CONFIDENTIAL

No.	Ft. to Ore	Ft. of Ore.	Avg. Grade	Depth of hole
1	250	400	0.90	900
2	150	450	0.79	800
3	none	none		800
4	100	300	0.72	1000
5	300	550	0.93	1100
6	150	300	0.99	900
7	200	50	0.40	500
8	100	750	0.80	1100
9	350	200	0.64	1150
10	none	none		1200
11	300	600	0.60	1800
12	350	700	1.03	1050
13	150	850	1.01	1400
14	150	400	0.60	1200
15	500	450	1.03	1900
16	400	450	0.75	1600
17	50	700	0.54	1500
18	300	400	0.58	1000
19	300	100	0.95	1200
20	1000	200	0.59	
21	400	400	0.61	
22	350	650	0.46	
23	350	650	0.51	
24	650	1000	0.47	
25	600	200	0.74	

0.40% of Copper and above is ore. Copper values run as high as 4.00% Copper.

Ore is encountered at shallower depths but is not counted unless an entire 50' level averages 0.40% or more.

Within the above t e values run as high as 1.50% Cu.

ESSEX INTERNATIONAL, INC.

EXPLANATION OF PROPERTY

Indicates Phelps Dodge

—— Indicates Banner Mining Co.

Indicates B.Y.U.

ESSEX INTERNATIONAL, INC.

MORENCI-BANNER-BYU PROJECT

Greenlee County, Arizona

MEMORANDUM

28 Dec. 1970

TO: Mr. Howard Lanier, General Manager
Copper Operations

FROM: G. E. Jackson

SUBJECT: Essex-Morenci Project
Tax Delinquent Parcel

Max Rapier brought a tax situation to my attention on 23 Dec. 1970 while in Clifton.

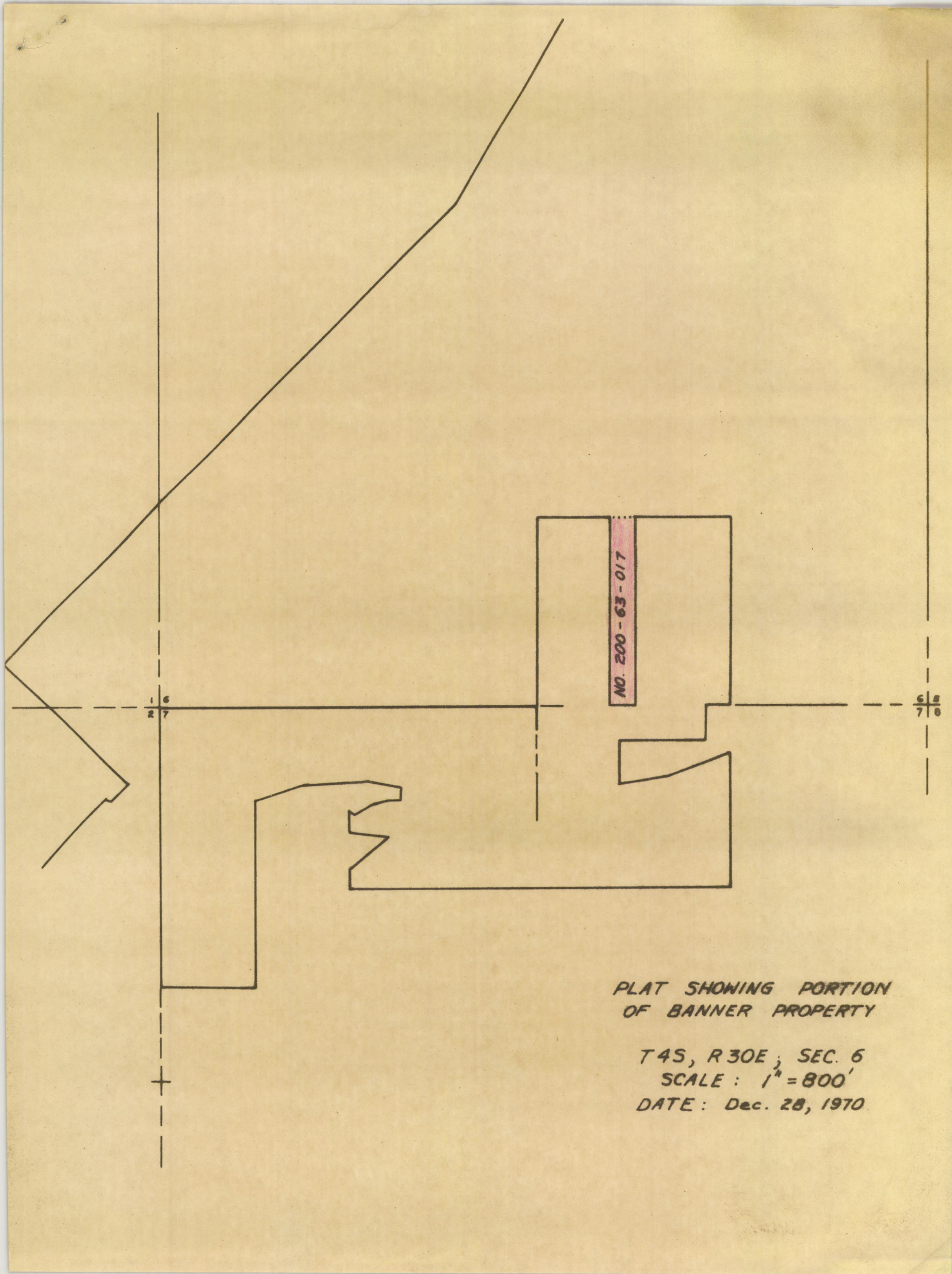
Briefly, it concerns a 15 acre parcel in Section 6, T4S, R30E, Greenlee County, which should have been included in the Banner Mining Co. holdings, but wasn't (see map). The parcel is described as follows:

Parcel No. 200 - 63 - 017
Section 6, T4S, R30E
E½ E½ W½, SW¼, SE¼
Recorded Book 8, p. 315

The title is (was) clouded, former owners have died, and now the property has reverted to the county for delinquent taxes of $9.53. Since this property lies in a potential mill site area, it is suggested that the property be purchased for taxes and/or have the title cleared through a quiet-title suit depending on advice of legal counsel.

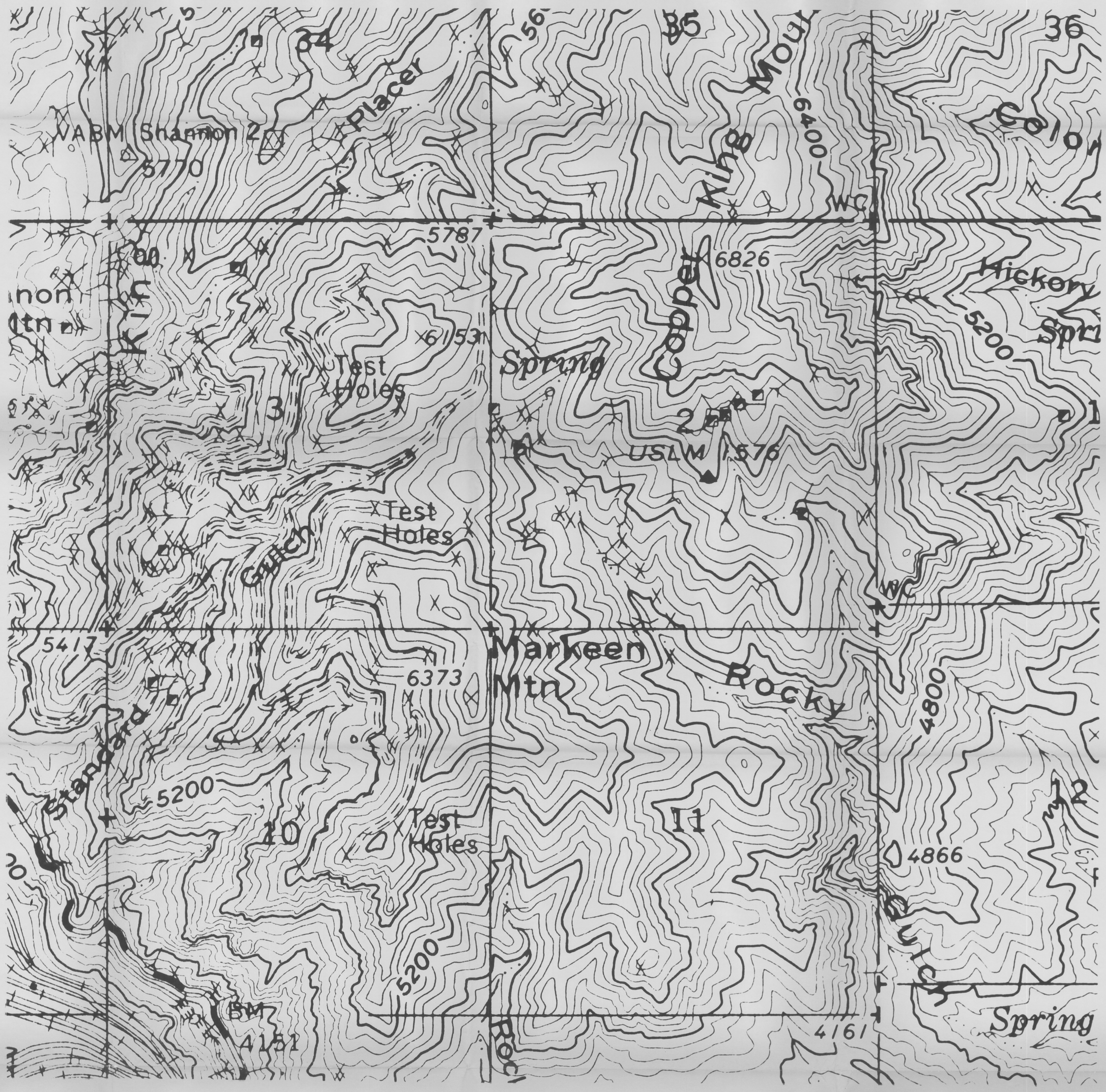
G.E. Jackson
G.E. Jackson

cc: E.G. Heinrichs ✓

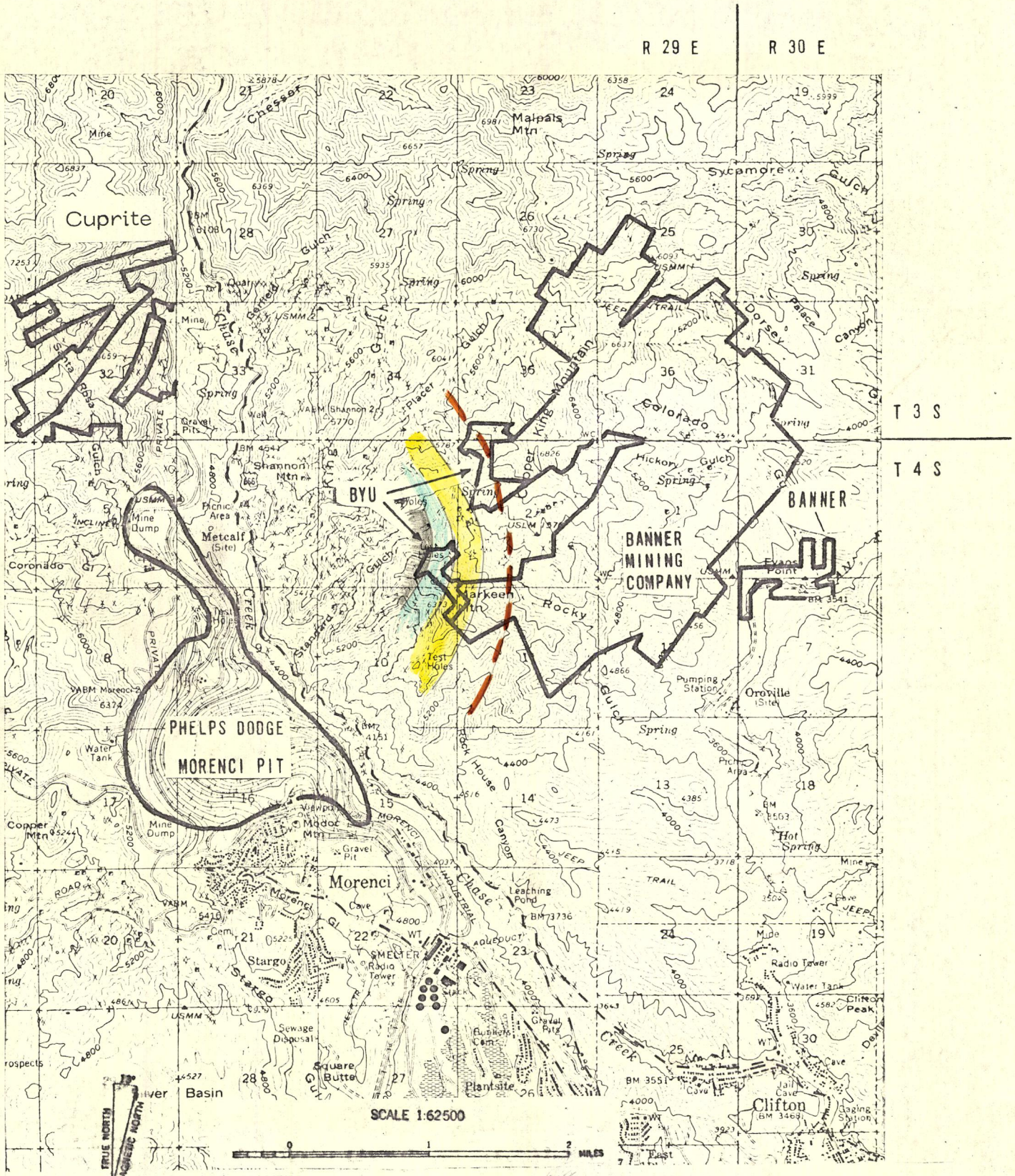


PLAT SHOWING PORTION
OF BANNER PROPERTY

T4S, R30E ; SEC. 6
SCALE : 1" = 800'
DATE : Dec. 28, 1970


Placer
VABM Shannon 2
5770
5787
6400
Kings Mou
Colo
Hickory
6826
5200
Spring
Test Holes
6153
USLM 1576
Gulch
5417
Markeen Mtn
6373
Rocky
4800
Standard
5200
Test Holes
4866
5200
BM
4151
4161
Spring

ESSEX INTERNATIONAL, INC.



