OIL FIELD *High in Promise, Geologist Says*

Authoritative Article Tells of Boom Here

AFTER 10 years of negligible development during which time many of the principal oil fields of the Los Angeles Basin were successfully prospected for new and deeper oil zones, the South Torrance field is in the spotlight again as one of the state's most active deep zones.

In the latest issue of the Petroleum World, No. 1 publication of the oil industry, an article about the amazing revival of the Torrance field appeared that was credited by local operators as being the best survey of the development yet to be published. The author was George C. Williams, consulting geologist. The Petroleum World has given The Herald permission to reprint his report.

During the last decade several attempts were made to locate deeper zones in Torrance, William's article recalls. The most important of these was Superior Oil's well No. 63 which encountered the schist at 5,861 feet. No oil sands thought worthy of a production test were noted below the upper zone.

First Tests Announced

"Other wells exploring the marine sediments underlying the then main zone were drilled by C.C.M.O., Lora J. Oil company, Mohawk Oil company, Shell Oil and Union Oil companies and none was successful in finding a new oil producing zone," the geologist stated and continued:

"At the time, the tests seemed in number and depth to establish the fact that no deeper production existed. They continued to act as a deterrent to deeper drilling until the early part of 1937, when several wells in the vicinity of Sepulveda and Hawthorne boulevards were deepened and an attempt made to find a new producing zone."

The outcome of these wells was varied. A few had an initial production of about 150 barrels daily with a sharp decline while most of the tests resulted in net production of 30 to 50 barrels daily, accompanied by much water and even more rapid decline. This activity was short lived. Late in 1937, however, operators were again attracted to Torrance by the success of C.C.M.O., when this company deepened its well No. 34 on the Torrance lease (off Sepulveda) to 4,906 feet and obtained an initial production of 130 barrels daily of 28 gravity oil with only a slight decline from the initial output.

Find Better Production

"The next venture by the same company was well No. 33 on the same lease, which was placed on production last January with an initial yield of 148 barrels of 28 gravity oil after it had staged a small blowout," Williams' article reports.

Following these two wells an active drilling campaign took place, until between 30 and 40 wells were under way, for the most part deepening jobs in either idle wells or small producers. Interest was confined to wells favorably located on the structure as defined by the upper zone wels. The average production from these deepened wells was about 200 barrels daily.

As this development progressed southeasterly toward Narbonne avenue and across it farther along the axis of the upper zone structure some wells failed to obtain clean production and for a short time interest again slackened until the wells around 231st street and Pennsylvania avenue, located down the dip with reference to the upper zone, obtained production of 400 to 500 barrels daily.

The location and direction of the axis of the lower zone is of especial interest because if extended to the southeast it will pass approximately thru the D and B well No. 1 at 253rd street and Vermont avenue, a recent completion in the Harbor City area. This well altho most unfavorably located with reference to the upper zone structure, had an initial production of 512 barrels daily of 30.5 gravity oil as compared to the 27 and 28 gravity oil in the South Torrance "hot spot" area.

Thin Shale Separators

As a result of the completion of the D and B well and the better results in the "hot spot" a vigorous leasing campaign has been under way along a line between the two areas. Seven projects are already drilling within one-half mile west of the D and B well and more will undoubtedly be announced within the next few weeks. A rapid development should take place.

"The oil bearing sands of the lower zone are Upper Miocene in age and are present as solid sand bodies with thin shale members, sometimes only three or four inches in thickness, dividing the oil sand. These same thin shales serve as effective separators between oil sand and gray sand in wells located on the edge of the structure," Geologist Williams writes.

In a number of these edge wells, where oil sand is both above and below gray sand the only separating medium is one of these thin shale members or at the most six or eight inches of very hard well-cemented calcareous sandstone. In order to expose the maximum amount of oil sand blank casing has been run to bottom, cemented and then gun-perforated opposite the oil bearing sands.

Southeast Looks Good

The difficulty in obtaining clean production is probably due as much to the obstacle which presents itself in obtaining an effective water shut-off against these very thin shale members, as it is to the normal conditions existent in edge wells. Failure of a cement job in any degree would permit migration of waters to oil sands otherwise free from water.

The formations encountered below the upper zone are a succession of shales and sands. The shales vary in color from very light brown to black and the sands for the most part are fine grained altho ranging from loose to well-cemented. Coarse sands are present in only few places in the section but cross-bedding of the finer sands as well as the coarse with dark brown shale is much in evidence just above the producing zone.

