07/18/96

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES FILE DATA

PRIMARY NAME: EL COBRE CLAIMS

ALTERNATE NAMES:
PROHOROFF CLAIMS

MARICOPA COUNTY MILS NUMBER: 437

LOCATION: TOWNSHIP 2 S RANGE 10 W SECTION 10 QUARTER C
LATITUDE: N 33DEG 16MIN 10SEC LONGITUDE: W 113DEG 16MIN 49SEC
TOPO MAP NAME: EAGLETAIL MTS - 15 MIN

CURRENT STATUS: DEVEL DEPOSIT

COMMODITY:
COPPER OXIDE
COPPER SULFIDE
SILVER
IRON
GOLD

BIBLIOGRAPHY:
AZ DEPT OF TRANS COUNTY MAP
ADMMR EL COBRE CLAIMS FILE
ADDITIONAL CLAIMS SEC 11, 14 & 15-T2S-R10W

EL COBRE MINE

MARICOPA COUNTY
N.GILA MTN.DIST.

Dick Mieritz came in to check with me on the El Cobre prospect and submitted a sludge board record of the diamond drill hole down to 415 feet. He revealed that from 400 to 415 feet the hole showed 0.18 percent copper, three times as much as in the previous 400 feet.

LEWIS A. SMITH - Weekly Report - 12-29-61

Pete Prohoroff in about 52 claims in the Eagle Tail Mts. Worried because Damson Oil Co., out of Tucson blanketed his claims after he had pointed out his to them. Wondered what to do. Could get committemnt from Damson, written preferably or could contact lawyer. Most large exploration units blanket area as a matter of course and won't argue with prior claims. JHS WR 9/26/69

~~[illegible] Prohoroff and Robert Lauber claims about 3½ miles southerly from Bumble, [illegible] no indication mineral except a fair gossan. FTJ WR 1-22-71~~

REFERENCES

ARIZONA DEPARTMENT OF TRANSPORATION COUNTY MAP

MILS Sheet sequence number 0040130266

COMPOSITE DIAMOND DRILL LOG

HOLE № 1 Sheet 1 of 3

COMPANY: Provan Mining Co MINE: El Cobre CLAIM: El Cobre, Gr 2-2 DISTRICT: Eagle Tail

COUNTY: Maricopa STATE: Arizona TWS: 2 S RGE: 10 W SEC: un-surd. N.S. ______ E.W. ______

BEARING: Vertical ANGLE: Vert. ELEVATION: ______ FT. T.D.: 787 FT. DATE STARTED: 12-8-61 DATE COMP: 1-5-62

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS	HOLE / CASING	CORE SIZE	CORE RUNS	CORE REC%	MINERALIZATION	ASSAYS % Tot. Cu.	ASSAYS % check
5			Fill		NC					
10			Gneiss, of two types, intermixed, on surface and in depth.	3 5/8"						
15			(1) Coarse grained, feldspars, quartz & mica, laminated.							
20			(2) Fine grained, quartz, mica, some feldspars, laminae			20				
25			still visible. Both types relatively fresh to 29.'						.02	
30										
35			29,' Heavy Fe, alteration of mica, also feldspars, to 95.'	3.0"	NX W.L.					
40			Iron has dull red brown color (dead). Fractures			40			.02	
45			3"-4" apart. Fe on fractures & disseminated.							
50										
55			52-54, thin seams orange-red Fe with sparse speaks						.05	
60			CuOx minerals, malachite, chrysocolla, etc. (Fe-live)			60				
65										
70									.02	
75										
80			80.5'- 2" wide Or-rd Fe zone, CuOx minerals 65° dip			80			.36	.59
85										
90										
95			95'- Relatively fresh, micas slightly altered. Type 1. to 126.'						.03	
100				2 3/8"	BX W.L.	100				
105										
110									.01	
115										
120						120				
125			126' Mixture of types 1 & 2 to 295.2' with varying						.02	
130			degrees of "dead" Fe in frac. & dissem. Feldspars							
135			altered slightly. Fractures becoming more							
140			numerous, 1" to 2" apart.			140			.01	
145										
150										
155			156'- Badly broken (breccia) possible Fault Zone.						.03	
160			Stronger alteration below. More frequent			160				
165			occurance of Or-rd Fe.							
170									.02	Tr.
175										
180			178'- Small area quartz, Or-rd & blk Fe.			180				
185									.015	
190										
195										
200			198'- Strong Or-rd Fe. Qtz zone. Blk Fe. All Fe to 232			200			.01	
205									.02	
210										
215										
220						220			.03	
225										
230			232'- Very heavy (dead Fe), some Or-rd Fe. Gouge 236-37							
235									.01	
240						240				
245										
250									.02	
255										
260						260				
265										
270									.03	
275										
280						280				
285									.04	
290										
295			295.2'- Type 1- Relatively fresh to 302.5.'							
300						300			.03	

COMPOSITE DIAMOND DRILL LOG

HOLE № 1 Sheet 2 of 3

COMPANY: Provan Mining Co. MINE: El Cobre CLAIM: El Cobre Gr.2-2 DISTRICT: Eagle Tail

COUNTY: Maricopa STATE: Arizona TWS: 2-S. RGE: 10 W. SEC: un-Sur'd N.S. ____ E.W. ____

BEARING: Vertical ANGLE: Vert. ELEVATION: ____ FT. T.D.: 787 FT. DATE STARTED: 12-8-61 DATE COMP: 1-5-62

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS	HOLE: ——— CASING: — —	CORE SIZE	CORE RUNS	CORE REC.%	MINERAL-IZATION	ASSAYS % Tot Cu.	ASSAYS % Check
305			302.5 - Type 2. Heavy dead Fe. Some Or-rd Fe. Much	2 3/8"	BX				.03	
310			alteration.		W.L.					
315										
320									.07	.02
325						320				
330			329 - Gouge ±1 ft.							
335										
340			336 - Small Andesite dike. Heavy Fe hides character.			340			.03	
345			337 - Type 2. Some calcite stringers. Small quartz							
350			veins at 349', 351.5', sugary.						.18	
355			354.5' Small Andesite dike.							
360			365 - Type 2. Strong dead Fe, some Or-rd Fe as			360			.02	
365										
370			disseminations. Dead Fe decreases to 406							
375									.05	
380						380				
385										
390										
395									Tr.	
400			406 - Type 1 - Pink cast. Moderate dead Fe with			400				
405										
410			black-purple-red Fe as disseminations and						.015	
415			on fractures.							
420						420			.01	
425										
430			427-28 - 1/8" to 1" wide greenish-gray andesite dikes.							
435									.025	
440						440				
445										
450									.015	
455			454-55 Some Or-rd. Fe.							
460			462 & 64 Small Andesite dikes, 4-5"			460			.01	Tr.
465									.03	
470										
475									.03	
480						480				
485			485 Andesite porphyry dike to 497.						.025	
490										
495									.04	
500						500				
505									.025	
510			509 - 3" Andesite dike.							
515									.015	
520						520				
525			523 - Mica Schist. Similar to surface exposed. Pur-						.035	
530			ple-red sooty Fe as disseminations on laminae.						.02	
535			Specks of sulphides (Fe & Cu) indicated.						.03	
540						540			.015	
545			537-42 Type 1. - Schist-Gneiss contact 70°						.025	
550			532 - Start of purple-red Fe, box work.						.02	
555									.02	
560			565 & 62 - Quartz seams, some epidote, Native copper			560			.02	
565			565.5 Andesite dike. in quartz & Schist						.025	
570									.025	Tr.
575			574 - Type 1, 577 - Type 2, 580. Type 1						.015	
580						580				
585			587 - Type 2. Purple-Red Fe on frac. & disseminations							
590									.02	
595			Some spec. hematite.							
600						600				

20% 60% 100%

COMPOSITE DIAMOND DRILL LOG

HOLE № 1 Sheet 3 of 3

COMPANY: Provan Mining MINE: El Cobre CLAIM: El Cobre Gr. 2-2 DISTRICT: Eagle Tail

COUNTY: Maricopa STATE: Arizona TWS: 2-S. RGE: 10 W. SEC: un-surv'd N.S. ______ E.W. ______

BEARING: Vertical ANGLE: Vert. ELEVATION: ______ FT. T.D.: 787 FT. DATE STARTED: 12-8-61 DATE COMP: 1-5-62

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS	HOLE / CASING	CORE SIZE	CORE RUNS	CORE REC.%	MINERALIZATION	ASSAYS % Tot. Cu.	ASSAYS % Check
605			608 - Type 1 - Heavy Or-rd Fe.	2 3/8"	Bx W.L.					
610			613 - Type 2 & Type 1 intermixed to 696½. Moderate Fe throughout but less altered.						.025	
615										
620						620				
625									.015	
630										
635										
640						640			.04	[illegible]
645			648 Small Andesite dike. Spec. hematite stringers.							
650										
655									.01	
660						660				
665										
670									.02	
675										
680						680				
685									.02	
690										
695			696½ - Chloritic Schist, many slips & veinlets of quartz & Spec. hem. Contact 30° dip.							
700						700			.03	
705			708 - Laminae 45° dip.							
710										
715									.02	
720						720				
725										
730			730 - Andesite dike. Some spec. hem.							
735			734 Pegmatite dike. Pink cast Moscovite Mica.						.01	
740			742½ - Chloritic Schist. Some epidote.			740				
745										
750										
755			757 - Brecciated Zone. Contact horizontal. Some Or-rd. Fe., epidote. Feldspars strongly altered.							
760						760			.01	
765										
770			772 - Porphyritic rock - transitional in character. Feldspars, (large), quartz, epidote, some black mineral as specks. Some indications of sulphides.							
775										
780						780				
785									.015	Tr
790							20% 60% 100%			
795										
800						800				
805										
810										
815										
820						820				
825										
830										
835										
840						840				
845										
850										
855										
860						860				
865										
870										
875										
880						880				
885										
890										
895										
900						900				

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
FIELD ENGINEERS REPORT

El Cobra Claims

Mine: Prohoff Claims (PROHOROFF) — Date: March 17, 1961

District: Painted Rock north of Agua Caliente, Maricopa Co. — Engineer: Lewis A. Smith

Subject:

Interview with Nick Prohoff

Minerals: Lead, silver, gold

Claims: 3 unpatented (so far)

Owners: Nick and Alex Prohoff, Rt. 5, Box 1319 (near intersection between 65th Ave. and Van Buren) Phoenix.

Work: Location work is to attempt to uncover the two end outcrops of the veins. Some shallow pits and cuts are present. The owners plan to crosscut the vein system with core drills.

Geology: The gold vein is about 4-6 feet wide, trends NW and is fairly steep. Three hundred feet of outcrop along the strike, is exposed. On the ends, detrital material covers it. Development work will include bulldozer trenching to uncover more of the vein. This vein is reported to show from preliminary sampling, about $95 in gold and silver values, the silver assaying 11 ounces.

Nearby are several quartz veins which are reported to contain galena with some silver values. The galena is partly oxidized. Little is known about these so far except that there is not much gold in them.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine El Cobre Date December 20, 1961

District North Gila Mountain Dist. Engineer LewisA. Smith

Subject: Mine visit with Nick Prohoroff, ~~[illegible]~~ Van Landingham and Richard Mieritz (12-20-61)

The essential information in the previous report appears to be good. However, there are a few new facts to add to that report.

(1) The mineralized area is apparently confined to a fracture pattern where transverse fractures cross the schistosity of the hornblende schists or the foliations of the granite gneiss. It was also found that the indications of copper mineralization while evident in places, was too far apart to constitute ore. The copper minerals (chrysocolla, brochantite and relicit chalcocite) were confined to narrow stringers which ranged in width from 1/8 inch up to 2 inches, which pinched and swelled locally and had little strike length. The schist in the vicinity of faults was altered to a deep red color but in between these localized areas it was almost fresh. The gneiss (?) was evidently less mineralized (in general).

(2) The schist contact with gneiss on the north was definitely a fault contact accompanied by breccia, extra strong silicification and some epidotization. The fault zone ranged from a few feet to 30 feet wide, but the limonites in it were not good, although general samples indicated $2.00 in gold and silver.

(3) The schist and gneiss rock lies against a very fine-grained acid rock suspected of being granite porphyry, on the east, which apparently pitches about 35 degrees SW under the schist and gneiss. The contact zone is extremely shattered over a width of several feet. Epidote is fairly prevalent in the schist and gneiss and in places along this contact these rocks are altered almost beyond recognition. Sheeting parallel to the contact dip was fairly intense in all the rocks. It seems therefore, that this combination of conditions could represent a flat fault or a thrust fault, probably the latter. The fine-grained rock could also have come in as a sill, along this break.

(4) Farther east the fine-grained acid rock butts against a coarse textured rock (probably monzonite) of somewhat similar appearance, but has no phenocrysts of quartz, and which forms the main bulk of Cortez Mountain. The coarser rock is impregnated by disseminated blebs of epidote, and it is composed of feldspars, biotite and some hornblende in addition to epidote. The coarse rock is cut by felsitic dikes/and aplitelike dikes trending in a northwest-southeast direction paralleling the contact with the finer-grained granite porphyry (?) (generally this contact is about N 30-35 degrees W and dips steeply to the southwest). Sheeting, roughly parallel to the contact, dips about 70-75 degrees SW. The contact is somewhat indefinite but the finer-grained rock is crushed in a narrow belt whereas the coaser grained rock is far less affected. This contact roughly parallels the porphyry-schist contact. In two places it appeared that the finer-grained rock was bowed upward close to the contact, as if it had been thrust from the SW against the coarser rock buttress. At every place where the contact area was observed, it appeared to be a curving contact. The coarse rock weathers in much larger units than the finer-grained rock and the topography decidedly steepens when the coarser rock is encountered. The dikes that cut the coarser ~~rock stand~~

rock stand up in fairly bold relief and seem to be more siliceous. The absence of notable epidote in the finer-rock may be significant. The finer-grained rock is more closely broken by joints. In some cases the joints follow a shear pattern, but conjugate fracturing appears to be much more prevalent. This is true to a considerable degree in the overlying schists and gneiss. These joint and sheeting patterns were not very evident in the overlying volcanics, but they were not closely observed.

