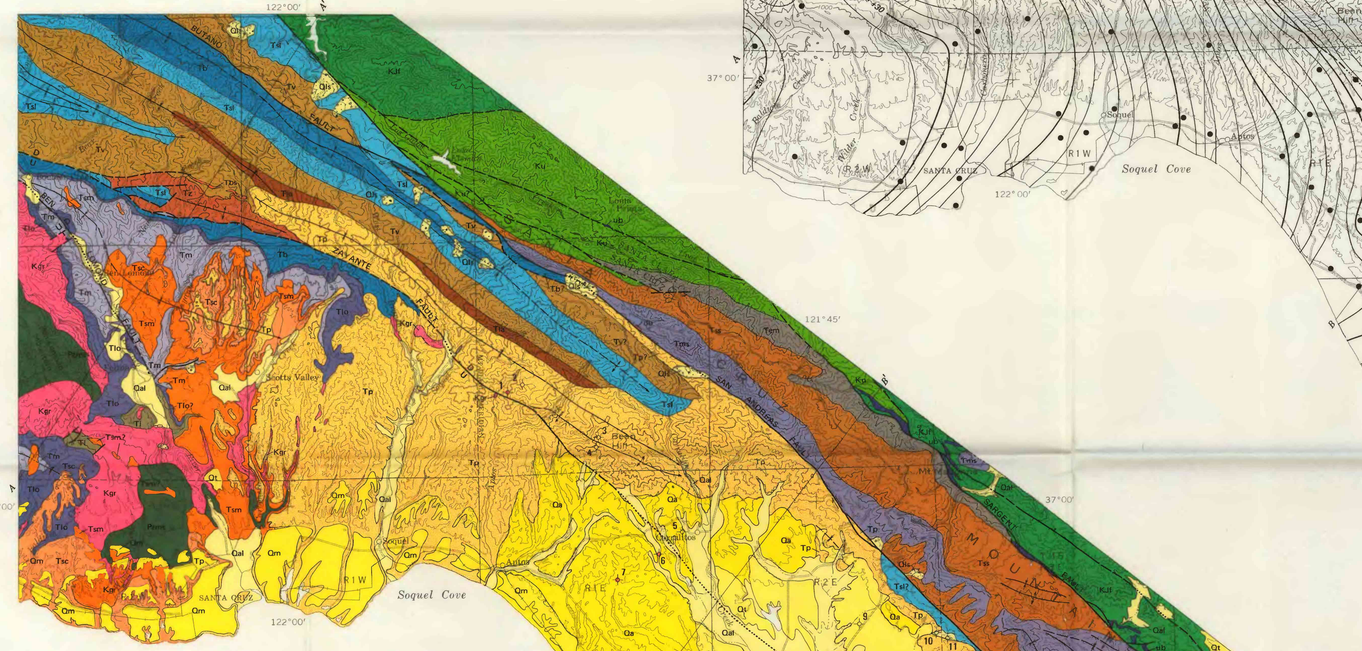
