

MINE MANAGEMENT
OPERATIONAL CONSULTING

Paul Jills Acting O.M.E. President
MINE EXAMINATIONS
MINING ENGINEERING

(151)
INVESTOR'S REPORTS
EFFICIENCY STUDIES

Item 2

J. H. WREN & CO.

CONSULTING MINING ENGINEERS

CABLE ADDRESS
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SACRAMENTO, CALIF.

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INVENTORY REPORT

U. S. MINING EXPLORATION CO., INC.

0830 0002

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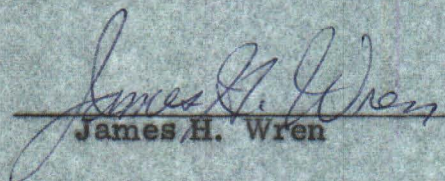
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U. S. MINING EXPLORATION CO., INC.

2. Ownership of the Vista Lode Claims. See professional reports herewith.
3. Ownership of the Silver King Lode Claim Group consisting of seven full lode claims, in Douglas County, Nevada. See exhibits.
4. Ownership of the Silver Bullion Claim Group consisting of nine full lode claims in Mineral County, Nevada. See exhibits.

IMMEDIATE CORPORATION OBJECTIVES:

1. A joint venture agreement is being negotiated with J. Hitt of Sonoma, California to operate the Vista and Utah Claim groups. They are to drill out the indicated ore resulting from the Vista geophysical survey, evaluate and set up to beneficiate the 50,000 tons of dumpage for production income, rehabilitate and commence production of known ore in the Utah group.
2. Alignment is being made to complete the x-cut across some 300' of highly mineralized Rhyolite and the cutting of six mineral bearing veins on the Silver Bullion Nos. 2 and 5 claims. The data gained will also allow evaluation of open pit possibilities of gold-silver ore. During the course of driving the x-cut already in some 700' a very definite probability exists whereby direct crude ore shipments will be produced for market.
3. As soon as weather conditions permit -- in about one month or less -- the Silver King Claim Group will be reactivated and selective shipments of good grade gold, silver, lead ore produced.
4. The above objectives have been formally authorized by the shareholders and board of directors of the U. S. Mining Exploration Co., Inc.


James H. Wren

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SACRAMENTO, CALIF.

FEBRUARY 21, 1963
40 West First Street, Reno, Nevada
U. S. MINING EXPLORATION CO., INC.

The U. S. Mining Exploration Co., Inc., was organized under the laws of the State of Nevada in 1945, and has been in good standing at all times concerning the regulations governing its operation.

The U. S. Mining Exploration Corp. is capitalized for two and one-half million, non-assessible shares with a par value of \$1 per share. Approximately three quarters of the total two and one-half million shares are unissued. The shareholders of the corporation are composed of professional engineers, businessmen, and retired individuals. No shares have been placed or given by the corporation for promotional purposes. All present members contributed either cash, property assets and/or services for their share ownership.

From 1945 to February 1963 limited activity was conducted by the corporation. It explored one gold property North of Winnemucca, Nevada and acquired a lease with option to purchase a group of eleven lode mining claims known as the Utah Mine in Lander County, Nevada. It also acquired the ownership of two lode mining claims, known as the Vista Claims, in Lander County, Nevada. The corporation abandoned the gold holdings north of Winnemucca after doing some rehabilitation and exploration work. The Utah Claims and the Vista Claims were examined, geologic, geophysical and metallurgical work was accomplished. Professional reports were made and the holdings were evaluated as economic mining properties. For the past several years the company's funds were inadequate to carry on any other work than completing the necessary assessment work to keep the claims in good standing under U. S. Federal Mining Regulations.

Mine operators Otto Brink, Ed Cleve and Consulting Mining Engineer, James H. Wren, all of Sacramento, California, through a mutually equitable arrangement with Mr. Lester Walbridge, President U. S. Mining Exploration Co., Inc., added valuable lode mining properties to the corporation's inventory in February 1963.

The U. S. Mining Exploration Co., Inc., inventory as of February 21, 1963, is as follows:

1. Lease with option to purchase Utah Lode Claim Group.
See professional reports herein.

J. H. WREN & COMPANY

Consulting Mining Engineers

4297 D Street

Sacramento, California

January 30, 1963

Subject: U. S. Mining Exploration Co., Inc., Inventory - Misc. Data.

1. Silver Crown Lode Mining Claim Group:

- a). Location: Red Canyon Mining District of Douglas Co., Nevada.
- b). Property: Seven full Lode Mining Claims, 1 mill site.
- c). Ownership: The U. S. Mining Exploration Co., Inc. is the sole owner, holdings are free of obligation.
- d). Geology: Gold, silver and lead occurs in an altered and highly mineralized Rhyolite bound by shale and limestone contacts.
- e). Production: Limited volume of selectively mined good grade ore shipped crude to smelting markets has been achieved for some 50 years, at various times. Shipments sold in the 1930s and 1940s were valued at \$50 to \$133 per ton at less than 1/2 of the present markets.
- f). Operation: Selected shipments produced from small open pits are scheduled to commence within the next 60-90 days. Evaluation of the wide mineralized zone is being studied relative to high volume, low grade open pit production.

2. Utah And Vista Mines:

- a). Location: Lander County, Nevada, in the Bullion Mining District.
- b). Property:
 - 1. Eleven full Lode Mining Claims known as the Utah Mine. This section is under lease-with-option-to-purchase for \$35,000 - royalty applicable against option.
 - 2. Two full Lode Mining Claims known as the Vista Group, owned free and clear by the U. S. Mining Exploration Co., Inc.
- c). Geology: The Country Rock in general is a series of thin-bedded, shaley limestones in which occur the mineralized fissures from which ore has been produced. Stringer zones and silicious fill in joints and cracks of the shaley limestone with silver minerals hold potential of volume open pit mining.
- d). Production: Considerable good grade, silver value, tonnage has been produced from the property since August 1907 intermittently. It now has some acceptable developed ore reserves and products which can be beneficiated.

2. Utah And Vista Mines, Continuation :

- e). Negotiations are now underway with regard to a joint venture agreement now being let to an adequately financed group who will be obligated to : a). Rehabilitate Utah Mine workings where available economic grade ore is developed. b). Evaluate 50,000 tons of silver bearing dumpage with object of beneficiation and production income. c). Diamond drilling of the area on the Vista No. 1 Lode Mining Claim as a follow up on the extensive geophysical study made of a particular zone which concluded in the exact locating of a highly favorable zone in which it is very probable that a major economic grade ore occurrence exists. d). Sample, drill and evaluate the silver bearing zone which holds some considerable merit with regard to the opening of a high-volume open pit operation.

3. King Mine :

- a). Location : Nine full Lode Mining Claims in the King Mining District, of Mineral County, Nevada.
- b). Ownership: U. S. Mining Exploration Co., Inc. is the owner and the property is free and clear of obligation.
- c). Geology : The mineralized zone, some 350' in width by over 3/4 mile in length is a highly mineralized, altered Rhyolite. This mineralized zone, on the S.W. contacts Andesite which holds some mineralized veins. On the N.E. side, it is bound by unaltered Rhyolite. The chief values in the veins, stringer zones and disseminated mineral over extensive widths are in the form of gold and silver. Due to the absence of lower level exploration, it is suspected that the silver values will increase with depth as the surface shows evidence of high leaching.
- d). Production: Some selectively mined tonnage from this property was accomplished during the 1920s at a low silver price and under primitive mining conditions. However, hundreds of shallow shafts, short x-cuts, drifts and surface channels exist. Some mineral is present at each prospect. This will enable an economic evaluation and sampling program whose results will enable the compiling of an accurate reserve estimate.
- e). A seven hundred foot x-cut in good condition has been driven in the Andesite near the center of the ore deposit. This entry is only some 20' from a connection with the mineralized zone. Schedule calls for driving this adit across the proven mineralization, some 350'. During the course of the drive advance at least six veins will be cut through. Vein backs above this x-cut and production haulage adit will be from 150' to 450'. Gravity loading of ore production in this entry can be produced cheaply. At the conclusion of the x-cut drive an evaluation will be possible to conclude positive factors with regard to the now apparent possibility of the establishment of a high volume open pit operation with dimensions 300'-350' wide and over 1/2 mile in length. While this x-cut is being finished on one shift, a second shift can be producing shipping grade ore from the known veins. A preliminary sampling program has been completed. Results are available.

U. S. Mining Exploration Co., Inc. Inventory of Jan. 30, 1963

3. The U. S. Mining Exploration Co., Inc. is a solvent company. Its officers and directors are either members of various professions or experienced mine operators and engineers.

The corporation is capitalized at 2,500,000 shares of \$1 per stock. Something less than 600,000 shares have been issued and over 1,800,000 are unissued. It is a Nevada Corporation, organized in 1945. It has at all times been in good corporate standing during its almost 18 years of life.

4. The corporation's schedule at this time is to commence the production of silver-gold ores at its three properties. Silver market at \$1.25-6/10 is higher now than at anytime since the 1800s. Mining equipment, methods, metallurgy and technical advancement creates a very attractive silver production outlook from economic properties under the present long range firm market outlook.
5. The U. S. M. E. Co., Inc. is now conducting an examination program concerning gold-silver properties' evaluations with object of increasing corporation assets.

Very truly yours,
J. H. Wren & Company,
Consulting Mining Engineers,

By James H. Wren
James H. Wren.

THE VISTA AND UTAH GROUP OF MINING CLAIMS

INTRODUCTION

The following is a brief summary of the principal features of the group as noted on my inspection trip of September 3 and 4, 1949. Even in this limited space of time, the records and showings of the claims indicate the desirability of a detailed study for the purpose of intelligent exploration and development. "The substantial quantities of lead and silver already produced, even by the haphazard methods of exploration and financing heretofore employed, point strongly toward the development of extremely profitable ore bodies by proper geological correlation." It is this geological feature and the aspects of financing the necessary work that are stressed in this paper.

LOCATION

The group is located about 30 miles southeast of Beowawe, Nevada in the Bullion Mining District. It is reached by a graded dirt road which runs from Beowawe to Austin, and a secondary mine road for approximately 9 miles. (See Plate 1)

PHYSICAL FEATURES

~~The group is situated on a small divide and on the ridges and slopes at the south flank of a range of mountains. The topography is steep, but relatively free from outcrops, being covered by a 1 to 4 foot mantle of soil and gravel, with the exception of the easternmost ridge on the property, which is crowned by an outcrop of massive, siliceous rock, variously described as quartzite or silicified lime.~~

From the highest point on the property, along the northern edge of the group, to the lowest, where the ridges and ravines fade out into a wide valley or flat to the south, there is a vertical difference of approximately 1000 feet. (See Claim Map Pl.2)

There is no vegetation on the property other than sage brush, and water is scarce, the only sources being a small well at the camp, 1/4 mile north of the claims, and a spring at the south end of the group near the flat. This latter might be enlarged to provide water for a small mill.

Drill well on valley South.

CAMP AND EQUIPMENT

The camp consists of 4 buildings, one a cook-house in fair repair, and can accommodate ten or more men.

There is no mining equipment on the property with the exception of a mine car, platform scale and a few hundred feet each of light mine rail, air line and water line.

CLAIMS

These are shown on the included map, Plate 2.

HISTORY AND WORKINGS

Vista Group: The records of the operations on the group are very incomplete, but the earliest known production was from the high ridge at the northwestern corner of the group on the Vista and Hilltop claims, probably before the turn of the century. The ore occurred in a well defined siliceous vein dipping to the east. The values were principally in silver, in very good quantity, recent samples of the remaining pillars and dump ore showing a silver content of 60 to 200 ounces per ton. This vein was stoped from drifts through the ridge to the apex at the summit of the hill for a distance on the dip of the vein of 150 to 250 feet and for a lineal distance of several hundred feet on the strike of the vein.

