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GEOPHYSICS
PINAL COPPER CO.
& VICINITY
PINAL COUNTY, ARIZONA
APRIL, 1971

GEOPHYSICS PINAL COPPER

SIERRA DIAMOND DRILLING CO.

Report on Drilling Results
for
Pinal Copper Corporation
on
Kick Back No. 2 and Kick Back No. 5 Claims

Feb.-Mar., 1970

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Pinal Copper Corporation

Kick Back No. 2 and Kick Back No. 5 Claims

To date the Pinal Copper Corporation has had very limited knowledge of the potential of the Greenback group of eight claims which constitute part of their holdings.

In 1923 when the shafts were all accessible a very commendible report was written on these claims by Dr. G. Montague Butler of the University of Arizona in Tucson, and also Director of the Arizona Bureau of Mines.

In the "Summary" of his report Dr. Butler states: "I consider that the property of the Greenback Mining Company constitutes a very promising prospect. I believe further an extensive development to be abundently justified by the showing already made, and feel that there is a good chance that intelligent work will develop ore of such amount and grade as may be mined profitably."

In his "Conclusions" Dr. Butler further states: "The property of the Greenback mining Company is not a developed mine in which it is possible to compute the available ore or even to estimate closely the probable grade of such ore as may be developed. It is purely a prospect, but the size and character of the veins and the work already done, make it a very attractive prospect. In fact I do not remember ever to have examined a gold property in which the indications appear to be more favorable.

A meeting of the Directors of Pinal Copper Corporation was held the latter part of 1969 to discuss a procedure to be followed in regards to these claims. It was unanimously agreed by the Directors that some exploratory drilling should be done in order to evaluate the claims, and to verify Dr. Butler's report.

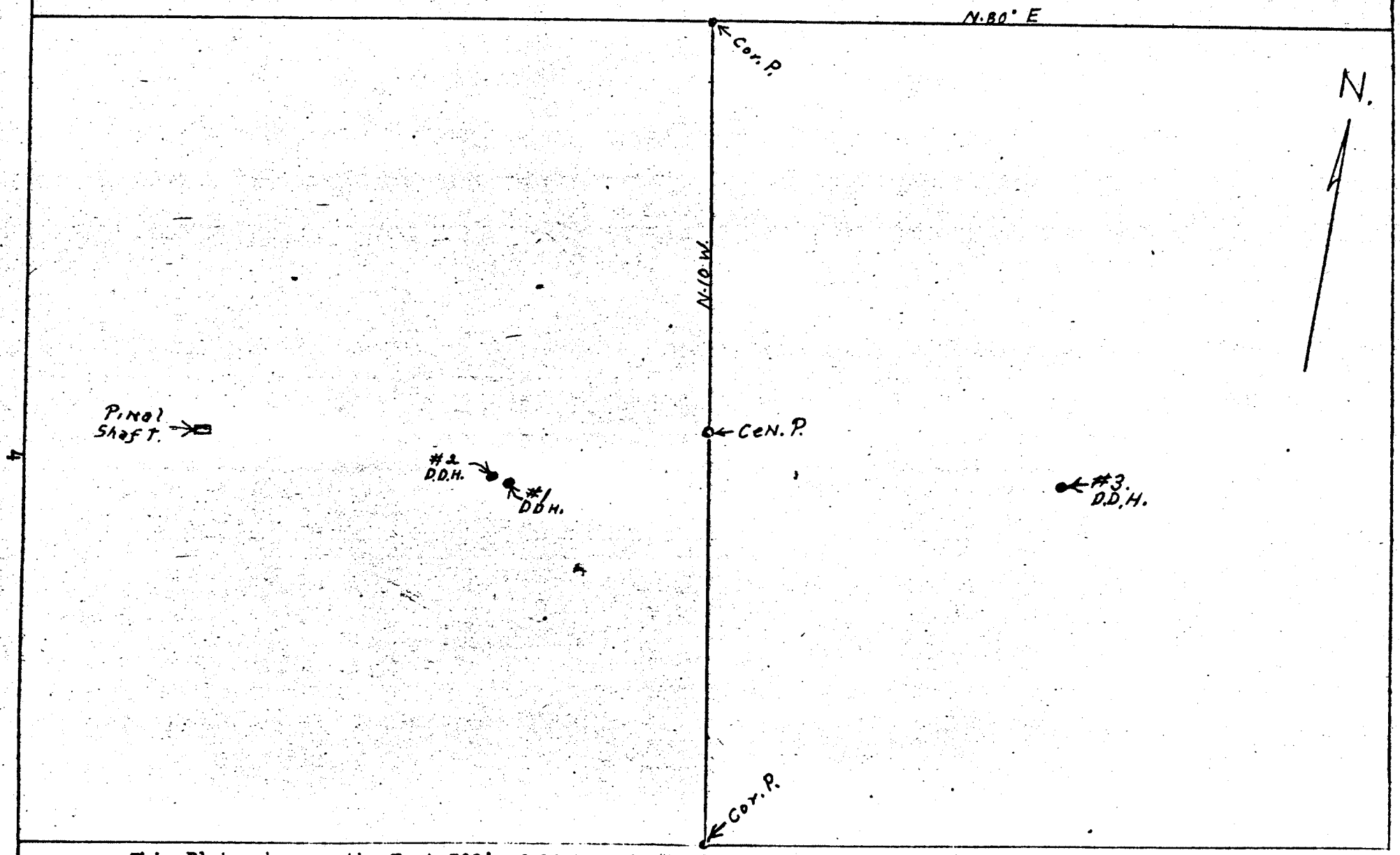
As a result the writer was retained to drill three shallow holes, and to determine the location of these holes.

