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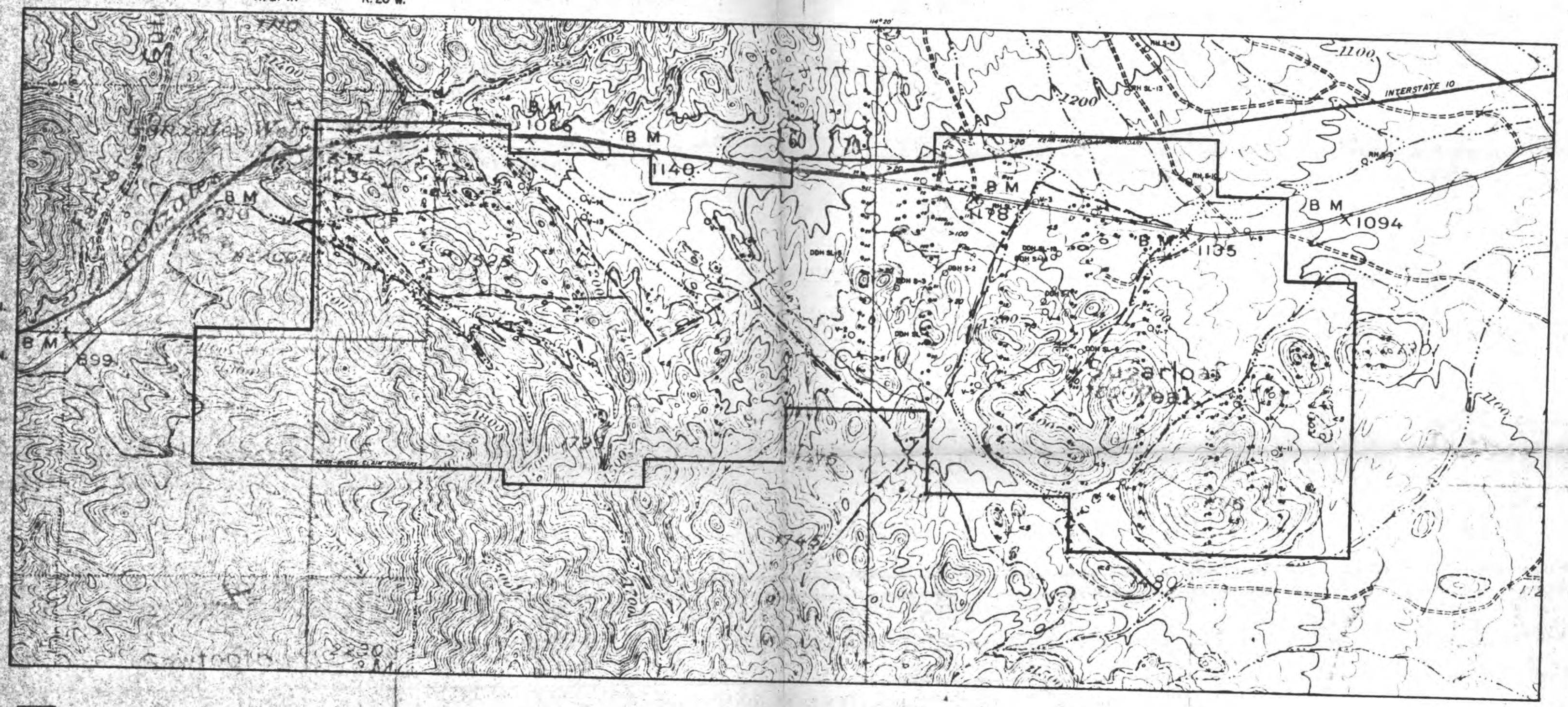
PHASE I DRILL PROGRAM
AND
EVALUATION OF GOLD-SILVER POTENTIAL

SUGARLOAF PEAK PROJECT
QUARTZSITE, ARIZONA

CONCLUSIONS AND RECOMMENDATIONS

Review of recent data and interpretation of previous accumulated data with regards to precious metal potential at the Sugarloaf Peak Project permits the following conclusions:

1. The Phase I drilling program, consisting of 10 drill holes spaced 700 to 2,000 feet apart, to depths of 250 feet, indicates widespread, disseminated gold-silver mineralization associated with a phyllic alteration zone that is coincident to the surface gold geochemical anomaly and possibly with a third dimensional zinc anomaly to depths of 500 plus feet, as defined by older drill hole information. The target area of interest also appears to be associated with a structural feature consisting of an elongate dome trending northeasterly through the phyllic alteration zone (Plates 1, 2, 3, and 4; Figures 13 and 14; and Appendices A through H).



ALLUVIUM

GRAB SAMPLE LOCATION
GRID SAMPLE LOCATION
PPM MOLYBDENUM
UNDERSCORED VALUES FROM AMERICAN ANALYTICAL
OTHER VALUES FROM SOUTHWESTERN ASSAYERS

MOLYBDENUM VALUE RANGES

- > 100 PPM
- 20-100 PPM
- 5-20 PPM
- < 5 PPM (PROBABLY EXTENDS INTO THE UNSAMPLED AREAS)

OUTLINE OF KERR-McGEE SUG AND ZALES CLAIMS

V-3 — KERR-McGEE ROTARY VALIDATION DRILL HOLE AVERAGE MOLYBDENUM VALUE

DDH SL-5, RH S-8 — CONGDON AND CAREY DIAMOND AND ROTARY DRILL HOLES GEOCHEMICAL RESULTS COMPILED IN BASE METAL DISTRIBUTION AT SUGARLOAF PEAK. R AMERN, AUGUST 1971

FAULT, INDICATING HORIZONTAL MOVEMENT

FAULT, INDICATING VERTICAL MOVEMENT

MOLYBDENUM GEOCHEMICAL VALUES
SUGARLOAF PEAK PROJECT

QUARTZSITE DISTRICT, YUMA COUNTY, ARIZONA

1" = 1000'

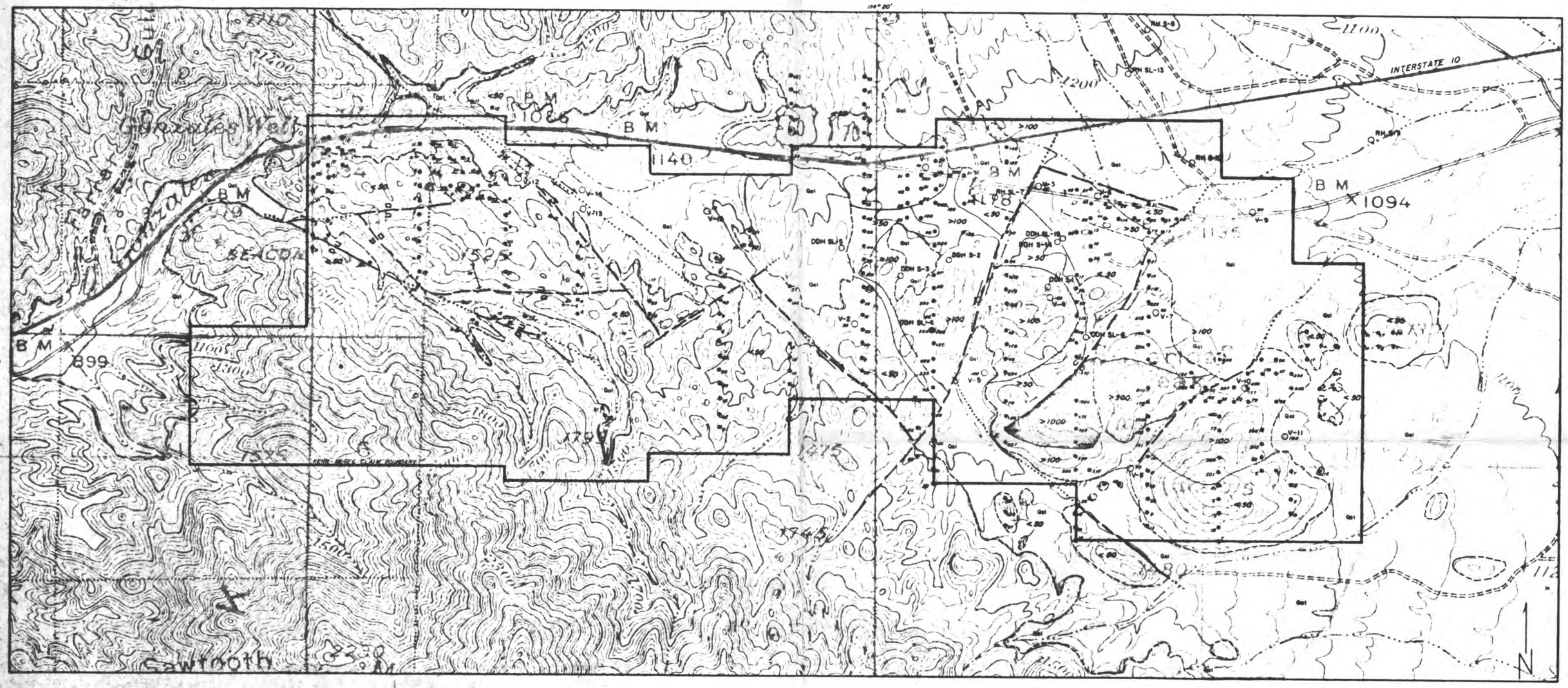
1000' 500' 0 1000' 2000'

C.I. 25'

[redacted]

MAY, 1973

To accompany: Exploration Potential of the Sugarloaf Peak Area, [redacted] 28 May 1973



ALLUVIUM

GRAB SAMPLE LOCATION
GRID SAMPLE LOCATION
PPM LEAD
UNDERSCORED VALUES FROM AMERICAN ANALYTICAL
OTHER VALUES FROM SOUTHWESTERN ASSAYERS

LEAD VALUE RANGES

- > 1000 PPM
- 500-1000 PPM
- 100-500 PPM
- 50-100 PPM
- < 50 PPM (PROBABLY EXTENDS INTO THE UNSAMPLED AREAS)

OUTLINE OF KERR-McGEE SUG AND ZALES CLAIMS

V-3 — KERR-McGEE ROTARY VALIDATION DRILL HOLE, AVERAGE LEAD VALUE

DDH SL-5 / RH S-8 — CONSDON AND CAREY DIAMOND AND ROTARY DRILL HOLES
GEOCHEMICAL RESULTS COMPILED IN BASE METAL DISTRIBUTION AT SUGARLOAF PEAK, R AHERN, AUGUST 1971

FAULT, INDICATING HORIZONTAL MOVEMENT

FAULT, INDICATING VERTICAL MOVEMENT

LEAD GEOCHEMICAL VALUES
SUGARLOAF PEAK PROJECT

QUARTZSITE DISTRICT, YUMA COUNTY, ARIZONA

1" = 1000'

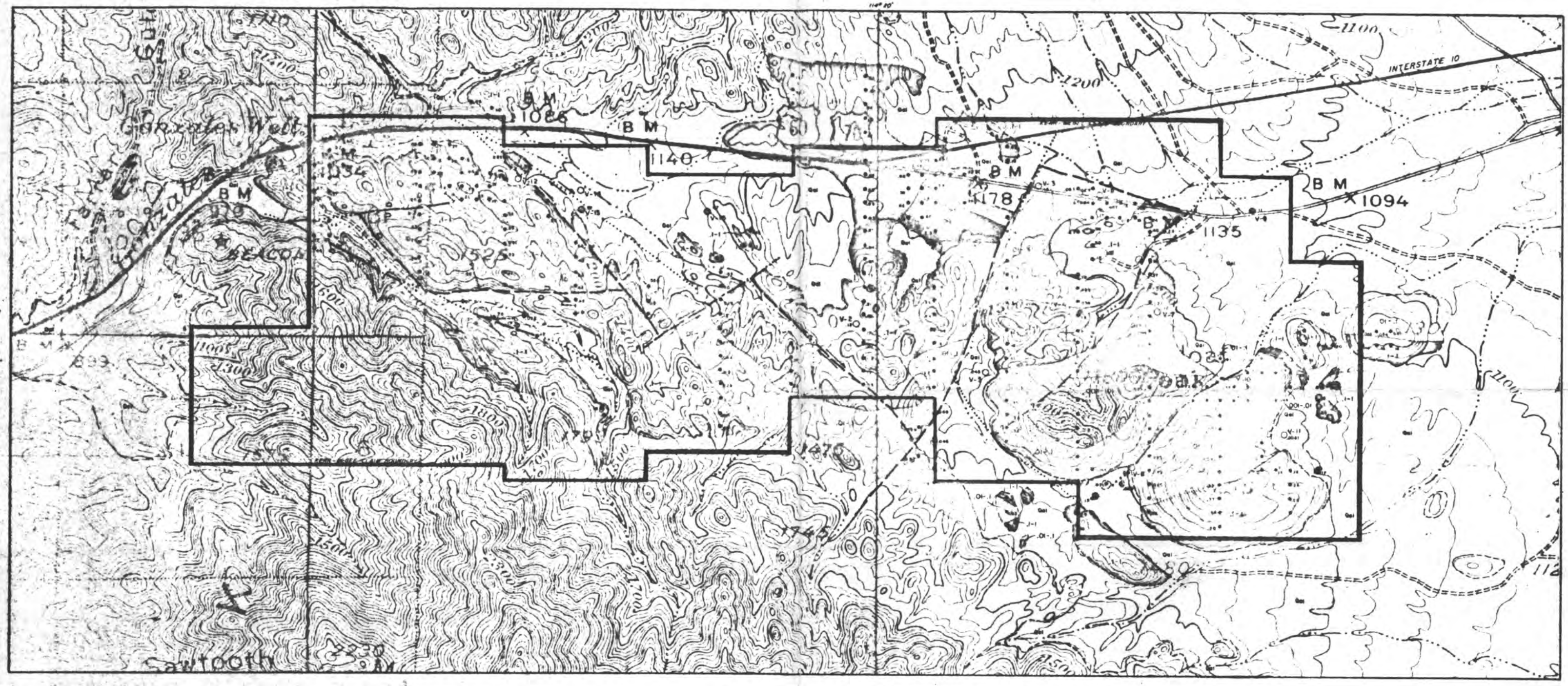
1000' 500' 0 1000' 2000'

C.I. 25'

[redacted]

MAY, 1973

To accompany Exploration Potential of the Sugarloaf Peak Area, [redacted] 25 May 1973



Qal ALLUVIUM

GRAB SAMPLE LOCATION
GRID SAMPLE LOCATION
Mo/Pb RATIO

COMBINED MOLYBDENUM AND LEAD VALUES

> 1000 PPM

100–1000 PPM

< 100 PPM

MOLYBDENUM / LEAD VALUE RANGES

> 1

.1 – 1

.01 – .1

.001 – .01

OUTLINE OF KERR-McGEE SUG AND ZALES CLAIMS

KERR-McGEE ROTARY VALIDATION DRILL HOLE

FAULT, INDICATING HORIZONTAL MOVEMENT

FAULT, INDICATING VERTICAL MOVEMENT

MOLYBDENUM/LEAD RATIO
SUGARLOAF PEAK PROJECT

QUARTZSITE DISTRICT, YUMA COUNTY, ARIZONA

1" = 1000'

1000' 500' 0 1000' 2000'

C.I. 25'

[redacted] MAY, 1973

To accompany Exploration Potential of the Sugarloaf Peak Area [redacted] 25 May 1973

± Sam-Foto, 1980

WALLABY ENTERPRISES INCORPORATED

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810 WEST GRANT ROAD - P.O. BOX 5964 - TUCSON, ARIZONA 85703 - (602) 623-0579
3425 WEST BARDOT STREET - TUCSON, ARIZONA 85741 - (602) 744-2700

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122 EAST GURLEY - SUITE 203 - PRESCOTT, ARIZONA 86301 - (602) 445-8498

REPORT OF INVESTIGATIONS

at the SP claim group,

Middle Camp-Oro Fino

Mining District, Yuma

County, Arizona

by

Richard J. Lundin,

Mineral Exploration Consultant

& President, Wallaby Ent. Inc.

INTRODUCTION:

During the period from January 22, 1982 to February 5, 1982, Wallaby Enterprises Inc. Mountain States Engineering personnel conducted field operations on Westworld Oil & Gas' SP claim holdings in the Middle Camp-Oro Fino Mining District, Yuma County, Arizona. This work was done at the request of Mr. Don French, President of Westworld, and consisted of the following:

1. Geologic strip mapping of the property at a scale of 1" equal to 500' in plan and cross-section. This mapping was done along N-S lines on a 750' E-W interval so as to cover the entire claim block.

2. The taking of geochemical samples along the mapped N-S lines so as to establish a sample grid of 750' X 600' and plotting of the location of these samples on the base map and the various cross-sections. (See Figure 1 and Cross-sections A-A' through O-O' for the locations of these samples.)

3. The taking of radiometric readings along the mapped and sampled lines at 300' intervals so as to establish a data grid of 300' X 750' and the plotting of this data on the various cross-sections. (See Cross-sections A-A' through O-O'.)

4. Assaying of the samples for their Au, Ag, As, and Zn content and the plotting of this information on the various cross-sections. (See Cross-sections A-A' through O-O' and Appendix A.)

Subsequent to thse efforts was a Photolinear-Structural study of the claim group. This work was done to ascertain the causes of the various geochemical anomalies and to properly assess their economic importance. (See Appendix B for this study.)

LOCATION, OWNERSHIP, HISTORY & PAST PRODUCTION:

The SP claim group is located in Sections 3, 4, 9, 10; Township 3 N, Range 20 W, and Sections 33 & 34, Township 4 N, Range 20 W, Yuma County, Arizona. The group consists of 83 unpatented lode claims held by location and owned by Westworld Oil & Gas Co. of Houston, Texas. The claims are in an area of the Middle Camp-Oro Fino Mining District that has seen considerable mining activity. According to S.B. Keith the placer gold deposits that are found in the area were worked about the same time as the famous La Paz placers and produced around 12,000 ounces of gold. Lode mines within the claim group produced minor amounts of gold, silver, lead, zinc, copper, bismuth, antimony and alunite. Only two deposits, the Goodman Mine and the Leadville Grp. are thought to have had any significant production. (For further information on these properties see Appendix C.)

Recent activity in the district has consisted of occasional dry-washing operations for placer gold, intermittent exploration for base and precious

metals and weekend alunite and pyrophyllite mining by mineral hobbyists. The area of the SP claim group has been thoroughly investigated for its porphyry copper deposit potential by a series of major mining companies and consulting groups. (Kerr-McGee, Congdon & Carey, MacIntyre-Porcupine.)

GENERAL GEOLOGY:

According to prior work that has been done on the district, the rocks outcropping within the SP group are "Mesozoic metamorphic rocks with some Mesozoic granite as the basal rocks and some small and local intrusive dacitic plugs." This description was made by E. Wilson in 1961. Subsequent work by Crowel in his 1979 master's thesis did not shed any additional insights. This author's work in the area and on the SP group, specifically, has led him to the conclusion that most of the bedrock outcropping on the SP group is a pre-Laramide series of quartz crystal tuffs-rhyolite tuffs, andesite flows and rhyodacite-dacite intrusive dikes and plugs.

For clarity, all of the tuffaceous units have been lumped together into a single quartz crystal tuff designation. A single breccia unit that this author feels has some importance in unraveling the volcanic setting of the area has also been separately mapped. In the vicinity of Sugarloaf Peak, a single andesite-rhyodacite unit has been mapped in a reconnaissance fashion.

All bedrock units encountered appear to be a part of an intermediate-felsic extrusive volcanic system. Extrusive textures and features are especially apparent near Sugarloaf Peak with vent or moat breccias being mapped around a central vent feature southwest of Sugarloaf Peak. (See Figures 1-4.) The volcanic nature of the units becomes clear when one maps separate stratigraphic horizons and encounters pyritic mineralization uniformly distributed throughout certain horizons. The distribution of this mineraliation is restricted to an area surrounding the source vent structure, and is typical of Nevada-California volcanic systems.

All of the units outcropping within the claim group have a general NW striking foliation which in most cases is parallel to original bedding. The present orientation of the units is due more to low angle faulting than any volcanic or intrusive episode. A prominent N 70° W linear feature was identified on the aerial photos and may be a major regional structure that localized the pre-Laramide volcanism.

Other photocircular structures identified on the photos are thought by this author to be deeply eroded volcanic vent or collapsed pipe structures. Cutting these structures in the northern and western parts of the property are a series of NW and NE striking quartz vein swarms that intersect and form a "stockwork" of quartz veins and veinlets. These vein swarms have significant economic potential and will be discussed in the next section.

Alteration assemblages encountered within the claim group are: argillic (Kaolinite-montmorillionite-quartz); propyllitic (chlorite-epidote-quartz); phyllic (quartz-sericite); silicic (quartz); and alunitic (alunite-pyrophyllite). (See Figure 1 and Cross-sections A-A' to O-O'.) Of these alteration assemblages only the alunitic, silicic, and argillic assemblages seem to be important for localization of the gold mineralization.

ECONOMIC GEOLOGY, GEOCHEMICAL RESULTS & GEOLOGICAL CONCLUSIONS:

Past exploration activity in the area of the SP claim group was oriented to look for porphyry copper deposits, placer gold deposits, alunite deposits, and high-grade lead-zinc-copper-gold-silver lode deposits. No serious attempt has ever been made to examine the area for its lode gold potential. As a result of our work in the area, this author feels that there is potential for a low-grade, bulk tonnage gold deposit and that it may occur in a number of different settings within the present claim group. This opinion is based on the geological and geochemical results that are summarized below:

1. Out of nearly 200 samples submitted for analysis, 25 had values in excess of .10 ppm Au. This value is considered by this author to be anomalous and indicative of a gold rich system. In addition, three samples had ore grade values in the range of .041 to .081 ounces per ton.

2. The majority of these anomalous samples are located in an area that has the dimensions of approximately 2400' X 3000' and is located in the NW 1/4 of the claim group. (See attached Figure 1.)

3. This area is coincidental with a strong photocircular structure that may be a volcanic vent or collapsed pipe. (See Appendix B.)

4. This area is also coincidental to an area that knows to be extremely anomalous in molybdenum. (This information is based on prior work in the area by Kerr-McGee.)

5. A series of silicified units outcrop around another photocircular structure SW of Sugarloaf Peak. (This is the vent structure referred to earlier in this report.) These units contain anomalous amounts of gold (.2 to .5 ppm) in association with 1-10% pyrite that is disseminated throughout the unit. The total volume of these units with disseminated pyrite and anomalous gold values exceeds 200 million tons. (For the location of these, see Figure 1 and Appendix B.)

6. A series of strongly argillized units outcrop in a circular pattern around the photocircular structure-vent feature. These units originally contained from 1-10% pyrite and probably were non-silicified tuffaceous units. These units have been strongly leached. A possible product of this leaching are the masses of allunite and pyrophyllite that are found in the area directly south of Sugarloaf Peak.

7. The strongly silicified units have a characteristic radiometric signature in relationship to the surrounding unaltered and argillized units. (See Cross-sections A-A' through O-O'.)

8. The source of the rather coarse gold placer deposits that have been worked in the area in the past is a series of NE and NW striking quartz veins that have associated pyrite, galena, and minor chalcopyrite. These veins outcrop in the extreme northern portion of the claim group and in cerain areas approach a stock work type density. In the course of this study numerous washes were dry panned with the results that the quartz veins were producing the coarse gold and the pyritic silicified zones were producing a fine (.01 mm) gold.

In light of these results, the gold potential of the group appears to lie mainly in the following areas:

1. The silicified pyritic units surrounding the vent structure SW of Sugarloaf Peak.

2. The vent or collapse structure in the NW 1/4 of the claim group.

3. The vein swarms and "stockwork" vein systems located in the northern part of the claim group.

These environments are listed in order of perceived economic potential.

The entire claim group seems to have only minor amounts of silver and copper mineralization. (See Figure 1 for the location of the various mines and prospects with past production.)

CONCLUSIONS AND RECOMMENDATIONS ARE AS FOLLOWS:

1. Since a sizable area in the NW 1/4 of the claim block has been shown to have anomalous gold values associated with a possible volcanic vent or collapse structure, it is recommended that this area be mapped on a 1" equal to 200' scale and additional sampling on a 300' X 375' grid be initiated immediately.

2. As the silicified units associated with the photocircular structure SW of Sugarloaf Peak contain anomalous amounts of gold, it is recommended that further mapping and sampling efforts be carried out in this area also.

3. It is further recommended that reconnaissance investigations be carried out in Sections 32 and 5 to ascertain the extent of the mineralization to the west.

4. Analysis of the various character samples that were taken of highly pyritic silicified material is recommended. In addition, it is suggested that thin-sections be made of some of this material to ascertain the nature of the gold occurrence. It may be very useful to have some of pyrite bearing samples that have anomalous gold values tested for their accessory metal content via low cost X-ray florescence methods. This could be very useful in identifying a "pathfinder" element that is associated with gold in this system. Our results to date indicate that there is no direct association with either zinc or arsenic in this environment.

5. As there is considerable activity within the district by other major mining companies, (Gulf, Texas Gulf, Homestake, Inspiration, Amax) it might be prudent to either contact these companies about a joint venture arrangement or look into the possibility of acquiring via low cost lease-option arrangements those outstanding and valid claim blocks within your current holdings.

Richard J. Lundin
Mineral Exploration Consultant &
President, Wallaby Enterprises Inc.

FIGURES AND CROSS-SECTIONS

EXPLANATION

- Alluvium or talus
- Dacite
- Quartz crystal tuff
- Flow or vent brecca
- Alunite - Pyrophillite
- Silicification or Quartz veins
- Propyllitic Alteration
- Argillic Alteration
- Phyllic Alteration
- Potassic Alteration
- Cu Oxides or gossan/veins
- Fe Oxides or gossan/veins
- Mn Oxides or gossan/veins
- Silicified Areas with anomalous Au values
- Photo circular structures

FIGURE 1a

LEGEND for GEOLOGICAL MAPS and CROSS-SECTIONS.

WALLABY ENTERPRISES INC.

EXPLANATION

SP 256 RC	WALLABY SAMPLE SITES (Au|Ag)	
	0.0 — 0.009 ppm Au	0.00 — 0.019 ppm Ag
	0.01 — 0.29 ppm Au	0.02 — 0.99 ppm Ag
	0.30 — 0.99 ppm Au	1.00 — 9.99 ppm Ag
	1.00 — 5.00 ppm Au	10.0 — 100.0 ppm Ag
	> 5.00 ppm Au	> 100.0 ppm Ag
	GOLD	
	SILVER	
	ZINC	
	ARSENIC	
	RADIOMETRIC READINGS	

FIGURE 1b

LEGEND OF GEOCHEMICAL RESULTS AND RADIOMETRIC READINGS FOR MAPS AND CROSS — SECTIONS

WALLABY ENTERPRISES INC.

EXPLANATION

Mine

10° Strike & Dip of foliation - single unit

30° " " " " " - multiple units

20° " " " " bedding

Pb, Au Metal Occurence

FIGURE 1c

WALLABY
ENTERPRISES
INC.

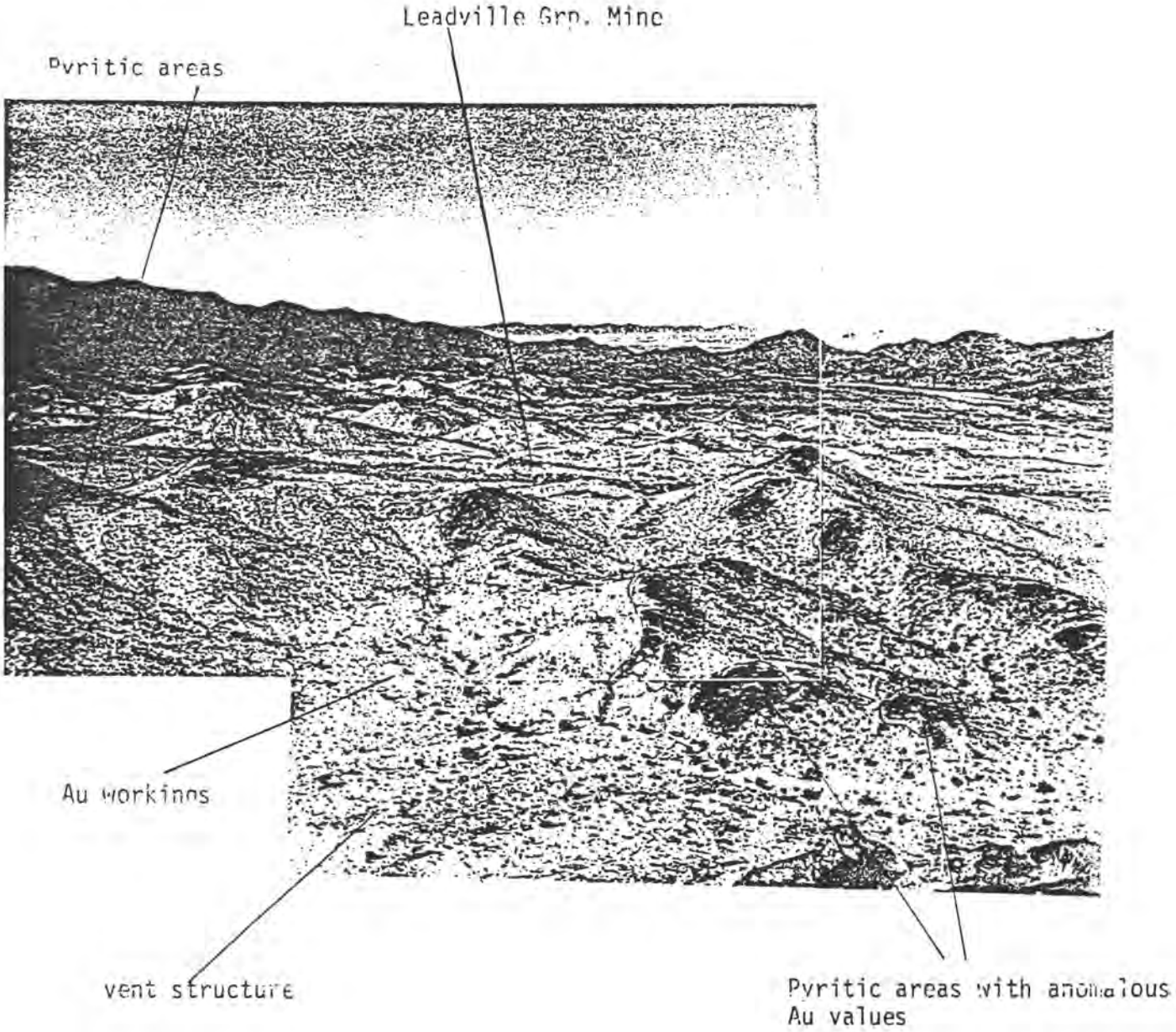
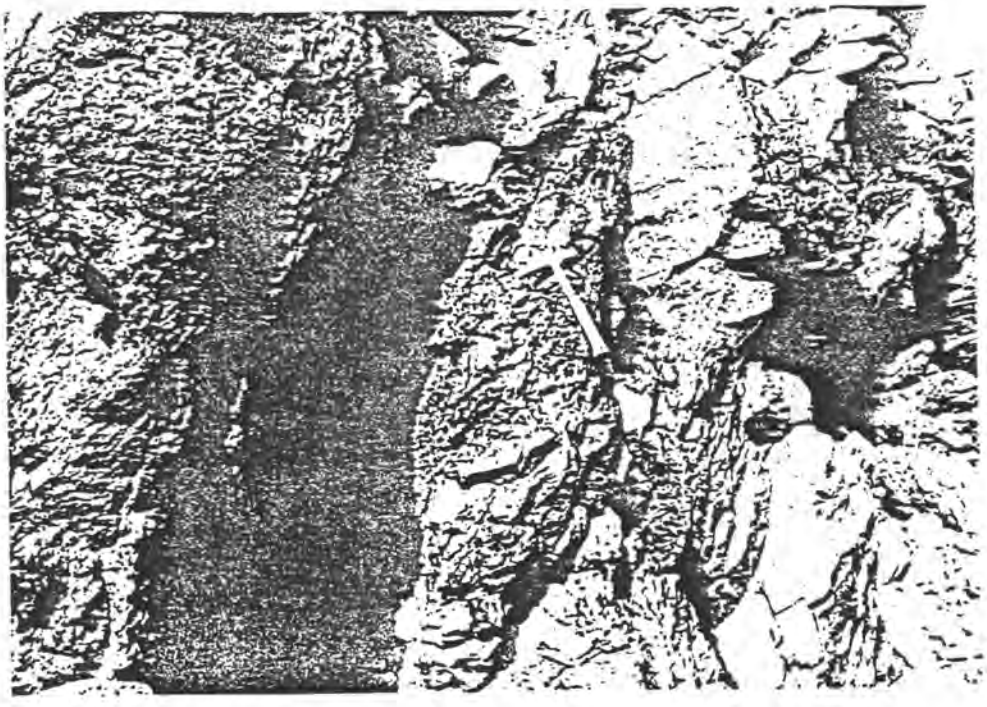