At various points on the ~~ridge and south~~ ^{east} slopes are dumps of small, shallow openings, now caved, but showing in the dumps varying amounts of shipping grade silver, ~~lead ore~~, work apparently done several decades ago.

Further down the south slope at an approximate vertical distance of 250 feet below the uppermost silver stopes, is a cross-cut adit, now caved, which cuts the formations for about 200 feet and connects with a drift along a dark colored fault gouge, a prominent feature on this portion of the group, and which is better exposed in an adit some 200 feet below the cross-cut. The most recent work on the entire group was done in this tunnel and over 150 feet of drifting and 30 or 40 feet of raising on the predominately black fault material has exposed "drag" ore as well as a fine-grained, basic, intrusive rock occurring in the hanging wall of the fault.

See into the hill.

From the ridge and summit occupied by the Vista workings to the ravines and saddle on which the Utah and Montana are situated there are two prominent intervening ridges, both of which have been worked in numerous places at shallow depths as testified by numerous dumps, several of which contain upward of 1000 tons of material and all of the workings have a record of production and ore shipped, principally lead-silver. Specimens of this material from the dumps show a high content of both metals.

Utah Mine: By far the most extensive workings on the group are on the Utah claim and the eastern adjoining Montana claim. On the Utah a steeply inclined shaft follows a small vein, known as the Utah vein, easterly to a depth of 200 feet. At an intermediate tunnel level, about 75 feet below the collar of the incline, the vein was drifted on for over 200 feet and numerous rich ore shoots stoped nearly to the surface. These shoots continued downward to the bottom of the shaft which is connected with a vertical shaft on the adjoining Montana claim by means of a cross-cut. Another cross-cut near the bottom of the vertical shaft into the east or hanging wall encountered several bodies of ore, one of exceptiona grade known as the Leaser's stope. (Pl.3)

The map of the Utah workings also indicates other stoped areas, all production as far as is known, having been from intermittent operations from August of 1907 until the present time.

PRODUCTION

By far the greatest actual production from the Utah was in the year 1918 when the Waddy-Hunt Lease shipped 159.36 tons of ore assaying 114.66 ounces in silver per ton and 40.04 per cent lead per ton, with a net to shipper of \$18,694.00. With present prices and schedules, this ore today would net approximately \$30,000.00.

It should be borne in mind that this output in all probability represents the efforts of three or four men and entailed a large amount of dead work such as sinking and drifting. It is also apparent that in order to maintain this high shipping grade, the ore was mined in extremely narrow widths, by striping or "chloriding".

Subsequent production, mainly in the 1920's, was of a very erratic and minor character, and resulted principally from the efforts of small, ill-financed groups who held leases for short periods of time. A few tons of ore were shipped from time to time, most of it apparently being taken from pillars left by earlier operators.

In this connection it is worthy of note that in the entire history of both the Vista and Utah Groups no workings penetrated in excess of 200 feet below the surface and in only a few cases was that depth reached, although the ore horizons are known to continue downward wherever exposed. It is reasonable to assume that, as yet, no finances for systematic, comprehensive exploration have been available to the various operators and that the property is still in the early stages of numerous random, shallow "diggings" that characterize so many Western mining properties, many of them having later become famous producers through exploration and development at depth.

VALUES

Table 1 shows the results of samples taken from various points in the area.

GEOLOGY

There were observed three distinct planes of movement, apparently representing different periods in the structural history of the property:

(1) The first movement noted was the formation of fairly steep ore fissures dipping to the east and striking north and south, probably produced by the same stresses that resulted in the slight tilting of the beds to the east (10° to 30°). This may be considered the main period of ore deposition in the Utah Group and of a large part of the mineralization on the Vista, although subsequent activity was undoubtedly responsible for the deposition of copper and zinc ores on the last named property.

The vein fissures on the Utah are relatively narrow, ranging from an inch or two to a foot and a half or more in thickness. The values are fairly distributed along the veins even in the extremely narrow portions, the thickness of the vein being the main factor in mining consideration. The ore-shoots, i.e., wider portions of the veins occur generally as elongated "kidneys" with the long dimension on the dip and the short axis on the strike of the vein. The vein filling con-

sists of crushed wall material containing galena and pyrite with varying amounts of oxidation products of these. The silver values are in both the sulphides and oxide-carbonates.

The country rock in the entire area is, in general, a series of thin-bedded, shaly limestones, although toward the east extensive silicification has occurred with resulting chert beds and, on the high ridge at the extreme east of the property, massive beds of either quartzite or silicified limestone cap the summit. It is presumable that the period of activity which caused the tilting of the beds also resulted in this extensive silicification.

With the exception of the massive capping, nearly all of the country rock in the area can be termed "short" ground, that is, extremely brittle in three planes of direction, and breaking in a more or less rhomboidal pattern. This characteristic may have been inherent in the original beds, but is more probably due to stresses along the three planes of movement described here.

(2) The second phase of movement, although minor in importance, was in the form of bedding faults, caused by slippage along the bedding planes. This can be described as normal faulting, the beds above having moved a relatively greater distance down the dip to the west than those immediately beneath. This is illustrated clearly in an east driven cross-cut on the Montana where a small mineralized fissure is displaced three times in the height of the drift, the throw in each case not exceeding a foot or two. It is possible that this movement is contemporaneous with the following, although it cannot be satisfactorily correlated.

✓ (3) The third period of faulting is of extreme importance in relation to the zones of ore deposition, and may well hold the key to the location of extensive ore bodies. This consists of a series of northwesterly-southeasterly striking faults which dip generally to the southwest at varying angles of from 30 to 70 degrees with the horizontal. One of these is well exposed in the Utah Group and there shows a horizontal displacement of the ore fissures of approximately 40 feet. This appears to be a normal fault and shows evidence of post-fault mineralization in addition to drag material from the earlier veins.

✓ A much stronger fault in this series is found on the Vista Group, showing gouge or drag up to six feet in thickness. This fault also dips in a west-to-southwest direction and contains appreciable amounts of zinc, both as a sulphide and as secondary sulphate crystals on the tunnel walls. At one place the hanging wall of the fault is composed of a massive, dense, basic intrusive, black in color, occurring as a dike or sill, or more probably both, since a six foot sill of the same material is exposed at the crest of the hill, some 250 or 300 feet above the lowest exposure.

In the fault the gouge is a soft and clayey mixture of jet black and nearly white material with occasional inclusions of drag ore high in silver lead and zinc, in the form of sulphides.

Near the top of the hill, in the hanging wall of this fault and dike occur the siliceous silver veins, mined in the earlier operations.

These have a general north-south strike and dip easterly. They appear analogous to the Utah fissures except that the gangue is principally quartz, often "frozen" to the foot wall, and the veins and the ore bodies appear to have been much thicker (2 to 3 feet) and more continuous. In the same area, still above the fault, several dumps show appreciable amounts of copper.

The Intrusive: The relation of the black basic sills or dikes to the ore is not entirely clear at this time but there is strong evidence that the intrusion occurred prior to the latest faulting as shown by the incorporation of black material into the fault drag both on the Vista and on the Utah.

The conditions noted on the Vista would seem to connect the copper and zinc with this activity. Inasmuch as the intrusive does not outcrop, except at one point on the Vista, and as the drag showing on the Utah is at a much lower horizon, this hypothesis can only be demonstrated by exploration to greater depths than those now visible.

East-West Veins: These are indicated on the claim map (Pl.2) as occurring on the Grand Central and Red Top Claims, and on the Grand Prize Group. This latter was not visited but the dumps and shallow workings on the Grand Central and Red Top were inspected and deemed worthy of note.

Going toward Vista -

The vein is quite uniform, striking east-west and nearly vertical in dip. It has an average thickness of three feet and is traceable for over 2000 feet on the strike and for a vertical distance of ~~six or 3~~ ^{seven} hundred feet, specimens from some of the dumps show commercial amounts of lead and silver, but their relation to the vein in question is not clear due to caving of many of the openings. The results of a face sample taken from a short tunnel near the lowest point on the vein is shown in Table 1.

The vein is quite dissimilar in character to any seen on the Utah or Vista. It is gray in color and consists almost entirely of extremely light, porous silica, greatly resembling a sponge in appearance, or one of the frothy, extrusive volcanic glasses. Whether dike or intensely leached vein filling, it is obviously related to a zone of great compression as shown by sharp fan folds in the bedding along the walls. The bedding is also greatly altered immediately adjacent to the vein with strong kaolinization in evidence. Several narrow ore bearing fissures of the Utah type were noted along the north wall of the vein.

SAMPLING AND ASSAYING

The included tabulation (Table 1) shows the results of various sampling tests on the Vista and Utah Groups. These have been segregated under four headings in order to better focus their relation to the potentialities of the two groups.

The first division, A, shows the payment assays on actual shipments from intermittent operations during the past 30 years.

Division B gives the results of numerous random samples taken at various points on the properties during the past year which indicate the general strength of the ore occurrence throughout the area, and which, while not specifically relative to the extent of the ore reserves, do give strong evidence that the mineralization is widespread in the groups and not confined to a few isolated spots.

In the third division, C, I have placed those samples, which, while in many cases not as spectacular in grade as those in the other classifications, I believe to have the greater bearing on the problem of an immediate and successful mining operation on the property in that they tend to confirm, beyond reasonable doubt, the practicality of starting a moderate scale operation on the material now available.

The last division, D, gives the results of preliminary tests on the dumps, and tends to further develop the possibility of profitably recovering silver and lead that has already been mined.

It is well to remember that the data listed in the table do not indicate the results of thorough and systematic sampling and testing. However, it is my belief that, with proper allowance, they can be used as a basis of operation for the purpose of mine development and exploration, and that these can be accomplished in a self-sustaining manner. That allowance has been made in this report.

ORE RESERVES

Ore Reserves are often classified in three general categories: measured; indicated; and inferred.

The first term is usually applied to ore that has been exposed and sampled on three sides, in general.

✓ The second designation may be considered to apply to ore bodies whose limits are more or less apparent and the grade of which can be reasonably assumed from one or more samples.

The third classification is applied to ore whose occurrence is suggested by one or two exposures and through geological association and interpretation.

All of the reserve estimates given here fall in the second category, i.e., indicated ore, since the first is seldom possible on undeveloped properties and the third is hardly tangible enough for a basis of investment.

The principal sources of immediate mill ore as follows:

RED TOP-GRAND CENTRAL: The silicious vein described under geology is the most extensive and uniform vein inspected on the property. It has been exposed for more than 2000 feet on the strike and to an average depth of approximately 500 feet with a uniform thickness of 2 to 3 feet. It is readily accessible by road to a tunnel near the lowest exposure. A 2 foot sample at the face of this tunnel showed silver and lead with a gross value of \$14.89 per ton, and two dump samples from the vein at the top of the hill, some 1000 feet west and 600 feet higher, although taken at an earlier date, confirm these results, with a high of approximately 9 oz. silver and 9% lead.

A conservative estimate of available ore gives a minimum of 75,000 tons of this material.

It should be noted in this connection that the values given above are subject to milling losses and marketing costs and for further conservatism the ore may be considered as having a potential net-before-operating value of approximately \$10.00 a ton.

