

monly away from the coast. Absolute age determinations by both Larsen and isotope dilution techniques have confirmed previous regional correlation of the batholith of Baja California with the Southern California batholith.

Relatively undeformed post-batholithic rocks along the Pacific Coast lie across beveled erosion surfaces on both pre-batholithic and plutonic rocks, clearly establishing the age relations. Abundant fossils indicate that the oldest exposed sediments in this sequence are of Maestrichtian age.

A close point of correlation has been established between the relative and absolute time scales. The absolute age of the intrusive rocks, $115(\pm 10) \times 10^6$ years, falls in the interval of time bracketed by the Albian below and the Maestrichtian above. The chronological and geological relations of the Baja California rocks to those of adjacent regions are considered.

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Fillmore Oil Field, Ventura County, California

The Fillmore field is a relatively minor Ventura basin oil field located west of and adjacent to the city of Fillmore. It is one of several recent discoveries in the Santa Clara Valley area between the Oak Ridge fault on the south and the San Cayetano fault on the north.

The Fillmore field is an excellent example of multiple-zone primary stratigraphic trap accumulation, independent of local structural closure. Two middle Pico (Pliocene) sand zones have produced to date. Closure in both zones is effected by rather abrupt updip pinch-out on a low southeastward-dipping homocline.

The Spalding pool was discovered by Standard Oil Company in April, 1954, and development of the field has been continuous and orderly since then. The Perkins pool, slightly shallower but more limited in areal extent, was discovered by Humble Oil and Refining Company in January, 1957. Both zones have short oil columns, small free gas caps, level water tables, and relatively narrow productive areas elongate essentially parallel with the regional northeasterly strike.

At present the field is 3 miles long and has maximum width of 3,200 feet, with a proved productive area of approximately 800 acres. Average well depth is a little more than 14,000 feet, and gravity of the oil is 27°-35° API. Cumulative production to August 1, 1957, was 2,387,000 barrels, and average production as of that date was 7,984 B/D from 22 wells.

The productive limits of the two known pools have been fairly well established except at the east end of the field, where development is continuing at present. Future expansion of the field depends on its easterly extent and possible discovery of additional Pliocene sand pinch-out traps.

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Llano Seco and Perkins Lake Gas Fields, Butte and Tehama Counties, California

The Perkins Lake and Llano Seco gas fields are in the north point of the Sacramento Valley 12 and 16 miles, respectively, southwest of the city of Chico.

The Llano Seco field was discovered in November, 1954. Production is from the Upper Cretaceous Estes and Sannar sands at a depth of approximately 3,300 feet. Structurally, the field is on a broad, symmetrical north-trending anticline.

The larger Perkins Lake field, discovered in September, 1955, produces from the lower Eocene "Perkins Lake" sand at depths ranging from 3,365 to 3,505 feet. The structure is an elongate, north-east-trending anticline.

Stratigraphically, the two fields are quite dissimilar. The Llano Seco field has an almost normal sequence of lower Eocene and Upper Cretaceous beds, whereas the Perkins Lake field, being in an Eocene erosional gorge, has a lower Eocene section which is greatly thickened at the expense of the Upper Cretaceous section. The pronounced unconformity at the base of the Eocene is found 1,300-1,800 feet lower at Perkins Lake than at Llano Seco, whereas within the Cretaceous the two fields are nearly flat structurally.

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Oil Creek Field, San Mateo County, California

The Oil Creek field is in the southeast corner of San Mateo County, in the Santa Cruz Mountains. The discovery well was the Union-Richfield's Costa No. 1, completed in October, 1955, from the interval 2,055-2,206 feet, with production from the Butano sandstone of Eocene age. The initial production on the pump was 100 B/D, 10% cut, 43.2°, 45 mcf. As of September 1, 1957, the well had produced an approximate total of 25,775 barrels net oil and has a present daily rate of 30 barrels net oil.

The surface structure is anticlinal and was delineated in the field by close coordination of surface mapping and paleontological control. The subsurface structure is that of a faulted anticline or a bowing against a fault.

The stratigraphic section in the field consists of the San Lorenzo and Butano formations.