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PRINTED: 03/05/2003

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: HERR

ALTERNATE NAMES:
IRON SPRINGS

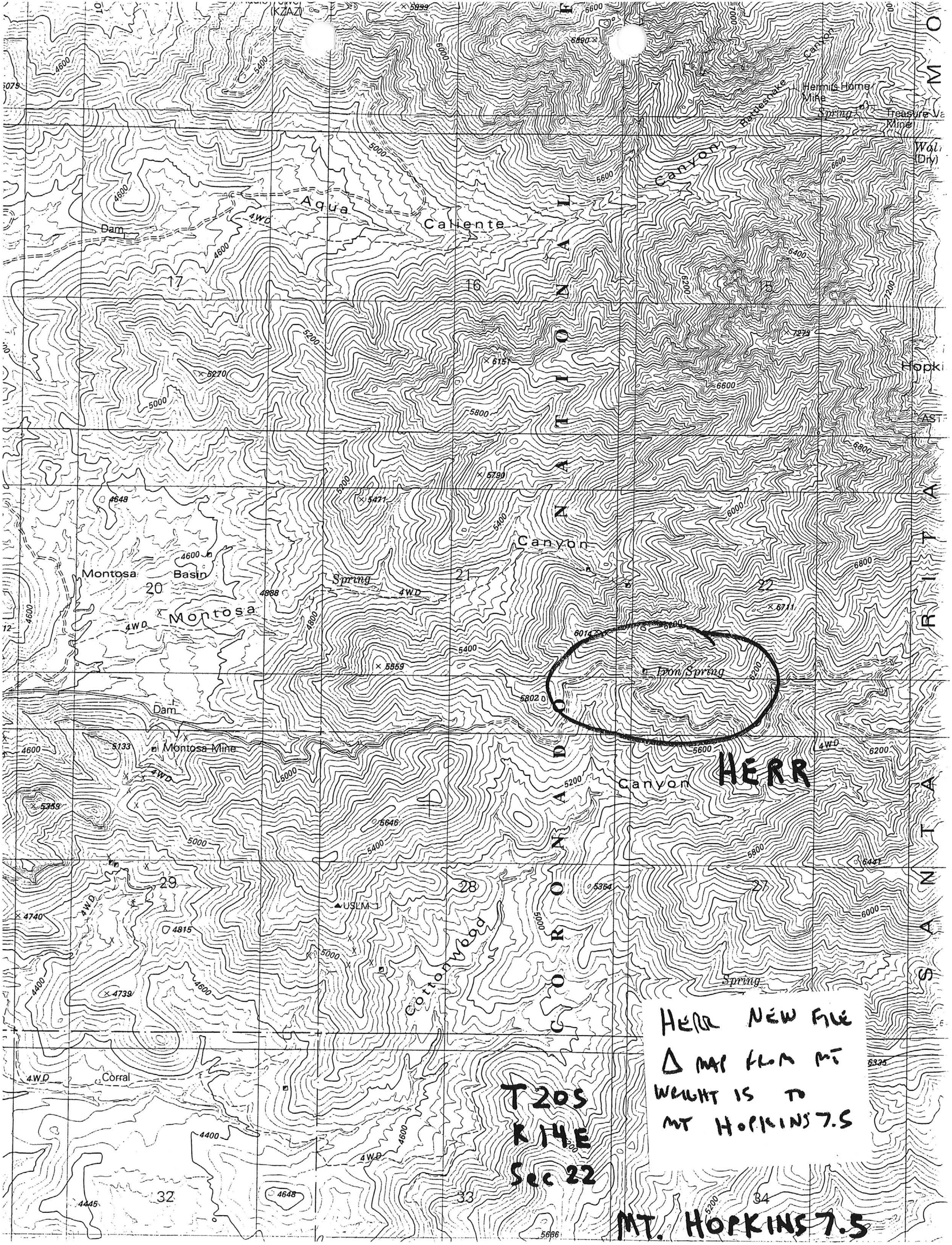
SANTA CRUZ COUNTY MILS NUMBER: 139A

LOCATION: TOWNSHIP 20 S RANGE 14 E SECTION 22 QUARTER SW
LATITUDE: N 31DEG 40MIN 27SEC LONGITUDE: W 110DEG 54MIN 17SEC
TOPO MAP NAME: MT HOPKINS - 7.5 MIN

CURRENT STATUS: PAST PRODUCER

COMMODITY:
LEAD
COPPER
ZINC

BIBLIOGRAPHY:
USGS MT WRIGHTSON QUAD
USGS FIELD NOTES PB39
ADMMR HERR FILE



HERR

HERR NEW FILE
Δ MAP FROM MT WRIGHT IS TO MT HOPKINS 7.5

T20S
R14E
Sec 22

MT. HOPKINS 7.5

HERR (NEW FILE) SANTA CRUZ

GEOLOGIC and ENGINEERING EXAMINATION of THE HERR MINE in SANTA CRUZ COUNTY, ARIZONA

by

R. E. Mieritz
Mining Consultant
Phoenix, Arizona

December 24, 1956

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APPENDIX

INTRODUCTION

Messrs R. W. Rehfeld and W. W. Creighton, leading principals of the Peaceful Valley Development Company, an Arizona corporation, of 4040 E. Pinchot, Phoenix, Arizona, requested the writer to complete an evaluation examination and report thereon of the HERR Mine, a lead-zinc-copper property in Santa Cruz County, Arizona.

Scope of the examination included a review of a report and maps by Mr. J. G. O'Brien, Amado, Arizona, diamond drill reports, logging of 1063 feet of drilling, actual field examination, preparation of composite drill logs and new map preparation. An attempt was made to dewater one shaft and its underground workings but the project was not successful because of pump failure. Additional time and expense to complete the dewatering was not warranted at this time.

LOCATION

The property reviewed comprises two end to end standard lode mining claims know as the Hilda and Edith claim and the Ruth and Ruby Claim. This group has been designated as the HERR Mine and shall so herein be referred too.

The HERR Mine is located primarily in the southwest quarter of Section 22, T. 20 S., R. 14 E. of Gila and Salt River Base and Meridian in the Tyndall Mining District, Santa Cruz County, Arizona.

Airline wise, Tucson is 40 miles north, Nogales 25 miles south and Patagonia 12 miles southeast of the property. Amado, a Post Office populace 36 miles south of Tucson on U. S. Highway 89 is the turning off point to the mine. A graveled road easterly for some 11 miles services the mine. The first 8 miles of this road built on late Quaternary gravels is moderately maintained. The last 3 miles are over canyon washes and steep hillside slopes with an average grade of plus 8%. None but Jeep or pickup travel is recommended because much washing has occured since its last maintenance. The road also services the idle Tia Juana Mine, 1½ miles further east.

TOPOGRAPHY and CLIMATE

Elevations range from 5580 near the west end of the mine to 6175 feet near the east end. The great difference in elevation is a result of rugged terrain created by recent errosion and formation of the present steep rock strewn slopes of the various young canyons. A branch canyon of the West Fork of Cottonwood Drainage Basin traverses the southeast portion of the property while the balance of the property covers a "hogback" forming the north slope of this branch canyon.

The higher elevations at the mine result in climatic conditions which are extremely favorable to all year mining and its associated operations and are in direct contrast to the arid, hot conditions normally present in the lowlands of Southern Arizona. Maximum summer temperatures may reach

98° F. whereas minimum winter temperatures seldom drop below 25° F. Annual precipitation is around 14 inches, most of which occurs as rain with infrequent light snow falls.

Vegatation on and around the property is extremely sparse, only small scattered thickets of brush and clumps of scrub oak trees are visible.

FACILITIES

An ore loading ramp is located at Amado on the Nogales Branch of the Southern Pacific Railroad. Favorable freight rates are available to all nearby smelters and mills.

Electric power is likewise available at Amado, some 11 miles west of the mine.

Unless water is encountered in mine operations, there are no nearby sources, the general area being arid. The West Fork of Cottonwood may have water running for three or four months a year during the rainy season.

There is no nearby source of virgin timber for mine operation or construction. All such supplies would have to be purchased at Tucson or Nogales.

There is no housing on the property. Amado being the only nearby possibility. The property is void of any useable buildings except for a small change house and a hoist shelter, both requiring rehabilitation.

All supplies for building construction, mine operation etc would have to be obtained from Tucson, the best source of such materials.

Manpower for mine operation should not be difficult

since three drawing points are available, Tucson, Nogales and Patagonia, a mining community.

HISTORY and PRODUCTION

Lead-zinc-copper mineralization was discovered in 1949 while surveying the Tia Juana Mine road but it was not until December 28, 1951 that the two claims were located by Tia Juana Mines, Inc., an Arizona Corporation, 931 E. Denton Lane, Phoenix, Arizona. The claims were recorded on March 22, 1952 at Santa Cruz County Recorders Office in Bk. 28M, pages 17 and 18. Annual acessment work has been done each year as underground development.

On April 26, 1956, TiaJuana Mines Inc. and Peaceful Valley Development Co. entered into a formal agreement providing each participant with an interest in the property and permitting the party of the second part to conduct any and all exploration deemed necessary to improve the property. Tia Juana Mines Inc. retained a 40% interest while Peaceful Valley Development Co. was granted a 60% interest.

