

Meet the Hardenberg

By Mark Bowlby

Next year will mark the centennial of the last company that worked the Hardenberg Mine. This mine is in the Middle Bar region that lies south of Jackson, on the Mokelumne River. With the approach of such an occasion, it seems only right to reflect on the history of this oft-overlooked Amador County mine.

What? You mean you don't know of the Hardenberg? Well, it's understandable for a number of good reasons. There isn't any mention of a Hardenberg Mine in the voluminous works of Amador County historians Jesse Mason^a or Larry Cenotto. It is well off the beaten path, and you will drive right past it, unless you know what to look for and where.

I have yet to find any extant photos of the mine. The Amador County Archives has a fabulously detailed photo of the Middle Bar region from the north side of the Mokelumne River, dated from the 1880s, (see photo this page). The back of the photo includes a note that purports "*the old Hardenburg mill may be seen.*" I disagree based on matching the location the photo was taken from to historic maps that indicate where the mill was at the time the photo was taken.



Middle Bar region in the 1880s, taken during a period when the bridge was out. Courtesy of Amador County Archives.

Fortunately, numerous bits of information appear in newspaper articles, mining journals and state mining reports, plus archive and county records. When combined, they allow one to reconstruct a reasonable history of this mine.

Amador County had hundreds of mines that dotted its auriferous landscape during mining times. Jim Norris, at the county museum has compiled a list of over 500,

only a few of which amounted to much of anything. So why focus on this one over the hundreds of other long forgotten mines?

My interest was piqued to investigate this mine after coming into possession of a variety of original documents, mostly from the 1890s, from sellers on eBay. This report is the result of my current research, and is incomplete at best. (When is any historical account considered "complete"?) To my knowledge, it is the first attempt at a comprehensive compilation of the history of this mine.

^a Mason, in his 1881 History of Amador County published by Thompson and West, does provide a brief mention of this mine under one of its other names that I will reveal later in our story.

While the Hardenberg sits in relative obscurity at the present, in its day it attracted the attention of members of Amador County's elite mining fraternity. Alvinza Hayward and Charles Lane, William Loring and James Parks, John Martin and Henry Malloch to name a few, all mustered considerable experience, resources and finances to plumb its rocky depths. And for almost seventy years, the Hardenberg played the role of eternal tease, forever dangling, but never delivering, on its seductive promise of eventual payoff. State mining reports released during its lifetime tell us partly why that was. These reports regularly described common and significant problems that can occur in a typical mine. Pity our poor Hardenberg for oft appearing as the poster child for many such described problems.

The namesake of our mine is James Richmond (or more commonly, "J. R.") Hardenbergh. He immigrated to California in 1849 from New Jersey, and settled in Sacramento. There, he quickly established himself in business and politics. He served as one of its earliest mayors, first in 1850, and then again in 1852. He was appointed by President James Buchanan as Postmaster of Sacramento, and later by President Ulysses S. Grant as U.S. Surveyor General for California.

A glowing biography of him, written while he was still living,¹ says very little about his efforts in mining, except that it was an unsuccessful venture. It spends a lot of time, however, describing the immense stature he achieved in his public endeavors, concluding that *"No man on the Pacific coast is so well and favorably known as Mr. Hardenberg, especially among the early pioneers, and no man has more numerous and warm personal friends than he has."* Many different groups worked this mine, and Hardenbergh only ever had a partial stake for a short period of time. It is my guess that his stalwart reputation as a pioneer is what permanently attached his name to it.

Before starting our story, it is worth noting that history is not consistent in the spelling of the Hardenbergh name, whether in reference to the person, or to the mine. You will find it variously rendered as Hardenbergh, Hardenberg, Hardenburgh, Hardenburg, and even Hardingburg. For the purpose of our story, I will use *Hardenbergh* to refer to the person, since records lead me to believe this is the original and correct spelling of his Dutch heritage name. I will use *Hardenberg* to refer generically to the mine, but will occasionally use other spellings as it appears in direct quotes, or to match how the various owners of the mine over time each self-identified it. As a result, even this report will be inconsistent in this respect.

The Early Years (Pre 1867)

As mentioned already, Hardenbergh was not the only one to work this mine. He also wasn't the first. Research has yet to reveal the date and circumstances surrounding the initial discovery that later became the Hardenberg Mine. One source² states it may have been one of the first quartz mines to be operated in California. That would be a considerable distinction, but no known evidence substantiates the claim.

The earliest record found so far in my research is a deed in the Amador County Archives, dated November 22, 1859.³ It records a \$2400 sale by Jabez C. Arnold to Marlette and Company, including John B. Marlette, Joseph Ginaca, Michael Gerans, Peter Bartolo and Anthony Gintz. It describes five items sold:

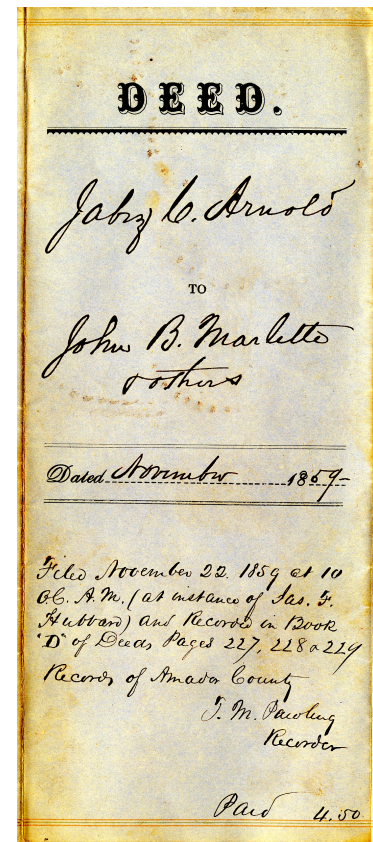
- 1) All of that quartz lode situated on the northerly side of the Mokelumne River and in said Amador County, and about one fourth of a mile below Middle Bar Bridge and known as Marlette and Company's old lead being six hundred feet in length;
- 2) Also that quartz lode situated on the northerly side of the Mokelumne River and in said Amador County lying about one fourth of a mile above Middle Bar Bridge and upon Pigot's flat and bounded at the South end thereof by the northerly extremity of those quartz claims heretofore known as Sargeant's claims and extending therein in a northerly direction twelve hundred feet being the same lode opened by said Jabez C. Arnold and heretofore known as Arnold's lead.
- 3) Also that quartz mill erected on the northerly bank of said Mokelumne River in said Amador County near that quartz lode firstly above described;
- 4) Together with that ditch constructed for the purpose of conveying water to furnish power to drive machinery in said mill and leading from said river at a point above said mill along down the northerly bank of said river to said mill and the privilege of water thereto belonging;
- 5) Also all tools, machinery, and other personal property of every character belonging to that firm or co-partnership known under the name of Marlette & Company

The legal descriptions of these assets are important. They are repeated, almost verbatim, in the chain of deeds that eventually links us to the purchase made by Hardenbergh himself. That connection reveals that the second quartz lode, described as being "upon Pigot's Flat," is the one of interest to us. With that knowledge, we can then draw a few inferences from this critical, early document.

The fact the deed states that the lode was opened by Arnold, and originally known as Arnold's lead, gives me cause to consider Jabez C. Arnold the original and first claim holder. Unfortunately it doesn't tell us when that occurred. We also have to consider possible implications from its location being given as upon Pigot's Flat. Who was Pigot, and is that name significant to our history?

