CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
1520 West Adams St.
Phoenix, AZ 85007
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the

Arizona Department of Mines and Mineral Resources Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

PRINTED: 08/07/2001

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: HWR CLAIM GROUP

ALTERNATE NAMES:

GRAHAM COUNTY MILS NUMBER: 22

LOCATION: TOWNSHIP 3 S RANGE 23 E SECTION 25 QUARTER ALL
LATITUDE: N 33DEG 08MIN 35SEC LONGITUDE: W 109DEG 56MIN 17SEC
TOPO MAP NAME: FORT THOMAS - 15 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:
- COPPER
- ZINC
- LEAD
- MOLYBDENUM

BIBLIOGRAPHY:
- ADMMR HWR CLAIM GROUP FILE
- BLM AMC FILE 44315
- CLAIMS EXTEND INTO SEC. 24, 26, 35 & 36, ALSO SEC. 19, 30, 31 T3S-R24E

HWR CLAIMS

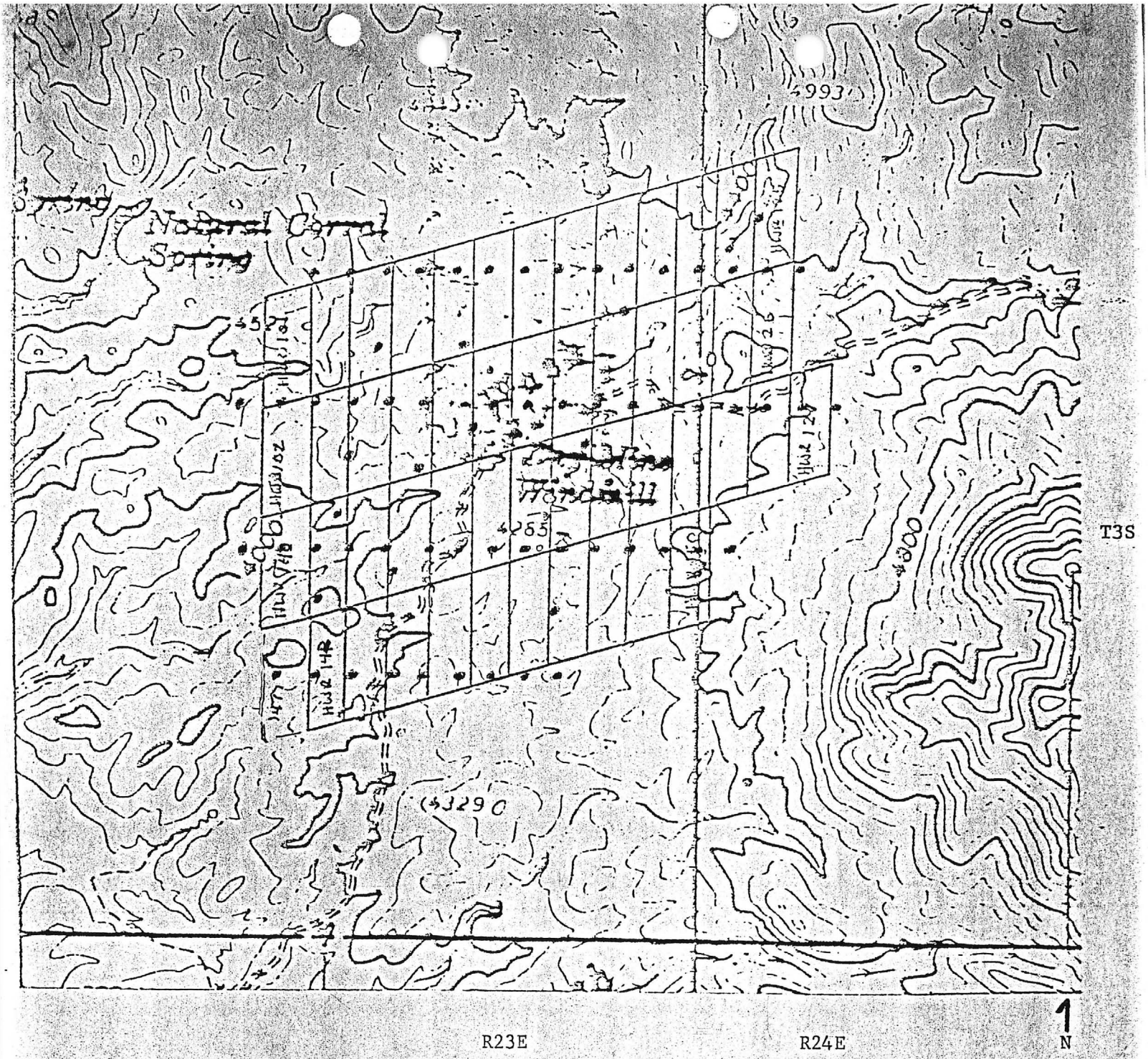
GRAHAM COUNTY
T3S R23E Sec 25

MILS Graham Index #22

USGS Fort Thomas Quad

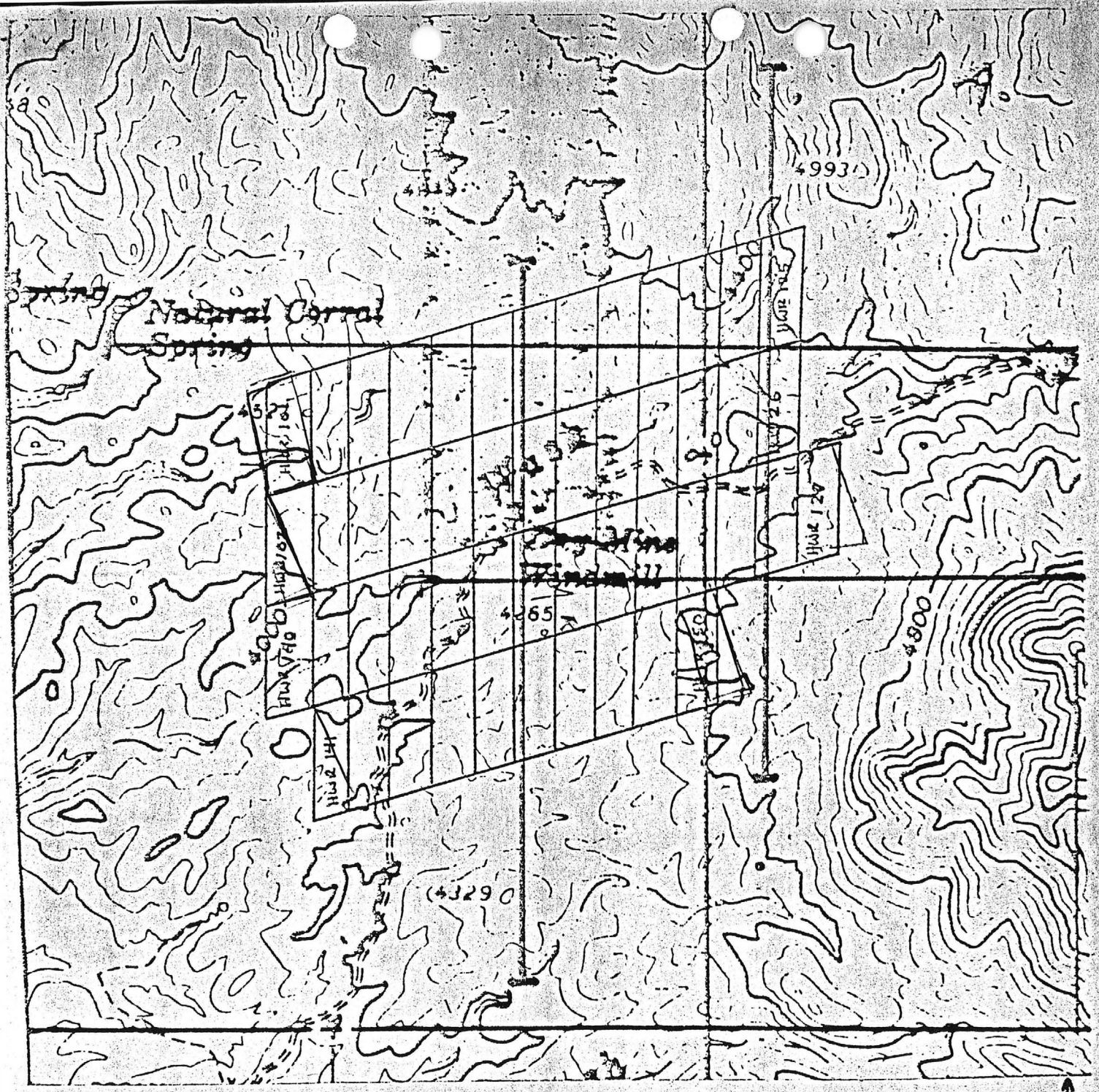
Geology Report- Calder, Susan Vol I, 1982

NUMBER	FILE	CONT	CONT1	PRINAME						
22	**F**	**0**	**N**	**HWR CLAIM GROUP**						
ALTNAME1				ALTNAME2						
ALTNAME3				ALTNAME4						
ALTNAME5				ALTNAME6						
CURSTAT		MNAME					NLATDEG	NLATMIN		
EXP PROSPECT		**FORT THOMAS - 15 MIN**					**33**	**08**		
NLATSEC	WLONGDEG	WLONGMIN	WLONGSEC	TOWN	RANGE	SECTION	QUARTER	COM1		
35	**109**	**56**	**17**	**3 S**	**23 E**	**25**	**ALL**	**CU**		
MODI1	COM2	MODI2	COM3	MODI3	COM4	MODI4				
	ZN		**PB**		**MO**					
COM5	MODI5	COM6	MODI6	COM7	MODI7					
BIB1										
ADMMR HWR CLAIM GROUP FILE										
BIB2										
BLM AMC FILE 44315										
BIB3										
CLAIMS EXTEND INTO SEC. 24, 26, 35 & 36,										
BIB4										
ALSO SEC. 19, 30, 31 T3S-R24E										



LOCATION MAP
GEOCHEMICAL SURVEY
HWR CLAIMS 101 TO 150
GRAHAM COUNTY, ARIZONA

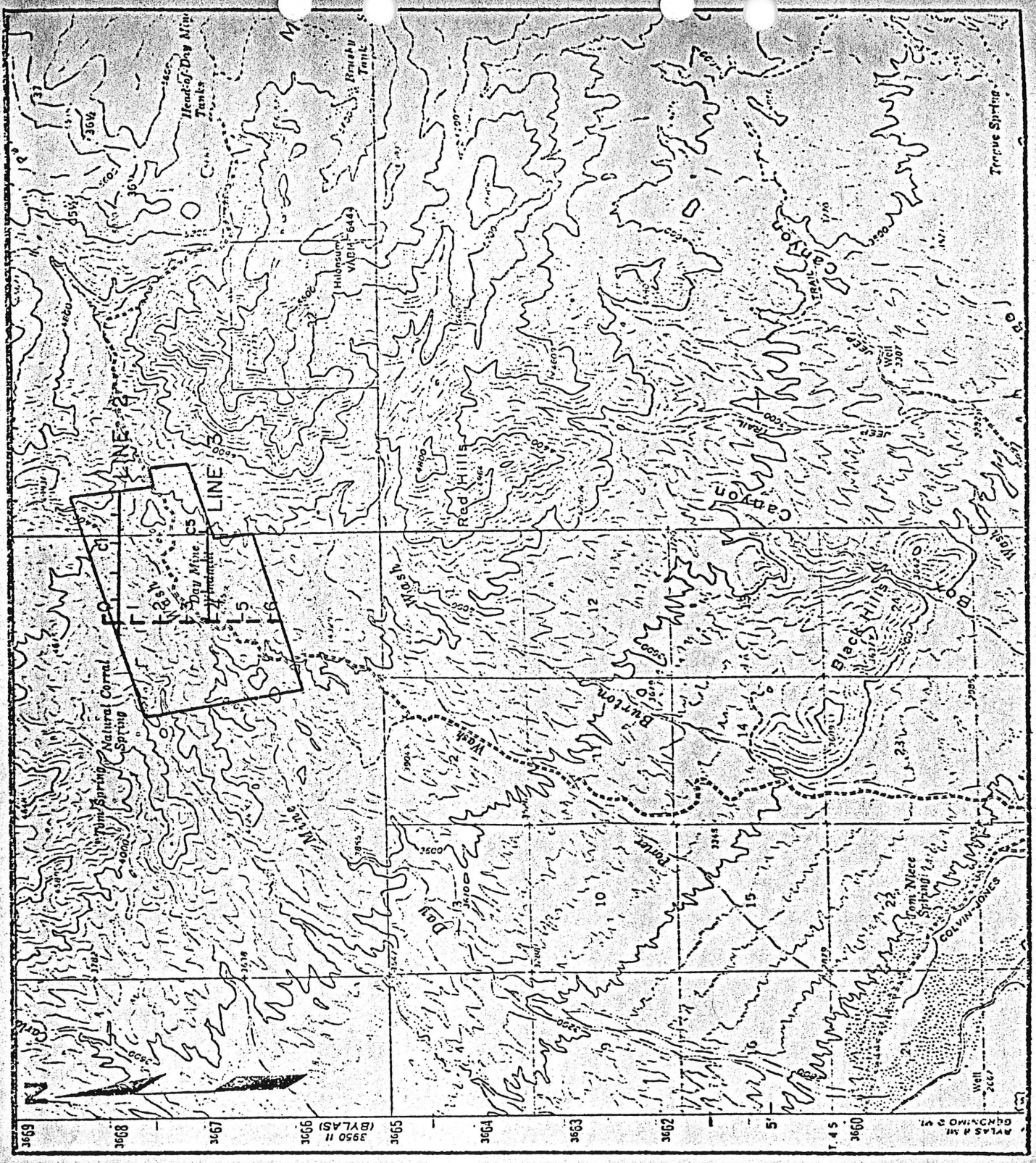
Scale: 1" = 2000 ft.



STANDARD I.P. SURVEY

COMPLEX RESISTIVITY SURVEY

LOCATION MAP
GEOPHYSICAL SURVEYS
COVERING HWR CLAIMS 101 TO 150
GRAHAM COUNTY, ARIZONA



Explanation

IP line location

Complex resistivity line location

AMAX EXPLORATION, INC. TUCSON, ARIZ.	
IP LINE AND COMPLEX RESISTIVITY LINE LOCATION DAY PROSPECT AREA	
SCALE: 1:62,500	
TO ACCOMPANY REPORT BY:	
DATE:	DRAWN BY:

M. & LeRoy Jensen

September 15, 1972

Mr. Lance W. Pape
P. O. Box 431
Thatcher, Arizona 85552

Dear Lance,

Your letter of Sept. 12 was delivered as I was dashing to the airport. I'm on my way to Finland and Russia for 3 weeks to give lectures and study mineral deposits in Finland and, I hope, the U.S.S.R.

I meant to write to you before Sept. 1 and report on the work that Harold and I have done on the HWR claims. We've spent a total of approximately 10 days on the property doing geology, Hg soil gas analyzes, and reconnaissance of the property. We entered the area this summer to do variable frequency IP work, but I decided against it based on the extension evidence of pulse IP work that has been done. What was done was pulse IP, generally in vehicular accessible sites, suggesting large power units, and the transmitter sites are most numerous.

We decided instead to perform 12g soil gas analysis which was done in the region of the corrals on both sides of the canyon bottoms, especially in the discolored area across the wash from the corrals and water tanks. The results were most disappointing with analysis varying between 12 to 100 ppb Hg. This is essentially background in unmoltend areas.

On top of all of those disappointments, the worst was that our financial backer stopped payments. We're still trying to get our penny share concern Mineral Ventures, Ltd. off the ground and I had hoped that it would help further studies on HWR, but the market is real bad in SLC now and I'm afraid I will have to return the property to you.

I believe with our geochemical work on the property, Hg assays, and Harold Jones and myself services plus expenses that we have expended $5,000 on the HWR group. If you can file this as assessment work, I'll be most appreciative. If the assessment work notice needs our signature, I'll be back in SLC on Oct. 7 and would sign and prepare a notice at that time.

I'm in Washington D.C. now, having just obtained my visa from the Russian Embassy - quite an experience. I fly to NYC now and continue on to Europe and Asia

I'm awful sorry that WR didn't turn out better. Probably what it needs is a deep drill hole test, but God only knows where.

Many best regards and best wishes.

Sincerely yours,

Mead LeRoy Jensen

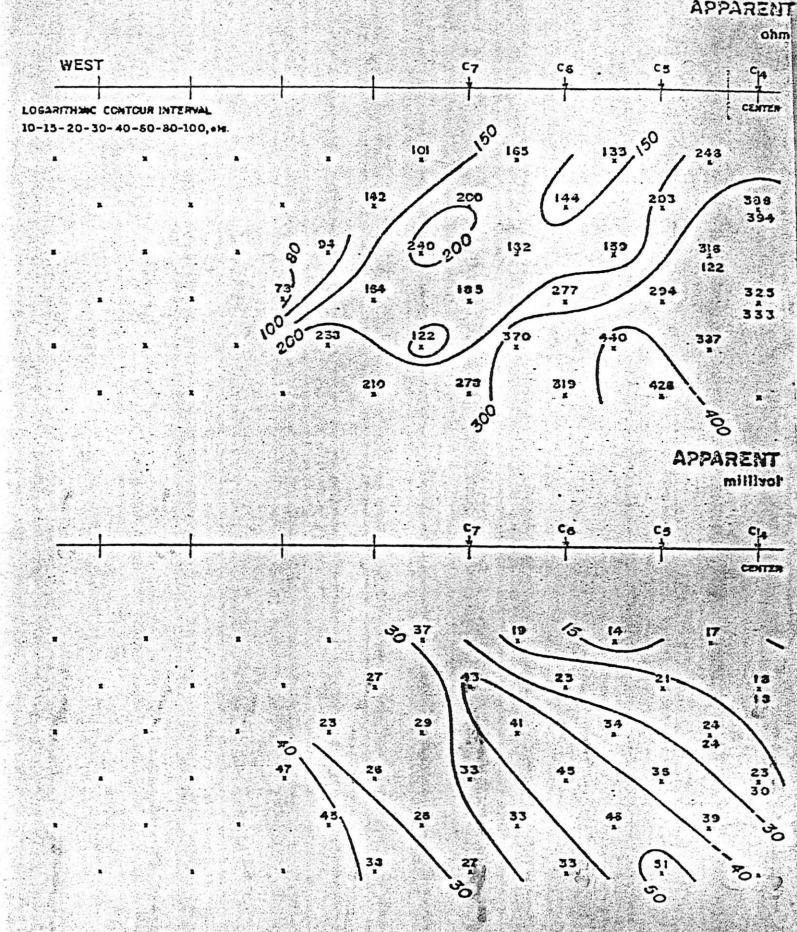
P. S. If you could make me a copy of this letter I'd appreciate receiving such.