The organizations, property titles and acessment affidavits all appear to be in good order.

No reported production has been credited to the property. It is rumored however, that a few years back a one carload shipment credited to the mine was received by American Smelting and Refining Companys' mill at Demming, New Mexico. No claim for payment was ever made. A small tonnage of fair grade material was observed on the shaft dump.

REGIONAL GEOLOGY

The Santa Rita Mountains, within which the property lies, are of the fault block type and are primarily the result of crustal deformation and activity. The responsible regional uplift began early in Cretaceous time and continued into the Tertiary period with the climax of Tectonic activity ending during Laramide time.

Upward movement of the igneous rocks folded, faulted and otherwise deformed the overlying sediments. Subsequent igneous intrusives within the earlier igneous masses, coupled with erosion, tended to further destroy and remove the sediments leaving but few remnant exposures on the margins of the Range. Steeply west dipping sediments are evidenced about two miles southwest of the HERR Mine.

Only igneous rocks are to be found in the immediate area of the claims and the apparent sequence of their intrusion is as follows:

Pre-Cambrian basement complex---	
Granite	Mesozoic-Fine grained to Porphyritic.
Granite Porphyry	Tertiary-Coarse grained to medium grained.
Quartz Diorite	Tertiary-Granular to fine grained.
Monzonite and quartz monzonite	Tertiary-A speckled gray granitoid rock-medium to coarse grained, occ. porphyritic.
Lamprophyric ? (Diorite?)	Complementary rocks-fine grained, greenish.
Alaskite and Alaskite-Aplite Dikes	Late Tertiary-Whitish, fine grained. Some association with ore deposits.
Rhyolite-Effusive? - Late Tertiary - Area undefined.	

The above table is a direct copy from Mr. O'Briens re-

port. Mr. O'Brien indicated he obtained the table from USGS Bulletin #582.

LOCAL GEOLOGY

Locally, the igneous rocks present are monzonite or quartz monzonite, granite or granite porphyry and quartz diorite. Lamporphyric, Alaskite and Alaskite-Aplite dikes are quite numerous, generally persistant in direction and dip but to project any one dike more than ten feet is difficult because of the net-work like structure they have assumed. For simplicity of presentation, rock nomenclature in drill logs and maps have been limited to the classifications as granite, diorite and dikes.

Structural and geologic features associated with and resulting in mineral deposition are separately discussed under the following sub-topics.

FAULTING

Four distinct zones of weakness and dislocation have been recognized within the property. Of these, two are pre-mineral and two are post mineral.

Mineralogically there is little difference in the two pre-mineral zones, the major differences being in their respective directions and strength. Both zones are complementary to the strain pattern accompanying normal fault stresses as is so indicated by their intersection on the Ruth and Ruby claim. The major structure has predominantly influenced jointing action as is evidenced by the parallelism assumed by the major joints to that of the major structure.

Both structures host lead-zinc-copper mineralization and are appropriately named the Main Vein and the Spur Vein.

The post-mineral zones of weakness are also of extreme intensities, that of major and minor, but none-the-less, related, to each other and to the strain pattern. The major structure is believed to be responsible for segmentation of the Main Vein at its eastern limit. A horizontal displacement of some 60 feet is indicated by evidence and not actual measurement. The more abundant minor structures have in many cases displaced the Spur Vein both horizontally and vertically. Such displacements are in evidence in the road cuts and by the incompleted geologic map of the 50 foot level of the R & R Shaft which was part of the records furnished the writer by Peaceful Valley Development Co.

VEINS

The veins of concern have been designated the Main Vein and the Spur Vein. These veins are not clear cut defined by true footwalls and hanging walls because of the intense stresses which destroyed the original features and projected its forces into the wallrock, fracturing and deforming same for some distances. The structures are limited primarily on the basis of reduced or absence of alteration and silicification.

The core of the Main Vein is composed of fissure filling quartz veinlets and silicified, altered vein and wall rock. Because of its erosion resistant qualities, the core of the

Main Vein can be traced for 2000 feet along its strike of S. 80° E. and N. 83° E. on the Hilda and Edith claim and Ruth and Ruby claim respectively. The prominent silicified ocre escarpments project from 4 to 15 feet above ground level with an apparent southern dip of 80 to 85 degrees.

The Spur Vein, like the Main Vein, is primarily defined by reduced or absence of silicification and alteration of the wall rock. Being a minor structure, the zone lacked ability to shatter the wall rock for any great distance, consequently, the limits of the zone more nearly approach the true footwall and hanging wall. Fissure filling quartz veinlets occupy much of the zone. Silicification is prominent as contrasted to the reduced alteration accompaning the zone.

MINERAL DEPOSITION

Mineral deposition within the two zones appear to be genetically related to a quartz monzonite intrusive which locally invaded the granite porphyry and the quartz diorite. The aqueous solutions ascending from the monzonite magma deposited their minerals along channels previously opened during the period of faulting. The epoch of deposition was brief compared to that of faulting, most of which took place previous to mineral deposition.

The metallic minerals are classed as epigenetic hypogene in origin and probably lower epithermal or upper mesothermal in their associations. Epithermal deposits are the result of open cavity filling or replacement of surrounding rock by metasomatic action.

Metallic minerals found within and adjoining the zones are sphalerite, galena, chalcopyrite, silver, gold and iron pyrite. The silver appears to be associated with the galena and the gold with the chalcopyrite. These primary sulphides of zinc, lead, and copper are erratically distributed throughout the zones chiefly as disseminations. Where they are concentrated as small mineral veinlets, their associated mineral is usually the small quartz stringers common to the zone. Unless the mineralized quartz stringers have gathered themselves in sufficient quantity and close spacing, the chances of mineable ore bodies being present is quite remote. Such unions however are possible as evidenced by the recent diamond drilling results.

DEVELOPMENT

Tia Juana Mines Inc. partially explored the property in 1952 by sinking a 6'x10' shaft to a depth of 55 feet and by drifting 95 feet on the 50 foot level of the shaft. This work was completed in the Spur Vein on the Ruth and Ruby claim, since called the R & R Shaft. A similar size shaft but limited in depth to 12 feet was sunk in the Main Vein on the Hilda and Edith claim, since called the H & E Shaft, and primarily completed as the discovery shaft.

From August to November of this year, Peaceful Valley Development Co., expending their own funds, further explored a portion of the property by diamond drilling. Five widely spaced holes were drilled at various minus angles to intersect the mineralized zones at depth. The total footage

drilled from August 28 to November 15, 1956 was 1063 feet.

SAMPLING

Tia Juana Mines Inc. sampled both shafts on the property, some time prior to October 1952. The results and descriptions of these samples are tabulated below and have been taken from Mr. O'Briens October 1952 report.

The H & E shaft was sampled at the surface, 5 feet below and 10 feet below the surface. The channel cuts were 3 feet, 4 feet and 4 feet respectively for the samples. The reported metallic content of these samples ranged as follows:

	Au ozs.	Ag ozs.	Pb %	Zn %	Cu %
High	.02	8.2	2.40	19.15	0.65
Low	.01	0.3	0.90	8.35	0.30
Average	.01	2.4	1.60	8.40	0.21

The writer could not check the above average by arithmetic or weighted means. An error is evident in the case of zinc and copper while the lead and silver averages are reasonable and possible since a third value of any metal is lacking. The reported averages for zinc and copper are low.

The following tabulation are the results of samples taken from the R & R shaft.

Location - Cut	Au ozs.	Ag ozs.	Pb %	Zn %	Cu %
Shaft Collar 8"			1.00	4.40	1.35
Collar -3 ft 8"	.01	3.4	18.00	16.20	0.60
Collar -9½ft 8"		3.0	4.62	7.00	3.40
Collar-15½ft 10"		2.0	4.60	10.80	2.81
Collar-38 ft 8"		4.8	5.50	8.20	2.00
Collar-40 ft 18"		8.1	7.71	10.00	4.05
Weighted Average		4.8	7.7	9.6	3.08

The writer has checked the reported averages with relative exactness.

Records do not indicate that samples had been taken of the exposed ore in the 50 foot drift level on the Spur Vein. The only information available is the value assigned to the rumored shipment previously mentioned. The car-load lot nodoubt was hand sorted, consequently would not be representative of mined material. The metallic content ofthe heads as determined by American Smelting and Refining Co. were as follows:

Au - .005 ozs.
Ag -1.900 ozs.
Pb -7.00 %
Cu -2.00 %
Zn -8.65 %

DIAMOND DRILLING

Peaceful Valley Development Co., after acquisition of their interest in the property, undertook a recommended drilling program to explore the mineralized zones at depth. This work was completed during the third quarter of 1956.

Five holes totaling 1063 feet were drilled at four locations which spanned a strike length of 350 feet. (see map).

