

Calico. A Brief Overview of Mining History
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The story of Calico begins at Waterman mine, located four miles north of Barstow, and 9 miles west of Calico. In 1876 George G. Lee, a local prospector, discovered what he thought was mercury ore. After prospecting the property he died (was probably murdered) on the desert in the fall of 1879. Robert W. Waterman, a leading farmer in the San Bernardino Valley (and a future governor) and geologist John L. Porter visited the Lee property in mid-1880s. In December, they found silver in samples taken from the claims, and staked out the area. Operations began at once. By summer 1881 a 10-stamp mill had been constructed, as well as a settlement. Before construction of the mill was constructed fabulously rich ore (reportedly assaying up to \$3,000) per ton were shipped to San Francisco for processing [anyone interested in the history of this mine should read Lingenfelter's 2012 account of these events].

News of the silver discovery made by Waterman and Porter at George Lee's old mine spread quickly; prospectors fanned out and staked hundreds of new locations. Almost daily groups of San Bernardino residents set out into the desert, and reported their finds to an eager press in Colton and San Bernardino.

On April 6th the Silver King was staked by San Bernardino residents, Frank Mecham, George Yager, Mecham's uncle; and Tom Warden and Huse Thomas, sheriff's deputies. They were grubstaked by San Bernardino County Sheriff, John C. King (an uncle to Walter Knott) and Ellis Miller, the owner of Grapevine Station and ranch. The samples collected while staking this claim contained some silver, but certainly nothing to get excited about, but in late June, Meacham's brother Charles returned to the claim with Hieronymous Hartman and Huse Thomas. High on the east end of the claim Charles broke off a sample that caught his attention, taking out his knife he found odd blisters that could be cut like a lead bullet. It was horn silver. Recognizing his discovery, he broke off a number of samples, all which contained these "blisters." It was with this discovery the rush to the Calico Mountains began in earnest.

In October 1882 the Silver King Mine was leased to the owners of the Oro Grande mill, which was located forty miles up the Mojave River near the present location of Victorville. In January 1883, the company completed an impressive ore chute and bin, at the Silver King mine, above the town of Calico. Immediately after construction of the chute, mule-drawn wagons began hauling ore through town headed to the Oro Grande mill.

In early 1884 the Oro Grande Company (the second with that name) purchased the King Mine and Oriental Company's mine and mill near Daggett. After enlarging the Daggett mill to 15 stamps, the ore wagons to Oro Grande ceased. During that period of time the Oro Grande mill was running on ore from the Silver King mine, about \$50,000 per month was produced.

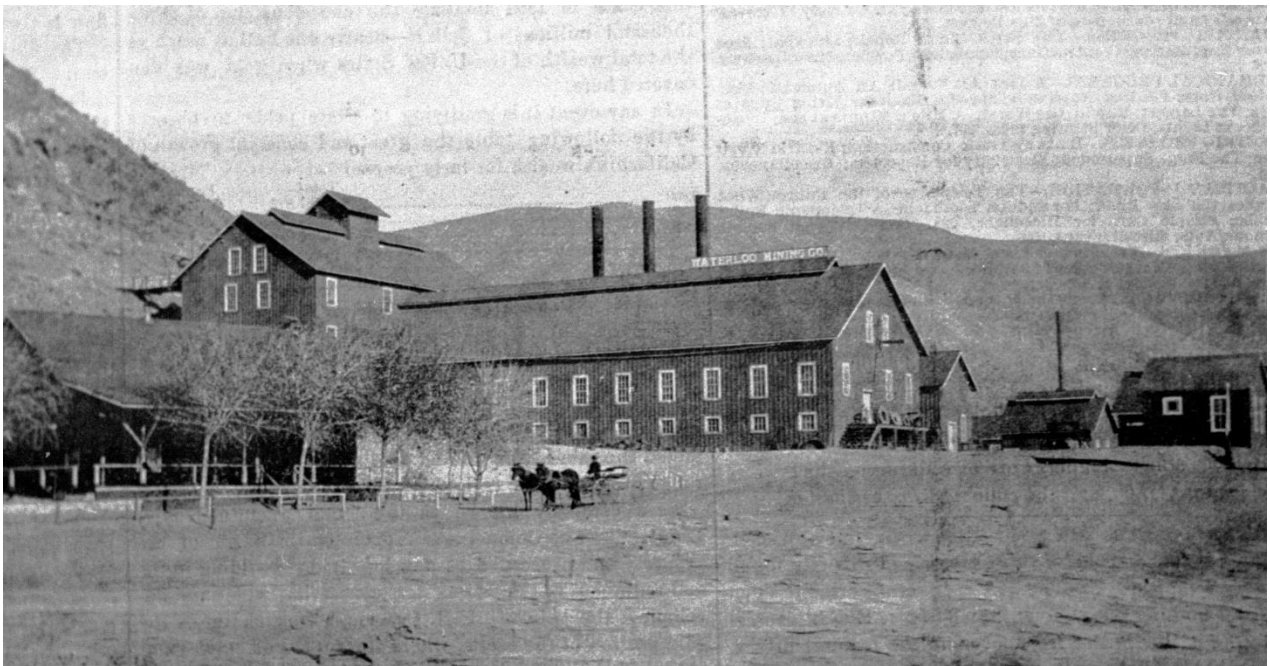
By the end of 1884, the district had taken shape geographically: immediately north of Calico camp, on King Mountain, were the Silver King, Oriental, Burning Moscow, Red Cloud, and other mines. The northeast, in the vicinity of Odessa Canyon, were the mines of "East Calico;" including the Garfield, Odessa, Bismarck, Blackfoot, Thunderer and Occidental; and to the west and northwest lay "West Calico," with ultimate development of the Waterloo, Sue, Langtry, and other mines.