EXPLANATION OF PROPERTY

Indicates Phelps Dodge

—— Indicates Banner Mining Co.

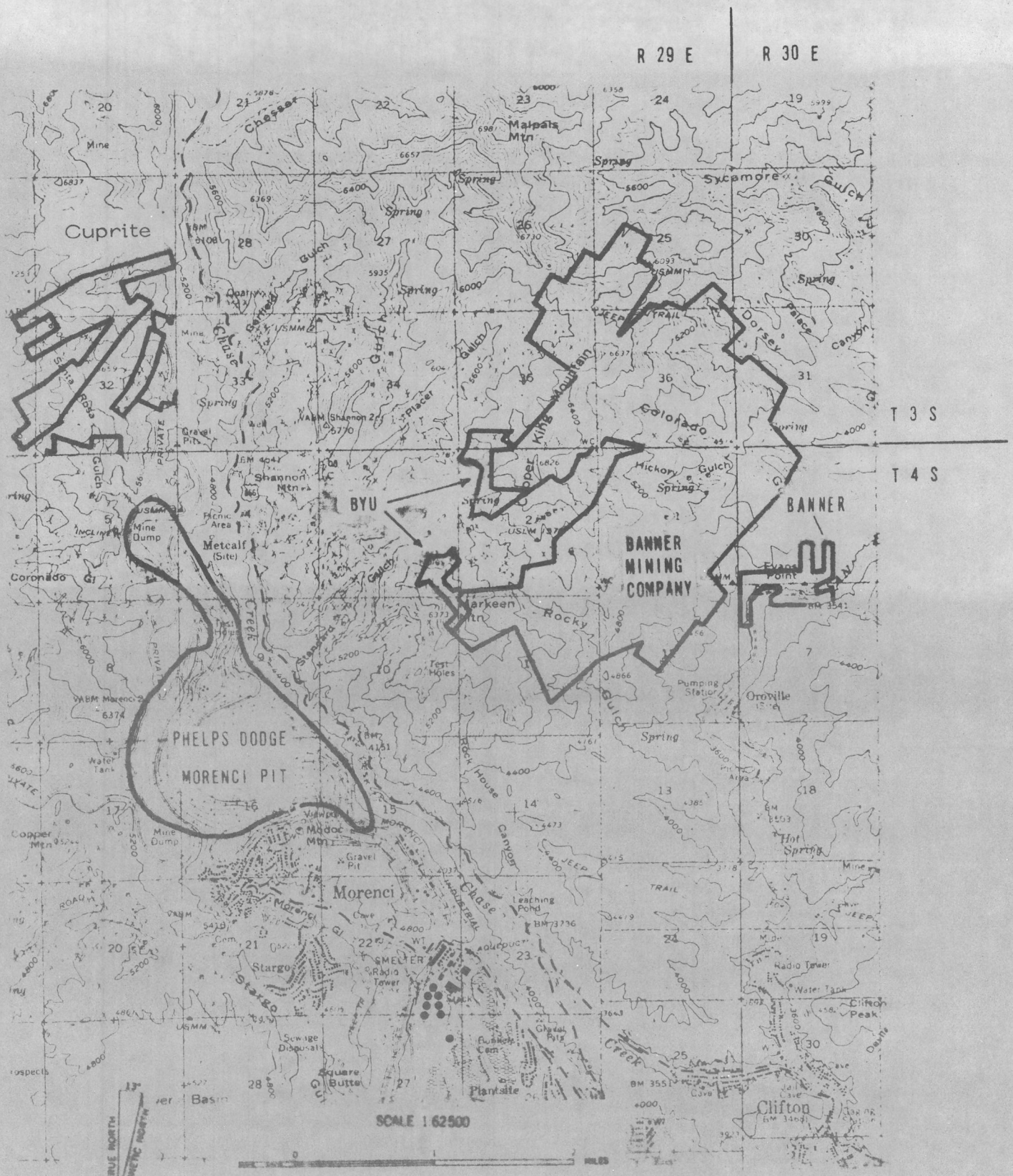
Indicates B.Y.U.

ESSEX INTERNATIONAL, INC.

MORENCI-BANNER-BYU PROJECT

Greenlee County, Arizona

ESSEX INTERNATIONAL, INC.



EXPLANATION OF PROPERTY

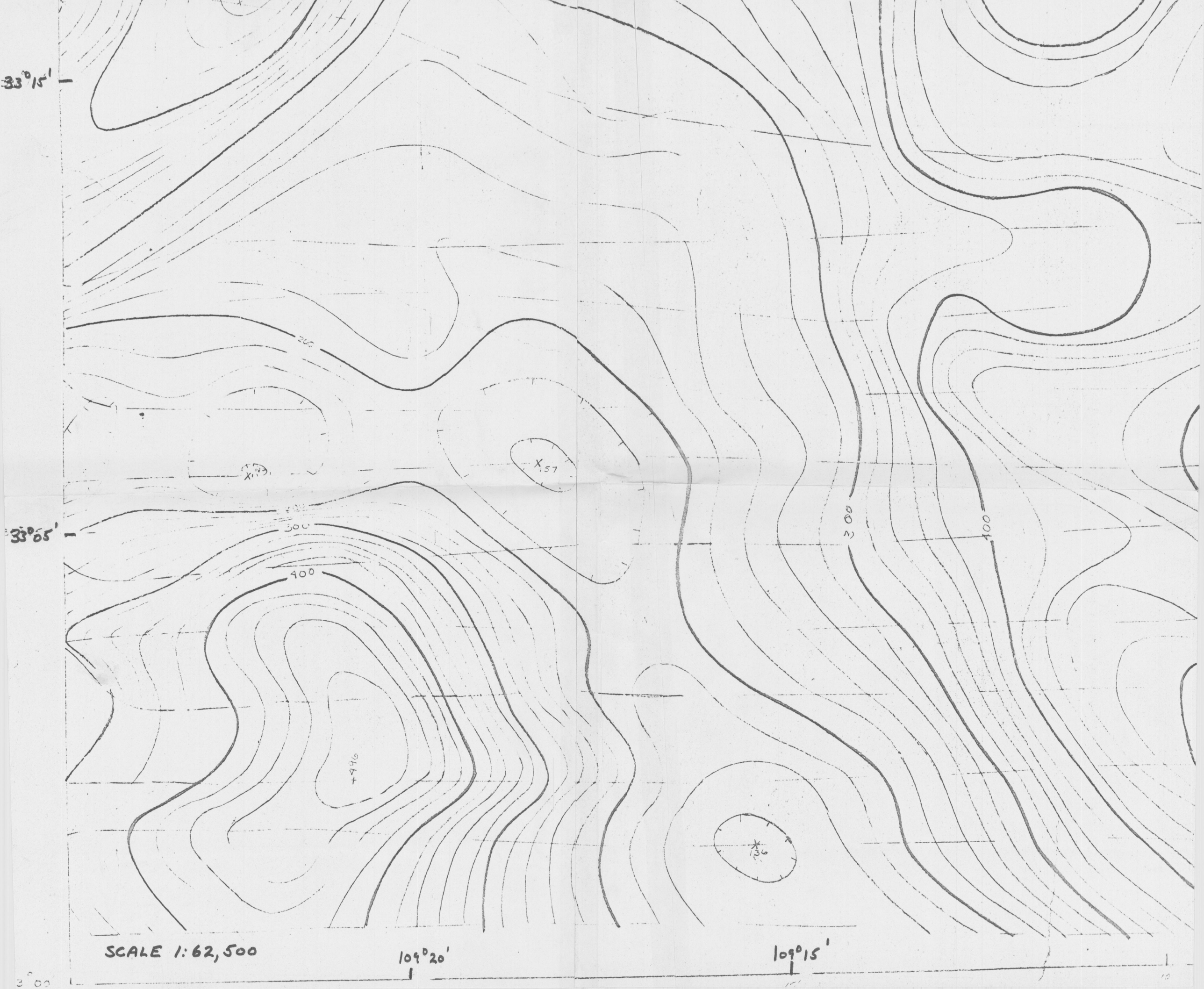
Indicates Phelps Dodge

—— Indicates Banner Mining Co.

Indicates B.Y.U.

ESSEX INTERNATIONAL, INC.
MORENCI-BANNER-BYU PROJECT
Greenlee County, Arizona

EGH / 11-70


33°15'
33°05'
200
300
400
300
400
+496
136
SCALE 1:62,500
109°20'
109°15'

P.D

Expectation, 2, 5 & 7, 16 Roof of Labor
April 12 1965
is last recorded affidavit of labor
on group

Els - Pet 1 thru 6 Claridge & Anderson

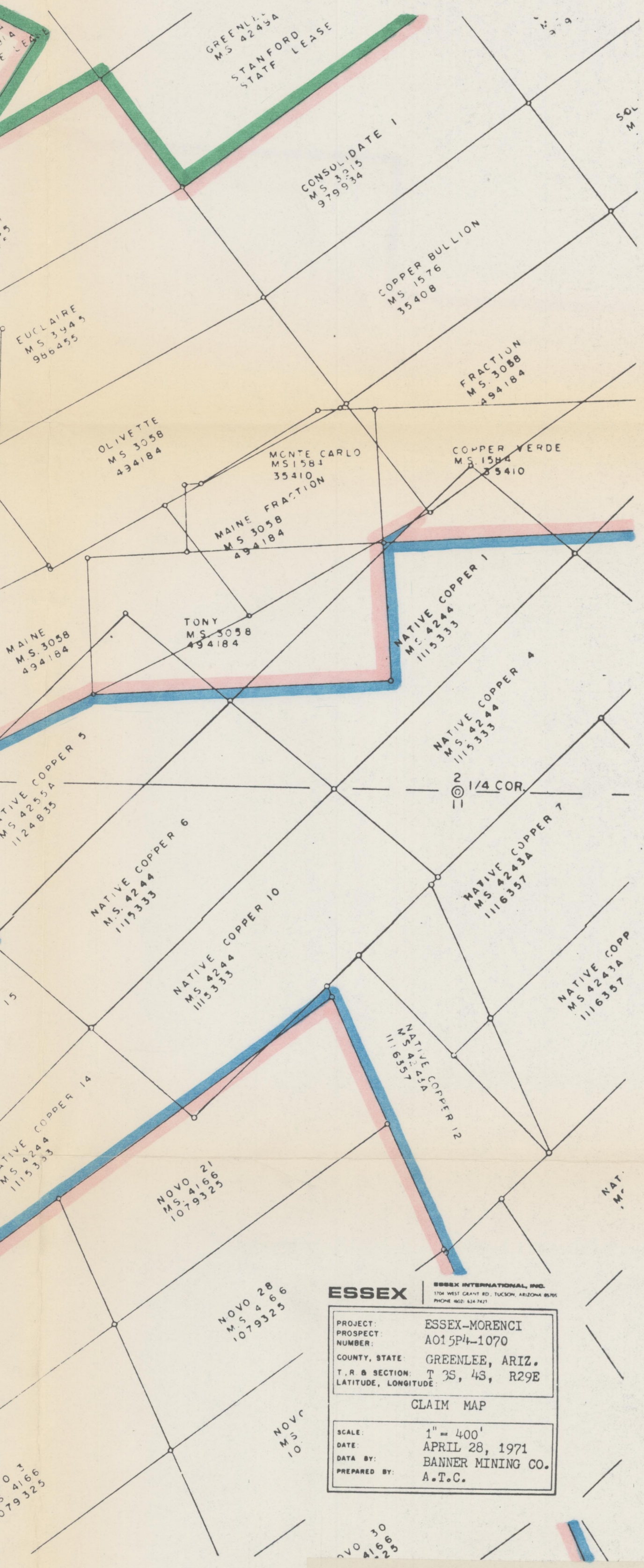
5-10-56 3/422, 423
8-15-56 3/443, 444
7-16-57 D-1/258, 259
7-25-58 D-4/627, 628
9-6-59 D-6 127, 128
6-5-61 9/701, 702
6-6-62 11/88, 89
5-31-63 13/202, 203
7-24-64 15/118-119
6-12-65 17/258-259
6-6-66 19/49-48
6-7-66 20 674-675
7-1-67 22 720-721

(2)

