CONTACT INFORMATION
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Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

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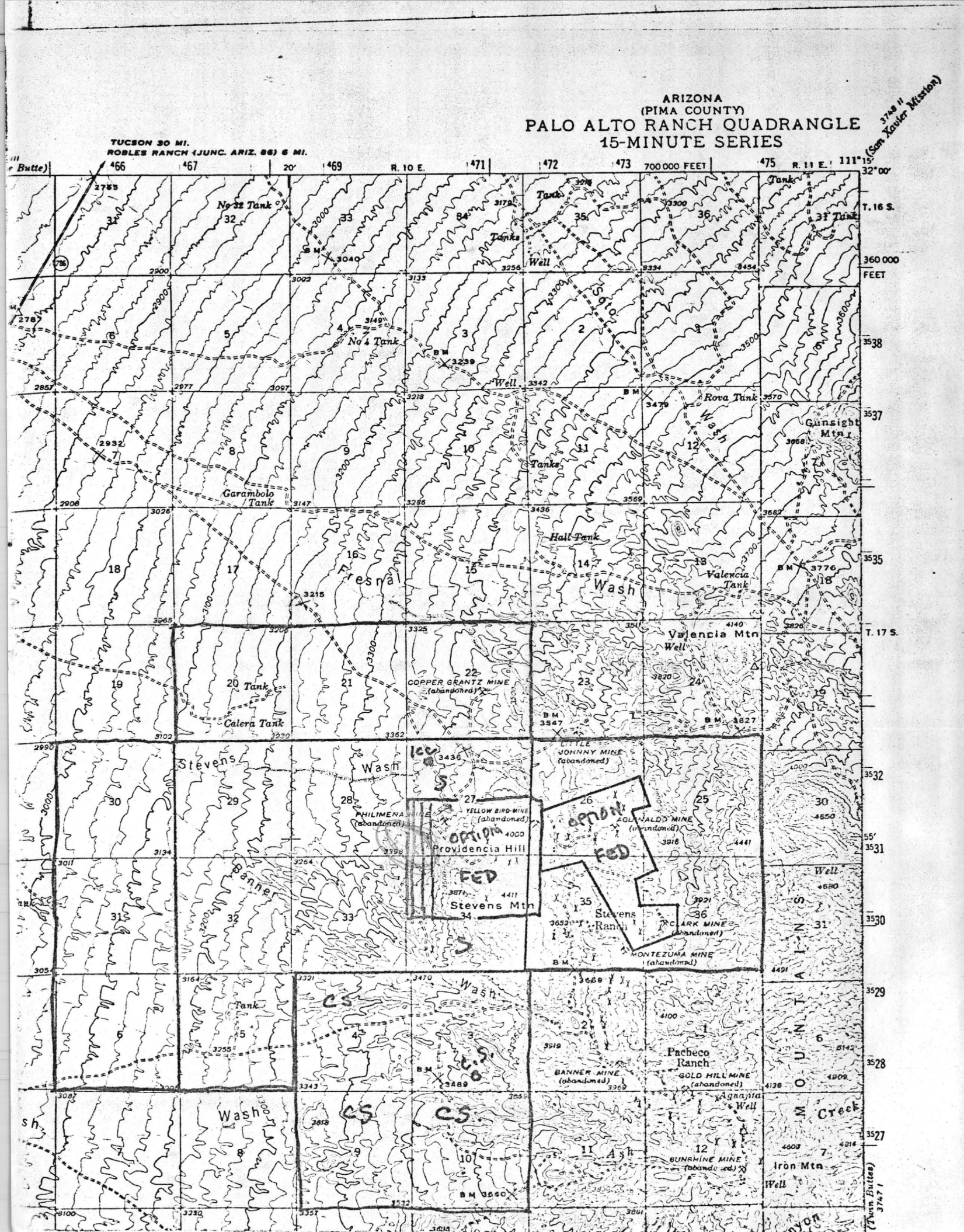
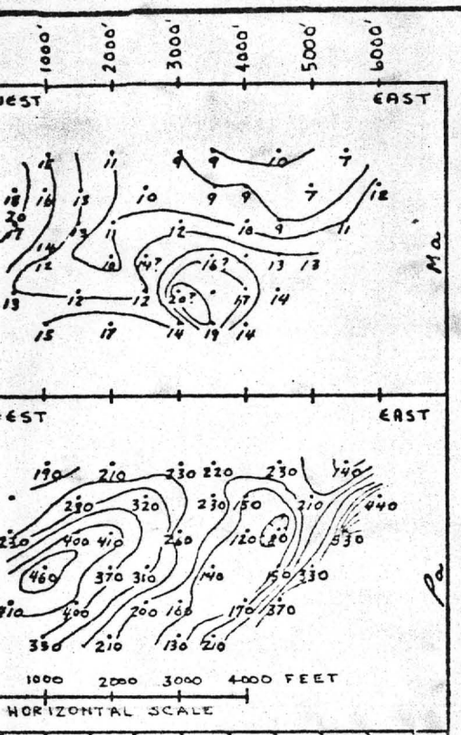
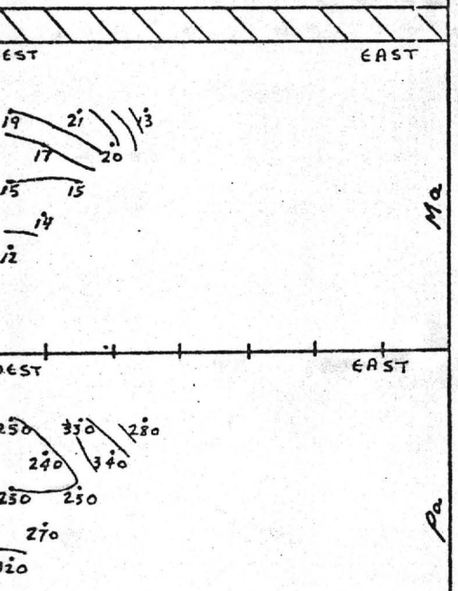
Draft

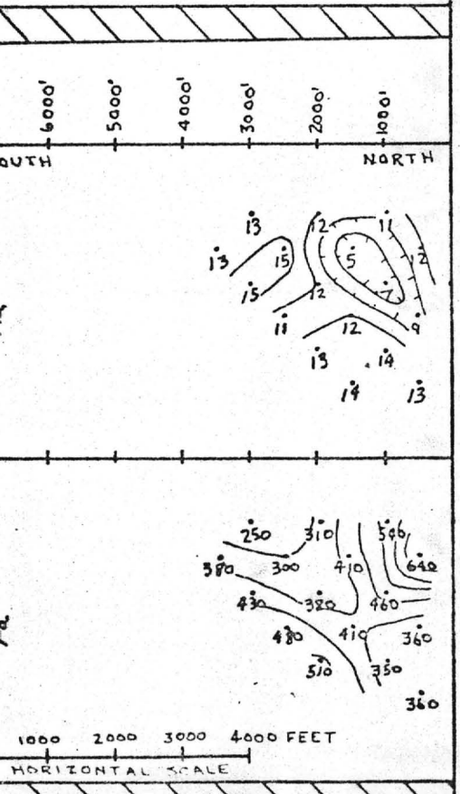
STEVENS Mtn. Prospect Pima County ARIZONA
STEVE TIMM Promoter
West Side of Sierritas

Visual file


ARIZONA
(PIMA COUNTY)
PALO ALTO RANCH QUADRANGLE
15-MINUTE SERIES
TUCSON 30 MI.
ROBLES RANCH (JUNC. ARIZ. 86) 6 MI.
R. 10 E.
R. 11 E.
700 000 FEET
111°15'
32°00'
T. 16 S.
T. 17 S.
360 000 FEET
No 32 Tank
No 4 Tank
Rova Tank
Gunsight Mtn
Garambolo Tank
Calera Tank
Hall Tank
Valencia Tank
Valencia Mtn
COPPER GRANTZ MINE (abandoned)
LITTLE JOHNNY MINE (abandoned)
YELLOW BIRD MINE (abandoned)
PHILIMENA MINE (abandoned)
AGUINALDO MINE (abandoned)
Providencia Hill
Stevens Mtn
Stevens Ranch
CLARK MINE (abandoned)
MONTEZUMA MINE (abandoned)
BANNER MINE (abandoned)
Pacheco Ranch
GOLD HILL MINE (abandoned)
BUNKHINE MINE (abandoned)
Iron Mtn
Agua Jita Well
Stevens Wash
Banner Wash
Ash Creek
OPTION
FED
CS
Tanks
Well
BM







NEW YEAR GROUP

PIMA COUNTY

ARIZONA

INDUCED POLARIZATION - RESISTIVITY SURVEY

NEWMONT TYPE TIME DOMAIN EQUIPMENT

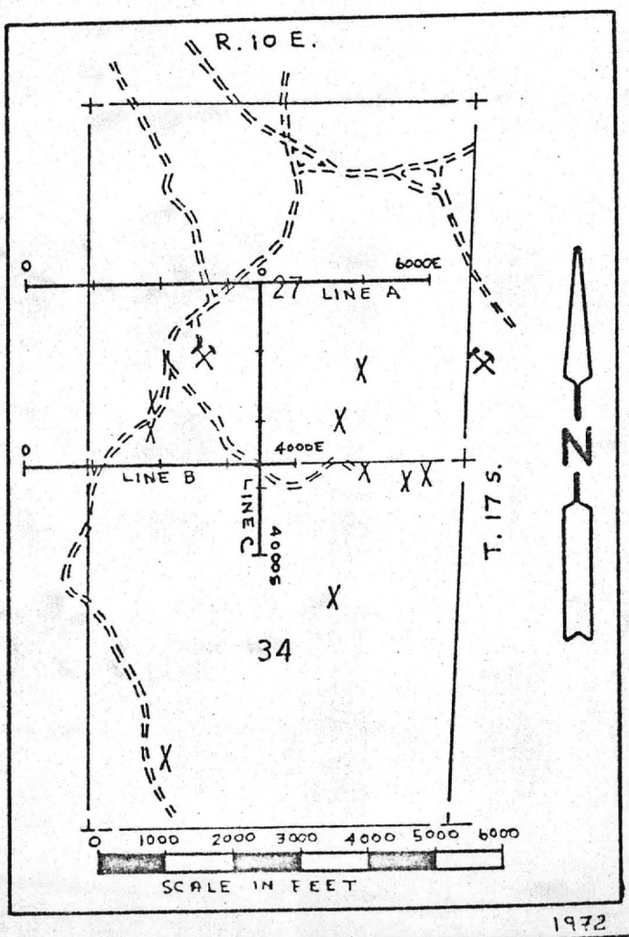
Station spacing (a) = 1000 feet

Electrode configuration = dipole-dipole

Search depths (n) = 1 to 6

M_a = apparent chargeability in milliseconds

ρ_a = apparent resistivity in ohm-meters



1972

INDUCED POLARIZATION SURVEY
WEST SIERRITA MOUNTAINS AREA
PIMA COUNTY, ARIZONA

For

Mountain Copper Company

December 1966

By

Heinrichs Geoexploration Company
P. O. Box 5671 Tucson, Arizona 85703
Phone: 623-0578 Area Code: 602

TABLE OF CONTENTS

INTRODUCTION

At the request of Mr. Eugene H. Lindsey, consulting geologist, Heinrichs Geoexploration Company conducted an induced polarization survey in the West Sierrita Mountains Area located in the Palo Alto quadrangle, Pima County, Arizona. The field work was done during the period December 7 to December 14, 1966 for the Mountain Copper Company.

