SILVER STAR 4410 0102

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File Douglas Mine Yerrington, Nev.

RALPH L. READE D. SC. E. M.

YERINGTON, NEVADA

A63-3710

HISTORY and PREAMBLE

on the

DOUGLASS MINE

Located in MINERAL COUNTY, NEVADA

In the year 1859, prospectors roving along the north flank of the Excelsior Range, discovered the outcroppings of many quartz veins. Under the direction of a man named Curtis, an emigrant miner from Cornwall England, they found many pockets of high-grade Gold ore. On the strength of these discoveries, Cornishmen from the Candelaria mines to the south and the Comstock Lode to the north were attracted to the district and by their efforts many more rich veins were uncovered. Without exception, the miner from Cornwall was the pioneer operator of mines in the West. He had the "know how" from experience and training coupled with an uncanny sense of where to find the ore. He blazed the trails for the hard-rock miners who came in later years.

This was an isolated country at the time of the Gold discovery in the Excelsior Range. San Francisco and Salt Lake City were the nearest centers of population. The overland route to the east was across desert wastelands, arid and barren with no easily traversed roads. To the west the High Sierras formed a barrier with the Donner Pass being the only point over the mountains where an entry could be made into the lowlands of California and the coast. With ox and horse drawn vehicles, transportation and travel over these routes was arduous, hazardous and difficult. There were no quartz mills to reduce the ores to recover the Gold values. The only alternative left to the miner was to mine only the richest of the ores. With hand steel and black powder he blasted down the ore, sorted and culled out the high-grade. This was sacked and packed on burros from the high country to the lowlands where it was transhipped by wagon to eastern or western buyers of Gold. Some of the richest ores were loaded aboard ships in San Francisco Harbor and accompanied by the owner, shipped around Cape Horn to Swansea, Wales for smelting. The resultant bullion was sold in England.

Lacking adequate mining equipment and using only the most rudimentary facilities, no depth on the veins was ever reached by the early miner. His work was confined to shallow open cuts and pits. Whenever a rich pocket was encountered, this was picked and blasted out, sorted and sacked. From one end to the other of the Douglass group of claims we find these open cuts and pits. Adjacent to them the dumps were left after the high-grade was sorted out. These dumps are of valuable milling grade.

Just previous to 1890, a man named Pepper arrived upon the scene. In partnership with Douglass, he was able to form a cooperative system among the individual claim holders and miners. At this time, the population of the camp numbered nearly four hundred persons. Forty Gold veins were being worked by owners and partnerships.

Ultimately, Pepper and Douglass secured control and ownership of the productive areas. They had acquired from their mining operations enough capital to enable them to install more up-to-date mining machinery and

equipment. Their purpose was to develop at depth several of the veins, which heretofore had not been opened or developed. They selected the Bounce vein on the Banner Claim and the Mary Ann vein on the Mary Ann unpatented claim for this development.

A shaft was sunk on the Bounce vein to a depth of 400 feet. From the surface down, good ore was found in the vein. At 100 feet depth from the surface, a drift was run to the northwest on the course of the vein. High-grade ore was discovered along this drift and leases issued to the miners under royalty payments for the privilege of working the ores. At the 200-300-400 foot levels the same rich ores were discovered and leases granted for their mining. On the Mary Ann vein, a shaft was put down to a depth of 300 feet with drift levels at 100-200 and 300 feet. Extremely rich ore was found on all three levels. The same system of leasing as followed on the Bounce vein was established at the Mary Ann. Although mining from depth on the Bounce and Mary Ann lodes, the old practice of highgrading was unchanged from the early day methods of the surface cuts and pits. The ore was hoisted to the surface and sorted on the dumps. These dumps today can be milled at a profit. Underground at the Bounce and Mary Ann great tonnages of untouched ore are still un-mined. According to the areas opened by underground development with an average vein width of four feet, this width being consistent, it is probable that up to two hundred thousand tons of mill ore can be mined from the exposures made underground on the Bounce and Mary Ann veins.

In 1895, Pepper and Douglass constructed a rudimentary milling plant in the canyon at the east boundary of the Banner claim. Its capacity was limited and only higher grade ores were milled. This plant was operated for a period of three years until the death of Pepper. Douglass, being a very old man, retired from all mining activities and sold most of his holdings to individuals. From this time on for many years only minor operations were carried on at the camp and following the old original open cut and shallow pit production of rich ores.

In 1932, Harry Springer, a mine operator of experience, made a careful examination of the Douglass property. At the advice of his engineers who had spent over three months on the property, he acquired by purchase the holdings as they stand today - the full Gold zone. For the first time since the first Gold discovery in 1859, the district came under the control of a man who knew mining and saw the possibilities of building up the district into a major Gold camp.

From a point at low elevation on the Snowball claim he drove a crosscut to the north for the purpose of cutting the Fortuna, the Monarch, the Snowball and the Mary veins at depth. This tunnel was set by survey and its dimensions such as to be a main haulage way. The overall distance driven was 1,000 feet. On its course, it cut the Fortuna vein at depth of 80 feet; the Monarch vein at a depth of 200 feet; the Snowball vein at a depth of 400 feet; the Mary vein at a depth of 700 feet.

No drifting or development work was performed on the Fortuna and Monarch veins. On the Snowball vein, drifts were run for a distance of 300 feet and a few pockets of highgrade ore stoped out. But on the Mary vein, 1,000 feet of drifting exposed the vein for this full distance holding an average width of 4 feet. Also a raise was put up to the surface for ven-

tilation. Under the operation of Springer, no ore was stoped or produced from either the Snowball or Mary veins. After his death his widow granted leases to several miners for a limited period of time and possibly 500 tons of highgrade ore was mined.