Els-Beth 1-6 April 15, 1968 D-26/344, 343

8-30-69 33/463-464

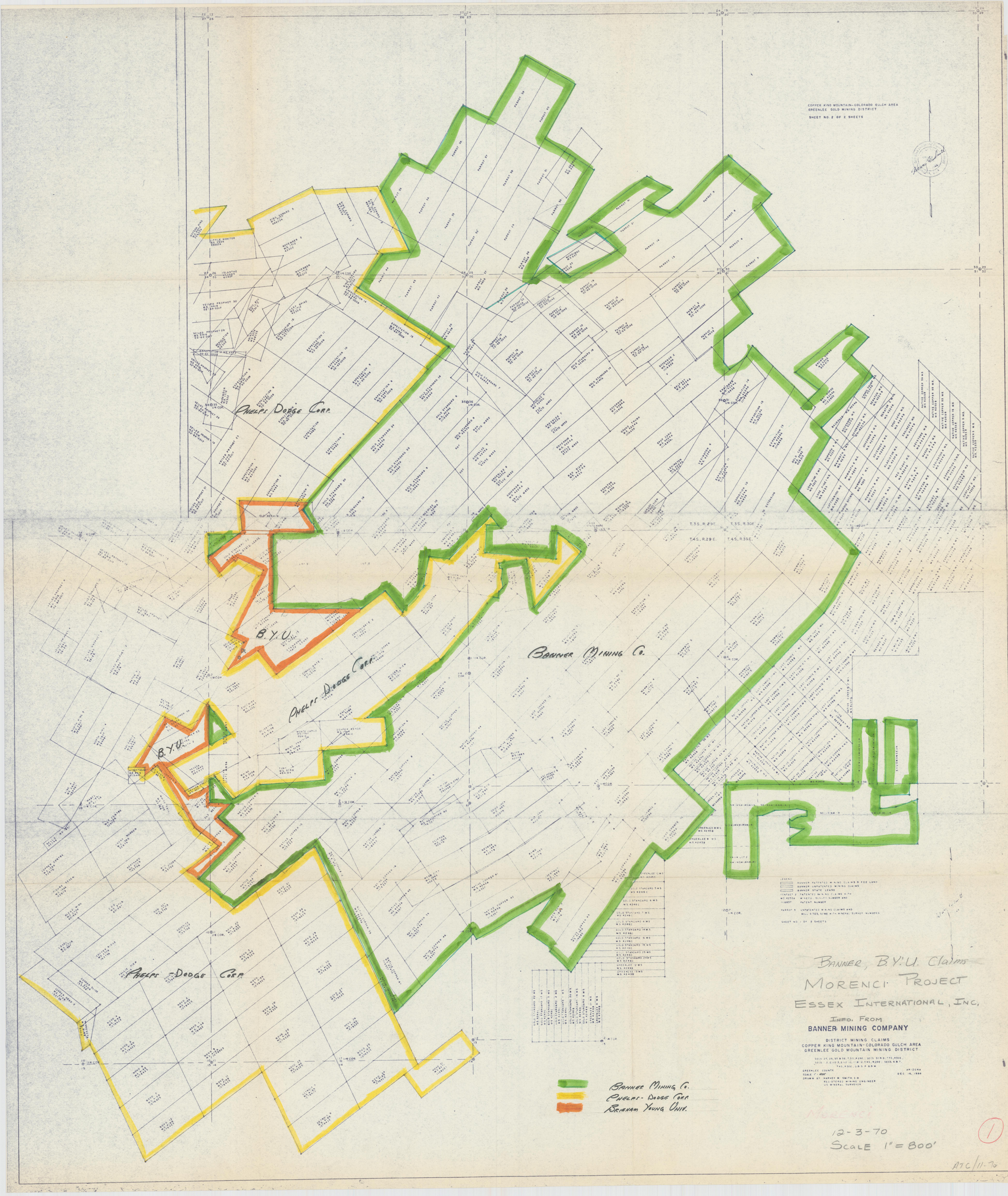
7-17-70 34/321-322



Tuc. office Copy
sent to Leo Smith
Bud Jones
Harvey Smith } 3-7-72

REVISED 3-3-72

PRIORITY
No. 1 ELS-BETH 3
No. 2 ELS-BETH 1, 2, 4, 5



BANNER, B.Y.U. Claims
MORENCI PROJECT
ESSEX INTERNATIONAL, INC.

INFO. FROM
BANNER MINING COMPANY

DISTRICT MINING CLAIMS
COPPER KING MOUNTAIN-COLORADO GULCH AREA
GREENLEE GOLD MOUNTAIN MINING DISTRICT

SECS. 25, 26, 35 & 36, T.3S., R.29E.; SECS. 30 & 31, T.3S., R.30E.;
SECS. 1, 2, 12 & 13, T.4S., R.29E.; SECS. 6 & 7,
T.4S., R.30E., G & S.R. B.&M.

GREENLEE COUNTY ARIZONA
SCALE 1" = 800' DEC. 16, 1966
DRAWN BY HARVEY W. SMITH E.M.
REGISTERED MINING ENGINEER
U.S. MINERAL SURVEYOR

MORENCI

12-3-70
SCALE 1" = 800'

1

ATC/11-70

University Development
Brigham Young University
Provo, Utah 84601

A-387 ASB
Mineral Development

May 20, 1971

SXM
MAY 24 1971
RECEIVED

Mr. Grover Heinrichs
Essex International, Inc.
1704 West Grant Road
Tucson, Arizona 85705

Dear Grover:

With reference to your confidential map for patent of the Elsbeth 1 - 5, I am enclosing a copy of our old original map which indicates the northeast part of Afterthought is included and part of the Nevada Fraction is included as outlined from our old map.

In studying over the notices of location on Elsbeth #3, I doubt if we can make any change other than what is represented on your map.

I understand Howard Lanier is with Guy Anderson today. If there is anything else we can do to help, please let us know.

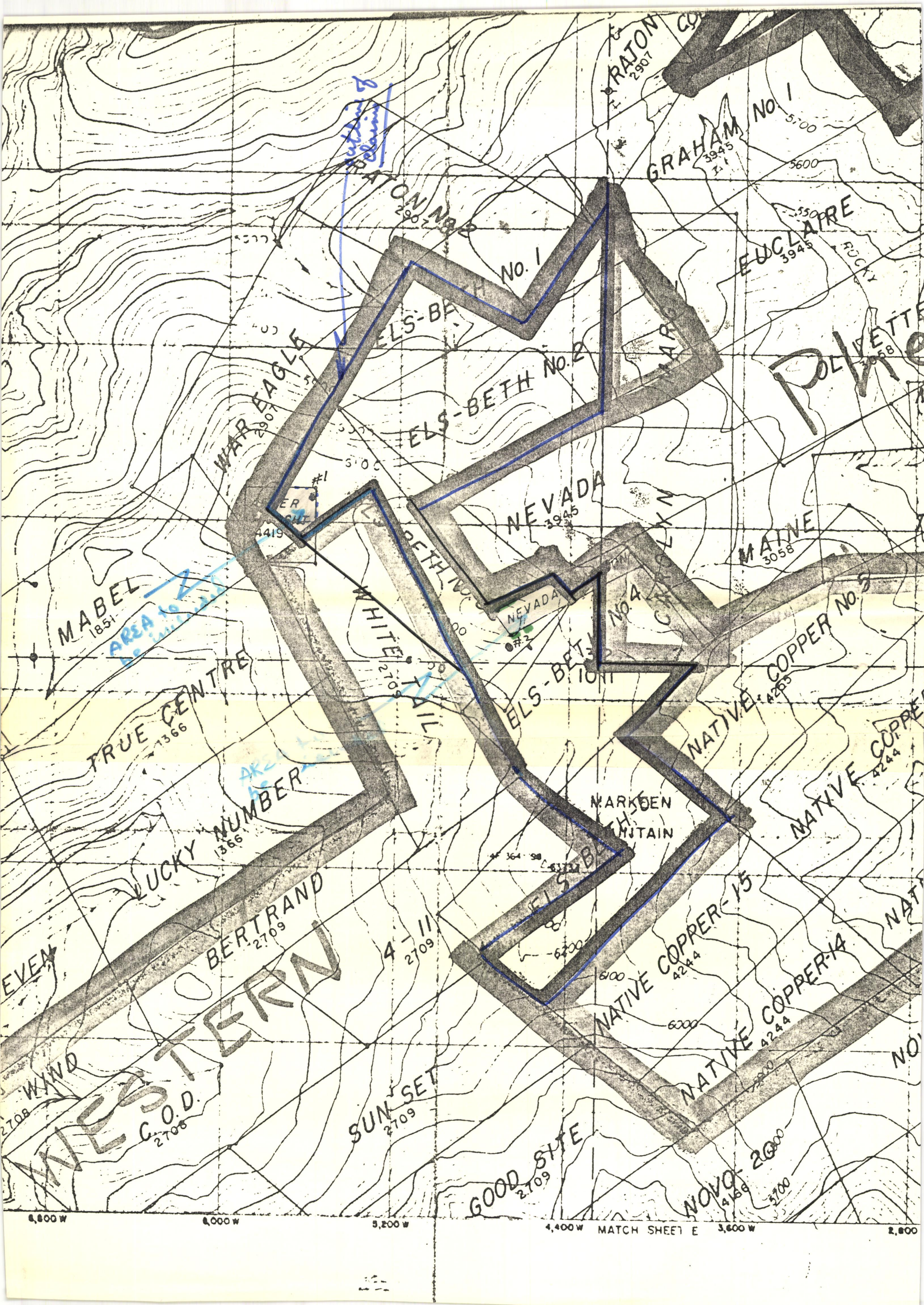
Regards,

H. Clyde Davis/pn

H. Clyde Davis, Director
Mineral Development

HCD:pn

Enclosure



RATON
2907
GRAHAM No. 1
3945
5700
5600
EUCLAIRE
3945
ROCKY
No. 1
ELS-BETH No. 2
WAR EAGLE
2907
#1
4419
NEVADA
3945
MAINE
3058
MABEL
1851
AREA to be included
WHITE TAIL
2709
NEVADA
#2
ELS-BETH No. 4
1011
NATIVE COPPER No. 5
4265
TRUE CENTRE
1366
LUCKY NUMBER
1366
MARKEEN
MTAIN
NATIVE COPPER
4244
BERTRAND
2709
4-11
2709
NATIVE COPPER-15
4244
NATIVE COPPER-14
4244
WESTERN
WIND
2708
C.O.D.
2708
SUN SET
2709
GOOD SITE
2709
NOVO-20
4166
6,800 W
6,000 W
5,200 W
4,400 W
MATCH SHEET E
3,600 W
2,800

MEMORANDUM

Jan. 20, 1971

TO: Howard Lanier

FROM: Paul Eimon

SUBJECT: Kenyon Richard Observations at Morenci - January 19, 1971

During the entire day of January 19, 1971 Kenyon Richard (hired as a consultant to Essex for that day) studied the outcrops including and surrounding the BYU claims.

Included in Kenyon's comments during the day were the following statements.

1. The leached cap west of the Els-Beth claims represents the leached equivalent for a chalcocite blanket that should have averaged 1% Cu or greater.

2. The Els-Beth claims at the top of the hill show the leached equivalent of chalcocite ore that approached 1% Cu in grade.

3. The copper from the above leached ground probably was transported away from the area and did not furnish copper for significant re-enrichment at depth.

4. The Els-Beth claims could contain higher grade and higher tonnages of ore than we are presently estimating.

5. The most logical geological explanation of the apparent displacement along the BYU boundary is a feature such as the "Boundary Fault" I have surmised. This "Boundary Fault" is probably a series of irregular fracture planes.

6. The leached cap in the Standard area represents the leached equivalent of extremely good porphyry copper ore.

7. The top and bottom of the chalcocite blanket in the Standard area is probably quite irregular.

TO: H. Lanier Jan. 20, 1971

FROM: P. Eimon

SUBJECT: Kenyon Richard Observations at Morenci - January 19, 1971

8. Kenyon recommends 5-6 weeks of field geologic mapping to pin down geological relationships and appraise the leached cap. He recommended against geophysical work or detailed geochemical sampling.

9. The three dimentional geometry and grade of the underlying ore body will be difficult to ascertain merely by surface geologic mapping.

10. It is mandatory for P.D. to obtain the BYU ground soon to begin stripping in a logical manner with minimum ore and waste haulage. This need is accentuated by the geometry of the ridge leading SW from BYU D.D.H. #1.

11. Kenyon generally felt that Essex's position is extremely strong and should be profitable if negotiations remained rational.

12. The Banner ground is of very limited value for exploration. (Based on prior ASARCO mapping and evaluation).

PIE:td

PROPOSALS FOR NEGOTIATIONS WITH PHELPS DODGE

BACKGROUND

The following summary illustrates the order of magnitude of the dollar values involved in the BYU position at Morenci, assuming the concepts developed in the property evaluation are valid.

The principal value of the BYU property is determined by the ore "locked in" the back wall of an ultimate pit controlled by the western BYU property boundary. This ore, which cannot be mined, is estimated to be between 1 and 2 hundred million tons.

A second factor is the ore value in the perched ore body which includes both the BYU and P.D. ground. The value of this ore is probably adequate to pay for the stripping and the property costs assumed by Phelps Dodge in assignment of the lease. This means that Phelps Dodge could derive all the benefits of developing an open pit operation for the King and Standard ore bodies at no real cost to them.

A rough estimate of the magnitude of the total dollar values to Phelps Dodge based upon the concepts developed from the incomplete data available is as follows:

Perched Ore:

BYU - 90,000,000# Copper Recovered =	$45,000,000
P.D.- 25,000,000# Copper Recovered =	12,500,000
	$57,500,000

Locked P.D. Ore:

1.8×10^9# Copper Recovered = $900,000,000

GENERAL EXPENSE

Regardless of negotiation proposal with Phelps Dodge, it is anticipated that Essex will recapture its expense involved in achieving control and evaluating the property. Estimates of these costs are as follows:

	Feb. 1	May 31
Property	$125,000	$125,000
Expense	20,000	40,000
Personnel	24,000	50,000
Overhead	6,000	14,000
Total Project	$175,000	$229,000
Pre-Project	75,000	75,000
Total	$250,000	$304,000

PROPOSALS

The following summaries outline the more apparent types of arrangements that could be considered with Phelps Dodge.

