

3810 0123

PRELIMINARY REPORT

KILBORN PROPERTIES

RESSE RIVER MINING DISTRICT

AUSTIN, LANDER COUNTY, NEVADA

AUGUST, 1935

F. J. De LONGCHAMPE

MINING ENGINEER

## KILBORN MINING PROPERTIES

### DISTRICT

This district is located on the Lincoln Highway about one hundred and eighty miles east of Reno, Nevada, one hundred and fifteen miles east of Fallon, Nevada, and about ninety miles south of Battle Mountain, Nevada, which is on the main line of the Southern Pacific Railroad. There is a branch narrow-gauge railroad running from Battle Mountain to Austin. There is a first-class auto stage line running east and west on the Lincoln Highway. The altitude of Austin is 6,800 feet above sea level. The terrain is somewhat rolling and not precipitous.

### HISTORY OF DISTRICT

The first discovery was made by Pony Express riders on May 2, 1862. Extremely high grade silver was discovered in a small vein afterwards known as the Pony vein. This discovery was soon followed by a great influx of prospectors into the camp and many other veins were discovered. Claims were grouped and companies formed for more extensive development work.

Up to the present time the district has produced in excess of fifty million dollars in silver and gold. One of the principal companies, which was known as the Austin Manhattan Company, produced up to the year 1897 nineteen million dollars from one hundred thousand tons of ore, showing an average extracted value of one hundred and ninety dollars per ton milled.

There are numerous veins in the district, the principal ones of

which, according to U.S.G.S. Bulletins, have had the following production.

Sonora	\$ 600,000.
Farrell	\$ 3,000,000.
Ruby	\$ 1,500,000.
Oregon	\$ 3,000,000.
Isabella	\$ 1,500,000.
North Star	\$ 5,000,000.
Independence	\$ 3,000,000.
Frost	\$ 2,000,000.
Panamint	\$ 9,000,000.
Union	\$ 3,500,000.
San Jose	\$ 750,000.
Silver Chamber	\$ 1,500,000.
Whillatch	\$ 100,000.
Carnago	\$ 100,000.
Baker	\$ 1,500,000.
Paxton	\$ 1,000,000.
London	\$ 1,500,000.
Savage and Diana	\$ 2,000,000.

The distance at right angles to the general strike from the first footwall vein to the hangwall vein is in the neighborhood of 3,600 feet.

#### GEOLOGY OF DISTRICT

Reference is made to the United States Geological Survey Bulletin No. 594, page 95, for a description of the geology of the district.

The principal country rock is a Quartz Monzonite, Cretaceous, intruded into quartzites and calcareous shales of pre-Carboniferous age.

The Quartz Monzonite is cut by a number of lamprophyric dykes most abundant on the west slope of Lander Hill. The veins occur in the Quartz Monzonite and their strike is approximately N 40 W with a dip of approximately 45 degrees to the N.E. The vein system is cut by N. S. Faults with west dips.

The veins are from a few inches to six feet in width. The principal values are in silver. As the veins extend to the northwest they become more base, containing a considerable amount of copper, lead and zinc. The greatest change in the veins seems to occur at or near a N. S. fault in the neighborhood of the north crosscut from the main Manhattan Tunnel. Although the base ores carried good values in silver and gold it marked the line of early profitable production due to what was then known as a complex ore.

#### DESCRIPTION OF MAP

The map shows the position of the Kilborn Properties in relation to the adjoining properties as taken from Government Public Survey notes.

The twenty-one claims embraced in these properties consist of the following and are all patented:

Survey No. 3313	New York
" " "	Moss
" " "	Moss Fraction
" " "	Hillside
" " "	Illinois
" " "	Mormon Turn
" " "	Hilltop
" " "	Sunset
Survey No. 3713	Janey C. W.
" " "	Janey C. W. Fraction

Survey No. 3713	Gold King
" " "	Gold King Fraction
" " "	Ballard
Survey No. 4683	Granulite
" " "	Dolerite
Survey No. 4684	Austin
" " "	Austin Fraction
" " "	Highland Boy
" " "	Lucky Fraction
" " "	Highland Fraction

The total area of these patented claims is 134.328 acres.

