

The Great Berryessa Oil Rush(es): 1900 and 1920  
By Peter Kilkus

If you look at the map of Lake Berryessa you'll notice a location on the east shore called Oil Well Canyon. I had always wondered what that meant until I attended a seminar a few years ago and saw photos of an oil well near where the Bureau of Reclamation headquarters building now stands.

The first "Oil Rush" began when some local businessman and a professional surveyor went prospecting for oil in Berryessa Valley in October, 1900. They returned with several full bottles that they said came from springs. A well should be drilled, one told the Napa Journal, to find the source somewhere in the sandstone and shale below.

Within days an "expert" from the Mt. Shasta Oil and Development Company said they were going to develop what suddenly became known as the "Berryessa Oil Lands." Soon after that the Monticello Oil Company was formed.

Oil strikes were making news all over the country. It was oozing out elsewhere in Northern California and positively bursting from the ground in the state's south.

The value of this new form of gold was only beginning to be recognized. As a replacement for whale oil and tallow, "rock oil" or "coal oil," as it was once called, illuminated homes around the country in the form of kerosene. Gasoline was used as a cleaning solvent. Oil was converted to light whole buildings as well as city streets. It lubricated the moving parts of bigger machines, like the locomotives and cars of the Southern Pacific. But by far the most significant use of oil would prove to be as a fuel in a contraption called the "internal combustion engine."

When Henry Ford began making gasoline-powered vehicles, he started a demand that transformed the world. Ford's first automobile was completed and ready to go in 1896. The horseless carriage had become a rare but impressive sight on the streets in many American cities by 1902, and someone had already driven a motored vehicle through Napa. Prompted by the invention of the automobile, oil production in California had grown from 470,000 barrels in 1893 to 24,000,000 by 1903.

Now practically everyone with any cash in the bank made a beeline to Berryessa. President of the Miners' Petroleum Association said "I consider the oil indications in Northern California superior to any that I have seen in any part of the world."

People promised that there would be an oil rush in California that echoed the great gold rush 50 years earlier. Indications for oil were supposedly popping up on the Gosling ranch in Berryessa and in Wooden Valley. So much oil, of so fine a quality, so near the surface, so close to home!

In mid-April, a man from Capell Valley struck oil after drilling down 125'. After that... silence. There were no more big stories in the local papers about oil strikes. There may have been oil there, but somehow most of it vanished before it could come to the surface. The drillers and drifters, surveyors and investors quietly packed up their things and went away. A lot of money had changed hands for nothing, much of it going in legal and professional fees to attorneys.

The second "Oil Rush" began due to persistence, better known as an obsession in this case. Berryessa had long been a frustration to the scores of investors who had hoped to find oil and gas there. One persistent "wildcatters" was Walter B. Griffiths, a Napa realtor, state assemblyman, and self-styled petroleum expert. Like the prospectors who preceded him around the turn of the 20th Century, he had struck modest, short-lived pockets of oil and gas several times in the early 1920's.

When someone claimed to have found oil and coal on the McCormick ranch on Spring Mountain in St. Helena, a rush of speculation started again, and a hatch of new companies appeared. One businessman convinced some Hollywood stars to invest.

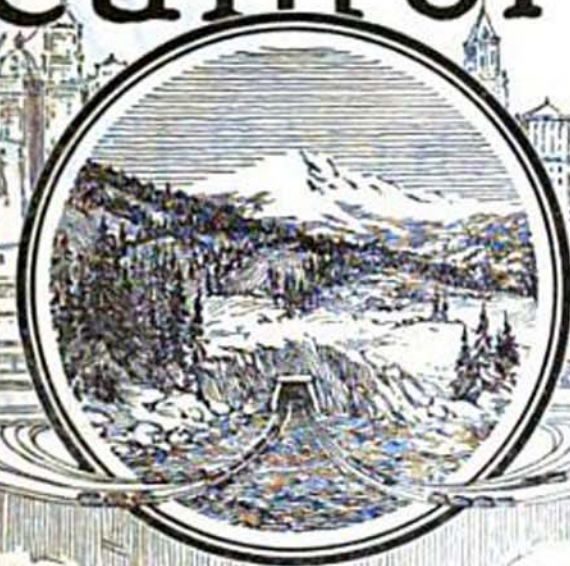
A moderate-sized company produced about 10 barrels of oil a day, "very high grade and clear as crystal," according to the speculator. But it wasn't enough and the hole was closed and the riggings were removed.