Five induced polarization lines were surveyed with a total line coverage of 44,250 feet giving about five miles total subsurface plotted data. The lines were laid out as per instructions from Mr. Lindsey and as shown on the aerial photographs supplied by him. A 750 foot dipole spacing was utilized for maximum detailed subsurface information as well as maximum ground coverage. This spacing allows maximum detail from 150' to 900' below the surface.

The data were obtained by use of the dual frequency induced polarization technique utilizing a dipole-dipole electrode configuration. Sending frequencies of 0.05 and 3.0 cycles per second were used.

The data are presented on sectional data sheets, one for each line, showing resistivity, percent frequency effect, (PFE) and metallic conduction factor (MCF) contoured in section with self potential (SP) in profile. An induced polarization location and interpretation plan is also included.

Geoex personnel involved in the field work were W.E. Hurley, geophysical crew chief, R. D. Montierth, and B. J. Terrell, technical assistants, K. S. Ijams, and L. W. Turner as helpers to expedite production. Interpretation, compilation and report are by the Geoex staff in Tucson, Arizona under the supervision of Chris S. Ludwig, senior geophysicist.

CONCLUSIONS, RECOMMENDATIONS AND INTERPRETATION

Very weak anomalism was noted on Lines 2, 4, and 5 and is probably caused by narrow zones slightly higher than background in sulfide content. The anomalism would indicate that any possible metallic sulfide mineralization is essentially confined to small-scale veins. Those, if any, having high enough concentrations of valuable sulfides or associated minerals to be at all economic, were not identifiable in such a broad and deep reconnaissance type of survey; however, general indications are that the odds are fairly low. The self potential lines show no especially strong or interesting oxidizing sulfide anomalies except on Line 3. The low here apparently corresponds to minor, near surface, oxidizing sulfides in or near the Aguinaldo Mine. Associated anomalous frequency effects were not noted.

No drilling is recommended on the basis of the induced polarization results at this time. If geologic evidence suggests that the very weak anomalies on Lines 2, 4, and 5 could be of economic interest then appropriate drill sites could be chosen; however, it would be preferable to do more detailed surveys with smaller dipole spacings. This is because of the probable narrow character of the anomaly sources and the $\pm$ 1/2 dipole spacing inaccuracy inherent with the technique and related geometry.

The resistivity on Line 3 shows an interface at about 30W. This apparently corresponds to some old workings in this vicinity but no sulfide response was indicated here.

In summary, therefore, with the possible exceptions of the three very weak anomalies mentioned, no major or continuous disseminated or massive sulfide zones were noted in the vicinity of the lines; (an area approximately 1 mile wide by 2 miles long) to a depth of around 900 feet and having lateral dimensions comparable in magnitude to the dipole spacing (750').

BASIS OF THE INDUCED POLARIZATION METHOD

The induced polarization method is based on the electrical properties exhibited by ele... when ...

Unless additional encouraging information is revealed, no further reconnaissance induced polarization work is recommended on the property at this time.

...constant current is made to flow through ... phenomenon occurs because at the ... two conductor types, electrolytic ... or take on electrons thereby req... (overvoltage) over that which would ... one mode of production, showing ... tial across the block with time ... This potential approaches a cons... libriu... is established between ... boundaries and the flow across the ... from the preceding discussion ... effect ... this ... are ...

Respectfully submitted,
HEINRICHS GEOEXPLORATION COMPANY

Chris S. Ludwig

Chris S. Ludwig
Senior Geophysicist

APPROVED:

Walter E. Heinrichs, Jr.
President & General Manager

In the time domain ... method, a ... current is imposed across ... block for a ... and abruptly terminated so that the capacitive-... (discharge) curve can be measured or recorded ... the voltage decay curve is integrated with ... time to give the area under the decay curve ... volt-seconds. The more area undermined, the ... capacitance or polarization the block exhi...

In the frequency domain method, the ... difference between the impedance (AC resistance) offered to a lower and a higher frequency is measured. A capacitance offers a lower impedance to a higher frequency than it does to a lower frequency, therefore the percentage difference between the impedances will increase with increased

January 4, 1966
Tucson, Arizona 85703

A third technique is to measure the phase angle or delay between an introduced current wave-form and the received voltage wave across the block. This phase delay also increases as polarization increases.

HEINRICHS GEOEXPLORATION COMPANY

Mariposa Spectrographic Laboratory

Mariposa, California 95338

Telephone 966-2591

July 2nd, 1972

Mr. W. Loveall
701 W. Drexel Rd.
Tucson, Arizona 85700

Dear Mr. Loveall:

Enclosed, find spectrographic analysis report #19038, covering the analysis of your submitted sample. (note, we were not certain of the sample mark Mr. Loveall, we hope that we have it correct.)

The sample is a corbonate-silicate rock formation in schist form. The rock is essentially composed of a soda-orthoclase feldspathic rock with some Quartz and oxidized Hematite Iron to a very red ocherous color.

Small quantities of Lead and Silver were found, along with some Manganese that is probably present in the carbonate mineral. We also detected several Rare Earth elements.

The carbonate mineral in the rock is a dolomitic limestone Mr. Loveall. Dolomite is a limestone composed of Calcium, Magnesium and carbon-dioxide.

Our sincere thanks Mr. Loveall and our best wishes in your mining.

Sincerely,

George R. Graves

George R. Graves

1cc

LABORATORY REPORT

Mariposa Spectrographic Laboratory

CHARGES: $5.00
LAB NO. 19038
SUBMITTED BY:

Dr. W. Loveall
701 W. Drexel Rd.
Tucson, Ariz. 85700

Qualitative Spectrographic Analysis

Date 7/2/72

ELEMENTS FOUND
AND ESTIMATED PERCENTAGE RANGE
OF CONCENTRATION

SAMPLE MARK

Line D Hole 13
120' - 124'.

ELEMENT	Not Less Than %	Not More Than %	ELEMENT	Not Less Than %	Not More Than %	ELEMENT	Not Less Than %	Not More Than %
Aluminum	5.0	15.0	Lithium	.008	0.04	Thallium		
Antimony			Magnesium MgO	4.0	8.0	Thorium		
Arsenic			Manganese	3.0	6.0	Tin		
Barium	0.20	0.40	Mercury			Titanium	0.04	0.12
Beryllium			Molybdenum			Tungsten		
Bismuth			Nickel	.0004	.0008	Uranium		
Boron			Osmium			Vanadium	.003	.009
Calcium as CaO	4.0	12.0	Palladium			Zinc		
Cadmium			Phosphorus			Zirconium		
Cesium			Platinum Not detected in sample			RARE EARTHS:		
Chromium	.0004	.0007	Potassium	1.0	3.0	Cerium		
Cobalt	.0005	.001	Rhenium			Dysprosium		
Columbium			Rhodium			Erbium		
Copper	.0007	.003	Rubidium			Europium		
Gallium	.003	.009	Ruthenium			Gadolinium		
Germanium			Scandium			Holmium		
Gold Below detection limit			Silicon (as SiO2)	20.0	40.0	Lanthanum	.003	.009
Hafnium			Silver	.0001	.0005	Neodymium	.002	.006
Indium			Sodium	2.0	4.0	Praseodymium		
Iridium			Strontium	.0007	.003	Samarium		
Iron	3.0	6.0	Tantalum			Ytterbium		
Lead	0.03	0.10	Tellurium			Yttrium	.002	.004

Remarks: Percentages not shown in this report to equal 100% are largely due to carbon-dioxide, since this sample contains considerable dolomitic limestone.

Respectfully Submitted,

Joseph A. Brown (Spectrographe

MARIPOSA SPECTROGRAPHIC LABORATORY

percent to ton (2,000 lbs.)
1.0% = 20.0 Lbs. AVOIR.
0.10% = 2.0 Lbs. AVOIR.
0.01% = 3.2 oz. AVOIR

Mr. Tindall

Mr. Siprach

Special for Geology

CERTIFICATE OF ASSAY

5/1/69

BAKER NOS.	MARKS, ETC.	SAMPLE GMS.	Cu %	Ag oz/ton				
	EX 5913		0.19	0.40				

FORM 311 M.S.

Sent 28 State

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

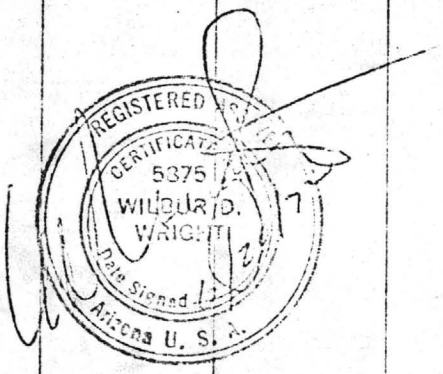
P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Mr. William L. Loveall
701 W. Drexel Road
Tucson, Arizona 85706

JOB # 011477
RECEIVED 6-19-72
REPORTED 6-20-72

SAMPLE NUMBER	GOLD OZ.*	SILVER OZ.*	LEAD %	COPPER %	ZINC %		MOLYBDENUM %
L.D. Hole 13: 120-124				.01			



CHARGE $ 2.00 Paid Check

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Mr. William L. Loveall
701 W. Drexel Road
Tucson, Arizona 85706

JOB# 009719
RECEIVED 7-9-71
REPORTED 7-12-71

SAMPLE NUMBER	TOTAL COPPER %	ACID SOLUBLE COPPER %	TOTAL IRON %	SULFIDE SULFUR %	ACID CONSUMED LB H_2SO_4/TON	MOLYBDENUM %
Hole # I-1:						
596-597	.02					

REGISTERED ASSAYER
CERTIFICATE NO. 5875
WILBUR D. WRIGHT
Date Signed 7-12-71
Arizona U. S. A.

CHARGE $ 2.00 Paid Cash

INVOICE

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Mr. William Loveall
701 West Drexel
Tucson, Arizona

JOB # 003557
RECEIVED 12-10-68
REPORTED 12-12-68

SAMPLE NUMBER	GOLD OZ.*	SILVER OZ.*	LEAD %	COPPER %	ZINC %		MOLYBDENUM %
1 sample		1.90					

CHARGE $2.00

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

SOUTHWESTERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

008980

Mr. William L. Loveall
701 West Drexel Road
Tucson, Arizona 85706

JOB # 3-16-71
RECEIVED 3-18-71
REPORTED

SAMPLE NUMBER	GOLD OZ.*	SILVER OZ.*	LEAD %	COPPER %	ZINC %		MOLYBDENUM %
127-133		.07		.005			

CHARGE $ 4.00 Paid

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

STERN ASSAYERS & CHEMISTS, Inc.

REGISTERED ASSAYERS

FELIX K. DURAZO
WIL WRIGHT
ARIZONA REG. NO. 5875

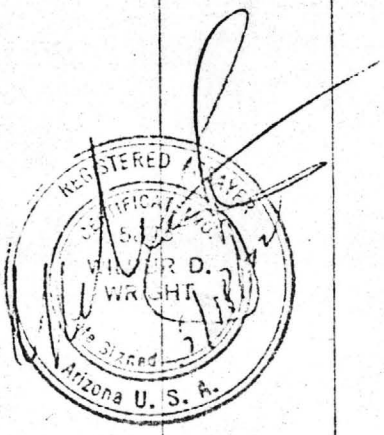
P. O. BOX 7517
TUCSON, ARIZONA 85713

710 E. EVANS BLVD.
PHONE 602-294-5811

Mr. William Loveall
701 W. Drexel Road
Tucson, Arizona

JOB # 011319
RECEIVED 5-17-72
REPORTED 5-18-72

SAMPLE NUMBER	GOLD OZ.*	SILVER OZ.*	LEAD %	COPPER %	ZINC %		MOLYBDENUM %
1 -		3.46					



CHARGE $ 2.00 Paid Check

* Gold and Silver reported in troy oz. per 2,000 lb. ton.