Fo llowing is the result of this drilling:

Drill Hole No. 1

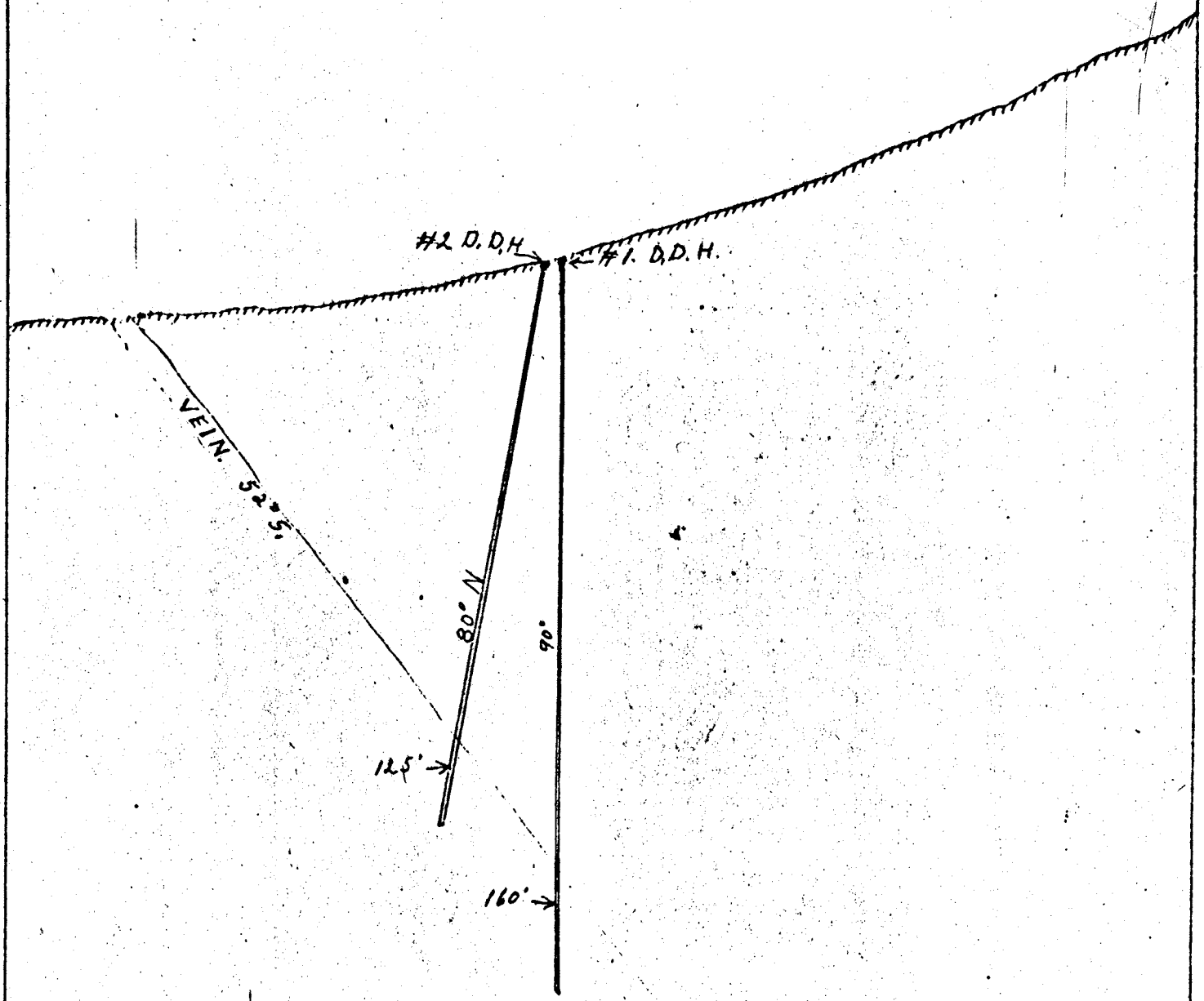
The first hole was drilled 214 feet east of the old Pinal Shaft along the general strike of the vein. This is illustrated on the accompanying Vertical Cross Section Map for No. 1 and No. 2 holes.

Attached is an assay of the vein structure of this drill hole showing results far beyond our expectations.



This Plat embraces the East 500' of Kick Back #2 claim, and the west 500' of Kick Back #5 clain, and illustrates the position of the three holes drilled on the above in February & March, 1970 by Sierra Diamond Drilling Co.

Vertical Cross Section
Illustrating Position Vein was cut
With No. 1 and No. 2 Diamond Drill Holes
On Kick Back No. 2 Claim



SIERRA DIAMOND DRILLING CO.

DIAMOND DRILL HOLE LOG

Property: Pinal Copper

Hole No.: 1

Date Drilled: Feb. 20, 1970

Inclination: Vertical

From	To	% Core	Remarks	Assay
			No core kept above 50 ft.	
50	60	90	Andesite porphyry with Fe oxides in soft zones and fractures	
60	70	98	Hard massive grey porphyry	
70	80	96	Hard massive grey porphyry	
80	90	98	Hard massive grey porphyry	
90	100	97	6 Ft. hard grey andesite, 4 ft. altered soft andesite, Fe in fractures	
100	110	98	2 Ft. fine grained andesite, 4 Ft. coarse grained andesite	
110	120	95	Fine grained hard silicified porphyry with 2 inch quartz breccia seams showing pyrite vugs	
120	130	90	Andesite breccia with quartz seams and Fe	
130	140	85	Fractured andesite with quartz seams and Fe	
140	150	90	6 Ft. coarse grained grey andesite, 4 Ft. highly altered with quartz breccia and Fe	
150	160	80	4 Ft. andesite breccia with some quartz and Fe. 6 Ft. quartz and quartz breccia assayed for gold	58.10
160	170	94	Andesite with Fe in all fractures	
170	180	96	Andesite porphyry, Fe in fractures	

ARIZONA TESTING LABORATORIES

A DIVISION OF CLAUDE E. McLEAN & SON LABORATORIES, INC.
817 WEST MADISON ST. PHOENIX, ARIZONA 85007 PHONE 254-6181

For Sierra Diamond Drilling Co.
Mr. Harold Ferrin
Post Office Box 102
Mesa, Arizona

Date February 25, 1970

Sample of Core Chips

Received: 2-24-70

Submitted by: same

ASSAY CERTIFICATE

Gold figured at $ 35.00 per ounce

Silver figured at $ 2.00 per ounce

LAB. NO.	IDENTIFICATION	GOLD		SILVER		PERCENTAGES	
		OZ. PER TON	VALUE	OZ. PER TON	VALUE		
6775	Core Chips	1.66	$58.10	0.10	$0.20		

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Claude E. McLean

Claude E. McLean, Jr.

Rocky Mountain Geochemical Corporation

2050 EAST 14TH STREET
TUCSON, ARIZONA 85719

Phone 622-5702
Area Code: 602

CERTIFICATE OF ANALYSES

Date April 28, 1970

Client Sierra Diamond Drilling Company
P.O. Box 102
Mesa, Arizona

ATTN: Mr. Harold Ferrin

Report on: 1 Core Sample

Submitted by: Mr. Ferrin

Date Received: April 15, 1970

Analysis: Gold

Remarks: Analysis determined by atomic absorption.