We also read in this deed that Arnold dissolved his connection with Marlette & Company as part of the transaction. Arnold was part of Marlette's company and clearly wanted out. He was also a joint owner of the properties and wanted to sell his portion back to the company. This deed documents that buyout.

What we don't know are the conditions and timeline under which Arnold joined Marlette's company. Was it before or after the initial mining claim? My bet is after, again due to implications of the "Arnold's lead" reference. We also don't know what percent ownership he



Deed of sale by Jabez Arnold to John Marlette, image courtesy of Amador County Archives.

had at the time of the transaction. Further research is needed to bring clarity to these foundational questions.

We also know there was sufficient work, at least at some point in time, from the two claims mentioned to justify a mill and ditch. We don't know when they were constructed, or by whom. The deed places the location of the mill close to the first lode, and the ditch located along the northerly bank of the Mokelumne River, starting somewhere upstream. An article written on Middle Bar history⁴ references correspondence dated December 6, 1857, and another later in 1858, that both mention work on a ditch at Middle Bar. The latter indicates it was at least two and a half miles in length. It is reasonable to believe that it was the same ditch described in the deed. The authors of the article draw the same conclusion.



1866 map of Amador County showing Middle Bar region and Marlette's Mine and Mill. Arnold's Lead would have been located near the bottom of Hunt's Gulch, closer to the river.

Following this sale, Marlette and his company, now sans Arnold, held this group of assets until 1862 when ownership transferred again, this time to Warren Hubbard and Archibald McAdams. A deed recorded in county records, dated August 6, 1862, describes the somewhat confusing circumstances surrounding that transfer. The legal jargon of the day doesn't make it an easy task to decipher the chain of events, but I'll do my best here.

On March 18, 1862, Ellis Evans^b filed a claim against Marlette & Co. for \$3824.31 due him for a

mortgage on these properties. The names of both Hubbard and McAdams are in the Marlette & Co. list of defendants meaning they were part of that company. The court of the 16th Judicial District ordered that the properties be put up for sale at public auction. That auction occurred on April 12, and Morgan Morgans^c was the highest bidder at the price of \$5200.

^b Mason makes many references to Evans. Among them, Evans is listed as one of many sources of information for Mason's work, and was elected county treasurer in 1856.

^c Morgans was a native of South Wales and an early California pioneer. He was involved in coal mining prior to coming to California. He was superintendent of the Haywood Mine in Sutter Creek from 1855 to 1868, then moved to Contra Costa County where he held the same title at the Black Diamond Coal Mine until at least 1882.

However, on June 4, Hubbard and McAdams presented proof of their holding a separate mortgage on the same properties. This one was for \$2200, plus interest accrued, issued on June 11, 1861, which predates the claim filed by Evans. They paid the county \$5200 and thereby redeemed the property back from Morgans. The deed also references a second redemption payment of \$5824, but it isn't clear if that is on top of, or including the \$5200. Whatever the circumstances, it was enough for the county to issue a certificate of redemption for these assets. A second deed, also recorded with the county and dated October 17, 1862, mysteriously repeats the story, with a single exception. The first deed referenced that, on June 4th, the sheriff delivered to Hubbard and McAdams the certificate of redemption and filed a copy with the county. That statement is missing from the second deed, so perhaps there was a procedural error that warranted the rewrite.

Regardless, Warren Hubbard and Archibald McAdams now stood alone as sole owners, apart from Marlette and his company. I wonder what Marlette's men thought about all of this. Unfortunately, a deed records only the mechanics of the subject transaction, and not any of the thoughts or feelings of its participants.

No records are known to describe any work that Marlette's company, or Hubbard and McAdams, may have performed while holding title to these claims. The 1866 official county map shows only Marlette's Mine and Mill in the Middle Bar region (see previous page). It is located just below the Middle Bar Bridge, suggesting that any work of significance probably occurred on that quartz lode rather than on Arnold's Lead.

The Hardenbergh Years (1867-1887)

McAdams and Hubbard held title to both quartz lodes, the mill, ditch and water rights, until 1867. A series of deeds we find on file with Amador County Records tell the story.

On May 8, 1867, McAdams and Hubbard entered into an agreement with our mine's next owners, J. R. Hardenbergh and John J. Haley. The latter two were living in San Francisco at the time. For one dollar, Hardenbergh and Haley were to take possession of the lode referred to as Arnold's lead, the mill, ditch and water rights for one year. Marlette's mine was not part of this agreement, being forever removed from further transactions on these assets. The agreement locates the mill in its original location, near Marlette's mine.

Hardenbergh and Haley were contractually obligated to begin work on this mine within thirty days, work it continuously for a year, and drive a shaft to a depth of 150 feet, or forfeit their right to further work. At the end of one year, they would have the option to either walk away, or take ownership at a price of \$7000.

A second agreement, dated December 10, 1867, declared that Hardenbergh was only acting as an agent for his wife Maria in the first agreement, and that she was truly the one entering into it and not him, using her money. It further specifies that Maria had a one-third interest in the agreement and Haley two-thirds. It remains a mystery as to the reasoning or possible advantage achieved by transferring this over to her.

Word got out between these two agreements, likely due to the visible pursuit of contractually obligated work. The October 26 issue of the Amador Dispatch reported that the McAdams and Hubbard Quartz Mine^d was being reopened under the supervision of J. R. Hardenbergh, but no mention of Haley. It described the work being done:

The old shaft is being retimbered, the engine was put in operation this week. The old shaft nearby justifies the above undertaking. If there is anything in will, and means to carry it out, this mine will be made to pay dividends again. Success attend them.

It seems McAdams and Hubbard had some prior success on the site. Note the reference to an older shaft, we'll revisit this later.

Hardenbergh and Haley organized the Casco Co. to manage their operations, and thereafter the mine took on the Casco name^e. In February of 1868, they reached a depth of 210 feet⁵, exceeding the contractual requirement of 150 feet. By March they had hoisted 1000 tons of rock, and contracted to have it moved to the old Marlette mill for processing⁶.

In May, when their contracted year was up, they took the plunge and decided to purchase the mine. A copy of the deed filed in Amador County Records, records the purchase by Maria Hardenbergh and John Haley from Hubbard and McAdams, for \$7000. As part of that transaction, Maria's interest was reduced to one-quarter, increasing Haley's to three-quarters.

In August we read⁷ that they "*struck the ledge*," (which meant they found a significant quartz vein) described as seven feet in width and showing free gold.⁸ The ledge was found at the 300-foot level,^f with reported expectations that it could yield gold at the rate of \$100 per ton.⁹ This was an enthusiastic estimate, certain to raise a few eyebrows. It was the first of many promising strikes that, during the active life of this mine, would entice its current, and future owners into further exploration and investment. It was certainly the case here. Hardenbergh and Haley immediately ordered a 20-stamp mill to replace the previous one.^g The new mill, plus additional ore processing equipment, rumbled through downtown Jackson on its way to Middle Bar in October.¹⁰

No known records shed light on the outcome of the find at the 300-foot level, but we do know they encountered what was described as a "black greasy gouge".¹¹ A gouge is a region of fractured rock that occurs at the intersection of two different rock layers that grind against each other. On the good side, it can be a sign of a possible nearby paying vein. On the downside, it creates a region of instability, making it difficult to hold open a shaft and tunnels that run through it. Hardenbergh and Haley did not know that this would be a harbinger of a problem that would haunt owners of this mine going forward.

