DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH
CALIFORNIA DIVISION OF MINES AND GEOLOGY

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GEOLOGIC MAP OF THE CUCAMONGA FAULT ZONE BETWEEN SAN ANTONIO CANYON AND CAJON CREEK, SAN GABRIEL MOUNTAINS, SOUTHERN CALIFORNIA

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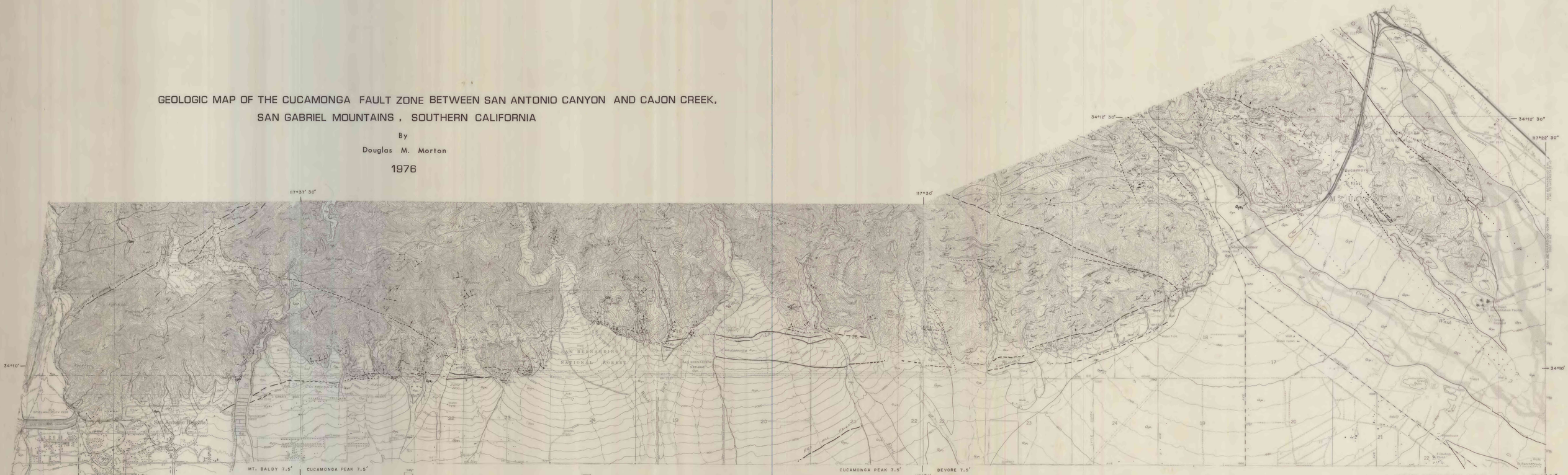
1976



BASE FROM U. S. GEOLOGICAL SURVEY
DEVORE AND CUCAMONGA PEAK, 1966;
MT. BALDY, 1967

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

EXPLANATION

CORRELATION OF MAP UNITS

Qaf, Qya, Qya$_1$, Qc, Qls	Holocene	QUATERNARY	CENOZOIC
Qao, Qao$_4$, Qao$_3$, Qao$_2$, Qao$_1$	Pleistocene	QUATERNARY	CENOZOIC
Tcg, Td, Ta	Pliocene ?	TERTIARY	CENOZOIC
Tgd	Miocene	TERTIARY	CENOZOIC
Tq	Miocene ?	TERTIARY	CENOZOIC
Kgc, Kg, Kqm, Kqdc, Kqd, Kd	CRETACEOUS		MESOZOIC
Mzps, Mzpg			MESOZOIC?
Pzs, Pzm			PALEOZOIC?
s			PRECAMBRIAN?

DESCRIPTION OF MAP UNITS

Qaf ARTIFICIAL FILL--Uncompacted fill from mining and tunnel excavations and compacted road and levee fill and dams

Qya YOUNGER ALLUVIUM--Includes unconsolidated grayish alluvium consisting of mixtures of sand through boulder-size material on canyon floors within the mountains, low-lying unconsolidated terrace deposits and areas underlain by colluvium and eluvium along base of slopes, and gray unconsolidated coarse-grained sand to boulder deposits in the valley area. Most alluvium is or recently was subject to reworking by active streams

Qya$_1$ ALLUVIAL FAN DEPOSITS--Younger alluvium of virtually the same composition as unit Qya, but occurs in areas that are not currently subject to reworking by active streams owing to entrenchment of streams at fan heads. Age variable; may be same age as unit Qya in certain areas, much older in others

Qc COLLUVIUM AND ELUVIUM--Unconsolidated deposits of soil and angular rock debris ranging from almost entirely rock fragments to soil and humus-rich material transitional to slopewash

Qls LANDSLIDES--Landslides generally consisting of a crown area and landslide deposit. Deposits are composed of massive, unconsolidated rock debris. Principal direction of movement shown by arrows. Areas or deposits of inferred or questionable landslide origin are queried

Qao UNDIFFERENTIATED OLDER ALLUVIUM--Poorly consolidated to unconsolidated, poorly bedded cobble and boulder-rich deposits