View of Calico from the Silver King Mine. R. V. "Penny" Morrow Collection

It is difficult to fix a date for the beginning of Calico's decline. As early as the first months of 1885 the mines were mostly extracting low-grade ore. The faint signs of dull times were growing obvious as 1885 passed. The King's output of \$302,000 in 1885 was down sharply from the \$507,000 produced in 1884. During 1886 production fell to \$120,000.

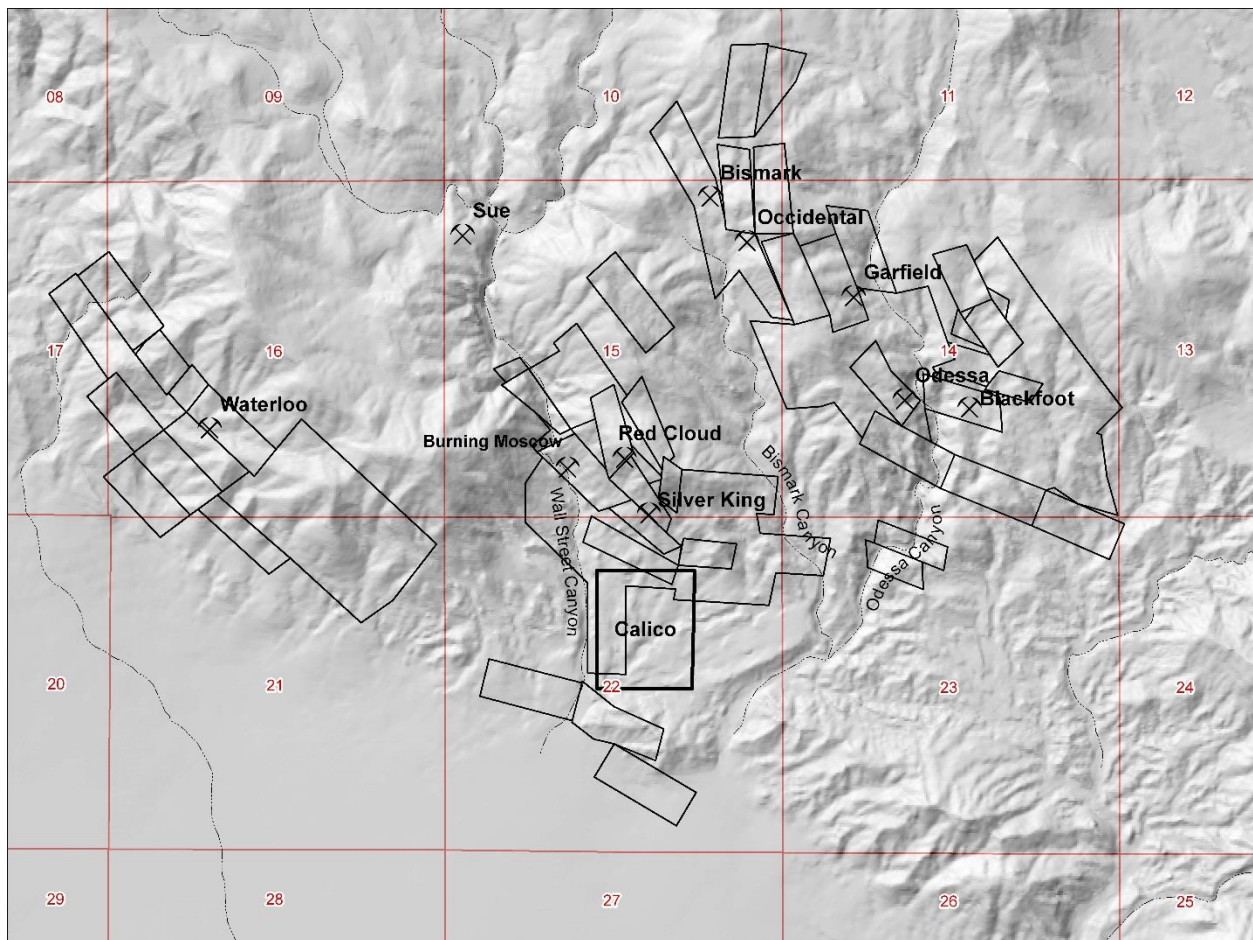
In 1887 the Oro Grande Company spent \$250,000 to further enlarge the mill at Daggett to 60 stamps, but in August as it neared completion the mill burned to the ground.



