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PAR 2 OF 2

04/08/97

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: COLOSSAL

ALTERNATE NAMES:
LOGAN PROPERTY
NORTH COLOSSAL

YAVAPAI COUNTY MILS NUMBER: 846

LOCATION: TOWNSHIP 9 N RANGE 2 W SECTION 1 QUARTER SW
LATITUDE: N 34DEG 08MIN 50SEC LONGITUDE: W 112DEG 25MIN 30SEC
TOPO MAP NAME: MINNEHAHA - 7.5 MIN

CURRENT STATUS: DEVEL DEPOSIT

COMMODITY:
GOLD
SILVER
LEAD

BIBLIOGRAPHY:
CLAIMS EXTEND INTO SEC 2 AND 11
WILSON, E.D. ET.AL. AZ LODE GOLD MINES AZBM
BULL 137 1967 P 60
ADMMR COLOSSAL FILE

REPORT
on
COLOSSAL GROUP OF MINING
CLAIMS
in
Township 9 North, Range 2 West, G.& S.R.B.M.
Yavapai County, Arizona.

FOREWORD

The writer was engaged by John J. Darmody of Prescott, Arizona, to investigate and report on the above mentioned property held by the COLOSSAL MINES INC. under an agreement with the owners R.S. and Grace Logan of Phoenix, Arizona.

Spending several days in the area it was found that these claims were definitely in the prospect stage and as such did not call for an examination that would more than qualify them for further investigation and exploration.

I herewith submit the results of this investigation. It can only qualify and verify the results of the activities of the organization during its brief operation,

Respectfully submitted,

Carl G. Barth, Jr., E.M.,
Registered Mining Engineer,
Certificate No. 689,
State Board of Registration,
Arizona.

Sept 17, 1937

SUMMARY

My examination shows the property now held by the COLOSSAL MINES INC. to be four distinct groups of claims sufficiently removed each from the other as to make their operation impossible as a unit.

None of these groups can be said to be other than in the prospect stage.

Each group offers a distinct problem because of its geographical location and its type of mineralization.

The Silver Dollar is the only group on which sufficient work has been done in exploration of its one ore shoot, to indicate further immediate possibilities.

The Gold Note requires agreat deal of intensive and careful exploration before any definite opinion can be given as to its future worth.

The ruggedness of the area makes the building and maintenance of roads a major problem.

Water, though adequate for the present, may possibly be augmented by drilling in some of the sheared zones.

RECOMMENDATIONS

Due to the activity already in progress at the Silver Dollar and the results obtained it is recommended that this work be continued with adefinite program of development to a further depth.
Some additional equipment and improved accomodations for living is at present required for efficient and satisfactory results at a minimum of cost.
Stoping of ore should not be carried on until such time as there is sufficient volume to make an efficient and continuous mill run.
Sorting of ore at the mine should be carefully done increasing the grade and decreasing the cost of transportation to the Mill.
Suggest that all development work be let on contract thereby reducing cost of supervision.

Continue leasing the Colossal on the same or a better basis than now offered. This is a cheap method of development.

Attempt to interest leasors on the Gold Hill as no organized work is called for at the present.

A program of exploration should be instituted on the Gold Note.
To carrynthis out it will be necessary to make it more accessible by building a mile of road; this could be done at a relatively small cost. A camp would have to be established for the purpose. a tent being all that would be now required.

PROPERTY

The property held by the COLOSSAL MINES INC. under an agreement with the owners, R.E.Logan and his wife Grace H.Logan consists of 16 Lode Claims containing approximately 320 acres as follows:-

NAME	BOOK OF MINES	PAGE
SILVER KING	122	488
SILVER DOLLAR	133	153
SILVER DOLLAR EXT.	133	510
ORA GRANDE	133	509
GOLD HILL II	135	284
GOLD HILL III	135	285
GOLD HILL LV	135	286
GOLD HILL V	135	322
BOX CANON	137	13
NORTH COLOSSAL	127	569
WEST COLOSSAL	127	571
GOLD NOTE	135	321
GOLD NOTE II	137	16
GOLD NOTE LLL	137	17
LEAD CARBONATE	133	83
GOLD CARBONATE	124	279

Book and page numbers refer to the Records of the County Recorder of Yavapai County, Prescott. Arizona.

LOCATION

The property lies in Sections 1,2,11 & 12 of Township 9 North, Range 2 West, Gila and Salt River Base Meridian, Yavapai County, Arizona.

ACCESSIBILITY

From PRESCOTT, Arizona, the county seat and nearest sizeable town, the property is reached by driving south over the Hassayampa Highway, Route 89, 22 miles to Kirkland Junction, beyond which a quarter of a mile turning east over the Walnut Grove road a distance of 20 miles to Wagoner, thence over what is locally known as the Oak Creek road, 12 miles south of east(formerly a part of an old road to Phoenix, Arizona, long since abandoned for the purpose) to the CAMP on the Silver Kingpclaim accessonaadyofrRyalnheGryeknow

the road is passable throughout the year or closed for short periods only.
The last 12 miles is at present very rough due to the recent heavy summer rains.
The rise from Wagoner, at an elevation of 3372 feet to the camp is approximately 13oo feet, indicating the hilly condition to be encountered.

KIRKLAND, the nearest railroad point lies four miles west of Kirkland Junction, before mentioned, making this point 36 miles from the camp,

TOPOGRAPHY

Topographically the country in the vicinity of the immediate property is extremely rugged.
It lies at the head of Ryland Gulch, a tributary of Castle Creek, and has worn a deep canon through the granites, with a drop of over 1000 feet from one end of the property to the other, with side washes from the east making similar deep canons down the western slope of the northern end of Silver Mountain.
Reference is here made to the accompanying enlarged section of the Bradshaw Quadrangle, involving this area.

GEOLOGY

The General Geology, taken from Folio No.126, U.S.G.S. " The Bradshaw Mountains Quadrangle" shows this area lying generally in the Bradshaw Granite in close proximity to the Crooks Complex, a structure consisting of varying bands of granites, schists, diorites and aplitic dikes, locally covered by volcanics, not however as much as reported by Jaggar and Pa Palache.
On the western slopes of Silver Mountain northward trending dikes of Rhyolite Porphyry are prominently exposed and noted by Waldemar Lindgren in Bulletin 782, U.S.G.S. on pages 22 and 24. Herein he attributes the widespread mineralization of the Bradshaws to these acidic dikes.

Numerous dikes of Andesite,Diorite and Diabase, the latter seemingly having some bearing on the sulphide mineralization along this eastern slope,borne out by many observations by me and indicated here in the vicinity of the Silver Dollar ground where diabase dikes are very noticeable.

VEINS

The veins of this area trend generally northerly and northeasterly. They follow fracture zones, which are, where no outcrops occur,indistinct. Outcrops are irregular and seemingly lacking in continuity and appear to be lenticular in form.Wall rock alteration almost lacking and therefore no bold outcrops are found.

HISTORY

The history is rather vague and sketchy, but dates back to the early history of mining in the county, locations having been made as early as 1876.
With the falling of of Placer Mining, lode mining drew the attention of the prospector and he, by panning, located outcrops of free milling gold.Resorting to the Arrastre for his grinding, a primitive but effective method imported from Mexice and driven by a Burro, he collected the free gold in quicksilver, as an amalgam, These Arrastres were located near permanent water and in close proximity to his mining operations. Arrastres are found in this vicinity and judging from the size and wear of the rocks used was both sizeable and of long duration. The time element may have been due to its close proximity to the major wagon route between Phoenix and Prescott, within a short distance of the location. Ryland, for whom the Wash is named, Taylor and Hardscrabble, names well known, were responsible for this activity.

A Judge Campbell of Alabama was active in building a branch road and sinking a shaft on the Gold Hill Claim. It is said that some of his ore was shipped to Swansea, Wales, indicative of the highgrade surface values encountered.

No large mines developed from these activities,

except perhaps the attempt about 1902 to operate the BOAZ property in the northeastern end of the Township on a low grade quartz vein on a fairly large scale. Equipment and a Mill were installed and considerable work done underground with no apparent success, due, it is said to metallurgical difficulties. It is now locally owned and some attempt is being made to place it in operation.

In 1923, R.E.Logan, a Spanish War Veteran and prospector, moved into the area, consolidated the holdings of others by purchase and location and operated intermittently to within the year. Following the tactics of the old timers, mining the free milling ores wherever they could be found, but with more modern mining and milling equipment, made a moderate success. His prospecting and exploration laid bare certain areas that seemed promising of future results.

In January 1937 the property was taken over, under option, by the COLOSSAL MINES INC.

GENERAL DESCRIPTION OF CLAIMS

Four distinct groups of claims have been designated due to the character of its veins and physical location.
Reference is here made to a sketch map of the locations indicating this grouping.

The NORTH COLOSSAL GROUP, consisting of the North Colossal, Lead Carbonate, Gold Carbonate, West Colossal and Silver King lie in the northern end of the area.

The CAMP, consisting of two frame dwellings, one galvanized iron dwelling and two tent houses and the Pilot Mill are grouped in the vicinity of several springs on the banks of Ryland Wash.on the Silver King Claim.

The work on this group has been recently confined to the North Colossal Claim. On this claim, two definite veins are distinguished, being tight fractures in the granite expanding into lenticular mineralized shoots at distantly spaced intervals. There is practically no wall rock alteration and where mineralized shows narrow quartz bands sometimes filled with galena. Near the surface is a

definite oxidation to lead carbonate, showing free gold values on panning.
On the north end of the claim work has been done in the past on what must have been a fre free milling outcrop and a shaft, reported to have been 60 feet in depth, was sunk, but now filled, thendump giving evidence of this possible depth.
Recent chloriding, by a leasor, has been done inna surface cut near the collar of this shaft and together with ore sorted from the dump to the amount of 211/2 tons, after milling was shipped as a concentrate to the American Smelting and Refining Co, at El Pas Texas, the returns netting $ 277.75 before freight and sampling charges, indicating a smelter value of approximately $ 13.00
See Smelter return Sheet of August 26,1937
Lot 3215 included herewith.

At present a drift tunnel is being driven by a leasor 200 feet south of the shaft on a parallel vein and at a position to gain some depth on what appears to be an ore shoot 50 Or so feet ahead. A galena outcrop and float indicates the possibility. The tunnel now having gained a length of 20 feet, shows in its face two narrow bands of quartz, each having some mineral content and producing a shipping and milling ore in small quantities satisfactory to the leasor. The leasor works on a 50% of the net smelter return from ore and concentrates, less hauling to shipping point and is seemingly satisfied with results so far.
An assay of a specimen of the shipping ore showed .96 oz Gold; 8.8 Oz Silver; 51.5 % Lead.

The Lead Carbonate shows a similar vein where examined but no ore was visible where work had been done some time in the past.

The Gold Carbonate and West Colossal claims were not examined but similar conditions were indicated by the general surface.

The Box Canon Claim is located mainly for the control of water, there being a very possible damsite in its deep canon through which Ryland Creek flows during rainy periods.

The GOLD HILL GROUP, consisting of Gold Hill II,III IV & V is the easterly group and can be reached from the camp over the old road made by Judge Campbell, now only a trail, within a half a mile.

Gold Hill IV & V are located along a fractured zone in the granite running north and south, above which no springs seem to issue and which zone may be a source for the development of more water when and if required. There was no particular mineralization noted other than requirements for location.

Gold Hill II is the major claim of the group. On its approximate center on the downward slope southward a white quartz vein outcrops and is traceable a distance of 200 feet southward and 75 feet northward from the shaft here located, varying in width from a few inches to as much as two feet. Sulphide mineralization is indicated in the vein, particularly in the vicinity of the shaft and cuts adjoining, but highly oxidized. The shaft has apparently been sunk in what was at the time a free milling outcrop and mined in open cuts for a few feet below the surface. The shaft, reported to be 60 feet in depth was not accessible nor could the bottoms of the cuts be properly examined due to debris.
The vein seems to be a series of lenses in the granite lying innechelon, with no wall alteration but showing some sulphide mineralization, particularly along its hanging wall side where this cou;d be determined. Its dip is almost vertical.
The past miningbhaving been confined almost entirely to the vicinity of the shaft indicates the lack of other ore shoots along the vein, but further work may now disclose other places along its outcrop worthy of exploration.
A sample of what appeared to be sulphide ore, unoxidized, of sufficient quantity to indicate its possible source being the bottom of the shaft, was assayed with the following results:-

.24 oz Gold; .02 oz Silver, a gross value of $ 8.85. This, if there was any particular width, would be worth investigating.

None of the oxide ores were assayed because of their limited extent but chloriding could be carried on with favorable results to be expected on these oxidized outcrops.

Gold Hill III was not examined due to its distance and ruggedness indicating the need for something unusual to warrant its investigation. It is reported however that pockets of highgrade ore were extracted in the past.

The SILVER DOLLAR GROUP consists of the Silver Dollar, Silver Dollar Extension, and Ora Grande Claims. These are reached by automobile over six miles of rough road from the upper camp, part of which traverses up Ryland Wash, to the camp on the Silver Dollar Claim.
On the Silver Dollar Claim has been established a small camp consisting of one corrugated iron building used as a Mess and a Tent house for living accomodations. A good spring lies within 300 feet of the camp on an adjoining claim and reported to flow the year round.

The Silver Dollar lying wholly in the Granite, near the surface slightly decomposed, and on its southern end covered by surface debris, is the active claim of the group.
The surface generally shows only a mere fracture in the granite but traceable beyond the northern end of the claim.with no outcrops other than in the vicinity of the shaft where some quartz is noticeable.
Slightly south of the center of the claim the early operators mined this quartz in an open cut for a length of approximately 100 feet, sank a shaft reported to be 128 feet in depth, at an angle of 76 degrees, drove levels at 35, 70 and 90 feet, stoping from the 70 to the surface.

The lengths of the 35 and 70 foot levels was not obtainable, but the 90 level was driven 160 feet southward and 142 feet northward. The two upper levels were driven southward only indicating no ore to the north at this point.

The Silver Dollar Extension, so named because of its location along the Silver Dollar fractur e zone northward, lies mostly on the precipitous northern slope of Hardscrabble Wash. A small opening on the side hill distant about 200 feet from the southern end line, was examined and gave evidence of ore having been removed but showed no continuous ore in its face. No other openings were found along this fracture. To the east of the Silver Dollar Fracture about 150 feet lies a flat dipping greenstone dike, readily seen outcropping up the precipitous slope and which had been prospected rather thoroughly in the past, showed intense silicification on its hanging wall, somewhat oxidized, in places indicating some prospects of ore and from which some had evidently been removed. A rather long drift tunnel was indicated near the bottom of the wash by a sizeable dump. No samples were taken as in my opinion it was not warranted due to lack of definite signs of sulphide mineralization.

The Oro Grande Claim was not examined as nothing more than the necessary location work had been done.

The GOLD NOTE GROUP consisting of the Gold Note, Gold Note II & III is reached over a trail from the Silver Dollar eastward about a mile.
The Gold Note II & III were apparently located for camp and water purposes which seems to be of sufficient quantity to maintain a small crew.

The Gold Note is the major mineralized claim but of such a nature that only a cursory examination could be made.
What appears to be an Andesite dike follows more or less along the eastern border of the claim, paralleling which is an area of mineralized granitic rocks, which can be called a granite porphyry. Several irregularly outcropping quartz veins traverse the area with minor quartz stringers intersecting the granites. These are in places highly oxidized indicating their former sulphide mineralization.

Ore has been recently mined from the 90 level over a length of 115 feet southward to the 70 level and a small stope 30 feet north of the shaft for the first time indicating ore in this direction. The total length of the ore shoot here is now accepted as 145 feet.
The north drift on the 90 level appears to have been driven on a barren side fracture and should be examined by a short cross cut.
The condition of the 90 level precluded regular sampling, but it was possible to get a bulk sample 75 feet south of the shaft and another 30 feet to the north of the shaft.
The mineralization here is different from that encountered on other parts of the property, being here a quartz, pyrite, chalcopyrite galena, carrying free gold and showing at this depth only a slight oxidation.
Wall rock mineralization by pyrite is here more strongly evident than in other parts of the ground and is a good indication of continuity though in itself of no value.
Thenore shoot appears to be a series of small lenses pinching and swelling vertically as well as horizontally and as reported by the foreman varying from a few inches to as much as 42 inches in width. The stopes that could be examined indicated this to be true as they have been left open without much need of timber the walls being generally firm.
The samples mentioned above, when assayed were as follows:-

South sample, 75 feet from the shaft, 8 inches wide and 3 feet long shows .39 oz Gold; 1.2 oz Silver, a gross value of $ 14.58.

North sample, 30 feet from the shaft, 3 inches innwidth, 1 foot long shows 1.2 oz Gold; 8.8 oz Silver, a gross value of $ 48.82.

The shaft was inaccessible below the 90 foot level,
A small amount of water is required to be pumped each day, but the quantity was insufficient to measure.

Several of these oxidized outcrops have been mined from which it is apparent ore has been removed. Statements of the owner and verified by a bulk sample consisting of grabs from remaining dumps show these to have been high grade free milling ores. In places sulphides were noticed but insufficient in quantity to gain any information by assaying. No depth has been obtained by work so far, but the widely scattered mineralization indicates an area well worth while examining for the possibility of developing a low grade low cost property. The mineralized area can be said to cover roughly a width of 100 feet, a length of 300 feet and a length along its slope of 200 feet. This in itself would represent a fair tonnage if found to be of a mining grade.

The sample mentioned herein consisting of grabs from the remaining dumps showed .74 oz Gold; 4.5 oz Silver, a gross value of $ 29.39.

DISCUSSION OF OPERATIONS ON THE SILVER DOLLAR

The Colossal Mines Inc. began its operations on the Silver Dollar Claim as the most promising and accessible for preliminary operations and exploration.

The Shaft is equipped with a headframe, gasoline hoist and a portable type 105 foot compressor and the necessary accessory equipment for underground work with some accomodations for a small crew.

The shaft was unwatered and cleaned to the 90 foot level, ore was mined upward to the 70 level for the length of the oreshoot together with a small stope on the north side of the shaft. The shaft is now being cleaned below this level from which drifting will start from its bottom.

Shipping ore direct to the smelter proved inadvisable. The mill was reequipped to handle sulphide ores and now consists of the following:

Small Dodge Srusher driven by a gasoline engine; 10 ton bin; 12-15 ton Straub Rib Cone Ball Mill; 2-No.12 Fahrenwald Flotation Cells; 24 inch Wheeler Denver Amalgamator; Deister Plato Table; necessary water tanks and pumps.