(5) In the south half of the Cortez Range the hornblende schist and gneiss evidently occupy the near crest area overlying the plutonic rocks, probably as a long "floater." The contact between the plutonic rocks and the "floater" is somewhat indefinite but is suspected to be along a steep normal fault. The schist farther south plunges under volcanic rocks.

(6) To the west and southwest the schist and gneiss plunge with about a 20-25 degree pitch under rhyolite flows, tuff beds and basalt in order from bottom to top. Farther west the south end of the Eagle Tail Mountains in the vicinity of Clayton Well are largely composed of intensely block-faulted rhyolitic flows capped locally by late basalt. The flows immediately west and southwest of the El Cobre claims, dip from 40-50 degrees to the southwest but appear to flatten notably in the Eagle Tails. South of the El Cobre area, the basaltic "flows" and tuff dip flatly to the south and southeast. Here no rhyolite was observed, but in a few places andesite (?) underlies the tuff.

(7) Within the El Cobre area gneiss and schist laminae and foliations apparently strike approximately N 30-35 degrees E, although local variations are frequent. The principal sheeting directions within the schist-gneiss area are shown on the rough sketch map accompanying the previous report, which indicates three predominant directions.

(8) Near the southwest corner of the mineralized area an outcrop of thin bedded indurated, dark gray limestone crops out over a width of 100-150 feet and a length of a few hundred feet. This shows no evidence of copper mineralization. This overlies the schist and gneiss on an erosional unconformity. The limestone strikes northwest and dips moderately to the southwest. The southwest border of the limestone is covered by caliche and quarternary gravels.

(9) The basalt is in a very thin sheet and is a coal black, dense rock occupied by numerous small amygdaloidal cavities like a coarse sponge. Much of this lies in a large area between Camel and the El Cobre area and covers valley fill, late Tertiary lake deposits, or tuff. In some places it lies horizontally. It generally appears to be quite fresh indicating that the doming that also affected the basalt and in some cases the faulting, are probably of late Tertiary age, sincethe basalt is tilted and broken by faulting and the doming. However, some of the faulting within the claims area is older and apparently does not extend up into the volcanics, even though the tilting caused by doming probably may have altered the altitudes of the older faults.

A diamond drill hole has reached 275 feet of depth (12-20-61). This showed that a few feet from the collar was mineralized weakly by copper and limonite. From here the remainder of the hole showed no mineralization either from copper minerals or as limonite from sulphides down to 270 ft. The rock, principally gneiss, is somewhat altered and locally stained by iron oxide of the type generally attributed to the oxidation of ferro-magnesian minerals, such as biotite and hornblende. The hornblende schist is more intensely but similarly altered around fracture intersections or in localized shattered areas. The distribution of the iron oxide in the gneiss in the hole also shows a tendency to be localized. In general, from 10 to 270 feet, the hole is relatively negative. From 270 to 275 feet the material was strongly brecciated, impregnated by sugary-white quartz along with a stronger concentration of iron oxides. This change may represent the approach to the projected contact between the fine-grained granitic porphyry and the gneiss. Mr. Mieritz's principal hope is that this contact may produce satisfactory mineralization in depth.

While all of the schist and gneiss contact with the granite porphyry was not closely covered, the impression was gained that the alteration of the gneiss and schist was more intense near to this contact.

DEPARTMENT OF MINERAL RESOURCES

STATE OF ARIZONA

FIELD ENGINEERS REPORT

Mine El Cobre Claims Date Dec. 4, 1961

District Gila Bend Mtns., Maricopa Co. Engineer Lewis A. Smith

Subject: Conference with Richard Mieritz, Consultant (12-4-61)

Note: Mieritz just completed 3 weeks of geological mapping of the claims and collecting typical rock and mineral types. Numerous dips and strikes were plotted. A study of the data lead to certain hypothetical conclusions which follow.

Property: 58 unpatented claims

Access: 4 miles N of Agua Caliente, thence 5 miles along R.R., thence 14 miles by Sundad and 3 miles NW (2 miles W of Cortez Peak).

Location: Sections 10-11, 14-15, T. 2 S., R. 10 W.

Owners: Guy Van Landingham, Arlington, Arizona
Alex Prohoroff, West Buckeye Road at 67th Avenue.

Minerals: Copper: pyrite, chalcopyrite, chalcocite, chrysocolla and some melaconite, brochantite, malachite and azurite; Iron: specularite, limonite and hematite; Gold: free in limonite.

Work: (a) Old Work: More than ten years ago the area was prospected by several shafts (8 to 60 feet deep) an adit, and several trenches. (b) Recently several bulldozer cuts (6 to 10 feet deep) were made on surface showings and much road work was done. It is now planned to sink a diamond drill hole to at least 600 feet near the center of mineralization. Boyle Brothers will do the drilling and the rig was being moved in 12-4-61.

Geology: According to Mieritz the essential structure consists of a domed structure as shown on the accompanying hypothetical diagram. Regionally the area appears to be within the projection of a suspected geoanticline which extends from Parker to Mexico. The anticline slumped below the crest and forms what appears to be a large "graben" up to 30 miles wide. The suspected "graben" appears between the Plomosa and Little Harquahala Mountains and again between the Little Ajo Mountains and the Growler Mountains around Ajo. The "graben" could have been formed by the flow of lava out from under the anticline. The area between the graben walls is complicated by block faults. The walls are stepped down. The displacement aggregates about 1500 to 2000 feet downward at the anticlinal crest or apex with respect to the sides of the graben. It seems possible that the dome structure in this area may represent the slumped anticlinal crest of a segment of the anticlinal structure.

As shown on the hypothetical diagrams the "basalt" (?) and underlying tuff found at considerable distance from the claims in 3 directions, dips down and away from the suspected dome. To the southeast the flows dip 20-25 degrees to the SE; to the northeast and east the flows dip 20 to 40 degrees in these directions; to the southwest they dip 45 degrees to the southwest; to the northwest and west they dip 30-45 degrees in these directions. To the north the volcanics are eroded away for a considerable distance. Mieritz suggests that if these dips are projected toward the center, erosion could have removed upwards of 1000 feet of flows and underlying formations part of which were mineralized. The area west and southwest of the claims is covered by rhyolitic tuff and basalt (?). The rhyolitic tuff consists of a relatively fine grained matrix studded by fragments of quartz and minor other materials. It, from the specimens available, did not show the type of water segregation as would be expected if the tuff accumulated in a body of water such as an old lake. Further study of the area might reveal more light on this. The basalt (?) is a fine grained to dense black rock containing small amygdaloidal cavities which are lined by small black needle crystals suspected of being hornblende. This rock could be a fairly basic andesite similar to the black flows found further south in the Gila Bend, Slate and Vekol Mountains. In these areas the rock is near to the base of the andesitic flows.

The lake beds lie south of the area at a distance of approximately 3-5 miles. The depth of the lake sediments is unknown, but in several places in the State they range from 100 to 500 feet in thickness. Mieritz estimated that the lake beds lie some 200 or more feet below the average elevation of the mineralized area on the claims.

The claim area consists essentially of two bands of schists separated by a wide band of schists. The contact between the north band of schist and the gneiss is suspected of being a strong fault. A band of strong silicification effects both rocks along the contact. The south border is less definite but appears to be an intrusive contact. The gneiss band, especially in the south and southwest exposures is intruded by a cluster zone of andesite dikes individually which strike and dip variably, but the band or zone generally trends around N 45 degrees E. These dikes are much less prevalent in the central and northeast parts of the area. It is suspected that they may represent appendages from a central intrusive body, now most^ly hidden, which could underlie much of the area and which may have helped to produce the dome structure. The gneiss area contains at least 3 variations, the most prominent one being hornblendic. The other two vary from a quartz-mica gneiss to a biotite gneiss. The bulk of the gneiss is fine grained with closely spaced laminae. The foliations dip variably from 70 degrees to vertical but may dip in every direction locally. The strike in general is N 45-50 degrees E, but local flexures are common. The schists have notable variations in character also. Much hornblende schist was noted, but biotite and quartz mica schist were also present. The schists dip steeply generally, being near to vertical. The trend of the laminae in general is the same as that of the gneiss foliations, but more intimately variable. Rolls, crinkles and shatter zones are common.

The gneiss and schist butt against an intrusive rock which could be classified generally as a quartz-monzonite porphyry, to the east of the area. The Cortez ridge is cut in two parts by the EW schist-monzonite(?) contact. To the south the schists cover the monzonite and here contain considerable epidote. Mieritz stated that he plans to study the gneiss and schist contacts with the monzonite (?) to see if the relationships are intrusive. *The monzonitic rock could be a quartz diorite*

Numerous slip-faults trending and dipping variably are found over the entire area. These can be assembled into three groups according to predominate trends:

(a) N 55° E (most prominent)
(b) N 10-15° E (next prominent)
(c) N 45° W (least prominent)

El Cobre Claims (continued)

These appear from Mieritz's discription to be affiliated with conjugate fracturing.

A series of jasperoid dikelike bodies trending from N 70° E to EW and dipping nearly vertically, cut the schist north of the gneiss contact. These are, like the andesite dikes are exposed in short segments, their longitudinal extent being indefinite due to detrital cover. These could be intense silicification zones.

The detrital cover contains many cobbles of the dark black basalt (?) and fragments of gneiss and schist.

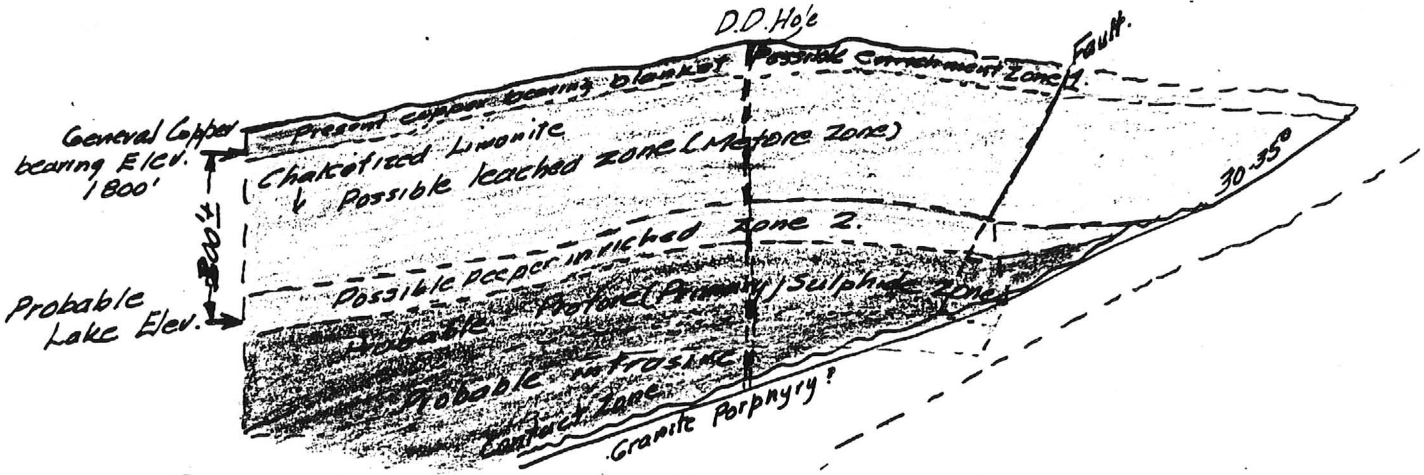
An irregular monzonite mass of very limited areal extent crops out north of but close to the schist-gneiss north contact. This rock is strongly feldspathic and has minute rounded quartz phenocrysts together with biotite in books. Augite appears sporadically in clusters. Blebs of epidote are present and in places the feldspar has been strongly kaolinized. It has not, so far as observed, been mineralized. The rock is quite similar to the rock, classed as diorite by Mieritz. A specimen of the latter has been sent to Tucson for identification. Casual observation reveals that there is sufficient sparsity of ferromagnesian minerals to rule out diorite, and it is strongly suspected that the rock is monzonite or quartz monzonite. The drilling should reveal whether this rock underlies the schist and gneiss as an intrusive stock or not.

The principal mineralization locus from present information appears to be centered in the northeast and east part of the area. Within this bulldozer cuts revealed that the copper mineralization was concentrated within a relatively thin blanket near or at the surface. Below this all openings showed strong iron oxides, principally limonite. The limonite commonly is held up within the schist laminae in drusy cavities or in bands in the gneiss. Much of the limonite was derived from chalcocitized sulphide and some was derived from altered specularite or ferromagnesian minerals. "Relief" limonite most commonly derived from chalcocitized sulphides was fairly prevalent. Granular mammillary black limonites were also present, these being formed from sulphides with less chalcocite than those producing "relief" limonite. Accordingly the drilling should also determine whether the mineralized blanket is a remnant of a former enrichment zone or whether there is a characteristic leached zone followed in depth by another copper enriched zone. Two enrichment zones separated by a leached zone were found in several other deposits, notably at Toquepala. The elevation difference between the blanket and the lake deposits infers that if such a second enriched zone is present it would be at least 200 feet below the present blanket. The thickness of such a zone would probably be determined by the duration of the old water level stop point during the period of lake existance. The present zone could be related to the lake deposits, but is in its present position as a result of doming. The presence of copper indicating limonites below the zone would tend to mitigate against this idea.

Should the first hole prove valuable, other holes would be in order. It was recommended that in the event a second hole be desired, it be placed 800 feet north in the schist area.

