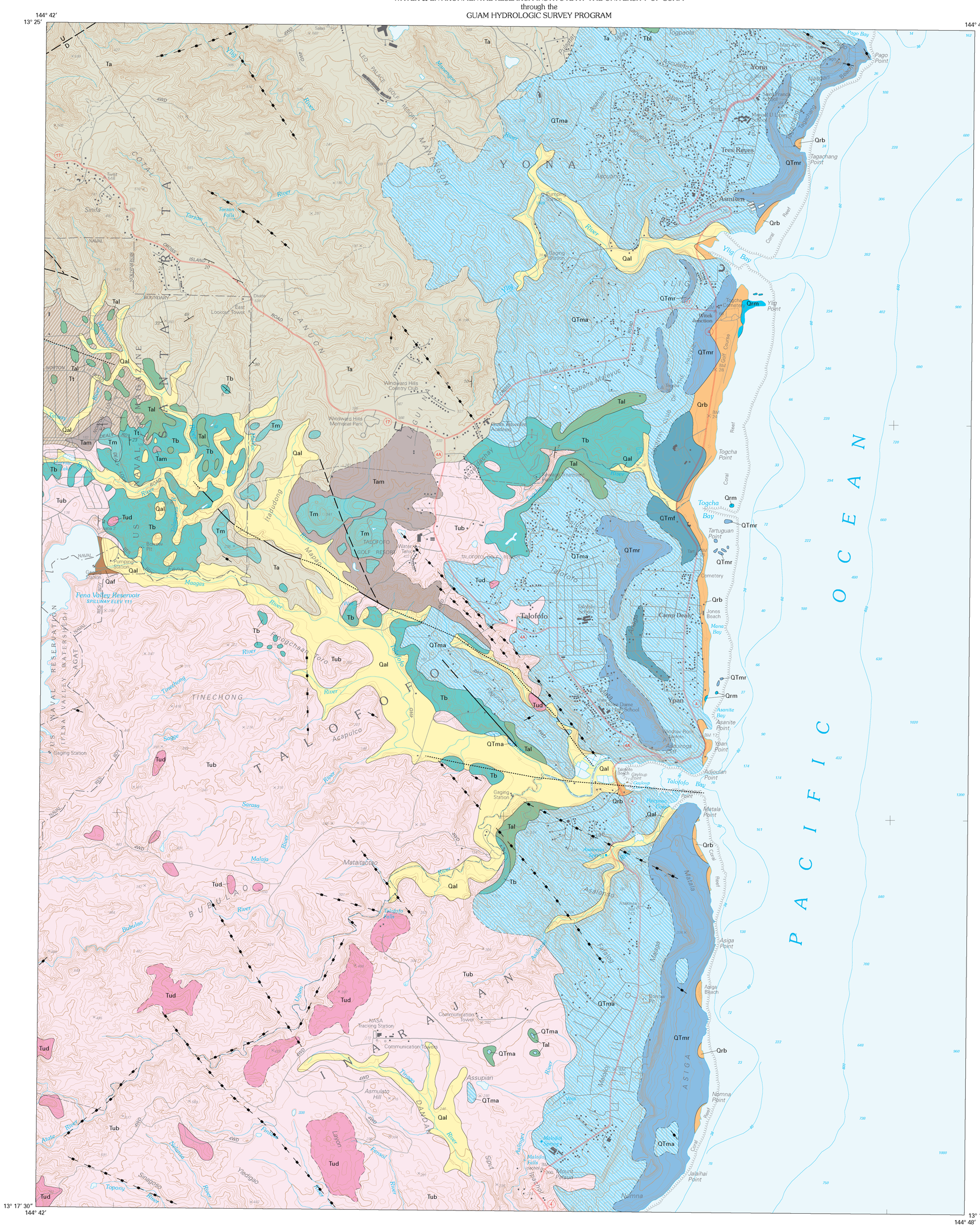
Revisions partially funded by
WATER & ENVIRONMENTAL RESEARCH INSTITUTE AT THE UNIVERSITY OF GUAM
through the
GUAM HYDROLOGIC SURVEY PROGRAM

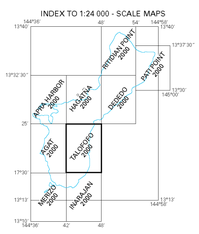
144° 42′ 13° 25′ — 144° 48′ 13° 25′



13° 17′ 30″ 144° 42′ — 13° 17′ 30″ 144° 48′

Base from U.S. Geological Survey, 1:24,000 GIS quadrangle

INDEX TO 1:24 000 - SCALE MAPS



SCALE 1:24 000

1 MILE
7000 FEET
1 KILOMETER

CONTOUR INTERVAL 20 FEET

APPROXIMATE MEAN DECLINATION, 2002

GEOLOGIC MAP OF TALOFOFO QUADRANGLE, GUAM

Revisions proposed and mapped by
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Field interpretations assisted by
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Digital cartography by Linda Masonic

2007

DESCRIPTION OF MAP UNITS

Qaf **Artificial fill**—shown only where extensive

Reefs—reef platforms of living coral, coralline algae, and reef sediment, raised terraced ramps and pools, and algal encrusted intertidal bedrock outcrops, including basaltic outcrops along the southwest coast and limestone outcrops on the platform margin from Ritidian Point south to Urano Point

Qrb **Beach deposits (Quaternary)**—beach sand and gravel, beach rock in the intertidal zone, and small isolated patches of recently emerged detrital limestone. Sand generally is less than 15 feet above sea level, seldom as much as 30 feet above