Patents have been issued and taxes paid to date. Taxes on this property amount to approximately two hundred dollars per year.

The principal production of the district has been immediately North, East and South of the New York claim. The map also shows the approximate location of the principal veins crossing the group. If a line were drawn at right angles to the strike of the vein system across the Kilborn Properties, the distance between two lines drawn through the extremes of the Kilborn Properties parallel to the strike of the vein system would be over five thousand feet, therefore covering the projected strikes of most of the principal veins of the district with the exception of a width of about seven hundred feet between the two groups.

The map also shows the location of the main portion of the town of Austin on the Lucky Fraction and the Highland Fraction claims. The location of the main Manhattan Tunnel is also shown. The principal workings on the Kilborn properties are also shown.

#### MANHATTAN TUNNEL

The Manhattan Tunnel is approximately six thousand feet long not

including the crosscut and intersects the Frost shaft at a depth of six hundred and sixty feet. The crosscut is 2,830 feet long. Work in this main tunnel and crosscut was stopped many years ago and has not been kept open since that time.

#### ELEVATIONS

The approximate relative elevations of the various points which have a bearing on the Kilborn Properties are as follows:

Assumed elevation of Main Tunnel	6,500 feet
Equity Tunnel (Kilborn)	6,770 "
Croppings of veins cut by Equity Tunnel (roughly)	7,300 "
Collar of Belle Wilder shaft	7,000 "
Crosscut of Belle Wilder shaft	6,900 "
Collar of New York shaft	6,900 "
Town of Austin	6,700 "
Portal of Austin Fraction Tunnel	6,700 "
Collar of Austin Fraction shaft	6,900 "

#### KILBORN WORKINGS

In the early days several incline shafts were sunk on the veins of the Kilborn Property and it is said that due to the base character of the ore encountered after passing through the oxidized zone they were abandoned. This has proven that the veins extend through this area and are at least equal width to the same veins in the originally mined area. The New York Shaft being on the strongest and most productive vein of the district has quite extensive workings according to old surveys, but little could be learned of its assay value at this time on account of its caved condition. The Hillside shaft, which appears to be on the same vein as the New York shaft vein, is open and can be sampled after the removal of a

small amount of debris. Some of the Hilltop and Sunset inclines are open for a short distance below croppings. When Geo. D. Kilborn acquired these properties he started a crosscut tunnel from another canyon to the north to cut the principal veins of the group. This tunnel is now about seventeen hundred feet long and during its progress seven veins were cut, five of which were drifted on. It was the intention of Mr. Kilborn to continue this tunnel to intersect the more important veins, such as the Panamint, Savage and London vein. He died before this work was finished and work was then stopped. Judging from croppings and dip of the veins it is the writer's belief that the principal veins cut in the tunnel are in the neighborhood of the "Blue" vein or the "Blue North Star" vein. This would indicate that it would require about a thousand feet more of tunnel in order to intersect the more important "Savage" and "Panamint" veins. This tunnel is caved at a point about four hundred feet from the portal, making it inaccessible at this time. Local miners who worked in the tunnel say that the general information is fairly solid and that the caves are probably minor in character and could be easily caught up.

The Austin Fraction Tunnel and shaft are accessible and could be sampled.