All holes were collared NX size for 10 feet, reduced to BX size after 20 to 30 feet more and completed with AX size to their total depths. With few exceptions, core recovery was excellent in the fresh granite, diorite and dike material, being upwards of 80 to 90 percent. Core recovery in the identified mineralized zones however, was extremely poor, seldom exceeding 40% and averaging more like 20%. In many instances, evidence of extreme grinding was observed

in the areas lacking core. Only a guess is possible as to what had been penetrated since few sludge samples were taken in these important areas. Galena and sphalerite are relatively soft minerals and can easily be "ground" and lost. Much of the zone itself is highly altered, is soft and could also be easily "ground" and lost. How much of each was present in these poorly cored areas will remain unanswered. (see Composite Drill Logs).

It is the writers opinion that but one hole, D.D.H. 1, actually penetrated the mineralized zone from hanging to footwall; this opinion based primarily on the fact that the last six feet of hole and core indicated minimum alteration of the granite. All other holes show fair to moderate lead-zinc mineralization at or near the total depths.

DIAMOND DRILL SAMPLING

Only one sample from each drill hole was taken, four of which were core samples ranging in length from 1½ to 4 feet and the fifth was a sludge sample covering a length of 25 feet. These samples are indicated on the Composite Drill Logs and will not be repeated here.

Of the five samples taken, only one two foot sample indicated strong mineralization. Review of the core indicates the sample should have been lengthened to four feet to be representative of the zone encountered. Additional samples should be taken from each drill hole but this will be discussed under Recommendations. Such sampling would be advantageous to future exploration.

ORE BODIES - RESERVES

The Main and Spur Veins are contemporaneous in origin. The mineralization of the veins are of the same type being derived from the same source. Structurally there is much greater magnitude applied to the Main Vein for ore bearing potentialities than to the Spur Vein. However, information and exploration to date indicate the Spur Vein may possess concentrated and stronger mineralization as contrasted to the Main Veins' abundant but widely dispersed mineralization.

MAIN VEIN

The Main Vein strikes N. 83° E. for more than 2000 feet and dips steeply to the south. The vein zone itself varies greatly in width as does the silicified, quartz filling core. The core, where measurable on the surfaces, pinches and swells horizontally from 4 to 20 or more feet. It is within this core that metallic mineralization has associated itself with the network type quartz filling veinlets which have widths varying from ½ inches to as much as 1 foot as observed in the drill core.

The writer is of the opinion that ore bodies in the Main Vein will be controlled by the ability of the mineralized quartz veinlets to gather themselves in close proximity and sufficient width for economic mining. Such concentrations may well be lenticular in shape, both horizontally and vertically with their longer dimension in a vertical direction, probably 20 to 100 times the shorter horizontal dimension. No doubt several such ore bodies exist within the zone of the

Main Vein. Indication of such bodies by exploration is extremely difficult and costly.

All drill holes encountered and penetrated to some thickness the Main Vein. Sulphide mineralization in varying degrees is present in all holes but only one two foot sample in drill hole 6 showed concentrations of sulphides in economic proportions.

SPUR VEIN

The Spur Vein strikes N. 45° E. and intersects the Main Vein at a point some 340 feet east of the west end line of the Ruth and Ruby claim.(See Geologic Map). Although the apparent dip of the Spur Vein in the shaft is vertical, drill holes 1 and 2 indicate that a possible increasing southeast dip exists as the zone approaches its intersection with the Main Vein.(See Projection A-A').

Except for drill holes 1 and 2, there is little geologic conditions which the writer could observe and on which to base a firm opinion. The R & R Shaft and its workings are presently flooded, consequently not accessible for examination. An attempt to dewater the workings by the writer during the examination was not successful. Examination of the dump material however, indicates that much sulphide mineralization exists in the workings. Strong quartz and silicification predominates the dump material as contrasted to quantities of granite and diorite wall rock. Much galena sphalerite, chalcopyrite and pyrite were visible in the dump material.

The writer believes a potential ore body exists within the zone between the R & R Shaft and the zones intersection with the Main Vein. Further exploration will however be required.

ORE RESERVES

The writer does not feel justified at this time to infer or credit the property with any amount of ore reserves because information available is limited and widely spaced and considering the nature of an existing ore body, projection of the available information for any great distance is prohibited.

METALLURGY

The unreported but credited one carload shipment of ore to American Smelting and Refining Cos.' mill at Deming, New Mexico indicates the ore from the R & R workings is quite readily amenable to flotation concentration.

The following mill test results were obtained from the Tucson office of American Smelting and Refining Co.

	Au ozs	Ag ozs	Pb %	Cu %	Zn %	Recoveries % Wt.	Pb	Cu	Zn
Heads	.005	1.9	7.0	2.0	8.65				
Pb Conc.	.01	13.2	66.3	3.0	7.4	9.4	85.9	13.7	7.8
Cu Conc.	.02	6.4	8.9	27.5	6.3	5.2	6.4	69.4	3.7
Zn Conc.	-	-	-	0.8	63.8	13.1	1.5	8.3	80.0
							93.8	91.4	91.5

American Smelting and Refining Co. indicated they would pay for the following contained metals in the various concentrates.

Payment	Pb Conc.	Cu Conc.	Zn Conc.
Ag	X	X	
Pb	X	-	-
Cu	X	X	-
Zn	-	-	-

The value of the ore at Amado as indicated by the Mill using the quotations for silver @ 90¢, lead @ 14.04¢, copper @ 24.075¢ and zinc @ 12.54¢ as of December 9, 1952, is as follows:

	Pb Conc.	Cu Conc.	Zn Conc.	Total
Net/ton Conc.	$141.68	$98.48	$73.69	$213.85
Net/ton Crude.	$ 15.07	$18.93	$ 5.62	$ 39.62

All freight and necessary mill charges have already been deducted prior to figuring the net returns. Using the same quotations, the net value of the ore mined was $50.91 for the contained metals but not including the silver or gold.

MAPS - PROJECTIONS - DRILL LOGS

The following maps and drawings have been prepared for your convenience and use while reviewing the written portion of the report.

Figure 1--Index Map-shows relationship of the HERR Mine to nearby towns and cities. Regional geology is also indicated.

Figure 2--Claim Map-shows location of claims with respect to Gila and Salt River Base and Meridian survey. Course of the two zones of mineralization are also shown.

Figure 3--Geologic Map-shows geologic observations and conditions within the area of the two shafts and the diamond drill holes.

Figure 4--Projection A-A'-shows geologic conditions and features encountered in diamond drill holes 1 and 2. The interpretations are those of the writer.

Figure 5--Projection B-B'-shows geologic conditions and features encountered in diamond drill holes 6 and 6-A.

Figure6 --Projection C-C'-shows geologic conditions and features encountered in diamond drill hole 5.

Composite Diamond Drill Logs--There is one log for each of the five holes and two sheets for drill hole 6-A. This was necessary because the hole was drilled to a depth deeper than what the log had been designed for.

CONCLUSIONS

The following conclusions are a result of the writer having (1) studied all available information, (2) personally examined the property and (3) applied his knowledge and experience with properties of similar character and magnitude.

These conclusions are, that,

(1)-information available is limited, consequently, accurate correlation of geologic features is primarily theory rather than factual.

(2)-lenticular ore bodies of moderate vertical extent can easily exist in the unexplored portions of both the Main and Spur Veins,

(3)-considerable exploration will be necessary to locate and develop such ore bodies.

(4)-ore bodies so located should at least approximate a combined metallic content of 15%.

(5)-a mill test on ore from the R & R Shaft indicates favorable recoveries and marketable concentrates can readily be made by flotation, and

(6)-that the property warrants further guided exploration to indicate the existance of the suspected ore bodies.

RECOMMENDATIONS

The following general recommendations are herewith submitted.

(1)-Sample and assay various zones encountered in the drill holes.

(2)-Dewater the R & R Shaft and workings.

(3)-Explore the Spur Vein above the 50 foot level by short closely spaced surface diamond drilling.

(4)-Advance underground drifting on the 50 foot level if drilling results in good ore showings.

