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RECONNAISSANCE REPORT

CHARLESTON HILL GOLD MINING COMPANY

National, Humboldt County, Nevada

By

WILBUR H. GRANT

MAPS

RECONNAISSANCE REPORT

CHARLESTON HILL GOLD MINING COMPANY

NATIONAL, HUMBOLDT COUNTY, NEVADA

INTRODUCTION

This reconnaissance report is based on a three days' examination of the property of the above company and the mines in the immediate vicinity. Two days were devoted to the study of all accessible workings and data at the National Mine office. One day was devoted to the study of the surface. The geological conditions in the district outside of the property under consideration have been so thoroughly explained by Lindgren in Bulletin 601, U.S.G.S., "Geology and Mineral Deposits of the National Mining District, Nevada," that only those parts of the district in the immediate vicinity of Charleston Hill were covered during my examination.

LOCATION

The National Mining District is about 74 miles by road northerly from Winnemucca, Humboldt County, Nevada, which is on the main lines of the Western Pacific and Southern Pacific Railways, and is the nearest railroad shipping point. National is 16 miles by road from Platora, the nearest postoffice, in the Quinn River Valley. The old postoffice at National has been abandoned. National is at the north end of the Santa Rosa Range of mountains, which extends from Winnemucca to the Oregon state line. National is about 12 miles south of the Oregon-Nevada line.

The Charleston Hill group of claims adjoins the property of the National Mining Company on the South. (See Map 1.) This group covers the north end of Charleston Hill, from which its name is taken.

There is a difference of 700 ft. in elevation on the property between 6900 and 7600 ft. above sea-level.

PROPERTY

The property is a compact square group of five claims, namely,

The Windy
Charleston Hill
Kendall
Cross Lot No. 1
Cross Lot No. 2

The Windy is the only full sized claim, 1500 ft. x 600 ft. The Charleston Hill is nearly full sized, but overlaps the National grounds slightly. The Kendall and Cross Lots have exclusions, the latter being less than half size claims. The size, shape and relation of these claims can be seen on Map 1 herewith.

WORKINGS

The only working on the Charleston Hill which was accessible is a tunnel 100 ft. long lying near the north endline of the Charleston Hill group. All other workings were caved and inaccessible. Map 1 shows the location of all the workings on the property, regardless of the condition of them.

The principal workings which have furnished information regarding the Charleston Hill property are the 5th Level of the National Mine, the White Rock Tunnel, the McDonald Shaft, the

Stowe Shaft, and the Defiance Shaft. None of these were accessible, so the information which they revealed had to be obtained from hearsay information and from the dump material. The 5th Level and the White Rock Tunnel are said to have been driven into the Charleston ground each for a distance of about 40 ft. The McDonald Shaft is claimed to be 325 ft. deep on the incline. At the bottom of it there were short crosscuts towards the footwall. The breast of the White Rock Tunnel and the bottom of the McDonald Shaft are said to have been in soft material and caved shortly after being driven. It is claimed that it was the intention to connect the White Rock Tunnel with the bottom of the McDonald Shaft for ventilation, but this connection was never made on account of the caving. It is also claimed that the south breast of the 5th Level of the National Mine was not in the vein as the vein was difficult to follow while the last work was being done.

All stopes in the National Mine and most of the drifts on the veins were in soft material and are now caved. Only the crosscuts in the harder rock and some of the drifts which are kept in repair were open for inspection at the time of my examination. The portions of the National workings which were inspected are shown on Map 1. The White Rock Tunnel was entered for a distance of about 2000 ft. There were many small caves along the last thousand feet. The air became increasingly bad back of each cave, so that, although the tunnel was still open beyond the 2000 ft. point, the bad air prevented any farther examination.

GENERAL GEOLOGY

As will be seen from Lindgren's description of the National Mining District, that portion of the Santa Rosa Range south of

Canyon Creek, which is 4 miles south of National, is composed essentially of slates and other metamorphic sedimentaries. These slates are intruded by numerous porphyritic and granitic intrusive rocks. North of Canyon Creek the range is composed essentially of Miocene Columbia River basalts. Canyon Creek therefore is the southern limit of the great plateau of basalt flows which cover the eastern part of Oregon and southern Idaho. These basalts at National are interbedded or intruded with tuffs, rhyolites, trachytes and latites. The flows at National strike north-south and dip 5 to 15 degrees to the east. No volcanic necks are found in the immediate vicinity.

