Report on

The Marybelle Mine

Trans-Western Mining Corp.

Silver Peak

Nevada, USA

By: Pierre G. Lacombe, P.Eng.
P.G.Lacombe & Associates
Consulting Mining Engineers

1964

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INGÉNIEURS-CONSEILS

1290 AVENUE DES PINS OUEST
MONTRÉAL

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Introduction:

At the request of Trans-Western Mining Corp., I examined the Marybelle Mine located at Silver Peak, Nevada, between the 8th. and the 18th. of March 1964.

This examination was done after an extensive perusal of the voluminous records of the former production, which records were put at my disposal by the Directors of the above mentioned Corporation.

These records include Mining and Milling Monthly progress Reports for the period 1936 to 1942 and other data, as follow:

1. Mining Monthly Progress Reports 1936-42; Milling Reports and returns, same period;

2. Milling Report and Returns 1960;

3. Geology - Horizontal and Vertival Projections;

4. Composite and Individual Level Plans;

5. Assay Plans and Assay Books;

6. Survey Books;

7. Diamond drill Holes Location prior to 1940;

8. Geology Base Maps;

9. Sampling and Trial Shipments Location Plans;

10. Claim Map;

11. Various Examination Reports.

The full significance of the facts recorded in these documents could not be completely correlated and interpreted until the "on-the-spot" examination had been effected. Even then, it must be realized that, due to the size and importance of the deposit, much longer study would be required to obtain a detailed working knowledge of every part of the mine.

The aims of the inspection were to ascertain the following:

1. Whether the Marybelle Mine still contained ore of mineable grade;

2. The location of such ore;

3. The present potential of the mine based on the ore presently exposed, if any, and on the possibilities of extensions to the presently known orebodies;

4. Exploration possibilities on the claims outside the presently opened area;

5. The economics of resuming mining operations;

6. Conclusions as to the actual value of the property and reccommendations as to the developpements to be carried out if warranted;

7. Means of financing such developpements if reccommended.

It is my opinion that the study and investigation carried out have fulfilled these aims and answered the above questions. The present report summarizes my conclusions on the project.

The investigation has effectively shown that several faces of the mine are still in ore, that some of these faces may still be mineable, that the mine has great potential as shown by its structure and some diamond drill holes, that the Prescott Lease and other parts of the claims deserve extensive exploration and offer excellent chances of reward, that development should be carried out in systematic and gradual fashion after a carefull and scientific program, that several avenues are available for financing of the project.

In other words, the Marybelle mine is far from exhausted, far from having reached the end of its potential and should definitely be the object of an extensive and methodical development and exploration program.

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1. Location and Property:

The mine is located at Silver Peak, in the State of Nevada. It lies roughly 60 miles south-west of the town of Mina, which is itself about 170 miles south of Reno. The whole area is well known mining country and the famous gold camp of Goldfield lies about 20 miles to the East.

The property consists of 56 "Surveys" or claims all in good standing to July 1964. They stretch from Highway No. 47 to the top of Silver Peak Range.

2. Means of Access:

The property is easily reached from Reno by first class paved highways all the way to the border of the claims. A gravelled road leads to the various entrances to the underground workings.

This road can be travelled on by automobile although some passes are pretty rough and rocky. However, these sections are very short and do not extend over more than a couple of hundred feet. The grades are reasonable. A little work and repairs would restore the road into fine condition.

The best way to reach the property is by plane either from San Francisco or directly to Reno.

3. Topography:

The area is essentially Nevada Desert. A salt lake lies at the foot of the range, on the east side of the property, across Highway No. 47. From the road to the west, the hills rise gently to a maximum elevation of approximately 7900 feet. This summit is about 3500 feet above the salt lake valley.

Vegetation is almost totally absent. The hills seem steeper than they really are; the slopes averaging about 25°. A couple of fairly deep and steep canyons cut at right angle to the slopes, exposing a good cross section of the formations.

Outcrops are fairly numerous, especially along the road and near the top of the range.

4. Previous Work:

The cluster of mines and openings located on and around Silver Peak have reportedly produced $42,000,000 of gold in the past. This is quite possible when one considers the extent of the underground workings and of the surface pits.

It would seem that the gold was first discovered close to the summit, where the mineralized veins outcropped and also along the sides of one of the canyons.

The summit occurrence was worked as an open cut, the strata being probably folded over and quite thick at this spot. Much overburden and quantity of waste rock was removed to expose the ore which followed the dip of the slope at this point. There must have been a dozen companies working various part of the deposit at different horizons. Some of these developpements entailed the expenditure of considerable funds for aerial tramways, trussles, etc....

From the East side of the canyon, the veins were traced underground and later, they were attacked from the North-east face of the mountain. Development was pursued from all sides of the range untill the most accessible workings were exhausted. When mining became deeper and more expensive, the remaining valuable properties were consolidated into three or four blocks which were often operated by leasers.

Mineralization was followed and mined on various levels down to a point three levels below the present Mary Tunnel, which is the main entrance adit to the workings.

The workings are concentrated into two hills separated by a small canyon underlain by a granite wedge which pushed to the north. The two groups of workings are defined as the South-East and the North-West Sections and will be referred to under these names in this report.

The tunnels and stopes reportedly exceed 50 miles in length, which I quite believe. The surface pits are the largest I have seen in a gold mine anywhere thus far and are indeed most impressive.

The mine was shut down in 1942 when the USA joined the war. It was stripped of equipment to provide for more essential metal mines. An attempt to resume production was made in 1960, although it

is not fully clear why it did not succeed.

An extensive survey and assay of the faces was made in 1942 after the shut down, and our own check sampling showed it to be reliable.

Some diamond drilling was done in 1940 and 1941 to locate additional ore down the dip. More drilling was planned but there is no evidence that it was completed. At least I have not found it yet. Although sketchy and far scattered, the drilling was, in my mind, very successful in showing the presence of another member of the mineralized formation north-east of the present bottom.

Grade and size of this member seem to be similar to that of the former horizons and deserve very careful consideration.

5. Geology:

The geology of the Mary vein and of the Silver Peak area has been studied and described several times. Technicians did not always agree on details of the genetics and structure of the deposit.

I will not give here a meticulous description of these differences or of every geological aspect of the area, which would encumber the present report with much specialized details. Furthermore, verification of certain previous statements and theories would require weeks of work, most of it on the spot.

However, the most important factors of the deposition and its structural control are established and will be summarized hereafter, stress being given to facts which may point the way to additional ore.

The Silver Peak Range is essentially the northern limb of a SE plunging anticline lying over a base of intrusive granite generally described as "alaskite". Considering the batolith of alaskite as the floor or footwall, from this bottom upwards the succession of formation is as follow: Cambrian Limestone; Cambrian Schists, Shales and Slates; Dolomites; Unconsolidated of alluvial origin.

The axis of the anticline is generally about N40W. The beds dip about 22 to 25 degrees to the NE. The sequence of events which led to the formation of the present deposit is approximately as follow:

1. Folding of the sediments with shearing of the limestone, mainly, producing bedding planes and fractures.

2. Intrusion of the alaskite with possible uplifting of the sediments.

3. Intrusion of the alaskite as sills in the fractures and bedding planes, forming a multi-layered body.

4. Faulting. There has been two main series or systems of faults. One system striking closer to the general strike of the beds caused the hanging wall to be pushed up against the foot wall. They seem sometime to be very fine and minute . The other system includes mainly faults normal to the bedding and they have often had a horizontal movement or separation of a few feet.

5. Injection of mineralisation as gold bearing solutions or vapors of acid character. They intruded the limestone beds between the alaskite sills and the alaskite massive footwall.

6. Erosion factors continuously acting upon the surface and producing the present topography with its canyon, its deep back valley and the extensive disappearance of some of the softer sediments.

7. Recent appearance of a volcanic neck producing the small but spectacular ash and lava cone to be seen near the Highway, north-east of the mine.

6. Structure:

As previously said, the gold bearing solutions ascended from the north, that is from the lower part of the anticlinal limb, and formed gold-quartz veins lying conformably between the alaskite sills and intrusion, in limestone.

Thus the dip of these veins is similar to that of the overall bedding. The better vein or veins seem to be closer to the alaskite footwall where greater thickness seem to be the rule, at least in the areas mined thus far. It should be noted, however,

that this may not be an absolute rule and in other areas, it may be eventually found that higher horizons yield greater thickness. Considerable geological study would have to be done on the upper quartz injections before an absolute theory is issued.

The orebodies are limited laterally by higher parts of the diaskite footwall which circumscribe the quartz-injected sediments in troughs with northern pitch.

The normal faults with lateral displacement had little effect on the orebody besides separating and moving horizontally apart the veins over a few feet. They can be followed and picked up easily. This gap in the mined areas forces the creation of long pillars across the whole mine. If they are something of a bother to operations, they nevertheless considerably re-enforce the structure.

The reverse faults are, in my opinion and as far as I can see to the present, the most important structural control on the mineralization. I could not ascertain yet if they have been all recognized and mapped. The data in hand seem to indicate that Mr. Basil Prescott, Geologist and Engineer, had a very good knowledge of them and spent considerable time in their study, as is evident from a few sketch geological base maps presently in our hands.

These faults succeed each other in a series "en échelon". They have cut the original bedding at a slightly steeper angle than the dip and the hanging wall has been generally pushed up with respect to the footwall. Some dragfolding effect may have taken place as sometimes a thinning of the veins and an increase in the angle of dip can be observed at the fault site.

This reverse faulting en échelon can be studied with advantage on the walls of the transverse canyon west of the Mary Tunnel. It can also be seen underground, especially if one is on the look-out for it. A very short heading cut at right angle to the Mary Tunnel, in the western section, shows on its east wall a very goodexposure of this faulting effect, on a small scale.

Evidence of this faulting can also be seen in the topography and very much in the location of the former stopes. Their study may be, I suspect, the key to a successful operation of the Mary mine and ore when lost should be looked for at an upward angle into the hanging wall. At least, this would be my definite impression at this stage of my study.

This structure is briefly illustrated on the sketches attached to the present report.

7. Mineralization:

Gold mineralization in the Mary Mine has been both rich and abundant. In other words, the grade was high and the quantities were big.

This can be easily seen by the very considerable extent of the workings. Stopes are long, wide, fair to very high in thickness, and very continuous. Furthermore, the development work to outline new ore, the haulage openings are numerous and very extensive. Such costly development openings could be paid only by a highly rewarding operation.

Grade of the ore mined in the past was uniformly high. Good sections running above .75 or above 1.00 or 1.25 ounce per ton, even, were not exceptional. A certain decrease of the grade milled can be seen in the last years, but this may have been due to mining of larger quantities of lower grade and of a narrowing of the vein toward the north-east margin of the Central stope.

Even the last attempt at mining produced good grade averaging well around .30 and more with two sections running above .60 ounce per ton. Ore left in the transfer by the side of the road, from the last mining in 1960, assays 0.52 ounce or $18.20 per ton.

The mineralization did not all occur in the quartz veins paralleling the bedding between the alaskite floor and the sills. In places, the gold penetrated the limestone walls to large extent and more, better ore was taken from the wall than from the vein itself.

Crossveins are also present and they were mined consistently, reportedly yielding good grade in substantial quantity.

The orebodies follow the pitch of the troughs in the alaskite and pitch about 15 degrees to the north. As explained higher, the up-dipping sides of the trough limit the lateral extent of the orezones.

Silver is also present along with the gold. The ratio of gold to silver varies. When the gold content is good and economical, the gold is in larger quantity and is in a proportion of 2 to 3:1 with respect to silver.

When mineralization in gold gets very high, the gold to silver ratio rises to 6 or 10:1. Contrarywise, when the gold values are poor and sub-grade, silver is present in larger quantities than gold and the gold to silver ratio becomes 1:2 to 1:5.

It would seem that most of the gold is in the free state with about 10% only associated with pyrite. The silver may be mainly associated with some galena.

Recovery by cyanidation should be high and was reported to reach 96% to 98%, which seem very likely. The straight metallurgical loss of 10% deducted by the custom mill in 1960 may not represent the actual loss, especially in such good grade as was shipped.

An idea of the size of the orebodies will be obtained when it is said that the Cord stope for instance is 550 feet long by 75 to 200 feet in width and 4 to 14 feet in height.

8. Present Potential:

It may be asked at this point whether there is still ore left in the old Mary Mine? If so, where, of what grade and in what quantity?

The answer is that there is definitely some ore left in the Mary Mine. It is left in the former stopes extensions, in the pillars and most probably in a new orebody located located north-east of the last workings.

i. In the former stopes: In 1941 and 1942, the full extent of the mine was surveyed and all working faces were sampled. These results were plotted on three maps presently in our possession. These maps show a number of faces in good to excellent ore, not only in the last operated Cord stope, but in the 379, Western Soldier, Upper and Wasson stopes. There is little doubt that modern mechanized low-cost methods could extract much ore from these openings yet.

ii. In the pillars: A quantity of pillars have been left to support the roof of the stopes. These pillars represent 10% to 20% of the ore extracted. After a proper study, it may well be that many if not most of these pillars can be recovered and shipped as ore. The exceedingly strong walls and good conditions of the workings would favour such a project.

iii. In a new orebody: As stressed in the discussion of the structure, the orebodies have been cut by reverse faults which pushed up the hangingwall. As a thinning and weakening of the veins can be observed in the last stopwes operated, it is to be feared that the mineralization may be lost after little further mining, at least in the Cord stope and in the 379 and 366 areas. A steepening of the dip and a narrowing of the veins, especially visible in stope 379, east of station 373, seems to confirm this situation.

If the en échelon structure of the mine persists, one should look for a repeat orebody in the hanging wall north-east of the last stope faces, that is beyond the extreme end of the 4th. level in the 366 Winze.