Local Napa businessmen also bought into the dream. But when a geologist from Los Angeles came to inspect the site, the expert advised folks to pull out. All the other little oil companies that had popped up in Berryessa soon reeled in their cables, too, and disappeared.

Convinced that Berryessa would yield oil, the driven Griffiths sank what was at the time the deepest hole ever drilled in Northern California. At 3,710', his 25'-long, heavy steel drilling cable snapped off. The line he used to rescue the cable also broke, and he had to seal the hole with cement. He tried again with another well nearby, but this time it was he who busted. He found a Los Angeles firm that was willing to finish the job on contract, but then the stock market crashed and no one had the cash to sink into questionable oil well investments.

As before, the only people to profit from Berryessa's gas and oil reserves were the lawyers who drew up the contracts.

# Mining in California



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Subsequent to the publication in 1921 of Vander Leck's report on the oil possibilities in the Sacramento Valley (including the eastern slope of the Coast Ranges and foothills of the Sierra Nevadas) as a part of his work on the Petroleum Resources of California, issued as Bulletin No. 89 of the State Mining Bureau, there has been considerable new 'wildcat' drilling started in this northern territory.

So-called 'wildcat' drilling has been an important factor in keeping both the United States and California well in the lead in the production of petroleum in recent years, and the development of prospective new fields in northern California has attracted the attention of the public in growing measure as operations have progressed.

For the purpose of outlining the development work under way, and the results attained to date, by companies that have elected to drill in Napa County, the writer spent several days during October in making a hurried reconnaissance of Berryessa Valley where some seven wells are in process of drilling.

A possible oil-bearing area of Cretaceous formation in northeastern Napa County is shown on the map of California accompanying Bulletin No. 89.

Situated within this formation lies the Berryessa Valley 'wildcat' oil field. The geology of this area of Cretaceous sediments, as a whole, and the factors favorable and unfavorable to the accumulation and production of oil are discussed by Vander Leck in the above bulletin. A generalized cross-section of the area along a northeasterly line passing close to Knoxville and Rumsey, Yolo County, is also given. This line just cuts the northernmost part of Napa County. No features of the geological structure of Berryessa Valley, farther south, in the vicinity of Monticello, are given, and as there was no activity at the time, the discussion of oil indications in the central portion of the valley was limited to the listing of records of wells drilled some twenty years ago. These were the Harris well, 400 feet in depth, in Sec. 29, T. 9 N., R. 3 W.; and the Fearless well in Sec. 26, T. 9 N., R. 3 W., which was drilled to a depth of 1475 feet. Showings of oil were obtained in both these wells.



Encouraged by strong seepages of oil in the Knoxville formation along this contact, and after study of the structural features to determine the most likely points at which oil could accumulate, large acreages throughout the valley were secured by oil operators for the purpose of developing a producing field.

The principal holdings are those of the Griffiths Oil Company and the Associated Oil Company of California, both of which started active development this year.

The Griffiths Oil Company drilled four prospect wells on steeply dipping monoclinial structure in Sec. 29, T. 8 N., R. 3 W., and obtained a high-grade paraffin base oil in a ten-inch hole at a depth of 165 feet. A small pump has been placed on this well.

The Associated Oil Company is drilling, also in section 29, about one-half mile south of the Griffiths discovery well. In their well No. 2, high gravity paraffin oil was obtained in quantity, variously estimated as making from one to ten barrels daily, at 1365 feet. Drilling was continued with three shifts daily, and at present this well is down 1700 feet.

From section 29, the oil-bearing formations penetrated strike about N. 30° W., outcropping at points slightly closer to the Cretaceous-Franciscan contact on the west, as they extend northward.

About three miles north of the discovery well the level floor of Berryessa Valley is much constricted by a series of low rounded hills extending from the base of the Franciscan to the road going to Monticello, and reaching north and south for several miles. This generally elevated portion appears to be made up of one or more transverse folds. On the south, where exposed along the banks of Sugarloaf Creek, the strata show a series of small anticlinal and sinclinal folds with dips east and west of low angle.