Job No. 70-3-20T
cc: Enclosed (2)
RMGC--Salt Lake
file
MH:ab

By Martin Hibbetts

Martin Hibbetts

Sample No.	ppm Gold
#1 Hole	51.5 (=1.5 oz/ton)

This assay was made in order to verify the results of the assay made by Arizona Testing Laboratories. H. Ferrin

All values are reported in parts per million unless specified otherwise. A minus sign (-) is to be read "less than" and a plus sign (+) "greater than." Values in parenthesis are estimates. This analytical report is the confidential property of the above mentioned client and for the protection of this client and ourselves we reserve the right to forbid publication or reproduction of this report or any part thereof without written permission.

ND = Non Detected 1 ppm = 0.0001% 1 Troy oz./ton = 34.28 ppm % Mo. x 1.6683 = %MoS_2

Drill Hole No. 2

The second hole was placed to encounter the vein approximately 30 feet from the No. 1 Hole in order to determine if we had hit a high grade spot, or if there was any real continuity to the mineralization. The strike of this drill hole is shown on the Vertical Cross Section Map for No. 1 and No. 2 holes.

The results of No. 2 Hole were equivalent to that of No. 1 Hole as is shown on the accompanying assay.

SIERRA DIAMOND DRILLING CO.

D I A M O N D D R I L L H O L E L O G

Property Pinal Copper

Hole No. 2

Date Drilled Mar. 5, 1970

Inclination 80° N

From	To	% Core		Remarks	Assay
				No cores were kept above 50'	
50	60	98%		Andesite porphyry	
60	70	96%		Andesite porphyry	
70	80	95%		Quartz monzonite porphyry	
80	90	98%		Porphyry	
90	100	100%		Andesite porphyry	
100	110	95%		Brown porphyry with quartz seams	
110	118	96%		Porphyry	
118	125	70%		Quartz vein and porphyry breccia highly mineralized. 5 ft. core split assayed for gold	59.15
125	130	98%		Andesite porphyry	

ARIZONA TESTING LABORATORIES

A DIVISION OF CLAUDE E. McLEAN & SON LABORATORIES, INC.
817 WEST MADISON ST. PHOENIX, ARIZONA 85007 PHONE 254-6181

For Sierra Diamond Drilling Co.
Mr. Harold Ferrin
Post Office Box 102
Mesa, Arizona

Date March 9, 1970

Sample of ~~8x8~~ Core Chips

Received: 3-9-70

Submitted by: Same

ASSAY CERTIFICATE

Gold figured at $ 35.00 per ounce

Silver figured at $ 2.00 per ounce

LAB. NO.	IDENTIFICATION	GOLD		SILVER		PERCENTAGES	
		OZ. PER TON	VALUE	OZ. PER TON	VALUE		
6851	Hole #2, Core Chips	1.69	$59.15				

Respectfully submitted,

ARIZONA TESTING LABORATORIES

Claude E. McLean, Jr.

Drill Hole No. 3

Apparently from the results of number one and number two drill holes the mineralization seemed to be coming from the east. Therefore the third hole was placed approximately 640 feet east from the shaft where several veins parallel through the hill, and a small cross vein intersects the Pinal vein at this point. The position of this hole is shown on the attached Vertical Cross Section Map for No. 3 Drill Hole.

The accompanying assay shows the results of this No. 3 drill hole.

Conclusions

In view of the fine results of the three holes drilled, it is my opinion a more extensive drilling program should be undertaken to further determine the values and extent of the ore zones of the Pinal Copper Corporation holdings.