1. Assignment of BYU property with Phelps Dodge assuming all rights and obligations of the lease.
   Phelps Dodge would contract to sell copper cathodes or wirebars to Essex at market price less a discount. The quantity and term of such a proposed contract would approximate the term of the lease and the estimated copper in the locked ore. Consequently, the initial proposal would be for 50 million pounds of copper per year for 30 years. The proposed discount would be 2%.

   In initial negotiations Essex would also seek a return of all contained copper in the BYU property at a price equivalent to Phelps Dodge mining and processing costs.

2. Assignment of the BYU property with Phelps Dodge assuming all rights and obligations.
   Phelps Dodge would contract to sell concentrates at a price approximating the net smelter return value adjusted to include a discount. The quantity and term would be 50 million pounds over a 30 year period. The initial proposal would also seek return of the perched ore copper at cost.

3. Sub-lease of the BYU property to Phelps Dodge for a cash settlement.
   Inasmuch as Essex retains the lease obligations, the cash settlement would need to be adequate to cover the lease costs and the discounted present value of the 2% price discount for 50 million pounds of copper for 30 years. Also, Phelps Dodge would enter into a contract for long term sale of copper at no discount.

   The proposal for the return of the copper from the perched BYU ore at cost would also be included.

4. Assignment of BYU property to Phelps Dodge for a cash settlement.
   Phelps Dodge would have all the obligations to the lessors; thus, the cash settlement would be less than Proposal #3. The amount of the cash settlement would be comparable to the discounted present value of the 2% price discount on 50 million pounds of copper over 30 years.

   Also Phelps Dodge would enter into a contract for long term sale of copper at no discount.

   The proposal for return of the copper from the BYU perched ore at cost would also be included.

Numerous other proposals have been considered, including (1) Essex entering a joint venture on the concentrator for the Metcalf-King ore body; (2) Phelps Dodge delivering to Essex oxide ore which has been selectively mined for a leach, LIX electrowin process; (3) Essex offering to buy outright the Standard ore body.

BANNER PROPERTY

In the studies it has become evident that the Banner property has little apparent value in the development of the Metcalf-King (Standard) ore bodies. There is an estimated penalty of approximately 2.8 million tons of ore which would be lost by not having the Banner property. Also if our estimates are incorrent as to the depth and location of the Standard ore body, it is conceivable that Phelps Dodge could need some of the Banner ground to develop adequate pit slopes.

The possibility that Phelps Dodge could require Banner ground for leach dumps was considered and it is doubtful that they would have this interest.

During negotiations the value of the Banner property will need to be assessed from Phelps Dodge's reactions prior to any committment by Essex.

H. Lanier/29 Jan. 71

ESSEX / BYU

1/26/71

H.L.

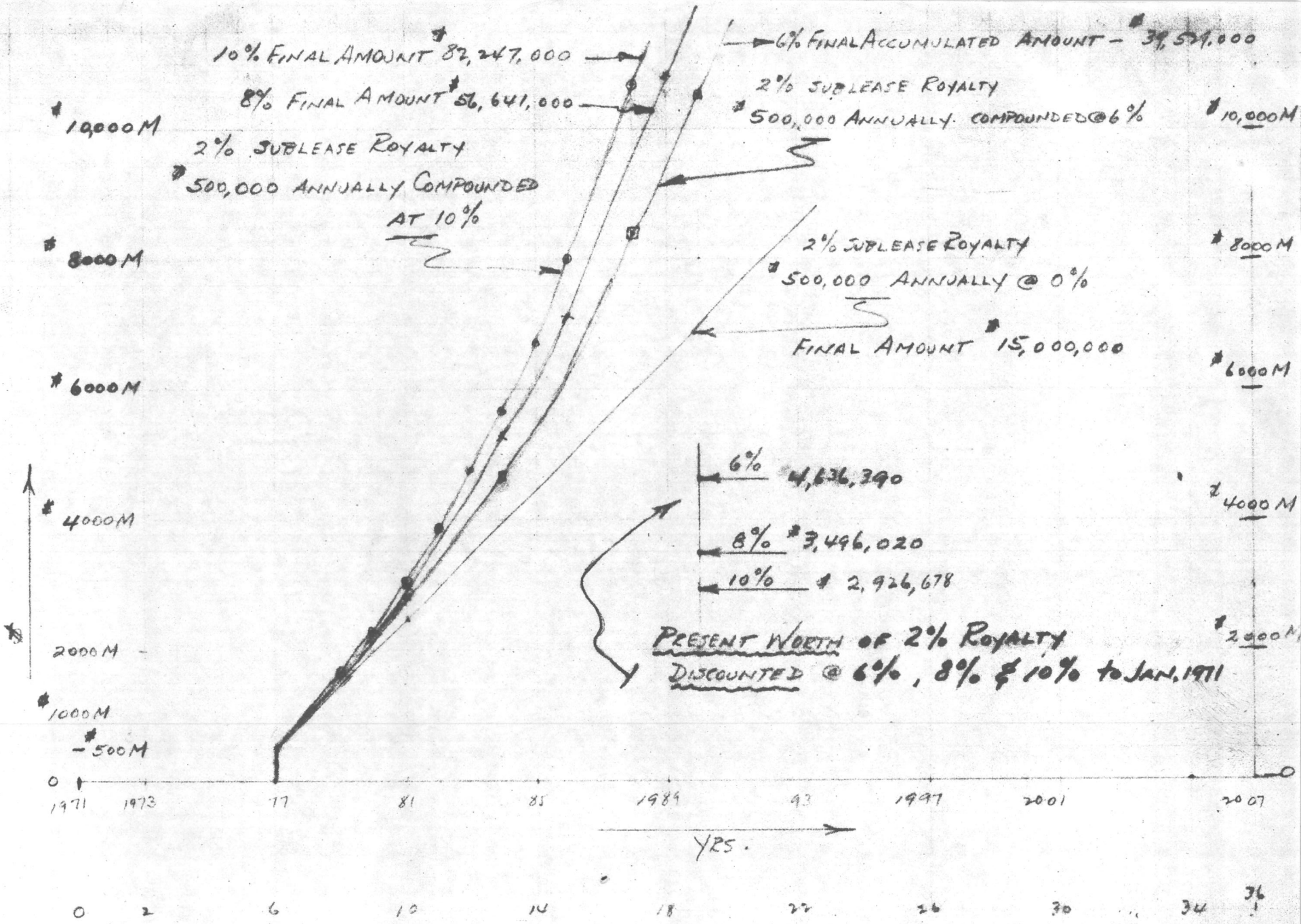
Present Worth of the following payments brought back to "0" time as of 12/7/70

DATE	AMOUNT $	PRESENT WORTH % DISCOUNTED 6	8	10
12/1/70	25,000	—	—	—
6/1/71	50,000	—	—	—
12/1/71	50,000	—	—	—
6/1/72	50,000	—	—	—
12/1/72	150,000	—	—	—
12/1/73	200,000	—	—	—
12/1/74	250,000	—	—	—
12/1/75	300,000	—	—	—
12/1/76	350,000	—	—	—
TOTAL	$1,425,000	1,136,834	1,093,891	990,181
BEGINNING 12/1/77	500,000			
ANNUALLY 24 ADDITIONAL PAYMENTS OF	500,000			
for a TOTAL of	$12,500,000	4,583,381	3,071,713	2,305,305
GRAND TOTAL	13,925,000	5,720,215	4,165,604	3,295,486
PRESENT WORTH OF 2% OVER RIDE - Cu @ 50¢/# = 1¢/# Cu - 50,000,000#/Y = $500,000/Y for 30 yrs. (starting in 1977 or 6 years from "0")		4,636,390	3,496,020	2,926,678
TOTAL P.W. for lease + 2% DISC.		10,356,605	7,661,624	6,222,164

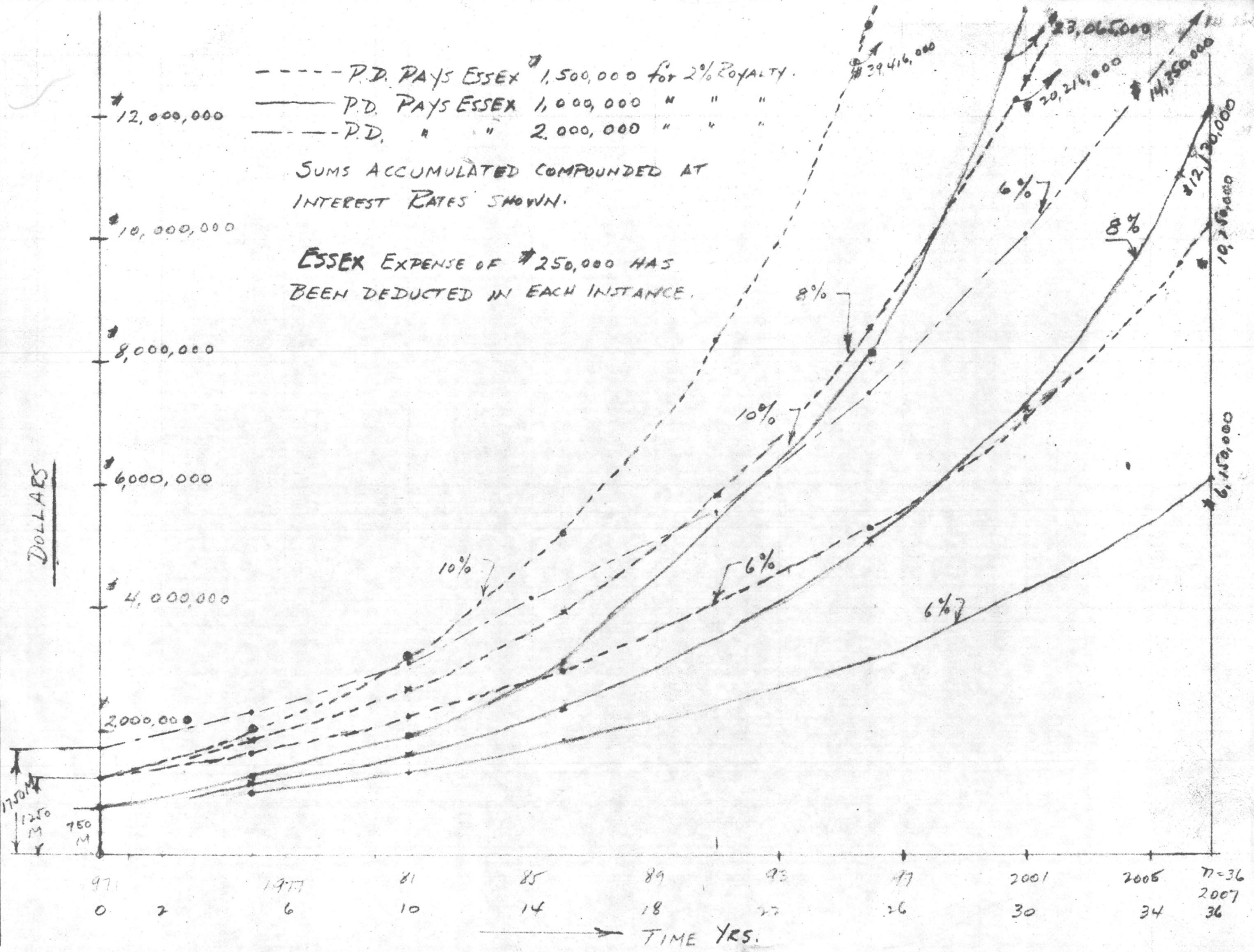
(see following sheets for calculations)