FIGURE 2: View of vent structure SW of Sugarloaf Peak



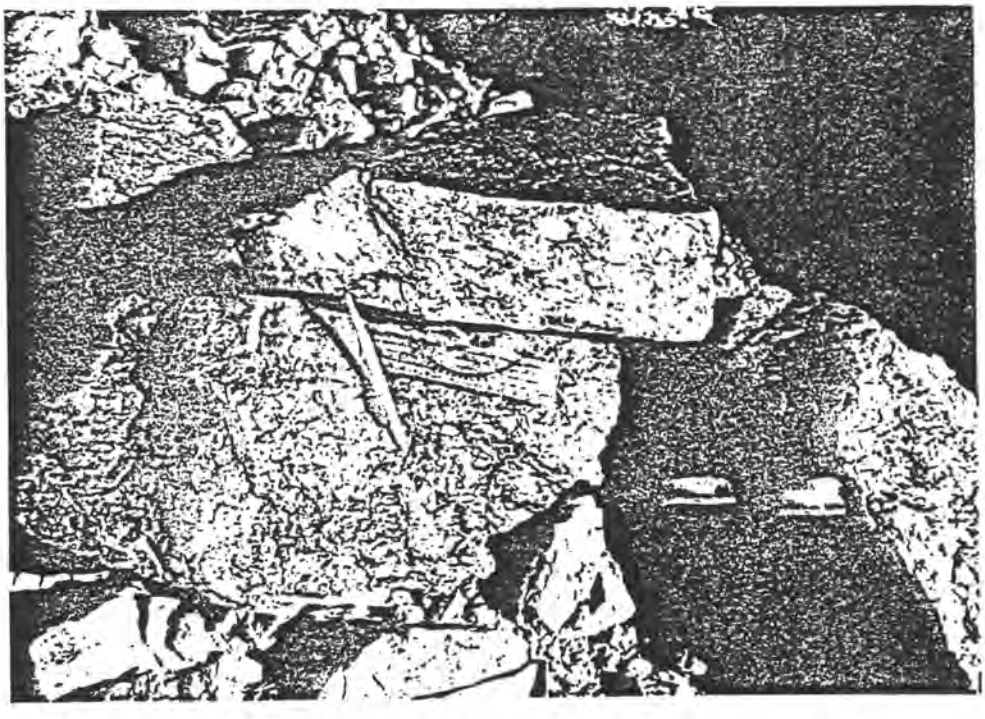


FIGURE 3: Vent breccias in the vicinity of Sugarloaf Peak

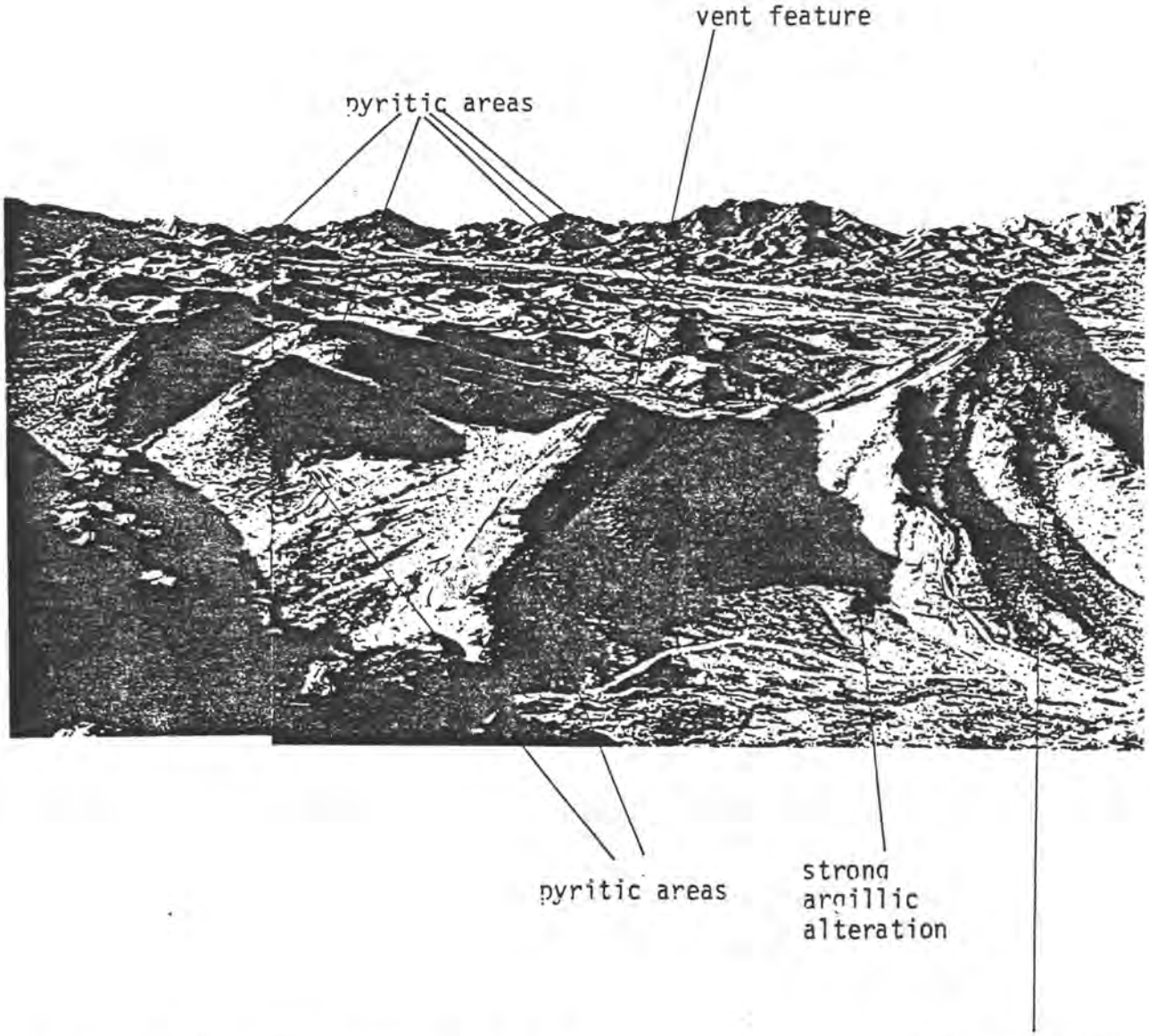
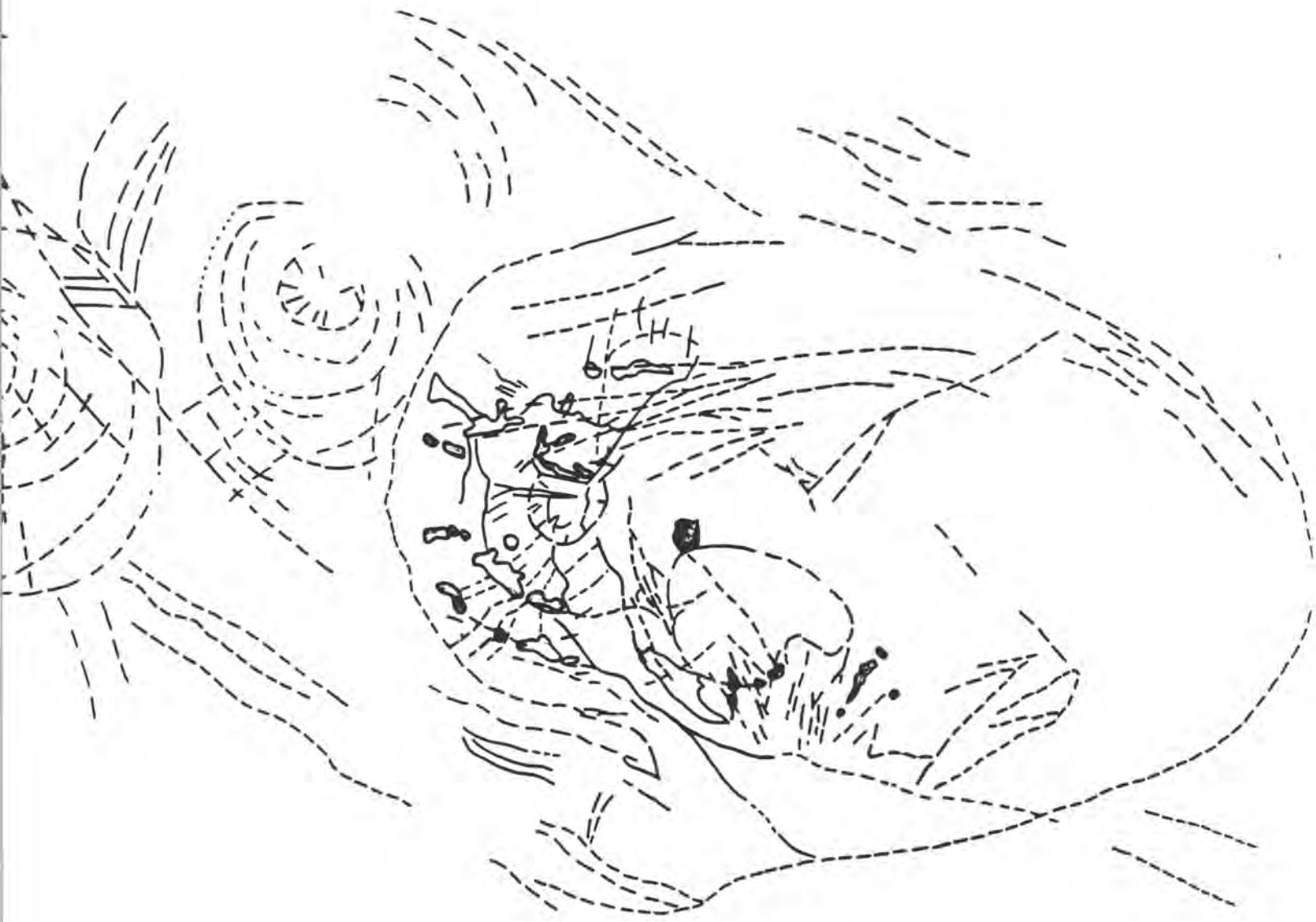


FIGURE 4: View of Sugarloaf Peak Area

APPENDIX B

WALLABY
ENTERPRISES
INC.



SKYLINE LABS, INC.
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TDU 022
February 16, 1982
PROJECT NO. 8003

WALLABY ENTERPRISES
3425 W. Bardot St.
Tucson, Arizona 85741

Analysis of 170 Soil and Rock Chip Samples

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
1	SP 001S	.06	.6	30.	65.
2	SP 002RC	.03	.2	10.	30.
3	SP 004RC	<.02	<.2	30.	15.
4	SP 005RC	<.02	.2	20.	10.
5	SP 006S	<.02	.2	30.	20.
6	SP 007S	<.02	<.2	10.	15.
7	SP 009S	<.02	<.2	20.	15.
8	SP 012RC	<.02	.2	20.	5.
9	SP 013RC	<.02	<.2	10.	10.
10	SP 014S	<.02	<.2	20.	35.
11	SP 015S	.02	<.2	10.	70.
12	SP 016S	<.02	<.2	20.	55.
13	SP 017S	<.02	<.2	10.	60.
14	SP 018S	<.02	.2	10.	135.
15	SP 019S	<.02	<.2	30.	45.
16	SP 020S	<.02	<.2	30.	60.
17	SP 021S	.05	<.2	20.	40.
18	SP 022S	<.02	<.2	20.	50.
19	SP 023S	<.02	.8	20.	70.
20	SP 024S	<.02	<.2	20.	50.
21	SP 028S	<.02	<.2	110.	<5.
22	SP 029S	<.02	<.2	20.	5.
23	SP 031RC	<.02	<.2	<10.	<5.
24	SP 033RC	<.02	<.2	10.	10.
25	SP 034RC	<.02	<.2	20.	10.

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JOB NO. TDU 022
February 16, 1982
PAGE 2

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
26	SP 035RC	<.02	<.2	10.	5.
27	SP 036RC	<.02	<.2	10.	40.
28	SP 037S	<.02	<.2	- 40.	40.
29	SP 037RC	<.02	1.0	10.	125.
30	SP 038S	<.02	<.2	20.	60.
31	SP 039S	<.02	<.2	20.	75.
32	SP 040S	<.02	<.2	20.	95.
33	SP 041S	<.02	<.2	20.	70.
34	SP 042S	<.02	<.2	20.	20.
35	SP 043S	<.02	<.2	10.	20.
36	SP 044S	<.02	<.2	20.	20.
37	SP 045S	<.02	<.2	20.	25.
38	SP 046S	<.02	<.2	20.	25.
39	SP 047S	<.02	<.2	20.	15.
40	SP 048RC	<.02	<.2	20.	<5.
41	SP 049S	<.02	<.2	40.	30.
42	SP 050S	<.02	<.2	50.	35.
43	SP 051S	<.02	<.2	30.	20.
44	SP 052S	<.02	<.2	30.	30.
45	SP 053RC	<.02	<.2	20.	115.
46	SP 054S	.08	<.2	40.	140.
47	SP 055S	<.02	<.2	10.	50.
48	SP 056RC	[illegible]	<.2	10.	<5.
49	SP 057S	<.02	<.2	10.	75.
50	SP 058RC	<.02	<.2	10.	85.

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Tucson, Arizona 85703
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JOB NO. TDU 022
February 16, 1982
PAGE 3

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
51	SP 059S	<.02	1.2	20.	130.
52	SP 060S	<.02	.2	20.	80.
53	SP 061S	<.02	<.2	-10.	330.
54	SP 062S *	0.00 *	0.0 *	0. *	0. *
55	SP 063S	<.02	<.2	40.	15.
56	SP 064RC	<.02	<.2	100.	35.
57	SP 066RC	<.02	<.2	50.	15.
58	SP 067RC	<.02	<.2	20.	10.
59	SP 068S	<.02	<.2	10.	30.
60	SP 070S	<.02	<.2	20.	110.
61	SP 071RC	<.02	<.2	20.	10.
62	SP 073S	<.02	<.2	10.	60.
63	SP 074S	<.02	<.2	10.	35.
64	SP 075S	<.02	<.2	10.	50.
65	SP 076S	<.02	<.2	<10.	50.
66	SP 077S	<.02	<.2	30.	115.
67	SP 078RC	<.02	.2	<10.	15.
68	SP 081S	<.02	<.2	<10.	700.
69	SP 082S	.09	.2	10.	130.
70	SP 083S	<.02	<.2	10.	130.
71	SP 084S	<.02	.2	10.	95.
72	SP 085S	<.02	.2	<10.	60.
73	SP 086S	<.02	.2	10.	125.
74	SP 087S	.04	.4	20.	140.
75	SP 088S	<.02	<.2	20.	90.

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Tucson, Arizona 85703
(602) 622-4836

JOB NO. TDU 022
February 16, 1982

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
76	SP 089S	.04	<.2	10.	265.
77	SP 090S	<.02	<.2	10.	65.
78	SP 091S	<.02	<.2	70.	35.
79	SP 092S	<.02	<.2	20.	90.
80	SP 093S	<.02	.2	30.	75.
81	SP 100RC	.08	.4	30.	130.
82	SP 102S	<.02	<.2	10.	330.
83	SP 103RC	.4%	.2	<10.	115.
84	SP 105RC	<.02	.4	60.	10.
85	SP 106S	<.02	<.2	50.	40.
86	SP 108RC	.07	24.0	<10.	195.
87	SP 109RC	.11	.2	30.	150.
88	SP 110RC	<.02	<.2	<10.	90.
89	SP 111RC	<.02	<.2	30.	180.
90	SP 112S	<.02	<.2	60.	65.
91	SP 113S	<.02	<.2	50.	85.
92	SP 114RC	.03	1.2	20.	5.
93	SP 115RC	<.02	<.2	<10.	140.
94	SP 121S	.03	.2	30.	260.
95	SP 122S	.03	.2	10.	370.
96	SP 123S	.03	.2	<10.	215.
97	SP 124S	<.02	.2	20	455.
98	SP 125S	<.02	<.2	40.	60.
99	SP 126S	<.02	<.2	20.	40.
100	SP 127S	<.02	.4	30.	195.

SKYLINE LABS, INC.
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

JOB NO. TDU 022
February 16, 1982

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
101	SP 128S	<.02	.2	10.	10.
102	SP 129S	<.02	1.0	40.	5.
103	SP 130S *	0.00 *	0.0 *	- 0. *	0. *
104	SP 131S	<.02	.6	20.	20.
105	SP 132S	<.02	<.2	<10.	40.
106	SP 133S	<.02	<.2	20.	55.
107	SP 134S	<.02	<.2	20.	125.
108	SP 140RC	.26	6.0	20.	95.
109	SP 142RC	.08	.2	<10.	185.
110	SP 143RC	.68	.2	<10.	50.
111	SP 145S	.10	.2	30.	510.
112	SP 146RC	2.80	1.6	10.	20.
113	SP 147S	<.02	.6	20.	35.
114	SP 148RC	<.02	.2	10.	15.
115	SP 149S	<.02	.2	30.	30.
116	SP 150S	<.02	.2	20.	45.
117	SP 151RC	<.02	.4	60.	35.
118	SP 152RC	<.02	.2	80.	105.
119	SP 153RC	<.02	<.2	40.	60.
120	SP 161S	<.02	<.2	<10.	45.
121	SP 162S	.04	2.0	50.	40.
122	SP 163S	<.02	1.4	40.	50.
123	SP 164S	<.02	.8	20.	60.
124	SP 165S	<.02	.2	<10.	90.
125	SP 166S	<.02	<.2	10.	65.

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JOB NO. TDU 022
February 16, 1982

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
126	SP 167S	<.02	.2	10.	40.
127	SP 168S	.06	.2	30.	470.
128	SP 169S	.10	.2	<10.	280.
129	SP 170S	.03	<.2	10.	810.
130	SP 171S	.04	.2	20.	1400.
131	SP 172S *	0.00 *	0.0 *	0. *	0. *
132	SP 173S	.03	.2	10.	530.
133	SP 174S	<.02	.2	10.	405.
134	SP 181RC	<.02	.6	10.	70.
135	SP 182S	<.02	<.2	20.	35.
136	SP 183S	<.02	<.2	110.	70.
137	SP 184RC	<.02	.2	20.	95.
138	SP 185S	<.02	<.2	10.	50.
139	SP 186S	<.02	<.2	10.	85.
140	SP 187RC	<.02	<.2	<10.	50.
141	SP 188RC	[illegible]	.2	<10.	285.
142	SP 191S	.10	.2	10.	455.
143	SP 192RC	.09	4.0	<10.	75.
144	SP 193RC	.10	.2	10.	35.
145	SP 194RC	[illegible]	.4	10.	190.
146	SP 195RC	[illegible]	.2	10.	1700.
147	SP 200S	.11	<.2	20.	1800.
148	SP 201RC	[illegible]	<.2	10.	1100.
149	SP 202S	<.02	.2	10.	195.
150	SP 203S	.03	.2	<10.	155.

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JOB NO. TDU 022
February 16, 1982

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
151	SP 204S	.08	.2	20.	100.
152	SP 205RC	.25	.2	<10.	135.
153	SP 206S	.05	<.2	-<10.	120.
154	SP 207S	<.02	<.2	10.	80.
155	SP 208S	<.02	<.2	10.	95.
156	SP 209S	<.02	<.2	10.	65.
157	SP 210S	<.02	<.2	20.	45.
158	SP 211S	<.02	<.2	20.	50.
159	SP 212S	<.02	<.2	20.	45.
160	SP 213S	<.02	.2	50.	55.
161	SP 221RC	<.02	<.2	40.	170.
162	SP 222RC	<.02	<.2	10.	5.
163	SP 223S	<.02	1.2	30.	30.
164	SP 224S	<.02	<.2	10.	60.
165	SP 226RC	<.02	<.2	10.	40.
166	SP 228RC	<.02	.2	<10.	40.
167	SP 229RC	.43	.6	<10.	60.
168	SP 230S	.19	.2	10.	205.
169	SP 232RC	.09	.2	<10.	40.
170	SP 233RC	<.02	<.2	<10.	65.
171	SP 234S	.10	.2	10.	380.
172	SP 235S	.03	<.2	10.	180.
173	SP 236S	<.02	<.2	<10.	135.

*NOTE: The following samples were not received in the lab for analysis: No. 54 SP 062S, No. 103 SP 130S, No. 131 SP 172S.

cc: Mountain States Research
P.O. Box 17960
Tucson, Arizona 85731
Attn.: Mr. Norm Dausinger

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK DATE SIGNED 2/17/82 Arizona U.S.A.

William L. Lehmbeck
Manager

SKYLINE LABS, INC.
P.O. Box 50106 • 1700 West Grant Road
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. TDU 023
February 25, 1982
PROJECT NO. 8003

WALLABY ENTERPRISES
3425 W. Bardot Street
Tucson, Arizona 85741

Analysis of 14 Soils and 12 Rock Chip Samples

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
1	SP 261 S	<.02	<.2	30.	60.
2	SP 262 S	<.02	<.2	10.	55.
3	SP 263 S	<.02	<.2	20.	50.
4	SP 264 RC	<.02	.4	30.	50.
5	SP 266 S	<.02	<.2	20.	85.
6	SP 267 RC	<.02	<.2	30.	55.
7	SP 268 RC	<.02	<.2	10.	90.
8	SP 273 S	<.02	<.2	30.	45.
9	SP 272 RC	.33	.2	40.	50.
10	SP 274 RC	<.02	<.2	40.	30.
11	SP 275 S	<.02	<.2	10.	45.
12	SP 281 S	<.02	<.2	10.	50.
13	SP 282 S	<.02	<.2	20.	45.
14	SP 283 S	<.02	<.2	30.	45.
15	SP 284 S	<.02	<.2	30.	30.

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JOB NO. TDU 023
February 25, 1982
PAGE 2

ITEM	SAMPLE NO.	Au ppm	Ag ppm	As ppm	Zn ppm
16	SP 285 S	<.02	<.2	<10.	15.
17	SP 287 RC	<.02	<.2	<10.	<5.
18	SP 288 S	<.02	<.2	20.	25.
19	SP 289 S	<.02	<.2	20.	15.
20	SP 290 RC	<.02	<.2	40.	5.
21	SP 291 RC	<.02	<.2	20.	10.
22	SP 292 RC	<.02	<.2	110.	25.
23	SP 293 S	<.02	<.2	30.	40.
24	SP 270	<.02	<.2	10.	90.
25	SP 271	<.02	<.2	10.	170.
26	SP 286	<.02	<.2	30.	<5.

cc: Mountain States Research
P.O. Box 17960
Tucson, Arizona 85731
Attn.: Mr. Norm Dausinger

William L. Lehmbeck
Manager

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

APPENDIX C

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
2558								Quartz Schist	Dense, massive: few fractures coated with chlorite.	Quartz-pyrite-epidote veins numerous.	Pyrite disseminated weakly; and in quartz-pyrite-epidote veinlets.
2600	50	80%	C18925	95	26	10	80				
2650	50	10%	C18926	50	28	10	140				
2700										Quartz-epidote vein 6" at 2756'.	Pyrite 10-20%.
2750	50	30%	C18927	105	45	35	55				
2800	50	80%	C18928	105	27	25	55				
2850	50	60%	C18929	65	40	5	55				
2900	50	20%	C18930	100	26	15	60			Extreme silica flooding: numerous quartz-chlorite-pyrite veinlets; occasional epidote veins.	Minor sphalerite in a few of the pyrite veinlets.
2950	50	100%	C18931	110	44	7	50				
3000	50	40%	C18932	75	29	10	50				
3050	50	60%	C18933	60	34	15	55		Dark grey, dense quartz-chlorite schist.	Numerous quartz and epidote stringers filling fractures.	
3100	50	60%	C18934	175	35	45	75				
* 3110			14750	44	<5	60	104				
3150	50	80%	C18935	550	50	45	90	Schist Breccia	Somewhat shattered; numerous chlorite lined fractures.	Quartz-epidote-pyrite-epidote-quartz matrix and occasional epidote fragments.	
3200	50	80%	C18936	80	28	5	65				
3250	50	100%	C18937	80	27	5	55			Extreme silica flooding at 3260-3280'.	
3280								Chlorite Schist	Horizontal fractures, 5-10 per inch coated with chlorite.		
3300	50	100%	C18938	95	37	10	70				
3319								Porphyroblastic Schist	Dark grey, dense, massive. Former feldspar replaced by epidote, quartz-pyrite and quartz-epidote fracture fillings.		Occasional 1" quartz-epidote-pyrite veinlets contain sphalerite and rare molybdenite.
3350	50	100%	C18939	215	43	15	65				

District Quartzite-Sugarloaf Hole Number DDH S-2

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
600								Quartz Schist	Massive, medium-grey.	Quartz-epidote; no calcite	Prominent white quartz vein at 604 contains abundant pyrite and minor molybdenite.
612								Phyllic Schist	Fine-grained, thinly laminated.	Quartz-epidote-pyrite.	
650	50	80%B	18982	90	115	70	145	Porphyro-blastic Schist	Dark grey, fine-grained chlorite-quartz ground-mass.	Quartz-epidote-chlorite alteration; epidote in quartz-pyrite veins and replacing former feldspar; minor chlorite along fractures; quartz flooding and occasional white quartz vein.	10% pyrite disseminated and in veins; pyrite content increases with depth.
700	50	100%B	18983	85	80	100	165				
750	50	100%B	18984	100	52	110	335				
800	50	40%B	18985	120	68	115	260				
* 830	10	100%	14743	72	30	40	136				
848											
890	42	70%B	18986	95	53	95	155				
		----------	----------	----------	LAST	BOX	----------	----------			

* Samples taken and described by R. M. Corn.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH S-3
Spudded 5-21-63
Completed Prior to July 1965 11-27-64
Total Depth Approx. 2000'
Driller Congdon & Carey
Logged By A. Grant for [illegible]

County Yuma State Arizona
Claim Sec 3 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0											
83	NX	CORE						Schist	Very porous		
104	21	85%	B18901	127	41	70	260		Schistosity at 90° to	Intense quartz-sericite;	Abundant cubic pyrite.
119									core.	oxidized iron on fractures.	
										Abundant talc.	
131	12	20%	B18902	104	220	45	260	Schist	No iron stain, abundant		1/16" molybdenite veinlet at 35° to schist-
187									pyrite: abundant talc.		osity.
196	9	70%	B18903	145	30	115	970	Schist	Argillic schist.	Weak sericite; minor quartz.	Pyrite cubes; fine pyrite veinlets at
* 225	10	100%	14744	128	-5	130	404				35° to schistosity; minor chalcopyrite.
233											
251	18	70%	B18904	132	61	185	700	Schist	Argillic schist.	Chlorite-biotite micas;	Steep pyrite veinlets which cross at 90°
										minor quartz-sericite.	and 45° to schistosity; minor chalcopyrite
279											tarnish.
288	9	70%	B18905	170	90	170	4000		Argillic schist: numer-	Quartz-sericite: abundant	Near vertical 1½" bull quartz vein: steep
									ous unorientiated por-	pyrite.	pyrite veinlets with sphalerite. Some
									phyroblasts.		pyrite veinlets appear lensoidal.
337										338 - Slightly increased.	Abundant pyrite mostly in schist planes.
										chlorite.	Minor chalcopyrite tarnish; small graphite
										340-350 Intense silicifica-	veinlet.
364	27	60%	B18906	145	108	205	640			tion with occasional bull	
										quartz vein.	
412								415-419		More chlorite than above-	More abundant pyrite.
421	9	100%	B18908	290	95	120	320	Fault Zone		quartz-sericite.	
* 435	10	100%	14745	104	ND	100	244				
499-									Argillic Schist.	Intense quartz-sericite.	Small specs of dark mineral, likely
535	36	80%	B18907	116	60	115	350		Schistosity at 90° to	Abundant pyrite steep chlor-	tourmaline: some minor chalcopyrite
									core.	ite veinlet; tourmaline.	tarnish.
										Strong local silification.	

District Quartzite - Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
* 655	10	100%	14714	100	70	200	272				
709									Dark grey argillic schist to 727'. Light grey argillic schist to 764'. Dark schist may be result of biotite(?).	Strong silicification, few quartz veinlets. Quartz vein 1/3" at 30° to schistosity. Possibly contains pale yellow-green epidote.	Abundant pyrite; minor chalcopyrite tarnish on pyrite.
764	55	65%	B18909	118	48	72	180				
* 770	10	100%	14746	48	-5	30	176				
793											
802	9	60%	B18910	83	95	80	70		Light grey.	Anhydrite and massive chlorite veinlets; anhydrite also noted in groundmass.	Minor chalcopyrite stain, however it is more than above. 858 - Calcite cuts across bull quartz which also contains large crystals of red sphalerite.
849											
859	10	40(?)	B18916	100	43	130	420				
887								Medium to light grey Quartz Schist.	Medium to grey quartz schist: porphyroblastic texture. Below 907' color is light grey.	Quartz alteration groundmass seems to be mixture of quartz and biotite. Contains numerous grains of yellow-green epidote; inclusion of anhydrite with faint ring of chlorite.	Abundant disorientiated pyrite veinlets. Occasional quartz-pyrite almost parallel to schistosity.
916	29	100%	B18911	178	90	170	190		Medium grey to greenish-grey schist.	Open quartz veinlets; abundant small anhydrite veinlets which cross schistosity. Minor sericite, possibly secondary biotite. Minor chlorite-quartz-sericite.	915 Quartz-pyrite ½" veinlet at 30° from vertical. Abundant disseminated and veinlet pyrite. Occasional bull quartz veins. Small grains of molybdenite in pyrite veinlet within bull quartz at 933.5'. At 950' note massive fine-grained chlorite veinlet with large grain of chalcopyrite.
955	39	100%	B18912	180	95	150	150	Medium to dark grey schist.	Mildly porphyroblastic texture.	Several vertical vuggy quartz and calcite veinlets. Pale yellow-green epidote throughout groundmass. Fine-grained blebs of chlorite and/or biotite in groundmass. Open veinlets show very minor oxidation.	Quartz-pyrite veinlets with very minor chalcopyrite. Pyrite veinlets seem to be lined with chlorite. At 970' 3/4" quartz-pyrite veinlet in which the pyrite is well disseminated.
982	27	100%	B18913	170	64	115	260				
* 1015	10	100%	14747	80	-5	115	188				

District Quartzite-Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1082								Schist	Quartz schist	Quartz-sericite. Chlorite in groundmass along schist planes.	Quartz-pyrite veinlets.
1090	8	80%	B18922	112	70	275	260				
1115								Dark grey Schist	Weak to moderate porphyroblastic texture; low sericite content.	Grains of calcite in groundmass: abundant grains of pale yellow-green epidote. Quartz-alunite. Abundant fine-grained chlorite throughout.	Disseminated and veinlet pyrite. Minor chalcopyrite in quartz-pyrite veinlets.
1140	25	90%	B18914	199	120	190	340		Good porphyroblastic texture.	Phenocrysts are likely feldspars partially altered to alunite.	Pyrite-quartz veinlets; minor disseminated pyrite.
1160	20	80%	B18923	70	33	140	200	Medium green grey schist	Good porphyroblastic texture.	Abundant greenish-yellow epidote in porphyroblastic texture. Quartz alteration. Calcite on veinlets.	Abundant pyrite. Quartz occasionaly occurs in large grains. A $\frac{1}{4}$" quartz-pyrite veinlet is well surrounded by layer of epidote.
1180	20	40%	B18915	70	40	80	120	Dark grey Schist	Below 1194 color is light grey with increased quartz.	Abundant biotite-quartz. Abundant feldspars.	Good fine pyrite and minor fine chalcopyrite.
1205	25	80%	B18924	102	30	62	90				
1215								Quartz Schist	Quartz schist light-grey.	Occasional quartz-pyrite vein or veinlet. Several fine quartz veinlets; less epidote than above.	Bull quartz with inclusions of epidote-feldspar mixture containing fair disseminated chalcopyrite.
1259	44	80%	B18917	108	37	75	100			Calcite on fractures. 1208-Bull quartz with secondary orthoclase.	
1269									Argillic Schist	Quartz-sericite; calcite on fractures and in groundmass.	Quartz-pyrite veinlet system is mostly parallel to schistosity.
1280	11	70%	B18918	75	41	42	65				
1304								Schist	Argillic schist which is well broken and fractured.	Abundant calcite on veinlets. Minor epidote. Fair chlorite. Iron oxidation evident at 1353 and 1358'.	Possibly increased fine chalcopyrite associated with pyrite veinlets. Anhydrite and chlorite associated with possible epidote.
* 1365	10	100%	14748	36	-5	60	109				
1367	63	75%	B18919	85	53	40	75			Probable anhydrite.	
1412									Porphyroblastic texture of quartz-epidote with chlorite, pyrite and minor chalcopyrite.	Abundant quartz with biotite and/or chlorite; probable secondary orthoclase.	1412-1429 Fair chalcopyrite ($\frac{1}{2}$-1%) with secondary biotite and epidote.
1429	17	95%	B18920	71	23	50	80			Entire groundmass is recrystallized.	Sample was all of the split core in the interval.