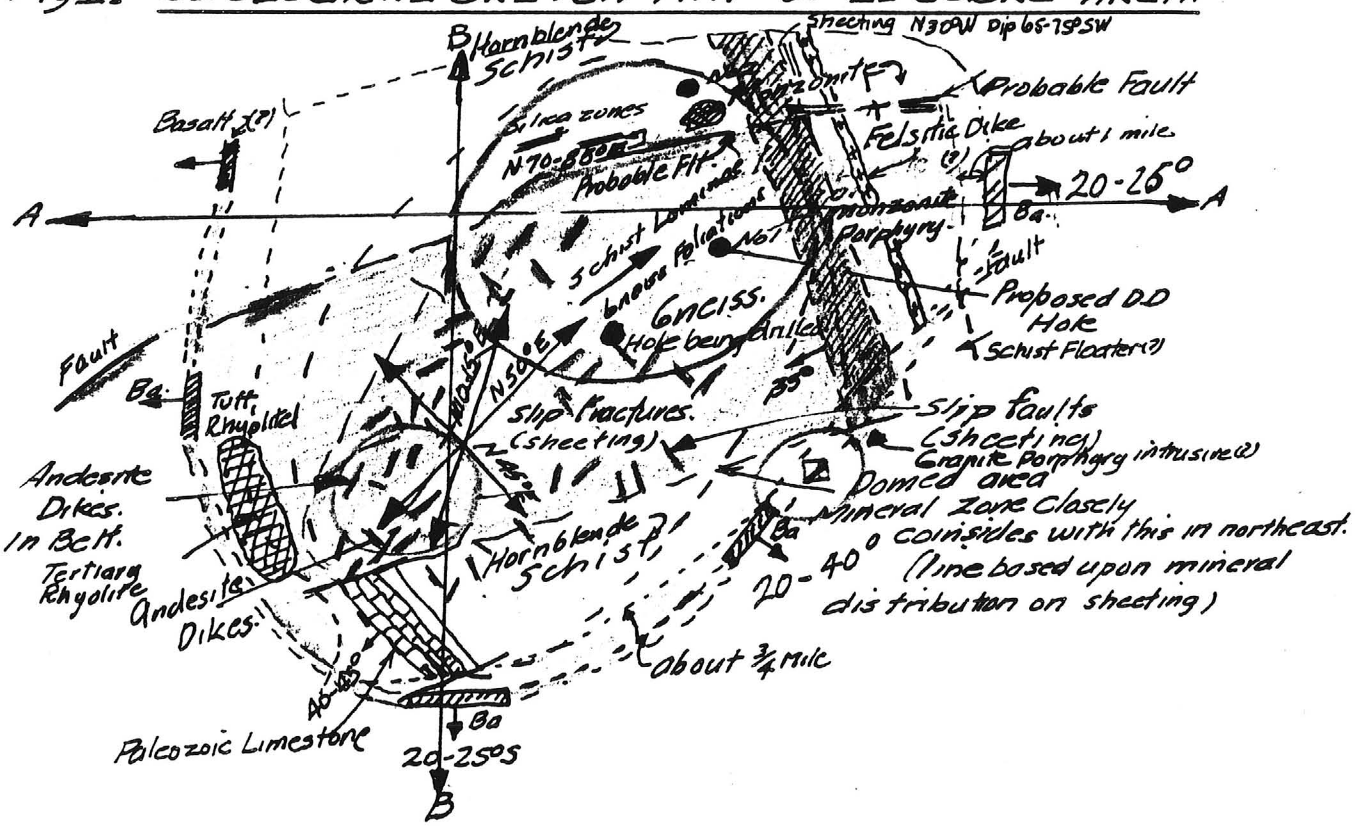
PLATE I

Fig. I. HYPOTHETICAL SECTION SHOWING POSSIBILITY OF DEEPER ENRICHMENT ZONE AT EL COBRE CLAIMS



Some places in Arizona the enrichment zones are related to older water level stop points and not necessarily to the present water tables. Old lakes often controlled it.

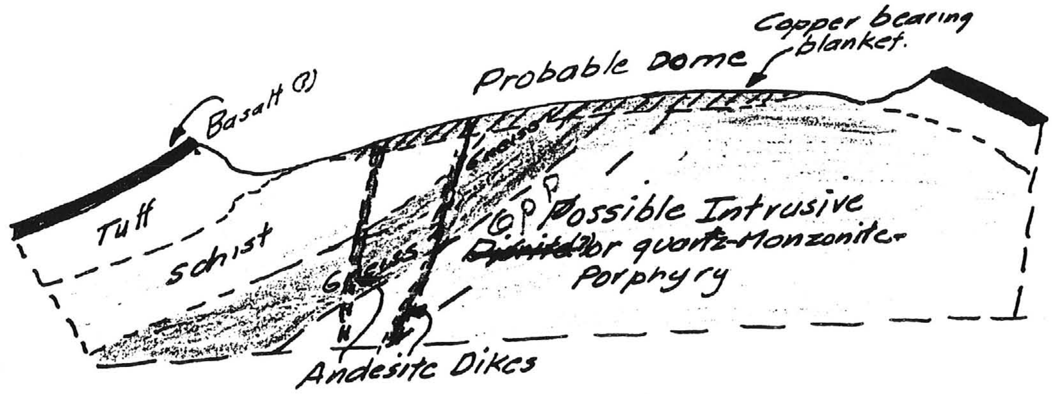
Fig II. GEOLOGICAL SKETCH MAP OF EL COBRE AREA.



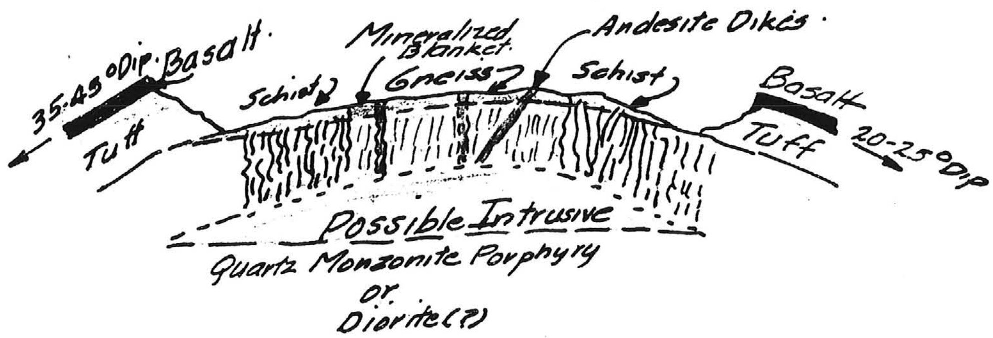
Mieretz considers this area as most favorable.

Mineralized sheeting planes or slip-faults. Nearly all of these show copper indications.

1/ PLATE II CROSS-SECTION A'-A', EAST-WEST-EL COBRE.



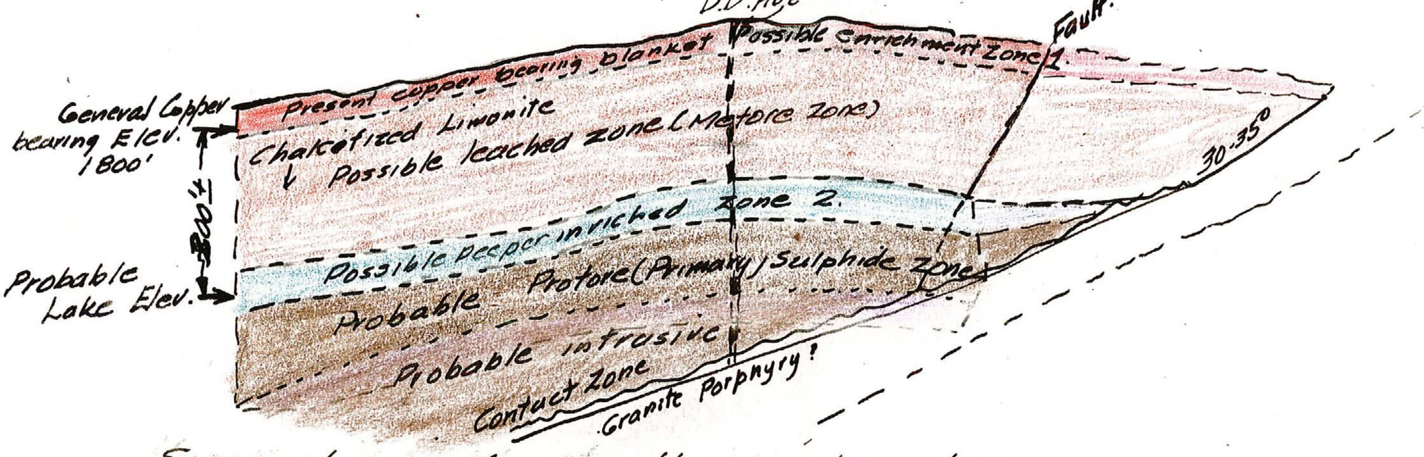
1/ CROSS-SECTION B'-B', NORTH-SOUTH
EL COBRE CLAIMS.



1/ Based upon information furnished by Richard Mieretz
Consulting Engineer.

PLATE I

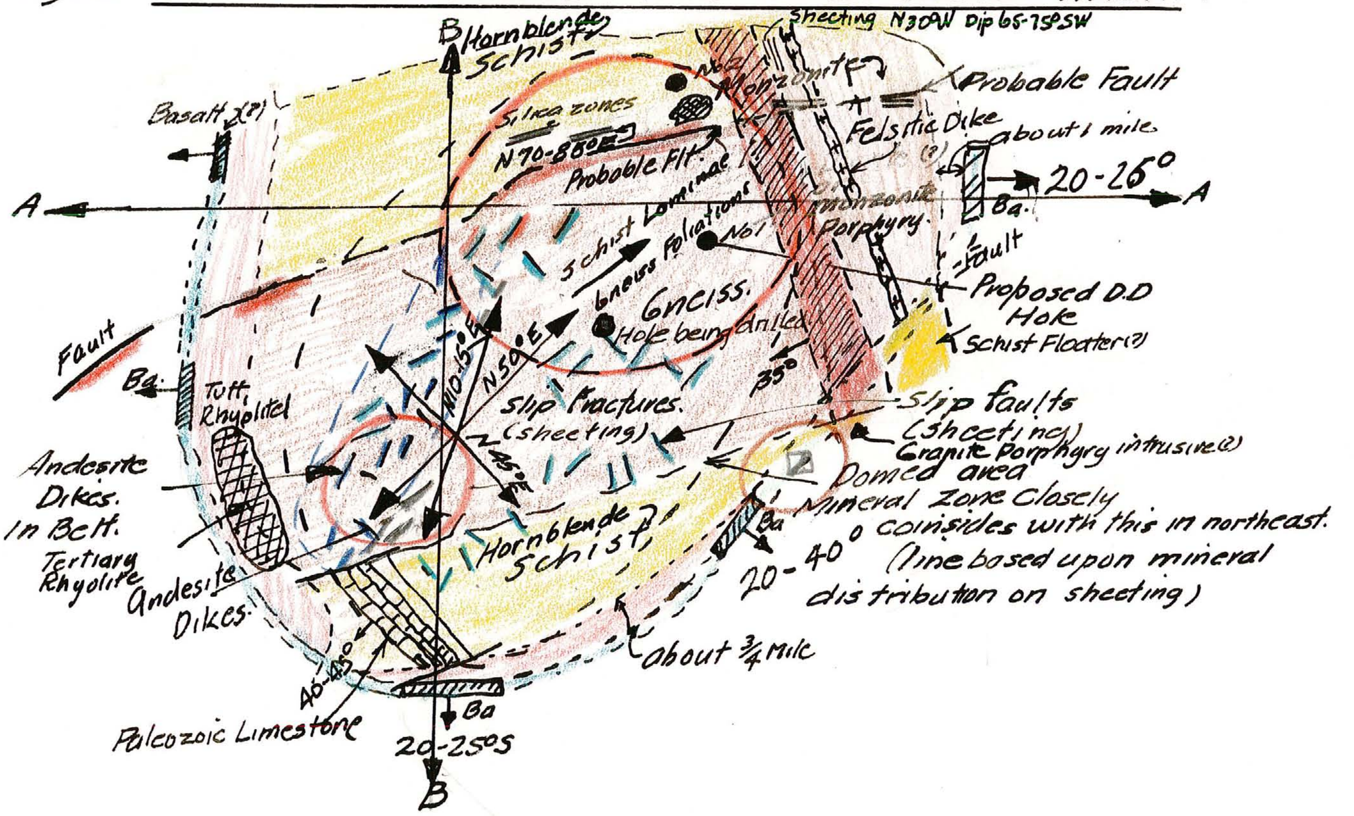
Fig. I. HYPOTHETICAL SECTION SHOWING POSSIBILITY OF DEEPER ENRICHMENT ZONE AT EL COBRE CLAIMS



Some places in Arizona the enrichment zones are related to older water level stop points and not necessarily to the present water tables. Old lakes often controlled it.

— // —

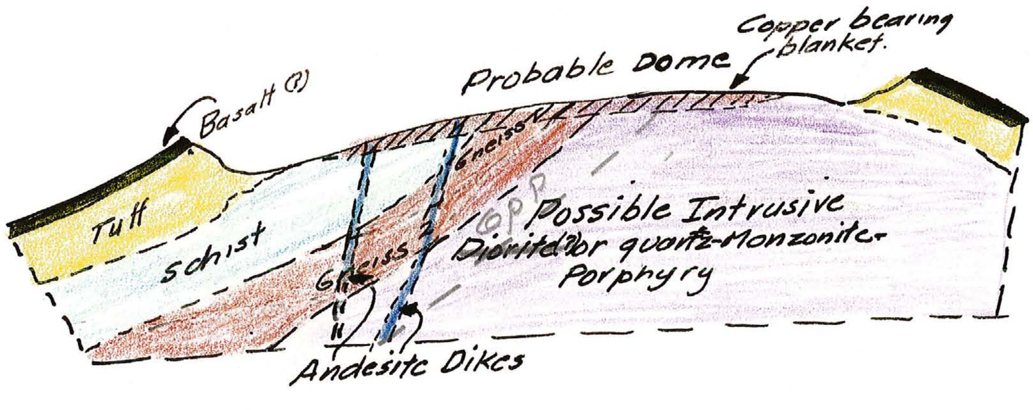
Fig II. GEOLOGICAL SKETCH MAP OF EL COBRE AREA.