Along the canyon rimming the northerly slope of the Diorite contact, Springer was able to develop a flow of water from a series of springs. There was enough water to justify the erection of a mill of 100 tons daily capacity. Not having the capital to buy and install this size milling plant, he contacted a Los Angeles capitalist, who was head of a building and loan association. After investigation by their engineers they agreed to erect the 100 ton plant on the property on a milling charge basis; that is, they would mill Springer's ores for a set price per ton. In this agreement Springer had no interest in the mill, nor the mill owners any interest in the mining properties. This was in the end a fortunate arrangement for Springer, as after the mill was set up and operating, the building and loan association became involved with the state of California under the Fraud Act and all their assets liquidated. The mill machinery was removed and sold.

Being an invalid, Springer made no further effort to acquire a milling plant up to the time of his death a few years later. Thus the first and only time since the discovery of Gold in the district, that a substantial mining and milling operation could have become a reality, circumstances put an end to this project.

From this time to the present only a few leasers have been on the claims. The last production was made at the Mary Ann in 1938, when two miners shipped ore to the smelter, receiving $47,089.88 as returns made direct to them on bullion returns. This production was made from May 13th to November 25th, 1938. (mo.)

LOCATION

The Douglass Camp lies along the northern and western flanks of the Excelsior Range, Mineral County, Nevada.

From an elevation of 7,200 feet at the campsite, a winding mountain road leads down for a distance of three miles to a maintained county road. From this junction it is a distance of five miles to the Town of Mina, located on Highway 95.

From Mina, a spur of the Southern Pacific Railroad handles all railroad and freight transportation north to the main line at Sparks, Nevada. Highway 95 is the main U. S.-State Highway, north and south between Reno and Las Vegas.

These are the highway distances from Mina:

Mina to Reno	169 miles	
Mina to Hawthorne	34 miles	(County Seat)
Mina to San Francisco	400 miles	
Mina to Las Vegas	457 miles	
Mina to Los Angeles	364 miles	

Six miles south of Mina, secondary Highway 10, joins Highway 6 at Basalt, leading over Montgomery Pass to Bishop, California where the connection is made with Highway 395 leading south to Los Angeles and Southern California.

At Hawthorne, airplane service north and south over the Bonanza Airways Lines is available for north and south flights to either Reno or Las Vegas, connecting with the trans continental lines at both these cities.

GEOLOGY

The core of the Excelsior Range in the vicinity of the Douglass Group is intrusive Diorite, probably a phase of the Jurassic intrusion. This intrusion of Diorite up through and into the older Limestones was catastrophic to the character and chemistry of the primary carbonate formations. The Limestone was crushed, shattered and permeated by siliceous solutions. During the Tertiary, another igneous emanation from the deep-seated magma brought in intrusive Granite along what is now the northern boundary of the Douglass Group. These two igneous intrusives, the Diorite to the south, and the Granite to the north, enclosed the original Limestone body on two sides. From the magmatic activity in two periods of geologic time, there thus took place a complete engulfing of the carbonate body by these intruders. The effect of the Granite was to further break and crush the partially silicified Limestone, also bringing in more silica to complete the alteration.

The replacement of the Limestone over wide areas was complete and we can term this as replacement because neither metamorphism nor metasomatism occurred. The Limestone apparently was replaced by silica, atom for atom. Considering these igneous intrusions we would normally expect to find in or near the contacts the occurrence of bodies of the metasomatic minerals such as Garnet, Epidote and other Lime Silicates. But these do not appear except as small occasional stringers of Epidote lying along the walls of very few of the veins and dikes. These replacement zones are distinct and where the infusion of Silica produced a saturation they appear as wide belts of sugar Quartz. During the period of this complete alteration, the inflowing solutions from the magma carried percentages of Gold. This was deposited generally throughout the whole rock mass.

The foregoing was the first phase of what we might call the primary makings of a Gold belt.

Separate from the Diorite and Granite major intrusions, we find throughout the Douglass area, a system of intrusive dikes, in no way identified with the major intrusives. They evidently came in at a late Tertiary period.

It has been brought forward that these dikes are not of igneous origin, nor are they actually intrusive, but were original gravel beds layed open at different periods upon a Limestone sill and later by pressure altered to Conglomerate. This theory or contention is not correct. The dikes are clastic intrusives. A study of the composition of the dike aggregate brings for the following hypothesis:

> The underlying magma under great telluric stress in relieving this pressure underwent an explosive phase with an upthrust into the overlying earth crust and passing through, it gathered shattered fragments from this above strata. They are composed of angular pieces of Andesite, Diorite, Granite, Felsite, Quartz, Dolomite and other yet unclassified rock types. Some of these fragments were smoothed by wall attrition as they were forced upward. Superheated gases and liquids were intermingled in this agglomerate mass to consolidate and bind them together.

To upset any claim that these dikes were of sedimentary origin, we find on the Dispute and Orphan Boy claims a great dome of this dike material, actually a major intrusive uplift which broke through to the surface and not conforming to any originally existing bed planes.

To the south, in contact with the Excelsior Diorite on the Jim No. 1 and No. 2 claims, a great belt of this intrusive extends southwesterly and northeasterly from the base of the Douglass Ridge, over the summit and on down the western slope. From this main contact with the Diorite, and from this Agglomerate Breccia intrusive, fingers extend to the north cutting across the formation to tie into the dome on the Orphan Boy and Dispute claims.

Finally, between the South wall of Diorite and the North wall of Granite we have two main inclusions of this Agglomerate Breccia. But also between these walls and separate from the main inclusions, we find a series of these dikes, mostly with a strike of northwest and southeast. Others have strikes bearing north and south.

Geologically we have observed in the structures on the Douglass group, the building and destructive forces over two complete epochs, the Mesozoic and the Tertiary. First, the Jurassic Age in which the Diorite invaded the Limestone, or the middle period of the Mesozoic Era covering a time scale estimated to be forty million years. Second, the Granite intrusion in the Tertiary with a time scale of sixty million years. Finally, in structure alteration by fracture and intrusion, the coming of the Agglomerate-Breccia dikes, which evidently as to time period, was late Tertiary.