Grinding is done through a 30 mesh screen followed by flotation; flotation concentrates are passed through the amalgamator; extracting

the free gold; tailings from the flotation are tabled giving a concentrate and a middling; middling returned for regrind. Flotation and Table concentrates are combined.
Bullion is shipped to the U.S.Mint at San Francisco; concentrates are shipped by truck to the American Smelting and Refining Co, El Paso, Texas.

The results of this work, consisting of the milling of newly mined ore and debris from the 90 foot level, was estimated by the foreman as approximately 219 tons.
For use in the following calculations this has been reduced to 200 tons which allows for its moisture content.
Results obtained from the Concentrates and Bullion covering the same period with an estimate made for the last shipment of 3400 pounds. This last shipment has been reduced by 5% for moisture and its value calculated on the average obtained from former shipments, is as follows;-

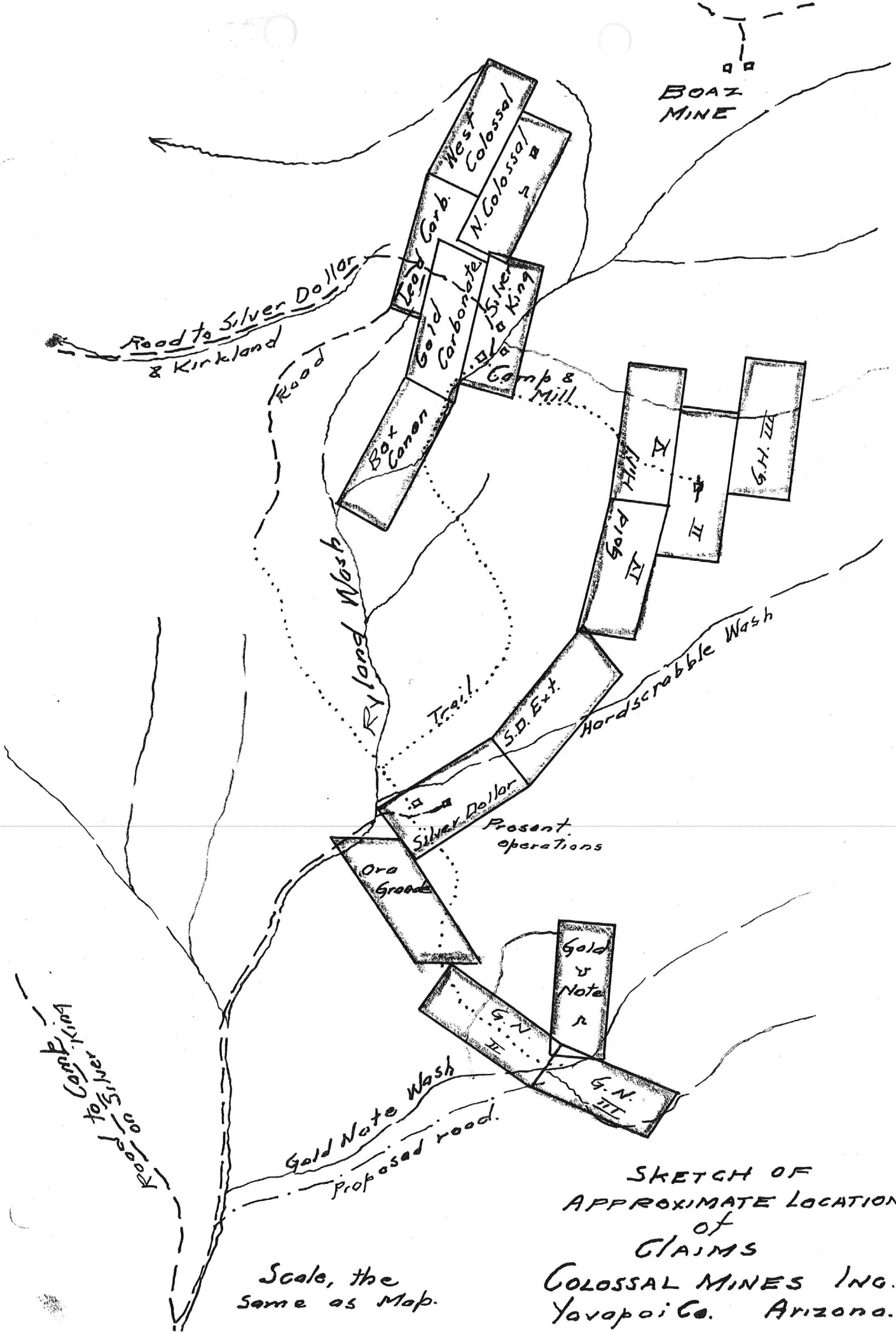
LOT NO.	DATE	LBS	TONS	VALUE/TON	GROSS
2017	6-9	2394	1.1970	$ 185.18	$221.66
2460	7-6	4008	2.0040	153.13	306.87
2466	7-7	3192	1.5960	179.19	285.98
2813	7-19	3225	1.6125	237.41	382.82
2941	8-9	2867	1.4335	306.18	438.89
?	9-30	3230	1.6100	208.60	335.84
	Totals		9.453		$ 1972.06

BULLION from Mint returns covering same period,

No.329	June 23,1937	Value	$ 174.10
No. 19899	May 18, 1937		60.38
No. 2133	July 21.1937		119.68
?	August 1937	Est.	72,48
Totals			$ 426.64

Total Gross value of Concentrates and Bullion before any charges is therefore $ 2398.70

Based on the above 200 tons of Mine ore hailed would give an estimated recovery as of $ 12.00 per ton. Using a 90% Mill recovery would show a Mine ore of an estimated value of $ 13.33 per ton.



SKETCH OF APPROXIMATE LOCATION of CLAIMS
COLOSSAL MINES INC.
Yavapai Co. Arizona.

Scale, the same as Map.

MILL TEST RUNS

Two Mill Tests were made by W.C.Broadgate of Prescott, Arizona, the results of which were placed at my disposal.
These tests indicated that the Mill was capable of handling approximately 7 tons of ore per 24 hours
Heads to the Mill averaged $ 14.75 checking sufficiently close the estimates made on the total ore milled and verifying the results of the operation to date.

COSTS

A discussion of the probable costs to be expected can not be even surmised as there is no basis on which to determine the probable volume of ore to be handled.

Development costs such as sinking and drifting can be estimated and should not exceed $35.00 per foot for sinking and $ 10.00 per foot for drifting. Contract prices may be had at even a lower figure.

Milling costs, being based on volume, can as well not be determined.

H. C. SMOOT
CHEMIST AND ASSAYER
REGISTRATION NO. 460

CUSTOM ASSAY OFFICE

Assay Certificate

IT PAYS to ASSAY

For Carl G. Barth, Jr., *Prescott, Arizona,* 8-30-37

DESCRIPTION	GOLD PER TON OZS. TROY	GOLD PER TON VALUE	SILVER PER TON OZS. TROY	SILVER PER TON VALUE	GOLD AND SILVER VALUE	OTHER METALS PER CENT	OTHER METALS VALUE
		$		$	$	Lead	$
Silver Dollar V Ground	1.44	50.40	5.0	5.87	54.27		
N. Colossal Dixon	.96	33.60	8.8	6.82	40.42	51.5	
E. Colossal	.02	.70	Trace		.70		

MARKET VALUES

GOLD PER OZ.	SILVER PER OZ.	COPPER PER LB.	LEAD PER LB.	ZINC PER LB.
35.00	.77			

Charges $

REGISTERED ASSAYER CERTIFICATE EXPIRES DEC. 31, 19 H. C. SMOOT ARIZONA, U.S.A.

H. C. SMOOT

H. C. SMOOT
CHEMIST AND ASSAYER
REGISTRATION NO. 460

CUSTOM ASSAY OFFICE

Assay Certificate

IT PAYS to ASSAY

For Carl G. Barth, Jr., *Prescott, Arizona,* 8-7-37

DESCRIPTION	GOLD PER TON OZS. TROY	GOLD PER TON VALUE	SILVER PER TON OZS. TROY	SILVER PER TON VALUE	GOLD AND SILVER VALUE	OTHER METALS PER CENT	OTHER METALS VALUE
		$		$	$		$
Silver Dollad N Side	1.20	$42.00	8.8	$ 6.82	$ 48.82		
" " " #	.02	.70	Trace		.70	Pyrites	
" " S. "	.39	13.65	1.2	.93	14.58		
Campbell Pyrites	.24	8.40	0.2	.15	8.55		
Gold Note	.74	25.90	4.5	3.49	29.39		
Table Concentrates	2.48	86.80	11.7	9.07	95.87		

MARKET VALUES

GOLD PER OZ.	SILVER PER OZ.	COPPER PER LB.	LEAD PER LB.	ZINC PER LB.
35.00	.77			

Charges $

REGISTERED ASSAYER CERTIFICATE EXPIRES DEC. 31, 19 H. C. SMOOT ARIZONA, U.S.A.

Engin & Mining Jul 5-55-Vol. 156-No.5

I N T R O D U C T I O N

This is one of a series of mine reports prepared by the PACIFIC ENGINEERING COMPANY on metal on metal mines in the Western States and in Mexico.

INTENT. The purpose of this paper is to give certain preliminary property information to determine a mine's commercial possibilities, to those who may be in a position to participate with a mine development.

SERVICE. This service is only possible with the cooperation of the mine owner who may have a mine of commercial importance, and the financial principles who may be in a financial position to carry a mine development.

This service is founded on a principal of rendering service to both the mine owner and the prospective mine operator. Such a service requires detailed investigations, analysis of the projected mine, compuation of the capital costs and the calculation of operating costs with estimate of probable gross revenue.

SERVICE COSTS. We stand the expense for property preliminary examinations, and assembling the elements of the business. This work is paid for by the mine owner on a commission basis when the purpose has been accomplished.

On Mexican mines, a 10% service charge is made for Federal Mining Concessions, Title examinations, Incorporations, and mine and Mining Claim Surveys.

Cordially,

Percy T. Horrell
Chief Engineer

August 9, 1947

PACIFIC ENGINEERING COMPANY
P.O. Box 6830
Parkway Station
Kansas City 4, Missouri-USA

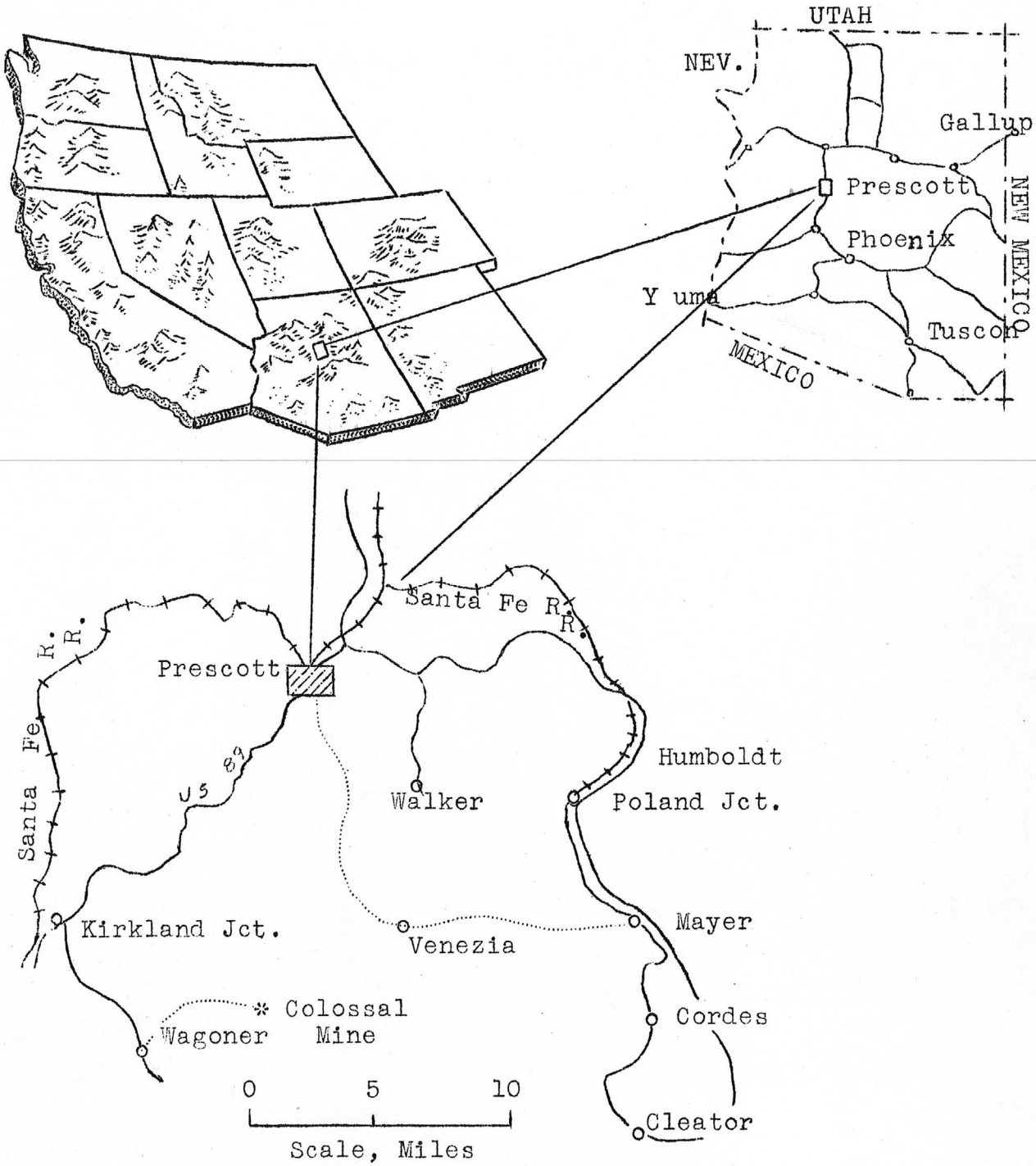


Fig. 1

SKETCH SHOWING AREA OF COLOSSAL MINE

August, 1947

INFORMATION ON THE COLOSSAL MINE
YAVAPAI COUNTY, ARIZONA

By Percy T. Horrell

CONTENTS

	Page
GENERAL	
Introduction	A-1
Acknowledgments	A-2
Summary	A-2
Location	1
Accessibility	1
Topography and Climate	1
Water Supply	1
Power (electric)	1
MARKETING MINE PRODUCTS	
Smelters and Freight Rates	2
Basis of smelter payments	3
Copper and Lead Smelters and Provisions	3-6
Split-check leasors	6
ANALYSIS OF MINING COSTS IN YAVAPAI COUNTY	
Description of Reese Prospect	7-9
Description of the Octave Mine	10-13
COLOSSAL MINE	
History	14
General Geology	14-15
Commercial Minerals	16
Milling	16-17
Property -Claim Map of Colossal Group	18
Description of Sue Claim	19-20
Description of Gold Hill Group	21-22
Description of Silver Dollar Group	23-26
Description of Gold Note Group	27-30
Description of Old Colossal Claim	31-33
Description of Box Canyon and Silver King	34

LOCATION

The Colossal Mine is located in the Silver Mountain Mining District, Yavapai County, Arizona and more particularly in Sections 1, 2, 11, 12 and 13, Township 9-North and Range 2-West

ASSESSIBILITY

Roads. From Prescott, the property is reached by going southward over U.S. Highway 89 to Kirkland Junction a distance of 22 miles. From Kirkland Junction, going southeast over 20 miles of county maintained road to Wagoner. The mine is reached over a fair up-grade road, 12 miles from Wagoner.

Mail is received at Wagoner. All necessary mine and mill supplies are maintained at Prescott the county seat. Freight and ore are received at Kirkland Junction a station on the Santa Fe Railway.

TOPOGRAPHY AND CLIMATE

The elevation about the property varies from nearly 3,000 to 6,000 feet. The country is generally rough and precipitous, the rise of the mountains permits easy mine developments by either tunneling on veins or cross-cutting to the veins.

At this elevation the snowfall is light. The average annual temperature is about 60 degrees. The climate is mild both winter and summer and at no time weather conditions will prevent working outdoors.

WATER SUPPLY

The average annual precipitation is about 15 inches, the greatest rainfall is in the months of July and August from thunder storms.

There are no running streams. The vegetation consists of the usual desert growth at higher elevations. The water table is comparatively shallow as water is developed on various parts of the property.

Commercial water must be developed. The present water supply for the camp and mill, on the Silver King Claim is from a shallow well. This supply holds well during the dry season.

POWER

At the present all machinery is driven with internal combustion engines. Fuel oil will cost about 9 cents a gallon delivered at the mine, while gasoline will run about 15 cents a gallon without tax.

Electrical power is available within 4 miles from the property. The Arizona Power Company serves the area, on the secondary transmission lines the primary voltage is 11,000, three phase-60 cycle current. Transmission line would cost $500.00 per mile, the connection charge is $50.00 for transformer installation.

ACKNOWLEDGMENTS

The data herein contained on the Colossal Mine, the general property information, grades of ores, assays and facilities was obtained from the owner -Mr. R.E. Logan; also, from a mine report made in September, 1937 by -Carl G. Barth, Jr., Registered Mining Engineer of Arizona.

Mr. Logan has lived on this property and operated it since 1922. Through the 25 years of development he has obtained considerable information at the various developments which has contributed in many ways with the preparation of this preliminary mine report.

Local and other information was obtained during the course of field investigations. Operating costs on mines in the immediate area was submitted in order to show costs to be expected at the Colossal; two operations are: Reese prospect and Octave Mine which was obtained from Bureau of Mines Information Circular - I.C. 6991, "Gold Mining and Milling in The Wickenburg Area, Maricopa and Yavapai Counties, Arizona."

SUMMARY

This investigation was undertaken in order to determine the essential facts concerning the production of gold-silver-lead ores contained in the Colossal Mine group.

Geolographically, it was found, due to the topography the vein system in divided into five distinct mine developments and the fractional portions are covered in this report accordingly.

Considering the whole mining group of claims, or at any particular mine development, we are dealing with a well mineralized area and a mining property not yet producing and is in the various stages of exploration and small developments. This has been the condition since its discovery in the early 1860's which is probably due to the little change of ownership during the years.

The availability of rich surface croppings permitted easy discovery and production of direct smelter ore shipments which enabled the owners down through the years for their success; and also offered inducement for split-check leasors and chloriders.

The course of the vein system with its favorable geology establishes a sizable mining operation in ground known to contain commercial ores from shallow developments.

In analyzing the elements for either a small or large operation this property is favorable for commercial production when considering the grade of ore, climate, topography, water, smelters and the conceivable factors for a mining enterprise.

MARKETING MINE PRODUCTS

Crude mine ores and mill concentrates are accepted at any one of the following smelters:

Magma Copper Smelter, Magma, Arizona
Phelps Dodge Smelter, Clarkdale, Arizona
American Smelting & Refining Co., Hayden, Arizona
American Smelting & Refining Co., El Paso, Texas

All lead-bearing ores and concentrates are shipped to El Paso, while the copper and gold-bearing ores can be shipped to any of the above smelters as they are copper smelters.