Regionally, the amount of shale present in the section decreases from the vicinity of Redondo Beach to Wilmington while the percentage of sand increases in the same direction. This phenomenon of sedimentation is already manifest to some extent in the "hot spot" and if the structure maintains itself as far to the southeast as the D and B well, then doubtless wells in that direction will encounter oil

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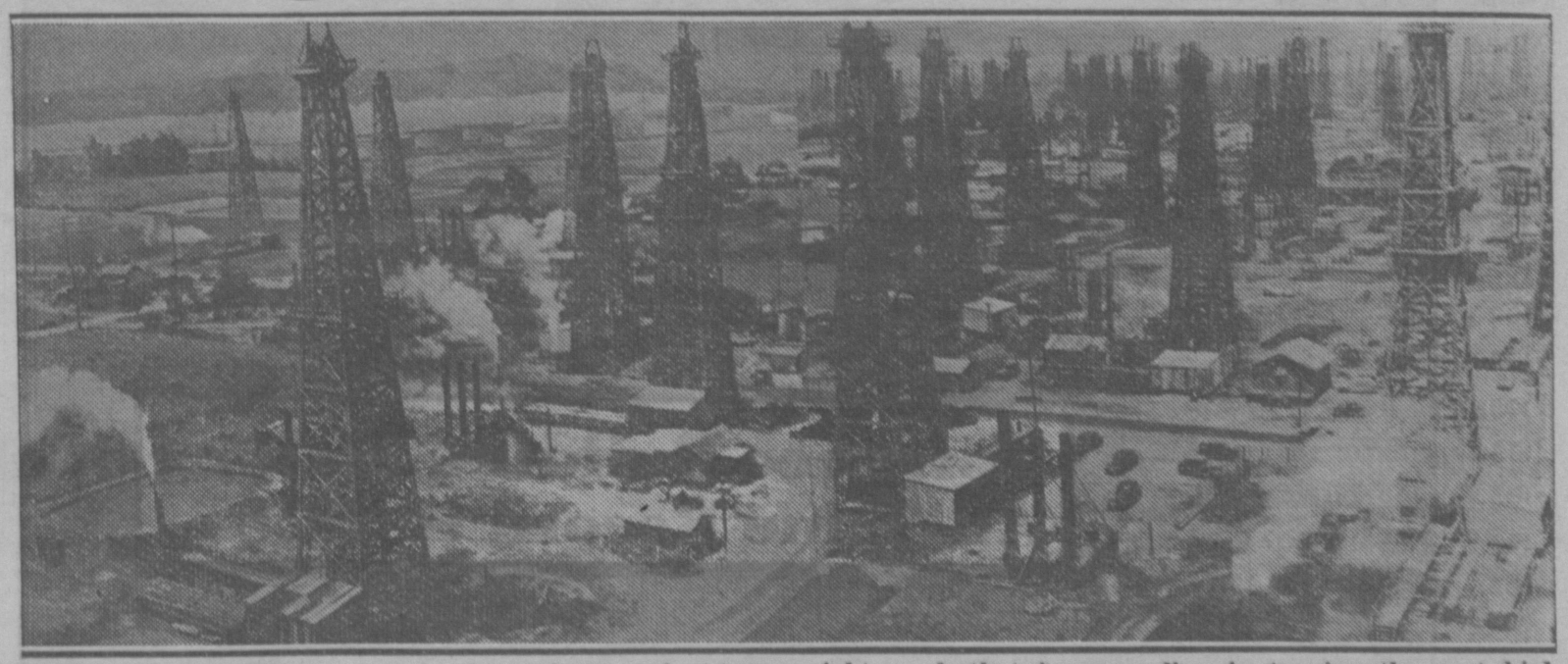

BRISTLING SPIRES . . . and white plumes of steam; clanking drill machinery and the rat-tat-tat of riveting on tanks; shouts, orders and bent-head surveys of charts—that's the setting and sound of the South Torrance-Lomita deep sand oil field. Continuing to lead the state's oil areas in activity it presents an inspiring sight when seen from the air. Motorists and visitors going thru the field get a more intimate view of the day and night work that is succeeding in tapping the vast high gravity oil pools lying some 5,000 feet underground. In the background of the above photo, taken especially for this edition, are the huge storage tanks to which the Torrance oil is piped. Those who would like to see a booming oil field should come to Torrance and watch the men, more than 1,000 being employed here at this time, building derricks, drilling and bringing in additional deep sand wells.

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