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PRINTED: 11/20/2001

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: LONESOME PINE & ESTHER GROUPS

ALTERNATE NAMES:
COPPER SPRINGS
AQUA VERDE

GILA COUNTY MILS NUMBER: 81

LOCATION: TOWNSHIP 1 S RANGE 14 E SECTION 14 QUARTER E2
LATITUDE: N 33DEG 20MIN 30SEC LONGITUDE: W 110DEG 54MIN 10SEC
TOPO MAP NAME: PINAL RANCH - 7.5 MIN

CURRENT STATUS: DEVEL DEPOSIT

COMMODITY:
COPPER SULFIDE
COPPER OXIDE
MOLYBDENUM
TUNGSTEN
LEAD

BIBLIOGRAPHY:
ADMMR LONESOME PINE GROUP & ESTHER GROUP FILE

11/13/92

ARIZONA COPPER RESERVES

COMPILED BY

ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES

PROPERTY:

LONESOME PINE GROUP

ALSO KNOWN AS - COPPER SPRINGS, ESTHER GROUP

OPERATOR\OWNER:

Corn, Russ
8425 E.Desert Steppes Dr.
Tucson, AZ 85710
602-298-1770

LOCATION INFORMATION:

TOWNSHIP 1 S RANGE 14 E SECTION 14
COUNTY - Gila AZMILS - 81
DESCRIPTION - 5 miles south of Inspiration.

ORE TYPE AND RESERVE INFORMATION:

Sulfide - 20 MILLION TONS AT 0.4% Cu (a)

RESERVE INFO - (a) Possible tonnage of partially tested chalcocite/oxide zone.

SUMMARY

COPPER SPRINGS CANYON, SUMMIT MINING DISTRICT, GILA COUNTY, ARIZONA

General

The Copper Springs Canyon prospect has potential for a substantial tonnage of open-pit, readily-leachable, oxide copper and chalcocite mineralization in a self-leaching chalcocite blanket and adjacent down-slope zone of oxide copper mineralization. The prospect is part of a large porphyry copper alteration system located approximately five miles south of Inspiration that was not thoroughly evaluated by previous exploration efforts. The alteration-mineralization system consists of a concentrically zoned pattern of pyritic-phyllic and potassic alteration covering an area of approximately five square miles. The pattern has been disrupted by faulting with a large area of high-sulfide, pyritic-phyllic alteration juxtaposed against low-sulfide potassic alteration.

Location

Sections 13, 14, 15, 22, 23, 24, T1S, R14E, Sec 14, T1S, R14½E, Summit Mining District, Gila County, Arizona.

Land

There are three groups of unpatented claims covering most of the mineralized area.

1. Lonesome Pine & Ester group of 20 claims - Santa Anna Mining Co.
2. Turdy group of 46 claims - Ed Dannenhauer, A.B. Walker, Charlotte & Buster Sanders
3. Aqua Verde group of 30 claims - Richard Ahern & Russell M. Corn.

Previous Exploration

Previous exploration includes five churn drill holes, drilled in 1948, five or six widely-spaced holes drilled by Bear Creek in the late 1950's, seven shallow holes drilled by Kerr-McGee in 1964 and several holes drilled by Cities Service in the late 1960's. This drilling is concentrated on a limited part of the alteration system, and was carried out prior to the recent advances in heap leaching and SX-EW technology. Available data on this drilling includes N.P. Peterson's (USGS Bull. 1141-H) summary of the churn drilling, and composite assay logs for the Kerr-McGee drill holes. Although drill hole locations are not definitely known, this data indicates the presence of widespread sub-economic primary copper mineralization and a chalcocite blanket 40 to 50 feet thick averaging approximately .40% copper in the area of high-pyrite phyllic alteration.

Exploration Potential

Copper mineralization of economic interest at Copper Springs Canyon occurs as a readily leachable chalcocite blanket and adjacent, downslope oxide copper mineralization that have not been evaluated by previous drilling. Limited data suggests a tonnage potential in excess of 20 million tons at .40% Cu for the chalcocite blanket. The blanket has migrated laterally and down-slope to be precipitated as both chalcocite and oxide copper minerals at lower elevations. The downslope movement of soluble copper should have resulted in a greater concentration of copper at lower elevations, with increased thickness and grade in the lower part of the chalcocite enriched zone and oxide copper minerals in the adjacent area of little or no pyrite. The potential of leachable chalcocite and oxide copper mineralization in this more favorable zone has not been tested by previous drilling.

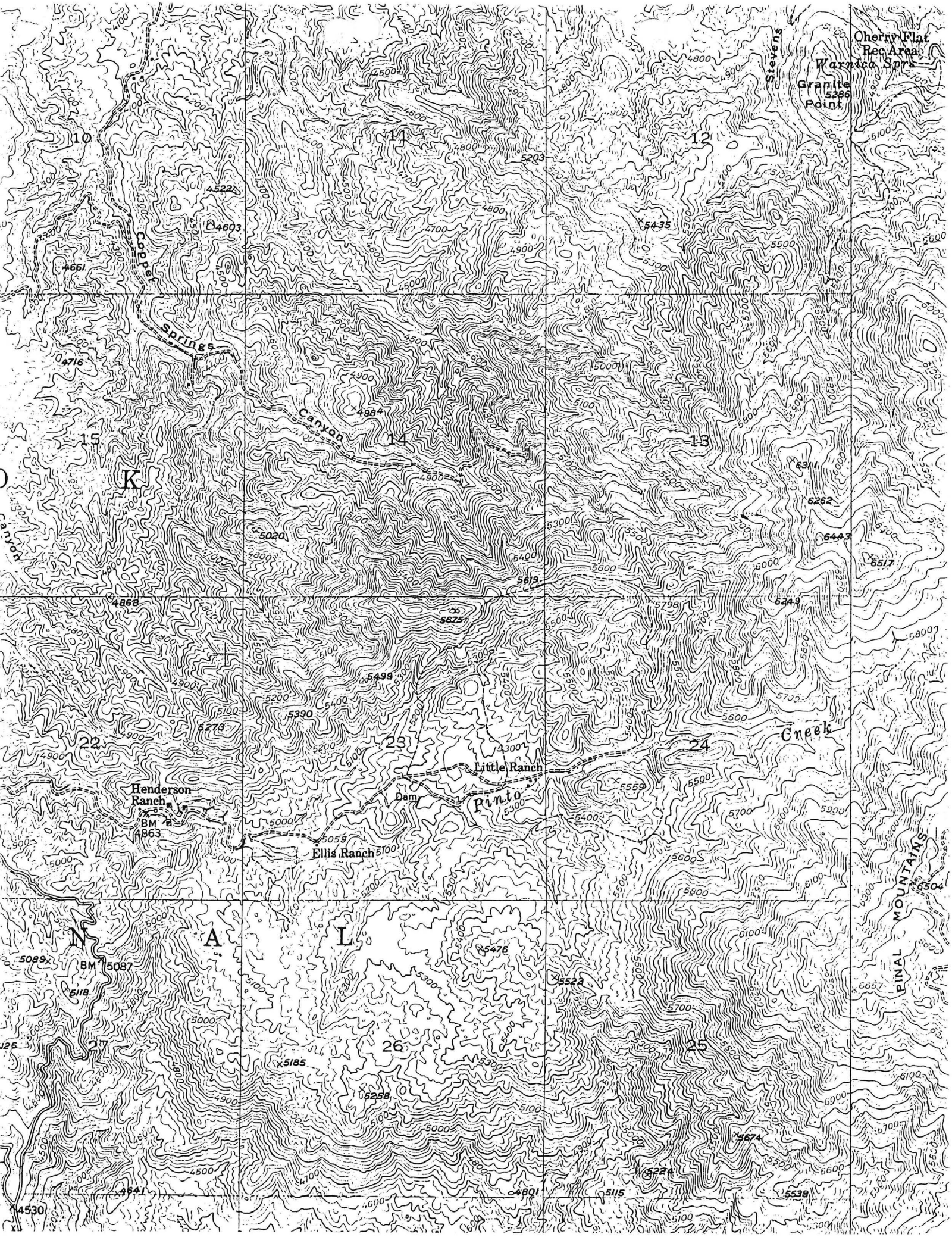
Prepared by: Russell M. Corn

September 26, 1990

8425 E. DESERT STEPPES DR.

TUCSON, AZ 85710

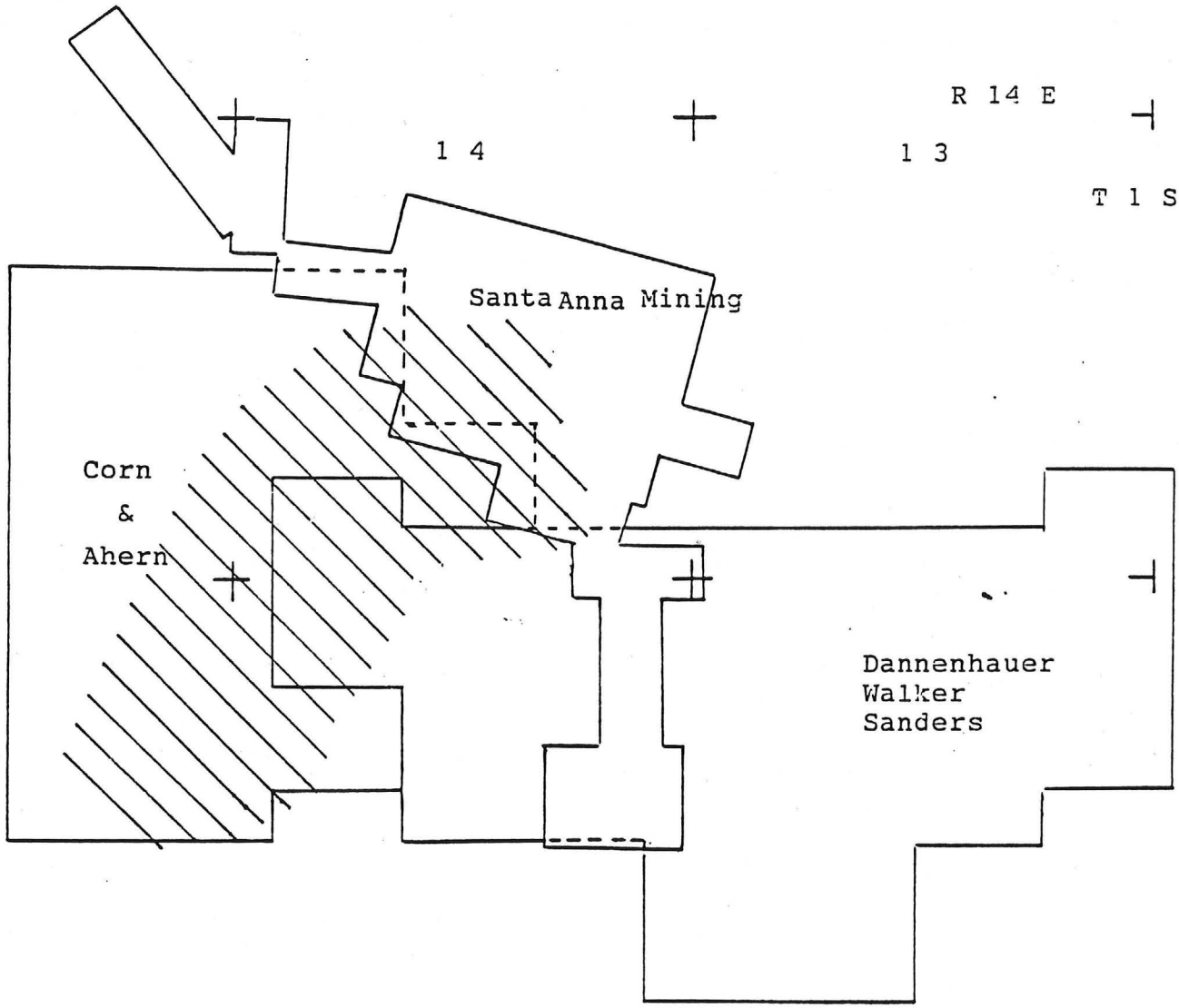
298-1770


Cherry Flat
Rec Area
Warnica Spr
Granite
5286
Point
Stevens
Coppe
Springs
Canyon
Canyon
Creek
Little Ranch
Dam
Pinto
Henderson
Ranch
BM
4863
Ellis Ranch
BM 5087
PINAL
MOUNTAINS
10
11
12
13
14
15
22
23
24
25
26
27
K
A
L
N
4522
4603
4661
4716
4984
5020
5203
5435
5619
5675
5798
5499
5390
5278
5559
5059
5476
5522
5185
5258
5674
5224
5115
5538
4801
4641
4530
6311
6262
6443
6517
6249
6504
6657