Ore shipments are received on the Santa Fe Railrad at Kirkland Junction where an ore ramp is provided. From the mine the trucking distance is about 35 miles, and from Kirklan Junction the rail distance to El Paso is about 560 miles, 115 miles to Clarkdale

Freight rates from Kirkland Junction to American Smelting & Refining Co., El Paso, Texas are about for:

Metal value ($) per ton	80,000-lb. minimum car	60,000-lb. Minimum car	40,000-lb. minimum car
Up to 15	$4.00		
15 to 20	4.25	$4.50	
20 to 30	4.50	4.75	$4.75
30 to 40	4.75	5.15	5.15
40 to 50	5.00	5.65	5.65
50 to 60	6.00	6.20	6.20
60 to 70	6.50	6.90	6.90
70 to 80	7.00	6.75	7.85
80 to 90	7.50	7.85	7.85
90 to 100	8.25	7.85	7.85
100 to 150	9.00	8.65	8.65
150 to 200	9.50	9.42	9.42

Freight rates from Kirkland Junction to Phelps Dodge (United Verde) Smelter, Clarkdale, Arizona are about for:

Metal value ($) per ton	60,000-lb. minimum cars	1/ 60,000-lb minimum cars
Up to 15	$1.90	$2.40
15 to 25	2.40	2.50
25 to 35	2.80	3.25
35 to 50	3.40	3.60
50 to 75	4.10	
75 to 100	5.40	5.50

1/ To magma Smelter, Magma, Arizona

SMELTING SCHEDULES

The basis of payment to a miner for his produced product is the gross value of the metals which can be extracted and refined in a particular smelter and in addition to a base treatment charge of so much per ton, deductions are made from the gross value to cover costs.

The base treatment charge is the approximate cost of handling and smelting one ton of ore. This charge should theoretically include the smelter's profit, but rarely does include more than a small part of the legitimate profit to which it is entitled.

Deductions from gross values take different forms but may be roughly classified as follows:

1. Percentage deductions, which cover the losses by spillage, dust, slag, and the retreatment of by-products.

2. Deduction per pound or ounce to cover the cost of refining and transportation. These costs include the costs of seperating the gold and silver from the lead bullion or blister copper to produce bars of the refined metals, as well as the cost of shipment from the smelter to the market where the metal is priced.

Copper and Lead Smelters. To be able to sell ores at the best price is an important as to find it. In the West, generally, there are two kinds of smelters -lead and copper.

When an ore such as an lead-ore is sent to a copper smelter, or an copper-ore sent to a lead smelter the metal recovered is in the form of by-products. Deductions are made to pay for the additional processing required. Since the latter condition directly affects the return payment to a miner, the miner should shop around for the highest possible market for his product.

The general examples illustrate typical provisions of SMELTER SCHEDULES FOR CUSTOM ORES.

Amounts: Smelters usually will not accept crude ore shipment under 15 tons in truck lots.

Mill concentrates are accepted by truck or railroad car, either bulk or sacked, if sacked 50¢ per ton is charged.

Weights: All payment calculations are based on dry weights. Actual moisture content will be ducted with the understanding that the minimum deduction is 1%. A ton is considered 2,000 avoirdupois pounds. An ounce of gold or silver is a troy ounce. A unit is 1% of a ton, or 20 pounds.

Contracts: If a mine is a steady shipper and can furnish a definite minimum tonnage or either mine run ore or mill concentrates, then arrangement should be made with the smelter on a contract basis.

Sampling: The settlement payment paid to the miner for his ore or concentrate by the smelter is usually correct, that is, free from errors and the intent to falsify the amount of payment.

Usually, on small lots a sampling charge of $5.00 is made for each lot less than 10 ton, or the minimum tonnage accepted.

It is common practice for a steady shipper to hire an umpire assayer in view of the fact the smelter is honest, in this event the shipper pays for such umpire assaying. And, in the event the smelter and the shipper's assays do not check within in the limits stipulated in the contract, an assay shall be made by a third party selected for a list of umpire assayers previously agreed upon. If the umpire exactly check either previous results, the assay not checking will be disregarded. When three different results are obtained, the one between the other two will govern.

Common methods for payment for metals by smelters

Gold - Based on U.S. metal price. Gold payments are based on realized mint price which is set by Congress of $34.912 5 per troy ounce.

Silver - Silver payments are based on realized mint price of 77 cents per ounce, provided affidated is furnished to qualify silver for U.S. Goverment purchase. This price is a premium to the U.S. producers and is higher than the world price set in London.

Lead - Lead payments are based on N.Y. quotation for desilvered lead.

Copper - Copper payments are based on Engineering & Mining Journal quotations for electrolytic cathodes averaged for the week.

General provisions for payment by Lead Custom Smelters

Gold - minimum paid for 0.03 ounces per ton.

Ounces per ton	Per ounce
0.03 to 3	$31.81825
3 to 5	32.31825
5 to 10	32.6743
Over 10	33.0304

Silver - pay for 95% less 1 ounce per ton (present mint price).

Lead - no payment for less than 5% wet assay. Deduct from the lead west assay 1.5 units and pay for 90 % of the remaining lead at N.Y. quotations, less 1.5 cents a pound.

Copper - no payment for less than 1%. Deduct from wet assay 20 pounds and pay for 100% of the remaining copper at current quotations less 6 cents per pound.

General provisions for payment by Copper Custom Smelters

Gold - Minimum paid for 0.01 ounce per ton. All classes of ore, $31.81825 per ounce.

Silver - if one ounce per ton or over, pay for 95% at current price less 2 cents an ounce. Minimum deduction 1 ounce per ton.

Copper - deduct 10 pounds per ton; pay for the remainder at 90% of current quotations, less $0.025 (2½ cents) per pound.

Lead - None.

A SAMPLE ORE SETTLEMENT SENT TO THE PHELPS DODGE CORPORATION (united Verde Branch) CLARKDALE, ARIZONA

Date: July 18, 1941
Smelter Lot No.: 1432

Metal Quotation Average Week Ending July 16, 1941

N.Y. Copper - 11.788 cents per pound, deduct 2.50 cents lb.
U.S. Silver - 70.625 cents per ounce.
U.S. Gold Price- $34.9125 per ounce, deduct 8% - 2.793 per ounce.

Assay per ton

Gold - 1.56 ounces
Silver-11.07 ounces
Copper- 5.10 percent

Weight of Ore

Dry tons - 7.9895
(part of lot shipment)

Payments	AMOUNTS Per Ton	Total
Gold - 1.56 oz @ $32.1195	$ 50.11	
Silver-11.07 oz @ 70.625 cents ...	7.82	
Copper- 5.10 % is 102 lbs less 10.05 lbs or 91.95 lbs @ 9.288 cents...	8.54	
Total payments		$66.47

Treatment Charges		
Base treatment	3.50	
Treatment increase account excess value	2.50	
Net treatment		6.00
NET PRICE PER TON		$ 60.47

Gross Proceeds	
7.9895 dry tons @ $60.47	483.13

Deductions		
Less freight on 30.66 gross tons @ $2.20/ton-	67.45	
Less sampling charge on 22.0105 tons @50¢/ton	11.01	
Less 10% of $62.48 payment for silver	6.25	
Additional sampling charge one 10 ton over one contained in one car	7.50	
Net deductions		$92.21
Balance due shipper		$390.92

Local Ore Markets

The Prescott and Wickenburg Ore Markets accept small shipments of less than carload lots of gold, silver, lead, and copper ores, Each customer's ore is kept in a seperate bin until satisfactory settlement is made before it is shipped to a smelter. Sampling is done by hand quartering on a steel sheet. Assaying is done by a custom asserer. The ore bins are at a railroad siding, and when enough ore has accumulated to make a carload lot it is mixed and shipped to a smelter. Shipments are made mostly to the American Smelting & Refining Co. plant at El Paso, Texas, and the Magma Plant at Superior, Arizona.

Payments are based on the following statement, issued by the Ore Market in its open ore-buying schedule: "After proper freight and treatment charges are deducted, we arrive at the net smelter value of the ore. From this amount we deduct 10% as out brokerage. There is also a sampling charge of $3.25 per ton or per lot. This entitles the shipper to a control assay." A sample settlement on a small lot is as follows:

Net weight of lot	2,575 pounds
Moisture, 4.4 %	113 "
Net dry weight	2,462 pounds

Payments

Gold - 1.88 ounces, all at $32.20		$60.54
Silver- 0.50 ounces, no payment		
Value per ton at shipping point		$60.54
Freight rate per ton	$4.50	
Smelter treatment per ton	6.00	
Total	$10.50	10.50
Net value per ton		$50.04
Total net value of 1.231 dry tons		$61.60
Brogerage	$6.16	
Sampling, assaying	3.25	
Total	$9.41	9.41
Due shipper		$52.19

MINE LEASING

In the prescott area and surrounding territory there always has been much small-scale leasing, particularly in periods of general unemployment. Accessibility of the mines and the widespread occurence of rich ore at grass roots or in partly developed mines has enabled leasers to make fair wages with more than usual consistency.

Leasers work in small groups, if the mine owner or lessorsupplies equipment and power the royalty may be 25 percent or more.

ANALYSIS OF MINING COSTS IN YAVAPAI COUNTY

The following information is submitted from actual mining operation:

Situation

The Reese Mine is in the Martinez district at the summet of the Date Creek Mountains, about 6 miles due north of Congress Junction. It is served by a passable branch road from the Congress Junction-Hillside Highway (U.S. 89), which lies about one mile to the east of the mine.

TOPOGRAPHY AND GEOLOGY

The property consists of 2 patented and 11 unpatented claims. The ground lies in the quite rugged part of the Date Creek Mountains. The highest peaks are about 4,500 feet. The summit of the range at the mine is 3,800 feet.

The country rock is granite with diorite intruded along the plane of the vein. The vein bears northwest and southeast and dips to the northeast about 30 degrees. At the southern end of the property the vein consists principally of quartz, which varies in thickness from 2 to 4 feet. The principal minerals are gold-bearing sulphides of iron, lead, and copper, with some zinc. At the northern part of the property the vein seems to be more altered and oxidized. The best ore occurs with yellow and brown oxides of iron.

Development

The property was worked many years ago, and it is developed quite extensively for a small mine through two inclined shafts on the vein. One shaft at the southern end of the property is 1,180 feet deep and the other at the northern part is 300 feet deep. The bottom of the south shaft connects with the surface by an adit crosscut 700 feet long. There are a number of levels from each of these shafts, but the extent of workings is unknown because of caving.

Equipment

Mine equipment consists of a gasoline hoist, a gasoline air compressor, and two jackhammers. Besides this it was necessary to buy a truck for hauling supplies and taking men to and from work.

Mining Methods

Mining was started in the upper levels in 1936. Shipments from this part of the mine ran from $9 to $15 a ton in gold. Later on this part of the mine was abandoned and mining was begun on the upper level of the north shaft. Shipments from here ran from $40 to $60 a ton in gold.

Drilling is done with mounted jackhammers using 7/8-inch hollow steel and chisel bits. The steel is sharpened at the mine.

In November 1936, operations consisted of mining above the first level south of the shaft and drifting south on the same level. By careful mining higher grade ores shipments were kept around at $40 to $60 per ton. Carload shipments of 45 tons were made to the Magma Smelter at Magma-Superior every two weeks.

Labor

The payroll in November was as follows:

3 miners	@	$5.00	Per day
4 muckers	@	4.00	do
2 hoistmen	@	5.00	do
1 cook	@	2.00	do
Total		$43.00	do

The hoistman runs the hoist, takes care of the compressor, and does the topping. Quarters are furnished, but there is a charge of $1 a day for board.

Capital Costs

Equipment:

Gasoline hoist	$ 250.00
Gasoline compressor	1,350.00
Rock drills	138.00
Picks and shovels	63.00
Drill steel	22.00
Pipe, hose, etc.	250.00
Mine haulage	90.00
Total	$2,163.00

The truck was purchased on a time-payment plan and the payments are figured as operating expenses.

Trucking, Freight, & Smelter

Trucking rates to Congress Jct. are $1.50 a ton. For a 80,000-pound railroad car, the freight rate from Congress Jct. to the Magma Smelter at Superior is as follows: $15 to $20 ore -$2.40 a ton; $25 to $30 ore -$2.60 a ton; over $70 ore $4.80 a ton.

Treatment charges are $3.50 a ton for ores having metal values up to $15 a ton and 10% additional of the gross value of ore for any value over $15.

Operating Expenses:

March 1, 1935 to August 30, 1936
Total, 802.47 tons produced

	Total	Per ton
Labor	$4,200.00	$5.23
Gasoline for hoist and compressor	490.00	.61
Lubricating oil	66.00	.08
Powder	173.00	.21
Caps and fuse	127.00	.16
Groceries	1,475.00	1.84
Ore hauling	720.00	.90
Gasoline and oil for truck	246.00	.31
Cash payments on truck	375.00	.47
Assaying	96.00	.12
Repairs on old truck	74.00	.09
Tires and tubes	220.00	.27
Timber	$8,323.00	$10.37
Total		

Smelter Receipts

Dry Tons	Assay Value	Freight per ton	Treatment per ton	Receipts
46.16	$ 9.66	$ 2.17	$ 3.50	$ 184.58
49.41	11.59	3.97	3.50	203.02
45.76	9.02	2.20	3.50	152.00
51.27	11.27	2.17	3.50	288.44
47.39	8.05	2.18	3.50	112.46
51.70	6.44	2.16	3.50	40.25
49.60	15.45	2.57	3.55	462.19
50.95	14.16	2.61	3.50	411.05
52.88	16.10	2.60	3.61	523.36
44.60	18.99	2.56	3.90	557.82
51.43	15.45	2.62	3.55	479.14
45.23	12.88	2.66	3.50	303.95
40.27	21.57	2.90	4.16	583.64
36.31	23.90	3.20	4.39	592.58
31.77	35.42	3.20	5.54	847.11
33.65	40.80	7.05	6.00	936.64
42.63	62.79	4.27	6.00	2,243.01
31.46	21.57	2.70	4.16	462.19
802.47				$9,383.43

Mining and Milling Costs At The Octave Mine, Yavapai County

Situation

The Octave Mine is about 12 miles east of Congress Junction in the foothills of the Weaver Mountains.

The principal water supply, consisting of 40 to 50 gallons per minut, comes from Antelope Springs about 8 miles northwest of the mine.

Topography and Geology

The elevation at the mine is 3,400 feet. The country is rough, having been cut by deep arroyas from the Weaver Mountains, but just below the mill the country flattens out.

The country rock is granite in character. The Octave vein bears North 70-degrees east and dips from 18 to 25-degrees to the north, the vein widths range from a few inches to 6 feet. The commercial mineral contain galena, chalcopyrite, bornite, pyrite, and gold in appreciable quantities.

Development

The property has been extensively developed to a depth of 1,800 on the dip of the vein over many years of work. It is estimated the development work amounts to as much as 150,000 feet.

Prospecting is done by drifting on the veins and diamond drilling. On haulage levels, drifts are kept from 10 to 12 feet wide so that it can be doubled tracted. Raising on the vein, in stopes, on veins of 20 to 30-degrees is done with mounted machines, ore is moved from stopes in shaker chutes by hand methods.

Milling

The normal capacity of the mill is from 90 to 100 tons per day. Electrical power is purchased from the Arizona Power Co.

Recovery is made by flotation concentration and cyanidation. The ratio of concentration is from 35 to 45 to 1. Typical head, tail, and concentrate assays from the flotation circuit are as follows:

Flotation heads	0.3 gold, oz per ton.
Flotation Concentrates	(12.5 gold, do (15 silver, do
Flotation tails	0.05 gold oz per ton

Total recoveries:

	Percent
Gold	94.13
silver	84.23
Lead	80.0
Copper	79.5

Operating Costs

Mining, 1935. -Developing and ore-breaking costs for 1935 are shown in the following tables:

Development: (2,034 feet produced 23,951 tons)

	Amount	Per foot	
Breaking:			
Labor	$8,870.00	$ 4.361	
Supplies	994.31	.489	
Supervision	1,146.23	.565	
Power	2,032.37	1.000	
Timber	146.42	.072	
Explosives	2,803.43	1.378	
Drill Supplies	1,207.74	.594	$ 8.459
Tramming:			
Labor (sub level)	754.09	.366	
Supplies do	177.31	.087	
Labor (main level)	349.59	.172	
Supplies do	103.93	.051	.676
Hoisting:			
Labor	937.05	.462	
Supplies	13.91	.006	.468
Shops:			
Labor	1,586.54	.780	
Supplies	912.09	.448	1.228
Miscellaneous:			
Labor	336.38	.165	
Supplies	1.03	.001	.166
Total amount . . .	$22,373.52	$10.997	$10.997
Per foot	11.00		
Per ton milled . .	.94		

Ore-breaking Costs, 1935 (23,951 tons milled)

	Amount	Per ton mined	
Stoping:			
Labor	$40,005.61	$1.724	
Miscell. supplies	4,019.42	.173	$1.897
Supervision	3,618.34	.156	
Power	7,042.47	.304	
Timber	2,408.17	.104	
Explosive	9,314.93	.401	
Drill Supplies	6,224.86	.268	1.233
Tramming:			
Labor (sub level)	2,451.93	.106	
Supplies do	975.48	.042	
Labor (main level)	1,750.93	.075	
Supplies do	729.72	.034	.257
Hoisting:			
Labor	2,232.11	.096	
Supplies	71.96	.003	.099
Shops:			
Labor	6,547.56	.282	
Supplies	3,261.39	.141	.423
Miscellaneous:			
Labor	918.69	.039	
Supplies	7.85	.000	.039
Total	$91,581.42		
Per ton mined			$3.948

Milling, 1935. -Costs are shown in the following table:

General:			
Labor	12,362.46	$0.517	
Supplies	10,623.17	.444	$0.961
Supervision	2,075.00	.087	
Power	14,367.13	.600	
Reagents	5,737.70	.239	
Royalties	217.71	.009	
Hauling Concentrates	1,675.97	.070	1.005
Miscellaneous:			
Labor	4,173.84	.175	
Supplies	1,755.37	.073	.248
Total	52,988.35		
Per ton milled			$2.214

General, 1935. -The general expense for 1935 is shown in the following table. (Tons milled, 23,951)

General expenses, 1935 (itemized)

	Amount	Per ton milled	
Salaries	$4,450.00	$0.186	
Taxes	2,553.29	.106	$0.292
Engineering and assaying:			
Labor	2,469.11	.103	
Power and supplies		.035	.138
Water supply:			
Labor	219.95	.009	
Supplies	7.88	.000	.009
Insurance:			
Fire	400.00	.017	
Employees liability	7,413.26	.310	
Theft	50.00	.002	.329
Telephone and telegraph	240.00	.010	.010
Camp maintenance:			
Labor	1,591.36	.067	
Supplies	1,216.30	.051	.118
Boarding house	205.26	.008	
Traveling	642.37	.027	
Tucson office	2,396.00	.100	
Legal	70.00	.003	
Office supplies	387.49	.016	
Miscellaneous	94.15	.004	.158
Total	$25,236.92	$1.054	$1.054

Total, 1935. -The total expenses for 1935 is as follows:

Tons mined and milled	23,951
Development	$ 0.934
Mining	3.948
Milling	2.214
General	1.054
Total per ton	$ 8.150

HISTORY

The presence of gold in this property has been known for many years, and mining operations on a small scale have been carried on intermittently sience in the early 1860's.

