CORRELATION OF MAP UNITS

Qal	Qls	Holocene	QUATERNARY
Qt	Qm	Pleistocene	
Unconformity			
Tp		Pliocene	TERTIARY
Tsc			
Tsm			
Unconformity			
Tm		Miocene	
Tlo			
Unconformity			
Tla		Oligocene	
Tbs / Tv			
Tz			
Tsr			
Tst		Eocene	
Tbc			
Tbb			
Tba			
cgl			
Unconformity			
Tl		Paleocene	
Tlss			
Nonconformity			
qd	ga	gd	hcg
sch	m		MESOZOIC OR PALEOZOIC

DESCRIPTION OF MAP UNITS

SURFICIAL SEDIMENTS

Qal ALLUVIUM—Unconsolidated gravel, sand, and silt

Qls LANDSLIDE MATERIAL—Half arrows show direction of downslope movement

Qt RIVER TERRACE DEPOSITS—Unconsolidated sandy pebble and cobble gravel and dark-yellowish-orange fine to medium sand

Qm MARINE TERRACE DEPOSIT—Unconsolidated moderate-yellowish-brown fine sand and granular gravel

UPPER MIOCENE TO PLIOCENE SEDIMENTARY SEQUENCE

Tp PURISIMA FORMATION (upper Miocene and Pliocene)—Very thick bedded yellowish-gray tuffaceous and diatomaceous siltstone with thick interbeds of bluish-gray semifriable fine-grained andesitic sandstone. Includes Santa Cruz Mudstone east of Scotts Valley and north of Santa Cruz

Tsc SANTA CRUZ MUDSTONE (upper Miocene)—Medium- to thick-bedded and faintly laminated blocky-weathering pale-yellowish-brown siliceous organic mudstone. Includes Santa Margarita Sandstone along Glenwood syncline

Tsm SANTA MARGARITA SANDSTONE (upper Miocene)—Very thick bedded to massive thickly crossbedded yellowish-gray to white friable granular medium- to fine-grained arkosic sandstone; locally calcareous

MIDDLE MIOCENE SEDIMENTARY SEQUENCE

Tm MONTEREY FORMATION—Medium- to thick-bedded and laminated olive-gray to light-gray subsiliceous organic mudstone and sandy siltstone. Includes few thick dolomite interbeds

Tlo LOMPICO SANDSTONE—Thick-bedded to massive yellowish-gray medium- to fine-grained calcareous arkosic sandstone; locally friable

EOCENE TO LOWER MIOCENE SEDIMENTARY SEQUENCE

Tla LAMBERT SHALE (lower Miocene)—Thin- to medium-bedded and faintly laminated olive-gray to dusky-yellowish-brown organic mudstone with phosphatic laminae and lenses in lower part

Tv VAQUEROS SANDSTONE (Oligocene and lower Miocene)—Thick-bedded to massive yellowish-gray arkosic sandstone

Tbs Basalt—Spheroidal-weathering pillow basalt flows in upper part

Tz ZAYANTE SANDSTONE (Oligocene)—Thick- to very thick bedded yellowish-orange arkosic sandstone with thin interbeds of greenish and reddish siltstone and lenses and thick interbeds of pebble and cobble conglomerate

SAN LORENZO FORMATION

Tsr Rices Mudstone Member (Eocene and Oligocene)—Massive medium-light-gray fine- to very fine grained arkosic sandstone; thick bed of glauconitic sandstone at base

Tst Twobar Shale Member (Eocene)—Very thin bedded and laminated olive-gray shale

BUTANO SANDSTONE (Eocene)

Tbc Upper sandstone member—Thin- to very thick bedded medium-gray fine- to medium-grained arkosic sandstone with thin interbeds of medium-gray siltstone

Tbb Middle siltstone member—Thin- to medium-bedded nodular olive-gray pyritic siltstone

Tba Lower sandstone member—Very thick bedded to massive yellowish-gray granular medium- to coarse-grained arkosic sandstone.

cgl Conglomerate—Thick to very thick interbeds of sandy pebble conglomerate in lower part of lower sandstone member

PALEOCENE SEDIMENTARY SEQUENCE

Tl LOCATELLI FORMATION—Nodular olive-gray to pale-yellowish-brown micaceous siltstone

Tlss Sandstone—Massive medium-gray fine- to medium-grained arkosic sandstone locally at base

CRYSTALLINE PLUTONIC AND METAMORPHIC ROCKS

qd QUARTZ DIORITE—Grades to granodiorite south and east of Ben Lomond Mountain

ga GRANITE AND ADAMELLITE

gd GNEISSIC GRANODIORITE

hcg HORNBLENDE-CUMMINGTONITE GABBRO

sch METASEDIMENTARY ROCKS—Mainly pelitic schist and quartzite

m MARBLE—Locally contains interbedded schist and calc-silicate rocks

Contact, approximately located—Triangle where well exposed; queried where uncertain

Fault—Dashed where approximately located; short dashed where inferred; dotted where concealed. U, relatively upthrown side; D, downthrown side

Anticline—Dashed where approximately located; dotted where concealed

Syncline—Showing direction of plunge; dashed where approximately located; dotted where concealed

Strike and dip of beds
- Inclined
- Vertical
- Horizontal
- Estimated

Strike and dip of foliation

Fossil localities
- M5049 × Megainvertebrate
- V5555 × Vertebrate
- Mf3675 × Microfossil
- L37 × Lithologic sample locality

Abandoned exploratory oil well

Half arrows show direction of downslope movement

Base from U.S. Geological Survey
Felton, 1955; Santa Cruz, 1954

APPROXIMATE MEAN DECLINATION, 1981

SCALE 1:24 000

CONTOUR INTERVALS 20 AND 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES IN FEET—DATUM IS MEAN LOWER LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF TIDE IS APPROXIMATELY 4 FEET

QUADRANGLE LOCATION

Geology mapped 1960–69
Igneous and metamorphic geology of Ben Lomond Mountain area modified after Leo (1961)

C — C′

D — D′

E — E′

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA —1981—679684

GEOLOGIC MAP AND SECTIONS OF THE FELTON-SANTA CRUZ AREA, SANTA CRUZ COUNTY, CALIFORNIA