INVOICE

4715 EAST FORT LOWELL ROAD TUCSON ARIZONA 85716

CORPORATION

February 26, 1969

Mr. William Loveall
701 W. Drexal St
Tucson, Arizona

Dear Mr. Loveall

Below are the results from the core you gave me on the 22 nd of January, 1969.

Cu = .002%, Pb = .001%, Zn = .014%, Au = nil, Ag = .03 oz/ton

While these results are negative, I would be glad to examine any more core you may obtain in the future.

Sincerely,

John L. McGillis

JLM/jlm

Petrography of Core Samples from NW/4 of Sec. 27, T12S, R10E Pima Co., A[illegible]

570

This core is a gray-green, coarse grained, hornblende granodiorite. It is cut by sulfide bearing quartz veins, which may also have introduced potassium feldspar. The rock is holocrystalline and has a hypidiomorphic granular texture.

From thinsection analysis the rock is estimated to consist of plagioclase (36%), perthite (12%), quartz (21%), hornblende (16%), biotite (12%) with epidote, carbonate, apatite, zircon, hematite, as well as sulfides (pyrite and/or chalcopyrite) comprising at least the remaining 3 percent. Subhedral plagioclase (An_{44}) occurs in laths 10mm in maximum dimensions. Plagioclase is characteristically unaltered but commonly fractured. Anhedral quartz (1mm) shows undulatory extinction and commonly occurs in fine grained mosaics instead of single grains. Microcline-microperthite (12mm) occurs as the fine string variety. Perthite is generally fresh with slight alteration to sericite and/or clay. Green hornblende (2.5mm) forms clots in association with other accessory minerals and its alteration products. Hornblende alters chiefly to biotite possibly with the formation of some epidote. Most of the epidote, however, appears to be deuteric. Biotite (2.5mm) appears to result chiefly from the alteration of hornblende and commonly is intergrown with chlorite to which it has been altered. Apatite, hematite and zircon are distributed throughout the dark accessory clots. The vein quartz is a fine mosaic (0.1mm) that contains sulfides, carbonate and microcline. The quartz veins cut the rock, whereas veins of microcline commonly cut the perthite grains.

596

This core is a gray-green, coarse grained, hornblende-biotite, granodiorite. The rock is holocrystalline and has a hypidiomorphic granular texture. Sulfide bearing quartz veins cut across the core from several directions.

From thinsection analysis the rock is estimated to consist of plagioclase (55%), biotite (22%), quartz (12%), perthite (2%), hornblende (1%), with epidote, sphene, hematite, carbonate, and sulfides comprising the remaining 8 percent. Subhedral plagioclase grains (7mm) show incipient to moderate alteration chiefly to sericite and probably kaolinite. Anhedral quartz mosaics (2mm) show strain effects and suggest cataclastic textures. Most of the hornblende (1mm) has altered to biotite and epidote. Epidote may also be a deuteric. Anhedral biotite (2mm) forms accessory clots that include epidote, sphene and hematite. Microcline-microperthite alters to sericite and/or kaolinite. Pyrite and/or chalcopyrite occur in quartz veins which have also introduced carbonate and biotite, probably epidote and some microcline were also introduced. This rock was probably subject to mild sheering stresses.

622

This core is a pink and greenish-black, coarse grained, hornblende-granodiorite. Pink K-spar phenocrysts (8mm) occur with plagioclase phenocrysts (8mm) and interstitial greenish-black blebs of mafic accessory minerals.

From thinsection analysis the rock is estimated to consist of plagioclase (42%), microcline and/or perthite (22%), quartz (12%), hornblende (11%), chlorite (12%) with epidote and hematite comprising at least the remaining 1 percent. Subhedral plagioclase is extensively altered to a mass of light brown alteration products (in plane polarized

light) chiefly sericite and probably kaolinite. Most grains exhibit only vestiges of unaltered plagioclase commonly preserving the polysynthetic twin lamellae. Relatively unaltered microcline grains (1mm) are associated with anhedral fine mosaics of quartz measuring up to 2mm in maximum dimensions. Perthite grains are also extensively altered to a dark colored felted mass of sericite and low birefringent products presumably kaolinite. Green hornblende is extensively altered to chlorite and traces of epidote. Chlorite (pennine) forms fringes around hornblende cores and occurs in shredded masses throughout the rock. Apatite forms tiny crystals along with opaque hematite in the ferromagnesian clots. This rock may have experienced potassium feldspar metasomatism accompanying mild deformation.

661

This core is a gray-green, coarse grained hornblende-granodiorite. Black clots (10mm) of accessory minerals are distributed among phenocrysts of plagioclase (10mm), microcline (5mm) and quartz (3mm). Epidote veins cut the core and what may be a xenolith was exposed by slabbing. The rock is holocrystalline and has a hypidiomorphic granular texture.

From thinsection analysis the composition is estimated to be plagioclase (34%), microcline and perthite (28%), quartz (16%), hornblende (15%), chlorite (5%) with traces of biotite. Apatite, sphene, hematite, epidote and pyrite are minor accessory minerals that comprise at least 2 percent of the rock. The subhedral plagioclase (An_{44}) grains show mild to moderate alteration to sericite. Potassium feldspar occurs as microcline and microcline microperthite. The microcline is relatively fresh, whereas, the perthite shows moderate to extensive alteration to chiefly sericite. Intergrowths of

myrmekite occur. Green hornblende alters to biotite. Biotite must be an [illegible]diate alteration product as it forms only a minor amount of the rock. Chlorite, va[illegible] pennine, is more abundant than biotite and with secondary grains of epidote form the end products of hornblende alteration. Quartz mosaics (3mm) show cataclastic structures that record mild deformation. Numerous thin (0.5mm) epidote veins are visible in thinsection.

Bill,
The numbers (#) refer to core footage - #661 was taken from 661 feet on the bottom of the hole, etc.
Jui

Sample No.		ppm Copper	ppm Molybdenum
NY	555-560	50	63
"	560-565	50	49
"	565-570	40	71
"	570-575	170	253
"	575-580	70	86
"	580-585	50	76
"	585-590	180	.031%
"	590-595	50	220
"	595-600	50	66
"	600-605	55	88
"	605-610	40	209
"	610-615	40	79
"	615-620	70	155
"	620-625	40	86
"	625-630	40	60
"	630-635	50	95
"	635-640	45	59
"	640-645	40	98
"	645-650	60	33
"	650-655	50	37
NY	655-661	30	94

Sample No.		ppm Gold	ppm Silver
Comp.	555-575	-0.1	-1
"	575-595	-0.1	-1
"	595-615	-0.1	-1
"	615-635	-0.1	-1
"	635-655	-0.1	-1
Comp.	655-661	-0.1	-1

June 5, 1972

Mr. R.A. "Bill" Loveall
701 West Drexel Road
Tucson, Arizona 85706

Dear Mr. Loveall:

Enclosed you will find a sheet showing the results of assays from your New Year core. The core was assayed in five foot increments for total copper and molybdenum (Mo). The results are in parts-per-million. Twenty foot composite samples were also run for gold and silver. These results are also in parts-per-million and appear at the bottom of the page. The minus (-) sign should be read "less than".

The pulps and the rejects from the core have been saved and will be returned to you shortly. We also will return the induced polarazation data that was left in our office by Mr. Jim Sorrell.

We would be most interested in learning of the results of any additional exploration performed on your New Year property.

Yours truly,

Robert C. Moore
District Geologist

RCM:dlr

3255580

296-5a

Jean Frame

LAB AMAX, DENVER

ANALYTICAL REPORT

DATE 6-9-71

ANALYST AP

TYPE SAMPLES CORE

REQ. NO. 247

PROJECT 396

REQUESTED BY W P DURNING

	Sample	Lab No.	Mo ppm	Cu ppm				Sample	Lab No.				
01	Aggantu	0-20	N.I	5			31						
02	2	20-40	V	6			32						
03	3	40-60	V	17			33						
04	4	60-80	V	6			34						
05	5	80-100	V	6			35						
06	6	100-120	V	15			36						
07	7	120-130	V	25			37						
08	NY-1-7	91-98	40	205		.00	38	.02%					
09	2	119-128	25	140			39	.01					
10	3	137-144	20	290			40	.02					
11	4	154-164	15	205			41	.02					
12	NY1-1	60-80	5	50			42	.005					
13	2	80-106	10	65			43	[illegible]					
14	3	116-125	50	113			44	.01					
15	4	125-142	10	650			45	.04					
16	5	196-200	55	80			46	.008					
17	6	200-214	6	160			47	.01					
18	7	214-235	40	75			48	.007					
19	8	235-253	60	140			49	.01					
20	9	253-287	10	340			50	.03					
21	10	282-296	40	48			51	.004					
22							52						
23							53						
24							54						
25							55						
26							56						
27							57						
28							58						
29							59						
30							60						

Section 27 South ½

METHODS: DIGESTION- $HClO_4$, HNO_3 SAMPLE WEIGHT- 3.0 gm

DETERMINATION- Mo-colorimetric

REMARKS: Cu-AA

NOTE: MAIL ORIGINAL TO
AMAX EXPLORATION, INC.,
12620 W. CEDAR DRIVE,
P.O. BOX C, DENVER, COLO., 80226

COPIES TO:) 1. AMAX AT TUCSON

2. _____ AT _____

DEN 012439

1 cc
1 tole

.100

LAB AMAX-Denver

ANALYTICAL REPORT

DATE

ANALYST EJR

TYPE SAMPLES Core

REQ. NO. Tucson 289

PROJECT 063

REQUESTED BY Durning

1 cc

	Sample	Lab No.	Mo ppm	Cu ppm			Sample	Lab No.
01	I-1-1		190	76		31	.001	
02	2		410	62		32	.006	
03	3		340	39		33	.009	
04	4		120	40		34	.004	
05	5		120	53		35	.005	
06	I-1-6		340	29		36	.002	
07						37		
08	G-2	Int std	80	130		38		
09						39		
10						40		
11								
12								
13						43		
14						44		
15						45		
16						46		
17						47		
18						48		
19						49		
20						50		
21						51		
22						52		
23						53		
24						54		
25						55		
26						56		
27						57		
28						58		
29						59		
30						60		