According to early records the outstanding work was done in early times by Major Pickens, Judge Campbell, Frank Ryland, Harvy Taylor and R.E. Logan.

The Silver Dollar and Gold Note mines were discovered in the late 60's by Major Pickens and the highgrade gold ores were worked by hand methods, the ore was hauled out by ox team and shipped to Swansea, Wales for smelting.

The Old Colossal claim was located in the early 70's by Harvey Taylor who was a Civil War veteran. Taylor also relocated the Gold Note as the Grubstake mine in 1902, from which much of the ore was treated in arrastres for the recovery of the gold values.

It is known that Tylor mined and recovered more than $50,000 from these mines until his death in 1916. On his death the property the mines laid dormant in his estate and was lost sight of until the present owner became active in the immediate area in 1922.

R.E. Logan, the present owner of the various mining groups which comprises the Colossal Mine obtained several claims from the Taylor Estate and relocated other claims which have been worked with better mining methods, living facilities and a small mill has been provided.

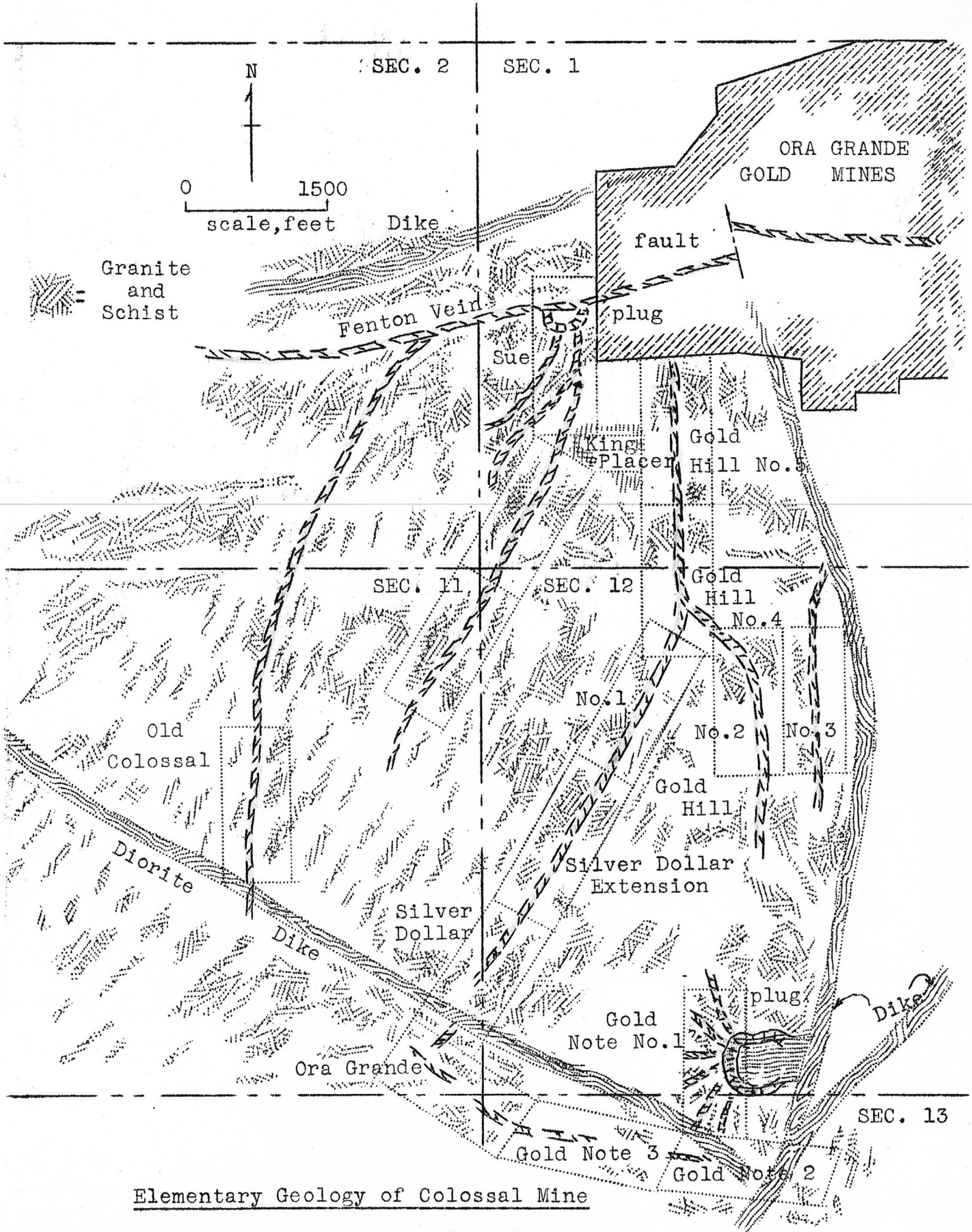
Mining has been carried more or less consistently by Mr. Logan since 1922 on the various mining groups. The work was largely by leasers who work surface croppings for highgrade shipping ores and it is reported by the owner $92,000.00 has been received, mostly for royalties from produced ores.

GEOLOGY

The general geology of the immediate area is described by the United States Geological Survey Folio No. 126 of the Bradshaw Quadrangle and in U.S.G.S. Bulletin No. 782.

Fig. 14 shows the elementary geology. The district is characterized by a great number of northeasterly striking veins. The veins consist principally of quartz filled in faulted fissures that are from a few inches up to greater width than 4 feet.

The country rock is essentially granite and beds of schist that run in a general northeasterly and southwesterly direction. Numerous diorites and aplitic dikes were intruded into the rocks of the area.



Elementary Geology of Colossal Mine

Fig. 2

The country about the property is rugged and precipitous permitting easy exploration and development work. Geological determinations are also quite simple since the vegetation comprises chiefly grass and sage brush, and veins are exposed over considerable depth due to the curvature on the vein's strike.

Generally the veins dip to the west from a nearly vertical to 60-degrees. By far the most abundant mineral in the veins is quartz. Several thousand feet of the vein system has been worked by comparatively shallow developments, this development work has showed there are two types of mineralization thus forming two distinct type of veins, one carrying free gold with little mineralization and the other with massive sulphide mineralization of iron, lead and copper, free gold is also found with the various sulphides.

The minerals in the ore deposit are typical of the deep vein or veins deposited under conditions of moderate temperatures and pressures in a granite intrusion on a batholithic scale. To the north, in the area of the Sue Claim, there are zones showing intense pressure resulted in schisting which gives evidence of the plastic condition of the rocks. Stresses of the granites country rock in the formation as a whole on the property show apparently much pressure and stresses were relived by flowing rather than faulting since the veins carry a good strike over thousands of feet, or at least until near the termination of igneous activity.

Development of the various veins in the vein system has indicated the mineralization is probably due to base dynamic action at the time of the intrusion of the dikes and plugs. The amorphisim which brought the disintergration of the lime in contact of the area which released the acidic material from the joint granites forming the diorite porphyry by fracturing sufficiently to oxidize all the minerals in the basic rock, as weal as in the sedementary rocks, forming and establishing a group of sulphides in a quartz magma thus filling the veins which have followed by long period of oxidization which resulted in leaving a tremendous body or oxide ore.

It could be said without fear of contradiction that the various dikes and plugs have fathered the mineral deposition of this net-work comprising the vein system.

The commercial sulphide minerals now exposed in the many shallow workings show evidence of heavy oxidization, and in some cases there is a complete leaching of the monzonite and replacement of blocky schis and as the veins are in a shear zone of the schist followed by a footwalling of the schist composed of ampholic schist material which is sufficient to resistance to avoid leaching in the secondary minerals deposition therefore inasmuch as the base minerals are copper, gold, and silver in those veins now showing lead as galena it is likely with depth the lead values would terminate into good values of gold and copper with intensive enrichments in the line of contact with intersections of vein-jointings.

COMMERCIAL MINERALS

Virtually all the base minerals produced have been by-products of gold and silver. Gold is the principal ore-mineral content. In all the veins, the outer zones at croppings carry a high percentage of gold which is free milling.

The development work already done, comprising about 40 opening, confined largerly to surface work since the depest development is 127 feet below the vein's cropping, has shown, invariably veins are found filling fissures of greater or less magnitude that occur as faults or joints. As a rule, ore bodies are not liable to be found along prominent or open cracks or breaks. This is accounted for by relative lack of impounding of solutions locally and excessive permeability. And it is remarkable, how earlier work was confined to parts of the veins where ore is far more often deposited in adequately permeable paths such as breccia-filled portions, or in tight joint planes where circulation was a slow process and ample time for penetrarion and precipitation was a slow process and ample time for penetration and precipitation.

MILLING

Highgrade free milling gold ores have been milled from all the major developments. The mill flow sheet is shown in Fig. 4. Mine ore is crushed in a Blake-type jaw crusher set at 3/4-inch discharge. The crusher is driven by a 4-cylinder automobile engine.

The ore is received in a Fine Ore Bin and discharged from the bin bu an Ore Feeder into the feed of a Straub Rib-Cone Ball Mill.

Water is feed into the feed of the Ball Mill at a ratio of about 3 to 1. Water is obtained from a near by well.

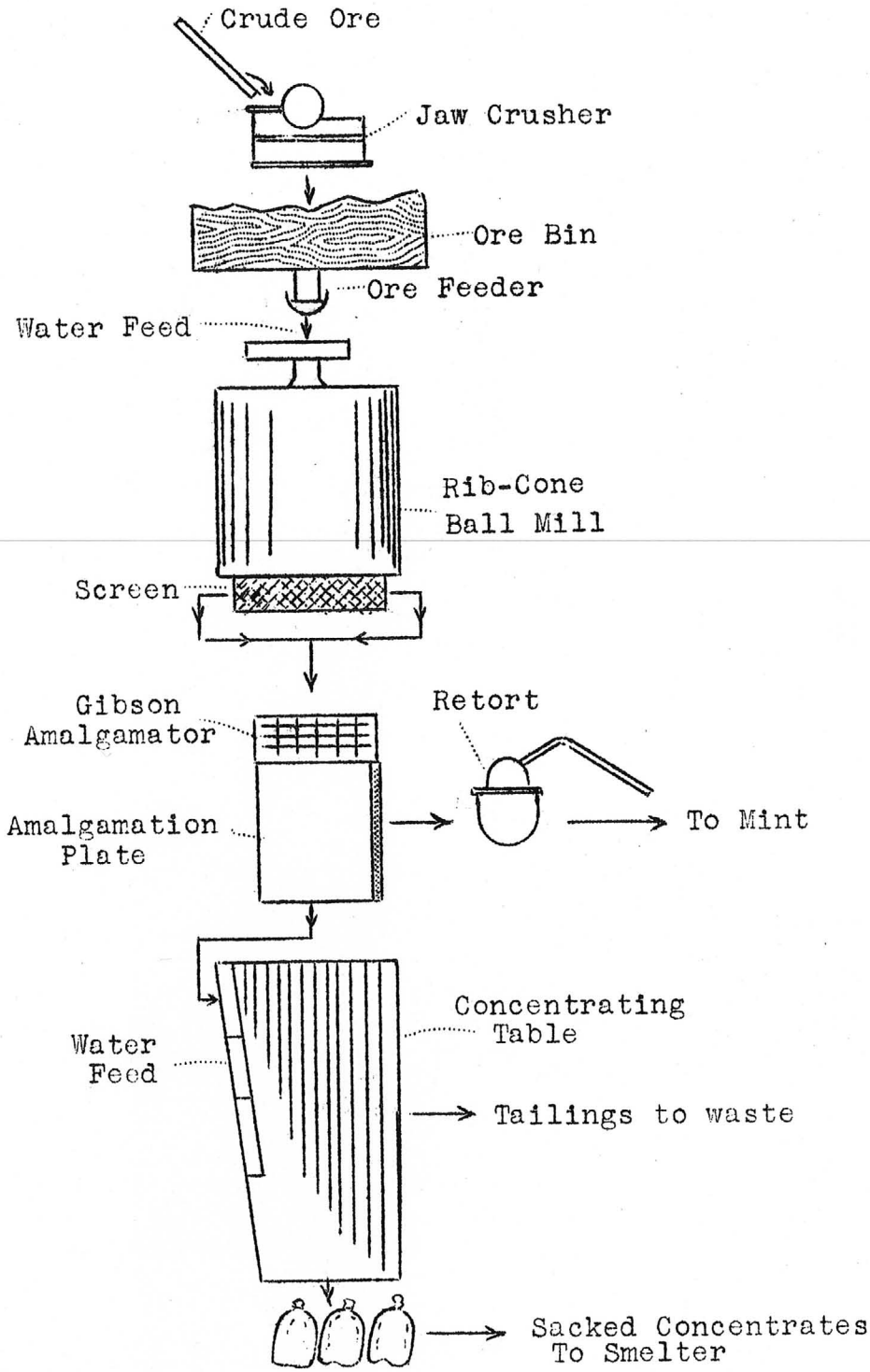
The Rib-Cone Ball Mill is equipped with screen at the discharge end of the mill for classification. When provided with 60-mesh screen the capacity of the mill is about 15-tons per day.

The ball mill discharge is passed through a Gibson Amalgamator and over an amalgamation plate. Here the gold is recovered in and as amalgam and is then retorted for a mint product.

Tailings from amalgamation are passed to the feed of a Deister Plat-O Concentrating Table, table concentrates go to the smelter and the tailings to waste. Concentrates are sun dried and sacked for shipments.

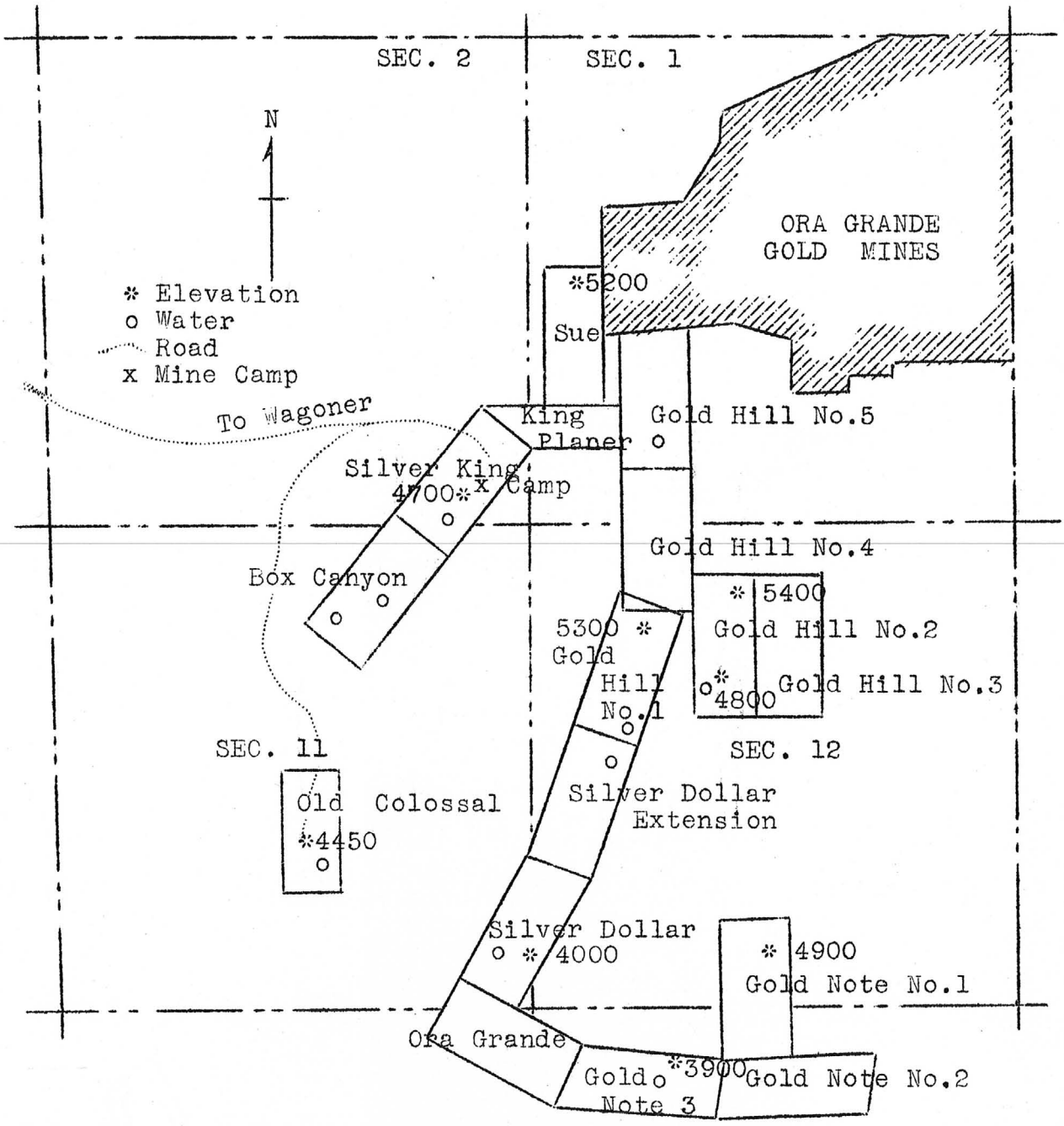
The mill and table is powered by a 4-cylinder Nova Engine rated at 10 horsepower.

The mill equipments are housed with a wood-frame structure of dimensial lumber framing.