^d Many lists of Amador County mines (such as those on the Western Mining History, Mindat and BLM websites) locate a *Hubbard and McAdams Mine* on the north end of Sutter Creek instead of Middle Bar. This is not an error. Another deed in the Amador County archives, dated November 24, 1862, describes a mine in Sutter Creek purchased by McAdams and Hubbard from Alvinza Hayward. Jim Norris' list is the only I know of that identifies the one they had in Middle Bar (but not the one in Sutter Creek).

^e The Casco name is referenced briefly by Jesse Mason in his 1881 history of Amador County.

^f The Jackson Ledger of September 12, 1868, reported the depth at 375 feet.

^g We don't know the configuration of the previous mill, but surely this was going to be a significant upgrade in ore processing capacity.

Operation at the mine continued into the New Year. Hardenbergh had taken up residence at the mine while Haley still resided in San Francisco.¹² The new, water powered mill was now in place along the bank of the Mokelumne River, located closer to the mine than the old one.

In January of 1869 it was decided to sink 200-feet deeper. In April, they upgraded their hoisting engine.¹³ In May, they exceeded 500-feet in depth,¹⁴ and reportedly found another “*flattering prospect*.”¹⁵

The owners executed a series of financial transactions in parallel with the bustling activity of operating a mother lode quartz mine. In December of 1868, Maria Hardenbergh purchased an additional 760-feet of land, extending north from the current property.

In August of 1870, Hardenbergh upgraded the business arrangement by incorporating under title of the Chicago Milling and Mining Company. They issued 5000 shares of stock for a capitalization of \$500,000,¹⁶ with plans to sink an additional 300-feet. Neither Maria, nor Haley, were listed as officers of this new company. It’s possible the relationship with Haley may have dissolved at this point, as his name no longer appears in the record. Title of the mine, new mill and ditch, was transferred over to the new company.^h

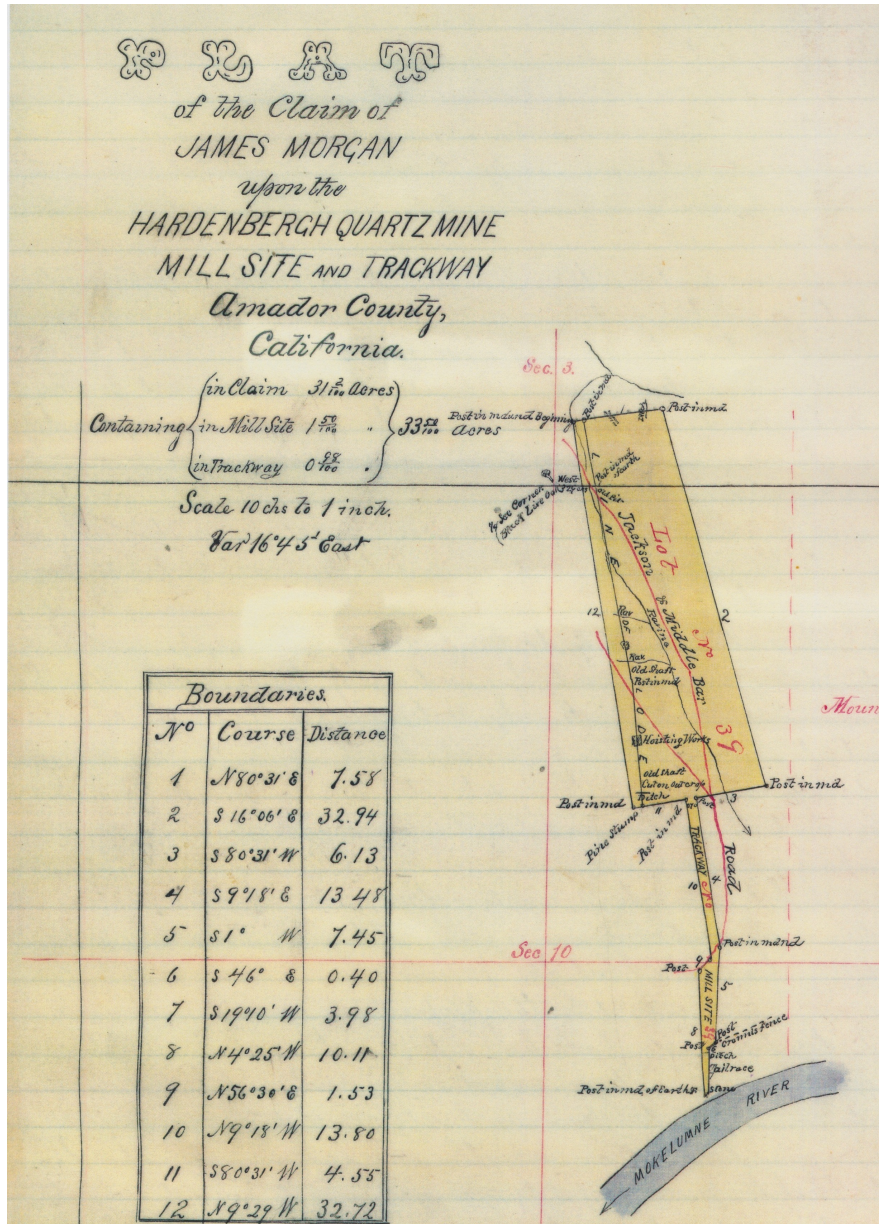
With this new influx of cash, you would expect to see a corresponding increase in activity at the mine. Instead, we see the exact opposite – no report of further activity occurs during 1870. For the next three years, we see a series of sporadic, sometimes confusing, short reports that lead me to conclude that the owners were giving up on this mine. Here are the only snippets we have on activities, or lack thereof, following the year of their incorporation:

- May 6, 1871, Mining and Scientific Press: *We learn that a contract has been entered into to sink the Casco mine two hundred feet deeper, and work will at once be commenced.*
- June 17, 1871, Amador Dispatch: *Mr. J. R. Hardenberg, the superintendent and owner of the Casco mine, at Middle Bar, was in town during the fore part of the week. He contemplates starting up his mill again in a few weeks.*
- March 3, 1872, Amador Dispatch: *The Union quartz mine, located on Jones’ Bar, on the Mokelumne river, was being re-opened; also the Casco mine, at Middle Bar. Both mines had been lying idle for want of capital and both were conceded to be good mines, capable of remunerative yield.*
- March 9, 1872, Mining and Scientific Press: *Work will soon be resumed on this mine, which is at Middle Bar on the Mokelumne River.*
- October 4, 1873, Mining and Scientific Press: *The Casco Mine, which is being worked by Mr. McKinney, is at present, as it has been for some time, yielding a handsome profit. Mr. McK. took charge of the mine more than two years ago under the most unfavorable auspices. In consequence of the low stage of the water in the river, and its continual failing, it is thought the crushing of the rock will soon have to be suspended until the river rises sufficiently to afford the amount of water necessary to run the mill.*

How do you assemble such disparate pieces into a coherent story? The lack of capital sounds odd just two years following their capitalization for half a million dollars. Perhaps the stock did

^h Deed recorded in Amador County Records, dated August 6, 1870.

not sell well, of the funds were invested elsewhere. What were the “unfavorable auspices” that lead to Mr. McKinneyⁱ taking charge two years prior to 1873? And if he had been achieving a “handsome profit” during that time, why was the mine reported to have been lying idle for a while just one year prior? These questions, and more to come, will have to remain unanswered for now.



In 1874, U.S. Patent 739, Mineral Certificate No. 122, was issued “for the Claim of James Morgan upon the Hardenbergh Quartz Mine, Mill Site and Trackway”. Patents were issued to convert public lands into private ownership, which means that the mining property itself was now in the hands of a new name, James Morgan.