District Quartzite-Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1431								Medium to Dark Grey Schist	Weak to medium porphyroblastic texture; altered groundmass seems to contain inclusions of original dark schist. Below 1458 rock is light grey quartz schist.	Quartz-sericite with biotite. Abundant epidote throughout groundmass. Occasional grain of anhydrite. Secondary orthoclase in small amounts.	Good disseminated pyrite with weak chalcopyrite. Occasional chlorite-pyrite veinlet.
1460	29	95%	B18921	110	26	40	80				
1469								Medium to Light grey Schist	Quartz schist.	Intense silicification with minor epidote, calcite on fractures. Possible secondark K-feldspar.	Fair chalcopyrite along with fine-grained disseminated pyrite.
1480	11	75%	B18922	92	33	30	65				
1495									Quartz schist.	Probable secondary feldspar. Epidote and chlorite in groundmass. Silicification is less intense below 1516'.	Fine disseminated pyrite with fair chalcopyrite. Below 1516' sulfide content drops.
* 1515	10	100%	14712	48	ND	40	128				
1541	46	70%	B18925	80	27	50	80	Medium to Dark Grey Schist.			
1563								Medium Grey Schist	Argillic Schist	Calcite in groundmass and on fractures: minor oxidation on a few fractures.	Low total sulfide.
1579	16	80%	B18926	189	40	32	55		Quartz sericite.		
1587	8	80%	B18931	120	120	58	110				Minor chalcopyrite.
1606								Quartz Schist		Quartz-sericite; partially argillic.	1607 - 1" quartz-pyrite vein with good molybdenite stringers. Pyrite is in center of quartz vein.
1616	10	90%	B18927	105	45	35	125				
1646								Quartz-Sericite Schist	1660-1672 - Fault zone	Phyllic to argillic	Low total sulfide.
1685	39	100%	B18928	123	30	33	90				

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
3377								Quartz Schist	Dark grey, dense, massive, very siliceous.	Quartz-epidote-pyrite.	Very low sulfide content.
3400	50	80%	C18940	190	33	20	80				
* 3425			14751	280	5	30	152				
3430								Quartz Sericite Schist	Dark grey, minor fracturing; breccia texture on outer surface.		
3440	10	100%	C18941	115	35	15	75				
3455											
3500	45	25%	C18942	110	36	20	110		Local highly fractured zones exhibit abundant chlorite.		Occasional quartz-pyrite veins.
3550	50	30%	C18943	160	64	30	70				
3600	50	20%	C18944	320	39	20	70				
3650	50	15%	C18945	190	43	20	95				

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-15
Spudded
Completed
Total Depth > 3650'
Driller ~~McIntire - Porcupine~~
Logged By R. Ahern

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size ~~5-1/8"~~ Rotary to 533'
Core Size NX 533-2000'; BX 2000-3650'
Hole Angle
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
0											
		ROTARY CUTTINGS									
50	50		18921	530	20	255	680				
		NX CORE						Quartz	Medium-grey, medium-	Quartz-sericite-pyrite-	Pyrite disseminated and in veinlets;
62	12		B18987	95	290	210	+1000	Sericite	grained metasediments	gypsum veinlets parallel to	partial oxidation.
								Schist	cut by quartz-pyrite	schistosity while quartz-	
100	38		18922	66	22	135	810		and gypsum veinlets	pyrite veinlets cross-cut	
									with minor chlorite	it.	
150	50	NO SAMPLE							along fractures.		
200	50		18923	122	24	125	910				
250	50	NO SAMPLE									
300	50		18924	82	19	175	620				
350	50		18925	85	22	145	580				
400	50		18926	73	24	90	300				
450	50		18927	72	30	80	250				
500	50		18928	73	32	95	260				
533	33		18929	66	34	95	260				
		NX CORE									
550	17	100%	B18988	90	50	60	200	Porphyro-	Dark grey, subhedral	Pyrite, very minor epidote	Unoxidized, 5-7% pyrite, mostly in vein-
								blastic	feldspar, chlorite and	and quartz, possible clay.	lets parallel to schistosity; minor chal-
								Schist	clay along schist planes.	2" epidote-quartz-pyrite	copyrite-bornite tarnish; numerous epidote-
									1" quartz vein at 556'.	vein at 560'.	quartz-pyrite veinlets cross-cut schistosity.

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
550											
600	50	80%	B18989	250	45	100	185	Porphyro-blastic Schist		Most former feldspar replaced by epidote.	
634									Minor brecciation		
650	50	100%	B18990	80	41	85	155				
663	13		B18991	40	31	50	300				
		NOT SALVAGED									
709								Quartz Sericite Schist	Medium to fine-grained metasediments, cut by calcite veins.		
729								Porphyro-blastic Schist	Dark grey, fine-grained groundmass of quartz and chlorite with sub- to euhedral feldspar.	Quartz-epidote-pyrite veinlets and epidote replacing former feldspar.	Prominent vein at 738'.
750	50	40%	B18992	145	87	62	170				
800	50	60%	B18993	65	50	45	135				
										Massive chlorite associated with pyrite veinlets.	10-20% pyrite disseminated and in veinlets.
850	50	60%	B18994	110	55	80	740				
									Core is badly shattered below 785'.		

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
900	50	60%	B18995	10	52	75	225	Porphyblastic Schist	Medium-grey.	Chlorite-quartz-epidote-chlorite is in 1/8 to 1/2" borders along pyrite and quartz-pyrite veins, epidote with quartz-pyrite veins and replacing feldspar, occasional calcite veinlets.	5-10% pyrite, occasional 1-2" pyrite-quartz-epidote veins.
950	50	80%	B18996	100	75	50	130				
1000	50	20%	B18997	70	45	35	85				
1050	50	30%	B18998	90	155	130	205				
* 1050			14749	60	5	110	216				
1065	15	100%	B18999	70	155	155	140				
	-----NOT SALVAGED-----										
1116								Quartz-Sericite Schist with Local Brecciation	Thin-bedded, obscurring original texture. Core is dense and massive. Sericite-clay along fractures.	Epidote replacing feldspar. quartz flooding.	Pyrite veinlets in schist planes.
1150	34	90%	B19000	100	44	40	115				
1200	50	20%	C18901	160	75	65	125				
1250	50	40%	C18902	110	40	35	95				
1300	50	40%	C18903	75	53	35	60	Schist Breccia	Fragments of up to several inches in quartz-sericite-chlorite matrix.	Quartz-epidote-gypsum.	Pyrite filling fracture plane bounding and cutting through breccia fragments.
1350	15	100%	C18904	115	87	55	85				
1407											
1450	43	80%	C18905	145	46	60	115			Quartz-chlorite-calcite veins.	Prominent quartz-pyrite veins exhibit good chalcopyrite tarnish.
1500	50	40%	C18906	650	67	55	90				
1550	50		C18907	620	56	155	95				
	-----NOT SALVAGED-----										
1600								Quartz Sericite Schist Breccia	Medium to dark grey, mottled looking with veinlets and fractures abundant.	Quartz-chlorite-pyrite.	5-10% pyrite with occasional 1-2" quartz-pyrite veins.
1650			C18908	165	96	35	70				
	-----NOT SALVAGED-----										

District Quartzite-Sugarloaf Hole Number DDH SL-5

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1737								Quartz Sericite Schist	Dark grey fine-grained chlorite and calcite lining fractures; mottled breccia appearing on outside surface.	Quartz-epidote-chlorite: quartz-pyrite veinlets.	Pyrite and quartz-pyrite veinlets cross-cutting schist.
1747	10	100%	C18909	215	55	40	55				
1764											
1784	20	90%	C18910	250	150	40	90				
	-----NOT SALVAGED-----										
1867										Occasional calcite veins, chlorite lined fractures abundant.	Low sulfide content, 3-5%.
1900	33	80%	C18911	205	155	35	60				
1950	50	30%	C18912	250	120	45	80				
2000	50	30%	C18913	175	68	40	65		3' quartz vein at 1990' bounded by zones of abundant chlorite.		
	-----BX CORE-----										
2050	50	60%	C18914	285	125	50	70			Local zones of intense silication and pyritization.	
2100	50	60%	C18915	320	117	50	50				
2125								Schist Breccia	Scattered zones of porphyroblasts.	Quartz-epidote-chlorite.	
2150	50	80%	C18916	110	34	25	70				
2200	50	10%	C18917	155	29	350	240				
2250	50	80%	C18918	205	45	40	75			More numerous quartz-epidote pyrite vein zones and sinuous fractured filled veins with fine-grained quartz and pyrite.	Quartz-pyrite veins exhibit minor occurrences of molybdenum.
2300	50	100%	C18919	185	330	45	175				
2350	50	70%	C18920	185	57	15	85	Massive Quartz Sericite Schist	No visible brecciation. Porphyroblasts not altered.		Very low sulfide content.
2400	50	80%	C18921	200	31	35	100				
2450	50	80%	C18922	110	58	20	165				
2500	50	80%	C18923	130	35	10	95				
2550	50	20%	C18924	115	66	10	100				

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-6
Spudded
Completed Prior to July, 1965
Total Depth 696'
Driller Congdon and Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 34 T. 4N R. 20W
Elevation
Hole Size NX 0-466'; BX 466-696'
Core Size NX 0-466'; BX 466-696'
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0	----NO CORE----										
25								Schist	White, chalky brecciated with numerous quartz-pyrite veinlets.	Quartz-clay.	Limonite after pyrite in fractures only; completely oxidized.
45	20	100%	18971	44	23	90	70				
	---- NOT SALVAGED----										
75									Light grey, brecciated below 86'.	Quartz-clay-pyrite-sericite.	Pyrite disseminated and in veinlets; very minor chalcocite coating pyrite; partially oxidized. 2" quartz-pyrite vein at 186' shows abundant pyrite with chalcocite tarnish.
100	25	100%	18972	144	16	250	+1000				
150	50	100%	18973	123	28	265	+1000				
167								Quartz Sericite Schist	Tan to grey: minor oxidation: numerous breccia zones: schistosity nearly horizontal.	Quartz-sericite-pyrite: quartz-gypsum veinlets with pyrite. Intense quartz-alunite-pyrite 198-202'.	Abundant pyrite stringers in schist planes with chalcopyrite tarnish: pyrite 5%.
198											
* 200	10	100%	14737	80	50	200	2400				
200	50	65%	18974	80	34	650	+1000				
225	25	100%	18975	125	54	255	+1000				
	-----NOT SALVAGED-----										
253	28							Phyllic Schist	Light grey, speckled with pyrite: open zones of fault breccia.	Sericite-quartz-pyrite with occasional gypsum veinlets.	Pyrite is 10-20%, disseminated uniformly throughout.
278	25	100%	18976	60	40	240	+1000				
303	25	NOT SALVAGED-----						Schist	Light grey; no mafic minerals.	Quartz-sericite-pyrite with numerous gypsum veinlets.	Pyrite veinlets exhibit chalcopyrite tarnish: some disseminated pyrite locally.
350	47	100%	18977	71	80	485	+1000				
* 355	10	100%	14738	28	100	190	224				

District Quartzite-Sugarloaf Hole Number DDH SL-6

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
415								Phyllic Schist	Light grey, schistosity generally horizontal. Prominent massive quartz vein 434-478'.	Quartz-sericite-pyrite-alunite with occasional veinlets of gypsum after anhydrite.	Pyrite stringers along schist planes equal 10%.
450	35	100%	18978	101	60	220	+1000	Fault Breccia 447-451'			
466	-----	REDUCE	TO BX	CORE	-----						
474								Quartz Vein			Pyrite 10% to 20% disseminated and along schistosity: some sulfide grains exhibit chalcopyrite tarnish; pyrite more abundant at 470': quartz-pyrite-sphalerite-galena vein at 480'.
481											
495			14739	48	48	400	4720	Quartz Schist	Rock is mostly quartz with occasional porphyroblasts of chloritic material.	Quartz-pyrite with minor clay.	Pyrite is 10-20% occurring as stringers in gently dipping planes of schistosity.
500	50	90%	18979	118	57	140	+1000				
550	50	90%	18980	110	48	270	+1000				
553								Phyllic Schist	Light grey, pearly scheen on all surfaces. No veinlets: minor stringers of chlorite.	Quartz-sericite-pyrite with clay: graphite at 600'.	Pyrite approximately 10%: in schist planes.
600	50		18981	84	59	465	+1000				
650			18982	92	90	335	+1000				
* 660	10		14711	68	15	600	2800				
* 690			14740	64	10	840	3680				
696			18983	91	35	375	+1000				
								TOTAL DEPTH - 696'			

* Samples taken and described by R. M. Corn

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-4
Spudded
Completed Prior to July, 1965
Total Depth 790'
Driller Congdon & Carey
Logged By A. Grant

County Yuma State Arizona
Claim Sec 4 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0								Schist	Quartz-sericite: bleached white.	Abundant jarosite on fractures. Quartz veinlets with quartz grains in groundmass.	
30	30								Bleached argillic schist.	Intense quartz-sericite-alunite.	Abundant pyrite.
49	19	40%	B18935	48	35	150	35			Intense quartz-sericite: good alunite in schist planes: minor epidote.	Abundant pyrite with minor chalcopyrite in schist planes.
100	51	80%	B18936	60	68	160	+1000		Quartz-sericite schist.	Pyrite is weakly oxidized.	Fair chalcopyrite on pyrite.
118	18	80%	B18937	67	70	270	+1000		110-118' Rock is highly fractured.	Jarosite on most of the pyrite. Wide spread "bleeding" not apparent.	
147											
157	11	100%	B18938	73	53	230	+1000				Minor chalcopyrite on widespread pyrite.
184											
200	36	50%	B18939	125	100	255	+1000		Quartz-schist.	Strong quartz-sericite-alunite. No mafic minerals.	
212									Quartz-schist.	Groundmass is 100% quartz, sericite. Occasional quartz veinlet.	Abundant pyrite, some with fair chalcopyrite tarnish.
252	40	40%	B18940	112	112	280	+1000				
261	9	100%	B18944	82	57	270	+1000				
* 310	10	100%	U4730	88	85	450	5600				
319									Quartz-schist.	Intense quartz-sericite-alunite. Coarser quartz than noted above.	Abundant pyrite. Occasional pyrite veinlet with associated epidote.
347	29	75%	B18941	110	48	620	+1000				Occasional chalcopyrite on pyrite.

District Quartzite Hole Number DDH SL-4

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
375									Quartz schist.	Intense quartz-sericite-alunite. More quartz than above. Minor limonite on occasional fracture.	Abundant disseminated pyrite and pyrite veinlets. Minor chalcopyrite tarnish on both kinds of pyrite.
404	29	60%	B18942	98	44	250	+1000				
422											
460	38	85%	B18943	110	61	280	+1000		Quartz schist.	Intense quartz-sericite-alunite. Quartz is coarse in some places.	Abundant pyrite, some chalcopyrite tarnish.
* 485	10	100%	14731	64	5	430	2880		Light medium grey quartz schist.	Note! Introduction of chlorite; may be slightly argillic.	5% pyrite with less chalcopyrite stain. Gently dipping veins following schistosity.
500	40	70%	B18945	67	45	225	800		2" quartz vein at 509'.	Weak oxidation along some veinlets.	
550	50	100%	B18946	75	65	145	+1000			More intense silicification below 560'.	Pyrite as abundant thin stringers in schist planes.
600	50	100%	B18947	88	35	135	510				
* 600	10	100%	14732	60	<5	125	416				Blebs of pyrite disseminated throughout with minor chalcopyrite staining.
626	26	80%	B18948	100	33	200	510				
673								Quartz Schist	Porphyroblastic	Porphyroblasts altered to alunite.	Quartz-pyrite-sphalerite veinlets in schist planes.
692	20	100%	B18949	90	46	165	400				
703										Chlorite introduced along fractures.	
723	20	100%	B18950	105	55	125	800				
* 710-715	5	100%	14710	432	20	280	2000				
747								Quartz Sericite Schist	Light Grey		Quartz-pyrite sphalerite veins cross-cutting schist; disseminated pyrite throughout.
757	10	100%	B18958	100	56	225	505				
* 760	10	100%	14733	68	<5	160	440				
784								Quartz Schist	Micaceous banding.	Not discernable.	Quartz-pyrite veinlets.
790	7	100%	B18959	140	44	190	285				
								-790' - TOTAL DEPTH-			

* Samples taken and described by R. M. Corn

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH S-1
Spudded
Completed Prior to July, 1965
Total Depth Approx. 2,000'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX 0-1616'; BX 1616-2000'.
Core Size NX 0-550'; 700-1616'; BX 550-700'; 1616-200
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0								Schist	White, fine-grained	Discernable superimposed	Pyrite, 10% in schistosity. No oxidation,
74									quartz-sericite, gently	alteration limited to	no chalcocite.
									dipping schistosity.	alunite-pyrite-calcite.	
100	26	100%	18984	90	51	210	+1000		Occasional calcite vein-	Local zones of silica	
									lets. No mafic minerals.	flooding.	
142	42	100%	18985	92	48	335	+1000				
161	19										
181	20	100%	18986	93	50	315	+1000		Grey, phyllic schist		Abundant disseminated pyrite with minor
210	29								cut by veinlets of		local molybdenite.
250	40	40%	18987	97	93	145	+1000		quartz, pyrite, and cal-	Quartz-pyrite veins more	
									cite. 2" quartz-calcite	abundant below 250'. Alunite	
300	50	60%	18988	116	41	135	+1000		vein at 317'.	veins persist, occasional	
										serpentine coating frac-	
350	50	60%	18989	69	70	265	+1000			tures.	
400	50	60%	18990	101	60	190	+1000		Light grey quartz schist,	Quartz flooding with	
									shattered and badly	rare secondary orthoclase.	
450	50	60%	18991	163	160	116	+1000		broken.		
456	4	0							Medium grey quartz feld-	Alunite replacing feld-	
500	44	80%	18992	165	190	135	+1000		spar schist, no mafics.	spar, quartz veins and	
										silica flooding: alunite	
550	50	80%	18993	202	100	210	500			quartz-pyrite zone at 465'.	
	---- BEGIN BX CORE ----										
* 620	10	100%	14716	112	30	120	264				
627		0									
637	10	100%	18994	120	67	83	340				

District Quartzite - Sugarloaf Hole Number DDH SL-1 Page Number 2 Of 4 (23 Sheets)

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
700-		NX CORE						Argillic Schist	Grey, micaceous, fine-grained; locally brec-ciated.	Difficult to distinguish from metamorphism; chlorite and very rare calcite are possible alteration minerals.	Pyrite in veinlets and stringers along schistosity.
730								Fault Breccia	Rounded schist in clay matrix.		
750	50	100%	18995	96	66	545	600				
765								Schist	Medium greenish grey, fine-grained micaceous	Quartz-sericite chlorite; anhydrite(?) at 768'.	Prominent quartz veins cross-cutting schistosity.
793	43	100%	18996	120	52	55	210				
* 860	10	100%	14734	76	ND	90	216				
884		0						Schist	Quartz-sericite schist breccia.	Calcite veins with minor alunite, occasional quartz-pyrite veinlets.	Pyrite disseminated along schist planes and forming veins. Sulfides are 10%.
900	16	100%	18997	130	67	100	230				
914											3" quartz vein at 915'. Sharply reduced sulfide content, 3 to 5%.
920	20	100%	18998	143	54	100	230				
991								Phyllic Schist	Greenish grey, fine-grained.	Quartz-sericite-alunite; feldspar replaced by alunite.	Pyrite 5-10% in schist planes.
1000	9	100%	18999	171	57	115	220				
1050	50	90%	19000	137	47	100	330				
* 1060	10	100%	14736	80	20	110	236				
1070										Quartz-alunite-sericite with chlorite-pyrite and clay.	Pyrite 10% to 20%: larger quartz-pyrite veins, 1 or 2 per foot.
1100	30	100%	B18951	146	55	100	170				
1117		0									Reduced sulfide content.
1150	33	100%	B18952	100	59	65	165				
1200	50	100%	B18953	225	36	155	320	Quartz Schist	Dark grey, dense, hard.	Clay, chlorite, gypsum.	Pyrite 5-10%.

District Quartzite - Sugarloaf Hole Number DDH SL-1

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1250	50	40% B	18954	100	72	85	145	Schist	Quartz-chlorite meta-sediments.	Sericite-epidote.	Pyrite 3-5%.
1300	50	90% B	18955	100	110	170	325				Pyrite and quartz-pyrite veins more pronounced but total sulfides still less than 5%.
1350	50	90% B	18956	105	46	140	200				
1400	50	40 B	18957	90	53	90	195	Quartz Schist		Quartz, chlorite, pyrite.	
1419								Schist	Core is badly broken, maybe fault zone.	Introduced chlorite is abundant.	
1428	9	100% B	18960	120	70	105	175				
* 1440	10	100%	14735	80	ND	60	160				
1447								Porphyroblastic Schist	Dark grey fissile, schistosity is nearly horizontal.	Abundant epidote after former feldspar, also veinlets	Quartz-pyrite-sphalerite-calcite veins, intense chalcopyrite tarnish in veins, 10%.
1454									2' quartz vein.		
1466								Quartz Schist	Medium grey, dense, massive.	Epidote replacing feldspar, chlorite along fractures, increases with depth.	Pyrite disseminated along planes of schist, 30-50%. Pyrite content increases to 10% below 1476'.
1490								2' Fault Breccia			
1500	53	100% B	18961	103	65	95	175	Chlorite Schist	Porphyroblastic texture locally discernable.		Pyrite 5%.
1523	23	100% B	18962	70	105	45	115				
1606								Quartz-Chlorite Schist	Medium-greenish grey; locally well healed breccia texture.		Low sulfide content, 2-5%.
1616											
	----------		BEGIN	BX CORE	----------						
1627								Breccia			
1650	23	100% B	18963	65	37	55	75				
1658								Quartz Schist Breccia	Dense, massive, dark grey schistosity not apparent; breccia texture persists.	Quartz, secondary orthoclase; 2" quartz vein at 1664'.	5% pyrite in quartz-pyrite veins and disseminated.

District Quartzite-Sugarloaf Hole Number DDH SL-1

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1700	50	100%	B18964	55	41	100	85	Schist Breccia	Dense, massive, medium to dark grey.	Quartz-secondary orthoclase, with minor epidote and chlorite in fractures Occasional calcite veinlets.	3% pyrite disseminated along schist planes, increased to 5-8% below 1740'.
1750	50	100%	B18965	80	25	80	105				
1770									Rock is badly broken up.		
1800	50	100%	B18966	100	52	50	110				
1835								Hornfels	Dense, massive, dark grey; no schistosity visible.		
1850	50	80%	B18967	80	31	45	100	Quartz Schist	Somewhat porphyroblastic, massive with moderate brecciation.	Quartz-chlorite-pyrite.	
1900	50	100%	B18968	80	44	60	110	Breccia	Alternating zones of greenish grey schist and massive dark grey, siliceous rock: possibly intrusive monzonite.	Schist-chlorite-clay-monzonite-quartz flooding with biotite and quartz-calcite-pyrite stringers.	Pyrite 10-15% with minor chalcopyrite tarnish. Molybdenite in quartz vein at 1666'.
* 1920-1925	5	100%	14713	68	5	80	144				
1950	50	100%	B18969	80	58	50	80				

* Samples taken and described by R. M. Corn.

KERR-McGEE CORPORATION

District Quartzite - Sugarloaf
Hole Number DDH S-2
Spudded
Completed Prior to July, 1965
Total Depth Approx. 200'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0	PLUGGED (NO CORE)										
25		NX CORE						Schist	Tan to light grey, vuggy: quartz and biotite-quartz: feldspar porphyroblasts weathered to clay.	Calcite-chlorite-pyrite, gypsum noted in fractures.	Completely oxidized iron flooding and black hematite filling fractures and schist planes indicating 15% pyrite.
43											Only slight oxidation along fractures. Near vertical quartz-pyrite veinlet cross-cuts horizontal veinlets following schistosity at 50'.
52									Fine-grained, no visible texture.		Very minor disseminated pyrite.
73								Schist	Gently dipping, mottled looking.		Pyrite stringers following schistosity predominate with quartz-pyrite veinlets crosscutting 10% pyrite. No chalcocite or chalcopyrite noted.
77									Shattered zone.		Partially oxidized.
100	75	65%	B18971	130	51	70	+1000				
120									Light to medium grey: platey to massive.	Intense quartz-pyrite with minor chlorite and epidote: no calcite.	Only minor oxidation, sulfides equal 15-20%.
137									Massive, fine-grained.		10% pyrite in stringers along schistosity.
150	50	100%	B18972	125	55	95	+1000				
* 170	10	100%	14741	192	30	35	440				
183										Numerous gypsum veinlets accompany quartz-pyrite alteration.	10-15% pyrite, no chalcocite or chalcopyrite: local massive pyrite-gypsum veinlets.
200	17	100%	B18973	220	112	95	+1000		Light to medium grey; fine-grained.		

District Quartzite-Sugarloaf Hole Number DDH S-2

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
204								Schist	Porphyroblasts of orthoclase.	Abundant pyrrhotite-pyrite-quartz veinlets; porphyroblasts by epidote.	Pyrite 10%.
230									Core is badly broken.		Partial oxidation.
250	50	80%B	18974	185	100	55	+1000				
269								Schist	Fine-grained, medium grey.	Pyrite-chlorite-epidote.	5-10% disseminated pyrite: 15-20% below 296'.
296											
300	50	60%B	18975	90	165	100	185	Porphyroblastic Schist.	Feldspar replaced by epidote in quartz matrix.	Quartz-epidote-pyrite with minor epidote.	15% pyrite disseminated and in veinlets.
315-325	10	100%	14717	180	10	90	184				
348									Massive quartz-pyrite-epidote zone.		
350	50	100%B	18976	125	93	70	120	Schist	Fissil, dark-grey, only rare porphyroblasts.	Quartz-pyrite-epidote.	5-10% pyrite in veinlets and finely disseminated with occasional ½" quartz-pyrite veins.
370								Porphyroblastic Schist		Epidote replacing former feldspar; quartz flooding and veins.	
400	50	80%B	18977	190	100	55	165				
450	50	60%B	18978	105	100	95	160				
488								Quartz Schist	Dark grey, dense, massive, fine-grained.	Quartz flooding and in veinlets; epidote lining veinlets with locally massive epidote.	Massive pyrite in quartz veins.
500	50	80%B	18979	110	100	130	185				
532									Micaceous schist, thin laminations, greenish-grey.		Sparsely disseminated pyrite and quartz-pyrite veinlets.
550	50	100%B	18980	175	260	85	140				
564								Porphyroblastic Schist	Dark grey and green.	Epidote replacing former feldspar, locally massive epidote associated with quartz-pyrite zones.	
600	50	80%B	18981	185	85	50	110				

District Quartzite-Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
1685									Medium to dark grey schist.	Mostly quartz with abundant thin calcite on fractures. Abundant chlorite in schist planes.	1732 Quartz-chalcopyrite veinlet parallel to schistosity. Sulfide level slightly higher than above.
1734	49	50%	B18930	202	24	38	70				
								Quartz Schist	As above	As above with less calcite. A few fractures are weakly oxidized.	Generally very low total sulfide. Occasional large quartz vein.
1788	54	60%	B18931	195	33	31	80		Dark grey quartz schist.	Epidote in fair amount chlorite or possible biotite. Calcite on fractures. Calcite or anhydrite(?) with chlorite and pyrite in schist planes.	Increased sulfides with notable chalcopyrite. Quartz veinlets have pyrite at center with chlorite lining. Most of the pyrite is in schist planes. 1801.5 - Small specks of molybdenite in massive quartz vein.
1832	44	75%	B18932	135	33	27	70		Quartz schist, medium to light grey. Below 1840' schist is light grey with quartz and low sulfide.	Strong silicification. Chlorite and/or secondary biotite found with quartz grains and quartz veinlets.	Increased total sulfide to 1840'. Below 1840' total sulfide is low. Rock material is well broken with occasional fault zone.
1855	23	60%	B18933	96	30	42	75				
* 1860	5	100%	14715	248	ND	80	104				

DEEPEST CORE FOUND WAS 1857'.
TOTAL DEPTH IS UNKNOWN.
2000' PROBABLE TOTAL DEPTH.

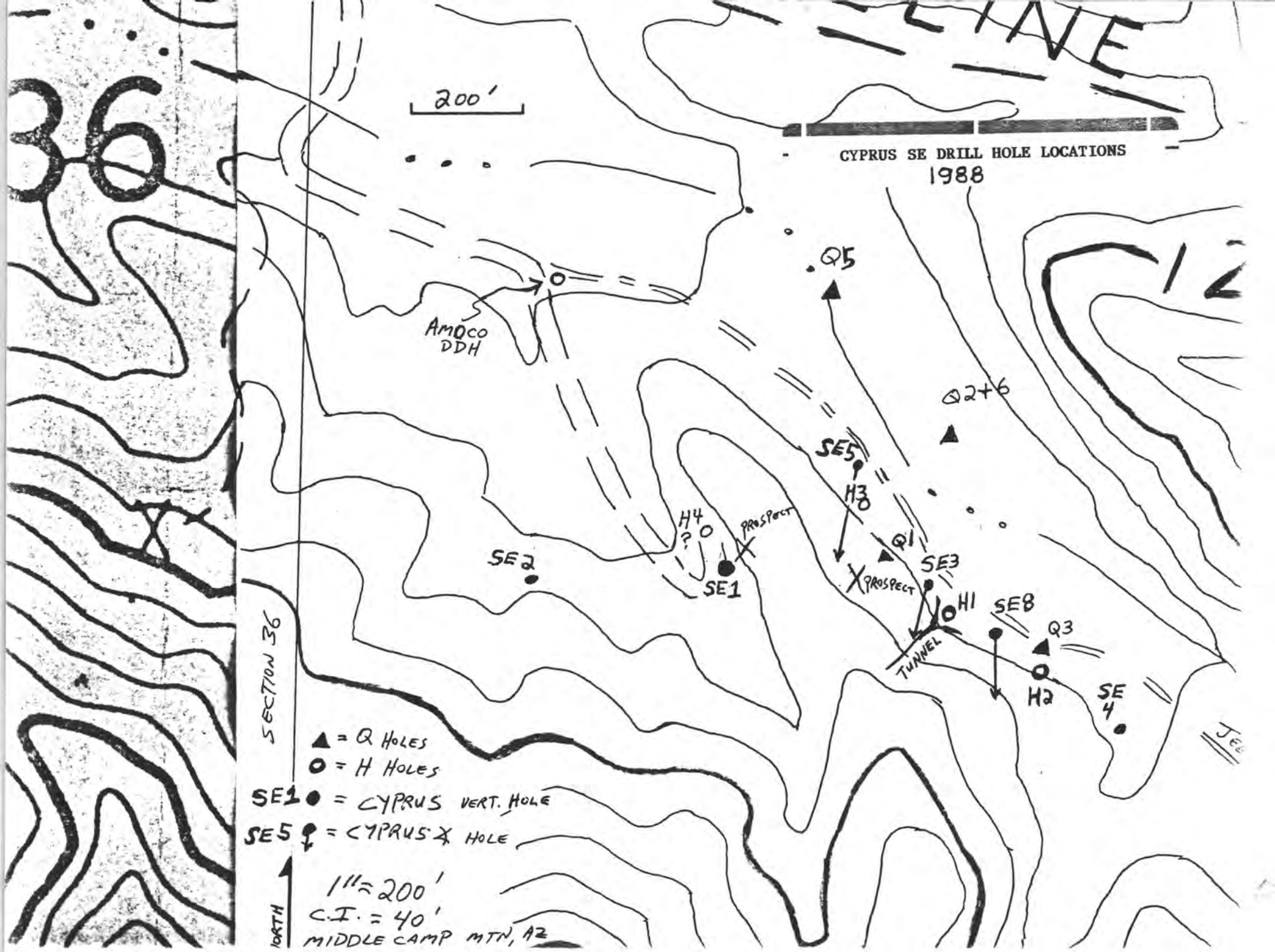
* Samples taken and described by R. M. Corn.