TIME DOMAIN INDUCED POLARIZATION AND RESISTIVITY SURVEY

DAY PROJECT – GRAHAM COUNTY, ARIZONA

FOR

AMAX EXPLORATION INC.



DIPOLE DIPOLE ARRAY

CURRENT DIPOLE — na — POTENTIAL DIPOLE

PLOT POINT

LINE 3

LOOKING ...NORTH

DIPOLE LENGTH 1000

DATE AP. 27/1973

LEGEND

FENCE

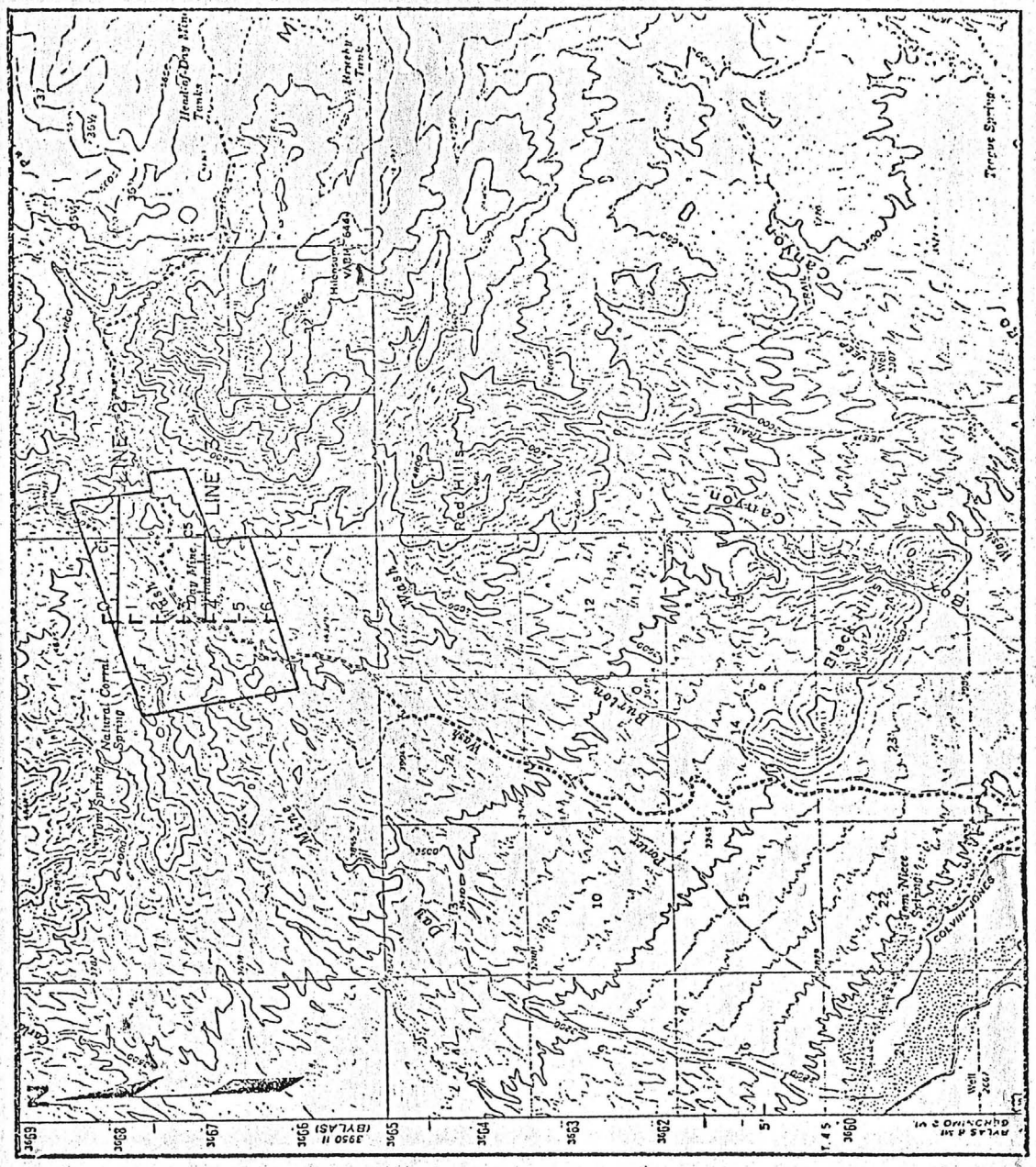
PIPELINE

POWERLINE

ROAD, RR.

mining geophysical surveys

M.S.B. 0320

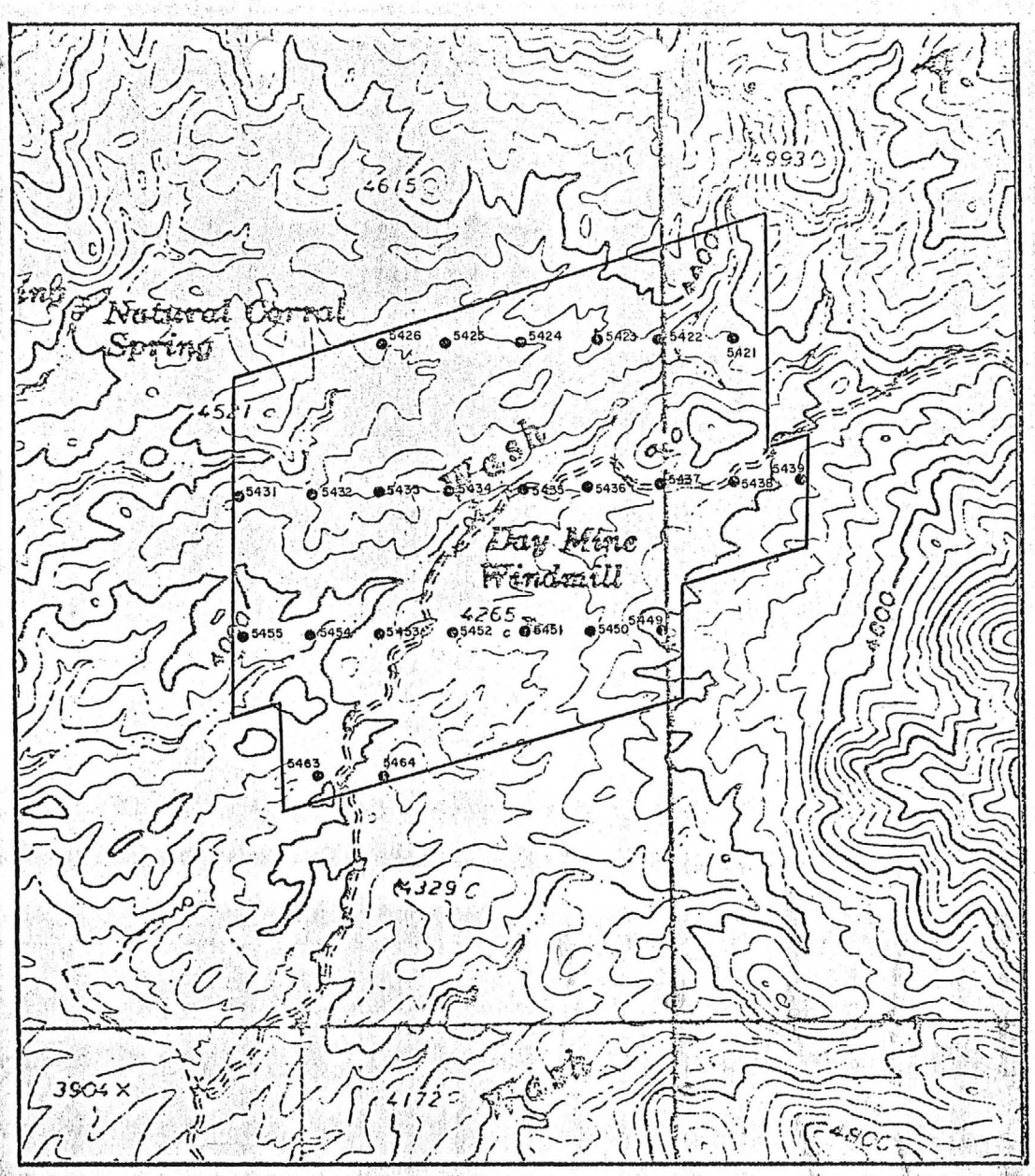


Explanation

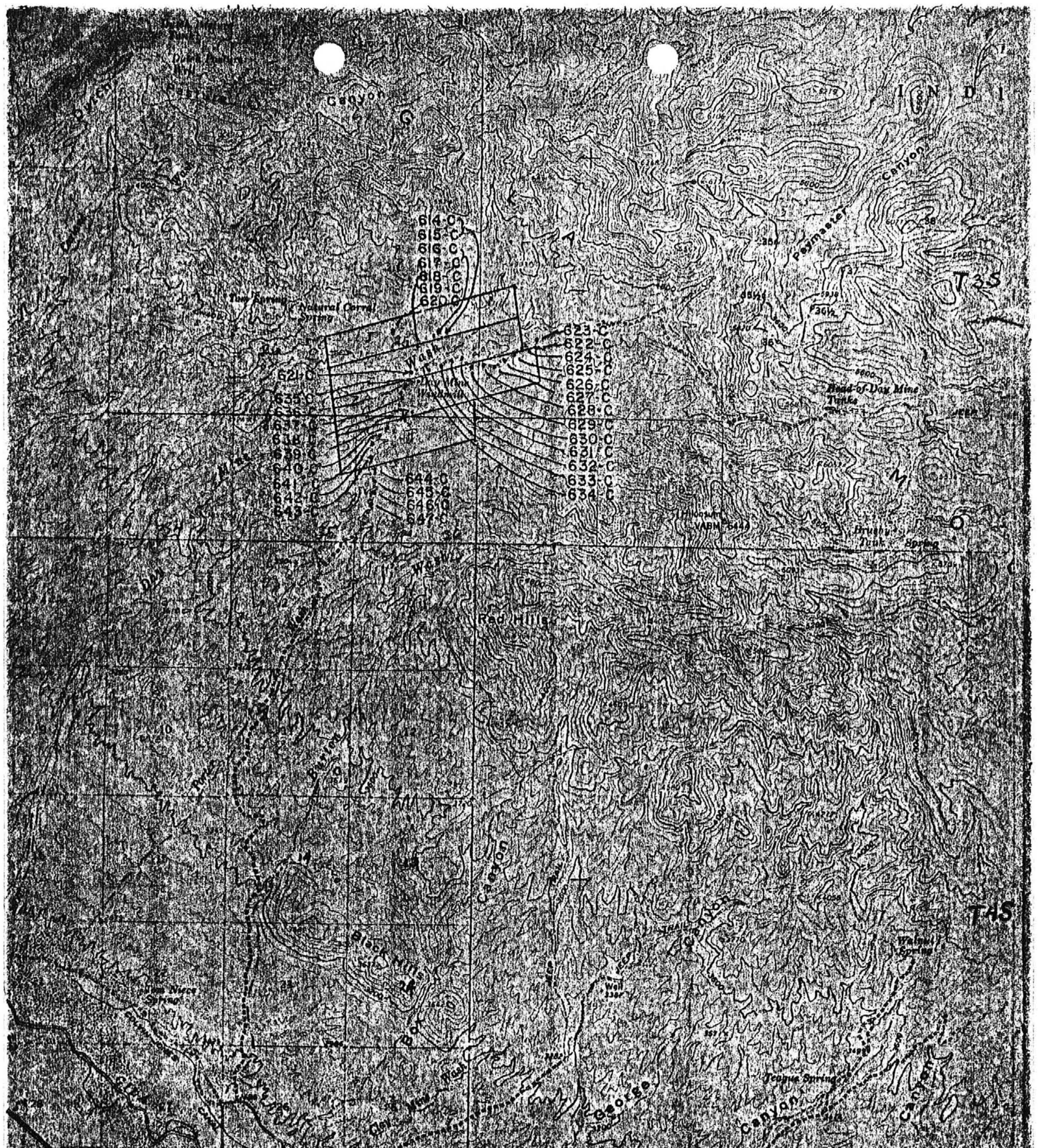
IP line location

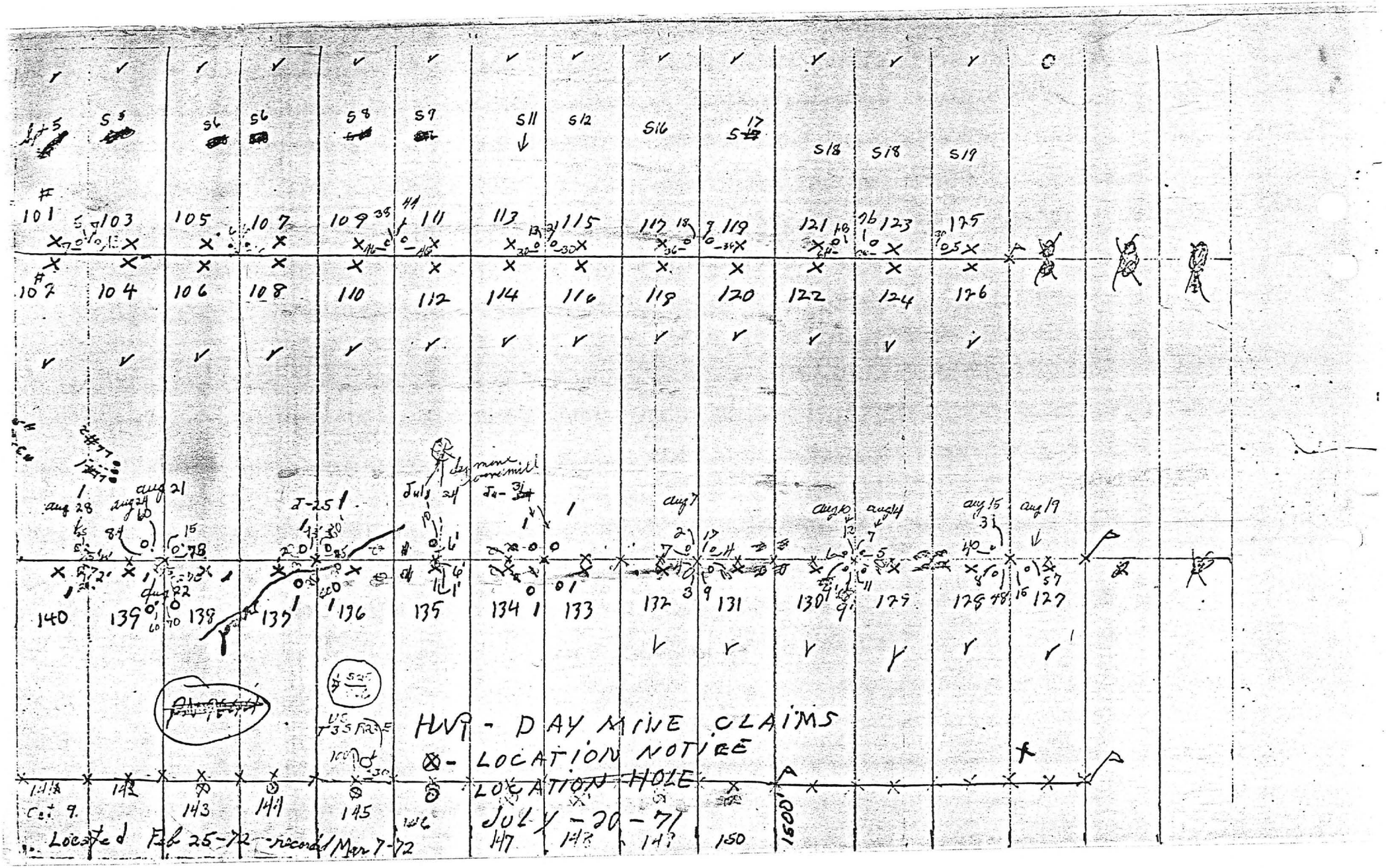
Complex resistivity line location

AMAX EXPLORATION, INC. TUCSON, ARIZ.	
IP LINE AND COMPLEX RESISTIVITY LINE LOCATION DAY PROSPECT AREA	
SCALE: 1:62,500	
TO ACCOMPANY REPORT BY:	
DATE:	DRAWN BY:



AMAX EXPLORATION, INC. TUCSON, ARIZ.	
ROCK CHIP SAMPLE LOCATIONS HWR GROUP	
SCALE: 1" = 2000'	
TO ACCOMPANY REPORT BY:	
DATE:	DRAWN BY:


614-C
615-C
616-C
617-C
618-C
619-C
620-C
621-C
622-C
623-C
624-C
625-C
626-C
627-C
628-C
629-C
630-C
631-C
632-C
633-C
634-C
635-C
636-C
637-C
638-C
639-C
640-C
641-C
642-C
643-C
644-C
645-C
646-C
647-C
Wash
Canyon
Paymaster Canyon
Red Hills
Black Hills
Road-of-Day Mine
Tanks
Brushy Tank Spring
Natural Corral Spring
Tongue Spring
Walnut Spring
George
Tabalo Spring
Oliver Spring
Fort Thomas
T3S
T4S
I N D I


HVP - DAY MINE CLAIMS
⊗ - LOCATION NOTICE
LOCATION HOLE
JULY - 20 - 71
Located Feb 25-72 - record Mar 7-72

ANALYTICAL REPORT

DATE 8/4/73 AMAX ACCT. NO. 693
ANALYST JHB TUCSON, ARIZONA PROJECT 398
TYPE SAMPLES RX CHIP PULPS REQUESTED BY K.A. LOVSTROM

	Sample	Lab No.	Mo ppm	Cu ppm	Pb ppm	Zn ppm		Fe Sample %	Mn Lab No. ppm	Ni ppm	Co ppm	Ag ppm	
06	21	TV4	<1	17	7	41	36	1.2	700	9	10	.5	
07	22	TV5	<1	4	6	37	37	1.1	400	4	4	.2	
08	23	TV6	1	14	14	28	38	1.9	230	6	5	.3	
09	24	"	<1	7	.6	76	39	.71	800	8	7	.4	
10	25	"	<1	9	5	33	40	.79	940	6	7	.5	
11	26	"	<1	11	6	43	41	1.8	680	8	9	.5	
16	31	"	1	25	12	39	46	2.5	430	11	6	.4	
17	.32	"	1	14	22	16	47	1.3	250	5	4	.4	
18	33	"	1	14	35	19	18	1.3	240	4	4	.5	
19	34	"	<1	10	20	13	49	.74	200	4	3	<.2	
20	35	"	1	11	20	51	50	2.9	210	5	4	<.2	
21	36	"	1	15	11	56	51	2.4	990	9	9	.2	
22	37	TV4	<1	18	14	59	52	2.0	830	12	13	.3	
23	38	TV5	<1	19	11	59	53	1.9	770	18	14	.3	
24	39	TV6	2	8	12	8	54	1.2	360	5	3	<.2	
04	49	"	1	8	9	29	34	.53	540	5	3	<.2	
05	50	"	1	12	6	45	35	1.4	1000	15	6	<.2	
06	51	"	1	5	18	3	36	.49	310	4	2	<.2	
07	52	"	3	26	18	50	37	2.4	790	19	15	.2	
08	53	"	3	22	28	140	38	2.2	920	9	11	<.2	
09	54	"	1	28	25	110	39	1.9	410	7	6	<.2	
10	55	"	5	14	30	93	40	2.5	550	6	5	.4	
18	63	"	12	14	12	7	18	2.1	400	8	5	<.2	
19	64	"	4	40	16	37	49	1.5	940	13	5	<.2	

METHODS: DIGESTION- $HClO_4 : HNO_3$ SAMPLE WEIGHT- 3.0 gm / 60 ml
DETERMINATION-
REMARKS: Mo -- colorimetric
Cu, Pb, Zn, Fe, Mn, Ni, Co, Ag, high Mo } A.A.

Ken we can't be sure out Sr Rb or Cs on these samples wi $HClO_4 \cdot HNO_3$ digestio
Kate

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

COPIES TO: 1. K.A. LOVSTROM AT TUCSON
2. R.F. HORSNAIL AT LAKESIDE
3. J.T. AWALD AT LAKESIDE

DFH 012469

TIME DOMAIN INDUCED POLARIZATION AND RESISTIV

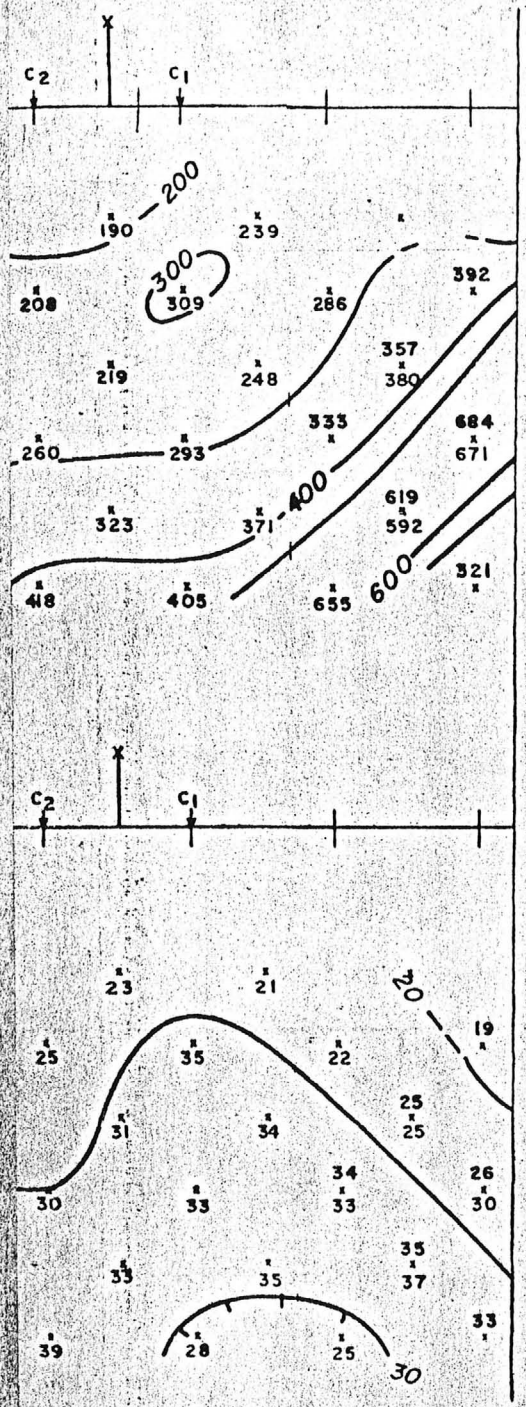
DAY PROJECT - GRAHAM COUNTY, ARIZONA

FOR

AMAX EXPLORATION INC.

APPARENT RESISTIVITY

ohm-meters



LEGEND

FENCE

PIPELINE

POWERLINE

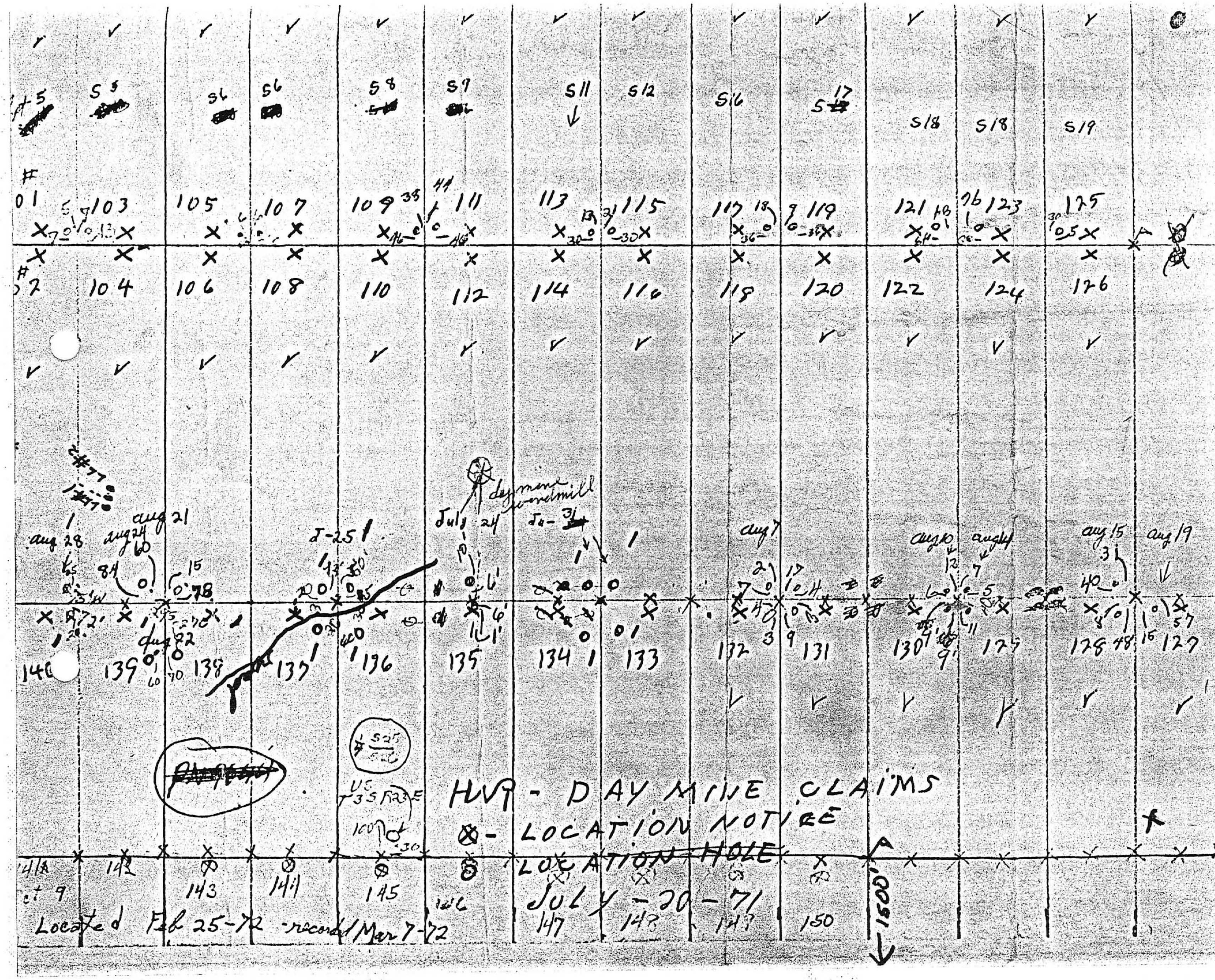
ROAD, RR.

LINE 2

LOOKING . . . NORTH

DIPOLE
LENGTH . . . . 1000'

DATE AP. 24/1973


HVR - DAY MINE CLAIMS
⊗ - LOCATION NOTICE
LOCATION HOLE
JULY - 20 - 71
Located Feb 25-72 - record Mar 7-72
1500'
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
142
143
144
145
146
147
148
149
150
aug 28
aug 24
aug 21
aug 22
July 24
aug 7
aug 10
aug 14
aug 15
aug 19
day mine windmill

DAY #1

TAS.

DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	KF	%ox	METALLIZATION Estimated Percent qz vns	mo qz	cpy	py	cc	Mag	tot sulf	mo sa	cu	GRAPHIC LOG	ASSAY PPM Cu	ASSAY PPM MoS_2	REMARKS
500'-2523.0'	100	Latite porphyry breccia	Fragments of andesite (weakly propylitized) of up to ¼" dia plag phenos imbedded in a dense, coarse grained, locally flow-banded matrix composed of K-spar & devitrified glass. Groundmass is more plag-rich than in prior descriptions. Rock is 40-50% K-spar, 30-40% plag, 3-5% free atz, & contains minor amts of rutile & apatite.	<1/10ft @ 10° to 20° w/ calc & chlor fill		5-10% chlor replacing plag & bio primarily in frags. 2-5% calc in frags & as clots associated w/ tourmaline & chlor. Tr of ser dusting plag phenos. Tr of tourmaline in clots w/ plag, chlor & calc.		Tr		m					1-2% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally.			Tr	Tr		1-2	Tr		Tr				
2523.0' 2543.0'	100	Latite porphyry TS(36) Latite Porphyry	Blocky plag phenos up to ¼" dia embedded in a dense, aphanitic, groundmass. Microvoids are present filled w/ calc or atz. 40-50% K-spar; aphanitic to fine grained forming groundmass 30-40% plag phenos, 7% free atz, intergrown w/ K-spar. Minor amts of apatite, rutile & zircon are scattered throughout	<1/10ft @ 10° to 20° w/ calc & chlor fill.		4-6% chlor replacing bio & plag as clots & flakes in groundmass. ±1% ser dusting plag phenos & bio flakes. 2-5% calc in frags & as clots associated w/ trs of tourmaline		W		m					1-2% mag as disseminated grains Mag essentially unoxidized. Trs of disseminated py & cpy were observed locally.			Tr	Tr		1-2	Tr		Tr				
2543.0' 2556.0'	100	Latite tuff breccia (Latite tuff) TS(37) Latite Tuff Breccia	Latite ppy frags embedded in dense, tuffaceous, flow-banded devitrified glass matrix	<1/10ft @ 10° to 20° w/ calc & chlor fill.		2-5% chlor replacing bio & plag. Trs of atz, ser, & clay dust plag phenos	Tr	Tr	Tr	W					1-2% mag as disseminated grains Mag essentially unoxidized. Trs of disseminated py & cpy were observed locally.			Tr	Tr		1-2	Tr		Tr		10	10	
556'																											

DH Y-71

TAS

DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	ALTERATION %	Description	clay	ser	qz	chl	bio	fs	METALLIZATION %ox	Estimated Percent qz vns	mo sz	cpy	py	cc	mag	tot sulf	mo sa	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS_2	REMARKS
400'	100	Latite porphyry breccia	Fragments of andesite (weakly propylitized) ϕ up to ¼" dia plag phenos imbedded in dense, coarse grained, locally flow-banded matrix composed of K-spar & devitrified glass. Groundmass is more plagioclasic than in prior descriptions. Rock is 40-50% K-spar, 30-40% plag, 3-5% free qtz, & contains minor amts. of rutile & apatite.	4/10ft @ 10°&20° w/calc & chlor fill.	5-10% chlor replacing plag & bio primarily in frags. 2-5% calc in frags & assocts associated w/ tourmaline & chlor. Tr of ser dusting plag phenos. Tr of tourmaline in clots w/ plag, chlor, & calc.			Tr		M				1-2% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally.			Tr	Tr			Tr		Tr				
																								15	5	
																								10	3	

DAY#1

715

DEPTH	CORE REC.	ROCK 1"=30'	ROCK DESCRIPTION	Fract.	ALTERATION %	Description	clay	ser	qz	chl	bio	fs	ep	%ox	METALLIZATION	qz vns	mo sz	cpy	py	cc	Mag	tot sulf	mo sz	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS2	REMARKS
300 – 400'	100	Latite porphyry breccia	Fragments of andesine (weakly propylitized.) & up to 1/4" dia phenos imbedded in dense, course grained, locally flowbanded matrix composed of K-spar & devitrified glass. Groundmass is more plag-rich than in prior descriptions. Rock is 40-50% K-spar 30-40% plag, 3-5% free qtz, & contains minor amts of rutile & apatite.	<1/10 ft @ 10° to 20° w/ calc, qtz, & chlor fill		5-10% chlor replacing plag & bio primarily in frags. 2-5% calc in fracs & as clots associated w/ tourmaline & chlor. Tr of ser dusting plag phenos. Tr of tourmaline in clots w/ plag, chlor, & calc.		Tr		m					1-2% mag as disseminated grains mag essentially unoxidized. Trs of disseminated py & cpy were observed locally			Tr	Tr		1-2	Tr		Tr				
																										15	8	
		—TS(35) Latite porphyry Breccia																										
																										10	10	
400'																												

DDH-4

Sheet 23 of 26

TAS

DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	K_2O	%ox	METALLIZATION	Estimated Percent: qz vns	mo sz	cpy	py	cc	mag	tot sulf	mo sz	cu	GRAPHIC LOG	ASSAY ppm: Cu	MoS_2	REMAR
2200'-2233.8'	100	TS(32) Latite tuff breccia (Lithic Tuff)	Plag & K-spar phenos imbedded in dense aphanitic flow-banded matrix of K-spar & devitrified, welded glass. 55-65% of rock is K-spar & devitrified glass, 20-30% is plag phenos up to 3/8" dia., 5-7% free qtz, & 1-2% rutile. No vuilts were observed.	<1/16 ft @ 10° to 20° w/ calc & chlor fill		2-5% chlor replacing bio & plag. 2-3% ser replacing plag phenos & plag in frags. 1-2% calc replacing bio & plag. Trs of qtz & clays.	Tr	W	Tr	W					1-2% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally.			Tr	Tr		1-2	Tr		Tr				
2233.0'-2253.8'	100	Latite porphyry — TS(33) Latite Porphyry	Seriate to porphyritic texture w/ abundant phenos up to 1/8" dia in an aphanitic, dense, weakly flow-banded matrix composed mostly of K-spar. 40-50% K-spar as fg granular groundmass material intergrown w/ 3-5% qtz. 40% of plag phenos. Trs of tourmaline, zircon, & apatite. No vuilts noted.	<1/16 ft @ 10° to 20° w/ calc & chlor fill.		5-10% chlor replacing plag & bio to near completion. 1-3% calc as clots associated w/ bio & trs of tourmaline. Trs of ser dusting plag phenos.		Tr		M					1-2% mag as disseminated grains. Mag is unoxidized. . . Trs of disseminated py & cpy were observed locally.			Tr	Tr		1-2	Tr		Tr		10	1	
2253.0'-2291.2'	100	Latite tuff breccia (lithic tuff)	Plag & K-spar phenos imbedded in dense aphanitic flow-banded matrix of K-spar & devitrified, welded glass. 55-65% of rock is K-spar & devitrified glass, 20-30% is plag phenos up to 3/8" dia., 5-7% free qtz, & 1-2% rutile. Microveinlets filled w/ calc or qtz were noted locally.	<1/16 ft @ 10° to 20° w/ calc & chlor fill		2-5% chlor replacing bio & plag. 2-3% ser replacing plag phenos & plag in frags. 1-2% calc replacing bio & plag. Trs of qtz & clays.	Tr	W	Tr	W					1-2% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally.			Tr	Tr		1-2	Tr		Tr				
2291.2'-2323.0' 2300'	100	TS(34) Latite tuff breccia — Latite Porphyry Breccia	Seriate to porphyritic w/ plag phenos up to 1/8" dia in an aphanitic, weakly flow-banded, K-spar rich matrix. Microvuilts w/ calc or qtz filling becoming abuts	<1/16 ft @ 10° to 20° w/ calc & chlor fill		5-10% chlor replacing plag & bio. 1-3% calc. Tr of ser & tourmaline.		Tr	Tr	M					1-2% mag as disseminated grains Mag essentially unoxidized. Trs of disseminated py & cpy were observed locally.			Tr	Tr		1-2	Tr		Tr		10	7	