Thus we have the setting for the formation of the Quartz veins and the genesis of the Douglass Gold belt. Fracturing, crushing, chemical alteration of primary formations, awaited mineralization.

With the dikes cutting through the formation lying between the great walls, the effect was to provide a friable channel or channels for later magma effusions and infusions, along their individual walls.

In the late Tertiary, long after the formation of the dikes, the country was again subjected to upheaval and magmatic activity from end to end, but confined between the Diorite and Granite walls. Great faults and breaks extended northwesterly and southeasterly, mostly along the walls of the Agglomerate-Breccia dikes. Minor cross-faults extended in every direction from wall to wall of the parallel dikes.

Up through these fractures and fault breaks ebbed and flowed silica and mineral laden solutions. These solutions contained the chemical constituents, which when cooled sufficiently, crystallize to form the minerals that make up the ores. This can be called the point of supersaturation. The mineral assemblage in the forming veins depends on the chemical composition of the original mother magma.

The solutions and gases that ascended from depth into the broken fractured zone at the Douglass brought from their genetic source a series of minerals which when crystallized and concentrated within the silica carrier, formed the ores that we find today in the Quartz veins.

This concentration and permeation followed every fissure, fracture and break between the Diorite and Granite walls.

MINERALOGY

To determine what elements were components of the ores of the Douglass properties, two large samples were taken of what could be called representative. These samples were cut down and a concentrate made of the minerals contained therein. These samples were sent to the Abbot A. Hanks Laboratories in San Francisco for spectographic analysis.

SAMPLE NO. 1

Less than .03%	.03 to .30%	.30 to 3%	3% to 30%
Chromium	Zirconium	Calcium	Silicon
Nickel	Vanadium	Magnesium	Iron
Cobalt	Zinc	Sodium	Aluminum
Copper		Potassium	
Lead		Titanium	
Rare Earths		Manganese	
Silver			

Assay for Gold .... $ 22.53

SAMPLE NO. 2

Less than .03%	.03 to .30%	.30 to 3%	30% to 100%
Copper	Potassium	Aluminum	Silicon
Sodium	Titanium	Iron	
Strontium		Manganese	
Vanadium		Calcium	
Nickel		Magnesium	
Cobalt		Silver	
Chromium		Lead	
Boron		Zinc	

Assay of Ore, Sample No. 2 ..... $111.30 Gold

The concentrate made from this ore, was very heavy in its free Gold content. Also, the Manganese percentage was high.

Assay of Concentrate:

Gold	336.60 oz.	$ 11,781.00
Silver	179.40 oz.	161.46
	Total Value	$ 11,942.46

It is well to mention here that Sample No. 1 was the erode material from several of the gulches at an apex where they joined. Sample No. 2 was from two cuts made across the Monarch vein.

The above two spectographic analyses are sufficient to outline the elements occurring in the ores.

PROPERTIES

The Douglass Group comprises the following list of mining claims and deeded lands:

PATENTED CLAIMS HELD UNDER SURVEY NO. 2561

Gold Nugget - Bunco - Delusion - Duke of Wellington - Excitement - Mary - Monarch - Dispute - Snow Ball - Orphan Boy - General - Progress - Oscar - Hardluck - Fottler - New Party (16 in number)

UNPATENTED MINING CLAIMS

Jupiter - Banner - Little Chief - Gold Sovereign - Fottler No. 1 - Fottler No. 2 - Fottler No. 3 - Fottler No. 4 - Mary - Ann - Mary Ann - Minnie - Minto - Storey - Emma - Jim No. 1 - Jim No. 2 - Bill No. 1 - Bill No. 2 - Marje. (20 in number)

PATENTED LANDS

South East ¼ Section 3 - Township 5 - Range 33. Lot 4 of Northwest ¼ Section 6, Township 5 - Range 34. Seventy-three acres of Mountain or Barren Land. Within these boundaries are located the Pepper Springs held under grant from the State of Nevada.

All the above holdings are of record in the county recorder's office, Hawthorne, Nevada. An abstract of title was brought down to October 1, 1956. All taxes on patented claims and lands have been paid for 1956-57. All annual assessment work for 1956-57 has been performed. As the properties stand today the title is 100% clear and good.

VEINS

We have presented an enclosure in which is situated a Gold belt approximately one and one-half miles long and one mile wide. As covered under the heading, GEOLOGY, we understand the dynamics which made this belt a host for the deposition of elements and the ores derived from chemical combinations with the elements. These basic elements are delineated under the heading, MINERALOGY. The ores formed from these elements, at the present time, have no bearing upon the value, nor upon the mining worth of the properties. The interest which is paramount, is to establish the present and future value as a Gold mine or Gold mines. Also, under the heading, HISTORY, we understand the superficial mining methods which were practiced at the Douglass and that there was apparently no desire to make an overall estimate of the actual potentials of the Gold bearing zone. It was a case of individuals working their own veins or segments of veins, to skim off the cream and leave the greater tonnage of milling ores in place or on the dumps. This was the practice for seventy-nine years, from 1859 until the last highgrading, in 1938.

From our examination, study, sampling and months of time spent upon the properties, we have endeavored to conservatively form an opinion as to the actual value of the Douglass Gold Belt.

This examination, beginning in September, 1956, was carried on through the winter months and into this spring. To cover a terrain containing many veins, at times snow covered, was difficult. But with the work, sampling and exploration accomplished, we believe that we can present a picture that will give an understanding of just what the potentialities are at the Douglass and what could be expected if the properties were completely developed and adequate finances were provided to open the many orebodies already exposed, further on both the surface and at depth. Also to perform the necessary bulldozer work to uncover veins yet covered by overburden.