OEO 1/26/71

SHEET NO. ____ OF ____
JOB NO. ____
SUBJECT ____
DATE ____
BY ____
CHKD. BY ____ DATE ____



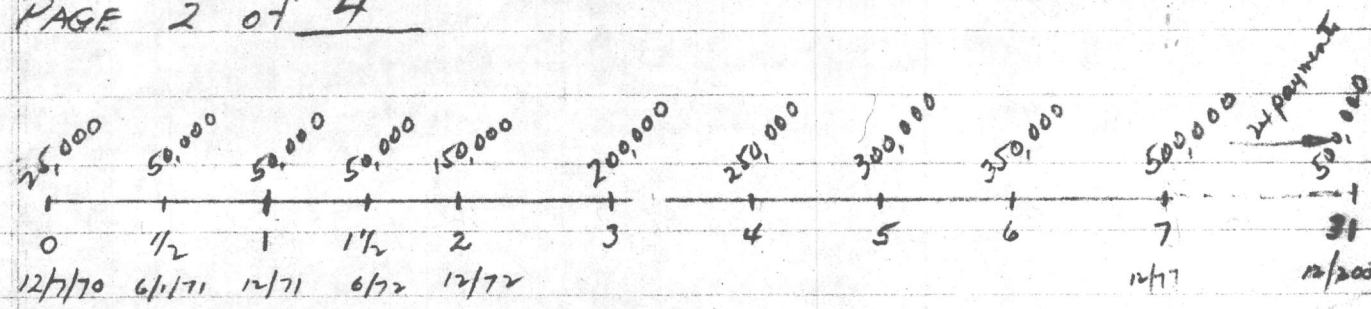
ESSEX ASSIGNS B.Y.U. LEASE TO P.D. ESSEX RECEIVES 2% ROYALTY



ESSEX ASSIGNS LEASE TO ~~B.Y.U.~~ P.D.
and RECEIVES LUMP SUM PAYMENT

CEO 1/29/71

SHEET NO. ____ OF ____
JOB NO. ____
SUBJECT ____
DATE ____
BY ____
CHKD. BY ____ DATE ____

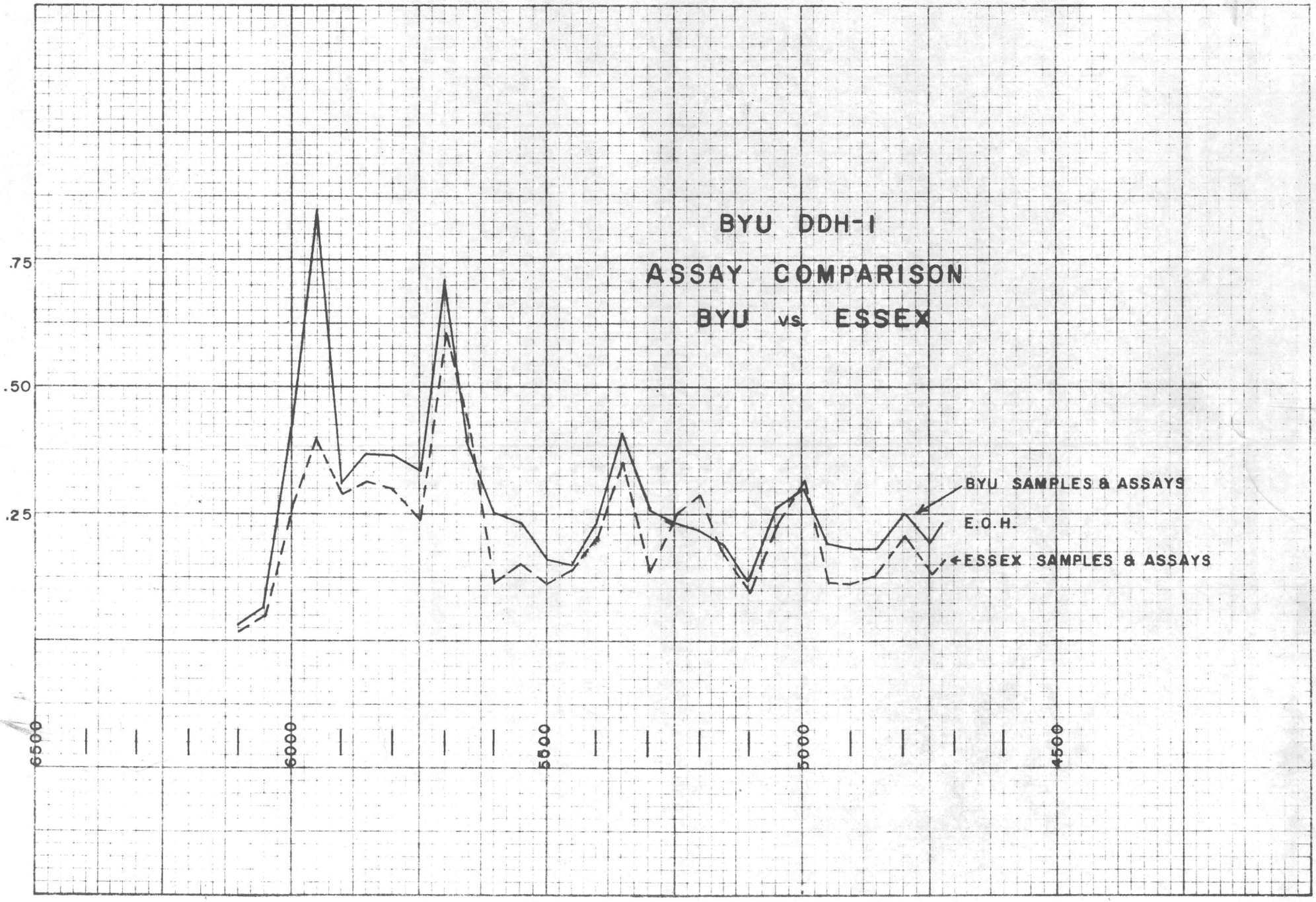


6%

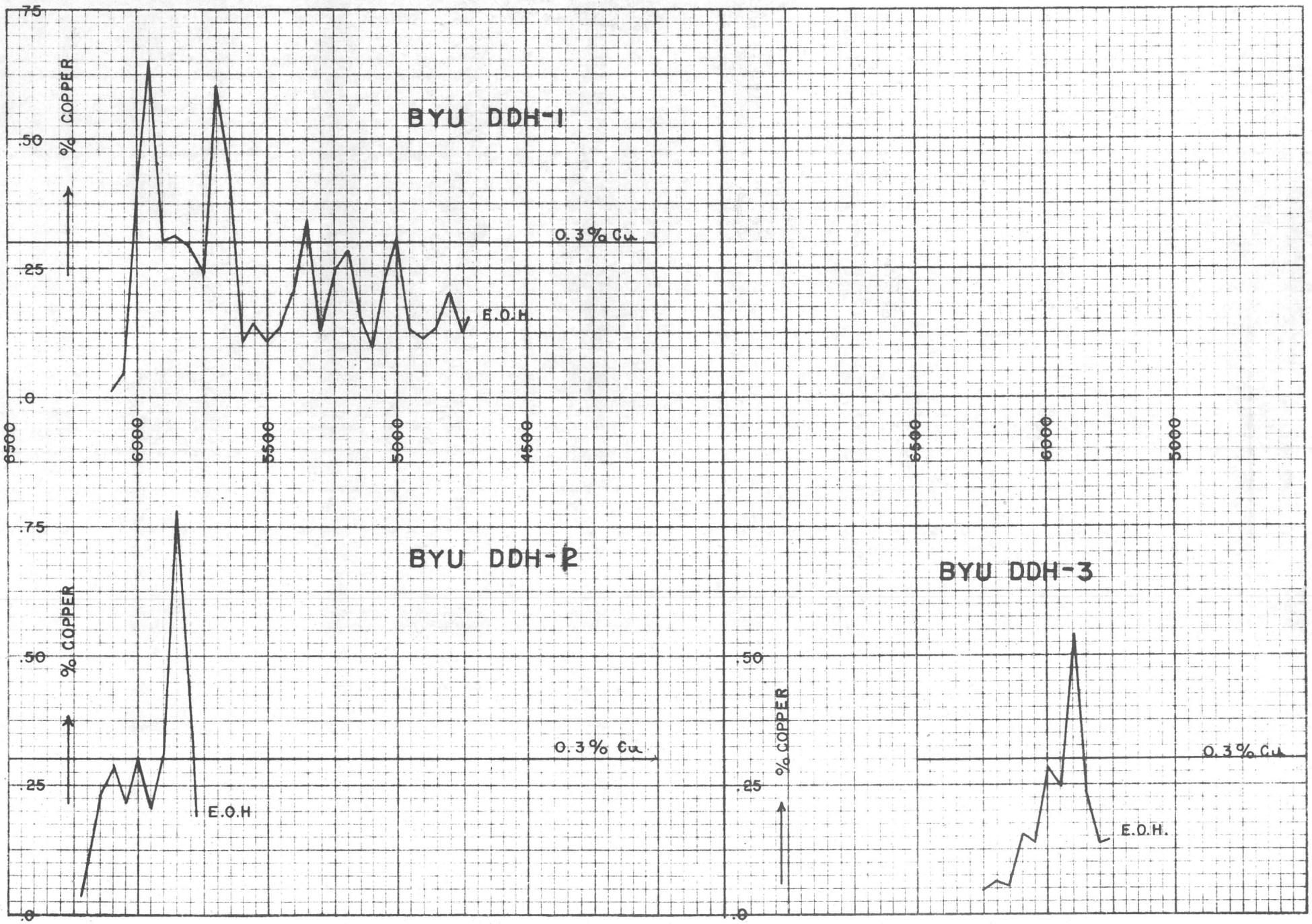
$$PW = 25000 + 50{,}000(PS_{3-1}) + 50000(PS_{6-1}) + 50000(PS_{3-2}) + 150000(PS_{6-2}) + 200{,}000(PS_{6-3})$$
$$+ 250{,}000(PS_{6-4}) + 300{,}000(PS_{6-5}) + 350{,}000(PS_{6-6}) + \left[500{,}000 + 500{,}000(PR_{6-24})\right](PS)_{6-7} =$$

	6%	8%	10%
	$ 25,000	25,000	25,000
	48,544	48,077	47,619
	47,170	46,477	45,455
	45,757	44,500	43,192
	133,500	128,601	123,968
	167,924	158,766	150,262
	198,023	183,758	170,753
	224,178	220,509	186,276
	246,736	238,203	197,656
(25 PAYMENTS @ 500,010)	$ 4,583,381	3,071,713	2,305,305
TOTAL	$ 5,720,215	$ 4,165,604	$ 3,295,486

K+E 10 X 10 TO THE INCH 46 0782
7 X 10 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.



K+E 10 X 10 TO THE INCH 46 0782
7 X 10 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.



ESSEX ASSAYS ON
MORENCI DRILL CORE SAMPLES

ASSAY COMPARISONS

BYU Hole #1	BYU assays averaged 23.3% higher than Essex (wet assay comparison).
BYU Hole #2	Essex averaged 10.9% higher than BYU (wet assay comparison).
BYU Hole #3	Both sets of assays averaged the same.

Mining Bench Composites	BYU x-ray copper assays	- 52% high
	BYU silver assays	- 380% high
	BYU molybdenum assays	- 430% high

50 FT. BENCH COMPOSITE ASSAY COMPARISONS

Composite	Assayer	%T. Cu	%N.S. Cu	oz./ton Au	oz./ton Ag	% Mo
Hole #1 80'-130'	AA&RL(1)	0.31	0.03	0.001	0.10	0.005
	Jacobs(2)	.27	.02	Trace	.05	0.003
Hole #1 130'-185'	AA&RL	.38	.01	Trace	.09	.0075
	Jacobs	.37	.03	Trace	.10	.004
Hole #1 185'-230'	AA&RL	.30	.01	Trace	.07	.0028
	Jacobs	.28	.03	Trace	.05	.002
	Operating Laboratory	.255	.007	.0033	.0255	.0042
Hole #1 230'-280'	AA&RL	.34	.01	Trace	.03	.0029
	Jacobs	.32	.02	Trace	.10	.002
Hole #1 280'-330'	AA&RL	.32	.01	Trace	.02	.0033
	Jacobs	.29	.02	Trace	.10	.002
Hole #1 330'-380'	AA&RL	.26	.02	Trace	.02	.0064
	Jacobs	.22	.03	Trace	.05	.003
Hole #1 380'-430'	AA&RL	.65	.03	Trace	.05	.0027
	Jacobs	.62	.04	Trace	.10	.002
Hole #1 430'-480'	AA&RL	.44	.02	Trace	.11	.012
	Jacobs	.42	.05	Trace	.05	.018
Hole #2 401'-468'	AA&RL	.74	.05	Trace	.18	.0023
	Jacobs	.70	.06	Trace	.10	.002
Op. Lab.		.710	.056	.0014	.0616	.0030
Hole #3 370'-420'	AA&RL	.50	.03	Trace	.04	.001
	Jacobs	.50	.03	Trace	.10	Trace
	Operating Laboratory	.495	.028	.0006	.0144	.0024

Averaging the AA&RL and Jacobs assays from the foregoing table results in the following comparisons:

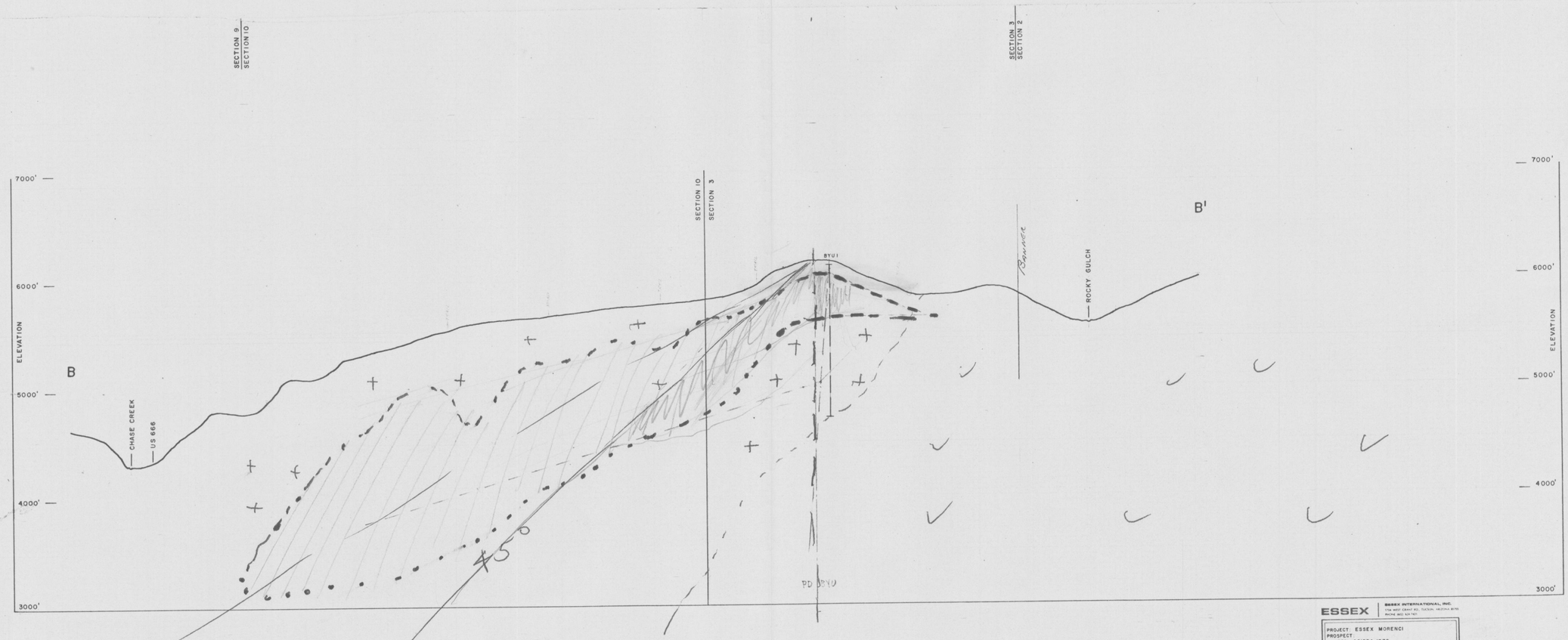
	%T. Cu	%N.S. Cu	oz./ton Au	oz./ton Ag	%Mo
AA&RL	.410	.021	Trace	.073	.0042
Jacobs	.386	.032	Trace	.075	.0040