VISTA TUNNELS: The extent and continuity of the exposed mill ore is not as evident as that given above. Samples taken in both tunnels indicate up to 3 feet of good ore both in the black drag areas and in the brown, oxidized footwall immediately adjacent to the fault gouge. Random samples indicate that this material will average approximately \$30.00 net-before-operating per ton for a thickness of 2 feet, with an indicated minimum reserve of 2000 tons. That this tonnage will be greatly augmented, and the grade increased by high-grade portions, is to be reasonably expected. *Base of hill - showing of high grade Chalcocite.*

DUMP ORE: Throughout the properties there are scattered dumps containing an estimated 50,000 tons of material. Limited sampling has indicated that one-third to one-half of this rock can be milled with good results, not only making an excellent concentrate as shown in Table 1, but capable of showing a good operating profit by screening and gravity concentration.

Although dump sampling is unusually difficult and the results often extremely variable, there is indicated approximately 7,000 tons of this material with a recoverable value in excess of \$8.00 per ton.

OTHER SOURCES OF ORE: In addition to the above reserves there are undoubtedly a number of localities on the properties where a limited tonnage of high-grade ore, i.e. \$100.00 per ton, or over, can be produced for the purpose of "sweetening" the mill feed. Too, it is probable that many of the old tunnels and shafts could greatly augment the supply of immediately available mill-ore, as well as increase the average grade of the ore.

These sources are not dealt with in detail here, however, in part because they were not closely inspected, but more particularly in

the interest of a small initial capitalization whereby the investment may be concentrated in two or three good sources of ore and further development and enlargement financed from operating revenue.

The predicating of an operation on the reserves listed by no means precludes the possibility of applying the investment to even more profitable ore bodies should their presence be determined by the thorough and systematic examination that should precede the actual installation of mining facilities.

OPERATION

From the foregoing material it may be inferred that, through intermittent operations over a 50-year period, mining on a shipping basis has not been generally profitable. Among the reasons for this are: (1) Mining to narrow widths with consequent low production in order to maintain grade. (2) High shipping and treating costs on a crude ore basis, and, (3) Limited financing coupled with the high overhead common to this type of operation.

MILLING: The solution, therefore, lies in concentrating the ore at the property, with the following advantages: (1) Making possible the mining of far greater widths of ore of sub-shipping grade that was hitherto avoided, with a consequent large increase in both production and operating efficiency; (2) Lowering freight and treatment costs on a crude ore basis by discarding much of the worthless material as mill tailing, and (3) Lowering operating overhead by increased production.

It is suggested that a small concentrating plant be constructed on or near the properties, having a capacity of not less than 50 tons in 24 hours. A gravity type plant of inexpensive construction, utilizing good second-hand equipment is indicated.

Among the factors to be considered for a plant are: First, water supply. It is probable that the spring at the south end of the claims may be developed to provide a sufficient amount of water for the purpose or that a well further to the south will be necessary.

The second consideration is equipment. This can only be determined after thorough mill testing has been done and a satisfactory flow sheet worked out.

The third consideration is a source of power, although a gas or diesel engine appears most feasible. A diesel motor in good condition would undoubtedly have a higher initial cost, but the fuel saving would more than offset this in a short time.

Additional factors include machinery, bins, buildings, pumps, piping, water storage facilities and supplies.

Generally speaking, a plant of this type could not be put into operation for less than \$15,000.00, under present condition, and then only by the greatest economy in construction.

enables him to increase this efficiency to as high as 85% and even 90% with minor changes and additions. Much of this initial loss can be eliminated by preliminary research by a competent ore-dressing engineer.

MINING: It is not warranted to set up an ironclad recommendation on mining sites at this time. However, it will not be practical to equip and man more than two headings, in addition to treating dump ore, without necessitating an additional investment on equipment and camp facilities.

The two sites tentatively suggested for mining and development operations are in the lower tunnel on the Grand Central claim and the lower tunnel on the Vista claim. Each should be equipped with ore bin, small compressor, mining equipment, track, pipe and cars, in duplicate to avoid delays. Both should be in condition to provide a continuous flow of ore by the time the mill is completed. Cost of installations, equipment and initial development are estimated at \$5,000.00. It would appear practical to follow this general outline, even though other sites may be selected as a result of further examination and sampling.

Mining of the dump ore may or may not precede completion of the mill, depending on available capital. It should be carried on, however, as soon as the mill begins operation in order to "take up the slack" from the mining faces.

EXPLORATION: Although extensive exploration is warranted and gives good promise of exposing sufficient ore on which to base a large-scale operation, this should be financed through operating revenue. It should, however, not be neglected, but carried on as a definite program as soon as possible after the operation is begun.



PLATE 1

UTAH & VISTA MINING GROUPS
LANDER COUNTY, NEVADA

Scale 1" = 25 mi.

Sept. 1949

VISTA
GROUP
3 claims

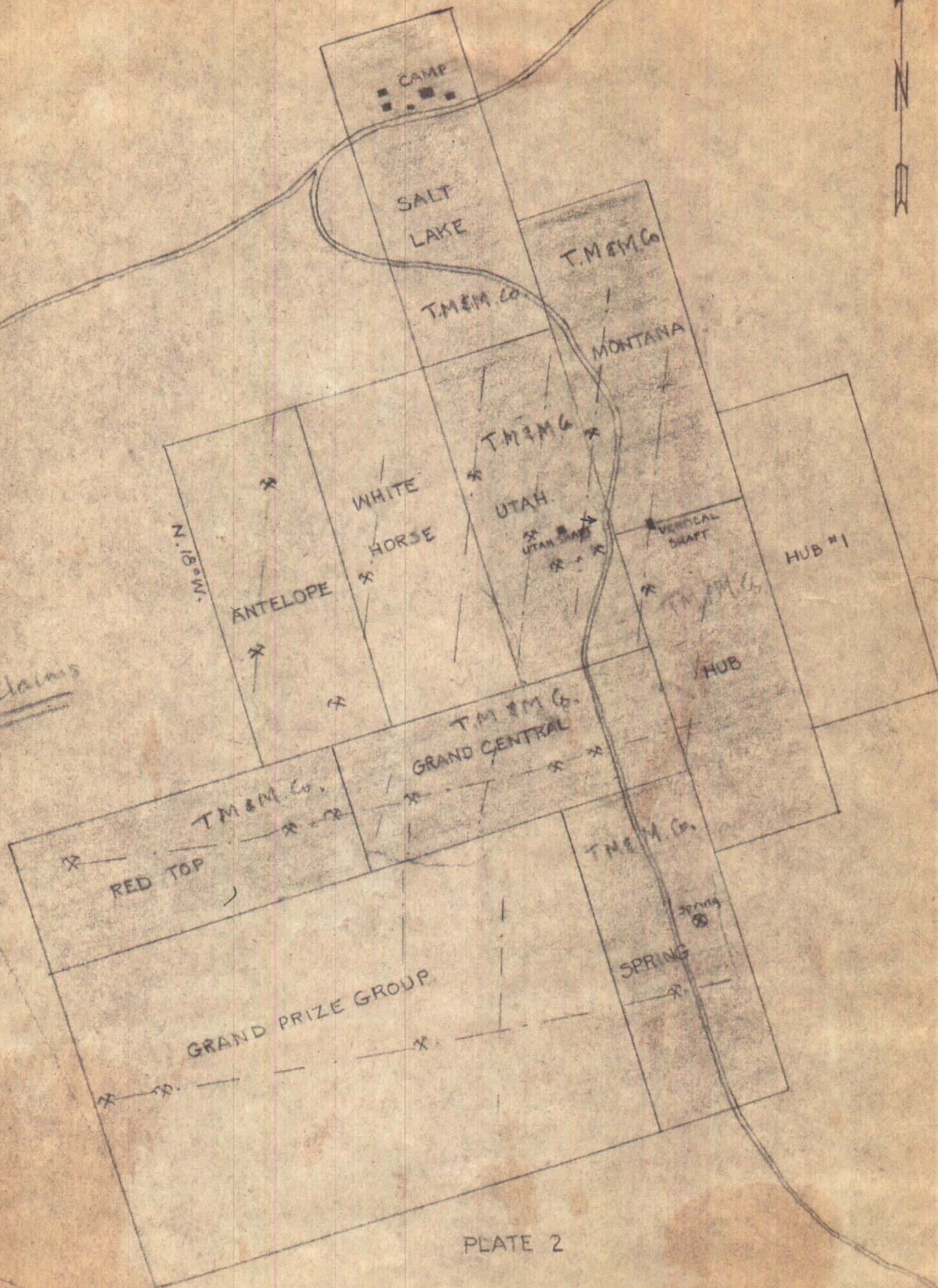


PLATE 2

THE UTAH GROUP OF MINING CLAIMS
BULLION DISTRICT, LANDER CO., NEV.

Held by Lease

Scale - 1" = 330'
Sept. 1949

Shallow Workings x

Fissures - - -

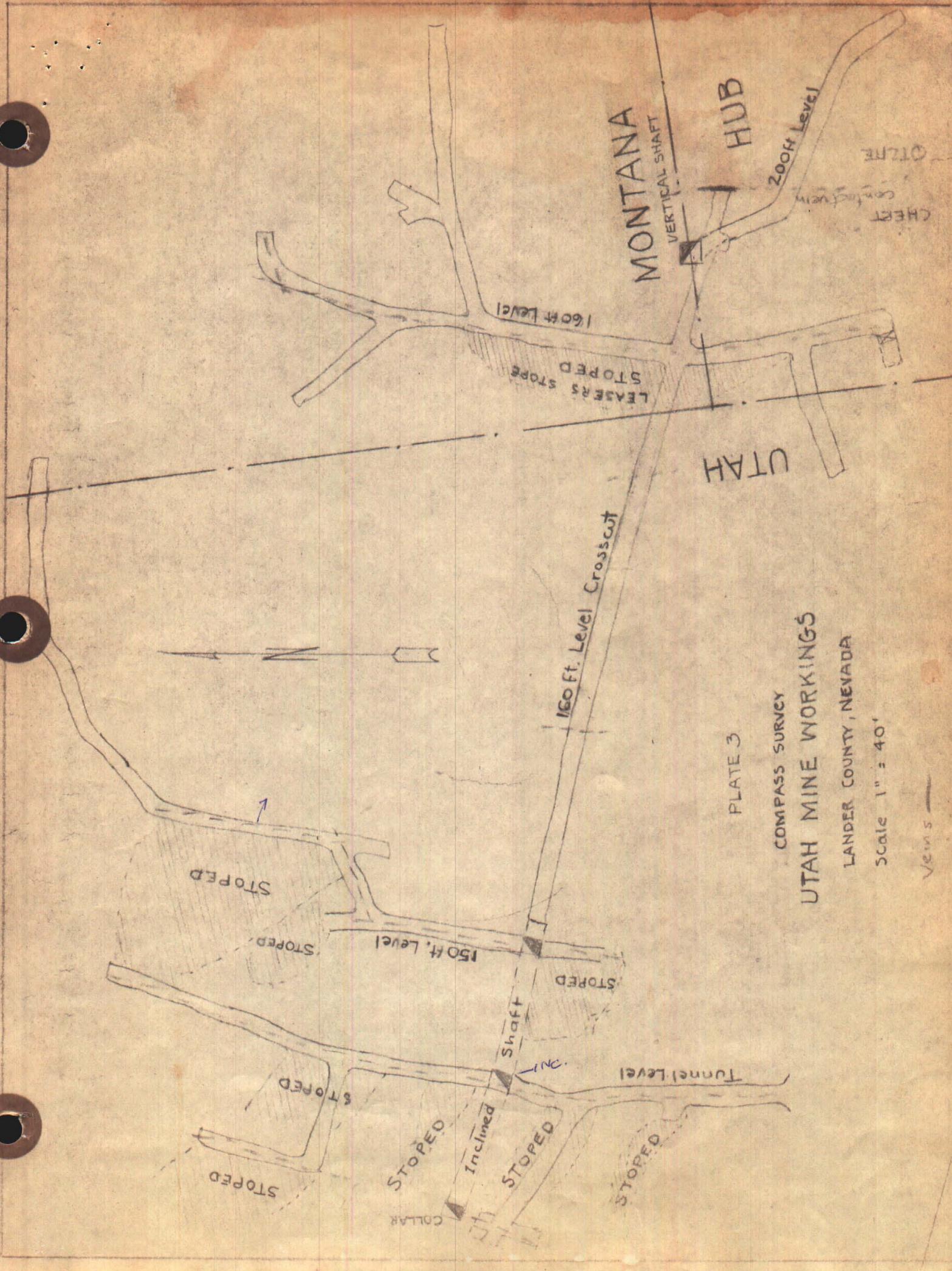


PLATE 3

COMPASS SURVEY
UTAH MINE WORKINGS

LANDER COUNTY, NEVADA

Scale 1" = 40'