Mining & Scientific Press: May 12, 1894, p. 289, Mills of the Waterloo Mining Company, San Bernardino County

In March 1888, the Oro Grande Company started work on a seven-mile narrow-gauge railroad from Daggett to the Waterloo Mine's ore bins. The reconstructed mill and the railroad were completed later that year. Two small locomotives would ease cars loaded with ore down the grade to Daggett and return with supplies and timbers. The completion of the line cut the cost of hauling from \$2.50 a ton (by wagon) to as little as seven cents a ton.

Not surprisingly, with the decline in the grade of ore, the economy of scale favored the corporate influence on Calico's mining industry, over individual leasees or "chloriders." The Oro Grande Company was reorganized as the Waterloo Mining Company in February, 1889. The company owned the Waterloo mines and mill and other properties, notably the Silver King Mine and its mill. The Waterloo Company built a branch of the railroad past the town to the ore bins at the Silver King Mine in 1889. Meanwhile, several properties owned by J. S. Doe and Company of San Francisco, notably the Odessa, Oriental, and Occidental-Garfield mines, were sold. The new concern was confusingly named the Silver King Mine Company, Ltd., of London. The Garfield mill, 20 stamps, was renamed the King mill.



Calico Silver Mining District, Map showing Patented Mining Claims. Derived from BLM records.

In July 1890 the Sherman Silver Purchase Act was pushed through Congress. This law required the U.S. Treasury to buy a limited amount of silver every month, the act gave a boost to the industry. Causing the price of silver rise from 97 cents an ounce to \$1.05. The Waterloo and Silver King corporations reopened their low-grade deposits. The King Mine was shipping out 100 tons of ore a day by September, 1891, the

Waterloo 50 tons. Three months later, the Silver King Company enlarged its mill (the old Garfield) from 20 to 30 stamps.

But this prosperity was short lived. The price of silver to dipped, to 88 cents in 1892. Considering it “foolhardy to exhaust the great ore bodies when the profit ... was merely nominal,” the Waterloo company closed its mine and mill in March, 1892; 120 to 150 men were idled.

It has been estimated that during the period of 1882 to 1896, a total of between \$13 and \$20 million was produced from the mines of the district.

According to Tucker and Sampson (1931) both the Zenda Mining Company and the Total Wreck Mine (Burcham Group) were active during the late 1920s and early 1930s.

Geology Overview

Barite veins usually mineralized with silver occur in a wide area including the Calico Mountains, Waterman Hills, Lead Mountain and Mt. General. In a study of the silver ore bodies in the Calico Mining District, Weber (1971) concluded:

In early (?) Pliocene, andesite and dacite were intruded discordantly and in parts - concordantly into a middle and late Miocene sequence of pyroclastic sediments and minor volcanic flows of the Pickhandle Formation and playa lake and fluvial sediments of the Barstow Formation. The sequence apparently was arched gently during the intrusion.