DAY #1

TAS

DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Fe ox	% ox	METALLIZATION Estimated Percent: qz vns	mo qz	cpy	py	cc	Mag	tot sulf	mo sa	cu	GRAPHIC LOG	ASSAY PPM: Cu	MoS_2	REMARKS
2100-2141.0	100	Latite porphyry -TS(25) Latite Porphyry -290±14 m.y.o. age -TS(26) Latite Porphyry -TS(27) Latite Porphyry -TS(28) Latite Porphyry	Seriate to porphyritic w/ andesine & plag phenos imbedded in aphanitic matrix composed of K-spar, chlor, & plag. Flow banding is also present. Trs of fluorite are present along unaltered microveinlets. Rock averages 40-50% K-spar, 30±10% plag, 3-5% qtz intergrown w/ K-spar, 1-2% rutile, & trs of apatite, zircon, & bio.	<1/10 ft @ 10° to 20° w/ calc & chlor fill		10-15% chlor alt of plag as flakes, & clots intergrown w/ K-spar. 1-2% epid as scattered disseminations or as clots in association w/ chlor-calc. 2-3% calc commonly associated w/ bursts of tourmaline. 1-2% tourmaline as clots & bursts w/ calc-chlor. 2-5% ser replacing plag as mat-like masses. Tr of kaolinite-montmorillonite.	Tr	W	W	S	Tr		W		1-2% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally. py : cpy = 20 : <1			Tr	Tr		1-2	Tr		Tr				2115 - 2116' AGE DATE 29.0 ± 1.4 m.y.
2150.3'	100	Latite tuff-breccia. (Lithic tuff)	Plag & K-spar phenos imbedded in dense aphanitic flow-banded matrix of K-spar & devitrified welded glass. Rock is 55-65% K-spar & glass, 20-30% plag phenos up to 3/8" dia, 5-7% free qtz, & 1-2% rutile	<1/10 ft @ 10° to 20° w/ calc & chlor fill.		2-5% chlor & 1-2% calc replacing bio & plag. 2-3% ser replacing plag. Trs of qtz & clay.	Tr	W	Tr	W					1-2% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally. py : cpy = 10 : <1			Tr	Tr		1-2	Tr		Tr		15	8	
2150.3' 2180.0'	100	-TS(29) Latite Latite Porphyry -TS(30) Latite Porphyry -TS(31) Latite Porphyry	Porphyritic plag phenos up to 1/4" dia imbedded in aphanitic, dense K-spar rich, matrix. Prisms of hornblende are observed locally. No flow banded zone are apparent. Tourmaline confined to clots surrounded by chlor-calc. Rocks average 40-50% K-spar, 30-40% plag, 3-5% qtz, 1-2% rutile, & trs of apatite & zircon. Qtz fills scattered microfractures	<1/10 ft @ 10° to 20° w/ calc & chlor fill.		10-15% chlor alt of plag as flakes, & clots intergrown w/ K-spar. 1-2% epid as scattered disseminations or as clots in association w/ chlor-calc. 1-2% calc commonly associated w/ clots of tourmaline. Tr to 1% tourmaline as isolated clots. Tr to 1% ser replacing plag phenos. Trs of clays.	Tr	W	W	S			W		1-2% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally. py : cpy = 20 : <1.			Tr	Tr		1-2	Tr		Tr				
2233.0'	100	Latite tuff-breccia (Lithic tuff)	Plag & K-spar phenos imbedded in dense, aphanitic, flow-banded matrix of K-spar & glass. Cataxic fabric is apparent in glassy matrix. 55-65% of rock is K-spar & devitrified glass, 20 to 30% is plag phenos up to 3/4" dia, 5-7% free qtz, & 1-2% rutile. No vulls were observed.	<1/10 ft @ 10° to 20° w/ calc & chlor fill.		2-5% chlor replacing bio & plag. 2-3% ser replacing plag phenos & plag in frags. 1-2% calc replacing bio & plag. Trs of qtz & clays.	Tr	W	Tr	W					1-2% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally. py : cpy = 20 : <1			Tr	Tr		1-2	Tr		Tr		10	7	

DAY #1

TAC

DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	ep	%ox	METALLIZATION	qz vns	mo sz	cpy	py	cc	mag	tot sulf	mo sz	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS2	REMARKS
900.0 921.5'	100	Latite-andesite breccia	Dk gry andesitic frags embedded in matrix of latitic-andesitic composition. Partly collapsed or euhedral amygdules filled w/ calc-chlor are present locally. Microvnlts are common & are filled w/ calc-qtz-epid. Texture mottled.	<4/10 ft @ 5° & 38°		5-15% chlor as flakes replacing pyroxene in andesitic frags 2-6% epid in blebs & clots w/ chlor-calc replacing plag. 5% calc flooding rock & replacing K-spar. Trs of qtz as tiny grains & microfissure fillings.			Tr	m			W		Tr of cpy & 1-3% py concentrated in propylitized and. frags. 2-5% disseminated mag.			Tr	1-3		2-5	1-3		Tr				
921.5 1374.0'	100	Andesite -TS(20) Andesite	Dk gry dense aphanitic andesite. Rock is well propylitized. No flow structure visible. Abnt calc replaces plag & floods matrix giving rise to mottled texture.	<1/10 ft @ 10° & 30°		7-12% chlor flooding entire groundmass. 10-15% calc as blebs & clots <1/2" dia replacing much of plag. 1-3% epid associated w/ chlor & calc. No visible tourmaline				S			Tr		Abnt mag sprinkled between plag phenos. No visible hematite. 3-6% pyrite in and frags. Tr of cpy present.			Tr	3-6		5-10	3-6		Tr		30	3	
[illegible] [illegible]6.0 [illegible]50'		-TS(21) Graywacke Andesite agglomerate -TS(22) Andesite Agglomerate	Same as for 1787.0-1800.0 & 1804.0-1816.0 Angular and frags embedded in a dense aphanitic plag & K-spar matrix. Mottled texture due to calcite flooding matrix & selectively replacing plag. Also due in part to presence of large sunbursts of tourmaline. Microvnlts are filled w/ mag & calc.	<1/10 ft 2' clor-gouge zone <1/10 ft. @ 10° & 30° 3/10 ft @ 15° & 30°		5% chlor. Trs of cly-tourmaline 10-15% chlor as flakes & clots in angular frags. Trs of epid replacing plagioclase & dispersed unevenly throughout rock. 10% tourmaline & 15% calcite responsible for mottled texture.	Tr			m S			Tr		Tr of mag. 3-6 py & Tr of cpy. 2-5% mag w/ minor amts of hem. Trs of py & cpy.			Tr Tr	3-6 Tr		Tr 2-5	3-6 Tr		Tr Tr		5	1	

DAY #1

TAS

DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	ALTERATION %	Description	clay	ser	qz	chl	bio	fs	ep	%ox	METALLIZATION Estimated Percent qz vns	mo sz	cpy	py	cc	mag	tot sulf	mo sz	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS_2	REMARKS
2000	100	Andesite agglomerate.	fine grained to subangular andesite & latite fragments embedded in fine grained dense lt. gry matrix of oligoclase & andesite X-tals. Faint flow banding is apparent locally. V. large & abnt sunbursts of tourmaline are present throughout. 60-70% plag as mat-like intergrowths w/ latite & andesite frags embedded in k-spar (5-25% K-spar. No veins were observed. 2-5% rutile is disseminated throughout matrix.	3/10ft @15°&30° w/scale & gouge zones	5-10% tourmaline as dendritic(?) large bursts up to ½" dia. 3-7% chlor as flakes, clots, & blebs upto 1" dia w/ minor amts of clay alt & trs of atz. Clay alt appears in form of kaolinite-montmorillonite patches (<1%) replacing plag. All biotite has gone to chlor.	W		Tr	M			Tr		2 to 5% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally.			Tr	Tr		2-5	Tr		Tr		100	10	
		T5(23) Andesite Agglomerate																									
		Andesite-Latite Agglomerate.	Lithic and-lat frags w/ strong flow banding & contortions embedded in dk, dense, latitic to andesitic matrix. Chalcedony & plag veinlets are present locally with veins of atz & epid.	2/10ft @15°&30°	3-7% chlor as flakes & clots upto 1" dia w/ replaces plag along w/ trs of clay-sericite & epidote (1-3%). Trs of bio, tourmaline, atz locally	Tr	Tr	Tr	M	Tr		W		2 to 5% mag as disseminated grains partly oxidized to hem. Trs of disseminated py & cpy were observed locally.			Tr	Tr		2-5	Tr		Tr		10	5	
2100		T5(24) Andesite-Latite Agglomerate																									

DHY #1

TTS

DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Ep	%ox	METALLIZATION	qz vns	mo s2	cpy	py	cc	mag	tot sulf	mo s2	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS2	REMARKS
1800'–1804.0'	100	–TS(17) Feldspathic qtzst.	Poorly sorted angular to subrounded qtz grains in a k-spar matrix qtz grains up to 1/2" dia in matrix	6/10ft @5° & 30°		5-7% clay-sericite Trs of hematite, calcite, tourmaline, & leucoxene	W	W							Traces of hematite in matrix after mag 3-6% py in qtz grains & in frags.				3-6		Tr	3-6						
1804.0'–1816.0'	100	Greywackie –TS(18)– Greywacke	Angular to rounded grains of qtz, k-spar, & plag in silty iron-stained matrix of qtz, plag, k-spar, & mag Frags of qtzst, andesite, arkose, latite, & chert are common.	6/10ft @5° & 30°		1-2% chlor fills fracs & replaces plag. Trs of tourmaline, calcite, biotite, & sericite found along calc-qtz vnlts or dusting ind grains.		Tr		W	Tr				wk mag development (±1%) 3-6% py between qtz grains & in frags.				3-6		1-2	3-6						
– .5	100	Latite-Andesite Breccia	Dk gry andesitic frags embedded in matrix of latitic-andesitic composition. Partly collapsed or eutaxitic amygdules filled w/ chlor-calc are present locally. Microveinlets common filled w/ calc-qtz-epid. Texture mottled.	<4/10ft		5-10% chlor as flakes replacing pyroxene in andesitic frags. 2-6% epid in blebs & clots w/ chlor-calc replacing plag. 5% calc flooding rock & replacing k-spar. Trs of qtz as tiny grains & microfissure fillings.			Tr	M			W		Trs of cpy & 1-3% py concentrated in propylitized and frags. 2-5% disseminated mag. About amts of FeOx found along some fracs (?possibly hematite-goethite)			Tr	1-3		2-5	1-3		Tr				
																										10	7	
		–TS(19) Latite-Andesite Breccia																										
																										10	3	
1900																												