The existence of such an orezone was also Mr. B.Prescott's opinion and he had outlined an exploration program to verify the possibilities of all the ground between the end of the faces and the north-east border of the Mohawk claim. It is probably based on his suggestions that three diamond drill holes were drilled between 1940 and 1942 in that area, and probably two more were also completed from underground.

Four of these holes intersected ore andoutlined an orebody exactly where a study of the structure indicated its theoretical position. This ore zone could be 1800 feet in length and appears to vary in thickness from 3 to 10 feet and may be more.

Discussion of this drilling and significance of the check sampling effected by the author with respect to the mine's future potential follows in the next paragraphs.

9. Diamond Drilling:

As exposed, three drillholes were made from the surface and two underground. Three are grouped in the south-east end of the property while two lie at the north-east end.

It has been rather difficult to gather together the data pertaining to these drillholes as there has not been found any systematic description of the holes, their designation, their length, orientation, dip or results.

However, by comparing maps and bits of records, by exhausting the old Assay Office Reports, by measurements and study of the various plans and sections, it has been possible to get a complete information on each of these vital holes.

The five drillholes are spread over a strike length of about 1980 feet oriented N45E and covering what is known as the Custer block, that is the claims extending north-east of the [illegible] faces. Description of the holes is as follow:

Hole No. 1275: Located at the northwest end of the strike. Strike S15W. Drilled from the end of 366 Winze, underground, probably flat. Assay record for the period of December 13, 1941 to December 15, 1941 shows the hole to have reached 130 feet in length.
Sludge assayed 0.18 oz./ton from 110 to 115.
Core assayed 0.43 oz. from 112 to 114 and 0.8r from 114 to 115 for an average of 0.56 oz. over 3 feet.

Hole No. 32: Data on this hole is somewhat unclear yet. Some maps report it as striking S62W and dipping 67 degrees. It would have been over 200 feet deep with a 14-foot section assaying 0.34 ounce/ton.
Another map where a hole, believed to be approximately in the position of hole No. 32 reports 5 feet at 0.10 oz. in core and 5 feet at 0.08 oz. in sludge.
More digging of information is required here.

Hole No. 1280: Strikes about S85W and is located almost in the center of the strike length. It was started on January 3, 1942 and completed on January 8, 1942 at 240 feet. Dip must have been about 45-50 degrees west.
Sludge assayed 0.39 oz. from 200 to 205,
Core assayed 0.10 oz. from 205 to 210,
0.31 oz. from 201 to 203,
0.56 oz. from 203 to 205,
0.12 from 205 to 208.

Hole No. 1276: Started on December 12, 1941 and completed on December 31, 1941. Strike and dip unknown yet, possibly vertical. Location very close to #1280. Depth along core 257 feet.
Core assays 0.11 oz. from 212 to 213 feet,
0.09 oz. from 213 to 215 feet,
0.11 oz. from 215 to 220 feet,
Sludge is 0.18 oz. from 210 to [illegible]

Hole No. 1250: Located at the extreme south-east end of the zone and probably drilled underground from the Custer Shaft. Strike about S55W. Dip probably flat. It was probably started on September 25, 1941 and completed on about September 30, 1941 at 155 feet.

Sludge assayed 0.16 oz. from 90 to 92 (?) ft.,
0.46 oz. from 95 to 100 ft.,

Core assayed 5.17 oz. from 93 to 94 ft.
0.13 oz. from 94 to 94.5 ft.
0.21 oz. from 98 to 100 ft.

Vertical projection of these holes shows them to intersect ore over 200 feet in elevation and to correspond to a new orezone in a new overthrust of the formation.

These drillholes, drilled when the mine was about to close shows that, far from being worthless, the mine and claims extend over ground where chances are excellent for discovery of additional and large quantity of presently commercial ore. The tonnage contained in this zone, if later development confirms the present results and proves the zone to be continuous over the strike length, would be quite important.

10. Check Sampling:

One of the purpose of our examination was to take a series of spot check samples in the old workings to verify the grade of ore formerly mined and the possible value of the faces presently accessible.

To that effect, 17 check samples were cut underground at various points of significance. The ore values are nowhere apparent and samples were cut in the veins without any possible means of selecting better or poorer grade.

The samples were brought back to Canada by air and were all the time under my personal supervision. Nobody got near these samples except myself, until I personally took them for assay to the Laboratories of the Department of Mines of the Government of the Province of Quebec.

They were assayed by this official Lab of the Government by very experienced assayers-chemists under the supervision of Professor O. Rolland, Chemical-Engineer, Chief Chemist and former Professor of Chemistry at the University of Montreal.

Out of the 17 samples, 8 yielded excellent results. Not only are these results fully commercial but they are vastly above average, not to say very high.

One assay was just a borderline case while three others are just sub-grade. The others are definitely sub-grade and worthless.

The assays are as follow:

Sample No.	Approx. Thick.	Au.	Ag.	$US
A - Incline 366, Chute 65, Cord.	Muck	3.20 oz.	1.10 oz.	112.52
B - Incline 366 Chute 66 Cord Stope	Muck	0.79	0.30	28.31
C - Cord Stope Sta. 253	3.5'	-	-	-
D - Pillar in Lower Sta 401	4.0'	0.43	0.24	15.34
E - Uphand Heading S of Sta 364	4.0'	0.04	0.20	1.64
F - Draw Point SW of Sta 364	Muck	0.01	0.04	0.40
G - Stope 379 N of Chute 393	4.0'	0.13	0.26	4.86
H - Stope 379 E of Chute 393	3.0'	0.41	0.20	14.59
I - Stope face W of Sta 362A	3.0'	-	-	-
J - Uphand Heading N of Sta 362A	3.5'	1.30	0.20	45.74
K - Stope W 362 A	Muck	0.07	0.13	2.61
L - Draw Point Sta 373	Muck	0.01	0.05	0.41
M - Ore Transfer on road	Muck	0.52	0.28	18.54
N - Stope 379 E of Sta 373	Muck	0.06	0.04	2.15

Sample No.	Thickness	Au	Ag	$US
O - Stope 379 Face E of Sta 373	6"	9.25	1.08	324.83
P - Stope 379 E wall	3'	0.42	0.13	14.86
Q - Incline 366 Sta 382	2'	0.07	0.08	2.55

The fact that commercial and even very high assays are found does not necessarily indicate that commercial or large quantities of ore at the grade indicated are available at that spot.

However, the following inferences can be made from the check sampling:

i. Ore grade in the Mary mine was certainly good and the sampling supports entirely the values recorded in Milling Reports and other Production Records.

ii. Most of the gold is in the free state.

iii. Some good ore is left in the mine in several faces and stopes. Close and systematic sampling could locate this ore and give indications as to its quantities and grade.

iv. Various part of the Mary mine can yield good ore, whether east or west.

v. The last survey and assay maps are a good indication of the location and grade of the ore, although the presence of much free gold prevent an absolute checking of close together but not absolutely identical samples.

vi. The last stope worked in 1960 and the ore shipped was good grade. Milling reports about this ore are likely true.

Conclusions:

In the introduction to the present report, we defined the aims of the inspection I made of the Mary mine. In this conclusion, I will state the results obtained with respect to each aim, under the same order and numbers.

I will thereafter state the general conclusions to be drawn from my inspection of all the data at hand. The following section shall deal with my reccommendations as to the technical and financial development of the property.

1. The Mary Mine still contains ore of mineable grade, as shown by the assay maps and especially as confirmed by our check sampling. The grade of such ore might, in our opinion, average $12.00 to $14.00 per ton, with careful location of ore faces. This, however, is an impression and requires more work for definite confirmation.

2. The ore of mineable grade is located in the faces of several stopes, especially in the Cord, 379, Western Soldier, Wasson, Upper levels. It is possibly located in a number of good to high grade recoverable pillars.

3. A systematic and detailed study of the mine as described in the Reccommendations will give a fairly accurate estimate of the tonnage and grade of the ore presently left in the mine and its immediate extensions.

   Five diamond drillholes and several geological projections indicate definitely the presence of a repeat orezone in an up-thrust position on the north-east side of the last faces which could be of major size. Grades would appear to be similar to that of the former operation, that is rather high.

4. Large sections of the claims have been completely unexplored to the present. The repeat orezone mentioned above could be only one of several repeat zones in successive overthrust on the north and northeast side of the old mine.

   Similarly the area south and south-west of the tremendously large open pits at the back of the mine could contain other orezones in various beds of the folded sediments.

   The limestone beds located above the bed mined in the past close to the alaskite footwall could also contain parallel orezones of lesser importance.

   The whole general area deserves a very good exploration by modern investigation methods as it is obvious that, if good grade ore and outlined orezone have been left untouched in the mine, it is unlikely that the full potential of the area has been technically asessed.

5. It would not be adviseable to resume operations immediately because:

   a. The Company has no equipment;
   b. Exact location of the good grade ore and the quantities available at each location is unknown beyond simple assumption.

   Hence, an immediate resumption of production would result in high expenses for development and search for ore, mixed grade production, some sub-grade developments and general failure of the operation.

6. The Mary Mine contains a definite, probably limited, quantity of commercial grade ore which can be extracted at a profit with a well planned operation after this ore has been fully located and sampled by a very careful, systematic sampling.

   The Mary Mine extends over a well indicated new orezone of apparently very good grade and possible major dimensions.

   This new orezone could be the first of several repeat orezone in the up-thrusted en échelon structure.

   The surrounding area has been unsufficiently explored and is obviously excellent exploration ground, especially when one considers the extent of former operations, and their inefficiency.

   Thus, the Mary Mine is a highly valuable ppreperty with an excellent potential presently in sight.

7. Reccommendations as to developments and financing will be found hereafter.

These are the answers to the questionsasked from us at the onset of this project. Our thinking as to the best way to fully asess the value of the Mary Mine and as to give it the development it requires is exposed hereafter.

Recommendations:

It has been stated that production should not be resumed immediately for the obvious reasons given above. The following recommendations fall into two class: those pertaining to techniques of development and those pertaining to financing. They are grouped together under proper headings.

1. Technical Recommendations:

i. A detailed study should be made of all the data presently at hand to get as complete an understanding of the mine geology and mineralization as possible. Assays, maps, sections, drillholes should be correlated by somebody who has a knowledge of the mine.

ii. Complete check sampling should be made on site of all the faces and areas where ore is present or could be present. Measurements should be taken of all ore to estimate quantities possibly and probably available.

iii. Consultations should take place with Mr. Basil Prescott who seems to be the man with the best working and scientific knowledge of the mine and its geology.

iv. A diamond drilling and underground exploration program should be planned for the exploration of the orezone outlined by the five drillholes described.

v. This drilling and drifting should be done under the direction of a competent engineer. At the same time, a general exploration and geological study of the area should take place under the direction of the same engineer.

vi. Estimates of ore and grade available in the mine should be made. Estimates of ore and grade in the new zone should be made.

vii. Exploration by means of test drill holes should be made of the area between the Mohawk claim and the Cord stope.

viii. Additional testing should be made of the area north and north-east of the Mohawk claim.

Feasibility Study while drilling To determine cut-off grade

ix. Plans should be made for the type and size of mill required, based on the results of the above operations; estimates for such mill and required corresponding mine developments should also be tabulated.

x. All above recommendations should be estimated as to cost and time involved and proper schedule and capital appropriations be organized to bring them into effect.

From that point on, the Mary Mine should be fairly well known, with definite quantities of ore blocked and new orebodies outlined. A mill should be built and production resumed on a scientific and profitable basis.

2. Financial Recommendations:

Financing of the above recommended operations can be effected in three main ways:

i. The present Company and shareholders can provide the capital for steps i, ii, iii and x. They can also provide capital for iv, v and vi. From this point on it would be easy to obtain major financing from either stock brokers, the general public (by issue of shares or bonds) or large mining companies.

The advantage of this method is that by the time major financing is done, the present Directors and shareholders have a larger, more controling interest and the property or Company commands a much larger, more profitable financing with correspondingly higher share price.

ii. The present Company can finance 50% of the steps listed above and obtain another 50% of the required financing from OME. This is extremely advantageous and leaves full control to the present group at half the cost. The value of the project and the actual US shortage of gold should make the project an easy one to register with OME.

iii. The present group could immediately look for financing by an issue of Stock through the services of a broker to finance the above program. Though diluting the interest and delaying the program, it is a fairly advantageous method if the broker is reliable.

iv. The Company can make an agreement with another large and experienced Company for the above development. At this point, the present group would likely have to settle for a minority position.

Choice of the approach selected shouldbe made on the basis of capital available, speed of operations and percentage of ownership it is desired to retain.

All methods are possible but, likely, step iii and possibly iv may require some time to organize.

Our final recommendation is that, considering the value and potential of the property, immediate action should be initiated to put into effect, as soon as possible the conclusions and recommendations of this report.

It is my definite opinion that the Mary mine is more than a good prospect and superior in value and potential to most Canadian gold occurrences.

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3000' S Drilling @ 6.00 — 18,000.00
2000' UG " " 4.00 — 8,000.00
3 mos. - Eng. @ 800.00 — 2400.00
Asst @ 400 — 1200.00
Cars & Travel — 3000.00
Living Expenses - — 1500.00
Assaying etc — 1000.00
Misc — 3000.00
~~3000~~
40,100
Feasibility — 8,000
Contingencies 20% — 8,000.00
Say - $50,000.00

Certificate:

I, undersigned, Pierre G. Lacombe, Graduate Mining Engineer (McGill 1954) and a member in good standing of the Corporation of Engineers of Quebec, declare:

1. That the data and conclusions of the present report are based on my extensive study of all the data available on the former operation of the Mary Mine and on my personal observations on site, in Nevada, during several days of inspection;

2. That all the facts recorded in the present report are true and conform to the best available information;

3. That I have no interest, whether direct or indirect in the said Mary Mine or Trans-Western Mining Corp. beyond the value of my professional fees.

