

C O P Y

862-B
Upper Placerita Canyon
Marshall Diet

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OIL PROSPECTS UPPER PLACERITA CANYON AREA

Sections 3 & 4, T. 3 N., R. 15 W. S. B. B. & M

Los Angeles County

INTRODUCTION

Last year I spent several weeks making a detailed geological map of this area. The work was done on air photos and the significant data transferred to the accompanying topographic sheet.

STRUCTURE

The most important structural feature of the area is the San Gabriel Fault. This is a readily mappable fault on which movement has probably been largely horizontal and is to be measured in terms of miles. The fault is nearly or quite vertical in all places.

Another important fault has been called the Placerita Fault. This fault branches off the San Gabriel Fault at a slight angle a little south of the E/4 corner of Section 3. It is well exposed in several places notably on the old road which branches southward from the Placerita Canyon road about 1500' west of the east line of Section 4. The Placerita Fault is also vertical where ever exposed. Movement on this fault is believed to be several thousand feet and may also be largely horizontal.

The structure between the San Gabriel Fault and the Placerita Fault is a simple syncline plunging slightly to the northwest.

STRATIGRAPHY

The rocks exposed between the San Gabriel and Placerita faults are non-marine beds which have been correlated with the Saugus formation.

In the Placerita Field in Section 31, T. 4 N., R. 15 W. the Saugus is underlain by a few hundred feet of conglomerate referred by some paleontologists to the upper Pliocene. This conglomerate is the producing zone of the Placerita Field. It is underlain by several hundred feet of marine Eocene shale. In the upper Placerita area it is believed that the sequence will be similar.

What rocks underlie the Eocene shale is speculative. The Shell Braille well near the east edge of the town of Newhall penetrated over 500' of Eocene including some permeable sands and some shales. This well did not reach the base of the Eocene. I believe it is reasonable to expect a similar section in the upper Placerita Canyon area.

OIL POSSIBILITIES

Attention was called to the upper Placerita area in the latter part of the last century by the existence of substantial seeps of high gravity oil near the E/4 corner of Section 4. These seeps occur in the basement complex south of the Placerita Fault. 6 or more wells were drilled in the early 1900's all of which produced small quantities of 45-55° gravity oil above depths of 1000'. One of these wells reportedly made 100 B/D for a short period before mechanical difficulties and surface water stopped production. One well is still producing sufficient gas for the domestic use of the Walker Rancho. All of these wells spudded and probably stopped in metamorphic rock.

Kew suggested, Bull. 752, that this oil had seeped into the basement complex from across the fault. This seems to me the most likely, and in fact the only reasonable explanation for its presence. Kew's mapping, however, failed to separate the Placerita and San Gabriel faults and his map does not show the trap in the sediments which exists in the area.

The west plunging syncline between the San Gabriel and Placerita faults constitutes a trap. The persistent occurrence of oil in the basement complex south of the Placerita fault suggests that the trap is probably filled with high gravity oil.

The high gravity of the oil suggests that it did not originate in the Saugus or Pliocene but probably came from the underlying Eocene or Miocene if the latter is present.

The thickness and nature of the Eocene in this area is speculative but it seems reasonable to assume that a thousand or more feet of it should be present, and that it will include shales and sands.