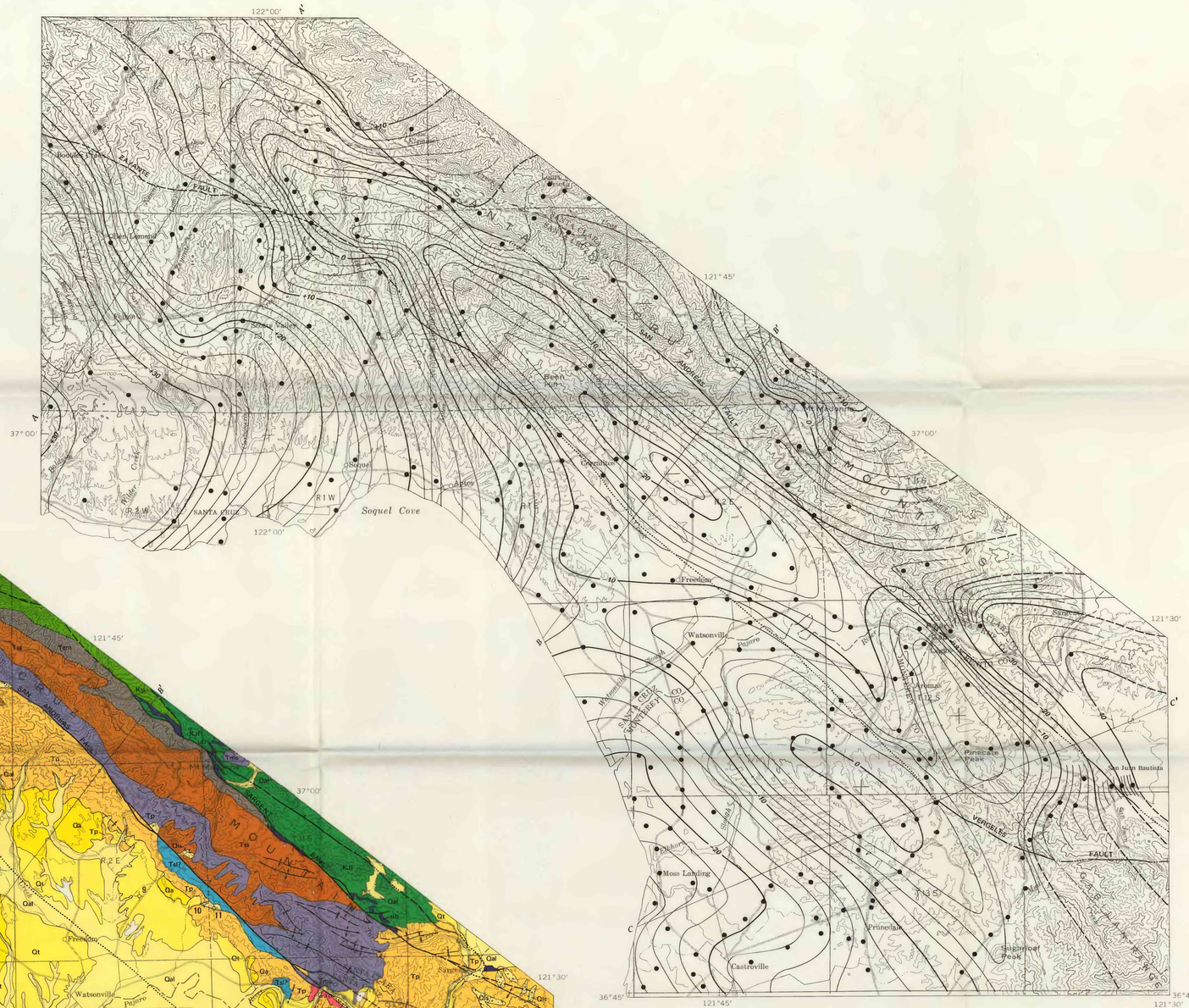
INDEX TO GEOLOGIC MAPPING