The National veins and those on Buckskin Peak are the only ones in the vicinity in the basalts and other lavas. The other ore deposits which are found farther south in the Santa Rosa Range are in the slates or igneous rocks which intrude the slates.

ROCKS

The only rocks on the Charleston Hill property are a series of basaltic flows and tuffs, which form the principal country rock of the district. They strike north-south, but have a slightly steeper dip than the general average for the district, the dip being from 15 to 25 degrees to the east. The flows are the typical black to brownish basalts of the district, many of which are vesicular. The same flow does not have uniform or persistent characteristics. Some parts of the same flow may be hard and resistant to weathering, while other parts along the flow may disintegrate rapidly. There is also a great variety of characteristics in the different flows. Some of them are coarse porphyritic, as is found in the White Rock Tunnel at the 2000 ft. point. The others vary from this coarse porphyritic

type down to the glassy obsidian. There are also a great variety of tuffs. Some are composed of large fragments up to 6 inches or more, and are better classified as volcanic breccias; some others are a mixture of coarse fragments with fine volcanic ash, and some are entirely fine ash, which has been more or less indurated. The hardness of these tuffs varies greatly. Some were well indurated to a hard, firm rock, while others are soft, having poorly cemented fragments or particles, due to imperfect induration. Then again the weathering has had an important influence on the characteristics of the tuffs. Wherever exposed to the elements the tuffs prevailingly disintegrate rapidly, regardless of the original hardness resulting from induration. Consequently, wherever the tuffs outcrop they are barely exposed as they quickly become covered with soil. In some parts of the district, especially around the town of National, there is an occurrence of tuffs which were evidently derived from volcanic ash which fell into a lake and was more or less stratified, but these types do not occur on the Charleston Hill property.

Both the flows and tuffs which were encountered in the McDonald Shaft and the White Rock Tunnel in the Charleston Hill ground disintegrate rapidly when exposed to air and water. All the dumps at the workings on the Charleston Hill group were simply a pile of soil, as practically all of the rock which was removed has already disintegrated.

Both the basalts and tuffs, therefore, which are found in depth on Charleston Hill are soft and quite earthy in their consistency, even when fresh. This type of rock did not fracture readily along continuous fractures, but stresses which ordinarily fracture brittle to firm country rock were distributed in these

soft basalts and tuffs in such a way that no continuous fractures occur, but numerous small slips are found. None of the fractures which were observed contained any mineralization. So these formations, therefore, are not favorable for the formation of strong continuous veins.

MINERALIZATION

The occurrence of the gold in the veins of the National Mine has been thoroughly described by Lindgren, so that only the main feature will be repeated here. All the gangue minerals of all the veins are apparently of the same period of mineralization, but were intermittent in their deposition. There was first deposited a watery quartz along the walls of the fissures which developed well defined crystal faces protruding towards the center. The central cavities were then filled with white milky quartz. Calcite and adularia were recognized in some of the veins, but they occur in such small quantity that they are negligible, so quartz in its different forms may be considered the only gangue. The white milky quartz frequently leaches to a sugar quartz. It was this milky quartz that brought in the gold and other metallic minerals and is intercrystallized with the gold. There is frequently considerable interbanding of the gangue and metallic minerals. Practically all the veins which carry metallic minerals carry stibnite, arsenopyrite and other less common antimony and arsenic minerals. The veins carry also some cinnabar, some pyrite, chalcopyrite, sphalerite and galena in small quantities, where the veins have escaped oxidization. This association of minerals indicate that the vein material was deposited in the fissures near surface rather than at great depth. The veins which carry much

stibnite are usually poor in gold and silver. Near the outcrop of the National orebody the vein predominated in silver in the form of ruby silver, which is secondary and probably the principal mineral of the silver ore.