The patent shows a detailed plat map, revealing the classic paddle shape that would characterize the property for the next forty years. It also provides a lot of interesting (at least to me) detail about the then current, and earlier shaft locations. The Middle Bar Road runs right along the base of the ravine

Plat map for 1874 land patent issued to James Morgan.

as it heads towards the river. The hoisting works then lay to the west of the road, placing it on, or near, the western hillside. North and south of the head frame we see the locations of two

ⁱ It is reasonable to assume this was Abraham McKinney, a long time resident of Middle Bar. He was active in quartz mining in that area, and involved in reconstruction of the Middle Bar Bridge that was swept away by the flooding rains of 1861-62.

“old shafts.” This ties back to the old shaft referenced earlier, however, I don’t know yet how they fit into our story. The 20-stamp mill is right along the river, directly south of the mine, and a set of tracks were laid to move ore from the mine to that mill.

The dimensions of the main part of the property, ignoring the handle for the trackway and mill, are 500 feet at its narrowest in the east-west direction, and almost 2200 feet in the northerly direction. Prior deeds give that latter dimension as 1200 feet, which means the patent incorporated the 1868 purchase of land, made in Maria’s name, just to the north of the mine.

That leaves us with the question as to why the patent was issued to James Morgan, and not Haley, either of the Hardenberghs, or to the company, Chicago Milling and Mining. Mason describes Morgan¹⁷ as *“a man with much experience in mining”* and speaks of work he had done in a couple of locations near Middle Bar, but doesn’t give us dates for that work. It’s possible Hardenbergh and Morgan became acquainted in the field.

From 1874 through 1881 we see a series of new incorporations for mining companies that include the names of both J. R. Hardenbergh (under a variety of spellings) and James Morgan – some in California and some in Nevada. Clearly Hardenbergh and Morgan were business partners in these new ventures. Haley’s name is nowhere to be found, further suggesting that his partnership with Hardenbergh had since dissolved.

Then, on August 29 of 1874, Hardenbergh’s house near the mine was destroyed by arson. The September 5th issue of the Amador Dispatch tells the story. John Wetzler, a fellow resident and miner at Middle Bar, and apparently drunk at the time, got into an argument with some men who were residing at the house. When ordered to leave, Wetzler threatened to get even. Five minutes later the men were shocked to find one corner of the house engulfed in flames, and Wetzler fleeing the scene. The house was completely burned. Wetzler was apprehended by the men and taken to the police in Jackson to be held for trial.

The chapter of the Hardenbergh era seems to come to a close on this event, as otherwise our trail of reported activity runs cold for the next ten years. In the 1881 history of Amador County, Jesse Mason tells us the owners of the Casco mine sunk \$20,000 into it.

Then, interestingly, and for no apparent reason, in 1885, a glowing description of the mine appeared¹⁸ that is worth quoting in full:

The Hardenburgh mine lies just above Middle Bar, with a 20-stamp mill at Middle Bar, which has been idle some years. From the men that worked in this mine I learn that no better mine is in this county if properly worked by capitalists. There is a shaft of 500 feet on the ledge, with four or five levels of 100 feet apart 100 to 200 feet each in length. Good paying quartz was taken out of this mine from the very top all the way down to the 500-foot level, and it run from \$5 to \$10 and \$15 per ton. There is also a good water ditch of 1,000 or more miner’s inches of water and two and one-half miles long, that belongs to this property, which is owned by General Hardenburgh, of San Francisco, California. Some of the \$60,000 has been taken out of this mine. The ledge runs from 5 to 30 or more feet in width, and there is at least a big fortune for the parties who will take hold of and develop and work this mine again, as it is considered by all who worked in it second to no quartz mine in Amador county today. I know of no better interest than this old Hardenburgh mine at Middle Bar, but I understand that General Hardenburgh does not intend

himself to work it, though I believe he will sell it to parties who will work it in a proper manner, as half a million dollars of quartz is in sight to-day.

It reads more like an advertisement to potential buyers than a description of recent history, and perhaps it was. It would take another two years before anyone would bite.

The British Years (1887-1892)

It is now 1887 and our mine has been sitting idle for at least ten years. We don't know the exact year work ended, or for what reason. A patent has been issued on the property to James Morgan, a business partner of Hardenbergh.

In April of 1887, we suddenly see a flurry of filings recorded in Amador County Records. They detail attachment claims against mining properties located in the Plymouth area owned by the Chicago Milling and Mining Company. None of the claim amounts exceeded \$300, but they give glimpses of potential financial problems.

Later that same month we read:¹⁹ *"It is reported, on good authority, that the Hardenburgh or Casco mine, at Middle Bar, has been sold to San Francisco parties, and that the south extension, owned by Mrs. Sargent, is also likely to be sold to the same parties."* It further states *"some excellent rock was taken out in early days and if rumor can be relied upon, the cause of its abandonment was owing to poor management rather than the non-paying character of the ore."*

Rumors and "good authority" are frequent sources of information for much of what is promoted as news today. Seems they were considered sufficient sources to spill ink over then, too. We don't know who these San Francisco parties were, or whether it was sold by the Chicago Milling and Mining Company as a means to cover some of its apparent financial woes. Considering the reported sources, we can't be completely sure that it actually sold. No deed yet found in County Records testifies to such a sale.

Then nothing more until 1889, when we find the following entry in the May 11th issue of the Engineering & Mining Journal: *"There is again some talk of starting up the old Hardenburgh claim. The owners are disposed to sell it at a reasonable figure, from \$25,000 or \$30,000 it is reported. There is a large amount of water in the shaft, and it would take in the neighborhood of \$5000 to get the water out, so as to make an examination of the property possible."* Were "the owners" referenced here the same San Francisco parties sited two years prior?

On June 15, we read in the Mining and Scientific Press: *"We understand the Hardenburgh mine at Middle Bar has been bonded to the English company, operating the Morley and Wetzlar mine; it is also reported that the Amador Queen and Doyle properties are also under bonds to the same company."* If we rewind to the January 19 issue of the same publication we read: *"John Wetzlar,^j former owner of the mining claim in Hunt's Gulch [that was] recently purchased by the Morley Mining Co. – an English company..."*

^j Yes, that is the same John Wetzlar who burned the Hardenbergh residence fifteen years earlier.

Putting these last two pieces together tells us that an English company, called the Morley Mining Company, had bonded for rights to work a number of mines in the Middle Bar region, including the Hardenberg. Like the reported sale in 1887, no deed yet found in Amador Records sheds light on this transaction. That company is never mentioned again, and later reports refer only to *“San Francisco and Eastern Capitalists.”* Based on this, I assume this next period of work was done through British funding. An article in 1891,²⁰ stating the mine was still being worked under bond, provides further reason to believe this. During this period, our mine would be referred to under both the Casco and Hardenberg names.

With funding now in place, work began in earnest at the end of the 1889, under the management of James Evans.²¹ By April of 1890, they completed installation of a new hoisting works, and began draining water from the mine.²² It would take until December to complete this arduous task.²³ They put new timbers in the shaft, and constructed a network of ditches and reservoirs to channel and store water from the Amador Canal, needed to power the equipment.²⁴

In February of 1891 they sent test ore to the mill at the Amador Gold Mine.²⁵ The results were promising enough to warrant further digging of tunnels (also called drifts) away from the shaft, and getting their own mill up and running. This created some excitement in the press.²⁶

Reports conflict on the nature of the mill they were putting in place. Some state it was a new one of either 10 or 20 stamp capacity. Another reports they moved the previous Hardenberg mill from the bank of the river closer to the mine.²⁷ Regardless of the configuration, by April they were ready to put it to the test, and directed water into the newly laid pipes. Suddenly, the pipes burst in several places, sending water in all directions.²⁸ They had tried to save money by securing used piping that was clearly not up to the task. They contracted with C. O. Mitchell of Sutter Creek for new pipes. This mishap would set back operation for weeks. But by June, it was up and running steadily²⁹ for at least the next few months.