Slightly later, fractures and faults formed in these rocks along a northwest-trending belt about four miles long and half a mile wide, and were filled with jasper, barite, silver-bearing minerals and other minerals that were derived from residual fluids of the intrusive mass. The ascending fluids also invaded, altered and mineralized permeable portions of the playa and fluvial sediments.

Bowen (1954), Dibblee (1970) and Durrell (1954) noted barite (\pm silver) mineralization is widespread and spatially associated, if not in fact genetically associated with the Tertiary intrusion of andesite, dacite and rhyolite. These volcanics have intruded not only the Miocene sediments, but also the Precambrian Waterman Gneiss, Precambrian-Cambrian (?) Oro Grande Series (composed largely of limestone and quartzite) and Mesozoic granitics. Barite (\pm silver) veins occur in all of these rock types except the Oro Grande Series.

Out of dozens of past silver producers, several have potential for production. West of Calico core drilling by ASARCO in the early 1970s had indicated an ore body of about 30 million tons which averages 3 ounces of silver a ton and from 7 to 15 percent barite.

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Table 1
Patented Mining Claims
of the Calico Silver Mining District

Patent Number	Patent Date	Section	Mineral Survey	Claims	Acres	Patentee
13990	4/8/1890	14	MS 2329	Blackfoot Consolidated No. 1	14.64	Hart Samuel
14158	6/25/1888	22	MS 2371	Oregon Quartz Mine	12.64	Oro Grande Mining Co
14456	11/3/1888	16	MS 2406	Waterloo Quartz Mine	18.69	Oro Grande Mining Co
14494	11/21/1888	14	MS 2330	Blackfoot Consolidated No. 2	7.04	Hart Samuel
14495	11/21/1888	14	MS 2331	Blackfoot Consolidated No. 3	2.03	Hart Samuel, Locan F
16827	11/19/1890	15	MS 2592	Red Cloud Quartz Mine	17.83	Doe John S
16828	11/19/1890	22	MS 2593	Gray Carbonate	7.99	Doe John S
16829	11/19/1890	14, 15	MS 2597	Thunderer Quartz Mine	19.07	Doe John S
16830	11/19/1890	14	MS 2596	Run Over Quartz Mine	20.63	Doe John S
16831	11/19/1890	10, 15	MS 2598	Occidental No. 1	17.81	Doe John S
16832	11/19/1890	10, 11, 14, 15	MS 2599	Occidental No. 2	18.112	Doe John S
16900	12/4/1890	14	MS 2595	Garfield Quartz Mine	19.68	Doe John S
17013	1/10/1891	15, 22	MS 1941	Silver King Quartz Mine	7.25	Bradley Charles T, Metcalf William H, Sanger Casper M, Wells Daniel Jr.
17689	4/20/1891	15	MS 2549	Mastoden Quartz Mine	10.63	Felt Paul
17841	5/6/1891	14, 23	MS 2544	Mountain View Quartz Mine	38.431	Oro Grande Mining Co
17841	5/6/1891	14, 23, 24	MS 2545	Snow Bird Quartz Mine	38.431	Oro Grande Mining Co
18487	8/10/1891	16	MS 2796	Gem Silver Mine	9.79	Waterloo Mining Co
18488	8/10/1891	15	MS 2641	Old Oriental Quartz Mine	20.54	Doe John S
18648	10/6/1891	16, 17	MS 2769	Illinois Quartz Mine	16.01	Waterloo Mining Co
19048	12/5/1891	23	MS 2767, MS 2771	Non-Parallel Mine, Belle Key Quartz Mine	18.23	Waterloo Mining Co
19331	1/8/1892	16, 17, 21	MS 2765, MS 2770	Daggett Quartz Mine, Compass Quartz Mine	36.4	Waterloo Mining Co
19332	1/8/1892	22	MS 2877	Millsite Quartz Mine	20.62	Doe John S
19505	1/20/1892	22	MS 2911	Try Quartz Mine	19.24	Waterloo Mining Co
19506	1/20/1892	22	MS 2888	Milwaukee Quartz Mine	20.66	Waterloo Mining Co
19507	1/20/1892	10, 11	MS 2889	Dana Quartz Mine	11.61	Waterloo Mining Co
19677	2/6/1892	16	MS 2772	Harmonial No. 1	13.84	Waterloo Mining Co
19679	2/6/1892	14	MS 2948	Ballast No. 2	11.57	Waterloo Mining Co
19680	2/6/1892	14	MS 2947	Ballast No. 1	12.53	Waterloo Mining Co
19681	2/6/1892	16, 17	MS 2795	Grant Quartz Mine	20.65	Waterloo Mining Co
19867	2/23/1892	15	MS 2887	Black Strap Quartz Mine	10.43	Waterloo Mining Co
20096	3/11/1892	15	MS 2332	Little Bonanza Quartz Mine	5.6	Bradley Charles T
20097	3/11/1892	14	MS 2945	Triangle #2	0.44	Waterloo Mining Co
20687	4/9/1892	14	MS 2965	Little Scottie No. 1	2.71	Waterloo Mining Co
20688	4/9/1892	10	MS 2836	Bullion Quartz Mine	18.94	Doe John S
21028	4/23/1892	14	MS 3005	Little Scottie No. 3	1.63	Waterloo Mining Co
21455	6/8/1892	15	MS 2333	Burning Moscow	11.68	Burning Moscow Mining Co