Respectfully submitted,

Pierre G. Lacombe, P.Eng., (McGill);
B.A., (Montreal);
B.Sc. (Aachen).
P.G.Lacombe & Associates
Consulting Mining Engineers

Montreal, Canada
Silver Peak, Nevada
April 30, 1964

PGL:id

PROVINCE DE QUÉBEC
MINISTÈRE DES MINES
LABORATOIRES

PROVINCE OF QUEBEC
DEPARTMENT OF MINES
LABORATORIES

ANNEXE E.—HÔTEL DU GOUVERNEMENT
2500 RUE GUYARD, QUÉBEC MONTRÉAL
ANNEX E.—PARLIAMENT BUILDINGS
2500 GUYARD STREET

CERTIFICAT
CERTIFICATE No 64-132 à 148

Montréal le 3 avril 1964

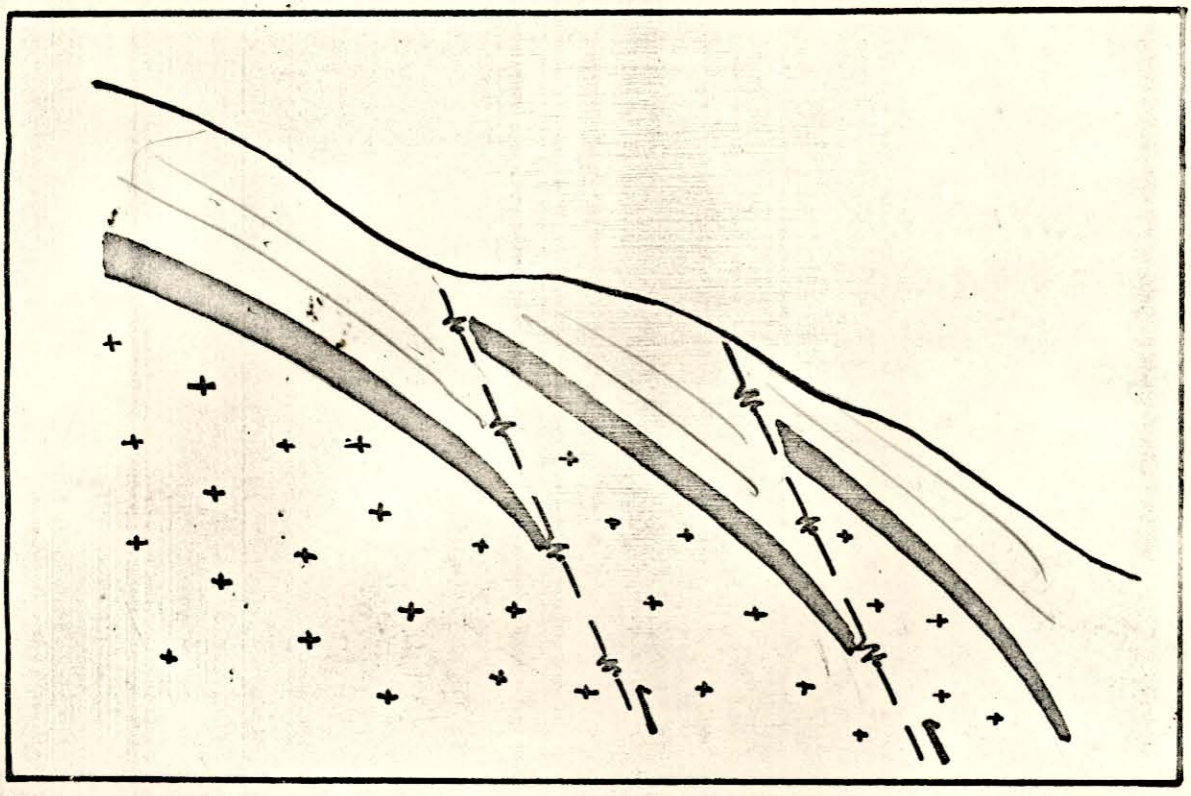
17 Echantillon soumis par
Sample submitted by Pierre Lacombe, Ing.P.,
B.P. 368,
Beloeil

Numéro ou désignation Number or description	Poids de l'échantillon Weight of sample	Or—Gold Once par tonne de minerai Ounce per ton of ore	Or—Gold Valeur par tonne de minerai Value per ton of ore	Argent—Silver Once par tonne de minerai Ounce per ton of ore	Argent—Silver Valeur par tonne de minerai Value per ton of ore
64-132 No.A	3/4 lb	3.20	$ 1[illegible]0	1.10	$ 1.32
64-133 No.B	2 lb	0.79	$ [illegible]5	0.30	$ 0.66
64-134 No.C	2 lb	Trace		Point	
64-135 No.D	1½ lb	0.43	$ [illegible]5	0.24	$ 0.29
64-136 No.E	½ lb	0.04	$ [illegible]0	0.20	$ 0.24
64-137 No.F	3 lb	0.01	$ [illegible]5	0.04	$ 0.05
64-138 No.G	1¼ lb	0.13	$ [illegible]5	0.26	$ 0.31
64-139 No.H	1½ lb	0.41	$ [illegible]5	0.20	$ 0.24
64-140 No.I	2½ lb	Point	[illegible]	Point	Point
64-141 No.J	1 lb	1.30	$ [illegible]0	0.20	$ 0.24
64-142 No.K	3 lb	0.07	$ [illegible]5	0.13	$ 0.16
64-143 No.L	½ lb	0.01	$ [illegible]5	0.05	$ 0.06
64-144 No.M	4 lb	0.52	$ 1[illegible]0	0.28	$ 0.34
64-145 No.N	7½ lb	0.06	$ [illegible]0	0.04	$ 0.05
64-146 No.O	2 oz	9.25	$ 32[illegible]5	0.90	$ 1.08
64-147 No.P	1¼ lb	0.42	$ 1[illegible]70	0.13	$ 0.16
64-148 No.Q	1 lb	0.07	$ 2.45	0.08	$ 0.10

Prof. O. Rolland
Ingénieur Chimiste

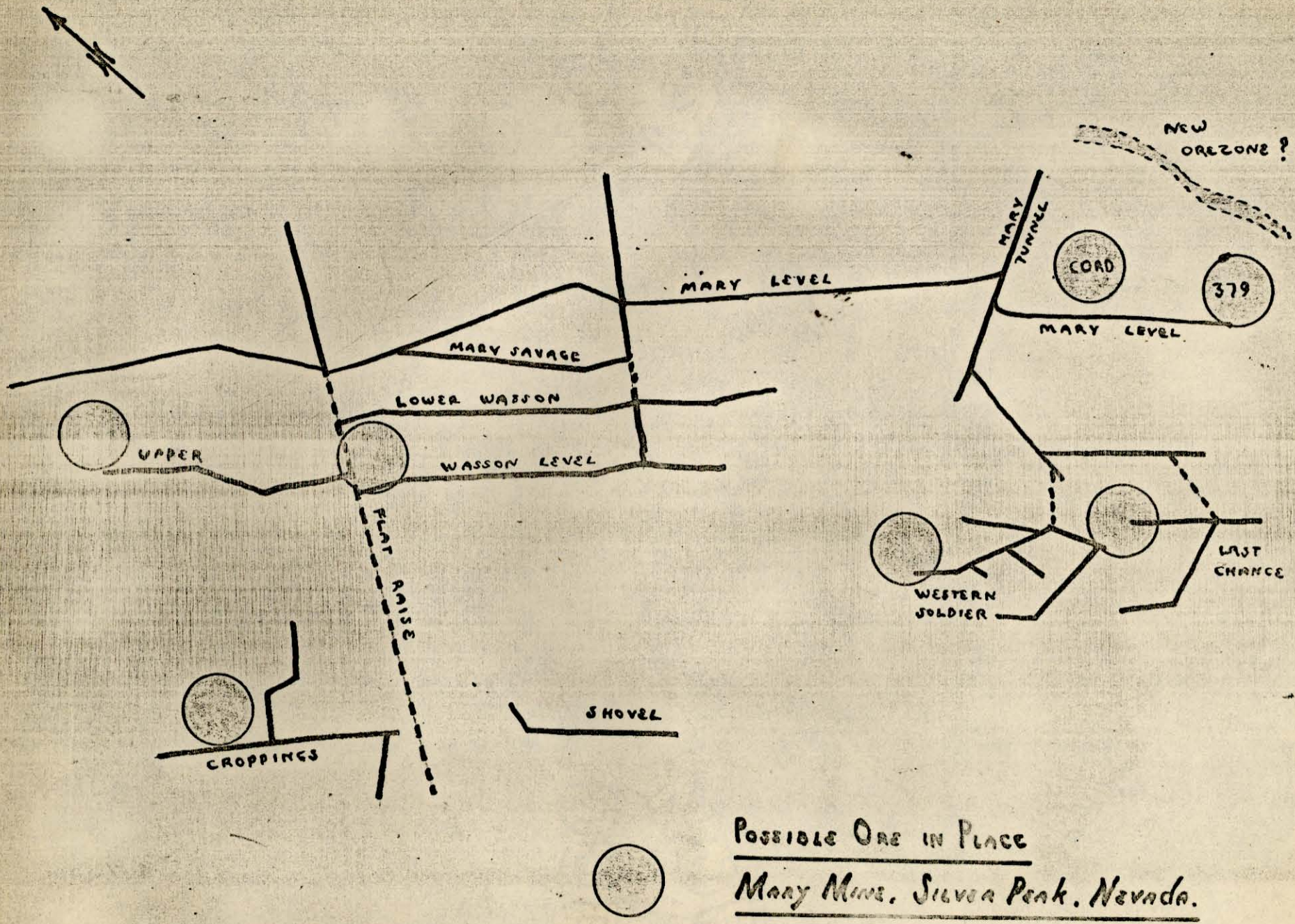
Diagrammatic Representation of the Structure

Mary Mine, Silver Peak, Nevada.



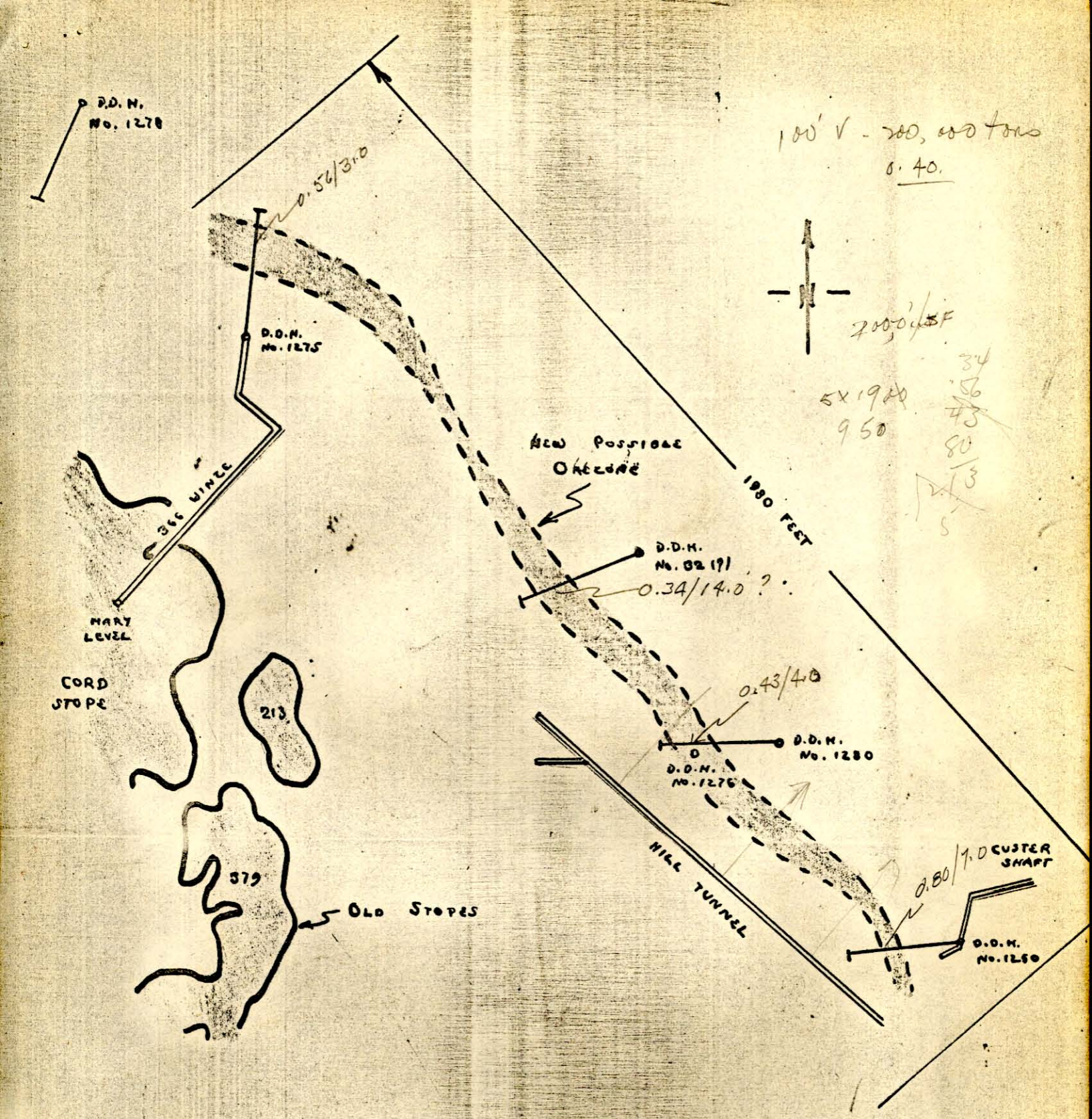
Alaskite

Ore Zone



Possible Ore in Place

Mary Mine. Silver Peak. Nevada.