1. Clark (1966a)
2. Brabb, E.E.
   Burchfiel (1964)
   Clark, J.C.
   Dibblee, T.W., Jr.
   McCollom (1959)
3. Burford (1961)
4. Dibblee, T.W., Jr., modified locally by:
   Brabb, E.E.
   Christensen (1960)
   Clark, J.C.
   Clark, J.C.
5. Dibblee, T.W., Jr.
6. Dibblee, T.W., Jr.
7. Allen (1946)
   Dibblee, T.W., Jr, modified locally by:
   Nason and Rogers (1967)



Base from U.S. Geological Survey 7.5' edition sheets, 1969

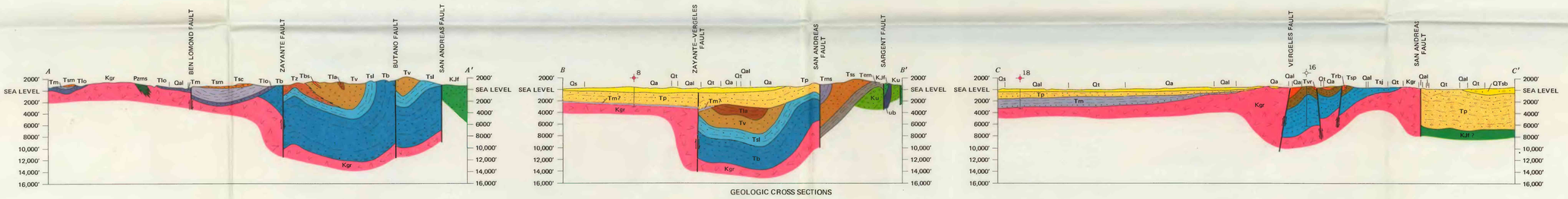


Gravity data by J.D. Rietman, J.C. Clark, and California Division of Mines and Geology