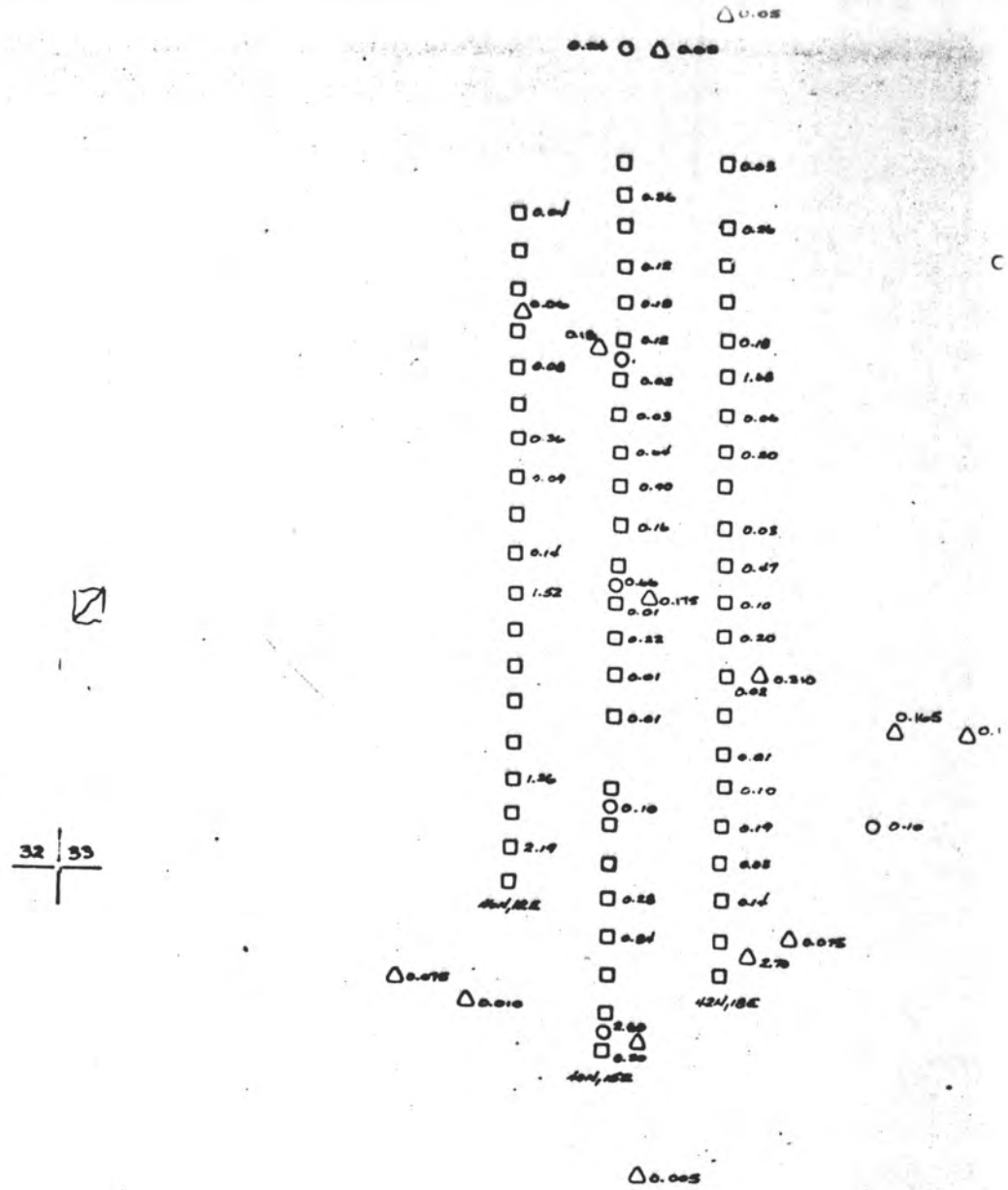
KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-5
Spudded
Completed Prior to July, 1965
Total Depth 651.3'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX 0-500 BX 500-651 T.D.
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0											Oxidized: disseminated: pyrite less than
20	20	--Not	Cored	----				Schist	Chloritic schist with	Chlorite, clay, weak.	3%.
									blebs of feldspar and		
50	30	100%	18964	68	15	115	33		quartz: occasional zones		
100	50	100%	18965	60	14	70	250		of quartzite, dark		
	----	Not	Cored	----					greenish-grey.		
229	129								Light grey: original	Alunite-sericite-quartz.	20% oxidized, pyrite stringers coated
									mineralogy destroyed		with minor chalcocite: quartz-pyrite
									by alteration.		vein at 240': pyrite in veinlets not
											disseminated.
245								Arkosic	Grey to greenish grey.		Pyrite veins and stringers in planes
								Schist			of schistosity.
250	31	100%	18966	1380	200	35	360				
282	32		18967	137	180	70	+1000				
	----Not		Salvaged	----							
342	60							Argillic	Light to medium grey:	quartz-alunite-gypsum	Pyrite in veinlets and in schist planes:
								Schist	greenish grey.		no chalcocite tarnish noted.
350	8	46%	18968	163	55	65	250				
365											
387	----Not		Salvaged	-----							
400	50	56%	18969	164	150	60	270				Occasional chalcopyrite tarnish noted
											on non-crystalline pyrite.
420									Porphyroblastic texture.		
450	50	70%	18970	170	82	100	250				
474										More quartz veins with	
493	43	100%	18971	112	120	60	95			chlorite along fractures.	
	----Not		Salvaged	----							
651'							TOTAL DEPTH				


CYPRUS SE DRILL HOLE LOCATIONS
1988
200'
AMOCO DDH
Q5
Q2+6
SE5
H3
H4 ?
PROSPECT
Q1
SE3
PROSPECT
H1
SE8
Q3
TUNNEL
H2
SE 4
SE2
SE1
SECTION 36
▲ = Q HOLES
O = H HOLES
SE1 ● = CYPRUS VERT. HOLE
SE5 ↓ = CYPRUS ⊥ HOLE
NORTH
1" = 200'
C.I. = 40'
MIDDLE CAMP MTN, AZ


32
33

M-17

REPORT DATE: JUN 22, 1982 — TES DEPARTMENT OF THE INTERIOR — PAGE NO: 3762

STATE: ARIZONA — PCN: LT892PP1 — EAU OF LAND MANAGEMENT

MERIDIAN: GILA-SALT R. — GEOGRAPHIC INDEX

LEGAL DESCRIPTION TWNSHP	RANGE	SEC	SUBDV	GEO CTY	BLM DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)		LEAD FILE	COUNTY BOOK;PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
3 N	20 W	9	SW	27	5	38651	LD	RED CHIEF NO 4	FISHER MARY S		38637	570;741	5/14/1969	1981	
			SW			38652	MS	RED CHIEF NO 6	FISHER FRANK S		38637	568;622	5/10/1969	1981	
									FISHER MARY S						
			SW			38653	MS	RED CHIEF NO 7	FISHER FRANK S		38637	570;742	5/14/1969	1981	
									FISHER MARY S						
			SW			38657	MS	RED CHIEF NO 12	FISHER FRANK S		38637	571;769	5/18/1969	1981	
									FISHER MARY S						
			NE			148640	LD	SP 047	WESTWORLD OIL	GAS	148593	1259;339	11/03/1981	0000	
			NE			148641	LD	SP 048			148593	1259;341	11/03/1981	0000	
			N2			148663	LD	SP 071			148593	1259;387	11/10/1981	0000	
			NW			148664	LD	SP 072			148593	1259;389	11/10/1981	0000	
		10	SE			23647	PL	LITTLE SIX	WILLISON,HOWARD G II			298;438	1/16/1961	1981	
									ILLISON, ESTHER MAY						
			NE			31724	LD	VETA GRANDE	ONES, RICHARD L			1068;163	10/10/1978	1981	
									JONES, HELEN M						
			N2			97783	PL	DRY-RUN	FINE ANNA RUTH			1148;0	2/27/1980	1981	
			SW			100918	PL	SIRROCCO	MURPHY MIKE			1155;241	3/15/1980	1981	
									MURPHY EDIE						
			SE			100919	PL	SIRROCCO NO 2	MURPHY MIKE		100918	1155;243	3/15/1980	1981	
									MURPHY EDIE						
			NW			104378	PL	JACKRABBIT PLACER	COWELL CLARION J			1161;43	3/03/1980	1981	
									DUNCKHURST HELEN						
			N2			110422	LD	WAR EAGLE LODE 0?	BECK E W			1167;043	6/04/1980	1981	
									BECK HELEN						
			E?			114775	PL	DRY RUN NO 2	FINE BRADFORD SR			1191;0	11/05/1980	1981	
			S?			119815	PL	NEW HOPE NO ONE	SIDER FRANK			1198;156	12/15/1980	1981	
									SIDER CAROL						
									WALL R J						
									WALL ROSIE						
									KING CLARENCE						
									KING DOT						
									ROBINSON O F						
									ROBINSON NETTIE						
			NE			148593	LD	SP 01	WESTWORLD OIL	GAS		1259;245	11/03/1981	0000	
			N2			148616	LD	SP 023 FRACTION			148593	1259;291	11/03/1981	0000	
			NW			148617	LD	SP 024			148593	1259;293	11/03/1981	0000	
			NW			148640	LD	SP 047			148593	1259;339	11/03/1981	0000	
			NE			153408	PL	ELUSIVE DREAM 02	HILL J R			1264;593	1/02/1982	0000	
									HILL DOROTHY						
									MARTIN RALPH						
									MARTIN PAT						
			NE			154733	PL	NO NAME CLAIM	MARTIN RALPH			1265;702	1/12/1982	0000	
									MARTIN PAT						
									HILL J R						
									HILL DOROTHY						
		11	SW			23648	PL	THE HOPEFULL II	WILLISON,HOWARD G IV		23647	887;354	10/24/1975	1981	

* * DISCLOSURE * * ALL INFORMATION RECEIVED IN THIS OFFICE MAY NOT YET BE LISTED ON THIS REPORT, NAMES AND ADDRESSES ARE ENTERED AS THEY APPEAR ON THE LOCATION NOTICE OR ARE ABBREVIATED TO FIT LIMITED SPACE; THEREFORE THEY MAY NOT APPEAR IN THE EXPECTED SEQUENCE.

ILLUSTRATIONS

SE Claims - (GEOFEX #1425) 1/13/81

	SCALE
✓ 1. Moly/lead ratio	1" = 1000'
✓ 2. " geochem	"
✓ 3. Lead "	"
✓ 4. Generalized alteration w/ Congdon & Carey & Ropp claim boundaries (partial)	1" = 600' — 2 copies
✓ 5. Cross Section	1" = 1000'
✓ 6. Mag survey profiles	"
✓ 7. Alteration Map, (reduced from	" to ≅ 1" = 2000'
✓ 8. I.P. - resistivity plan, 4 sheets 8½"X11"	" " ± ?
1 copy 9. Moly/lead ratio	Reduced from 1" = 1000' to 1" = 2000'
" 10. " geochem	" " " "
" 11. Lead "	" " " "

Rolled

11 + 1 = 12 Rolled. 4, Folded. + 207 (8½"X11" sheets)

12 - Reports - 108 pages
13 - Claim Map - S.E. Claims - 1 page } 109 pages
14 - Dome Rock Mts Quad Area Map, 1" 91
15 - Logs - drill & assay - 90 " 200
7 Bargraphs
207

ARIZONA

DOCKET 882 PAGE 507

AFFIDAVIT OF ASSESSMENT WORK

STATE OF ARIZONA)
COUNTY OF PIMA) ss.

Dave Snyder, being duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one years of age, resides at Tucson, Arizona, is personally acquainted with the mining claims described below situated in Quartzsite mining district, Yuma County, Arizona, the location notices of which are recorded in the office of the County Recorder of said County as follows:

NAME OF CLAIM	RECORDING DATA BOOK	PAGE

See "Exhibit A"

That between the 1st day of September, 1974 and the 1st day of September, 1975 at least $1,300.00 dollars worth of work and improvements were done and performed upon said claims, not including the location work on said claims. Such work and improvements were performed by Kerr-McGee Corporation, its agents, employees and independent contractors at the expense of Kerr-McGee Corporation, the owner, lessee, or optionee of said claims for the purpose of complying with the laws of the United States pertaining to assessment or annual work and such work and improvements consisted of:

Core drilling and associated expenditures, assaying, drill road maintenance and drill site construction.

Dave Snyder - Affiant

Subscribed in my presence and sworn to before me this 15th day of October, 1975.

Notary Public

My Commission Expires:
June 6, 1976

STATE OF ARIZONA)
COUNTY OF Pima) ss.

The foregoing instrument was acknowledged before me this 15th day of October, 1975 by Dave Snyder.

Notary Public

My Commission Expires:
June 6, 1976

02-12-004

"EXHIBIT A"

NAME OF CLAIM	BOOK	DOCKET	PAGE
Old 60 & 70 No. 1	127		366
Old 60 & 70 No. 1 (Amended)	450		592
Old 60 & 70 No. 2	127		367
Old 60 & 70 No. 2 (Amended)	450		593
Old 60 & 70 No. 3	127		368
Old 60 & 70 No. 3 (Amended)	450		594
Old 60 & 70 No. 4	127		369
Old 60 & 70 No. 4 (Amended)	450		595
Old 60 & 70 No. 5	127		370
Old 60 & 70 No. 5 (Amended)	450		596
Old 60 & 70 No. 6	127		371
Old 60 & 70 No. 6 (Amended)	450		597
Old 60 & 70 No. 7	127		372
Old 60 & 70 No. 7 (Amended)	450		598
Surprise No. 1	127		363
Surprise No. 1 (Amended)	450		599
Surprise No. 3	127		365
Surprise No. 3 (Amended)	450		600
High Jolly No. 2 thru No. 5	132		90 thru 93

Located in Section 6, Township 3 North, Range 20 West and Section 31, Township 4 North, Range 20 West, Yuma County, Arizona

02-12-004

State of Arizona
County of Yuma } ss 23198

I hereby certify that the within instrument was filed and recorded at the request of
O. G. Hessigren
1975 NOV 5 [illegible] 24
Docket 882
on Page 507-8
Witness my hand and official seal the day and year aforesaid.
CARA N. BETTS
County Recorder
Elizabeth Arreola
Deputy Recorder

YUMA COUNTY RECORDER ARIZONA

Affidavit of Labor Performed and Improvements Made

STATE OF ~~ARIZONA~~ California,
County of Santa Clara } ss.

Burton W. Hancock of Royal Investments, Inc. being duly sworn, deposes and says that he is a citizen of the United States and more than twenty-one years of age, and resides at San Jose in Santa Clara County, State of ~~Arizona~~ California, and is personally acquainted with the mining claim known as See below. Said claims are all a part of a contiguous group and said work was done to improve and develop each of said claims for which this affidavit is filed.

mining claim situate in La Paz Mining District, County of Yuma, State of Arizona, the location notice of which is recorded in the office of the County Recorder of said County, in Book see below of Records of Mines, at page ; that between the 1st day of September, A. D., 19 75, and the 1st day of September A. D., 19 76, at least $1,400.00 ($100 for each claim dollars worth of work and improvements were done and performed upon said claim not including the location work of said claim. Such work and improvements were made by and at the expense of Burton W. Hancock owner of said claim for the purpose of complying with the laws of the United States pertaining to assessment of annual work, and Louis A. Corneja, Stephen W. Hodread and Delbert Cachora were the men employed by said owner and who labored upon said claims, did said work and improvements, the same being as follows, to-wit: Repaired roads, made a cut to remove overburden to expose ore.

Hi Jolly No. 2	Recorded in Book	132 Page 90	Old 60-70 No. 5	Recorded in Book 127 Page 370
Hi Jolly No. 3	" "	132 Page 91		
Hi Jolly No. 4	" "	132 Page 92	Old 60-70 No. 6	" Book 127 Page 371
Hi Jolly No. 5	" "	132 Page 93		
Surprise No. 1	" "	127 Page 363		
Surprise No. 3	" "	127 Page 365	Old 60-70 No. 7	" Book 127 Page 372
Old 60-70 No. 1	" "	127 Page 366		
Old 60-70 No. 2	" "	127 Page 367		
Old 60-70 No. 3	" "	127 Page 368		
Old 60-70 No. 4	" "	127 Page 369		

Burton W. Hancock

Subscribed and sworn before me this 13th day of DECEMBER A. D., 19 76

Dorothy M. Erickson
Notary Public.

OFFICIAL SEAL
DOROTHY M. ERICKSON
NOTARY PUBLIC-CALIFORNIA
SANTA CLARA COUNTY
My Commission Expires Oct. 17, 1977

STATE OF ARIZONA
COUNTY OF Yuma } ss.

I hereby certify that the within instrument was filed and recorded at request of Burton W. Hancock

1976 DEC 22 AM 9 56

on at M., Docket 946 Page 185

29117

YUMA COUNTY RECORDER ARIZONA

Witness my hand and official seal the day and year aforesaid.

Clara R. Betts
County Recorder.

By
Deputy Recorder.

Indexed	Photostat Compared	Blotted

No. 0183—Affidavit of Labor Performed and Improvements Made—Sawyer Stat. & Off. Equip. Co., Phoenix, Arizona

1799 Hamilton Ave
San Jose, Ca. 95125

Univ. of Ariz. Research

east of Hermosillo, Sonora. Stratabound and strataform lenses of massive and thinly bedded sulfides vary in thickness from several centimeters to 3.5 meters. These lenses and beds are interbedded in a sedimentary, volcaniclastic and pyroclastic section of limestone, water-lain fine crystal tuff, and lithic tuff known as the Arenillas Formation.

Mapping has shown that localization of sulfides in this volcano-sedimentary sequence occurs spatially between two thicker, more extensive volcanic units, the footwall Revancha Rhyolite ignimbrite and a hanging wall sequence of dacitic tuff breccia, lithic tuff, and feldspathic tuff. Locally the rhyolite is intensely silicified and displays eutaxitic texture. The overlying dacitic sequence is characterized by chlorite-epidote-pyrite alteration. The age of the Oposura Volcanic Group is estimated at upper Cretaceous to Paleocene.

Field and laboratory examinations identified four types of mineralization. The most common type consists of beds of fine-grained sphalerite and galene hosted by fine crystal tuff. It is associated with chlorite, epidote, and important amounts of manganese, either as rhodonite or rhodochrosite. The mineralization is interpreted to have formed syngenetically with deposition of crystal tuffs and limestone in a shallow, sub-aqueous, volcano-sedimentary environment.

Marshak, R. Stephen
1979, MS Thesis A RECONNAISSANCE OF MESOZOIC STRATA IN NORTHERN YUMA COUNTY, SOUTHWESTERN ARIZONA. (110p)
Support: Bert S. Butler Scholarship Fund (partial).
Thesis Advisor: Peter J. Coney.

89

This study reports on the geology of Mesozoic sedimentary rocks in five mountain ranges of northern Yuma County. Outcrop features of these deposits are diverse, a consequence of

March 31, 1980

Sugarloaf Peak Prospect
Dick Ahearn

Samples 1-6
pieces of alunite, pyrophyllite,
2 pieces w. jarosite
1 w. alunite vnlt.

Sugarloaf Peak adit
7-8 samples from ~ vert. ~ N-S-striking
alunite vns. in adit
9+10 alunite from dump w. possible
rhodochrosite(?)

11 - from phyllic zone
qtz vnlt - Fe-stained dark to
maroon - confined to vnlt.
important because indicates was
some Cu around; if no Cu, the
py wea + get Fe st. flooding
the rock (stains whole
rk)

12 - phyllic zone
fresh py dissem.

OCTOBER 1983

PHASE I DRILL PROGRAM

AND

EVALUATION OF GOLD-SILVER POTENTIAL

SUGARLOAF PEAK PROJECT

QUARTZSITE, ARIZONA

Prepared for:

WESTWORLD INC.
4044 One Shell Plaza
Houston, Texas 77002

NORMAN E. DAUSINGER, JR.

9331 E. Magdalena Street
Tucson, Arizona 85710
(602) 296-5993

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. GEOCHEMISTRY	16
. GROUNDWATER DATA	19
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2	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-2
3	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-3
4	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-4
5	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-5
6	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-6
7	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-7
8	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-8
9	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-9
10	ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-10

ILLUSTRATIONS

Figure

1 VIEW OF DRILL SITES WW-1 AND WW-8

2 SUGARLOAF PEAK FROM VICINITY OF WW-1

3 VIEW OF DRILL SITE WW-3

4 DRILL SITES WW-2 AND WW-9

5 SUGARLOAF PEAK FROM DRILL SITE WW-3

6 DRILL SITE WW-10

7 GRAPHIC GOLD ASSAY LOGS, WW-2, WW-9, AND WW-4

8 GRAPHIC GOLD ASSAY LOGS, WW-8, WW-1, WW-5, AND WW-6

9 GRAPHIC GOLD ASSAY LOGS, WW-3, WW-7, AND WW-10

10 GRAPHIC SILVER ASSAY LOGS, WW-8, WW-1, WW-5, AND WW-6

11 GRAPHIC SILVER ASSAY LOGS, WW-2, WW-9, AND WW-4

12 GRAPHIC SILVER ASSAY LOGS, WW-3, WW-7, AND WW-10

13 NORTHWEST-SOUTHEAST CROSS SECTION, SUGARLOAF PEAK AREA

14 SOUTHWEST-NORTHEAST CROSS SECTION, SUGARLOAF PEAK AREA

APPENDICES

Appendix

A DRILL PROGRAM ASSAY CERTIFICATES

B PULP CHECK ASSAY CERTIFICATES

C FLOTATION TEST LOG SHEET

D MINERALOGICAL REPORT

E BASE METAL DISTRIBUTION REPORT, KERR-McGEE CORPORATION (1971)

F EXPLORATION POTENTIAL REPORT, KERR-McGEE CORPORATION (1973)

(Appendices - continued):

Appendix

G DRILL HOLE LOGS, KERR-McGEE CORPORATION (1971-1973)

H MAPS - KERR-McGEE CORPORATION (1973):
- Alteration Map
- Lead Geochemical Map
- Molybdenum/Lead Ratio Map

PLATES

Plates

1* CLAIM AND DRILL HOLE LOCATION MAP, SUGARLOAF PEAK PROJECT

2* RELATIONSHIP OF MAJOR GEOCHEMICAL ANOMALIES, SUGARLOAF PEAK PROJECT

3* ALTERATION-STRUCTURE MAP, SUGARLOAF PEAK PROJECT

4* GOLD GEOCHEMICAL MAP, SUGARLOAF PEAK PROJECT

(*in pocket)

PHASE I DRILL PROGRAM
AND
EVALUATION OF GOLD-SILVER POTENTIAL

SUGARLOAF PEAK PROJECT
QUARTZSITE, ARIZONA

CONCLUSIONS AND RECOMMENDATIONS

Review of recent data and interpretation of previous accumulated data with regards to precious metal potential at the Sugarloaf Peak Project permits the following conclusions:

1. The Phase I drilling program, consisting of 10 drill holes spaced 700 to 2,000 feet apart, to depths of 250 feet, indicates widespread, disseminated gold-silver mineralization associated with a phyllic alteration zone that is coincident to the surface gold geochemical anomaly and possibly with a third dimensional zinc anomaly to depths of 500 plus feet, as defined by older drill hole information. The target area of interest also appears to be associated with a structural feature consisting of an elongate dome trending northeasterly through the phyllic alteration zone (Plates 1, 2, 3, and 4; Figures 13 and 14; and Appendices A through H).

2. The drilling program indicated about 100 million tons containing 1.5 million ounces of gold and 25 million ounces of silver within this zone. At present metal prices, this translates into a gross value per ton that is equivalent to, or in excess of, the value per ton of material currently being processed in most of the porphyry copper mines in the southwestern United States.

3. At this early stage of exploration, results are inconclusive as to the economic potential of the project. Future exploration efforts will probably require 30 to 50 additional drill holes to greater depths for preliminary evaluation of economic potential.

4. Holes WW-1, WW-2, and WW-5 suggest a gradual increase in gold values with depth. Holes WW-2, WW-4, and WW-9 suggest a modest enrichment of silver at and below the oxide-sulfide zone **(Figures 7, 8, and 11)**.

5. In the vicinity of holes WW-2 and WW-9, a near surface zone of gold-silver mineralization is indicated with a gold grade of about 0.03 ounce/ton. Closer spaced drilling in this area may develop sufficient tonnage that could be amenable to heap/leach processes. Similar ore grades are currently being treated at the Zortman and Landusky properties in Montana (Engineering & Mining Journal, August 1983, p. 21) and at Tenneco's Manhattan Project in Nevada (Engineering & Mining Journal, September 1983, p. 184).

6. Considering present day modeling concepts, that is, argillic-bleached alteration zones that form a halo around and a cap above precious metal zones, the inference is

that additional potential may exist below the argillic alteration zone and, in particular, to the north and southwest of Sugarloaf Peak (Plate 3).

7. Logs of older holes S-1, SL-4, and SL-6 indicate favorable alteration up to depths of about 1,200 feet in the phyllic alteration zone (Plate 1 and Appendix G).

8. Holes WW-3, WW-7, WW-10, and SL-15 appear to limit the area of interest to the north and northwest. Propylitic alteration was penetrated at shallow depths in these holes (Plate 1).

9. Considering the extent of the area of interest and apparent widespread precious metal content, if future drilling continues to indicate relatively low-grade mineralization, in-situ mining methods should be given consideration.

Future exploration efforts should focus on the southern two-thirds of the phyllic alteration zone (Plate 3). The following recommendations are made:

1. Detailed geological mapping, scale 1 inch = 200 feet, within the phyllic zone of alteration and peripheral areas.

2. Deepen holes WW-1, WW-2, and WW-5 to at least 500 feet.

3. Drill a series of approximately 10 holes to 500-foot depths, 400-foot spacing in the east one-half of SP claims 63, 64, and 65 (Plate 1).

4. Evaluate the results for subsequent exploration planning.

5. Continue to collect basic groundwater data during drilling.

Using similar drilling methods as in the Phase I drilling program, this secondary phase would cost on the order of $120,000, including roadwork, drill site preparation, supervision, drilling, assaying, and field expenses.

PHASE I DRILL PROGRAM
AND
EVALUATION OF GOLD-SILVER POTENTIAL

SUGARLOAF PEAK PROJECT
QUARTZSITE, ARIZONA

INTRODUCTION

The Sugarloaf Peak project is located in west-central Arizona approximately six miles west of Quartzsite, Arizona. Westworld Inc.'s (Westworld) holdings consist of 84 lode claims within T. 4 N., R. 20 W., S½ of sections 33 and 34, T. 3 N., R. 20 W., sections 3 and 4, La Paz County, Arizona. Access to the claim area is less than 0.5 miles southeast of the Dome Rock Interchange, Interstate 10 **(Plate 1)**.

The area is part of the Middle Camp - Oro Fino Mining District where past activity has mainly been confined to sporadic and generally unsuccessful dry-washing of alluvial materials for placer gold (Keith, 1978).

In the past, the area has drawn the attention of a number of companies as a potential deep porphyry copper deposit. During 1962 through 1971, Congdon & Carey drilled more than 14,500 feet of rotary and diamond drill holes in the general area, including 19 holes within the present claim block **(Plate 1; Appendices E, F, and G)**. During 1971-1973, Kerr-McGee Corporation (Kerr-McGee), Oklahoma City, Oklahoma, obtained holdings in the area, compiled the available Congdon & Carey data and undertook extensive geological mapping and geochemical sampling. Precious metal potential in

the area was virtually ignored during this interval, apparently due to market conditions at the time.

Subsequent review of Kerr-McGee's voluminous data on the area by the author, along with occurrences of placer gold and the characteristics of the alteration patterns, clearly suggested precious metal potential in the form of a "porphyry gold deposit". Review of the land status indicated that the area was generally open for staking and the claims were staked on behalf of Westworld in November 1981.

Initial field investigations were undertaken in January-February 1982, and consisted of geological mapping, geochemical sampling and analysis, and radiometric geophysical readings (Lundin, 1982a).

Beginning with Gold Fields Mining Corporation in March 1982, the project has drawn the attention of numerous mining companies. Most of these firms have collected rock chip geochemical samples for analysis. The data, totaling nearly 1,000 samples, are summarized on **Plates 2** and **4** and indicate an anomalous gold zone approximately 7,000 feet by 3,500 feet trending northwest across the claim block.

In April 1983, Westworld undertook a Phase I drilling program consisting of 10 widespread percussion holes to 250-foot depths for the purpose of obtaining subsurface precious metal data at shallow depths within the anomalous gold zone. The drilling program indicated disseminated gold-silver values throughout the target zone, but was inconclusive with respect to economic potential.

Areas of existing lode conflicts within the claim block are shown on **Plate 4**.

This report is an attempt to summarize and incorporate all previous available data into an evaluation of precious metal potential within the project area.

PHASE I DRILLING PROGRAM

Phase I drill site selection was based upon reinterpretation of accumulated data, including material from Congdon & Carey and Kerr-McGee during the period 1962-1973 when the Sugarloaf Peak area was tested as a potential deep porphyry copper target **(Appendices E, F, G, and H)**. Emphasis in selecting sites was placed upon alteration patterns in relation to possible disseminated gold mineralization, descriptive core logs by Kerr-McGee of Congdon & Carey drill holes S-1, SL-4, S-2, S-3, SL-5, and SL-15, and surface geochemical rock chip sampling.

The original intent was to drill 10 to 15 holes to 500-foot depths. Budget limitations curtailed the program to 10 holes to 250-foot depths spaced 700 to 2,000 feet apart **(Plate 1)**.

Ventures Drilling Company (Ventures), Tucson, Arizona, was contracted to undertake the drilling program using percussion methods. Hole diameter was 6-1/2 inches and two 10-pound samples were collected at five-foot intervals using Ventures' sample splitting procedures on site. One sample was sent to Jacobs Assay Office (Jacobs) in Tucson for gold-silver analysis; duplicates are in storage at Westworld's facilities at Old Tucson. In addition, character samples for each five-foot interval were collected in plastic vials for megascopic examination.

The drilling rig was mobilized on April 18, 1983 and drilling was completed by May 1, 1983.

By mid-May, assay results had been received for all the holes from Jacobs. Rejects from the samples are in storage at Jacobs' facilities. Subsequently, 51 pulp samples were selected for check assays at Skyline Labs, Inc. (Skyline), Tucson, Arizona. Assay results, including check assays for drill holes WW-1 through WW-10 are given in **Tables 1** through **10**.

Assay certificates from Jacobs and Skyline are incorporated in Appendices A and B.

In general terms, the gold assays by Jacobs and Skyline compared favorably; however, silver assays were completely divergent. Jacobs detected an average of about 0.30 ounces/ton silver while Skyline's comparitive assays were less than 0.01 ounces/ton silver. As a result, Jacobs volunteered to run a flotation test on a composite sample from hole WW-10 to check the silver content. The check assay confirmed a silver content of about 0.25 ounces/ton (Appendix C).

Using Jacobs' assay results and a cutoff of 0.01 ounce gold/ton, a brief statistical analysis of the drilling-assay results reveal the following:

HOLE NUMBER	GOLD CONTENT (ounce/ton)	SILVER CONTENT (ounce/ton)	THICKNESS (feet)
WW-2	0.0198	0.221	105
WW-9	0.0195	0.338	145
WW-8	0.0155	0.301	205
WW-1	0.0146	0.281	105
WW-4	0.0129	0.225	60
WW-5	0.0125	0.267	130
WW-7	0.0109	0.256	40
WW-3	0.0107	0.225	30
WW-10	0.0105	0.547	75

While the precious metal contents above do not translate into ore, the superficial, wide-spaced initial drilling program does indicate a gold-silver enriched system containing about 1.5 million ounces of gold and 25 million ounces of silver in a volume of about 100 million tons. The gross value per ton is equivalent, or in excess of, the present day per-ton value of most porphyry copper mines in the southwestern United States.

Holes WW-2 and WW-9 suggest that closer spaced drilling in the general area may indicate a near-surface zone of moderate tonnage amenable to heap-leaching. In addition, holes WW-2, WW-5, and WW-1 show increasing gold values with depth and should be deepened (all holes were adequately plugged so that future re-entry could be facilitated).

Due to budget restraints, assays were obtained from "one-assay ton" samples. In the future, because of the spottiness of gold in nature, assays should be done in the range of up to "five-assay ton" samples.

GEOLOGY

In general, the rocks exposed within the area of interest are relatively homogeneous and are field-identified as meta-rhyolites/meta-quartz porphyry with various textural, structural, and alteration overprints. Preliminary mineralogic studies confirm this conclusion (Dudas, 1981; Appendix D).

Kerr-McGee's core logs of the holes within the area generally classify the rocks as schist and they correlate the metamorphosed volcanic rocks with Precambrian Yavapai schist. Previous work in the area by the Arizona Bureau of Mines considered the schist to be of Cretaceous age (Appendices E and F).

Gulf Mineral Resources Co.'s work in the area classifies the rocks in the Sugarloaf Peak area as schist of Tertiary-Cretaceous age that are cataclastically derived from older units, and locally underlain by an annealed low-angle fault surface.

Lundin (1982b) classifies the bedrock units as part of an intermediate-felsic extrusive volcanic system and identifies an arc-shaped zone of vent or moat breccias southwest of Sugarloaf Peak (Plate 3).

The siliceous cap rocks that generally occur at higher elevations in the Sugarloaf Peak area may be remnants of hot spring activity (siliceous sinter) that were subsequently recrystallized during metamorphism.

The sequence of geologic events is tentatively proposed as follows:

- Volcanism, possibly with associated hot spring activity.
- Low-grade metamorphism-cataclasis.
- Doming; fracturing.
- Alteration and mineralization.
- Partial collapse of the domal feature.
- Regional faulting.

Locally, the units are partially covered by Quaternary alluvial materials.

The Sugarloaf Peak area represents a rather unique geologic setting in comparison to the surrounding area and literally stands out like a "sore thumb" on aerial photography.

