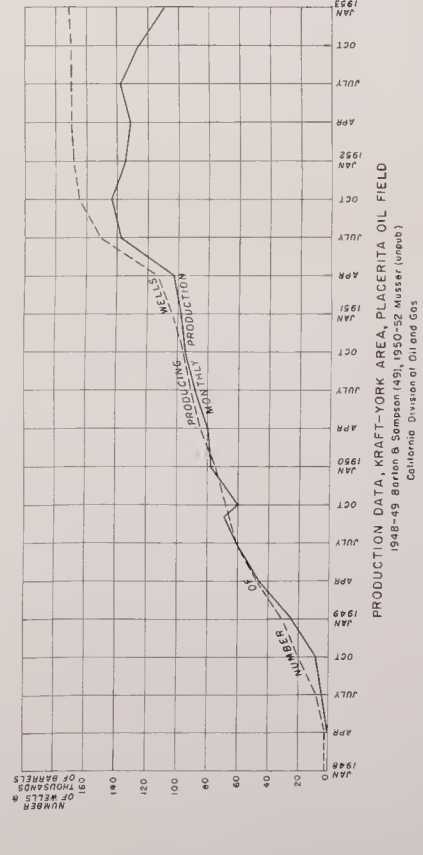


TOPOGRAPHIC MAP

Age	Formation or member	Description	Maximum thickness	Prominent features*
Recent	Alluvium	Stream sands and gravels of Placerita Canyon and Santa Clara River.	100	Water supply. Gold in Placerita Canyon.
Upper Pleistocene	Unconformity	Elevated, but unfolded, older alluvium.	175	Gold in Placerita Canyon.
	Younger terrace deposits	Slifting to younger terrace deposits, but affected by folding and faulting.	400	None recognized.
Lower Pleistocene	Major unconformity	Continental sandstone and conglomerate.	2000	Barren in the oil field.
	Saugus formation	Continental and brackish-water conglomerate, greenish sandstone and mudstone, thin beds of fresh-water limestone, redbeds.	1300	Some oil-saturated sands (probably includes "upper Kraft" beds, series of Willis [52]).
Upper Pliocene	Subsile Bay member	Coarse to fine marine sandstone and conglomerate; fossiliferous uppermost Pliocene (probably Santa Barbara zone).	1000	Oil sands (includes upper part of "upper Kraft zone" of Willis [52]).
	Upper Pliocene	Marine sandstone and conglomerate, massive fine sandstone and siltstone; fossiliferous calcareous sandstone beds (San Blas fauna).	700	Oil sand and seeps (probably includes lower part of "upper Kraft zone" of Willis [52]).
Middle Pliocene	Lower Pliocene member	Marine brown and gray siltstone and fine sandstone conglomerate.	300	Some oil sand and seeps in exposures.
Lower Pliocene	Repato siltstone member	Marine fossiliferous coarse sandstone and conglomerate, continental at north end.	300	(Probably essentially equivalent to "lower Kraft zone" of Willis [52]).
	Elanero member	Not exposed in oilfield; in subsurface of western part of field. Massive brown sandstone, shale, interfingering continental beds.	1700	Not productive in Placerita field; has produced in Juanita area (Willis [52]).
Upper Miocene	Mint Canyon formation	M. of San Gabriel fault only. Continental sandstone and conglomerate, buff beds, lake beds.	2400	None recognized.
Evening and Pliocene	Major unconformity	Well-indurated shaly sandstone, conglomerate, siltstone, clay, and lignite recognized in the subsurface.	2000	Reservoir for light oil in nearby areas; non-productive in Placerita field.
Pre-Tertiary	Granitic rocks; Rubio diorite gneiss; Placerita Paleozoic?; both intruded by granitic rocks (i. e., hyp.-dior.?)	Remnants of Placerita and San Gabriel rocks (Paleozoic?). Rubio diorite gneiss (Paleozoic?), both intruded by granitic rocks (i. e., hyp.-dior.?).		Reservoir rock for a little light oil in Placerita schist area.



