Hugh Shamberger (91)
Item 22

GOLDFIELD'S

2160 0022 ORE REDUCTION MILLS AND

SAMPLING PLANTS

1905-1916

During 1905 six custom ore reduction mills together with one sampling plant had been erected within the Goldfield Mining District. These were the Gardner, Combination, Spiking, Western Reduction Company, Nevada Goldfield Reduction Company (Frank), and American Milling and Water Company, reduction mills, and the Columbia Sampling and Ore Company plant. The location of these mills are shown on Map _____. Other mills constructed later in Goldfield were the Kinkead (1906), Goldfield (Cl) Chlorination (1908), Goldfield Consolidated (1908), Florence (1908-1909), and Nevada Metal Extraction Company (1916).

Frederick Ransome, in his outstanding report on the geology and ore deposits of the Goldfield Mining District noted that by September 1905 the average production of the Goldfield Mines was 70 tons of shipping ore, of an average value of $200 a ton, and 100 tons of milling ore, having an average value of $40 per ton. He further noted that in general only ore having an average value exceeding $100 per ton was shipped, with the exception of the Combination Mines Company which milled all its own ore, other than that exceeding $600 per ton, which was shipped. 1/

Prior to the erection of mills in Goldfield during 1905 the only method available to the mine owners and lessees to having their ores processed was by freighting to the Nevada & California Railway (old Carson & Colorado R.R.) railhead at Candelaria, a distance of 65 miles. Such freighting was by means of large ore wagons drawn by 16 to 20 mule teams. At Candelaria the ore was loaded on freight cars and transported over the narrow-gauge rails to Mound House, near Dayton, Nevada. There the ore was transferred to the Virginia & Truckee R.R. standard-gauge cars and transported to the smelters in the San Francisco Bay or Salt Lake area.

Following the completion of the Tonopah Railroad from Tonopah Junction, on the old C&C R.R. near Mina, to Tonopah during July 1904, the ore wagons had only a 30-mile haul to the loading facilities at Goldfield Junction, about 8 miles from Tonopah. By September 1905 the Goldfield Railroad reached Goldfield, and the need for the large ore wagons ceased.

Ransome reported that when he made his second visit to Goldfield during June and July 1908, the only mills operating at that time were the Combination, Columbia Sampling and Ore Company and the Nevada Goldfield Recution Company (Frank Mill), the other mills having closed. 2/ The Florence, Goldfield Consolidated and Goldfield Cl mills, mentioned above, had not as yet gone into production.

The small 1905 custom mills were a blessing to the early mine operators and lessees as it enabled them to have their ores milled locally and get immediate funding for continued operations. Most of these early custom mills were forced to shut down during 1907, brought about by their poor locations, low recovery values and mostly by the cessation of the most productive leasing operations and the take-over by company operation.

This history would not be complete without a brief description of the various mills and sampling works during the 1905-1916 period.

THE MILLS

AND SAMPLING WORKS

As earlier noted some of the Goldfield mills were reduction mills where the ore was crushed and treated by amalgamation, concentrating and cyanidation. The product was gold bullion and concentrates. In the sampling plants the ore was crushed and assayed and loaded on cars for shipment to smelters. Usually the sampling company would pay the owner of the ore a certain percentage of the assayed value. Some of the mills served both purposes, ore reduction and sampling.

The method used by the sampler was briefly as follows; The ore was first crushed and then conveyed to an automatic sampler. The sampler cut was again crushed and sampled. This cutting and crushing was continued until three small samples, in powdered form for assay were obtained, one for the mine owner, one for the sampling company, and one for an umpire, in case of a dispute over the values. The main bulk of the ore in each cutting process went to storage bins and kept there until a satisfactory settlement was made.

WHICH WAS FIRST

There seemed to be some question as to which mill first started reducing ore in the Goldfield Mining District. Some news items give this honor to the Combination Mill, while other state that the Gardner Mill was the first to start. Ransome reported that the Gardner Mill was the pioneer mill. 3/ The Goldfield News of May 12, 1905 noted that the Gardner was the first to start. However, from other news releases it would appear that they both started during the same week in April 1905, one being a custom reduction mill, the other a company operated reduction mill.

