Conflicting Opinions on the Potential for Petroleum in California in the mid-1800s: Early Reconnaissance, the First California Geological Survey, and the State Mining Bureau

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Abstract

The period we commonly refer to as the 1849 gold rush would be over within about seven years, and as the pursuit of gold became more difficult and expensive, the State's declining economic climate during this period led to much interest in the search for other means to spur the State's economic development. Future economic growth and development became a major focus of the State's legislature in its effort to assess whether that future be mining, agriculture and/or oil – each with conflicting interests. The history of oil and gas exploration and production during the latter half of the 19th Century can be divided into four eras: (1) Early Reconnaissance (1849-1864); (2) First Oil Boom (1865-1866); (3) the Doldrums (1866-1875); and closing with the (4) Revitalization Period (1875-1900) with the historically significant discovery of the Los Angeles Oil Field in 1882 by Edward L. Doheny and Charles Canfield. Over the course of eight decades, reconnaissance and geological exploration of California led by the federal government, the State's California Geological Survey (1860-1874), speculators and investors, among others, led to various opinions regarding whether a future existed for petroleum.

Although several eminent individuals such as Philip T. Tyson (geologist), John B. Trask (California's First State Geologist), William P. Blake (geologist; Pacific Railroad Survey), Thomas Antisell (geologist; Pacific Railroad Survey), and Benjamin Silliman, Jr. (consultant) expressed optimism in oil's future, this view was not necessarily shared by other influential individuals such as Josiah D. Whitney (California's Second State Geologist and Director of the California Geological Survey) and his assistant William H. Brewer (botanist; California Geological Survey). Benjamin Silliman, Jr's, 1864 report on the petroleum region of California, notably focused primarily on what would become Santa Barbara and Ventura Counties. With the publication of his report, the California Geological Survey was essentially taken by surprise, and controversies regarding the potential and future of petroleum in California as an economic driver commenced in heated debate and would continue throughout the beleaguered Survey's existence. In 1865, Silliman, Jr., would go even further to predict that petroleum would eventually surpass gold in economic wealth to the State. Whitney by 1874 would have to concede that the issue of petroleum is what caused the legislature to terminate the Survey in 1874.

Episodes of economic mayhem plagues California during the latter half of the 19th Century, which would extend through the early decades of the 20th Century. The results were reflected in regional and national economic downfalls, and significant fluctuations in the price of oil. With the re-establishment of the State Mining Bureau (formerly California Geological Survey in 1880), individuals such as State Mineralogist Augusta S. Cooper, and Assistants William L. Watts and Watson A. Goodyear, would report on the advancement of oil and gas exploration and production throughout the State. Distrust by the legislature of the Bureau to focus on economic resource exploration and development forced them to establish the Board of Trustees for oversight and guidance.

From a technology perspective, California would experience its first well drilled at the Davis Ranch in Humboldt County in 1861. In 1864, the first natural gas well would be developed from an artesian well located in Stockton. In 1865, tunnels would be drilled just north of Santa Paula at Sulphur Mountain. In 1866, the first steam-powered rig in California is used to drill an oil well at Ojai. By the 1880s, drilling techniques changed from spring pole to 8-inch diameter. Well derricks would rise to 65 ft with an average depth of 2,200 feet, reaching nearly 4,000 feet by the late 1890s, and over 6,000 feet by the late 1920s. By 1887, shallow wells were replacing the asphalt mines in the McKittrick area (originally named Asphalto), due to its asphaltum mines, which prior to the 1906 Earthquake provided most of the asphalt paving for San Francisco. By 1899, a new era of petroleum-fueled transportation begins with the conversion of locomotive engines from coal- to oil-burning.

Those individuals who expressed optimism based them on observations made during their respective field excursions and used their specific skills and knowledge to conceptualize a world where in 50 years after the gold rush petroleum would dominate the State's economy – petroleum would surpass the State's precious metal, that being gold, in 1907, as forecast by Benjamin Silliman, Jr., in 1865. Overall, early thoughts, speculations and concepts would have a profound effect on those entrepreneurs who would ultimately demonstrate the importance of petroleum playing a significant role in the State's economic future. Following their efforts, the turn-of-the-century would bring several decades of discovery, with most of the California's 52 giant oil fields (greater than 100 million barrels) being discovered between 1890 and 1920. By the 1940s, the modern era with a focus on enhance petroleum production and recovery would commence and continue until the end of the 20th Century.