DAY #1

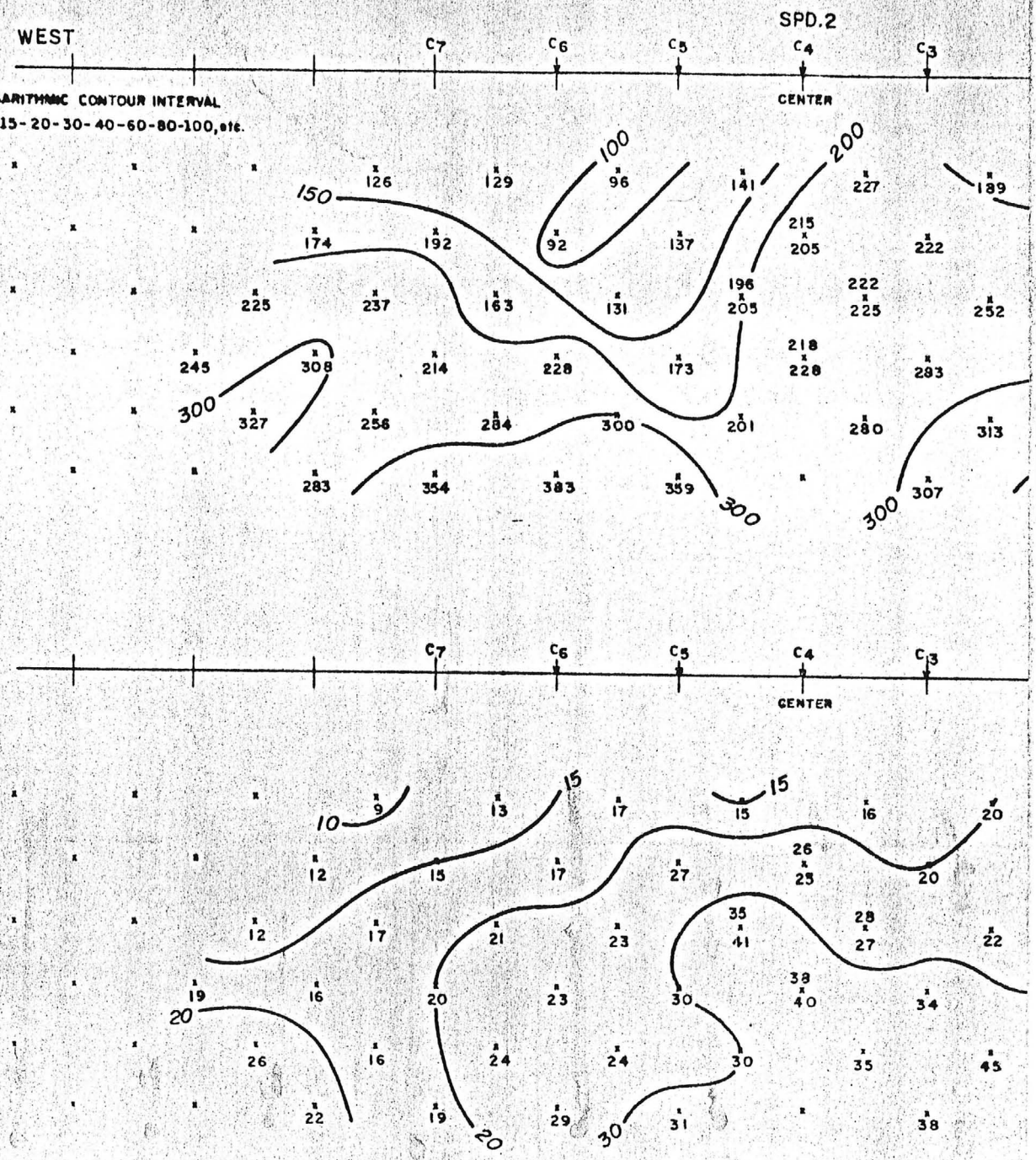
TAS

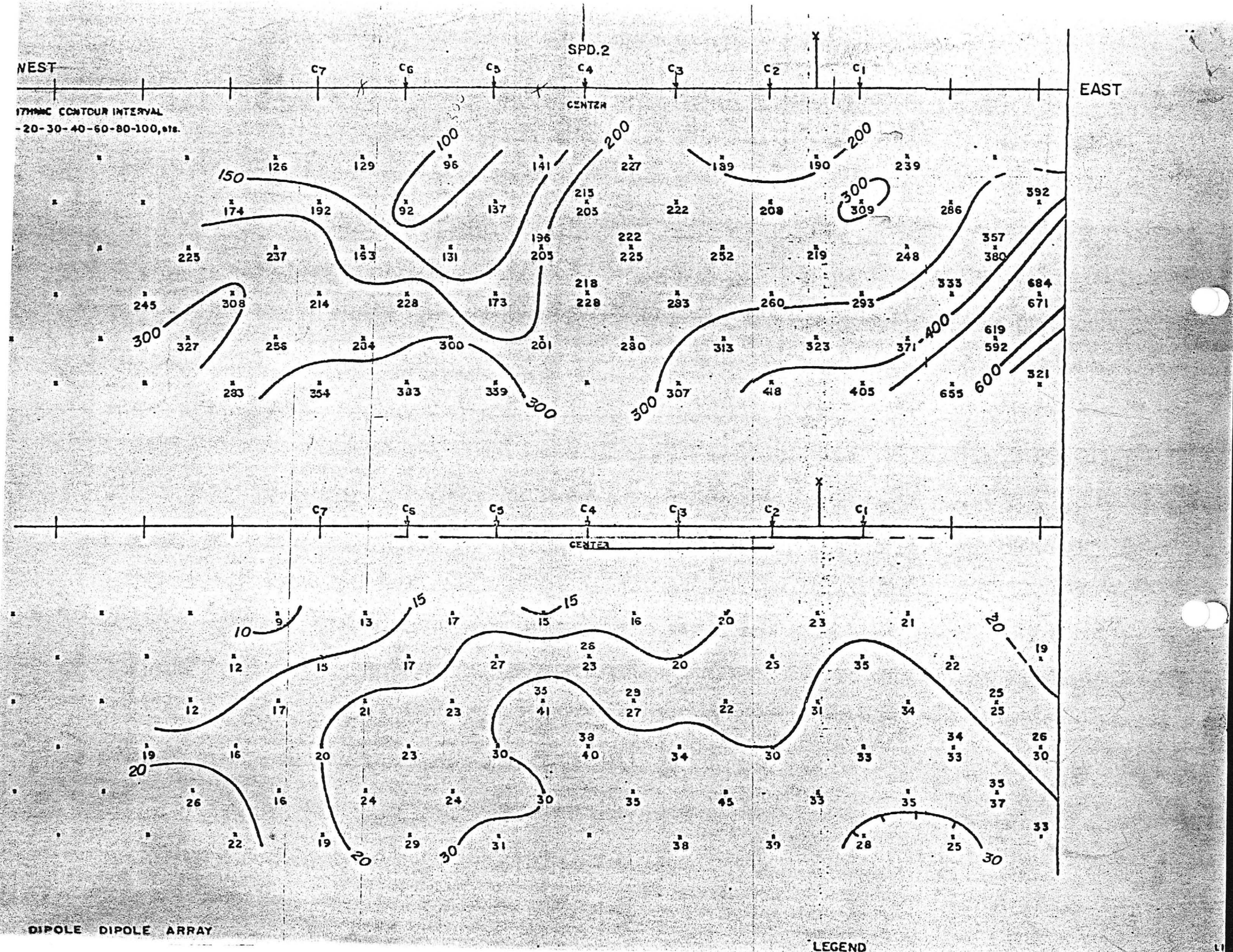
DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	% ox	METALLIZATION	Estimated Percent qz vns	mo qz	cpy	py	cc	mag	tot sulf	mo sz	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS_2	REMARKS
1700'	100	Andesite	Dk grey aphanitic to fine grained Crude indications of flow fabric, moderately to strongly propylitized. Chlor-epid-calc replace hornblende & plag 35-45% plag weakly altered by clay-ser or calc-epid. 5-15% fn K-spar in matrix or replacing plag. 10-20% pyroxene well epidotizing.	6/10 ft		5-10% epid replacing matrix & plag partly 7-12% chlor as large flakes or in blebs & clots w/ epid 1-3% calc replacing plag & strongly associated w/ chlor-epid. 1-2% clay-ser dusting plag phenos	Tr	W		S			M		Abnt mag (15-20%) partly oxidized to hematite. 3-6% dissem py with no cpy association.				3-6		15-20	3-6					
		TS(15) Andesite		3-30° calc fracs — 1" atz vn @ 30° w/ chlor gouge																							
				20° frac w/ calc-epid																							
		24.1±1.2 m.y.o age date																						50	3	1741-174 AGE DATE 24.1±1.2
				5° frac w/ calc.																							
1787.0	100	Feldspathic quartzite	Poorly sorted, angular to subrounded qtz grains in a K-spar matrix. Qtz grains up to ½ dia in matrix	6/10 ft @ 5° & 30°		5-7% clay-sericite as flakes or books around qtz & K-spar grains. Trs of hematite, calcite, tourmaline, and leucoxene.	W	W							Traces of hematite in matrix after mag. Only trace mag. 3-6% py between qtz grains & in frags			3-6			Tr	3-6					
1800'	100	Greywackite	Angular to rounded grains of qtz K-spar & plag in slightly iron-stained matrix of qtz, plag, K-spar, & mag. Frags of basalt andesite, porphyritic latite, & chert are common.	6/10 ft @ 5° & 30°		3-5% chlor fills fracs & replaces plag 3-5% epid replaces plag 5-7% calc replaces plag & along veins 1-2% ser associated w/ calc & chlor.		W		W		W			Wk mag development (1-2%) 3-6% py between qtz grains & in frags. minor amts of FeOx found coating fracs.			3-6			1-2	3-6				215	8	
		—TS(16) Greywacke																									

DAY #1

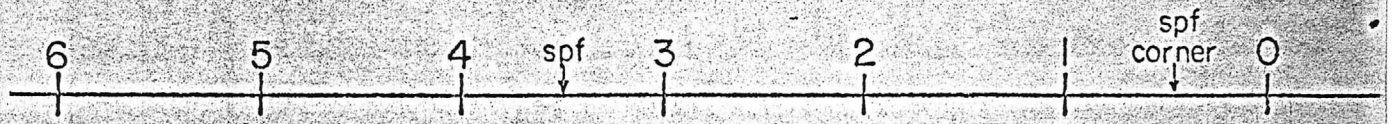
THS

DEPTH	CORE REC.	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	ALTERATION %	Description	clay	ser	qz	chl	bio	fs	Rp	%ox	METALLIZATION	Estimated Percent qz vns	mo qz	cpy	py	cc	mag	tot sulf	mo qz	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS_2	REMAR
1600'	100	Andesite	Dk gry aphanitic to fn grained andesite w/ portions of the groundmass replaced by chlor-epid-calc 50-60% plag partly replaced by patches of epid-chlor 10-20% pyroxene forming an epidatized matrix around plag phenos. Locally bleached & mottled appearance common.	3/10 ft. @ 30° w/ calc.	3-5% cp.d 2-3% chlor Tr calc.					w			w		Abnt mag (10-15%) unoxidized & disseminated throughout 2-3% euhedral py cubes dissem throughout. No visible Cu.				2-3		10-15	2-3						
					7-10% epid as clots & blebs associated w/ calc-chlor 5-8% chlor associated w/ calc-epid Some pyroxene & plag replaced 1-3% calc either in amygdules or along fracs. All mafic silicates have been replaced.					m			m														
				1639.0' 30° frac w/ abnt calc																								
639.8'-1663.6'	100	Latite porphyry -TS(14) Latite Porphyry	Lt gry latite porphyry moderately propylitized with chlor, calc, & epid at the expense of pyroxene & plag. 25-35% K-spar flooding groundmass. 40-50% plag w/ phenos weakly to moderately propylitized. 5-15% pyroxene strongly altered by calc-epid.	3/10 ft. @ 20° & 30°	5-7% epid as clots & blebs associated w/ calc-chlor 3-5% chlor as clots & blebs replacing pyroxene 3-4% calc flooding matrix & replacing plag & pyroxene. Sunbursts of tourmaline scattered throughout					w			m		Wk mag (2-5%) unoxidized & disseminated throughout. Tr of py as widely scattered x-tals. No visible Cu.				Tr		2-5	Tr			20	2	
1663.6'-1777.7'	100	Andesite	Dk gry aphanitic to fn grained andesite. Crude indications of flow fabric. Moderately to strongly propylitized. Chlor, epid, calc replace hornblende & plag. 35-45% plag weakly altered by ely-ser or calc-epid. 5-15% fn K-spar in matrix or replacing plag. 10-20% pyroxene well epidetized.	6/10 ft. Abnt microfrac	5-10% epid replacing matics & plag partly 7-12% chlor as large flakes or in blebs & clots w/ epid 1-3% calc replacing plag. & strongly associated w/ chlor-epid 1-2% clay-ser dusting plag phenos	Tr	W	S		m			Abnt mag (15-20%) partly oxidized to hematite 3-6% dissem py with no cpy association.				3-6		15-20	3-6					
				1678.0' 20° frac w/ calc-epid.																								
1700'																										40	7	


SPD.2
WEST
C7
C6
C5
C4
C3
CENTER
LOGARITHMIC CONTOUR INTERVAL
10-15-20-30-40-60-80-100, etc.
100
200
150
300
15
10
20
126
129
96
141
227
189
174
192
92
137
215
205
222
225
237
163
131
196
205
222
225
252
245
308
214
228
173
218
228
283
327
256
284
300
201
280
313
283
354
383
359
307
9
13
17
15
16
12
15
17
27
26
25
12
17
21
23
35
41
28
27
22
19
16
20
23
30
38
40
34
26
16
24
24
30
35
45
22
19
29
31
38
DIPOLE DIPOLE ARRAY
a
na
a
CURRENT DIPOLE
POTENTIAL DIPOLE
PLOT POINT


SPD.2
NEST
EAST
C7
C6
C5
C4
C3
C2
C1
CENTER
ITHMIC CONTOUR INTERVAL
-20-30-40-60-80-100, ets.
DIPOLE DIPOLE ARRAY
LEGEND

DAY MINE PROJECT LINE 1

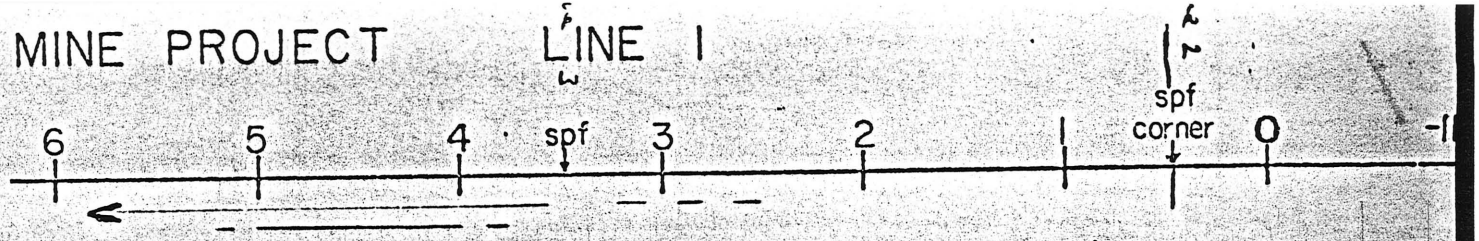


Apparent Resistivity Ohm-Meters

91	83	93	92	167	99	
81	85	98	106	135	141	144
117	100	99	158	154	190	219
128	151	118	143	149	168	286
177	157	140	154	225	254	
340	184	NR	164	224	342	

Complex Resistivity Measurements

DAY MINE PROJECT LINE 1



PFE (.03 - .3 Hz)

3.9	NG	5.7	3.8	1.8	1.4	
3.4	3.6	4.1	5.8	4.1	2.3	1.9
3.5	2.6	3.6	5.5	4.7	2.9	2.2
2.5	2.6	3.1	3.6	4.8	5.6	3.3
2.5	2.6	2.9	4.2	5.2	4.6	
2.9	3.0	N.R	2.7	3.7	4.5	

PFE (.3 - 3. Hz)

4.5	6.5	7.3	5.3	3.1	1.9	
3.8	3.7	4.5	6.5	5.1	3.4	2.3
3.6	2.7	4.2	6.1	5.3	3.5	3.3
3.8	2.7	2.9	4.7	5.7	5.5	4.3
3.2	2.6	2.8	4.9	5.3	5.8	
3.0	4.7	N.R	4.0	4.9	5.7	

Complex Resistivity Measurements

run for the following:

LWP -2	Cu			quoted cost	2.00 Cu	$2.00
					2.50 Mo	
LWP - 4	Cu	Mo	Au		2.25 Au	$6.75
LWP - 4a	Cu	Mo				$4.50
LWP - 6	Cu					$2.00
LWP - 8	Cu	Mo				$4.50
LWP - 9	Cu					$2.00
LWP - 10	Cu	Mo				$4.50
LWP - 12	Cu	Mo	Au			$6.75
LWP - 14	Cu					$2.00
LWP - 19	Cu					$2.00
LWP - 20	Cu	Mo				$4.50
LWP - 23	Cu					$2.00
LWP - 27b	Cu	Mo				$4.50
LWP - 28c	Cu					$2.00
LWP - 32b	Cu	Mo				$4.50
LWP - 33	Cu					$2.00
LWP - 34	Cu	Mo				$4.50
LWP - 38	Cu					$2.00
LWP - 39	Cu	Mo				$4.50
LWP - 40	Cu					$2.00
						69.50

To: Mr. Wright
Southwestern Assayers & Chemists
710 E. Evans Blvd
Tucson, Arizona

return results to:
Lance W. Pape
P.O. Box 431
Thatcher, Arizona 85552

HWR Mining Claims

Lea Hooper 1/4
Darvin Weddle 1/4
John Rhodes 1/4
Chas. Raymond Rhodes 1/4

(LP) 10% PO Box 431

6-8X10

1st. ~~claims located Nov. 30 - 1970~~
Located July 20 - 71
\# ~~1 thru 14 located Nov 21 1970~~
\# ~~15 thru 34 located Nov 22 1970~~
~~35 thru 40 located Nov 28 1970~~

PRELIMINARY GEOLOGIC REPORT ON THE HWR CLAIM GROUP

FT. THOMAS QUADRANGLE, ARIZONA

Introduction

The HWR Claim Group is a continuous block of 50 claims located 35 miles northwest of Safford, Arizona (8 miles north of Fort Thomas) along the west side of the Gila Mountains. The claims are located at the head of Day Mine Wash where altered andesite to monzonite outcrops at the base of the Gila Mountain volcanics (rhyolite to andesite overlain by basalt flows). The area has undergone alteration which grades in a bulls-eye pattern from phyllic, to argillic, to propylitic alteration over a seven square mile area. Abundant casts and staining of iron sulfide mineralization with trace occurrance of copper oxide are found in the claims area. At present, ground is open on all four sides of the HWR claims.

General Geology

Structure -- The controlling structure in the area of interest is the Butte fault, a high angle, normal, south-westerly-dipping fault which borders the west side of the Gila Mountains and is responsible for uplifting the Gila Mountain volcanics and exposing a window of andesite-monzonite at the base. This same structure is believed to be the fault which controlled the emplacement and limits of the Phelps Dodge discovery north of Safford, as well as Producers Minerals' Peacock Mine ore body, etc. This fault line has been diagrammed by Wilson, et al. on the geologic cross-section 7-B, state maps -- Arizona Bureau of Mines. Cross-faulting at North 50° East (with minor displacement) has broken the area of interest into a series of irregular blocks with a general size of ¼ to ½ mile square.

Lithology -- Two major rock types are exposed in the area of interest -- a layered sequence of volcanic rocks ranging from quartz latite to porphyritic andesite, and plutonic monzonite plugs and dikes. The coarse-grained intrusive rocks are small injection bodies into layered volcanics which are bleached in the vicinity of the intrusions. The above-mentioned sequence is overlain to the east, northeast, and southeast by the younger volcanic series of andesites and basalts (late tertiary) which post-date the older volcanic andesite series, monzonite intrusions, and mineralization. Altered limestone blocks rafted in the younger

EXECUTIVE OFFICES
1 AVENUE OF THE AMERICAS, NEW YORK, N.Y. 10020
PLAZA 7-9700

AMAX EXPLORATION, INC.
SUBSIDIARY OF AMERICAN METAL CLIMAX, INC.
2510 N. CAMPBELL AVE., TUCSON, ARIZONA 85719

TELEPHONE
AREA CODE 602
795-4731

August 16, 1973

Mr. Charles R. Rhodes
P. O. Box 27
Ft. Thomas, Arizona 85536

Dear Mr. Rhodes:

Enclosed is your copy of a properly recorded Affidavit of Annual Assessment Work performed on the HWR claim group for the year ending September 1, 1973.

If additional copies are needed for the other owners, please let us know.

Very truly yours,

J. T. Green

JTG:cg
Encl.

also see DKT 205 Page 387

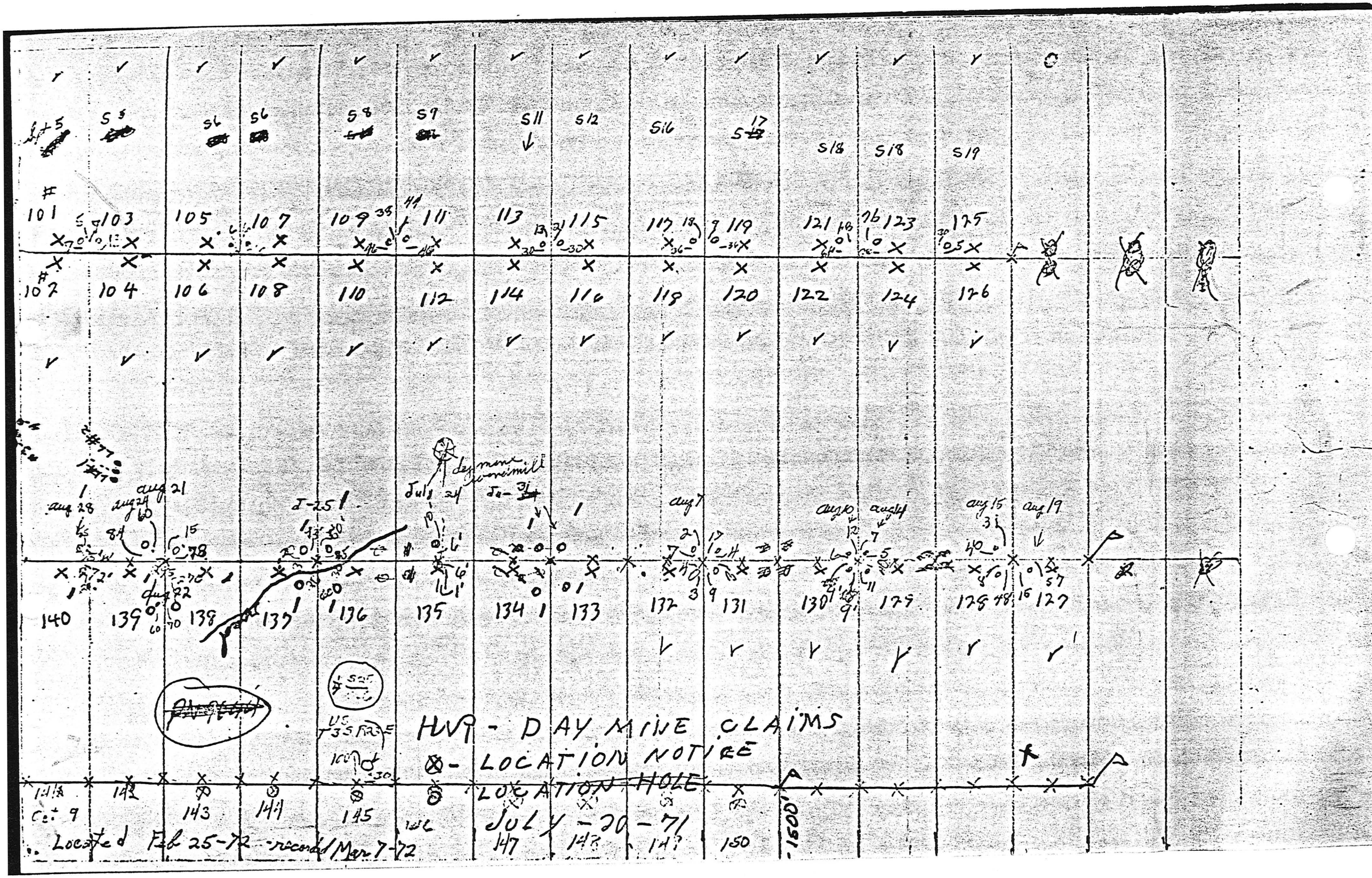
($5,100.00) ;