In sight within the Gold Belt when we first made a preliminary surface survey, we found forty-six quartz veins which had been worked in past years and ore extracted by open cuts. The innumerable Gold-bearing quartz stringers, both paralleling and cutting at right angles between the more prominent veins were not listed in the total number of forty-six.

From our surface exploration, with bulldozer cuts, we uncovered four more veins with outcrops buried beneath the overburden. This brought the total known number of veins up to fifty.

There are extensive areas within the Gold Belt still covered by surface soil and erosion material. Over a great deal of this land, quartz float is scattered along the slopes and eroded from buried veins. A series of bulldozer cuts in these areas should expose their outcrops.

ORPHAN BOY - DISPUTE REPLACEMENT ZONE

Under the heading of GEOLOGY, it was remarked that there were complete replacements of the original Limestone, by Silica. This is remarkedly demonstrated in the altered zone, or ore-dike that raises in and on the General Claim to the east. (At this time it is well to mention that the ore-dike was fractured from end to end at the time of the last upheaval of the general structure and these fractures and fissures well filled by auriferous quartz and associated minerals. These veins were worked for highgrade from the base in the gulch to the summit.)

The ore-dike outcrops above the overburden on the General for three hundred feet. Striking southwesterly, it crossed the corner of the New Party Claim, then abruptly swings northwest about the middle of the Orphan Boy Claim for four hundred feet, where it follows its course fifteen hundred feet, the length of the Dispute and over the summit, where it is covered by overburden. Thus we have exposed for twenty-two hundred feet an orebody which could be open-pit mined on segments which have not been intruded by the Agglomerate-Breccia.

This ore-dike is approximately four hundred feet wide on the average. We can be assured of a thousand feet of workable ground on the Orphan Boy and Dispute Claims from the gulch to the summit, as an open-pit proposition.

To approximate the possible tonnage that lies in this segment of the ore-dike on the Orphan Boy and Dispute, we have taken the following dimensions as a yardstick:

Length	1,000 feet
Width	400 feet
Mining Depth	800 feet
Cubic feet to ton ..	15 cubic feet (actual)

Tons 21,333,333

As this block would be wedge-shaped, with a slope of forty-five degrees from the gulch to the summit, we must cut this tonnage estimate in half, and reach a dependable figure of 10,666,666 tons.

When faced with the possibility that this ore-dike could have mineable value, we traversed it the full length and across it from base to summit at many intervals. It was then decided to conduct a sampling which would render some idea as to Gold values contained. Two hundred feet above the gulch on the Orphan Boy Claim a bulldozer cut was made across the formation north and south for one hundred feet. Channel-cut samples were then taken in this cut every ten feet, crossing the ore material.

Below is listed the assay results for Gold values of the samples taken:

$3.50 - $56.35 - 7.87 - 1.57 - 6.82 - 8.05 - 19.68 - 4.55 - 54.60 - 3.32

We partially stripped the soil above the cut for a distance of two hundred feet to establish the fact that there was a continuity of the ore-

dike beyond this point. From the measured data and the assays, we endeavored to arrive at an estimate of the probable tonnage in a block of ground and its gross value in Gold as per the following:

Length ..... 200 feet
Width ..... 100 feet
Depth ..... 200 feet
Cubic feet to ton ... 15 cubic feet (actual)

Tons 266,666

Average assay of ore .... $16.63 per ton in Gold

Gross value of ore in place $4,134,655.58

In the above listed ten samples, the range in value is from $1.57 up to $56.35. This radical difference in Gold content is caused by the inclusion of the Gold bearing quartz stringers which cut through the ore-dike encountered in the cutting of the samples.

On the Dispute Claim, we made a cut across a segment of the ore-dike for one hundred and seventy feet. Its elevation was one hundred feet above the gulch. The same method of sampling was followed as established on the Orphan Boy.

Tonnage and assay value of the ore in place for this segment is as follows:

$14.70-21.70-14.70-13.30-11.20-8.05-18.55-20.65-21.70-17.15
$14.70-17.15-19.60-19.95-19.25-16.60-12.00

Length ..... 200 feet
Width ..... 170 feet
Depth ..... 100 feet
Cubic feet to ton ..... 15 cubic feet (actual)

Tons 226,666

Average assay of ore ..... $16.52 per ton in Gold

Gross value of ore in place $3,744,522.32

On the General Claim, owing to the topography, we were able to make our cuts on more level terrain, as we did not have the sudden dips and slopes as encountered on the Orphan Boy and Dispute.

At about the center of the General, we made a cut 500 feet across the formation. Here the vein-dike is of a much more compact structure and more siliceous. Across this exposed ore-body we cut fifty samples at ten foot intervals with the following results:

$4.65 - 3.10 - 11.10 - 2.40 - 7.80 - 13.05 - 1.70 - 3.70 - 5.90 - 6.45 -16.80

$13.80 - 4.05 - 9.85 - 22.15 - 19.10 - Trace - Trace - 5.10 - 14.25 - 11.10

$11.10 - 3.30 - 3.95 - 17.70 - 15.05 - 9.10 - 20.00 - 4.40 - 8.05 - 8.70-8.80

$2.95 - 2.00 - 7.55 - 7.95 - 13.35 - Trace - 1.10 - 18.95 - 18.15-11.05-11.50

$8.05 - 6.10 - 7.70 - 4.95 - 7.25 - 2.95 - 6.20

Average Assay Value Per Ton in Gold ... $8.47

On the Orphan Boy and Dispute, we had a lay of country, whereby we could say that we were safe in making a tonnage estimate of the ore in place, as we could determine length, width and depth of the block of ground under consideration. But on the General we are dealing with a flatter country and cannot accurately lay out a block of measured ore. But we do know that southwesterly, a canyon four hundred feet deep cuts the vein-dike where the course cuts a corner of the New Party Claim. This canyon lays three hundred feet beyond the bulldozer cut from which the above samples were taken. We could make an estimate of POSSIBLE ore in this area under discussion, as follows:

Length ..... 300 feet
Width ..... 500 feet
Height ..... 400 feet
Cubic feet to ton .... 15 cubic feet (actual)

Tons ..... 4,000,000 tons (?)