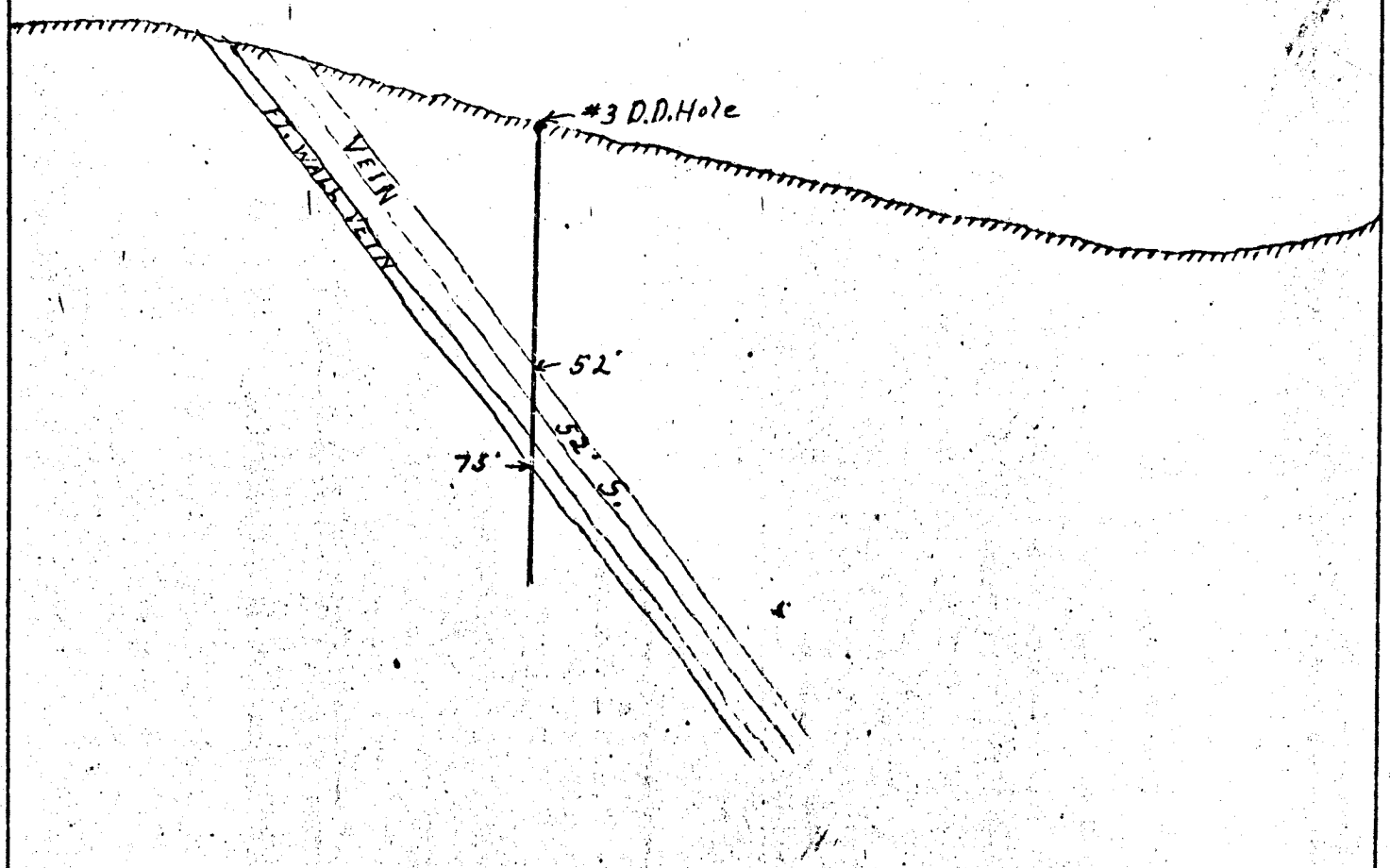
Respectfully submitted,

Harold Ferrin

Harold Ferrin

April 5, 1970

Vertical Cross Section
Illustrating Position Vein was Cut
With No. 3 Diamond Drill Hole
On Kick Back No. 5 Claim



SIERRA DIAMOND DRILLING CO.

DIAMOND DRILL HOLE LOG

Property: Pinal Copper

Hole No.: 3

Date Drilled: Mar. 20, 1970

Inclination: Vertical

From	To	% Core	Remarks	Assay
			No core taken above 40 ft.	
40	50	80	Andesite porphyry	
50	52	90	Andesite porphyry, some Fe oxide	
52	55	75	Quartz, quartz porphyry and vein breccia	
			Gold assay	14.00
55	60	70	Quartz, quartz porphyry and vein breccia	
			Gold assay	17.00
60	70	80	Broken up gangue filling	
70	75	70	Quartz vein structure	
			Gold assay	42.00
75	80	90	Altered andesite porphyry and Fe	
80	90	94	Quartz and andesite breccia, Fe in all joints	
90	100	96	Andesite porphyry	

ARIZONA TESTING LABORATORIES

A DIVISION OF CLAUDE E. McLEAN & SON LABORATORIES, INC.
817 WEST MADISON ST. PHOENIX, ARIZONA 85007 PHONE 254-6181

For Sierra Diamond Drilling Co.
Post Office Box 102
Mesa, Arizona 85201

Date April 3, 1970

Sample of Ore

Received: 4-2-70

Submitted by: Same

ASSAY CERTIFICATE

Gold figured at $ 35.00 per ounce

Silver figured at $ 2.00 per ounce

LAB. NO.	IDENTIFICATION	GOLD		SILVER		PERCENTAGES	
		OZ. PER TON	VALUE	OZ. PER TON	VALUE		
7049	3-Hole, 52'-55'	0.40	$14.00				
7050	3-Hole, 55'-60'	0.50	$17.50				
7051	3-Hole, 70'-75'	1.20	$42.00				

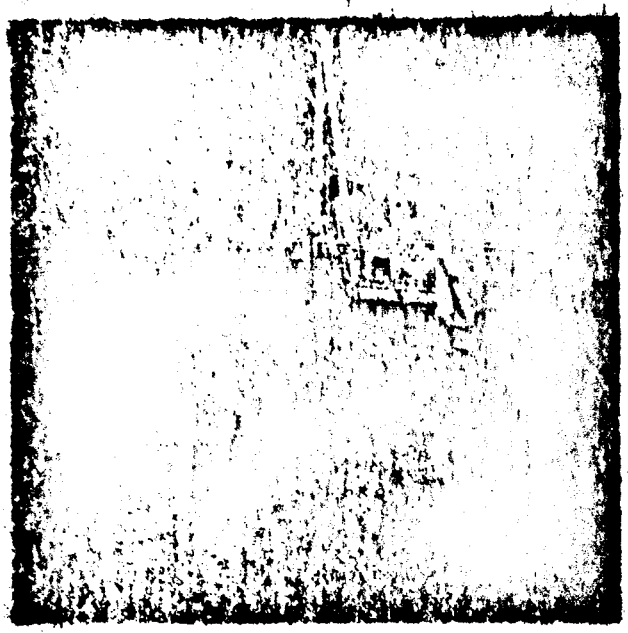
2 cc: Mr. Tom Hopkins
401 East Indian School Road
Room 107
Phoenix, Arizona

Respectfully submitted,

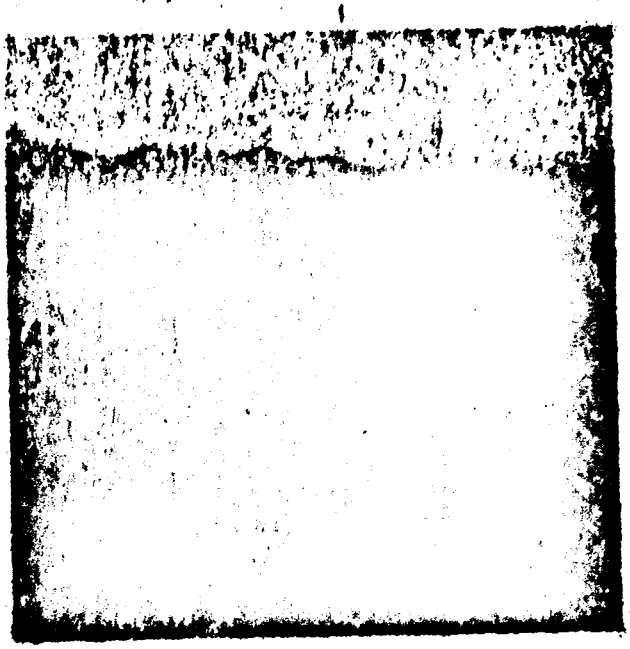
ARIZONA TESTING LABORATORIES

Claude E. McLean Jr.

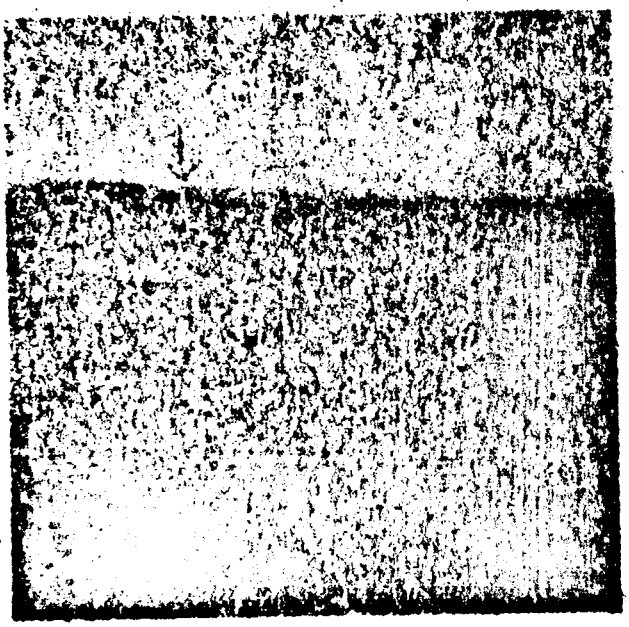
Claude E. McLean, Jr.



