



The two restored 150-barrel stills, with a crude oil storage tank on the hillside above. Standard Oil Company's plaque marking the restoration in the 1930s is on the still to the right.

Pioneer Oil Refinery—1876

Newhall, California

Pioneer Oil Refinery Site, north of Los Angeles

The first deliberate pursuit of petroleum in America took place in Titusville of the Oil Creek area of northern Pennsylvania during the summer of 1859. Petroleum was known, having been found and used here and there for centuries. Tests made at Yale University suggested a number of products which could be distilled from the oil. Oil was now to be sought in quantity rather than collected from pools into which it had seeped. "Colonel" Drake, commissioned by the Seneca Oil Company of Connecticut and given a budget of \$2000, hit oil at 69-1/2 ft (21 m), having had to invent the drilling technique. This first commercial well was so shallow that it needed pumping, the first flowing well not being drilled until 1861. Rock oil was said to have medicinal properties good for many ailments: three teaspoonsful three times a day for cholera morbus, liver complaint, rheumatism and consumption. It was a time when a new illuminant was urgently needed, for the supply of whale oil was decreasing, a situation that would turn critical with the Civil War soon to come. The organic oils used for lubrication were far from satisfactory, especially in the presence of the high temperatures encountered in steam engines striving for ever-higher pressures.

Oil came to be drilled for in California, too, possibly in 1866. Four successful wells have been traced to Pico Canyon not far from Los Angeles. To produce a salable product, a small refinery was built in 1873 by the Los Angeles Petroleum Company near Lyons Station, a stage stop about three miles north of San Fernando Pass, but the venture proved unrewarding.

Better drilling methods imported from the Pennsylvania oil fields improved the production of Pico No. 1, which, when deepened to 120 ft (36.5 m), produced 10 to 12

Designated
September 27, 1975

barrels a day. If today's 42 gal barrel was customary then, the production lay between 1600 and 1900 liters per day.

In 1876 the California Star Oil Works Company was organized and a 20 barrel still set up near Lyons Station. Pico No. 4 was worked over and driven to 370 ft (112 m) for an output of 25 barrels a day (3975 liters). Today, Pico No. 4 is still in production — at the rate of a barrel or so a day — and is the oldest working well in the west. When Pico No. 1 was pushed down to 175 ft (53 m) to produce 30 barrels daily (4770 liters), the need for a new refinery was manifest. Since Lyons Station had been bypassed by the just-built Southern Pacific Railroad, the new refinery came to Andrews Station on the outskirts of Newhall where it was close to the tracks.

The new refinery — the “Pioneer Refinery,” whose construction was supervised by J. A. Scott, an experienced oil man — was completed in August of 1876. Storage tanks of 20 to 100 barrels (3200 to 15 900 l) were placed on a hillside above the stills, the oil flowing to them by gravity. Two of the stills, of 15 and 20 barrel (2400 and 3000 l) capacity, had been brought over from abandoned Lyons Station, and a new, 150 barrel (23 800 l) still installed. All were set on brick foundations and were direct-fired. The last still was duplicated, giving four in all. Fuel was the heavy residual oil from earlier refining runs, with steam injection for atomization and hotter flame. The condenser was a wooden box, 5 x 5 x 125 ft (1.5 x 1.5 x 38 m) containing approximately 1400 ft (425 m) of 2 and 3 in. (50 and 75 mm) diameter iron pipe submerged in water. The condensed oils then flowed by gravity to a lead-lined agitator for treatment with chemicals to improve their burning quality.

Several products came from this Andrews Station refinery. Benzene was made in small quantity; other things included a 300 °F (149 °C) fire-test safety illuminating oil for use on ships, railroads, factories, and mines; a light lubricating oil for general machine purposes; a heavy lubricant for saw mills, quartz mills and railroad journal boxes; and two grades of kerosene. This last was the breadwinner, even though several runs were necessary to get a salable product. Kerosene production averaged about 750 gal (2838 l) per day. The originally quite shallow wells were deepened to increase their output, No. 4

becoming a flowing well when finished off at 560 ft (170 m). More storage capacity was installed until the total was 3300 barrels (525 000 l).

An early run of high-grade kerosene was shipped to San Francisco in 1876 just as eastern kerosene started a steep price climb. The presence and further prospect of quality western oil quickened interest in California Star Oil Works Company to which investors were attracted. Oil lands were leased in the San Fernando district of Ventura County, and the beginning of an integrated industry for supplying oil to California and the bordering areas was laid, in large measure due to the efforts of D. G. Scofield, who in time became president of Standard Oil Company of California. Events moved quickly. A new and much larger refinery was built at Alameda in the Bay Area about 1880, allowing the older refinery in Ventura to be phased out by 1888.

In its short life the pioneer refinery at Andrews Station (Newhall) served the west with distinction. In the 1930 s the Standard Oil Company of California restored the two largest stills and opened the historic site to the public.