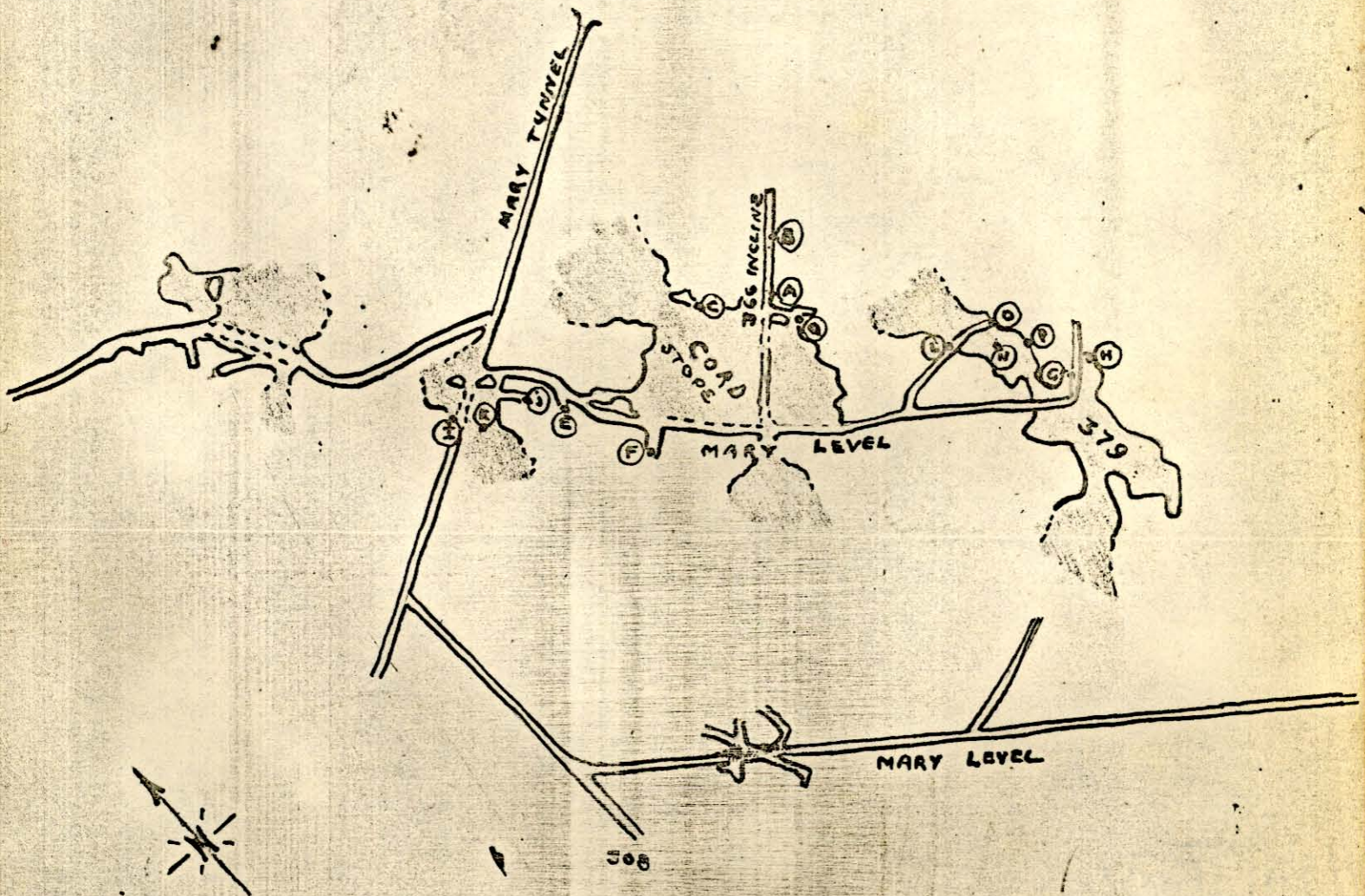
POSSIBLE INDICATED ORE ZONE

D. D. HOLES LOCATION

MARY MINE, SILVER PEAK, NEVADA.

Location of Check Samples.

Mary Mine. Silver Peak, Nevada.



MARY GOLD MINE

Esmeralda County, Nevada

This famous highly productive gold mine operated continuously from 1864 to 1942, at which time it was shut down by order L208 and World War II. Production has more or less closely totalled $42,000,000.00.

The mine is situated almost due west of the famous gold area of Goldfield, Nevada, about 23 miles airline. Climate is semi-desert with about 7 inches rainfall per year. Good asphalt roads service the area. The mine lies high above the valley in the Silver Peak range. At the junction of the lower valley below this range exists the small town of Silver Peak. Here also we find a modern 150 ton cyanide mill driven by electric power. A large capacity electric sub-station makes available large quantities of cheap power. Conditions for all year mining are ideal.

The ore of the Mary Mine occurs as a blanket vein in a structure of bedded Alaskite sedimentary rocks dipping about 25° N, 50° E. The vein has a sympathy with the bedding of the enclosing structure. Besides the main vein, parallel veins occur in both the hanging wall and foot wall of the main vein itself. Concentrations of commercial ore are more scattered on these parallel veins. The main vein has been worked along the strike for about 8000 feet and along the dip for about 2200 feet. The ratio of commercial ore to barren zones in this large area is very favorable and consequently has led to heavy profit during the entire gold exploitation period.

Gold occurs free and with pyrite and galena with some silver to produce a buillion 75% gold or 750 fine. The main vein mineral is quartz. The early system of treatment was amalgamation with very good recovery. Latest metallurgy applied the cyanide process to giving 96 to 98% recovery with low cyanide consumption. This exceptionally easy and high recovery is due to the almost completely oxidized nature of the ore which is a partial or total quartz replacement of the original vein material before mineralization. Good gold values at times grade into the walls up to rich concentrations of 3 to 5 ozs. per ton. The last owner of the mine before the war period extracted six hundred tons per day over an 18 month run. Most of this production came from the "Cord" stope named after E. L. Cord, the owner. This stope averaged about 10 feet thick of high at $14.00 per ton.

Since the main valley below is about 4500 feet above sea

level and the lower mine workings are at about 6400 feet above sea level, this oxidized condition of the ore will continue downward. It should be noted that the main Mary vein has been worked over a vertical range of about 1000 feet from 6400 foot level to 7400 foot level or a slope distance of about 2200 feet and a strike length of 8000 feet. A number of diamond drill holes have proved ore values below 6400 foot level. A systematic development program below this point by cheap tap tunnel and vein development should again block out commercial ore in large quantities.

Mining is easy on an all year basis. No troublesome underground water exists. The ground openings stand well with little timber using a cheap room and piller system with about 90% extraction. The ore zone areas compared to total development footage, is high and very favorable when compared to other highly productive mines of this type. Commercial ores generally show vein or stope widths of two feet to twenty feet with 8 feet being a good average. These facts are further borne out by the small waste dumps in evidence for the miles of underground workings in existence.

There are still virgin areas in the upper levels which should be developed with close and skilled supervision. Considerable publicity is being given to a possible rise in gold price or a heavy government subsidy such as Canada.

A very heavy tonnage of marginal ores in the old workings would, with a gold price rise, become very profitable. Even after 50 to 95 years standing open, most of the workings are only slightly caved and easily accessible.

It is economically very important that in the Town of Silver Peak, just 7 miles from the Mary workings, the custom mill above mentioned accepts custom ore at such economic rates that a company mill is not necessary at this time.

It is proposed to open up the downward extension of the main vein about 400 feet below the 8000 feet of 6400 foot level as follows:

1. Tap tunnels from surface.

2. Drifts, raises, wizzes, crosscuts on the vein.

3. Drifts from xcuts to hanging wall and footwall veins from access xcuts.

This is nothing more than systematic layout of a heavy producing mine and profitable extraction. It would also be profitable to re-rail some of the upper levels where commercial ores were being extracted at the time of the shutdown order L208 in 1942 war days. Total facilities of this mine were stripped to product strategic minerals for war purposes.

Limit time leasers could be used with aid of company rails and ties to open these old levels. They would be ready for large scale production of now marginal ore should such ore become commercial by any price rise of gold. In the past, leasers extracted much ore from this mine who with their skill and patience followed out on small high grade occurrences to ship much rock, that averaged by selection patient mining 1 oz. to 15 oz. gold per ton as per smelter and mill rations.

The above program, not counting heavy returns from development ores, requires $250,000 of investment. This would develop a sound profitable mine operation with long life expectancy, carrying itself profitably as it works under good management.

R. O. COMOZZI
Mining Engineer
April 9, 1960

COPY

[illegible] DRILL HOLES

	DEPTH	MINERAL ESTIMATE	REMARKS
1	0-22	trace	br. shale
	22-23	nil	lt. bl. lime
	23-65	nil	black lime, water @ 23
2	0-25	nil	br. shale
	25-28	5%	" "
	28-45	nil	" "
	45-65	nil	black lime, water @45 high pyrites
3	0-8½	nil	br. shale
	8½-10	4-5%	lime
	10-15	1-2%	lime & br. shale
	15-35	nil	br. shale
	35-50	nil	black lime, water @ 40
4	0-10	nil	br. shale
	10-12½	30%	" " & lime
	12½-13½	20%	" " "
	13½-19	tr.	" " "
	19-20	nil	blue lime
5	0-10	nil	br. shale
	10-11	tr.	" "
	11-25	nil	blue lime
6	0-5	tr.	br. shale
	5-10	tr.	" "
	10-15	nil	blue lime
7	0-10½	nil	br. shale
	10½-15	nil	" " & lime
	15-19	nil	" " " wet @ 19
	19-20	nil	blue lime, high pyrites
8	0-9	1-2%	br. shale
	9-17	tr.	" " some sphalerite
	17-17½	nil	blue lime @ water
9	0-5	nil	br. shale
	5-8	5-6%	" "
	8-15	5%	" "
	15-20	tr.	" " & lime
	20-35	tr.	black lime
	35-60	3-1%	" " water @ 45
	60-75	1-2%	" "
	75-120	3-1%	" "
	120-125	" "	" "
10	0-5	nil	overburden
	5-10	tr.-1%	br. shale
	10-20	tr.	" "
	20-30	nil	" "
	30-65	nil	lt. blue lime
	65-110	nil	black lime

	DEPTH	MINERAL ESTIMATE	REMARKS
10	110-125	1%	block lime
11	0-5	nil	o'burden
	5-10	tr.	hr. shale
	10-45	tr.	lt. blue lime
	45-100	"	block lime water @ 50
	100-120	1%	" "
	120-125	tr.	" "
12	0-10	5%	o'burden
	10-15	2-3%	hr. shale & lime
→	15-20	1-2%	" " "
	20-25	2-3%	hard lime rock
	25-30	1%	" " "
	30-45	tr.	lt. blue lime
	45-50	nil	block lime, water @ 50
	50-100	"	" "
	100-125	1%	" "
13	0-20	nil	hr. shale
	20-25	tr.	" "
	25-27	nil	" "
	27-47	nil	block lime. water @ 45
14	0-8	tr.	o'burden
	8-15	tr.	hr. shale
	15-20	nil	lt. blue & bl. lime banded
	20-39	nil	lt. blue lime
	39-43	nil	block lime
15	0-14	nil	o'burden & caving
16	0-15	nil	o'burden & caving
17	0-10	1-2%	hr. shale
	10-25	1%	" "
	25-30	2%	" "
	30-35	tr.	" "
	35-40	nil	" "
	40-45	tr.	" "
	45-90	nil	lt. blue lime
	90-272	nil	bl. lime. Water @ 145
18	0-10	1-2%	hr. shale
	10-15	tr.	" "
	15-21	nil	" "
	21-25	tr.	" "
	25-30	nil	" "
	30-35	1-2%	" "
	35-50	tr.	" "
	50-55	nil	" " some calcite
	55-60	tr.	" "
	60-61	1%	lt. blue lime
→	61-64	5-10%	" " "
	64-65	1%	" " "

36	0-10	null	clayish
	10-11	1-ft	"
	11-15	4ft.	"
	15-37	null	lm. sandy p. clay & gr.
	37-39	"	1/2. pipe lime
	39-48	"	white lime
	48-51	"	very fr. blue lime rock fragments
	51-73	"	18. blue shale and clay
	73-100	"	blue lime water @ 75
37	0-80	null	c/pumpings- GRAVEL
38	0-84	null	c/pumpings, GRAVEL, water @ 17
39	0-10	null	c/pumpings
	10-20	"	8n. sandy
	20-44	"	12. blue lime
	44-45	"	blue lime
	45-55	"	very fr to firm lime
	55-58	"	16. blue lime
	58-60	"	mixed lime water @ 75
40	0-108	null	clayish
	108-116	"	black lime shale @ 108

NEW No. X.11

C. P. KEEGEL

Mineral Appraisal - Production Management - Metallurgical Design

1721 SOUTH 14TH STREET
LAS VEGAS NEVADA
DUDLEY 4 6981

November 14, 1960

Mr. Walter F. Simmons
Marybell Mining Company
Silver Peak, Nevada

Dear Mr. Simmons:

Pursuant to your request, I have made a preliminary examination of the Mary Mine at Silver Peak, Nevada.

My attention was principally concentrated on the area east of the main Mary level. Due to the very large magnitude of the general development, a larger area consideration would be impractical within a short time period, since there is well over 50 miles of lineal development in the property.