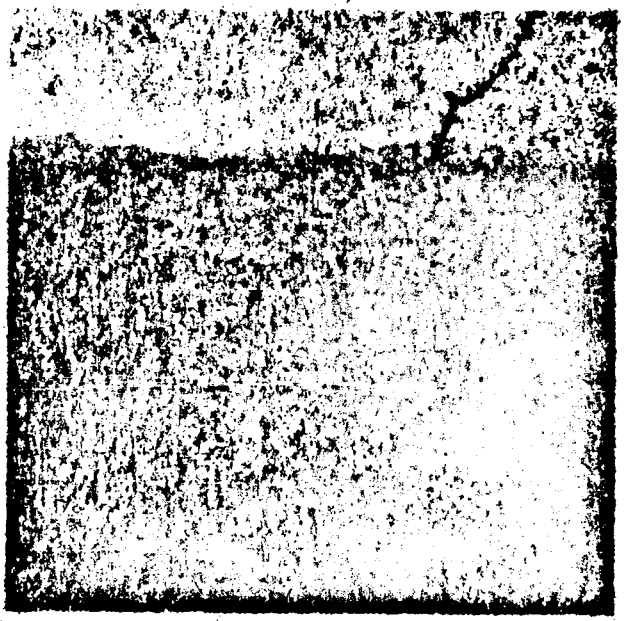
Drill Site of No. 3 Hole
on Black Rock No. 5 Claim



Taken from slope above
Final shaft



Taken looking East from Final
Shaft Dump
Red arrow shows position of
No. 1 and No. 2 Holes



Looking NE from Final Shaft

G. MONTAGUE BUTLER
Geologist & Mining Engineer
Tucson, Arizona

Some observations on the property
of the

GREENBACK MINING COMPANY

Situated Southwest of Casa Grande, Ariz.

SUMMARY: I consider that the property of the Greenback Mining Company constitutes a very promising prospect. I believe further an extensive development to be abundantly justified by the showing already made, and feel that there is a good chance that intelligent work will develop ore of such amount and grade as may be mined profitably.

GEOLOGY: The Country rock consists mainly of large intrusions of porphyritic material which is probably a monzonite porphyry, which schists to the south. These intrusions are traversed by dikes which are usually of an andesitic nature, and such dikes form, at least in a part of the property, one of the vein walls. Higher hills in the vicinity of the property are capped by basalt flows.

The gold deposits are in the form of numerous large, strong, easily traceable quartz veins. Most of these veins are more or less closely crowded with fragments of the country rock, usually more or less silicified, and a very few fragments of rock not now exposed in the area, such as marble, are enclosed in the quartz. The fragments of country rock appear to be suspended in the quartz, the latter often surrounding the fragments in concentric layers of different density or tint, and varying in color from gray through brown and yellow to white. Free gold (both fine and coarse) is visible in the quartz taken from a number of points on the property and it is very evident that some of the ore seen, especially that taken from the Greenback shaft, is of very high grade ore. A very little fine-grained pyrite was observed in the Pinal shaft, but as a

whole the ore is remarkable for its freedom from any metallic minerals other than gold. Even iron oxide is relatively scanty, and most of the ore is so dense as to indicate that sulphides will probably not be plentiful below the zone of oxidation. Gold is present both disseminated through solid quartz and along joints in the country rock a foot or two from the contact.

Some calcite (carbonate of lime) occurs with the quartz in the workings connected with the Greenback shaft, but it appears to be free from gold, and to represent a period of deposition later than that which produced the gold-bearing quartz.

In general the veins strike east to west, and have a southerly dip. Thickness of at least two or three feet are common, and some of the veins are several times that thick. It is notable that the gold values in the veins do not appear to come to the surface. The outcrops are almost invariably barren, and practically no gold is found until a depth of from five to ten feet has been attained. This statement applies even to the outcrop of the vein directly above the very high grade ore-shoot exposed in the Greenback shaft. I can suggest no reason for this condition, since the absence of any considerable amount of manganese and iron oxides and the presence of calcite would prevent the dissolving of the gold by the only common solvent with which geologists are familiar. Sufficient work has been done, however, to show that the gold has been leached out of the outcrops in some way, and no estimate of the value of any of the veins should be attempted by surface sampling.

<u>PROBABLE CONTINUITY AND PERSISTENCE OF THE DEPOSITS</u>: The veins are of a deep type which may be expected to extend to great depths along the drip. While faulting is to be expected, and has, indeed, already been encountered in the Greenback shaft, it is not probable that the displacements will be

COPY

great or will interfere seriously with operations. No faulting has yet been encountered in the thick vein upon which the Pinal Shaft has already been sunk to a depth of 96 feet.

I do not believe that there is any probability that a secondary enrichment of the gold will be encountered at depth. Such enrichments have been found where plenty of manganese and iron oxides occur and calcity is absent, but such conditions do not exist on the property. Furthermore, the vein material in most places appears too compact to have been subjected to much leaching. The higher grade ore will certainly be found in ore-shoots, but they will be of primary character, and not the result of any re-arrangement of the values after the deposits were formed. Such shoots have already been encountered in both the Greenback and the Pinal shafts, and in both cases they pitch to the West.

CONDITIONS AT THE GREENBACK SHAFT: Most of the development work done on the property has been at the Greenback incline shaft where a high grade ore-shoot was encountered a few feet below the surface. Several tons of ore taken out in sinking this shaft lie on the dump, and it is claimed that it will run $200.00 a ton. So much free gold is visible in the ore that this claim does not appear to be extravagant. In fact, specimens can easily be collected which will probably run a thousand dollars or more a ton. The lower limit of the high grade shoot crossed the shaft diagonally from east to west, and disappeared in the western wall of the shaft a little above the 30 ft. level. A short drift to the west was driven where this ore shoot entered the western wall, but, although it contains some ore of fair grade, it has penetrated beyond the shoot itself.