Qao$_4$ OLDER ALLUVIAL FAN DEPOSITS--Dissected older alluvial fan deposits consisting of well-consolidated poorly bedded red-brown clay-bearing deposits with large amounts of angular to subangular rocks

Qao$_3$ OLDER TERRACE DEPOSITS OF LYTLE CREEK--Extensive cobble and boulder terrace deposits occurring primarily on lower west side of Lytle Creek Canyon. Consists of unconsolidated to poorly consolidated crudely bedded deposits of rounded clasts in a coarse sand matrix that is in part auriferous (for example, Texas Hill). Commonly overlain by 1 to 2 m of locally derived subangular to angular rock debris

Qao$_2$ OLDER MONOLITHOLOGIC ALLUVIAL DEPOSITS--Remnants of older monolithologic alluvial deposits east of Lytle Creek. Deposits consist of rounded to subrounded clasts of granodiorite (Tgd) with sparse rounded cobbles of Pelona Schist

Qao$_1$ OLDER BOULDER MONOLITHOLOGIC ALLUVIAL DEPOSITS--Boulder monolithologic deposits consisting of moderately coasolidated crudely bedded subangular boulders of granodiorite (Tgd). Some boulders are more than 3 m long

Tcg CONGLOMERATE--Poorly consolidated gray massive-appearing to poorly bedded boulder conglomerate with interbeds of coarse-grained poorly consolidated sandstone

Td DIABASE--Fine- to coarse-grained olivine diabase. Marginal rock is fine-grained diabase that progressively coarsens inward to coarse-grained gabbro

Ta ANDESITE--andesitic rock forming thin dikes exposed west of Lytle Creek. Consists of fine- to medium-grained, equigranular to porphyritic hypabyssal andesitic composition rock

Tgd GRANODIORITE--Medium-grained massive white-weathering biotite granodiorite. Most thoroughly and intensely fractured; deeply weathered along ridge tops

Tq QUARTZ PORPHYRY--Leucocratic hypabyssal quartz porphyry forming thin dikes exposed on the west side of San Antonio Canyon

Kgc CATACLASTIC GRANITE--Intensely fractured cataclastic leucocratic granite with well-developed cataclastic layering produced by streaked-out quartz and feldspar

Kg GRANITE--Medium- to coarse-grained, massive to poorly foliated, intensely fractured, deeply weathered muscovite granite exposed within the San Jacinto fault zone

Kqm QUARTZ MONZONITE--Medium-grained, subporphyritic, massive rock forming northeast-striking dikes west of the San Jacinto fault zone. Phenocrysts are potassium feldspar and quartz. More resistant than enclosing rocks giving rise to rubbly steep slopes of angular rock fragments

Kqdc CATACLASTIC QUARTZ DIORITE--Gray porphyroblastic cataclastic quartz diorite and minor granodiorite (Kqd). Cataclasite is very fine grained to aphanitic with porphyroclasts of plagioclase, quartz and hornblende as much as 3 cm long. Contains dark-gray to black aphanitic mylonite and ultramylonite layers 1 to 4 cm thick

Kqd QUARTZ DIORITE--Foliated hornblende-biotite quartz diorite with minor granodiorite. Mainly medium- to coarse-grained gray equigranular, locally semiporphyritic with phenocrysts of plagioclase. Common dark platelike inclusions parallel foliation. Locally contains septa of gneiss and schist

Kd DIORITE--Coarse-grained diorite composed essentially of hornblende and plagioclase

Mzps PELONA SCHIST--Mostly siliceous tan to gray muscovite schist, quartzite, spotted albite schist, greenstone, and biotite schist with rare masses of carbonate-tremolite rock and talc-rich rock. Most rock is intensely fractured and is relatively landslide prone

Mzpg PELONA SCHIST GREENSTONE--Foliated and crudely layered chlorite-epidote-albite greenstone. Greenstone is relatively landslide prone

Pzs SCHIST AND GNEISS--Mainly biotite schist and gneiss with local pods and layers of quartz-feldspar-rich rock, graphite- and sulfide-rich rock, and calc-silicate rock

Pzm Discontinuous masses of coarse-grained marble

s GRANULITIC GNEISS AND CATACLASITE--Massive to layered granulitic gneiss and well-foliated cataclasite. Gneiss includes quartz-feldspar gneiss, garnet-quartz-feldspar, amphibole, garnet-pyroxene, and spinel-pyroxene-rich rocks. Intensity of cataclasis and amount of rock with cataclastic texture increase in southern part of unit.

m Marble--Discontinuous layers of coarse-grained white marble

c Charnockite--Local discontinuous masses of light-gray charnockitic rock

SYMBOLS

Contact, approximately located

Fault, showing dip. Solid where accurately located; dashed where approximately located; dotted where concealed; queried where inferred

Fault scarp. Hachures on apparently downthrown side

Possible fault. Location based on equivocal geomorphic evidence

Fault zone consisting of crushed and sheared rock

Fault zone consisting of thin shear zone, showing dip

Strike and dip of beds
Inclined

Vertical

Horizontal

Strike and dip of foliation and (or) layering in plutonic and metamorphic rocks

Inclined

Vertical

Bearing and plunge of minor fold axis in metamorphic rock

Bearing and plunge of mineral lineation in metamorphic rock

Direction of landslide movement