Patent Number	Patent Date	Section	Mineral Survey	Claims	Acres	Patentee
21855	8/12/1892	14	MS 2766	Alabama Quartz Mine	18.56	Oro Grande Mining Co, Waterloo Mining Co
21856	8/12/1892	16	MS 2773	Zephyr Quartz Mine	5.45	Waterloo Mining Co
25575	5/4/1895	15, 22	MS 2591	Oriental #2 Quartz Mine	6.351	Doe John S
25861	7/22/1895	14	MS 2109	Odessa Silver Mine	15.45	Odessa Silver Mining Co
27532	10/29/1896	15	MS 2854	Red Jacket Quartz Mine	13.195	Waterloo Mining Co
1067972	2/8/1934	15, 22, 23	MS 6040	Wall Street, Wall Street #1, Maggie, Lucille, Gray Carbonate #1, Oriental No. 3 Oriental No. 4 Gordon, Comstock Claim.	150.613	Zenda Gold Mining Co
1072292	9/19/1934	15	MS 6039	High Grade, Silver Star Mine, Rose, Red Cloud Extension	64.979	Zenda Gold Mining Co
1100614	1/4/1939	13, 14	MS 6189.	Golconda, Lookout, Richmond, J. R. Lane No. 1, J. R. Lane No. 2, Triangle, Lucy Lane.	118.733	Lane Lucy B
1116696	4/19/1943	14, 15	MS 6067,	Veto No. 1, Thunderer No. 1, Garfield No. 1, Esther, Krueger, Odessa Extension, Dragon, Alhambra.	162.897	Lane Lucy B
1117816	2/5/1944	10, 14, 15	MS 6062	Argentum No. 1, No. 2 & No. 4.	52.267	Britt Henry W
4710187	5/20/1971	16, 21	MS 6771	Nevada Quartz Mine	14.134	Burcham R L Heirs of Burcham Rose
4720002	7/29/1971	16, 17	MS 6770	Harmonia1 No.2, Lamar Lode	34.84	Mulcahy Joseph B
4720010	8/12/1971	16, 21	MS 6768	California, Colorado, Idaho, New Mexico, Washington, and Wyoming Quartz Mines	114.875	Burcham R L Heirs of Burcham Rose
4720045	11/23/1971	16	MS 6769	Silver Gem Extension Lode Mining Claim	0.149	Buch R C
4720090	3/15/1972	16, 21	MS 6771	Nevada Quartz Mine	14.134	Burcham R L Heirs of Burcham Rose
4760087	9/23/1976	6, 7, 8	MS 6777	Quad Duece I, II, IV, V, X, XII, XIII, XIV, Quad Duece 22, Pal No.'s 16,17,35,36, Langtry No.'s 1,2,4, 5, 6, Cisco No.'s 1 through 3 Lodes	433.88	Title Insurance And Trust Co
4810003	10/14/1980	22	LOT A OF MS 6818;	Shamrock No.'s 1 and 2 Millsites	2.856	Buch R C