PRODUCTION DATA, KRAFT-YORK AREA, PLACERITA OIL FIELD
1948-49 Barton & Sampson (49), 1950-52 Messer (unpub)
Coleridge Division of Oil and Gas

DIVISION OF MINES
BULLETIN 170
GEOLOGY OF SOUTHERN CALIFORNIA
MAP SHEET NO. 31
GEOLOGY OF THE PLACERITA OIL FIELD,
LOS ANGELES COUNTY

By Gordon B. Oakeshot *

Introduction. The Placerita oil field extends over section 31, T. 4 N., R. 15 W., and the borders of adjoining sections on the north, west, and south at the western end of the San Gabriel Mountains about 2 miles east of Newhall. The field is crossed by Sierra Highway (U.S. 6) 1 mile north of the Whittier fault, and 2 1/2 miles north of the Elsinore area, abandoned in 1897; 1 1/2 miles north of the Elsinore area, which produced a little high-gravity oil from the schist area several years ago. These three areas had no production in 1952. The Placerita field is divided into the Juanita area on the north and the Kraft-York area on the south by the north-west-trending Orwig fault. The Juanita area produced 1,887,000 barrels of 21.0° gravity oil in 1952, while the Kraft-York area produced 1,371,000 barrels of 12.7° gravity oil.

The Kraft-York area was discovered in 1920 by the Equity Oil Company, which completed Daisy 1 (now Gutterson Oil Company York 1) for a few barrels of 14° gravity oil at a depth of 975 feet. Four wells were drilled between 1920 and 1923, and produced from 6 to 19 barrels per day. In April 1948, the Nelson-Phillips Oil Company discovered the area when it brought in Kraft 1 in Placerita on May 11, 1948, producing 110 barrels per day from a depth of 650 feet. On January 3, 1949, Kraft 1 produced 293 barrels of oil with the bottom of the producing zone at 1,830 feet. This well, about a mile north of Nelson-Phillips' Kraft 1, was the discovery hole in the Juanita high-gravity area. This was followed a period of unrestricted production in this area, as the State Spacing Act was declared unconstitutional by the California Superior Court. A town-to-drilling campaign saw production skyrocketing in the Juanita area to more than 600,000 barrels per month by November 1951. Production in the field is rapidly and gradually declining since that time.

Stratigraphy. The Placerita area is at the eastern end of the Ventura basin. The rock formations consist of a series of Tertiary and Quaternary marine and continental sediments dipping northwestward



