

GEOLOGIC MAP OF THE REDINGTON 7 1/2' QUADRANGLE, COCHISE, GRAHAM AND PIMA COUNTIES, ARIZONA

Joseph P. Cook and Jon E. Spencer

Arizona Geological Survey Digital Geologic Map 60
 (DGM-60), version 2.0

April 2009

1:24,000 scale

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 7 1/2' Quadrangle, Cochise, Graham and Pima Counties, Arizona;
 Arizona Geological Survey Digital Geologic Map 60 (DGM-60), v. 2.0,
 1 sheet, layout scale 1:24,000, with text.

(also available in Adobe pdf format on CD-ROM)

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Map Unit Descriptions

Other Units

- Plowed areas - historically or actively plowed fields, irrigated pastures, and other lightly disturbed ground
- Disturbed ground - heavily disturbed ground due to agriculture, extensive excavation, or construction of earth dams
- Quaternary hillslope talus and colluvium - unconsolidated to weakly consolidated, very poorly sorted angular rock debris deposited at the base of bedrock slopes

San Pedro River alluvium

- Active river channel deposits - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels
- Flood channel and low terrace deposits - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels
- Historical river terrace deposits - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain
- Latest Holocene to historical river terrace deposits - silt, clay, sand and minor gravel deposits underlying the early historical floodplain
- Late to early Holocene river terrace deposits - silt, clay, sand and minor gravel terrace deposits, 0.5 to several meters above the early historical floodplain
- Late Pleistocene river terrace deposits - gravelly, sandy river terrace deposits up to 25 m above the active river channel
- Middle to late Pleistocene river terrace deposits - older, higher gravelly, sandy river terrace deposits
- Early to middle Pleistocene river terrace deposits - oldest, highest preserved gravelly, sandy river terrace deposits

Piedmont alluvium and surficial deposits

- Modern stream channel deposits - unconsolidated, very poorly sorted sandy to cobbly ephemeral piedmont channel deposits
- Latest Holocene alluvium - intermittent tributary channel deposits and low-lying piedmont channel terraces flanking active drainages
- Late Holocene alluvium, active fan deposits - active portions of young fan deposits exhibiting distributary drainage patterns
- Late Holocene alluvium - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits overlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits
- Older Holocene alluvium - broad, low-relief, undulating fan deposits exhibiting widespread, shallow braided drainage patterns
- Holocene alluvium derived from distal Quiburis basin fill alluvium - unconsolidated alluvium derived predominantly from basin fill deposits
- Late Pleistocene alluvial fan and terrace deposits - relatively planar, reddish terraces capping planar fan terraces found capping Quiburis basin fill deposits, typically inset into slightly older Q12 deposits
- Middle to late Pleistocene alluvial fan and terrace deposits (youngest member) - broad planar fan terraces found capping Quiburis basin fill deposits, typically inset into slightly older Q12 deposits
- Middle to late Pleistocene alluvial fan and terrace deposits (younger member) - broad planar fan terraces found capping Quiburis basin fill deposits, typically inset into slightly older Q12 deposits
- Middle to late Pleistocene alluvial fan and terrace deposits - broad planar fan terraces capping Quiburis basin fill deposits, inset into older, more well-rounded alluvial deposits, or lining significant piedmont drainages

- Early to middle Pleistocene alluvial fan and terrace deposits - high-standing, moderately to well-rounded alluvial deposits exhibiting strong carbonate accumulation (where preserved) capping underlying Quiburis basin fill deposits
- Early Pleistocene alluvial fan deposits - high, moderately consolidated gravelly deposits with variable soil development
- Late Pliocene to early Pleistocene fan gravel - coarse, moderately to well-consolidated gravelly deposits capping high rounded ridges

Tertiary Basin Fill alluvium

- Late Miocene to Pliocene Quiburis basin fill deposits, alluvial fan facies - Sandy to gravelly, moderately to strongly indurated alluvial fan deposits
- Late Miocene to Pliocene Quiburis deposits, fan toe and axial valley facies - Sandy to clayey, moderately indurated axial valley and playa margin deposits
- Pliocene Quiburis basin fill deposits, low energy fluvial deposits - alternating thin weakly-consolidated beds of gypsum, silt, and very fine sand with sparse pebble stringers