Without going into geologic detail on the matter, I am of the general opinion that the Mary vein occupies a thrust fault and after a study of the available data, especially the drill logs, believe that you would wish to take up some facts which are related to development with your principals, before any further geological work is done.

I have made a tracing from your work plan showing the Hill adit and related eastern area.

In plotting drill hole development, I note that an engineer recently on the property shows a drill hole described as extending "over 200 feet and intersecting 14 feet of 0.34 oz Au/ton ore." I have shown this as drill hole "A". While he makes no mention of just where in this hole the ore was encountered, he apparently indicates in plan that the Hill adit, if extended, would intersect such ore.

In the vertical section which also accompanies this letter, I have shown that continuation of this adit could not possibly intersect any ore found in the development described, even though such ore was at the bottom of the hole. (See hole "A" Section C-C').

In reviewing your log file, the only drill hole which I can find which might correspond to the "hole A" is drill hole No. 49 which I have plotted as hole "B." The log does not show any ore discovery; however, there are penciled notations to the effect the low values shown for the distances of 88 to 110 feet from the collar are incorrect, and that Alaskite continues from the 96' point to the bottom at 202'. It is possible, therefore, that a revision of these data was used by the Engineer who also, for some apparent reason, relocated the drilling position, and that values are higher than those indicated on the log.

In the vertical section C-C' I have shown a hypothetical geological situation which may explain the possibility of values in the general drilled area shown for either hole "A" or "B". This is based upon the idea that the vein occupies a thrust fault and has been subject to overthrusts with a displacement which could be of the type shown. From my observation, there is indeed factual support to this theory in that, at the bottom of the stoped areas, the walls tend in all cases to change dip from 30° to as much as 60° .

Under this situation, it is obvious that an ore occurrence in the position indicated could have extreme importance in finding a continuation of the large upper shoot down dip and just such a possibility may have prompted Mr. Prescott to remark that more ore than that removed would be found in the Mary Mine.

As you know, we take a very conservative view of these possibilities and, confronted with data which are not of record, or hearsay and conflicting, I am forced to recommend to you that the only practical course which is realistic is to re-drill the hole 49 area.

I understand your general business position with regard to raising finance for major development, if warranted. Under this situation, and to greatly improve the outlook, I am suggesting that your own group undertake to verify this drilling because (1) your prospective merit will be greatly benefited, and (2) it is impossible for me to honestly support development from the Hill adit without such work due to inconsistent information. Successful termination would place you in a very fine position.

With regard to the footwall section, or exploration on the eastward extension of the Mary vien from the known productive area, it is my belief that the course, or strike of the vein will be markedly influenced by the downward and lateral shift along the fault marked by the canyon occupied by the Hill adit such that it will tend to curve westerly. This would mean that a straight line projection from the strike known would not result in an important discovery and that development at any given horizon would have to be well to the west for best results.

It is my opinion that at least 3 holes should be drilled from the vicinity of hole 49, with one located only a few feet from the collar of that hole, to a depth of at least 200 feet each. About two weeks would be required for each hole and the cost will probably be in the range of from $5,000.00 to $7,000.00 for direct drilling. To this should be added administrative and engineering expense. A total of $10,000.00 would be adequate. The amount provides for such eventualities as cementing and other costs and expenses such as hauling water. On a larger program, the cost per foot could be materially reduced.

In summary, the reported ore occurrence in hole 49, or "A" is of possible major significance and by all means should be immediately verified. I suggest that a formal engineering report on this property be deferred until the recommended development is completed.

I realize that this informal presentation does not give you a full picture of my geologic reasoning, but feel that any additional information may be conveyed orally.

I shall appreciate your advice on whatever course your principals wish to undertake.

Very sincerely,

C. P. KEEGEL ENGINEERS

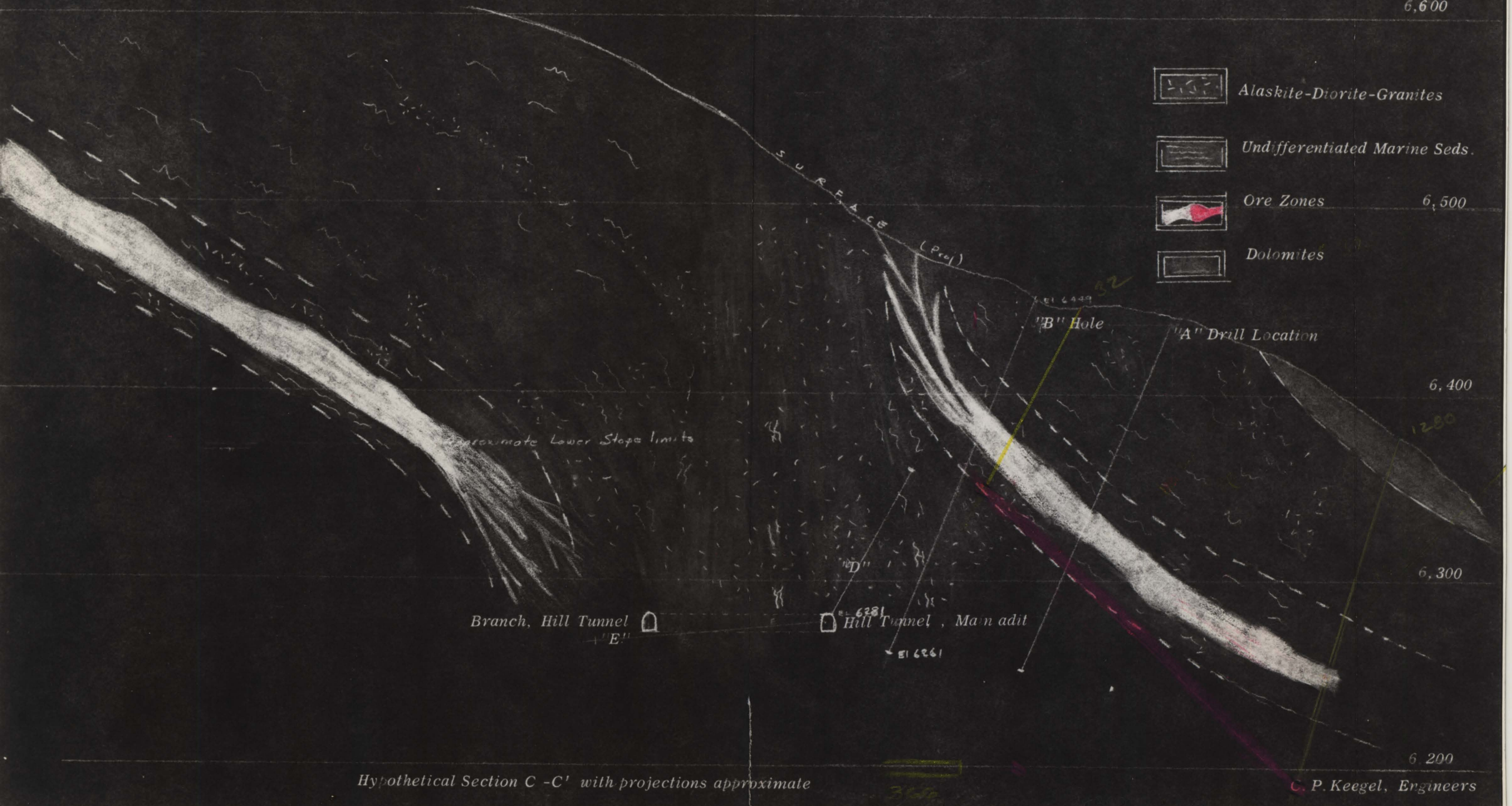
By _____
C. P. Keegel

cc:
Mr. Victor C. Ingram
4811 So. Collidge
Tampa 11, Florida

HYPOTHETICAL GEOLOGIC SECTION C-C'

View Northeasterly

MARY MINE
Silver Peak, Nevada
Marybell Mining Co.
Scale: Vertical and Horiz: 50 ft/ inch
November, 1960



Hypothetical Section C-C' with projections approximate

C. P. Keegel, Engineers

MARY MINE.

Silver Peak, Nevada
Plan of East Workings
MARYBELL MINING CO.

Scale 1" / 50 feet

Mary Mine workings

7500 E

N 9000

6500

8000 E

6550

"E"

Hill Tunnel

6281

"D"

El 6254

Hole "A"

El 6449.6

Hole "B"

"A" El 6438(?)

6450

6400

8000 E

6550

N 3500

Feb. 23, 1965.

The Directors,
Black River Mining Ltd.,
400 St. James St. W.,
Montreal, Que.

Dear Sirs,

The following is a report covering my study of the Marybelle Mine held by Trans-Western Mining Corporation at Silver Peak, Nevada. The report is based on my visit to the property January 16-18, together with a study of previous reports and data pertaining to the property.

Mr. Pierre G. Lacombe, P. Eng., had previously made a ten day examination of the workings and his report of April 30, 1964, is very complete and recommends a program designed to resume production at the mine. The writer was accompanied on the present visit by Mr. C.D. Robbins, President of Black River Mining, and Mr. Lacombe who proved of invaluable assistance with his prior knowledge of the workings.

The object of the present examination was to check on conditions at the property, corroborate Mr. Lacombe's findings and determine if the program recommended by Mr. Lacombe is justified.

The present examination was not nearly as thorough as Mr. Lacombe's and as a result this report will not deal with location, access, general geology, etc. but rather is confined to the pertinent facts on the ore potential of the property. For further details the writer would refer to Mr. Lacombe's report which gives a very comprehensive description of conditions at the property.

PREVIOUS WORK

The extent of the underground workings was very revealing as it is obvious that a great deal of ore has been taken out of the mine. The orebodies have been opened by a number of adits and the present adits and stopes are mostly in good condition. A noticeable feature was the large stoping widths in places and since the operation was profitable one must assume that these widths were economic. They range from a few feet to as much as 14 feet.

The mine was shut down in 1942 during World War II when the United States closed all gold mines to provide labor and equipment for the more essential industries. Thus it is obvious that the ore has not been exhausted but at this stage it is impossible to estimate how much remains and of what grade.

Some diamond drilling was carried out in 1940 and 1941 to locate additional ore down the dip. This drilling would appear to indicate the presence of another "en echelon" ore shoot in the hanging wall following the pattern of faulting described by Mr. Lacombe. The drilling carried out was widely spaced with five holes along a strike length of close to 2,000 feet. Values were obtained in these holes with some of them ore grade. Apparently more drilling was planned to investigate this zone but it was never carried out to our knowledge.

ORE RESERVES AND POTENTIAL

There is no information available on possible ore reserves and it is doubtful if any calculations were made. From an examination of the workings it would appear that very little if any development was carried out ahead of

mining. The procedure appears to have been to carry out development for mining and stoping proceeded as the headings advanced. This would make it very difficult for any kind of grade control and might account in part for the variation in mill heads shown in the records.

An examination of the composite stope maps at the time of closing shows a great many faces with ore grade values and sampling by both Mr. Lacombe and myself would appear to corroborate this. It is impossible to know how far the ore extends past these faces but detailed sampling, together with certain limited assumptions, would permit a tonnage and grade figure to be estimated. Attached to this report are the results of the spot check sampling carried out by Mr. Lacombe and myself. It should be pointed out that it is not possible to detect the ore visually as there is a distinct lack of mineralization and the gold in the free state is too fine to be visible. Thus it was impossible to be selective in the sampling and it can be regarded as fairly representative. An examination of the results of this random sampling indicates that there is some ore left but detailed sampling is required as stoping would have to be guided by assay walls.

Another source of ore in the mine are the pillars which are quite plentiful and presumably contain ore. Much of this ore could be recovered as the upper areas appear to be mined out and they could be blasted as the mining proceeds or at a later date. Detailed sampling and measurements are required to calculate the tonnage and grade remaining in the pillars.

The remaining possible source of ore is the new zone indicated by the previous drilling. The drill results are carried in detail in Mr. Lacombe's report and from these results further investigation is warranted to outline the zone as this could be an important source of ore. The

possibility of other zones occurring at lower horizons following the same en echelon pattern cannot be overlooked.

GRADE

At this stage it is difficult to even hazard a guess as to the grade of the ore remaining in the mine. The sampling results to date indicate values from .04 to over 9 ounces in gold. The mine figures do not provide much assistance as the grade has fluctuated considerably. Initially they were milling ore close to one ounce or better but there has been a decrease in the later years. Mr. Lacombe states that this may have been due to mining larger quantities of lower grade material and of a narrowing of the vein toward the northeast margin of the Cord stope.

A small attempt was made at shipping some ore in 1960 and the ore mined ranged from 0.30 to 0.60 ozs. per ton. Samples taken by myself and Mr. Lacombe from the ore transfer which contained some of this ore assayed 1.35 ozs. and 0.52 ozs. per ton.

A report by R.O. Comozzi, Mining Engineer, dated April 9, 1960, refers to production for an 18 month period before the war. He states that production ran at 600 tons per day with most of this coming from the Cord stope. He states that this stope averaged about 10 feet with a grade of $14.00 per ton.

Mr. Lacombe feels that a grade of $12.00 to $14.00 per ton could be expected but he admits this is an impression only. It could be higher and it could be lower and this becomes a key factor in determining the future possibilities of the property.

The grade can no doubt be regulated somewhat by more selective mining and close supervision. Once more

information is available from sampling it should be possible to arrive at an average grade and determine what is waste and what is ore.

CONCLUSIONS AND RECOMMENDATIONS

There is no doubt that there is ore remaining in the Marybelle Mine. It exists in extensions to old stopes, in pillars and possibly in a new orebody indicated by diamond drilling to the northeast. The tonnage and grade of this ore is not known but there are sufficient indications of economic ore to justify certain expenditures in an exploration and sampling program. The object of this program would be to determine the tonnage and grade of ore remaining in the above-mentioned categories.