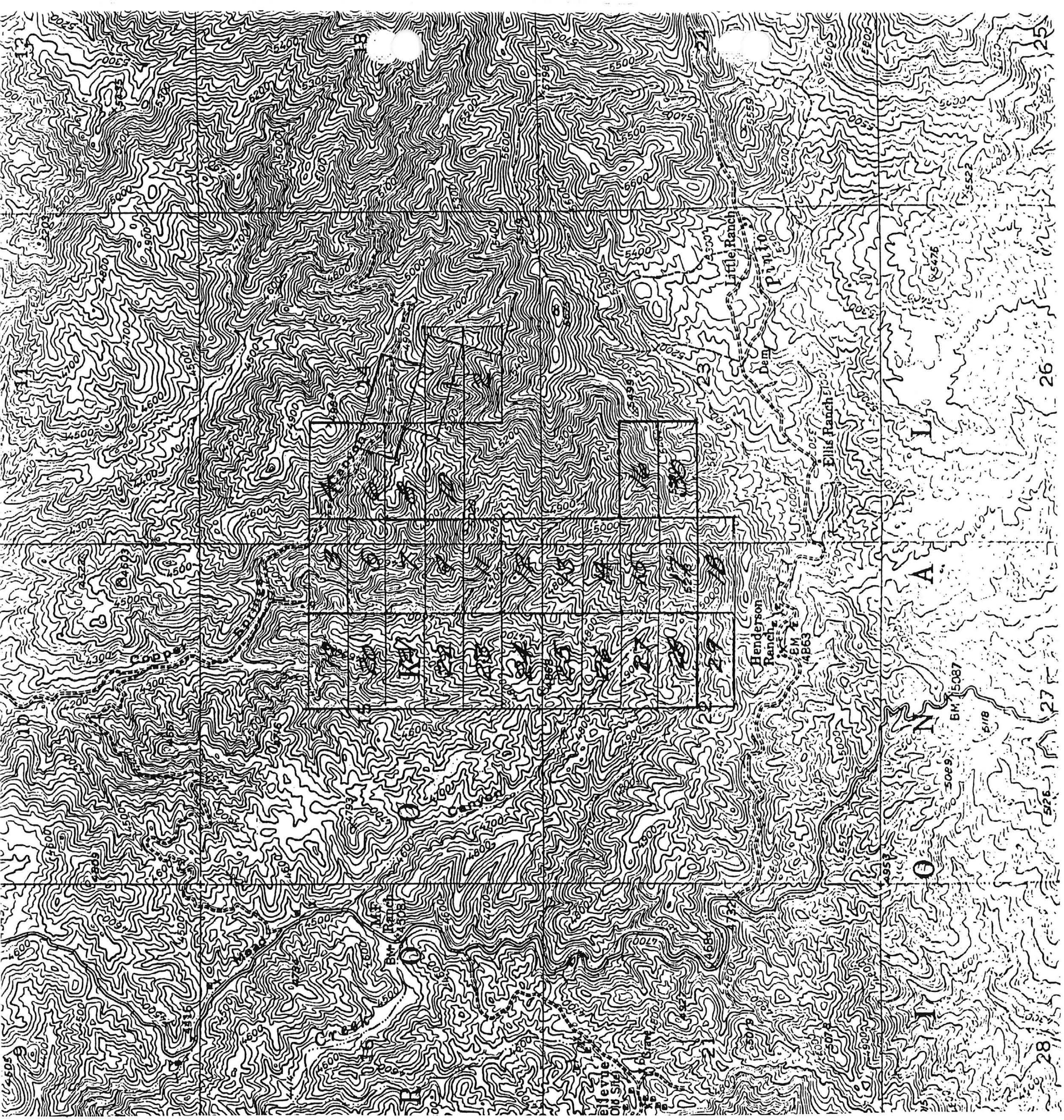
CASTLE DOME MINE 3.5 MI. (INSPIRATION)
55'
Schultze Ranch
BM 3883
Tank
Tanks
BM 3906
Wash
Bloody
Springs
Alfred
BM 4201
BM 4189
BM 4287
CASTLE DOME ROAD
60
70
4549
4605
4809
4603
4661
4416
4716
4734
4793
4984
5020
5625
5498
5390
5278
4868
4695
4508
MF Ranch
Mead
Creek
Copper
Springs
Canyon
R O O K
Bellevue
(Old Site)
Grave
4927
4684
4732
5018
4957
4958
5015
4892
5089
BM 5087
5476
Henderson Ranch
BM 4863
Ellis Ranch
5059
Little Ranch
Dam
Pinto
T I O N A L
4
3
2
9
10
11
16
15
14
21
22
23

LAND MAP

COPPER SPRINGS CANYON, GILA COUNTY, ARIZONA



General Area of Favorable Potential
for Leachable Copper Mineralization



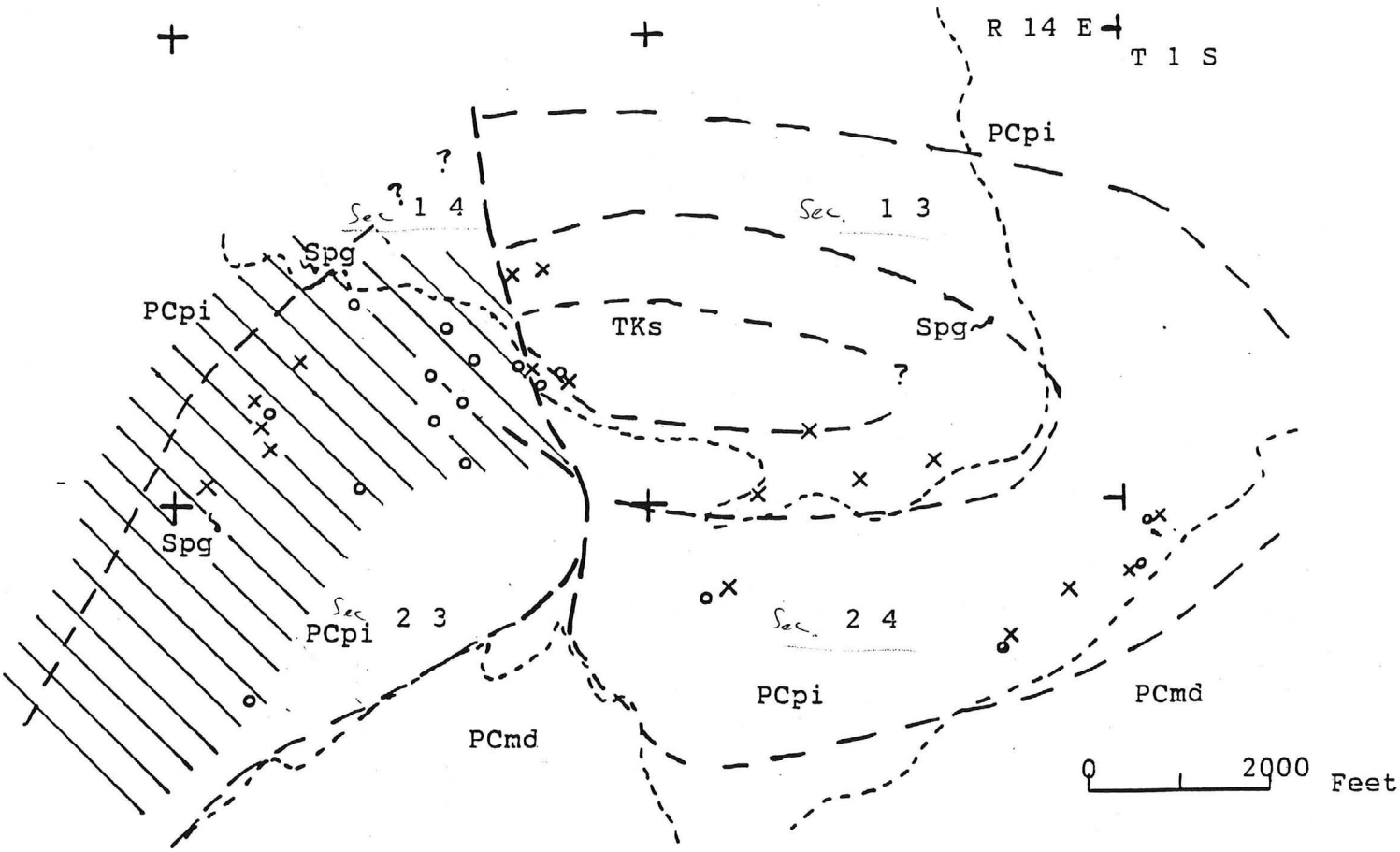
Map of Aqua Verde Claims

Copper Springs Canyon

Summit Mining District, Gila County, Arizona

GEN[illegible]ZED ALTERATION PATTERN

COPPER SPRINGS CANYON, GILA COUNTY, ARIZONA



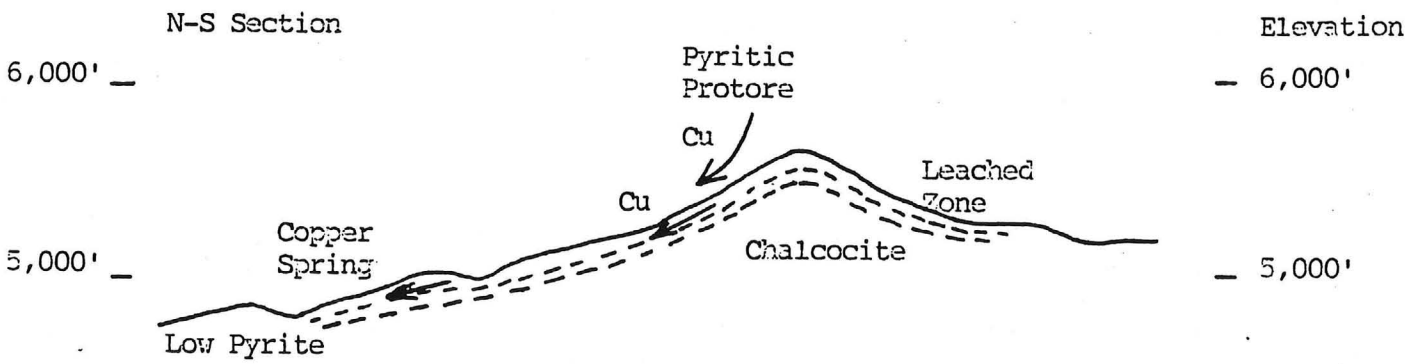
ALTERATION

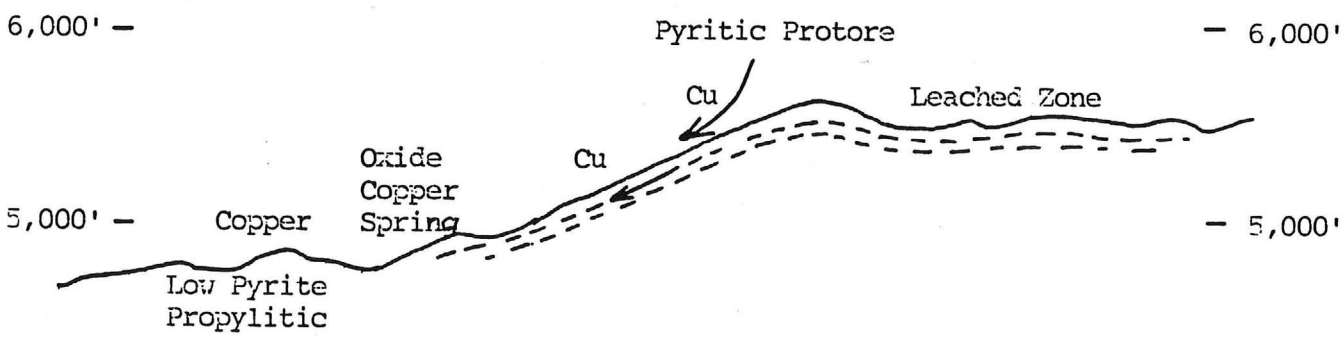
- Low sulfide Potassic
- Potassic - Phyllic zone of numerous quartz-sericite-K feldspar veinlets
- High sulfide Phyllic-Pyritic
- Low sulfide Phyllic-pyritic

General Area of Favorable Potential for Leachable Copper Mineralizaion

- o Drill Hole
- X Oxide copper occurrence
- Spg Copper spring
- Tks Schultze granite
- PCpi Pinal Schist
- PCmd Madera diorite