#### ASSAYS

In order to arrive at some idea of assay values in the Kilborn Property the writer took a few pilot samples during a recent trip to Austin. They are as follows:

	<u>Oz. Au</u>	<u>Oz. Ag</u>	<u>Total Value</u> <u>at 77 1/2 Ag &amp; 335 Au</u>
No. 1 - Top of Easterly incline on Sunset claim	.20	1.12	7.36
No. 2 - Second Incline	.02	1.28	1.63
No. 3 - Third Incline	.04	2.36	3.21

	<u>Oz. Au</u>	<u>Oz. Ag</u>	<u>Total Value</u> <u>at 77 1/2 Ag &amp; 35 Au</u>
No. 4 - Fourth Incline	trace	.48	.36
No. 5 - Fifth Incline	trace	trace	trace
No. 6 - White Quartz pile on Equity dump	.20	1.40	8.07
No. 7 - Ribbon Quartz pile on Equity dump	.26	6.46	14.17
No. 8 - Heavy sulphide pile on Equity dump	.40	64.60	56.04
No. 9 - Ore pile in tunnel about 260 feet from portal (10 tons)	.15	26.60	25.73
No. 10 - Sacked ore at same pile as Sample No. 9	.10	51.70	43.30
No. 11 - Ore pile in tunnel about 350 feet from portal (10 tons)	.55	108.20	102.36
No. 12 - Ore in boxes at same place	.60	106.95	103.35
No. 13 - Small vein 300 feet from portal	.05	3.03	4.10
No. 14 - Collar of Hillside shaft	.04	2.92	3.57
No. 15 - Ore dump Hillside shaft (40 tons)	.02	10.79	9.00
No. 16 - Collar of New York shaft	.01	.84	.99
No. 17 - Large White Quartz dump New York shaft	trace	3.58	2.74
No. 18 - Remains of ore dump at New York shaft (5 tons)	.12	48.03	41.22
No. 19 - Collar of Austin Fraction shaft	trace	1.19	.91
No. 20 - Austin Fraction Dump	.03	1.40	2.12
No. 21 - Composite sample of Nos. 6 to 12 inclusive	(.31	51.15	50.23
	{ Pb	12.05%	
	{ Zn	7.53%	
	{ Cu	5.83%	

All of the ore piles on the Equity dump and in the tunnel are sulphide in character. Although there is quite a tonnage of ore on the Equity dump it appears to have been sorted over so it is doubtful whether the above assay values from this point are correct. It is reported by the owner of the Kilborn Properties that ore of extreme high grade was encountered in the No. 6 and No. 7 veins of the tunnel. Mrs. Kilborn exhibited to the writer several large samples taken from these veins and probably running into thousands of dollars per ton. There is no doubt considerable commercial ore in the veins already out. The owners records show that only development work was done on these veins and that none of the ore was stoped.

#### CHARACTER OF ORE

The ores below the oxidized zone are a heavy sulphide ore containing lead, copper and zinc. The galena, chalcopyrite and zinc blend all carry silver but the largest part is carried with the galena.

As stated previously in this report the ores to the southeast where most of the early mining was done were less base and easily milled by processes available at that time. When the more base ores were encountered at the northwest portion of the district where the Kilborn properties are located it was found impossible to profitably mill that character of ore, therefore but little mining was done in that area. With the present development of the flotation process, such ores are comparatively simple to separate.

Mr. Geo. D. Kilborn was a well to do man of unusual mining knowledge, having met with great success in the field in Cripple Creek, Colorado, and Goldfield, Nevada. He was a metallurgical expert and saw the possibilities in the working of base ores in the Austin District, so acquired these properties with this in view. Unfortunately, Mr. Kilborn's health broke down during the development of this property and he died within a short time. The property has lain idle since the year 1930.

### RECOMMENDATIONS

It is the writer's belief that this property is worthy of a thorough investigation and sampling as it shows reasonable possibilities of becoming a very profitable producer. The Equity tunnel should be made accessible and the exposed veins carefully sampled. The Hillside and New York shafts should also be sampled. The Austin Fraction Tunnel is also worthy of a thorough sampling.

