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Item 6

REPORT ON EAST END OF MANHATTAN DISTRICT

NYE COUNTY, NEVADA

The properties considered in this report, consisting of the Nevada Coalition Gold Mines Company, Manhattan Consolidated Mines Development Company, White Caps Gold Mining Company and White Caps Extension Mines Company, are located at the eastern end of the Manhattan Mining District in the state of Nevada. This district lies about forty miles north of the town of Tonopah in the Toiyabe Mountains and can be reached by the Tonopah and Goldfield Railroad. Trucking charges are reasonable, being \$10.00 per ton for outgoing and \$5.50 per ton for incoming freight.

HISTORY

The Manhattan District has been known and in production for the past 27 years, ore having first been discovered in 1905. Production has been continuous since that date in greater or less amount. In 1917 ~~the~~ ore was discovered in the lower levels of the White Caps Mine. This ore, while base and offering metallurgical difficulties, gave promise of extending to depth and of forming large replacements in the limestone in which these orebodies occurred. This promise has since been realized, a gross production of about \$2,225,000.00 in gold having been made up to date from the White Caps mine. According to Nash the Manhattan Consolidated produced \$183,000.00 for the same period. No data is available as to production of Manhattan Consolidated from that time up to date. The Nevada Coalition produced \$24,120.79, net smelter returns between 1918 and 1925, this amount having produced by leasers. At the present time operations are being conducted at both the White Caps Gold and the Nevada Coalition Gold Mining Company by means of the leasing system.

GEOLOGY

Ore bodies in the eastern end of the Manhattan District are formed by replacement of the limestone. There are several beds of limestone of which the White Caps limestone is the most important and the one in which the orebodies occur. The age of this rock is given as Cambrian by Henry G. Ferguson of the United States Geological Survey and probably corresponds to limestone of similar age in which the orebodies of Eureka, Nevada occur.

The White Caps limestone is a relatively pure, bluish crystalline rock, from 20 to 60 feet in thickness, with a northwesterly strike and dipping southwesterly at an angle of 47 to 50°. This region is one of intense faulting, the lime stone being cut into numerous small blocks; these blocks being fractured to such an extent that mineralizing solutions readily penetrate and replace large bodies. In some places, notably on the 400 and 500 foot levels of the East orebody of the White Caps mine, practically the whole limestone block has been replaced by quartz and other gold bearing minerals.

Associated with the gold in the White Caps Gold and Manhattan Consolidated properties are minerals of arsenic and antimony. These minerals seem to have a zone of concentration from the 600 level to the zone of oxidation about the 200 level. Below the 600 level the arsenic and antimony content diminish, the gold being contained in a black quartz.

At the deepest workings so far reached in the White Caps mine, conditions favorable for the deposition of gold bearing quartz still persist and there seems to be no reason why this condition should not continue for much greater depth.

While orebodies in the Nevada Coalition property occur in the White Caps limestone, the conditions of ore deposition are not the same as in the White Caps mine. A large fault known as the Mud Fault divides the East Manhattan district into two zones of ore deposition. The eastern half in which the White Caps Extension, White Caps Gold and a part of the Manhattan Consolidated are located contain the gold deposits in which considerable antimony and arsenic appear and are known as Base Ores. West of this Mud Fault in the western half of the Manhattan Consolidated and the Nevada Coalition we have a different type of deposit; one in which the gold occurs as free gold and therefore causes no metallurgical difficulties. These deposits are replacements of the limestone also, but are more in the nature of quartz veins formed along a fault plane.

Ore has been found on the 700 foot level of the Nevada Coalition property altho not in commercial quantity. Geological conditions on this level, however, indicate that additional development work would be justified with every hope of opening up new ore chutes.

The Manhattan Consolidated property has produced ore to a depth of 500 feet, this ore being similar to the Base Ore of the White Caps Gold property. These deposits indicate, however, that conditions favorable for ore deposition are present and that additional development work should be performed.