Shortly below the 50 ft. level a fault was encountered, where exposed in the shaft it appears to be decidedly irregular, but to dip to the south considerably more steeply than the vein. Faulting parallel to the vein was also noted.

Near the 70 ft. level, where some drifting has been done, vein material was again encountered but it lies somewhat flatter than the vein above the 50 ft. level, and I believe it to be a different vein. I base this belief upon differences in detail in the vein matter, and more particularly upon the fact that the calcite in the vein above the 50 ft. level is crystallized in an entirely different habit from that found below the 50 ft. level and down to the lowest workings. It is inconceivable that the habit of crystallization of the calcite should have changed so completely and suddenly within a few feet, but it is quite possible that, conditions being somewhat different in parallel veins, the calcite should crystallize differently in them. It seems probable that the rich ore shoot encountered near the top of the shaft will be cut off by the fault first mentioned, but as stated previously, I do not believe that the displacement has been great, and I think that a careful study of conditions will make it possible to pick up the extension of the ore-shoot below the fault, without great expense or difficulty.

<u>CONDITIONS AT PINAL SHAFT</u>: The Pinal Shaft on Silver Queen No. 1 claim has been sunk as an incline on a vein that strikes N. 72 Degrees E., and has an average dip of 55 Degrees to the south. The full thickness of the vein has not been exposed in the shaft, which is 96 feet deep, although six feet of vein matter is exposed on the 50 ft. level, where some drifting has been done, and at the bottom.

The vein is a strong one, easily traceable on the surface for some distance, and shows no indication of faulting to the depth already reached. It had been thoroughly sampled by reputable engineers of experience, and a shoot of fairly good ore has been found pitching diagonally from near the top of the shaft westerly across the 50 ft. level.

Two comparatively small samples were taken at the bottom of the shaft merely to make a rough check upon the sampling done by others.

Sample No. 1 was cut across three feet on the northerly foot-wall side of the vein. It is composed of almost pure, hard, white quartz, and previous sampling is said to show that it ran from a dollar to two dollars per ton. The average of two assays on material taken by me shows that it runs $1.20 in gold and 1/10 of an ounce of silver per ton.

Sample No. 2, cut across three feet of vein matter on the southerly or hanging wallside of the vein, was composed mostly of quartz, but contained more included rock fragments, was more or less copper-stained, and was comparatively soft and porous, especially near the hanging wall. Samples taken at the same point are reported to have run from $2.20 to $2.50 per ton. The average of two assays made on the material obtained by me gave a figure of $2.50 in gold and 85/100 of an ounce of silver per ton.

Sample No. 3 was taken twelve feet from the shaft in the west drift at the level of 50 feet. It was cut across three feet of sypical vein matter, but neither wall was exposed. Previous sampling is said to show that it was taken at the eastern edge of the ore-shoot previously mentioned, and samples are said to have yielded from $8.00 to $35.00 per ton. The average of two assays in the material I secured gave a figure of $5.20 in gold and 25/100 of an ounce of silver per ton.

Sample No. 4 was cut across six feet of vein matter, exposed in the same drift eight feet west of Sample No. 3. The average of two assays made on this material gave a figure of $3.70 in gold and 3/10 of an ounce of silver per ton.

CONDITIONS IN OTHER OPENINGS: Numerous other shallow trenches or shafts exist on the property, and free gold was evident in several of them. As already stated, the values do not appear to come clear to the surface anywhere, and it is doubtful if useful figures could be obtained by sampling in these openings, so nothing along that line was done. However, they suffice to prove the continuity of the value, and the free gold seen on the samples taken by others show that the veins are gold-bearing at many points.

SAMPLING DIFFICULTIES: The grade of no type of ore deposit is more difficult to obtain that of quartz veins containing free gold like the ones found on the property of the Greenback Mining Company. The values are so irregularly distributed through the veins that one sample may run very low, whereas another sample cut directly beneath the first of any one sample will not usually check each other very closely, while it is generally true that in all types of deposits the larger the sample, the more dependable the results obtained. This statement applies especially to the type of deposit under consideration, and no reliable figures need be expected unless the samples weight fifty to one hundred pounds or more. Even then, samples should be taken close together and some fluctuation would be expected. While, by working in this way, fairly dependable results may be secured, figures that will be even more reliable can be obtained by taking large samples from the buckets as development work is done. I understand that competent, reputable engineers have taken numerous large samples from the workings connected with the Final shaft, and that samples have also been taken from the buckets in the manner mentioned. For these reasons it seemed inadvisable to spend several days cutting numerous large samples. It was hoped that a few small samples would suffice to prove the presence of gold in the deposit, and, especially, roughly to check the results already secured by others. I feel that this end was satisfactorily accomplished, and would call attention to the fact that sample No. 2 runs somewhat better than the highest results that are reported to have been obtained by others, at the particular point sampled. As a possible reason why higher values were not found anywhere sampled, even where a good ore-shoot is believed to exist, I may mention that the gold seems to be included within the border of the denser portions of the quartz. In taking a small sample it was hard to prevent the cutting of an excess of the softer material which would tend to reduce the grade of the sample.

RECOMMENDATION: I believe that the work of the company should be concentrated

on the Pinal shaft, that this shaft should be sunk several hundred feet, and that drifts should be run both to the west and to the east, but especially to the west, at 50 ft. intervals. The vein is so wide that it seems very likely that a large amount of ore of commercial grade may be developed in that way.

If the company wishes to do some work deepening other workings on the property, it might be wise to do so, but such work should not be done at the expense of the thorough development of the vein exposed in the Pinal shaft.

I should not do much more work at the Greenback Shaft at present, but it would probably be wise to sink directly on the rich ore-shoot and extract such high grade ore as is easily obtainable before moving the equipment from that shaft. This ore should not be shipped now, since the cost of haulage will be high. If a mill is subsequently installed to treat the Pinal ore, the rich Greenback ore may then be treated profitably. Since most of this rich ore is now being removed by visitors to the property, I should recommend that it either be sacked or placed under cover at an early date.

CONCLUSIONS: The property of the Greenback Mining Company is not a developed mine in which it is possible to compute the available ore or even to estimate closely the probable grade of such ore as may be developed. It is purely a prospect, but the size and character of the veins and the work already done, make it a very attractive prospect. In fact I do not remember ever to have examined a gold property in which the indications appear to be more favorable.