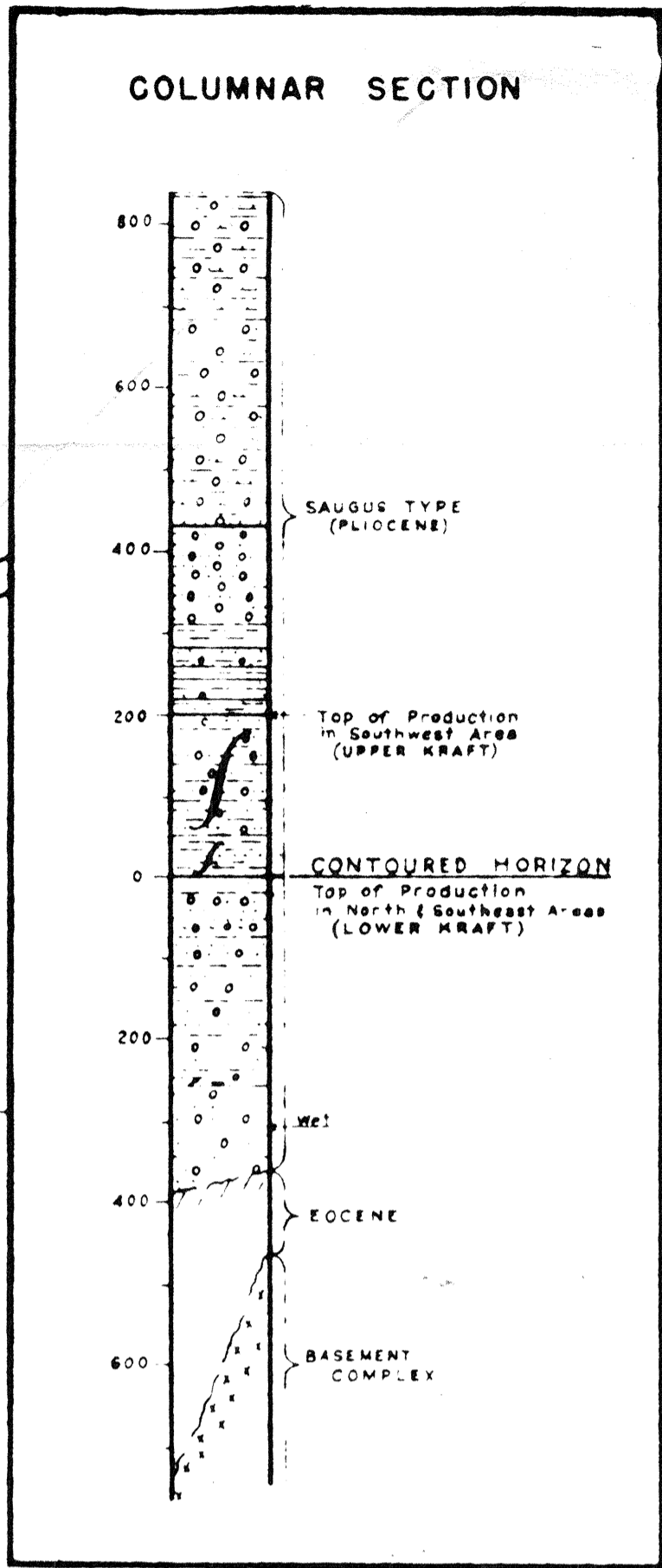
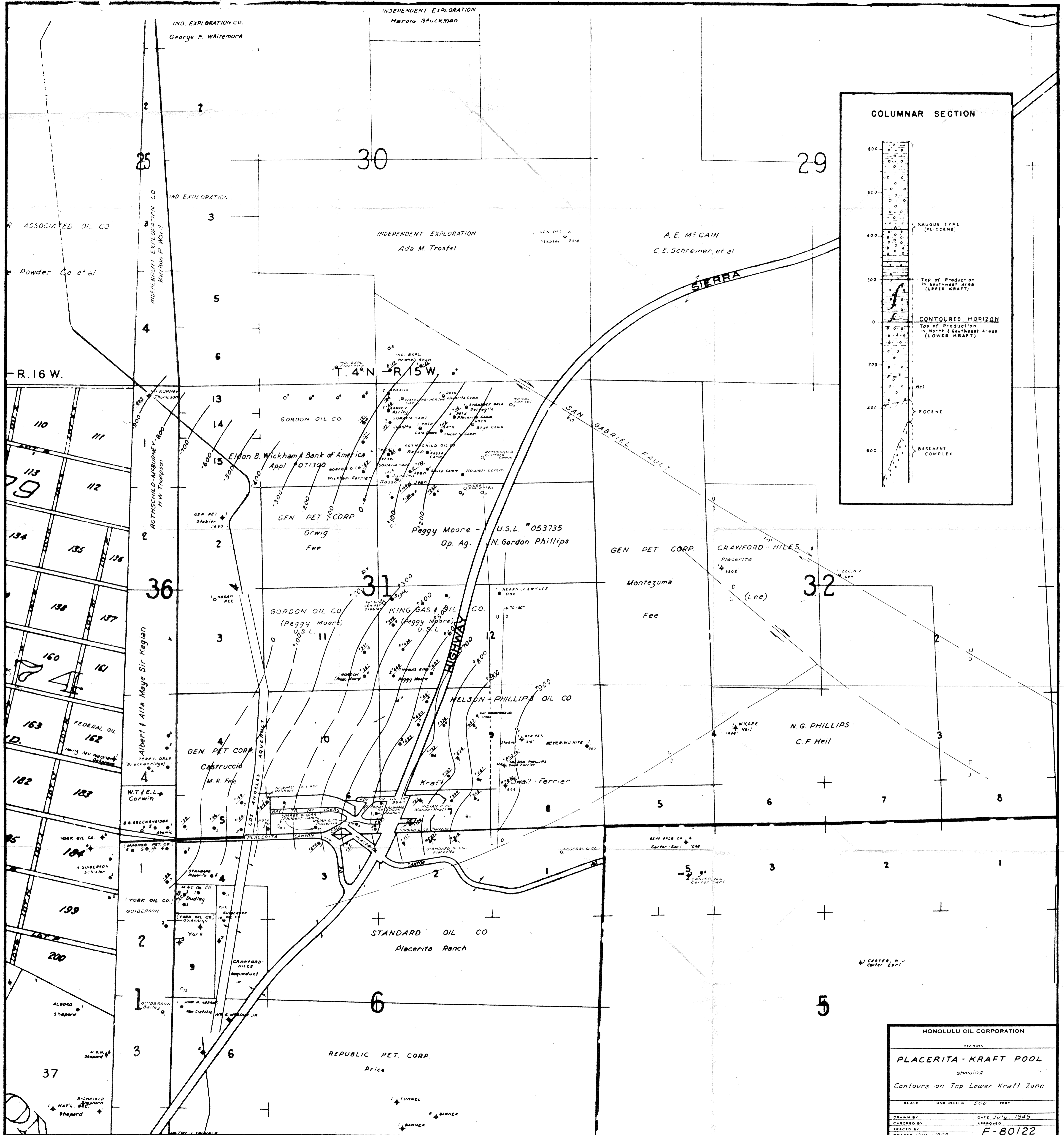
All things considered it seems likely that there is a commercial accumulation of high gravity oil in the west plunging syncline of sedimentary rocks between the San Gabriel and Placerita faults.

Depth to the prospective horizons is speculative but should not exceed 4000-5000' and may well be much less.

Ys/ HAMPTON SMITH
Hampton Smith, Geologist

HS:rrs

January 24, 1949



HONOLULU OIL CORPORATION	
DIVISION	
PLACERITA-KRAFT POOL	
showing	
Contours on Top Lower Kraft Zone	
SCALE	ONE INCH = 500 FEET
DRAWN BY	DATE July, 1949
CHECKED BY	APPROVED
TRACED BY	
REVISED July, 1949	F-80122