EXHIBIT A

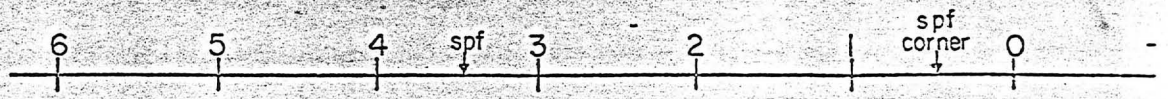
Exhibit A to Affidavit of Performance of Annual Work and Improvements relative to a group of 50 contiguous unpatented lode mining claims situate in the Lone Star Mining District of Graham County, Arizona, the location notices of which are of record in the office of the Graham County Recorder in the dockets and at the pages set forth below:

Name of Claim	Recorded Docket	Page
HWR #101	167	569
HWR #102	167	570
HWR #103	167	571
HWR #104	167	572
HWR #105	167	573
HWR #106	167	574
HWR #107	167	575
HWR #108	167	576
HWR #109	167	577
HWR #110	167	578
HWR #111	167	579
HWR #112	167	580
HWR #113	167	581
HWR #114	167	582
HWR #115	167	583
HWR #116	167	584
HWR #117	167	585
HWR #118	167	586
HWR #119	167	587
HWR #120	167	588
HWR #121	167	589
HWR #122	167	590
HWR #123	167	591
HWR #124	167	592
HWR #125	167	593
HWR #126	167	594
HWR #127	167	595
HWR #128	167	596
HWR #129	167	597
HWR #130	167	598
HWR #131	167	599
HWR #132	167	600
HWR #133	167	601
HWR #134	167	602
HWR #135	167	603
HWR #136	167	604
HWR #137	167	605
HWR #138	167	606
HWR #139	167	607
HWR #140	167	608
HWR #141	176	204
HWR #142	176	205
HWR #143	176	206
HWR #144	176	207
HWR #145	176	208
HWR #146	176	209
HWR #147	176	210
HWR #148	176	211
HWR #149	176	212
HWR #150	176	213

All owned by Charles R. Rhodes and Billie Ruth Rhodes, husband and wife; John C. Rhodes and Loretta D. Rhodes, husband and wife; Leo C. Hooper and Ruby Hooper, husband and wife; Darvin W. Weddle and Norma B. Weddle, husband and wife; Lance W. Pape and Judith A. Pape, husband and wife; and under option to AMAX Exploration, Inc.


HWI - DAY MINE CLAIMS
⊗- LOCATION NOTICE
LOCATION HOLE
JULY - 20 - 71
Located Feb 25-72 - recorded Mar 7-72
101
103
105
107
109
111
113
115
117
119
121
123
125
102
104
106
108
110
112
114
116
118
120
122
124
126
140
139
138
137
136
135
134
133
132
131
130
129
128
127
143
144
145
147
150
1500'
aug 28
aug 21
aug 22
July 24
aug 7
aug 10
aug 15
aug 19
S11
S12
S16
S18
S19

DAY MINE PROJECT LINE 1



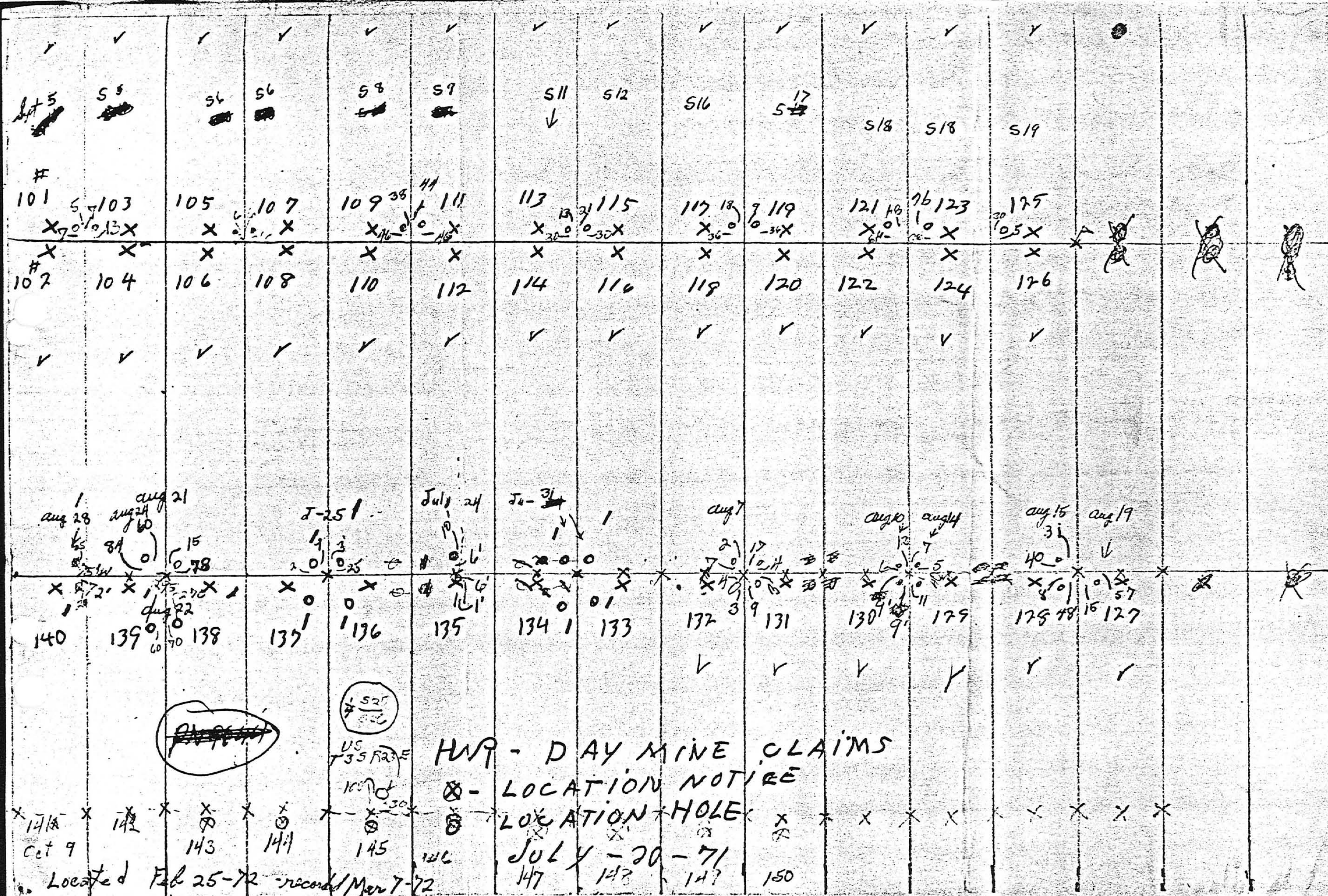
Apparent % Total Sulfides by Volume

	1.0	.6?	1.2	1.0	0.4	0.2
1.0	1.0	0.6	1.2	1.2	0.8	0.3
	1.0	0.5	1.0	1.2	1.2	0.6	0.5
0.8	0.8	0.5	1.0	1.2	1.3	0.7
	0.6	0.5	0.5	1.0	1.0	1.0
0.7	1.0	NR	0.8	1.0	1.2	

Apparent % Copper Sulfides by Volume

	.3	.7	.25	.25	.1	.05
.3	.3	?	.2	.25	.3	.1
	.3	.15	.3	.25 ?	.4	.2	.1
.2	.2	.1	.2	.25	.25	.2
	.3	tr	?	.2	.2	.2
.15?	.15	NR	?	?		

Complex Resistivity Measurements



HWR - DAY MINE CLAIMS
⊗ - LOCATION NOTICE
LOCATION HOLE
JULY - 20 - 71
Located Feb 25-72 - record Mar 7-72
101
103
105
107
109
111
113
115
117
119
121
123
125
102
104
106
108
110
112
114
116
118
120
122
124
126
140
139
138
137
136
135
134
133
132
131
130
129
128
127
141
142
143
144
145
146
147
150
S11
S12
S16
S18
S19
aug 28
aug 21
aug 22
J-25
July 24
aug 7
aug 10
aug 14
aug 15
aug 19
Oct 9

PROPERTY/PROSPECT DATA TRANSMITTAL

FROM: AMAX Exploration, Inc. DATE: June 20, 1975

TO: Lance C. Pape PROPERTY NAME: Day - HWR Claims

ITEM NO.	DESCRIPTION	OK TO COPY	TO BE RETURNED	MAP OR DRAWING	LOG	REPORT	ASSAY/GEOCHEM DATA	DRILL CORE/SAMPLES	OPTION AGREEMENT	OTHER	NO. OF COPIES: TRANSPARENCY	NO. OF COPIES: PRINT	DATE RETURNED
1.	I.P. Line and Complex Resistivity Line Location Map				X							2	
2.	Complex Resistivity Measurements										X	2	
3.	Time Domain Induced Polarization and Resistivity Survey Measurements Line 3										X	2	
	Line 2										X	2	

RECEIVED BY: _____ _____ FOR AMAX

_____ FOR _____

CERTIFICATE OF ASSAY

Ja[illegible] [illegible], 19[illegible]

n [illegible] ([illegible])

	MARKS ETC.	Cu ppm	Mo ppm	Pb ppm	Zn ppm
1/12	M1	23	nil	35	40
	M2	14	3	26	40
	M3	12	8	30	20
	M4	13	9	36	17
	M5	17	14	34	80
	M6	11	12	33	11
	M7	18	8	34	90
	M8	13	9	31	10
	M9 *	24	7	46	80
	M10	8	8	32	16
	M11	9	7	35	13
1/12	M12 *	22	5	29	60

* "control sample" of unaltered rock.

FORM 311 M.L.

DAY #1

Sheet 16 of 26

TAS

ROCK 1"=20'	ROCK DESCRIPTION	Fract.	ALTERATION %	Description	clay	ser	qz	chl	bio	fs	Fp,o	%ox	METALLIZATION Estimated Percent: qz vns	mo qz	cpy	py	cc	Mag	tot sulf	mo sa	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS2	REMAR
Andesite.	Dk gry, aphanitic to fn. grained andesite w/ portions of the groundmass replaced by chlor-epid-calc. 50-60% plag partly replaced by patches of epid-chlor. 10-20% pyroxene forming an epidotized matrix around plag phenos. Locally bleached & mottled appearance common.	1/10ft @ 30°	7-10%	epid as clots & blebs associated w/ chlor-calc. 5-8% chlor associated w/ calc-epid Some pyroxene & plag replaced. 1-3% calc either in amygdules or along fracs. All mafic silicates have been replaced.				m			m		Abnt mag (10-15%) unoxidized & disseminated throughout. 2-3% euhedral py cubes dissem throughout. No visible Cu.				2-3	10-15	2-3					
TS(13) Andesite			5-8%	epid 8-12% chlor ±1% calc.				s			m												55	2	
			3-5%	epid 2-3% chlor Tr calc.				w			w												15	2	

DAY #1

TAS

ROCK 1" = 20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Ep/lp	%ox	METALLIZATION	qz vns	mo s2	cpy	py	cc	mag	tot sulf	mo s2	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS2	REMARK
Andesite – latite breccia	Andesitic frags up to 3" dia embedded in a matrix of latitic composition w/ an aphanitic texture. is nonentaxitic. 40-50% plag phenos in both latite & andesite partly replaced by chlor, epid & calc 15-20% fn grained K-spar in latitic matrix Trs of qtz & rutile x-tals.	<1/10ft.		Mod chlor (5-12%) replacing plag & mafics <5% epid & calc flooding or replacing K-spar & plag. Closely associated in time & space.			Tr	m			W		Mod amts of small grains unoxidized mag crystals dissem. throughout, 2-3% euhedral py cubes dissem or concentrated in chlor-calc blebs. Tr of dissem cpy			Tr	2-3		7-12	2-3		Tr				
Andesite	Dk gry aphanitic andesite. Weak entaxitic fabric defined by amygdaloidal elongation. Local fracs filled w/ chlor-calc-epid. 45-55% plag phenos partly replaced by chlor-epid-calc 15-25% K-spar as fn grn intergrowth in matrix 15% partly epidotized pyroxene. Tr of anhedral qtz w/ epid.	<1/10ft.		Abnt epid (7-12%) as blebs or amygdules w/ chlor & calc. 5-10% chlor w/ epid & calc. 1-2% calc as frac fillings or w/ chlor-epid Tr. of clay in amygdules.	Tr		Tr	m			S		1-3% mag unoxidized & dissem throughout. 2-3% euhedral py cubes disseminated throughout. No visible cu.				2-3		1-3	2-3				70	3	
–TS(12) Andesite Andesite – latite breccia	Andesitic frags up to 3" dia embedded in a matrix of latitic comp. Aphanitic texture. 40-55% plag, 15-20% K-spar Trs of	2/10ft @1468 (35') 1473 (20') w/ calc.		Strong chlor (10-15%) replacing plag & mafics. ±10% epid & calc flooding or replacing K-spar & plag Close space-time association			Tr	S			m		3-7% disseminated unoxidized mag X-tals throughout. 2-3% euhedral py cubes dissem or concentrated in chlor-calc blebs. No cu visible.				2-3		3-7	2-3						
Andesite	Dk gry aphanitic andesite. Weak entaxitic fabric defined by amygdaloidal elongation Local fracs filled w/ chlor-calc-epid. 45-55% plag phenos partly replaced by chlor-epid-calc 15-25% K-spar as fn grn intergrowth in matrix 15% partly epidotized pyroxene Tr of anhedral qtz w/ epid.	<1/10ft		Abnt epid (7-12%) as blebs or amygdules w/ chlor & calc. 5-10% chlor w/ epid, & calc, 1-2% calc as frac fillings [illegible] w/ chlor-epid Tr. of clay in amygdules	Tr		Tr	m			S		Abnt mag 10-15% unoxidized & dissem. throughout. 2-3% v. fn. euhedral py cubes dissem. throughout. No visible cu.				2-3		10-15	2-3				50	1	

DAY #1

TAS

ROCK	ROCK DESCRIPTION		ALTERATION										METALLIZATION											GRAPHIC LOG	ASSAY ppm		REMARK
														Estimated Percent													
1"=20'		Fract.	%	Description	clay	ser	qz	chl	bio	fs	ep	%ox		qz vns	mo qz	cpy	py	cc	mag	tot sulf	mo sa	cu		Cu	MoS_2	
Andesite-latite breccia	Andesitic frags up to 3" dia embedded in a matrix of latitic composition w/ aphanitic texture. Texture is non eutaxitic 40-30% plag phenos in both latite & andesite partly replaced by chlor, epid, ±calc. 15-20% fn grained K-spar in latitic matrix. Trs of qtz & rutile X-tals.	<1/10ft.		About chlor (5 to 20%) replacing plag & mafics. 5% epidote & 10% calc flooding & replacing K-spar & plag. Closely associated in time & space.			Tr	S			m		Mod amts of dissem unoxidized mag crystals dissem. throughout. 2-3% euhedral py cubes dissem or concentrated in chlor-calc blebs. Tr of dissem cpy.			Tr	2-3		7-12	2-3		Tr					
																								60	1	
				10-15% chlor, 2-4% epid, 6% calc.				S			w																
TS(11) Andesite-Latite Breccia				1370'-1372' buggy zone w/ about calc filling vugs																							
				3-7% chlor, ±1% epid, ±3% calc.				m			w																
																								15	3	

DAY #1

THS

E	ROCK	ROCK DESCRIPTION		ALTERATION									METALLIZATION										GRAPHIC LOG	ASSAY ppm		REMAR
														Estimated Percent												
	1"=20'		Fract.	%	Description	clay	ser	qz	chl	bio	fs	E_{Fe}	%ox	qz vns	mo qz	cpy	py	cc	Mag	tot sulf	mo sa	cu		Cu	MoS_2	
	Andesite-latite breccia	15-20% K-spar around plag, 35-40% plag, strongly chloritized, 3-5% rutile evenly disseminated. Flow texture absent. Angular frags of latite up to 3" dia. embedded in andesitic matrix. Matrix & frags cut by abnt calc-epid-chlor vnlts. Plag locally replaced by K-spar.	1/10ft @ 20° & 40°	10-15% chlor dissem in matrix, replacing pyroxene, & along vnlts w/ calc & epid. 1-2% blebs of epid along calc-chlor vnlts. 3% calc along vnlts.				S			W	Abnt distribution of fn grained mag unoxidized, except along vnlts. 2-3% euhedral py & tr of cpy disseminated in matrix & lithic frags.			Tr	2-3		7-12	2-3		Tr				
																								20	2	
	TS(10) Andesite Latite Breccia			Becoming more flooded with calc vnlts @ 30°. No amygdales.																						
			30° frac w/ abnt calc @ 1283'																							
																								10	1	