Work continued into 1892 in drifts at the 500-foot level. They continued to take out rock that showed promise.³⁰ In June, it was decided to sink the shaft 200-feet deeper.³¹

The eleventh report of the state mineralogist, dated September 15, 1892, gives great detail on the configuration of the ore processing equipment, layout of drifts, and description of ore extraction done at the 75-, 200-, 300-, 400-, and new 600-foot levels. It was an impressive enough operation to attract attention from new, interested parties.

Hayward and Lane Years^k (1893-1896)

From 1889 through the end of 1892, British funding drove a period of renewed activity on the Hardenberg mine. At the end of 1892, we read³² *“some fine ore has been taken out, but the ledge is small, and it is now necessary to go deeper, the expense of which is too heavy for those who have been operating the property for the past two years.”* A later state report³³ gives further insight on the poor results, telling us that during 1892, the mine produced a meager

^k It is from this period of time that I have been lucky enough to secure a small collection of original documentation from various eBay purveyors. It was these that original sparked my interest in this mine.

\$23,500 from between the 300- and 600-foot levels. That's not enough to even cover expenses for an entire year. Suddenly, it seems, the owners were open to sell.

Interest came from mining magnates Alvinza Hayward and Charles Lane, whose considerable experience and wealth were achieved through success with the Utica Mine at Angels (now Angels Camp), in Calaveras County. They negotiated a deal with S. A. Howland for his bond on the Hardenberg. I don't know how or when Howland got involved yet. Hayward & Lane intended to invest considerable resources to work the mine.³⁴ During their time they would refer to it only as the Hardenburg, possibly out of respect for that earlier owner who had passed away in 1885.

By early 1893, the deal was struck and work had begun. They quickly awarded a contract to Knight & Co. in Sutter Creek, to completely replace the hoisting works.³⁵ They had to pump water out and repair a cave in before they could start to sink the shaft deeper.³⁶ Fred G. Martin from the Utica Mining Co. was put in charge of the operations.³⁷

In April, they filed an application for a post office, a copy of which resides in the Amador County Archives.³⁸ That office, the only to ever exist in Middle Bar, would operate under the Hardenburg name from 1893 to 1896, the years that Hayward and Lane would actively operate the mine.

It wouldn't take long for them to encounter the same problems that had beset prior owners. A handwritten letter from Martin to Lane dated May 5, 1893, reveals behind-the-scene details that didn't often get reported to the local newspapers:

"...it seems impossible for Mr. Fuller to make more than a foot and a half per day. This was a heavy month on expenses – where would a poor devil be to open a mine like this. No wonder Mr. Howland busted. It scares me to think of it..."

In spite of this, they continued to sink deeper but apparently with some caution. In January of 1894, we read:³⁹ *"The Hardenburg mine, which was on the verge of shutting down upon the 1st of December, did not do so, and since that time has encountered the much sought-for ledge in north drift at the 800 foot level. For some weeks they have been following up the ledge which they first struck as a small stringer, and now it is between seven and eight feet in width."*

It's an unusual reference to owners on the verge of throwing in the towel. But once again, our mine flirted with its suitors, dangling estimates of \$40 per ton ore in waiting. Hayward and Lane took the bait and immediately decided to upgrade their hoisting machinery, and install more ore processing equipment.⁴⁰ They dug out a reservoir for water above the mine,⁴¹ most likely to power their machinery. They also continued to sink deeper. By October they reached a depth of 1000-feet, and yet another promising find.

Alas, these promises would be fleeting. They sent gold for assay to the Selby Smelting and Lead Company in San Francisco. I have three of these reports from 1894, dated June, October and December. Net value of gold and silver was around \$2400 for each report. I also have some monthly accounting sheets from 1894 and 1895 that detail wages and mining expenses ranging from \$1800 to \$2000 per month. If the assay reports represent the total amount of gold

extracted in a particular month, and I believe this to be true, then they were barely covering expenses.

Additional assays I have for early 1895 were only slightly higher, reaching \$3600 for one dated in April. But it was still not enough to warrant further investment. In May, all work at the mine was stopped⁴², and they started selling off the equipment. Timbers were sold to the Gwinn Mine in

Calaveras County.⁴³ The Mechanics Mine in Sutter Creek purchased and hauled off the mill.⁴⁴

(No. 4, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100)

Memorandum of Gold Bullion deposited with **SELBY SMELTING & LEAD CO.** for Refining.

DUPLICATE
San Francisco,

APR 8 1895

Office, 416 Montgomery Street.

By

HARDENBERG MINE

NO. OF DEPOSIT.	WEIGHT.				GOLD.		SILVER.		CHARGES.	NET VALUE.
	Before Melting	After Melting	Purities	Value	Purities	Value				
	GRAMS.	GR.	GRAMS.	GR.	PERCENT.	PERCENT.	PERCENT.	PERCENT.		
3473	27000	28475	739 1/2	30556.243		3538	1245	360749		
Am Pump										

April 1895 assay statement from Selby Smelting and Lead, possibly the last before Hayward and Lane decided to shut down. From author's collection.

Years later, we read the dismal account of the real output of this mine:⁴⁵ *"In 1892, \$23,500 was produced between the 300-ft. and 600-ft. levels, and in 1894, when work had reached the 800-ft. level \$12,002 more was taken out. Work stopped in*

1895 at a depth of 1000 ft. The last ore milled in 1895 averaged \$4.19 a ton." This was below a yield typically considered profitable for operating a mine, and a far cry from the \$40 estimate. Stripped of its key machinery, our mine went back into dormancy, to await another suitor. It would take fifteen years before one would arrive.

Martin and Malloch Years (1910-1916)

The Hardenberg entered its second major inactive period starting in 1895. During this period, a report was published⁴⁶ that profiles the varying mining characteristics along the length of the Mother Lode Belt. For the Middle Bar Region, where our mine resides, it describes the crushed and ground up rock that can often infiltrate quartz veins, and references our mine as an example. Most notable in the report is the general comment *"although gold occurs in these large veins, no remunerative mine has yet been developed there"*. True so far, but that word "yet" would become an irresistible challenge, waiting for someone to take it on.

Henry Malloch, then president of the South Eureka Mining Company in Sutter Creek, had just recently turned the South Eureka Mine from a decades-old disappointment into a respectable, paying mine.⁴⁷ Fresh off of that success, he felt empowered to take on the challenge of the Hardenberg. Together with his working partner John Martin, also from the South Eureka, they took out a bond on the property from its current owner, Mrs. Kate Wells (wife of Peter Wells). I don't know yet how or when she came into possession of the property. They also made a deal to access adjoining property called the Littlefield Claim on the east side, but details are unclear whether they bonded or purchased that land. In November of 1910, they started work.⁴⁸

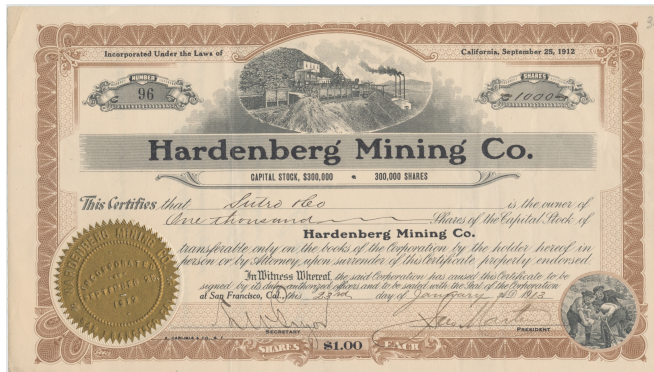
Their approach would be different from earlier companies. First, they wanted to avoid the well-known gouge of fractured rock that had plagued prior attempts on the west side of the vein.