MILL FLOW SHEET - LOGAN MILL

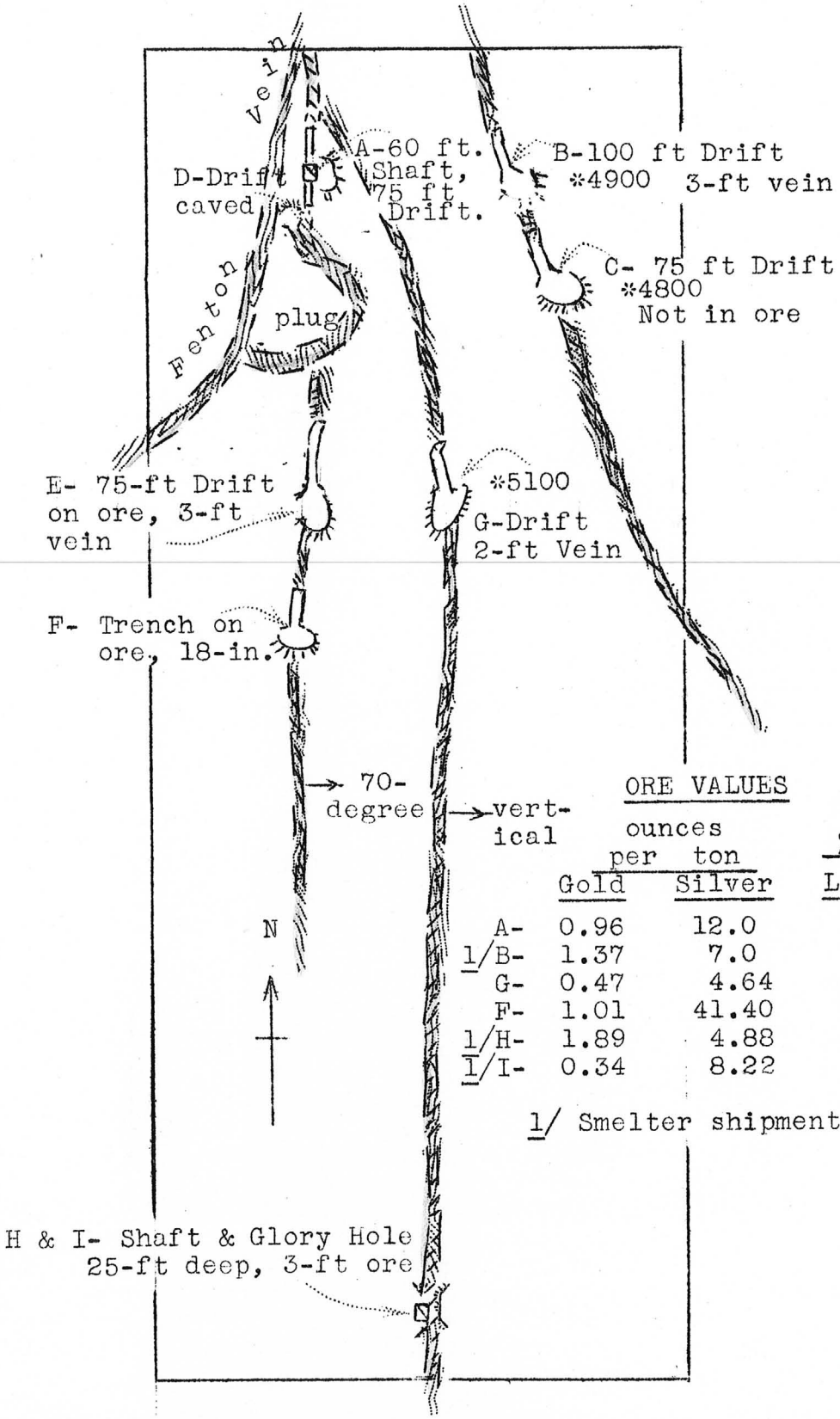
Fig. 4



CLAIM MAP OF COLOSSAL MINE

Fig. 3

Property. The property consists of 16 unpatented mining claims, and recorded with the County Recorder at Prescott, County of Yavapai.



ORE VALUES

	ounces per ton Gold	Silver	% Lead
A-	0.96	12.0	14.00%
1/B-	1.37	7.0	12.04%
G-	0.47	4.64	11.20%
F-	1.01	41.40	49.00%
1/H-	1.89	4.88	18.40%
1/I-	0.34	8.22	17.70%

1/ Smelter shipment

SUE CLAIM

SUE CLAIM
(North Colossal Group)

The ground formerly held by the North Colossal, West Colossal, and Lead Carbonate Claims is now held by the Sue Claim which covers the major development work.

Topography and Geology

The elevation on this claim is generally 5,000 feet. The rough country contributes toward easy development of the veins from adit tunnels.

Fig. 3 shows the vein system. The veins are the quartz-fissure type and the country rock is granite schist. This group of veins appear to be in a shear zone and are of the mesothermal type deposited under conditions of moderately high temperatures and pressures.

There are three well-defined veins that are approximately parallel in strike bearing to the north with nearly vertical dips, and with widths of 3-foot average. These veins apear to be spur veins off the well-defined Fenton Vein. The Fenton vein strikes easterly and dips 70-degrees to the north.

Development

Fig. 3 shows the development. Little systematic mining has been done. Near the surface lead carbonates are found in areas of much oxidization, the carbonate ore has been worked fot its gold content which is free-gold and development work has been confined entirely to such outcrops.

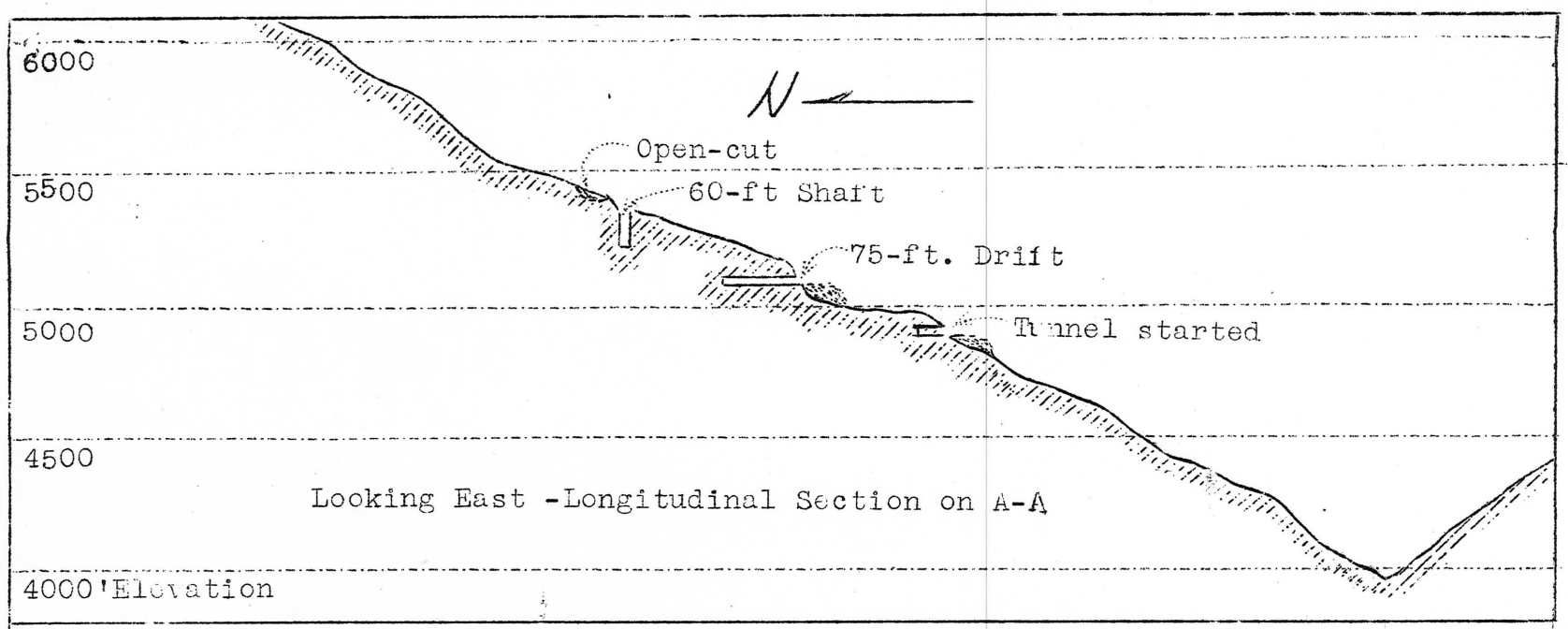
The development done by chloriders has determined considerable information as to the commercial possibilities from smelter shipments and attempts to mill the ore.

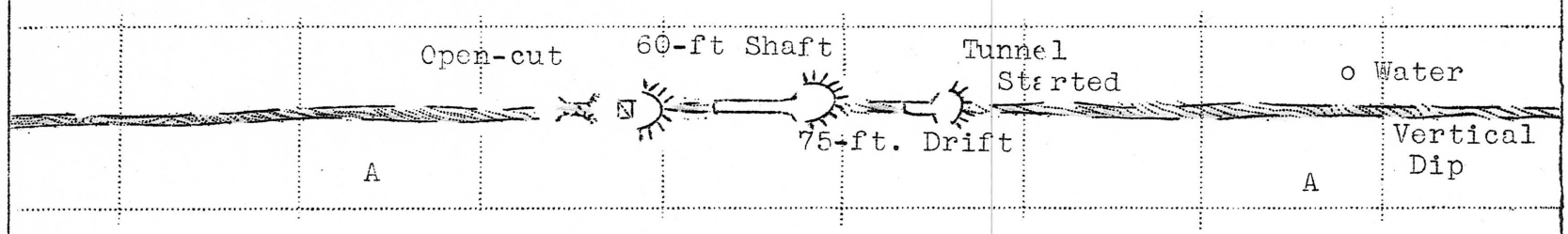
The ore on this claim are predominately oxides, mostly of lead with lead sulphides as galena. Some of the ore was milled in the Logan mill which is equipped with amalgamation and table concentration, this was not successful as only about 50% of the gold assay was recovered.

Fig. 3 shows assay results from smelter shipments and assays cut on the vein. The Fenton vein is from 5 to 25 feet in width and probably will average 0.50 ounce gold, this vein is free from lead oxides or sulphides as the gold is free and finely divided and found in the matrex of the vein filling.

Possibilities

There is ore in sight, veins are of sufficient width and contain commercial mineralization of gold, silver and lead of a smelter shipping grade. This claim could now be worked by sub-leasers on a split-check basis when equipped with mining facilities.





Plan of Gold Hill No. 2 Claim

Fig. 5

GOLD HILL GROUP

The Gold Hill group consists of 5 full-size mining claims:

1. Gold Hill No. 1
2. Gold Hill No. 2
3. Gold Hill No. 3
4. Gold Hill No. 4
5. Gold Hill No. 5

This group of claims is shown in Fig. 3 , and are reached over an old road from the Colossal Camp. The road is in poor condition but can be put in fai condition at little cost by renting equipment from the County Road Commission.

Topography and Geology

The country on this group of claims is rough and precipitous which permits easy development,development by adit tunnels with considerable vein above transportation levels.

The country rock is essentially granite and beds of schist that run in a general northeasterly and southwesterly direction. Rhyolite and diorite are intruded along the plane of the vein.

Gold Hill No. 2 Claim

Development has been confined to this claim. Fig. 5 shows the plan; while Fig. 6 shows the elevation of the development work.

The vein is from 1 to 3 feet in width and consists of a quartz filling in a faulted fissure. Walls of the vein are on a nearly vertical dip and hold well without timbering. In the area of the development, the vein is traceable by its cropping some 300 feet southward and 150 feet northward from the 60-foot shaft, the vein strikes north-south

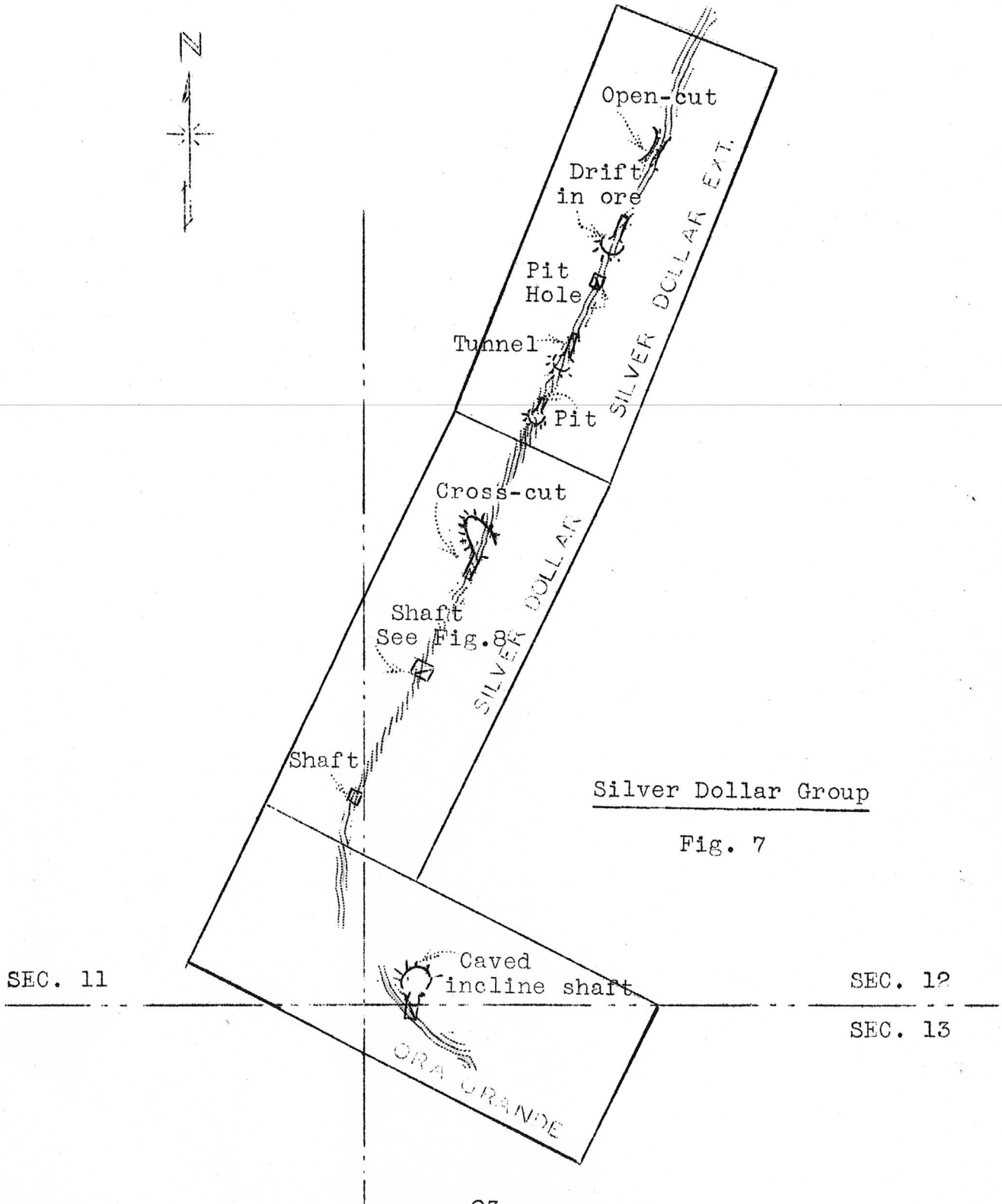
Possibilities

The work already done is in an oreshoot containing free gold and sulphide mineralization. Smelters shipments have been made and some of the ore milled in the Logan Mill.

In the shaft, the vein shows a 3-foot vein of sulphide ore assaying 1-ounce gold; lower down the hill, in the face of the 75-foot drift-tunnel the vein is 2-foot wide assaying 0.69 ounces gold.

This development appears to be the best of the group for easy and quick returns. Sufficient work has been done to expose ore of a commercial grade. Work could be continued in the known ground from the 75-foot tunnel.

To start with, on a small scale, to prove the possibilities at this development, a Mexican crew or split-check leasers could be put to work with mining equipments. Burro pack train could be used to pack the highgrade ore to the Logan Mill for treatment, or for direct smelter shipment.



Silver Dollar Group

Fig. 7

SILVER DOLLAR GROUP

The Silver Dollar group consists of 3 full-sized mining claims:

1. Silver Dollar
2. Silver Dollar Extension
3. Ora Grande

Fig. 3 shows the position of this group which is reached over a rough truck road through Ryland Gulch from the Logan Camp on the Silver King Claim.

Topography and Geology

The country is rough which permits development on the vein by adit tunnels. The elevation is around 4,000 feet.

On this group one vein has been developed, it is a quartz fissure with an average width of about 3 feet, it's strike is northeasterly with a dip of 75-degrees to the east. The country rock is wholly granite and altered at the surface. Walls appear to hold well at deeper development without the use of timbers.

Mineralization on this group is entirely sulphide of iron, copper and lead in the form of pyrite, chalcopyrite and galena. Gold is the commercial metal, it occurs as free and associated with the various sulphides.