Veins

TABLE I-SAMPLE ASSAYS

A - PAYMENT ASSAYS ON ORE SHIPMENTS

DATE	MINE	SHIPPER	AU-OZ	AG-OZ	PB-%	ZN-%	VALUE/TON
1927	UTAH	LEE LAMIN	TRACE	163.35	44.60	TRACE	\$129.62
1927	"	RASMUSSEN & ROYLKE	"	52.20	35.65	"	59.13
1936	"	LION MONARCH CO	"	27.60	30.00	"	32.29
1936	"	"	"	21.00	29.40	"	28.15
1936	"	"	"	47.00	35.90	"	52.55
1936	"	"	"	23.60	16.90	"	20.44
1936	"	"	"	49.00	30.70	"	49.48
1938	"	"	"	98.55	38.35	"	77.84
1940	"	J.A. SMITH LEASE	"	89.20	26.85	"	73.14
1949	VISTA	A.N. LINKE	0.01	11.50	11.00	6.50	31.68

B - GENERAL SAMPLES

1948 prices

DATE	LOCATION	AU-OZ	AG-OZ	PB-% SULPH	ZN-% SULPH	CU %	GROSS VALUE
9-13-48	VISTA	TRACE	18.9	18.0	11.9	0.15	\$136.06
11-18-48	HILLTOP	0.01	210.3	15.8	0.8	1.73	265.00
11-18-48	"	TRACE	21.6	6.3	0.1	-	47.53
11-18-48	"	-	15.2	0.8	0.2	-	17.82
1-15-48	VISTA	.004	15.67	14.1	0.2	0.05	71.53
2-27-49	MONTANA	TRACE	4.70	10.4	-	-	35.43
6-16-49	"	"	5.60	14.8	-	-	49.44

C - MEASURED SAMPLES

Oct 1949 prices

DATE	LOCATION	WIDTH	AU-OZ	AG-OZ	PB-% SULPH	ZN-% SULPH	CU %	GROSS VALUE
9-19-49	RED TOP VEIN-FACE LOWER TUNNEL	18"	-	2.54	4.2	-	-	\$14.88
9-30-49	" " UPPER TUNNEL	30"	0.005	7.22	3.8	-	-	17.89
9-30-49	" " TOP OF HILL-LEACHED	36"	-	1.12	0.6	-	-	2.81
9-30-49	VISTA TUNNEL-BLACK DRAG NEAR FACE	84"	-	0.70	0.4	1.4	-	4.63
9-30-49	" " 25' FROM PORTAL	18"	-	8.00	7.3	4.2	-	37.50
9-19-49	" " BROWN ORE IN RAISE	30"	-	29.24	24.5	-	1.5	99.82
11-24-48	" " FOOTWALL ORE	21"	-	2.40	2.6	1.2	-	12.36
9-29-49	VISTA BLACK TUNNEL-BOTTOM	18"	-	21.0	3.4	-	-	29.10
9-29-49	" " " STONE FILL	-	-	4.5	2.2	-	-	10.65

D - CONCENTRATION TESTS ON UTAH DUMP ORE

DATE	PRODUCTS	WT. %	ASSAY				RECOVERY %				METHOD
			AU-OZ	AG-OZ	PB %	NS-PB %	AU	AG	PB	NS-PB	
7-30-49	HEADS	100.0	.003	8.06	4.69	3.36	-	-	-	-	CRUSH TO
	TABLE CONTR.	9.0	.010	47.01	30.0	25.50	30.0	52.5	57.1	68.3	20 MESH AND
	SLIME TAILS	12.3	.002	7.49	4.7	2.9	70.0	11.4	12.3	10.1	TABLE ONCE
	SLIME TAILS	78.7	TR.	3.69	1.8	0.9	-	36.1	30.6	21.6	
	SAND TAILS										
4-2-49	SCREEN CONC.	50.0	.01	2.60	2.40	-	-	-	-	-	SCREEN THRU 1/4"
	PAN CONC.	05.0	.01	38.50	20.1	-	-	-	-	-	PANNED
7-15-49	SCREEN CONC.	20.0	.01	11.80	29.5	-	-	-	-	-	SCREEN THRU 1/4"
	PAN CONC.	05.0	TR	72.20	42.40	-	-	-	-	-	PANNED

ASSAY CERTIFICATE

H. R. Brandenburg
Assayer and Chemist
1 1/2 N. Virginia St.,
Reno, Nevada

P. O. Box 339 Phone 2-1323

Reno, Nevada, September 13, 1948

The samples assayed for Mr. Lester B. Wallbridge Reno, Nevada
gave following results per ton of 2000 lbs.

Gold oz. per ton	Silver oz. per ton	Value per ton	Percentage of Lead	Value per Ton	Total value per ton
Trace	31.10	27.99 <u>Zinc</u>	26.4 11.6	79.20 <u>25.52</u>	135.82

This ore contains a trace of
copper

Gold at 35.00 per oz. Zinc at 11¢
Silver at .90 " " Lead at 15¢

Charges \$3.50

H. R. BRANDENBURG

AT Present Prices - \$ 159.51

BRANCH LABORATORY: 1086 MARTIN AVENUE • SANTA CLARA • CHERRY 8-5262
BRANCH OFFICE: 61 JORDAN STREET • SAN RAFAEL • GLENWOOD 4-8650

CABLE: HANX

ABBOT A. HANKS, INC.

ESTABLISHED 1866

1300 SANSOME STREET • SAN FRANCISCO 11, CALIFORNIA • EXBROOK 7-2464

Engineers
Assayers
Chemists
Metallurgists
Spectrographers
Soils and Foundations
Consulting • Testing • Inspecting

REPORT OF ASSAY

November 30, 1962

Deposited by

Mr. Lester Walbridge
1356 - 42nd Street
Sacramento, California

Sample of

- - -

Labty. No.	Mark	GOLD, per ton of 2,000 lbs.		SILVER, per ton of 2,000 lbs.		Percentages
		Troy Ounces	Value at \$35.00 oz.	Troy Ounces	Value at 90c	
1941	50609 No1	6.73	\$235.55	6.97	\$ 6.27	
<i>Dump Sample for Frank</i>						

ABBOT A. HANKS, INC.

Original Signed by

CHARLES J. TAYLOR

By.....

CHARLES J. TAYLOR

TELEPHONE 3-3302

Hand Sample Serial 52324-5

ASSAY REPORT

UNION ASSAY OFFICE, Inc.

Mine U. S. 825 Lester B. Walbridge

Salt Lake City 11, Utah

Results per ton of 2000 pounds

Sept. 14, 1948

	: Gold	: Silver	: Lead	: Copper	: Insol	: Zinc	: Sulphur	: Iron	: Value
NO.	: Oz per T.	: oz. per	: Per Cent	: per	:	:	:	:	:
	:	: T.	: Wet	: cent	:	:	:	:	:

#1 Myers Sample Light Ore
Trace

7.9

8.3

0.10

8.8

7.2

9.9

6.2

Vista

Lower Tunnel.

#2 Watts Sample Brown Ore

Trace

64.0

32.0

0.30

24.4

1.7

3.8

14.4

Utah

Raise on 200' level.

A. C. Solly

CRISMON & NICHOLS
229-231 So. West
Temple St.

Certificate of Assay

P. O. Box
1708

Salt Lake City 12, Utah Aug. 23, 1948

Arthur Deleray

We have assayed your one sample and find it to contain as follows:

ozs Gold per T.	Ozs Silver per T.	Per Cent Lead	Per Cent Zinc
Trace	18.10	17.9	10.25

Charges \$3.00

CRISMON & NICHOLS

C. C. CRISMON

ASSAY CERTIFICATE

UNITED STATES SMELTING REFINING AND MINING COMPANY

Name Arthur Deleray

Elko, Nevada

Midvale, Utah Sept. 13, 1948

Oz. Gold:	Oz. Silver:	Per cent:	Per cent:	Per Cent:	Per cent:	Per Cent:	Per Cent:	Per Cent:
per T.	Per ton.	Copper	Lead	Silica	Iron	Zinc	Sulphur	Lime

Tr	<u>18.9</u>	.15	<u>18.0</u>	5.0	8.1	<u>11.9</u>	15.6	13.7
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(151)
Item 2

VISTA & UTAH GROUPS

SUPPLEMENTARY NOTES

Two other trips were made to the property to gain additional data to support my original findings and recommendations in regard to putting the property on a paying basis with a small investment.

Additional samples were taken on the Vista Claims and on the vertical east-west vein of the Grand Central-Red Top Claims.

It was also believed desirable to carry out more detailed sampling on several of the larger dumps, to determine whether or not these could be used as a basis for the initial installation of a small concentrating plant.

Five dumps on the Utah Claim were selected for sampling, since they are close together and represent an estimated 30 to 40 percent of the dump material in the area.

In order to avoid accidental "salting" from high-grade material scattered about the top of the dumps, trenches were dug to a depth of 2 feet or more to expose the fresh layers or strata of the dumps. The excavation consisted of a trench on the long axis of the dump, from the shoulder to the natural grounds, and one or two lateral trenches, depending on the length of the dump. From the bottom of these trenches was taken a uniformly proportioned, composite sample weighing from 1000 to 1500 pounds for each dump. These were carefully quartered to about 50 pounds each, the larger pieces of obviously rich material being discarded, and the samples sent to U. S. Smelting Co. of Salt Lake City for analysis.

The results of this supplementary work tend to verify to a large extent the conclusions reached on my original inspection, with the exception that in many respects the properties appear to have an even more favorable outlook in regard to immediate production than originally estimated.

Briefly the results of this work are as follows:

Vista Group - Several samples were taken in the lower tunnel with special emphasis on the black gouge. This was found to be generally low grade with the exception of the rich shoot partially developed by the raise and in an ore shoot exposed near the portal on a partially oxidized vein that extends downward.

Both of these showings contain appreciable amounts of galena. The drag ore in the raise analyzed 29.24 oz.ag. and 24.5 % pb. from a 30 inch cut. The shoot near the portal analyzed 8 oz.ag., 7.3 % pb. and 4.2% zn. for 18 inches.

An intermediate 2-foot sample of the brown, oxidized material in the footwall of the black gouge assayed 2.4 oz.ag., 2.6% pb. and 1.2% zn.

Red-Top - The original sample of the face of the lower tunnel, with an assay of 2.5 oz. ag. and 4.2% pb. for 18 inches indicated that this vein might well be a good source of mill ore, so a further examination was made. From the lower tunnel, which is about 100 feet long, the vein was traced by float and shallow prospect holes for approximately 1800 feet to a ridge some 600 feet higher than the lower tunnel level. A 150 foot tunnel, 100 feet below the ridge showed the vein to vary from $1\frac{1}{2}$ to 4 ft. thick. Two samples were taken in this tunnel. The first, a short distance from the portal was entirely leached, being in effect no more than a silicious sponge, and assayed 0.94 ag. and 0.5% pb. for 36 inches.