Miocene sedimentary units

- Conglomerate, San Manuel Formation, volcanoclastic Soza Canyon facies (Miocene) - clasts are derived primarily from volcanic rock like those that make up most of the Galiuro mountains as well as locally exposed, depositionally underlying bedrock in lower Soza Canyon (Dickinson, 1991)

Bedrock units

- Rhyolite lava (Oligo-Miocene) - flow-banded silicic lava containing 2-3% <2 mm quartz, 1-3% <3 mm plagioclase, and ~1-2% <2 mm sandstone
- Felsite lava (Oligo-Miocene) - variably brecciated, aphyric lava flows that contains <1% <1 mm quartz, and <1% <1 mm sandstone
- Bedded Pyroclastic Rocks (Oligo-Miocene) - bedded pyroclastic rocks contain 1-2% <1 mm quartz, <1% <1 mm biotite(?), <1% <1 mm sandstone, and abundant, 1-10 cm, angular, volcanic rock fragments. Bedding is crudely defined by variations in volcanic-lithic fragment abundance and size
- Basalt (Oligo-Miocene) - basalt in Redfield Canyon
- Andesite porphyry lava flows (Oligo-Miocene) - medium to dark gray to dark brown, generally massive lava flows with conspicuous, 10-50%, 3-30 mm, tabular, plagioclase phenocrysts ("turkey-track porphyry")
- Galiuro Volcanics, undivided (Oligo-Miocene) - Oligocene-Miocene Galiuro Volcanics, undivided
- Sandstone and conglomerate (late Cretaceous to early Tertiary) - moderately lithified, moderately sorted sandstone and gray sandstone in beds 10-100 cm thick, with subordinate conglomerate
- Rhyolite tuff (late Cretaceous to early Tertiary) - quartz-biotite tuff with flattened pumice fragments and fresh biotite
- Biebee Group, undivided (Cretaceous to Jurassic) - siltstone, sandstone, and conglomerate of the Biebee Group, undivided
- Naco Group (Permian and Pennsylvanian) - Pennsylvanian Horquilla Limestone consisting of thin-bedded blue-gray limestones interbedded with red shale and staley limestone and Pennsylvanian-Permian Earp Formation containing more shale as well as sandstone, dolomite and rare conglomerate
- Escabrosa Limestone (Mississippian) - thick-bedded, coarse-grained, cliff-forming very dark gray coarse-grained dolomite and pure light gray limestone with subordinate dolomite beds

Map Symbols

Contacts

- contact, accurately located
- contact, approximately located
- concealed contact
- scratch contact
- gradational contact