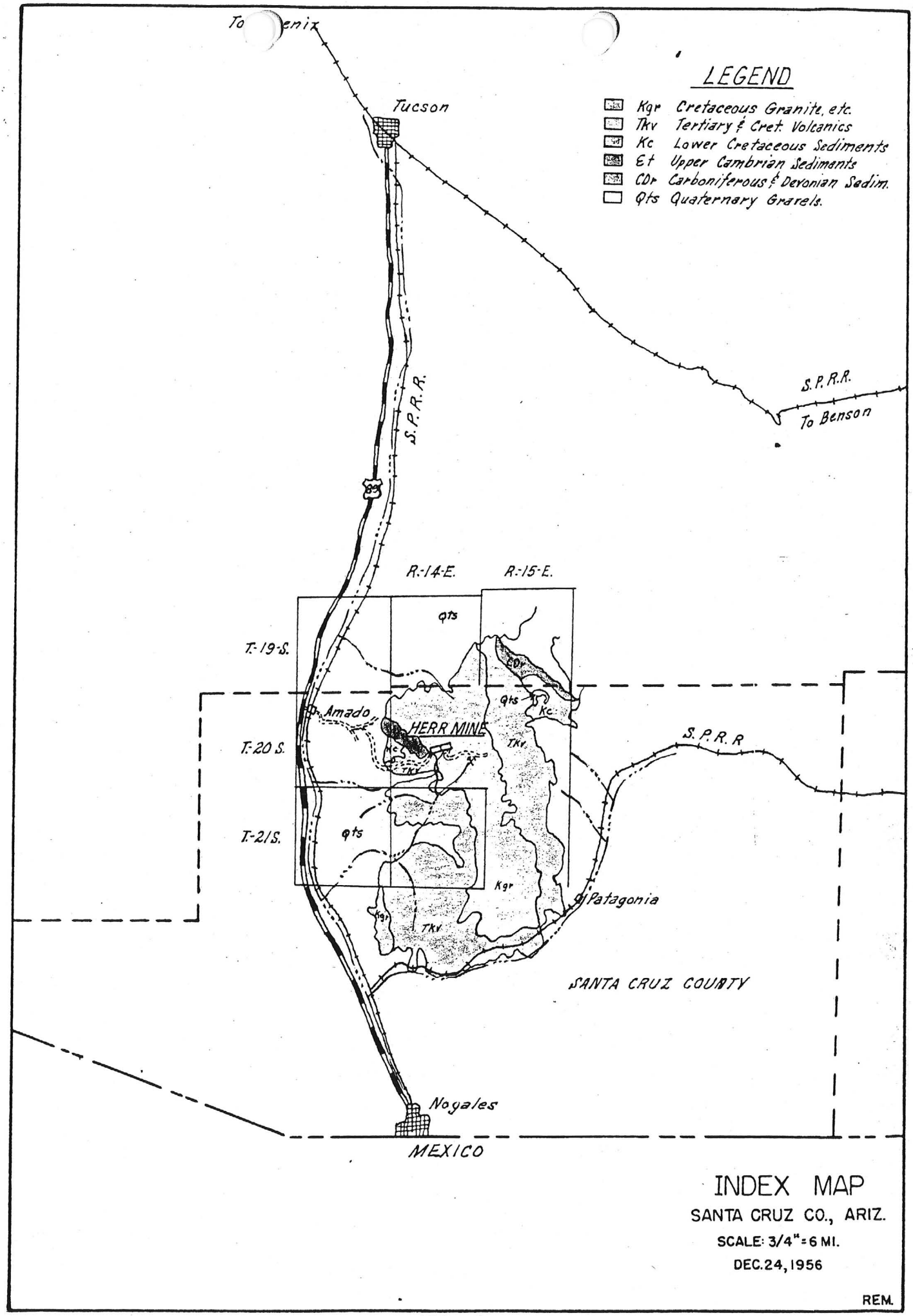
(5)-Above all, employe professional guidance during the exploration program to assure adequate and best possible information obtainable, and

(6)-Apply for a DMEA loan if outside funds are required, basing the application on all or any portion ofthe recommendations separately discussed as Exhibit A of the report.

Respectfully submitted,

R. E. Mieritz, P. E.

December 24, 1956



INDEX MAP

SANTA CRUZ CO., ARIZ.

SCALE: 3/4" = 6 MI.

DEC. 24, 1956

REM.

FIG. 1

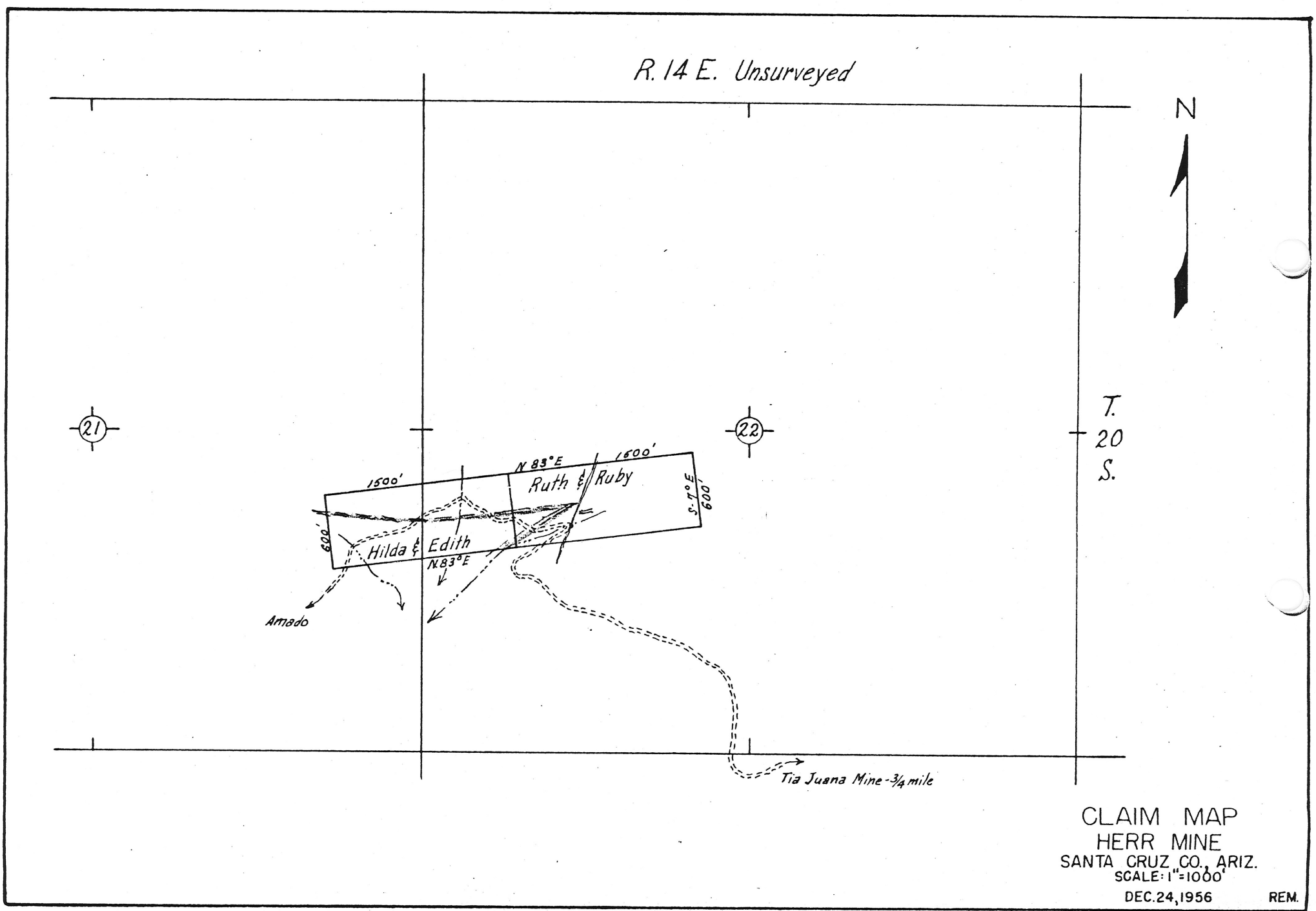

R. 14 E. Unsurveyed
N
21
22
T.
20
S.
1500'
N 83° E
1600'
Ruth & Ruby
S. 7° E
600'
600'
Hilda & Edith
N 83° E
Amado
Tia Juana Mine - 3/4 mile
CLAIM MAP
HERR MINE
SANTA CRUZ CO., ARIZ.
SCALE: 1" = 1000'
DEC. 24, 1956
REM.

