

EXPLANATION OF MAP UNITS

EXPLANATION OF MAP SYMBOLS

QUATERNARY	Qv ALLUVIUM-Unconsolidated silt, sand, and gravel
QUATERNARY	Qs SILT AND CLAY-Fill undrained depressions
QUATERNARY	Qg GRAVEL-Composed mostly of chert pebbles
QUATERNARY	Qsb SABKHA DEPOSITS-Salt-encrusted clay, silt, and sand
QUATERNARY	Qd CALCAREOUS AND GYPSEOUS DURICRUST AND BASALT FLOWS
QUATERNARY	Qta ALKALI-OLIVINE BASALT-Forms lava flows and cinder cones
QUATERNARY	Qtr SIRHAN FORMATION-Calcareous sandstone and limestone
QUATERNARY	Qts SIRHAN FORMATION AND BASALT-interbedded
QUATERNARY	Qti UNCONFORMITY
QUATERNARY	Qtr KASHRAHAYAH FORMATION-Calcareous claystone and chert

CRETACEOUS TERTIARY	JALAMID FORMATION
CRETACEOUS TERTIARY	Tu Kuwaykakah member-Dolomitic limestone, chert and shale
CRETACEOUS TERTIARY	Tu Thaniyah Phosphoric member-Phosphoric, limestone and chert
CRETACEOUS TERTIARY	DISCONFORMITY
CRETACEOUS TERTIARY	Ka ARUMA FORMATION-Argillaceous limestone and shale
CRETACEOUS TERTIARY	UNCONFORMITY
CRETACEOUS TERTIARY	Tu JILH FORMATION-Sandy limestone and shale
CRETACEOUS TERTIARY	Tu SUDAIR SHALE-Shale containing thin limestone and dolomite beds
CRETACEOUS TERTIARY	UNCONFORMITY
CRETACEOUS TERTIARY	Si TAYYARAT FORMATION-Shale, sandy near top

LINE OF CROSS-SECTION A-A'

BASEL SAMPLE LOCALITY SITE

VOLCANIC CONE-Showing elevation in meters

MEASURED OUTCROP SECTION

TOWN OR VILLAGE

DEEP WATER WELL-Having subsurface geologic data

ROAD

Prepared by the United States Geological Survey for the Kingdom of Saudi Arabia from computer-enhanced Landsat imagery. Imagery controlled to photorectified ground positions. The north-south error in position of well-defined features in relation to the graticule is approximately 88 meters. Transverse Mercator Projection.

This report has not been edited or reviewed for conformity with U.S. Geological Survey standards and nomenclature.

GEOLOGIC MAP OF THE TURAYF QUADRANGLE, SHEET 31C, AND PART OF THE AN NABK QUADRANGLE, SHEET 31B, KINGDOM OF SAUDI ARABIA

by
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Age	Group	Formation	Member	Bed	Strat. Column	Thickness in Meters
Quaternary	Quaternary	Duricrust (Qd)				1-6
Quaternary	Quaternary	Basalt (Qb)				2-16
Quaternary	Quaternary	Silt (Qs)				50+
Quaternary	Quaternary	Rashrahiyah (Tr)				3-18
Quaternary	Quaternary	Jilh (Tu)				1-10
Quaternary	Quaternary	Umm Wu'ad (Tu)				20-80
Quaternary	Quaternary	Hamad (Tu)				2-10
Quaternary	Quaternary	Al Jilh (Tu)				2-40
Quaternary	Quaternary	Al Jilh (Tu)				100+
Quaternary	Quaternary	Sib (Tu)				50
Quaternary	Quaternary	Mindassah (Tu)				20+
Quaternary	Quaternary	Gharah Phos. (Tu)				35-80
Quaternary	Quaternary	Jalamid (Tu)				35
Quaternary	Quaternary	Kuwaykakah (Tu)				70-400+
Quaternary	Quaternary	Thaniyah Phos. (Tu)				125+
Quaternary	Quaternary	Upper Sudan Shale (Tu)				18+
Quaternary	Quaternary	Tayyart (Si)				375+

XXX	Duricrust
XXX	Basalt
XXX	Calcareous sandstone
XXX	Shale
XXX	Calcareous claystone
XXX	Limestone
XXX	Sandy limestone
XXX	Argillaceous limestone
XXX	Stromatolitic limestone
XXX	Dolomitic limestone
XXX	Chalk
XXX	Bioclastic rock, Coquina
XXX	Nannulitic rock
XXX	Phosphatic rock, Phosphorite
XXX	Chert, nodules and lenses
XXX	Chert bedded

REGIONAL GEOLOGIC SETTING

INDEX TO ADJOINING SHEETS