THE GARDNER MILL

This mill constructed by the Goldfield Reduction Company was situated at the base of the Malpais Mesa, about 1,000 feet north of Rabbit Springs. Photographs _____ and _____ show this mill.

The mill, consisting of two batteries of five stamps, each stamp weighing 1,240 pounts, amalgamation plates, and concentrating tables, was in the charge of Percy C. Gardner. The water supply was furnished by deep wells.

The mill started operating during the last week of April 1905. The August 21, 1909 edition of The Tonopah Miner described the operation of the mill as follows:

> The mill never handled much ore, for it lacked the chemical process necessary for close saving, was high up on the hill, far from the railroad, necessitating a heavy hand with loaded ore

> wagons, and the advent of the railroad ... finally put a quietus upon its successful operation ... The mill was first equipped with a steam power plant, this latter being superceded by electricity ...

The article continued by stating that all that remained of the old mill was the old smokestack as it was dismantled and shipped to the Mayflower Consolidated property at Pioneer, Nevada. (Note: The Pioneer Mining District was adjacent to the Bullfrog Mining District, near Beatty, Nevada.)

THE COMBINATION MILL

The August 13, 1904 issue of The Tonopah Miner reported that the excavation for the Combination Mill was nearly completed. The article continued by stating:

> Within 90 days the stamps will be dropping in Goldfield. The event will mark the dawn of a new epoch in the history of the district, and the shipment of bullion will quickly supplement the cumbersome and expensive method of moving ore by mule teams.

Because of the inability in obtaining machinery for the mill it wasn't until the following April 1905 that the mill was completed. The Tonopah Miner in its April 29, 1905 issue reported that a trial run on 18 tons of ore was made April 17, 1905 and that the mill was pronounced satisfactory.

The mill was situated on the Combination No. 1 mining claim, as shown on Map _____. As originally constructed the mill had 10-stamps and amalgamation plates. Water for the mill was piped from Alkali Springs, 10 mills to the north. (For details regarding this pipeline see the section on Goldfield's Struggle for an Adequate Water Supply.) By the following February two additional batteries of five stamps each were installed, and also a tube mill. 4/ The capacity of the mill was increased from 30 to about 80 tons of ore per day.

Ransome reported that some of the ore milled, carried 48 to 55 ounces of gold to the ton, and that a saving of 62 percent of the gold was caught on the amalgamation plates, and the tailings sacked and shipped to the smelter. 5/ With the installation of concentrating tables and cyanide tanks the mill recovered about 95 percent of the gold values in the ore.

When first constructed the mill was operated by steam power. Later during 1905 electric power was used.

The Combination Mines Company property, including the mill was acquired by the Goldfield Consolidated Mines Company on March 1, 1907. 6/ No doubt, following this acquisition of the mill, the Consolidated Company milled ores from some of its other properties.

THE MILL DESTROYED

On September 25, 1909 a serious mining accident occurred when the famous Hampton Stope on Combination No. 1 Claim caved in: The October 2, 1909 edition of The Tonopah Miner reported it to be the most remarkable mining accident in history. The cave-in from the fourth level to the surface, breaking through nearly 200 feet of solid ground, enveloped a portion of the Combination Mill, caught and killed three men. The stope had a length of 150 feet and a width of 70 to 100 feet. The interior of the mill was badly damaged, with a portion of the equipment dropping down in the hole. The mill was then torn down, and never rebuilt.

The Combination Mine and Mill is shown on Photograph _____. Photograph _____ taken in 1974 shows the remnants of the mill.