5-575
-595
-615
635
-655
-661

METHODS: DIGESTION- $HClO_4 : HNO_3$ SAMPLE WEIGHT- 3.0g/60ml

DETERMINATION- Mo - AA

Cu - AA

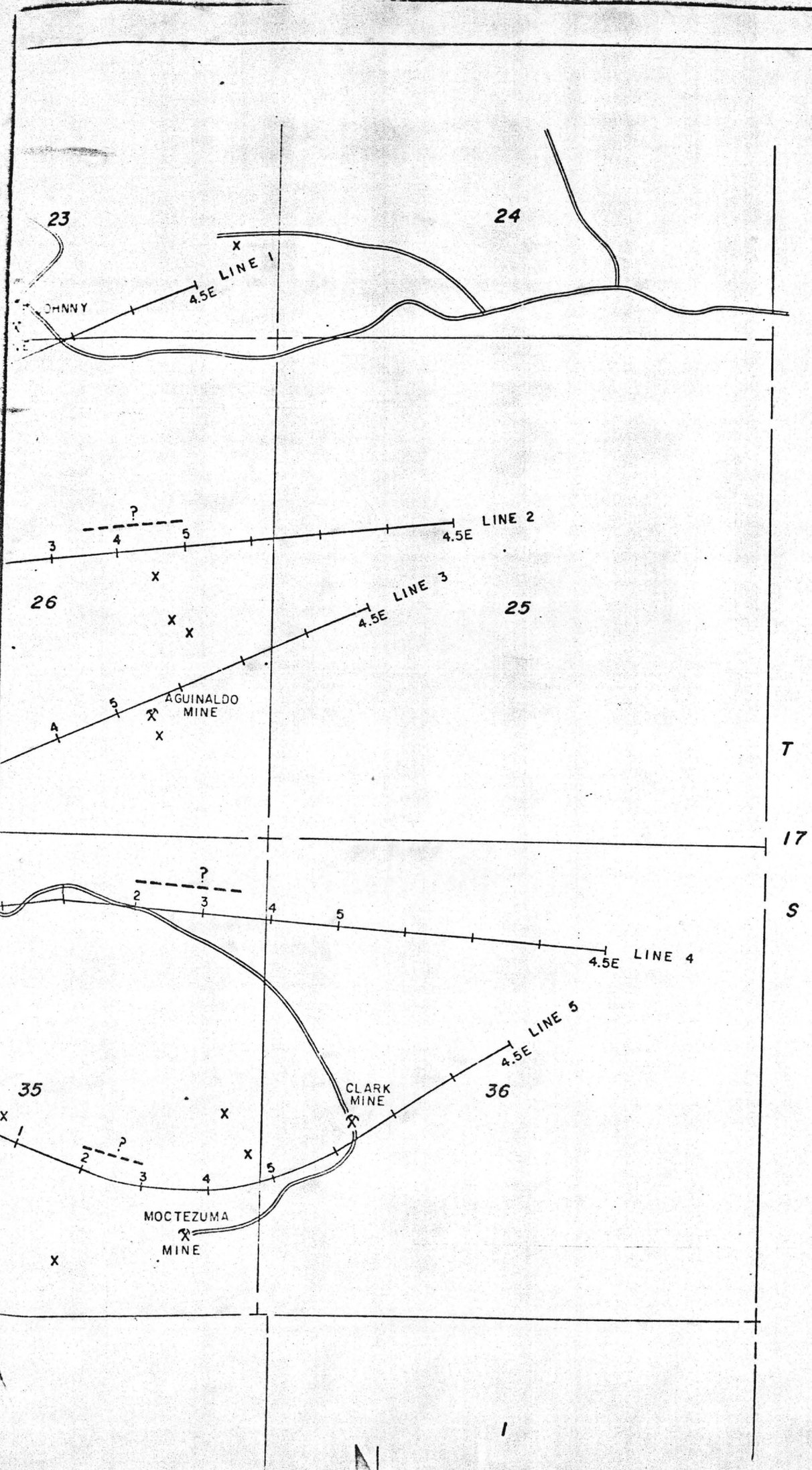
REMARKS:

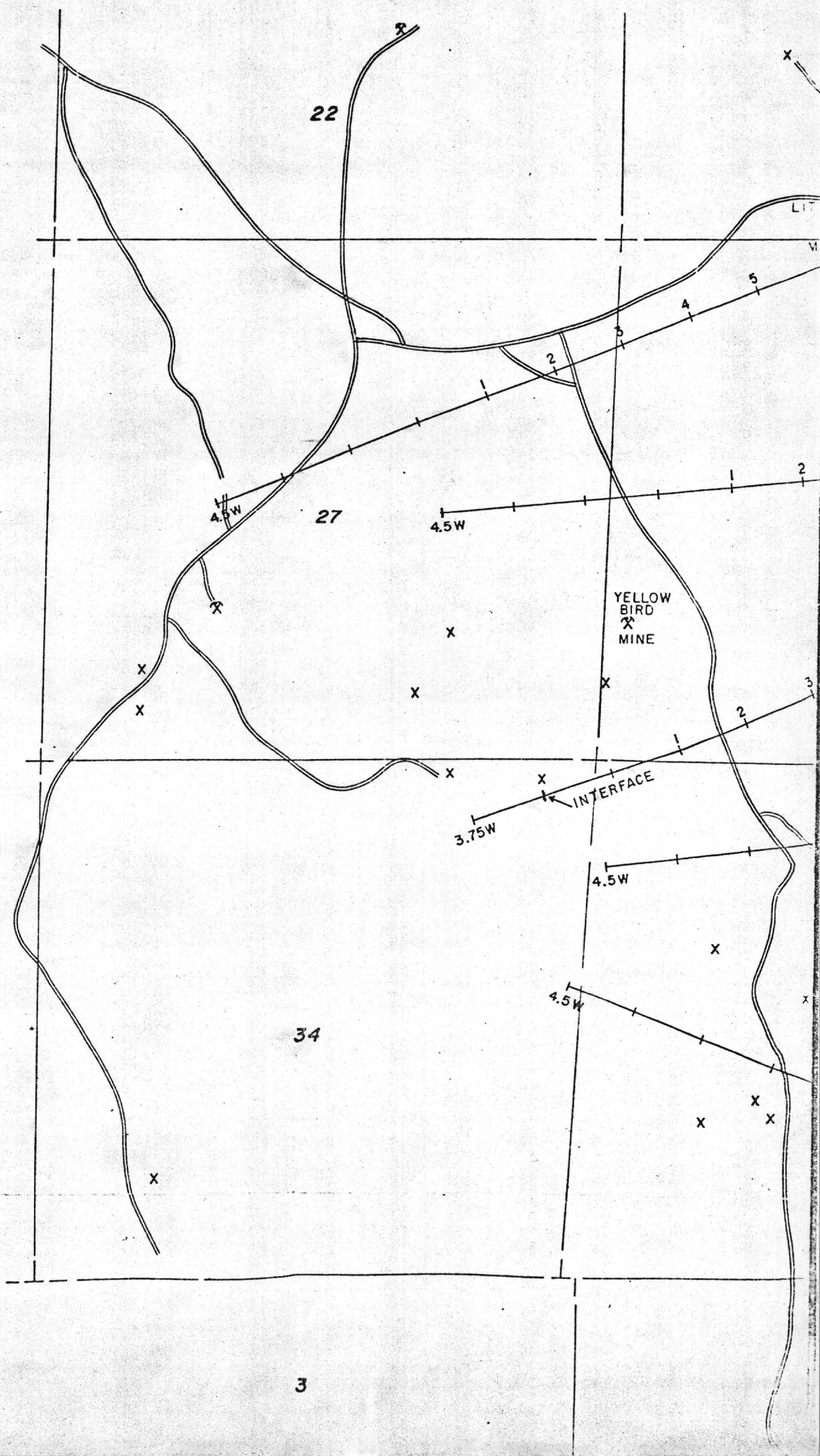
G-2 - Int. std. - No charge

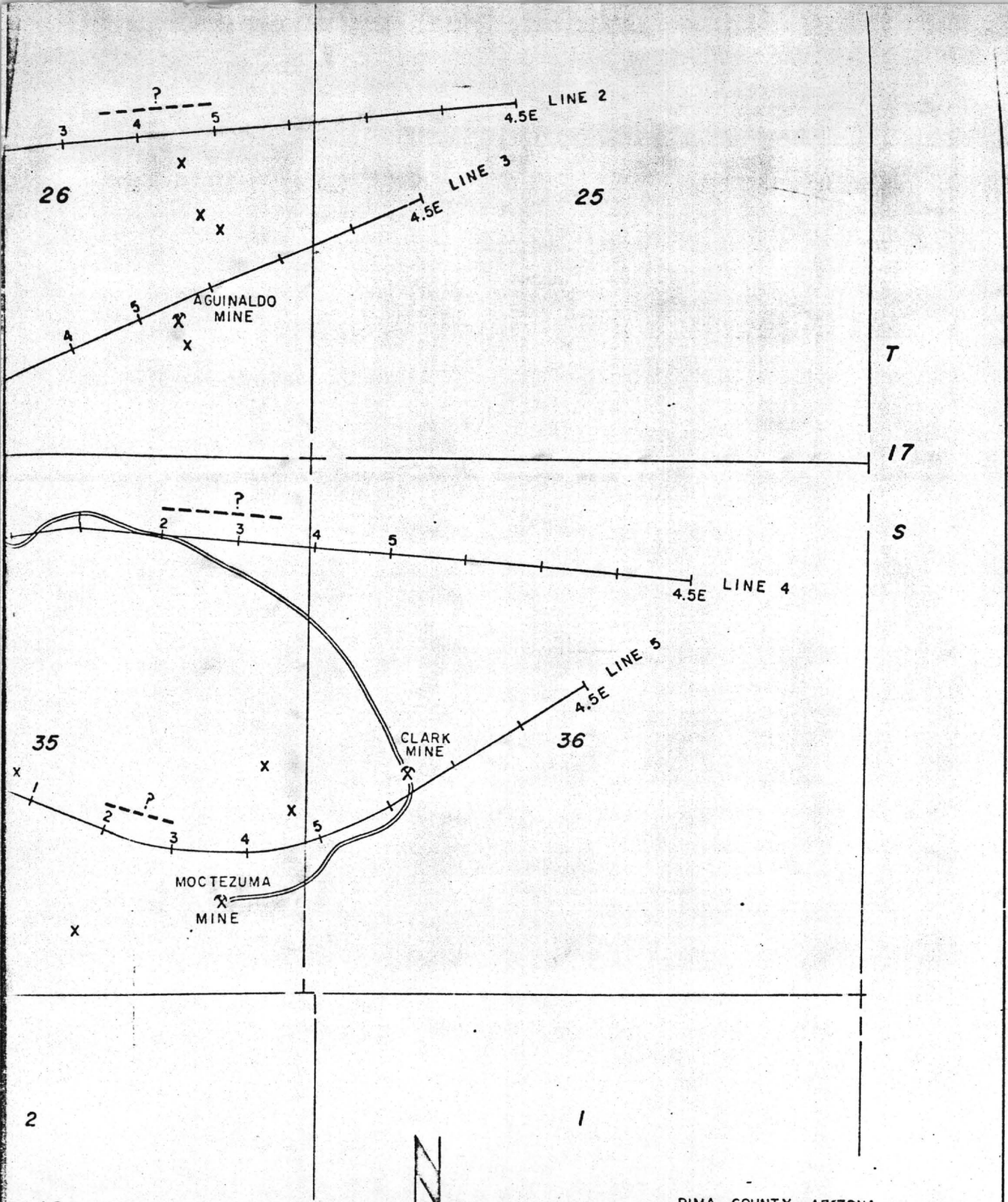
NOTE: MAIL ORIGINAL TO
AMAX EXPLORATION, INC.,
12620 W. CEDAR DRIVE,
P.O. BOX C, DENVER, COLO. 80236

COPIES TO:) 1. Durning AT

2. Tucson Office


23
24
LINE 1
4.5E
JOHNNY
LINE 2
4.5E
26
25
LINE 3
4.5E
AGUINALDO MINE
T
17
S
LINE 4
4.5E
LINE 5
4.5E
35
36
CLARK MINE
MOCTEZUMA MINE
1
N