FIG. 2

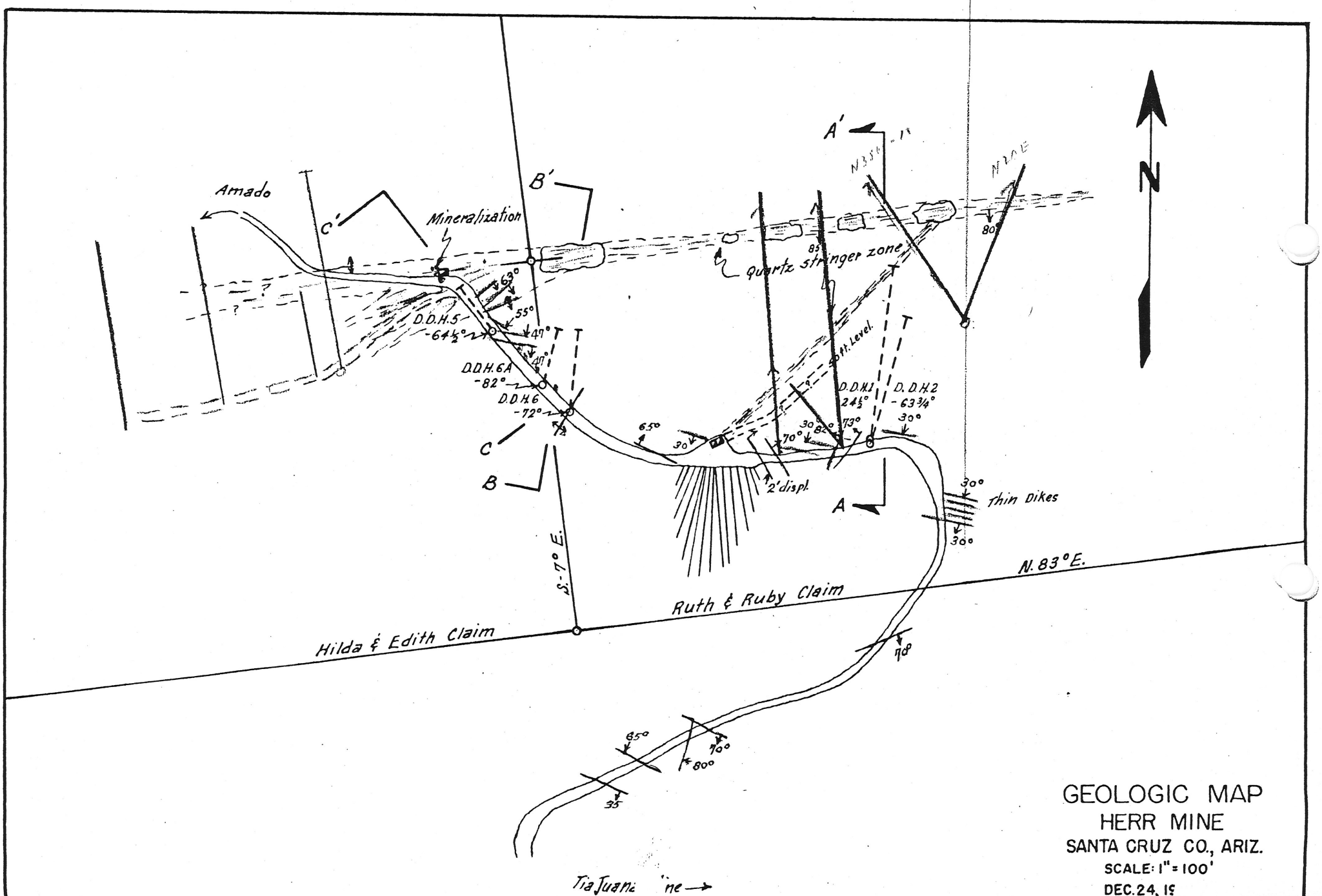

Amado
Mineralization
A'
B'
C'
A
B
C
N
N 35° E
N 12° E
80°
85°
Quartz stringer zone
63°
55°
47°
41°
D.D.H.5
-64½°
D.D.H.6A
-82°
D.D.H.6
-72°
50 ft. Level
D.D.H.1
24½°
D. D.H.2
-63¾°
30°
82°
73°
70°
65°
30
2' displ.
Thin Dikes
S. 7° E.
N. 83° E.
Ruth & Ruby Claim
Hilda & Edith Claim
85°
70°
80°
35
Tia Juana line
GEOLOGIC MAP
HERR MINE
SANTA CRUZ CO., ARIZ.
SCALE: 1" = 100'
DEC. 24, 19
REM.

FIG. 2

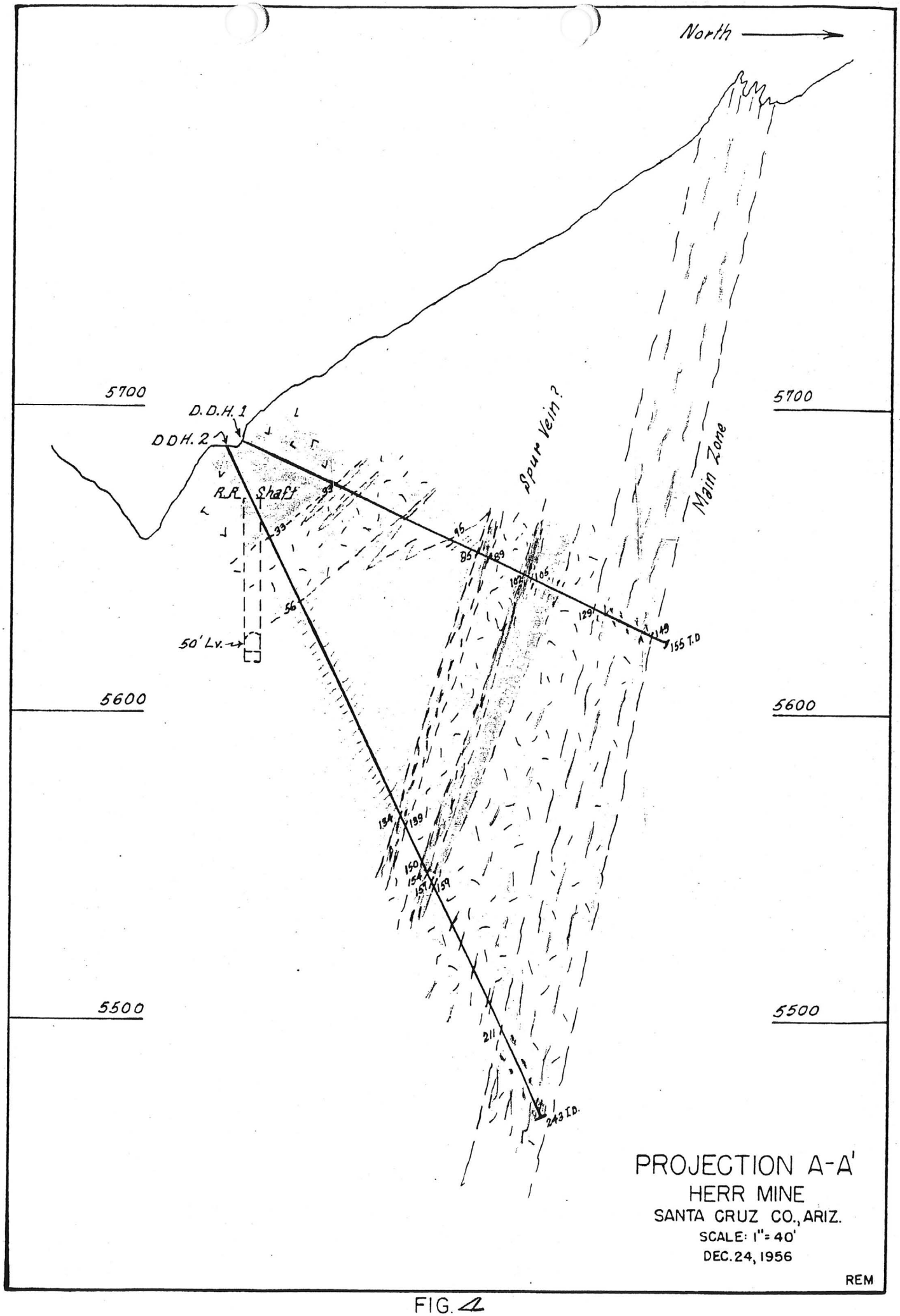
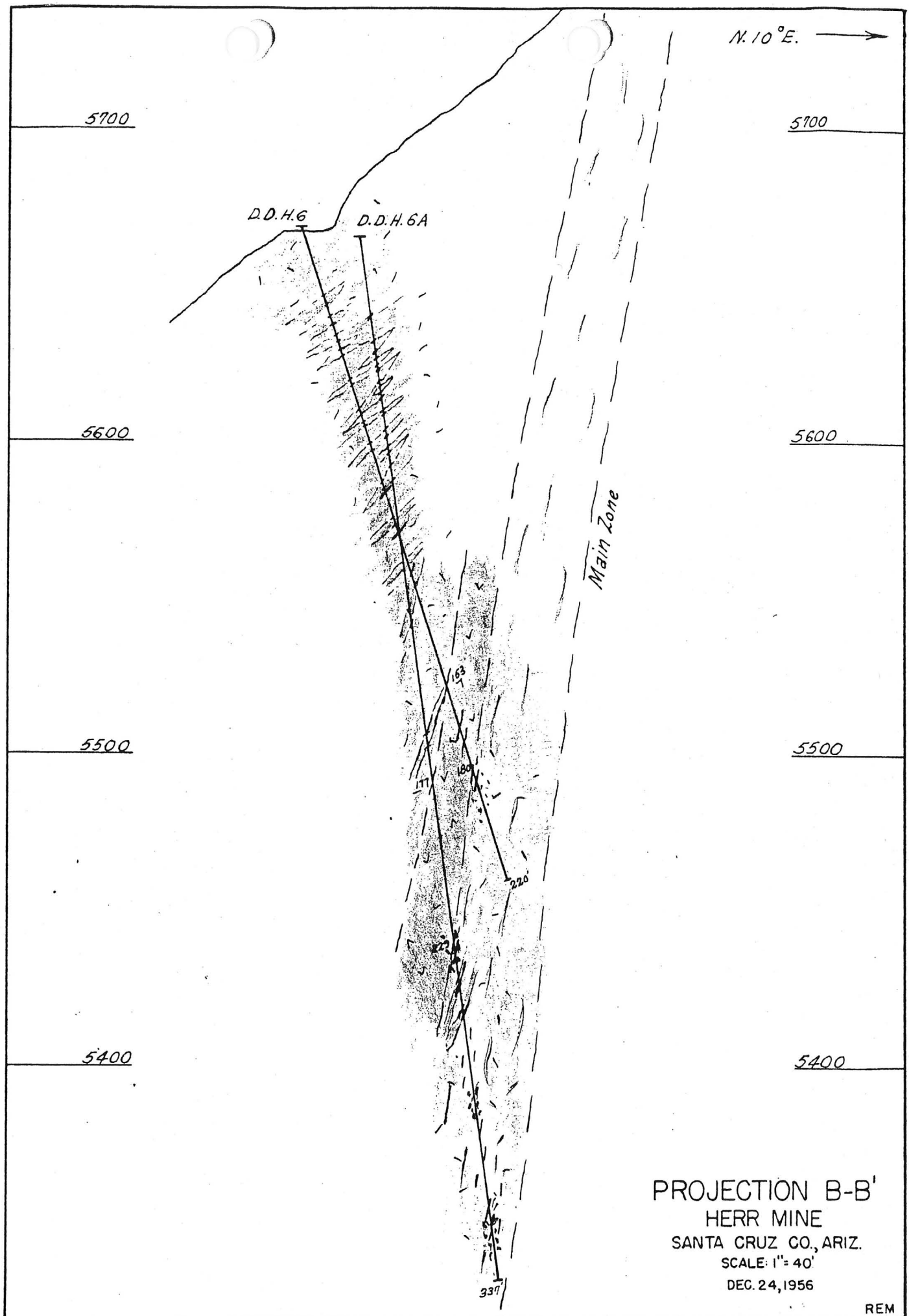