WATER

Water has been encountered in the White Caps Gold, Nevada Coalition and Manhattan Consolidated properties. The pumping problem is not a serious one, however, as none of these properties have had to handle more than 100 gallons per minute for any length of time. Maximum pumping capacity is required when penetrating a fault and opening up a new limestone block. When this excess flow is pumped down, however, a normal flow of about 100 gallons per minute is maintained at the White Caps mine. Water pumped from the mine was enough to run the cyanide mill of 100 tons daily capacity.

EQUIPMENT

WHITE CAPS EXTENSION

On the White Caps Extension property are located two shafts; one, the old White Caps Extension shaft is of two small compartments, 400 feet deep. This shaft has a head frame, hoisthouse and residence. Also a Chicago Pneumatic, five drill compressor and a 35 H.P. single drum hoist.

EQUIPMENT: (Cont.)

There is also a second shaft known as the New White Caps Extension shaft. This shaft is a three compartment one, each compartment being 4'6" by 5', 90 feet deep and equiped with head frame. Assessed valuation of the improvements according to 1932 Nye County Tax Roll is \$1060.00. A one half interest in the equipment located at the old shaft belongs to the Zanzibar Mining Company.

WHITE CAPS GOLD MINING COMPANY

This property has a two compartment, vertical shaft 800 feet deep, with additional depth of 500 feet attained by means of underground inclined shaft, equiped complete with headframe, 40 H.P. double drum hoist, one five drill Leyner Compressor and one seven drill Ingersol compressor. Transformer House, 3 100 KW Transformers, Blacksmith shop, tools and equipment, 2 Triplex pumps and motors, (underground), one Triplex pump and motor (surface), ore cars, drills, tools, track, change room, carpenter shop, assay and mine office buildings, assay furnace and equipment, assay office and crusherroom equipment, two cottages and garage, conveyor, 9 houses, 3 ore bins, crusher and motor at lower ore bin, Rolls building, crusher, trommell rolls etc., oil tanks, Roasting Plant and Building, 100 ton Cyanide Plant. Assessed valuation of improvements according to 1932 Nye County Tax Roll \$40,080.00. 150

MANHATTAN CONSOLIDATED

This property is equiped with a two compartment shaft, 500 feet deep, complete with head frame, hoist and compressor. There is also located on this property complete surface equipment for operation of the mine. Assessed valuation of improvements according to 1932 Nye County Tax Roll \$5,345.00.

MANHATTAN CONSOLIDATED GOLD

On this property are located two operating shafts known as the Bath Shaft and the Coalition Shaft, as well as a third shaft, the Earl, not in operation at the present time. The Bath Shaft is an incline shaft and is equiped with head frame, hoist and one ton skip. There is also a two drill compressor at this shaft.

The Coalition Shaft is a three compartment shaft, 700 feet deep with complete equipment consisting of head frame with all necessary surface equipment, together with pumping equipment necessary for the handling of 100 gallons of water per minute from the 700 foot level to the surface. Assessed valuation according to 1932 Nye County Tax Roll \$10,000.00

ACREAGE

One of the important things to be considered, when considering acreage of the various companies, is the length of White Caps limestone outcropping on these properties and if said limestone will remain for any distance in said properties if followed downward on their dip. A decision of the District Court in favor of the White Caps Mining Company in the case of White Caps Mining Co. versus Morning Glory Mining Company, would make it difficult for one mining company to follow an ore chute into the neighboring property, claiming apex to a vein as a right to do so. Listed below is the footage of White Caps Limestone outcropping on the several properties:

ACREAGE (Cont.)

| | |
|------------------------|---------------|
| White Caps Extension | 2700 feet |
| White Caps Gold | 1900 " |
| Manhattan Consolidated | 1000 " |
| Nevada Coalition | <u>2700</u> " |
| Total | 8300 " |

In acreage we find the territory divided approximately as follows:
White Caps Extension, 300 acres, 13 patented claims, 7 located claims.
White Caps Gold, 177 acres, 8 patented claims, 7 located claims.
Manhattan Consolidated, 200 acres, 5 patented claims, 12 located

claims.