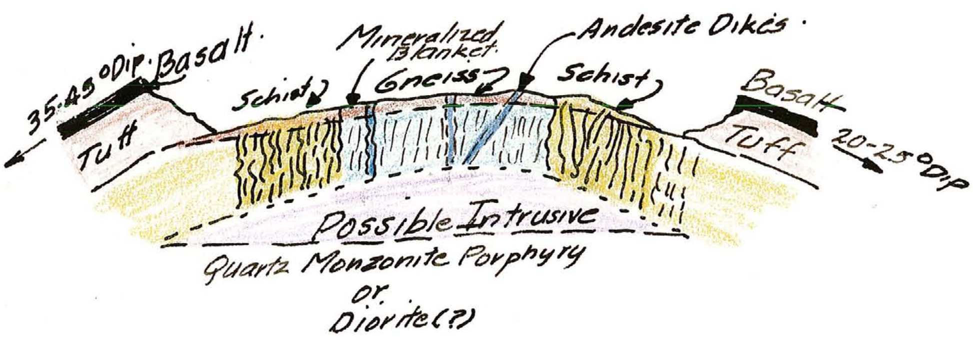
Mieretz considers this area as most favorable.

Mineralized sheeting planes or slip-faults. Nearly all of these show copper indications.

1/ PLATE II CROSS-SECTION A'-A', EAST-WEST-EL COBRE.



1/ CROSS-SECTION B'-B', NORTH-SOUTH.
EL COBRE CLAIMS.



1/ Based upon information furnished by Richard Mieretz
Consulting Engineer.

E. Cobre f) Maricopa

A

GEOLOGIC APPRAISAL

and

EXPLORATION REPORT

of the

EL COBRE COPPER PROPERTY

in the

EAGLE TAIL MINING DISTRICT

T. 2 S. - R. 10 W.

Maricopa County, Arizona

by

Richard E. Mieritz
Consulting Mining Engineer
Phoenix, Arizona

January 15, 1962

TABLE OF CONTENTS

INTRODUCTION

At the request of Messrs. Alex Prohoroff and Guy Vanlandingham Jr., Phoenix and Arlington, Arizona, respectively and principal owners of the Provan Mining Co., Phoenix, Arizona, the author was engaged to examine and evaluate the Companys' El Cobre copper property in West Central Maricopa County, Arizona. As part of the program and coincident with the evaluation, study, etc, a hole was diamond drilled to gain geologic information and evidence in this relatively unknown area.

CONCLUSIONS

As a result of the geologic evidence obtained from the field mapping, regional evaluation and the drilling of a single hole as well as the authors knowledge concerning low grade copper deposits, the following conclusions are forwarded:

(1)- Regional geology (structure) in part, indicates one of two large scale features, (1)-a doming or anticlinal effect in the area of the deposit was created by a non-outcropping, at depth, magma, or (2)- a terrific low-angle thrust faulted, overriding block was created to have the various rock types in their present position.

(2)- The local area contains favorable host rocks as Schist and Monzonite porphyry.

(3)- The wide-spread but limited copper oxide and abundant iron oxide mineralization indicated on the surface suggest an outline of a hub with six spokes wherein each set of spokes parallel in direction the three known major trends of mineralization common to Arizona regional structural geology, namely, NNW., NNE., and ENE.

(4)- The weak but consistant copper content encountered in the drill hole its entire length is typical of cappings common to major low-grade disseminated copper deposits in Arizona and elsewhere, and

(5)- The many geologic features exhibited all point to the possibility and potential of strong copper mineralization at some undeterminable depth in a quantity which should class the possible discovery as major in importance.

PROPERTY and LOCATION

The El Cobre copper property consists of 62 contiguous, unpatented standard lode mining claims situated in an unsurveyed area but which approximates Secs. 10, 11, 12, 14 and 15, T. 2 S., R. 10 W., G. & S. R. B. & M., Maricopa County, Arizona.

Said claims are in three blocks, one of 50 claims, the second of 8 claims and the third of 4 claims. They are identified by name as follows:

El Gato, Group 1, 1-10 Inclusive.	Povan 1-8 Inclusive
El Cobre, Group 2, 1-10 " " ".	
El Toro, Group 3, 1-10 " " ".	Povan 9-12 " " "
El Canejo, Group 4, 1-10 " ".	
El Oro, Group 5, 1-10 " " ".	

All claims have been properly recorded and ample work completed to constitute legal and valid claims.

Location-wise, the property is 19 airline miles north of the old historic town of Agua Caliente which is 13 miles by road north of Sentinel, a small community on the Southern Pacific Railroad and U. S. Highway 80, some 33 miles southwest of Gila Bend, a town of 1500 on the same highway.

Access to the property by car from Sentinel is north 13 miles over a graveled, county road, thence east and mostly north some 19 miles over a similar graveled, county maintained road paralleling the Phoenix branch of the Southern Pacific Railroad for six miles and on the old Agua Caliente-Arlington road to Sundad, a former U. S. "prisoner-of-war" area. One half mile north of Sundad, a mine road traverses the small hills and washes northwesterly 10 miles to the property.

The area at the property is void of power, gas, water, etc. Gila Bend is the nearest town for supplies, however, Phoenix is but 64 miles further northeast on U. S. 80.

Prominent land marks near the area are Montezuma Head, Columbus Peak and Cortez Peak, the latter two being part of the Gila Bend mountain range, the property lying between the two peaks at the southern base near the western portion of the range.

Drainage in the area is to the south.

REGIONAL GEOLOGY

Except for a few isolated reminants of sediments, the regional area, 15 to 20 mile radius from the property, is basically composed of igneous rocks and the very early Cambrian and Pre-Cambrian rocks. An extensive basalt flow, typical of Arizona occurances, caps several hills as float in the area of the deposit as well as "in place" capping of much of the surrounding area for several miles in all directions. Observed dips and projections of this lava flow indicate a doming or anticlinal structure has centered itself in the immediate area of the property, at least the longer axis, easterly-westerly, has and might therefor be considered as one of the major structures of the deposit.

Rock-wise, regionally and locally, there are many types exposed, namely, Pre-Cambrian-Cambrian gneiss, and schist, Pre-Cambrian granitoids, Cambrian ? limestone, Cretaceous tuff and rhyolite, andesite dikes, probably Tertiary, monzonite porphyry and Quaternary basalt flows as well as Quaternary sand-gravel.

LOCAL GEOLOGY

The included Surface and Geology Map indicates the geologic pattern as expressed on the surface. Rock types as mapped by plane table survey include Schist (hornblende and mica, not differentiated), Gneiss (either granitic or dioritic and includes two types, not differentiated) (coarse grained with feldspar as the major constituent, mica as intermediate and quartz the minor constituent as contrasted to the fine grained type where quartz is the major constituent and both the feldspar and mica the very minor constituents; Tuff and Rhyolite as a prominent outcropping at the south end of the property, monzonite porphyry ? as a narrow outcropping band at the north and underlying? the schist and gneiss; a granitoid which makes up the western end of the Gila Bend mountains and small narrow andesite dikes.

Structurally, the schist and gneiss are in contact with each other in a N. 25° E. direction which itself is a second major structural feature in the area and forms one of the main drainages as well as dividing the property in half from the southwest to the northeast. This same gneiss is also in contact with schist in about the same direction approximately ¼ mile east of the most easterly claim of the property. The narrow band of monzonite porphyry ? is in contact on its southside with both the schist and gneiss in a general easterly-westerly direction at the north end of the property and in contact with the granitoid on its north side. The tuff-rhyolite blowout is in contact in a northwest-southeast direction on its northern extremity with both the schist and gneiss at the south end of the property, a probable third major structural feature in the area. Small andesite dikes cut both the schist and gneiss.

Exposed also are small quartz veins, a prominent ironized silica vein, small calcite stringers and a small reminant of limestone near the tuff-rhyolite-gneiss contact.

MINERALIZATION

Copper mineralization, principally as oxides, malachite, chrysocolla and some azurite, is confined to the schist and gneiss within the boundary of the property. More specifically, the greater copper mineralization occurs within an area approximately 1500 feet on each side of the schist gneiss contact for a distance of some 4500 feet. The area of influence is outlined on the included Surface and Geology Map. This irregular outline suggests a parallelism to intersecting spokes of a wheel, the directions of which are NNW, NNE and ENE; the typical structural pattern common to many copper deposits in Arizona.

Copper mineralization observed within the boundary is associated with the thin fractures in both the schist and gneiss, the strikes of which vary in all directions.

Associated with copper mineralization is an orange-red limonite iron, usually as halos. The copper-iron combine is always associated with small but numerous dull red-brown limonite iron, an alteration product of the micas in both the schist and gneiss. Alteration of the feldspar in the gneiss is also quite extensive in and around these indigenous iron areas.

In the initial stage of claim location work, many of these iron areas were trenched with a cat-dozer and more frequently than not, small thin fractures of copper oxide minerals were uncovered which actually showed no surface expression. Therefor, copper mineralization may be much more closely spaced than indicated on the included Geology Map because all small indigenous iron areas were not platted.

DEVELOPMENT

The entire area is numerously dotted with small pits, shafts, etc on the many copper outcroppings. More recent work consists of many cat trenches, roads and a diamond drill hole designated on the Geologic Map as D. D. H. No 1.

DIAMOND DRILLING

The drill hole had as its objective the intersection and penetration of the suspected magma ? responsible for the anticlinal structural effect and possibly the source of the existing copper mineralization exhibited on the present surface and (2) the intersection and penetration of the monzonite porphyry ? which may or not be the suspected magma and which might underlay both the schist and gneiss.

This being an unknown area of geology in depth, the drill hole was spotted to obtain the best possible test of the mineralized gneiss as well as to cater to the above mentioned objectives. A geologic and physical log of the 787 foot drill hole is included at the end of this report.

Boyles Bros. Drilling Company drilled the hole using NC, NX and BX wire-line bits. The various depths to which each size was used is indicated on the log. Overall core recovery exceeded 85%. Sludge tanks were at location but were not used because of the excellent core recovery. Drilling commenced December 8, 1961 and the hole was finished January 5, 1962, twenty-four actual drilling shifts averaged 32.7 feet per shift. Water recovery was good, exceeding 85% throughout the hole. A ten foot core barrel-wire-line, was used.

Drilling was supervised by the writer who took up residence at the project in a small house trailer.

SAMPLE PREPARATION

All core recovered was split using a core splitter manufactured by Boyles Bros. One half the core was returned to the standard cardboard core boxes for storage and future reference. The remaining half was crushed through a ¼ inch laboratory jaw crusher and quartered by a Jones type splitter, quartered only when the particular sample was to be assayed for copper. One quarter became the sample for assaying, the other three quarters for the sludge board and storage for any future use.

The pulp reject from the assayed samples have been saved and stored.

The sludge board was prepared by taking a pint volume portion-about a pound in weight-of the crushed sample and panning same to a concentrate approximating 2½" in length and 1" across at its greatest width in the groove of the pan. Portions of the coarse, medium and small sizes of rock were also saved during the panning operation. After the particular sample had been dried, the various sized pieces of rock and concentrate were glued to a pine board 4 inches in width and 48 inches in length. The respective depths of samples were scaled on the board at 10 feet to the inch. Depths and copper assays were lettered on the right hand margin in black and red ink respectively. Check assays of samples by a second assay firm were lettered in orange ink beneath the initial assay.

Arizona Assay Office in Phoenix completed the initial assays and Jacobs Assay Office in Tucson completed the check sample assays.

The practice followed for selecting samples to be assayed was dictated by the presence or absence of visible copper mineralization. When absent, usually each 3rd or 4th sample was assayed. When present, either to the naked eye or by use of a geologist glass, successive samples were designated for sampling. Samples were assayed for total copper only.

All remaining core (split), crushed samples and pulp rejects are stored at the residence of Mr. Guy Van Landingham Jr. at Arlington, Arizona. The sludge board is in the poessession of the writer. Both the split core and sludge board are available for observation.

Samples sent to assayers were identified by number only. Sample identification numbers and samples are separately listed in this report.

RESULTS OF DRILLING

The drill hole was stopped at a depth of 787 feet because of limited finances. Except for several andesite dikes, 14 feet of mica schist and the usual small quartz stringers, the drill hole penetrated 696 feet of gneiss of varying degrees of alteration and indigenous limonitic iron oxide. The remaining 91 feet penetrated chloritic schist, a pegmatite dike, a brecciated zone and bottomed in a transitional zone type rock not readily identified.

Limonitic iron oxide is present throughout the entire length of the hole, thus indicating a full column of "capping" which has not been completely penetrated by the drilling. Although not visible to the naked eye and extremely difficult to ascertain with a glass, the copper assays indicate a consistant and persistant presence of copper bearing minerals either in the oxide or sulphide form from top to bottom. The range of copper content is typical of "capping" present in other major low-grade deposits within the state, and should thusly serve to justify the possible presence of stronger copper mineralization at depth.

A noteworthy observation is the persistant occurance of the orange-red limonitic iron oxide the full length of the hole and more encouraging the appearance of both the black sooty type and purple-red boxwork type limonitic iron oxide from 406 feet to the bottom and also, the fact that both types of the latter iron oxide appear on the fractures and as extremely fine disseminations. These occurances are extremely meaningful to the geologist familar with low-grade copper deposit "cappings".

RECOMMENDATIONS

To definitely ascertain whether strong disseminated mineralization lies beneath the weakly mineralized area (copper-wise) as outlined in the Geologic Map, at least two holes must be drilled at strategic locations within the outline and the present hole must be deepened.

Each hole must penetrate at least a 1200 foot section unless bottomed at a shallower depth for geologic reasons. The two additional holes must be drilled no closer than 1400 feet and on a "square with the world" grid system using D. D. H. Nº 1 as an intersecting position of a 200 foot square grid.

The above program would require an expenditure of approximately $35,000.00 including roads to drill sites, drill site construction, contract drilling, sampling and assaying, supervision, etc.

Respectfully submitted.