North
5700
5600
5500
D.D.H. 1
DDH. 2
R.R. Shaft
50' Lv.
Spur Vein?
Main Zone
155 T.D
243 I.D.
PROJECTION A-A'
HERR MINE
SANTA CRUZ CO., ARIZ.
SCALE: 1"= 40'
DEC. 24, 1956
REM

FIG. 2



PROJECTION B-B'
HERR MINE
SANTA CRUZ CO., ARIZ.
SCALE: 1" = 40'
DEC. 24, 1956
REM

FIG. 5

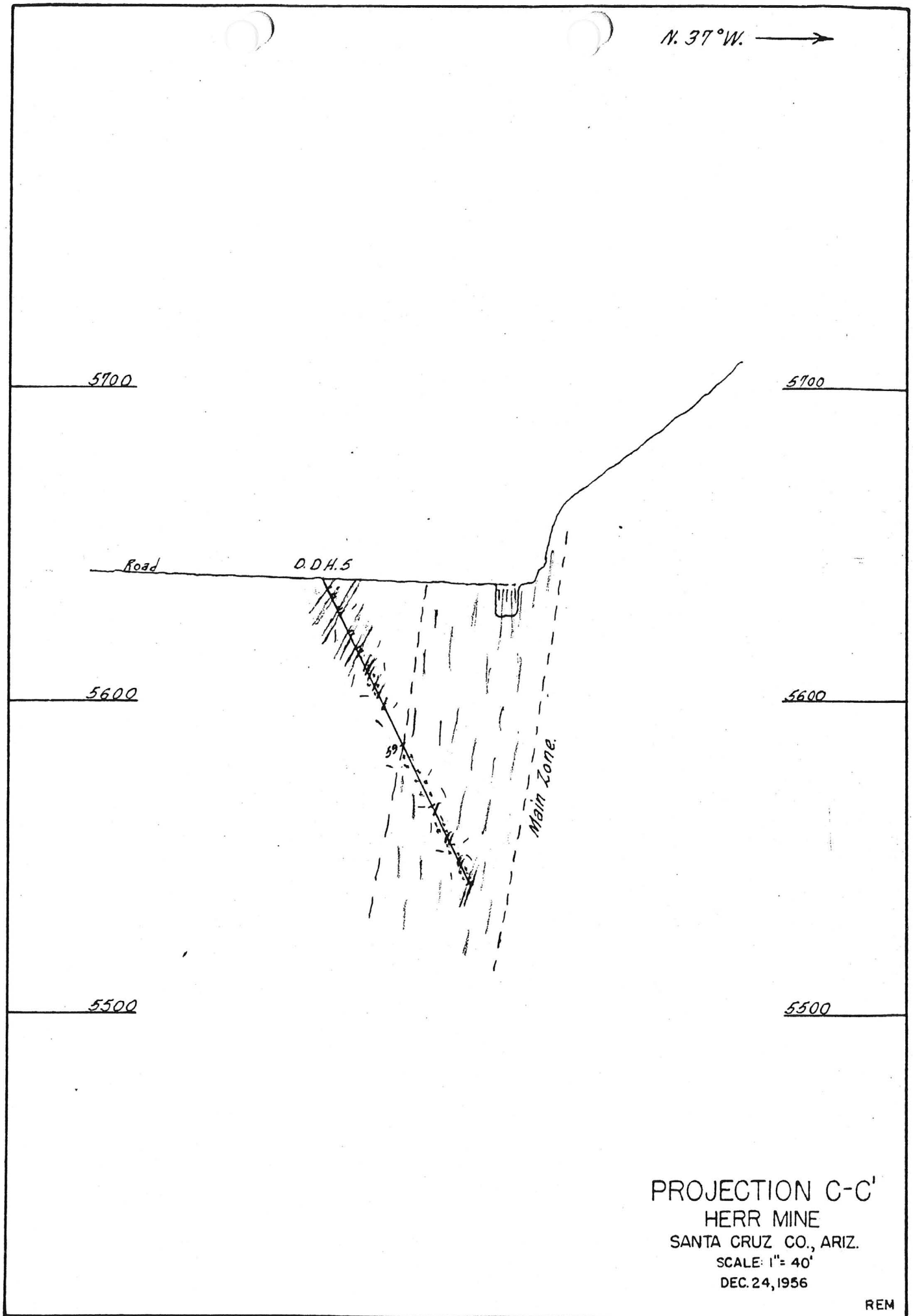

N. 37° W.
5700
5700
Road
O.D.H.5
5600
5600
59
Main Zone
5500
5500
PROJECTION C-C'
HERR MINE
SANTA CRUZ CO., ARIZ.
SCALE: 1"= 40'
DEC. 24, 1956
REM

FIG. 6

COMPOSITE DIAMOND DRILL LOG

HOLE Nº 1

COMPANY: Peaceful Valley Dev. Co. MINE: HERR CLAIM: Ruth & Ruby DISTRICT: Tyndall

COUNTY: Santa Cruz STATE: Arizona TWS: 20 S RGE: 14 E. SEC: 22 N.S. _____ E.W. _____

BEARING: N. 7° E ANGLE: -24°30' ELEVATION: 5688 FT. T.D.: 155 FT. DATE STARTED: 9/1/56 DATE COMP: 9/10/56

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS
5–30			Quartz Diorite: medium grained, green-gray cast. Mn. dentrites. Iron/talc paper thin fractures at 45° to core. Tendency to porphyritic texture.
30			33
35–70			Granite - Contact at 55° to core, fine grain green dikes at 34½-35, 39 to 41, 63 to 64. Dike contacts at 20°, 50°, 70° Granite is tan colored, medium grained. ¼" mineralized seam at 43½'. Sparse mineralization below dike at 64'.
75			75
75–80			Diorite - fine grained, silicified. Mineralization at 84¾'
85	5600		85
85–100			Granite, as above. Specular hematite at 87'. Mineralization at 87½, 88, 89. Sparse pyrite to 94.
100			102
100–115			Diorite ? - fine grained, green-gray. Quartz stringers, 1ft at 105' Sparse pyrite throughout. Mineralization as seams, 102'-105'
115			116 in quartz stringers.
120			123 Granite, as above. 1ft mineralization at 120', qtz.
125–150			Area of quartz stringers, silicification, highly altered granite. Scattered mineralization throughout zone. Quartz stringer at 129', 130', 139', 143', 149'. Sparse pyrite at 130-45
150–155			Less alteration from 149 ft.
155			155
160–185			
185	5500		
190–300			

HOLE: ——— CASING: — —

T.D

CORE: SIZE — NX; BX; AX

RUNS: 20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300

REC% (20, 60, 100)

MINERALIZATION: Pb, Zn, Cu, Fe

Galena
Sphalerite
Chalcopyrite
Pyrite
Quartz

ASSAYS %

Pb	Zn	
= 0.20	1.10	150'–151½'

COMPOSITE DIAMOND DRILL LOG

HOLE Nº 2

COMPANY: Peaceful Valley Dev. Co. MINE: HERR CLAIM: Ruth & Ruby DISTRICT: Tyndall

COUNTY: Santa Cruz STATE: Arizona TWS: 20 S. RGE: 14 E. SEC: 22 N.S. _____ E.W. _____

BEARING: N. 12° E. ANGLE: -63°45' ELEVATION: 5687 FT. T.D.: 243 FT. DATE STARTED: 9/10/56 DATE COMP: 9/24/56

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS
5			Quartz Diorite ?
30			38
35			Granite - numerous fractures at 20° or 70° to core.
40			Sparse disseminated pyrite, chalcopyrite at 48'. Ground core.
55			56
60			Dike - Diorite ? Green, fine to medium grain. Fractures 50°
70			to core, also at 68°. Somewhat altered at 103'-05', 119'-121',
75			127. ½" quartz stringer at 89' at 68° to core, sparse pyrite.
80			Strong fracture at 116', Pyrite, Chalcopyrite, Hematite on seam.
85	5600		Numerous fractures with pyrite, chalcopyrite, all directions
130			134
135			Granite. Gradational Contact. Tan to purple cast, to 243'.
145			Sparse Chalcopyrite, pyrite, galena, Sphalerite at 134'-139'.
150			150
155			Area of quartz stringers & Altered granite. Galena, pyrite,
160			chalcopyrite, quartz stringers 154-57.
165			Dike - gray-green 157, to 159.
170			Quartz stringers, 173, 179, 189, 199, 200. Mineralization 173'-
175			179'. Stringers at 45° & 70° to core. Sparse pyrite, chalco-
180			pyrite at 199'.
185	5500		
205			Less alteration 204'-211'
210			Fractures & quartz seams 211'-243'
235			Less alteration 231'-235'
240			Vuggy quartz 238'-240' disseminated Sphalerite, galena, pyrite
245			chalcopyrite. Much quartz, alteration 240'-243'.
285	5400		
300			

HOLE: ——— CASING: — —

T.D.