R.M. Corn
April, 1990





E-W Section

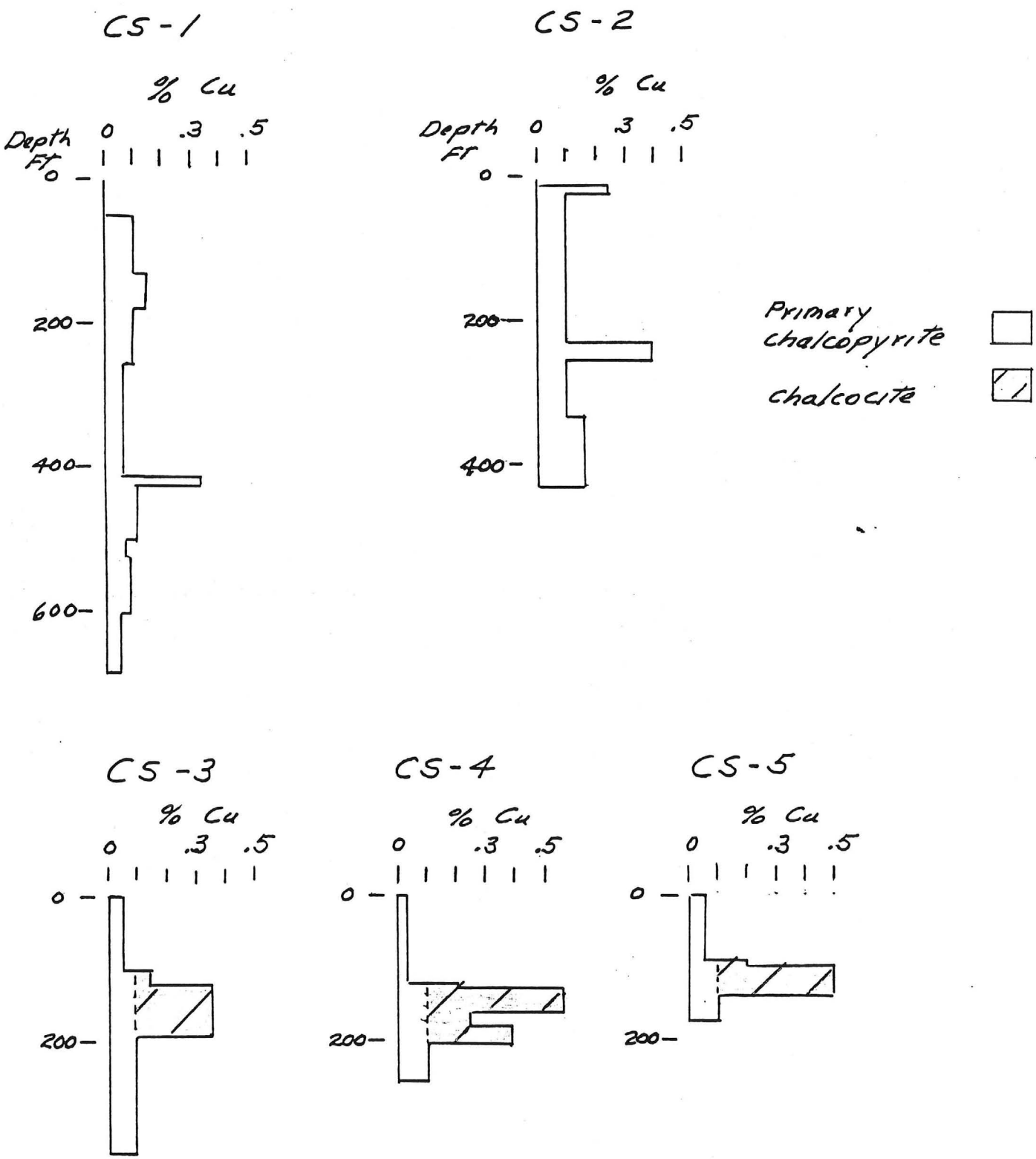
Scale
1 inch = 1,000'
H = V

Sections Through Pyritic Protore

At Copper Springs Canyon

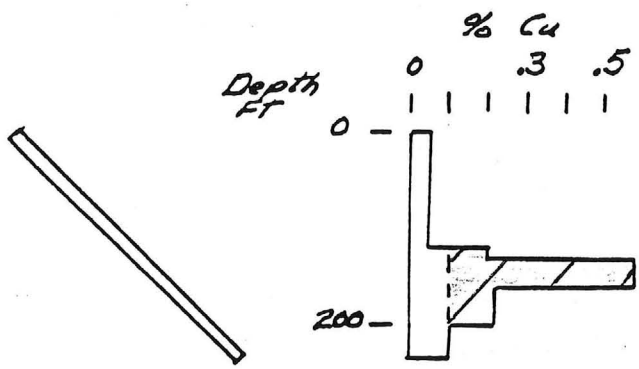
Illustrating Copper Migration

Chalcocite Enrichment and Oxide Copper Mineralization

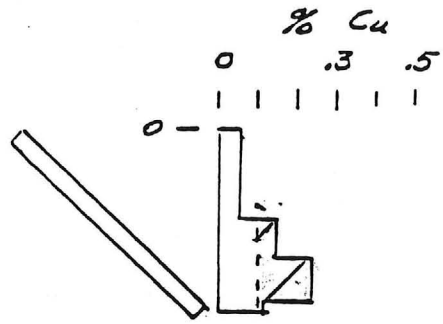


Chalcocite Mineralization and Copper Values
Kerr-McGee Drill Holes
Copper Springs Canyon, Gila County, Arizona

CS - A6



CS - A7



KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-1
Spudded 1-8-64
Completed 2-17-64
Total Depth 692 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
50	50								
125	75	.10	nil	.20	.0005	.36	trace	3.5	$1.49
173	48	.13	nil	.20	.0005	.36	trace	2.6	$1.67
253	80	.10	nil	none	.0005	.30	none	2.7	$0.99
412	159	.06	nil	none	.001	.20	none	2.5	$0.65
421	9	.33	nil	none	none	.30	.02	2.4	$3.07
501	80	.11		.	.003	.10	none	2.9	$0.87
526	25	.06			none	.25	trace	2.3	$0.69
605	79	.08			none	.20	none	2.5	$0.74
692	87	.05	.05	none	none	.25	none	2.4	$0.74
									692 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-2
Spudded 2-18-64
Completed 3-2-64
Total Depth 429.8 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim _____ Sec _____ T. _____ R. _____
Elevation _____
Hole Size _____
Core Size BX
Hole Angle Vertical
Collar Coords. _____ N.
_____ E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
10	10								
20	10	.23				.20	trace		$1.64
30	10	.09				.20	trace		$0.80
40	10	.10				.10	trace		$0.73
232.4	192.4	.09	.05	.04	.002	.30	nil		$1.18
252	19.6	.34				.10	nil		$2.17
330	78	.09	.05	nil	.002	.24	trace	3.4	$1.02
429.7	99.7	.16			.001	.26	trace	2.3	$1.33
									429.7 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-3
Spudded 3-7-64
Completed 3-13-64
Total Depth
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
1.3	1.3								
110	108.7	.05			.001	trace	trace	2.2	$0.33
130	20	.14				trace	trace	2.2	$0.84
195	65	.35	.05	nil	.001	trace	nil	4.6	$2.24
300	105	.08	trace	nil	.001	trace	nil	2.0	$0.51
359.5	59.5	.08			.004	trace	nil	2.4	$0.59
									359.5 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs
Hole Number CS-4
Spudded 3-17-64
Completed
Total Depth
Driller J. Jones
Logged By R.C.B.

County Gila State
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
1									
130	129	.04			.01	trace	trace	3.2	$ .52
135	5	.20			.003	trace	trace		$1.28
165	30	.56	trace	nil	.01	trace	.01	3.2	$3.99
185	20	.24			.005	.02	.005	2.2	$1.78
210	25	.39			.0075	trace	trace	2.1	$2.55
260	50	.10			.001	trace	trace	2.3	$ .63
									260 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-5
Spudded 3-28-64
Completed 4-3-64
Total Depth 175.3 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
2	2								
98	96	.05			.002	trace	trace	2.8	$ .36
105	7	.19			.005	trace	trace		$1.28
141	36	.49			.002	.02	trace	2.5	$3.03
175.3	34.3	.10			.001	trace	trace	2.2	$ .63
									175.3 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-A6
Spudded 4-6-64
Completed 4-20-64
Total Depth 325.2 feet
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim Sec T. R.
Elevation
Hole Size
Core Size BX
Hole Angle 45°
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									not assayed
2.7									
170	167.3	.05			.011	tr	tr	3.1	$ .61
185	15	.19			.014	.02	tr	3.1	1.56
230	45	.57			.004	tr	tr		3.53
280	50	.21			.009	tr	tr	3.2	1.51
325.2	45.2	.10			.004	tr	tr	2.6	.71
									325.2 is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

KERR-McGEE OIL INDUSTRIES, INC.

Assay Log

District Copper Springs - Miami
Hole Number CS-A7
Spudded 4-20-64
Completed 4-30-64
Total Depth 263.9'
Driller J. Jones
Logged By R.C.B.

County Gila State Arizona
Claim _____ Sec _____ T. _____ R. _____
Elevation _____
Hole Size _____
Core Size BX
Hole Angle 45°
Collar Coords. _____ N.
_____ E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	U_3O_8 ppm	Gross Value
0									
									not assayed
21							Not Valid		
135	114	.06			.003	trace	.055	3.0	$2.37
190	55	.15			.005	trace	.006	4.1	$1.25
255	65	.23			.005	trace	.003	3.8	$1.63
263.9	8.9	.11							$ .66
									263.9' is end of hole

* Gross value calculated from copper 30¢ per pound; lead 10.5¢ per pound; zinc 11.5¢ per pound; molybdenum $1.40 per pound; silver $1.30 per ounce; and gold $35.00 per ounce.

Copper Springs
Gila Co., Az

Table

Mineralized Intervals Intersected by the Drill Holes

Collar Elev.	T.D.	Intervals	Foot-age	Content (%Cu)	Mineral	Classification	Rock	Obs.
5020'	187'	155-185	30	0.114	Chalcocite coating pyrite	N.C.	Schist	Oxide & sulphide zone.
5262'	146'	-	-	-	-	N.C.	Schist all oxide zone	No Cu values abo. 0.1%
5448'	205	-	-	-	-	N.C.	Schist oxide & sulph. zones	No values above 0.1%
5334'	205'	-	-	-	-	N.C.	Schist	One isolated val. >0.1% Cu. Ox. & Sulph. z
5150'	105'	-	-	-	-.	N.C.	Schist all oxide zone	No values >0.1% C
5101'	159'	-	-	-	-	N.C.	Schist oxide & sulph. zones	No values >0.1% C
5504'	210'	180-190 175-195	10 20	0.34 0.22	Malachite	N.C. G.I.	Schist	All oxide zone
5741'	210'	105-135 145-210 170-210	30 65 40	0.19 0.19) 0.23)	Malachite, tenorite (Chalcocite, (coating pyrite) (Chalcopyrite	 N.C. G.I.	Granite	Oxide & Sulph. z
5720'	103'	-	-	-	-	N.C.	Schist	No Cu value >0.1% oxide zone
5403'	110'	-	-	-	-	N.C.	Schist & diabase	Oxide & sulph. zo
5323'	35'	-	-	-	-	N.C.	Schist	Oxide & sulph. zo
5132'	268'	15-85 152.5-268.0 166.2-187.4 211.2-240.0	 115.5 21.2 28.8	0.13 0.30 0.40 0.42	Malachite, tenorite (Chalcocite (Chalcopyrite	 G.	Schist	Oxide & sulph. zo

Table I (d.)

Collar Elev.	T.D.	Intervals	Foot-age	Content (%Cu)	Mineral	Classification	Rock	Obs.
5130'	248.7'	135.0-234.5 178.0-216.0 196.0-216.0	99.5 38 20	0.22 0.29 0.31	Chalcocite (Chalcocite, minor (Chalcopyrite, bornite	G.	Schist	Oxide & Mix ox-su
5144.4	120'	56.5-73.0	16.5	0.21	Chalcopyrite	N.C. G.I.	Granite	Sulphide zone onl
5733'	132'	95-128	33	0.09	Tenorite, Chalcocite (weak)	N.C.	Granite	Mineralization at oxide-sulphide
4218+ 4247'	70 140	-	-	avg. 20 ppm		N.C.	Granite	Oxide & sulphide
4325'	146	-	-	avg. 100 ppm		N.C.	Granite	Oxide & sulphide
4670'	148'	-	-	avg. 200 ppm		N.C.	Granite	Oxide & mixed oxi sulphide zone
5330'	311	115-155 175-195 205-292.6 224.7-237.7	40 20 87.6 13.0	0.13 0.15 0.13) 0.23)	tenorite (ox.zone) ten.&malachite (ox.zone) chalcocite zone	N.C. G.I.	Schist	oxide &mix. ox-su sulph. & chalcc zones.
5428'	333.8	246.8-255.0	9.2	0.28	chalcocite zone	N.C.	Schist	ox., & mix. ox.su sulph. &chalcoc (weak) (zones)
4965'	142.0'	100.3-108.9	8.6	0.13	chalcocite zone (weak)	N.C.	Schist	ox., & sulphide zo
5040'	286.1'	45 - 75 177.2-257.7 177.3-202.2	30 80.5 25	0.17 0.31) 0.44)	Cu oxide zone chalcocite; cuprite in chalcocite zone	G.	Schist	ox., &mix. ox-sulp zones
5150'	223'	136.2-199.7	63.5	0.21	Chalcocite, chalcopyrite	N.C. G.I.	Schist	ox., mix. ox-sulp zones. Chalcoc zone.
5147	225.6	25 - 42.7 69.6-193.0	17.7 123.4	0.17 approx. 0.20	Malachite Chalcopyrite	N.C.	Schist	ox., mixed ox-sulp sulph. zones. No chalcocite zon

Table I (cont'd.)

Collar Elev.	T.D.	Intervals	Foot-age	Content (%Cu)	Mineral	Classification	Rock	Obs.
5521'	297.0'	150-283	123'	0.14	Chalcocite	G.I.	Schist	oxide; mix. ox-s and sulph. zo Chalcocite z
4750.3'	155.0	55- 65	10	0.10	Chalcocite	N.C.	Schist	ox.; mix. ox-s and sulph. zo Weak chalcocit
4883.1'	136.8'	70- 75	5	0.13	Malachite	N.C.	Schist	ox., mix. ox-sul and sulph. zon N chalcocite.
5160'	296.7'	60-110	50	0.20	Chalcocite	N.C.	Schist	ox.; mix ox-sulp and sulph. Cha cite zone.
4726'	102.3'	-	-	avg. <150 ppm	-	N.C.	Granite	ox.; mix ox-sulp sulph. zones.
5013'	219.5'	40- 50	10	0.13	Cu oxides	N.C.	Schist	Three zones and v chalcocite zone

The classification is an arbitrary qualitative estimation of the mineralization in the drill hole.

N.C. - non-commercial (very poor)
G. - good mineralization
G.I. - good indication of mineralization

Table II*

Mineralized Intervals Intersected by the Kerr-McGee Drilling Program

Drill Hole	Thickness (ft.)	% Copper	Elevation of bottom of Enriched Blanket (ft)
KM-1	9	0.33	5,209
KM-2	19.6	0.34	5,403
KM-3	65	0.35	5,050
KM-4	80	0.40	4,980
KM-5	41	0.45	4,929
KM-A6	78 (vertical)	0.35	4,982
KM-A7	63 (vertical)	0.22	5,090

*From Fitzgerald (1964)

NAME OF MINE: LONESOME

COUNTY: Gila
DISTRICT:
METALS: cu,mo,w,pb

OPERATOR AND ADDRESS:		MINE STATUS	
DATE:		DATE:	
8/44	Joseph M. Santa Ana, 624 Sikes St., Miami,Ariz.	8/44	Developing
		9/44	Idle

ARIZONA DEPARTMENT OF MINERAL RESOURCES
MINERAL BUILDING, FAIRGROUNDS
PHOENIX, ARIZONA

April 2, 1958

To the Owner or Operator of the Arizona Mining Property named below:

Lonesome Pine Group and Esther Group Tungsten, copper, molybdenum
(Property) (ore)

We have an old listing of the above property which we would like to have brought up to date.