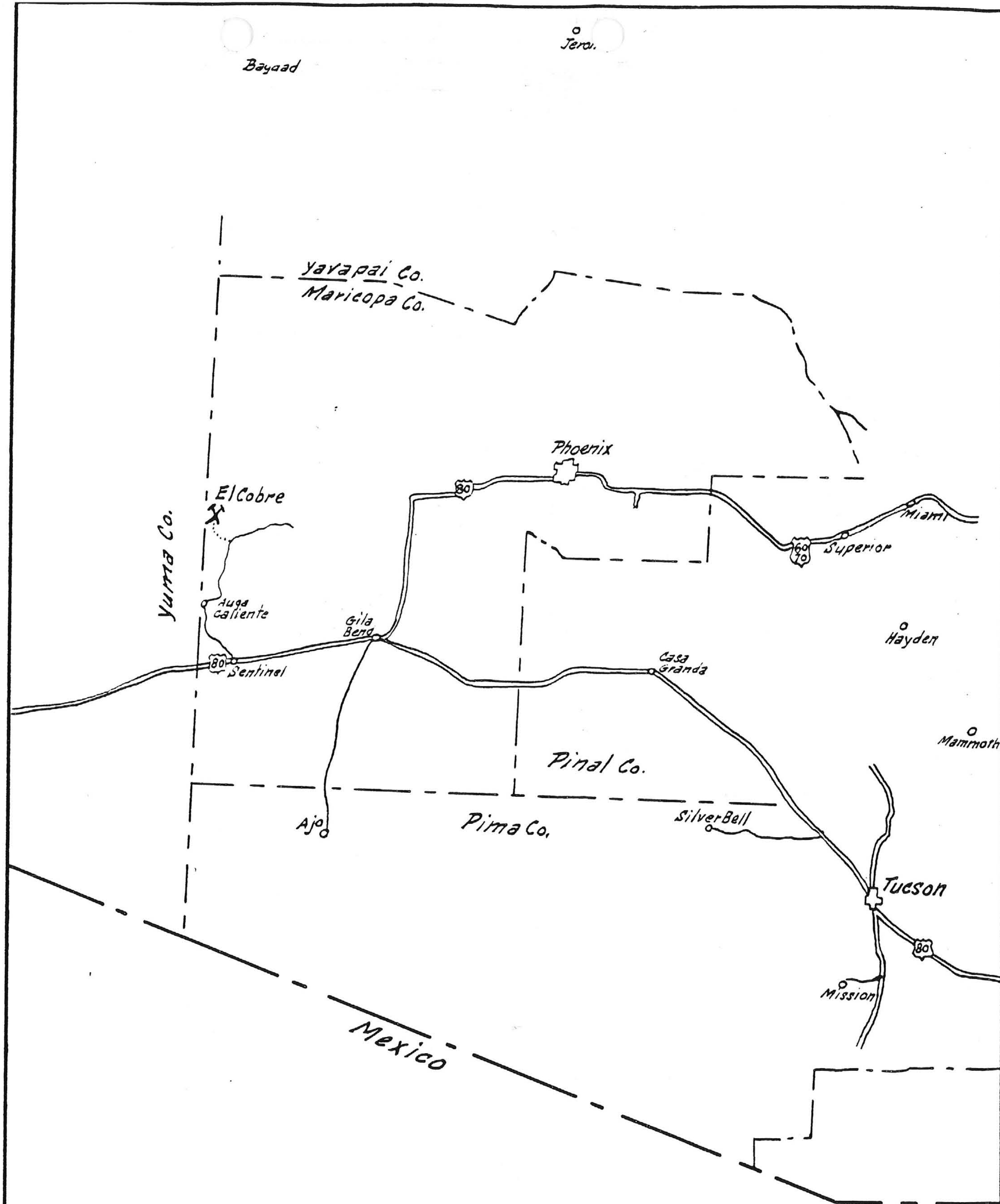
Richard E. Mieritz, P. E.
Phoenix, Arizona

January 15, 1962

SAMPLE IDENTIFICATION RECORD--D. D. H. Nº 1.

EL COBRE PROJECT

Samp. No.	Depth	% Cu.		Samp. No.	Depth	% Cu.		Samp. No.	Depth	% Cu.	
101	8.0			151	237.0	.01		201	537.0	.03	
102	11.6			152	243.0			202	542.0	.015	
103	15.9			153	247.0			203	547.0	.025	
104	18.2			154	256.0	.02		204	552.0	.02	
105	21.4			155	260.0			205	557.0	.02	
106	26.0	.02		156	266.5			206	562.0	.02	
107	30.2			157	269.5	.03		207	567.0	.025	
108	35.2			158	274.5			208	572.0	.025	Tr.
109	40.3	.02		159	278.6			209	577.0	.015	
110	45.2			160	283.0	.04		210	582.0		
111	49.9			161	287.0			211	587.0		
112	54.7	.05		162	295.2			212	592.0	.02	
113	58.6			163	302.5	.03		213	597.0		
114	63.4			164	309.5			214	604.0		
115	68.2	.02		165	314.4			215	610.5	.025	
116	72.8			166	320.7	.07	.02	216	617.0		
117	77.4			167	327.0			217	622.0		
118	82.1	.36	.59	168	331.2			218	627.0	.015	
119	86.6			169	337.0	.03		219	632.0		
120	91.0			170	341.0			220	637.0		
121	95.0	.03		171	345.0			221	642.0	.04	.02
122	100.0			172	349.0	.13		222	647.0		
123	105.4			173	351.8			223	652.0		
124	110.0	.01		174	357.0			224	657.0	.01	
125	115.6			175	362.0	.02		225	662.0		
126	120.6			176	367.0			226	667.0		
127	126.0	.02		177	371.1			227	671.0	.02	
128	131.0			178	377.0	.05		228	677.0		
129	136.0			179	383.4			229	682.0		
130	141.2	.01		180	388.2			230	687.0	.02	
131	144.6			181	396.0	Tr		231	692.0		
132	148.0			182	401.0			232	697.0		
133	156.1	.03		183	406.0			233	702.0	.03	
134	163.3			184	412.0	.015		234	707.0		
135	167.0			185	416.0			235	712.0		
136	171.0	.02	Tr.	186	421.7	.01		236	717.0	.02	
137	176.2			187	427.0			237	722.0		
138	180.9			188	435.0	.025		238	727.0		
139	185.5	.015		189	441.5			239	732.0		
140	190.0			190	446.0	.015		240	737.0	.01	
141	193.0			191	453.4			241	741.0		
142	197.4	.01		192	460.6	.01	Tr.	242	747.0		
143	200.7			193	468.0	.03		243	752.0		
144	204.2			194	477.0	.03		244	757.0		
145	207.0	.02		195	487.0	.025		245	762.0	.01	
146	211.2			196	497.0	.04		246	767.0		
147	217.0			197	507.0	.025		247	772.0		
148	222.0	.03		198	517.0	.015		248	777.0		
149	227.0			199	527.0	.035		249	782.0		
150	231.0			200	532.0	.02		250	787.0	.015	Tr.



INDEX MAP
SOUTHWEST ARIZONA
SCALE: 1" = 27.5 MILES

JAN., 1962
R. E. MIERITZ, P.E. PHX. ARIZ.

COMPOSITE DIAMOND DRILL LOG

HOLE № 1 Sheet 1 of 3

COMPANY: Provan Mining Co MINE: El Cobre CLAIM: El Cobre, Gr 2-2 DISTRICT: Eagle Tail

COUNTY: Maricopa STATE: Arizona TWS: 2 S RGE: 10 W SEC: un-surv'd. N.S. E.W.

BEARING: Vertical ANGLE: Vert. ELEVATION: FT. T.D.: 787 FT. DATE STARTED: 12-8-61 DATE COMP: 1-5-62

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS	HOLE / CASING	CORE SIZE	CORE RUNS	CORE REC.%	MINERALIZATION	ASSAYS % Tot. Cu.	ASSAYS % check
5			Fill		NC					
10			Gneiss, of two types, intermixed, on surface and in depth.	3 5/8"						
15			(1.) Coarse grained, feldspars, quartz & mica, laminated.							
20			(2) Fine grained, quartz, mica, some feldspars, laminae			20				
25			still visible. Both types relatively fresh to 29.'						.02	
30										
35			29.' Heavy Fe, alteration of mica, also feldspars to 95.'	3.0"	NX W.L.					
40			Iron has dull red brown color. (dead). Fractures			40			.02	
45			3'-4" apart. Fe on fractures & disseminated.							
50			52-54, thin seams orange-red Fe with sparse specks							
55			CuOx minerals, malachite, chrysocolla, etc. (Fe-live)						.05	
60						60				
65									.02	
70										
75										
80			80.5'- 2" wide Or-rd Fe zone, CuOx minerals 65° dip			80			.36	.50
85										
90									.03	
95			95'- Relatively fresh, micas slightly altered. Type 1. to							
100			126.'	2 3/8"	BX W.L.	100				
105									.01	
110										
115										
120						120				
125			126' Mixture of types 1 & 2 to 295.2' with varying						.02	
130			degrees of "dead" Fe in frac. & dissem. Feldspars							
135										
140			altered slightly. Fractures becoming more			140			.01	
145			numerous, 1" to 2" apart.							
150										
155			156'- Badly broken (breccia) possible Fault Zone.						.03	
160						160				
165			Stronger alteration below. More frequent							
170			occurance of Or-rd Fe.						.02	Tr.
175										
180			178'- Small area quartz, Or-rd & blk Fe.			180			.015	
185										
190										
195			198'- Strong Or-rd Fe. Qtz zone. Blk Fe. All Fe to 232						.01	
200						200				
205									.02	
210										
215										
220						220			.03	
225										
230			232'- Very heavy (dead Fe), some Or-rd Fe. Gouge 236-37							
235									.01	
240						240				
245										
250									.02	
255										
260						260				
265										
270									.03	
275										
280						280			.04	
285										
290										
295			295.2'- Type 1- Relatively fresh to 302.5.'						.03	
300						300				

COMPOSITE DIAMOND DRILL LOG

HOLE № 1 sheet 2 of 3

COMPANY: Provan Mining Co. MINE: El Cobre CLAIM: El Cobre Gr.2-2 DISTRICT: Eagle Tail

COUNTY: Maricopa STATE: Arizona TWS: 2-S. RGE: 10 W. SEC: un-Surv'd N.S. ______ E.W. ______

BEARING: Vertical ANGLE: Vert. ELEVATION: ______ FT. T.D.: 787 FT. DATE STARTED: 12-8-61 DATE COMP: 1-5-62

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS	HOLE / CASING	CORE SIZE	CORE RUNS	REC.%	MINERALIZATION	ASSAYS % Tot. Cu.	ASSAYS % Check
305			302.5 - Type 2. Heavy dead Fe. Some Or-rd Fe. Much alteration.	2 3/8"	BX W.L.				.03	
310										
315										
320						320			.07	.02
325										
330			329 - Gouge ±1 ft.							
335			336 - Small Andesite dike. Heavy Fe hides character.						.03	
340			337 - Type 2. Some calcite stringers. Small quartz veins at 349', 351.5', sugary.			340				
345									.18	
350										
355			354.5' Small Andesite dike.							
360			365 - Type 2. Strong dead Fe, some Or-rd Fe as disseminations. Dead Fe decreases to 406			360			.02	
365										
370										
375									.05	
380						380				
385										
390										
395									Tr.	
400			406 - Type 1 - Pink cast. Moderate dead Fe with black-purple-red Fe as disseminations and on fractures.			400				
405										
410									.015	
415										
420						420			.01	
425			427-28 - 1/8" to 1" wide greenish-gray andesite dikes.							
430									.025	
435										
440						440				
445									.015	
450			454-55 Some Or-rd Fe.							
455										
460			462 & 64 Small Andesite dikes, 4"-5"			460			.01	Tr.
465									.03	
470										
475									.03	
480			485 Andesite porphyry dike to 497.			480				
485									.025	
490										
495									.04	
500						500				
505			509 - 3" Andesite dike.						.025	
510										
515									.015	
520			523 - Mica Schist. Similar to surface exposed. Purple-red sooty Fe as disseminations on laminae. Specks of sulphides (Fe & Cu) indicated.			520				
525									.035	
530									.02	
535			537-42 Type 1. - Schist-Gneiss contact 70°						.03	
540			532 - Start of purple-red Fe, box work.			540			.015	
545									.025	
550									.02	
555									.02	
560			565 & 62 - Quartz seams, some epidote, Native copper in quartz & Schist			560			.02	
565			565.5 Andesite dike.						.025	
570									.025	Tr.
575			574 - Type 1, 577 - Type 2, 580. Type 1						.015	
580						580				
585			587 - Type 2. Purple-Red Fe on frac. & disseminations. Some spec. hematite.							
590									.02	
595										
600						600	30% 60% 100%			

COMPOSITE DIAMOND DRILL LOG

HOLE № 1 Sheet 3 of 3

COMPANY: Provan Mining MINE: El Cobre CLAIM: El Cobre Gr. 2-2 DISTRICT: Eagle Tail

COUNTY: Maricopa STATE: Arizona TWS: 2·S. RGE: 10 W. SEC: un-surv'd N.S. ______ E.W. ______

BEARING: Vertical ANGLE: Vert. ELEVATION: ______ FT. T.D.: 787 FT. DATE STARTED: 12-8-61 DATE COMP: 1-5-62

DEPTH	ELEV.	ROCK TYPE	GEOLOGIC DESCRIPTION & REMARKS	HOLE / CASING	CORE SIZE	MINERALIZATION	ASSAYS % Tot. Cu.	Check
605–785			608 - Type 1 · Heavy Ox·rd Fe.	$2\frac{3}{8}$"	Bx W.L.		.025	
			613 - Type 2 & Type 1 intermixed to 696½. Moderate Fe throughout but less altered.				.015	
							.04	.02
			648 Small Andesite dike. Spec hematite stringers.				.01	
							.02	
							.02	
			696½ - Chloritic Schist, many slips & veinlets of quartz & Spec. hem. Contact 30° dip.				.03	
			708 - Laminae 45° dip.				.02	
			730 - Andesite dike. Some spec. hem.					
			734 Pegmatite dike. Pink cast Moscovite Mica.				.01	
			742½ - Chloritic Schist. Some epidote.					
			757 - Brecciated Zone. Contact horizontal. Some Oxrd. Fe., epidote. Feldspars strongly altered.				.01	
			772 - Porphyritic rock - transitional in character. Feldspars (large), quartz, epidote, some black mineral as specks. Some indications of sulphides.				.015	Tr.