Instead they decided to sink an entirely new, vertical shaft, that would approach the vein from the east side. They planned to do this on the Littlefield Claim property.⁴⁹

Second, new technological options were now available to them. The recently formed Pacific Gas & Electric Company had a power generating plant at Electra. In March of 1911, they extended electrical lines out to the Middle Bar region to power the new electrical equipment this mine would use.⁵⁰ In May, three 8-hour shifts were working round-the-clock at sinking the new shaft.⁵¹

By July of 1912, they reached over 1000-feet in depth⁵² and began crosscutting at this level westward toward the vein.⁵³ The September 30 issue of the Sacramento Union bugled another promising story for our mine, and also for the whole Middle Bar region:

A development of great importance to the entire section between Jackson and the river has just been made in the Hardenburg mine in the west cross-cut from the 1000-foot level. They have so far opened up six feet of milling ore for a distance of 60 feet, and the ledge gives every indication of permanence. During the week, Henry Malloch, John Martin and L. W. Prior visited the property



Hardenburg Mining Co. stock certificate for 1912 incorporation. From the author's collection.

and these heavily interested parties are so well pleased with conditions at the mine that a 20-stamp mill will be started in the near future. Other mining enterprises in the vicinity will now be pushed with renewed vigor as the Hardenburg work has proved the possibilities of the comparatively unprospected ground in that part of the county, and there is every reason to believe that the territory will now be given the investigation it deserves.

On September 23, Martin, Malloch and three others incorporated the Hardenburg Mining Company, issuing \$300,000 worth of stock at \$1.00 per share. N. S. Kelsey of Jackson was then superintendent.¹

Assays of their find averaged \$5.58 per ton.⁵⁴ This is still very low, but in November they started pouring the concrete foundation for the new mill.⁵⁵

They contracted Knight & Co. to build that 20-stamp mill. It would begin processing ore taken from the 800- and 1000-foot levels in February of 1913.⁵⁶ During this year they would also go through a string of superintendents. N. S. Kelsey was followed by a Mr. Bryant, then H. R. Drullard. By August it was W. H. Schmal, who came with prior successful experience as superintendent of both the South Eureka and Oneida Mines on his resume.⁵⁷

Glowing reports about our mine flowed from the local presses. Tons of ore was piled on the ground while the mill operated at full capacity. The owners were considering sinking the mine deeper.⁵⁸

¹ By 1914, Kelsey would also become the general manager of the Argonaut Mine in Jackson.

Then in September of 1913, the news⁵⁹ turned at the reappearance of an old nemesis: *“The drifts are in swelling ground and are said to be giving some trouble, and may necessitate the exploration of new ground.”* They had encountered the very thing they tried to avoid by sinking on the opposite side of the vein! This must have been a disappointing blow.

After this, news about further activity grows thin. In March of 1914, consultants were brought in to examine the mine.⁶⁰ In July, we read they were crosscutting to discover new ore shoots.⁶¹ A rumor circulated the mine was up for sale, but it is quickly denied.⁶²

Then, in August of 1914, we read:⁶³ *“A thorough survey of this property is being made, both surface and underground works. What this is for we do not know, unless for keeping a record of all working for future reference. It is not likely that the mine will start again under the old management. The funds for development work are not available, and while it is claimed the ore is of fair grade, the ore developed is not sufficient to keep the stamps dropping. More development work is needed, and this the managers are not in a position to undertake at present.”* Clearly Martin and Malloch were losing interest in the Hardenberg as they turned their attention back toward the South Eureka which at the time was showing greater success. Their work on the Hardenberg was summarized as follows⁶⁴:

In April, 1911, the stockholders of the South Eureka Mining Company began reopening and sank a vertical shaft 1100 ft. deep and in 1913 and 1914 reported production of 26,478 tons which yielded \$65,970 or \$2.49 a ton, principally from the 850-ft. and 1000-ft. levels. The ground was found to be heavy, badly shattered and with a wide gouge on the black slate footwall.

New money, new techniques and new strategies were not enough to overcome the inherent problems of mining in this region. Another article,⁶⁵ written closer to the time, summarizes the results this way:

Between February 1, 1913, and 1914 records show that 26,475 tons yielded \$57,029 by amalgamation and \$5941 by concentration. The Hardenberg company made no profit, but opened a shoot that assayed \$6.10 per ton. Physical conditions were not suitable for economic mining and the ore was not mined clean. Machinery installed is worth over \$15,000, and permanent improvements cost over \$30,000.

These are far from successful results by either account, so it is no wonder that by April of 1915, they stopped all work on the mine, and allowed it to start filling with water.⁶⁶ In June, it was revealed⁶⁷ the company was deeply in debt, and they were proposing a plan to pay it off. A six-month agreement was reached with their creditors, and with Kate Wells, the owner of the land. Company property was turned over to C. L. Culbert of the Bank of Amador County as trustee⁶⁸ to manage the debt.

Then in November, it appears a bond was taken out on the property but details are unclear.⁶⁹ Regardless, our mine would go idle once again, but for a briefer period.

The Final Years – Parks and Loring, and Beyond (1916-1918+)

The Hardenberg Mine was now filling with water, as mines will do when they are not under active management. In April of 1916, there was news that a New York firm of men was ready to invest.⁷⁰ This group would include well known men from the Plymouth Consolidated Mine, specifically James F. Parks, and William J. Loring. Following great success at the Plymouth, they were in a period of business expansion, taking over additional mining operations in Amador, Calaveras and Tuolumne Counties. The Hardenberg would be one of them. Money to fund their operations in Plymouth had come from Bewick, Moreing & Co., of London. Because of the Great War, British capital was harder to come by for investment in California mining.⁷¹ Their work at the Hardenberg would be managed under a separately formed company named the Hardenberg Mining Syndicate.⁷²

It started with a typewritten letter found in the Amador County archives,⁷³ dated September 12, 1916. The letter is signed JFP, for James F. Parks, and the topic is the “Hardenburg”. The first page is missing so we don’t know to whom it was addressed. What we do have states:

I note what you have to say with reference to the Hardenburg proposition and hope that you can make some arrangement with Mr. Burch^m for me to look after the work for you, as I feel that I could give you as good a results as you could from anyone else, by placing a good foreman there. We could also do the office work and assaying here which would save quite a little and I know that you would be pleased with Mr. Beesley’sⁿ work.

If you will remember the day we were there Mr. Mallock [sic] said that you would have to have a new hoist cable before starting to bail water. It might be advisable if you intend to start work there soon, to place your order with Roebling so that you will have the cables on time.