NEW WESTERN REDUCTION COMPANY

The mill of the New Western Reduction Company was situated about 600 feet north of the Goldfield Brewery and 1,500 feet east of Rabbit Springs. Photographs _____ and _____ show this mill. It started operating during the latter part of May 1905, being the third reduction mill to handle ore in the Goldfield Mining District. It was both a reduction mill and sampler, having a capacity of 25 tons, and 120 tons per day respectively. It was initially equipped with 5-stamps. 7/

It was reported that this company purchased custom ore, paying 85 percent of the assay value before it was milled. What ore that wasn't milled was shipped to the smelters, either to the San Francisco Bay area or Salt Lake Valley. 8/

By the first of January 1906 and subsequent to July 1, 1905 the company handled over 10,000 tons of ore, of which 9,000 tons averaged over $200 per ton. The ore treated in the reduction mill amounted to about 1,400 tons averaging $46 to the ton. 9/

Like the Gardner Mill, with the advent of railroad facilities and the cessation of the rich leasing operations, the company abandoned its operation about January 1907. The August 21, 1909 issue of The Tonopah Miner stated that the mill had been abandoned over two years and was being moved to the Mammoth Mining Company property at Gold Mountain (Divide Mining District, about six miles south of Tonopah).

THE SPIKING MILL

While this mill had a life-span of only 27 days it is mentioned here because it was either the third or fourth mill to be erected in the district, and it represents a part of the early milling history in Goldfield that little is known about.

It was announced in The Goldfield News of December 30, 1904, that plans were being made to build a five-stamp mill just outside of the town limits on the northeastern edge of Goldfield, and that two wells had been sunk. Earlier, the News in its August 5, 1904 issue reported that the Goldfield Mines and Development Company had elected J. H. Spiking, President; Sol Camp, Vice-President; M. M. Detch, Secretary, William Campbell, Treasurer and T. D. Murphy, A. D. Myers, C. C. Stell, W. S. Williams and J. F. O'Brien, Directors. It is assumed by the writer that this company was the builder of the mill.

It was reported by The News May 12, 1905 that the mill had started operations and that it was situated near the graveyard. Its actual location has been difficult to ascertain with any degree of accuracy. However, the author now feels that the location shown on Map _____ is about right. The April 25, 1907 Map of Goldfield, by James H. Parks, shows the location of the early graveyard. As

projected by the author this would place the graveyard in the area where later the Las Vegas & Tonopah R.R. depot was erected.

Mrs. Elvira Nelson, youngest daughter of the Barton McGee's, lived on Cedar Street, across from the Cedar Street (Mary A. McLaughlin) School, being constructed at the time of the explosion of the Spiking Mill. Elvira was then 13 years of age. She related to this writer that she remembers the explosion at the mill and that fragments from the mill fell in their yard. Mrs. Nelson, now living in Carson City has been mentioned earlier in this history of Goldfield.

The fatal explosion of the mill was reported in The Tonopah Daily Sun of July 8, 1905. James Spiking, the Manager, and Taylor Bates, an employee, died as the result of the explosion. The Sun mentioned that it was the boiler that exploded destroying the plant. The fact that there was no roof on the mill, as related by Elvira Nelson, allowed the fragments to scatter over a wide area. At the time of the accident The Sun noted that the mill was working on ore from the Florence Mine.

NEVADA GOLDFIELD REDUCTION COMPANY

THE FRANK MILL

The Frank Mill was named for H. L. Frank, of Butte, Montana, the president of the above mentioned company. It was situated about 2,400 feet northeasterly of the 1905 T&G R.R. depot and near the southwest corner of Columbia.

Milling operations started June 26, 1905. 10/ It was the owners intention to operate the small mill at first in order to experiment with Goldfield ores. The January 4, 1906 issue of The Goldfield Review in reporting on this operation stated:

> The Goldfield Reduction Company, which was started some eight months ago as an experimental plant, is now ranked among the largest in the district.