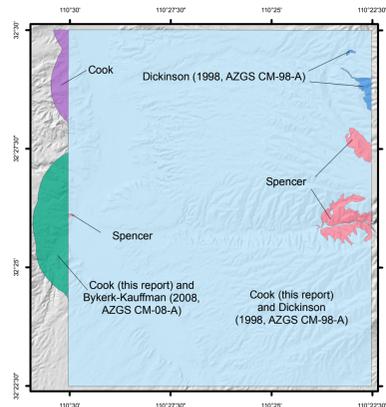
Faults

- fault, accurately located
- fault, approximately located
- fault, concealed

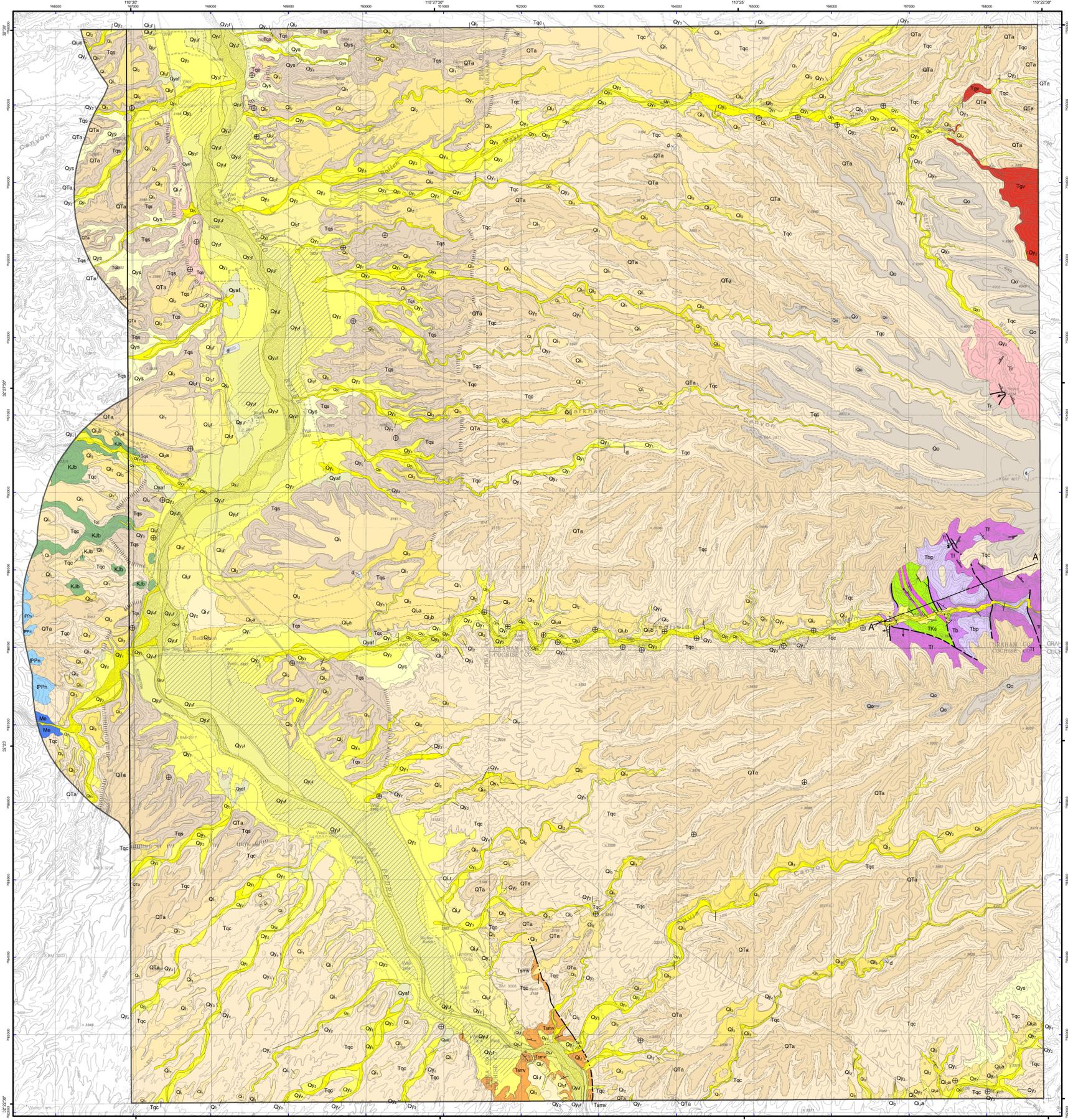
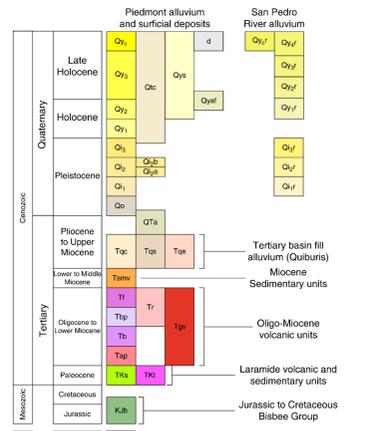
Structure Symbols

- bedding, horizontal
- bedding, inclined
- bedding, overturned with tops known
- inclined eutaxitic foliation
- fault or vein dip
- slickenside striae lineation
- lineation in foliation

Mapping Responsibility

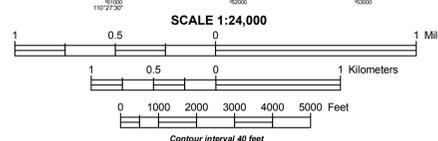


Unit Correlation



Topographic base from USGS 1:24,000 scale quadrangle series.
 North American Datum of 1983 (NAD83), Projection and
 1,000-meter grid; Universal Transverse Mercator, zone 12.

2008 MAGNETIC
 NORTH DECLINATION
 10 1/2°



Arizona Geological Survey
 416 W. Congress Street, Suite 100
 Tucson, AZ 85701
 (520) 770-3500
 www.azgs.gov

Location Index Map



Cochise, Graham and Pima Counties



Adjoining 7.5' Quadrangles