That same month, Loring secured a three-month option on the mine from Mrs. Kate Wells, and also the mining machinery from Martin and Malloch that was still onsite.⁷⁴ The machinery was restarted by October and, as mentioned in Park’s letter, new cabling was put in place. They began the work to dewater and repair the mine.⁷⁵ In January they installed a new pump⁷⁶ and by February the mine was cleared down to 1100-feet.⁷⁷ The goal now was to develop operations at deeper levels.⁷⁸

The Archives has a copy of a report,⁷⁹ dated May 27, 1917. It was written by Oscar H. Hershey, and addressed to Loring. Hershey entered the mine with Parks, and inspected the work at the new 1330-foot level. He notes the same “gougy” conditions that have always plagued this mine. The vein they have encountered showed every promise for yielding gold, and yet it assayed at less than one dollar per ton, except for one location that assayed at six. He offered an explanation as to why it might not be yielding any better that would become yet another alluring promise to continue work:

As to why it is not, I can only offer the same explanation that I did in my original report, namely, that it is rather a common feature of Mother Lode veins to have low-grade belts. Mining

^m Assuming this is Albert Burch, based on various items in Amador County Archives. He was a mining engineer with the Plymouth Consolidated.

ⁿ C. H. Beesley was bookkeeper for the Plymouth Consolidated at the time.

operations were sometimes terminated when a low-grade belt was reached and subsequently other bodies of good ore found deeper. I can only suppose that you are digging in one of those relatively barren zones and that greater depth will bring improvement.

Loring was convinced that digging deeper would pay off, and he told the press this in August,⁸⁰ shortly after reaching the 1500-foot level. In September the suspicions seemed to play out in the news:⁸¹ *"A rich strike in the Hardenburg mine on the Mokelumne river, south of Jackson, is reported during the week. The find was made on the 1500-ft. level in the north drift, the assays from a well-defined vein ranging from \$16 to \$7600 per ton in gold."*

News like this was certain to draw considerable attention, but the excitement would be short-lived. At the start of the very next month, we read:⁸²

Failure to find enough ore to justify further expenditure is the reason the W. J. Loring company has discontinued operations under its option at the Hardenburg mine, south of Jackson. The property reverts to the former owners, who are the same men interested in the South Eureka property at Sutter Creek. The rich find reported in the Hardenburg mine recently proved to be only a small pocket. Large low-grade orebodies are in sight, but the cost of handling them under present conditions is prohibitive.

By November of 1917, the mine was shut down⁸³ for the last time, demonstrating the decisiveness of experienced mining men who knew when to call it quits. It was also during a time when the cost of mining materials was on the rise, and cheap labor was no longer abundant. As a result, many mines that had been operating on thin margins were being shut down.⁸⁴ This was likely a motivating factor as well. The property reverted back to Martin and Malloch. I believe this was probably just the Littlefield Claim.

A trustee sale took place at the Jackson courthouse in March of 1918. John Doman^o purchased it for \$10,000. One quarter of that would be refunded to cover title for the mill site that had been constructed on Hardenberg ground that was not owned by the company.⁸⁵ More research is needed to learn what pieces Doman actually purchased – the Hardenberg property from Kate Wells, the Littlefield Claim or the mining equipment from the South Eureka Mining Co.

What we do read⁸⁶ is *"a company headed by W. J. Loring worked it under option for a short time since, but the purchase was not consummated. Creditors of the Hardenburg company assigned their claim for material and supplies to C. L. Culbert as trustee and the sale was made for their benefit."* I believe the Hardenberg Company is a reference to Martin and Malloch. This would seem to point to Doman's purchase of the equipment. Long after, In 1929, he would file for a patent on the Littlefield Claim,⁸⁷ so it appears he may have purchased that piece too.

A William J. McGee was also involved in the closing transactions, as his name appears on several documents we have in the county archives. A receipt⁸⁸ shows where he covered \$639.80 worth of expenses incurred by Culbert for his work as trustee in the transaction in August of 1918. William's name would be associated with the mine for many years to come, later adding a Ralph McGee as well.

^o The name J. Doman appears on a February 1895 timesheet for this mine, during the time Hayward and Lane were running it. It is not clear if this is the same person, an offspring or just a coincidence.

In parallel, equipment from the mine was being sold off. In June of 1918, the hoist motor was sold for use in constructing the Hetch Hetchy reservoir.⁸⁹ A letter from the Keystone Mines to Doman, dated July 30, 1919,⁹⁰ makes an offer to purchase some metalwork on the headframe from him. This bolsters the idea that he purchased the mining equipment. In 1921, the Triple Lode Mining Co. at Angel's Camp purchased the Hardenberg mill.⁹¹



Author's photo of the Martin and Malloch built mill site, visible from Middle Bar Road.

Then in August of 1927, a major grass fire would consume over 5500 acres of land around Middle Bar.⁹² It started in a building of the nearby Mammoth Mine, and quickly got out of control. In spite of the best efforts of over 100 people, the fire would burn away many structures in the area, including those of our mine: the headframe, change house, timber shed and a dwelling

house. The only signs left of mining at the Hardenberg would be the concrete foundations and tailings that exist today.

Our mine's numerous documented failings didn't stop desire for others to consider giving it a go. There was a report of once again reopening the mine in April of 1922.⁹³ And in 1934, an Edward Thornton from Los Angeles wrote a letter addressed to both William and Ralph McGee,⁹⁴ expressing his interest to "*acquire a good mining property*". As far as I can tell, none of these ever went further than the papers that recorded the interest.

Someday, when you are driving south on Highway 49 out of Jackson, look for the



Google Earth view of Hardenberg Mine site, with author's current best guesses regarding mine features.

sign that points to Middle Bar. This single-lane road will eventually take you to the Middle Bar Bridge. The last gulch you pass through before the road bends west toward the bridge is the area that was once the Hardenberg Mine. It is private property, so please respect the owners by not trying to get closer without first seeking permission. Someday I hope to get permission myself to view what does remain.

While in that gulch, look carefully to the east. It will be easier if you get out of your car and walk along the road. Up against the hillside, and surrounded by trees, you will see old concrete walls and pillars. Aerial imagery also shows this, see photo, previous page. I believe this to be the foundation of the mill constructed by Martin and Malloch, in November of 1912. Drive a little further and you will see gray colored tailing rock, closer to the road and on the same side. I am not sure yet what this feature is.

In the aerial view, at the top of the hill, right above the mill, we see what I believe are pillars for the hoisting works, the shaft site, and tailings, all from work done by Martin and Malloch, and then by Loring. These would be on land that we now know was the Littlefield Claim.

I believe work done earlier on this mine occurred on the west side of the road you are on, based on the detailed plat map from the 1874 patent. I have not yet found any remaining signs of this work from the road, or from Google Earth imagery.

Our story is far from complete. There are many gaps and unanswered questions that, over time, may get filled in by further research or additional eBay finds. Perhaps a reader of this report will have missing pieces to share.

Two thousand and eighteen will mark the one-hundred year anniversary of the Loring and Parks sale of the Hardenberg Mine that closed the story of its active operation. Let's remember the many people who tried and failed, who were employed and let go, and who recorded and reported on it so that we can now preserve its memory in greater detail. And perhaps we can now add the Hardenberg – named in honor of an original and great California pioneer who worked it – to our collective consciousness of Amador County mines.

¹ *Sketches of Leading Representative Men of San Francisco*, Oscar T. Shuck, 1875; pp. 935-940

The Early Years

² *Mining and Scientific Press*, October 21, 1916; pp. 610-611.

³ *Amador County Archives record #7815.7, Deed from Jabez C. Arnold to John B. Marlette and others.*

⁴ *Cultural Resource Study of Middle Bar for EBMUD*, Deborah Cook and Julia Costello, 2002.

The Hardenbergh Years (1867-1887)

⁵ *Amador Dispatch*, February 29, 1868; p2.