A sample near the face of this tunnel showed the same general leached appearance, with the exception that the pores or cavities were filled with yellow, brown and red earthy material. A 30 inch sample assayed 7.2 oz. ag. and 3.8% pb.

A short tunnel and inaccessible winze at the top of the ridge showed the same conditions. The entirely leached vein 4 feet from the surface assayed 1.12 oz. ag. and 0.6% pb. for 3 feet, while material from the winze assayed 8.0 oz. ag. and 7.1% pb.

There can be little doubt that the ore in this vein is commercial mill feed, both in the oxide and sulphide zones, with the exception of the material exposed to surface leaching. The permanent and persistent nature of the vein, and its vertical attitude are strong contributing factors to its importance.

Utah Dumps: Results of the sampling of these are tabulated here:

Inclined Shaft	- 7000 tons	- 4.8 oz ag.	- 4.2% pb. ⁹⁶	- 0.15% cu.
Tunnel Level	- 2000 "	- 2.8 " "	- 2.3% " ⁹⁶	- 0.25% "
Vertical Shaft	- 4000 "	- 3.9 " "	- 2.2% " ⁹⁶	- 0.10% "
First Footwall				
Tunnel	- 1000 "	- 2.3 " "	- 2.5% " ⁹⁶	- 0.25% "
Second Footwall				
Tunnel	- 2000 "	- 2.2 " "	- 2.0% " ⁹⁶	- 0.20% "
<hr/>				
Total	- 16000 "	- 3.84 " "	- 2.8% " ⁹⁶	- 0.16% "

It appears from these results that a simple gravity concentrating plant will be profitable on the dump ore alone. The friable nature of this material, as shown by the fact that over 80% of the dump material is minus $\frac{3}{4}$ inch in size, and the conclusion that the ore minerals are easily freed, indicates that a shipping grade of concentrate can be made with fine crushing and jigging. It might be advisable to classify or screen the material in closed circuit to keep sliming at a minimum, as well as to remove the slimes for supplementary treatment, such as tabling.

In general, the original estimate of required investment will cover this installation, in the manner outlined in the initial report, although it is a logical conclusion that an investment on a larger scale is fully warranted in the light of the above results.

A further conclusion may be reached which has a much greater bearing on the future of the mine on a long-range basis. From the dump sampling, as well as samples of the stope fill and wall rock material, there appears a possibility of an immense tonnage of low-grade ore containing approximately 2 oz. ag. and 2% lead. While not truly "disseminated" in character the apparently general mineralization along the bedding and jointing of the country rock might, with thorough sampling, be found suitable for large-scale, low cost mining.

Owen W. Terry, E. M.

151

June 1950 *Item 2*

REPORT OF MILL TEST OF UTAH DUMP ORE
IN THE LITTLE GEM MILL, TENABO, NEVADA

OBJECT:

The purpose of the test was threefold - First, as a method of large scale sampling on the Utah waste dumps, which contain an aggregate of more than 50,000 tons of low grade material - Second, to ascertain the feasibility of flotation concentration of this material - and Third, to learn to what extent, and to what cost, the mill could be put in first-class condition.

THE ORE:

The Utah ore is a fairly complex mixture of lead and silver sulphides, lead carbonates and silver chlorides, associated with highly silicified thin-bedded limestone, mostly replaced by chert. Inasmuch as these dumps represent material that was thrown away by earlier operators they are extremely low grade, preliminary samples indicating a content of approximately 2% lead per ton and 3 ounces of silver per ton, with minor amounts of copper and gold. However, on the premise that this dump rock, with efficient and low cost treatment, might be made to yield sufficient profit to pay for developing the higher grade showings on the property, it was decided to lease and repair the mill, to the extent of treating 200 tons of this material.

THE MILL:

The mill, situated a mile north of the old camp of Tenabo, on the road from Beowawe to Austin, is owned by a group, under the trusteeship of W. H. Gibson of Salt Lake City, Utah. It has been idle since 1941, and has fallen into disrepair to a large extent. It has a present capacity of 70 tons in 24 hours, which can be increased to 100 tons in 24 hours, with minor improvements. The method employed is a flotation process, and the plant contains all necessary buildings and equipment for this purpose.

For the sake of economy, it was decided to make only sufficient repairs to treat the 200 tons comprising the mill test. This was done at a cost of \$2500 and 100 tons of ore were treated, at which time, a break down of the deep well water pump interrupted the test, and it was decided to accept the results to that time as indicative of future results. At the same time a thorough inspection was made of the plant, and estimates prepared for a complete overhaul.

METALLURGY:

Before starting the mill, a sample of the material was tested by Mr. Roger Dering, Flotation Research Engineer for Combined Metals Reduction Company, of Salt Lake City. The results of these tests showed that this ore was amenable to flotation, and an excellent recovery could be obtained in the 4% lead, 5 ounce silver bracket, with extraction percentages decreasing with the grade of the ore, due to a fixed tailing loss for both metals. These results were borne out in actual operation and it was satisfactorily demonstrated that the mill is capable of producing good results on this type of material, as well as other ores in the district, most of which have a much less complex metallurgy than the Utah ores.

CONCLUSIONS:

The conclusions drawn as a result of the test are as follows:

1. Sampling Utah Dumps - The test shows that these are too low in the aggregate, to be profitably treated in the Little Gem Mill, without screening or other method of selection at the mine. It was shown that a good grade of concentrate can be produced, especially after rearrangement of the milling equipment. The test also demonstrated that the material from the ore showings on the Utah can be efficiently and profitably concentrated.
2. Feasibility of Flotation - The results show that in addition to treating the Utah lead-silver area, the mill can treat the gold, silver, copper ores now mined in the area, with excellent recoveries of all metallics except that copper which occurs in the form of a silicate.
3. Rehabilitation of the Mill - In addition to the repairs made for the initial run at a cost of \$2500, complete rehabilitation of the mill will cost approximately \$15,000. This will include new machinery parts, replacements or additional machinery, complete re-covering of all buildings; including bunk house, power house and assay office; and operating capital for one month after rehabilitation is completed. It is possible that much of this expenditure can be deferred, but an initial expenditure of \$7500 will be required.
4. Use of Mill as Custom Plant - Because of the great need of a plant capable of concentrating the ores now available in the district which cannot be profitably shipped to a smelter, it was decided to adapt the mill to treating these ores on a custom basis. A survey has shown that at least 10 properties in the district can produce more than enough ore to run the mill to capacity, and that other operators are being attracted to the district on the strength of a possible custom mill to treat their ores. Results of the mill test show a maximum operating cost of \$3.00 per ton of ore, and a maximum capacity of 2500 tons monthly. On the basis of 2000 tons monthly at a flat milling fee of \$5.00 per ton, an income of \$4000 monthly is reasonably assured. Although the potential production is far greater than the mill capacity, it is planned to treat ore on an annual contract basis, thus insuring a minimum tonnage at all times. From present indications, it is probable that the milling facilities will have to be expanded as soon as earnings permit. One prospective shipper alone, The Jarvis and Nelson property, estimates that they can provide 2000 tons monthly, and several others claim the same production potential. Ores of the Jarvis-Nelson type are especially desirable, consisting principally of clean, unoxidized sulphides, highly amenable to economical flotation.

Attached is a tabulation of test assays.

Owen W. Terry, E. M.

LITTLE GEM MILL
100 TON MILL TEST ON UTAH MINE DUMPS
MILL TEST ASSAYS

ASSAYER:	HEADS					TAILINGS					CONCENTRATE				
*	Au.: Oz	Ag Oz	Pb %	Cu.: %	Zn.: %	Au.: Oz	Ag Oz	Pb %	Cu %	Zn.: %	Au.: Oz	Ag Oz	Pb %	Cu %	Zn %
A	Tr.	3.2	1.3	:	:	-	1.4	1.0	:	:	0.04	58.9	15.2	:	:
B	Tr.	3.72	Lost	:	:	-	0.94	-	:	:		53.05	18.7	:	:
A	Tr.	2.70	1.1	:	:	-	1.4	0.90	:	:	0.05	87.6	26.0	0.2	:
B	Tr.	1.94	Lost	:	:	-	0.89	-	:	:	0.12	85.02	32.5	-	:
A	Tr.	2.70	1.3	:	:	-	1.2	0.8	:	:	0.07	117.9	14.6	1.01	:
A	No Sample					No Sample					0.10	91.2	20.6	0.9	:
A	Tr.	2-10	1.2	0.1	:	-	1.1	0.8	0.1	:	0.05	80.9	24.6	0.86	:
A	No Sample					-	1.0	0.8	:	:	0.10	97.0	35.5	1.17	:
C	Tr.	3.86	1.0	:	:	:	:	:	:	:	:	:	:	:	:

A - Union Assay Office, SIC
B - Harry Treweek
C - Composite Heads - Fire Assay

Estimated Concentrate - 5.5 tons.

Concentrate received
at Smelter - 1.705 tons **

Note - Because of the discrepancy in weight of concentrate shipped and weight received at smelter; and discrepancies in individual assays, the ratio of concentration cannot be satisfactorily determined. However, the concentrate is of commercial grade even with the extremely low mill head treated and should increase in value with better ore and uninterrupted milling.

** Indicates loss in transit.

Dec. 1, 1950.

Item 2

PROSPECTUSHOLDINGS

- Lease on 7 mining claims, known as Utah Group, principally Lead-Silver, and some Copper, in Bullion District, Lander County, Nevada - Price, \$35,000.00 - Terms 10% royalty on net smelter returns - minimum, \$150.00 monthly - Paid, \$2,500.00.
- Lease Vista Group - 2 claims - Silver-Lead, Zinc and Copper. Price, \$20,000.00 - on 10% royalty basis.
- Lease on Little Gem Flotation Plant - Price, \$20,000.00 - Terms 50¢ per ton royalty - Minimum, \$100.00 per month.

ORE DEPOSITS:

- 20 North-South Fissure Veins: Dipping easterly - from 1 inch to 1 foot thick - can be mined with 3 foot or wider stopes, to maintain an average grade of 5% lead, 5 ounces in silver, per ton, with some copper and zinc. - Wall rock is shaly or cherty thin-bedded limestone, lying nearly flat. - Up to 200 feet of backs exposed.
- Contact Fault: Vertical fault zone. - West wall is flat chert beds, east wall is massive quartzite. - a 2½ foot sample assayed 2% Lead and 46 ounces in Silver - a full-width, 5 foot sample assayed 1.3% Lead and 19 ounces in Silver, at 200 foot level. - Contact can be traced on surface for 2 miles.
- East-West Vein: Siliceous vein in shaly walls. - Nearly vertical. - Average 2½ to 3 feet thick. - Outcrops traced for 1500 feet on strike. - Highest outcrop is 350 feet above lowest outcrop. - Unleached vein material averaged 4% Lead and 5 ounces in Silver, in oxidized zone. - Not stoped.
- Dumps: Over 50,000 tons of low-grade dump rock. - 100 ton mill test showed average of 1.35% Lead and 3.2 ounces in Silver. - Screen test showed minus 1/4 inch material to average 5% Lead and 10 ounces in Silver. - Ratio was 5 tons of dump rock to produce 1 ton of fines.

WORKINGS:

- Utah Mine: A 200 foot vertical shaft and a 200 foot inclined shaft, connected at the 165 foot level by a 200 foot cross-cut. - Approximately 400 feet of drifting on each of 2 levels. - Numerous old stopes, mined for high grade "shipping" ore. - Five north-south fissures exposed, and the contact vein fault exposed on 2 levels near the vertical shaft.
- East-West Vein: Three tunnels along the strike of the vein, from 100 to 200 feet long. - Several shallow shafts and winzes.