Average Assay of Ore ..... $8.47 per ton in Gold

Gross Value of Ore in Place ... $33,880,000 (?)

No commitment will be made as to the probability that the foregoing figures are the actual tonnage contents of this ore on the General Claim. But in the future, if the covering soil was stripped from this section of the claim, from the cut to the canyon, the above figures could be substantiated or discounted. Therefore, at the present, this ground will not be included in the final summary of tonnages and ore values on the Douglass property.

EXCITEMENT REPLACEMENT ZONE

On the Excitement Claim, a segment of the replacement zone strikes northwesterly along the border of the Agglomerate-Breccia dome. To the southwest another intrusion of the Agglomerate-Breccia, seals this segment between them. This segment is approximately two hundred and thirty feet wide and has been stripped for a distance of four hundred feet. Its depth is three hundred feet, determined by the steep wall of the canyon.

Length ..... 400 feet
Width ..... 230 feet
Depth ..... 300 feet
Cubic feet to ton .. 15 cubic feet (actual)

Tons ..... 1,840,000 tons

Sampling of the cut, twenty-three samples in number, gave us the following results:

$6.95 - 9.10 - 9.45 - 4.40 - 7.95 - 12.30 - 15.50 - 2.95 - 3.15 -17.20 -12.10

$9.90 - 10.10 - 4.45 - 3.85 - 9.05 - 7.00 - 7.05 - 16.65 - 11.60 -6.90 -9.00

$13.05

Average assay of ore ..... $8.98 per ton Gold

Gross value of ore in place $16,523.200

In the compilation of the data relative to the values and tonnages of ore existent on the Dispute, Orphan Boy, General and Excitement claims, it must be considered that but a fraction of this area was actually sampled and explored. To arrive at a final and unassailable determination, extensive surface work should be undertaken to uncover in toto the outcrop of this ore-dike from the General Claim to the summit of the ridge. If this is undertaken, we believe that our figure of 10,666,666 tons of ore in place would be one-third of what actually lays in tonnage in this ground.

Furthermore, mill test runs in fifty ton lots should be made of ores from many places in this ore-dike. Hand samples are only indications of ore-grade at the spots where cut from the ore mass.

The following is a summary of our estimate of values and tonnages gained from our exploration and sampling on the four claims:

Claim	Tonnage	Assay Value	Tonnage Value
Orphan Boy ...	266,666	.... $16.63	..... $4,134,655.58
Dispute	226,666	.... $16.52	..... $3,744,522.32
Excitement...	1,840,000	.... $ 8.98	.... $16,523,200.00

Total Tonnage ..... 2,333,332 tons in place

Average Assay ..... $14.04 in Gold

Total Value $24,402,377.90

At this time it is well to state that at the beginning of our examination and sampling of the Douglass Group, we had no data as to whether the area had been established as a quadrangle by the U. S. Geological Survey, or the State of Nevada and if a subsequent mineral and geological survey was made. This we later found had never been done. So we entered

upon the property with the necessity of making these most necessary determinations, as they are basic. It was a case of elimination of all unpromising sections of the terrain from end to end by sampling and assay. Thus to segregate these valueless areas from the possible and probable Gold bearing zones. Until we were able to make these determinations, we had taken over three hundred samples of rock.

As these are not germane to the body of this report, nor factors in the final answer of the value of the properties, they are not listed herein. But as an example of our process of elimination of the valueless from the valuable, we will list the assay results given on the sixty-two samples we cut across the Agglomerate-Breccia dome. To the eye and by its siliceous character, we thought it possible that it could carry enough value in Gold to be considered ore. As follows:

$.35 -Trace -Trace -.52 -.35 -Trace -Trace -.35 -.35 -.35 -.35 -$6.65
$.52 -.35 -9.10 -.35 -.35 -Trace -Trace -4.90 -Trace -.35 -.70 -Trace
$Trace -.35 -.70 -Trace - Trace -Trace -Trace -Trace -.35 -Trace -Trace
$.35 -.35 -Trace -Trace -Trace -.35 -.35 -Trace -.35 -.35 -Trace -Trace
Trace -Trace -Trace -2.97 -Trace -Trace -1.40 -.52 -2.27 -1.15 -Trace
Trace -.70 -Trace -$87.50.

From this sample checking we proved as an ore source that the Agglomerate-Breccia is valueless. In the total of sixty-two samples, you will note assays of $6.65-9.10-4.90. These sample cuts included very small stringers of quartz cutting into the formation. When we made the last sample cut, part of the sample included a portion of a contact quartz vein lying between the Agglomerate-Breccia and the ore-dike, hence the assay of $87.50.

We know, by the outcrops showing, that this ore-dike is existent on other claims adjacent to the four from which the foregoing samples were taken and estimates compiled. With our facilities and considering the time element, we were not able to cover these other areas with the exception of the segment exposed on the Mary Patented Claim. As follows:

On the Mary Patented Claim we are presented with several Agglomerate-Breccia parallel dikes striking northwest and southeast. These dikes cut the country for long distances, and form one or the other of the vein walls on the Mary vein and the adjacent veins of the Snowball, Monarch and Fortuna veins to the southeast. Without the use of a bulldozer to cut down through the overburden to the underlying formation, we were able to segregate a segment of the vein-dike and cut therefrom, eleven samples. This segment where exposed is one hundred feet long and one hundred and ten feet wide. Lower down on the slope, the ore is exposed enough to give us a minimum depth of one hundred feet.