⁶ *Amador Dispatch*, March 28, 1868; p2.

⁷ *Mining and Scientific Press*, August 15, 1868; p102. Note that mining journals often received mine-specific information from local newspapers. There might be as much as a two-week delay between an event, and the reporting of it.

⁸ *Jackson Ledger*, September 5, 1868.

⁹ *Mokelumne Hill Chronicle*, September 5, 1868.

¹⁰ *Jackson Ledger*, October 17, 1868.

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- ¹¹ *Jackson Ledger*, January 23, 1869.
¹² *Mining and Scientific Press*, December 26, 1868; p408.
¹³ *Jackson Ledger*, April 10, 1869.
¹⁴ *Ibid*, April 29, 1869.
¹⁵ *Ibid*, May 25, 1869.
¹⁶ *Mining and Scientific Press*, August 20, 1879; p124.
¹⁷ *History of Amador County, California*, Jesse Mason. Thompson & West, 1881; p147.
¹⁸ *Ibid*, February 7, 1885; p90.

The British Years (1887-1892)

- ¹⁹ *Amador Ledger*, April 23, 1887.
²⁰ *Ibid*, August 1, 1891.
²¹ *Amador Dispatch*, December 7, 1889.
²² *Amador Ledger*, April 5, 1890; p3.
²³ *Mining and Scientific Press*, December 6, 1890; p364.
²⁴ *Report X of the State Mineralogist*, December 1, 1890; p106.
²⁵ *Mining and Scientific Press*, February 21, 1891; p116.
²⁶ *Calaveras Citizen*, March 14, 1891.
²⁷ *Amador Dispatch*, March 21, 1891; p3.
²⁸ *Mining and Scientific Press*, May 9, 1891; p276.
²⁹ *Amador Ledger*, June 6, 1891.
³⁰ *Engineering and Mining Journal*, May 14, 1892; p527.
³¹ *Mining and Scientific Press*, July 2, 1892; p14.

Hayward and Lane Years (1893-1896)

- ³² *Engineering and Mining Journal*, December 24, 1892; Vol 54, p613.
³³ *Mother Lode Gold Belt of California, Bulletin 108*, November 1934; p84-85.
³⁴ *Amador Ledger*, December 23, 1892.
³⁵ *Mining and Scientific Press*, January 7 1893; p13.
³⁶ *Ibid*, April 1, 1893; p205.
³⁷ *Ibid*, October 21, 1916; p610-611.
³⁸ *Application for Federal Post Office*, Amador County Archives item #1335.6.35.
³⁹ *Ibid*, January 13, 1894; p24.
⁴⁰ *Ibid*, April 28, 1894; p269.
⁴¹ *Ibid*, July 28, 1894; p58.
⁴² *Ibid*, May 18, 1895; p307.
⁴³ *Ibid*, June 22, 1895; p398.
⁴⁴ *Ibid*, January 18, 1896; p50.
⁴⁵ *Mother Lode Gold Belt of California, Bulletin 108*; p84-85.

Martin and Malloch Years (1910-1916)

- ⁴⁶ *Mining and Scientific Press – Some Structural Features of the California Gold Belt*, W. H. Storms, August 22, 1903; p113.
⁴⁷ *Mines and Methods, Exploiting the Deepest American Gold Deposits*, Al H. Martin, October, 1912; Volume 41, No. 2, p38.
⁴⁸ *Engineering and Mining Journal*, November 19, 1910; Volume 90, p1028.
⁴⁹ *Report of the State Mineralogist*, September 15, 1914; p29.
⁵⁰ *Ibid*, March 11, 1911; Volume 91, p537.
⁵¹ *Ibid*, May 27, 1911; Volume 92, p467.
⁵² *Ibid*, July 20, 1912; Volume 94, p133.

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- ⁵³ Ibid, August 10, 1912; Volume 94, p278. This article provides extensive detail on the configuration of the machinery and ore processing for the mine.
- ⁵⁴ Ibid, October 12, 1912; Volume 94, p712.
- ⁵⁵ Ibid, November 9, 1912, Volume 94, p905.
- ⁵⁶ Ibid, February 22, 1913; Volume 95, p445.
- ⁵⁷ *Mining and Scientific Press – Central Belt in Amador County*, June 1, 1913; p945.
- ⁵⁸ Ibid, September 13, 1913; p434.
- ⁵⁹ *Engineering and Mining Journal*, September 20, 1913; Volume 96, p567.
- ⁶⁰ Ibid, March 14, 1914; Volume 97, p589.
- ⁶¹ Ibid, July 11, 1914; Volume 98, p89.
- ⁶² Ibid, July 18, 1914; Volume 98, p138.
- ⁶³ *Amador Ledger*, August 21, 1914; p1.
- ⁶⁴ *Mother Lode Gold Belt of California, Bulletin 108*; p84-85.
- ⁶⁵ *Mining and Scientific Press*, October 21, 1916; p610-611.
- ⁶⁶ *Mining and Scientific Press*, April 10, 1915; p596.
- ⁶⁷ Ibid, June 19, 1915; p964.
- ⁶⁸ *Engineering and Mining Journal*, June 26, 1915; Volume 99, p1137. The Trustee was erroneously listed as C. L. Cuthbert.
- ⁶⁹ Ibid, November 6, 1915; Volume 100, p777.

The Final Years – Parks and Loring, and Beyond (1916-1918+)

- ⁷⁰ Ibid, April 22, 1916; Volume 101.
- ⁷¹ Ibid, December 23, 1916; Volume 102, p1115.
- ⁷² Ibid, June 9, 1917; Volume 103, p1022.
- ⁷³ *Letter from James F. Parks regarding the “Hardenburg”*, Amador Archives item #2459.4.39.63.
- ⁷⁴ *Mining and Scientific Press*, September 30, 1916; p507.
- ⁷⁵ Ibid, October 7, 1916; p538.
- ⁷⁶ Ibid, January 6, 1917, p31.
- ⁷⁷ Ibid, February 24, 1917; p281.
- ⁷⁸ Ibid, April 21, 1917; p557-558.
- ⁷⁹ *Report by Oscar H. Hershey*, May 27, 1917; Amador County Archives item #792.23.
- ⁸⁰ *Engineering and Mining Journal*, August 25, 1917; Volume 104.
- ⁸¹ *Mining and Scientific Press*, September 8, 1917; p364.
- ⁸² Ibid, November 3, 1917; p656.
- ⁸³ *Engineering and Mining Journal*, November 24, 1917; Volume 104, p940.
- ⁸⁴ Ibid, *Gold Mining in the Mother Lode Region*, April 22, 1918; Volume 105, p768.
- ⁸⁵ *Mining and Scientific Press*, March 2, 1918; p308.
- ⁸⁶ Ibid.
- ⁸⁷ *Amador Dispatch*, November 11, 1929; p6.
- ⁸⁸ *Amador Archives #4515.5*.
- ⁸⁹ *Engineering and Mining Journal*, June 22, 1918; Volume 105, p1149.
- ⁹⁰ *Letter from Keystone Mines to John Doman*, July 30, 1919; Amador Archives item #815.46.2.
- ⁹¹ *Mining and Scientific Press*, April 9, 1921; p507.
- ⁹² *Amador Ledger*, August 18, 1927; p1.
- ⁹³ *Engineering and Mining Journal*, April 15, 1922; Volume 113, p646.
- ⁹⁴ *Letter from Edward Thornton to William and Ralph McGee*, June 9, 1934; Amador Archives item #4515.7.