ALTERATION - STRUCTURE

Previous work by Kerr-McGee (Ahern, 1973; **Appendix F**) proposed that the Hancock Wash area (potassic alteration zone with copper mineralization located in the center of section 31, T. 4 N., R. 20 W., about 2.5 miles west of Sugarloaf Peak) is the lower portion of a once-vertical porphyry copper system now rotated 90 degrees to the east, thus making the Sugarloaf Peak area the upper part of a horizontal porphyry system. Recent interpretations tend to discount this hypothesis. The two areas are considered to be two separate systems with the Hancock Wash area being a porphyry copper type occurrence and the Sugarloaf Peak area being a "porphyry" gold type occurrence.

Fault interpretations as developed by Kerr-McGee are considered to be essentially valid with the exception being that the Sugarloaf Peak block (NW¼ section 3) is interpreted as being elevated in respect to the block to the northwest. This is a reversal of Kerr-McGee's earlier interpretation **(Plate 3; Appendix H)**. These post-alteration/mineralization faults appear, in part at least, to have developed near or coincident to alteration boundaries and may be a rejuvenation of older, structurally weak zones that existed during volcanism and doming **(Plate 3)**.

The most significant structure within the zone of interest is a northeast-southwest elongate dome produced by vertical or near-vertical tectonics. Tension fractures, now filled with quartz, developed during up-arching, one set being longitudinal (parallel to the northeast-southwest axis of uplift) with a weaker set of cross-joints developed normal to the axis **(Plate 3; Figures 13 and 14)**.

Regional foliation strikes northwest, generally dipping to the north, and is considered to be parallel to original bedding. A reversal of the dip is present in the northern part of the area and foliation is variable

within the phyllic zone of alteration (in essence, the central part of the dome) and generally is relatively flat or dips gently. This is attributed to the apparent passive nature of the doming and subsequent partial collapse of the dome. Foliation is frequently reported to be normal to the core axis in many of the prior holes within the domal structure **(Appendix G)**.

Recent shallow holes drilled by Westworld (WW-3, WW-7, and WW-10) and review of Kerr-McGee's logs of prior holes, S-2, S-3, SL-4, SL-5, SL-6, and SL-15, indicate a plunge of the favorable phyllic alteration zone to the south-southeast in the general direction of Sugarloaf Peak. The surface alteration patterns suggest a similar structural trend in that the argillic zones are relatively narrow to the north and wide in the apparent "hanging wall" zone to the south **(Plate 3)**.

The vent-breccia feature southwest of Sugarloaf Peak is coincidental to several geochemical samples high in gold and perhaps reflects leakage from the gold-rich system at depth **(Plates 2 and 3)**.

The overall gold geochemical anomaly coincides with the phyllic alteration zone. Kerr-McGee logs of prior holes within the phyllic alteration zone indicate favorable alteration in hole S-1 to 1,200 feet, in S-2 to about 300 feet, in S-3 to about 600 feet, in SL-4 to perhaps total depth of 790 feet, and in SL-6 to total depth of 696 feet, although SL-6 is considered to have been collared in phyllic alteration and subsequently penetrated a fault zone and argillic alteration below the fault **(Plates 1, 2, and 3; Appendix G)**.

MINERALIZATION

The nature of precious metal mineralization at Sugarloaf Peak is presently unknown but is assumed to be associated with pyritic mineralization and silicification within the phyllic zone of alteration **(Plate 3)**. Previous work by Kerr-McGee, including analysis of older drill holes, define a zone within the phyllic alteration that contains in excess of 1,000 ppm (parts per million) zinc from the surface to at least a depth of 500 feet that may be associated with precious metal mineralization (logs S-1, SL-4, SL-6; **Appendix G**). Pyrite occurs along schistosity planes, in quartz veins and veinlets, and as disseminations.

The Arizona Bureau of Mines reports that the Leadville Mine, located in the southeast corner of Sugarloaf Peak Claim 64, produced 360 tons of ore during 1947-1948 averaging about 17 percent lead, 0.7 percent zinc, 0.5 ounce silver/ton, and 0.06 ounce gold/ton. Minor occurrences of bismuth, antimony, mercury, and molybdenum are also reported in the area (Keith, 1978).

GEOCHEMISTRY

Geochemical sampling data are illustrated on **Plates 2** and **4**. In addition, copies of Kerr-McGee's geochemical maps (1973) are included in **Appendix H**.

The mercury anomalies shown on **Plate 2** are approximately located based on a verbal description by Gulf Minerals personnel in late 1982.

The following tabulation summarizes the geochemical surface sampling results since recognition and acquisition of the area as a possible precious metal target in November 1981:

FIRM	TOTAL SAMPLES	ROCK CHIP SAMPLES	SOIL SAMPLES	REMARKS
				Samples analyzed for:
Westworld	226	96	130	Au - range <.02 to 3.33 ppm; 5 samples of 1.40, 1.75, 1.90, 2.80, and 3.33 ppm. Ag - range <.20 to 24 ppm. As - range <10 to 110 ppm. Zn - range <5 to 1,800 ppm.
Felmont	59	59	---	Au - range .005 to 3.50 ppm; 5 samples of 1.05, 1.55, 2.70, 3.10, and 3.50 ppm. Ag - range 0.2 to 12.0 ppm. As - range 2 to 50 ppm. Hg - range 0.010 to 1.44 ppm.

FIRM	TOTAL SAMPLES	ROCK CHIP SAMPLES	SOIL SAMPLES	REMARKS
Newmont	164	164	---	Au - range 0.01 to 10.0 ppm; 12 samples of 1.10, 1.10, 1.20, 1.30, 1.40, 1.90, 2.00, 2.30, 2.30, 2.60, 6.60, and 10.0 ppm. Cu - range 2 to 990 ppm (one sample).
AMAX	58	43	15	Au - range <.01 to 5.92 ppm; 6 samples of 1.97, 2.15, 3.48, 3.65, 4.90, and 5.92 ppm. Ag - range <.2 to 5.5 ppm. Hg - range 0.1 to 1.6 ppm. Sb - range <0.5 to 6.0 ppm. As - range <2 to 178 ppm.
Utah	286	286	---	Au - range <.01 to 6.44 ppm; 9 samples of 1.36, 1.52, 1.68, 2.19, 2.23, 2.43, 3.50, 3.74, and 6.44 ppm. Ag - Range <.2 to 9.4 ppm. As - range <1 to 175 ppm. Sb - range <1 to 25 ppm. Bo - range <10 to 30 ppm. Bi - range 1 to 14 ppm.
Atlas	36	36	---	Au - range <.02 to 3.70 ppm; 3 samples of 1.10, 1.30, and 3.70 ppm.
AMOCO	168	168	---	Au - range 5 ppb to 3,860 ppb; 5 samples of 1,100, 1,100, 1,650, 1,730, and 3,860 ppb.

TABLES

FIRM	TOTAL SAMPLES	ROCK CHIP SAMPLES	SOIL SAMPLES	REMARKS
AMSELCO	26	26	---	Au - range TR to 0.227 ounce/ton; 3 samples of .025, .055, and 0.227 ounce/ton. Ag - range <.05 to 0.50 ounce/ton.

The most significant anomalies in order of importance are:

1. An extensive gold anomaly trending northwesterly across the claim block from the vicinity of Sugarloaf Peak. Values in excess of 1.0 ppm tend to generally cluster in the southern, western, and eastern portions of the overall anomaly and also coincide with the phyllic zone of alteration (Plates 2, 3, and 4).

2. A third dimensional zinc anomaly in excess of 1,000 ppm to a depth of at least 500 feet, as defined by Kerr-McGee's logs of prior holes S-1, SL-4, and S-6 (Plate 1; Appendix G). This is coincident to both the zone of higher gold geochemical values and the zone of phyllic alteration (Plates 2, 3, and 4) and suggests a possible gold-zinc association.

3. A lead anomaly in excess of 500 ppm on the southern and southwestern flank of Sugarloaf Peak, as determined by Kerr-McGee in 1973 (Plate 2; Appendix H). This may represent lateral and/or vertical metal zoning.

4. A molybdenum anomaly in excess of 100 ppm located along the northern rim of the broad gold anomaly (Plate 2).

GROUNDWATER DATA

A Soiltest Sounder was utilized to measure depth to water below land surface in several of the exploration holes upon completion to planned depths of 250 feet. Measurements obtained were as follows:

HOLE NO.	DEPTH TO WATER (feet)
WW-3	107.0 - 113.0
WW-10	119.5 - 120.0

During drilling, the drill operator estimated that holes WW-4, WW-7, and WW-10 were making water in the range of 10 to 30 gallons per minute. Holes that were "wet" included WW-1, WW-3, WW-4, WW-7, and WW-10.

Basic water data in the vicinity of the project were found to be negligible in the Arizona Department of Water Resources files. Most existing wells are shallow, of small diameter, and are used for stock or domestic purposes. Data obtained are briefly summarized as follows:

TOWNSHIP	RANGE	SECTION	REMARKS
3	19	9	
(B-3-19)9ccc			Drilled to depth of 152.5 feet; 6-inch casing; reported dry in 1974.
3	19	19	
(B-3-19)19acc			Four wells reported in this section; 3 reported dry in 1974. Fourth well 155.5 feet deep; 8-inch casing; approximately one gpm discharge. Depth to water in 1974 - 133 feet.
(B-3-19)19acd			
(B-3-19)19daa			
(B-3-19)19dad - Beamer Well			

TOWNSHIP	RANGE	SECTION	REMARKS
3	19	20	
(B-3-19)20cbb - Kuehn Well			Depth drilled, casing size - unreported. Depth to water in 1974 - 111 feet.
3	19	29	
(B-3-19)29aab$_1$			Six wells reported in this section. Depths drilled reported as 180 feet; 8-inch casing. Depths to water in 1974 reported from 116 to 152 feet.
(B-3-19)29aab$_2$			
(B-3-19)29aba			
(B-3-19)29bcc$_1$			
(B-3-19)29bcc$_2$			
3	20	16	
(B-3-20)16dba			Drilled to 265 feet. Depth to water in 1971 reported as 120 feet.

As a precaution and step toward future water supply, it may be useful to run a corridor of mine claims from the southeastern corner of the claim block parallel to the pipeline road in a southeasterly direction to the vicinity of Tyson Wash in sections 17 and 20, T. 3 N., R. 19 W. This would entail a distance of approximately 3.5 miles or 12 to 13 lode claims oriented lengthwise in the southeasterly direction. A land status check and legal opinion should be sought prior to staking of the claims. The motive is for the purpose of avoiding right-of-way access conflicts for future water supply.

Basic water data should be collected during future exploration drilling efforts at Sugarloaf Peak.

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*Note: Private reports.

TABLE 1. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-1

Claim - W½ of SP-38
SE¼, SE¼, Section 33,
T. 4 N., R. 20 W.

Elevation - 1,235 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.006	.10	Weathered	Leached zone, Fe Ox, jarositic staining, flow banding, schistic - platy. Light gray.
5-10	.010	.10	Arg-Sil	
10-15	.001	.05		
15-20	Tr	.20		
20-25	.006	.25		
25-30	.006	.25		
30-35	.007	.60		
35-40	.009	.35	Arg-Sil	Transitional zone, mixed ox-sul.
40-45	.010	.30		Sulfide zone, 2-3% diss. py.
45-50	.012	.45		
50-55	.010	.35		
55-60	.005	.15		
60-65	.021	.30	Ph	Skyline check, .010 Au, <.01 Ag.
65-70	.010	.10		
70-75	.004	.05		
75-80	.004	.50		
80-85	.010	.30		
85-90	.015	.40		Notable gypsum.
90-95	.010	.20		
95-100	.004	.05		
100-105	.005	.30		
105-110	.005	.30		
110-115	.005	.90		
115-120	.005	.30		

TABLE 1. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-1

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
120-125	.005	.30		
125-130	.023	.35	Ph	
130-135	.017	.30		
135-140	.020	.40		Skyline, .010 Au, <.01 Ag.
140-145	.010	.40		
145-150	.015	.40	Ph	Increased sil?
150-155	.010	.30		
155-160	.015	.35		
160-165	Tr	.30		
165-170	.005	.20		
170-175	.001	.30		
175-180	.005	.30		
180-185	.002	.35		
185-190	.005	.50		Influx of water from 180 feet.
190-195	.005	.10	Ph	Strong sil, sericite to total depth. Fragments finer.
195-200	.005	.10		
200-205	.020	.10		Skyline, .005 Au, <.01 Ag.
205-210	.003	.10		
210-215	.004	.30		
215-220	.001	.05		
220-225	.020	.10		Skyline, .015 Au, <.01 Ag.
225-230	.010	.10		
230-235	.005	.05		
235-240	.002	.55		
240-245	.025	.45		Skyline, .005 Au, <.01 Ag.
245-250	.014	.15		See Appendices; Kerr-McGee core log, S-1, same location. Qz-sericite-alunite-clay alteration reported to 1,200 feet. Probable propylitic alteration below.

TABLE 2. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-2

Claim - SE¼ of SP 64
NE¼, NW¼, Section 4,
T. 3 N., R. 20 W.

Elevation - 1,260 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.007	.35	Weathered	Leached zone, Fe Ox, jarosite staining, abundant clay-Qz, yellow-orange color.
5-10	.004	.30	Arg-Sil	
10-15	.007	.15		
15-20	.013	.20		
20-25	.012	.15		
25-30	.034	.30		Skyline, .010 Au, <.01 Ag.
30-35	.011	.10		
35-40	.039	.30		Skyline, .040 Au, <.01 Ag.
40-45	.026	.30		Skyline, .015 Au, <.01 Ag.
45-50	.007	.30	Arg-Sil	Transitional zone, ox - diss. py. 1-2%, abund. clay, Whitish-gray.
50-55	.013	<.05	Ph	Sulfide zone, 1-2% diss. py.
55-60	.012	.45		
60-65	.009	.40		
65-70	.014	.30		
70-75	.007	.30		
75-80	.006	.40		Less clay alteration.
80-85	.007	.30		Increasing Argillic alteration.
85-90	.021	.30		Skyline, .020 Au, <.01 Ag.
90-95	.013	.25		
95-100	.004	.30		
100-105	.004	.30		
105-110	.008	.35		
110-115	.027	.45		Skyline, .005 Au, <.01 Ag.
115-120	.004	.15		

TABLE 2. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-2

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
120-125	.006	.20	Ph	Sulfide, 1-2% diss. py., light gray color.
125-130	.003	.15		
130-135	.001	.25		
135-140	.002	.35		
140-145	.004	.20		
145-150	.002	.10		
150-155	.008	.10		
155-160	.003	.15		
160-165	.013	.15		
165-170	.017	.20		Increase in sulfide, 4-5% py.
170-175	.002	.05		1-2% diss. py.
175-180	.003	.10		
180-185	.005	.05		
185-190	.005	<.05		
190-195	.001	<.05		
195-200	Tr	.05		Minimal moisture from 205 feet to total depth.
200-205	.001	.10		
205-210	.005	.10		
210-215	.015	.05		
215-220	.020	.25		Skyline, .010 Au, <.01 Ag.
220-225	.010	.25	Ph	Increasing sil, minor epidote?
225-230	.010	.25		
230-235	.008	.10		
235-240	.010	.15		Schistic fabric noticeable.
240-245	.050	.10		Skyline, .030 Au, <.01 Ag.
245-250	.035	.15		Skyline, .035 Au, <.01 Ag.
				See Appendices; Kerr-McGee core log, SL-4 located 500 feet to north. Strong Qz-sericite-alunite alteration to 560 feet, silification to 700 feet.

TABLE 3. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-3

Claim - NE corner of SP-61
NE¼, SW¼, Section 33,
T. 4 N., R. 20 W.

Elevation - 1,200 (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.010	.25	Weathered	Leached zone, Fe Ox, jarositic staining, yellow-orange to rust color.
5-10	.003	.20	Arg-Sil	
10-15	.001	.20		
15-20	.004	.20		
20-25	.002	.35		
25-30	.002	.30		
30-35	.006	.25		
35-40	.003	.25		
40-45	Tr	.20		
45-50	Tr	.30		
50-55	.003	.30		
55-60	.002	.25		
60-65	.002	.35		
65-70	.002	.40	Arg-Sil	Transitional zone, 1-2% py, strong clay, medium gray color.
70-75	.003	.50		
75-80	.002	.25	Prop	Sulfide zone, 1-2% py, moderate clay, dark gray
80-85	.003	.30		
85-90	.001	.35		Increased py.
90-95	.010	.20		
95-100	.010	.25		Strong epidote.
100-105	.004	.50		
105-110	.007	.30		
110-115	.008	.30		
115-120	.006	.20		
120-125	.007	.25		

TABLE 3. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-3

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
125-130	.006	.30		
130-135	.005	.35	Prop.	Water encountered.
135-140	.010	.40		
140-145	.001	.20		Notable epidote.
145-150	.002	.30		
150-155	.004	.30		
155-160	.002	.05		
160-165	.003	.35		
165-170	.002	.45		
170-175	.005	.35		
175-180	.005	.40		Qz veining.
180-185	.010	.40		
185-190	.003	.35		
190-195	.004	.30		
195-200	.010	.15		
200-205	.003	.30		
205-210	.004	.20		
210-215	.005	.25		
215-220	.005	.30		
220-225	.005	.20		
225-230	.005	.25		
230-235	.006	.15		
235-240	.014	.10		
240-245	.002	.05		
245-250	.004	.30		Nearest prior hole is S-2, 400 feet to SW. See Kerr-McGee log; Appendices. Water level measurement, 113 feet below land surface.

TABLE 4. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-4

Claim - SE corner of SP-80
SW¼, SW¼, Section 33
T. 4 N., R. 20 W.

Elevation - 1,260 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.010	.15	Weathered	Leached zone, Fe Ox, jarositic staining, yellow-orange color, Schistose.
5-10	.002	.15	Arg-Sil	
10-15	.001	.25		
15-20	.002	.25		
20-25	.003	.20		
25-30	.002	.20	Arg-Sil	Strong clay, pale yellow-orange to 50 foot depth.
30-35	.005	.30		
35-40	.010	.15		
40-45	.010	.15		
45-50	.006	.25		Transitional zone, diss. py., whitish color.
50-55	.019	.35		
55-60	.004	.40	Ph	Sulfide zone, 1-2%, diss. py., strong clay, white-gray color.
60-65	.004	.35		
65-70	.009	.35		
70-75	.014	.35		
75-80	.002	.30		Less clay, increasing sil., medium gray color to 140 feet.
80-85	.004	.15		
85-90	.003	.10		
90-95	.011	.20		
95-100	.008	.25		
100-105	.004	.30		
105-110	.003	.25		
110-115	.011	.10		
115-120	.014	.25	Ph	2-4% py, general increase in sulfides to 150 feet.
120-125	.006	.15		

TABLE 4. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-4

INTERVAL (feet	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
125-130	.003	.25		
130-135	.012	.20		
135-140	.006	.65		
140-145	.007	.10		
145-150	.005	.15		
150-155	.008	.15		
155-160	.012	.30	Ph	1-2% diss. py., clay, black opaque diss. mineral, light gray color.
160-165	.017	.30		
165-170	.005	.20	Prop.	Increased py., 2-4%, dark gray.
170-175	.009	.05	Ph	1-2% py., medium gray.
175-180	.004	.10		
180-185	.003	.30		
185-190	.004	.25		
190-195	.005	.15		
195-200	.015	.20		Siliceous felsitic tuff; water encountered; medium gray color.
200-205	.007	.05		
205-210	.003	.10		
210-215	.005	.30	Ph	Increase in clay.
215-220	.007	.20	Ph	
220-225	.004	<.05		
225-230	.006	<.05		
230-235	.002	.10		
235-240	.001	.15		1-2% py., minor clay, schistose; medium-gray color.
240-245	.003	.20		
245-250	.004	.10		

TABLE 5. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-5

CLAIM - SW corner of SP-40
NE¼, NE¼, Section 4
T. 3 N., R. 20 W.

ELEVATION - 1,280 feet (approximate)

INVERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.008	.45	Weathered	Leached zone, Fe Ox, jarositic staining, yellowish-orange color.
5-10	.005	.45	Sil-Arg	
10-15	.003	.45		
15-20	.014	.35		Skyline, .005 Au, <.01 Ag, .02% Zn, .06% Pb.
20-25	.020	.30		
25-30	.009	.55		Transitional zone, diss. py., Fe Ox.
30-35	.010	.40		
35-40	.012	.35		Sulfide zone, 1-2% diss. py., black opaque mineral, light gray.
40-45	Tr	.30	Ph	
45-50	.010	.35		Notable sericite.
50-55	.015	.10		Skyline, .020 Au, <.01 Ag, .08% Zn, .36% Pb.
55-60	.019	.40		Notable gypsum.
60-65	.010	.20		
65-70	.006	.15	Ph	
70-75	.006	.15		
75-80	.011	.20		Gypsum veinlets.
80-85	.004	.25		
85-90	.006	.35		1-2% diss. py., black opaque, gypsum, strong clay, whitish.
90-95	.010	.20		
95-100	.003	.20		
100-105	.004	.40		
105-110	.004	.35		
110-115	.003	.40		
115-120	.004	.05		Strong clay, black opaque mineral.
120-125	.005	.10		

TABLE 5. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-5

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
125-130	.008	.20		
130-135	.007	.55	Ph	
135-140	.007	.60		1-2% diss. py., black diss. opaque, strong clay, grayish-white.
140-145	.010	.65		
145-150	.007	.30		
150-155	.010	.20		
155-160	.012	.20		Decreased clay.
160-165	.008	.35	Ph	
165-170	.012	.25		No opaque black mineral, dark gray.
170-175	.010	.25		1-2% diss. py., black diss. opaque mineral, light gray color to total depth. Moderate clay.
175-180	.010	.20		
180-185	.005	.05		
185-190	.002	.20		
190-195	.008	.15		
195-200	.009	.35		Increase in py.
200-205	.012	.25		
205-210	.010	.15		
210-215	.012	.20		
215-220	.013	.25		
220-225	.014	.30		
225-230	.011	.25		
230-235	.011	.35		Slight increase in py.
235-240	.012	.35		
240-245	.010	.15		Skyline, .015 Au, <.01 Ag, .10% Zn, .12% Pb.
245-250	.012	.10		Skyline, .010 Au, <.01 Ag, .01% Zn, .04% Pb. Dry hole.

ILLUSTRATIONS

TABLE 6. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-6

CLAIM - NE part of SP-40
NW¼, NW¼, Section 3
T. 3 N., R. 20 W.

ELEVATION - 1,230 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.001	.35	Weathered	Leached zone, Fe Ox, jarositic staining, yellowish color.
5-10	Tr	.45	Arg-Sil	
10-15	.001	.35		
15-20	.001	.30		
20-25	Tr	.20		
25-30	Tr	.20		
30-35	Tr	.20		
35-40	.006	.20		
40-45	.001	.30		
45-50	.002	.10		
50-55	.002	.20		
55-60	Tr	<.05		
60-65	.002	.20		
65-70	.002	.15		Transitional zone, diss. py., abundant Qz, light-gray color.
70-75	.002	.35		
75-80	.002	.50	Ph	Sulfide zone, abundant Qz, clay, light-gray.
80-85	.002	.25		
85-90	.002	.40		1-2% diss. py., black opaque mineral.
90-95	.002	.20		
95-100	.003	.20		Increased Sil.
100-105	.002	.20		Clay zone.
105-110	.003	.20		1-2% diss. py., black opaque mineral.
110-115	.003	.25		
115-120	.003	.25		Strong clay alteration.
120-125	.003	.35		

TABLE 6. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-6

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
125-130	.002	.30		
130-135	.003	.30	Ph	1-2% diss. py., black opaque to 160 feet.
135-140	.001	.25		
140-145	.002	.30		
145-150	.003	.20		
150-155	.006	.20		
155-160	.005	.40		
160-165	.005	.25		
165-170	.008	.25	Ph	Skyline, .010 Au, <.01 Ag, .05% Zn, .27% Pb.
170-175	.008	.35		Skyline, .010 Au, <.01 Ag, .06% Zn, .31% Pb.
175-180	.005	.30		No black opaque mineral to total depth.
180-185	.004	.30		
185-190	.004	.35	Arg-Ph?	Fault zone?
190-195	Tr	.50		
195-200	Tr	.30		
200-205	.003	.35		
205-210	.001	.35		
210-215	.003	.30		
215-220	.006	.35		
220-225	.008	.25		Skyline, .010 Au, <.01 Ag, .05% Zn, .14% Pb.
225-230	.009	.50		Skyline, .005 Au, <.01 Ag, .01% Zn, .21% Pb.
230-235	.002	.15		Abundant clay 225-230 feet.
235-240	Tr	.35		
240-245	Tr	.05		Abundant clay.
245-250	.002	.35		Dry hole. Kerr-McGee core log, SL-6, same location as WW-6 shows generally strong argillic alteration to total depth of 696 feet, see Appendices.

TABLE 7. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-7

CLAIM - SE part of SP-82
SW¼, Section 33
T. 4 N., R. 20 W.

ELEVATION - 1,280 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.006	.30	Weathered	Leached zone, Fe Ox staining yellow-orange color.
5-10	.005	.35	Arg-Sil	
10-15	.007	.20		
15-20	.006	.25		
20-25	.006	.10		Moderate clay zone - fault?
25-30	.006	.25		
30-35	.007	.40		
35-40	.005	.30	Prop.	Sulfide zone, dark gray.
40-45	.006	.35		
45-50	.006	.20	Arg	Leached zone with clay, schistic.
50-55	.007	.35		
55-60	.005	.35	Prop.	Sulfide zone, dark gray.
60-65	.004	.30		
65-70	.005	.25		Abundant sulfides, py.
70-75	.005	.35		
75-80	.006	.35		
80-85	.004	.30		
85-90	.003	.25		Silicic, decreased py.
90-95	.010	.15		
95-100	.012	.10		Qz veining?
100-105	.010	.20		
105-110	.008	.20		
110-115	.012	.25		
115-120	.010	.20		
120-125	.006	.35		

TABLE 7. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-7

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
125-130	.007	.30		
130-135	.010	.30	Prop.	Dark gray.
135-140	.006	.10		Clay zone, fault?
140-145	.003	.30		
145-150	.003	.25		
150-155	.002	.30		
155-160	Tr	<.05		Abundant Qz, veins?; light gray to 190 feet.
160-165	.002	.30		
165-170	.002	.30		
170-175	.006	.40		
175-180	.003	.40		
180-185	.003	.50		
185-190	.010	.55		
190-195	.001	.35		Dark gray.
195-200	.006	.25		Water encountered.
200-205	.005	.25		
205-210	.002	.25		
210-215	.008	.35		
215-220	.010	.30		Clay, fault zone?
220-225	.006	.25		
225-230	Tr	.35		
230-235	Tr	.30		
235-240	.001	.40		
240-245	.002	.20		
245-250	.009	.55		Epidote.

TABLE 8. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-8

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
120-125	.026	.25		Skyline, .010 Au, <.01 Ag.
125-130	.020	.35	Ph	Skyline, .025 Au, <.01 Ag.
130-135	.015	.20		
135-140	.004	.30		
140-145	.015	.35		
145-150	.014	.30		
150-155	.015	.15		
155-160	.020	.05		Skyline, .030 Au, <.01 Ag.
160-165	.021	.30		Skyline, .015 Au, <.01 Ag.
165-170	.020	.35		Skyline, .020 Au, <.01 Ag.
170-175	.022	.45		Skyline, .010 Au, <.01 Ag.
175-180	.021	.50		Skyline, .030 Au, <.01 Ag.
180-185	.022	.25		Skyline, .020 Au, <.01 Ag.
185-190	.012	.35	Ph	Increasing sil, decreasing sulfides to total depth.
190-195	.012	.35		
195-200	.028	.35		
200-205	.014	.45		
205-210	.013	.40		
210-215	.011	.45		
215-220	.010	.50		
220-225	.014	.35		
225-230	.010	.45		
230-235	.013	.40		
235-240	.012	.30		
240-245	.010	.40		
245-250	.009	.45		Dry hole.

TABLE 9. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-9

CLAIM - South-center of SP-63
SE¼, SW¼, Section 33
T. 4 N., R. 20 W.

ELEVATION - 1,280 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
0-5	.024	.30	Weathered	Skyline, .015 Au, <.01 Ag.
5-10	.032	.15	Sil-Arg	Skyline, .010 Au, <.01 Ag.
10-15	.022	.25		Skyline, .020 Au, <.01 Ag.
15-20	.006	.20		
20-25	.028	.25		Skyline, .030 Au, <.01 Ag.
25-30	.013	.25		Leached zone, 0-45 feet, Fe Ox.
30-35	.008	.15		
35-40	.041/.038	.25/.20		Skyline, .045 Au, <.01 Ag.
40-45	.015	.50		Transitional zone.
45-50	.017	.45	Ph	Sulfide zone, 1-3% diss. py., grayish-white color, 45-85 feet.
50-55	.016	.50		
55-60	.016	.50		Slight increase in py., 85-125 feet, schistose, medium-gray color.
60-65	.007	.40		
65-70	.007	.40		
70-75	.013	.55		
75-80	.020	.55		Skyline, .015 Au, <.01 Ag.
80-85	.031	.55		Skyline, .030 Au, <.01 Ag.
85-90	.005	.30		
90-95	.028	.45		Skyline, .005 Au, <.01 Ag.
95-100	.011	.35		
100-105	.016	.30		
105-110	.033	.30		Skyline, .045 Au, <.01 Ag.
110-115	.020/.014	.20/.15		Skyline, .010 Au, <.01 Ag.
115-120	.007	.15		
120-125	.015	.15	Sil-Ph	Finely diss. py., 125-145 feet, local sil tuff, medium-gray color.
125-130	.010	.25		

TABLE 9. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-9

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag	ALTERATION	REMARKS
130-135	.021	.20	Ph	Skyline, .005 Au, <.01 Ag.
135-140	.010	.30		
140-145	.016	.25		
145-150	.004	.20		From 145-200 feet, finely diss. py. and black opaque mineral, platy fragments, flow structures around Qz eyes, light-gray.
150-155	.013	.30		
155-160	.010	.25		
160-165	.009	.25		
165-170	.006	.30		
170-175	.010	.35		
175-180	.019	.30		Moisture, 175-210 feet.
180-185	.005	.10		
185-190	.003	.15		
190-195	.003	.30		
195-200	.001	.15		
200-205	.002	.30		200-210 feet, diss. py., medium-gray.
205-210	.034	.45		Skyline, <.005 Au, <.01 Ag.
210-215	.009	.40		210-250 feet, diss. py., platy fragments, light-gray color.
215-220	.005	.25		
220-225	.004	.30		
225-230	.010	.35		
230-235	.003	.30		
235-240	.001	.30		
240-245	Tr	.40		
245-250	Tr	.10		

TABLE 10. ASSAY RESULTS AND DRILL LOGS - DRILL HOLE WW-10

CLAIM - Center of SP-61
SW¼, Section 33
T. 4 N., R. 20 W.

ELEVATION - 1,220 feet (approximate)

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
0-5	.006	.30	Weathered	Leached zone, Fe Ox staining, clay
5-10	.005	.50	Prop?	
10-15	.005	.40		
15-20	.010	.35		
20-25	.010/.006	.60/.20		Skyline, <.005 Au, <.01 Ag, .01% Zn, .10% Pb. Qz chips, veins or veinlets.
25-30	.010	.50		
30-35	.010	.55		
35-40	.012	.45		
40-45	.010	.45		
45-50	.009/.009	.60/.20		Skyline, .005 Au, <.01 Ag, <.01% Zn, .22% Pb.
50-55	.008	.60	Prop	Transitional zone, schistose, medium gray-brown.
55-60	.010	.10		Sulfide zone, diss. py., schistose, dark gray.
60-65	.005	.35		
65-70	.006	.25		3-5% py.
70-75	.006	.30		
75-80	.010	.50		
80-85	.002	.40		
85-90	.002	.25		
90-95	.001	.35		
95-100	.003	.30		
100-105	.006	.50		Little moisture, increase to 145 feet.
105-110	.005	.20		Bleb of MoS_2, cuttings fine.
110-115	.005	.30		
115-120	.010	1.50		Skyline, .005 Au, <.01 Ag, .05% Zn, .11% Pb.