Length ..... 100 feet
Width ..... 110 feet
Depth ..... 100 feet
Cubic feet to the ton-15 cubic feet (actual)

Tons 73,333

Assays:

$8.75 -22.15 -11.90 -15.05 -9.80 -11.02 -10.50 -13.82 -12.95
12.77 -16.62

Average assay of ore .....$13.20 per ton

Gross value of ore in place $967,995.60

The above depth given to the block of ground was from surface observation alone. In this case it is arbitrary, for in the Snowball Tunnel driven by Harry Springer, the ore-dike was cut at a depth of over four hundred feet below the surface.

In all our depth calculations on the Mary, Orphan Boy, Dispute, General and Excitement claims, they are subject to radical change whenever the ore-dike is developed and depth below the lowest exposures in the canyons can be reached. A very interesting and enlightening fact is that the formation at the bottom of the Bounce shaft is of the ore-dike formation, the Bounce vein cutting through it to the northwest. The bottom of this shaft is approximately over thirteen hundred feet below the highest outcrop of the ore-dike at the summit of the ridge to the northwest. If this depth is sustained whenever the ore-dike is developed and mined, our foregoing estimates on tonnage will be but a fractional percent of what could be in place from the General orebody on that claim, to the summit of the ridge.

Returning again to the Mary Patented Claim and the adjacent terrain, we are in a locale where the mineralization was the greatest in the Douglass Group. The many parallel veins, together with the cross-veins and stringers forming more or less of a stockwork in the formation, should be greatly enriched throughout in values. If the ore-dike was fully exposed by stripping, we believe that where these Gold-bearing cross-veins and stringers are numerous in the ore-dike, would possibly be found extensive mineable belts which would approximate in value many of the richer quartz veins already opened in the years past. There is a reasonable premise in this idea as the surface soil lying over most of this area contains a certain amount of free Gold obtained by panning this. An erosion product from the disintergration and weathering of the softer material of the ore-dike.

This ore-dike material lies scattered from the Mary Claim, northwesterly across the Hardluck, Progress, Monarch, and Delusion claims, a distance of nearly two thousand feet. There is a bend in the structure on the southwest boundary of the Mary Claim. This breaks from a southwest strike on the Mary, to take up the true northwesterly strike of the Ore Belt. It is nearly at right angles from the position on the Mary and evidently a pushover from the force of the Granite intrusion.

As stated on page 9 of this report, there are fifty quartz veins within the boundaries of the claims and all Gold bearing. They are all exposed and were mined at different times. What other veins that lay buried from sight we leave to future uncovering.

Below is listed the number of veins exposed on each claim having been examined and their existence confirmed.

PATENTED CLAIMS

MONARCH	5	SNOWBALL	3
DISPUTE	3	DUKE OF WELLINGTON	2
ORPHAN BOY	4	BUNCO	1
HARDLUCK	6	DELUSION	2
MARY	1	NEW PARTY	3
GENERAL	1	OSCAR	1
PROGRESS	1	FOTTLER	2
EXCITEMENT	2	GOLD NUGGET	1

Total Number of Veins 38

UNPATENTED CLAIMS

BANNER	1		MARY ANN	2	
JUPITER	0	(covered)	MARY	1	
GOLD SOVEREIGN	1		EMMA	0	(Cov.)
LITTLE CHIEF	1		MINTO	0	"
JIM NO. 1	1		ANN	0	"
JIM NO. 2	1		MINNIE	0	"
BILL NO. 1	1		STOREY	0	"
MARJE	1		FOTTLER NO. 1	1	
BILL NO. 2	1		FOTTLER NO. 2	0	
			FOTTLER NO. 3	0	
			FOTTLER NO. 4	0	

Total Number of Veins 12

The statement, "Covered", following the names of six of the unpatented claims means that the depth of overburden laying upon them was and is of such depth that they have never been explored by trenching or any removal of the earth cover. But all these claims lay within the mineral belts of the Douglass area. We have noted that wherever the rock formation has been exposed to any extent, such as on the Banner, Mary Ann and others, veins have been found and worked.

We have determined, by sampling, facts of geology and very thorough examination, that the main concentration of Gold Values in the Douglass Group lays in the area covered by the Monarch, Snowball, Mary, Orphan Boy, Dispute, General, Excitement, New Party, Hardluck, Progress, Delusion, Banner, Duke of Wellington, patented claims.

These total thirty-four veins, exclusive of the ore-dike replacement ore bodies existent on the Orphan Boy, General, Dispute, Excitement and the Mary. This appers as the main heart of the Gold Belt confined between the north wall of Granite and the south wall of Diorite. The heading GEOLOGY covers the reason to be, of the structure alteration its faulting along the Agglomerate-Breccia dikes, providing channels for the inflow of Gold bearing solutions and silica, to become the veins that exist today.

Of these thirty-four veins, there appear to be eight which in themselves are of great enough extent, both in length, width and value to be developed into mines, each of a potentiality of their own to constitute a worthwhile separate mining operation; if properly developed by tunnel and shaft, to get below the horizons of the old time shallow surface cuts.

We have covered these veins on the surface and wherever we could gain entrance to the cuts upon them or any of the tunnels.

In August, 1956, the writer spent several days at the Douglass to gain an idea of the general lay of the land, the geology and enough samples of the ore to justify, if they assayed, further investigation. Of the samples, taken here and there, eleven of the twenty taken assayed in Gold over $15.00. These samples were of vein material, mostly laying on the old dumps.

Early in September, from the foregoing results, it was thought advisable to go over the ground more thoroughly and select type samples of the ores from selected places on the veins where the indications were that selective mining of rich ore had been followed in the early operations years ago. It is well to mention here that these samples were picked. We followed this plan deliberately to substantiate or refute the tales that the Douglass was a highgrade camp and that all the ores ever produced were highgrade. From the results of this sampling of the ores left behind from the work of previous operators and knowing that they were mostly Cornishmen who culled what they mined thoroughly, we were surprised at the results obtained from the assay of one hundred and thirteen samples. It gave us the proof needed to intensify our examination.