DAY #1

TAS

E	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Tr	%ox	METALLIZATION Estimated Percent qz vns	mo qz	cpy	py	cc	mag	tot sulf	mo sa	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS_2	REMAR
	Rhyolite Tuff-Breccia	Microgranular to cryptogranular pumice & glass frags imbedded in a coarse grained microgranular, hematite stained K-spar matrix. Flow banding is apparent in lithic frags. Perlitic, glassy rims are present on some frags. 20% fn grained plag in groundmass.	<1/10ft @10°-30°		Tr-3% chlor confined mostly to lithic frags. Tr of anhedral flourite grains imbedded in lithic frags, 3% calc in veins of lithic frags				w			Tr				2-3% euhedral py cubes disseminated in matrix & lithic frags. Tr of mag left not sulfadized to py Tr of hem after mag.			2-3		Tr	2-3					
	Andesite.	Aphanitic, holocrystalline andesite. 15-20% K-spar grains, plag, 30-35% plag, 10-15% pyroxene	<1/10ft.		10-15% chlor as flakes & blebs up to 1" dia. Replaces plag, Bio, & pyroxene. 7-10 epid, replacing pyroxene & plag along w/ calc.			Tr	s			m				Abnt distribution of fn grained unoxidized mag in matrix. 2-3% euhedral py cubes disseminated in matrix and lithic frags.			2-3		10-15	2-3					
	-TS(8) Andesite		-5° calc filled frac																							
	Welded Rhyolite -TS(9) Tuff (?)	Eutaxitic, welded matrix enclosing ats & K-spar bands & filled collapsed vesicles	0/10ft.		10-15% epidote, 1-2% chlor Trs of calc & tourmaline.				w			s				Tr of mag sparsely disseminated 2-3% py in matrix			2-3		Tr	2-3					
	Andesite-latite breccia	15-20% K-spar around plags 35-40% plag strongly chloritized, 3% rutile evenly disseminated. Flow texture absent. Angular frags of latite up to 3" dia embedded in andesitic matrix. Matrix & frags cut by abnt Calc-epid-chlor veins. Plag locally replaced by K-spar.	1/10ft @20° & 40°		10-15% chlor dissem in matrix, replacing pyroxene, & along veins w/ calc & epid. 1-2% blebs of epid along calc-chlor veins. 3% calc along veins.				s			w				Abnt distribution of fn grained mag unoxidized, except along veins. 2-3% euhedral py & tr of cpy disseminated in matrix & lithic frags.		Tr	2-3		7-12	2-3				70	2	
																									35	2	

DAY #1

TH 5

ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Fe_2O_3	%ox	METALLIZATION	Estimated Percent qz vns	mo qz	cpy	py	cc	mag	tot sulf	mo qz	cu	GRAPHIC LOG	ASSAY FPIN Cu	ASSAY FPIN MoS_2	REMARK
Spherulitic Rhyolite Tuff (cont.)	60% small anhedral fibrous K-spar X-tals in an aphanitic qtz matrix (25%a) 10% very fw grained plag in matrix.	<1/10 ft @ 20° & 30°		Tr of chlor & ser in sparse widely scattered lithic frags		Tr		Tr					1-2% euhedral py cubes in frags & disseminated throughout matrix Tr of mag ore disseminated in core				1-2		Tr	1-2						
	2 sets of abnt rounded to subrounded pumice frags up to 1" dia																									
																								15	6	
Rhyolite Tuff-Breccia	Microgranular to cryptogranular pumice & glass frags imbedded in a coarse grained microgranular, hematite stained K-spar matrix. Flow banding is apparent in the lithic frags. Perlitic glassy rims are present on some frags. 20% fw grained plag in groundmass.	<1/10 ft @ 10°-30°		Tr-3% chlor confined mostly to lithic frags. Tr of anhedral flourite grains imbedded in lithic frags. 3% calc in blebs of lithic frags.				W			Tr		2-3% euhedral py cubes disseminated in matrix & lithic frags. Tr of mag left not sulfadized to py. Tr of hem after mag				2-3		Tr	2-3						
-TS(?) Rhyolite Tuff Breccia																								10	12	

DAY #1

TAS

ROCK	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	fe oxy	% ox	METALLIZATION	Estimated Percent qz vns	mo qz	cpy	py	cc	mag	tot sulf	mo sz	cu	GRAPHIC LOG	ASSAY Cu	ASSAY MoS_2	REMARK
1"=20'																										
Spherulitic Rhyolite tuff (cont'd)	60% fine-small anhedral-fibrous K-spar X-tals in an aphanitic qtz matrix (25%) 10% very fn grained plag. in matrix	1/10ft @30°-50°	1-2%	1-2% py occasionally replacing mag to completion. 1% calc found in fracs & in blebs in matrix Tr of ser on K-spar & qtz.		Tr		Tr					1-2% euhedral py cubes disseminated throughout core Tr of mag gr disseminated in core				1-2		Tr	1-2						
		~30° oak calc filled fracs											microveinlts of qtz cut through frags from 920'-940' & 955'-960'													
TS(6) Spherulitic Rhyolite Tuff	Welded rhyolite tuff zone w/ eutaxitic texture. Abnt rounded to subrounded plumose frags			~1% chlor blebs w/ abnt py.		Tr		Tr-w																		

DAY #1

T125

E	ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Fe	%ox	METALLIZATION	Estimated Percent qz vns	mo qz	cpy	py	cc	Mag	tot sulf	mo sa	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS_2	REMAR
	Perlitic Rhyolite Tuff-Breccia (cont.	Wh. perlitic rhyolite devitrified glass in a mixture of angular glass shards, devitrified glass, plag phenos and aphanitic K-spar matrix 40% devitrified glass & glass 45% K-spar intergrain w/ glass 10-15% plag in perlitic intergrowth of glass. Texture is occasionally almost indistinct. Squished pumice frags 5% of total rock	1/30ft @ 50-70°		1-2% pyrite disseminated through rock		Tr		Tr					1-2% euhedral disseminated py cubes Tr of mag then grains disseminated throughout rock				1-2		Tr	1-2					
	TS(5) Perlitic Rhyolite Tuff Breccia																								15	10	
0	Spherulitic Rhyolite Tuff	60% small anisotropic fibrous K-spar X-tals in an aphanitic qtz matrix (25%) 10% very fine grained plag.	1/10ft w/ calc @ 30°-50°		1-2% py occasionally replacing mag to completion Tr calc found in fracs & in blebs in matrix Tr of ser on K-spar & qtz		Tr		Tr					1-2% euhedral py cubes disseminated throughout core Tr of mag grs disseminated in core				1-2		Tr	1-2				15	16	

NAV #1

TAS

ROCK 1"=20'	ROCK DESCRIPTION		ALTERATION										METALLIZATION										GRAPHIC LOG	ASSAY ppm		REMARKS
		Fract.	%	Description	clay	ser	qz	chl	bio	fs	H_2O	%ox		Estimated Percent										Cu	MoS_2	
														qz vns	mo sz	cpy	py	cc	mag	tot sulf	mo sz	cu				
Perlitic Rhyolite Tuff-Breccia	Angular frags of aphanitic latite-andesite frags upto 3" dia. imbedded in a perlitic rhyolite tuff matrix to 7% devitrified glass & K-spar w/ concentric perlitic fractures, 15% plag. intergrown w/ sm. squashed pumice frags becoming evident.	1/30 ft @ 50° & 70°	10%	10% ser replacing plag in perlitic masses 1-4% chlor eschists in lithic and frags Irregular clots of calc in perlitic masses (3%) Tr of flourite as small sparsely disseminated anhedral grains.		W		W					1-2% euhedral py cubes disseminated throughout rock Tr of mag mostly altered to hem.				1-2	Tr	1-2						
	Faint 40° flow banding @ 750'-754' Glass accumulating into strongly segregated perlitic masses.																							215	5	
TS(4) Perlitic Rhyolite Tuff																								295	5	

DAY #1

TAS

ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Tr	%ox	METALLIZATION	Estimated Percent qz vns	mo qz	cpy	py	cc	Mn	tot sulf	mo sz	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS_2	REMARK
Pebble Conglomerate (cont.)	Pebble Conglomerate w/ subrounded to subangular grs & pbls of perthitic K-spar, qtz, plag, & lithic frags of quartzite, ls, latite, and andesite imbedded in a carbonated & epidotized matrix w/ crude stratification.	1/10 ft @ 30° E50°		15 to 20% epid added to matrix as infilling between grains & disseminated in sed, latite, & ls. 7-10% calc w/ epid. in matrix 5% chlor as anhedral flakes & disseminated in latite-andesite frags Tr ser dusting plag phenos.	Tr	Tr		W			S		No sulfides present 5-10% Hem added to matrix						5-8%						
-TS(2) Pebble Conglomerate																										
Andesite	dense fn grain magnetite bearing andesite	soft frac w/ epid		10-15% chlor, 5% calc 10% epid in matrix		Tr		S			m		No sulfides 3-7% weakly hematized magnetite						3-7%							
Rhyolite Tuff Breccia	Angular frags of non-porphyritic latite and up to 6" dia imbedded in a rhyolitic tuff matrix. 38% devitrified glass intergrown w/ 45% K-spar as bands & fibrous radiating X-tals 15% plag microlites in frags & matrix 40-70% lithic frags	30° frac w/ chlorite 1/80 ft @ 30°		1-4% chlorite as clots in lithic and frags. Tr to 1% epid associated w/ small blebs of calc.		Tr		W			W		1-2% disseminated in lithic frags & admixed w/ calc in matrix Tr of mag-Hem as disseminated grs partly assimilated by py.				1-2		Tr	1-2			10	-1	
-TS(3) Rhyolite Tuff-Breccia																								10	-1	

DAY #1

TAS.

ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	Description	clay	ser	qz	chl	bio	fs	S/D	%ox	METALLIZATION	qz vns	mo s2	cpy	py	cc	Mag	tot sulf	mo s2	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS2	REMARKS
Andesite (cont.) Vuggy zone w/ large calc X-tals & hem.	Dk grey, dense, aphanitic, holocrystalline, magnetite bearing andesite. No flow banding or eutaxitic fabric apparent. 10-15% K spar molded around plag rims ~10% plag partly altered to sericite. 15% pyroxene as portion of plag matrix. No amygdules in this interval	2/10ft 50° frac w/ calc & hem 1/10ft @ 30°		10-15% chlor as pale grn prochlorite replacing pyroxene in aphanitic matrix. 1-2% epidote as anhedral disseminated grains. Tr of calc as scattered small patches. Tr of ser replacing pyroxene phenos.		Tr		S			W		No sulfides present ±5% disseminated hem replacing magnetite.						10-15%							
TS(?) Andesite																								70	2	
																								45	1	
Pebble Conglomerate	Pebble conglomerate w/ subrounded to subangular grs & pbls of perthitic K-spar, qtz, plag, & lithic frags of quartzite, ls., latite, and andesite imbedded in a carbonated & epidotized matrix w/ crude stratification.	1/10ft @ 30° & 50°		15 to 20% epid added to matrix as infilling between grains & disseminated in and, latite, & ls. 7-10% calc w/epid in matrix. 5% chlor as euhedral flakes & disseminated in latite and frags. Tr ser dusting plag phenos.		Tr		W			S		No sulfides present 5-10% hem added to matrix						5-10%					10	1	

DAY #1

TAS

ROCK 1"=20'	ROCK DESCRIPTION	Fract.	ALTERATION %	Description	clay	ser	qz	chl	bio	fs	%m	%ox	METALLIZATION	Estimated Percent qz vns	mo sz	cpy	py	cc	mag	tot sulf	mo sa	cu	GRAPHIC LOG	ASSAY Ppm Cu	ASSAY Ppm MoS_2	REMARKS
andesite (cont.)	Dk grey dense, aphanitic, holocrystalline, magnetite bearing andesite. No flow banding or extensive fabric apparent.) Amygdules of calcite-epid. abnt.	1/10 ft. @ 55° & 75°	5-10% chlorite alt of pyroxene as fn gr, pale grn prochlorite. 1-3% epid. Tr ser flakes on pyroxene phenos.		Tr		5			W		No sulfides observed Alt of mag to hem along fracs.					5-10%							
	Agglomeritic zone w/ lt. gry subrounded frags up to 8" dia in dk grymatrix	1/10 ft. @ 75°	424-430' has secondary K-spar and abnt chlor-epid. Min dy-ser	Tr	Tr		5			W	m	Tr of euhedral py cubes w/ chlor alt. Greatly decreased mag content.				Tr		±2%	Tr					
		40° calc-hem frac @ 441' 20° frac @ 443' w/ ½ calc-epid filling.	2-5% chlor alt of pyroxene as fn gr, pale grn prochlorite ±1% Epid. dissimated. Sparse scattered zones of calcite amygdules (1-2%)		Tr		W			W		No sulfides observed Sparse hem as coatings on fracs.					5-15%					95	1	
	Zone of large (up to ¾") calcite filled amygdules.																					50	2	
	Brecciated zone w/ lt grey subrounded frags up to 2" dia in dk grey matrix.	10 frac w/ calc 1/10 ft @ 10° ± 20°																				105	2	
																						450	3	

DAY #1

TAS

ROCK	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	E_p	%ox	METALLIZATION Estimated Percent: qz vns	mo sz	cpy	py	cc	mag	tot sulf	mo sz	cu	GRAPHIC LOG	ASSAY ppm: Cu	MoS_2	REMARKS
1"=20'																									
Andesite (CONT.)	Dk gry dense, aphanitic, holocrystalline, magnetite bearing andesite. No flow banding or cutaxitic fabric apparent. Amygdules of calcite -epid abnt.	8/10 ft @ 30° 55° E 65° w/ calc-epid		10 to 15% Chlor alt of pyroxene as pseudomorphs 5 to 7% epid disseminated Hem → mag along fracs	W	Tr		5			W		Pyrite becoming more abnt along fracs & gouge zones. 5 to 5% magnetite. Magnetite altered to hematite along fracs.			Tr		5–15%	Tr				
		1/10 ft of calc filling @ 55° to 65°		Abnt gouge-chlor-py in 4" zone. Mag becoming more abnt 2 to 5% ground dissemated as well as along fracs 2 to 5% Epid in amygdules & disseminated		Tr		5			W		Tr of of euhedral pyrite cubes along fracs. Mag as above.			Tr		5–15%	Tr				
Faintly agglomeratic textural zone w/ subrounded frags up to 2" dia.																									
																							60	1	
																							55	2	
		10° frac @ 363.0 m/ mag & calc.																							
Aphanitic zone w/ no amygdules. Possibly mixed w/ fusite																									
																							15	1	
																							105	1	

DAY #1

Sheet 3 of 26

TAS

ROCK 1"=20'	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Fe_{in}	%ox	METALLIZATION	Estimated Percent qz vns	mo qz	cpy	py	cc	mag	tot sulf	mo sa	cu	GRAPHIC LOG	ASSAY ppm Cu	ASSAY ppm MoS_2	REMAR
Andesite (cont.)	DK gry dense, aphanitic holocrystalline, magnetite bearing andesite. No flow banding or eutaxitic fabric apparent. Amygdules of calcite-epid abut. Fract'd zone healed w/ calc filling @ 10° to 20°	1/ft oft 30° calc frac @ 210' 231.2 - calc-qtz vn (1/2") @ 45°		5-10% chlor alt of pyroxene as fn grn pale green prochlorite 1-3% epid disseminated throughout the rock. Calcite present along fracs and in amygdules up to 1/4" dia. Calc filled seam @ 10-20° common. Tr of ser dest on partly replaced pyroxene.		Tr		M			W		No sulfides. From 5 to 15% magnetite partly oxidized to hematite.					5-15%					50	2	
	mottled agglomeritic zone w/ complete replacement of matrix hem and pyroxene to prochlorite from 261 to 263'	1/ft @ 45°		15 to 20% chlor 5 to 7% hem. calc filled fract's mdt @ 261-55°		Tr		S			W		No sulfides 40% mag replaced by hematite					15-20%					30	2	
		1/ft oft. 240° calc filled fracs @ 272' 45° calc frac 10° frac w/ calc, chlor & hem.		5-10% chlor alt of pyroxene 2 to pale green prochlorite 2-5% dissem epid. Abut calcite filled amygdules & along most fracs. Tr of ser. 45° gouge zone w/ chlor & py cubes @ 349.5'		Tr		S			W		Tr of py w/ chlor along fracs. From 5 to 15% magnetite partly oxidized to hematite.				Tr	5-15%	Tr				20 25	1 -1	

DAY #1

TAS

ROCK	ROCK DESCRIPTION		ALTERATION									METALLIZATION										GRAPHIC LOG	ASSAY ppm		REMAR
1"=20'		Fract.	%	Description	clay	ser	qz	chl	bio	fs		%ox		Estimated Percent qz vns	mo sz	cpy	py	cc	mag	tot sulf	mo sz	cu		Cu	MoS_2	
Dacite Porphyry Tuff (cont.)	Prpl dacite porphyry tuff w/ a seriate-perlitic mottled texture. 45° flow banding & cutaxitic fabric is apparent in groundmass. Composition transitional between dacite & quartz latite. Many x-tals of plag imbedded in dense, devitrified qtz, k-spar matrix. A few tiny vein/localized qtz, k-spar seams present.	1/10ft. w/calc coatings @ 35° & 65°		±15% chlorite alt of hornblende & bio. 1-3% sericite dusting plag phenos. A few scattered qtz & K-spar seams	W	Tr	Tr	S			W		FeOx & py content gradually decreasing. Trs of mag observed locally.	0.5			Tr		Tr	Tr						
	Baked fg grained contact.			Calcite amygdules becoming abnt.																			10	1	
Andesite w/ a 15' latite ppy dike w/ and inclusions.	DK gry dense, aphanitic, holocrystalline magnetite bearing andesite. Locally includes latite ppy zones w/ andesite inclusions. Flow banding or cutaxitic fabric locally. Up to ½" angular andesite frags found in latite ppy.	1/10 @ 35° & 65° Calc.		to 15% chlorite alt of pyroxene as fine grn, pale green prochlorite 2 to 3% eprd. Tr of ser replacing pyroxene phenos. Calcite present along fracs and in amygdules 2 to 5%		Tr		S			W		No sulfides except for scattered traces found in andesitic inclusions. From 5 to 15% magnetite. Magnetite partly oxidized to hematite, primarily along margins of latite ppy.					S-15%							
Latite porphyry dike(s)	45° welded latite ppy @ contact			2 to 5% Epid.																			90	2	

1741' - 1742' - 24.1 ± 1.2 m.y.
2115' - 2116' - 29.0 ± 1.4 m.y.