TABLE 10. ASSAY RESULTS AND DRILL LOGS, DRILL HOLE WW-10

INTERVAL (feet)	...JACOBS... Au (oz/ton)	Ag (oz/ton)	ALTERATION	REMARKS
120-125	.002	<.05		Rock fabric, gneissic-like- to total depth.
125-130	.002	.20		
130-135	.012	.20		
135-140	.005	.10		
140-145	.006	.30		Influx of water.
145-150	.006	.90		
150-155	.009	.10		
155-160	.010	.20		Clay zone, fault?
160-165	.012	.20		
165-170	.010	1.00		Skyline, .005 Au, <.01 Ag, .01% Zn, .07% Pb.
170-175	.002	<.05		3-5% py., occasional Qz chips.
175-180	.002	.20		
180-185	.002	1.15		Skyline, <.005 Au, <.01 Ag, .02% Zn, .09% Pb.
185-190	.001	<.05		
190-195	.011	1.30		Skyline, <.005 Au, <.01 Ag, .01% Zn, .03% Pb.
195-200	.001	<.05		Increasing epidote to total depth.
200-205	.010	.30		
205-210	.001	.35		
210-215	.004	.35		
215-220	.004	.20		
220-225	.006	.40		
225-230	.004	.50		
230-235	.005	.25		
235-240	.001	.05		
240-245	.006	.20		
245-250	.005	.35		

FIGURE 1. TOP PHOTOGRAPH SHOWS VIEW OF DRILL SITES WW-1 AND WW-8 (left background) LOOKING SOUTHWEST. LOWER PHOTOGRAPH IS SITE WW-1. PIPE IN LEFT BACKGROUND IS SITE OF CONGDON & CAREY DIAMOND DRILLHOLE S-1, DRILLED IN 1967-1968 TO APPROXIMATELY 2,000-FOOT DEPTH.

FIGURE 2. SUGARLOAF PEAK AS VIEWED FROM THE VICINITY OF SITE WW-1 LOOKING SOUTH.

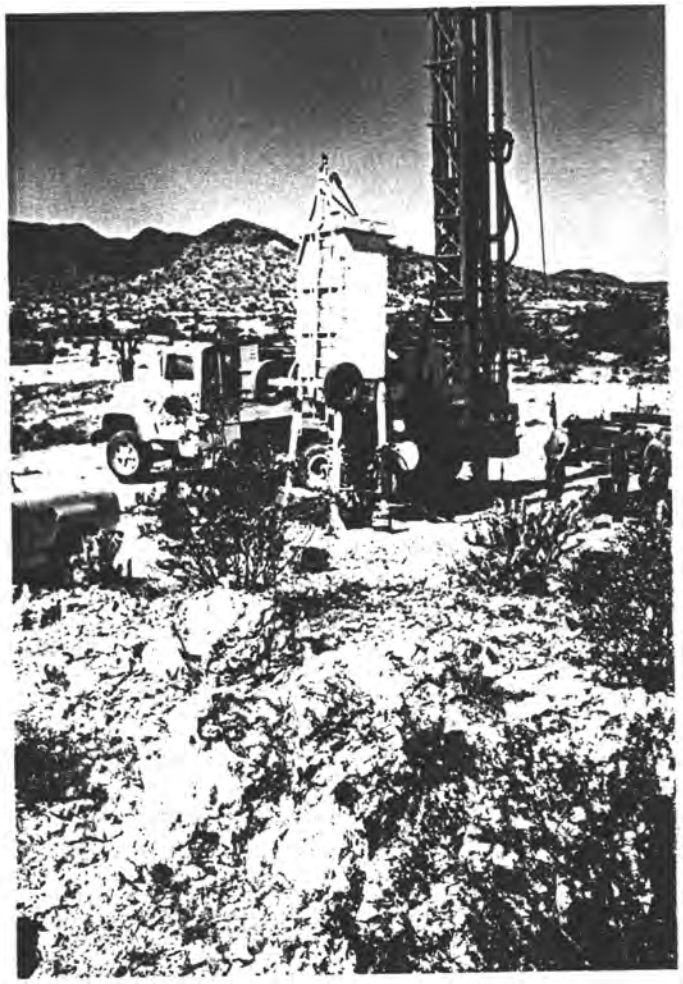


FIGURE 3. VENTURES DRILLING COMPANY RIG SET-UP AT SITE WW-3, VIEW LOOKING SOUTHWEST. PROPYLITIC ALTERATION ENCOUNTERED HERE AT SHALLOW DEPTH.

FIGURE 4. TRUCK IS AT SITE WW-2. SITE WW-9 IS IN RIGHT BACKGROUND, TOP PHOTOGRAPH

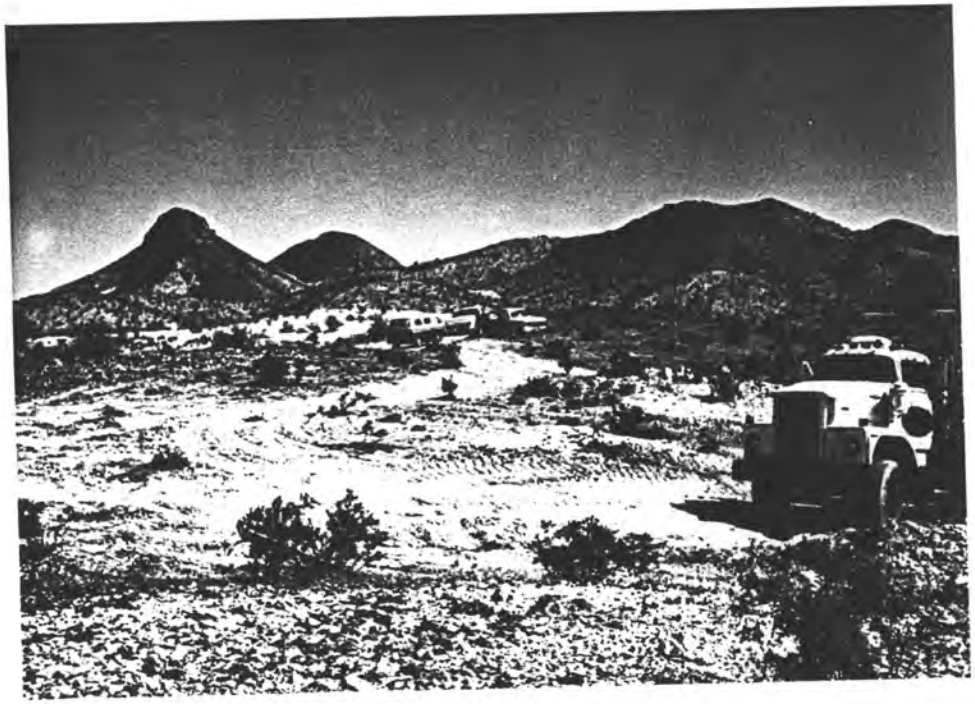


FIGURE 5. SUGARLOAF PEAK AS VIEWED FROM THE VICINITY OF SITE WW-3 LOOKING SOUTHEAST.

FIGURE 6. DRILL RIG SET-UP AT SITE WW-10. TOP PHOTOGRAPH LOOKING NORTHEAST, LOWER PHOTOGRAPH LOOKING SOUTHWEST.

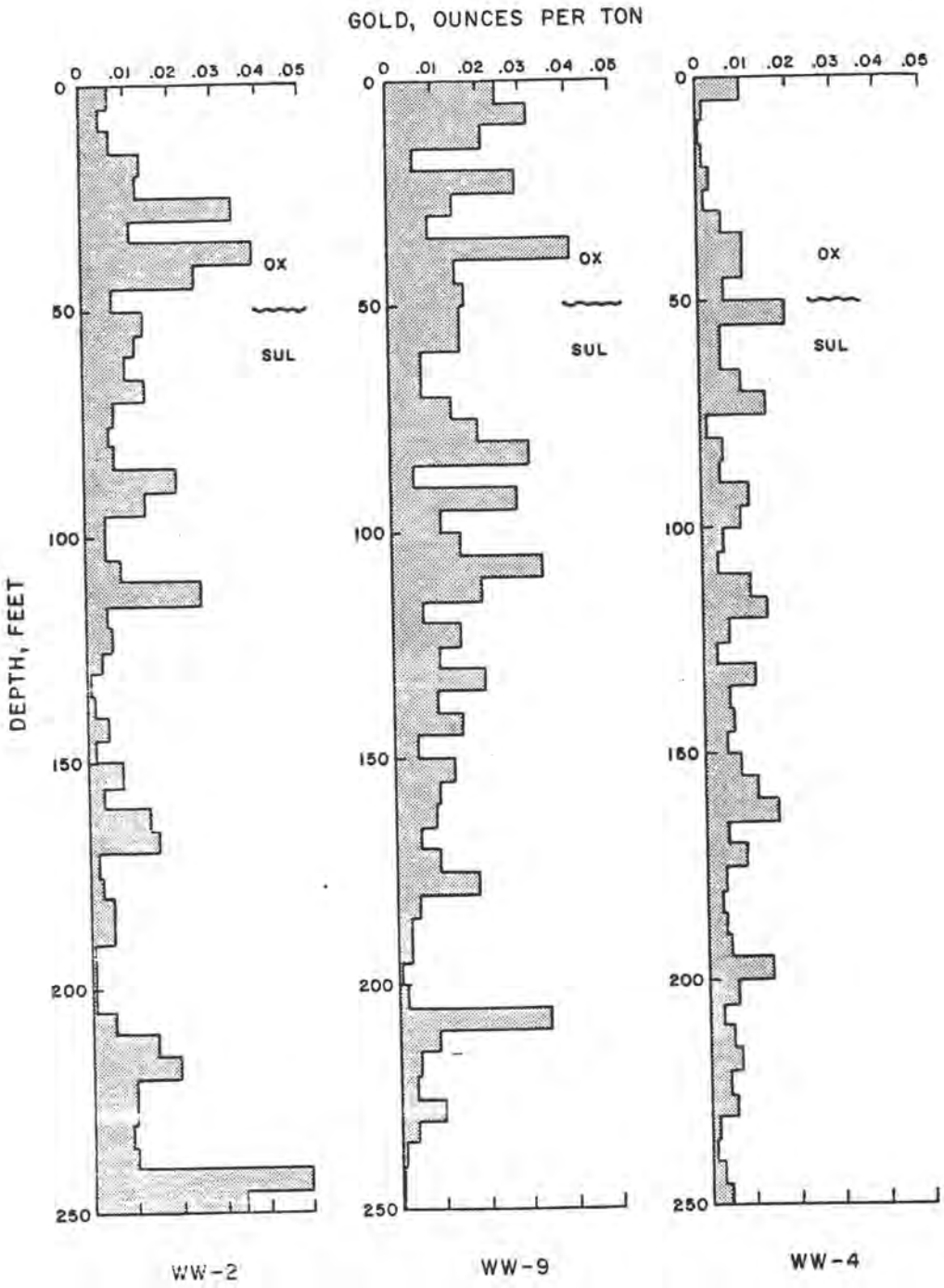


FIGURE 7. GRAPHIC GOLD ASSAY LOGS, HOLES WW-2, WW-9, AND WW-4

FIGURE 8. GRAPHIC GOLD ASSAY LOGS, HOLES WW-8, WW-1, WW-5, AND WW-6

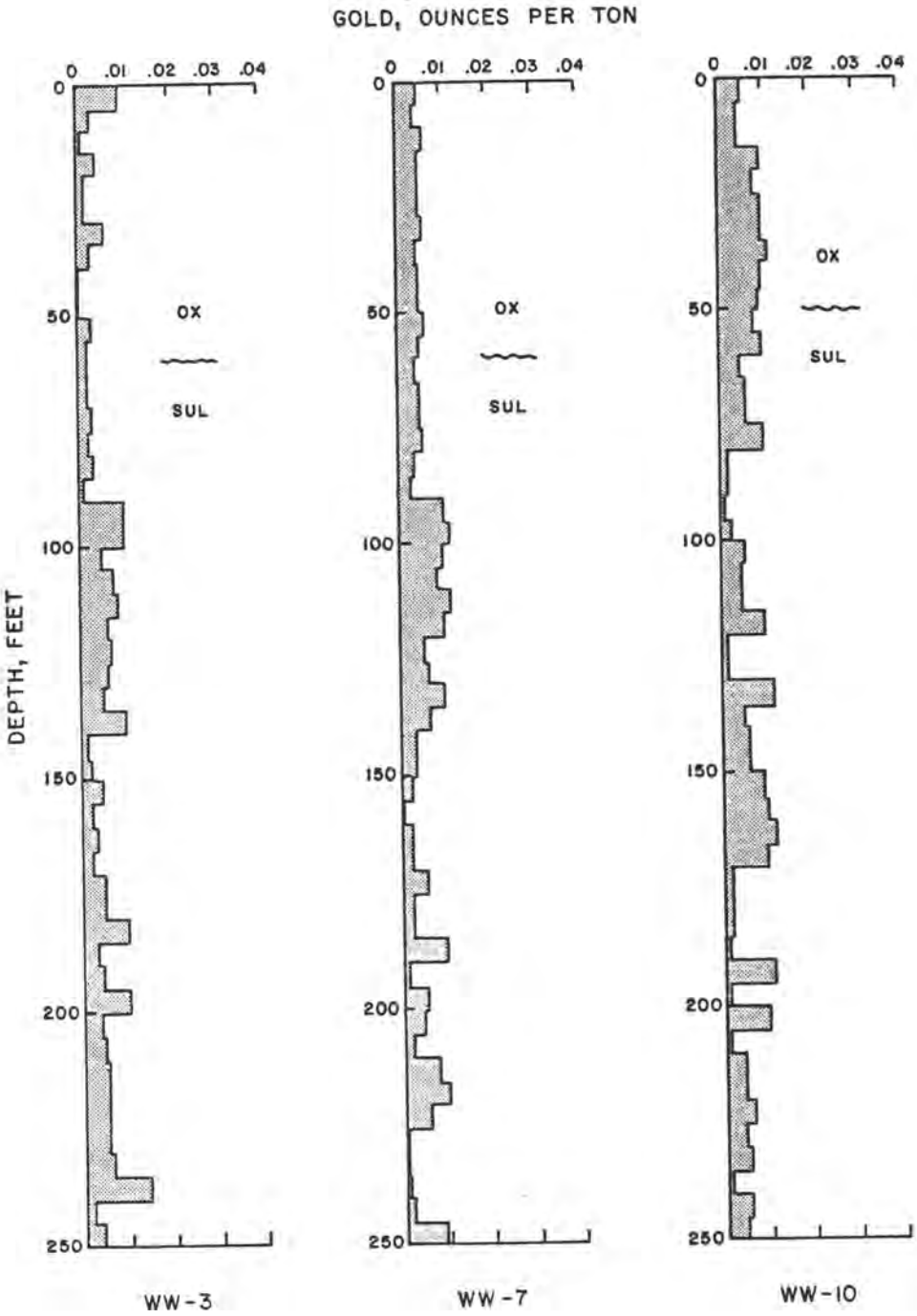


FIGURE 9. GRAPHIC GOLD ASSAY LOGS, HOLES WW-3, WW-7, AND WW-10

FIGURE 10. GRAPHIC SILVER ASSAY LOGS, HOLES WW-8, WW-1, WW-5, AND WW-6

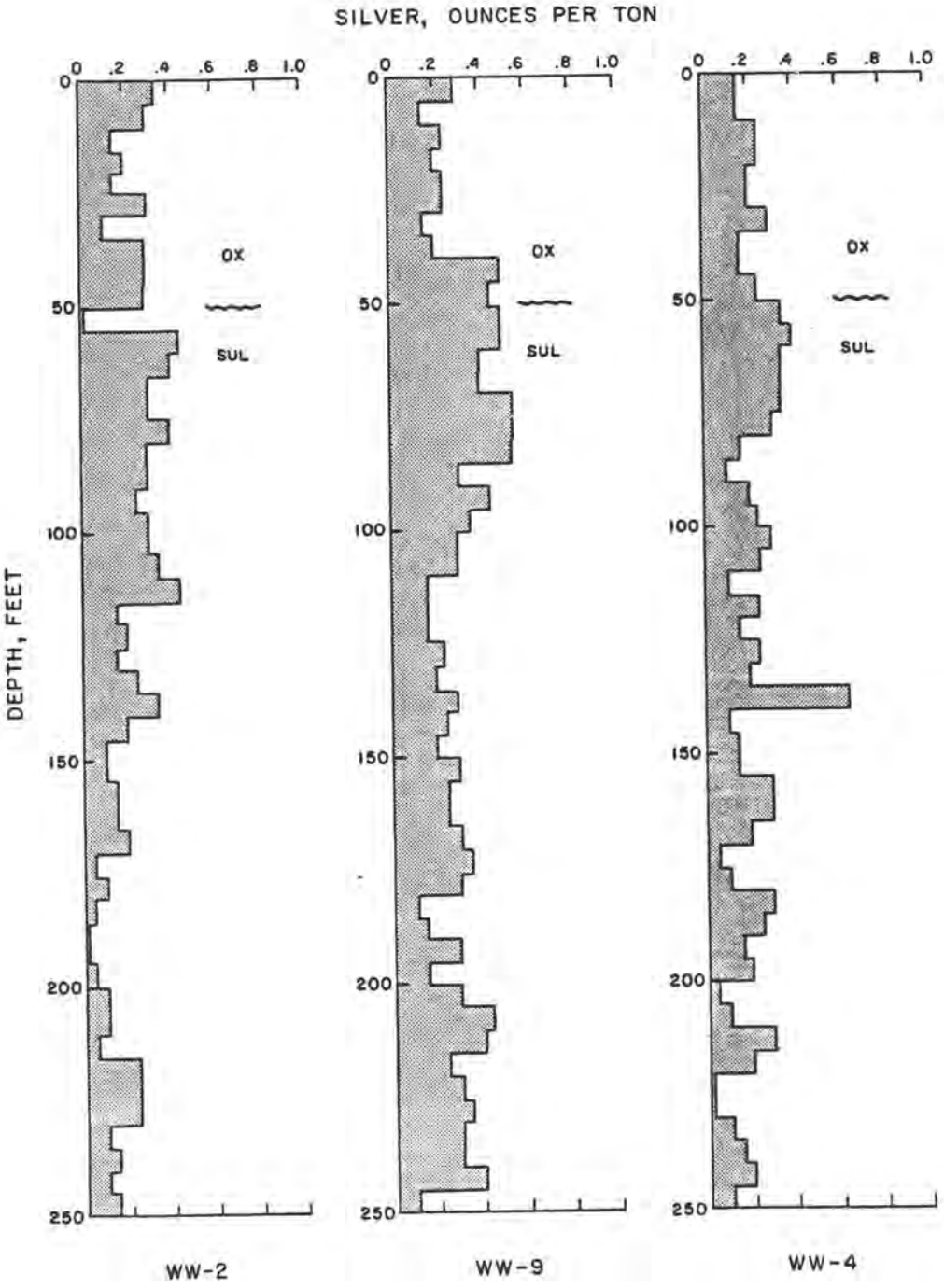


FIGURE 11. GRAPHIC SILVER ASSAY LOGS, HOLES WW-2, WW-9, AND WW-4

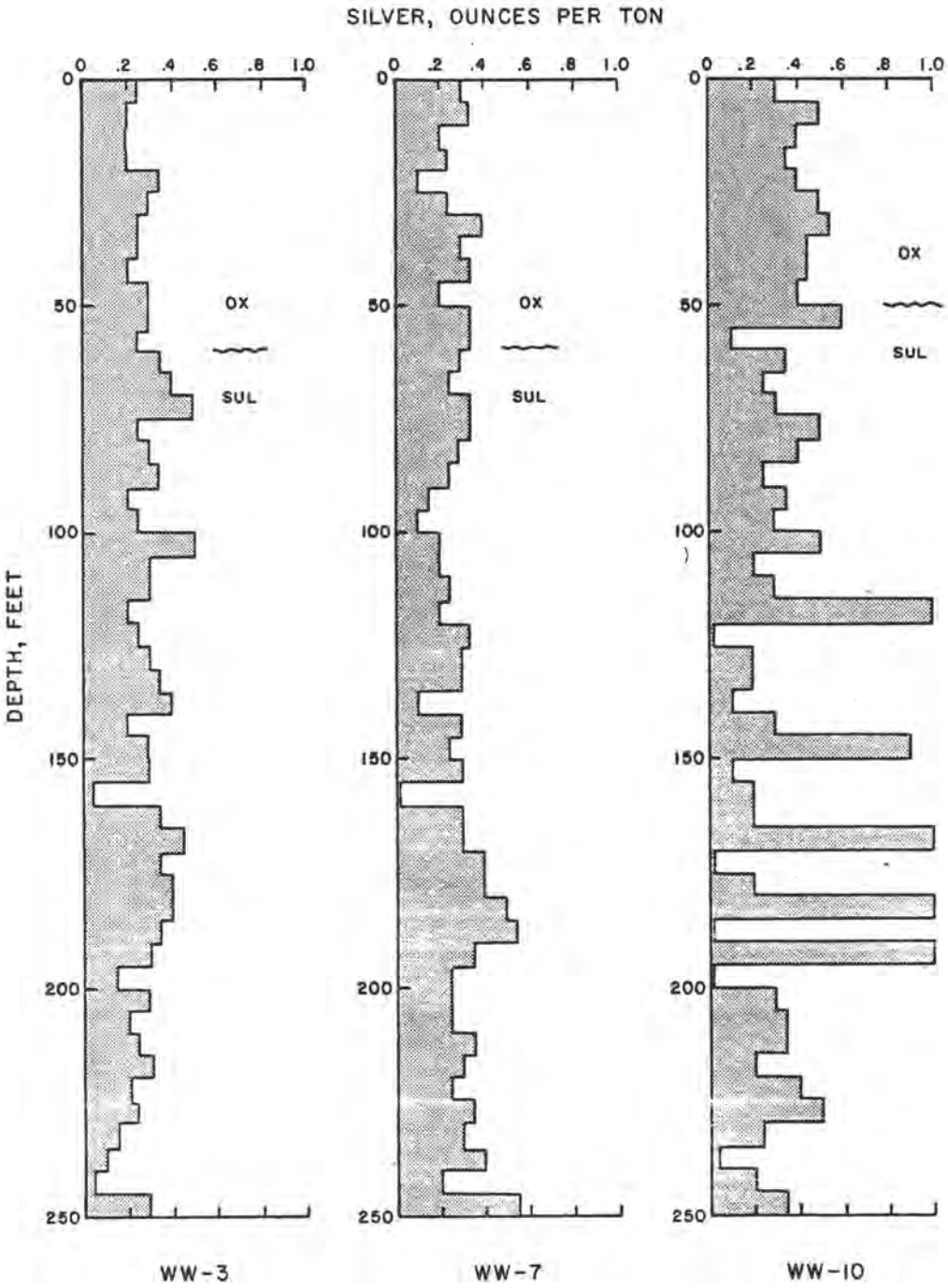


FIGURE 12. GRAPHIC SILVER ASSAY LOGS, HOLES WW-3, WW-7, AND WW-10

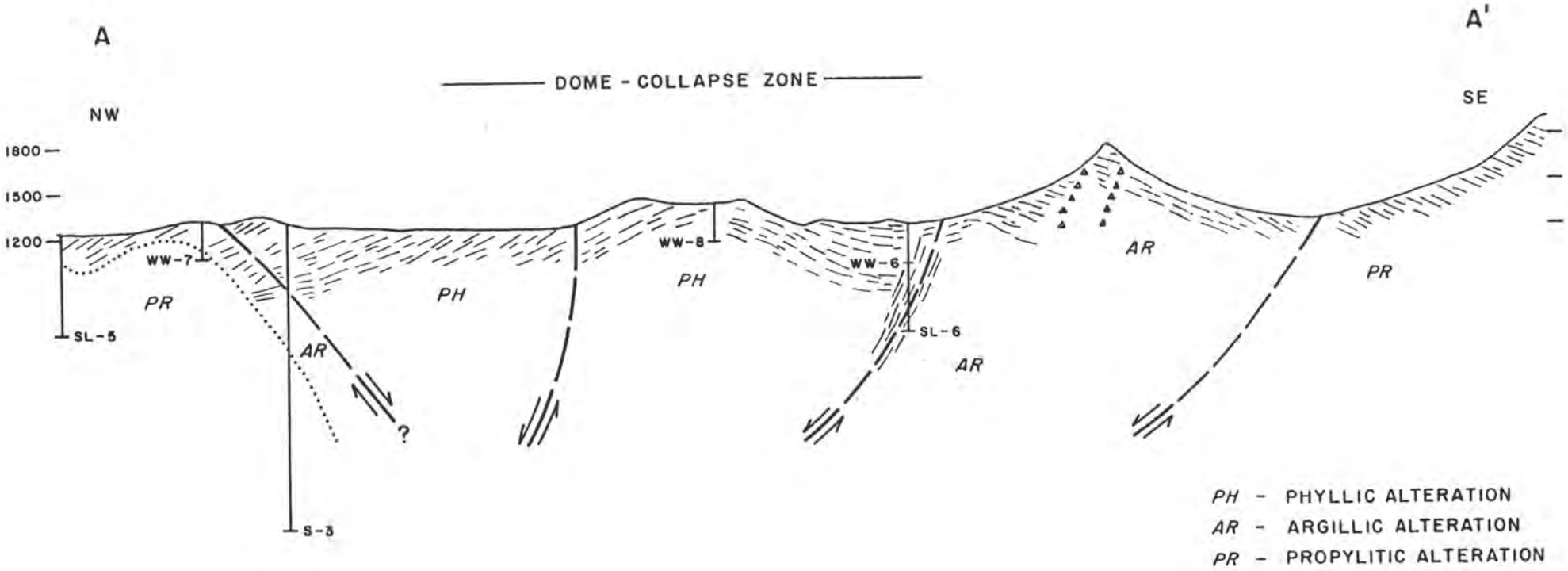


FIGURE 13. NORTHWEST - SOUTHEAST CROSS SECTION THROUGH SUGARLOAF PEAK AREA

SCALE: 1 INCH = 1000 FEET

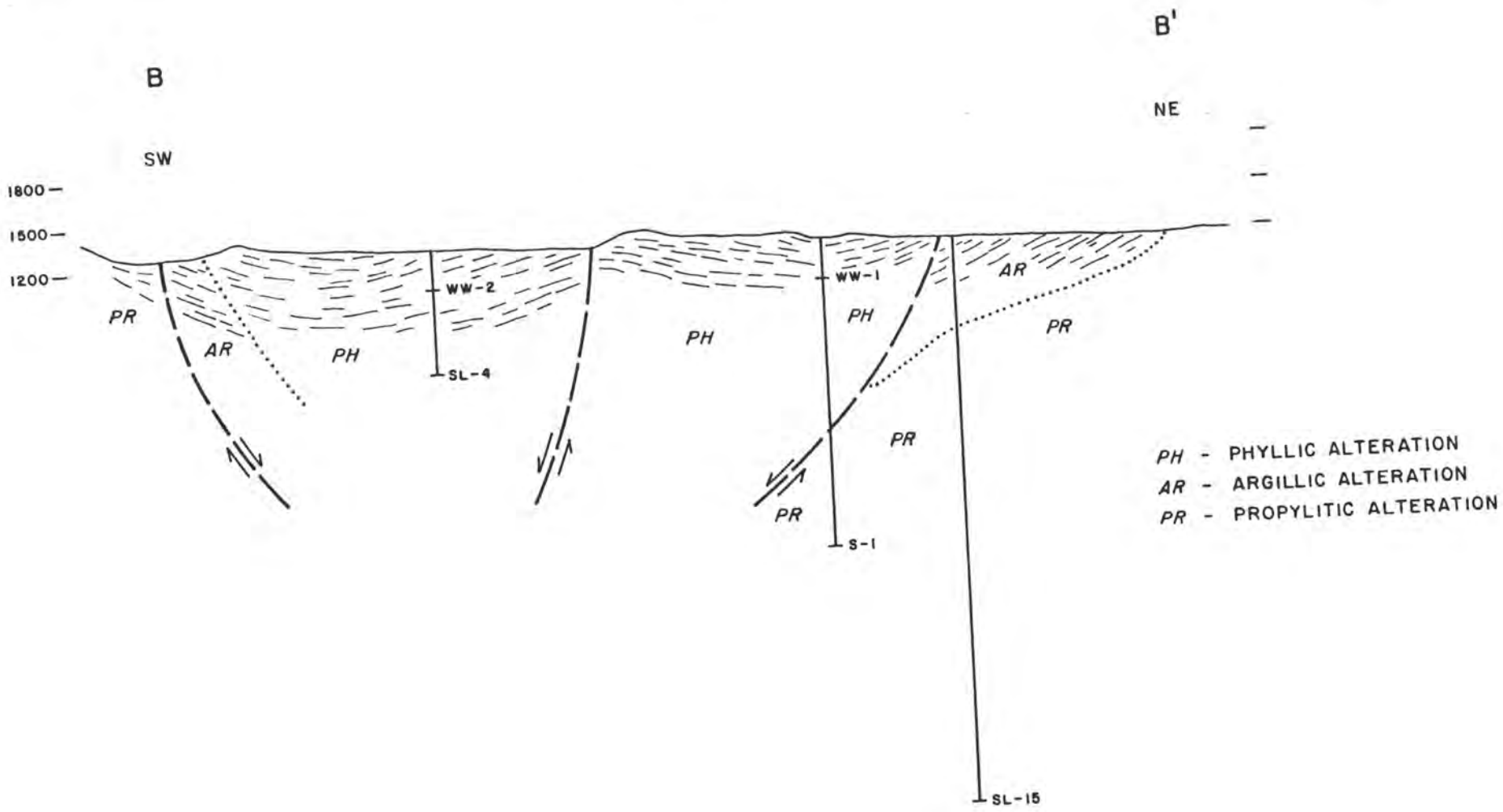


FIGURE 14. SOUTHWEST - NORTHEAST CROSS SECTION, SUGARLOAF PEAK AREA

SCALE: 1 INCH = 1000 FEET

APPENDIX A

DRILL PROGRAM ASSAY CERTIFICATES

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May - 2 - 1983

Certificate No. 6287

Sample Submitted By Mr. Westworld W.W.

SAMPLE MARKED	GOLD Ozs. per ton ore		~~GOLD Value per ton ore *~~		SILVER Ozs. per ton ore		~~LEAD Per cent Wet Assay~~		~~COPPER Per cent Wet Assay~~		~~Per cent Wet Assay~~		~~Per cent Wet Assay~~	
WW-1A 100-105	0.	005	$		0.	30								
105-110	0.	005			0.	30								
110-115	0.	005			0.	90								
115-120	0.	005			0.	30								
120-125	0.	005			0.	30								
125-130	0.	023			0.	35								

Charges $ 75.00

Very respectfully,

[signature]

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May - 16 - 19 83

Certificate No. 62412

Sample Submitted By Mr. Westworld WW

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
WW-5A 195	0.009	$	0.25				
200	0.012		0.25				
205	0.010		0.15				
210	0.012		0.20				
215	0.013		0.20				
220	0.014		0.20				
225	0.011		0.25				
230	0.011		0.25				
235	0.012		0.25				
240	0.010		0.15				
245-250	0.012		0.10				

Charges $ 22.50

Very respectfully,

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

Certificate No. 62429

9 May 1983

Sample Submitted By Mr. Wetford

SAMPLE MARKED	GOLD Ozs. per ton ore		~~GOLD Value per ton ore *~~		SILVER Ozs. per ton ore		~~LEAD Per cent Wet Assay~~		~~COPPER Per cent Wet Assay~~		~~Per cent Wet Assay~~		~~Per cent Wet Assay~~	
WW 7A - 190-195	0.	001	$		0.	35								
195-200	0.	006			0.	25								
200-205	0.	005			0.	25								
205-210	0.	002			0.	25								
210-215	0.	008			0.	35								
215-220	0.	010			0.	30								
220-225	0.	006			0.	25								
225-230	trace				0.	35								
230-235	trace				0.	30								
235-240	0.	001			0.	40								
240-245	0.	002			0.	20								
245-250	0.	005			0.	55								

Charges $ 90.00

Very ~~respectfully~~,

[illegible signature]

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

Certificate No. 62424

TUCSON, ARIZONA 85713 May - 10 - 1983

Sample Submitted By Mr. Westworld

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
WW-6 A 195-200	trace	$	0.30				
200-205	0.003		0.35				
205-210	0.001		0.35				
210-215	0.003		0.30				
215-220	0.006		0.35				
220-225	0.008		0.25				
225-230	0.009		0.50				
230-235	0.002		0.15				
235-240	trace		0.35				
240-245	trace		0.05				
245-250	0.002		0.35				

Charges $ 82.50

Very respectfully,

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

Certificate No. 62440

TUCSON, ARIZONA 85713 May-12- 1982

Sample Submitted By Mr. Westworld

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
WW8 A 190-195	0.012	$	0.35				
205-210	0.013		0.40				
215-220	0.010		0.50				
220-225	0.014		0.35				
240-245	0.010		0.40				
245-250	0.009		0.45				

Charges $ 45.00

Very respectfully,

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

Certificate No. 62460

TUCSON, ARIZONA 85713 12 MAY 1983

Sample Submitted By Mr. WESTWORLD, INC.

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD ~~Value per ton ore *~~	SILVER Ozs. per ton ore	~~LEAD Per cent Wet Assay~~	~~COPPER Per cent Wet Assay~~	~~Per cent Wet Assay~~	~~Per cent Wet Assay~~
		$					
WWB 195-200	0.028	~	0.35				
200-205	0.014	~	0.45				
210-215	0.011	~	0.45				
225-230	0.010	~	0.45				
230-235	0.013	~	0.40				
235-240	0.012	~	0.30				
FIRE ASSAYS							

Charges $ 45.00

Very respectfully,

1439 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

Certificate No. 62379

APRIL - 30 - 19 83

Sample Submitted By Mr. Westworld W.W.