Many of the veins are very low grade, being almost without metallic minerals. In the main ore shoots the gold is very local in its occurrence. There is a very sharp line between the gold bearing quartz and the non productive quartz. The gold occurs in pockets of varying size, so that the whole vein has to be mined in order not to miss some of these small pockets, which are very rich. This condition is further accentuated by leaching and movement along the vein. The unoxidized pockets of gold and other metallic minerals sometimes are rolled along the vein in the soft material and are found as nodules of high grade ore in a barren vein filling. The vein material of the National Orebody was mined and sorted. The sorted ore shipments ran as high as $88,000. to the ton. Very little of the rejects ran over $2 to $4 to the ton. This shows the sharp definition between the gold ore and the waste, giving few chances for milling ore. The values in the main National Oreshoot predominates in gold, while the small shoot on the x-vein carried a relatively larger quantity of silver. The whole production is claimed to have carried an ounce of silver to an ounce of gold. The gold occurs as electrum or white gold, which carries 50 % silver or about $10.00 per ounce. It is also claimed to have produced about $10,000,000, but this figure is not authentic. Lindgren gives a reported production of possibly $4,000,000. up to the end of 1912, which includes the main production.

My observations indicate that the mineralization was

introduded into the flow rocks immediately after the eruption of the rhyolite, consequently all formations which are older than this rhyolite may contain productive veins. As rhyolite is one of the latest eruptive rocks, practically all formations in the district may contain veins, but the susceptibility of fissuring and subsequent mineralization depend to a large extent on the physical qualities of the formation. It is an observed fact that most of the mineralization and consequent values are found in the latite and rhyolite. Small quantities are found in all the other formations, but in a very few cases is it in commercial quantity.

VEIN STRUCTURE

As will be seen on Map 2 herewith, the country was fissured in diamond shaped blocks. One direction of fracturing was N-S and the other N. 30 W. Both sets of fissures dipped westerly at an average of about 60 degrees.

Mineralizing solutions were intruded into this zone of fracturing and naturally follow the line of least resistance, i.e., came into the fissures which were most open and which were most directly connected with the magnetic center. Instead of following one straight fissure, the predominating mineralization followed a zigzag course through the fissure zone.

As has been intimated heretofore, the fracturing developed best in the firm rock formations. The rock surrounding the veins of the National Mine is claimed by Lindgren to be latite, which is much more firm than the basalts of the Charleston Hill group, and therefore developed the best fractures. The rocks surrounding the veins in the National Mine, however, were so thoroughly leached that the original character could not be determined by me during my

examination. As will be seen in Lindgren's report, the area of latite in which the National Orebody occurred did not extend much beyond the limits of the claims of the National Mining Company.

ORE CONTROLS

As will be seen also on Map 2, the two known orebodies, the main National Orebody and the X-vein Orebody, appear on the same side of the diamond shaped blocks in the fracture zone. These are on portions of the N-S component of fracturing. Small quantities of ore have been found on portions of the veins adjacent to the main orebodies, but not for any great distance from those bodies.

Mining and development indicates that the ore occurs essentially between an elevation of 6000 and 6600 ft. above sea level, that is, between the No. 5 Tunnel on the collar of the Stall Shaft. It will be seen therefore that the four main ore controls are: (1) segments of the N-S fissures in the fissure zone; (2) on the main zigzag vein which has a resultant strike of N. 15 W; (3) at elevations between the 5th Level and the collar of the Stall Shaft; and (4) in rock formations which could develop strong continuous fracture, such as rhyolite and latite, and to a much lesser extent in the soft formations, such as basalts and tuffs.

POSSIBILITIES

All this data indicates that there are very few, if any, chances of developing veins in the Charleston Hill ground which will carry an appreciable amount of mineralization or ore. It would be inconceivable that no mineralization whatsoever would occur in the Charleston ground, but the physical characteristics

of the country rock are such that they did not fracture well or continuously and therefore gave unfavorable conditions for the introduction of mineralizing solutions.

CONCLUSIONS

No attempt will be made here to offer any opinion regarding the possibilities of the whole National District, as no attempt was made to study the whole district for determining its possibilities. My conclusions are, however, that the Charleston Hill ground will contain abundant slips but will lack continuous fractures and that the fractures which will be found will be preeminently without any mineralization in them, even though they are pre-mineral. The majority of mineralization which is found in the Charleston Hill ground will be low grade to barren. Very small discontinuous gold bearing mineralization may be found, but this will probably be in such small quantity that it will not be attractive to a mining investor.