Please fill out the enclosed Mine Owner's Report form with as complete detail as possible and attach copies of reports, maps, assay returns, shipment returns or other data which you have not sent us before and which might interest a prospective buyer in looking at the property.

Frank P. Knight

FRANK P. KNIGHT,
Director.

Enc: Mine Owner's Report

MIAMI
AUG 8
3 PM
1941
ARIZ.

THIS SIDE OF CARD IS FOR ADDRESS

Department of Mines & Resources
-rce of State of Arizona
528 Title of Trust Bldg.
Phoenix
Ariz.

Tucson - Ariz
Aug. 8 - 1914.

Dear Sir.

as I have my property listed with you., is my duty to let you know that I have leased and optioned it to Mr. R.C. Woods and associate of Los Angeles Calif. there for please mark my file as leased. at present they have started to sink a shaft 4 X 6 - ft. 3 men are at work and figure to go down 50 ft and then cross cut on strong Vein (J.M. Santa Anna.

File
Lonesome Pine Lump

July 15, 1940

J. s. Coupal
Dept. of Mineral Resources
Phoenix, Arizona

Dear Sir:

The only information I can forward to you at the present is that I have discovered more ore. I am still willing to sell my property at the price $12, 000. If any individual is interested in the buying of this property and cannot come to see it, I am willing to send some samples of the ore.

Very truly yours,

J.M. Santa Anna

13 August 1941

Mr. J. M. Santa Anna,
Miami,
Arizona.

My dear Mr. Santa Anna:

I thank you for your card of August 8 on which you advise that the LONESOME PINE GROUP has been leased and optioned to Mr. R. O. Woods of Los Angeles, California.

I appreciate your advising me of this transaction, and I trust that it will be most profitable to you.

With best wishes, I am

Yours very truly,

J. S. Coupal

JSC-jrf

December 17, 1942

MEMORANDUM

LONESOME PINE GROUP

TO: Andrew Macfarlane

FROM: Earl F. Hastings

Enclosed is a Mine Owner's Report on the above property. Mr. Santa Anna, whose address appears on the report, was in the office the other day to obtain information relative to a mine loan. His information is very incomplete and I suggested certain data which he should collect for the purpose of applying for this loan.

I believe he will do this and the docket will eventually reach this office for review. We have nothing in our file on this property and suggest that you arrange to see Mr. Santa Anna and make a report on the property that we may have something to add to the docket when it is sent to us by the RFC.

There is no hurry about this examination. It can follow your asbestos survey before you leave Globe, or can be sandwiched in during a lull in your asbestos survey at your own discretion. Thank you.

Maps returned to Mr. Santa Anna

12-15-42

EFH

April 23, 1942

Mr. J. M. Santa Anna
624 Sykes Street
Miami, Arizona

Dear Mr. Santa Anna:

I am enclosing a copy of Mine Owner's Report filed with this department covering the LONESOME PINE GROUP and the ESTHER GROUP in Gila County, to which has been attached a copy of a Preliminary Report on the Lonesome Pine Group.

I shall be glad to submit this report to anyone making inquiry for a property such as yours.

Assuring you of my desire to be helpful, and with best wishes, I am

Yours very truly,

J. S. Coupal, Director

JSC:LP
Enc.

ENGINEER'S REPORT.

To the COPPER SPRINGS MINING COMPANY.

Gentlemen:-

Pursuant to your request I have visited and examined the mining claims controlled by your Company, and wish to submit the following report:

The group is located in the southern portion of the Globe Quadrangle and bounded by Pine Mountain on the west and by the Copper Basin group on the south-west. The large proven low grade ore bodies of the Miami District lie four miles to the north-east; the Gibson Mine is within two miles to the west, and the Cole and Goodwin Mine is two miles to the south-west. A wagon road connects the property with Miami, which is the nearest shipping point on the A. E. R. R. The Company owns title to twelve claims, fully recorded and unincumbered in any way.

TOPOGRAPHY: The property under examination lies within the Pinal Range, roughly four thousand five hundred feet above sea level. The principal drainage of the District is northward through Pinto and Pinal Creeks. The property is deeply and abruptly scored by three V shaped canons, two of which are extended in easterly and westerly directions meeting at a common point forming an angle of about forty-five degrees, while the third traverses in a northerly and southerly direction, thus cutting up the area into ridges. These ridges, carved from paleozoic sediments and intrusive sills of diabase, form steep slopes. As a whole the topography is a crowded area of hills carved by erosion from a mass of schists invaded by intrusions of granite rock. These schists have undergone contacts. Metamorphism formed most of the ridge crests, while the granite area succumbed more readily to an erosion and determined the canons.

GEOLOGY: The country rocks are prevailingly of Pinal Schists, Shultz Granite and Diorite.

The geologic chronology may be briefly summarized as follows: From the structure and texture of the rocks of this district, which are of the Pre-Cambian era, may be inferred that at the close of the Pre-Cambian revolution this district was of a mountainous character. Ensuing centuries of denudation and degradation hewed these down fairly even pene-

plain upon which the next younger rock, comprising of shales, conglomerates and quartzites, ~~terms as~~ termed Apache groupes, were deposited. Ranging from Devonian to Pennsylvanian a series of lime stones were deposited overlying the Apache groupes. Then followed another long erosion cycle marked at its close by a great deformation of the region. When the paleozoic sediments and their underlying strata were cut by innumerable faults. Following the faulting masses of diabase in the form of sills were intruded. The intrusion of the diabase was followed by a long continued erosion, during which the rocks were further faulted and the original sulphide ores were deposited. Later followed a volcanic eruption of dacite to be followed in its turn by more deformity and extensive faulting.

SEDIMENTARY ROCKS: Pinal Schists. This represents ancient sediments which were upturned, compressed and intruded by granite rocks and metamorphosed to their present crystalline condition. The schist is of Pre-Cambian era, light gray in color and consists essentially of quartz grains and small scales of muscovite, the minerals being present in nearly equal amounts. Small granules of magnetite are scattered abundantly through the minerals, while hornblende, biotite and chloride, the latter greenish in color, complete the list of the constituents. The presence of microcline and muscovite and the preponderance of quartz over all other mineral constituents, and the absence of calcic minerals, suggests of the formation of the schist by metamorphism from quartzose sediments, and probably these sediments were of granitic origin.

IGNEOUS ROCKS: Schultz Granite. It is of Pre-Cambian era. The local name, "Schultz Granite", is derived from the near by Schultz property, in the vicinity of which this rock is well exposed. It is of a pale yellow color when slightly weathered, and nearly white when breaking off a fresh specimen, speckled with small flakes of black mica. Large porphyritic crystals of white felspar are imbedded into the rock. The other constituents are orthoclase, quartz, biotite and oligoclase. Alteration products of biotite, small amounts of epidate and chloride are occasionally present. In places it is shattered and is extensively stained with salts of copper.

DIORITE: Is of Pre-Cambian era; gray color; habit and texture granitic. The minerals visible are milky-white feldspar more or less showing albite striations, quartz and black mica in abundance. The structure is granular. By closely examining with a microscope the principal constituents in order of apparent abundance are plagiclase, labradorite, quartz, biotite or orthoclase and muscovite.

The other constituents are magnetite, apatite, titanite, rutite, zircon and hornblende.

MINERALIZATION: As has been previously stated in the geological history, the property is faulted. The schist and granite are brecciated by fissures and show conspicuous green stains of copper. Samples were taken from the surface and on assaying disclosed to carry commercial values of copper. The extent of the mineralization has not been proven due to the lack of permanent development; but loosely coherent pyritic ore containing chalcopyrite and bornite is found in Tunnel #2.

DEVELOPMENT: Development to date consists of two tunnels with an aggregate footage of about one hundred and twenty-five feet. The topography of the property is such that the most effectual way for future developments would be tunneling. Doing so, great depths may be penetrated with a minimum of expense. Timber growth is very luxurious, and may be utilized for timbering and developing power for a considerable length of time.

CONCLUSION: The property lies in a mineralized zone and shows evidence of strong mineralization. The surface indications are favorable; and it would be reasonable to believe that a large body of ore might be encountered by systematic development. By reason of favorable developments on near by and similar property and its location with reference to the Miami District, which it resembles in character, considered in connection with indications above referred to appearing on the property itself, would warrant exploration.

Very respectfully submitted,

D. P. Neary

Globe, Arizona,
9-4-1913.

COPPER SPRINGS MINING COMPANY GILA COUNTY

KAP WR 6/21/85: Received a report that Exxon Minerals had drilled a property known as the Copper Springs in Gila County in the early 1970's. It is quite possibly the same property as is covered by the Copper Springs Mining Company (f) Gila County.

COPPER SPRINGS MINING COMPANY

Inc. 8-4-13, Comm. exp. 8-14-28 % Arizona Corp. Comm.

(estimated from other mines in vicinity)

Sec 1 S. 14 E.

(21)

Mr. Santa Ana — Here are my notes and rough sketch I made last August, 1941. R.C.W.

Sheet 16

PRELIMINARY REPORT

ON

THE LONESOME PINE MINE

LOCATION:

The Lonesome Pine Mine consists of a group of six unpatented mining claims situated in the Globe-Miami District, Gila County, Arizona, 9 miles south from the town of Miami, Arizona. The property is accessible by road from Miami, 4½ miles of State Highway and 4½ miles of good dirt road.

CLIMATE:

The climate is ideal for year-round operation, the elevation being 5000 feet. The ground is well timbered and there is plenty of water for domestic and milling purposes.

HISTORY:

The Globe-Miami District is the most highly mineralized locality in the United States. The Lonesome Pine Group was originally located some 25 years ago and prospected for copper. Several good copper veins were opened up and developed on a portion of the ground. Reference is made to the accompanying sketch. On claims Nos. 5 & 6 are shown several tunnels and shafts all on copper veins. These old workings also show molybdenite, which the early prospectors thought to be a form of lead. An old shaft, some quarter mile west of Claim No. 1, is still running copper sulphate water which colors the creek bottom a vivid blue-green.

These copper prospects have all been found on the east end of the property. The west portion of the property shows no surface indications of copper. As shown on the sketch, this part of the ground on claim No. 1 and the west half of claim No. 5 is cut by several quartz veins. These are strong fissure veins impregnated with iron oxide, thoroughly oxidized and honey-combed where they crop on the surface. They have been sampled for gold and silver and found barren, so the early miners, who knew nothing of tungsten, did no development work on this part of the ground. Last Spring, crystals of hubnerite and specimens of scheelite were found at several places on these veins, as shown on map, and the property was acquired on a very favorable lease and bond from the owner, who did not know of the presence of tungsten on his ground.

GEOLOGY:

The country rock is a schist with a Grano-Diorite showing on the East end of the property and a granite on the West. The surface is thoroughly oxidized, fractured and altered especially where the above mentioned quartz veins outcrop.

DEVELOPMENT:

After tungsten was discovered and a lease on the property was secured, several open cuts were started on the quartz veins and samples gave results as follows:

Sample No. 1 ----	5.51%	WO3	(Hubnerite with quartz)
Sample No. 2 ----	2.01%	"	" " "
Sample No. 3 ----	Trace	"	(Honey-combed gangue)
Sample No. 4 ----	"	"	" " "
Sample No. 5 ----	5.67%	"	(Hubnerite with quartz)

An examination of these hubnerite (tungstate of manganese) samples with an ultra-violet lamp showed also, in every instance, the presence of scheelite (Calcium Tungstate).

A shaft was then started 25 feet south of the first tungsten vein, as shown on map. The idea was to sink some 50 feet and get below the oxidized, broken up, surface conditions and then to crosscut through the three tungsten veins, shown by dotted line on map. This development shaft although started on no vein and now only 23 feet deep has opened up a talcose vein showing 10 inches of molybdenite and pyrite, lying in contact with a formation heavy in gypsum crystals. This occurrence, within 25 feet of a known tungsten vein, furnishes evidence of strong mineralization activity in this hill.

RECOMMENDATIONS:

The hillside just north of the Tungsten veins, as shown in section on sketch, affords an ideal tunnel-site to open up these veins. Though no exact survey has yet been made, possibly 250 feet of tunnel here would intersect all veins and come to a point 100 feet below the present shaft. A raise would be made in ore to this shaft which will furnish ventilation and also provide two exits to the workings as required by law. Such a tunnel would give about 250 feet of stoping ground overhead.

FINANCIAL REQUIREMENTS:

The financial requirements for this work are as follows:

UNDERGROUND WORK		
250 ft. of tunnel @ $8.00 per ft.	$2000.00	
100 ft. of raise @ $7.00 per ft.	700.00	
Incidentals	300.00	$3000.00
GENERAL EXPENSE		
Alterations on house in camp for cook-house and bunk room.	200.00	
Glassware and chemicals for control assaying as work progresses.	150.00	
Down payment on 2nd hand car.	100.00	
State Compensation & Liability Ins.	50.00	
Miscellaneous fund	500.00	1000.00
Total		$4000.00

STATUS OF DORMANT MINES

MINE NAME: Joseph R. McLaughlin Anna

LOCATION: Western Pinal Mts. 6½ Miles So Miami Ariz

OWNER AND/OR LEASEE: owner. Lonesome Pine Group + Esther Group

ADDRESS: 624 Dikes St. Miami Arizona

APPROXIMATE PRODUCTION (Year of 1945): none -

COPPER _____ Lbs. LEAD _____ Lbs.

ZINC _____ Lbs. (OTHER) _____

CHECK THE CHIEF CAUSE OF YOUR DISCONTINUED PRODUCTION:

(A) Easily available ore worked out.
(B) Increased costs, but have quantity similar to past grade of ore.
(C) Too close a margin to develop more ore.
(D) _____

If you have ore ready to mine please give your estimate of the amount of metal (name each metal) that you could produce in one year (after allowing 60 days to get started) if there were premiums above present market prices. Name amount with a low premium, and amount at a high premium; such as:

Copper at 22½¢ plus 5¢ premium..... 1,000,000 Lbs.
Copper at 22½¢ plus 10¢ premium..... 1,500,000 Lbs.