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
2A - 0-5	0.007	$	0.35				
5-10	0.004		0.30				
10-15	0.007		0.15				
15-20	0.013		0.20				
20-25	0.012		0.15				
25-30	0.034		0.30				
30-35	0.011		0.10				
35-40	0.039		0.30				
40-45	0.026		0.30				
45-50	0.007		0.30				
50-55	0.013		<0.05				
55-60	0.012		0.45				
60-65	0.009		0.40				
65-70	0.014		0.30				
70-75	0.007		0.30				
75-80	0.006		0.40				
80-85	0.007		0.30				
85-90	0.021		0.30				
90-95	0.013		0.25				
95-100	0.004		0.30				
100-105	0.004		0.30				
105-110	0.008		0.35				
110-115	0.027		0.45				
115-120	0.004		0.15				
120-125	0.006		0.20				
125-130	0.003		0.15				
130-135	0.001		0.25				
135-140	0.002		0.35				
140-145	0.004		0.20				
145-150	0.002		0.10				
150-155	0.008		0.10				
155-160	0.003		0.15				
160-165	0.013		0.15				
165-170	0.017		0.20				
170-175	0.002		0.05				
175-180	0.003		0.10				
180-185	0.005		0.05				
185-190	0.005		<0.05				

< = Less than

FIRE ASSAYS

Charges $ 24.50

Very respectfully,

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

Certificate No. 62380

April - 30 - 1983

Sample Submitted By Mr. Westworld W. W

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD ~~Value per ton ore~~ *	SILVER Ozs. per ton ore	~~LEAD Per cent Wet Assay~~	~~COPPER Per cent Wet Assay~~	~~Per cent Wet Assay~~	~~Per cent Wet Assay~~
2A-190-195	0.001	$	<0.05				
195-200	TRACE		0.05				
200-205	0.001		0.10				
205-210	0.005		0.10				
210-215	0.015		0.05				
215-220	0.020		0.25				
220-225	0.010		0.25				
225-230	0.010		0.25				
230-235	0.008		0.10				
235-240	0.010		0.15				
240-245	0.050		0.10				
245-250	0.035		0.15				

<: less than

FIRE Assays

Very respectfully,

W. A. Jacobs

Charges $ 90.00

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

Certificate No. 62383

April-30- 1982

Sample Submitted By Mr. Westworld

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
3A-0-5	0.010	$	0.25				
5-10	0.003		0.20				
10-15	0.001		0.20				
15-20	0.004		0.20				
20-25	0.002		0.35				
25-30	0.002		0.30				
30-35	0.006		0.25				
35-40	0.003		0.25				
40-45	trace		0.20				
45-50	trace		0.30				
50-55	0.003		0.30				
55-60	0.002		0.25				
60-65	0.002		0.35				
65-70	0.002		0.40				
70-75	0.003		0.50				
75-80	0.002		0.25				
80-85	0.003		0.30				
85-90	0.001		0.35				
90-95	0.010		0.20				
95-100	0.010		0.25				
100-105	0.004		0.50				
105-110	0.007		0.30				
110-115	0.008		0.30				
115-120	0.006		0.20				
120-125	0.007		0.25				
125-130	0.006		0.30				
130-135	0.005		0.35				
135-140	0.010		0.40				
140-145	0.001		0.20				
145-150	0.002		0.30				
150-155	0.004		0.30				
155-160	0.002		0.05				
160-165	0.003		0.35				
Fire Assay							

Very respectfully,

Charges $ 247.50

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May - 2 - 1983

Certificate No. 62407

Sample Submitted By Mr. Westworld W.W.

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
WW-4 A 0-5	0.010	$	0.15				
5-10	0.002		0.15				
10-15	0.001		0.25				
15-20	0.002		0.25				
20-25	0.003		0.20				
25-30	0.002		0.20				
30-35	0.005		0.30				
35-40	0.010		0.15				
40-45	0.010		0.15				
45-50	0.006		0.25				
50-55	0.019		0.35				
55-60	0.004		0.40				
60-65	0.004		0.35				
65-70	0.009		0.35				
70-75	0.014		0.35				
75-80	0.002		0.30				
80-85	0.004		0.15				
85-90	0.003		0.10				
90-95	0.011		0.20				
95-100	0.008		0.25				
100-105	0.004		0.30				
105-110	0.003		0.25				
110-115	0.011		0.10				
115-120	0.014		0.25				
120-125	0.006		0.15				
125-130	0.003		0.25				
130-135	0.012		0.20				
135-140	0.006		0.65				
140-145	0.007		0.10				
145-150	0.005		0.15				
150-155	0.008		0.15				
155-160	0.012		0.30				
160-165	0.017		0.30				
165-170	0.005		0.20				

Very respectfully,

Charges $ 255.00

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 may-2- 1983

Certificate No. 62108

Sample Submitted By Mr. Westworld W. W

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD ~~Value per ton ore~~	SILVER Ozs. per ton ore	LEAD ~~Per cent Wet Assay~~	COPPER ~~Per cent Wet Assay~~	~~Per cent Wet Assay~~	~~Per cent Wet Assay~~
WW-4A 170-175	0.009	$	0.05				
175-180	0.004		0.10				
180-185	0.003		0.30				
185-190	0.004		0.25				
190-195	0.005		0.15				
195-200	0.015		0.20				
200-205	0.007		0.05				
205-210	0.003		0.10				
210-215	0.005		0.30				
215-220	0.007		0.20				
220-225	0.004		<0.05				
225-230	0.006		<0.05				
230-235	0.002		0.10				
235-240	0.001		0.15				
240-245	0.003		0.20				
245-250	0.004		0.10				

<= less than

Very respectfully,

Charges $ 120.00

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May - 2 - 1983

Certificate No. 6 2386

Sample Submitted By Mr. Westworld W.W.

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
3A. 165-170	0.002	$	0.45				
170-175	0.005		0.35				
175-180	0.005		0.40				
180-185	0.010		0.40				
185-190	0.003		0.35				
190-195	0.004		0.30				
195-200	0.010		0.15				
200-205	0.003		0.30				
205-210	0.004		0.20				
210-215	0.005		0.25				
215-220	0.005		0.30				
220-225	0.005		0.20				
225-230	0.005		0.25				
230-235	0.006		0.15				
235-240	0.014		0.10				
240-245	0.002		0.05				
245-250	0.004		0.30				
WW-1A 0-5	0.006		0.10				
5-10	0.010		0.10				
10-15	0.001		0.05				
15-20	Trace		0.20				
20-25	0.006		0.25				
25-30	0.006		0.25				
30-35	0.007		0.60				
35-40	0.004		0.35				
40-45	0.010		0.30				
45-50	0.012		0.45				
50-55	0.010		0.35				
55-60	0.005		0.15				
60-65	0.021		0.30				
65-70	0.010		0.10				
70-75	0.004		0.05				
75-80	0.004		0.50				
80-85	0.010		0.30				
85-90	0.015		0.40				
90-95	0.010		0.20				
95-100	0.004		0.05				

Very respectfully,

Charges $ 277.50

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May - 2 - 1983

Certificate No. 62403

Sample Submitted By Mr. Westworld W.W.

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore*	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
WW-1 A 120-135	0.017	$	0.30				
135-140	0.020		0.40				
140-145	0.010		0.40				
145-150	0.015		0.40				
150-155	0.010		0.30				
155-160	0.015		0.35				
160-165	trace		0.30				
165-170	0.005		0.20				
170-175	0.001		0.30				
175-180	0.005		0.30				
180-185	0.002		0.35				
185-190	0.005		0.50				
190-195	0.005		0.10				
195-200	0.005		0.10				
200-205	0.020		0.10				
205-210	0.003		0.10				
210-215	0.004		0.30				
215-220	0.001		0.05				
220-225	0.020		0.10				
225-230	0.010		0.10				
230-235	0.005		0.05				
235-240	0.002		0.55				
240-245	0.025		0.45				
245-250	0.014		0.15				

Very respectfully,

Charges 190.00

435 S. 10th AVE.

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May - 6 - 1983

Certificate No. 62412

Sample Submitted By Mr. Ukstworld W. W

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
JW-5A 0-5	0.008	$	0.45				
5-10	0.005		0.45				
10-15	0.003		0.45				
15-20	0.014		0.35				
20-25	0.020		0.30				
25-30	0.009		0.55				
30-35	0.010		0.40				
35-40	0.012		0.35				
40	TRACE		0.30				
45	0.010		0.35				
50	0.015		0.10				
55	0.019		0.40				
60	0.010		0.20				
65	0.006		0.15				
70	0.006		0.15				
75	0.011		0.20				
80	0.004		0.25				
85	0.006		0.35				
90	0.010		0.20				
95	0.003		0.20				
100	0.004		0.40				
105	0.004		0.35				
110	0.003		0.40				
115	0.004		0.05				
120	0.005		0.10				
125	0.008		0.20				
130	0.007		0.55				
135	0.007		0.60				
140	0.010		0.65				
145	0.007		0.30				
150	0.010		0.20				
155	0.012		0.20				
160	0.008		0.35				
165	0.012		0.25				
170	0.010		0.25				
175	0.010		0.20				
180	0.005		0.05				
185	0.002		0.20				
190	0.008		0.15				

Very respectfully,

Charges $ 292.50

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May 10 - 19 X3

Certificate No. 62423

Sample Submitted By Mr. Westworld

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
WW-6A 0-5	0.001	$	0.35				
5-10	trace		0.45				
10-15	0.001		0.35				
15-20	0.001		0.30				
20-25	trace		0.20				
25-30	trace		0.30				
30-35	trace		0.20				
35-40	0.006		0.20				
40-45	0.001		0.30				
45-50	0.002		0.10				
50-55	0.002		0.20				
55-60	trace		<0.05				
60-65	0.002		0.20				
65-70	0.002		0.15				
70-75	0.002		0.35				
75-80	0.002		0.50				
80-85	0.002		0.25				
85-90	0.002		0.40				
90-95	0.002		0.20				
95-100	0.003		0.20				
100-105	0.002		0.20				
105-110	0.003		0.20				
110-115	0.003		0.25				
115-120	0.003		0.25				
120-125	0.003		0.35				
125-130	0.002		0.30				
130-135	0.003		0.30				
135-140	0.001		0.25				
140-145	0.002		0.30				
145-150	0.003		0.20				
150-155	0.006		0.20				
155-160	0.005		0.40				
160-165	0.005		0.25				
165-170	0.008		0.25				
170-175	0.008		0.35				
175-180	0.005		0.30				
180-185	0.004		0.30				
185-190	0.004		0.35				
190-195	trace		0.50				

Very respectfully,

Charges $292.50

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May- 11- 1983

Certificate No. 62428

Sample Submitted By Mr. Westworld

SAMPLE MARKED	GOLD Ozs. per ton ore	~~GOLD Value per ton ore~~ *	SILVER Ozs. per ton ore	~~LEAD Per cent Wet Assay~~	~~COPPER Per cent Wet Assay~~	~~Per cent Wet Assay~~	~~Per cent Wet Assay~~
WW-7A 0-5	0.006	$	0.30				
5-10	0.005		0.35				
10-15	0.007		0.20				
15-20	0.006		0.25				
20-25	0.006		0.10				
25-30	0.006		0.25				
30-35	0.007		0.40				
35-40	0.005		0.30				
40-45	0.006		0.35				
45-50	0.006		0.20				
50-55	0.007		0.35				
55-60	0.005		0.35				
60-65	0.004		0.30				
65-70	0.005		0.25				
70-75	0.005		0.35				
75-80	0.006		0.35				
80-85	0.004		0.30				
85-90	0.003		0.25				
90-95	0.010		0.15				
95-100	0.012		0.10				
100-105	0.010		0.20				
105-110	0.008	Call to Jacobs 5/24/83	0.20				
? 110-115	0.12	<.012	0.25				
115-120	0.010		0.20				
120-125	0.006		0.35				
125-130	0.007		0.30				
130-135	0.010		0.30				
135-140	0.006		0.10				
140-145	0.003		0.30				
145-150	0.003		0.25				
150-155	0.002		0.30				
155-160	TRACE		<0.05				
160-165	0.002		0.30				
165-170	0.002		0.30				
170-175	0.006		0.40				
175-180	0.003		0.40				
180-185	0.003		0.50				
185-190	0.010		0.55				

< : less than

Very respectfully,

[signature]

Charges $ 285.00

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 May - 12 - 1983

Certificate No. 62439

Sample Submitted By Mr. Westworld

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore *	SILVER Ozs. per ton ore	LEAD Per cent Wet Assay	COPPER Per cent Wet Assay	Per cent Wet Assay	Per cent Wet Assay
WW & A 0-5	0.001	$	0.50				
5-10	0.001		0.05				
10-15	trace		0.15				
15-20	trace		0.50				
20-25	0.002		<0.05				
25-30	0.004		0.25				
30-35	0.004		0.35				
35-40	0.010		0.05				
40-45	0.012		0.10				
45-50	0.014		0.25				
50-55	0.010		0.35				
55-60	0.012		0.15				
60-65	0.010		0.25				
65-70	0.015		<0.05				
70-75	0.012		0.10				
75-80	0.015		0.55				
80-85	0.011		0.30				
85-90	0.014		0.30				
90-95	0.015		0.20				
95-100	0.018		0.30				
100-105	0.015		0.10				
105-110	0.016		0.15				
110-115	0.026		0.35				
115-120	0.020		0.60				
120-125	0.026		0.25				
125-130	0.020		0.35				
130-135	0.015		0.20				
135-140	0.004		0.30				
140-145	0.015		0.35				
145-150	0.014		0.30				
150-155	0.015		0.15				
155-160	0.020		0.05				
160-165	0.021		0.30				
165-170	0.020		0.35				
170-175	0.022		0.45				
175-180	0.021		0.50				
180-185	0.022		0.25				
185-190	0.012		0.35				

< = less than

Very respectfully,

Charges $ 285.00

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713 12 MAY 1983

Certificate No. 62461

Sample Submitted By Mr. WESTWORLD, INC.

SAMPLE MARKED	Au OZ/TON		X		Ag OZ/TON		SAMPLE MARKED	Au OZ/TON		X		Ag OZ/TON	
WW9A 0-5	0.	024			0.	30	WW9A 130-135	0.	021			0.	20
5-10	0.	032			0.	15	135-140	0.	010			0.	30
10-15	0.	022			0.	25	140-145	0.	016			0.	25
15-20	0.	006			0.	20	145-150	0.	004			0.	20
20-25	0.	028			0.	25	150-155	0.	013			0.	30
25-30	0.	013			0.	25	155-160	0.	010			0.	25
30-35	0.	008			0.	15	160-165	0.	009			0.	25
35-40	0.	041			0.	25	165-170	0.	006			0.	30
40-45	0.	015			0.	50	170-175	0.	010			0.	25
45-50	0.	017			0.	45	175-180	0.	019			0.	30
50-55	0.	016			0.	50	180-185	0.	005			0.	10
55-60	0.	016			0.	50	185-190	0.	003			0.	15
60-65	0.	007			0.	40	190-195	0.	003			0.	30
65-70	0.	007			0.	40	195-200	0.	001			0.	15
70-75	0.	013			0.	55	200-205	0.	002			0.	30
75-80	0.	020			0.	55	205-210	0.	034			0.	45
80-85	0.	031			0.	55	210-215	0.	009			0.	40
85-90	0.	005			0.	30	215-220	0.	005			0.	25
90-95	0.	028			0.	45	220-225	0.	004			0.	30
95-100	0.	011			0.	35	225-230	0.	010			0.	35
100-105	0.	016			0.	30	230-235	0.	003			0.	30
105-110	0.	033			0.	30	235-240	0.	001			0.	30
110-115	0.	020			0.	20	240-245	TRACE				0.	40
115-120	0.	007			0.	15	245-250	TRACE				0.	10
120-125	0.	015			0.	15							
125-130	0.	010			0.	25							

FIRE ASSAYS / ASSAY TON OUNCE PER SAMPLE

Very respectfully,

Charges $ 375.00

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

Certificate No. 62463

TUCSON, ARIZONA 85713 13 MAY 1983

Sample Submitted By Mr. WESTWORLD, INC.

SAMPLE MARKED	Au OZ/TON	X	Ag OZ/TON	SAMPLE MARKED	Au OZ/TON	X	Ag OZ/TON
WW10A-0-5	0.006		0.30	WW10A 130-135	0.012		0.20
5-10	0.005		0.50	135-140	0.005		0.10
10-15	0.005		0.40	140-145	0.006		0.30
15-20	0.010		0.35	145-150	0.006		0.90
20-25	0.010		0.60	150-155	0.009		0.10
25-30	0.010		0.50	155-160	0.010		0.20
30-35	0.010		0.55	160-165	0.012		0.20
35-40	0.012		0.45	165-170	0.010		0.00
40-45	0.010		0.45	170-175	0.002		<0.05
45-50	0.009		0.60	175-180	0.002		0.20
50-55	0.008		0.60	180-185	0.002		1.15
55-60	0.010		0.10	185-190	0.001		<0.05
60-65	0.005		0.35	190-195	0.011		1.30
65-70	0.006		0.25	195-200	0.001		<0.05
70-75	0.006		0.30	200-205	0.010		0.30
75-80	0.010		0.50	205-210	0.001		0.35
80-85	0.002		0.40	210-215	0.004		0.35
85-90	0.002		0.25	215-220	0.004		0.20
90-95	0.001		0.35	220-225	0.006		0.40
95-100	0.003		0.30	225-230	0.004		0.50
100-105	0.006		0.50	230-235	0.005		0.25
105-110	0.005		0.20	235-240	0.001		0.05
110-115	0.005		0.30	240-245	0.006		0.20
115-120	0.000		1.50	245-250	0.005		0.35
120-125	0.002		<0.05				
125-130	0.002		0.20				

FIRE ASSAYS / ASSAY TON CHARGE EA. SAMPLE.
< = Less than

Very respectfully,

Charges $ 375.00

APPENDIX B

PULP CHECK ASSAY CERTIFICATES

SKYLINE LABS, INC.
1775 W. Sahuaro • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF ANALYSIS

JOB NO. UHY 005
June 9, 1983
PROJECT: SLP
N.E. DAUSINGER, JR.
WW-1 THRU WW-10

WESTWORLD INC.
Attn: Mr. Don French
4044 One Shell Plaza
Houston, Texas 77002

Analysis of 51 Pulp Samples

ITEM	SAMPLE NUMBER	FIRE ASSAY Au (oz/t)	FIRE ASSAY Ag (oz/t)	Zn (%)	Pb (%)
1	WW-1 60-65	.010	<.01	N/R	N/R
2	WW-1 135-140	.010	<.01	N/R	N/R
3	WW-1 200-205	.005	<.01	N/R	N/R
4	WW-1 220-225	.015	<.01	N/R	N/R
5	WW-1 240-245	.005	<.01	N/R	N/R
6	WW-2 25-30	.010	<.01	N/R	N/R
7	WW-2 35-40	.040	<.01	N/R	N/R
8	WW-2 40-45	.015	<.01	N/R	N/R
9	WW-2 85-90	.020	<.01	N/R	N/R
10	WW-2 110-115	.005	<.01	N/R	N/R
11	WW-2 215-220	.010	<.01	N/R	N/R
12	WW-2 240-245	.030	<.01	N/R	N/R
13	WW-2 245-250	.035	<.01	N/R	N/R
14	WW-5 20-25	.005	<.01	.02	.06
15	WW-5 50-55	.020	<.01	.08	.36
16	WW-5 240-245	.015	<.01	.10	.12
17	WW-5 245-250	.010	<.01	.01	.04
18	WW-6 165-170	.010	<.01	.05	.27
19	WW-6 170-175	.010	<.01	.06	.31
20	WW-6 220-225	.010	<.01	.05	.14
21	WW-6 225-230	.005	<.01	.01	.21
22	WW-8 110-115	.025	<.01	N/R	N/R
23	WW-8 115-120	.040	.04	N/R	N/R
24	WW-8 120-125	.010	<.01	N/R	N/R
25	WW-8 125-130	.025	<.01	N/R	N/R

Charles E. Thompson
Arizona Registered Assayer No. 9422

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

APPENDIX D

APPENDIX E

APPENDIX F

SKYLINE LABS, INC.
1775 W. Sahuaro • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

JOB NO. UHY 005
June 9, 1983
PAGE 2

ITEM	SAMPLE NUMBER	FIRE ASSAY Au (oz/t)	Ag (oz/t)	Zn (%)	Pb (%)
26	WW-8 155-160	.030	<.01	N/R	N/R
27	WW-8 160-165	.015	<.01	N/R	N/R
28	WW-8 165-170	.020	<.01	N/R	N/R
29	WW-8 170-175	.010	<.01	N/R	N/R
30	WW-8 175-180	.030	<.01	N/R	N/R
31	WW-8 180-185	.020	<.01	N/R	N/R
32	WW-9 0-5	.015	<.01	N/R	N/R
33	WW-9 5-10	.010	<.01	N/R	N/R
34	WW-9 10-15	.020	<.01	N/R	N/R
35	WW-9 20-25	.030	<.01	N/R	N/R
36	WW-9 35-40	.045	<.01	N/R	N/R
37	WW-9 75-80	.015	<.01	N/R	N/R
38	WW-9 80-85	.010	<.01	N/R	N/R
39	WW-9 90-95	.005	<.01	N/R	N/R
40	WW-9 105-110	.045	<.01	N/R	N/R
41	WW-9 110-115	.010	<.01	N/R	N/R
42	WW-9 130-135	.005	<.01	N/R	N/R
43	WW-9 205-210	<.005	<.01	N/R	N/R
44	WW-9A 80-85	.030	<.01	N/R	N/R
45	WW-10	<.005	<.01	.01	.02
46	WW-10 20-25	<.005	<.01	.01	.10
47	WW-10 45-50	.005	<.01	<.01	.22
48	WW-10 115-120	.005	<.01	.05	.11
49	WW-10 165-170	.005	<.01	.01	.07
50	WW-10 180-185	<.005	<.01	.02	.09
51	WW-10 190-195	<.005	<.01	.01	.03

NOTE: N/R denotes analysis not requested.
cc: Mr. N.E. Dausinger, Jr.
9331 East Magdalena Street
Tucson, Arizona 85710

FIELD ASSAYER
9425
WILLIAM L. LEHMBECK
DATE SIGNED
Arizona U.S.A.

APPENDIX C

FLOTATION TEST LOG SHEET

LYALL J. LICHTY

Project No. GAUSINGER	Sample I.D. WW-10	Feed Wt. 1000 gms	Date
FLOTATION TEST LOG SHEET	Test No. MJ-1	Feed Size -10 MESH	JULY 22, 1983

CONDITIONS AND REAGENTS

Point of Addition	Conditions				Reagent Additions lbs/TON						
	Time (Min.)	Solids (%)	pH		SOD. SILIC.	AF-25	P.O.	CuSO4	KAmX		
GRIND	40	50			3.0	.02	.01				
CONDITION	5	30						1.0			
FLOAT	12	30				.04			.20		

Remarks:

METALLURGICAL RESULTS

Product	% WT.	Assays OZ/T. Au	Ag		Contents Au	Ag		Distribution (%) Au	Ag
CONC.	15.7	.050	0.90		.785	14.13		90.3	54.5
TAILS	84.3	.001	.14		.084	11.80		9.7	45.5
HEADS (CALC.)	100.0	.009	.259		.869	25.93		100.0	100.0

Remarks:

fire assay of composite head .010 oz Au/ton
.238 oz Ag/ton

Screen Analysis

Mesh	Wt. (%)	Cum. %

msrd-03

APPENDIX D

MINERALOGICAL REPORT

MINERALOGICAL REPORT.

Subject: Microscopic Examination and X-Ray Analyses of Rock Samples of a Gold Prospect from Sugar Loaf Peak Area, Quartzsite, Arizona.

Purpose: To determine the rock types and their mineral composition,in particular respect to the mode of alteration (alunitization). Furthermore to pay attention to any gold or heavy metal mineralization.

Samples: Four rock types from the Sugar Loaf Peak area were received from Mr. N. Dausinger on Nov. 5, 1981 as follows:

1. Alunite replacing rhyolite or andesite, E of Sugar Loaf Peak.
2. Intrusive dacite, S of Sugar Loaf Peak.
3. Meta-volcanic (volcanoclastic) rock, N of Sugar Loaf Peak at the 1400' contour line.
4. Silicified cap rock N of Sugar Loaf Peak at 1280' contour line.

All the rock types were first observed under a stereo binocular microscope to choose areas for thin sections. Two thin sections were prepared of each rock type.

Subsequently 20 gr samples were ground of each rock type except sample no.2 (which showed a yellow coating) of which two samples were prepared for x-ray diffraction analyses. No x-ray diffractogram was made of sample no. 4.

The thin sections were thoroughly examined under a transmitted light polarizing microscope and the mineral components by the x-ray powder diffractograms were determined. The results follow.

D I S C U S S I O N .

1. The first impression obtained by the observation with unaided eye of the four large hand samples is that they represent igneous (volanic) rock types subjected to different degrees of alteration. This impression is somewhat modified by the macroscopic observation under a stereo binocular microscope (at 30x magnification), which showed a fine stratification in sample no's 2 and 3.

2. Sample no. 1.

Macroscopic observation shows that a dense, white (with slight grayish tinge) mineral replaces a pink rhyolite. The mineral resembles alunite. It carries medium size quartz grains. At the edge of the hand sample a portion of the decomposed pink rhyolite is still visible. The mineral appears to be pure except for the disseminated (remnant) quartz inclusions.

Microscopic examination revealed that this mineral is natroalunite ($NaAl_3(OH)_6(SO_4)_2$). It occurs as fine grained mats replacing the preexistent host rock (rhyolite). These mats form contiguous lenticular bodies with very thin opaque separating lines, perhaps indicating the preexistent boundaries between the matrix and the phenocrysts of the original rock. The rhyolite is completely decomposed. The patches of the remnant rock (rhyolite) is opaque. They are either contaminated clay or a mixture of alunite and clay. The quartz phenocrysts (or large grains) are intact or fractured but both show undulating extinction. The fractures usually are filled with alunite. Quartz is more frequent in the decomposed rock than in the massive alunite.

The analyses of the x-ray diffractogram showed only natroalunite as major and quartz as minor components. No kaolinite, montmorillonite or sericite lines could be detected in the pattern.

Sample no. 2.

Macroscopic observation. The rock is white and appears to be laminated (built up of a succession of layered scales). These laminae (scales) are composed of silky fibers meandering between the quartz eyes.

One side of this hand sample is thickly covered with an orange-yellow, shiny crystalline coating which is perhaps jarosite.

Microscopic examination. It appears that the rock has suffered (been worked over) from tectonic movement. The original phenocrysts of quartz and feldspar are fractured. These stable minerals become brittle under the tectonic pressure and brake up. Granulated streaks and laminae of alunite, sillimanite, sericite and clay mixture swirl around and between the streamlined eyes of undestroyed portions of the quartz and feldspar grains. Thus this rock type can be named metarhyolite or meta-quartz porphyry.

The mineral composition of this mechanically deformed rock determined by x-ray diffraction is as follows, in order of their frequencies: quartz, albite, orthoclase, alunite, sillimanite, sericite and kaolinite.

An x-ray powder diffractogram was also obtained from the orange-yellow crust of this sample (no.2). Jarosite predominates among the mineral components according to the analyses of the diffractogram. Quartz, alunite, sillimanite and sericite are the other major and minor mineral components. This diffractogram showed an indication of the presence of native gold.

Sample no. 3.

Macroscopically (under stereo binocular microscope) the rock type shows a similar laminated, parallel structure as sample no. 2. The difference between the two rock types is that the silky, fibrous ground mass (similar to sample no.2) "flows" around pink remnant rock grains and white quartz particles while in sample no.2 there are no pink particles, the whole rock is white.

Microscopic examination. The rock type exhibits the same cataclastic

structure as was seen in sample no.2. The laminated, contorted ground mass is composed of alunite, sillimanite complex which plastically surrounds the quartz and feldspar grains or fills their fractures. The size of the quartz and feldspar grains are somewhat smaller in this rock than in sample no.2.

The amount of the ground mass is noticeably higher in sample no. 3 than in sample no. 2. Also, sample no.3 carries hydrous iron oxides as discrete minerals and as impregnation in high amounts which were minor constituents in sample no. 2. This rock type also can be named as meta-rhyolite or meta-quartz porphyry.

The mineral composition of sample no.3 determined by x-ray powder diffraction is as follows, in order of their frequencies: sillimanite, alunite, quartz, orthoclase, albite, sericite and kaolinite. Also a slight indication of native gold was detected,less than in the jarosite of sample no.2.

Sample no.4.

Macroscopic observation. Medium gray, fairly coarse crystalline quartz exhibits some cataclastic features. A network of white-cream colored veinlets can be seen throughout the sample. Under stereo-binocular microscope (at 30x magnification) the sample appears to be vuggy. The vugs are lined with quartz with a spongy appearence.

Microscopic examination. The sample is finely recrystallized quartz with an expressed parallel orientation of the individual small grains. Some large quartz particles showing strong undulating extinction and occasional contortions are plastically surrounded by the fine recrystallized quartz. Also thin, parallel stringers of sericite-muscovite are imbedded in the recrystallized quartz (these are the macroscopically visible cream colored networks). Thus the quartz is perhaps a meta-quartzite which represents a preexistent tectonically deformed vein-quartz.

3. The above described rocks (sample no's 2 and 3) suffered strong mechanical deformation thus they represent low grade metamorphic rocks, cataclastites. Since their chemical composition and remnant texture (as far as they are detectable) approximates that of an acid hypabyssal or volcanic rock, they can be designated as meta-quartz-porphyry or meta-rhyolite. Several geological descriptions (made by federal, state and company geologist) also mention fairly large bodies of meta volcanics in the Sugar Loaf area.

The tectonic movements fractured the surrounding rock formations. These fractures were filled later with alunite which perhaps originates from a moderately low temperature solution which contained sulfuric acid, acting upon the feldspar components of the rocks. The sulfuric acid may be derived from the decomposition of the disseminated pyrite which must have been (or still is) fairly frequent in the rock types of the area. It should also be mentioned that Sugar Loaf at Quartzsite, Arizona is a Dana locality for natroalunite.

The dissolution of the pyrite promoted the formation of the jarosite (seen on sample no.2) which is a popularly accepted indicator of gold by prospectors.

Lindgren states in his "Mineral Deposit (1933)" that "rich gold and silver ores are rarely associated with area of alunitization" but exceptions exist such as the rich Au-Ag deposit at Goldfield, Nevada. Placer gold was recovered around the Sugar Loaf area from time to time.

4. Geochemically the manner of occurrance of gold and silver in the upper lithosphere notably resembles that of copper. Naturally there are sharp differences between these elements, e.g. silver and copper are sulfophile while the gold is siderophile in character. In spite these great differences, gold generally follows copper and silver in the upper lithosphere, hence it is sulfophile in this region. Also the gold, silver and copper in many instances alloy with each other. It is well known that gold and silver is produced from many disseminated porphyry copper deposits as by products.

Thus the typical alteration characteristics of the wall rock which leads to discoveries of copper deposits do not exclude the possible occurrance of gold and silver in the same deposits.

5. The above discussed points can easily be applied to the Sugar Loaf area. The previous geological and geochemical explorations carried out by various companies were made for the sole purpose of discovering and outlining a disseminated porphyry copper ore body (or ore bodies) and completely neglected to evaluate the noble metal content besides the copper and base metal values of the drill cores. They recognize and emphasize that the quartz-sericite-alunite-pyrite alteration around the Sugar Loaf Peak is extensive and contains large volumes of mineralized rocks. They also say that alunite and tourmaline are abundant minerals in the alteration system at Sugar Loaf. The occurrence of these minerals indicate that gaseous and vapor phases were responsible for the pervasive alteration.

6. These two minerals (tourmaline and alunite) represent a fairly wide range of temperature of formation which perhaps encompasses the entire pneumatolitic and hydrothermal phase. Thus there is no well founded geological and mineralogical evidence which would contradict the possible occurrence of noble metals in the Sugar Loaf Peak area at Quartzsite, Arizona. This assumption is corroborated by the occurrence of gold and silver in an alunitized rock assemblage at Goldfield, Nevada. The occurrence of alunite, pyrophyllite, tourmaline etc. indicate intensive pneumatolitic-hydrothermal mineralization in the Quartzsite area where gold was also recovered from placer deposits.

APPENDIX E

BASE METAL DISTRIBUTION REPORT

KERR-McGEE CORPORATION - 1971

BASE METAL DISTRIBUTION
AT
SUGARLOAF PEAK, QUARTZSITE MINING DISTRICT,
YUMA COUNTY, ARIZONA

by

[redacted]

August, 1971

GENERAL

The Sugarloaf Peak center of hydrothermal alteration is in the Quartzsite District, Yuma County, Arizona, six miles west of the town of Quartzsite, Arizona. Access to the property is by dirt roads leading off of the old highway along the southern edge of Interstate 10, between the Quartzsite and Dome Peak exit ramps.