Developments

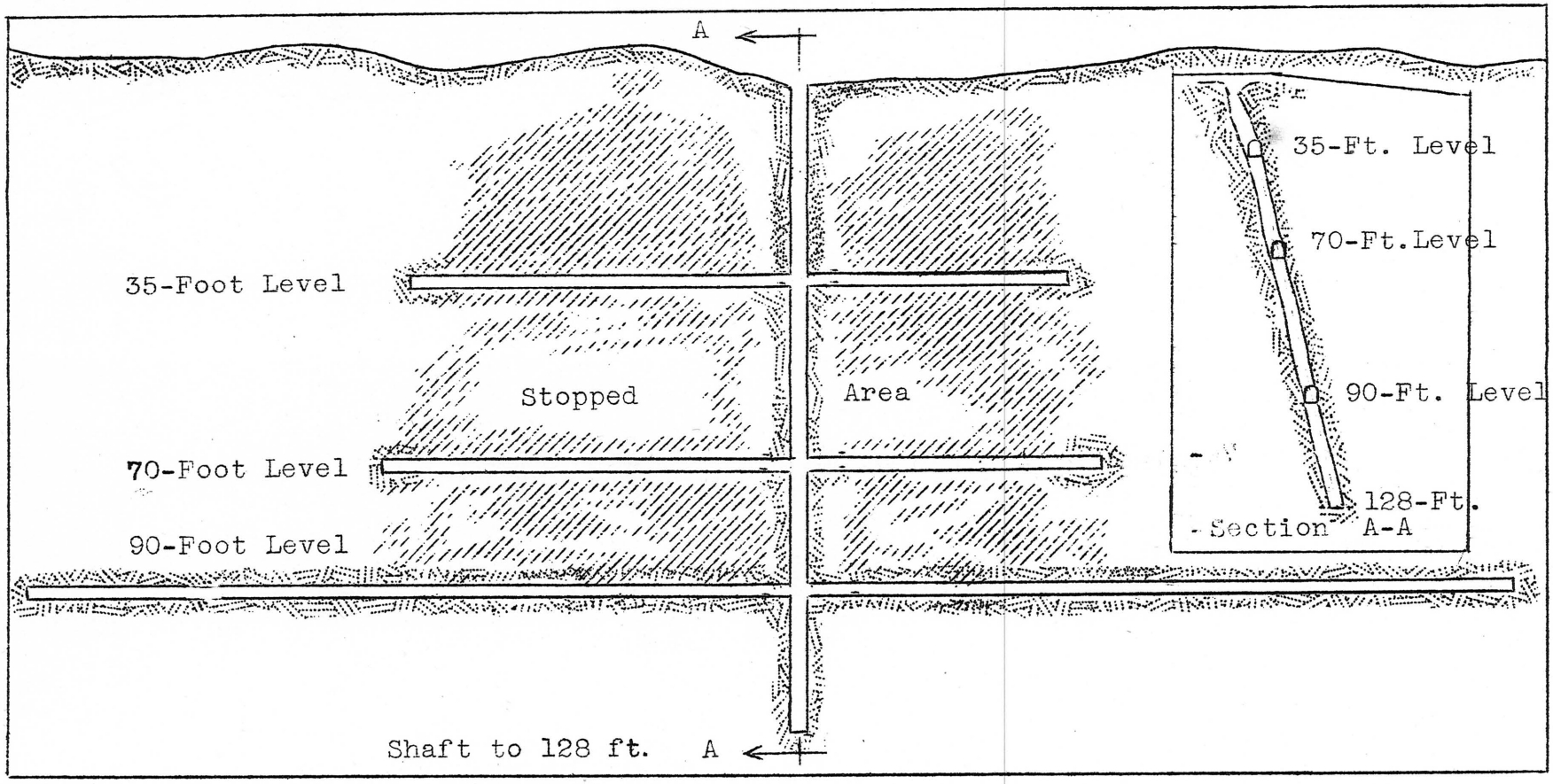
Open-cuts and shallow drifts has exposed the vein for some 1,500 feet on the Silver Dollar Extension and Ora Grande claims.

The major development has been done on the Silver Dollar Claim which is shown in Fig. 7. An incline shaft follows the vein to a depth of 128 feet. Levels are cut in both directions off the shaft, they are:

	Feet from Shaft	
	north	south
35-Foot Level -125 feet of drift	50	75
70-Foot Level -140 feet of drift	60	80
90-Foot Level -302 feet of drift	142	160

The ground from the 90-Foot Level to the surface has been mined. This block of ore showed a productive oreshoot od 145 feet in width and widening at depth with a rake southward from the shaft. The oreshoot appears to be a series of mineralized lenses, pinching and swelling vertically as well as horizontally with varying widths from 12 to 42-inches.

The shaft below the 90-Foot Level is filled with water. It is reported the vein is well mineralized and would pay to work with mine machinery.



VERTICAL LONGITUDAL PROJECTION LOOKING WEST
Silver Dollar Claim

Fig. 8

This group has been worked by various leasers over a period of time. For the most part all work was done by hand methods. Smelter shipments of selected ores were carried out on burro back and some of the ore was milled in the Logan mill from which mint and mill concentrate products were produced.

The following production will indicate the character of ore:

Smelter Shipments:

	Assay and Analysis of Ore					
	1/		2/		3/	
Gold	2.06	ounces	0.88	ounces	1.02	ounces
Silver	14.38	do	.30	do	4.50	do
Copper	2.6	%	.31	%	.77	%
Insoluble	69.56	do	65.0	do	-- --	
Iron	13.37	do	11.09	do	10.20	do
Sulphur	12.80	do	-- --		-- --	
Silica	68.74	do	56.80	do	67.40	do
Alumina	.86	do	-- --		5.50	do
Lime	-- --		.20	do	.08	do

1/ Shipped to Humboldt Smelter, Mayer, Arizona September 26, 1930

2/ Shipped to American Smelting & Refining Co., El Paso, Texas March 20, 1937

3/ Shipped to Magma Smelter, Superior, Arizona February 13, 1934

U.S. Mint:

Mint returns for the months of May and June, 1937 - $2,389.70

This product came from milling, the recovery was made by plate amalgamation and table concentration.

Mill Concentrates shipped to A.S. & R Smelter, El Paso, Texas

Date	Lot No	Value Per ton
June 9, 1937	2017	$ 185.18
July 6, 1937	2460	153.13
July 7, 1937	2466	179.19
July 7, 1937	----	306.18
July19, 1937	2813	237.41
Sept30, 1937	2941	208.60

Possibilities

Surface prospecting to the north from the shaft indicates that commercial ore can be mined. The present shaft shows values in that oreshoot of commercial importance which is indicated by smelter shipments and mill runs. Sufficient water will be developed from the mine and supplement water is available on the claim for a small mill.

When proper facilities are provided for mining and milling this group alone should be of commercial importance, even on a 25-ton basis.

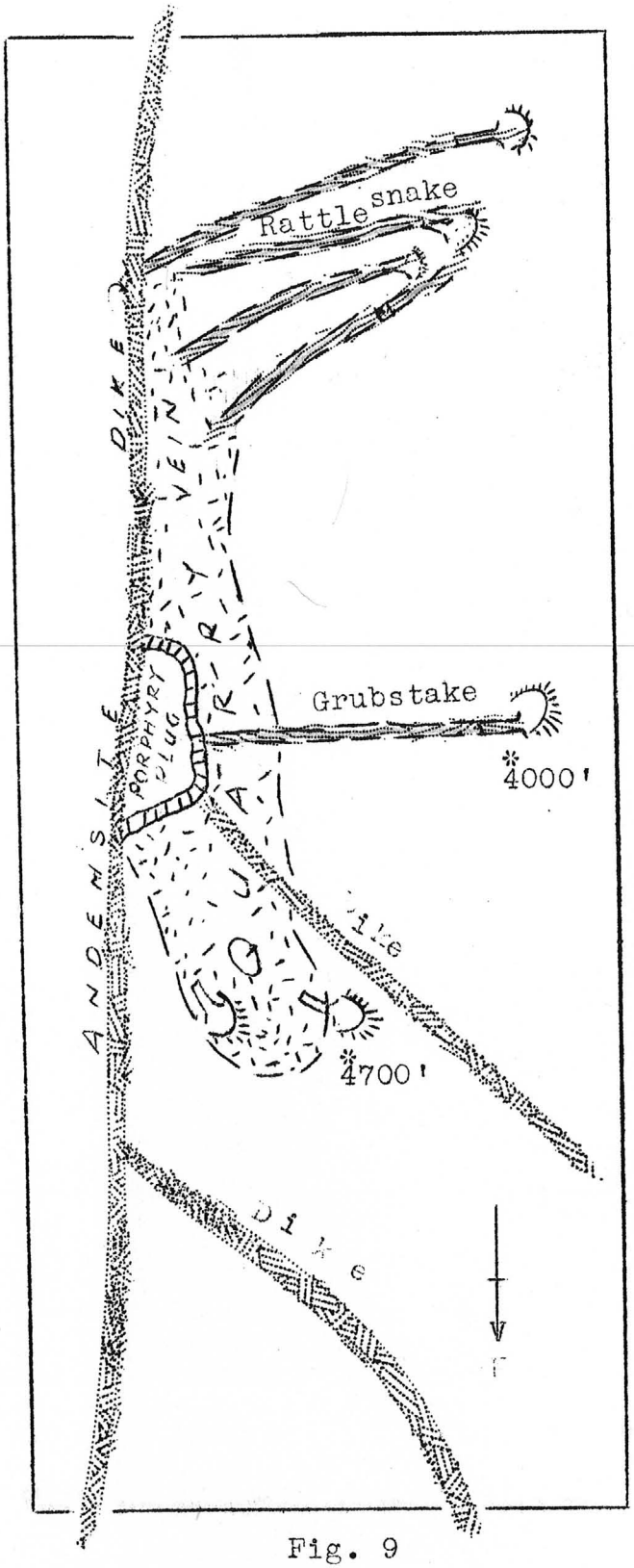
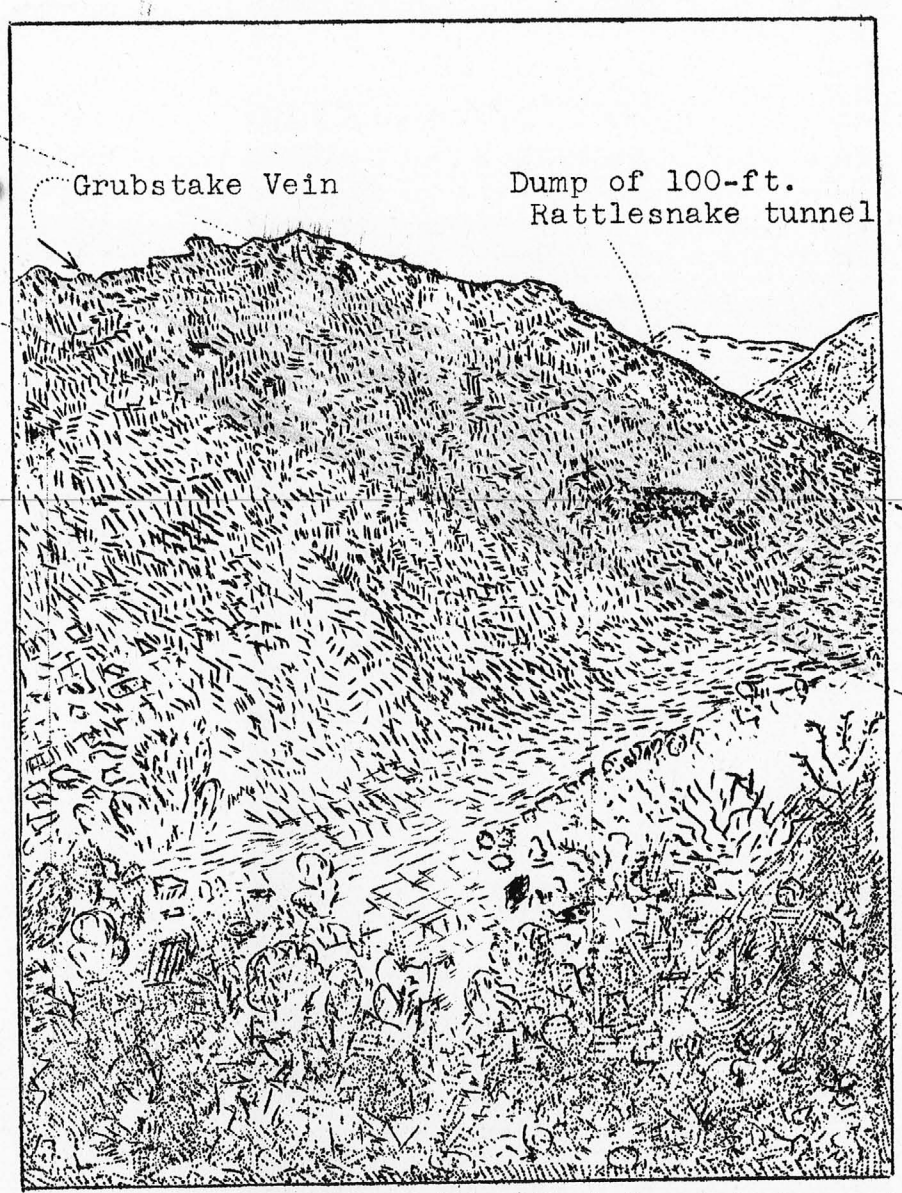


Fig. 9

Gold Note No.1 Claim



(Sketcked from photograph)

Fig. 10 -Looking southeast, dashed lines shows general width of Quarry Vein orebody on the slope of the mountain. Plan view is shown in Fig. 9.

GOLD NOTE GROUP

This group is located in the south part of the Colossal property. It is reached by trail from the Silver Dollar. The group consists of 3 mining claims:

Gold Note No. 1
Gold Note No. 2
Gold Note No. 3

Topography and Geology

The country is rough and precipitous, the elevation is around 4,000 feet. Water is available on this group, and sufficient water could be developed for a sizable operation.

The geological formation of this particular hill was noted by early field surveys by the U.S. Geological Survey and is described by Lindgren U.S. Geological Survey publication in Bulletin 782 in which it was thought the wide spread of mineralization is due to the various acidic dikes that cut the formation.

This group of claims are staked on ground that covers the intersecting of three major dikes that cut the country formation. Going northward, an andesite dike is exposed for some 6,000 feet; to the west and trending northward is a dike of diorite with width from 5 to 25-feet where exposed by its cropping; and, to the east there is found a large outcropping of rhyolite porphry which cuts the country.

Gold Note No.1 claim is the best mineralized claim of the group. Near the center of this claim, as shown in Fig. is a massive porphyry plug which is about 1,000 feet in height, above the small valley to the west, cuts the country formation and is on the west side of the andesite dike.

The west slope of the "plug", from its center, several quartz veins cut the country granite formation at various angles. These veins are quartz fissures with dips raking into the hill, widths are from a few inches up to 6 feet.

Along the slope of the "plug", Fig. 8 shows the Quarry Vein. This vein takes in an area of wide-spread mineralization, being about 300 feet wide and 1,000 feet long.

Development

This ground was discovered by Major Pickens in the late 60's and the highgrade ores were mined and shipped to Swansea, Wales for treatment. It was relocated in 1902 by Harvy Taylor and recorded as the Grubstake Mine. Taylor mined on several veins which strike toward the "plug" over a period of years and recovered the gold values in an arraster which was located in the near by valley.

After Taylor's death in 1916 the property lost the attention of prospectors and chloriders until it was relocated in 1924 by

R.E. Logan, the present owner. Since 1924, Mr. Logan has done considerable exploration, sampling and milling of the assessible ores.

More than 2,000 samples have been panned from the Quarry vein over a period of two month by two prospectors who were employed for the purpose. The results of this sampling showed free gold in many of the pannings from outcrops.

From an assay map, covering an area of about 1,000 feet in length and 800 feet on the slope of the mountain which was conducted by Carl G. Barth, E.M., sample No.'s 4,5,6,7, 10, 11, 12, 13, and 14 indicates an average of 0.74 gold, 4.5 silver ounces per ton, or a gross value of $23,39 with gold at $35 and silver at 64.6 cents per troy ounce.

Four mill run tests of five tons each was run by R.E. Logan with the following results:

Ounces per ton	
Gold	Silver
.69	.08
.49	.05
1.46	3.03
2.00	1.15

Possibilities

From the above investigations and from the developments on the Grubstake, Quarry and Rattle Snake veins it is likely a tonnage of large quanity and of commercial quality could be developed.

The problem of metalurgy is simple as the ore in the oxidized zone is free milling and the sulphides are simple to recover by either flotation and table concentration.

Water must be developed. The supply appears to be sufficient considering that water is now exposed at various points on the property.

Roads must be built into this part of the property, this does not offer a serious problem since roads are easily built in the desert mountains.

Electrical power is already within 5 miles from this development.

This group appears to contain commercial possibilities when provided with production and recovery equipments. And the installation should be justified after explorations are continued in known ground to determine the magnitude of the deposit.

OLD COLOSSAL CLAIM No. 1

History

Harvey Taylor, a Civil War veteran orginially discovered and located this ground in the early 1870's. Taylor work this claim and others in the area until his death in 1916. R.E. Logan, the present owner acquired control in 1923 and has worked it and others since.

According to records, Taylor's production exceeded $50,000. This ore was produced by hand mining and the ore was treated near the mine in arrasters using burros for power. Logan has continued in the ground using better equipments and milling some of the ores.

Geology and Mineralization

The country rock is granite schist with a sedimentary contact to the south. To the immediate south of the present development a westerly striking diorite dike cuts the granite country formation.

Fig. 11 shows the vein system. The veins are quartz filled fissures with a general north strike and dips about 60-degrees to the west. Gold is found as free-gold and associated with the various sulphides. Sulphides are of iron, copper and lead, in the form of hematite, chalcopyrite and galena. Sulphides are massive and veins are from 18-inches to 3-feet.

Development

All work has been confined largerly to open-cuts, the largest is 50-feet in width by 50-feet deep and about 70-feet in length. The deepest development is an inclined shaft, it follows the vein to a depth of 128-feet and at the bottom a small stope is cut.

This work is done in the area near the dike, it appears to be gossan capping and is stained with iron and its width of about 25-feet assays $10 per ton in gold. The 128-ft. shaft was sunk on what appears to be a split of the vein which is 18-inches wide, but at the 100-ft. level in the shaft another spur came in and 3-ft. vein was followed to the present 128-ft. level where a stope was opened.

The ore in the shaft is said to carry 4.5 ounces per ton in gold across a 2-foot width. Logan then started a cross-cut tunnel to tap this ore. The cross-cut was driven 100feet through the dike and heavy ground was encountered and work was stopped, about 25 feet will be required to cut the vein.

From the cross-cut, when the objective is reached, by drifting to the north on the vein, there will be considerable vein over the level of the drift, probably 500-feet.