One 50-ft. bench was assayed in detail (every 5 ft. interval) and the average of these assays were compiled for comparison with the bench composite assay:

Hole #1, 380'-430' Bench
(AA&RL Assays)

Intercepts	%T. Cu	%N.S. Cu	oz./ton Au	oz./ton Ag	%Mo
380'-385	0.39	0.01	.001	0.11	0.0021
385'-390'	.50	.01	.001	.04	.0077
390'-395'	.46	.01	Trace	.01	.0019
395'-400'	.41	.01	Trace	.11	.0016
400'-405'	.30	.01	.001	.10	.0024
405'-410'	.71	.03	Trace	.17	.0014
410'-415'	.50	.01	.001	.02	.0018
415'-420'	2.23	.02	.001	.01	.0021
420'-425'	.34	.02	.001	.06	.0071
425'-430'	.36	.01	Trace	.08	.0070
Averages	.62	.014	Trace	.07	.0035
Composite - 380'-430'	.65	.03	Trace	.05	.0027

(1) American Analytical & Research Laboratories, Tucson
(2) Jacobs Assay Office, Tucson



SECTION B-B'
LOOKING NORTH WEST
SCALE 1"=500'

ESSEX

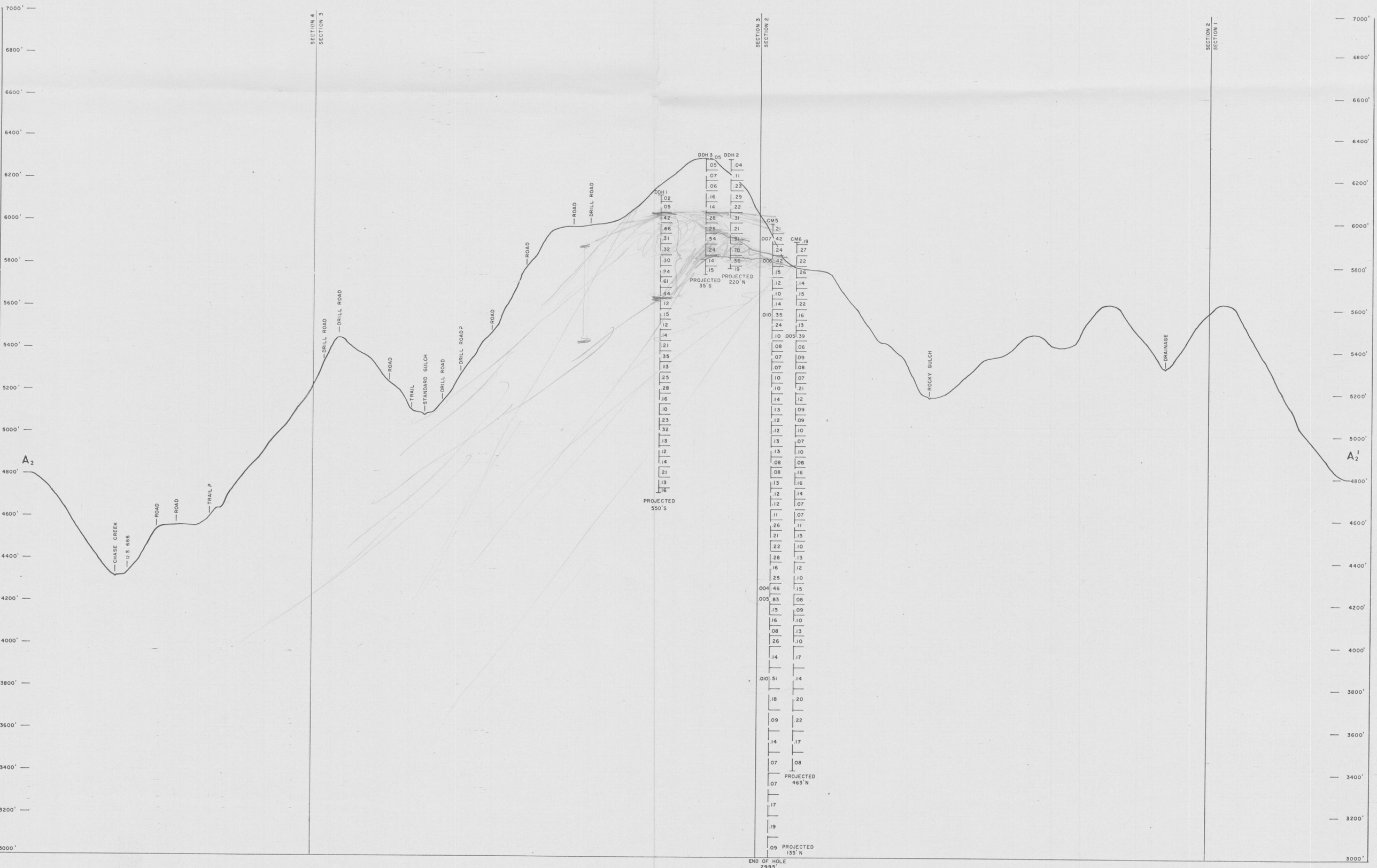
ESSEX INTERNATIONAL, INC.
1724 WEST GRANT RD. TUCSON, ARIZONA 85745
PHONE (602) 624-7421

PROJECT: ESSEX MORENCI
PROSPECT:
NUMBER: A01SP4-1070
COUNTY, STATE: GREENLEE, ARIZONA
T. & R. & SECTION: T4S R29E
LATITUDE, LONGITUDE:

SCALE: 1"=500'
DATE: 1/26/1971
DATA BY: R. JACKSON
PREPARED BY: A.T.C. & B.L.R.

1" = 1000'

SECTION LOOKING NORTH



SECTION 17,500 N A_2-A_2'

SCALE: ~~HORIZ. 1"=500'~~
~~VERT. 1"=200'~~ 1=400

ESSEX | ESSEX INTERNATIONAL, INC.
1704 WEST GRANT RD., TUCSON, ARIZONA 85705
PHONE (602) 624-7421

PROJECT: ESSEX MORENCI
PROSPECT:
NUMBER: A015P4-1070
COUNTY, STATE: GREENLEE, ARIZONA
T, R & SECTION: T4S R29E
LATITUDE, LONGITUDE:

SCALE: 1"=500'
DATE: 1/26/1971
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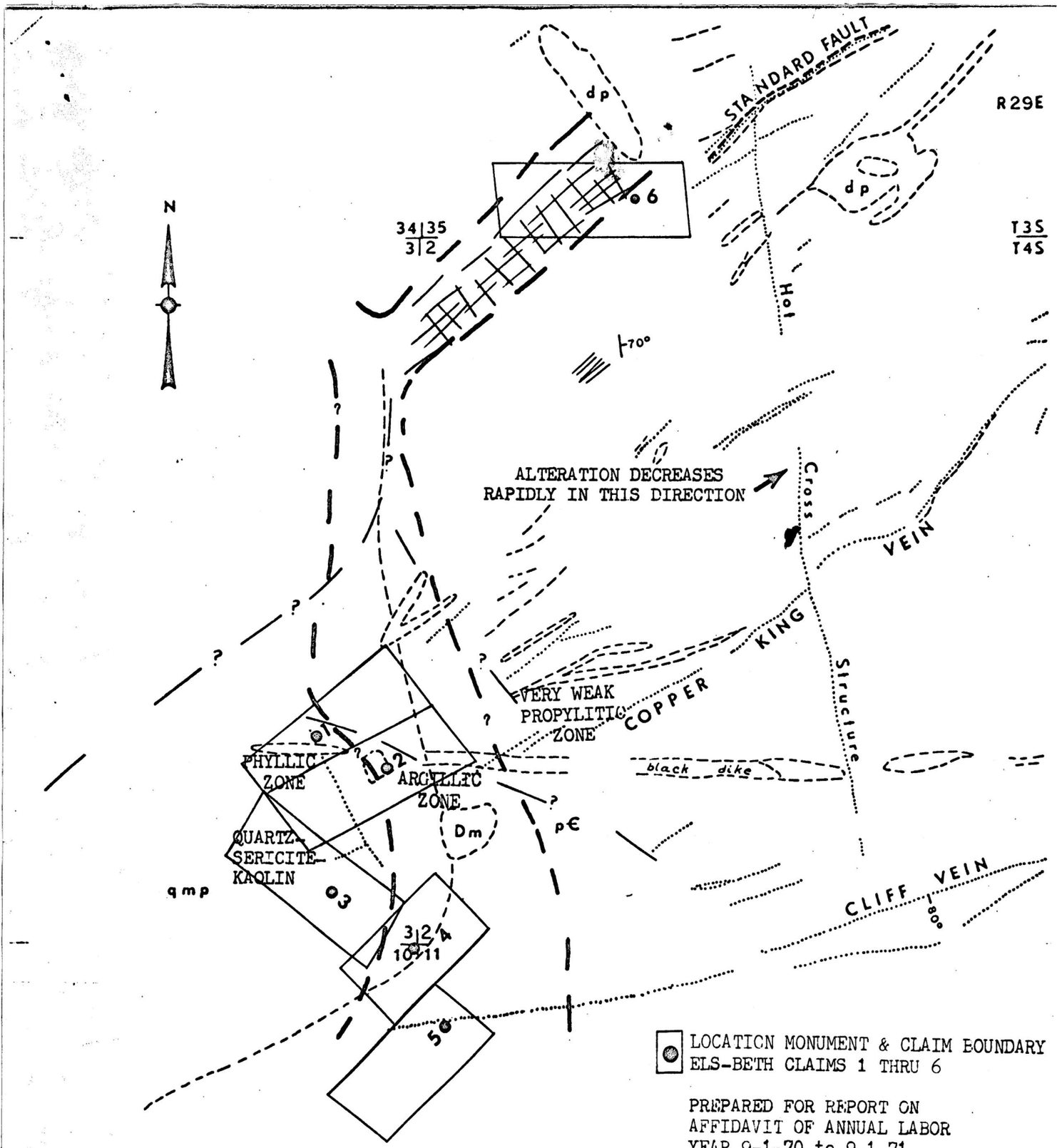


LOCATION MONUMENT & CLAIM BOUNDARY
ELS-BETH CLAIMS 1 THRU 6

PREPARED FOR REPORT ON
AFFIDAVIT OF ANNUAL LABOR
YEAR 9-1-70 to 9-1-71

Revised 9-28-71

EXPLANATION

Dm	LIMESTONES, SANDSTONES, AND SHALES
pC	PRECAMBRIAN GRANITE, GRANODIORITE, SCHIST
qmp	QUARTZ MONZONITE PORPHYRY
dp	DIORITE PORPHYRY
	MINERALIZED VEINS
	FRACTURE ZONE