22
27
34
4.5W
4.5W
4.5W
4.5W
3.75W
INTERFACE
YELLOW
BIRD
MINE
1
2
3
4
5



PIMA COUNTY, ARIZONA

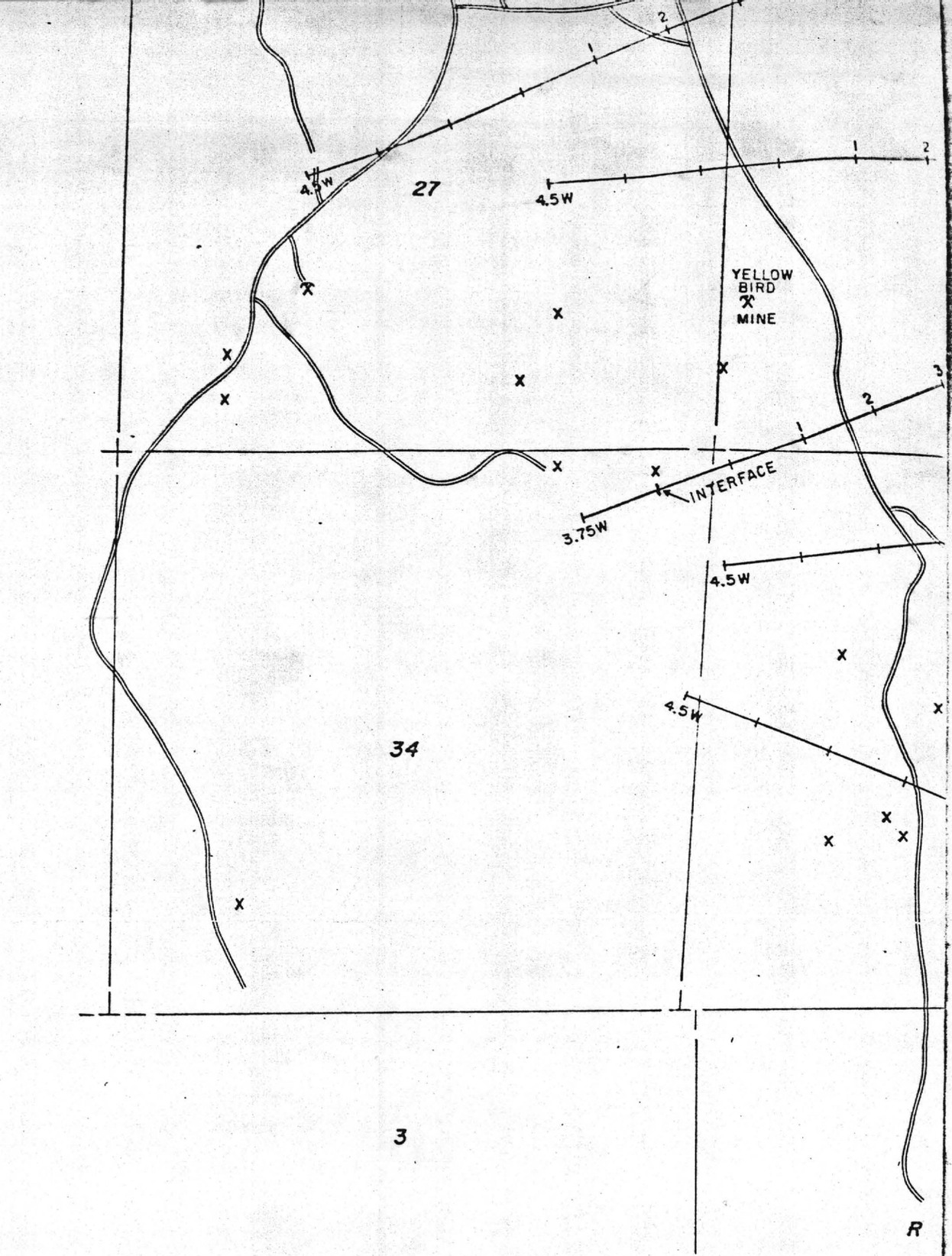
HEINRICHS GEOEXPLORATION CO
POST OFFICE BOX 5671 TUCSON, ARIZONA 85703

WEST SIERRITA AREA

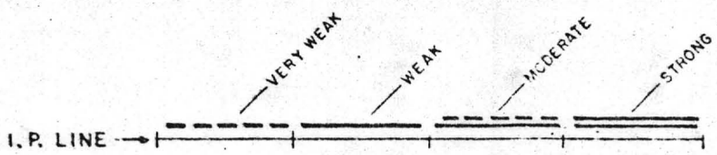
INDUCED POLARIZATION LOCATION & INTERPRETATION PLAN FOR

MOUNTAIN COPPER COMPANY

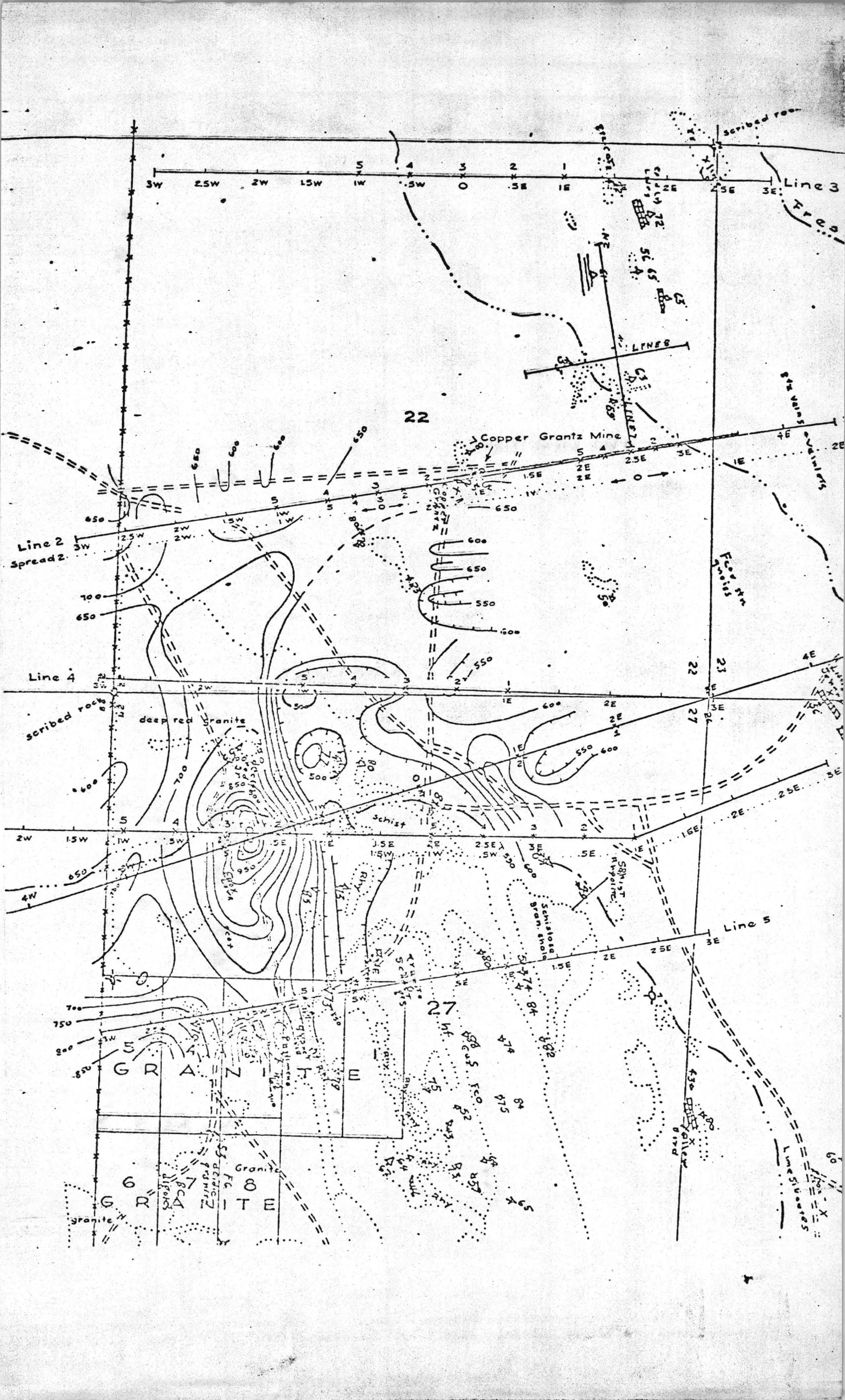
Scale 1" = 1000' | Date DEC 1966



RELATIVE ANOMALY STRENGTH



X PROSPECT


Line 3
Line 2
Spread 2
Line 4
Line 5
Copper Grantz Mine
22
27
23
deep red granite
Schist
Granite
GRANITE
GRANITE

Steven's Mtn. Area

Line "G" 200' Array (Detail)

Ds @ Fence

Station	I	ΔV	I.P.	I.P./ΔV	ρ
21W	930	470	3.28	7.0	630
19	990	525	3.54	6.7	660
17	1320	530	3.82	7.2	500
15	950	340	2.12	6.3	440
13W	1130	430	2.68	6.2	470

Line "G" 500' Array

500' South of Line "F"

Δ SW @ Fence

DDH #11 @ ± Δ 12+00 E

Station	I	ΔV	I.P.	I.P./ΔV	ρ
1750E	1450	370	3.30	8.9	600
1250E	1730	215	2.22	10.3	390
750E	2140	320	2.90	9.1	470
250E	1470	270	1.82	6.7	575
250W	1510	265	2.98	11.2	550
750	1720	375	3.52	9.4	695
1250	1920	345	2.90	8.4	565
1750	1460	285	2.88	10.1	610
2250	2090	500	3.58	7.2	755
2750	1510	320	1.70	5.3	665
3250	1980	405	1.98	4.7	575

Stevens Mtn. Project

Line "H" 500' Array 500' South of line "B"

Δ5 @ Fence

Station	I	ΔV	I.P.	I.P./ΔV	ρ
750	1330	410	3.80	9.2	965
1250	1480	380	3.08	8.1	805
1750	2140	525	3.40	6.5	775
2250	2400	530	4.55	7.6	695
2750	1600	300	1.50	5.0	590
3250	2110	290	1.38	4.8	430

Line "P" 500' Array

Δ10 @ Section line 1,000' South of line "L"

Station	I	ΔV	I.P.	I.P./ΔV	ρ
750	1710	450	3.8	8.4	225
1250	1850	350	3.32	9.7	755
1750	1170	350	3.27	9.3	1020
2250	1370	330	1.94	5.9	530

Line "Q" 500' Array

Δ5W @ Fence 1,000' North of "J" Prospect pits @ ±6+00 E

Station	I	ΔV	I.P.	I.P./ΔV	ρ
750E	1210	350	4.45	12.7	910
250E	1410	330	3.30	10.0	735

STEVENS MTN. AREA

3140

Line "J" down section line — Δ5 @ section corner

500' Array Δ5 @ Fence

STATION	I	ΔV	I.P.	I.P./ΔV	ρ
750	1300	415	4.92	11.2	1000
1250	1000	202	4.14	20.4	640
1750	[illegible]	302	3.67	12.1	585
2250	[illegible]	360	3.75	[illegible]	520
2750	[illegible]	380	2.80	7.4	560
250W	1100	400	4.72	11.8	1140
250E	1380	270	2.92	10.8	615
750E	1480	450	3.82	8.5	955
1250E	1380	290	1.68	5.8	660

Stevens Min. Project

1,000' Array Line "J" West Along road

△500 @ Section corner Section corner @ ℄ ± 560'

STATION	I	ΔV	I.P.	I.P./ΔV	S
1500	1380	140	1.91	13.7	635
2500	2010	210	2.65	12.6	655
3500	1920	170	2.08	12.2	555
4500	2600	185	1.88	10.2	450
5500	1480	185	1.12	6.1	785

1,000' Array Line "N" Along ridge road

△3+50 @ Fence

STATION	I	ΔV	I.P.	I.P./ΔV	S
1500	1620	150	1.86	12.4	580
2500	1320	140	1.52	10.8	605
3500	1600	125	.78	6.3	550
4500	3050	215	1.59	7.4	445
5500	1980	112	.57	5.1	360
6500	2170	128	.63	4.9	370