Core REC%: 20% 60% 100%

ARIZONA REG'D MINING ENGINEER
1338 WEST THOMAS ROAD
PHOENIX, ARIZONA 85013
TELEPHONE 279-7354

Richard E. Mieritz
MINING CONSULTANT

GEOLOGY
EXPLORATION
EVALUATION
FEASIBILITY
OPERATION

November 22, 1965

Mr. B. Jacobs
Jacobs Assay Office
30 South Main Street
Tucson, Arizona

Dear Mr. Jacobs:

Herewith are 31 samples which are numbered as follows:

1- 20	1- 88	1-123	3- 6	3- 26
1- 26	1- 90	1-125	3- 8	3- 28
1- 40	1- 92	1-127	3- 12	3- 33
1- 46	1- 97	1-129	3- 14	3- 38
1- 54	1-100		3- 17	3- 42
1- 56	1-117		3- 19	
1- 58	1-119		3- 22	
	1-121			

All the above samples should be run for copper. Using the above samples I would like you to make up composite samples (volume is okay) as follows:

Composite 1-A, samples 1-54, 1-56 and 1-58.

Composite 1-B, samples 1-88, 1-90 and 1-92.

Composite 1-C, samples 1-97 and 1-100.

Composite 1-D, samples 1-117, 1-119, 1-121.

Composite 1-E, samples 1-125, 1-125 and 1-127.

Composite 3-A, Samples 3- 6 and 3- 8.

Composite 3-B, Samples 3-17, 3-19 and 3-22.

Composite 3-C, Samples 3-26, 3-28 and 3-33.

Composite 3-D, Samples 3-38 and 3-42.

All nine of the composite samples I wish run for gold and silver.

After receiving the results for the copper, gold and silver I may advise you to run all or part of the composite samples for moly and nickel.

Please save pulps and remaining crude (crushed) material for me. Send all correspondence to me at 5822 North 22nd Place, Phoenix, Ariz. 85016.

Sincerely,

R. E. Mieritz

November 22, 1965

Mr. B. Jacobs
Jacobs Assay Office
30 South Main Street
Tucson, Arizona

Dear Mr. Jacobs:

Herewith are 31 samples which are numbered as follows:

1- 20	1- 88	1-123	3- 6	3- 26
1- 26	1- 90	1-125	3- 8	3- 28
1- 40	1-92	1-127	3- 12	3- 33
1- 46	1-97	1-129	3- 14	3- 38
1-54	1-100		3- 17	3- 42
1- 56	1-117		3- 19	
1- 58	1-119		3- 22	
	1-121			

All the above samples should be run for copper. Using the above samples I would like you to make up composite samples (volume is okay) as follows:

Composite 1-A, samples 1-54, 1-56 and 1-58.

Composite 1-B, samples 1-88, 1-90 and 1-92.

Composite 1-C, samples 1-97 and 1-100.

Composite 1-D, samples 1-117, 1-119, 1-121.

Composite 1-E, samples 1-125, 1-125 and 1-127.

Composite 3-A, Samples 3- 6 and 3- 8.

Composite 3-B, Samples 3-17, 3-19 and 3-22.

Composite 3-C, Samples 3-26, 3-28 and 3-33.

Composite 3-D, Samples 3-38 and 3-42.

All nine of the composite samples I wish run for gold and silver.

After receiving the results for the copper, gold and silver I may advise you to run all or part of the composite samples for moly and nickel.

Please save pulps and remaining crude (crushed) material for me. Send all correspondence to me at 5822 North 22nd Place, Phoenix, Ariz. 85016.

Sincerely,

R. E. Mieritz

30 So. Main St.
P. O. Box 1889

DUPLICATE

Jacobs Assay Office

Registered Assayers

PHONE Main 2-0813

Certificate No. 57464

Tucson, Arizona Dec. 1st 1965

Sample Submitted by Mr. Richard E. Mueritz - Phoenix Ariz

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore * $	SILVER Ozs. per ton ore	COPPER Per cent Wet Assay	~~LEAD~~ ~~Per cent~~ Wet Assay	Per cent Wet Assay	Per cent Wet Assay
# 1-20				Trace			
27				Trace			
40				0.02			
46				0.05			
54				0.03			
56				0.02			
58				Trace			
88				Trace			
90				0.02			
92				0.07			
97				0.04			
100				0.05			
117				0.05			
119				0.03			
121				0.05			
123				0.03			
125				0.02			
127				0.08			
129				0.05			
# 3-6				0.03			
8				0.03			
12				0.02			
14				Trace			
17				Trace			
19				Trace			
22				Trace			
26				0.02			
28				0.04			
33				0.12			
38				0.03			
42				0.03			
Composites							
1-A = 1-54, 1-56, 1-58	Trace		0.5				
B = 1-88, 1-90, 1-92	Trace		0.3				
C = 1-97, 1-100.	Trace		0.2				
D = 1-117, 1-119, 1-121	Trace		0.4				
E = 1-123, 1-125, 1-127	Trace		0.3				
3-A = 3-6, 3-8	0.005	0.17	0.8				
B = 3-17, 3-19, 3-22	Trace		0.4				
C = 3-26, 3-28, 3-33	Trace		0.4				
D = 3-38, 3-42	0.005	0.17	0.7				

* Gold Figured $35.00 per oz. Troy

Charges $ 77.00

Very respectfully, Ben P. Jacobs

December 13, 1965
1031 South Carnegie Drive
Tucson, Arizona *
85710

Mr. Richard E. Mieritz
Mining Consultant
5822 North 22nd Place
Phoenix, Arizona

RE JMG 1006

Dear Mr. Mieritz:

Your mineralized drill core specimen submitted to R. T. O'Haire of the Arizona Bureau of Mines was submitted to me, along with a thin-section and polished face of the core, for further study. I am returning the polished core, and will discuss it supposing that you are holding the narrow end of the core downward.

Thin Section Examination

On the right side of the specimen you will note a coarse dark silicate phase. Cursory examination suggests this to be an altered (chloritized) quartz diorite rock. Mafic minerals (now chloritized) were amphibole and minor augite; felsic minerals are slightly argillized plagioclase and minor interstitial quartz. At the left is a fine-grained rock, also chloritized, and not identifiable with confidence in the small specimen provided. It appears to be a variably and finely porphyritic finer grained compositional equivalent of the coarse material - whether it is a clot, a chilled phase, or a separate material cannot be answered with this specimen.

The sulfide band down the center of the specimen controls an envelope of chlorite-epidote-calcite and appreciable quartz. Its sulfide mineralogy is described next. The alteration is unusual in that two chlorites are involved; clinochlore replaces amphibole, and the chlorite mineral pennine replaces both amphibole and augite.

Polished Surface Examination

As mentioned above, the coarse and fine grained silicate portions of the specimen are divided by a band of coarser sulfides and a veinlet (approx. 1/8" wide) which arcs off into the finer phase. The clot, or band, of coarse yellowish white sulfides nearest the narrow end of the specimen is composed of granular anhedral pyrite (FeS_2), with minor interstitial hematite (Fe_2O_3) (described more fully below) and shreds of chalcopyrite ($CuFeS_2$). The patch of distinctly brassy yellow sulfide just above the center of the specimen is composed of highly anhedral, silicate-interstitial chalcopyrite (free of any exsolution or replacement products) with sparse associated blades and plates of molybdenite (MoS_2). The upper portion of the 1/8" veinlet is pyrite with hematite and minor chalcopyrite. The portion of that same veinlet which arcs off to the lower left consists of predominant bladed hematite with some silicate-carbonate gangue and minor chalcopyrite.

The coarse silicate portion of the specimen (at right) carries trace disseminated ultrafine grained chalcopyrite in mafic mineral sites. That which megascopically appears to be an opaque mineral in the fine grained silicate portion is actually leucoxene, an alteration product (TiO_2) of mafic silicates. This area contains only very rare ultrafine disseminated chalcopyrite and pyrite. The microveinlets in this area contain hematite, again with trace chalcopyrite.

The specimen appears to be one of a mineralized quartz diorite(?), and shows both a sulfide and oxide event. The oxide event, which produced the bladed hematite noted above, is presumably late and possibly of supergene affinity. No secondary copper sulfides were noted, however, and marginal replacement of hypogene sulfides by supergene minerals was not found. Hematite's genesis is somewhat ambivalent - it might occur as either a hypogene or supergene phase.

I trust that this information will be useful to you. If I can be of further assistance please let me know. Please be advised that the above comments on opaque minerals are explicit and confident, but that nothing can be said regarding the possible presence of precious metals beyond the fact that they might occur in solution in chalcopyrite and/or pyrite, but that they do not form separate mineral phases in this specimen. The sulfide data are firm, the petrographic data being limited by the combined effects of minimal sample material and obscuring alteration.

Sincerely yours,

John M. Guilbert

John M. Guilbert

JMG/s

cc: R. T. O'Haire

For services rendered.................................$15.00

December 16, 1965

Mr. John M. Guilbert
1031 South Carnegie Dr.
Tucson, Arizona, 85710

Dear Mr. Guilbert:

Thank you kindly for your mineralogical report on the thin section and polished surface specimen submitted to you by Mr. R. T. O'Haire.

My prime interest was to make sure that the "off-color" pyrite observed with the hand lense was not a nickel mineral. The pyrite might still be nickeliferous to some extent but not to the degree which it was hoped. Polishing the specimen no doubt removed the "odd tarnish" I observed with the hand lense.

Enclosed please find my check in the amount of fifteen ($15.00) dollars, your fee for the service.

Thanking you again, I remain,

Very truly yours,

R. E. Mieritz, P.E.

P.S. Received your second letter with the polished specimen.

Composite Drill Log

Hole No. 1 — Type Drill Hole: Diamond

Property: Harqua — Deposit: — Coordinates: N. — E.

Bearing: — Angle: -90^{o} — Elev: — Total Depth: 643 feet

Date Started: — Date Completed: — Drilled By: Provan Mining.

Hole Depth	Level Elev.	Hole / Ream. / Casing	Core Pulls	Rec. %	Rock Type	Geologic Description & Remarks	Assays % Cu.	% Ag. Au. Mo.
		3"	10					
			18			ANDESITE, green-gray, alt'd, fine grain. Qtz seams, 1/8", yel-tan limonite, calcite seams, mud 18-21'.		
			28					
		BX WL	38			Thin seams red hematite @ 47 & below		
			48			Specks sulphide @ 50 in red hem seams (py, cpy) also dissem'd.		
			58					
			68					
			78			Bands of diorite, 2 to 5 feet wide.		
			88			Andesite silicified in area, chloritic in others.		
100			98				Tr.	
			106					
			114			Sulphides (py, cpy) to 133', spks to pea size in hem veinlets, dissem'd.		
			122					
			130			No sulphides, 133 to 140', sulphides 140 to 149, no sul. to 155. Diorite seam 140 to 149, alt'd.	Tr.	
			138					
			146					
			154		155'	DIORITE, relatively fresh, qtz seams with sulphides (py, cpy). Bands of fine grained andesite throughout. Red hematite seams with sulphides, some boxwork. Good Fe staining. Qtz seams increasing in width, ¼".		
			162					
			169					
			174					
			181					
			189					
200			199				.02	
			209			All core crushed, 209 to 230.		
			218			Mineralized veinlets approx. 2' apart to 240'. Approx. 1' apart below 240'.		
			230				.05	
			240					
			250			No sulphides 252 to 259'.		
			260					
			270				.03	0.5
			280				.02	Tr.
			290			No qtz seams below 298'. Thin calcite seams below 298'. Sulphides in red (spec.) hematite seams. Also dissem. below 298'.	Tr.	
300			300					
			310					
			320					
			330					
			340					
			350					
			360			Qtz seams to 377 are barren.		
			370					
			380					
			385		388'	ANDESITE, with thin calcite seams to 401. Gouge @ 401'.		
400			395					

Composite Drill Log

Hole No. 1 TYPE DRILL HOLE Diamond

PROPERTY: Harqua DEPOSIT: COORDINATES: N. E.

BEARING: ANGLE: -90° ELEV: TOTAL DEPTH: 643 feet

DATE STARTED: DATE COMPLETED: DRILLED BY: Provan Mining.

HOLE DEPTH: 500, 600

LEVEL ELEV.

HOLE — REAM. — — CASING ==: BX WL

CORE PULLS: 403, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 643

REC. %

ROCK TYPE

Depth	GEOLOGIC DESCRIPTION & REMARKS	ASSAYS % Cu.	% Ag. Au. Mo.
409'	<u>DIORITE</u>, as previously discribed. Thin qtz seams, hem seams, sulphide in both and dissem. Some qtz seams barren. Frequency of both type veinlets or seams increasing.	Tr.	0.3
		.02	Tr.
	Sulphide mineralization increasing in strength.	.07	
		.04	0.2
			Tr.
		.05	
506'	<u>ANDESITE</u>, chloritic, brecciated in appearance. Very few qtz and hem seams, little sulphide.		
530'	<u>DIORITE</u>, fine grained, thin seams green andesite, some hem seams.		
544'	<u>ANDESITE</u>, chloritic, as above.		
554'	<u>DIORITE</u>, fine to coarse grain. Some qtz and spec. hem seams, little to no sulphide. Sul. in hem only.		
586'	<u>ANDESITE</u>, altered, with some bands fresh, silicified diorite. Sul. in spec. hem. seams and dissem.	.05	0.4
		.03	Tr.
		.05	
620'	<u>DIORITE</u>, fine grain, seams green andesite, all silicified. Sulphide in hem seams and dissem'd. Some calcite veinlets.	.03	0.3
		.02	Tr.
		.08	
		.05	

Composite Drill Log

Hole No. 3 | Type Drill Hole: Diamond

Property: Harqua | Deposit: | Coordinates: N. | E.