This was ample evidence to lay out the examination work to be followed by sampling in a systematic manner, to cover thoroughly every rock formation, to establish its identity as to its bearing upon ore deposition, to eliminate the worthless and segregate the valuable, to determine the vein systems and their relationships one to the other. As this examination progressed, many times we had to change our previous opinions. The unfoldment of new discoveries and more extensive ranges of the ores would necessitate a different modus operandi, if we could do justice to the group by concentrating in specific areas. This we had to do. To completely cover by sampling fifty Gold veins, rock formations, cross veins, stringers and ore-dikes presented to us with the facilities and manpower available, an undertaking beyond our powers and finances at the time. Therefore, the following data is confined to results obtained by work and sampling of the eight outstanding veins.

M O N A R C H V E I N

Exposed length by cuts and outcrops ..... 1,000 feet
Average vein width as exposed by cuts ..... 4 feet
Depth from gulch to summit ..... 900 feet
Assays: $103.95 -31.50 -42.35 -29.75 -31.32 -38.85 -49.00 -38.30
31.50 -8.75 -5.77 -6.30 -5.60 -6.30 -13.30.
Average assay value in Gold ..... $21.70 per ton

Much is covered along the strike of the vein and we sampled exposures.

MARY VEIN

Exposed length by cuts and outcrops ..... 1,200 feet
Average vein width as exposed by cuts ..... 4 feet
Depth from gulch to apex ..... 600 feet
Assays: $12.60 -15.05 -18.00 -15.75 -14.87 -15.75 -13.12 -13.95
10.85 -15.05 -9.97 -12.77 -11.90 -5.25 -22.40 -33.40
29.90 -17.65 -17.00

Average assay value in Gold ..... $10.70 per ton

Much is covered along the strike of the vein.

BOUNCE VEIN (Banner Claim)

Exposed length by cuts and outcrops ..... 800 feet
Average vein width as exposed by cuts ..... 3 feet
Depth-collar shaft 400 feet deep is
200 feet below outcrop ..... 600 feet
Assays: $16.90 -16.25 - 39.90 - 21.35 - 22.90 -11.10 -13.80 -24.25
19.45-14.15 -14.20 -33.30 -19.95

Average assay value in Gold ..... $20.57 per ton

SNOWBALL

Exposed Length by cuts and outcrops ..... 400 feet
Average vein width as exposed by cuts ..... 4 feet
Depth from outcrop to tunnel level ..... 400 feet
Assays: $51.10 -38.80 -16.95 -16.60 -18.30 -18.30 -9.10 -13.50
18.80 -13.15

Average Assays in Gold $21.50

HARDLUCK

Exposed length by cuts ..... 600 feet
Average vein width as exposed by cuts ..... 4 feet
Depth from apex to base of slope ..... 250 feet
Assays: $6.60 -9.60 -17.15 -29.65 -14.95 -22.20 -27.85 -10.00
10.55 -14.15 -19.50 -48.95 -31.35 -12.60

Average assays in Gold $19.65

EXCITEMENT

Exposed length by cuts ..... 900 feet
Average vein width exposed by cuts ..... 4 feet
Depth from apex to gulch ..... 450 feet
Assays: $2.95 -2.00 -18.00 -18.45 -7.25 -10.95 -8.60 -25.90
21.10 -15.25 -16.15 -34.40 -11.20 -14.75 -28.90

Average assays in Gold $15.72

ORPHAN BOY

Exposed length by cuts ..... 800 feet
Average vein width exposed by cuts ... 3 feet
Depth from apex to gulch ..... 800 feet
Assays: $10.50 -16.10 -11.90 -10.50 -54.60 -56.35 -19.65
37.10 -26.80

Average assays in gold .....$27.05 per ton

DISPUTE

Exposed length by cuts and outcrops ... 800 feet
Average vein width exposed by cuts .... 3 feet
Depth from apex to gulch ..... 800 feet
Assays: $14.70 -21.70 -14.70 -13.30 -11.20 -0.05 -18.55 -20.65
21.60 -17.15 -14.70 -17.15 -19.60 -19.95 -16.65 -12.00

Average assays in Gold .....$16.35 per ton

The foregoing data on the eight veins gives length, width, and the indicated depth based on the showing from outcrop, to the distance of the gulch or canyon adjacent which cuts the vein. Under these conditions of only surface showings, it is impossible to render any statement as to mineable tonnages of ore from these veins. The exception is of the ores developed on the Bounce and Mary Ann claims by the shafts and drifts and the ores developed on the Fortuna, Snowball, Monarch and Mary lodes by the cutting of the same by the Snowball Tunnel noted on page 2.

We know that the Fortuna vein was cut by the tunnel at a depth of eighty feet and the Monarch at two hundred feet. As no drifts were run on either of these veins, even though their outcrops run for long distances, we cannot claim any blocked ore in sight. However, a drift was run on the Snowball vein for a distance of three hundred feet. At this point of intersection the depth on the vein is four hundred feet below the outcrop. With a vein width, we can approximate the following tonnage:

Length of drift ..... 300 feet
Width of vein ..... 4 feet
Depth from outcrop to tunnel ..... 400 feet
Tonnage ..... 32,000 tons

On the Mary vein, we have a drift of one thousand feet on ore. From the outcrop down to the level of the Snowball Tunnel we have stoping ground of seven hundred feet available. The vein width is four feet. The following estimate of tonnage should approximate:

Length of drift ..... 1000 feet
Width of vein ..... 4 feet
Depth from outcrop to tunnel ..... 700 feet
Tonnage ..... 186,000 tons

SUMMARY

ORE

1. In sight and available for mining we have: OPEN PIT PRODUCTION, AND ORE THAT CAN BE PRODUCED FROM UNDERGROUND MINING.

TONS AVAILABLE TO OPEN PIT MINING .... 2,406,665 tons

ASSAY VALUE ..... $13.62 per ton

GROSS VALUE $32,778,777.30

UNDERGROUND ORE

SNOWBALL and MARY VEINS ..... 218,000 tons

ASSAY VALUE OF OUTCROPS, TAKEN FROM CUTS FROM WHICH THE RICHER ORE HAD BEEN MINED GAVE AN AVERAGE ASSAY VALUE OF ..... $16.10 per ton.