I could Produce at least 150 tons per Mo. between 2 & 4 % per ct. Copper between the 5 & 10 ct Premium

If you do not have ore ready to mine please discuss the following:

(A) Do you think a reasonable development program would produce a justified tonnage of commercial ore at above mine?

I Do think with a little development program I can produce justified tonnage of Comm. ore

(B) With a premium price (guaranteed for one year) could you carry out such a development program yourself? What premium?

yes. 5 cts or above

(C) If you could not do this yourself, would a quick drilling program by some government agency (at government expense) be sufficient?

(D) Or would you prefer a loan plan similar to the arrangements during World War II?
I prefer a loan of $5000. I would have enough to start production

How about a combination plan in two stages such as follows?

Stage 1: Government engineers review project and, if a little drilling appears to be justified and a preliminary key to the situation, such drilling program to be agreed upon by owner and government engineer, paid for by the government, but let by contract.

Stage 2: If results of drilling (or without drilling) justify underground development and/or production equipment, same to be obtainable via a mortgage loan on property.

Please discuss the above: I have Compressor, 120 cu ft. Jack Hammer & Hose and Set Drill steel. I have Rail and Ore Car, and other tools. I have Road in good shape to the property. The Loan would be used to pay Labor and to buy other supplies. I have two places to show Gov. ~~engineers~~ Engineers where there is a good showing of the ore.

SUGGESTIONS:
I would suggest that Gov. Engineers would come to the property for Inspection as soon as possible. I'm now at the property doing some works

DATE July 5-1950

SIGNATURE J. M. Santa Anna
624 Sikes St
Miami Ariz.

Owners and

ML 11

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date Sept. 22,1939

Mine Lonesome Pine Group

District Globe Mining District

Location 8 miles south of Highway 5

Former name

Owner J. M. Santa Anna

Address Miami,Ariz.

Operator

Address

President

Gen. Mgr.

Mine Supt.

Mill Supt.

Principal Metals copper, molybdenum, lead, manganese, tungsten

Men Employed two men doing assessment work

Production Rate

Mill: Type & Cap.

Power: Amt. & Type

Operations: Present Assessment work

Operations Planned Dig a shaft

Number Claims, Title, etc. six claims - unpatented

Description: Topog. & Geog. mountainous

Mine Workings: Amt. & Condition two shafts and open cuts approximately 90'
1 shaft 31 feet accessible
1 shaft 35 " partly caved
Tunnels - 100' open
1 tunnel 600'-1200' - not accessible

(over)

23. Geology & Mineralization Sulphides and Carbonates

24. Ore: Positive & Probable, Ore Dumps, Tailings Ore on dumps, veins and deposits

24-A Vein Width, Length, Value, etc.

25. Mine, Mill Equipment & Flow Sheet

26. Road Conditions, Route Leave Miami-Superior Highway at point to left at Schultz ranch and follow Old Gibson Road for 2-1/2 miles then turn to left and follow road for about 1 mile to the Property. Road is fair.

27. Water Supply Is good. Natural timber supply plentiful.

28. Brief History It's an old property.

29. Special Problems, Reports Filed Finance

30. Remarks Mr. Wollcott, State Mine Engineer has inspected this property.

31. If property for sale: Price, terms and address to negotiate. Price $12,000. Terms can be arranged to suit.

32. Signed /sd/ J. M. Santa Anna
624 Sikes St., Miami, Arizona.

33. Use additional sheets if necessary.

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
OWNERS MINE REPORT

Date Sept. 22 - 1939

Mine Lonesome Pine Group

District Globe mining dist.

Location 8 miles south of mi.

Former name

Owner J. M. Santa Cruz

Address miami ariz.

Operator — — —

Address —

President — — —

Gen. Mgr. —

Mine Supt. — — —

Mill Supt. —

Principal Metals copper, molybdenum lead, manganese tungsten

Men Employed two men doing assessment work

Production Rate

Mill: Type & Cap.

Power: Amt. & Type — —

Operations: Present assessment work

Operations Planned dig a shaft.

Number Claims, Title, etc. six claims. Unpatented

Description: Topog. & Geog. mountainous

Mine Workings: Amt. & Condition tunnels, two shafts and open cuts approximately 90'

1 Shaft - 31 feet - accessible

1 " 35 " partly caved

Tunnels - 100' open

1 Tunnel - 600' - 1200' ? not accessible

(over)

Geology & Mineralization sulphides and carbonates

Ore: Positive & Probable, Ore Dumps, Tailings ore on dumps and on veins and deposits

Mine, Mill Equipment & Flow Sheet none

Road Conditions, Route leave Miami Superior Highway at Point to left at Schultz ranch and follow old Gibson road for 2½ miles then turn to left and follow road for about 1 mile to the property. road is fair.

Water Supply is good
natural springs supply plentiful

Brief History its an old property.

Special Problems, Reports Filed finance

Remarks Mr. Wolcott state mine inspector has inspected the property.

If property for sale: Price, terms and address to negotiate.
Price $12,000 terms can be arrange to suit.

Signed J. M. Santa Anna 624 Pine St.
Miami Ariz.

Use additional sheets if necessary.

ML-11

COPPER - 6 claims unpatented; road to mine in fair condition; 2 shafts 30' accessible and 35' partially caved; tunnel 100' open; values in copper, molybdenum, lead, manganese, tungsten; water plentiful; for sale, terms on application; Globe Mining District, Gila County ML-11 OR

DEPARTMENT OF MINERAL RESOURCES
State of Arizona
MINE OWNER'S REPORT

Date: Jan 5th 1959

1. Mine:
2. Location: Sec. ..... Twp. ..... Range ..... Nearest Town: Miami Ariz Distance: 7 1/2
   Direction: South Nearest R.R.: Southern Pacific R.R. Distance: 7 1/2
   Road Conditions: Paved for a distance + 1/2 Miles, Rest dirt Road "Fair"
3. Mining District and County: Globe Mining Dist. Gila County
4. Former Name of Mine: Lonesome Pine, Esther Group, Wonder Hill,
5. Owner: J.M. Santa Anna
   Address: 10,623 Gridley Road Santa Fe Springs Calif.
6. Operator: Same
   Address: Same
7. Principal Minerals: Copper, Molybdenum, Tungsten,
8. Number of Claims: Lode 8 Patented ..... Unpatented ✓
   Placer ..... Patented ..... Unpatented .....
9. Type of Surrounding Terrain: Mountainous, Heavy Timber, "Pine".
   Enclose a Snap Shot attached to this report.
10. Geology and Mineralization: decompose Granite, altered Schist, with Heavy iron oxide, Red Hematite + Yellow Limonite surface
11. Dimension and Value of Ore Body: Large Low grade Showings from surface

Please give as complete information as possible and attach copies of engineer's reports, shipment returns, maps, etc. if you wish to have them available in this Department's files for inspection by prospective leasors or buyers.

(over)

12. Ore "Blocked Out" or "In Sight": "Plenty".

Ore Probable:

13. Mine Workings—Amount and Condition:

	No.	Feet	Condition
Shafts	two	32,	open
Raises	none	✓	
Tunnels	two	90, 1200,	90. open, 1200 not open at entrance for 3 ft.
Crosscuts		90.	on claim #3 one churn drill Hole 600 ft deep.
Stopes		none	

1 90 ft. open cut "B" 90 ft 20 ft. & good showing in Copper & Moly.

14. Water Supply: Fair at present, and can be develope as water is at 10 ft. from surface

15. Brief History: Lonesome pine Group was Located By Tom West & Albert West. "Bros." in the year of 1921, in 1928 was Bought By Present owner, Jim Santa Anna

16. Remarks: This Region is Very much Mineralize. "Secenerly Beautiful", Ideal for Leaching Plant. Elevation in Front of the House 4,990 ft. "Have spectrophrafic Analysis Report of Mud From Hole, Showing Copper, Potashum, iron, Alumunum, Lead, Nickel, Vanadium, Gallium, molybdenum.

17. If Property for Sale, List Approximate Price and Terms: $45000.00 five years terms. with $5000.00 down

18. Signature: Jim Santa Anna

2669½ Pasadena ave Los Angeles

10,623 Bridley Road, Santa Fe Springs Calif.

DEPT. MINERAL RESOURCES
RECEIVED
APR 28 1942
ARIZONA

mf-11

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
MINE OWNER'S REPORT

1. Mine The Lonesome Pine Group 6. The Esther group 3.

Date April 21-1942

2. Location 9 miles south of Miami Ariz. 4½ miles highway 4½ miles good dirt road.

3. Mining District & County Globe M. District Gila Co.

4. Former name —

5. Owner J. M. Santa Anna

6. Address (Owner) 624 Sykes St Miami Ariz.

7. ~~Operator~~

8. Address (Operator)

9. ~~President, Owning~~ Co.

9A. President, Operating Co.

10. ~~Gen. Mgr.~~

J. M. Santa Anna
~~624~~ Sykes Street
Miami, Arizona

633 S. Grand Ave.
Los Angeles

11. ~~Mine Supt.~~

12. ~~Mill Supt.~~

13. Men Employed ~~None~~ one at present.

14. Principal Minerals Tungsten, Copper, Molybdenum

15. ~~Production Rate~~

16. Mill: Type & Cap. No mill

17. Power: Amt. & Type None

18. ~~Operations: Present~~

19. Operations: Planned To sink on Claims No 1 + No 2 on Lonesome Pine to develop the Tungsten, Copper and Molybdenum showing on surface.

20. Number Claims, Title, etc. Nine unpatented claims - per sketch.

21. Description: Topography & Geography Elevation 5000 feet Rugged country.

22. Mine Workings: Amt. & Condition One 1200' tunnel, intersecting copper and molybdenum veins - Over a dozen surface small surface cuts, shafts, tunnels, showing Cu + Mo + WO_3

(over)

23. Geology & Mineralization Co[illegible]y rock - schist a[illegible] granodiorite. Some fissures - some replacement. Croppings, quartz and altered silicate - plenty of iron oxide - Cu oxide, carbonates, etc also, sulphide.

24. Ore: ~~Positive & Probable, Ore Dumps, Tailings~~ carrying Molybdenite and Hubnerite Scheelite. Surface conditions are so altered, oxidized and broken up that sinking will have to be done to determine extent of mineralization.

24A. ~~Dimensions and Value of Ore~~ body
$3500.00 effort sinking and drifting should "prove up" this property by getting below the oxidized surface conditions

25. ~~Mine, Mill Equipment & Flow Sheet~~ Tungsten float running as high as 6 % WO_3 has been picked up on some of the oxidized quartz veins.

26. Road Conditions, Route Good road - 4½ miles highway - 4½ miles dirt road to Miami - passable year round.

27. Water Supply Plenty of good water available year round for domestic and milling use. also natural timber

28. Brief History Many old prospect holes dug years ago on copper outcrops. No real development was ever done. One shaft on West end of property runs copper sulphate water.

29. Special Problems, Reports Filed
Just one problem - to sink on one of the many showings so as to determine whether ore occurs commercially below the oxidized zone.

30. Remarks
Surface showings are ample to justify such development

31. If property for sale: Price, terms and address to negotiate. Price $15000.00 Some cash & option terms can be arranged to suit

32. Signature Joseph M. Santa Anna 624 Sikes St, Miami Ariz

33. Use additional sheets if necessary.

ML-11

DEPARTMENT OF MINERAL RESOURCES
STATE OF ARIZONA
MINE OWNER'S REPORT

Date: April 21, 1942

1. Mine: Lonesome Pine Group (6) and The Esther Group (3)
2. Location: 9 miles south of Miami, Ariz. $4\frac{1}{2}$ miles highway, $4\frac{1}{2}$ miles good dirt road.
3. Mining District & County: Globe Mg. District, Gila County.
4. Former name:
5. Owner: J. M. Santa Anna
6. Address (Owner) 624 Sykes St., Miami, Arizona
7. Operator
8. Address (Operator)
9. President, Owning Co.
9A. President, Operating Co.
10. Gen. Mgr.
14. Principal Minerals: Tungsten, copper, molybdenum
11. Mine Supt.
15. Production Rate
12. Mill Supt.
16. Mill - type & cap.: No mill
13. Men Employed: One at present
17. Power - Amt. & Type: None
18. Operations - Present:

19. Operations - Planned: To sink on Claims No. 1 and No. 2 on Lonesome Pine to develop the tungsten, copper and molybdenum showing on surface.

20. Number Claims, Title, etc: Nine unpatented claims (Sketch in file at this office)

21. Description - Topography & Geography: Elevation 5,000 feet. Rugged country.

22. Mine Workings, Amt. & Condition: One 1200 foot tunnel, intersecting copper and molybdenum veins. Over a dozen small surface cuts, shafts, tunnels, showing Cu, Mo and WO_3.

(over)

23. Geology & Mineralization: Country rock - schist and grano-diorite. Some fissures - some replacements. Croppings, quartz and altered silicate. Plenty of iron oxide - copper oxide, carbonates, etc., also sulphides. Carrying molybdenite and hubnerite scheelite. Surface conditions are so altered, oxidized and broken up that sinking will have to be done to determine extent of mineralization. $3500 spent sinking and drifting should "prove up" this property by getting below the oxidized surface conditions. Tungsten float running as high as 6% WO_3 has been picked up on some of the oxidized quartz veins.