Qrm **Merizo limestone (Quaternary)**—emergent Holocene (2,500-4,800 years old) coralgal reef limestones, 2-12 feet thick, capping modern reef flats and platforms. Occurs as intertidal and low-supratidal outcrops. Extensive supratidal outcrops at Taragüe (algal-rich), Ylig Point (coral-rich), and Aga Point (detrital-rich). Almost no meteoric diagenetic alteration evidenced in outcrops. Many outcrops, too small to map, occur along SW coast between Merizo and Agat

Qal **Alluvium (Quaternary)**—alluvial clay deposits, mostly 30-100 feet thick, muck and clay in marshy estuarine deposits on the west coast, scattered sand and gravel bars within deposits near SE river mouths, and clay fill in large sinks in limestone areas

—UNCONFORMITY—

Mariana limestone (Pliocene and Pleistocene)
The maximum aggregate thickness of the Mariana limestone formation is estimated to be between 550 and 600 feet (Ritidian Point Quadrangle)

QTmr **Reef facies (Pliocene and Pleistocene)**—massive, generally compact, porous, and cavernous white limestone of reef origin, especially along cliff faces, made up mostly of corals in position of growth in matrix of encrusting calcareous algae

QTmf **Fore-reef facies (Pliocene and Pleistocene)**—well-bedded friable to indurated white foraminiferal limestone deposited as fore-reef sand

QTma **Hagåtña argillaceous member (Pliocene and Pleistocene)**—coarse-to fine-grained pale-yellow, tan, or brown fossiliferous detrital limestone containing 2 to 5 percent disseminated clay and as much as 20 percent clay in pockets and cavities; includes undifferentiated lenses of other Mariana Limestone facies. Formation typically unconformable upon underlying rocks.

—UNCONFORMITY—

Tal **Alifan limestone (Miocene and Pliocene)**—Massive coarse-to fine-grained recrystallized limstone generally pale pink, buff, or white but locally red, yellow, or brown. Characterized by dominance of sticklike *Porites* and *Acropora* and by long calcite tubes formed by burrowing worms or gastrpods. Locally argillaceous above base. Maximum estimated thickness of the Alifan limestone is 150 feet

Tb **Bonya limestone (Miocene)**—pure to argillaceous limestone. In south Guam, generally well bedded, coarse grained, and sandy; In north Guam, mainly massive, compact, white foraminiferal limestone. Scattered concentrations and grain coatings of manganese oxides. Maximum thickness about 120 feet

Tm **Maemong limestone formation (Miocene)**—reef facies in central Guam consists of compact white recrystallized limestone containing larger Foraminifera and algae, and corals in position of growth; at some places overlain by the Bolanos pyroclastic member. Outcrop distribution restricted generally to several prominent wooded knolls in the upper Talofofo River valley, many lying within the Talofofo Golfing Resort. The estimated outcrop thickness of the Maemong limestone ranges from less than 10 feet to about 150 feet, although the elevation of the base of the unit is not apparent

Umatac formation (Oligocene-Miocene)
Aggregate thickness of formation about 2200 feet

Tud **Dandan flow member (Miocene)**—compact medium- to coarse-grained porphyritic basalt flows separated from the underlying Bolanos pyroclastic member by a flow breccia approximately 10 feet thick; maximum thickness of member 50 feet.

Tub **Bolanos pyroclastic member (Miocene)**—breccias, conglomerates, and sandstones consisting largely of fragmented andesite. These andesites typically have prominant euhedral augite phenocrysts up to 1 centimeter in length and millimeter-scale plagioclase phenocrysts. Limestone clasts are conspicuous in some breccias and conglomerates. Estimated thickness of the Bolanos pyroclastic member ranges from 750 to 1000 feet

Tt **Talisay member (Oligocene)**—yellow, green, and red clay and lenticular clayey conglomerate and lignite; gray to green marl containing sticklike *Porites* and *Acropora*, and interbedded limestone lenses, 2 to 30 feet thick. Generally unconformable with the volcanics; locally overlies the Bonya limestone

Tam **Mahlac member of Alutom formation (Eocene and Oligocene)**—thin-bedded to laminated friable buff to tan or yellow-tan calcareous formaminiferal shale; maximum known thickness 200 feet

Ta **Alutom formation (Eocene and Oligocene)**—bedded breccias, conglomerates, sandstones, turbidites, sandy limestones, and micritic to bioclastic limestones. Clasts in the breccias and conglomerates generally are two-pyroxene andesites, although rare olivine phyric basalts and hornblende andesite clasts also are present. Estimated thickness of the Alutom formation ranges from 1850 to 2000 feet

EXPLANATION OF MAP SYMBOLS

Contact—Dashed where approximately located, gradational, or inferred

Fault (showing dip)—Solid where definitely located; dashed where approximately located; dotted where concealed. Queries indicate uncertainty as to existence of fault. Arrows show relative movement. U, upthrown side; D, downthrown side

Thrust fault—Dashed where inferred

Strike and dip of beds

32 — inclined

Strike of vertical joints—A line of joint symbols indicates a prominent joint or structural lineament, along which unbrecciated limestone is cut by a dominant set of joints in which solution has produced deep fissures bounding elongate, pinnacled ridges or along which volcanic rocks are cut by recognizable structural lines that show as a series of knobs and ridges crossing topographic trends or as fine fissures. In places, drainage patterns and valley-wall alinements are determined by these lines. Minor movement at the zone may have occured, but significant stratigraphic displacement is not shown