

Fault contact exposed in shallow gullies. Pigeon Point Formation (southwest) juxtaposed with Purisima Formation (northeast) along a broad zone of shearing. Individual shear zones as wide as 0.6 m. Azimuth of faults 343° to 353°, vertical. No clear evidence for recency of faulting. Thin soils on recent slope wash-not offset. Possibly a small localized thrust fault on ridge top inferred from rock distribution

Shoreline angles of the Santa Cruz (SC) and western (W) marine terraces are offset right laterally along the Frijoles fault segment.

Western marine terrace (age approximately 340,000 to 450,000 years B.P.) offset a minimum of 579 m. Santa Cruz marine terrace (age approximately 105,000 to 125,000 years B.P.) offset a minimum of 198-213 m. Slip rate a minimum of approximately 0.2 cm/yr, and may be far greater.

Sediments of Western marine terrace offset across fault. Wave-cut platform offset 4.5 to 6 m  
Sediments of Western marine terrace offset across minor fault.

Steeply dipping reverse fault exposed in spillway and in quarry. Purisima Formation displaced southwestward over marine terrace deposits. Between 12 to 21 m of vertical separation. Buried soils on downthrown block suggest as many as twelve episodes of movement since formation of Santa Cruz marine terrace (approximately 85,000 to 125,000 years B.P.)

Highly sheared and broken Purisima Formation exposed along a few hundred meters of sea cliffs. Purisima Formation may be in fault contact with Pigeon Point Formation to the NE.

Wood from a buried channel at the mouth of Green Oaks Creek has a <sup>14</sup>C age of 11,500 ± 165 years B.P. (I-7593)

Intensely fractured and broken Purisima Formation exposed in sea cliff. Probable fault zone

Fault trace located in trench—fault offsets soils and inter-dune pond deposits that yield a <sup>14</sup>C date of 6060 ± 105 years B.P. (Beta -1083)

Reverse fault offsets marine terrace approximately 3 m. Fault trace partly covered by landslide deposit.

**AÑO NUEVO THRUST FAULT**

Santa Cruz marine terrace offset approximately 5 m vertically along thrust dipping 37° N.E. Fault geometry and progressive offset of colluvial deposits indicate fault has moved a minimum of seven times during last 105,000 years

Linear channels and scarps(?) in shore platform may indicate faults. Fault between point and island suggested by differences in elevation of marine terrace platform and deposits between point (platform at sea level) and the island (platform elevation 5 m above sea level)

**FRIJOLAS FAULT**

Holocene deposits of Año Nuevo Creek deformed and faulted into contact with crushed Purisima Formation. Fault zone approximately 76 to 91 m wide exposed in sea cliff.

Detrital charcoal fragments and peat collected from fluvial and pond deposits (sag pond) deformed by the Frijoles fault yield <sup>14</sup>C ages ranging from 10,790 ± 380 (UM-1657) to 8,460 ± 210 (UM-1659) years B.P.

Detrital charcoal fragments collected from deposits of Año Nuevo Creek yield an age of 10,200 ± 300 years B.P. (USGS W-1376). This sample is stratigraphically below the sample collected adjacent to the Frijoles fault

**COASTWAYS SEGMENT**

One of primary traces of fault zone. Not exposed in small drainage because of dense vegetation and soil. Juxtaposes nearly flat-lying beds of Purisima Formation (southwest block) with gently dipping beds of Santa Cruz Mudstone (northeast block). About 5 m vertical separation of platform of Santa Cruz terrace (85,000-125,000 years) across fault, west side down.

Linearity and similarity of trend of main scarps of landslides suggests structural control. Lineations are probably related to faulting along a now dormant(?) trace of the San Gregorio fault zone

The shoreline angle of the Santa Cruz marine terrace (age approximately 85,000 to 125,000 years B.P.) offset across the eastern trace of the Greyhound Rock segment about 545 m. Slip rate approximately 0.4 cm/yr

Minimum age for landfills is 15,000 ± 1900 yr B.P. (I-6629) based on <sup>14</sup>C sample from basal deposit in pond on landfill

Vertical shear zones in colluvial deposits associated with the Santa Cruz marine terrace

**GREYHOUND ROCK FAULTS**

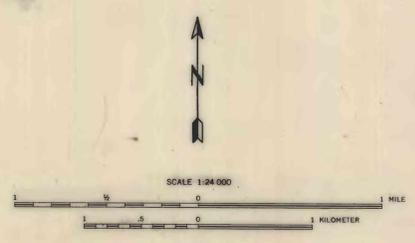
The Greyhound Rock faults consist of two separate fault strands referred to as the northeast fault strand and the southwest fault strand.

**NORTHEAST FAULT STRAND**  
This trace consists of three closely spaced normal faults dipping 62° to 68° southwest that offset the Santa Cruz marine terrace platform and sediments approximately 6 meters, west side down. These faults cut young colluvial deposits north of Highway 1 and may be Holocene. Faults exposed at two locations in sea cliff.

**SOUTHWEST FAULT TRACE**  
A normal fault dipping 72° to 84° southwest offsets the Santa Cruz marine terrace platform and the overlying shallow marine sediments at three localities along the sea cliffs. The overlying fluvial deposits are not offset, indicating that the fault movement is probably pre-Holocene

Linear seacliffs and linear trenches, channels, etc., in shore platforms suggest bedrock faults or joints of possible late Pliocene age. These faults or joints do not offset the Santa Cruz marine terrace

122° 15'  
87° 23' 15"  
Scott Creek drainage is probably fault controlled. It is the only major drainage on the southwest flank of San Lomed Mountain that flows parallel to the coastline for most of its course



**MAP OF QUATERNARY FAULTING ALONG THE SAN GREGORIO FAULT ZONE, SAN MATEO AND SANTA CRUZ COUNTIES, CALIFORNIA**

by  
**Gerald E. Weber and Kenneth R. Lajoie**

1980

Base from USGS 7.5' topo series: HALF MOON BAY, 1961, pr. 1968, 40 ft., and MONTARA MOUNTAIN, 1956, pr. 1968, 25 ft., CALIF. Compiled by Menlo Park Base Map Section. (31-37) (1-77) LAJOIE

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