### EXCERPTS

The writer has read and copied a statement signed by Geo. D. Kilborn who owned the Kilborn properties up to the time of his death, and which reads as follows:

#### "MEMORANDUM OF CONVERSATION WITH MR. ED. RYAN, STATE MINE INSPECTOR FOR NEVADA.

"In conversation with Mr. Ryan, State Mine Inspector, on the train from Austin to Battle Mountain not long before the Austin-Manhattan ceased work in the North Crosscut from its main tunnel Mr. Ryan asked me if I had ever been in this crosscut and the drift west from it. I replied that I had not. He then said: 'You have the right to go in there?' I replied: 'Yes.' He then said: 'You will see something that will interest you.' He then asked if I had a map of the Nevada Equity with me. I took a blue print out of my suitcase. After looking at it, he said: 'Yes, it belongs to you. The ore is there', pointing to the place on the map.

"When I learned that the Austin Manhattan Co. was working on the Hillside Vein I sent to the president of the company a notice that I would hold them responsible for criminal trespass if they did not cease work at this place.

"Not long after notifying them of this, two miners, as they

were on their way out of the main tunnel for their lunch heard two blasts go off after they had passed the portal to the North Crosscut. When they returned to their work after they lunched, they discovered that the crosscut above mentioned had caved in. Their opinion was that the shots were put off in order to prevent anyone's making inspection, survey and sampling of the ore body upon which they were working then I notified them to stop work. This crosscut has been inaccessible ever since the shots were heard by the two miners.

(Signed) George D. Kilborn"

Roughly approximating the dip of the Hillside or Panamint vein, the area referred to would be in the neighborhood of a point under the Belle Wilder Claim.

Respectfully submitted,

---

F. J. DeLongchamps  
Mining Engineer

Dated this 6th day of August, 1935.

(LETTER FROM W. W. WISHON, FORMERLY GENERAL MANAGER AUSTIN-MANHATTAN  
CONSOLIDATED MINING COMPANY, May 17th, 1926.)

To George D. Kilborn, Esq.  
President The Nevada Equity Mines Co.,

In driving the north crosscut from the Austin-Manhattan tunnel, at a distance of about 700 ft. therefrom, the Panamint-Hillside vein was intersected by this crosscut. At the point of intersection the ore streak is about two feet in width.

Subsequent to this cross-drive, a drift was driven west on the vein a distance of approximately 200 feet, which showed ore almost that entire distance that averaged about four feet in width. In extending this drift, the ore streak widened to a width of six feet. A raise was put up forty feet on the ore. At that point work was stopped although the ore streak in the top of the upraise continued at about six feet in width. I may say, however, that the vein and ore appear to be getting wider as depth is attained.

The character of the ore is a blackish sulphide, assaying about forty ounces in silver per ton, with some gold. In addition to the silver content it contains lead, copper and zinc in commercial amounts.

The work of further development on this vein was closed down because of the fact that a careful survey showed that the magnificent ore body being developed was in the ground of the Nevada Equity Mines Company, by virtue of its apex thereon, otherwise it would have been continued both laterally and in depth.

Very respectfully submitted,

Signed: W. W. Wishon

Formerly General Manager of the  
Austin-Manhattan Cons. Mng. Co.

Kingman, Arizona  
May 17, 1926

MEMORANDA  
by  
GEO. D. KILDORN

Dyke across street from Hotel, back to stable. Does not come to surface on Hillside, Mormon Turn, etc., but shows strong from Austin Manhattan Tunnel. Where it intersects the Hillside, Mormon Turn is a good place to expect a large ore body and possibly more gold, since the north and south veins in place carried one ounce of gold to 100 ounces of silver or about that amount.

Dyke running north and south across the Ballard and Dolorite Claims. Very promising ground for large bodies of gold and silver.

These dykes do not appear in the old Austin Manhattan ground on Lander Hill. They do appear on the Highland Group and through the westerly area of the Equity.

Assay samples taken by Mr. Madden and assayed by Trolson. These samples were taken after clearing out the Moss shaft to a depth of 120 feet when patent work was in progress. I cannot vouch for the assays. I did not see the workings, but Mr. Countryman of Cripple Creek who made the patent surveys said to me after inspecting the Moss shaft that there was a mine in the Moss vein by itself. Mr. Countryman was considered a very fine mining engineer.