By August 1905 additional equipment had been added which allowed the company to reduce 25 tons of ore each day and to also operate a 100-ton sampling plant. 11/

As reported in the August 4, 1906 issue of The Goldfield News the mill had been greatly enlarged with ore crushing capacity of 500 tons per day. The reduction mill was equipped with 20 stamps each weighing 1,250 pounds. The treatment was by plate amalgamation, concentration tables, tube mill and cyaniding. The news article stated that this new plate would start August 6, 1906.

Frederick Ransome wrote that the plant had a sampler of 450 tons per diem and a cyanide mill which treated 100 tons each day. Ransome stated that at the time of his second visit during July and August 1908, the only mills operating at that time were the Combination, Western Ore Purchasing Company (Columbia Sampler), and the Nevada Goldfield Reduction Company's Frank Mill. 12/

The January 30, 1909 issue of The Goldfield Review reported that the Combination Fraction Mining Company, controlled by George Wingfield and George Nixon, had leased the reduction portion of the Nevada Goldfield Reduction Company Mill on a long term lease. The mill was to treat 80 tons of Combination Fraction ore each day. The Reduction Company retained the sampling plant which was equipped to sample 400 tons of purchased ore each day in addition to the Combination Fraction ore. For the first three-quarters of 1909 the ore milled from the Combination Fraction had a gross value of $299,000. 13/

A listing of ore reduction plants in Nevada as of January 1, 1913, as tabulated in the January 2, 1913 edition of the Goldfield Daily Tribune shows only three mills in the Goldfield area, these being the Consolidated, Goldfield Chlorination and the Nevada Goldfield Reduction Works.

COLUMBIA SAMPLER

WESTERN ORE PURCHASING COMPANY

The January 14, 1905 issue of The Tonopah Miner reported that the sampling works of Bela Kadish would soon be started up. These works were, no doubt, the

forerunner of the Columbia Sampler which was situated near the northwest corner of Columbia and about 1,400 feet north of the Frank Mill (see Map _____). The works were purchased by the Columbia Sampling and Ore Company about August 1905.

It was reported in The Goldfield Review under date of August 24, 1905 that during the past two weeks the sampler had sampled and shipped $400,000 worth of high grade ore to the smelters in Salt Lake City, and was handling 70 to 100 tons each day. Superintendent Kadish stated the ores came from the Florence, Sandstorm No. 6, Kendall and other smaller producers.

On November 7, 1906 the sampler was purchased by the Western Core Purchasing Company. This company had large samplers at Millers, 12 miles north of Tonopah and at Reno, Nevada. The Goldfield Daily Tribune of November 8, 1906, in reporting this purchase, stated:

> It takes large capitol to operate a custom sampler in such a camp as Goldfield, where ore is of such high grade, and there is so much of it. It has to be paid for as soon as it is sampled, and the sampling company has to wait, often for weeks, before the ore is landed at one of the smelters.

The Mining and Scientific Press of January 22, 1910 reported that at that time the ore reduction plants in operation were the Consolidated 100-stamp, Florence 40-stamp, and the 20-stamp Nevada Goldfield Reduction Co., mills and the large crushing and sampling plant of the Western Ore Purchasing Company.

J. A. Rickard reporting in the Mining and Scientific Press of June 12, 1915, on his second visit to Goldfield in 1915, only listed one mill, the Goldfield Consolidated, as operating. The Engineering and Mining Journal of March 1, 1913, made reference that this mill was still sampling ore. It was announced in the Goldfield Daily Tribune in its February 10, 1915 issue that after a close-down of approximately two years the Columbia Sampler of the Western Ore Purchasing Company was again placed in commission by Frank M. Manson, Manager. It was said that the plant could handle 350 tons of ore in 24 hours.

AMERICAN MILL & WATER COMPANY

The American Mill was situated about 1,200 feet southeast of the 1905 T&G R.R. depot. It was constructed under the supervision of F. A. Doran who remained as manager. 14/ The reduction plant, with a daily capacity of 30 tons, started milling custom ore the latter part of September 1905. It used amalgamation plates and cyanide. At the start the mill was powered by gasoline but soon changed to electricity. Water was obtained from wells on the company's property.