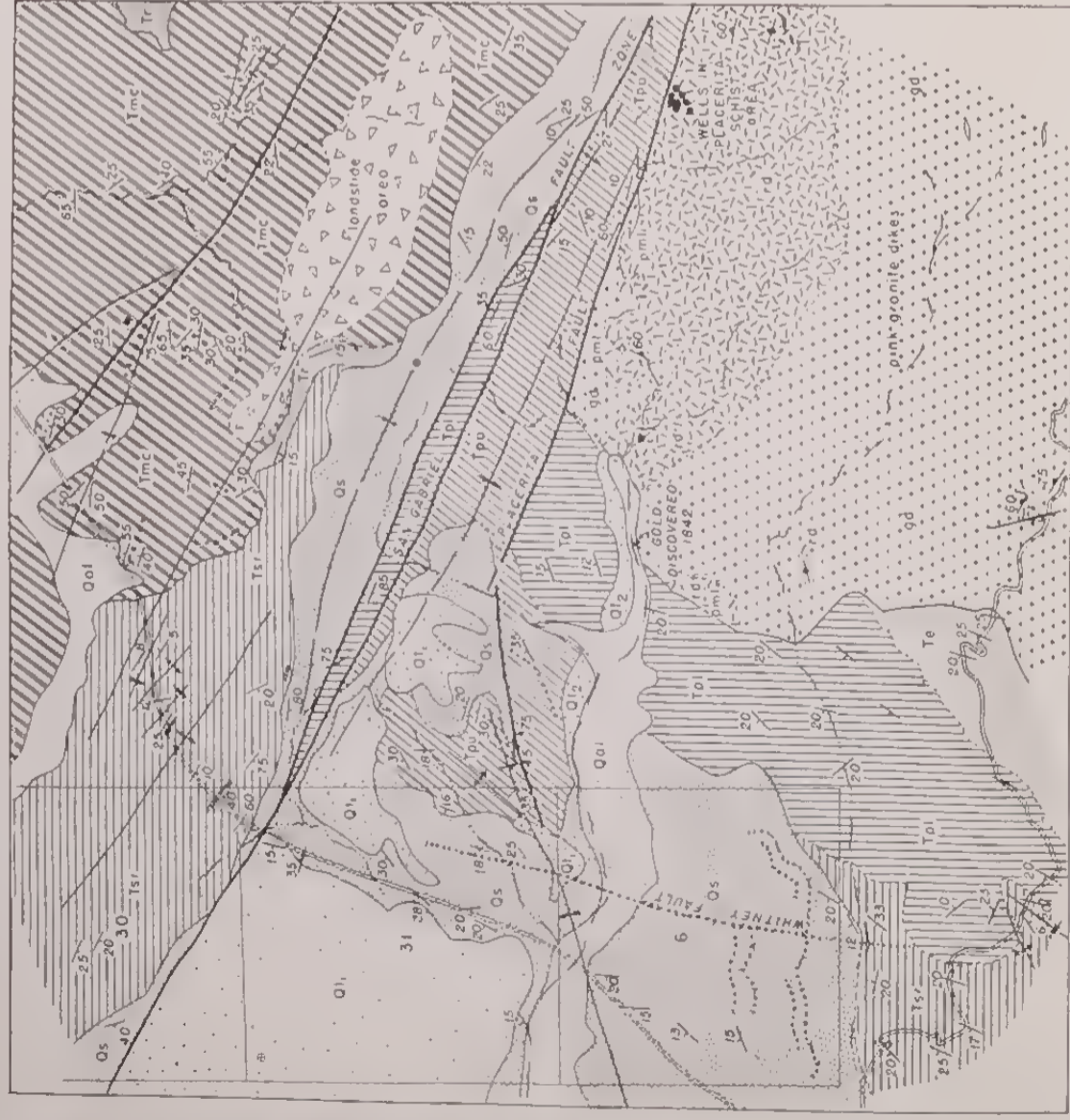
AERIAL PHOTOGRAPH



PRODUCING WELLS IN NORTHWEST PART NEWHALL OIL FIELD INCLUDING PLACERITA OIL FIELD
Modified July 1953 from map of NEWHALL OIL FIELD, No. 18A Revised Jan 1951 and No. 63 CALIFORNIA DIVISION OF OIL AND GAS

off the complex of very much older crystalline rocks that are exposed in the western San Gabriel Mountains only a mile southeast of producing wells. Unconformities separate most formations, and interfingering and intergradation of marine and continental beds is common, particularly in the upper Miocene Modelo formation (subsurface only, in western part of Placerita field), lower Pliocene Elsinore member of the Repeto formation, and upper Pliocene Upper Plio and Simshue sand members of the area is dominated by the San Gabriel fault zone, a major series of steeply north-dipping (70° to 80°) shear planes that trend N. 65° W. and show right-lateral horizontal movement. Post-lower Pliocene movement has been at least 1.5 miles, and movement since late Miocene time may have amounted to 15 or 20 miles. This fault separates two quite different geologic areas, and abruptly terminates the northward extension of the Placerita oil field. The eastward extension of the field is of the same magnitude as the northward extension of the field. The Whittier-Cummins well data suggest that the Whittier fault dips about 65° W. and that pre-Pliocene displacement was about 5,000 feet, the east block having moved relatively up. Saugus beds seem to have been little disturbed by the fault, the total Pliocene and post-Pliocene movement amounting to a maximum of about 150 feet, apparently opposite in sense to the pre-Pliocene movement.

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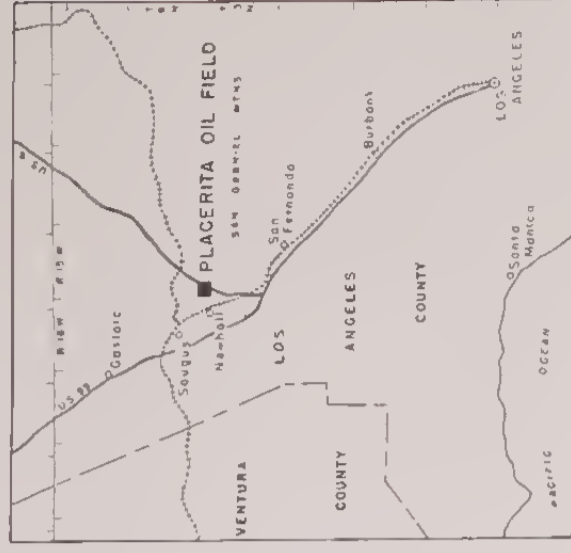