A miner from Austin came to see me, and said he would pay 50% royalty if I would lease him the Moss shaft and ground adjacent to it. His assays are as follows:

#1	Nov. 20, 1908	Silver	68.4 ozs.	Gold	.10	120 ft. level
#2			24.3		tr	
#3			42.5		.05	
#4			60.7		.05	
#5			163.7		.10	
#6			19.2		tr	
Nov. 18						
#1	W. side shaft, 120 ft. down --	Silver	572.4	Gold	.20	
#2			16.4		tr	
#3			28.3		.05	
#4			33.2		.05	
#5			31.4		.05	

After leaving the Diana shaft on the easterly end of the Equity back track to the New York shaft, thence towards the Moss shaft. When a couple of hundred feet to the westerly of the New York shaft you will see a shaft 25 to 50 feet deep. There is some ore lying about the shaft. I had some assayed which run 26 ozs of silver. I did not have it assayed for the other metals, but it is good milling ore, some lead, copper and zinc.

After leaving the Moss shaft go westerly to the top of hill towards the portal of the Equity tunnel. You will find several shallow shafts and trenches where the Chloriders worked the vein system in the early days of Austin. There is one waste dump of considerable size. You will find many small pieces of copper-stained ore through this dump. I think it will come out in sinking the shaft. I took a sack full of this quartz. It assayed 27 ozs silver. I did not have it assayed for other metals. I took a sample of some sulphide ore a little up the hill from this dump and near the shaft

from which the copper-stained 37 ozs sample came. This assayed 196 ozs silver, not assayed for other metals.

Looking toward Emigrant Canyon and the Portal of Equity Tunnel you will see a long distance of trenching from which the Chloriders worked in the early days. No record of this anywhere, but I am told by the old timers that it paid to a depth of 8 to 10 feet, then the ore became refractory and could not be treated in the local mills.

From the copper-stained dump go up the hill bearing to the left you will find some little openings. At one covered partly with sage brush you will find some lead ore. I had this assayed -- 28 ozs silver and 10% lead. I think this is the outcrop of the ore shoot in the east drift of #1 vein Equity Tunnel. This ore shoot was intersected about 85 or 90 feet from east from the Equity Main 1700 cross-cut tunnel. On the slope of the vein it is about 1000 feet to the surface. I think this is a very important ore shoot and should produce at least \$300,000 from the tunnel level to the surface. Further on in this same ore shoot beyond the drift sets, perhaps now caved in -- there is a streak a foot or more wide which is higher grade, some samples assayed \$125 per ton.

Now going back to the top of the hill where I think the shoot outcrops, start down the hill crossing the long trenching above mentioned, proceed until you come to the trail from town to the Equity Tunnel. At a point along the trail there is a small shaft and the trail crosses the dump -- this dump is on the easterly side of the draw or gulch near the west end line of the Hilltop and Mormon Turn claims. The shaft above mentioned was sunk on the outcrop (apex) of the gray copper shoot in #6 Vein west drift from the Equity 1700 ft. tunnel. When Ingram (the foreman) asked me how far we should have to drive #6 west drift from the main 1700 tunnel I told him 100 feet. The gray copper came in at 85 feet. I think this established the ore shoot fairly well.

#### NEW YORK SHAFT

Tom Ward of Cripple Creek took samples from a winze about 15 feet deep on the 200 ft. level in the New York shaft. Ward was a successful leaser on the Free Coinage property on Bull Hill Cripple Creek. He went to Southern California and went broke, having had a small stake. On his way back to Colorado, he stopped to see me, having sorted ore for me at the Isabella for several years. He asked about my mining property at Austin and if I would lease him some ground, that he could get backing in Colorado to work a lease. He went to Austin. Mr. Madden showed him the New York ground. Ward took his samples to Colorado for assay. They are as follows:

#1 ---135.2 ozs silver  
#2 --- 24.4 " " " average across three and one half feet,  
bottom of winze. Not assayed for other metals.