In describing the life of this plant the Goldfield Daily Tribune of February 28, 1908 reported:

> The plant of the American Milling Company, located a short distance west of town, will pass into the hands of Fred H. Vahrenkamp today ... Mr. Doran and his associates constructed the mill at a cost of $90,000 ... Owing to several causes the mill never ran steadily. Later it was leased to the owners of the Red Top Mine, but when that property was taken in by the Consolidated, it was again closed down ... At the present time the Combination, Goldfield Nevada Reduction Company and the Kinkead Mills are running at full capacity.

No further mention of this mill was found following the date of the above news release. It probably terminated all operation during 1908

KINKEAD MILL

The Kinkead Mill, oftentimes referred to as the Wingfield-Nixon Mill, was situated at the southeastern base of Columbia Mountain, near the north end line of the Red Top mining claim, and being on the Booth mining claims. It started operating about February 4, 1906 on ore from the Sandstorm and Kendall mining claims.

This mill, which used large mullers to grind the ore, was invented and patented by James Kinkead who along with Wingfield and Nixon owned the mill. After the ore was pulverized it passed over the quicksilver plates, then to the concentrating tables. While the mill was to be used on ores from the Wingfield-Nixon properties, some custom ore was purchased and treated. 16/

The water supply for the mill was obtained from the Highland Mine, near Diamondfield, three and one-half miles northeast of the mill. Electric power for the permit was furnished by the Nevada Power and Light Company. Photograph _____ shows the water pipe trench from the Highland Mine and also the N.P.&L. Co. power substation.

By the middle of January 1906 the Kinkead Mill was leased by the Garrett Mining and Leasing Company to mill ore from plots 9 and 10 on the Kendall claim. 17/ The Goldfield Daily Chronicle in its August 8, 1908 issue noted that the Kinkead Mill was treating 60 tons of concentrates from the Combination Mill. No record of any milling operations by this mill was found after the above date, although it was quite possible that intermittant milling operations were carried on during early 1909.

GOLDFIELD (Cl) CHLORINATION MILL

This mill was situated about 2,000 feet northwest of the Columbia Sampler and 2,600 feet north of the Franck Mill. It commenced operations about the first of November 1908. The Tonopah Miner of October 24, 1908 noted:

> Nearer and nearer approaches the time when the low grade ores of the Goldfield district will be treated at a profit to mine and mill owner, and to leaser. A tremendous strike in that direction was made this week when the Goldfield Cl Mill Co. announced the completion of its plant and beginning of operations, ... the process employed is the Greenwalt Electro-chlorination Process.

As described in the October 21, 1908 issue of Columbia Topics the gold and silver values were obtained from both oxide and sulphide ores. The treatment was by an electrolytic process which it was claimed would make a 95 percent recovery. The chlorine solution was generated by common salt obtained from nearby marshes. The present plant was designed to handle 100 tons of ore each day.

How long this plant functioned or what success it had was not determined. The Goldfield Daily Tribune of January 2, 1913 indicated that the plant was being used as a sampler having a capacity of 200 tons per day.

THE GOLDFIELD CONSOLIDATED MILL

100-stamps---600 tons per day

The great 100-stamp Consolidated Mill started reducing ores from their several properties on December 26, 1908. The Goldfield News in its December 26, 1908 issue announced the opening of the mill in this manner:

> True to promise, the great Goldfield Consolidated Mill on Sandstorn Hill, the finest quartz mill in the world, started operations this morning... With two or three miles of railroad equipment the Consolidated Mill has cost in the neighborhood of $900,000...

As noted in the section on railroads, the construction of the 1.87 miles of broad-gauge rails was com pleted April 2, 1908. During 1909 a holding company, the Goldfield Milling and Transportation Company was organized to own and operate the short-line railroad, milling and water properties. This company treated the Consolidated ores under contract. 20/ The officers of both the companies were the same.