GROSS VALUE (?) ORE IN PLACE $3,509,800.00

AVAILABLE MINEABLE ORE IN SIGHT BOTH OPENPIT and UNDERGROUND IS:

TONS 2,624,665

GROSS VALUE IN TOTAL $36,288,577.30

2. Without seeming repetition, we will refer to page 10, in which it is stated that there should be approximately 10,666,666 tons of ore mineable from the base of the gulch to the summit. Also, on page 12, we state there is a potential of 4,000,000 tons of ore laying in the General ground. Added together, we would have 14,666,666 tons of ore yet to be proven by surface clearing of the covering soil.

3. All ores so far exposed on the surface and to the bottom of the Bounce shaft are free milling. Nowhere have we detected any sulfides in any of the quartz. The Gold is clean and readily released from its quartz gangue.

RECOMMENDATIONS

1. That the surface soil be bulldozed and stripped from the ore-dike from the center of the General claim to the summit of the ridge.

2. That this ore-dike be core-drilled to the depth of 1,000 feet below its lowest exposure in the gulch.

3. That the ore-dike on the Mary, Hardluck, Progress, Monarch and Delusion claims be also stripped of overburden, to expose the ore-dike, and uncover the outcrops of other quartz veins which evidently lay within the Gold belt. Later, core-drill this zone.

4. Clean and renovate the Pepper Springs. Here can be developed a major water supply for a large milling project at the Douglass. Also make a survey of the terrain from the springs to the mine with it borne in mind that a lift of one-half mile from the springs to the elevation of the ridge, 800 feet above the springs, would then give a gravity flow of water to the mines.

Ralph L. Reade, E.M.

Hawthorne, Nevada
June 1, 1957

DOUGLASS MINE ADDENDA

Monarch Tunnel

In the examination of the northerly area lying between the Granite and Diorite walls, we were impressed by the strength and continuity of the Fortuna vein. The outcrop had been open-cut and surface mined for a distance of over one thousand feet along its south-westerly strike across the Snowball, Hardluck and Progress claims. Its continuity into the Monarch ground had never been exposed by any surface development or mining. The overburden was deep, compacted and heavy.

The Monarch vein also had been exposed by open-cuts and surface mining for over one thousand feet and from this work much high-grade ore had been mined. Its strike being to the northwest, we knew that there must be an intersection or joining with the Fortuna vein, and that at this junction the possibility of there being an enrichment of the Gold values. Accordingly, a survey was made to determine the approximate point of the intersection of the veins. This location was in an area deeply buried beneath soil, gravel and boulders eroded from the steep slope of the mountain. Also we found that the point of jointure of the two veins lay beneath a large dump accumulated from old work on the Monarch vein. A road was cut from the bottom of the gulch on the Hardluck claim along the slope to a point just below where the veins were supposed to intersect. Here a fill was made to provide level working space and the approach to a tunnel site, or crosscut to the objective. The course of the crosscut was set by survey and an estimated distance to be driven. The slope was stripped of overburden down to the formation to establish a portal, and drilling commenced.

Here we found the rare occurrence of the original primary Limestone, the bedding planes, blocky and regular. There is a partial silification, with minute stringers of quartz lying along the planes. At a distance of twenty feet into the formation, we passed through the Limestone and entered a zone of complete alteration and replacement. The change of character and structure of the country was complete. From this point on, we were in a crushed, broken, faulted and strain-fracture belt. The normal dip of the rock contacts and planes to the southeast changed to a dip to the northeast. For a distance of thirty feet this dip to the northeast was held. Over this distance we cut stringer after stringer of quartz and gouge. All these stringers and gouge panned varying amounts of free Gold. At this point, fifty feet in from the entrance, we entered to what appears as the area of the veins junction. The dip fell into its normal position of southeast and more quartz was encountered in the broken mass with an increase of the gouge or vein-mud.

We pushed the crosscut further in for a distance of thirty-four feet. The dip remained normal, but still the broken, crushed and quartz-impregnated mass was encountered. Ten feet back from the face, a new intruding vein came into sight. From its strike, we recognized it to be a minor vein which outcrops in the gulch seven hundred feet to the northeast. By its unbroken structure it is evidently of later age than either the Fortuna or Monarch veins and was not subject to the dynamics that overtook these two main veins. A sample was cut across the face of the crosscut from wall to wall composed of crushed quartz, country rock and gouge. The content of Manganese here was high.

Assay of Sample Taken From Face of Monarch Tunnel --

GOLD ..... 1.57 Ounces ..... $54.95 Per Ton

From the portal to the face we have driven a distance of eighty-four feet. In this distance we have passed through sixty-four feet of well mineralized ground. Daily pannings of the broken rock have yet to get a blank and this is the overall average. In this distance, selected pieces of quartz are proving to be rich in Gold content, especially those high in their content of Manganese oxide.

The face of the crosscut is still in the broken structure with no evidence of the Monarch and Fortuna veins being in place according to surface survey and measurement. It seems apparent that at some period the point of junction of the two veins was subjected to a crushing and fracturing that as far as we can determine does not show on the surface.

If this broken mineralized condition persists further to the northeast, it will join the Mary ore-dike and form a continuous ore belt. If the crosscut were turned to the northwest and driven along one of the rich stringers, it is probable that in a short distance it would pass out of the crushed zone and lead into the Monarch vein in place at a depth close to one hundred feet below any of the old workings.

RALPH L. READE E.M.