Bearing: | Angle: -90° | Elev: | Total Depth:

Date Started: | Date Completed: | Drilled By: Provan Mining

Hole Depth	Level Elev.	Hole / Ream. / Casing	Core Pulls	Rec. %	Rock Type	Contact	Geologic Description & Remarks	Assays % Cu.	Assays % Ag. Au. Mo.
		3"	10, 15, 25, 35				**ANDESITE & DIORITE**, a mixture, altered and bleached, white, brwn, grn, grey. Red, tan and yel FeO_x seams.	.03	0.8
		BX WL	35, 45, 55, 65, 75			37'	**DIORITE**, fine grained, with one to two foot bands of andesite. Many thin qtz seams, many red to tan hem seams, a few calcite veinlets. Reddish cast throughout.	.03 .02 Tr.	.005
100			85, 95, 105			81'	**ANDESITE**, fine grained, grn. Much red, tan, yel FeO_x to 85'. Breccia appearance to 85'. Red FeO_x 99-112'.	Tr. Tr.	0.4 Tr.
			116, 126, 136, 147½, 156½, 162, 168½			112'	**DIORITE**, fresh, Red FeO_x cast, red hem seams, specks sulphide at 127'. Andesite 121-26' Diorite altered 131-45' Andesitic 145-52, light grey, tan Andesitic 154-55, chloritic.	Tr. .02 .04 .12	0.4 Tr.
200			182, 191½, 201, 212				Sulphide in hem veinlets and dissem. 175-96; coarse and fine grain diorite. Few hem veinlets 196 to 217'.	.03 .03	0.7 .005
			218, 225			217'	**ANDESITE**, chloritic, brown calcite veinlets, few hem seams.		
			233			228'	**DIORITE**, heavy hornblende		
			243½, 252½			236'	**ANDESITE**, greenish grading to grey. Sparse hem seams.		
			263, 267½			261'	**DIORITE**, somewhat altered, a few qtz veinlets, a few hem seams, water course(?) at 272, lost water.		
300									

3.. 3.. 30 3D

(ОBRE (F) MARICOBA

El Cobre

"A" [illegible] Hy Fe ox Gn. 20' wide

N15W
1- [illegible] Hy Fe [illegible] N60E - [illegible] 30' [illegible] Tr. 5 [illegible]

2- [illegible] 330° N. - 15' on line [illegible] Fe ox [illegible]
{some [illegible] N50E - Gn. [illegible]
3- Gn N60E - [illegible] SE [illegible] SW. Fe [illegible]

4- [illegible] 336° W [illegible] wide.

5 N. end of "S" tr. { strong [illegible] Gn.

6. [illegible] Tr. - N [illegible] S. S [illegible] E 50' long [illegible]

7. Tr. 30' [illegible] Med Yellow - St. Fe ox [illegible] Red, Qtz [illegible]

8. [illegible] Tr. [illegible]

9 SE end of "S" tr.

10. [illegible] N [illegible] E. N [illegible] W. - S. [illegible] W. [illegible] Gn [illegible]

11. [illegible] Fe ox [illegible] 2 [illegible] N35W N55E. [illegible]
{ [illegible] cut. F [illegible] Gn between 11 & 10 [illegible]
12. Hy [illegible] Qtz [illegible] N84W.

13. [illegible] 3 [illegible] N [illegible] W [illegible] ([illegible] SE [illegible]
{ N [illegible] 70° W dip. Hy Fe ox or [illegible] - Alt.
14 [illegible] N [illegible] W - 30 [illegible] All [illegible]

15 [illegible] like - [illegible] Grained Gr. N [illegible] E Fine [illegible] top
{ Irreg. Cont.? Fine East coarse W.? white ground color
-16 - Edge of color tan E wh. west. & Ro [illegible]
16

60' [illegible] Arn. [illegible] N [illegible] E 65° N. Tr. area [illegible] Hy [illegible] ox

E/Osbre.

#29-{Feox N30W - 20'SE & 10'SW N30W - 70' Some spec.
{ 40' W. Crse Gr N35E 65W.

#30 - Feox spk Cuox. S28E - 40°SW. Crse Gn - Same Alt.

#31 - Hy Feox Veinlet Cuox - S15W Alt. ~~[illegible]~~ Sericite. Silic'd No sal.

#32 - Hy Feox (spec) N50W - 30' same Alt.

#33. 4x6x8 Pit S40W. - Alt. Crse Gr. Cont N53W - 55 SW.
Fine Gr Gr. on top. Crosses Cuox on pit - None in sh.

#34 - S½" 8' - On Feox - Fgr. Gn. N75E/30'

sta E
#35 4' wide Feox (some spec) S35E - 30' Joins EW Zone 72°S.
Cuox on EW. + 10' = Wash

#36. Feox zone S-35E - 60' to SE

#37 - {N. end of S25W - gray green fine gr Gn - 3 parallel 3 (10' & 5)
{ 10' - east. + 10' = Crse gr Gn - for Gn contact S25W.

#38 {East end N70W Fe zone 30' x 20' crse Gn. Some Cuox spks
{ on Sedge. Same alt. - East side wash

39 {W. End EW zone 8' - Spks CuOx. Hy wh Alt. 40' S on line =
{ gray grn Fgr. Gn. dike 6' wide crosses wash. - #39 + 70 = wash

40 - C RD then N25W - from pt. N60E 30' to NS - 8' wide Fe zone
Cuox. 60' N to wash Fe crosses wash.

#41 - C 80' wide N25E gray Fgr. Gn dike. EW passes 10' W of sta.
80° W dip - small qtz strg. Epotitized Gr? West. Shor
above wash.

[illegible] 65°S.

#42 - EW Hy Fe 15 EW zone - cuts dike Silic'd. Also N25E
Zone Feox - Snsc - wash.

43 - Trace Fe outcrop. N55E 65° S N55E

#44 - C? 10' wide N25E Feox 80' long. S30 W to c.c. 62'
in Gy gr. dike?

El Cobre.

#59 4X4X6 Pit - N50W 55°S Feox seam - Crse Gn?

#60 - 2X4 - Wi pt. [illegible] alt

#61 2X4 Wh pt Dis. El Toro Group 3 No3 - N60°S
{100' N. & Rd 10' E. N15E - S [illegible] S

#62 - ce Wh pt 2X4 - 15' E. of pt.

#63 - 2X4 Wh pt. Dis El Cobre Group 2 No8

#64 - 1' zone [illegible] Fe, pieces Qu ox. Sil. Crse Gn?

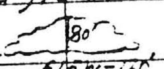
#65 - pt - 70' on line - Feox S30W - 37E. 100' SW. Pieces Quartz
FW. GM. HW Feox

#66 S[illegible]E 37°S 1' Feox Qu ox in place. Fe. Crse Gn?

#67 - 3½" E": Crse gn - Fgr. Gn. N40W to S½ A"

#68 Feox S20W 30' 45°W in Fgr. Gn. FW = Crse Gn?
Alt'd in spots

#69 S25E 82S Pit (Round) Feox in stringer Rot. crse Gn.?

#70 Cntr of Irreg. Feox - 

S15W - S70E 65S
Crse Gn on West Smalt.

5½ E"

#71 Irreg. Ore Zone [illegible] Fine Crse - (North) (South) S60E.

#72 - 15' wide Fe. Fgr. ll Crse. N50E 40' long.

#73 - pt on Fe (Same as #72). 10' S. is 6X6X6 pit.
N42W Fe zone - Junction in pit. Copper spks 72-73
70N alt.

El Arbre.

#89 Along [illegible] dead Fe. N 35E - Cuse... Fgr. [illegible]

#90 - N. end S35E Fe. Cuse gr. 120' SE

#91 - Fe Zn - N55W - 80 SW 5' Cuse gr. Fgr. top at point
turns S30E 70' - NW 70'

#92 N. 50E Fe Zn. dead. Fgr.

#93 - N35W - Barite 6" some Fe ox.

#94 - N55W Zn Fe Quar. [(N 70 W - Barite 36° S.) in Fgr.
SE 50' it turns to S 55 E)]

#95 - Disc. 2x4 El Gato Gr. I - No 8. 1400 S 100 N.
Fresh - Clorite - Epidote

11-7-61 - Windy

Sta F.

96 - "Stag" on Dead Fe o.

#97 Same as 83.

#98 Same as 82

#99 " " 81

#100 " " 84

#101 " " 85

#102 - 15' N is N 5 E & N 55 W Fe zones - alt. Some In Cuex

#103 4x6x8 Pit N35W 60 SW. Hy Feo - No Cuex 100 NW
100' SE 40' wide

El Cobre.

#119 - Sta. "J" on Gneiss

(Crse Gr.)
#120 - 20' wide zone Fe? Desd. N40E 20'SW 60'NE

#121 - {N75E 35SE Fe zone desd. also N35E for
{100'SW. 40'NE
#122 S75E Fe 20' wide desd. 100' sideway. Crse gr.

Note. entire area west of Sta. H. is [illegible].

Nov. 8, 1961

Sta "K."
#123 pt +15' on line = Fe-Cuox s.p. zone S65W - NE 40
Small pit NE - Qtz cp. N35E. Alt. Crse gr.
#124 - pt +35' = NW wide dike. Cuox s.p. at shot. [illegible]
(Amo)
#125 N80E - 25S Cuox Fe. Alt. Crse gr. N55E also Fe
zone with Cuox @ 50°E Gr Vert. in wash
#126 [illegible] And Dike also [illegible] S15E Fe zone [illegible]
Dike - with Cuox Alt. N80E - 35S - cuts?
#127 - [illegible] S15W 80E dike [illegible] gray dk gr. some epidote

#128 - In Dike S27W - goes under cover to NE.

#129 Top of pit in west wash. Hyamzo of Fe Cuox
Alt. w/ Same dike [illegible] Main zone N10E - 0[illegible] N5W
20°[illegible] Survey this

#130 [illegible] Dike & Fe zone - N17°E. 80°E 30'E - 25'W on w edge
west wash.
#131 - Area of 2 pits [illegible] N[illegible] N50E [illegible]
[illegible] - Trend of Fe zone is N15E. Dike or w FE
[illegible] 50 [illegible] Dike trends N[illegible]E
On East [illegible] Cuox 50' S of Sta. "L"

El [illegible]

#146 - S 83 E & S 80 W

#147 - Dis El gato Gr. 1 #1 SUSE [illegible] 40' on E
S 43 W to #147

#148 - 2x4 wh Dt. NE cor El Gato Gr. 1 #6

#149 - 2x4 wh Dt (NW cor? Gr 1 #6 NE cor? Gr 1 #1) #147 N 76 E to
100 N / 400 S

Pits, N 45 E
#150 - 2x4 - Disc - 15' N [illegible] #149 El gato Gr 1 #6

#151 - 2x4 wh [illegible] N 75 E towards #150
(NW cor Gr 1 #3 - NE cor G 2 #1
#152 [illegible]

#153 [illegible] 30' wide,
Pits [illegible] N 35 E
#154 [illegible] Grey Fe.
alt. [illegible] Gr. ep Dike N 45 E as exposed to NE 100'
[illegible] exposed 65' E [illegible] Alt.

#155 N 30 W [illegible]

#156 4x6 Dt. East [illegible] - N 55 W Fe [illegible] Alt. [illegible]
[illegible] N 30 E 65 E. [illegible] 40 S [illegible] Spv [illegible]

Nov. 9th
Stat.
#157 [illegible] & Rd.

#158 & Rd S 15 W

#159 Pit with [illegible] N 5 E [illegible] S @ S side
[illegible] 30 N on N side.

El Ocbre.

#170- Pt. on New Rd. - S15E ± N60 W.

#171- Jct. New Rd [illegible] N55E wash and W. at 5 [illegible]

20' wide road.
#172- N. Side [illegible] N55E [illegible] S15W 35°E [illegible]

5+ ft. wash [illegible] 40'

#173 [illegible] zone 15' wide N35E
150' long [illegible] N60E 70 ft.

#174 [illegible] "B"

[illegible]
#175 [illegible] [illegible] N60 [illegible]

#176 [illegible] Pt. on N60W [illegible] [illegible] 60' Alt, [illegible]
[illegible] 55°SW. [illegible]

#177 [illegible] x 75 Shaft [illegible] And?
[illegible] 5' cut [illegible] 20-Ft [illegible] N.
#178 [illegible] N55E 25 Y 10 Shaft N15E
[illegible] Dead 130
#179- Y in Rd. S50E, N60 [illegible]

#180 2xU wk Pt. Dist. El Arroyo [illegible] 100' N

181 [illegible] N57W [illegible] Quex white [illegible]

#182- Pit [illegible] dead [illegible] zone [illegible]

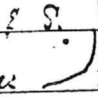
#183 [illegible] Quex [illegible] 200'
[illegible] 150' N80E 65SE. [illegible] N20E
#184 [illegible] N20E.

Nov 10, 1961

#185- [illegible] Dead [illegible]
[illegible] N55E 40 [illegible]
[illegible]

El Cobre.

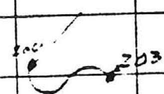
#201 - ¢ Rd. N. 15 W ? S.



#202 ¢ Rd - 5 40 W at [illegible] 5" curve to Wash

#203 - Junct. of Rds.

#204 ¢ Rd. N10W



#205 Approx posit. [illegible] - Dip Contact N75W [illegible] in ? ? area. Silic'd Spts. approx. Float Contact passes 80' E [illegible]

#206 - N60E [illegible] live Fe Zn - in Schist [illegible]

#207 - N05W Fe Chax [illegible] in Schist. Alt. [illegible] Spec hem.

#208 - Outcrop S 70 W 80 S. Fe Chax Silic'd Qtz. Some Schist showing in bottom.

#209 - Contact S 60 W 70 NW. Sch. N22E

#210 - Contact N ? E ? Hard to see.

#211 - Contact No strike diss. Float only

#212 - N10E Fe live dead Qtz Zn. Spec hem.

#213 - S70W in wash 45 S - live Fe Chax & N25W 80E Alt Fe slip. Spec hem silic'd. Schist w. side wash

'86

#214 [illegible] N50W - 70 SW Fe ? Chax [illegible] Alt. Feldspars

#215 Stat. "W"

~~#216 - Cots. Sub 60'~~

El Cobre.