Anyone investing in the property should realize that there is a certain element of risk involved, but that the possible returns on the investment are so great as to make the proposition an exceedingly attractive one. Good management will serve to reduce the risk to a minimum, and that will doubtless be provided. While profits from a developed mine may be more certain than from an incompletely developed prospect, they can never be as

great. If anyone is seeking the large profits that will doubtless be made if the development of the property reveals the existence of such conditions as the work already done lead one to expect, they could hardly hope to find a property more promising than that owned by the Greenback Mining Company.

Very respectfully,

(Signed) C. M. BUTLER

Tucson, Arizona

November 6, 1923

COPY

(Copy)

Mc PHAR GEOPHYSICS LIMITED

REPORT ON THE INDUCED POLARIZATION AND RESISTIVITY SURVEY AT THE PINAL COPPER CORPORATION PROPERTY PINAL COUNTY, ARIZONA

1. INTRODUCTION

At the request of the Corporation, a brief induced polarization and resistivity survey has been carried out on the Pinal Copper Corporation Claim Group in Pinal County, Arizona.

The claim group is underlain by granitic rocks and in places the outcrops show alteration and the weathered remains of pyrite and/or chalcopyrite mineralization. Several holes have been drilled in the outcrop areas, and previous geophysical work and drilling has shown that the alteration and mineralization extends into the adjacent areas that are covered by Tertiary sediments.

Some copper is contained within the disseminated sulphide mineralization, but none of the holes drilled to date have intersected substantial amounts of "ore grade" mineralization. The mineralization

within "porphyry copper" type deposits is typically variable in copper content. The induced polarization measurements to be described in this report were planned in an attempt to outline the complete zone of mineralization so that further drilling could be planned.

2. PRESENTATION OF RESULTS

The induced polarization and resistivity results are shown on the following enclosed data plots. The results are plotted in the manner described in the notes preceding this report.

Line 43W	500' electrode intervals	Dwg. IP 2533-1
Line 48W	500' electrode intervals	Dwg. IP 2533-2
	300' electrode intervals	Dwg. IP 2533-3
Line 51W	300' electrode intervals	Dwg. IP 2533-4
Line 53W	500' electrode intervals	Dwg. IP 2533-5
Line 7+50N	500' electrode intervals	Dwg. IP 2533-6
Line 0+00	500' electrode intervals	Dwg. IP 2533-7

Also enclosed with this report is Dwg. Misc. 4247, a plan map of the Pinal Copper Corporation Claim Group and the lines surveyed, at a scale of 1" = 400'. The definite and possible induced polarization anomalies are indicated by solid and broken bars respectively on this plan map as well as the data plots. These bars represent the surface projection of the anomalous zones as interpreted from the location of the transmitter and receiver electrodes when the anomalous values were measured.

Since the induced polarization measurement is essentially an averaging process, as are all potential methods, it is frequently difficult to exactly pinpoint the source of an anomaly. Certainly, no anomaly can be located with more accuracy than the spread length; i. e. when using 500' spreads the position of a narrow sulphide body can only be determined to lie between two stations 500' apart. In order to locate sources at some depth, larger spreads must be used, with a corresponding increase in the uncertainties of location. Therefore, while the center of the indicated anomaly probably corresponds fairly well with source, the length of the indicated anomaly along the line should not be taken to represent the exact edges of the anomalous material.

Also shown on Dwg. Misc. 4247 are the lines used for a previous IP survey and the location of the holes drilled to test the anomaly.

3. DISCUSSION OF RESULTS

The induced polarization method can be successfully used to locate zones of disseminated mineralization. Under the proper conditions, very disseminated mineralization can be located and the zones outlined. The IP results shown in Figure 1, which is enclosed, show the IP anomaly that recently located an extensive zone that contained only 1. 25% to 1. 35% metallic minerals. The only minerals present are molybdenite and bornite, and the tonnage is extremely large. Therefore, a profitable open-pit mining operation may be possible.

Induced polarization results can not be used to distinguish

between pyrite and chalcopyrite. It is therefore not possible to use only the magnitude of the IP effects measured to evaluate an anomaly. The IP results shown in Case History XXIII and Case History XXIV are from two very similar zones of mineralization. There is enough copper contained in the zone at Copper Mountain to make it "ore"; only small concentrations of copper and molybdenum are contained within the extensive mineralization located at Quartzite, Arizona.

The IP anomalies located on the Pinal Copper Corporation Claim Group show the widespread presence of disseminated metallic mineralization. This mineralization could be of economic interest, if the proper mineral assemblage is present.

Line 43W

Only weak IP effects were measured on this line. It seems to pass to the east of the most concentrated zones of mineralization.

Line 48W

The IP results on this line show two zones of more concentrated mineralization. The zone of mineralization extends for almost a mile, from 15S to 30N. The magnitude of the IP results suggests an increase in the concentration of metallic mineralization at depth at 5S to 5N and in the interval from 15N to 25N. The northern anomaly had been detailed with shorter electrode intervals; the anomaly is moderate in magnitude, and quite definite.

Line 51W

The northern zone has been checked on this intermediate line,

using 300' electrode intervals. The anomaly is definite, and the results are similar to those from Line 48W.

Line 53W

The northern anomaly has not been detailed with 300' electrode intervals on this line. It is indicated by the reconnaissance results, centered at 20N. The entire extent of this line, that was surveyed, is more-or-less anomalous. There is a narrow zone of slightly increased IP effects about 15S.

Line 7+50N

This east-west line passes through the center of the claim group. The anomalous IP effects extend west of about 35W; the apparent resistivities in this area are typical for fractured, altered acid intrusive rocks. To the east of 35W the resistivities at depth (measurements for n = 3, 4) show a higher value. This decrease in the porosity of the granitic rocks may be due to a decrease in the intensity of the alteration.

The increased IP effects measured for large electrode separations (n = 3, 4) at 53W to 48W are probably due to the zone of more concentrated mineralization to the north. The definite anomaly at 73W to 63W correlates with the zone outlined by the previous IP survey and drilled.

Line 0+00

This line was surveyed for a considerable distance to the east. The relatively non-porous (unaltered?) rocks extend east from about 35W.

There is a shallow, narrow, weak IP anomaly centered at

2+50W on this line that should be checked with 300' or 200' electrode intervals. The source could be a narrow zone (25' to 100') of relatively concentrated metallic mineralization. The weak to moderate IP effects measured at the western end of the line agree with the results from the north-south lines.

4. CONCLUSIONS AND RECOMMENDATIONS

The recent induced polarization and resistivity measurements on the Pinal Copper Corporation Claim Group show that the zone of disseminated metallic mineralization extends well beyond the area that has already been tested by drilling. The new anomalous zones located are much the same as those from the area already drilled; the amount of metallic mineralization present should be much the same.