Ward was unable to get the backing he expected, consequently could not go ahead with the lease greatly to his disappointment, since he liked the ore showing in the winze.

I am told that the white quartz on the New York shaft dump comes out of the winze. You will observe that there are specks, blotches of black metal through the quartz. It looks like pelibacite. Anyway it is one of the silver sulphides.

There are several tons of heavy sulphide ore on the dump similar to the ore in the Hillside shaft on the dump. I do not know at what point from which this ore came, but I am inclined to believe that it came from below the 200 ft. level.

There was some ore shipped from the New York Marcy 31, 1867, that assayed \$48 per ton.

Some trial shipments from the Hillside Shaft of which there is a government report records as follows:

79½ tons Sept. 30, 1866 -- settled at \$39.14 silver per ton.  
64½ tons Dec. 31, 1866 --- settled at \$54.01 silver per ton.

This is the ore of which the local mills could make but a small extraction of the values owing to its base character, but which is now an ideal flotation and concentrating ore.

I am told that the New York shaft is 300 feet deep. I had it cleaned up to the 200 ft. level. For some distance it was timbered with 10" by 10" Oregon pine. Owing to heavy rains and no one to look after relieving the timbers from the heavy ground it caved in -- I think only about 30 or 40 feet deep. As I remember it required no timbers below that depth.

It is best to go to the Hillside shaft first after leaving the hotel; thence to the New York shaft, thence to the Diana shaft which is just off the easterly line of the Equity property. Mr. Dakin of the Buckley Wells force told me that the ore looked good near the Equity line from the Diana shaft workings. Mr. Madden the same - a foot of ore showing ruby silver. Mr. Marshall came to see me at Auburn in 1926 (August, I think) and said he would like to get a price on the New York Claims. I told him the Equity would not sell a portion of its holdings. He then said his ore was going into the Equity ground from the Diana.

M.J. ESCOBAR REPORT ON HILLSIDE  
May, 1928

300 foot level west timbered stope 82 feet long -- pillar next to incline shaft 12 feet -- total length of stope 92 feet. Ore still shows in west end of stope. Ore streak for the length of stope runs from 5½ to 7½ feet with streaks of high grade gray copper. Ore looks good in west end of stope -- might be high grade. Mostly sulphide ore.

In the breast of the 300 ft. west drift the ore streak is from 20" to 24" wide. Four feet from the face the ore shows more gray copper than in the breast of drift, but for 9 ft. along the drift the ore looks good.

East drift 300 ft. level Hillside.

For 20 feet the ledge looks big. Cannot tell except size on account of timbers and dirt in the way. The 24 (total 44) the ore is about 6 feet wide.

On the 250 ft. level east the breast or face of the drift the ore streak is from 3½ to 5 feet wide assaying 30 ozs. silver besides copper, etc.

East drift 50 ft.

200 ft. level drift west about 40 ft. on streak 4 to 5 ft.  
200 ft. level drift east about 30 ft. on streak 4 to 5 ft.

DATA -- REGARDING THE UNION MINE AT AUSTIN, NEVADA  
AND ITS RELATION TO THE HIGHLAND GROUP

Mr. Stokes acquired the Union Mine in 1891, some years after he became interested in the old Austin-Manhattan area and several years subsequent to the retirement of Allen A. Curtis, who managed the old property for a period of twenty-five years.

Under Mr. Stokes' ownership the Union shaft was sunk to a depth of 725 feet. This shaft is far to the southwest of the region traversed by the long drainage tunnel in the old Austin-Manhattan property.

The trend of course of the Union Vein is S.E. and N.W. This of course carries it close to the westerly portal of the tunnel on its north-west trend and through the Highland Group for a distance of 2250 ft.

The ore streak in the Union Mine was from three to four feet wide and contained streaks of very rich sulphides, making a high grade ore. As an illustration a record of 1518 tons averaged \$141.00 per ton. The general average was between 50 and 60 ozs. silver -- to this silver contents is to be added the value in gold, copper, lead and zinc. Including these values increases the average value of the ore from \$10 to \$20 per ton over the silver contents.