CORE: SIZE — NX, BX, AX; RUNS; REC%

MINERALIZATION: Galena, Sphalerite, Chalcopyrite, Pyrite, Quartz

ASSAYS %	Pb	Zn	
153½–154	0.50	1.50	
154⅓–159	Trace	0.60	

COMPOSITE DIAMOND DRILL LOG

HOLE Nº 5

COMPANY: Peaceful Valley Dev. Co. MINE: HERR CLAIM: Hilda & Edith DISTRICT: Tyndall

COUNTY: Santa Cruz STATE: Arizona TWS: 20 S. RGE: 14 E. SEC: 22 N.S. _____ E.W. _____

BEARING: N.37° W. ANGLE: -64°30' ELEVATION: 5661 FT. T.D.: 108 FT. DATE STARTED: 9/25/56 DATE COMP: 10/6/56

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS
5–55			Granite with intermitent green, gray-green acidic dikes. Feldspars are coarse, tancolored, changes to purple cast at 26 ft. Dike-granite contacts normal to core - ±30° S. is indicated. Other contacts at 25° & 45° to core. Dikes are barren. Some mineralization as seams-contacts. Thin quartz stringers at 31, 32, 33, 38, 41 & 44 feet. Sparse lead, zinc and copper mineralization disseminated in granite
55–59	5600		Area of quartz fissures, silicification and highly altered granite. Sparse disseminated mineralization throughout zone. 1" concentrations at 82, 92, 92½, 101 & 101½ ft. Core badly ground, 59'-108'.
59–107			
107			Dike.
107–108			T.D.
160–300	5500		

HOLE: ——— CASING: - - -

CORE: SIZE — NX, BX, AX; RUNS; REC.%

MINERALIZATION: Pb, Zn, Cu, Fe — Galena, Sphalerite, Chalcopyrite, Pyrite, Quartz

ASSAYS %: Pb. 0.50; Zn. 0.95; 0.1 oz Ag

Sludge Sample 83' to 108'

COMPOSITE DIAMOND DRILL LOG

HOLE Nº 6

COMPANY: Peaceful Valley Dev. Co. MINE: HERR CLAIM: Ruth & Ruby DISTRICT: Tyndall

COUNTY: Santa Cruz STATE: Arizona TWS: 20 S. RGE: 14 E. SEC: 22 N.S. _____ E.W. _____

BEARING: N. 5°E. ANGLE: -72° ELEVATION: 5669 FT. T.D.: 220 FT. DATE STARTED: 10/8/56 DATE COMP: 10/19/56

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS
5			Granite. Fresh, tan, medium grained. Thin, intermitent, gray, green-gray dikes, all barren except 98-100. Traces disseminated pyrite in vugs, seams to 153'.
65	5600		3/4" quartz vug seam, 68', sparse mineralization.
85			1/2" quartz seam, 88', moderate mineralization. Hematite.
95			Sparse pyrite in dike.
120			4" silicified zone, 123', 1/2" quartz, moderate mineralization.
150			153
155			Diorite ? Fine grained, green-gray. Hematite in seams.
165	5500		1 1/2" quartz, 170 1/2'; 35° to core. Sparse mineralization.
180			180 1/4" quartz, 194, Sparse mineralization.
185			Area of quartz stringers, silicification and altered Granite. Moderate to strong mineralization at 183 1/2' to 184', 190' to 192', 194' to 197', 205' to 210'. Poor corerecovery.
210			212
215			Granite, altered, pink cast.
265	5400		

HOLE: ======= CASING: — —

BX ream drill

T.D.

CORE: SIZE — NX, BX, AX; RUNS; REC.%

MINERAL-IZATION: Pb, Zn, Cu, Fe; Galena, Sphalerite, Chalcopyrite, Pyrite, Quartz

ASSAYS %	Pb	Zn	Cu
183–185	8.52	3.95	0.85

COMPOSITE DIAMOND DRILL LOG

HOLE Nº 6A

COMPANY: Peaceful Valley Dev. Co. MINE: HERR CLAIM: Hilda & Edith DISTRICT: Tyndall

COUNTY: Santa Cruz STATE: Arizona TWS: 20 S RGE: 14 E. SEC: 22 N.S. _____ E.W. _____

BEARING: N. 15° E. ANGLE: -82° ELEVATION: 5666 FT. T.D.: 337 FT. DATE STARTED: 10/22/56 DATE COMP: 11/ /56

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS
5			Granite. Fresh, tan, medium grained. Thin, intermitent, gray, green-gray dikes, all barren. Purple cast to granite from 72' to 145'. Disseminated pyrite from 88' to 104'. Fractures about 50° to core.
65	5600		
95			½" quartz seam, 94', moderate mineralization.
155			Sparse pyrite & hematite seam at 151'. Sparse pyrite 156-58'
165	5500		Gradational Contact - about 171'.
177			Strong alteration 182'-186'.
210			Moderately altered & hematite, 210'-212'.
229			Area of quartz seams, at 229'. Sparse mineralization on contact. ½" dike at 230', mineralized. Quartz seam in dike, barren.
258			Quartz stringers, 258'. Sparse mineralization.
265	5400		Altered 264'-67'. Strongly silicified 267'-274'. Strongly altered 274'-280'.
281			Disseminated mineralization, 281'-289½', 290'-291½'. Altered 288'-290'. 291'-295 sparse chalcopyrite.

HOLE: ——— CASING: - - -

CORE: SIZE — NX, BX, AX; RUNS; REC%

MINERALIZATION: Galena, Sphalerite, Chalcopyrite, Pyrite, Quartz

ASSAYS %

	Pb	Zn	Cu
229–233	0.50	0.41	0.25

COMPOSITE DIAMOND DRILL LOG

HOLE Nº 6A-Con'td.

COMPANY: Peaceful Valley Dev. Co. MINE: HERR CLAIM: Hilda & Edith DISTRICT: Tyndall

COUNTY: Santa Cruz STATE: Arizona TWS: 20 S. RGE: 14 E. SEC: 22 N.S. _____ E.W. _____

BEARING: N. 15° E. ANGLE: -82° ELEVATION: 5666 FT. T.D.: 337 FT. DATE STARTED: 10/22/56 DATE COMP: 11/2/56

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS	HOLE: ——— CASING: - - -	CORE SIZE	CORE RUNS	CORE REC%	MINERALIZATION	ASSAYS % Pb	ASSAYS % Zn	ASSAYS % Cu.
305–300	5300		Altered 296'-313', less altered 313'-337'. Disseminated mineralization 315'-329'. Seam mineralization 320, 322. Sparse mineralization below 322	T.O.	AX	20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 220, 240, 260, 280, 300	20, 60, 100	Pb, Zn, Cu, Fe; Galena, Sphalerite, Chalcopyrite, Pyrite, Quartz			

EXHIBIT "A"

RECOMMENDED EXPLORATION

This exhibit has been prepared to adequately express in detail the writers recommended exploration that should eventually be followed and completed to properly explore the Herr Mine as a means to develop sufficient reserves to warrant an operation of moderate daily production.

The program has been designed to accomplish (1) a step by step program of judicious attack towards development and (2) as a guide to apply for a DMEA loan if such is required.

The estimated costs shown in the program are, I believe, within reason. The following program is hereby recommended.

PHASE 1

Sample and assay the following lengths of core from previous drilling.

Hole 1-- 85 to 90 ft, 128 to 132 ft., 139 to 143 ft.
Hole 2-- 134 to 139ft., 173 to 179 ft., 238 to 243 ft.
Hole 5-- 82 to 87 ft., 87 to 92½ ft., 100 to 104 ft.
Hole 6-- 185 to 187 ft., 190 to 192 ft., 194 to 197 ft., 205 to 210 ft.
Hole 6-A-281 to 284 ft., 315 to 322 feet.

Dewater the R & R Shaft and its workings.

Geologically map and sample the underground drift and the R & R Shaft.

Sample all surface exposeures where possible.

PHASE 2

Diamond drill short holes to intersect the Spur and Main Veins at the following locations, directions and angles.