GEOLOGIC MAP OF PLACERITA AREA

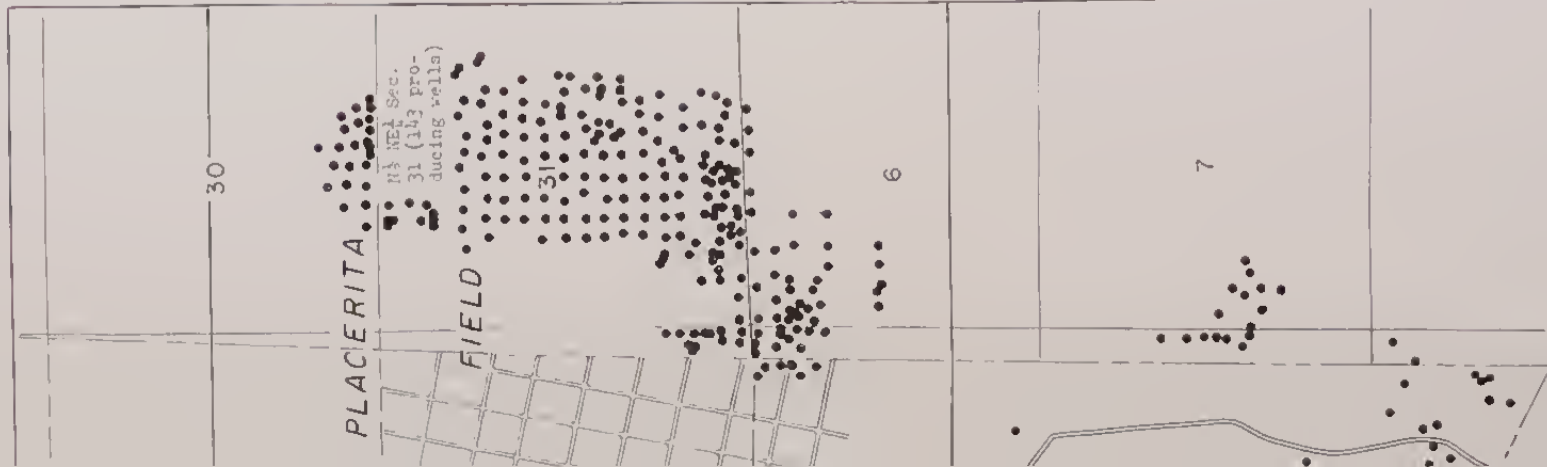


EXPLANATION

QUATERNARY	PLISTOCENE	RECENT
Qa1	O1, O2	O3
Terrace deposits (conglomerate and stream gravels)		
Saugus formation (conglomerate and sandstone, often little consolidated)		
Sawshole Beach member (conglomerate, greenish sandstone, mudstone, conglomerate, red beds, thin limestone beds)		
Upper Pico member (marine coarse to fine sandstone, mudstone, conglomerate, fossiliferous)		
Lower Pico member (marine conglomerate, sandstone, siltstone, fossiliferous calcareous sandstone)		
Repetto siltstone member (siltstone and gray siltstone)		
Elsmore member (marine fossiliferous, often pebbly, sandstone and conglomerate, siltstone, becoming continental toward the north)		
Mint Canyon formation (continental gray, buff sandstone and conglomerate, greenish mudstone, thin red sandstone and claystone beds; luff beds, lake beds)		
MIOCENE	Tmc	
IGNEOUS AND METAMORPHIC ROCKS		
Granite, granodiorite, quartz monzonite		
Rubia diorite, gneiss (?)		
Placerita crystalline limestone (am.)		
Contact		
Fault		
Axis of anticline		
Axis of syncline		
Dip and strike of beds		
Horizontal beds		
Foliation		
Conglomerate bed		
Tuff bed		
Limestone bed		