A half mile north of Sugarloaf Creek, about where the east line of section 7 would run, there is an outcrop of sandstone and shale dipping northward at a low angle, exposed in a draw. From one-quarter to one-half mile farther north, a bed of fossiliferous limestone is exposed, dipping south at a flat angle. Still farther north, toward 'the island' there are other exposures in small gulches, which substantiate the view that in general the formations in this vicinity form several transverse easterly and westerly folds whose axes are approximately level, modified by minor folding at right angles.



This structure seems to offer advantages in its retentive features, not generally found in the **Berryessa Valley** field, where steeply dipping monoclinical structure largely prevails; and if there are accumulations of **oil**, in quantity, in the district, it is extremely probable that a thorough prospecting of the area along these transverse folds by **wells** of sufficient depth to penetrate the **oil**-bearing formations will be rewarded by a highly remunerative production.

The Griffiths **Oil** Company has a complete standard rig capable of drilling to a depth of 5000 feet at their well No. 5 located on this structure in what would be the E.  $\frac{1}{2}$  Sec. 7, T. 8 N., R. 3 W.

At present this well is down 2000 feet, at which depth there is some gas coming from the hole. Gas and showings of **oil** were encountered

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above this depth, but the principal **oil**-bearing formation is not expected to be reached under 3400 feet, and drilling is being continued.

The Sugar Loaf **Oil** Company's well is being drilled in T. 8 N., R. 3 W., on the east side of Putah Creek slightly north of east from the Griffiths Well No. 5 and about one mile south of the town of Monticello.

Also on the eastern side of the **valley**, and about six miles north of Monticello, the Wreden **Oil** Co. of Los Angeles is drilling.

The Napetro Producing Company, controlled by the Humboldt Trading Company, also has a drill in operation in the **Berryessa** field in Sec. 20, T. 8 N., R. 3 W.

**Berryessa Valley** proper terminates on the south about opposite the point where Putah Creek turns eastward and cuts its way through the Vaca Ridge. The road south from the **valley** follows Steel Canyon until the canyon opens out into the smaller Capell **Valley** near the center of T. 7 N., R. 3 W. The Capell **Valley** Corporation is drilling here on Section 16. This well is approximately  $4\frac{1}{2}$  miles south of the Associated **Oil** Company's well and the Griffiths discovery well in **Berryessa Valley**.



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Unfortunately the U. S. Geological Survey topographic maps do not include Berryessa Valley, the northern boundary of the Napa quadrangle coinciding with the line between townships 7 and 8 north; neither is there a geological folio covering this territory. A large scale topographic map alone would be of much assistance in gaining a comprehensive view of the relative positions of the various horizons exposed at different points and their bearing on the structural geology.

Although it is probably true that petroleum in 'gusher' quantities is not likely to be found in the Cretaceous formations in California, the oil so far obtained in this formation is a high-gravity paraffin base oil varying in color from amber to light green or white, and much of it resembles a refined product as it comes from the well, more than it does a crude oil.

A matter of particular interest, in connection with the showings of oil in the Berryessa Valley, is the report that the oil contains ichthyol.

This has been substantiated by an analysis of the oil from the Griffiths Oil Company's well No. 1, made by Wrana, King & Co., which showed 3.57 per cent ammonium ichthyol-sulphonate.

Ichthyol, according to Collom (see page 107 *ante*), is employed in pharmaceutical practice as an antiseptic and medicament. When used in an ointment, it is said to have great penetrating qualities.

The scarcity of true ichthyol in the United States has resulted in much research work seeking to extract ichthyol oil from domestic bituminous material. Thus far, true ichthyol has been produced only in Austria, and since the war it has been increasingly difficult to obtain. American-made substitutes, synthetically derived, sell for from \$3.50 to \$5 per pound. True ichthyol ranges much higher in the New York market. It was quoted and sold at from \$12 to \$36 per pound during 1916 and 1917.

The development of even a moderately producing oil field in the Sacramento Valley area would be an asset of much value to the northern part of the state.

Locally, in the Berryessa Valley, operations to date show that excellent strides have been made in the short time since activities commenced, and the results so far obtained may well encourage companies drilling here to put forth every effort to prove up their holdings.