The following specific recommendations are made for the program:

1. Complete check sampling of all accessible stope faces and pillars. The necessary measurements should be taken and correlated with the mine maps available. This would enable calculations of tonnage and grade to be made.

2. A limited diamond drilling program from surface and possibly underground to investigate the zone indicated by previous drilling.

3. A thorough study should be made of the workings and mine maps to lay out a program of underground development to explore for additional ore in the vicinity of the mine workings. Particular attention should be paid to a report by Basil Prescott, Mining Engineer, dated January 14, 1939.

4. A limited feasibility study should be carried out during the exploration program. This will enable cost estimates to be made which will determine the cut-off grade for the ore.

The above-mentioned recommendations can be carried out concurrently and it is estimated that they would require between three and four months to complete. The estimated cost of the program is as follows:

Diamond Drilling	$30,000.00
Sampling, Assaying, Engineering, etc.	$15,000.00
Contingencies	$ 5,000.00
TOTAL:	$50,000.00

At the completion of the above program it should be possible to make a decision as to the economics of placing the property into production. If the project is feasible estimates could then be made as to time and cost required to bring the property to the production stage.

Respectfully submitted,

Montreal, Que.,
Feb. 23, 1965.

R.J. Bergmann, P. Eng.

SAMPLING RESULTS

Sample No.	Taken by	Location	Type	Width (ft.)	Gold Oz/ton	Silver Oz/ton
A	Lacombe	Incline 366, Chute 65, Cord stope.	Muck	-	3.20	1.10
B	"	Incline 366 Chute 66, Cord stope.	"	-	0.79	0.30
716	Bergmann	Chute, Sta. 350	"	-	0.33	N.A.
C	Lacombe	Cord stope, Sta. 253	Chip	3.5	Nil	Nil
52	Bergmann	Main drift	Grab		"	"
D	Lacombe	Lower Pillar, Sta. 401	Chip	4.0	0.43	0.24
E	"	Uphand Heading, S. of Sta. 364	"	4.0	0.04	0.20
F	"	Draw Point S.W. of Sta. 364	Muck	-	0.01	0.04
G	"	Stope 379 N. of Chute 393	Chip	4.0	0.13	0.26
H	"	Stope 379 E. of Chute 393	"	3.0	0.41	0.20
715	Bergmann	Stope 379 W. end.	"	2.0	0.54	0.66
1	Lacombe	Stope Face W. of Sta. 362A	"	3.0	Nil	Nil
J	"	Uphand Heading N. of Sta. 362A	"	3.5	1.30	0.20
K	"	Stope W 362A	Muck	-	0.07	0.13

Sample No.	Taken by	Location	Type	Width (ft.)	Gold Oz./ton	Silver Oz/ton
L	Lacombe	Draw Point Sta. 373	Muck	-	0.01	0.05
M	"	Ore Transfer on road	"	-	0.52	0.28
51	Bergmann	"	"	-	1.35	N.A.
N	Lacombe	Stope 379 E. of Sta. 373	"	-	0.06	0.04
714	Bergmann	F.W.-50' from Sta. 373	Chip	0.6	0.28	0.14
O	Lacombe	Stope 379 Face E of Sta.373	"	0.5	9.25	1.08
P	"	Stope 379 E. Wall	"	3.0	0.42	0.13
Q	"	Incline 366 Sta. 382	"	2.0	0.07	0.08
712	Bergmann	Surface near road and adit	Grab	-	Nil	-
713	"	Surface near old open pit	"	-	Nil	-
717	"	Wall near open pit	Chip	1.0	0.22	N.A.*
718	"	Wall Main drift	Character		0.59	0.93•

*N.A. - Not assayed.

•Character sample of quarts containing some sphalerite and galena.

MARYBELLE MINE

SILVER PEAK - NEVADA

P. Lacombe, in his report of mines in the Silver Peak district of the County of Esmeralda, Nevada, for Trans Western Mining Corporation presents data pertaining to history, geology, economic potential and recommendations that picture the old mines on Silver Peak as favorable for renewal of simple exploration, development and production.

A check of available information at the G.S.C. library in Ottawa tends to confirm Lacombe's report. It is felt that he uses material, expressions, etc. handed down through a number of reports originating from a major geological study by the U.S.G.S. titled:

> "Ore Deposits of the Silver Peak, Quadrangle, Nevada" by Josiah Edward Spurr, published in 1906.

A table of production history obtained from the University of Nevade Bulletin No. 38 in the Geology and Mining Series, and updated from 1940 - 60 by "Mineral Resources of U.S." shows a production from Silver Peak Mines of about $15,017,030 from 2,018,079 tons of ore materials for an

average value of $ 7.44 per ton. Since tonnages of reworked tailings are included above, it is reasonable to assume primary ore grades were well above the average shown.

Production from Silver Peak Mines, Nevada

Year	Gold, Silver, Lead	$
1873	7 Tons	1,562
1874	4	717
1881	-	27,569
1884	100	3,000
1885	487	4,582
1886	331	5,606
1887	1,530	30,390
1888	1,975	32,826
1889	290	2,474
1891	136	5,271
1895	934	17,621
1896	4,449	79,866
1908	85,712	686,588
1909	151,359	902,352
1910	173,862	841,058
1911	182,032	900,750
1912	169,932	732,803
1913	169,560	692,707
1914	113,560	485,544
1915	45,746	251,533
1916	14,874	48,804
1919	812	11,651
1921	1	435
1922	188	3,613
1923	1,138	22,701
1924	685	20,747
1925	893	20,483
1926	1,211	43,126
1927	1,013	25,560

cont'd.

1928	2,887	64,971
1929	1,581	21,467
1932	-	49,149
1933	2,402	103,377
1934	8,765	296,556
1935	15,302	290,141
1936	23,096	385,762
1937	62,940	812,938
1938	187,325	1,929,568
1939	202,533	1,919,299
1940	137,914	1,312,613
1941	170,359	933,625
1942	79,544	757,844
1943	22,928	244,781
	2,018,079	$[illegible]

There are 20 mines on Silver Peak that produced more than $5,000, the six largest being:

1908-37	Pittsburg Silver Peak	-	1,019,943 T.	$5,075,502
1932-40	Black Mamoth	-	184,075	2,398,612
1937-40	Desert Silver Inc.	-	226,235	2,072,814
- 1908	Silver Peak Gold Mine	-	53,544	461,826
1937-40	Prescott Lease	-	200,868	1,865,756
1923-34	Lucky Boy Divide	-	8,490	256,951

The Mary Mine produced from 1926-37 about 396 tons worth $76.777. However, there are records to suggest the Mary Mine was operated as Lucky Boy, Prescott Lease and Silver Peak Gold, and Pittsburgh Silver Peak as well as part production of mill feed to Desert Silver. The precise production from the Homestake, April, Western Soldier, Mary, Elizabeth, Last Chance, Savage, Wasson, Drinkwater mine or leases is not determinable.

It appears that all the mines are adjacent to one another mining the series of quartz lenses. The outline of the present claims on 56 surveys is unknown but it probably covers most of the old mine properties.

There is no evidence to say that the ore bearing quartz lenses do not continue or repeat further down dip than lowest developed horizon. If the interpretation of the five diamond drill holes shown on the maps is correct, then such is evidence to confirm deeper ore bodies. Check and additional drilling is advisable, along the plans projected and commenced in 1941-42.

Spurr indicates the ore as occurring in quartz lenses that tend to finger out at the extremities rather than being fault or shear terminated. There is an increase in sulfide mineralization in the deeper portions of the mine, which added to the milling circuits and tailings losses. Spurr covers all the mines of Silver Peak in fair detail.

Lacombe claims to have sufficient pertinent data to substantiate his knowledge of the area as presented in his report, and such data should be reviewed and summarized by Javelin before more formal associations are created with the property principals.

Memorandum re

MARYBELLE MINE

SILVER CREEK, NEVADA

The Marybelle Mine was closed in 1941 as a wartime Measure by the U.S. Goverament.

There has been no serious effort to re open it since that time even though the mine records show it was closed at a time when it was operating profitably.

It has recently been acquired by TransWestern Mining Corporation who have spent some $200,000 on acquisition and an unsuccessful attempt to operate and ship to a "custom mill."

Following this attempt Pierre Lacombe examined the mine in 1963 and wrote a report for the present Management. Copies of his report have been trumed over to us for study.

The conditions for exploration and ore development are favorable.

1. The ore faces are accessible through the old workings - There is little caving and no water.

2. Extension of the ore down dip below the present workings can be checked by relatively short drill holes. Diamond drilling in 1940-42 was used successfully and indicates ore below present working.

3. There is enough information available to indicate a recoverable grade of about $14.00 per ton in an ore suitable for treatment in a simple cyanide process treatment plant.

4. Access to the zone where exploration would be continued down dip is available.

5. There is a relatively simple fault pattern breaking up a continuous ore zone into blocks which have been partially "upthrust" one over the other. This same pattern can be expected to continue down dip. The structure is a relatively simple series of upthrust faults which can be readily recognized. Direction of dislocation of the ore zone can also be predicted from this structural pattern.

6. Surface contours have been reported to be favorable for

exploration "down dip" and there is a possibility that a relatively short low level addit might be used to open the ore zone at a considerable depth below the present workings.

7. Working from mine data there is an indicated 100,000 to 150,000 tons of ore available for development by check drilling an area in which previous drilling has shown ore intersections.

The present owners are prepared to turn over management to a competent mining group on some participation basis.

On the basis of Lacombe's report, an examination of maps and verbal discussion with him, this property could be well worth a careful check.

The group presently managing the Trans Western Mining Corporation have little mining experience. They are

Col. Wm. Reeves - President
Commander in Chief
U.S.A.F.
Europe.

Mr. Walter Breden, - Vice-President
Assistant Vice-President
Prentiss Hall
New York.

Mr. Frank C. Mendel - Secretary Treasurer
President, Fromen Steel
Fromen International
New York.

This property is worth serious consideration as a possible profitable development.

We can obtain some further information about the mine from the mining literature. However, there may not be much available as the mine was privately owned by the "Cord" family and (by local tradition in the area) was the source of money for development of the Cord car.

An initial discussion with one or more of the management group could be arranged before doing any work to see where their plans for the property might fit in to Javelin's developments.

A visit to the mine area is essential if we are to have a good understanding of the property situation and physical aspects of exploring the property.

There are several other properties in the area which can also be studied in relation to development of the area as one unit. Details on these were lacking.

W. H. Roxburgh
Vice-President, Engineering.

Copy to Mr. J. C. Doyle
Mr. D. Knowles
Mr. W. Hegler
Work File

WHR:mf

May 26, 1964.

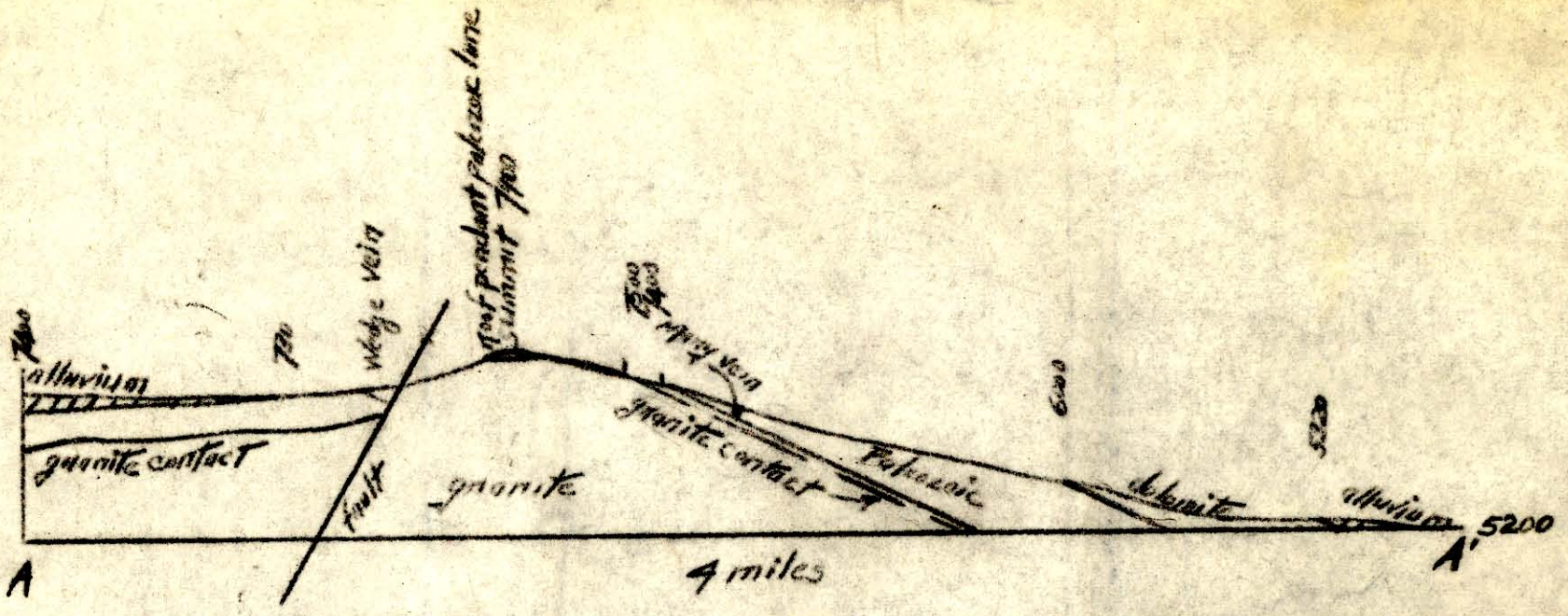


Plate II (Section AA')
Scale: (Hor. & Vert.) 2" = 1 mile

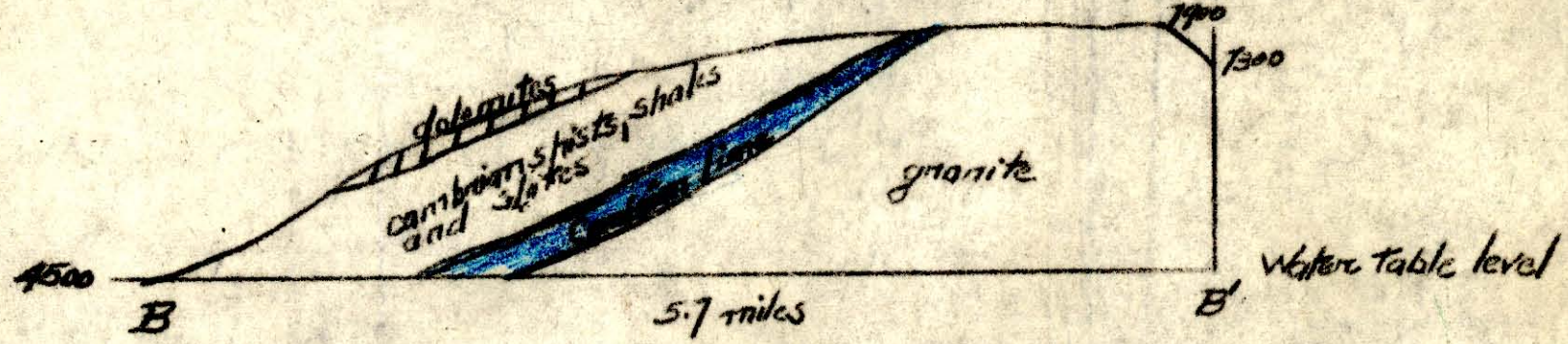


Plate III (Section BB')
Scale: Horizontal 1" = 1 mile
Vertical 2" = 1 mile
By: R. O. Camozzi
Mining Engineer