Nevada Coalition, 292 acres, 17 patented claims, 15 located claims.

As can be seen from the accompanying map any downward extension of orebodies would be protected for many hundred feet.

METALLURGY

Ore taken from the Nevada Coalition being free, offers no metallurgical difficulties and the gold is readily recovered from the gangue by amalgamation or cyanidation.

When we consider the Base Ores of the White Caps and the Manhattan Consolidated properties, however, a different condition arises. The large amount of arsenic and antimony present in the raw ore renders cyanidation impossible without preliminary treatment to remove these chemicals. Much time and money has been spent on experimental work. Flotation gave negative results.

A process of roasting was finally developed by the Bureau of Mines, whereby the ore was roasted at a low temperature in the presence of lime. This low temperature roast prevents the formation of arsenates and antimonates; two substances which tend to lock up the gold values. This process, it is believed, will finally solve the problem of economic treatment of the base ores of the Manhattan district, making available as commercial ore many tons of lower grade material not so available under present working conditions.

Another asset to be considered in examining these properties is the item of White Caps Tailings.

Attached hereto is a copy of a report on these tailings made by H. A. Burk, mill superintendent of the Tonopah Extension Mines, Inc. This report would indicate a net profit of \$30,000.00 after cost of installation, about \$15,000.00, and cost of treatment.

FINANCIAL CONDITION

WHITE CAPS EXTENSION MINING COMPANY

At the present time the White Caps Extension Mining Co., has outstanding 116,350 shares of stock with 1,883,650 shares of stock retained in the treasury. A note of \$6000.00 in favor of the Tonopah Banking Corporation is outstanding with interest on same amounting to about \$600.00 as of present date.

FINANCIAL CONDITION (Cont.)

WHITE CAPS GOLD MINING COMPANY

| | |
|-----------------------------|-------------|
| Accounts payable: | |
| Tonopah Trucking Company | \$42,000.00 |
| Estate of John G. Kirchen | 19,500.00 |
| T. F. Cole | 3,000.00 |
| Tonopah Banking Corporation | 12,000.00 |
| Total | \$76,500.00 |

Stock outstanding amounts to about 800,000 shares with 200,000 shares retained in the treasury.

MANHATTAN CONSOLIDATED

This company is incorporated for 2,000,000 shares all of which is outstanding.

NEVADA COALITION GOLD MINES

This company is incorporated for 1,000,000 shares, 666,001 shares of which are outstanding. An indebtedness of \$3200.00 in the form of a note to the Tonopah Banking Corporation, represents the liabilities of this company.

CONCLUSION

At the present time leasing operations are being conducted at both the White Caps Gold and Nevada Coalition properties. Hereto is attached a summary of recent shipments showing grade of ore. This ore, as can readily be seen, is of very good grade and the amount being shipped by leasers should justify further work on company account.

Conditions are right for the development of ore bodies in the White Caps limestone at greater depth. The percentage of arsenic and antimony in the ore seems to be decreasing on the lower horizons, making the metallurgical problem less difficult, and consequently insuring a lower milling cost.

I would recommend, therefore, that a vertical shaft be sunk to the 1500 foot level and laterals be extended to explore the White Caps limestone at this horizon. The location of this shaft should be determined only after careful study of all available engineering data with the purpose of making it the main working shaft in the event that large ore-bodies are developed. It might be advisable to start this shaft as an underground shaft from the 800 foot level of the White Caps mine, to be raised to the surface if future development warrants.

Pumping operations could be concentrated at one shaft, thereby saving duplication of effort and rendering mining operations easier on the higher horizons of the western end of the properties, notably the Nevada Coalition Gold Property.

CONCLUSION (Cont.)

The logical method of developing and exploiting this east Manhattan district would be then, to consolidate the various properties herein considered on some equitable basis, taking into consideration, financial situation, previous production and possibilities for the future.

Respectfully submitted,

(Signed) Homer L. Williams

September 1932.