



Three Rocks Research

So that others may know ...SM

The Three Rocks Report

A Message

You probably noticed, the newsletter is late again After about 100 hours of labor, we completed the application to nominate the New Idria Gould Rotary Furnaces to the National Register of Historic Places. Completing the application is one of the reasons why the newsletter is late this month. We also completed a detailed recordation of the historic stone culvert located on the road between Idria and San Carlos. Oral history suggests the culvert, crafted from local stone, was construction in the early 1880s by Chinese stone masons. Idria, and the surrounding area, is filled with many important historic sites and resources that should be recorded and preserved. Thorough research and recordation of an historic site is an important step in historic preservation, and for many historic features it is the only evidence that remains after a wildfire or construction project.

Eighteen participants made the May history tour at Idria a grand success. Visitors were shown many of the remaining historic features in this legendary mining town and learned the history behind the world famous Gould Rotary Furnace. We also talked about several environmental issues associated with the New Idria Quicksilver Mine and discussed the potential of Idria becoming a public park.

We recently received notice from the United States Board on Geographic Names that they have accepted our map corrections and the addition of two new feature names. The corrections are for Roberts Canyon, Skelton Spring, and Twentyfive Spring. The additions are for Lewis Canyon and Zalba Spring.

Get in a Pickle with us!

Kelp Pickles

June 11 in Santa Cruz.

Ray Iddings will teach folks how to make his famous *Carmel Canyon Pickles*. We begin with a refreshing swim to the kelp forest where we harvest fresh kelp. We'll bring the kelp back to the Adventure Sports poolside patio where we will cook up some of the best tasting pickle recipes ever created.

\$50.00 per person

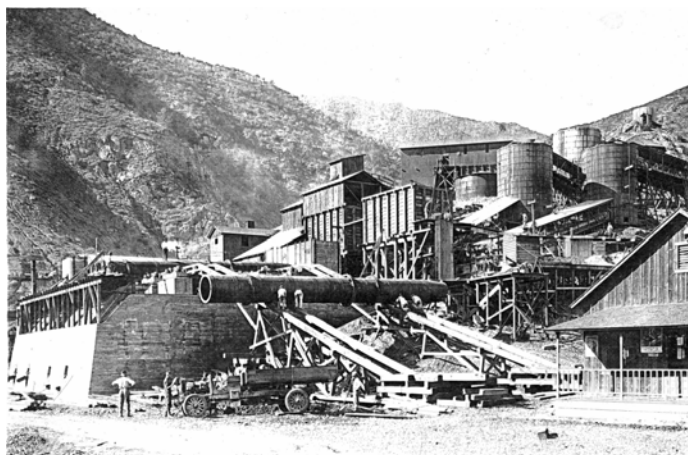
Call Adventure Sports at (831) 458-3648 for reservations and details.

A Story

The Gould Rotary Kilns

The Gould Rotary Furnaces installed by the New Idria Quicksilver Mining Company at their cinnabar mine in south San Benito County, California in 1917 are the world's first continuous-feed rotary kilns successfully adapted to cinnabar (mercury ore) reduction. These kilns led to a revolutionary change in mercury refining technology that significantly increased production, improved worker safety, and reduced environmental contamination.

The first successful commercial application of a rotary kiln was for Portland cement production. This was accomplished by David O. Saylor in 1889 in Coplay, Pennsylvania and this marked an important technological step that contributed to increased material production. However, the initial use of rotary kilns was restricted to wood and coal fired cement production until 1918 when Henry Gould, the mine superintendent and engineer for the New Idria Quicksilver Mining Company, adapted the kiln's fuel, air draft and exhaust system to mercury ore reduction. The innovative design of the Gould Rotary Furnace led to worldwide use of this technology in metallurgical and mineral processing, pulp and paper drying, waste regeneration, and drastic improvements in environmental quality.



New Idria Furnace Installation, 1918

From the Mark Ward Collection

Successful adaptation of the rotary kiln began at New Idria in 1917 during the height of World War I when mercury production was a critical component of munitions needed to support United States victories during the war. Mr. Gould installed a 4'X50' experimental rotary kiln and solved the technical issues that led to the failure of two previous attempts to introduce rotary kilns to mercury ore reduction. Mr. Gould's experimental unit was fully operation in production mode by March 1918 and his rapid success was quickly followed by the installation of four 5'X56' production kilns.

By 1907, Idria had already introduced electrical generators and fuel oil to their mining facility. "Bunker-C" fuel oil was being delivered from Coalinga and Mendota and electricity was generated locally from an oil-operated generator and a stream driven waterwheel. Mr. Gould already had at least ten years experience using these energies, so it was a natural step to adapt the rotary kiln to fuel oil and electric drive during their development stage.