△4800 @ Gate

Line "O" West Along dirt road

STATION	I	ΔV	I.P.	I.P./ΔV	S
1500	2140	240	1.64	6.8	705
2500	2000	222	1.24	5.6	700
3500	3350	315	1.90	6.0	590
4500	3280	255	1.24	4.9	440

Stevens Mtn. Project 100' Array

Line "J" Detail

Δ5@ fence

Station	I	ΔV	I.P.	$\frac{I.P.}{\Delta V}$	ρ
6+50	180	355	4.32	12.2	1240
7+30	195	300	3.50	11.7	1020
8+50	170	330	4.20	12.7	1230
9+50	200	265	3.45	13.0	930
10+50	145	225	3.82	13.4	775
11+50	210	202	2.20	10.9	605
12+50	220	210	2.38	11.3	600
13+50	240	230	2.03	8.8	600
14+50	320	275	2.20	8.0	540
15+50	[illegible]	270	1.88	7.0	545
16+50	390	240	1.68	7.0	485

Line "J" 200' Array

Station	I	ΔV	I.P.	$\frac{I.P.}{\Delta V}$	ρ
15+00	550	235	2.90	12.3	535
13+00	530	255	3.80	14.9	605
12+00	370	205	3.41	16.6	695
11+00	385	260	4.28	16.5	845
10+00	280	190	3.35	17.6	855
9+00	280	230	4.05	17.6	1030
8+00	225	200	4.40	22.0	1120
7+00	310	295	4.08	13.9	1195
6+00	405	310	4.30	13.9	960

Line "E" — Steven's Mtn. — 500' Array

E → W 500' North of line "B" — Δ25 @ N-S Fence

STATION	I	ΔV	I.P.	I.P./ΔV	ρ
750	1700	330	1.33	4.0	610
1250	1600	300	.81	2.7	590
1750	1030	250	.84	3.4	760
2250	970	150	.94	6.3	485
2750	1440	330	2.35	7.1	720
3250	920	135	.85	6.3	460
3750	950	198	1.05	5.3	655
4250	1310	270	2.04	7.6	645
4750	1420	325	2.52	7.7	720
5250	1500	295	2.04	6.9	620

Line "F" — 500' Array — 500' South of line "B"

Δ5 @ Fence

STATION	I	ΔV	I.P.	I.P./ΔV	ρ
750	1020	190	1.18	6.2	585
1250	780	115	.93	8.1	465
1750	800	128	1.18	9.2	500
2250	1320	270	2.60	9.6	640
2750	600	100	.62	6.2	520
3250	640	110	.78	7.0	540

Line L 500' Array May 14, 1973

Δ5 @ Fence 500' South of line "K"

STATION	I	ΔV	I.P.	I.P./ΔV	ρ
750	1770	405	3.82	9.4	715
1250	1320	3.45	3.46	10.0	820
1750	1280	202	1.90	9.5	495
2250	1620	305	2.14	7.0	590

Line "K" 500' Array

Δ5 @ Fence 500' South of line "J"

STATION	I	ΔV	I.P.	I.P./ΔV	ρ
750	1300	340	4.20	12.4	820
1250	1290	265	2.87	10.8	645
1750	2020	400	3.86	9.6	620
2250	1910	345	2.64	7.6	565

Line "M" 500' Array

500' North of line "J" Δ5 @ Fence

STATION	I	ΔV	I.P.	I.P./ΔV	ρ
750	1310	410	4.60	11.2	985
1250	1520	395	4.50	11.4	815
1750	1100	285	2.80	9.8	810
2250	1220	235	1.74	7.4	605

Stevens Mtn. Area

Line I

500' Array

Δ10 @ Fence

Station	I	ΔV	I.P.	$\frac{I.P.}{\Delta V}$	ρ
750	2100	540	1.30	3.0	805
1250	2050	520	1.52	3.1	795
1750	2670	520	1.62	3.1	610
2250	2490	500	1.60	3.2	630
2750	1820	530	1.24	2.4	590
3250	2620	540	.98	1.8	365
3750	2830	450	.73	1.6	502
4250	3000	600	1.24	2.0	630
4750	2580	480	.78	1.6	585
250	2570	570	1.62	2.9	695
250 E	2080	490	1.48	3.0	740

Line "B"

500' Array

Δ5 @ Gate in Fence

Station	I	ΔV	I.P.	$\frac{I.P.}{\Delta V}$	ρ
750	1000	165	1.36	8.2	518
1250	1190	122	.70	5.8	321
1750	1250	235	2.18	9.3	530
2250	1100	184	1.10	6.0	525
2750	1070	215	1.45	6.7	630

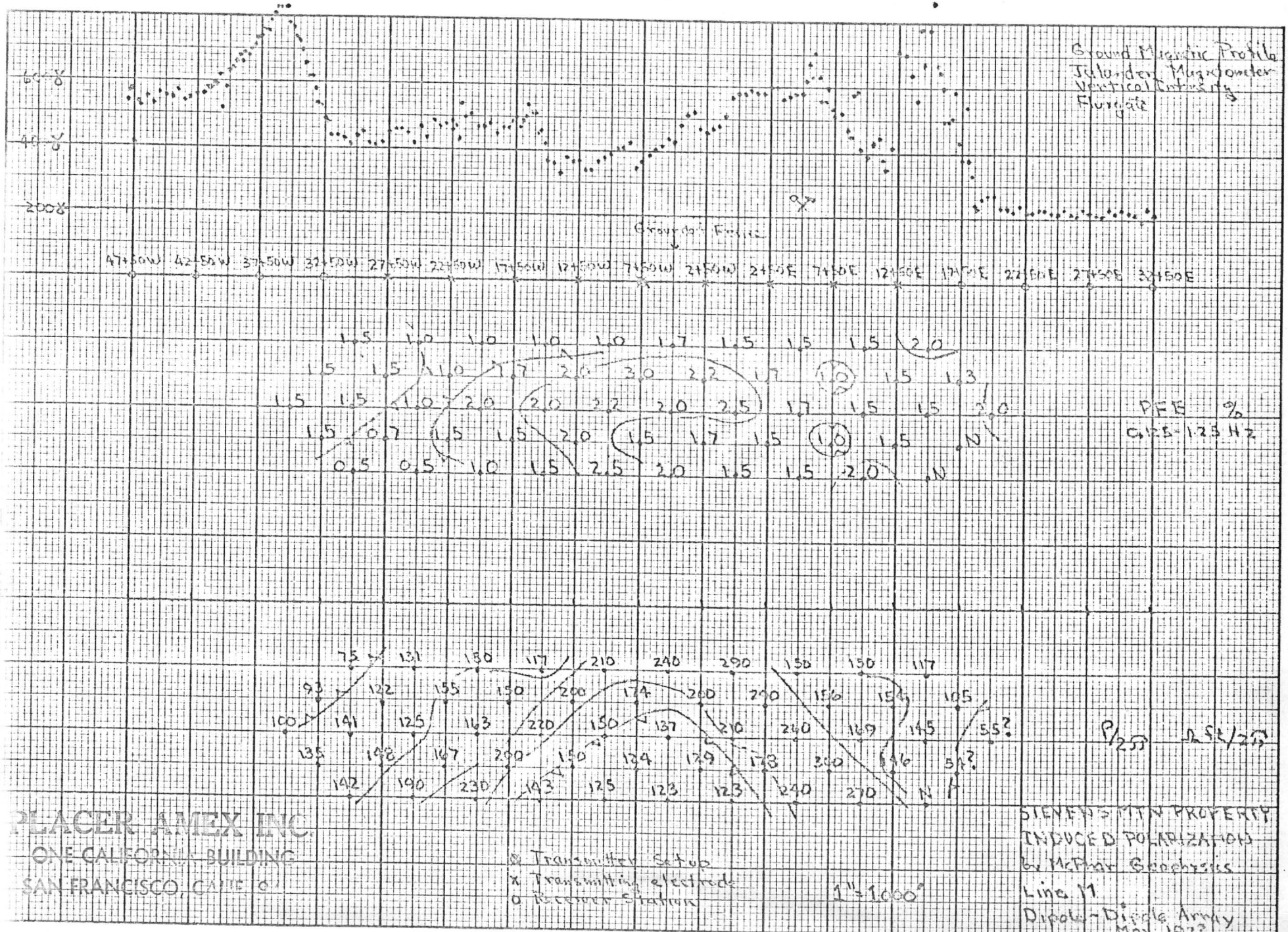
Stevens Mtn. Project

100' South of "J" Line "S" 200' Array

Station	I	ΔV	I.P.	$\frac{I.P.}{\Delta V}$	ρ
9+00	210	210	1.67	8.0	1250
8+00	320	234	2.72	11.6	920
7+00	450	415	4.32	10.4	1160

100' North of "J" Line "R" 200' Array

Station	I	ΔV	I.P.	$\frac{I.P.}{\Delta V}$	ρ
6+00	300	205	2.18	10.6	860
7+00	320	290	2.58	8.9	1140
8+00	280	255	3.00	11.8	1140
9+00	355	275	3.18	11.6	975
10+00	420	278	2.60	9.3	830
11+00	525	328	3.08	9.4	785



to prove the existence of a continuous ore body along the line of these openings. Judge Purcell informed me that samples that assayed high in lead and silver, with some gold, had been taken at several places, and the appearance of some of the material bore out his statements. The deposit as a whole, however, appears to be of comparatively low grade, and it would be impossible without considerable additional development to make any close estimate of the quantity and average tenor of ore present in any considerable and definite mass of the limestone. An engineer whose results are regarded as reliable and whose sampling was done for a prospective purchaser informed me that a sample taken vertically across the face of the open cut at the south end of the ridge (see Pl. XVII, *B*), where at present may be seen what is probably the most promising face of ore, yielded on assay from 6 to 7 per cent of lead and 4 ounces of silver to the ton. Such material could probably be concentrated at a profit if enough of it—some hundreds of thousands of tons—were available.

The Sunrise claims lie generally east of the Sunshine claims. On the Sunrise No. 6 claim, about 800 feet east of the Sunshine workings, is the contact between the granite on the east and the schist on the west. No very conspicuous contact metamorphism was noted at the main contact, but a short distance east of this contact a narrow mass of limestone is included within the eruptive rock. This has been changed in part into a hard, tough greenish-yellow rock consisting largely of garnet with some green amphibole. In places it contains a little pyrite and sphalerite and on the surface shows some copper carbonates, doubtless derived from chalcopyrite. A little oxidized copper ore is reported to have been shipped from a shallow opening on the outcrop. A 200-foot crosscut tunnel driven east under the outcrop fails to show any ore. The same limestone inclusion can be traced through the granite for some distance, possibly half a mile, north of the tunnel.