1-Shaft plus 50 ft. east, N.5°W., -10°, 200 feet
2- " " " " " -65°, 150 feet
3- " " 100 ft. " " -10°, 200 feet
4- " " " " " -55°, 200 feet
5- " " " " N.35°W.,-60°, 100 feet

PHASE 3

Diamond drill the following holes to intersect the fault and Main Vein from the following location, directions and angles.

1--100 feet east up canyon from road. N. 35° W., -10°, 150 feet
2-- " " " " " " " -50°, 200 feet
3-- " " " " " N. 20° E., -10°, 125 feet

PHASE 4

If phase 2 and 3 are successful as a result of good ore showings, continue 50 foot drift level of R & R shaft for 100 feet to NE and intersection of Main Vein.

PHASE 5

From H & E Shaft, construct drill road and locations parallel to but south of Main Vein outcroppings to explore by diamond drilling that portion of the Main Vein exposed on the Hilda and Edith claim. Number of holes to be drilled is dependent on results of surface outcrop sampling.

ESTIMATED COSTS

The writer believes the following estimated costs are within the range of present day prices. Drill costs are identical to prices paid for drilling during the third quarter of this year on this property.

PHASE 1

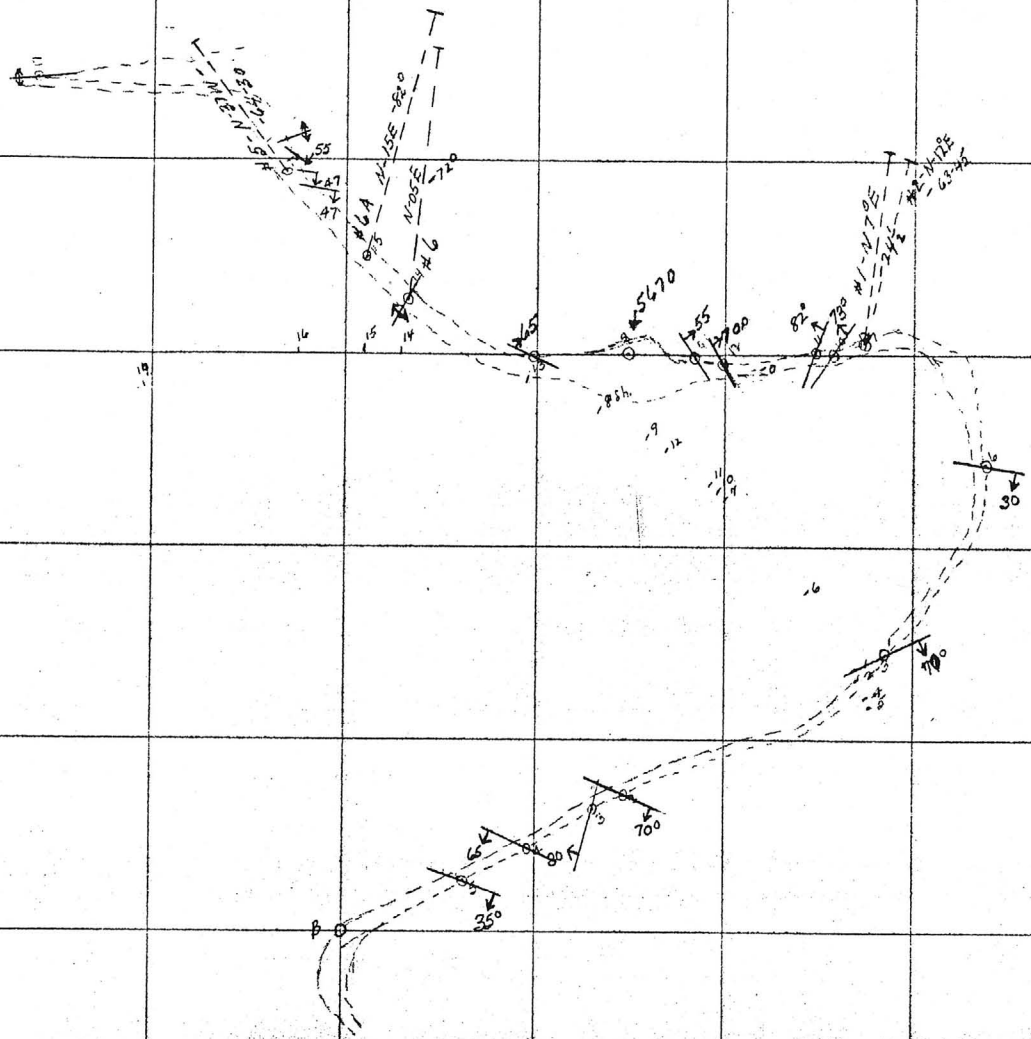
1-Core samples-16 @ $6.50	$ 104.00
2-Dewater R & R Shaft(Equip. rental supplies and materials)	$ 250.00
3-Mapping drift, Samp and Assay	$ 300.00
4-Sample surface Expos. assay	$ 300.00
Labor	$ 200.00
Supervision and Expenses	$ 400.00
Total Phase 1	$ 1554.00

Carried forward (Phase 1)		$ 1554.00
PHASE 2		
Drill 850 ft. @ average $7.30/ft.	$ 6405.00	
25% Extras, cement etc.	$ 1600.00	
Sampling	$ 200.00	
Supervision and Expenses	$ 800.00	
Total Phase 2	$ 9005.00	
Total Phase 1 and 2		$10559.00
PHASE 3		
Trail and Location	$ 200.00	
Drill 475 ft. @ average $7.30/ft.	$ 3275.00	
25% Extras, cement etc.	$ 825.00	
Sampling	$ 100.00	
Supervision and Expenses	$ 500.00	
Total Phase 3	$ 4900.00	
Total Phase 1 thru 3		$15459.00
PHASE 4		
Drift 100 feet @ $35.00/ft.	$ 3500.00	
Sample	$ 150.00	
Supervision and Expenses	$ 700.00	
Total Phase 4	$ 4350.00	
Total Phase 1 thru 4		$19759.00
PHASE 5		
Construct Road and drill sites, 800 ft. road, 6 drill sites.	$ 1200.00	
Drill approx. 1500 ft @ $7.30/ft.	$10950.00	
25% Extras, cement, etc.	$ 2700.00	
Sampling	$ 400.00	
Supervision and Expenses	$ 1500.00	
Total Phase 5	$16750.00	
Total all phases		$36509.00
10% contingencies		$ 3651.00
Total		$40160.00
Say $40,500.00		

The recommended exploration (drill holes) are shown in green pencil on the Geologic Map, Figure 3.

R. E. Mieritz, P. E.

December 24, 1956



MINE_____ LOCATION_____ LEVEL_____

GEOLOGY BY_____ SURVEY_____ SCALE_____ DATE_____

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

Mine Herr Mine new ~~R & R Mine~~ Date Aug. 5, 1952

District Tyndall Mining Dist., Santa Cruz Co. Engineer Axel L. Johnson

Subject: Mine Report. --- Information by Joseph G. O'Brien, Engineer.

Location 10 miles due ~~west~~ east of Amado P. O., reached by new road to Tia Juana Mine, built by Tijuana Mines, Inc.

Number of Claims 2 unpatented claims, located a few months ago.

Owners Tijuana Mines, Inc. ---- viz.
Joseph G. O'Brien, Engineer, Box 77, Amado, Ariz.
Chas. T. Tucker, Phoenix, Ariz. — 930 E. Denton Lane, Phoenix, Ariz.
6 others in the company.

Operators same as above.

Officers Chas T. Tucker, Phoenix, Ariz. --- President
Joseph G. O'Brien, Box 77, Amado, Ariz.-- lives at Kinsley.

Metals Found Copper, lead, zinc, silver, gold--- all in the form of sulphides.
Ores are chalcopyrite, pyrite, sphalerite, and galena.

Men Employed 4 men (day shift only)

Production Rate No Production. Doing shaft sinking.

Milling Facilities None at present. Plans are pending for the construction of a mill at the Half Way Station or Kinsley to treat the ores of the Tia Juana Mine.

Geology Two vertical veins, parallel to each other, and striking NE--SW.
(1) Small vein with high ore values is about 2 ft. wide. They are sinking the shaft in this vein.
(2) Large vein with milling grade ore is from 12 to 30 ft. wide.

Ore Values Small vein has values viz.--- Copper 3 to 8 %, Lead 10 to 20 %, Zinc 8 to 12 %, and Silver up to 20 oz. Large vein is milling grade ore.

Old Workings & Past Production None. This is a new discovery.

Present Operations Claim was located just a few months ago. It was found while making a survey for the road to the Tia Juana Mine.
A small prospect shaft is being sunk in ore in order to develop the ore body. The shaft is a vertical 6' x 10' shaft. They are down to a depth of 15 ft. now.

Proposed Work Operators intend to go down with the shaft as long as they have ore. Later on, they will cross cut following the vein.
Operators intend to start a similar shaft on the big vein in two or three weeks.

Remarks The plans for the mill that the company were planning on for milling the ore from the Tia Juana Mine is now being posponed, awaiting more favorable prices for Lead and Zinc.