The five kilns operated continuously until June 1920 when a disastrous oil fire caused extensive damage to the town of Idria and much of the company's mining equipment. The fire and the low price of mercury following the war forced the company into receivership. The mine reopened in January 1923 as New Idria Quicksilver Mines, Incorporated. The new company decommissioned the experimental kiln, rebuilt the furnace building, returned the four production kilns to service, and produced a \$642,522.89 profit during that year. Coast Valleys Gas and Electric Company ran a fifty-six mile long power line from King City to the mines in 1924. The furnaces continued producing mercury through the Great Depression, but because of low demand, the company focused on recovery mining and reclaimed the grounds under and around the old Scott furnace-a side benefit of this is that we have a much cleaner environment at Idria than at other quicksilver mining operations.

The New Idria Quicksilver Mines, Incorporated sold all of its mining property in June 1936 to William Moorehead. That same year former-president Herbert Hoover, who had a degree in mine engineering from Stanford University, inspected the property for his brother, who soon became one of the owners of the mines. The new owners included Theodore Hoover, California State Senator Sanborn Young, and Henry Gould. The new owners installed new firing heads, dust chambers and blowers.



New Idria Gould Rotary Furnaces, 2006

The firing heads were redesigned in 1944 to include new muffle blocks, and at the same time, the furnace building got a major face-lift. The front retaining wall was extended to include the calcine ore bin, which previously dumped directly into ore cars, and a fresh concrete overlay was added to the foundation. The building was also re clad with corrugated sheet metal. The condensing chambers were upgraded from wood to cast-iron, and the first automated hoeing tables were installed.

Ore production during World War II earned the company the Army-Navy "E" Production Award. In 1946, the furnaces were used to recycle 363,000 pounds of war surplus mercury batteries, and another 253,000 pounds were recycled in 1948. However, by the end of 1948, the demand for mercury plummeted and the company became idle.

With a reduced workforce, the company once again focused on recovery mining by processing mercury-contaminated soil from 2-miles of the San Carlos Stream basin.

The Korean War increased the market for mercury and the market remained profitable through the 1950s. However, the market was again declining by 1964 and Idria once again turned to low-cost recovery mining by processing mercury-contaminated soil between the furnace area and San Carlos Creek. The company continued to maintain profit until 1972 when declining value of mercury and new environmental regulations finally caused production cost to exceed market value and the company decided to close.

Pioneers and People

Deposition of Augustine Hernandez

The following deposition is extracted from *The History of the McGarrahan Claim as Written by Himself*, pages 237 and 238. The deposition was conducted on April 11, 1863.

8. THE DEPOSITION OF HERNANDEZ.

*In the District Court of the Third Judicial District, County of Monterey,
State of California.*

Augustine Hernandez, being duly sworn, says:

That he is over twenty-one year old, and resides in the county of Fresno. About ten years ago, I received a letter from Vicente P. Gomez, by the hands of Lewis Leon, requesting me to take charge of and hold possession of the rancho "Panoche Grande," he (Gomez) claiming to be the owner of it. I was at the time located on what he called the rancho, having built a house at the head of the "Panoche Grande" valley, a few rods from the arroyo or creek "Panoche Grande." He desired me to hold possession of my location and the rancho for him, promising a half of a league of the land in the event he gained the title from the United State government. I did hold possession for him for some three months after I received the letter, and until I was compelled to remove away for the reason that the water all dried up. When I removed away, I left the house I occupied, corals, &c., taking nothing with me but my stock and furniture.

The letter received by me from Gomez has been lost, destroyed, or mislaid. I have made diligent search for it recently.

I am familiar with the country about the "Panoche Grande" valley, and the vicinity of the New Idria Mines. The three high peaks in the vicinity of the mines have always been called, respectively, the "San Benito," the "San Carlos," and the "Idria" peaks. I have never heard either of them called the Panoche Grande Peak. The Cerro "Panoche Grande" or "Panoche Grande" mountain, lies about half-way between my old house and the entrance to the Vallecitos canon, and distant about seven or eight leagues from the New Idria mines.

The creek and valley "Panoche Grande" take their name from a species of cane growing in the valley, from which the Indians extracted panoche, a kind of sugar. The creek which heads in the San Carlos peak, and runs down by the Hacienda, I have never heard called by any other name than the "Arroyo de la Mina," or mining creek. Never knew or heard it called by any one as the Arroyo "Panoche."

His
AUGUSTINE X HERNANDEZ
mark.

The Three Rocks Report

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We welcome submissions to the newsletter, however articles may be edited for length and content, and all submitted materials become the property of Three Rocks Research.

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