On about January 15, 1919 the mining and milling operation of the company on Goldfield properties came to an end. The life of the mill under the supervision of the Goldfield Consolidated Mines Company, was from December 26, 1908 to January 15, 1919 a period of 11 years. During that time the mill had a production of $53,970,400, or over 50 percent of the total output of the district from 1903 to 1940. Of this amount gold values made up about 95 percent of the values, with silver and copper and small amounts of lead ores making up the balance.

Water Supply

Water for the milling operations was obtained, for the most part from the Lida water system, operated by the Goldfield Consolidated Water Company. When the Combination Mining Company was taken over by the Goldfield Consolidated Mines Company on March 1, 1907, it acquired the Alkali Springs-Neptune Wells water system. To what extent this supply of water was used by the Consolidated Mill is not known. However, when the Combination Mill was destroyed by the Hampton Stope cave-in on September 25, 1909, this source of water became available if needed.

As earlier related under the section on Water, the Goldfield Consolidated Milling and Transportation Company, a holding company for the Consolidated Mines Company filed Proof of Appropriation No. 01208 for the waters of Alkali Springs, claiming a priority of 1904.

Fire

Fire that started in the refinery plant of the mill the night of April 8, 1910, caused damage to the mill of about $250,000 and necessitated its closure for a period of 60 days. Of the 100 stamps only 20 were damaged, but because of the inability to get ore to the other 80 stamps they were all inoperative. 21/ By May 28, 1910 the repairs had been completed and the mill started up on June 1, 1910. 22/

Large Bullion Shipment

The largest bullion shipment ever shipped from Goldfield was related in The Tonopah Miner in its February 18, 1911 issue. The article read:

> The Goldfield Consolidated Mines Co. yesterday set a new pace for bullion shipments from Goldfield, an express shipment being sent to Selby Smelting Co., at San Francisco valued at $426,000. Two shotgun messengers accompanied the shipment. The shipment was made up to 19 ingots of metal, weighing 1,480 pounds. The bullion was .900 fine, and worth $18 per ounce. The shipment in point of value is the second richest ever sent out of Goldfield. It is the richest bullion shipment. Just a few years ago, however, the Hayes-Monnette lease on the Mohawk sent a carload of 48 tons of ore to the Selby Smelters, the ore averaging $12,421 per ton, and for which the Selby Company drew a check for $574,598.39... (Note by the author: at today's price of gold $600 per ounce, this shipment would have been worth more than $14 million.

Value of Ore Milled

By mid-January 1909 it was reported that the mill was treating 600 tons of $40 ore and that a gross yield of $8,00,000 annually would be made. 23/ The Mining and Scientific Press in its May 29, 1915 issue reported:

> From the date the mill started (December 26, 1908) to the end of 1914, the mines (Consolidated) had produced $1,895,338 tons of ore yielding $43,710,665. The only regret is the apparent termination of its useful activities, for the Goldfield Consolidated Mines cannot continue to furnish sufficient ore for long...

However, during the next four years the mill produced over $8,000,000. The grade of the ore steadily decreasing in value, averaging between $7 and $11 per ton. 24/

Flotation Plant

By 1916 in order to handle the sulphide ores from the lower levels the company first installed a 50-ton flotation experiment plant. This plant produced a recovery of 90 percent of the gold ore. During this period, the company was continuing to handle the low-grade oxide ores by the cyanide process. 25/ 26/ By the middle of June one-half of the plant was changed to flotation, the other one-half being used for the oxide ores. There not being enough of the oxide ore mined to use the one-half capacity, the company started to mill the tailings from the mill. 28/

The End of the Milling Era

Conditions brought about by the World War, coupled with a much lower grade of ore, and increased costs, caused Mr. J. W. Hutchinson, the General Manager to state in his 1917 Annual Report, that in August it had become apparent that the exposed ore would not yield a profit.