STRUCTURAL AND ECONOMIC GEOLOGY OF THE SILVER PEAK RANGE,

SILVER PEAK, NEVADA

Between April 4th and July 1, 1960, the writer spent 60 days in field work, both on surface and in miles of underground workings of the Mary Mine. Theundergound workings are enormous having been worked in a tabular inclined plane of about -25 degrees average with strike length of about 7000 feet and a dip length of 2200 feet or a vertical distance of about 1000 feet. The N.W.-S.E. axis of the Silver Peak range comprises a basement of Alaskite or Granite instrusive into a S.E. plunging anticline of principally Cambrian Paleozoic sediments. A normal N.S. fault near the town of Silver Peak has raised the Cambrian rocks to the S.E. several hundred feet. Together with flattening of the series and climbing structural folds we get in the salt marsh, at the same lake elevation, island outcrops of the Cambrian several hundred feet higher. At the town itself we have the top of the Cambrian series disappearing under the lake beds. This top of the Cambrian is recognized by small Dolomite remanants remaining at the top of the Cambrian series along the disappearanceunder the lake beds. The Dolomite beds are post Cambrian. In this area the Cambrian series with 500 feet of probable blue lime at their base would have a bedded thickness of 2000 feet.

See Plates I, II & III

As we travel N.W. on the section BB' heavier erosion takes place into the Cambrian strata until at 7900 feet, or crest of the Silver Peak range, we find true contact between the lower blue lime of the Cambrian and the Alaskite or Granite instrusive itself. The age of this instrusive is placed as Jurassic. The blue limestones are easily recognized by their "Zebra Like" filling of white Calcite. This is the result of complete shattering by slow powerful deformation forces with the resulting refilling by Calcite. To the S.E. as shown by a deep erosion canyon near the summit contact, those limestones have a 500 foot thickness while in the vein horizon of the Mary to the N.W. as well as the vein zone itself over 100 feet of thickness was never met

The Mary vein represents a structural weakness at or near the top of the bluelime series. The vein itself nearly parallels the Alaskite contact with the Cambrian bedding showing a distance from this contact of 50 to 150 feet at all times over an area of 7000 by 2200 feet

This instrusive has heavily stoped or engulfed the contact rocks as well as injected huge loccoliths and local masses of altered Alaskite thru the entire Cambrian series and even rarely injected into the post Cambrian Dolomite. So intense is this injection process that erosion surfaces of the Cambrian series show large areas of enclosed White Alaskite on the surface with surrounding black to red to blue gray characteristic color of the Cambrian series. The Cambrian series is a thinly stratified sequence of blue lime, shales, slates and schistoze layers of sedimentary rocks. The Mary vein, due to injections, shows Alaskite locally on both foot wall and hanging wall. This would automatically place the main mineralization Post Instrusive or Post Jurassic.

Section AA' shows mainly the eastly flank of the Paleozoic Cambrian

anticline. It will be noted here that the structure has a thickness of about 1600 feet in this area, because the blue lime series in either absent or only 100 feet thick. It is stressed here that the 100 feet proximity of the blue lime to the instrusive is no mere coincidence both mechanically and chemically, but had much to do with the consentration of gold mineralization in general. Many other local, but heavy quartz occurrences exist in the hangwall of the Cambrian well away from the instrusive and very similar to the Mary, but are weak in gold mineralization or barren.

It will be noticed that only at one known point in the Silver Peak range does an ancient andeiste lava flow succeed and overly unconformedly the Dolomite and Paleozoic erosion surface. The quite desected, block appearing, ancient Andisite dips S 70 degrees W. at -30 degrees with 20 to 30 feet of thickness. Erosion has removed all this probably eocene flow from this area.

The Dolomites, either Upper Cambrian or Early Ordovician, are made up of an upper and lower series, The latter is harder and more dolomitized, often showing a pinkish color. It filled a steeply eroded surface of upper Paleosoic. In these erosion troughs it has upwards of 300 feet of thickness but normally shows 150 feet of measure. The upper Dolomite is whiter, softer, less brittle and much less blocky. Its maximum thickness is seldom over 150 feet.

To the east the Cambrian Paleozoic structure flattens and disappears under the valley alluvium to rise out of the valley edge 10 miles to the east. thus we have a syncline of the same structure under the present valley surface of debris with some volcanic cover.

We see near asphalt Highway 47, a recent pleistocene obsidian reddish-black cinder cone possibly 200,000 years old.

Due north of this cone, about one mile, we encounter a series of remenants of basalt flows underlain by some 400 feet of acid, white pumice beds. These are erosion products of ancient white lava flows from the N.W. which were reconcentrated by wave action of the dry salt marsh lake which once was water filled to at least 750 feet as shown by deposits in the flanks of the present valley.

Now we come to the structural characteristic of the Mary vein which has not heretofore been recognized. The vein fissure formed prior to the instrusive in a zone of structrual weakness at or near the blue lime contact with shaley-slate Cambrian rocks, but continued movement took place during the entire epoch of intrusive cooling and associated shrinkage of the intrusive which has a very slow powerful force. During this process, hot ascending mineral solutionsformed large quartz areas from a few inches to 20 feet thick, Ninety percent of the gold occurs free and a good part was precipitated from these ascending solutions with the quartz during the first phase of gold

mineralization in association with pyrite, argentite and some galena. Siricite is quite plentiful in the vein area as an altered product of the intrusive micas. Then slow continued down movement of the footwall, due to magmatic cooling and necessary shrinkage, broke up, piled up and even overlapped the quartz bands so that today vein areas appear as mumberless small isolated quartz lenses in vein material in the thinner quartz areas. The thicker areas withstood movement without migration, but show polished slickenside surfaces in contact. Mineralization of gold associated with quartz filling of the shattered Cambrian walls of the fissure, often forms richer ore incontact of the quartz that the quartz itself. This is shown by remining of stopes by taking the vein contact rocks as much as 12 feet back into the hanging walls of such large stopes as the Chappel, Savage, Wossan and Cord in all sections of the mine. Resulting stopes show openings of as much as 30 feet from the wal to wall with values running up to one once or better in the richer zones.

Subsequent to the final cooling of the magma and major vein movements, a complex series of almost vertical N.E.-S.W. fractures of little or small movement opened the way for a very evident second period of gold mineralization. This gives rise to numberless enriched local paystreaks up and down the dip of very important consequence enabling large other-wise marginal ore bodies to be mined profitably. Values are generally controlled by on the spot mortaring and panning with subsequent fire assay.

Mining up to the present has all been above present water table and the ore zones are heavily oxidized. This oxidized zone will extend still another 1000 feet vertically or about 2200 feet along the dip of the vein zone.

To the S.W. from the Mayy ore zone and over the 7900 feet summit or crest of granite is found in the same horizon of the Cambrian structure, a much smaller mineralized zone known as the Wedge-Brodie Area. A 600 foot normal fault sheared the S.W. shoulder of the Paleozoic anticline dropping down the Wedge-Brodie area. The small section of vein in the Wedge has the same strike and dip as the Mary.

The main outcrop of the Mary vein is found near the top of the range crest as shown. The blue lime roof pendants at the crest itself, also show the last trace of the Mary vein itself. In one place it is six feet wide.

The outcrop of the Mary vein, except in the lower horizon canyon esposures along the dip, and rather large low grade area to the S.W. near surface, show weak mineralization of gold and give no indication of the $42,000,000 accredited gold bonanza which lay down the dip. This was all uncovered by persistent development work. The Mary ore zone is deep seated; no general conditions have changed. The 1000 feet of vertical section mined does not spell termination in depth for this type of mineralization. In short, the writer has full confidence of the continuation in depth, of profitable large ore stopes below all present workings.

This lower extension can be opened up by limited development funds, one area at a time or: using a $2000,000 development fund, open up the entire lower

extension in a rapid program for a bigger operation.

The upper, large worked area of the Mary mine contains considerable unmined ore as well as virgin vein areas which should be developed. All of these should average $15.00 to $20.00 in gold values.

The existence of a 200 ton local custom mill at Silver Peak, with low treatment rates, makes all the above worked areas attractive to skilled lease type miners. At present two groups of leasers are at work and it is hoped to expand this type of lease operation to at least 6 crews or about 25 men. When this program is in full swing, variations can be made as new conditions are met. It is very possible that the virgin blocks will render from leasers upgraded ore to run $20 to $30 per ton in gold. In this type of operation we have no payrolls other, than one or two company helper men for road construction, movement of supplies, etc. There are neither taxes or payrolls.

The writer on his first report after a 4 day inspection of the Mary mine mentioned the use of leasers in the upper mine workings above the Mary 6466 main haulage tunnel. Now I emphasize this use of leasers, because of the extra knowledge required to follow and identify this paystreak type of ore. The clorider and leaser type miner has this knowledge. He also has a more adventurer mental attitude necessary for aggressive work. He also does his work on percentages of production without payrolls or payroll taxes. Naturally when he finds rich ore he makes more money than days pay men.

There is also a general lethargy among present day desert miners which is desirable to eliminate. It is very costly to eliminate men until a good crew is at hand and even then they never reach the skill of chloriders in working the more dangerous old workings.

Company development should be done entirely on a liberal contract basis to attract the best men and do the work well, more rapidly and in the long run much more cheaply.