24. Ore - Positive & Probable, Ore Dumps, Tailings:

24A. Dimensions and Value of Ore Body:

25. Mine, Mill Equipment & Flow-Sheet:

26. Road Conditions, Route: Good road - 4½ miles highway - 4½ miles dirt road to Miami - passable year round.

27. Water Supply: Plenty of good water available year round for domestic and milling use. Also natural timber.

28. Brief History: Many old prospect holes dug years ago on copper outcrop. No real development was ever done. One shaft on west end of property runs copper sulphate water.

29. Special Problems, Reports Filed: Just one problem - to sink on one of the many showings so as to determine whether ore occurs commercially below the oxidized zone.

30. Remarks: Surface showings are ample to justify such development.

31. If property for sale - price, terms and address to negotiate: Price $15,000. Lease and option terms can be arranged to suit.

Signed: Joseph M. Santa Anna
624 Sykes St.
Miami, Arizona

PRELIMINARY REPORT
ON
THE LONESOME PINE MINE

LOCATION:
The Lonesome Pine Mine consists of a group of six unpatented mining claims situated in the Globe-Miami District, Gila County, Arizona, 9 miles south from the twon of Miami, Arizona. The property is accessible by road from Miami, 4½ miles of state highway and 4½ miles of good dirt road.

CLIMATE:
The climate is ideal for year-round operation, the elevation being 5,000 feet. The ground is well timbered and there is plenty of water for domestic and milling purposes.

HISTORY:
The Globe-Miami District is the most highly mineralized locality in the United States. The Lonesome Pine Group was originally located some 25 years ago and prospected for copper. Several good copper veins were opened up and developed on a portion of the ground. Reference is made to the accompanying sketch. On claims Nos. 5 & 6 are shown several tunnels and shafts all on copper veins. These old workings also show molybdenite, which the early prospectors thought to be a form of lead. An old shaft, some quarter mile west of Claim No. 1, is still running copper sulphate water which colors the creek bottom a vivid blue-green.

These copper prospects have all been found on the east end of the property. The west portion of the property shows no surface indications of copper. As shown on the sketch, this part of the ground on claim No. 1 and the west half of claim No. 5 is cut by several quartz veins. These are strong fissure veins impregnated with iron oxide, thoroughly oxidized and honey-combed where they crop on the surface. They have been sampled for gold and silver and found barren, so the early miners, who knew nothing of tungsten, did no development work on this part of the ground. Last spring, crystals of hubnerite and specimens of scheelite were found at several places on these veins, as shown on map, and the property was acquired on a very favorable lease and bond from the owner, who did not know of the presence of tungsten on his ground.

GEOLOGY:
The country rock is a schist with a grano-diorite showing on the east end of the property and a granite on the west. The surface is thoroughly oxidized, fractured and altered especially where the above mentioned quartz veins outcrop.

DEVELOPMENT:
After tungsten was discovered and a lease on the property was secured, several open cuts were started on the quartz veins and samples gave results as follows:

Sample No. 1	---	5.51%	WO_3	(Hubnerite with quartz)
Sample No. 2	---	2.01%	"	" " "
Sample No. 3	---	Trace	"	(Honey-combed gangue)
Sample No. 4	---	"	"	" " "
Sample No. 5	---	5.87%	"	(Hubnerite with quartz)

An examination of these hubnerite (tungstate of manganese) samples with an ultra-violet lamp showed also, in every instance, the presence of scheelite (Calcium Tungstate).

A shaft was then started 25 feet south of the first tungsten vein, as shown on map. The idea was to sink some 50 feet and get below the oxidized, broken up surface conditions and then to crosscut through the three tungsten veins, shown by dotted line on map. This development shaft although started on no vein and now only 23 feet deep has opened up a talcose vein showing 10 inches of molybdenite and pyrite, lying in contact with a formation heavy in gypsum crystals. This occurence, within 25 feet of a known tungsten vein, furnishes evidence of strong mineralization activit in this hill.

RECOMMENDATIONS:

The hillside just north of the tungsten veins, as shown in section on sketch, afford an ideal tunnel-site to open up these veins. Though no exact survey has yet been made, possibly 250 feet of tunnel here would intersect all veins and come to a point 100 feet below the present shaft. A raise would be made in ore to this shaft which will furnish ventilation and also provide two exits to the workings as required by law. Such a tunnel would give about 250 feet of stoping ground overhead.

FINANCIAL REQUIREMENTS:

The financial requirements for this work are as follows:

UNDERGROUND WORK		
250 Ft. of tunnel @ $8.00 per ft.	$2000.00	
100 Ft. of raise @ $7.00 per ft.	700.00	
Incidentals	300.00	$3000.00
GENERAL EXPENSE		
Alterations on house in camp for cook-house and bunk room.	200.00	
Glassware and chemicals for control assaying as work progresses.	150.00	
Down payment on 2nd hand car.	100.00	
State Compensation & Liability Ins.	50.00	
Miscellaneous fund	500.00	1000.00
Total		$4000.00

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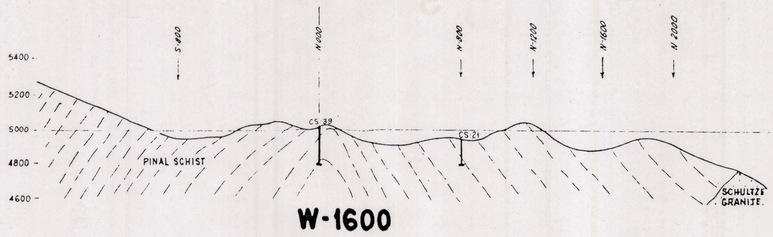

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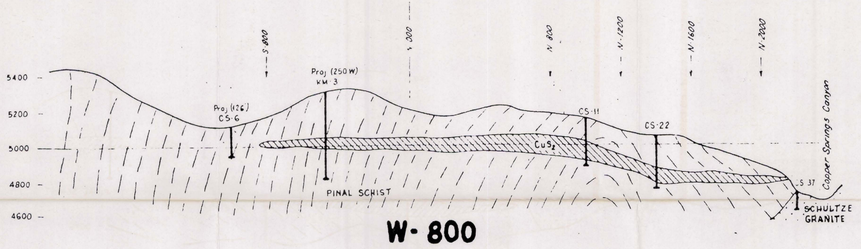

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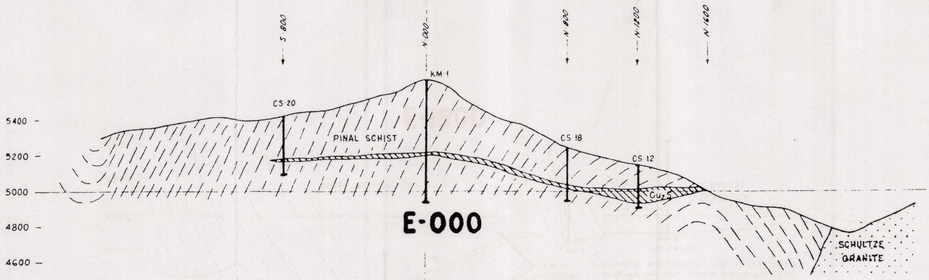

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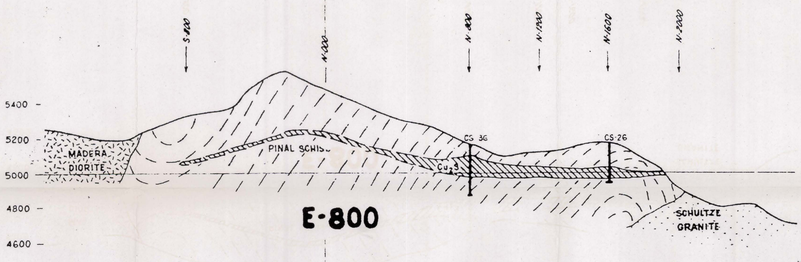

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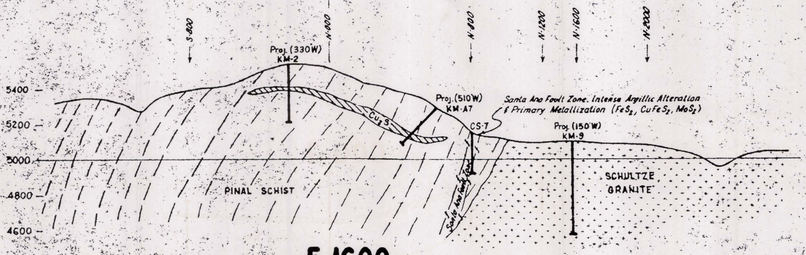

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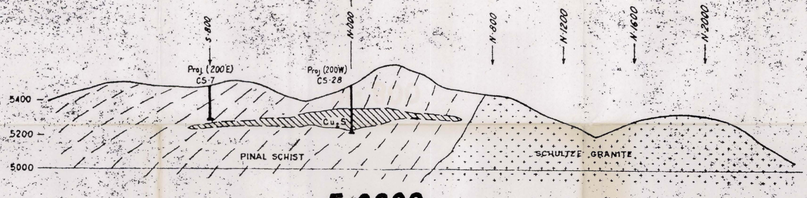

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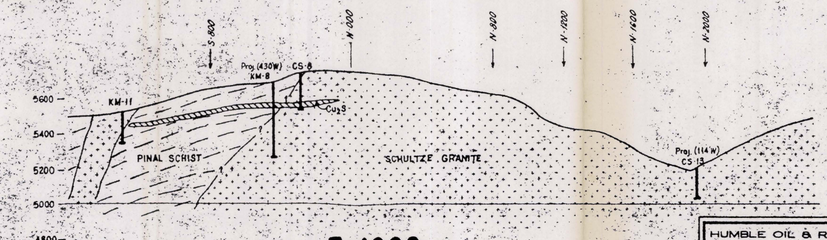

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HUMBLE OIL & REFINING COMPANY
MINERALS DEPARTMENT

COPPER SPRINGS
N-S CROSS SECTIONS

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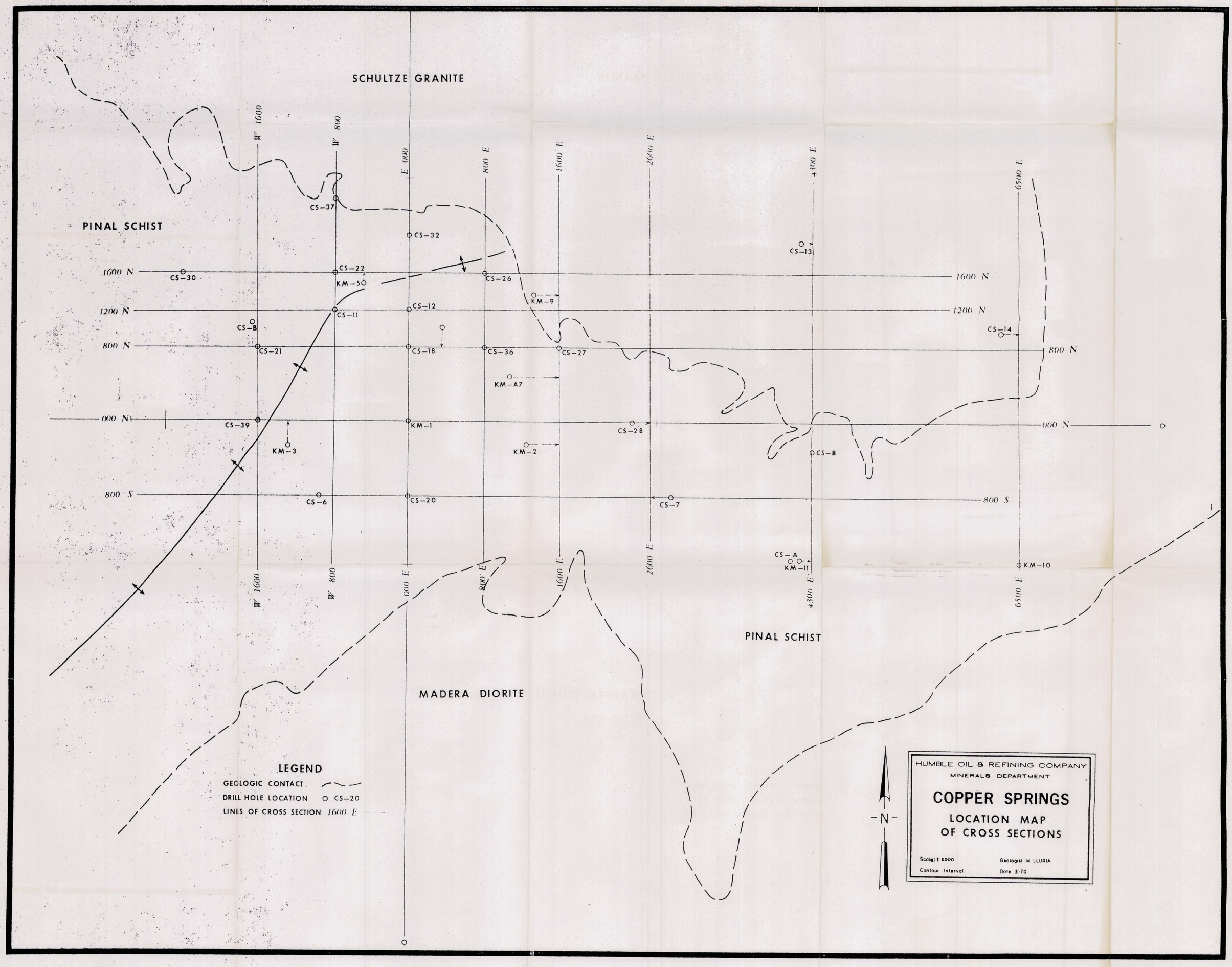
Contour Interval: 1'
Geologist: M.R. Liuria
Date: 8 70