ESTIMATED OPERATING COST, PER TONMining:

Stoping - Labor & Supplies - -	\$2.00
Operating Development - - - -	1.00
Supervision - - - - -	0.50
Trucking to Mill - - - - -	1.00
Contingencies & Taxes - - - -	0.50
Royalty - - - - -	0.50

Total Mining - \$5.50

3.50
2.50
6.00

Milling:

Material & Labor - - - - -	1.75
Supervision - - - - -	0.25
Contingencies & Taxes - - - -	0.25
Royalty - - - - -	0.50

Total Milling - 2.75

Total Mining & Milling - \$8.25

ECONOMIC CONSIDERATIONS:

Recovery: At present prices (Dec. 1, 1950) the average ore (4.2% Lead, 8 ounces Silver, and minor amounts of Copper & Zinc) has a gross value of \$22.32 per ton. Mill tests on the Utah Ore indicated a net extraction of 80% of this gross, based on the above average grade. The smelter settlement, after freight, will amount to approximately 65% of the gross value of the concentrate, or a net to operation of 52% of the gross value of the crude ore. The average ore in the property will, therefore, bring in a net of \$11.61 per ton, which, after operating costs, will result in a net income of \$3.36 per ton of ore.

Profit: On the basis of 15,000 tons of ore treated annually, the minimum reserve of 75,000 tons will insure a 5-year operation, with a net income during that period of \$252,000.00.

\$50,400 yr.
\$42000 mo.

Report on Geophysical Survey on Vista Group of Lode Claims, located in the Bullion Mining District, Lander County, Nevada, made the week of June 29th to July 5th, 1952.

The north-south vein on the west side of the hill, near the apex, has been mined in the early days by open cut in several places along the strike to a depth of six to ten feet. A tunnel drifted on the vein to the south, according to reports, produced high grade shipping ore from stopes and winzes. Samples taken from pillars in these workings show over 200 ounces of silver and 15% lead. Ore can be found on the dumps showing good values in silver and lead. This vein is between five and six feet wide and dips east at approximately 40 degrees.

The M-Scope Survey was started at the south end of the north open cut, and continued for a distance of 140 feet in a southerly direction, the size and conductive value of the area being shown on the attached map. South
140'

The conductive material in the vein is continuous over the 140 feet surveyed, some spots being of lesser value as shown on map. The values range from 10 to 80 dial reading, all of which is under thirty feet, which is the maximum depth range of this instrument. This survey on the dip of the vein varies from 21 feet on the north, to 48 feet on the south, which is also shown on the map. The highly conductive values as shown by this survey would indicate high grade ore over the entire distance worked, to a depth of thirty feet.

The Field Transmitter was then set up at the north end of the open cut and a deep survey of the vein to a depth of 250 feet was conducted along the strike of the vein to the south for a distance of 550 feet, where the vein is evidently cut by a southwest-northeast dike, which outcrops on the east slope of the hill. The values as shown on the map of survey are excellent for the entire distance, with the exception of two small spots. This dike has cut the vein at an angle, which is indicated by the fact that a zero dip reading was shown on the east side of center line of vein, while ore was still evident on the west side, both being shown on the map. This occurred at the extreme south end of the survey.

As noted on the map the second and third receiver settings from the south end of the survey show a very highly conductive condition for a distance of 160 feet to the north. The vein at this point is closer to the surface than at any other point along the survey. This more highly conductive condition at these two settings may have been caused by the intersection of the S.E.-N.W. dike mentioned above, which may be the foot-wall of a vein striking in the same direction. Some of the ore from this vein is now on the dump on the east slope near the apex of the hill, and looks to be of a very good grade.

On the east slope of the hill about 500 feet from the apex there is a tunnel striking N.W. for a distance into the hill of 175 feet where a raise was run for 27 feet in a very good grade of ore. Survey on the surface with Field Transmitter shows a very conductive condition ranging from 60 feet to 116 feet vertical. These are minimum readings of depth of maximum conductivity over a distance north and south of 160 feet. Due to the ore already known in this raise and the results of the Geophysical Survey, drifting on this vein in a northerly

VISTA PROPERTY - Samples and Assays - Prices Ag 90¢ oz - Pb 19¢ lb - Zn 19½¢ lb

<u>Upper Workings</u>	<u>Ag oz</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Value</u>
Old Pillar - 18" - 1	210.3	15.8	.8	\$252.93
Winze - West side - 24" - 2	21.6	6.3	.1	43.42
Winze - East side - 24" - 3	15.2	.8	.2	17.48

Tunnel East of B. T.

Drift - 18" - 15	21.0	3.4		31.80
"Gob" or Back Fill - 16	4.5	2.2		12.36
Dump Sample - 17	33.0	5.4		50.22

Black Tunnel

Sample 45" (did not get to Foot-Wall)				
Top of vein - 21" - 12	5.1	5.2	.8	29.87
Middle of vein - 18" - 13	12.7	2.0	3.5	34.85
Bottom of vein - 6" - 14	22.8	20.4	1.3	112.32

Lower Tunnel

Drift - west side - 24" - 4	18.9	18.0	11.9	131.83
Roof of drift - 36" - 5	15.7	14.1	14.3	123.48
Raise - east side - 36" - 6	18.1	17.9	10.25	125.69
Drift - east side - 36" - 7	7.9	8.3	7.2	66.73
Ore Shipment from Raise - 8	11.5	11.0	6.5	77.50
Ore sacked and on dump - 9	6.0	11.3	6.1	72.18
Drift - east side - 25' from Portal 18" - 10	8.0	7.3	4.2	51.32
Footwall - 24" - 11	2.4	2.6	1.2	16.72
Black fault gouge near Face of drift 84" - 12	.7	.4	.14	2.70
Face in easterly raise - 36" - 13	29.24	24.5	1.5	125.27

Samples sent for Mill Tests (50 to 75 lbs)

Analysis - United States Smelting Refining & Mining Co. sample

<u>Au</u>	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>	<u>Cu</u>	<u>Si</u>	<u>Fe</u>	<u>Sulphur</u>	<u>Lime</u>	
<u>Tr</u>	18.9	18.	11.9	.15	5.	8.1	15.6	13.7	131.83

Analysis - International Smelting & Refining Co. sample

<u>Au oz</u>	<u>Pb %</u>	<u>Ag oz</u>	<u>Zn %</u>	<u>Cu %</u>	<u>Fe %</u>	<u>S %</u>	<u>CaO %</u>	<u>Insol %</u>	
.01	7.8	7.09	5.4	.1	5.0	8.6	15.1	28.0	57.08
Nonsulfide	.45		.3						

Analysis - Combined Metals Reduction Co. sample

<u>Au oz</u>	<u>Ag oz</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Cu %</u>	
.004	15.67	14.3	14.3	.05	124.21
Nonsulfide		.2	.6		

Sample in Lower Tunnel (no measurement)

Ag 31.1 oz	Pb 26.4 %	Zn 11.6 %	188.75
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direction should be carried on to prove or disprove continuation of conductive ore as shown by the Field Transmitter Survey.

As a result of the work completed we can expect to open up a highly conductive area of ore, starting at the vein on the west slope of the hill to the vein mentioned in the above paragraph, a distance of some 800 feet from east to west and 550 feet from north to south. In this area there should be at least three different veins encountered, and at least two of them will intersect the main north south vein shown on the map.

There is also an east-west vein about 500 feet north of this present survey, showing in a tunnel and dipping north, which has a width there of around two feet and assays some \$30.00 per ton silver-lead. This produced shipping ore and was stoped to the surface in one place.

From the results obtained I suggest and recommend a program to Diamond Drill this area and especially the north-south vein on the west slope of the hill as shown in the Field Transmitter Survey. From results of this survey I would suggest that the drill be set to cut the vein at approximately 60 feet at the south end of survey and 150 feet at the north end. In between these points the maximum conductivity ranges from 75 to 200 feet.

Diamond drilling should also be carried on from the east slope of the hill cutting the present working vein at depths shown on the map.

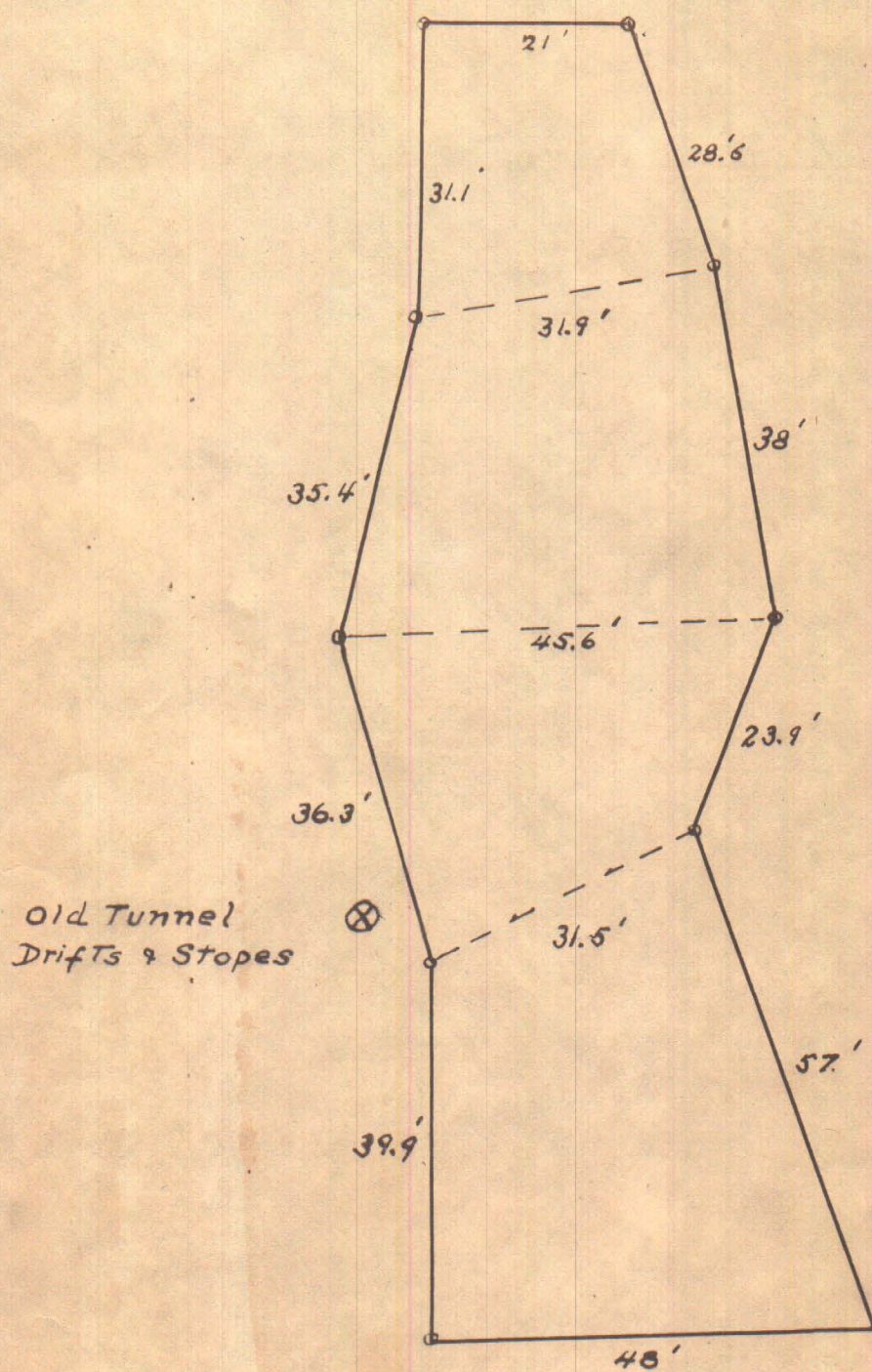
There is a geological report of this area available written by Owen W. Terry, E.M. of Elko, Nevada, which bears out the geophysical work covered in this report.