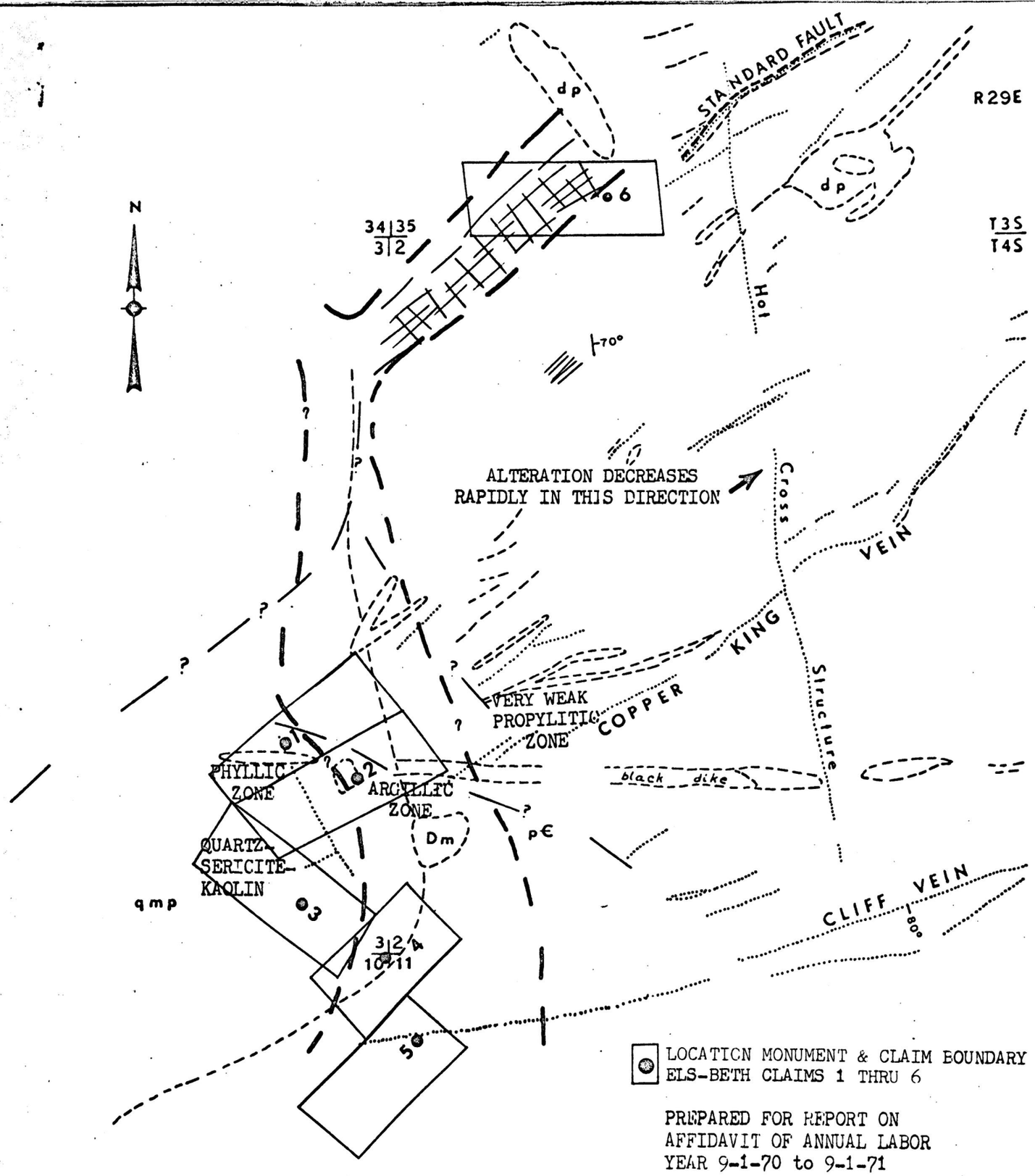
ESSEX

ESSEX INTERNATIONAL, INC.
1704 WEST GRANT RD TUCSON, ARIZONA 85705
PHONE (602) 624 7421

PROJECT:	ESSEX – MORENCI
PROSPECT NUMBER	A015P4 1070
COUNTY, STATE:	GREENLEE, ARIZ.
T, R. & SECTION:	T4S, R29E
LATITUDE, LONGITUDE:	

GEOLOGY

SCALE:	1" = 1000'
DATE:	FEB. 1, 1971
DATA BY:	J.C. BALLA, K. JONES P. EIMON
PREPARED BY:	A.T. CROSS & BLR



PREPARED FOR REPORT ON
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ESSEX

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1704 WEST GRANT RD TUCSON, ARIZONA 85705
PHONE (602) 624 7421

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PROSPECT:	
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T, R & SECTION	T4S, R29E
LATITUDE, LONGITUDE:	

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DATE:	FEB. 1, 1971
DATA BY:	J.C. BALLA, K. JONES
PREPARED BY:	P. EIMON A.T. CROSS & BLR

SXM

APR 17 1972

	Initials	Date
Prepared By	CEO	1/26/72
Approved By		

RECEIVED

45-805 EYE-EASE Made in U.S.A. NATIONAL

PRESENT WORTH STUDIES FOR PAUL EIMON.
(PRESENT TIME 12-1-71.)

		Date	1 Amount	2 8% Factor	3 Present Worth	4 10% Factor	5 Present Worth
150	1	12-1-72	$ 100000	.93828	$ 93828	.92424	$ 92424
150	2	12-1-73	100000	.85734	85734	.82645	82645
150	3	12-1-74	150000	.79383	119070	.75131	112696
150	4	12-1-75	200000	.73503	147006	.68301	136602
		SUB-TOTAL	550000		$ 445638		424637
					(104362)		(125363)
		NEXT 6 YRS. INCREASE PAYMENTS BY $50,000/YR					
150	5	12-1-76	250000	.68058	170145	.62092	155230
200	6	12-1-77	300000	.63017	189051	.56447	169341
250	7	12-1-78	350000	.58349	204222	.51316	179606
300	8	12-1-79	400000	.54027	216108	.46651	186604
350	9	12-1-80	450000	.50025	225113	.42410	190845
500	10	12-1-81	500000	.46319	231595	.38554	192770
		SUB-TOTAL	2250000	—	1,236234	—	1,077396
		TOTAL TO HERE	2,800,000	—	1,681,872	—	1,502,033
		NEXT 20 YRS. MAKE ANNUAL PAYMENTS OF $500,000	10000000	—	2273834	—	1641159
		TOTAL TO HERE	$ 12800000	—	$ 3955706		$ 3143192

Morenci ~~Extra~~ Adr.

O'Malley
B.Y.U
MARK

Leo Smith

Alf & Lenore

Guy & Elizabeth
Ann Jones
George Joney
Guy Jones

John -
Sue - signed
Jeanne -

Still to be Returned

X

CONFIDENTIAL

No.	Ft. to Ore	Ft. of Ore.	Avg. Grade	Depth of hole
1	250	400	0.90	900
2	150	450	0.79	800
3	none	none		800
4	100	300	0.72	1000
5	300	550	0.93	1100
6	150	300	0.99	900
7	200	50	0.40	500
8	100	750	0.80	1100
9	350	200	0.64	1150
10	none	none		1200
11	300	600	0.60	1800
12	350	700	1.03	1050
13	150	850	1.01	1400
14	150	400	0.60	1200
15	500	450	1.03	1900
16	400	450	0.75	1600
17	50	700	0.54	1500
18	300	400	0.58	1000
19	300	100	0.95	1200
20	1000	200	0.59	
21	400	400	0.61	
22	350	650	0.46	
23	350	650	0.51	
24	650	1000	0.47	
25	600	200	0.74	

0.40% of Copper and above is ore. Copper values run as high as 4.00% Copper.

Ore is encountered at shallower depths but is not counted unless an entire 50' level averages 0.40% or more.

Within the above t e values run as high as 1.50% Cu.

PR GJ OKC

J. DAVID LOWELL
CONSULTING GEOLOGIST

5211 N. ORACLE TUCSON, ARIZONA 85704 PHONE 887-5341

January 22, 1971

SXA

JAN 26 1971

RECEIVED

Mr. Paul Eimon
Essex International Inc.
1704 W. Grant
Tucson, Arizona 85705

Dear Mr. Eimon:

On January 21 at your request I reviewed with you and with Mr. Lanier some aspects of the Church claim group area near Morenci, Arizona. The following are my comments:

It is my feeling that the overall configuration of the mineralized body at Morenci is that of a vertical cylinder elongated in an east-west direction. This body is displaced by the north-trending, high-angle, postore Kingbolt fault in the vicinity of Chase Creek so that the original chalcocite blanket is at a higher elevation in the vicinity of King Peak than in the original Morenci orebody. These relationships are shown on the attached sketch. Some of the displacement may have been taken up by the Boundary fault rather than entirely by the Kingbolt-as is suggested by your information. It is apparent that the Church ground overlaps the edge of the zone of strong primary mineralization. Various information suggests that the grade of primary mineralization could be expected to increase at depth under Morenci and King Peak, and probably also under the Church group.

Exposures of shear zones on the projection of the Boundary fault into the Church group are indicative of the possible presence of a large displacement structure but do not confirm its existence. It might, however, be confirmed by detailed geologic mapping. The structure may have been the channelway for extensive migration of supergene solutions which have partly healed the original fault and make it now difficult to recognize.

Displacement on the fault will be difficult or impossible to determine based on evidence available on the Church ground. Some evidence of sharp change across the presumed trace of the structure is provided by the appearance of the leached capping. I feel that several profiles of rock geochem samples might show up a sharp change of metal content along this line which would tend to confirm a significant displacement. Testing of profiles of specimens using the Kennecott Grade Reduction Nomograph to estimate feet-percent copper in the chalcocite zone would also be a useful technique and might suggest the approximate configuration of the chalcocite deposit. Thin sections might also be cut from several rock specimens

across the presumed structure looking for a sharp change in hypogene alteration, but I am not very hopeful that this would produce diagnostic information.

I believe that it would be worthwhile for your purposes to map the geology of the Church group in detail, say 1" = 100', and to map part of the Banner property in less detail, say 1" = 500'. Some reconnaissance mapping might be done on a few reconnaissance traverses across the Phelps Dodge property with particular emphasis on leached capping. A wide-spaced grid of leached capping specimens should be collected for later review by a capping expert such as Kenyon Richard. It would be helpful to attempt to put together the broad picture on small-scale geologic sections which include the published Morenci ore geology, information from the Hanna ground, the Church ground, from surface mapping and capping estimates, and any other information which you may have. If this information were all put together the solution to the Boundary fault problem might be apparent.

Yours very truly,

J. David Lowell

J. David Lowell

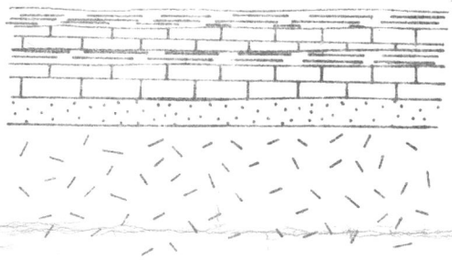
Attachment

JDL:h

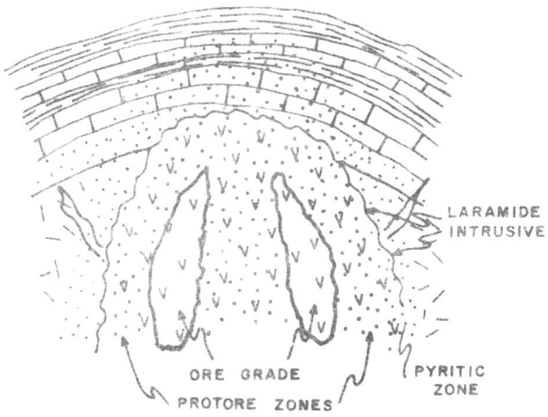
SCHEMATIC SECTIONS LOOKING NORTHWEST

ILLUSTRATING MORENCI HISTORY

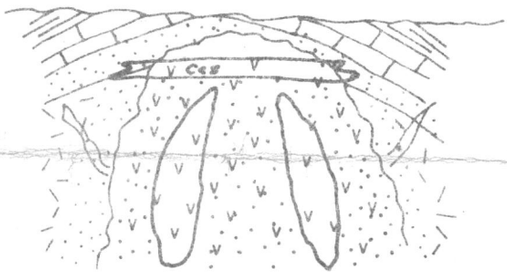
Pre-Laramide Intrusion
Morenci Section



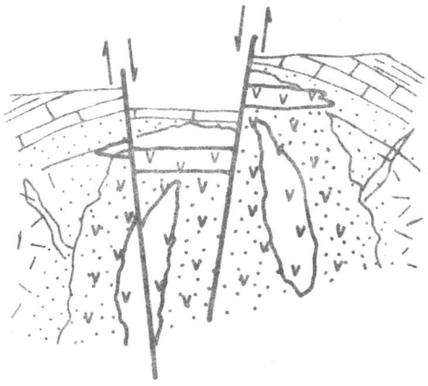
Pinkard fm. (shale)	Cretaceous
Modoc ls.	Carboniferous
Morenci fm. (shale),	Devonian
Longfellow fm. (ls.)	Ordovician
Coronado Quartzite	Cambrian
Granite	Precambrian



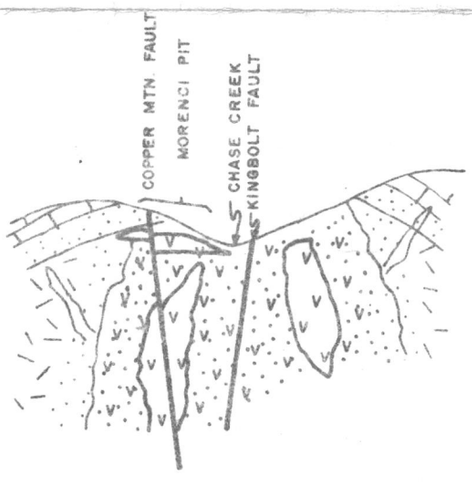
In Laramide time doming and intrusion of an intermediate composition stock occurred with the emplacement of a system of porphyry copper type zones of mineralization.



In early Tertiary time erosion largely leveled the topography and a thick chalcocite blanket was developed.



In middle to late Tertiary time displacements occurred on several faults which produced a graben structure approximately centered on the present Morenci pit.



Subsequent erosion apprently destroyed the chalcocite blanket east of the graben exposing the deep primary ore-grade mineralization in the King Peak Area. Also destroyed and removed were large amounts of protore and ore-grade primary mineralization.

Mr. P. W. O'Malley — Fort Wayne — P. I. Eimons - Tucson

Howard Lanier — Fort Wayne

Status of the Morenci Project — February 9, 1972

In a meeting with Guy Anderson February 4, he expressed a desire for Essex to convert the lease to an acquisition. All of the Anderson, Church & Claridge interest would be acquired by Essex for Essex stock. This was more than a casual inquiry and probably resulted from your meeting with the Church and BYU leaders.