The weakly anomalous IP effects measured over very large areas suggest the presence of perhaps 1% to 2% metallic mineralization. The areas of large IP effects are indicated to contain concentrations of 3% to 5% metallic mineralization; this mineralization could be of economic importance. It is recommended that holes be drilled to determine the nature of the mineralization in the source.

The anomalies are fairly well defined, and the holes recommended are on Line 48W.

a) Line 48W, 0+00; vertical hole to depth of 700'

b) Line 48W, 21+50N; vertical hole to depth of 500'

c) Line 48W, 24+50N; vertical hole to depth of 500'

The possible economic importance of the mineralization intersected in the drill holes will determine the need for further work in this area. It is obvious that the mineralization zone could be traced further to the north and west.

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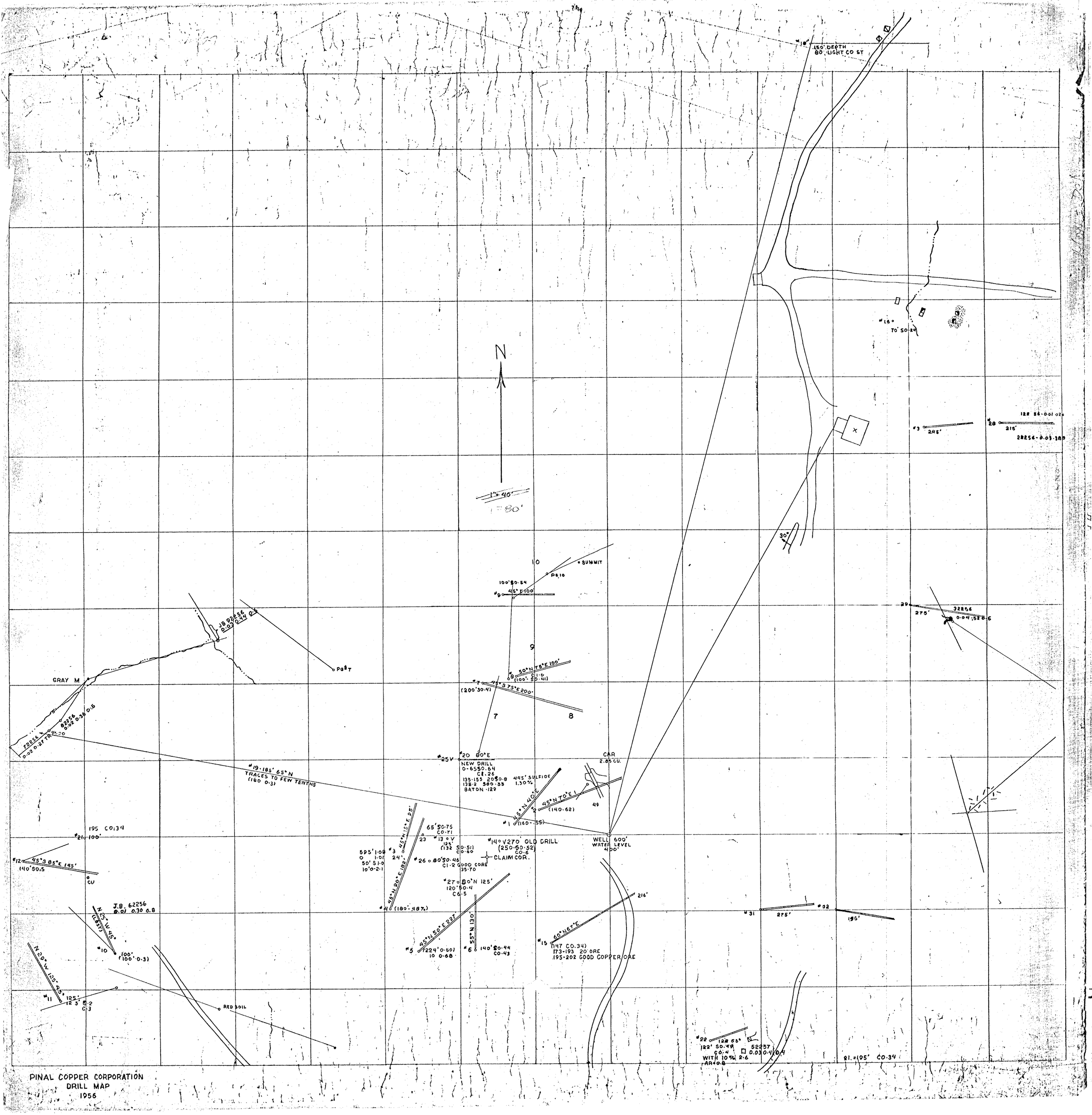
Dated: September 23, 1966


150' DEPTH
80' LIGHT CO ST
N
1" = 40'
1" = 80'
SUMMIT
GRAY M
NEW DRILL
0-65 50.64
C1.26
135-155 20 50.8
138-2 500-55
BATON .122
CAR
2.85 CU.
WELL 600'
WATER LEVEL
400'
#14 V270' OLD DRILL
(250-50-52)
CO.6
CLAIM COR.
#19 185' 65° N
TRACES TO FEW TENTHS
(180 0.3)
#25 V
#20 80° E
45° N 40° E
445' SULFIDE
1.30%
45° N 70° E
(140.62)
#1 (160-.55)
#3 245'
#29 215'
122 56-0.01 0.2
22256-0.03-.189
#29 275'
32256
0.04 .52 0.6
#31 275'
#32 195'
#21 100'
195 CO.34
#12 45° S 85° E 145'
140' 50.5
CU
J.B. 62256
0.01 0.30 0.8
N 25° W 45°
(185')
#10 100'
(100' 0.3)
N 29° W 125' 45°
#11 125'
12 5 5.2
C.3
RED SOIL
#26 80' 50.46
C1.2 GOOD CORE
35.70
#27 80° N 125'
120' 50.4
C6.5
#4 (180' .48%)
45° N 50° E 227
(224' 0.60)
10 0.68
55° N 130'
#6 140' 50.44
CO.43
#15 60° N 67° E
(147 CO.34)
173-193 20 ORE
195-202 GOOD COPPER ORE
216'
#22 128 60°
122' 50.49
CO.4
WITH 10% 2.6
AR 0.8
52257
0.03 0.4 0.4
21. = 195' CO.34
PINAL COPPER CORPORATION
DRILL MAP
1956