Mr. Hutchinson, resigned during March 1918 to join the armed services. 30/ His position was taken over by E. A. Julian, a wellknown mining man, who had been in charge of the Goldfield Consolidated Exploration Company since its organization in April 1930. 31/

During 1918 the mill continued to function both on ore and tailings. The 1919 Mineral Resources of the United States reported the closing down of all company mining and milling operations. The report read in part:

> After having been large producers for 17 years, the mines operated by the Goldfield Consolidated Mines Co. were turned over to the lessees on February 1, 1919... On January 15, 1919 shipment of ore to the mill was suspended and on January 31, all mining operations were discontinued.

The report continued by saying that since the organization of the company in 1906 to December 31, 1919, it had paid the stockholders $8.20 a share, or a

total of $29,777,789. That following the cessation of mining and milling operations a lease had been given to the Goldfield Development Company, but because of not being able to produce a profit, the lease was turned back during 1920.

The Final Years

The 100-stamp mill of the Goldfield Consolidated Mining Company remained idle from 1920 to 1927 when the Bradshaw Inc. obtained a lease on the tailings and utilized a large portion of the mill's facilities to treat the tailings. This operation continued up to 1940. It was reported that the company produced $3,418,196. 32/

THE LORENCE MILL

The Florence Mill, the last one to be erected during the first decade of this century, and the second most productive, commenced milling ore from the Florence Mine on January 16, 1909, about two weeks following the start of the large 100-ton Consolidated Mill. It's life span ended on December 11, 1911 when the mill was destroyed by fire, a period of operation of nearly three years.

The mill was situated on the Florence Mining claim, about 300 feet north of Florence Hill, and approximately 2,000 feet southeasterly from the Combination Mill (see Map _____ and Photograph _____).

For the first month of operation only 10 stamps were used, but shortly increased to 20 stamps, enabling the company to crush 100 tons per day. By August 1909 the mill was brought up to its designated capacity of 160 tons per day, until 40 stamps were in operation. 33/

The Goldfield News of November 3, 1906 reported that a contract had been let by the Florence Company to erect a mill close to the Florence Mine. Construction started April 28, 1907. 34/ The Goldfield Review in its January 11, 1908 issue reported that the mill would be first supplied from the large dumps of medium grade ore and afterwards with ore extracted from the mine. The article commented on the concrete reservoir with its disc cover as shown in photograph _____. In

reporting about the start of operations, January 16, 1909 the Goldfield Review quoted President Thomas G. Lockhart as saying:

> I regret now at times that I was not more insistent in my recommendations of nearly two years ago that we sacrifice everything to the immediate erection of a mill.

The Water Supply

A five mile gravity pipeline conveyed water from Indian Springs to a concrete reservoir on top of the small Florence Hill. Photograph _____ was taken during June 1979 showing the empty reservoir and a later day mill. For additional details about this source of water see the section on Water Supply.

Fire

The Florence Mill was destroyed by fire of an unknown origin December 11, 1911. The inadequacy of the company's firefighting equipment was blamed for the plant being a total loss. The president, Thomas G. Lockhart, reported that the plant was fully covered by insurance. 35/

Following the destruction of the mill by fire the Florence Goldfield Mining Company continued its mining operations, shipping ore directly to smelters or selling it to the Western Core Purchasing Company at Goldfield or Millers (near Tonopah).

Nevada Metal Extraction Company

During late 1915 the Florence Company leased the Florence mine dumps to the Nevada Metal Extraction Company. This company erected a 150-ton flotation mill to handle the base ores. The mill was built on the foundations of the 1909 mill, under the supervision of F. A. Mead. 36/

It was announced in early April 1916 that the flotation mill was operating with satisfactory results. However, it was reported on May 13, 1916 that the Florence Goldfield Mining Company had purchased the flotation plant with the lease on the dumps reverting to it. 37/ By September 1916 the plant had been increased to 200 tons per day. The December 23, 1916 issue of The Goldfield News

and Weekly Tribune reported that while the flotation plant was successful in recovering the gold and silver it was incapable of producing a profit. With the closing down of this mill the early milling era in the Goldfield Mining District came to an end.