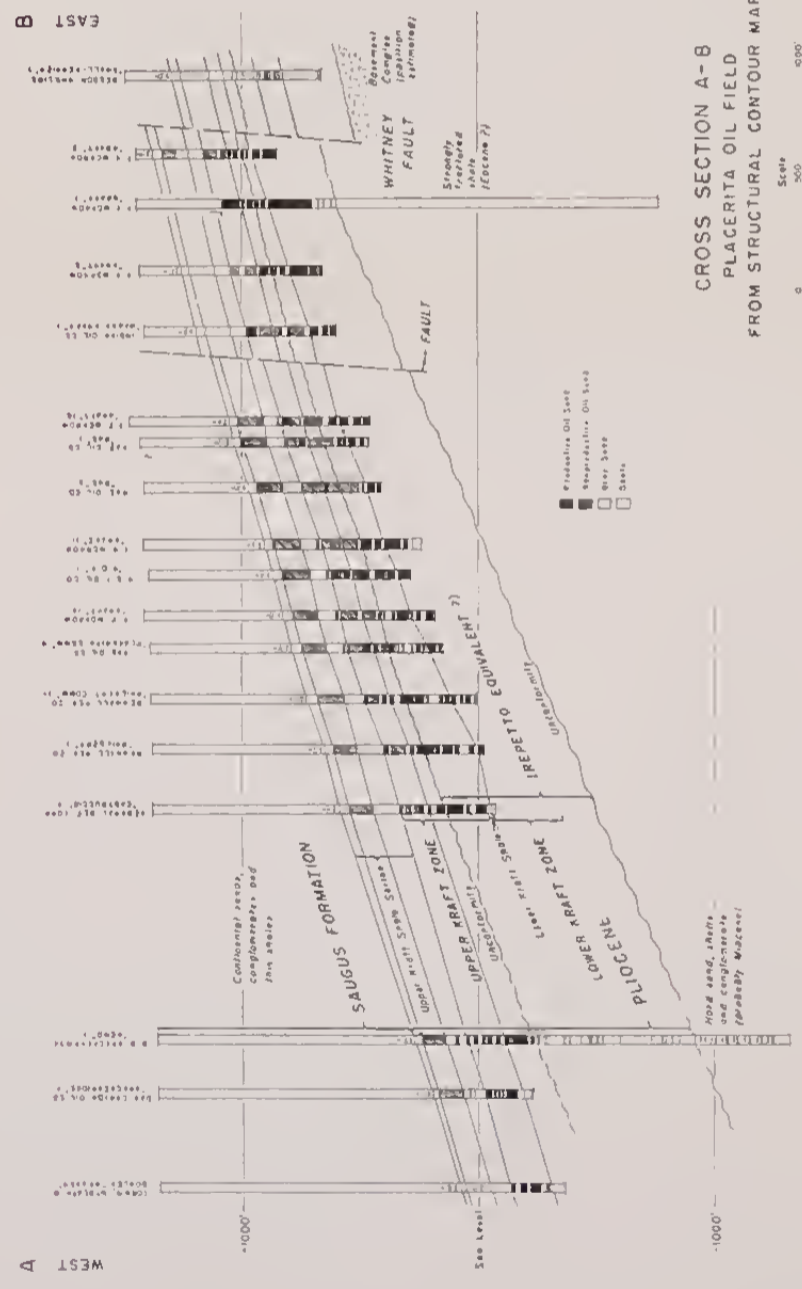


INDEX MAP

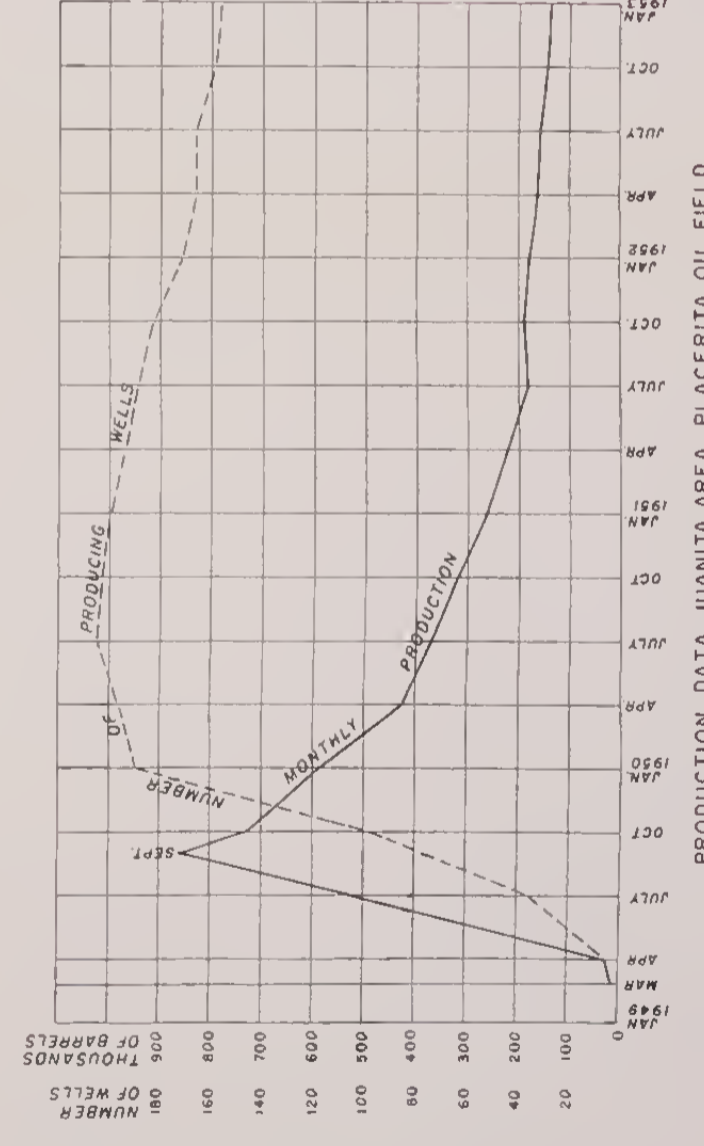


NEWHALL OIL FIELD
FIELD

FIELD No 18A Revised Jan. 1953,
OIL AND GAS



CROSS SECTION A-B
PLACERITA OIL FIELD
FROM STRUCTURAL CONTOUR MAP
AFTER ROBIN WILLIS (52)



PRODUCTION DATA JUANITA AREA, PLACERITA OIL FIELD
1948-49 Barton & Sampson (49), 1950-52 Musser (unpub)
California Division of Oil and Gas

The author believes that the Whitney fault is a major left-lateral shear zone forming the boundary between the Upper Tertiary sediments of the eastern Ventura basin and the crystalline rocks of the San Gabriel Mountains. The Whitney fault may well represent the southerly extension of the Pole Canyon fault, which has been displaced approximately 2 miles in a right-lateral sense by post-Pliocene movement along the San Gabriel fault. Several minor faults have been discovered through well records, but they cannot be recognized across the center of the field and separates the Juanita area of high-gravity oil from the Kraft-York area of low-gravity oil. Another break, similar in trend and character to the Orwig fault and a quarter of a mile southwest of it, forms a local gravity barrier between two different low-gravity oils of the Kraft-York area.

The area as a whole is complexly folded and faulted, but structure contours on top of the Lower Kraft zone in the oil field show that the Pliocene beds dip essentially homogeneously 15° to 20° west-northwest. In the southern part of the Kraft-York area this dip is due west, whereas in the northern part of the Juanita area the dip is northwest. Surface attitudes in the Saugus gravels and older terrace deposits that cover the oil field are difficult to evaluate.