SCHULTZE GRANITE
PINAL SCHIST
PINAL SCHIST
MADERA DIORITE
W 1600
W 800
E 000
800 E
1600 E
2600 E
4300 E
6500 E
1600 N
1200 N
800 N
000 N
800 S
CS-37
CS-32
CS-13
CS-30
CS-22
KM-5
CS-26
KM-9
CS-12
CS-11
CS-B
CS-14
CS-21
CS-18
CS-36
CS-27
KM-A7
CS-39
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CS-7
CS-A
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KM-10
LEGEND
GEOLOGIC CONTACT
DRILL HOLE LOCATION CS-20
LINES OF CROSS SECTION 1600 E
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HUMBLE OIL & REFINING COMPANY
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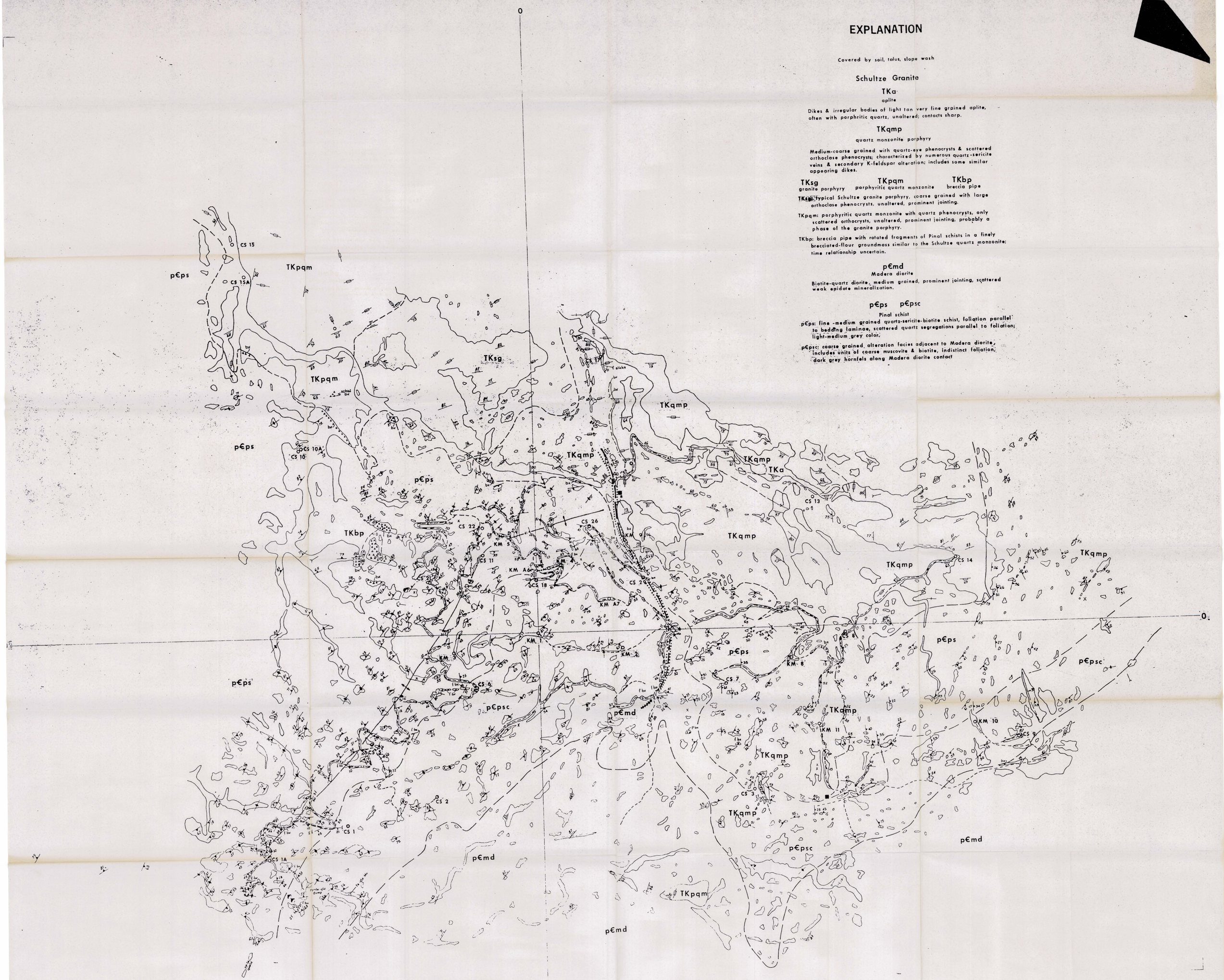
COPPER SPRINGS
LOCATION MAP
OF CROSS SECTIONS
Scale: 1" 6000
Contour Interval
Geologist M LLURIA
Date 3-70



EXPLANATION

Covered by soil, talus, slope wash

Schultze Granite

TKa
aplite

Dikes & irregular bodies of light tan very fine grained aplite, often with porphritic quartz, unaltered; contacts sharp.

TKqmp
quartz monzonite porphyry

Medium-coarse grained with quartz-eye phenocrysts & scattered orthoclase phenocrysts; characterized by numerous quartz-sericite veins & secondary K-feldspar alteration; includes some similar appearing dikes.

TKsg — TKpqm — TKbp
granite porphyry — porphyritic quartz monzonite — breccia pipe

TKsg: typical Schultze granite porphyry, coarse grained with large orthoclase phenocrysts, unaltered, prominent jointing.

TKpqm: porphyritic quartz monzonite with quartz phenocrysts, only scattered orthocrysts, unaltered, prominent jointing, probably a phase of the granite porphyry.

TKbp: breccia pipe with rotated fragments of Pinal schists in a finely brecciated-flour groundmass similar to the Schultze quartz monzonite; time relationship uncertain.

p€md
Madera diorite

Biotite-quartz diorite, medium grained, prominent jointing, scattered weak epidote mineralization.

p€ps — p€psc
Pinal schist

p€ps: fine -medium grained quartz-sericite-biotite schist, foliation parallel to bedding laminae, scattered quartz segregations parallel to foliation; light-medium grey color.

p€psc: coarse grained, alteration facies adjacent to Madera diorite, includes units of coarse muscovite & biotite, indistinct foliation, dark grey hornfels along Madera diorite contact

Contact
Dashed Where Covered

Fault
Dashed Where Approximate

Strike & Dip of Schist Foliation

Strike & Dip of Joints

Strike & Dip of Veins

Lineation in Schist

Breccia

Approximate Width of Major fault Zone

Shear Zone

Anticlinal Fold Axes

Dump

Dirt Road

Jeep Road

Drill Hole

Adit

Shaft

Prospect Pit

Copper Oxides

Relict Pyrite

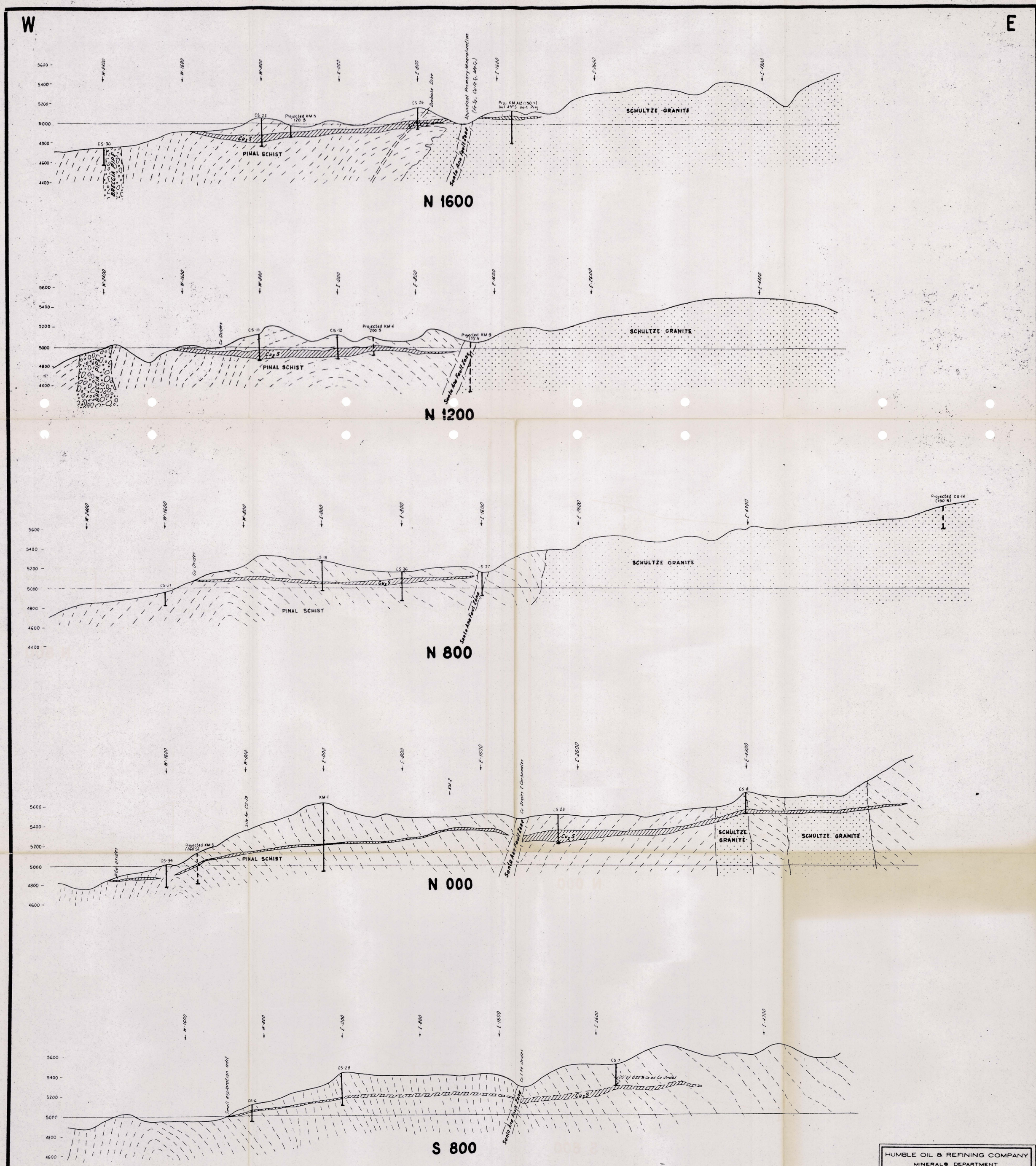
Molybdenite

Numerous Quartz Veins, Indicates Predominant Direction of Veining

GEOLOGIC MAP

1"=500'

W. Burton
10-69



HUMBLE OIL & REFINING COMPANY
MINERALS DEPARTMENT

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Contour Interval.
Geologist: M.R. Llunia
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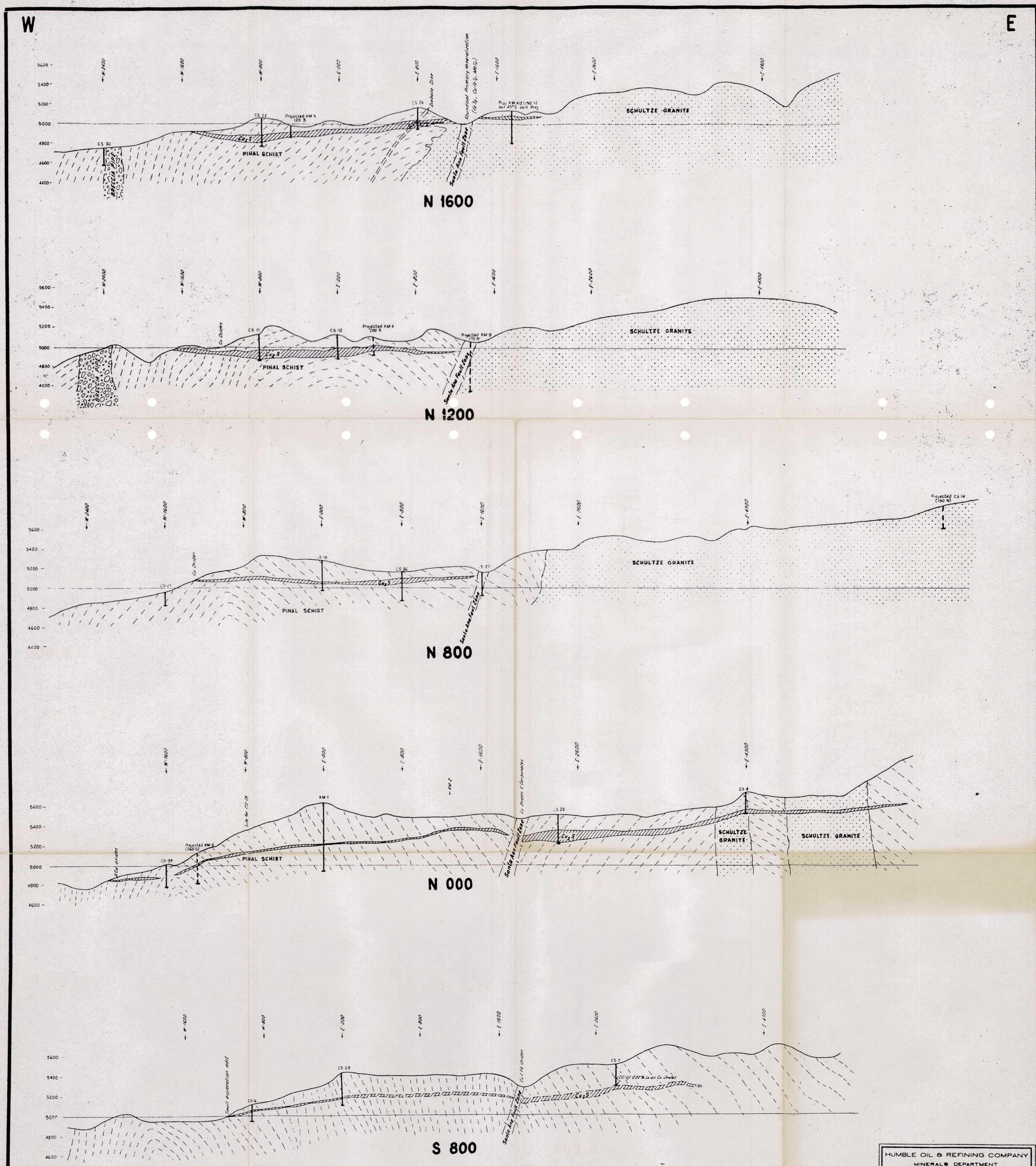