The buy-out of the lease by us, whether by stock or cash, has merit in that it makes a cleaner deal for P.O. I believe (in fact Lentz was authorized to pay $3,000,000) that this could be an answer to a settlement. I previously offered the Church and Anderson $2,000,000 cash but this may not be adequate.

I shall instruct Paul Eimon to resume negotiations in this range for cash (unless you would prefer to issue stock). When the negotiations with Anderson appear favorable we shall then resume negotiations with Lentz.

One other point of interest is Claridge has financial difficulties and wants to sell half of his 25% at Morenci. This, too, has merit if the total buy-out does not materialize. Claridge lost $100,000 each year during the last two crops of cotton and has bank loans of $1,000,000. Of course, his assets in property, etc., more than offset this but he has no liquidity and the interest is more than he can handle.

Since Claridge is receptive at this time I introduced the subject of an option for water rights in anticipation of a mine development at Safford.

H. Lanier

ms

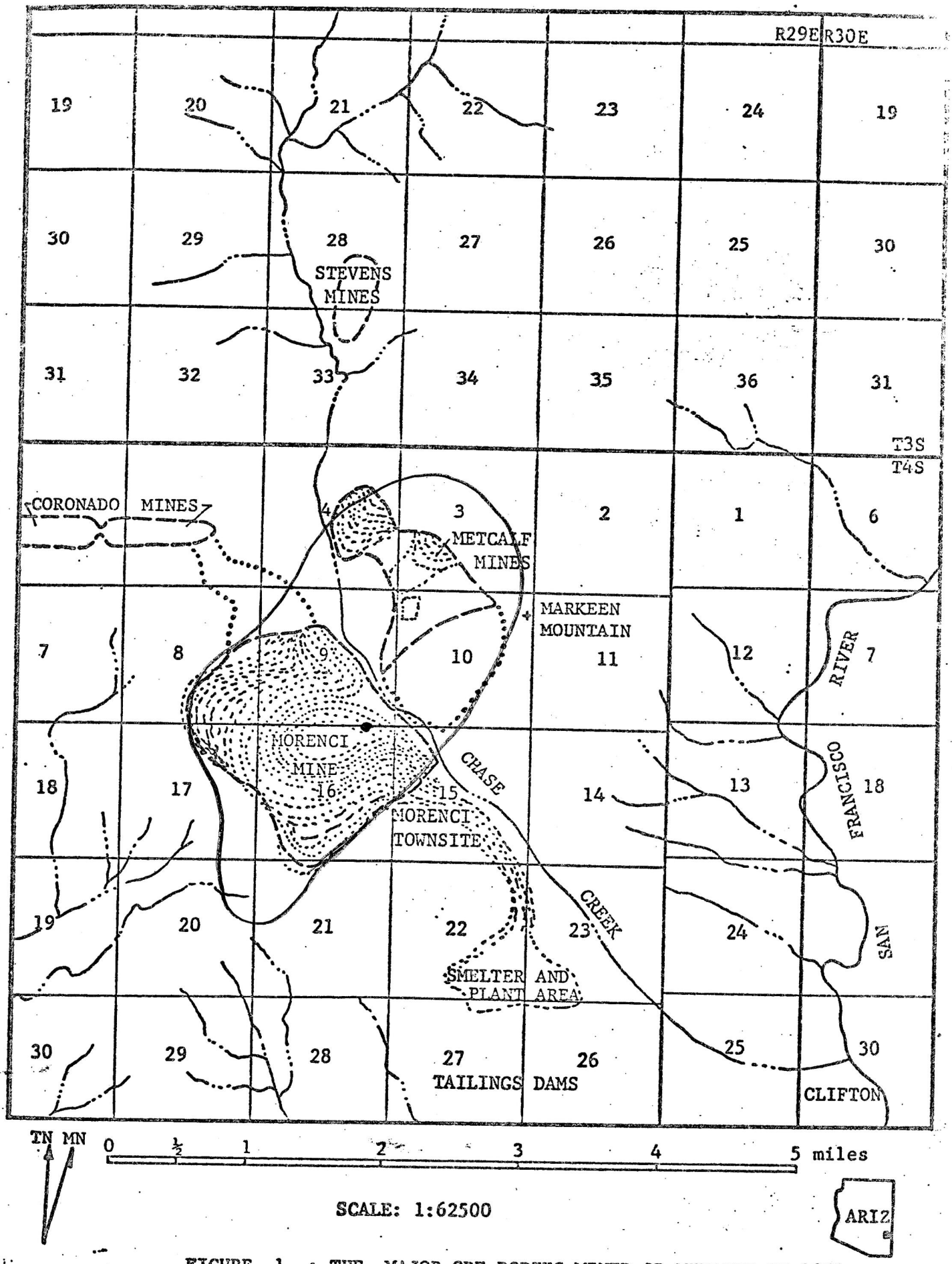


FIGURE 1 : THE MAJOR ORE BODIES MINED OR MINABLE IN 1971

ESSEX

ESSEX INTERNATIONAL, INC.
METALLURGICAL & MINING DIVISION
1704 WEST GRANT RD., TUCSON, ARIZONA 85705 • PHONE (602) 624-7421

MEMORANDUM

CONFIDENTIAL

March 6, 1972

TO: Guy & Elizabeth Anderson
Alf & Lenore Claridge
Clyde Davis
Ann Anderson Jones
Jeanne Anderson Wilson
Sue Marie Anderson Young
John Anderson
George Anderson
Mark Anderson

FROM: Paul Eimon

SUBJECT: Current Developments On Els-Beth Claims at Morenci

Patenting of Claims

With the completion of the signing of the extension of the Morenci Mineral Lease agreement, Essex is accelerating action to take the Els-Beth claims to patent. In view of possible future changes in the Mining Law, we feel this is important - to you as primary owners of the claims and to Essex as holders of the Mineral Lease.

We are asking Bud to acquire power of attorney from all of you to facilitate the various applications necessary to patent. It now appears that we will make two separate applications for patent since the case for granting of patent ownership is stronger on one of the claims.

In view of Bud's proximity to the U.S. Bureau of Land Management offices in Phoenix, I will depend on his keeping you all informed on the progress of this action.

Langton Paper - AIME Meeting, San Francisco, California February 23, 1972

On February 23rd Jack Langton, Chief Geologist of Phelps Dodge in Morenci, gave a paper, on the geology and ore distribution at

March 6, 1972

Morenci. I obtained preprints and have forwarded these to Guy, Clyde Davis and Alf Claridge. I will obtain more copies from the AIME in New York for any of you who want them. Before mid-March, we hope to have a transcript of a tape recording of Langton's additional remarks at the meeting as well as a memo I will produce analyzing the paper and his remarks. Copies of this will be forwarded to Guy, Clyde and Alf.

Regardless of the eventual results of our mutual agreements and common cause relative to the Morenci claims, I feel it vital 1) that a serious effort be made to patent the Els Beth claims, and 2) that you have a continuing picture of the geological and ore distribution picture in relation to your property ownership there.

The Essex-Tucson staff will be extremely busy the next few weeks on the Safford project as well as the Morenci patent work so that we may have limited time to keep you informed of day to day developments. I will do my best on this and please feel free to call me at any time if you have any questions.

Very truly yours,

Paul

Paul Eimon
Manager of Exploration

ESSEX INTERNATIONAL, INC.

ESSEX

ESSEX INTERNATIONAL, INC.
METALLURGICAL & MINING DIVISION
1704 WEST GRANT RD., TUCSON, ARIZONA 85705 • PHONE (602) 624-7421

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Paul Eimon
Manager of Exploration

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Very truly yours,

Paul

Paul Eimon
Manager of Exploration

ESSEX INTERNATIONAL, INC.

SXM

FEB 7 1972

RECEIVED

Brigham Young University

February 3, 1972

Mr. Paul W. O'Malley, President
Essex International, Inc.
1601 Wall Street
Fort Wayne, Indiana 46804

Dear Mr. O'Malley:

It was our pleasure in having you at the Brigham Young University on Wednesday, February 2, 1972. Everyone was pleased to make your acquaintance and learn more about Essex International, Inc.

We visited the following people:

1) President Harold B. Lee, (1st Counselor in the Presidency of the Church of Jesus Christ of Latter-Day Saints.)

   47 East South Temple, Room 101 A
   Salt Lake City, Utah 84111

2) President Nathan Eldon Tanner, (2nd Counselor in the Presidency of the Church of Jesus Christ of Latter-Day Saints.)

   47 East South Temple, Room 102 A
   Salt Lake City, Utah 84111

3) Elder Howard W. Hunter, (an Apostle in the L.D.S. Church.)

   47 East South Temple, Room 304
   Salt Lake City, Utah 84111

4) Dr. Neal A. Maxwell, Commissioner of Education for the L.D.S. Church

   880 Kennecott Building
   Salt Lake City, Utah 84111

Office of University Development, Brigham Young University, Provo, Utah 84601 (801) 374-1211

5) President Dallin H. Oaks, President of Brigham Young University.

Brigham Young University
Smoot Administration Building
D-346 ASB
Provo, Utah 84601

Those who attended the luncheon are as follows:

1) President Ben E. Lewis, Executive Vice-President of Brigham Young University.

Brigham Young University
Smoot Administration Building
D-364 ASB
Provo, Utah 84601

2) Dean Armin J. Hill, Dean of the College of Physical and Engineering Sciences, Brigham Young University.

Brigham Young University
Department of Physical and Engineering Sciences
271 ESC
Provo, Utah 84601

3) Dr. Heber G. Wolsey, Director of University Relations at Brigham Young University.

Brigham Young University
Smoot Administration Building
C-353 ASB
Provo, Utah 84601

4) Dr. Tracy Hall, Professor of Chemistry at Brigham Young University and Inventor of Artificial Diamond.

Brigham Young University
B-41
Provo, Utah 84601

5) Dr. Bill J. Pope, Chairman of the Chemical Engineering Department of the Brigham Young University.

Brigham Young University
196 B-41
Provo, Utah 84601

6) Dr. Lael J. Woodbury, Assistant Dean of the College of Fine Arts of the Brigham Young University.

Brigham Young University
A-412 HFAC
Provo, Utah 84601

I hope this information will be helpful to you.

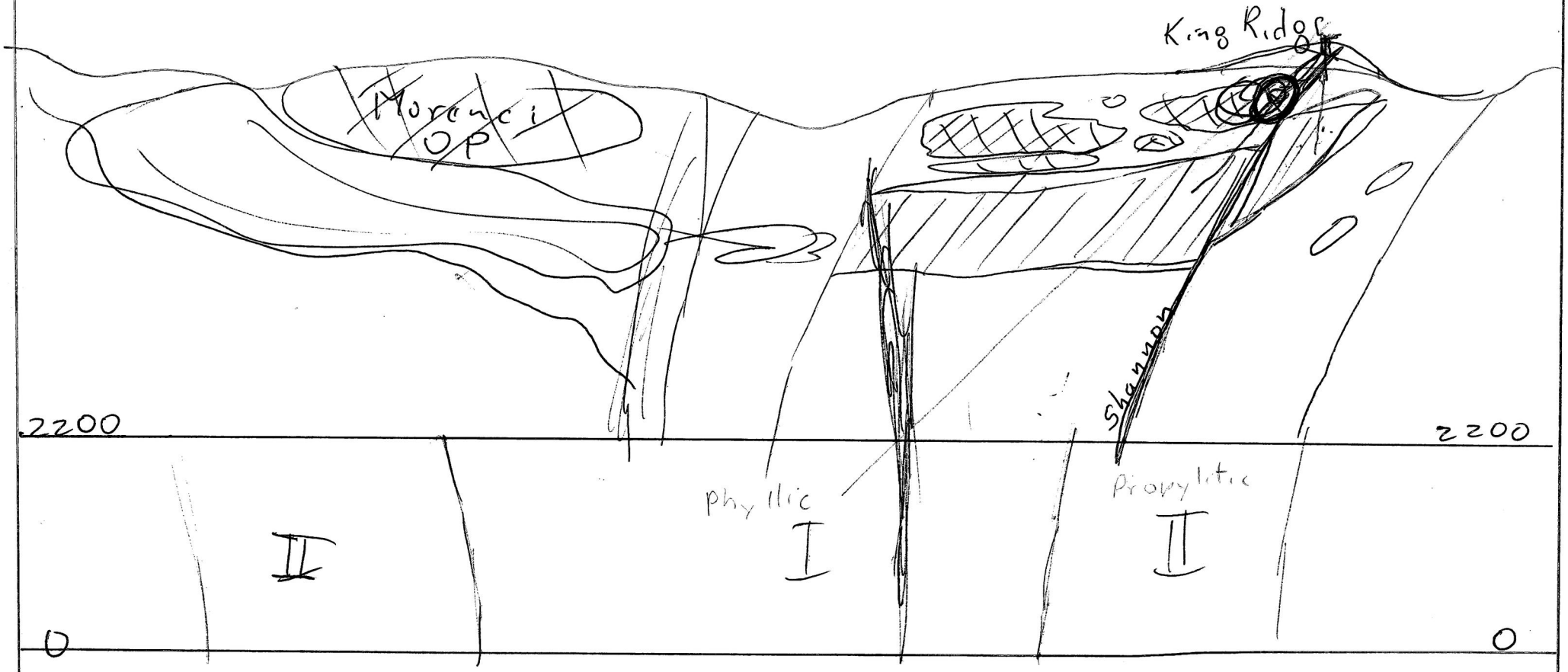
Regards,

H. Clyde Davis
Associate Director

HCD:pn

cc: Paul Eimon

Morenci - Langton Paper



chalcocite blanket

bornite - covellite - chalcolite

1/24,000