Respectfully submitted,

(Signed) R. W. Burge

N

M-Scope Survey
Dial Recordings 10° to 80°
30' Max. Depth Range



Cross Hatching
indicates
Highest Conductivity

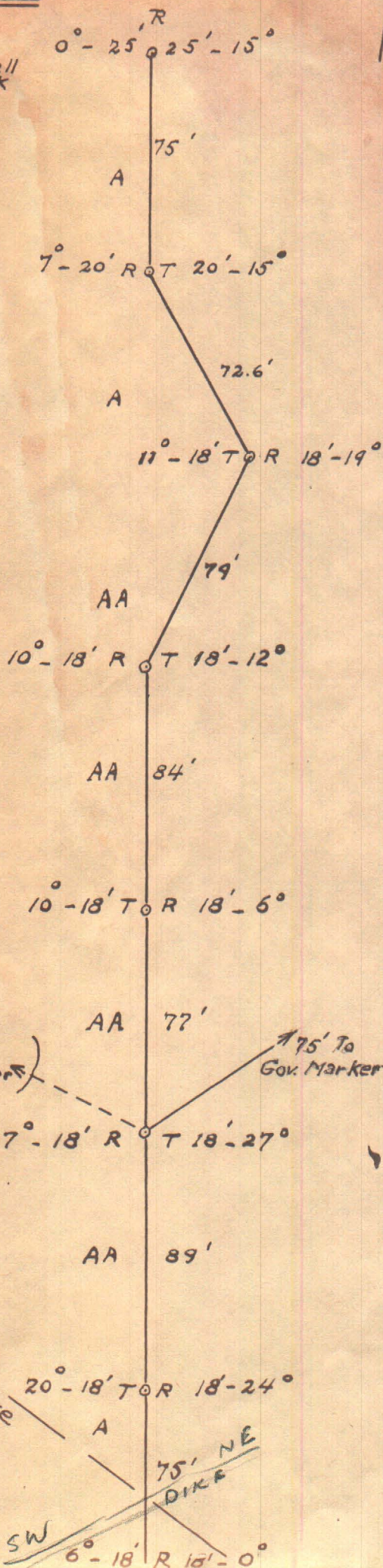
Old Tunnel
Drifts & Stopes

SURVEY WEST SLOPE
VISTA CLAIM #1
vein Dip - East
scale 1" = 20'

Bullion Mining District
Lander County
Nevada

MAP No. 1.

Foot-wall
Weak



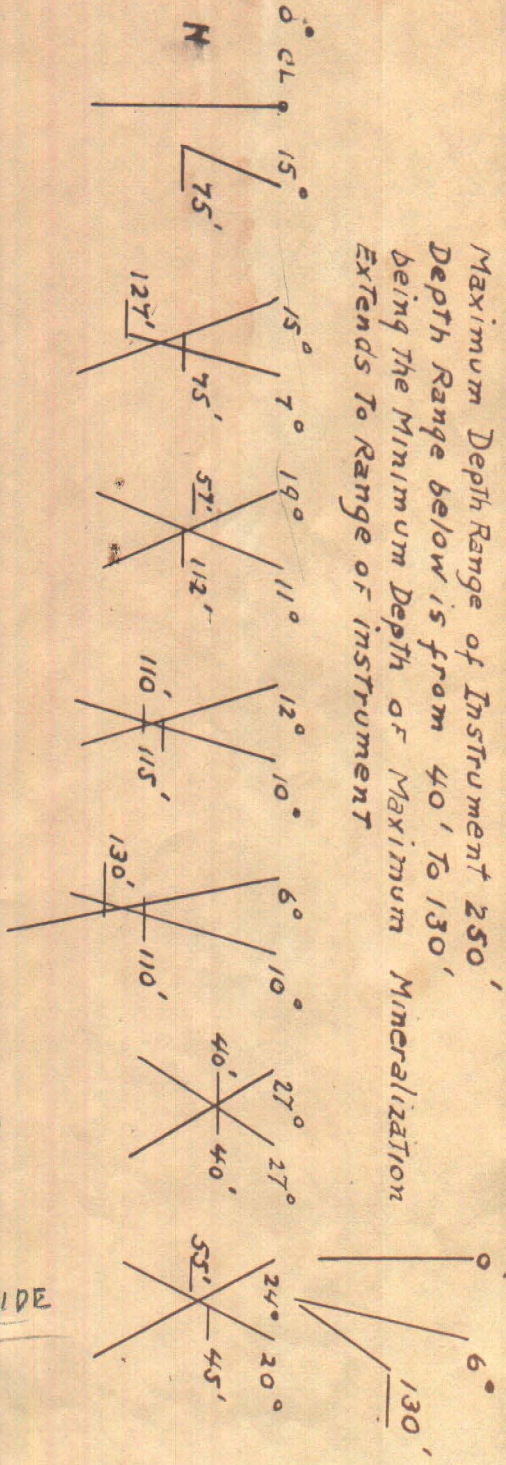
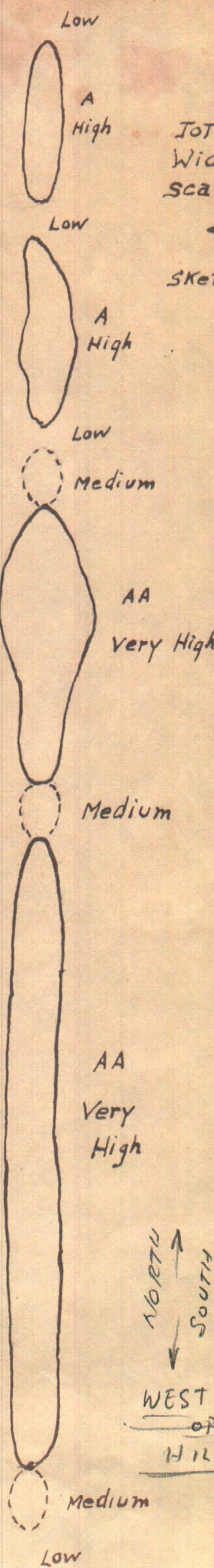
FIELD TRANSMITTER SURVEY

VISTA #1 CLAIM

Total length of Ore Shoot 550'
Width of Vein - 5' to 6'
Scale 50' = 1"

MAP No. 2

Sketch of Ore Body Not To Scale
Vein Dip - 40° to 45° EAST.



Maximum Depth Range of Instrument 250'
Depth Range below is from 40' to 130'
being the Minimum Depth of Maximum Mineralization
Extends To Range of Instrument

NORTH
SOUTH
VEIN
WEST SIDE
OF
HILL

N

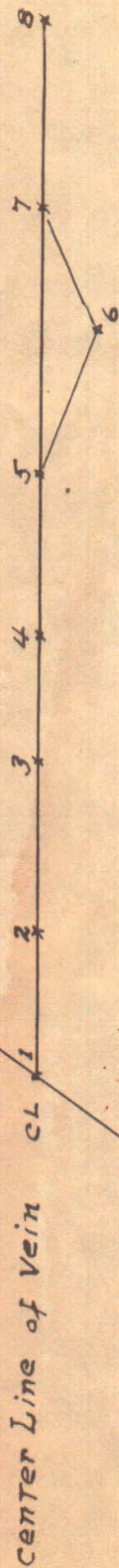
Geophysical Data

West	East
113' - 10°	18° - 60'
70' - 17°	18° - 110'

T - Transmitter
R - Receiver

VISTA CLAIM NO. 1 Bullion Mining District Lander County Nevada

Showing North-South Vein
and Present Workings - EAST Slope
Scale 1" = 100'



⊗ Crest of Hill
⊗ Gov. Marker

⊙ DUMP

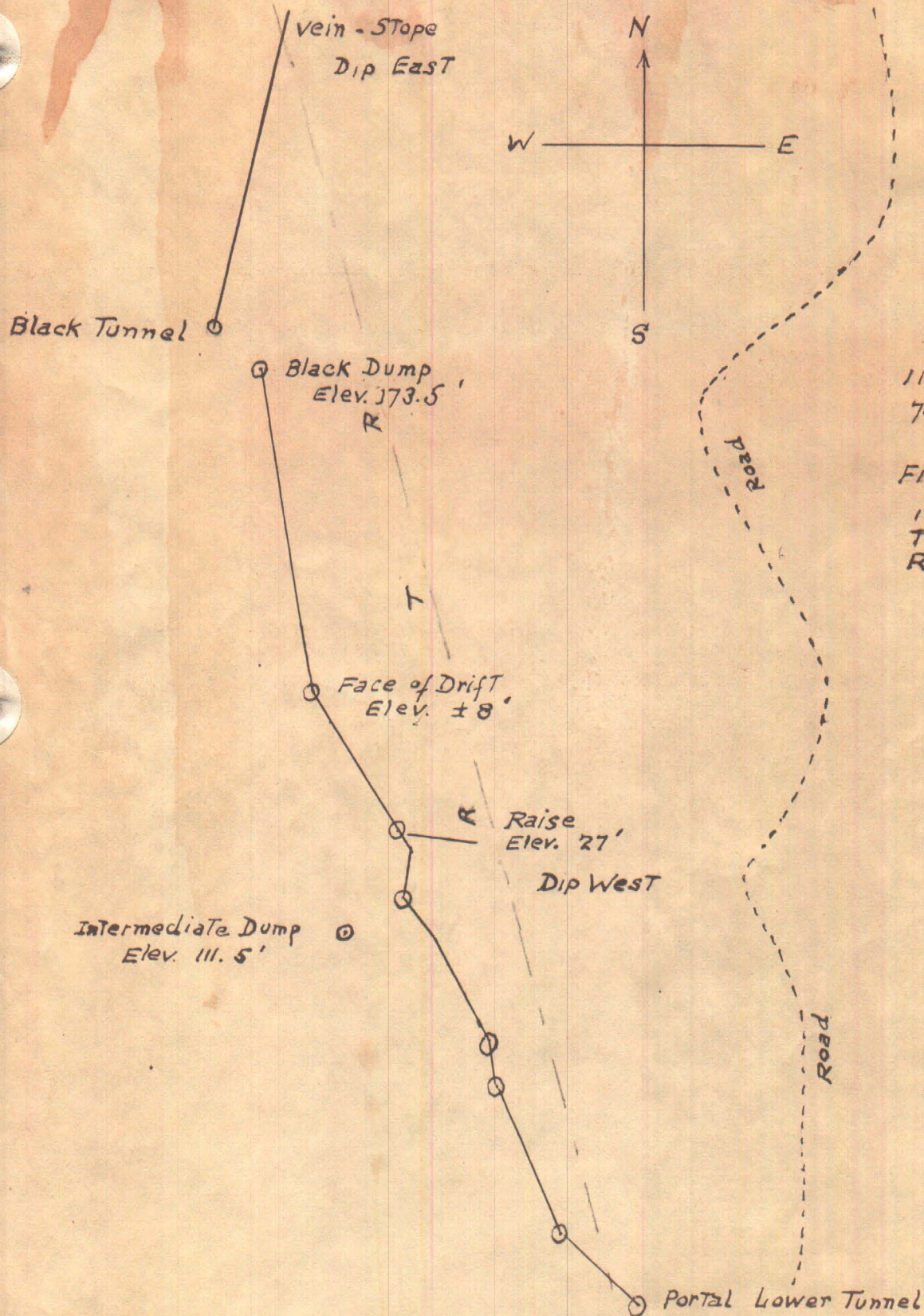
⊙ Portal - Black Tunnel
⊙ Black Dump

⊙ Int. Dump
⊙ Lower Tunnel
FACE
RAISE

⊙ Portal - Lower Tunnel.