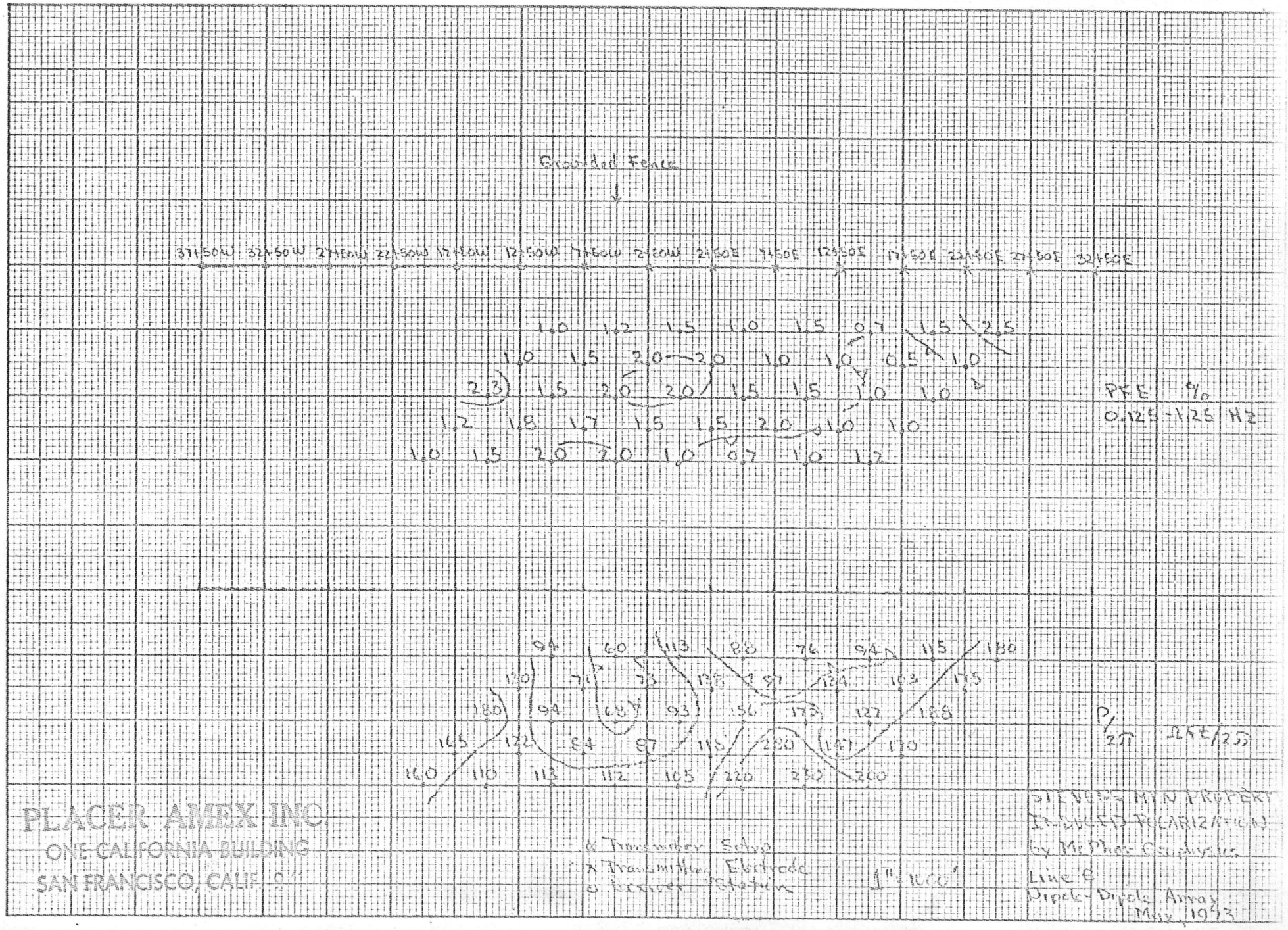
About 1½ miles northwest of the Sunshine workings and close to the main road is the Banner mine, which was worked intermittently from the eighties up to 1904. The Banner shaft is reported to be about 200 feet deep but is filled with water to within less than 100 feet from the surface. This shaft and a tunnel on the adjoining McKinley claim, to the south, are on a zone of fissuring and silicification in limestone, within the generally schistose series. The geologic relations are broadly similar to those on the Sunshine claim, the limestone being separated from the intrusive granite of the main range by a belt of gray slaty schist with some schistose rhyolite. The zone of fissuring strikes about N. 20° W. and dips 45°–50° E. It is generally less than 2 feet wide. Quartz, which is partly fissure filling and has in part replaced the limestone, is abundant but bunchy and does not

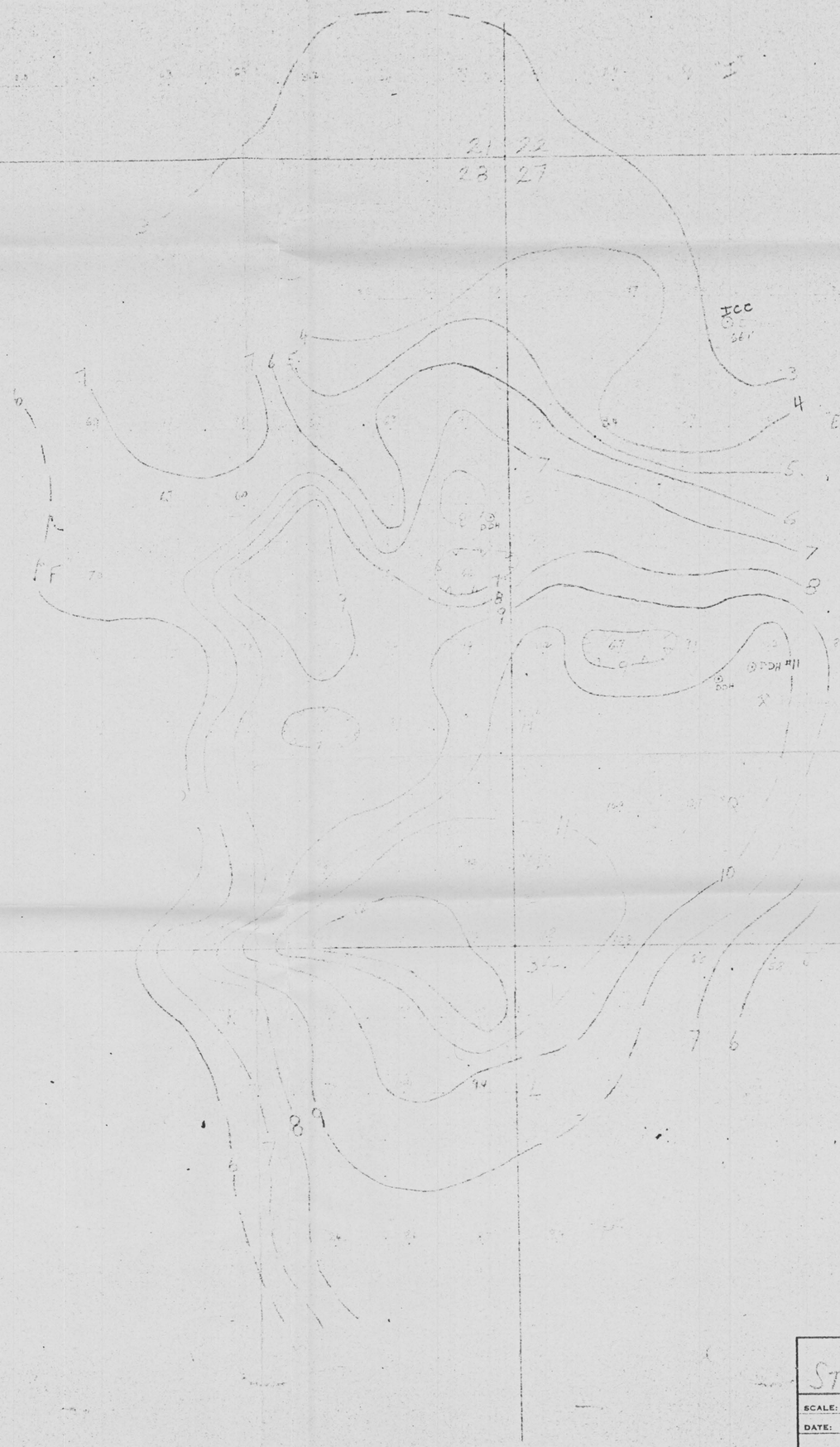
follow continuously any one fissure. The veins also are displaced by numerous cross faults of small throw. The ore, which was treated in a small mill, now dismantled, appears from material on the dump to have consisted of quartz with partly oxidized pyrite, galena, sphalerite, chalcopyrite, and some chalcocite, probably derived from chalcopyrite. It was valuable chiefly for its silver content. The Banner and McKinley claims are said to be owned by the Lehigh Valley Bank, of South Bethlehem, Pa.

About a mile north of the Banner is the Olympia shaft (Pl. XVIII), apparently about 200 feet deep. This is on the Olympia group of 14 claims, which adjoins the Banner on the north and is reported to be owned by the Olympia Mining Co., of Chicago. No work was in progress at the time of visit. The Olympia is on the same belt of partly silicified limestone as the Banner and McKinley mines, which here determines the crest of a rather prominent ridge. No persistent vein could be seen, but the limestone has been irregularly fissured, contains bunchy quartz veins, and is itself more or less silicified.

The Clark group of 10 claims lies north of the Olympia, partly on the same limestone ridge. Most of the work on this group, however, has been done to the east of the ridge and close to the granite. Here a little isolated hill (Pl. XVIII) composed mainly of limestone contains bunches of vein quartz and more or less thoroughly silicified limestone. No regular or persistent vein was recognized, but a few tons of partly oxidized silver ore has been shipped from scattered shallow pits and trenches. Supergene enrichment has probably been active here, and the appearance of the surface is not indicative of the presence of large or deep ore bodies. The Clark No. 2 and Clark No. 3 claims lie west of the Clark No. 1, on the same limestone ridge as the Olympia. They show a few small, irregular streaks of copper-stained, oxidized silver ore in silicified limestone, but the metallization has apparently been feeble, and the prospects for finding an ore body of considerable size can not be considered encouraging.

North of the Clark group is the Aguinaldo group of nine claims, owned by S. W. & E. M. Purcell. Most of the work on these claims has been done at a point about 2 miles north-northwest of the Sunshine camp, on the same limestone ridge on which are the Banner and Olympia mines. The beds strike northwest and dip 85° NE. They are in part fractured and silicified and crop out boldly. Near the Aguinaldo workings the limestone has been intruded by a decomposed dioritic offshoot that projects to the northwest from the main granite mass previously described. Near this tongue, which is regarded as a calcic border variety of the granite, the limestone shows contact metamorphism. It contains layers or streaks of tremo-





