunes and dune termini shown by form lines in southwestern part of quadrangle; may show crest lines interpreted from aerial photography and sparsely vegetated isolated lobate and linear dunes that may represent inactive remnants of major linear dune termini
 - Qst** TERRACE SILT DEPOSITS - Loessic silt to silty marl, buff; in part carbonaceous; contains thin sand and gravel lenses; mainly fluvial; includes some lacustrine and eolian deposits
 - Qtg** TERRACE GRAVEL DEPOSITS - Mostly poorly sorted, unconsolidated to loosely consolidated sand with pebble- to cobble-sized gravel of quartz, crystalline rocks, and sandstone; terrace surfaces about 1 to 3 m above present major wadis; base below wadi levels; contact with younger alluvium indistinct in northeastern and southeastern parts of quadrangle; partly covered by thin sheets of sand and silt, and small sand dunes
 - Qgp** GRAVEL PLAIN DEPOSITS - Mostly alluvium, poorly sorted, subrounded to angular, locally derived rock fragments to cobble size; mostly located at higher altitudes than terrace gravel deposits but in part merges with Qtg and Qst; small sand dunes and silt partly cover Qgp; includes interdunal areas parallel to linear dunes and dune complexes
 - Qpd** PEDIMENT DEPOSITS - Dominantly unsorted clasts of Wajid Sandstone distributed on low gradient bedrock surface; deposits probably less than 2 m thick; exposed surfaces of clasts covered with black patina; occurs in northern part of quadrangle
 - OEW** WAJID SANDSTONE - Gray to red, coarse-grained to pebbly, highly crossbedded quartz arenite; iron oxides abundant at and above base that rests with sharp angular unconformity on Precambrian units; probably less than 200 m exposed; sandstone has case-hardened surface, friable interior; contains a few well-cemented fractures in sandstone that weather to linear ridges (-----)
 - β-sg** SYENOGRANITE AND QUARTZ SYENITE - Pink, leucocratic, perthitic, fine- to medium-grained; locally contain sodic amphiboles, probably comagmatic
 - gba** BIOTITE-SODIC AMPHIBOLE GRANITE - Similar to biotite monzogranite (below) but contains perthitic microcline and a small percentage of riebeckite, arfvedsonite, and sodic amphiboles
 - mgb** BIOTITE-HORNBLENDE MONZOGANITE - Pink to red, fine- to medium-grained, in part porphyritic, pink, somewhat perthitic potassium feldspar; weakly to moderately foliate; mapped unit includes xenoliths and faulted blocks of minor greenstone and dioritic rocks
 - β-dg** DIORITE AND GABBRO - Gray, medium-grained, with large cumulate clusters of biotite and oxyhornblende
 - btg** BIOTITE TONALITE GNEISS - Light- to medium-gray, gneissic to schistose with poorly defined mineral layering and coarse "salt-and-pepper" foliated texture; includes tonalite interpreted as orthogneiss
 - rfv** RHYOLITE-DACITE FELS - Gray to reddish-gray, flinty, with conchoidal fracture; commonly with small feldspar megacrysts; associated with fine-grained amphibolite and greenstone; fels interpreted to be silicic and alkalic alteration of previously more mafic rocks
- CONTACT**
- - - INDEFINITE CONTACT - Approximately located
- STRIKE AND DIP OF FOLIATION**
- Vertical
 - Inclined
- AVERAGE DIP AND DIP DIRECTION OF FORESET BED-
In Wajid Sandstone**
- TREND LINES - In Proterozoic map units, from aerial photographic interpretation
- x137402** SAMPLE LOCATION AND ROCK ANALYSIS STORAGE SYSTEM NUMBER

Western part
Aerial photography 1951, 1953, semi-controlled mosaic 1951, 1953
Aerovision Corporation, Philadelphia, Penn. U.S.A.
Eastern part
Uncontrolled mosaic, U.S. Geological Survey RAK photography 1959



RECONNAISSANCE GEOLOGIC MAP OF THE JABAL SHAQRAN QUADRANGLE, SHEET 17/44 B, KINGDOM OF SAUDI ARABIA
by
Edward G. Sable
1982

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