The total production from the Union is given, as between \$3,000,000.00 and \$5,000,000.00. Under Mr. Stokes' regime the ore came from the 350 foot level to the 700 foot level. The longest level is the 550 ft. level, the 550 ft. level, the 625 level and 700 ft. level were exploited by drifts only 500 to 600 feet in length, thus showing that a large sum was extracted from a small area.

This information is taken in part from a long report made by an eminent engineer in 1898.

With this data at hand it is only fair to judge that the Highland will produce as much when converted into dollars as did the Union Mine. This belief is based upon surface indications, the strong vein outcropping for more than 1,000 feet showing particles of the rich sulphides of silver and other metals -- lead, copper and zinc. Also, the quartz monzonite in which the ore occurs looks better for making ore bodies in the Highland Group than it did in the Union property. And the Union Vein does not outcrop on the surface as it does in the Highland, nor is the formation as hard and well crystallized, which is an important feature in ore occurrence in the Austin District.

Taking these features into consideration it would be a reversal of usual opinion regarding mineral ground should the Highland not prove to be a valuable property.

Austin, Nevada  
Sept. 1, 1926

From J. L. MADDEN,  
c/o The Nevada Equity Mines Co.

This is given as a short synopsis report on the property of the Nevada Equity Mines Company, situated at Austin, Lander County, Nevada.

This is a partly developed mining proposition showing an appreciable tonnage of ore developed and in sight. The metal values are silver, gold, copper, lead and zinc. In reference to being partly developed, which means about one half of the main tunnel drive - not including drifts, winzes and raises on the vein systems, is completed, in accordance with original plan of development. The property at present is inactive; cause, illness of owner.

The property includes all the western virgin area which contains the primary ore zone of the famous Lander Hill mines, having a record of production of fifty million dollars, and comprises two groups: as follow, The Equity group situated on Lander Hill comprises 16 claims, 13 of which are patented. The Highland group comprises 5 claims not patented. This group holds the extension of the Union Mines series of vein systems and covers a portion of the business center of Austin - mineralogically speaking.

It is the "Keynote" property of the camp; in other words, judged from a mining viewpoint, both geologically and mineralogically, it controls the primary or base ore zone on Lander Hill. The character of this ore is a semi-siliceous sulphide base carrying silver (the predominating metal), gold, copper, (gray copper), lead and zinc. It is the primary ore which furnished the source of the rich ruby-silver ores mined in the fractured area on the east lateral right of the property. This area alone in extent not over 1500 ft. easterly and westerly and 1200 ft. vertically, yielded a record production of \$50,000,000.00 in silver. The formation is quartz-monzonite and possesses the same definite characteristics as the ore and formation in the Butte City, Mon. argentiferous-copper belt.

The course of the vein systems is N 45 degrees W by S 45 degrees E. The dip is towards the north at an angle of 45 degrees and the rake of the ore shoots is toward the northwest at an angle of 40 degrees. The vein systems occur in series, that is, extend through the mineralized area (which is about 1200 ft. in width from north to south) in the form of parallel veins. In this area, there have been 12 very productive veins mined, and each affording an appreciable tonnage of ore. The average width of ore mined measured from 1 ft. to 5 ft. but only the ruby-silver ore contained therein was saved and milled.

This camp was discovered in the fall of 1862 and the town of Austin was established in May, 1863. From 1863 to 1872 there were many different corporations operating here. In 1872, the Manhattan Silver Mining Co. was incorporated as a larger Co., which took over every available company.

This company was in full control of the mining situation here

from 1872 to 1887 when they closed down, owing to the drop in the price of silver. However, Mr. Allen W. Curtis, the General Manager of the Company, until they closed down in April, 1887, stated in an interview with him several years ago: "Their principal reason for closing down was not owing to the drop in the price of silver particularly, but they had reached the deepest extent of the ruby-silver ores, hence could not treat the sulphide or base ores carrying copper, lead and zinc as these ores were not amenable to the old pan amalgamation process."