RECOMMENDATIONS

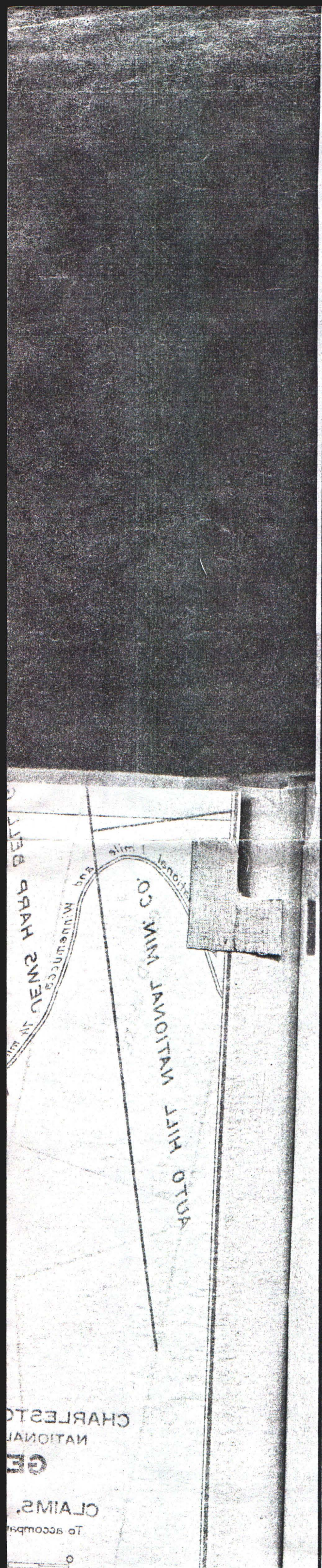
I recommend therefore that you do not exercise your privilege to option and develop the Charleston Hill group.