R. O. Camozzi
Mining Engineer

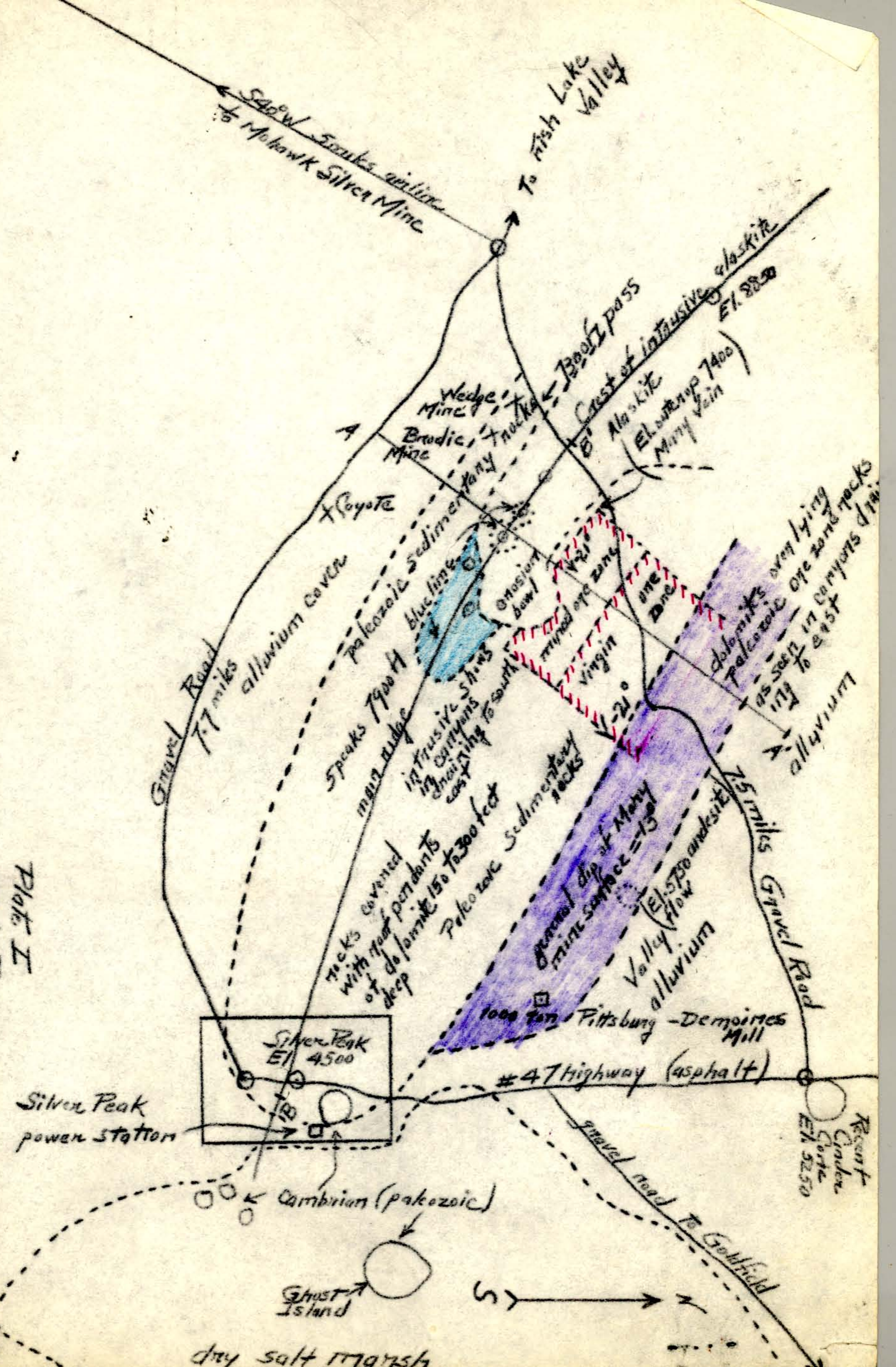
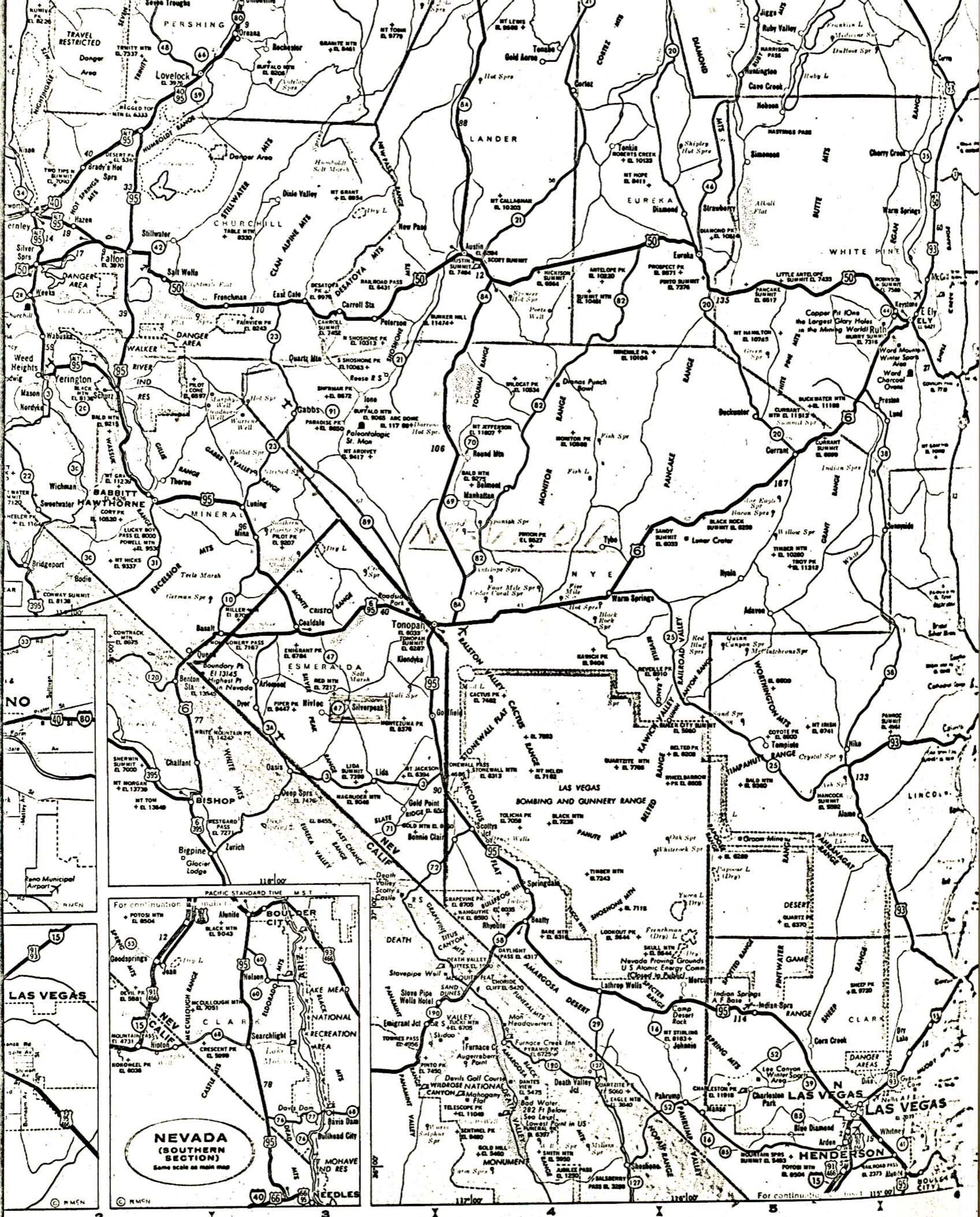
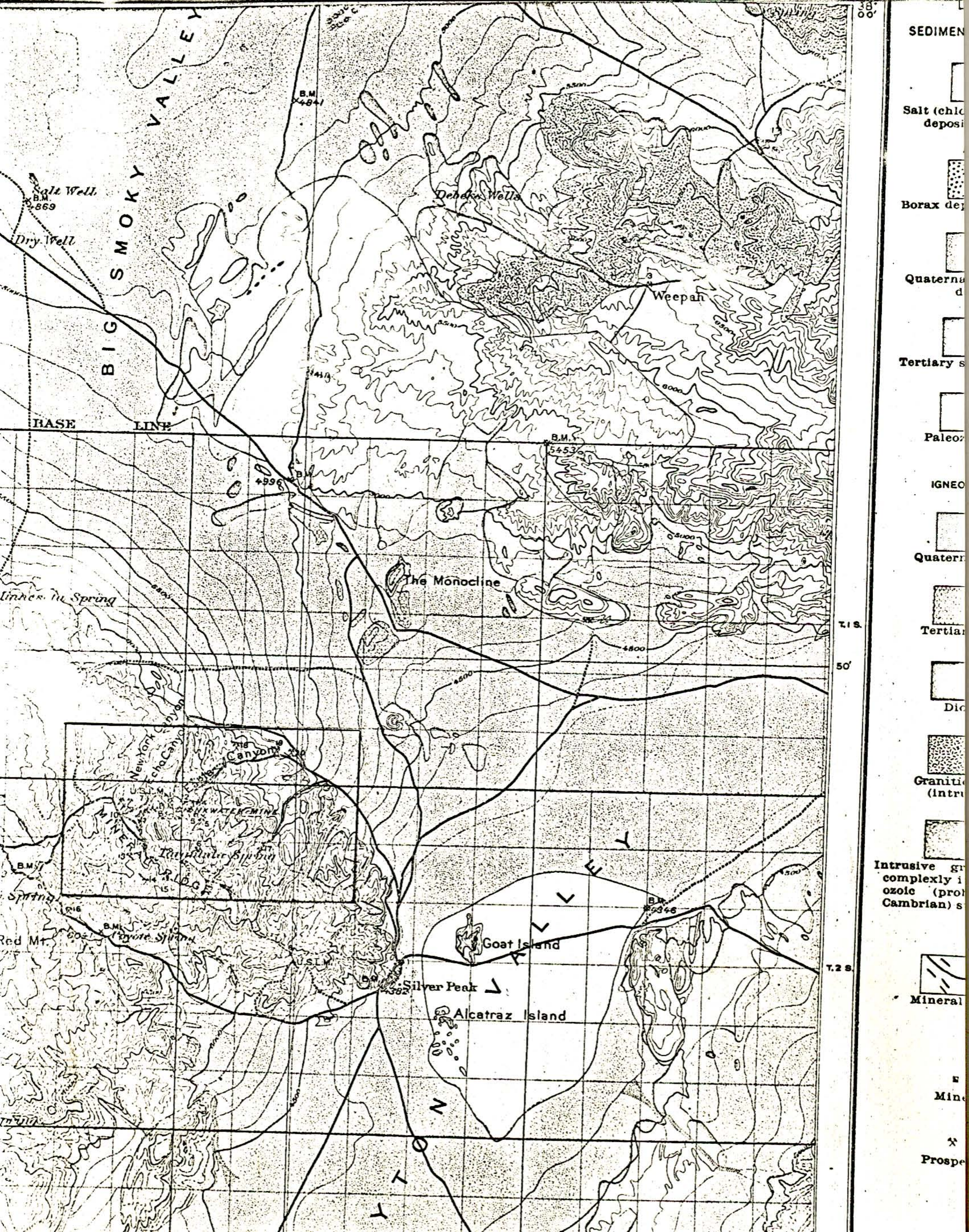


Plate I
⊙ Ridge Peaks
Silver Peak Range and Mary Mine
Scale: 1" = 1 mile
R.O. Camozzi
Mining Engineer


PERSHING
TRAVEL RESTRICTED
Danger Area
Lovelock
Orean
Rochester
Humboldt Range
Humboldt Salt Marsh
Danger Area
Brady's Hot Sprs
Hazen
Fernley
Fallon
Stillwater
CHURCHILL
Salt Wells
Frenchman
East Gate
Carroll Sta
Peterson
Dixie Valley
New Pass
Stillwater Mts
Clan Alpine Mts
Desatoya Mts
Shoshone Mts
Austin
LANDER
Tenabo
Gold Acres
Cortez
Cortez Mts
Tonkin
EUREKA
Diamond
Eureka
Strawberry
Diamond Mts
Ruby Valley
Huntington
Cave Creek
Hobson
Simonsen
Cherry Creek
WHITE PINE
Warm Springs
Keystone
Ely
East Ely
Ruth
Copper Pit (One the Largest Glory Holes in the Mining World)
Ward Charcoal Ovens
Preston
Lund
Currant
Duckwater
Pancake Range
White Pine Mts
Weeks
Wabuska
Weed Heights
Yerington
Mason
Nordyke
Walker River Ind Res
Danger Area
Gabbs
Ione
Reese R S
Paleontologic St. Mon
Toiyabe Range
Toquima Range
Round Mtn
Belmont
Manhattan
Monitor Range
Diana's Punch Bowl
Wichman
Sweetwater
Babbitt
Hawthorne
Thorne
MINERAL
Luning
Mina
Excelsior Mts
Bridgeport
Bodie
Tecla Marsh
NEVADA
NYE
Tybo
Warm Springs
Lunar Crater
Nyala
Adaven
Sunnyside
Tonopah
Ralston Valley
Klondyke
Goldfield
ESMERALDA
Silver Peak
Coaldale
Basalt
Montezuma Pk
Boundary Pk El 13145 Highest Pt in Nevada
Benton
Dyer
Arlemont
Oasis
Lida
Gold Point
Bishop
Big Pine
Zurich
Glacier Lodge
Chalfant
White Mts
Deep Sprs
Scottys Jct
Bonnie Clair
Stonewall Flat
Cactus Range
Kawich Valley
Railroad Valley
Reveille
Worthington Mts
Tempiute
Timpahute Range
Hiko
Alamo
Nevada Proving Grounds U S Atomic Energy Comm (Closed to Public)
LAS VEGAS BOMBING AND GUNNERY RANGE
Pahute Mesa
Groom Mine
Frenchman (Dry) L
Mercury
Indian Springs A F Base
Indian Sprs
Desert Game
Sheep Range
Pintwater Range
Corn Creek
CLARK
LINCOLN
Caliente
Beatty
Rhyolite
Springdale
Death Valley Scotty's Castle
Titus Canyon
DEATH
Stovepipe Well
Stove Pipe Wells Hotel
Emigrant Jct
Skidoo
Furnace Creek Inn
Death Valley Jct
Amargosa Desert
Lathrop Wells
Johnnie
Pahrump
Manse
Shoshone
Charleston Park
Lee Canyon Winter Sports Area
Blue Diamond
Arden
LAS VEGAS
N LAS VEGAS
HENDERSON
Boulder City
Whitney
Nellis AF B
Dry Lake
Danger Areas
Reno Municipal Airport
RENO
Bishop
CALIF
NEV
For continuation
PACIFIC STANDARD TIME
M S T
Potosi Mtn
Black Mtn
Alunite
BOULDER CITY
Goodsprings
Jean
Nelson
Eldorado
McCullough Range
Searchlight
Nipton
Crescent Pk
LAKE MEAD NATIONAL RECREATION AREA
Davis Dam
Bullhead City
Mohave Ind Res
Needles
ARIZ
NEVADA (SOUTHERN SECTION)
Same scale as main map
© RMCN
2
3
4
5


BIG SMOKY VALLEY
Salt Well
Dry Well
BASE LINE
Debeko Wells
Weepah
The Monocline
New York Canyon
Echo Canyon
MINERAL RIDGE
Red Mt.
Coyote Spring
Goat Island
Silver Peak
Alcatraz Island
CLAYTON VALLEY
T. 1 S.
T. 2 S.
50'
B.M. 4841
B.M. 4869
B.M. 5453
4996
Salt
Borax
Intrusive
Mineral


BIG SMOKY VALLEY
Salt Well
B.M. 4841
Dry Well
Emigrant Pass
MT. DIABLO BASE LINE
The Monocline
Minkenoka Spring
Black Canyon
Spring
Rhyolite Ridge
North Spring
New York Canyon
Cave Spring
Coyote Hole
Tarantula Spring
Valcalda Spring
Red Mt.
Coyote Spring
Goat Island
Silver Peak
Alcatraz Island
Jeff Davis Spring
Spring