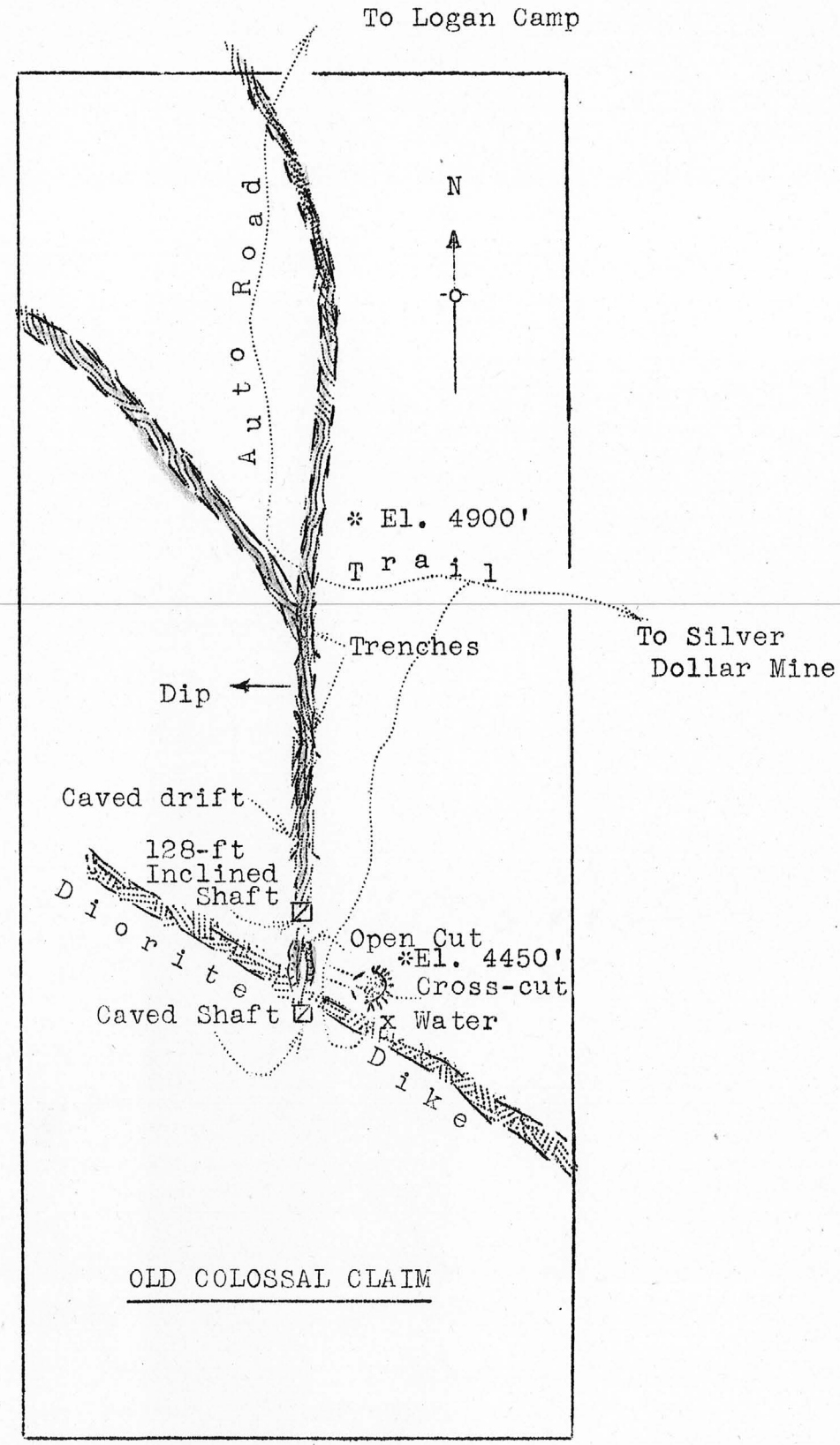

To Logan Camp
Auto Road
N
* El. 4900'
Trail
To Silver
Dollar Mine
Trenches
Dip
Caved drift
128-ft
Inclined
Shaft
Diorite
Open Cut
*El. 4450'
Cross-cut
Caved Shaft
x Water
Dike
OLD COLOSSAL CLAIM

Fig. 11

Recent shallow development done north of the shaft has exposed 3-foot of vein that assayed 5 ounces gold; and another 20-inch vein width that assayed nearly 1-ounce gold, and 12-ounces silver per ton.

Other surface assays are as follows:

Ounces per ton		Value	Width of
Gold	Silver	Per ton	Ore Sample
3.20	3.20	$113.12	18-inches
1.10	.40	38.90	3-feet
.70	.50	24.65	do
4.20	5.00	148.50	20-inches

Last smelter shipment of record was shipped September 24, 1941 to the El Paso smelter -Lot Number 1148. Return assays are:

Ounces per ton		Percent	
Gold	Silver	Lead	
1.003	41.40	49.00	As paid for.

Milling. -A small tonnage from the Colossal claim was packed to the Logan Mill and milled. Mr. Logan reports the ore will ratio a concentration of 25 to 1 and from second class ore he recovered 5-dwt. gold with amalgamation, and the table concentrates assayed 66.55 ounces per ton in gold and valued at $2,328.00; while the silver ran 43.50 ounces and valued at $15.20 per ton. He also reports the milling problems are simple.

Possibilities

The preliminary work for driving the cross-cut tunnel to the vein and cutting and opening stopes in the orebody will require about 30-days of dead work and should be completed for $5,000.

When this work is done, it will provide considerable tonnage of the vein above the transportation level. This would be in ground known to carry good values, considering the amount of vein prospected at surface croppings and the amount of ore produced for shipments.

Water is available near the workings, it must be developed for milling. Road must be built and put in shape before any sizable operation is carried.

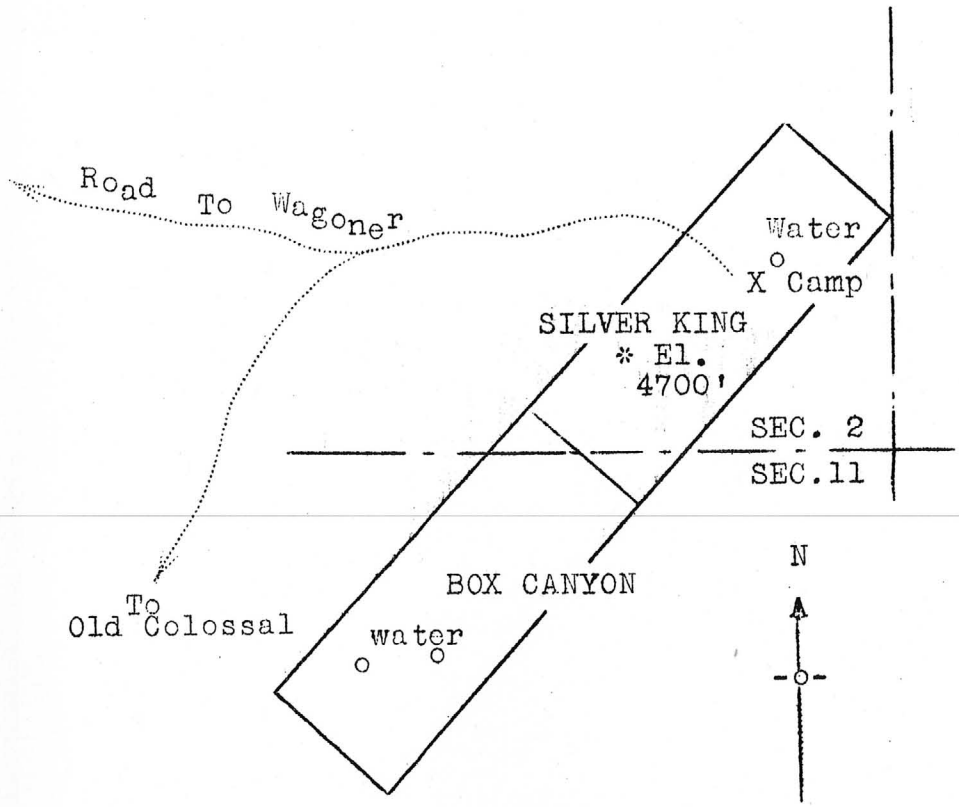


Fig. 12

The Silver King and Box Canyon Claims are staked on the southern part of the vein that is worked to the north on the Sue Claim. There is no active development on this group.

Domestic water is developed on the Silver King Claim and the camp and mill are grouped near the water.

The mine camp consists of two frame dwellings, three tent houses and a blacksmith shop. The mill is described on Pages 16 and 17.

Generally, for the past two years, the state of Arizona has experienced much lost water supply from the mountains for the lack of snow or railfall. In the area of this property the water table has lowered some 25%. Stockmen are now using the Colossal supply for cattle. The present supply will be sufficient to keep the present mill operating 24-hours per day by reclaiming the water from the concentrating table.

REPORT
on
COLOSSAL GROUP OF MINING
CLAIMS
in
Township 9 North, Range 2 West, G.& S.R.B.M.
Yavapai County, Arizona.

FOREWORD

The writer was engaged by John J. Darmody of Prescott, Arizona, to investigate and report on the above mentioned property held by the COLOSSAL MINES INC. under an agreement with the owners R.E. and Grace Logan of Phoenix, Arizona.

Spending several days in the area it was found that these claims were definitely in the prospect stage and as such did not call for an examination that would more than qualify them for further investigation and exploration.

I herewith submit the results of this investigation. It c an only qualify and verify the results of the activities of the organization during its brief operation,

Respectfully submitted,

Carl G. Barth, Jr., E.M.,
Registered Mining Engineer,
Certificate No. 689,
State Board of Registration,
Arizona.

Sept 17, 1937

Sept 17, 1937

SUMMARY

My examination shows the property now held by the COLOSSAL MINES INC. to be four distinct groups of claims sufficiently removed each from the other as to make their operation impossible as a unit.

None of these groups can be said to be other than in the prospect stage.

Each group offers a distinct problem because of its geographical location and its type of mineralization.

The Silver Dollar is the only group on which sufficient work has been done in exploration of its one ore shoot, to indicate further immediate possibilities.

The Gold Note requires agreat deal of intensive and careful exploration before any definite opinion can be given as to its future worth.

The ruggedness of the area makes the building and maintenance of roads a major problem.

Water, though adequate for the present, may possibly be augmented by drilling in some of the sheared zones.

RECOMMENDATIONS

Due to the activity already in progress at the Silver Dollar and the results obtained it is recommended that this work be continued with adefinite program of development to a further depth.
Some additional equipment and improved accomodations for living is at present required for efficient and satisfactory results at a minimum of cost.
Stoping of ore should not be carried on until such time as there is sufficient volume to make an efficient and continuous mill run.
Sorting of ore at the mine should be carefully done increasing the grade and decreasing the cost of transportation to the Mill.
Suggest that all development work be let on contract thereby reducing cost of supervision.

Continue leasing the Colossal on the same or a better basis than now offered. This is a cheap method of development.

Attempt to interest leasors on the Gold Hill as no organized work is called for at the present.

A program of exploration should be instituted on the Gold Note.
To carrynthis out it will be necessary to make it more accessible by building a mile of road; this could be done at a relatively small cost. A camp would have to be established for the purpose. a tent being all that would be now required.

PROPERTY

The property held by the COLOSSAL MINES INC. under an agreement with the owners, R.E.Logan and his wife Grace H.Logan consists of 16 Lode Claims containing approximately 320 acres as follows:-

NAME	BOOK OF MINES	PAGE
SILVER KING	122	488
SILVER DOLLAR	133	153
SILVER DOLLAR EXT.	133	510
ORA GRANDE	133	509
GOLD HILL II	135	284
GOLD HILL III	135	285
GOLD HILL LV	135	286
GOLD HILL V	135	322
BOX CANON	137	13
NORTH COLOSSAL	127	569
WEST COLOSSAL	127	571
GOLD NOTE	135	321
GOLD NOTE II	137	16
GOLD NOTE LLL	137	17
LEAD CARBONATE	133	83
GOLD CARBONATE	124	279

Book and page numbers refer to the Records of the County Recorder of Yavapai County, Prescott. Arizona.

LOCATION

The property lies in Sections 1,2,11 & 12 of Township 9 North, Range 2 West, Gila and Salt River Base Meridian, Yavapai County, Arizona.

ACCESSIBILITY

From PRESCOTT, Arizona, the county seat and nearest sizeable town, the property is reached by driving south over the Hassayampa Highway, Route 89, 22 miles to Kirkland Junction, beyond which a quarter of a mile turning east over the Walnut Grove road a distance of 20 miles to Wagoner, thence over what is locally known as the Oak Creek road, 12 miles south of east(formerly a part of an old road to Phoenix, Arizona, long since abandoned for the purpose) to the CAMP on the Silver King Claim at the head of Rye Creek now

the road is passable throughout the year or closed for short periods only.
The last 12 miles is at present very rough due to the recent heavy summer rains.
The rise from Wagoner,at an elevation of 3372 feet to the camp is approximately 13oo feet, indicating the hilly condition to be encountered.

KIRKLAND, the nearest railroad point lies four miles west of Kirkland Junction, before mentioned, making this point 36 miles from the camp,

TOPOGRAPHY

Topographically the country in the vicinity of the immediate property is extremely rugged.
It lies at the head of Ryland Gulch, a tributary of Castle Creek, and has worn a deep canon through the granites, with a drop of over 1000 feet from one end of the property to the other, with side washes from the east making similar deep canons down the western slope of the northern end of Silver Mountain.
Reference is here made to the accompanying enlarged section of the Bradshaw Quadrangle, involving this area.

GEOLOGY

The General Geology, taken from Folio No.126,U.S.G.S. " The Bradshaw Mountains Quadrangle" shows this area lying generally in the Bradshaw Granite in close proximity to the Crooks Complex, a structure consisting of varying bands of granites, schists,diorites and aplitic dikes, locally covered by volcanics, not however as much as reported by Jaggar and Pa Palache.
On the western slopes of Silver Mountain northward trending dikes of Rhyolite Porphyry are prominently exposed and noted by Waldemar Lindgren in Bulletin 782,U.S.G.S. on pages 22 and 24.Herein he attributes the widespread mineralization of the Bradshaws to these acidic dikes.

Numerous dikes of Andesite,Diorite and Diabase, thenlatter seemingly having some bearing on the sulphide mineralization along this eastern slope,borne out by many observations by me and indicated here in the vicinity of the Silver Dollar ground where diabase dikes are very noticeable.

VEINS

The veins of this area trend generally northerly and northeasterly. They follow fracture zones, which are, where no outcrops occur,indistinct. Outcrops are irregular and seemingly lacking in continuity and appear to be lenticular in form.Wall rock alteration almost lacking and therefore no bold outcrops are found.

HISTORY

The history is rather vague and sketchy, but dates back to the early history of mining in the county, locations having been made as early as 1876.
With the falling of of Placer Mining, lode mining drew the attention of the prospector and he, by panning, located outcrops of free milling gold.Resorting to the Arrastre for his grinding, a primitive but effective method imported from Mexice and driven by a Burro, he collected the free gold in quicksilver, as an amalgam, These Arrastres were located near permanent water and in close proximity to his mining operations. Arrastres are found in this vicinity and judging from the size and wear of the rocks used was both sizeable and of long duration. The time element may have been due to its close proximity to the major wagon route between Phoenix and Prescott, within a short distance of the location. Ryland, for whom the Wash is named, Taylor and Hardscrabble, names well known, were responsible for this activity.

A Judge Campbell of Alabama was active in building a branch road and sinking a shaft on the Gold Hill Claim. It is said that some of his ore was shipped to Swansea, Wales, indicative of the highgrade surface values encountered.

No large mines developed from these activities,

except perhaps the attempt about 1902 to operate the BOAZ property in the northeastern end of the Township on a low grade quartz vein on a fairly large scale. Equipment and a Mill were installed and considerable work done underground with no apparent success, due, it is said to metallurgical difficulties. It is now locally owned and some attempt is being made to place it in operation.

In 1923, R.E.Logan, a Spanish War Veteran and prospector, moved into the area, consolidated the holdings of others by purchase and location and operated intermittently to within the year. Following the tactics of the old timers, mining the free milling ores wherever they could be found, but with more modern mining and milling equipment, made a moderate success. His prospecting and exploration laid bare certain areas that seemed promising of future results.

In January 1937 the property was taken over, under option, by the COLOSSAL MINES INC.

GENERAL DESCRIPTION OF CLAIMS

Four distinct groups of claims have been designated due to the character of its veins and physical location.
Reference is here made to a sketch map of the locations indicating this grouping.

The NORTH COLOSSAL GROUP, consisting of the North Colossal, Lead Carbonate, Gold Carbonate, West Colossal and Silver King lie in the northern end of the area.

The CAMP, consisting of two frame dwellings, one galvanized iron dwelling and two tent houses and the Pilot Mill are grouped in the vicinity of several springs on the banks of Ryland Wash.on the Silver King Claim.

The work on this group has been recently confined to the North Colossal Claim. On this claim, two definite veins are distinguished, being tight fractures in the granite expanding into lenticular mineralized shoots at distantly spaced intervals. There is practically no wall rock alteration and where mineralized shows narrow quartz bands sometimes filled with galena. Near the surface is a

definite oxidation to lead carbonate, showing free gold values on panning.
On the north end of the claim work has been done in the past on what must have been a fre free milling outcrop and a shaft, reported to have been 60 feet in depth, was sunk, but now filled, thendump giving evidence of this possible depth.
Recent chloriding, by a leasor, has been done inna surface cut near the collar of this shaft and together with ore sorted from the dump to the amount of 211/2 tons, after milling was shipped as a concentrate to the American Smelting and Refining Co, at El Pas Texas, the returns netting $ 277.75 before freight and sampling charges, indicating a smelter value of approximately $ 13.00
See Smelter return Sheet of August 26,1937
Lot 3215 included herewith.

At present a drift tunnel is being driven by a leasor 200 feet south of the shaft on a parallel vein and at a position to gain some depth on what appears to be an ore shoot 50 Or so feet ahead. A galena outcrop and float indicates the possibility. The tunnel now having gained a length of 20 feet, shows in its face two narrow bands of quartz, each having some mineral content and producing a shipping and milling ore in small quantities satisfactory to the leasor. The leasor works on a 50% of the net smelter return from ore and concentrates, less hauling to shipping point and is seemingly satisfied with results so far.
An assay of a specimen of the shipping ore showed .96 oz Gold; 8.8 Oz Silver; 51.5 % Lead.

The Lead Carbonate shows a similar vein where examined but no ore was visible where work had been done some time in the past.

The Gold Carbonate and West Colossal claims were not examined but similar conditions were indicated by the general surface.

The Box Canon Claim is located mainly for the control of water, there being a very possible damsite in its deep canon through which Ryland Creek flows during rainy periods.

The GOLD HILL GROUP, consisting of Gold Hill II,III IV & V is the easterly group and can be reached from the camp over the old road made by Judge Campbell, now only a trail, within a half a mile.

Gold Hill IV & V are located along a fractured zone in the granite running north and south, above which no springs seem to issue and which zone may be a source for the development of more water when and if required. There was no particular mineralization noted other than requirements for location.

Gold Hill II is the major claim of the group. On its approximate center on the downward slope southward a white quartz vein outcrops and is traceable a distance of 200 feet southward and 75 feet northward from the shaft here located, varying in width from a few inches to as much as two feet. Sulphide mineralization is indicated in the vein, particularly in the vicinity of the shaft and cuts adjoining, but highly oxidized. The shaft has apparently been sunk in what was at the time a free milling outcrop and mined in open cuts for a few feet below the surface. The shaft, reported to be 60 feet in depth was not accessible nor could the bottoms of the cuts be properly examined due to debris.
The vein seems to be a series of lenses in the granite lying innechelon, with no wall alteration but showing some sulphide mineralization, particularly along its hanging wall side where this cou;d be determined. Its dip is almost vertical.
The past miningbhaving been confined almost entirely to the vicinity of the shaft indicates the lack of other ore shoots along the vein, but further work may now disclose other places along its outcrop worthy of exploration.
A sample of what appeared to be sulphide ore, unoxidized, of sufficient quantity to indicate its possible source being the bottom of the shaft, was assayed with the following results:-

.24 oz Gold; .02 oz Silver, a gross value of $ 8.85. This, if there was any particular width, would be worth investigating.