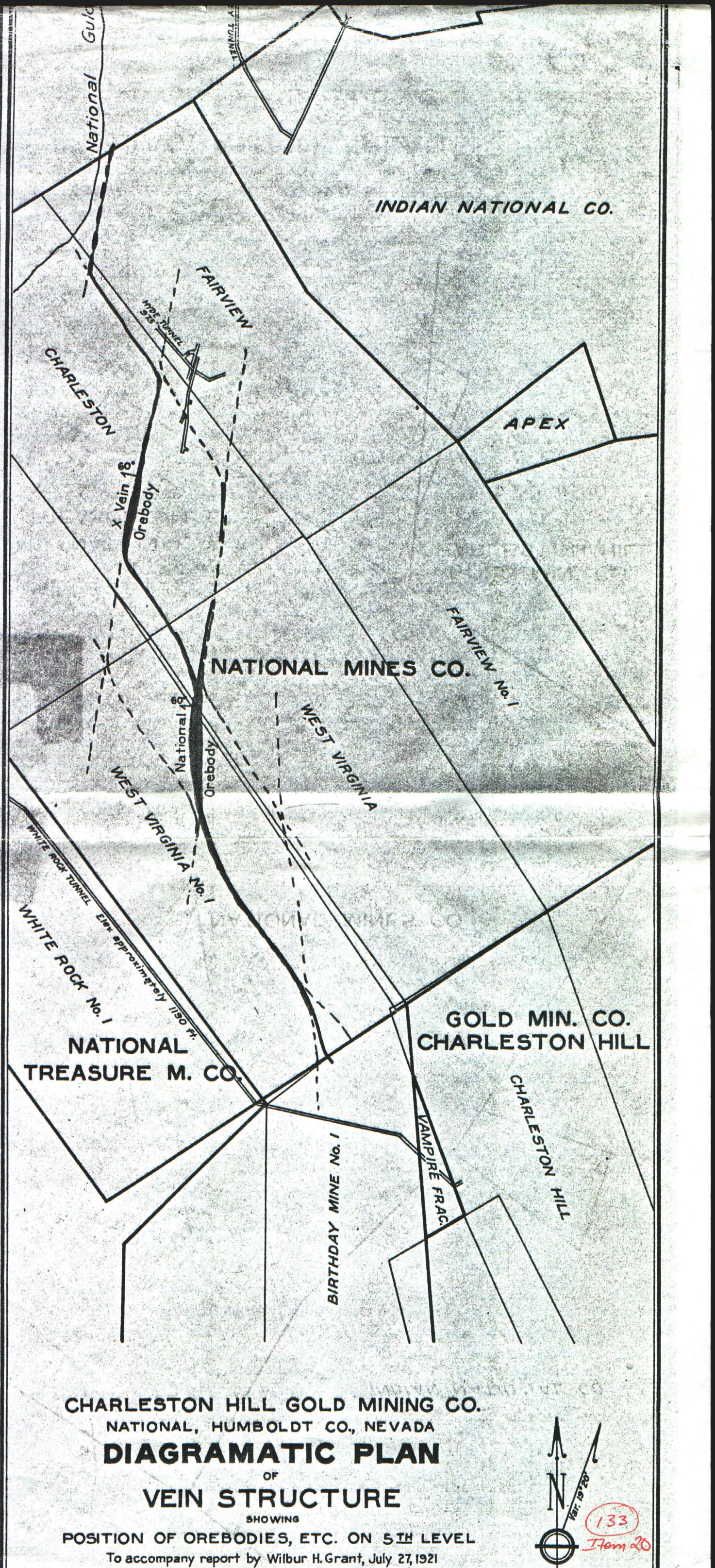
Respectfully submitted,

Wilbur H. Grant

San Francisco, California,

July 30, 1921.





CHARLESTON HILL GOLD MINING CO.

NATIONAL, HUMBOLDT CO., NEVADA

DIAGRAMATIC PLAN

OF

VEIN STRUCTURE

SHOWING

POSITION OF OREBODIES, ETC. ON 5TH LEVEL

To accompany report by Wilbur H. Grant, July 27, 1921

SCALE 1 INCH = 300 FEET

N Var. 19°20'

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28 27
33 34

JEWS HARP BELL. GR

NATIONAL TREASURE MIN. CO.

SAGE HEN

Sheatown

COYOTE

WHITE ROCK No. 1

WEST VIRGINIA No. 1

No. 3

No. 3A

No. 4

No. 5

No. 6

No. 7

INTERIOR SHAFT

No. 2 HATMAN

CAUSTIN SHAFT 167'

BANKERS SHAFT 170'

1705' END LINE SHAFT

DEFIANCE SHAFT

STOWE SHAFT

VAMPIRE FRAC.

CHARLESTON HILL

McDONALD SHAFT

WINDY

FRACTION EXT.

CHARLESTON HILL

CHARLESTON HILL GOLD MIN. CO.

SHILO GROUP

BIRTHDAY MINE No. 1

BIRTHDAY

FIRST NATIONAL MIN. CO.

KENDALL

CROSS LOTS No. 2

CROSS LOTS No. 1

EVENING STAR

34

CHARLESTON HILL DEV. & MIN. CO.

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Item 20

TON HILL GOLD MINING CO.
AL, HUMBOLDT CO., NEVADA
ENERAL MAP
SHOWING
, GROUPS AND WORKINGS
any report by Wilbur H. Grant, July 27, 1921
SCALE 1 INCH = 300 FEET
500 1000

LEGEND

rty under consideration

d area

ngs accessible

RED BLUFF

NATIONAL CON. MIN. CO.

INDIAN VALLEY TUNNEL

27

MAYFLOWER NATL. M. CO.

Gulch

INDIAN NATIONAL CO.

MEDALLION GOLD MIN. CO.

FAIRVIEW

HYDE TUNNEL 375'

CHARLESTON

1012' NATIONAL No. 5

APEX

Charleston Gulch

CHARLESTON No. 1

NATIONAL MINES CO.

No. 3 1522'

1242' NATIONAL No. 4

MAMMOTH 1192'

MAMMOTH No. 2 1397'

FAIRVIEW No. 1

1517'

1547'

STALL SHAFT 1530'

WEST VIRGINIA

WHITE ROCK

WHITE ROCK TUNNEL 1190'

CAUSTIN SHAFT

BELL GROUP

T.46 N., R.39 E.

28	27
33	34