The Florence Mill shown in Photograph _____ , operated from January 16, 1909 to December 11, 1911, a period of two years and eleven months.

According to Ruth Duffy, the present owner of the Florence group of claims, the 1916 Nevada Metal Extraction Company mill was also destroyed by fire. The mill building shown in Photograph _____ was constructed by the Newmont Deep Mines Company about 1948. It was used to mill ore from the White Rock property, about one-half mile southwest of the mill. The ore was trammed through a crosscut on the 358-foot level and hoisted by the Florence equipment.

ADDENDUM

GOLDFIELD MILLING AND REDUCTION COMPANY

It was reported in The Goldfield News under date of June 9, 1906, that the above company was constructing a six-stamp reduction mill on the White Rock property, immediately south of the January claim. The capacity was to be 18 tons per day, with water furnished by the January shaft. The Goldfield Daily Sun of June 5, 1906 carried the same announcement. It is quite doubtful that this proposed mill was ever built, as no further news items concerning it were found.

THE JUMBO EXPERIMENTAL MILL

It was reported in the November 11, 1905 Tonopah Bonanza that construction had started on a two-stamp crushing gold mill for the Jumbo Mining Company. The stamps were to weigh 1,000 pounds each, and that cyanide tanks would be installed. It was stated that if the plant proved successful a larger plant would be constructed.

The Second Annual Number of The Goldfield News 1906-1907 made reference to this mill. The article read:

> Out among the mines, high on the summit of a hill alongside the famous ledge from which it takes its name, is the Jumbo Mill, just completed. It is of the three Niessen stamp variety, like the American, with a daily capacity of twenty tons....

That this mill was actually constructed is further substantiated by the 1906 map of Goldfield produced by the Sanford Map Company of New York. This map showed a diagram of the Jumbo Mill with a 15,800 gallon reservoir 40 feet above the floor of the cyanide room. Apparently the mill never functioned any length of time. The Jumbo property became part of the Goldfield Consolidated Mines Company holdings at the time of the consolidation during October 1906. The author found no indications of it ever being operated by that company.

STATISTICS
EARLY GOLDFIELD MILLS

MILLS	STARTED OPERATIONS	CAPACITY	SOURCE OF WATER	CEASED OPERATIONS	REMARKS
Gardner	April 1905	10-stamps	Wells	1907?	Moved to Pioneer, NV
Combination	April 1905	20-stamps 80T/day	Indian Springs	Sept. 25, '09	Destroyed by cave-in of Hampton Stope.
Spiking	May 1905	5-stamps	Well	July 8, '05	Destroyed by explosion.
New Western Reduction Co.	May 1905	5-stamps-25 tons 120-ton sampler	Wells	Jan. 1907	Shipped to Gold Mtn.
Nevada Goldfield Reduction Co.	June 1905	20-stamps-80 ton 450-ton sampler	Wells?	1913?	Known as the Frank Mill.
Columbia Sampler Western Ore Pur. Co.	Aug. 1905	20-stamps? 180-ton sampler	Wells	1913?	Sampler only
American Mill & Water Co.	Sept. 1905	30 T/day	Wells	1908?	Known as Doran Mill
Kinkead	Feb. 1906	60 T/day	Highland Mine	1909?	Controlled by Nixon and Wingfield.
Goldfield Cl	Nov. 1908	100 T/day 200-ton sampler	Wells	1913?	Little information available.
Goldfield Consolidated	Dec. 26, 1908	100-stamps 600 T/day	Alkali Springs	Jan. 1919	Gross production of ore milled up to Jan. 1, 1919. Was approximately
Florence	Jan 16, 1909	46-stamps 160 T/day	Indian Springs	Dec. 11, 1911	Destroyed by fire.
Nevada Netal, Extraction Co.	April 1916	150 ton flotation	?	Dec. 1916	Leased Florence dumps-Gold Hill to Florence Goldfield Co. May 1916

(a) From March 24, 1917 The Goldfield News and Weekly Tribune.

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1905 - 1918

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