#229 Shear N85W Dead Fe with some Liv. Fe.

Orsegr & For. mit
#230 [illegible] 65W [illegible] like

Nov [illegible] 1921

#231 Out - Brown [illegible] 2 40W. Fe zn N 45W - Some Liv.
no [illegible] - AH. [illegible] pieces on dump.

#232 - N70W Fe zn dead - Orsegr.

#233 - 2x4 wh pt. cc. Orsegr. Fresh.

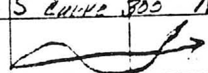
#234 - N55W - Liv Fe zn - 6 H. No dens [illegible]

#235 - N50W Fe zn [illegible] Orsegr.

#236 - Catr. S. 60W.

#237 - St. Fe zn N30W [illegible] Fe zn [illegible] Orsegr.

238 - ₵ Rd C 30W & "S" curve 300' N 42 E.



239 - ₵ Rd N-32 E

240 - ₵ Rd 2 [illegible] & N 11 E 130' to [illegible] Jnct. [illegible] for
S66E

241 - ₵ Rd S16E 150' & N16W (60' to Jnct.) then 20' N.
{Rhio Dike (S38E 600) crosses Rd [illegible] 150'
242 Sta "Y" - [illegible]

Sta. Y
#243 [illegible] wh [illegible] cc. [illegible]

E. Dekre

Nov. 17, 1961

A "P" Samp. D

#260 N10E 4 (Fe Zn Spec) some liv. Qtz some Alt.

#261 Dip on 3 Fe Zns N55E - N20W N85W. Spec. Qtz, some liv Fe. (Specks Cu? in spec Fe) Some grn dike mat. Schist N45E

#262 { 2 Fe Zn liv in road with Cu? - N50W - (1) 859 ft. 605
{ Silicfd. Alt. Grn dike mat. Gen. 37 = S40W.

#263 Catr. S52E With liv Fe. Alt. Qtz No strike.

#264 Grn dike mat. S60W & N60W. Some Fe liv. N85E strike 45 S30W. [illegible] spec hem. Alt. Silicfd. Much Epidote in and around dike.

#265 { A contact - ? N60E. East - Schist West - dike (grn - (epidote) mat. Some liv Fe along cont. Samp. E & F

#266 { Float contact - Grn Mat. 3 = ? Grav. Fe liv. Samp. "G"
Samp. "H"

#267 2x4 wh pt. NW Cor Gr. 2 #6. NE Cor. Gr 3 #1

#268 2x4 wh pt. Disc El Toro. Gr. 3 #1. Contact ? E. of pt 20' but hard to pick out.

#269 - pt. to 2x4 wh pt = S53W 20'. NE Cor Gr 3 #6 NW Gr 3 #1

#270 2x4 wh pt. El. Toro Disc. Gr. 3 #6. Pt + SQ L W.

#271 - 2x4 Wh pt. NW Cor Gr 3 #6 & NE Cor Gr 4 #1

#272 - Catr. N 55E

#273 - Contact ? Grn Dike mat E. Gr W. N10E 20' on line 100' to Pt. = N35E strike dip 50 E

El Cobre.

#287 - Liv Fe zn N70W - in wash.

Nov. 22, 1961

Sta "2"

#289 Sta A-1 near datr. & Rd. Fine gr. Orsegr Fgr & pink feldspar orse complex (Schist also) between stas.

Sta A-1

#290 Datr. Exposing N50E. Liv Fe ox Red (yel) Cu ox

#291 {Old - 2x4 wh pt. and datr. 40' @ Rt L to east, El Gato
{Disc Gr 1-6 - S45°E 128'

#292 - 2x4 wh pt - cc. 6' wat Pits.

#293 - 2x4 wh pt. Disc El Gato Gr 1-10 Orsegr - Fgr. Fresh

#294 {Small Fe ox outcrop - Intersect N85E & N55E Liv Fe cu ox zones, A/t. Silicified, Fgr. & Orsegr. A/t

#295 {Mouth of dr. to N. on N20E fiss. Fgr Hy 70E
{Liv Fe - sem spec. No Cu

#296 - 2x4 wh pt SE cor Gr 1-4; NE Cor. Gr 1-5

297 - Pit Rd. to Sta as flat's' to Inter. NW

#298 - Dis. Povan #1 - 750N 750S. 17' @ Rt L S to Δ RKS wh.

#299 {Datr. due S. dir. outline N55E Hy Liv Fe Cu ox spec
{Nem. Δ wh mo RKS

#300 {Lim RKs Cat ... Fiss, E Δ pit with Fe Cu ox
{on E side - pit filled in. No strike poss. (N50W zone?)

#1 Dis 2x4 wh pt - Povan #2 - 750N.

#2 - Sta B1 Float - Fgr. Mod er or ox ... Orse gr Some Augite non primitive

~~#3 Δ Rd N85E~~

#4 Δ Rd S85W & Cat to #3

El Cobre

#18 - Outcrop dead Fe Zn N30W Fgr.

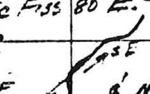
#19 { Area of And dike - No dir poss: same mod Red Feox
{ Gen. trend N 83 E.

#20 { N10W - 60W - Fe Zn - hill? HW. Fgr. FW - Hy Fe [illegible]
{ Wash is 810E 40' from pt.

#21 { Opp side wash - S80E 65S Fe Zn (red) - HW is #20 Fe
{ FW. Barren - N20E

#22 { Dike Mat. semi Fe [illegible] [illegible] (Fgr Mat) Crse [illegible] Fgr. Silica
{ With dike. - Parallel Fe Fiss 80° E. - Machine [illegible] in
Washes [illegible] east to Rd.

#23 ¢ Rd at pass. S63E



#24 - [illegible] D-1 on [illegible] of hill. Fgr.

#25 - ¢ Rd. N72W ° Back to #23.

Nov. 23, 1961

Sta D-1

#26 { 2x4 wh Pt - Dis. Povan No 5 - at Rt 2s S - Wash = 40, Rd
{ = 70E — Hill. Dark Gn - N40W

#27 - { N40W darkgrn. gy. Gneiss mat. W. side wash, along wash
{ to SE - E = Fgr. Gn. Wash circles Hill & Sta - to North

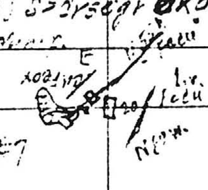
#28 - N of Pt extremely Fgr. bleached. S = Aluminum
E = Fr Fgr. & Crse gn - No Feox

#29 { Incl - 2 structures. 1) - on line of pt 2) NEDE with
{ Semi Fe - Breccia and Grn dike gns. Fresh Fgr (silica) and.
{ N = gy! [illegible] dike gn Gn.

#30 { Same NEDE Structure as 29 - No dike mat. N = Very
{ Fgr (silica) S = Crse gr dk grn Gn.

#31 - Sta on [illegible] — Fgr dike or andesite - dead
Feox. Alt.

Sta E-1



Disc Povan #7

DIETZGEN NO. 385-5

El Ocre

#45 Dike? Fe Liv & Cuox N50E – Qtz N40E N45W & E.W.

#46 – 2x4 wh pt – OC – Much Basalt Float. Crse gr.

#47 – N50°E Fe Cuox Zn in Crse-Fgr. Qtz Silf'd.

#48 – Disc El [illegible] Gr. A-8 △ Wh Rks. Much Basalt Float.

#49 – { A N50E Fe Cuox small outcrop – float? Dike Mat. N side
{ Crse. gr – S. side

#50 – Sta. G-1 much Basalt Float on Ridge SE-NW.

#51 – Contact – Tuff-Rhy – Fgr-Crse gr.

#52 – Pt + 10' on line = (Schist-Gn) E – (Tuff Rhy) – W.

#53 – Sta. H-1 on schist.

Nov. 24, 1961

Sta H-1

#54 @ station – N25E Fe decd'd liv. Schist N20E
Also N51E for 30' = N10W Fe Zn.

#55 Pt + 17' W @ Rt las Disc. 2x4 wh pt. El Oro Gr. 5-2.
Pt + 30' W @ " " = N10W Zn Fe Liv. Dn; Qtz: Schist
Pt + 30' on line = wash E. & W.

#56 – Incl. Shaft S25W on N60W Fe Qtz Zn @ 38° Sulph. Fe.
Schis – N25E, 85NW. Some Cox. about 60' on Incline. Sample
[illegible] wash – large dump. Also Fe Zn parallel to Schist
Towards N. – nothing in back.

#57 Contact – Gen Tr. N35W – SW = Red Tuf-Rhy – NE = Schist. SW.
much Bass – Float. Forward turns to S20E

#58 Contact S45E & S80W – N = Red Tuf-Rhy – S = Crse-Fgr.
Cuox Float.

El Cobre

Sta J-1

#71 2x4 wh pt. El Oro Gr 5 #8 - Rhy

#72 wh Δ Rks cc?

#73. Float Fault? Rhy W, Crse Fgr E

#74 " " " " " " "

#75 Δ wh Rks - SE cor Gr 5 #7 & SW cor Gr 5 #2. N12E 185' = Shaft - 20' deep on N65W) 80NE Hy Fe Zn. Alt. Qtz. contact, Rhy (gray to SW)

#76. Mouth of N18W 36' cut & 20' adit in Hy Fe Zn - Liv. N25W structure 60SW. Alt Fgr. some Qtz. Rhy? Carx on dump.

#77. Cut (R) on N70W Fe Carx Zn. Vert & dips 36S. Carx on both, crse Fgr to east.

#78 - Δ wh Rks. cc. Fgr - crse gr.

#79. 2x4 wh Pt. Disc El Oro Gr 5 #3.

#80 - Float contact? Rhy gr S & W - Fg N & E

#81 - " " " " " " " " irregular to #80

#82 End of Rd S55E for 120', then N83 E 250', then S85E to Pt 83.

#83 ¢ Rd X

#84 ¢ Rd at Junct. in Wash. S72W

#85 ¢ New Rd (Branch)

#86 Sta K-1 - Rd 159' N. on Fgr.

E/ Cabre

\- #101- Pt + N80W 120' = wash and N. of line - Start of Fade spread Fe dead.

Sta E-1

#102 N45W Fe Zn. 50' wide. 100' on line = N40W Fe liv zn

#103 W side of wash end of Rd. Hy Fe in wash 300' N & 200' S.

#104 N55W dead Fe Zn. Some live. Alt Silif'd sparkling

#105- Awh RKs. Disc Povan #8 Hy Fe Zn. N70W & 15' back on line N10W, 50NE = Hy cuox. Fe. Spec. Crse gr. Hy Alt.

#106- Shaft 60' deep on N50W Fe Zn. Liv. cuox Alt silif'd

#107- Interfingering Schist & crse-Fgr. Schist N.30E

#108- Contact N60W. S = Hy Fe crse Fgr. N = grn BK por. Med gr. No Fe.

#109- ¢ Rd.

#110 ¢ Rd. back to 109 - West as wide extre to S. Fe progressively weaker to S.

#111 - ¢ Rd. Liv Fe near pt 32 - N10W. No dear (in Bch

#112- Pt + 15' @ Rt is N = Disc Awh RKs Povan 6 on 50' wide Fe Zn - some liv - heads toward ¢ part of Fe Zn at Sta. Cuox in spots.

#113 W. Bank of N-S Wash (to 52) S50E & N40W 10' wide Liv Fe Cuox zn. Crse gr. Hy Fe 5' N. 75' S = N80E Fe Cuox and 50' S = N70W Fe Cuox zn.

#114 - W. Bank wash. Northern limit of Fe Zn.

El Tábre

#127 2x4 wh pt & small stake. SE cor Gr 1-5
S58W to 126

#128 - Contact S5W - W = Tuf Rhy Cong. E = Disc Fm.

#129 - W Bank Wash - Contact - S65E - S = Cong. Tuf Rhy -
N = Dike no & Disc-Fm.

#130 N15W - N50E to Fiss. N15E on to "W"
oc

Δ "W"

#131 Shaft W side wash. Over in And dike - N70W?
Some Feo. - Sample - ore - RK. 50 Ft on line shaft
maximum & Lt Fe Oxide. 75' on line = Rd
N10W as S & S10W as S. South of pt = Tuf Rhy?

#132 - Junct Rd - N35E, N70W and towards "W" as
runaround.

#133 Possible Contact N30W - SW Tuf Rhy - NE Disc Fm
Much Fe from Tuf. Runaround joins Rd 40' towards W.

134 Junct Rd on W & curve - N52E

#135 ¢ Rd. E 100' W 110'

#136 - Contact N55W And (Tuf Rhy) SW - Disc Fm NE.

#137 - 2x4 wh Pt. Disc Elcobre Gr 2 #9

#138 - 2x4 wh pt = Pt #364 E 125'. oc.

#139 - 2x4 wh Pt = Pt S65E 220' = Disc Gr 2 #4
Hy. Dead Fe outcrop N60E, dip -75 N & Rt Ls

#140 ¢ Rd N20E & S15W as far as S

#141 outcr N10W. ~~Fe~~ calcite Fiss.

#142 2x4 wh Pt 22' E Rt 45 W of Pt. oc. on Tuf-Rhy.
Rhy about 200' N.

[illegible]

#155 2x4 wi st - pt + as [illegible] line
N38E & N[illegible] to [illegible] pole.

#156 2x4 wi st - [illegible] 2x4 wi st [illegible]
bears. N13E - 300'

#157 Sta. R-1 - on top of hill.

#158 Pt + 30' S64W - 2x4 wi st [illegible] E/ ORO Gr 5-9
CL - 2x4 wi pt - S64W 250 ft. Rd 40' w [illegible] there
Rd 135' [illegible] R [illegible] pt. [illegible] S43W - 300' & N39E
Then move NE

#159 2x4 wi st. small st. SE cor Gr 5 #9 & SW cor Gr 5 #4
Rd 80' [illegible]

#160 - Pt [illegible] SE to [illegible] E/ ORO Gr 5 #4
1400' S & 100' W.

#171 [illegible] S57W & N5E - 120' N5E [illegible] to S75E

DIETZGEN NO. 385-6