In their operation of the ruby-silver belt from 1872 to 1887 their Bullion Books show a gross production of Twenty Million Dollars extracted by mill process and Six Million from shipments of ore sent to reduction plants. Hence, no mining operations of importance since then have been conducted on Lander Hill.

The objective of the Nevada Equity Mines Company, since the rake of the ore shoots is towards the Northwest, to acquire all the west area which is virgin ground and known as the base ore range. Also they have acquired an appreciable area which was formerly owned by the old M. S. M. Company.

On the west end of the property, we have a cross-cut tunnel drive 1700 ft. driven south from Emigrant Canyon besides several laterals driven on the different vein systems intersected. So far this tunnel drive has intersected ten vein systems of which seven, in our opinion, belong to the hanging wall series of Lander Hill. The heading of this tunnel has just about entered the main mineral zone and the important vein systems as yet have not been intersected.

The apexes of the vein systems intersected in the Xcut tunnel drive are fully one mile west of the original discovery on the Panamint, North Star, Oregon and other vein systems of the Lander Hill group. Our objective in this tunnel drive being located so far westerly from the rich ruby-silver source was to test the extent of the primary or argentiferous-copper zone westerly; whether the fissuring and mineralization were localized in the fractured, triturated, ruby-silver area, or were well defined fissure veins with continuity of ore shoots and mineralization stable and dependable.

This tunnel drive has proved that the base ore area is extensive and the fissuring, vein systems and ore shoots are as we judged they should be from a geological standpoint. The deeper the larger the vein, yielding a higher average percent in both the silver and copper, as a rule. The higher the percentage in tetrahedrite (gray copper), the higher value in silver per ton.

Besides this tunnel drive there are other developments on the property (see map) in form of shafts or inclines on their respective vein systems of which each one shows a good size vein with an appreciable tonnage of ore either disclosed or in sight.

Each shaft is sunk on an important vein system which has produced largely when operated easterly in the ruby-silver area by the Manhattan Silver M. Co. The reason why the ores in these shafts remain or not mined, they considered too refractory and not amenable to the milling process used 40 years ago in this camp.

Herewith are some of the productive veins with names and record of production, mined in the ruby-silver area close to the east lateral line of the Nevada Equity Mines Company's ground. The extension of these vein systems course through the latter property and the former company's underground maps (which we have) in my possession, show they were left unmined owing to being a heavy sulphide base.

VEIN SYSTEMS: Namely,-

Morgan & Muney production .....	\$ 600,000.00
Farrel v.r.....	3,000,000.00
Ruby .....	1,500,000.00
Oregon .....	3,000,000.00
Isabella .....	1,500,000.00
North Star .....	5,000,000.00
Independence .....	3,000,000.00
Frost .....	2,000,000.00
Panamint .....	9,000,000.00
Russell .....	Unknown
Union .....	3,500,000.00

Understand it was only the ruby ore or straight silver sulphide free of any refractory base such as copper, lead, and zinc that produced these values.

The Hillside incline (see map) which is 300 ft. deep is on the Panamint Vein, likewise the New York incline. The Moss incline is on the North Star vein system; this shaft is 300 ft. deep. The London incline is on the Independence vein; this incline is about 400 ft. deep.

The objective of the X-tunnel drive is to the intersection of the Panamint vein; thence along said vein to Hillside shaft; thence along said vein again to bottom New York shaft; thence to east lateral line. The working depth of this tunnel would give an average vertical backs from 350 to 400 ft. covering the entire minable area as shown on the map.

The property is entirely independent of any other property here. Egress and Ingress to any part of the property are over its own roadways. Besides it owns its water right, mill site and ample acreage for the impounding of tailings.

I remain,

Yours truly

J. L. HADDEN

Mining Engineer