None of the oxide ores were assayed because of their limited extent but chloriding could be carried on with favorable results to be expected on these oxidized outcrops.

Gold Hill III was not examined due to its distance and ruggedness indicating the need for something unusual to warrant its investigation. It is reported however that pockets of highgrade ore were extracted in the past.

The SILVER DOLLAR GROUP consists of the Silver Dollar, Silver Dollar Extension, and Ora Grande Claims. These are reached by automobile over six miles of rough road from the upper camp, part of which traverses up Ryland Wash, to the camp on the Silver Dollar Claim.
On the Silver Dollar Claim has been established a small camp consisting of one corrugated iron building used as a Mess and a Tent house for living accomodations. A good spring lies within 300 feet of the camp on an adjoining claim and reported to flow the year round.

The Silver Dollar lying wholly in the Granite, near the surface slightly decomposed, and on its southern end covered by surface debris, is the active claim of the group.
The surface generally shows only a mere fracture in the granite but traceable beyond the northern end of the claim.with no outcrops other than in the vicinity of the shaft where some quartz is noticeable.
Slightly south of the center of the claim the early operators mined this quartz in an open cut for a length of approximately 100 feet, sank a shaft reported to be 128 feet in depth, at an angle of 76 degrees, drove levels at 35, 70 and 90 feet, stoping from the 70 to the surface.

The lengths of the 35 and 70 foot levels was not obtainable, but the 90 level was driven 160 feet southward and 142 feet northward. The two upper levels were driven southward only indicating no ore to the north at this point.

The Silver Dollar Extension, so named because of its location along the Silver Dollar fractur e zone northward, lies mostly on the precipitous northern slope of Hardscrabble Wash. A small opening on the side hill distant about 200 feet from the southern end line, was examined and gave evidence of ore having been removed but showed no continuous ore in its face. No other openings were found along this fracture. To the east of the Silver Dollar Fracture about 150 feet lies a flat dipping greenstone dike, readily seen outcropping up the precipitous slope and which had been prospected rather thoroughly in the past, showed intense silicification on its hanging wall, somewhat oxidized, in places indicating some prospects of ore and from which some had evidently been removed. A rather long drift tunnel was indicated near the bottom of the wash by a sizeable dump. No samples were taken as in my opinion it was not warranted due to lack of definite signs of sulphide mineralization.

The Oro Grande Claim was not examined as nothing more than the necessary location work had been done.

The GOLD NOTE GROUP consisting of the Gold Note, Gold Note II & III is reached over a trail from the Silver Dollar eastward about a mile.
The Gold Note II & III were apparently located for camp and water purposes which seems to be of sufficient quantity to maintain a small crew.

The Gold Note is the major mineralized claim but of such a nature that only a cursory examination could be made.
What appears to be an Andesite dike follows more or less along the eastern border of the claim, paralleling which is an area of mineralized granitic rocks, which can be called a granite porphyry. Several irregularly outcropping quartz veins traverse the area with minor quartz stringers intersecting the granites. These are in places highly oxidized indicating their former sulphide mineralization.

Ore has been recently mined from the 90 level over a length of 115 feet southward to the 70 level and a small stope 30 feet north of the shaft for the first time indicating ore in this direction. The total length of the ore shoot here is now accepted as 145 feet.
The north drift on the 90 level appears to have been driven on a barren side fracture and should be examined by a short cross cut.
The condition of the 90 level precluded regular sampling, but it was possible to get a bulk sample 75 feet south of the shaft and another 30 feet to the north of the shaft.
The mineralization here is different from that encountered on other parts of the property, being here a quartz, pyrite, chalcopyrite galena, carrying free gold and showing at this depth only a slight oxidation.
Wall rock mineralization by pyrite is here more strongly evident than in other parts of the ground and is a good indication of continuity though in itself of no value.
Thenore shoot appears to be a series of small lenses pinching and swelling vertically as well as horizontally and as reported by the foreman varying from a few inches to as much as 42 inches in width. The stopes that could be examined indicated this to be true as they have been left open without much need of timber the walls being generally firm.
The samples mentioned above, when assayed were as follows:-

South sample, 75 feet from the shaft, 8 inches wide and 3 feet long shows .39 oz Gold; 1.2 oz Silver, a gross value of $ 14.58.

North sample, 30 feet from the shaft, 3 inches innwidth, 1 foot long shows 1.2 oz Gold; 8.8 oz Silver, a gross value of $ 48.82.

The shaft was inaccessible below the 90 foot level,
A small amount of water is required to be pumped each day, but the quantity was insufficient to measure.

Several of these oxidized outcrops have been mined from which itt is apparent ore has been removed. Statements of the owner and verified by a bulk sample consisting of grabs from remaining dumps show these to have been high grade free milling ores. In places sulphides were noticed but insufficient in quantity to gain any information by assaying. No depth has been obtained by work so far, but the widely scattered mineralization indicates an area well worth while examining for the possibility of developing a low grade low cost property. The mineralized area can be said to cover roughly a width of 100 feet, a length of 300 feet and a length along its slope of 200 feet. This in itself would represent a fair tonnage if found to be of a mining grade.

The sample mentioned herein consisting of grabs from the remaining dumps showed .74 oz Gold; 4.5 oz Silver, a gross value of $ 20.50.

DISCUSSION OF OPERATIONS ON THE SILVER DOLLAR

The Colossal Mines Inc. began its operations on the Silver Dollar Claim as the most promising and accessible for preliminary operations and exploration.

The Shaft is equipped with a headframe, gasoline hoist and a portable type 105 foot compressor and the necessary accessory equipment for underground work with some accomodations for a small crew.

The shaft was unwatered and cleaned to the 90 foot level, ore was mined upward to the 70 level for the length of the oreshoot together with a small stope on the north side of the shaft. The shaft is now being cleaned below this level from which drifting will start from its bottom.

Shipping ore direct to the smelter proved inadvisable. The mill was reequipped to handle sulphide ores and now consists of the following:

Small Dodge Srusher driven by a gasoline engine; 10 ton bin; 12-15 ton Straub Rib Cone Ball Mill; 2-No.12 Fahrenwald Flotation Cells; 24 inch Wheeler Denver Amalgamator; Deister Plato Table; necessary water tanks and pumps.

Grinding is done through a 30 mesh screen followed by flotation; flotation concentrates are passed through the amalgamator; extracting

the free gold; tailings from the flotation are tabled giving a concentrate and a middling; middling returned for regrind. Flotation and Table concentrates are combined.
Bullion is shipped to the U.S.Mint at San Francisco; concentrates are shipped by truck to the American Smelting and Refining Co, El Paso, Texas.

The results of this work, consisting of the milling of newly mined ore and debris from the 90 foot level, was estimated by the foreman as approximately 219 tons.
For use in the following calculations this has been reduced to 200 tOns which allows for its moisture content.
Results obtained from the Concentrates and Bullion covering the same period with an estimate made for the last shipment of 3400 pounds. This last shipment has been reduced by 5% for moisture and its value calculated on the average obtained from former shipments, is as follows;-

LOT NO.	DATE	LBS	TONS	VALUE/TON	GROSS
2017	6-9	2394	1.1970	$ 185118	$221.66
2460	7-6	4008	2.0040	153.13	306.87
2466	7-7	3192	1.5960	179.19	285.98
2813	7-19	3225	1.6125	237.41	382.82
2941	8-9	2867	1.4335	306.18	438.89
?	9-30	3230	1.6100	208.60	335.84
	Totals		9.453		$ 1972.06

BULLION from Mint returns covering same period,

No.329	June 23,1937	Value	$ 174.10
No. 19899	May 18, 1937		60.38
No. 2133	July 21.1937		119.68
?	August 1937	Est.	72,48
Totals			$ 426.64

Total Gross value of Concentrates and Bullion before any charges is therefore $ 2398.70

Based on the above 200 tOns of Mine ore milled would give an estimated recovery as of $ 12.00 per ton. Using a 90% Mill recovery would show a Mine ore of an estimated value of $ 13.33 per ton.

MILL TEST RUNS

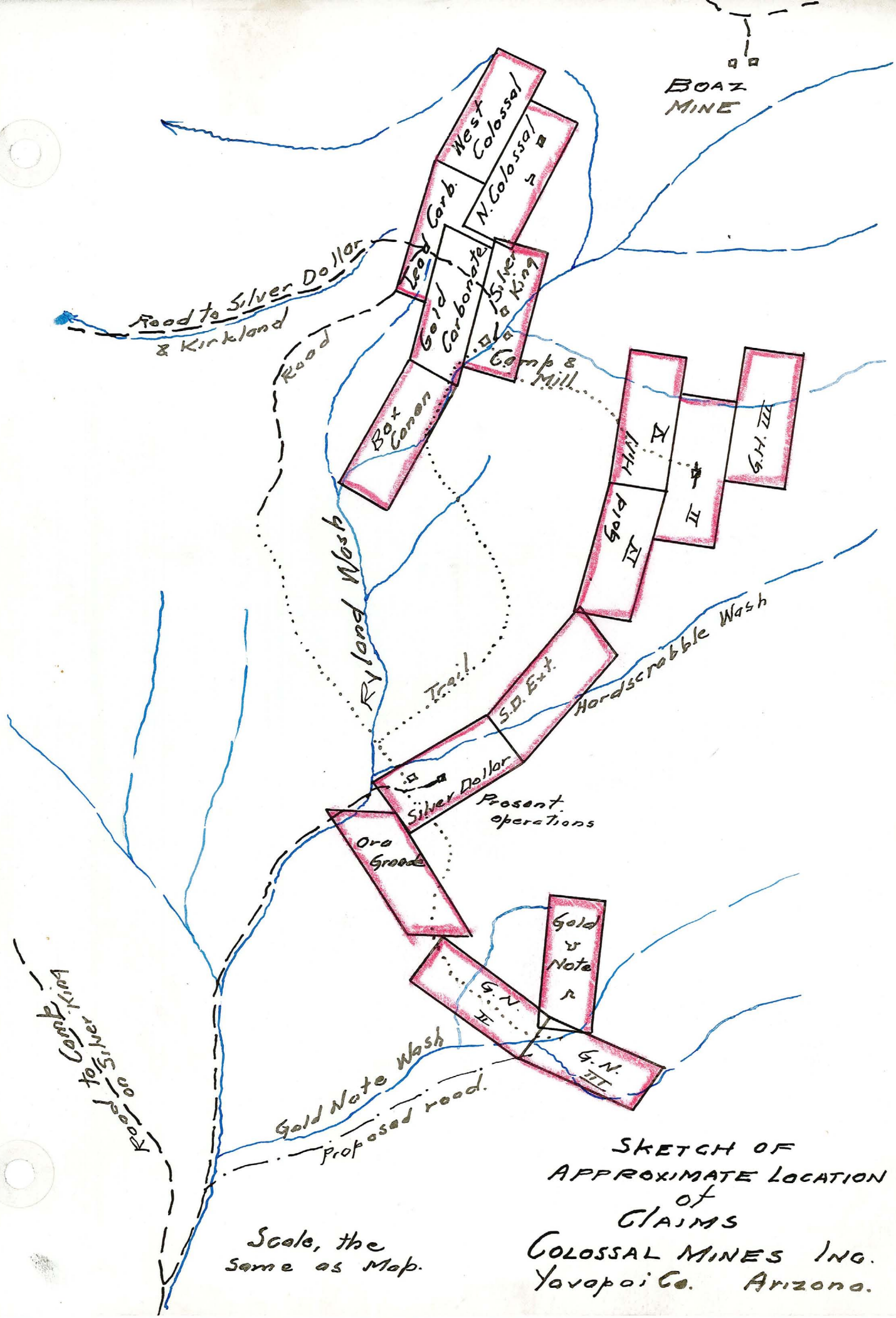
Two Mill Tests were made by W.C.Broadgate of Prescott, Arizona, the results of which were placed at my disposal.
These tests indicated that the Mill was capable of handling approximately 7 tons of ore per 24 hours
Heads to the Mill averaged $ 14.75 checking sufficiently close the estimates made on the total ore milled and verifying the results of the operation to date.

COSTS

A discussion of the probable costs to be expected can not be even surmised as there is no basis on which to determine the probable volume of ore to be handled.

Development costs such as sinking and drifting can be estimated and should not exceed $35.00 per foot for sinking and $ 10.00 per foot for drifting. Contract prices may be had at even a lower figure.

Milling costs,being based on volume, can as well not be determined.



SKETCH OF APPROXIMATE LOCATION of CLAIMS
COLOSSAL MINES INC.
Yavapai Co. Arizona.

Scale, the same as Map.

H. C. SMOOT
CHEMIST AND ASSAYER
REGISTRATION NO. 460

CUSTOM ASSAY OFFICE

Assay Certificate

IT PAYS to ASSAY

For Carl G. Barth, Jr., *Prescott, Arizona,* 8-7-51

DESCRIPTION	GOLD PER TON OZS. TROY	GOLD PER TON VALUE	SILVER PER TON OZS. TROY	SILVER PER TON VALUE	GOLD AND SILVER VALUE	OTHER METALS PER CENT	OTHER METALS VALUE
Silver Dollad N Side	1.20	$42.00	8.8	$ 6.82	$ 48.82		$
" " " #	.02	.70	Trace		.70	Pyrites	
" " S. "	.39	13.65	1.2	.93	14.58		
Campbell Pyrites	.24	8.40	0.2	.15	8.55		
Gold Note	.74	25.90	4.5	3.49	29.39		
Table Concentrates	2.48	86.80	11.7	9.07	95.87		

MARKET VALUES

GOLD PER OZ.	SILVER PER OZ.	COPPER PER LB.	LEAD PER LB.	ZINC PER LB.
35.00	.77			

Charges $

H. C. SMOOT
REGISTERED ASSAYER
DECATUR, ILL.
ARIZONA

H. C. Smoot

H. C. SMOOT
CHEMIST AND ASSAYER
REGISTRATION NO. 460

CUSTOM ASSAY OFFICE

Assay Certificate

IT PAYS TO ASSAY

For Carl C. Booth, Jr., *Prescott, Arizona,* [illegible]

DESCRIPTION	GOLD PER TON OZS. TROY	GOLD PER TON VALUE	SILVER PER TON OZS. TROY	SILVER PER TON VALUE	GOLD AND SILVER VALUE	OTHER METALS PER CENT	OTHER METALS VALUE
		$		$	$	Lead	$
Silver Dollar V Ground	1.44	50.[illegible]	5.0	5.07	54.27		
✓ H. Colossal Dixon	.96	33.60	8.8	6.82	40.42	51.5	
E. Colossal	.02	.70	Trace		.70		

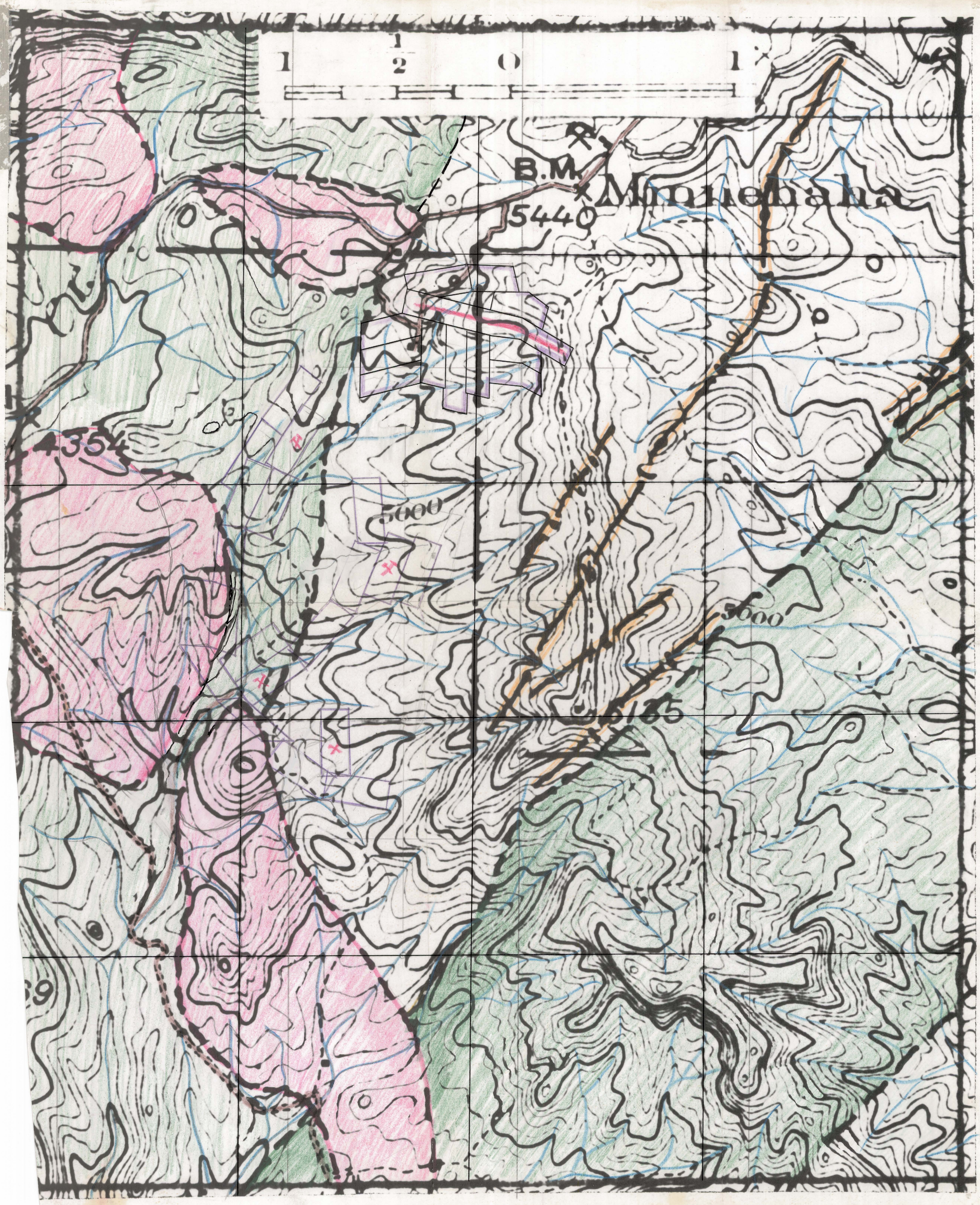
MARKET VALUES

GOLD PER OZ.	SILVER PER OZ.	COPPER PER LB.	LEAD PER LB.	ZINC PER LB.
35.00	.77			

Charges $

REGISTERED ASSAYER CERTIFICATE FOR [illegible] DEC 31, 19[illegible] ARIZ. U.S.A.

H. C. Smoot


1 1/2 0 1
B.M.
5440
Minnehaha
4354
5000
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