Production. The two producing zones in the field have been designated as the Upper Kraft and the Lower Kraft. The Upper Kraft zone, in the middle to upper Pliocene Pico formation, ranges from 170 to 250 feet in thickness and is productive of 11° to 17° gravity oil in the Kraft-York area only. The zone is terminated at the west edge of the field by a bottom-water interface. Initial production was 25 to 175 barrels per well per day. The Lower Kraft zone, in the lower Pliocene Repetto formation, ranges from 300 to 450 feet in thickness and is productive of 20° to 25° gravity oil northeast of the Orwig fault in the Juanita area, and 12° to 16° oil in the Kraft-York area. Initial production from the Lower Kraft zone in the Juanita area was as high as 3,000 barrels per day from some wells, but declined rapidly. Faulting has been of prime importance in the accumulation of oil in the Placerita field. The San Gabriel and Whitney fault zones form the north and east limits of the field. Faults of small displacement and dipping Pliocene beds have separated the field into pools with oils of no surface expression. Pools and faults that trend roughly N. 70° E. in the southern part of the field probably are responsible for its southern boundary; bottom-water determines the western limits of the field. Tuff beds in the members of the Pico formation and unconformities at the base of the Saugus and Pico formations probably have also influenced accumulation. Wells drilled into Eocene and Paleocene formations in the field have been dry.

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