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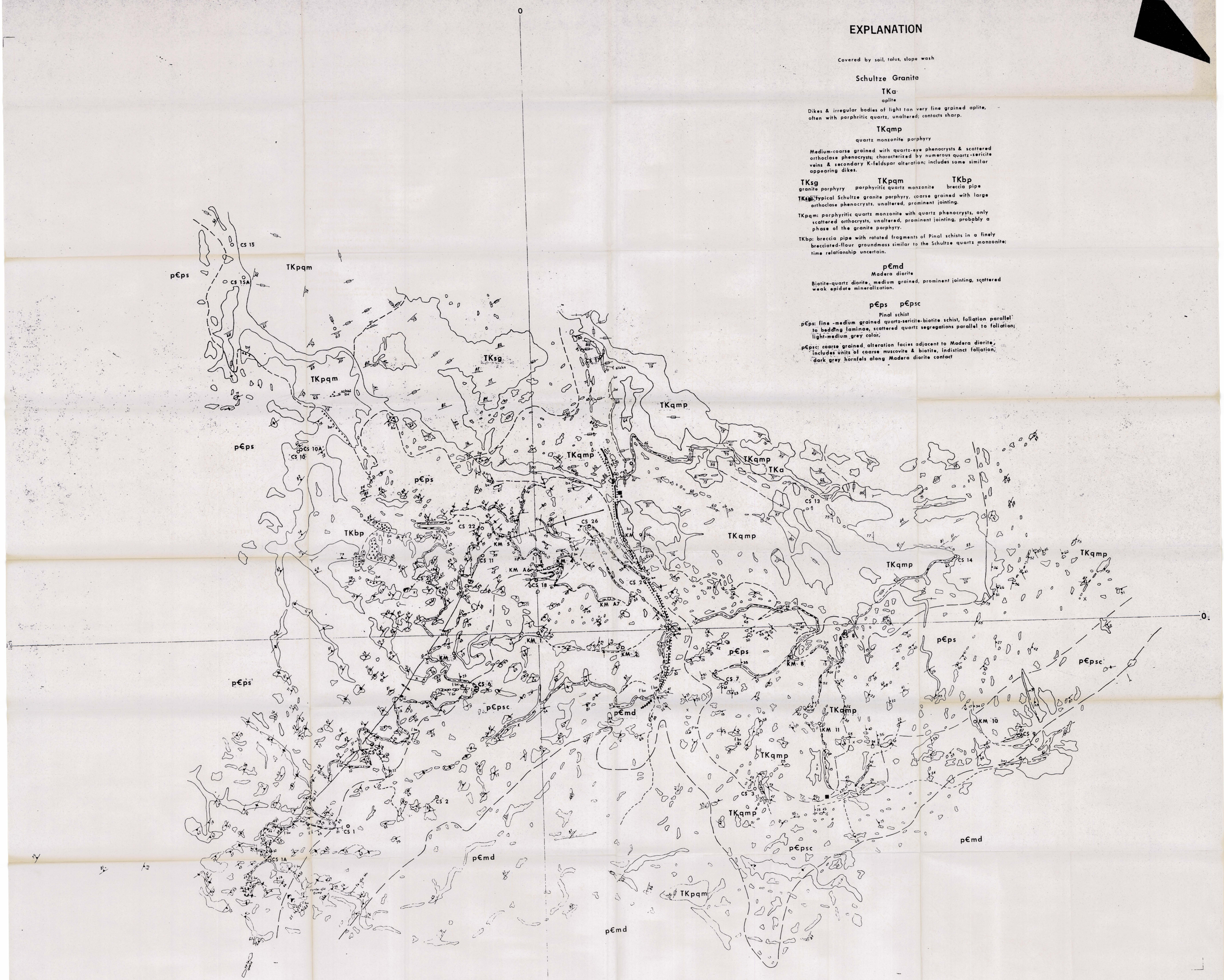

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Breccia

Approximate Width of Major fault Zone

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Anticlinal Fold Axes

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W. Burton
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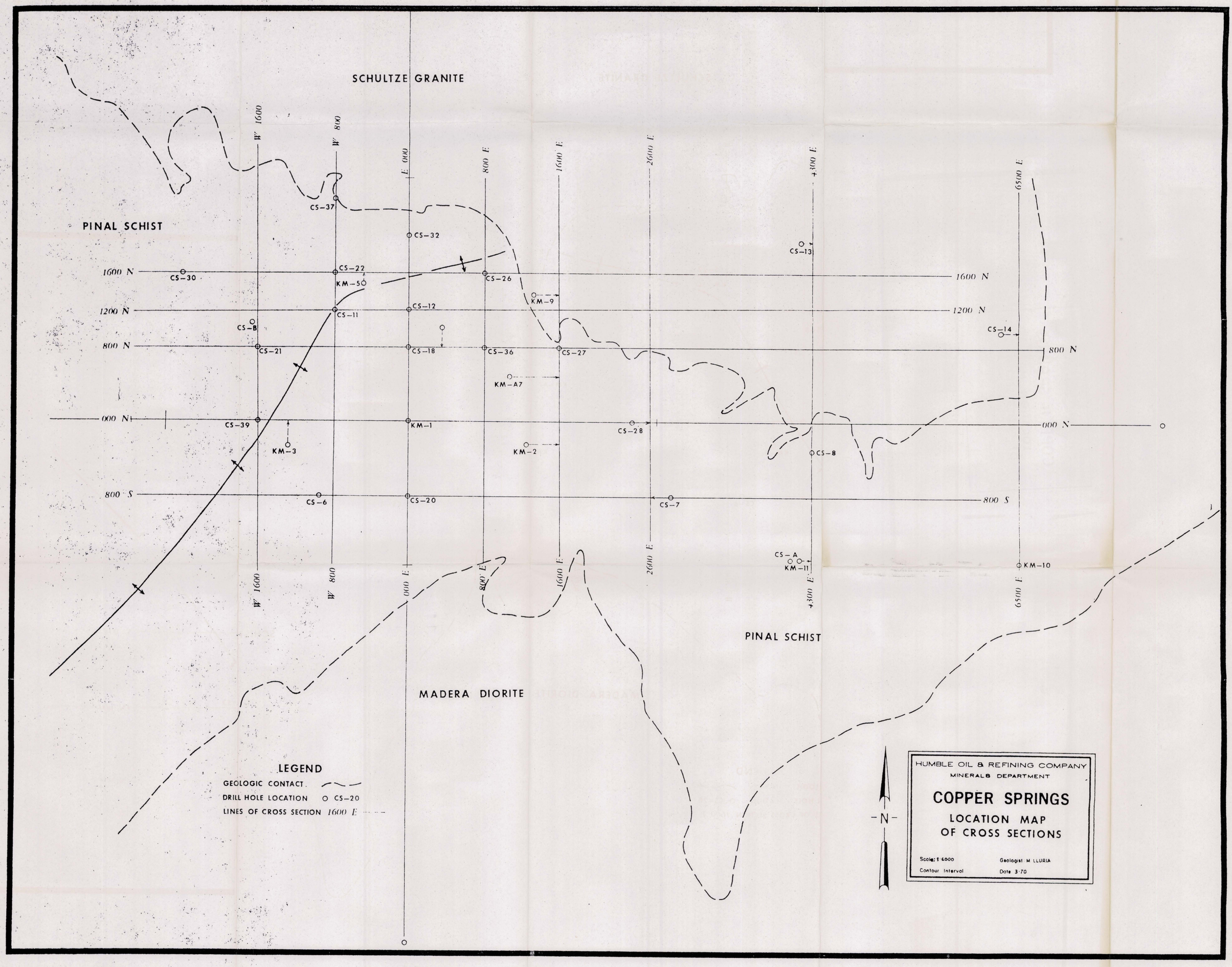
SCHULTZE GRANITE
PINAL SCHIST
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W 1600
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000 N
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CS-37
CS-32
CS-13
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CS-22
KM-5
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LEGEND
GEOLOGIC CONTACT
DRILL HOLE LOCATION CS-20
LINES OF CROSS SECTION 1600 E
N
HUMBLE OIL & REFINING COMPANY
MINERALS DEPARTMENT
COPPER SPRINGS
LOCATION MAP
OF CROSS SECTIONS
Scale: 1" 6000
Contour Interval
Geologist M LLURIA
Date 3-70

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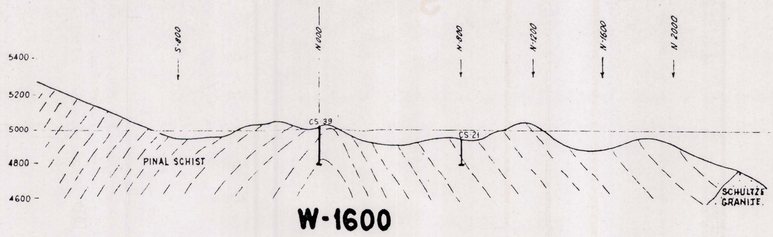

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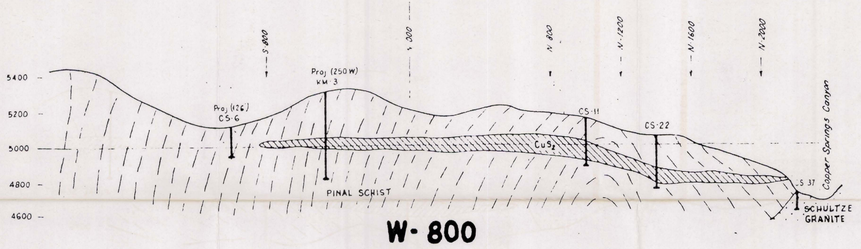

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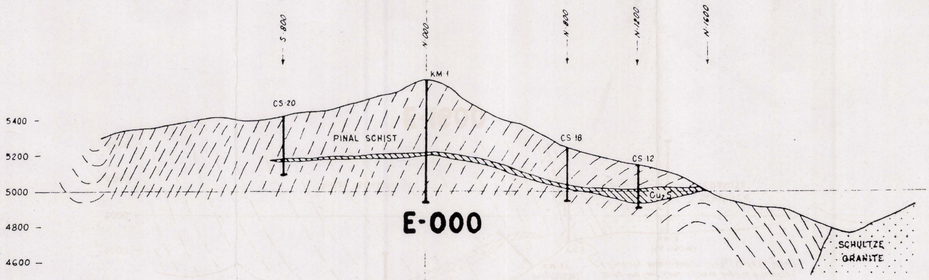

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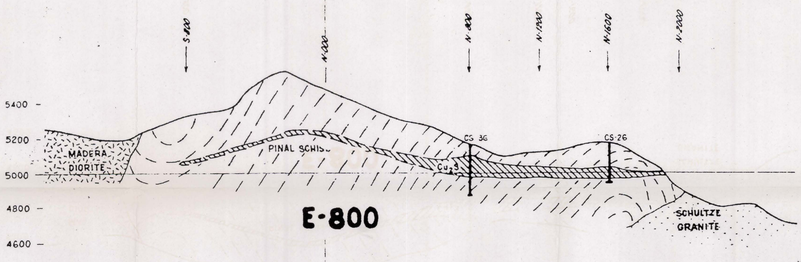

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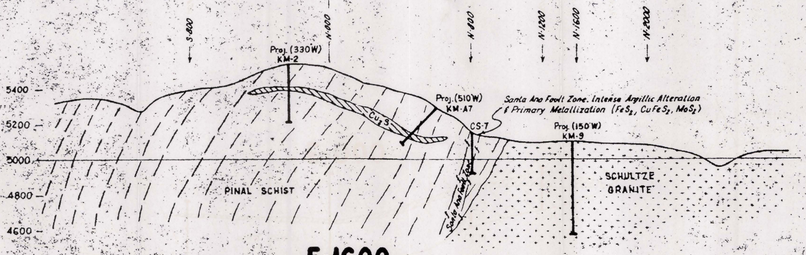

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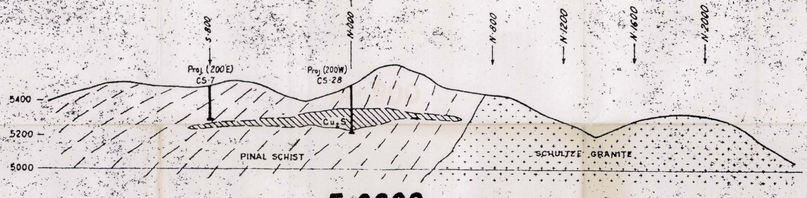

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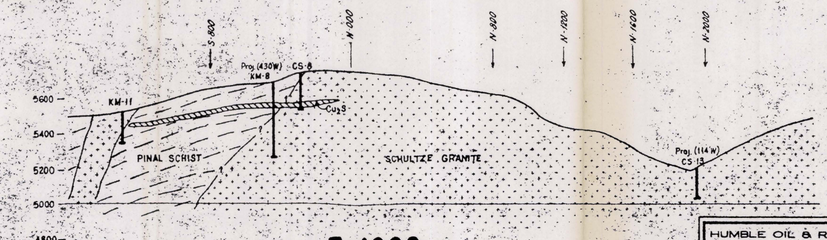

E-4300

HUMBLE OIL & REFINING COMPANY
MINERALS DEPARTMENT

COPPER SPRINGS
N-S CROSS SECTIONS

Scale: 1" = 400'
Contour Interval: 1'
Geologist: M.R. Liuria
Date: 8 70