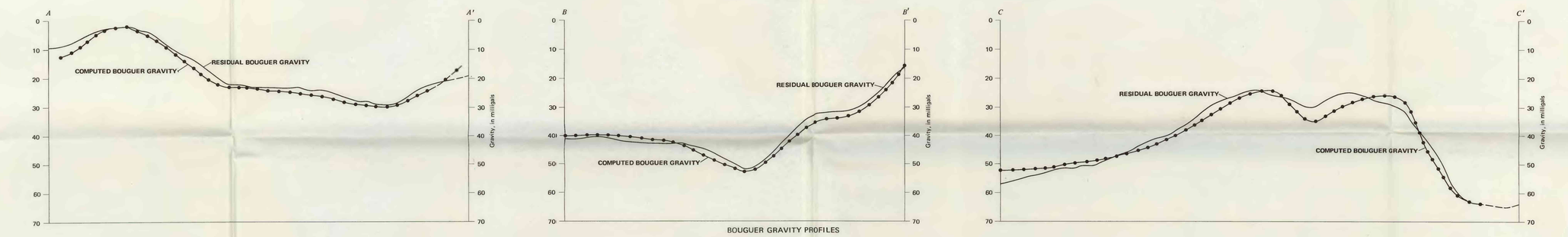
Geology compiled by J. C. Clark, 1970

EXPLORATORY WELLS SHOWN ON MAP

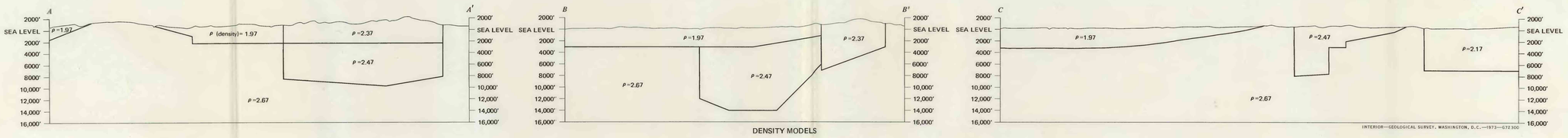
1. Union Oil, Loma Prieta 1; projected sec. 19, T. 10 S., R. 1 E.; T.D. 1942 feet.
2. Union Oil, Loma Prieta 2; projected sec. 20, T. 10 S., R. 1 E.; T.D. 4570 feet.
3. Union Oil, Teresa Hihn 1; projected sec. 34, T. 10 S., R. 1 E.; T.D. 7747 feet.
4. Union Oil, Teresa Hihn 2; projected sec. 34, T. 10 S., R. 1 E.; T.D. 3569 feet.
5. Texas, J.H. Blake 1; projected sec. 12, T. 11 S., R. 1 E.; T.D. 7522 feet.
6. Texas, M. Light 1; projected sec. 14, T. 11 S., R. 1 E.; T.D. 3694 feet.
7. Texas, Pierce 1; projected sec. 15, T. 11 S., R. 1 E.; T.D. 2670 feet.
8. Texas, Carpenter 1; projected sec. 35, T. 11 S., R. 1 E.; T.D. 3100 feet
9. Fullerton Oil, Peterson 1; projected sec. 27, T. 11 S., R. 2 E.; T.D. 3197 feet.
10. Monterey Oil, Porter 1; projected sec. 25, T. 11 S., R. 2 E.; T.D. 2985 feet.
11. Monterey Oil, Porter 2; projected sec. 30, T. 11 S., R. 3 E.; T.D. 3977 feet.
12. Texas, Blake 1; projected sec. 11, T. 12 S., R. 1 E.; T.D. 2463 feet.
13. Western Gulf Oil, Johnson 1; projected sec. 29, T. 12 S., R. 2 E.; T.D. 3198 feet.
14. Texas–Seaboard Oil, Robert Blohm 2; projected sec. 34, T. 12 S., R. 2 E.; T.D. 2188 feet.
15. Jergens Oil, Blohm 1; projected sec. 34, T. 12 S., R. 2 E.; T.D. 1935 feet.
16. Occidental Petroleum, Bingaman 1; projected sec. 34, T. 12 S., R. 3 E.; T.D. 7136 feet.
17. Bayside Development, Vierra 1; sec. 7, T. 13 S., R. 2 E.; T.D. 7916 feet.
18. Texas, Pieri 1; projected sec. 19, T. 13 S., R. 2 E.; T.D. 3291 feet.
19. Texas, Davies 1; projected sec. 34, T. 13 S., R. 2 E.; T.D. 2219 feet.



GEOLOGIC CROSS SECTIONS



BOUGUER GRAVITY PROFILES



DENSITY MODELS

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1973—G72300

EXPLANATION

SOUTHWEST OF SAN ANDREAS FAULT

QUATERNARY

Holocene

Qal, Qs, Qls — Surficial deposits
Qal, *alluvium*
Qs, *sand dunes*
Qls, *landslide material*

Pleistocene

Qt — River-terrace deposit
Includes fan deposits northeast of Watsonville

Qm — Marine-terrace deposit

Qa — Aromas Red Sands of Allen (1946)
Light-brown to red sands; nonmarine

UNCONFORMITY

TERTIARY

Pliocene

Tp — Purisima Formation
Interbedded yellow sandstone and siltstone; marine. Includes Tsc *east and south of Scotts Valley*

Miocene and Pliocene

Upper Miocene and Lower Pliocene

Tsc — Santa Cruz Mudstone of Clark (1966b)
Pale-yellowish-brown siliceous organic mudstone; marine. West of Santa Cruz locally includes Tsm *at base*

Upper Miocene

Tsm — Santa Margarita Sandstone
Yellowish-gray to white friable arkosic sandstone; marine

UNCONFORMITY

Miocene

Middle Miocene

Tm — Monterey Formation
Olive-gray, weathers light gray, organic mudstone; marine

Tlo — Lompico Sandstone of Clark (1966b)
Yellowish-gray arkosic sandstone; marine

UNCONFORMITY

BEAN HILL-BEAR CREEK AREA

Lower Miocene

Tla — Lambert Shale
Dusky-yellowish-brown organic mudstone; marine

Tbs, Tv — Vaqueros Sandstone
Yellowish-gray arkosic sandstone; marine
Tbs, *pillow basalt flows*

Oligocene

Tz — Zayante Sandstone
Yellowish-orange arkosic sandstone; interbedded green and red siltstone and conglomerate; nonmarine

Eocene

Tsl — San Lorenzo Formation
Light-gray nodular mudstone, locally grading to arkosic sandstone, and olive-gray shale; marine

Tb — Butano Sandstone
Yellowish-gray arkosic sandstone; interbedded olive-gray siltstone; interbedded conglomerate in lower part; marine