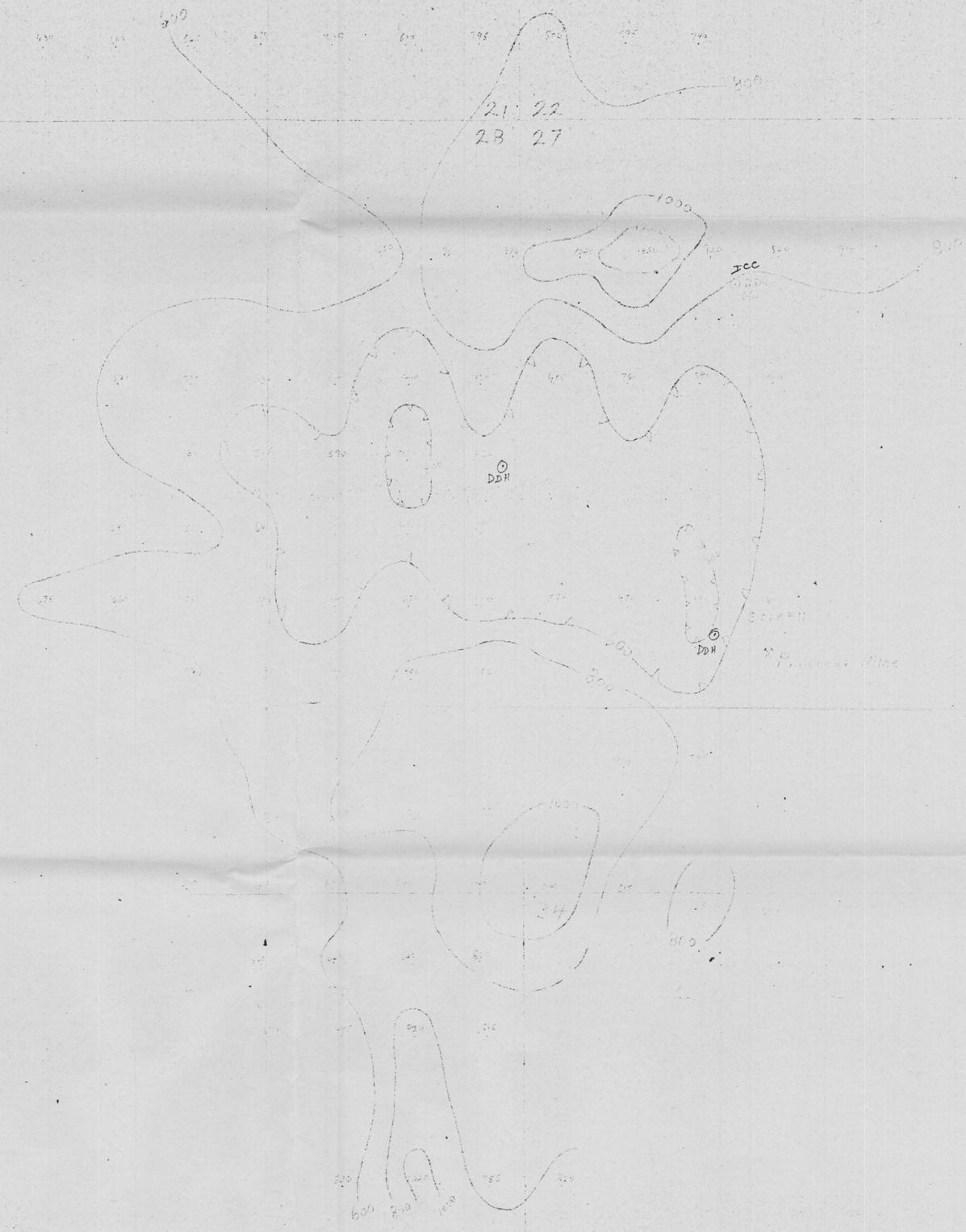
STEVENS MOUNTAIN PROJECT

SCALE: 1"=600'	APPROVED BY	DRAWN BY JDS
DATE: May 1973		

CHARGEABILITY CONTOUR MAP

500 Ft WENNER ARRAY

DRAWING NUMBER



RESISTIVITY ~ Ohm - Ft.

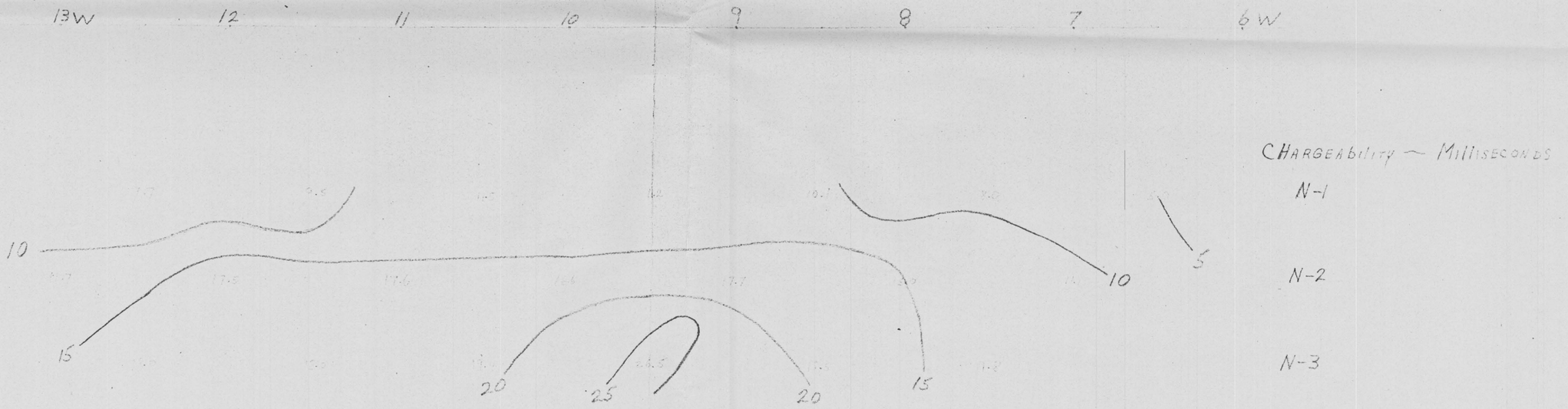
STEVENS MOUNTAIN PROJECT

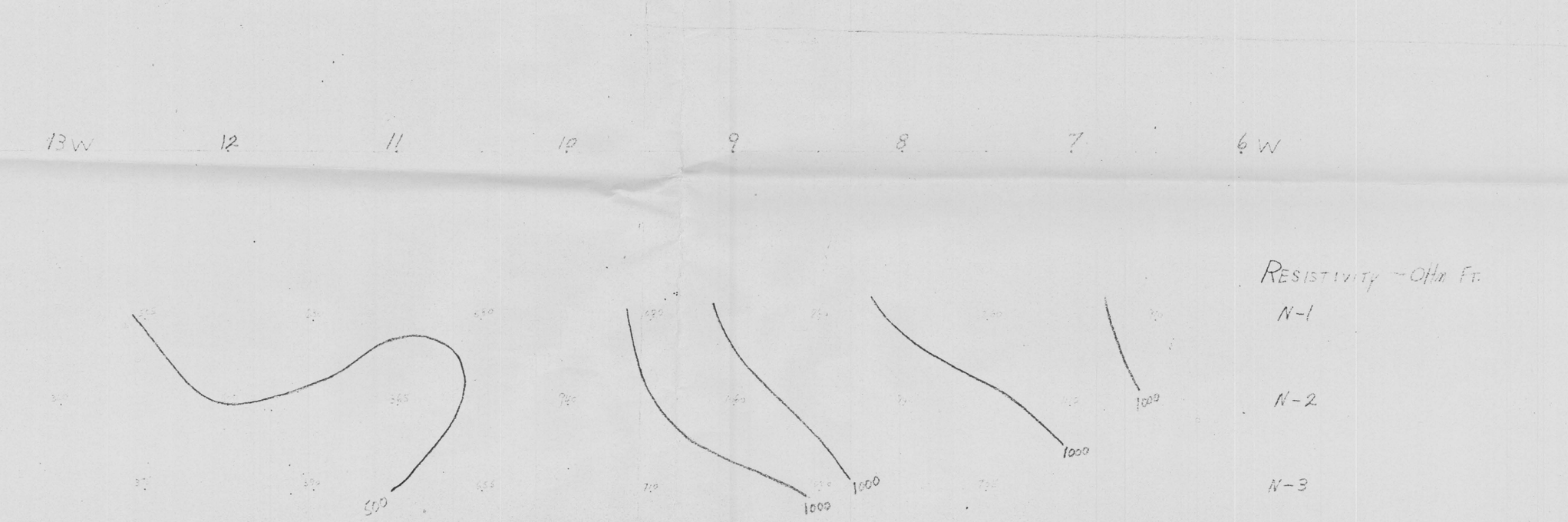
SCALE: 1"=800'	APPROVED BY	DRAWN BY J.D.S
DATE: May 1973		

RESISTIVITY CONTOUR MAP

500 Ft. WENNER ARRAY

DRAWING NUMBER





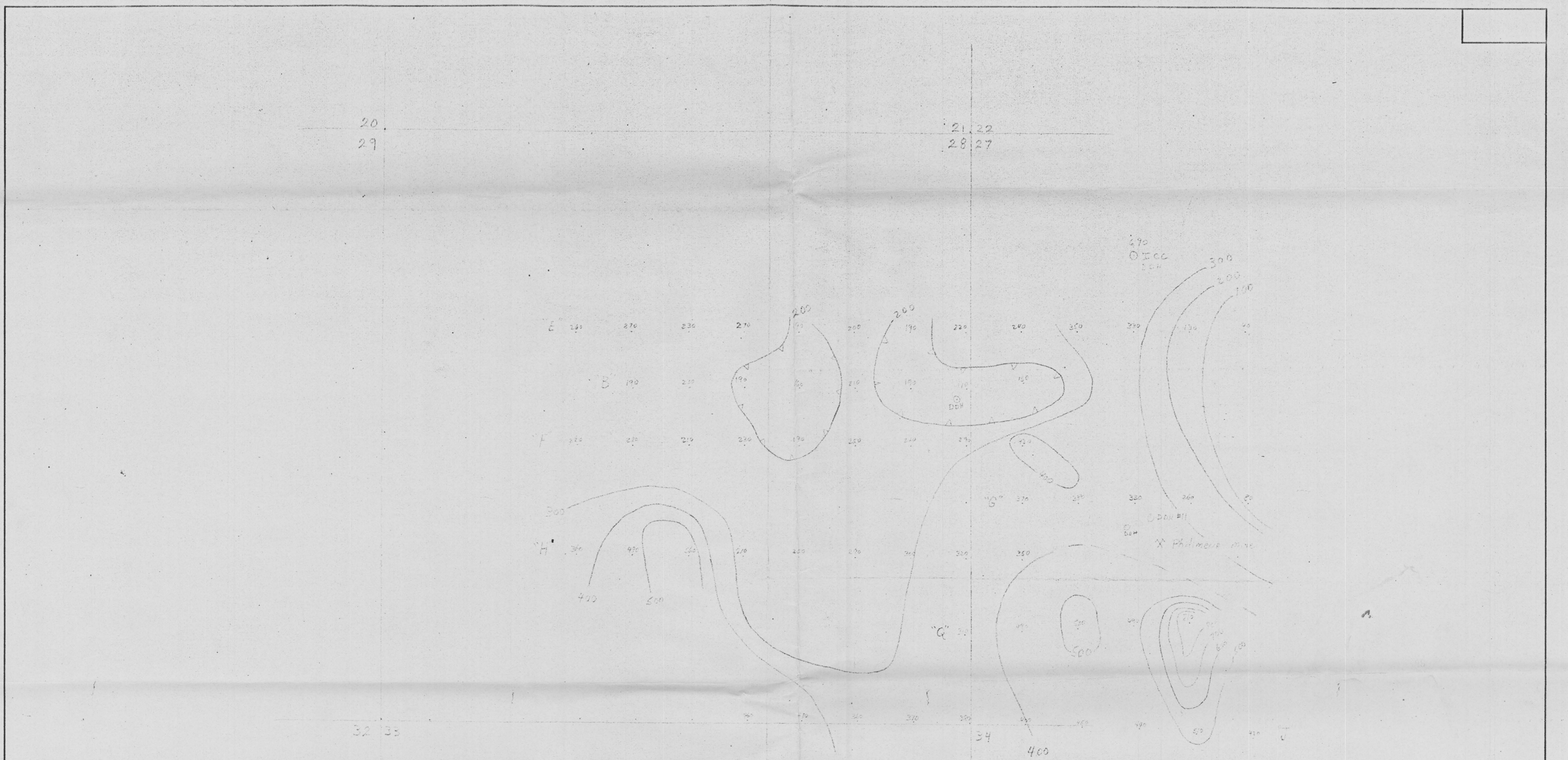
STEVENS MOUNTAIN PROJECT

SCALE: 1"=50'	APPROVED BY	DRAWN BY JDS
DATE: MAY 1973		

INDUCED POLARIZATION SURVEY LINE "J"

100 FT. DIPOLE — DIPOLE ARRAY

DRAWING NUMBER



STEVENS MOUNTAIN PROJECT		
SCALE: 1"=600'	APPROVED BY	DRAWN BY JDS
DATE: MAY 1973		
MAGNETIC SURVEY MAP		
100 GAMMA CONTOUR INTERVAL		DRAWING NUMBER