[illegible] supplementary to [illegible] assay results, thin section locations, & more concise geologic descriptions.

GEOLOGIC LOG

AMAX EXPLORATION, INC.

TUCSON, ARIZONA

HOLE: Day #1
[COORD]INATES: ______ N ______ E
[illegible] Core Rig

Project: Day
Sheet 1 of 26

COLLAR ELEVATION ≅ 4440'
DEPTH OF HOLE ≈ 2556'
DATE: Started 1/3/74 Completed
LOGGED BY: T.A. Schack

1" = 20'

ROCK	ROCK DESCRIPTION	Fract.	%	ALTERATION Description	clay	ser	qz	chl	bio	fs	Fe	%ox	METALLIZATION	qz vns	mo S2	cpy	py	cc	[illegible]	tot sulf	mo S2	cu	GRAPHIC LOG	ASSAY ppm Cu	MoS2	REMA[RKS]
No core Dacite porphyry tuff	[illegible] dacite porphyry [illegible] on fracs and partly disseminated. Mottled [illegible] texture and [illegible] flow banding [illegible] Eutaxitic fabric quite apparent.	3/10 ft from 0-[illegible] [illegible] 7/ft [illegible]		[illegible] alt. oxidation [illegible] of ferromagnesian minerals from [illegible] ±15% chlor. of ferromagnesian mins. [illegible] qtz eyes observed. Weak dusting of plag phenos by ser [illegible]	w-m	w	Tr	S				oxide zone 100	Orange to brn FeOx-MnO2 on fracs. Possibly some jarosite? also. No sulfides present Tr of magnetite in matrix FeOx & MnO2 decreases on fracs @36'						Tr							
	Prpl dacite porphyry tuff w/ only Tr FeOx [illegible] Mottled texture w/ a few small brecciated zones [illegible] flow banding [illegible] border between dacite and [illegible] latite. Stubby X-tals of plag imbedded in [illegible] devitrified qtz-K-spar matrix. A few tiny very localized K-spar seams are present.	[illegible] 15-25° [illegible]		±15% chl [illegible] black segregations. Tr FeOx on fracs only. Scattered partly chloritized Bt flakes & hornblende prisms disseminated [illegible] matrix. — qtz [illegible] vnlt @ 79' 20° to core axis.	w	w	Tr	S			w	Tr	Tr FeOx & MnO2 coating fracs. No sulfides. Tr of mag in matrix (?) calc on fracs.	0.5					Tr					10	-1	
													Trs of euhedral pyrite scattered along fracs & imbedded in matrix beginning @ 90.0' Trs of calc & (?) jarosite also present.				Tr			Tr						
	Welded dacite tuff breccia [illegible] from 90' to 100' w/ a few [illegible] inclusions.	[illegible]		Calcite on fracs FeOx coating 10° frac @ 98'																				15	-1	

AFFIDAVIT OF LABOR PERFORMED AND IMPROVEMENTS MADE

STATE OF ARIZONA, County of Graham, ss Fee $2.50 No. 5485
I hereby certify that the within instrument was filed and recorded at request of AMAX Exploration Inc. 8-9-73 2:15 P.M. in Docket No. 205 Page 382-387 and indexed in Proof of Labor.
Witness my hand and official seal the day and year aforesaid.
H. LYLE GRANT
COUNTY RECORDER By Ethel Sherman Deputy

STATE OF ARIZONA)
) ss.
COUNTY OF PIMA)

Marvin R. Stauffer, being duly sworn, deposes and says:

That he is a citizen of the United States of America, is more than twenty-one years of age, and resides at 1458 Roller Coaster Road Tucson, Pima County, Arizona.

That he is familiar with those certain unpatented mining claims situated in the Lone Star Mining District, Graham County, Arizona, more particularly described in Exhibit A which is attached hereto and made a part hereof by reference;

That between the period beginning April 20, 1973 and ending May 15, 1973, at least ONE HUNDRED DOLLARS ($100.00) worth of work and labor was performed on or for the benefit of each of the said unpatented lode mining claims listed on Exhibit A, and that such work and improvements were done and performed on behalf of the owners thereof for the assessment year beginning on September 1, 1972 and ending on September 1, 1973, and that the value of such work and improvements was in excess of FIVE THOUSAND ONE HUNDRED DOLLARS ($5,100.00);

That all of the unpatented mining claims are contiguous and that such work and improvements was performed under a common plan of development for all of the said claims described in Exhibit A,

which claims are held by AMAX Exploration, Inc. and that the work was performed on behalf of the owners thereof;

That the work and improvements consisted of:

1. Geophysical surveys on the ground for mineral deposits through the employment of generally recognized equipment and methods for measuring physical differences between rock types or its continuities in geological formations. An IP survey was conducted by Mining Geophysical Surveys, Tucson, Arizona, and a complex resistivity survey was conducted by Zonge Engineering, Tucson, Arizona, on the claim group as reflected by the attached location map and basic findings were as follows: A strong IP response was outlined and defined within the area.

2. A geochemical survey conducted on the ground applying the proper principles and techniques of chemistry as they relate to the search for mineral deposits. Geochemical sampling as shown by the attached location map was conducted on the claim group by personnel of AMAX Exploration, Inc. under the supervision of Kenneth A. Lovstrom, Staff Geochemist. Basic findings were as follows: A weak copper and molybdenum anomaly was defined on the claim group.

3. A geological survey was conducted by personnel of AMAX Exploration, Inc. under the supervision of William P. Durning, Staff Geologist, and consisted of geological mapping, sampling and interpretation on the ground within the claim group area by the proper application of the principles and techniques of the science of geology as they relate to the search for and discovery of mineral deposits. Basic findings were as follows: A complex sequence of Tertiary volcanic rocks with varying intensities of

clay alteration and minor pyrite mineralization was revealed.

That said work was performed at the expense of and under the supervision of AMAX Exploration, Inc, on its behalf and on behalf of the individual owners hereinafter named in Exhibit A and that the work was performed for the purpose of complying with the laws of the United States and the State of Arizona pertaining to assessment work or annual labor for the purpose of holding title to said unpatented lode mining claims for the valuable mineral contained therein.

DATED THIS 8th DAY OF August, 1973.

Marvin R. Stauffer

Subscribed and sworn to before me this 8th day of August, 1973.

J. T. Green
Notary Public

My Commission Expires August 9, 1975

Sept 15, 1972

Mr Lance Pope,
P O Box 431
Thatcher, Arizona, 85552

Dear Lance,

Your letter of Sept 12 was delivered as I was dashing to the airport. I'm on my way to Finland and Russia for 3 weeks to give lectures and study mineral deposits in Finland and, I hope, the USSR.

I meant to write to you before Sept 1 and report on the work that Harold and I have done on the HWR claims. We've spent a total of ~10 days on the property doing geology, Hg soil gas analyses, and reconnaissance of the property. We entered the area this summer to do variable frequency IP work but I decided against it based on the extensive evidence of pulse IP work that has been done. What was done was pulse IP, generally in vehicular accessible sites, suggesting large power units, and the transmitter sites are most numerous.

We decided instead to perform Hg soil gas analyses which was done in the region of the corrals on both sides of the canyon bottom, especially in the discolored area across the wash from the corrals and water tanks. The results were most disappointing with analyses ranging between 12 to 100 ppb Hg. This is essentially background in unaltered areas.

On top of all these disappointments, the worst was that [illegible]

stopped payments. We're still trying to get our penny share concern Manicord Ventures, Ltd., off the ground and I had hoped that it would help further studies on DWR, but the market is real bad in SLC now and I'm afraid we'll have to return the property to you.

I figure with our geochemical work on the property, Hg assays, and Harold Jones and myself services/photogrpahs that we have expended $5,000 on the DWR group. If you can file this as assessment work, I'll be most appreciative. If the assessment work notice needs our signatures, I'll be back in SLC on Oct 7 and would sign and prepare a notice at that time.

I'm in Washington D.C. now, having just obtained my visa from the Russian Embassy - quite an experience. I fly to NYC now and continue on to Europe and Asia.

I'm awful sorry that DWR didn't turn out better. Probably what it needs is a deep drill hole test - but God only knows where.

Very best regards and best wishes.

Sincerely yours,

Roy Jensen

Mead LeRoy Jensen.

P.S. If you could make me a copy of this letter I'd appreciate receiving such; xerox, verifax etc.

HWR CLAIMS

Sample Number		PPM Copper	PPM Molybdenum	PPM Lead	PPM Zinc
614 C	Rock	22	6	34	80
615	Soil	52	6	31	84
616	Rock	10	10	25	30
617	Soil	27	3	25	90
618	Rock	12	7	25	48
619	Soil	64	6	20	131
620	Sed.	20	3	17	80
621	Rock	10	9	31	73
622	Sed.	43	6	31	90
623	Soil	31	3	31	79
624	Rock	10	3	29	70
625	Soil	10	1	23	112
626	Sed.	26	3	37	116
627	Rock	25	3	23	76
628	Soil	18	3	17	79
629	Soil	25	3	17	89
630	Soil	60	3	25	72
631	Soil	60	3	29	84
632	Soil	34	1	29	10
633	Sed.	12	4	29	78
634	Sed.	59	1	29	75
635	Soil	32	3	23	107
636	Rock	10	3	20	24
637	Soil	48	4	40	109
638	Drill Cuttings	25	6	31	57
639	Soil	32	3	48	109
640	Sed.	13	3	23	55
641	Rock	20	3	29	76
642	Soil	30	6	31	112
643	Rock	27	6	37	157
644	Sed.	32	6	34	142
645	Soil	67	9	121	250
646	Sed.	23	9	95	233
647	Soil	40	10	43	169

12-15 ... 50 10,000 - 200 300 400 600

Nov. 71 June 72 record

60,000 ~~40,000~~

60,000 ~~30,000~~

F. D. MacKENZIE
MINING GEOLOGIST

May 26, 1956

Mr. William E. Rhodes
2213 South Irving Avenue
Tucson, Arizona

Dear Bill:

As per your request May 22, 1956, I submit this letter which is not a formal report. I consider this only a preliminary step in the examination of your family's property. This is because of insufficient time spent covering such a large and inaccessible area.

On the 8th of April 1956 I made a trip to Mt. Turnbull for the purpose of examining some copper prospects. The property examined consisted of twelve (12) unpatented claims located in Section 26, Township 4 South, Range 20 East, Gila & Salt River Meridian, Graham County, Arizona.

It is my understanding that these claims were located in 1913 and relocated in March 1956 by the same family. The required location work as prescribed by law was being carried out at the time I was there. This property is located on the south side of Mt. Turnbull at approximately 5500 feet elevation above sea level. The terrain in the area is extremely rugged and devoid of vegetation except for a few juniper trees. The canyon floors directly below the property have several excellent springs with numerous cottonwood trees around them. The property is accessible by two ways, the first being by foot trail 5 miles from the nearest road, the second way in is by following the main fork of Goodwin wash by jeep to about 1 mile from property.

The country rock in the area covered by the claims consists of Andesite, Andesite Porphyry and Rhyolite. The Rhyolite is capping the Andesites. These formations have been intruded by later rhyolite porphyry dikes which extend in a northwest-southeast direction dipping to the north into the mountain. It is along this rhyolite dike that the mineralization has taken place. It is my opinion that the rhyolite dike intruded the country rock along a fault, next came post intrusion faulting and subsequent mineralization. The rhyolite prophyry dike varies in thickness from 3 feet to 15 feet and can be seen cropping out along the mountain side for approximately one mile. The dike has a dip of 53° north on the east and a dip of 37° north on the west side of the claims. The mineralization of the dike is chiefly chalcopyrite filling the brecciated dike rock. The vein averages 3 to 4 feet in thickness. There is no evidence of extensive oxidation of the copper ores as the chalco-

pyrite is exposed on the surface and for a depth of 30 feet down dip of the vein shows little or no oxides. There are several inclined tunnels none over 30 feet long following the vein down dip showing ore to the bottom. A small amount of gray limestone float was noted on the way into the claims. This had obviously come from higher elevations on the mountain but because of limited time was not traced to its sources.

In concluding, I would say that this property bears further investigation even though it is located in a fairly inaccessible area.

Sincerely yours,

F. D. MacKenzie
Geologist

PRELIMINARY GEOLOGIC REPORT ON THE HWR CLAIM GROUP

FT. THOMAS QUADRANGLE, ARIZONA

Introduction

The HWR Claim Group is a continuous block of 50 claims located 35 miles northwest of Safford, Arizona (8 miles north of Fort Thomas) along the west side of the Gila Mountains. The claims are located at the head of Day Mine Wash where altered andesite to monzonite outcrops at the base of the Gila Mountain volcanics (rhyolite to andesite overlain by basalt flows). The area has undergone alteration which grades in a bulls-eye pattern from phyllic, to argillic, to propylitic alteration over a seven square mile area. Abundant casts and staining of iron sulfide mineralization with trace occurrance of copper oxide are found in the claims area. At present, ground is open on all four sides of the HWR claims.

General Geology

Structure -- The controlling structure in the area of interest is the Butte fault, a high angle, normal, south-westerly-dipping fault which borders the west side of the Gila Mountains and is responsible for uplifting the Gila Mountain volcanics and exposing a window of andesite-monzonite at the base. This same structure is believed to be the fault which controlled the emplacement and limits of the Phelps Dodge discovery north of Safford, as well as Producers Minerals' Peacock Mine ore body, etc. This fault line has been diagrammed by Wilson, et al. on the geologic cross-section 7-B, state maps -- Arizona Bureau of Mines. Cross-faulting at North 50^0 East (with minor displacement) has broken the area of interest into a series of irregular blocks with a general size of $\frac{1}{4}$ to $\frac{1}{8}$ mile square.

Lithology -- Two major rock types are exposed in the area of interest -- a layered sequence of volcanic rocks ranging from quartz latite to porphyritic andesite, and plutonic monzonite plugs and dikes. The coarse-grained intrusive rocks are small injection bodies into layered volcanics which are bleached in the vicinity of the intrusions. The above-mentioned sequence is overlain to the east, northeast, and southeast by the younger volcanic series of andesites and basalts (late tertiary) which post-date the older volcanic andesite series, monzonite intrusions, and mineralization. Altered limestone blocks rafted in the younger

volcanic series are noted in the area with in-place limestone sequences exposed about four miles to the northwest and three miles to the southeast. Alluvium and younger andesite flows overlay the altered volcanic and monzonite sequence to the northwest and south.

Alteration and Mineralization

Three alteration zones are evident in the area of interest and form a bulls-eye pattern roughly centered about the Day Mine Windmill (refer to accompanying alteration map). The highest grade of alteration is phyllic, which covers an area roughly two square miles. Surrounding this alteration zone is a zone of argillic alteration which extends about two miles out from the phyllic zone to the north, south, and southwest, which becomes buried under volcanic cover or alluvium in other directions. Weak propylitic alteration is evident to the south and southwest beyond the argillic zone, the limits of which are also masked by alluvial cover. This bulls-eye pattern is strikingly apparent from the air. In addition to a zonal alteration pattern, hydrothermal bleaching is evident along cross-faults and along the trace of the Butte fault, and casts with strong limonite staining and precipitation are evident at several fault intersections.

Frequent iron oxide casts with hematite-limonite staining and weak shows of crysocolla (?) have been noted within the area. Prospects to the east of the area reportedly have had spotty occurrances of calcocite but this has not been confirmed by the writer.

Land Status

~~Forty~~ 50 claims have been validated and filed at the Graham County Courthouse, Safford, Arizona, with work proceeding on the remaining ten claims. At present, ground is open on all sides of the HWR claim group.

Previous Work

The area in question and adjacent areas to the south, southeast, southwest, and west were staked in 1965 by Bear Creek Mining Co., who staked in excess of four hundred claims and did extensive shallow drilling (100' validation holes), geophysical, and geochemical surveys in the area covered by the HWR claims. In addition, a 500' hole was drilled on the edge of the property by a firm reportedly under lease agreement to Phelps Dodge Corporation. Two geophysical crews have run surveys over the HWR claims since

Bear Creek dropped their claims, one survey being run in April, 1971, by an unknown survey party from Salt Lake City, two weeks after the HWR claims were first papered.

Comparison to Similar Deposits

The HWR claim group has been located in an area where structure, rock types, and alteration zoning indicate an environment occurs which is similar to the environments encountered and presently being developed by Phelps Dodge, Producers Minerals, and Inspiration Consolidated Copper at their respective prospects in the Safford area. Those favorable characteristics include proximity to the Butte fault, on strike with the above-mentioned prospects and mine, monzonite intrusions in latite-andesite host rocks, and phyllic to propylitic alteration zoning. It is believed by the writer that the HWR claim group has the target prerequisites for a potential copper porphyry deposit. The claim group and surrounding land is open for inspection and investigation by your company.

Respectfully submitted,

Lance W. Pape
HWR Claims Group

LWP/dm