UNCONFORMITY

Paleocene

Tl — Locatelli Formation of Cummings, Touring, and Brabb (1962)
Pale-yellowish-brown nodular siltstone, arkosic sandstone locally at base; marine

SAN JUAN BAUTISTA AREA

Lower Miocene

Tvr — Volcanic rocks
Dacitic and andesitic flows and agglomerate; interbedded light-brown arkosic sandstone

Trb — Red beds of Kerr and Schenck (1925)
Red breccia and conglomerate; interbedded red and yellow arkosic sandstone; nonmarine

Oligocene

Tsp — Pinecate Formation of Kerr and Schenck (1925)
Yellow arkosic sandstone; interbedded conglomerate; marine

Eocene

Tsj — San Juan Bautista Formation of Kerr and Schenck (1925)
Buff sandstone; interbedded gray siltstone; marine

UNCONFORMITY

CRETACEOUS

Kgr — Granitic rocks
Predominantly quartz diorite and adamellite, ranging from gabbro to granite

PALEOZOIC(?)

Pzms — Metasedimentary rocks
Schists, quartzites, marbles, and calc-silicate rocks. Include Gabilan Limestone in Gabilan Range

NORTHEAST OF SAN ANDREAS FAULT

QUATERNARY

Holocene

Qls — Landslide material

Qal — Alluvium

Pleistocene

Qt — River-terrace deposit

TERTIARY OR QUATERNARY

Pliocene or Pleistocene

QTsb — San Benito Gravels of Lawson (1893)
Poorly consolidated sands and gravels; nonmarine

UNCONFORMITY

TERTIARY

Pliocene

Tp — Purisima Formation
Poorly consolidated sands, silts, clays, and gravels; marine and nonmarine

UNCONFORMITY

Eocene(?), Oligocene, and Miocene

Tms — Mudstone
Dark-gray, weathers light gray, siliceous organic mudstone; marine. Includes Monterey Shale of Allen (1946)

Tss — Sandstone
Yellowish-gray arkosic sandstone; interbedded dark-gray mudstone; marine. Includes Monterey Sandstone of Allen (1946)

Paleocene or Eocene

Tem — Mudstone
Olive-gray nodular mudstone; marine

CRETACEOUS

Upper Cretaceous

Ku — Undifferentiated sedimentary rocks
Interbedded conglomerate, feldspathic graywacke, and shale; marine. Near Loma Prieta locally include extrusive(?) volcanic rocks

JURASSIC, CRETACEOUS, AND YOUNGER

ub — Ultrabasic intrusive rocks
Predominantly serpentinite intrusive into Franciscan Formation and along fault zones

JURASSIC(?) AND CRETACEOUS

Upper Jurassic(?) to Upper Cretaceous

KJf — Franciscan Formation
Lithic and feldspathic graywacke, siltstone, and altered mafic volcanic rocks; minor chert, limestone, and conglomerate

AGE UNKNOWN

db — Diabase
Altered diabase along San Andreas fault

Contact, approximately located

Fault
Dashed where approximately located; dotted where concealed; queried where doubtful. U, relatively upthrown side; D, downthrown side; arrows show relative horizontal movement

Crest of anticline
Showing direction of plunge. Dashed where inferred; dotted where concealed

Trough of syncline
Showing direction of plunge. Dashed where inferred

Abandoned exploratory oil well
Red indicates well reported to have reached crystalline basement

Gravity station

Isogals
Lines of equal complete Bouguer anomaly in milligals; dashed in areas of poor control, contour interval 2 milligals. + indicates gravity high, – gravity low

SCALE 1:125 000

CONTOUR INTERVAL 200 FEET
DATUM IS MEAN SEA LEVEL

GEOLOGIC AND GRAVITY MAPS OF THE SANTA CRUZ–SAN JUAN BAUTISTA AREA, SANTA CRUZ, SANTA CLARA,