⊙ Lower DUMP

MAP No. 4



West	East
113' - 10°	18° - 60'
70' - 17°	12° - 110'

Field Transmitter Survey
indicated on Map
T - Transmitter
R - Receiver

Survey Map
Lower Tunnel
Distance into Hill ± 250'
Scale 50' = 1"

○ Lower Dump
Elev. 0-0' (assumed)

Glen L. Thompson

Mining Engineer

662 St. Lawrence Ave - Phone 2-4123

Reno, Nevada

July 28th, 1952

Mr. W. A. Hayes, President
Interstate Oil & Development Co.
156 Montgomery Street
San Francisco, California

Dear Mr. Hayes:

Re BOSS MINE - near Gold Acres, Nevada

I visited this mine on July 26th, in company with Mr. Lester B. Walbridge. We reached the mine shortly before dark and consequently the inspection of the surface was short, and examination underground was limited, as no lamps were available. We were able however, to see underground for some 70 feet or so, due to caving of an adit to surface, affording some light.

Ore outcrops at surface over a length of some 60 feet and a width of 8 to 10 feet. Strike is about N-S and the dip about 80 degrees west. Two adits have been driven only a few feet in elevation apart, both driven into the hill to the north. The upper adit has caved through to the lower one and ahead of the face of the upper adit, the ore is capped by a strata of limestone, and at the surface cannot be traced further to the north. However underground the vein appears to extend on into the hill, as ore was found as far as I was able to get into the workings, which was some feet beyond the point where the outcrop was covered by the limestone at the surface.

The ore is extremely leached, in fact is practically a gossan. What seems to be a stope some 10 or 12 feet wide is in the lower adit near its portal. Two winzes dipping westerly were noted, but their depth is not known.

Walbridge informed me that a carlot had been shipped from the dump at the portal of the adit, by Lee Lakin, and that Lakin was paid for 23 oz. silver and 4% lead, and of course this was the oxidized and leached ore, presumably similar to that now on the mine dump, and underground.

I am quite favorably impressed with what I have so far seen of this property. It would be very interesting indeed to see what this ore would be like at depth. How far the water table is below the surface is of course unknown. I understand that there is a flowing spring about a half mile up the gulch to the west, but this does not furnish anything definite. Two or three drill holes in the way of exploration would be an excellent gamble. Before anything can be done at the property a bulldozer for a day or two will be necessary to repair the road for 2 to 2½ miles from the mine out towards the main road. This section was badly washed out by melting snow water or rains this year.

If adequate grade and quantity of ore were found by the drill holes, it is obvious that a shaft would have to be sunk to reach it, as the topography does not permit the use of adits for the greater depth which would be required. While even the short visit to the mine has given me a good impression of its possibilities, before any expenditures for any purpose were made, I would want another day or so at the property for the purpose of a detailed examination, before making definite recommendations.

Signed - G. L. Thompson.

INTERSTATE OIL & DEVELOPMENT CO.

General Information on the VISTA Group and the BOSS Group of Mining Claims.

The company has discontinued the use of the prospectus which was issued in December 1951. Recent surveying, engineering and geophysical work on the properties has uncovered certain erroneous statements and assumptions, and has in general outmoded this prospectus.

The company is waiting to get their oil leases before writing a new prospectus, and to also determine a program for the development of these Silver-Lead properties. These properties are still in the prospect stage, no ore being blocked out, but from the available information are worthy of development in our opinion. They should be drilled and sufficient data is now available to know where and how to diamond drill them. It would not be a very expensive matter to put in a few preliminary drill holes to prove our contentions regarding same.

Vista

This group consists of 3 Lode Mining Claims, held by right of location which are in good standing and are deeded to the corporation. They are situated in the Bullion Mining District, Lander County, Nevada. This is an old mining property, first worked around the turn of the century, hence any reliable production records are lacking. However, from an old timer in the vicinity, who owns the adjoining property and has been there since 1906, it is estimated that over \$100,000.00 of ore was shipped of high grade silver. They had to have high values to ship and this was accomplished by selective mining and hand sorting.

Most of the ore shipped was mined from the west slope of the hill not over two hundred feet from the apex of the hill, which has an elevation of around 7000 feet. The hill slopes down gently on this side. The ore occurs in a well defined siliceous vein, striking north-south, and dipping to the east. It was worked by open cut and shallow drifts and stopes, for an approximate distance of 200 feet on the dip of the vein and for a lineal distance of approximately 300 feet along the strike. No appreciable depth was attained in any of this work. The deepest being a winze at the north end of the tunnel which is sunk to a depth of about 30 feet from the floor of the drift.

The easterly slope is somewhat steep and slopes some 1000 feet to the canyon floor below. At various points are dumps from tunnels and drifts, some caved, but showing varying amounts of shipping grade silver-lead ore, work done several decades ago. Several of these dumps show a considerable tonnage and all of the workings have a record of production and ore shipped. Specimens from these dumps show a high content of lead and silver.

Several carloads of ore left by the old timers have been shipped from these dumps over the intervening years, attesting to the high grade of the original ore shipped. None of the workings on this slope have ever tapped the main north-south vein, the original high-grade silver workings on the west slope near the apex, but have been on east-west

fissuring, and veins striking north-west by south-east.

Down the east slope at an approximate distance of 250 to 300 feet is a cross cut tunnel which cuts the formation for about 200 feet and connects with a drift along a dark colored gouge, a prominent feature on this portion of the group, showing copper and zinc. It also connects with a silver-lead vein which was stoped to the surface near the apex of the hill, and stoped for an undetermined distance along the strike to the north and back filled.

Some 200 feet vertical below this work is a tunnel 250 feet in- to the hill, where recent work has been done, some 100 feet of drifting and some 50 feet of raising on the predominately black fault material mentioned above, showing here a thickness of some 7 feet, with a fine grained basic intrusive rock occurring in the hanging wall of the fault. Here we encountered high grade silver-lead -zinc ore, assaying some 18 oz. silver, 17% lead, and 12% zinc, presumably drag ore, massive in quality. The foot wall of this fault is a silver-lead vein, apparently what they drifted in on, and is exposed near the portal, and which we now have in the easterly face of the raise. This is a brown material showing very little zinc in contradistinction to the grey ore in the fault gouge, which is high in zinc. This latter ore is above us, and shows in places in the roof. Although still in the fault zone, the ore seems to be making more continuously and I believe we are getting away from that effect. Our Geophysical work shows an ore shoot here of at least 150 feet continuous and shows better at depth.

A survey of the underground workings and their relation to a surface survey on Vista #1 Claim has just been completed, which in conjunction with the geophysical survey, should give us the necessary information to map out a development program.

Sampling

A list of samples taken at various places over the Vista property will be attached hereto. The samples as they apply to this particular report on the three workings described starting at the main north-south vein on the west slope near the apex and the two workings described on the east slope in their order in this report we will call No. 1, No. 2, and No. 3.

No. 1 - Old Pillar 18" 210.3 oz Silver 15.8% Lead
Winze West side 24" Silver 21.6 oz. Lead 6.3%
" East " " 15.2 " .8%

No. 2 - Sample 45" - 13.5 oz Silver - 9.2% Lead - 1.8% Zinc

No. 3 - Face in Raise -	Oz Silver	% Lead	% Zinc	% Copper
30" sample	29.24	24.5	1.5	
36" "	25.0	23.7	1.3	.2
48" "	10.3	9.8	1.1	.1

Attached is a report on the Geophysical work and as soon as the Maps and report on the underground and surface survey just completed is ready it will be made a part hereof.

Boss Property

This property consists of 9 patented lode mining claims. No work has been done on this property for a long period of years, and very little is known as to the extent of the deposit. Mineralization and showings of ore appear on the various claims. Several cars of high grade silver ore were shipped and the property patented in 1923.

The main workings are not very extensive, consisting of a shallow tunnel extending into the hill for a distance of approximately 150 feet, with from 50 to 75 feet of backs. The vein is 8 to 10 feet wide at the portal and opens up to about 25 feet near the portal and has been mined out for a height of 25 to 30 feet and a length of around 50 feet. The tunnel going back into the hill shows ore its entire length. The strike of the vein is north-south into the hill, and no ore appears to outcrop to the north but seems to be covered by a cap-rock as evidenced by several shallow adits on up the hill. The ore is a spongy brownish siliceous material which shows signs of heavy leaching, and if encountered at a depth below the leached zone will without doubt be of a very much higher grade.

The results of 8 samples taken in the workings at various places and on the dump assay from 37 oz of silver and 10% lead to a low of 8 oz silver and 4% lead. However, they average 20 oz of silver and 9% lead.

This is a rather steep vein dipping about 70 degrees to the west and is a strong vein and should go to depth. Two or three drill holes here would give us the necessary information. The elevation of this property is around 6000 feet, and by back road is about 3 miles from the Vista.

Three or four carloads have been shipped from the dump, and a settlement sheet on a carload shipped in April 1938 assayed Gold .0075 oz - Silver 23.2 oz, Lead 4.3% and Copper .1%.

Mill and Plant

The company has a five year lease and option on this, with a purchase price of \$20,000. During the use of the mill a charge of \$0.30 per ton of ore milled is to be paid and will apply against the purchase price. The mill has a capacity of 65 to 75 tons per day, and is operated electrically by a Cat-Diesel Power Unit and Generator of 120 H.P. The main equipment consists of a crushing plant, jaw crusher and rolls, from which the ore is carried by conveyor belt to the fine ore bin, which has a capacity of 300 tons - Eimco Ball Mill 5 by 6 - Atkins Spiral Classifier - Galigher flotation ten cells - Eimco filter. The water is obtained from a 350 foot well with Jensen type pump. There are living quarters for the crew. A deep well pump and casing should be installed to insure an adequate and efficient supply of water.

The mill is situated 20 miles from Beowawe by gravel road in a southerly direction, being 9 miles equidistant from each property by mine road. The intent of the company was to use this as a pilot mill until such time as, sufficient ore being blocked, it might be advantageous to build a mill to more efficiently operate the properties.

These properties lie in a big mineralized belt which has produced many, many millions of dollars, extending from the Battle Mountain area on over Hill Top and across the valley to Mill Canyon and the old Cortez. Gold Acres, a big open pit mine is operating just 5 miles east of the Vista and closer in a south-east direction from the Boss.

Recommendations:

The substantial quantities of Lead and Silver already produced, even by the haphazard methods heretofore employed, point strongly toward the development of extremely profitable ore bodies by proper geological correlation. The best opportunity to develop a large tonnage of good grade ore is by drilling the main north-south vein which outcrops on the west slope. We followed this with the field transmitter for a continuous distance along the strike of 550 feet and the vein showed a width of 5 to 6 feet and a dip of approximately 45 degrees. The vein flattens out before coming to the surface, as evidenced by the M-Scope survey, as well as the old workings. A few drill holes cutting this vein from the east to the west at appropriate depths will give lots of information.

Some further drifting on the vein in the raise in the lower tunnel on the east slope should also be carried on which will produce mill ore and prove whether it is a continuous body. A drill hole or two here would also be advantageous.

Respectfully yours,

INTERSTATE OIL & DEVELOPMENT CO.

Lester B. Walbridge - Secretary

SOME UTAH MINE DUMPS



ONE UTAH MINE DUMP & SHAFT

MAR. 1963



ONE UTAH MINE DUMP & SHAFT



OLD UTAH MINE CAMP