This report is based on examination and sampling of diamond drill core from work by Congdon and Carey. No detailed geologic mapping has been done. The generalized alteration pattern shown on the accompanying map is mostly inferred from the drilling results and from other work by Congdon and Carey.

Congdon and Carey acquired claims in the area in 1962 and began an extensive base metal exploration program. Prior to this time the principle mineral production from the district had been placer gold. The recent work included the drilling of numerous rotary and diamond drill holes in addition to geologic mapping and some geophysics. McIntire Porcupine is reported to have optioned the property and drilled several holes, including DDH-15 west of the area included on the enclosed map. A Proof of Labor was filed last year on 67 contiguous claims, including Coca No. 1 through 44, however several visits to the property last winter and spring did not disclose any new work.

GEOLOGY

Sugarloaf Peak is on the eastern flank of the Dome Rock Mountains. This range of rugged peaks trend along a nearly north-south axis near the western edge of the basin and range province. The mountains are composed of metavolcanic flows and tuffs of intermediate composition. The metavolcanics have been intruded by late Cretaceous rhyolite plugs and dikes. An early Cretaceous granite crops out north of I-10. Another large outcrop of granite occurs at Granite Peak on the extreme eastern edge of the pediment, near the Town of Quartzsite.

Alteration

Sugarloaf Peak occupies the center of a well developed pattern of hydrothermal alteration and metal zoning which has been superimposed upon the general metamorphism of the area. As is shown on the accompanying alteration map, the rocks cropping out in Sections 9 and 10, south of Sugarloaf Peak are unaltered. Prominent quartz veins are scattered throughout this unaltered zone and may be the source of the rich placer gold deposits which occur on the adjoining pediments. Except for the veins, however, mineral assemblages present indicate only metamorphism with no discernable hydrothermal alteration. Between this unaltered area and the center of alteration at Sugarloaf Peak is a zone of weak propylitic alteration.

This zone is characterized by development of hydro-mica bleached biotite, chalky feldspars and abundant specularite. The contact between this weakly altered zone and the unaltered schist is irregular and gradational. The contact between the propylitic and the interior, argillic zone is more distinct though still somewhat gradational. The central argillic zone of alteration is approximately 6,000 feet long by 3,000 feet wide with the long axis in an east-west direction. It is characterized by clay, sericite, pyrite and silica flooding with occasional alunite veinlets. The eastern end of this elliptical zone exhibits strong koalinization with abundant alunite veins and disseminated hematite. North of the argillic zone is the probable extension of the propylitic zone of alteration discussed earlier. The mineral assemblage, however, includes chlorite, epidote, sericite and pyrite, indicative of a zone of more intense alteration.

Mineralization

The widespread pyritic alteration appears to center around an interior zone of geochemically anomalous zinc located within the eastern two-thirds of the zone of argillic alteration. The zinc occurs both as disseminated grains and in quartz-chlorite-pyrite veins. The zinc values in this area run from 1,000 ppm to 4,000 ppm zinc in the "zinc shell" and values below this zone are everywhere well above background, running in excess of .01 percent in almost all samples.

Copper values, of .01 to .03 percent, associated with the zinc are attributable to small amounts of chalcopyrite. Oxidation is shallow and there is little indication of significant secondary enrichment.

Molybdenum is present in significant amounts, averaging between .01 and .02 percent. Small but significant amounts of silver and gold were reported with .1 to .2 ounces of silver and .002 to .006 ounces of gold per ton.

Sampling

The drill core and cuttings from past drilling had been left in an old shack on the property. The building and its contents had been severely vandalized, with much of the core dumped out on the ground or missing. It was decided that a log of the drilling results should be made before vandals had completely destroyed it. One week was spent in sorting out the holes and in logging and sampling the core. Samples were taken to best represent larger intervals, fifty feet if possible, and an estimate was made of the percent of the core salvaged from that interval. The samples were all tested for copper, lead, zinc and molybdenum and a few were checked for silver and gold. The results are listed on the detailed drill hole logs and assay logs which are included with the metal ratio graphs in the appendix of this report. The following is a summary of the outstanding features of these results:

S-I High zinc values (greater than 1,000 ppm) are associated with strong quartz-alunite-pyrite alteration in the upper 500 feet of the hole. Reduced, but still anomalous zinc values (100 to 500 ppm) are associated

Magnetite.

with chlorite, calcite, alunite and quartz below that depth. Copper and molybdenum are present in low, but geochemically significant amounts, with 100 to 200 ppm copper and 50 to 75 ppm molybdenum.

S-2 High zinc values associated with quartz, pyrite, gypsum alteration down to 250 feet form a sharp "zinc shell", similar to that observed in other porphyry copper environments. Below 250 feet the zinc values run from 100 to 200 ppm and are associated with epidote, chlorite, with less quartz and pyrite. Copper values are between 100 ppm and 200 ppm with molybdenum running from 50 to 100 ppm.

S-3 Anomalous zinc values between 150 feet and 400 feet run from 700 to 1,000 ppm. Lead values are slightly higher than were noted in DDH-S2. Copper averages about 100 ppm while molybdenum is generally low and decreases with depth. This pattern is typical of metal distribution near the periphery of the central portion of an alteration pattern.

SL-4 Very high zinc values (1,000 to 4,000 ppm) down to 550 feet fall off to 300 to 500 ppm below that depth, however the metal ratios indicate that the drill hole did not penetrate the bottom of the zinc shell. The wide disparity between the lead to zinc and the lead to molybdenum values is due both to the high zinc content and molybdenum values significantly lower than those noted in holes located closer to the center of the alteration pattern.

SL-5 Zinc values between 200 and 250 ppm indicate that this hole is well outside of the zinc shell. A 50 foot interval of .14 percent copper at 200 feet is the only significant concentration of chalcocite noted in any drilling in this district.

SL-6 Very high zinc values over the full length of the hole are associated with higher than normal lead values and average to low molybdenum values.

SL-7 Generally low, weakly anomalous zinc values with lead values increasing with depth. The lead to zinc ratios indicate a possible zinc shell at the surface.

S-8 Generally low metal values in the few samples available from this drill hole. The location of this hole is unknown.

S-10 Generally only weakly mineralized but still anomalous. Location unknown.

SL-13 Low metal values but with weakly anomalous molybdenite and copper. Location unknown.

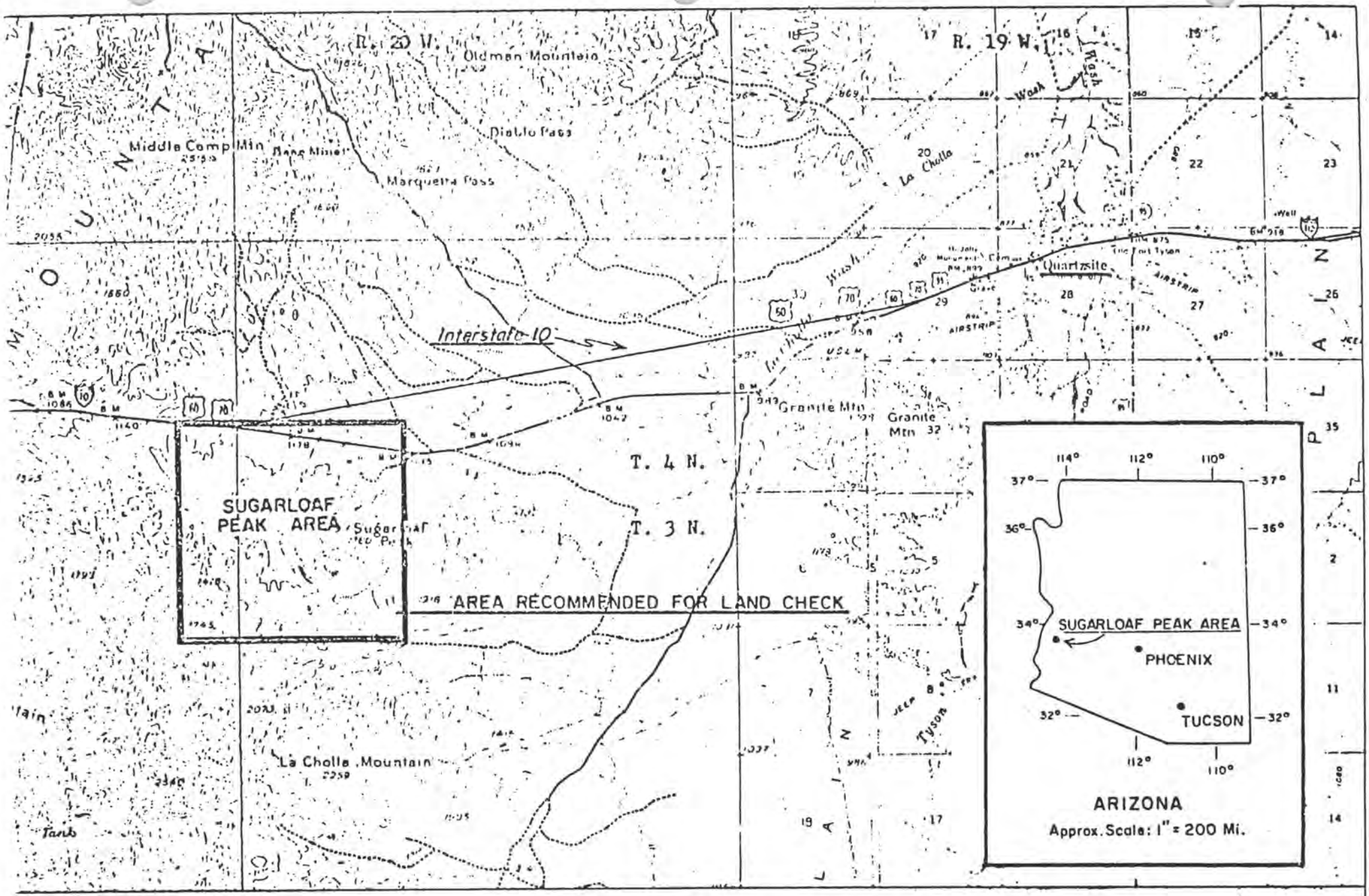
SL-15 Generally low in metal values but with weakly anomalous zinc near the surface, and weakly anomalous copper and molybdenum values below. This hole is located somewhere west of DDH-SL-5. With a depth in excess of 3,650 feet it is the deepest hole in the district.

CONCLUSIONS AND RECOMMENDATIONS

The area of pyritic alteration surrounding Sugarloaf Peak appears to be related to a zoned pattern of hydrothermal alteration and mineralization. If so, the district has favorable exploration potential for a large tonnage "porphyry copper" type deposit. Previous work by Congdon and Carey did not test the central argillic zone deeper than 1,000 feet and no drilling at all was done on the more resistant areas of intense silicification at Sugarloaf Peak.

The work upon which this report is based was very limited in scope, being confined to examination and testing of drill core. The interpretations made, however, are believed to be valid and they indicate that the area warrants further study. It appears probable that Congdon and Carey may drop their claims in the area. If they do it would be advisable to locate a block of claims surrounding Sugarloaf Peak in preparation to doing detailed surface mapping of the geology and alteration pattern. A check of Courthouse records is recommended covering Sections 3, 4, and 5 of Township 4 North, Range 20 West, and Sections 32, 33, and 34 of Township 3 North, Range 20 West, as well as another field check to evaluate present activity in the district.

[redacted]



SUGARLOAF PEAK AREA, YUMA COUNTY, ARIZONA

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APPENDIX F

EXPLORATION POTENTIAL REPORT

KERR-McGEE CORPORATION - 1973

R. A.

KERR-McGEE CORPORATION
INTERNAL CORRESPONDENCE

TO E. E. Jones

FROM R. M. Corn

DATE May 25, 1973

SUBJECT Sugarloaf Peak Area, Quartzsite Mining District, Yuma County, Arizona

The geologic relationships, alteration, mineralization, and exploration potential of the Quartzsite prospect are thoroughly covered in Dick Ahern's report, and in my opinion, he has done an excellent job in deciphering the complex structural relationships of the prospect. I would like to add a few comments emphasizing certain general features of the porphyry copper alteration system at Quartzsite and its indicated favorable exploration potential.

COPY

The alteration system at Quartzsite contains an impressive amount of disseminated base-metal mineralization. The area of quartz-sericite-alunite-pyrite alteration near Sugarloaf Peak in the eastern part, and originally higher part, of the alteration system contains large volumes of mineralized rock, exhibiting lead and zinc values in excess of .15 to .20 percent each, combined with molybdenum values that vary from 100 to 1000 parts per million. These relatively high lead-zinc and molybdenum values are similar to, and higher than, metal values encountered in a similar alteration environment at Red Mountain, Arizona, where they appear to be a direct reflection of the ore-grade primary copper mineralization, occurring at greater depth in the alteration system.

Both alunite and tourmaline are abundant minerals in the Quartzsite alteration system. The occurrence of both of these minerals is believed to indicate that major amounts of the volatile elements, sulfur,

fluorine, and boron were introduced into the alteration system during the period of hydrothermal alteration and metallization. The widespread and abundant alunite, associated with relatively high lead-zinc and molybdenum values, is believed to reflect a center of potassic alteration that should contain abundant anhydrite associated with copper and molybdenum mineralization at greater depth in the alteration system. Surface exposures of quartz-sericite-alunite-pyrite alteration are known to reflect deeper potassic alteration with associated anhydrite and ore-grade primary copper mineralization at El Salvador, Chile, Cananea, Mexico, and Red Mountain, Arizona. Although drilling has not been carried to sufficient depth at Red Mountain, Colorado to define ore-grade copper mineralization, the quartz-sericite-alunite-pyrite alteration exposed at the surface has been shown to be a direct reflection of abundant anhydrite and increasing copper values at depth. Intense quartz-sericite-alunite-pyrite alteration, similar to that at Quartzsite, is considered to be a direct indication of centers of potassic alteration and ore-grade copper mineralization that occur at depth at Cananea, Mexico. Interestingly, tourmaline is also a widespread constituent of the alteration system at Cananea.

The occurrence of disseminated copper mineralization on the Hancock claims in the western part of the altered area is of considerable interest, not just because this represents several million tons of potential ore-grade copper mineralization, but primarily because it represents the copper mineralization expected to be associated with potassic alteration in a position originally at greater depth in the alteration system. Although the copper mineralization is obscurred by faulting, oxidation, and alluvial cover, detailed examination of exposures near the Hancock workings

indicates that both the intrusive and metamorphic rocks formerly contained disseminated primary chalcopyrite mineralization of ore-grade or near ore-grade values. The indicated disseminated primary chalcopyrite mineralization on the Hancock property is believed to be part of, and a reflection of, primary chalcopyrite mineralization that is associated with potassic alteration toward the center of the alteration system in the western part of the Quartzsite prospect.

In summary, the combination of the features described above, widespread intense quartz-sericite-alunite-pyrite alteration associated with substantial disseminated lead, zinc, and molybdenum values, within what appears to have originally been the upper part of the alteration system, together with the indicated primary copper mineralization, associated with potassic alteration at a position originally at greater depth in the alteration system, is believed indicative of a very favorable exploration potential for ore-grade primary copper mineralization within the Quartzsite porphyry copper alteration system.

RMC/ps

COPY

R. A.

EXPLORATION POTENTIAL OF THE SUGARLOAF PEAK AREA, QUARTZSITE MINING DISTRICT, YUMA COUNTY, ARIZONA

by

Richard Ahern

May 25, 1973

Kerr-McGee Corporation

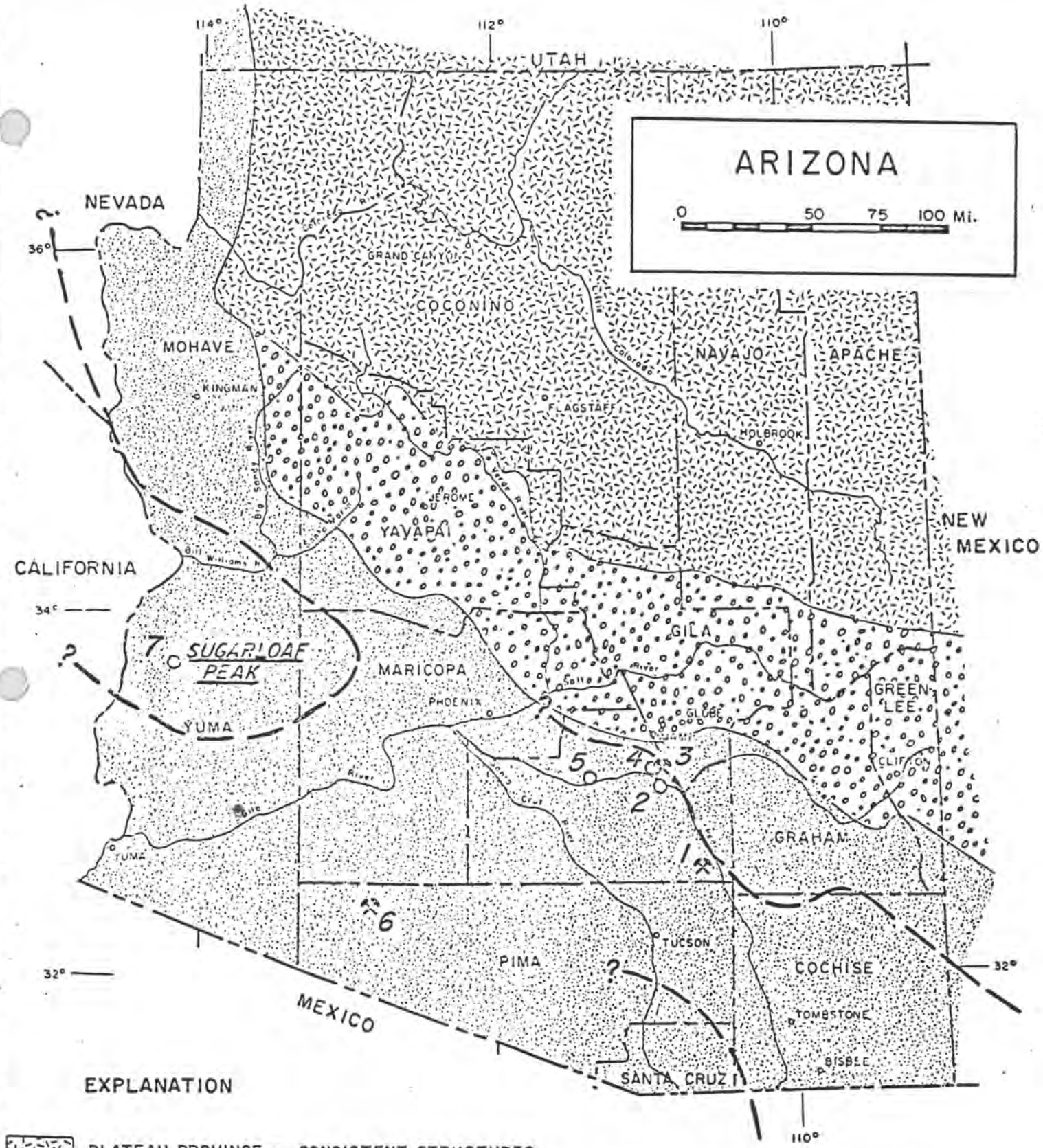
SUMMARY

The Sugarloaf Peak prospect is an area of porphyry copper type alteration and mineralization located in west-central Yuma County, Arizona. The area has a history of placer gold production, but only minor base metal values. Consequently the district has not received much attention from major mining companies.

Detailed mapping of the alteration system together with extensive geochemical sampling indicates that Sugarloaf Peak was originally a vertical alteration-mineralization system similar to that associated with other porphyry copper deposits. The system has been structurally rotated 90° to the east and offset by major faults, with strike and/or dip movement.

The most favorable target for ore-grade copper mineralization is at, or near, the surface in the zone of exposed potassic alteration near the west end of the Kerr-McGee claims. Results of surface sampling and reported values from shallow drill holes indicate the presence of a triangular shaped area of ore-grade copper mineralization at or near the surface which could contain 10,000,000 tons of ore-grade copper mineralization for each hundred feet of depth. Projection of this zone beneath the adjacent zone of potassic alteration would yield substantially greater tonnage with a prospect target of 48,000,000 tons per hundred feet of thickness.

To test this prospect, a 1000 to 1500 foot diamond drill hole is recommended, to be collared near the center of exposed copper mineralization in Hancock Wash. This would yield the most useful geologic information, as well as give a third dimension to our estimate of the potential copper mineralization.



EXPLANATION

PLATEAU PROVINCE — CONSISTENT STRUCTURES

MOUNTAIN ZONE — CONSISTENT TO INCONSISTENT STRUCTURES

BASIN AND RANGE PROVINCE — INCONSISTENT STRUCTURES

POSTULATED LOCATION OF FLAT OR THRUST FAULT LOBE

PROSPECTS ○ AND MINES ⚒ WITH POST MINERAL STRUCTURAL ROTATION

1. San Manuel — Kalamazoo (Newmont)
2. Kelvin (Kerr-McGee)
4. Granite Mountain (Kerr-McGee)
5. Florence (Continental Oil)

FIGURE 1

GENERAL

The Sugarloaf Peak prospect is an area of porphyry copper type alteration and mineralization located in the Quartzsite Mining District of west central Yuma County, Arizona. The area of interest lies south of U.S. Highway 60 & 70, now I-10, and east of Quartzsite Pass, where I-10 cuts through the Dome Rock Mountains.

The district is credited with over 10,000 ounces of placer gold production, however there has been no significant base metal production from this part of Arizona. Burton Hancock is reported to have shipped two carloads of material from the Surprise Claims, running 49 tons of 1.1 percent copper and 54 tons of 2.1 percent copper. Lehre Eardman reports shipping a truckload of lead-silver ore from the Leadville Mine. Exposed mineralization and sampling by us indicates that these figures are at least reasonable.

This report is based on extensive field work in the district, including geologic mapping and geochemical sampling of the area covered by Kerr-McGee's claims, some ground magnetic work and evaluation of results from shallow validation drill holes, as well as on data obtained from other sources, such as Congdon and Carrey. They controlled the area by location and options from 1962 thru 1971 and did more than 14,500 feet of rotary and diamond drilling, as well as conducting extensive Induced Polarization and aeromagnetic surveys.

GEOLOGY

The Sugarloaf Peak area is underlain by Precambrian schist and granite, which has been intruded by a complex stock of probable Laramide age and overlain by a Tertiary quartz porphyry flow. These units are partially covered by Late Tertiary and Quaternary gravels.

The main mass of the Dome Rock Mountains south of U.S. Highway I-10 is schist, with a few outcrops of schist north of the highway. The schist is representative of the greenschist facies of regionally metamorphosed intermediate volcanics and interbedded sedimentary units. Previous workers in the district from the Arizona Bureau of Mines have considered the schist to be of Cretaceous age, however there is little or no evidence for this. The rock is very similar to nearby outcrops in California and northern Yuma County that are of Precambrian age, and correlated with the Yavapai schist of central Arizona. There are no other schists of Cretaceous age in the region, however the metamorphosed volcanics were equated with unmetamorphosed Cretaceous-Tertiary andesites exposed in central and southern Yuma County. The lithologic similarity to Precambrian schists, the large extent of outcrop, and the lack of any real evidence correlating the metamorphosed volcanics with the unmetamorphosed Tertiary volcanics all suggest that the schist is better correlated with the Precambrian Yavapai schist.

The Precambrian granite is exposed in the mountains north of the highway except for a few exposures to the south where I-10 cuts through the mountains at Quartzsite Pass near the western edge of the map. The granite is generally coarse with less than five percent mafic minerals, mostly biotite and chlorite.

The Cretaceous intrusive stock varies in composition from aplite to biotite-diorite porphyry, but most exposures are monzonite porphyry. The biotite-diorite phase appears to be confined to the contact with the Precambrian granite. Aplite occurs as occasional dikes and possibly as a breccia zone in the NW 1/4, SE 1/4 Section 31, Township 4 North, Range 20 West.

A quartz porphyry or rhyolite porphyry caps Sugarloaf Peak. Large outcrops of porphyry occur along the flanks of Brown Mountain to the east, and capping a small hill just north of Brown Mountain. Scattered outcrops found north of the Dome Rock exit ramp appear to be remnants of a major flow. A very small block of rhyolite is exposed south of Brown Mountain, however this occurrence appears to be intrusive whereas those on Brown Mountain are flows. The outcrop at Sugarloaf Peak could be a cap or it could represent a neck or plug. It is at an elevation considerably above the other occurrences, and the contact is covered with talus. Adits along the flanks of Sugarloaf Peak do not penetrate to the core. A caliche cemented conglomerate surrounds the small hill of quartz porphyry near the southeast corner of Section 34, Township 4 North, Range 20 West. Late Tertiary gravels and Quaternary alluvium fill deep valleys along both the east and west flanks of the mountain range and lap up onto the pediments at Sugarloaf Peak, partially obscuring outcrops.

STRUCTURE

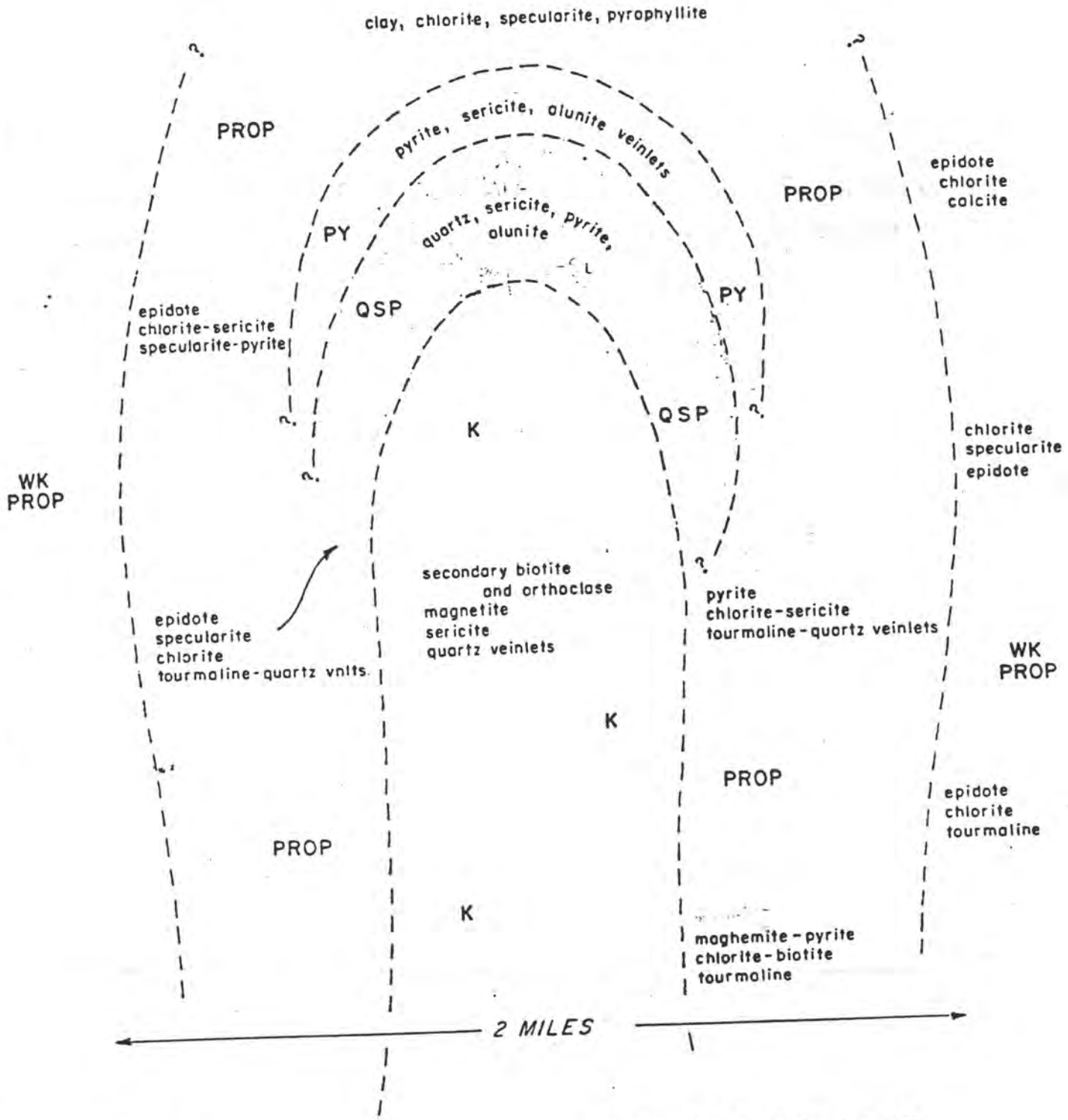
The Sugarloaf Peak prospect lies within a province of structural rotation and low-angle faulting. These structural elements are related to crustal distension and are similar to those observed along the west side of the San Pedro River, such as have been described at the San Manuel-Kalamazoo Mine and at Kerr-McGee's Kelvin and Granite Mountain prospects.

There are no marker horizons in the schist, however structural rotation to the east has been interpreted from detailed mapping of the alteration pattern and from the metal zoning relationships. Fault offsets are evidenced by abrupt discontinuities in the alteration pattern and are generally coroborated by corresponding changes in the geochemical pattern.

The horizontal position of the alteration pattern has been determined from review of drill hole information evidencing a decrease in alteration grade with depth in the area of drilling just west of Sugarloaf Peak. Northeast striking faults, dipping steeply westward to nearly flat lying, are related to gravity sliding during structural rotation and/or post rotation block faulting. Their displacements are generally of only a few hundred feet. In addition to these faults, major northwest trending, right lateral strike slip faults have been mapped. This structural trend can be projected into the Sugarloaf Peak area from the Plomosa Mountains to the east and appears to extend across the Dome Rock Mountains into the area of alluvial cover to the west. Displacement, as indicated by offset segments of the alteration system, may be 500 to 1000 feet along any one slip plane, however there are numerous slip planes within the area mapped and the total offset may be on the order of 5000 feet within that area.

ALTERATION

The observed alteration and metal dispersion patterns are shown on the accompanying maps of the Sugarloaf Peak area. Figure 2 is a diagrammatic presentation of the original alteration pattern. The alteration types and their associated metals are described in order of their probable occurrence, extending downward from the ore time surface above the central core of a typical porphyry copper alteration system. At Quartzsite this is equivalent to starting about one-half mile east of Sugarloaf Peak and moving westward over the surface along a horizontal axis.



ALTERATION

K	POTASSIC
QSP	PHYLLIC
PY	PYRITIC
PROP	PROPYLITIC
WK PROP	WEAK PROPYLITIC

HYPOTHETICAL SYSTEM OF
PORPHYRY COPPER ALTERATION

WITH RESTRICTED ENVELOPE OF QUARTZ-SERICITE-PYRITE
MODELED AFTER RED MOUNTAIN, SANTA CRUZ CO., ARIZONA

SUGARLOAF PEAK

QUARTZSITE DISTRICT YUMA COUNTY ARIZONA

R. AHERN
MAY 1973

FIGURE 2

Propylitic alteration is both the exterior and the uppermost facies of alteration and is generally characterized by epidote, chlorite, carbonate, and an absence of sulfides or quartz veinlets. This type of alteration is gradational into unaltered rock at a distance from the center of the alteration system. The change is particularly difficult to recognize in greenschist, however, because the metamorphic mineral assemblage is nearly the same as that of propylitic alteration.

Exposures of hydrothermal propylitic alteration immediately west of Sugarloaf Peak are typical of the upper high level of alteration occurring near the core of the alteration system. Chlorite and epidote are accompanied by specularite with lenses and zones of sericite and pyrophyllite. Occasional major quartz specularite vein zones and some calcite veinlets are also present. Exposures north of highway I-10 exhibit chlorite, epidote and specularite with quartz tourmaline veinlets. This is characteristic of deeper propylitic alteration than that discussed above, and probably reflects a position near the propylitic-phyllic interface, with the quartz veinlets extending out beyond the zone of pyritic alteration. The area of propylitic alteration along the southern edge of Kerr-McGee's claims is generally weaker than the two areas just described. Chlorite, epidote, and specularite are associated with calcite veins to the southeast, and with minor calcite and moderate tourmaline to the west.

Pyritic alteration at Sugarloaf Peak is characterized by disseminated pyrite controlled by planes of schistosity, generally without quartz veinlets. Abundant alunite veinlets occur along the north slope of Sugarloaf Peak, with intense sericite and clay on the south edge. The pyrite zone occurs at Sugarloaf Peak as a cap which separated the

propylitic and phyllic zones when in their original upright position. This zone does not generally extend to any great depth along the flanks of the system.

Phyllic alteration consisting of quartz, sericite, and pyrite is exposed over an area one mile long and from 3000 to 5000 feet wide just west of Sugarloaf Peak. This facies is generally characterized by intense sericitization with abundant disseminated pyrite and closely spaced quartz pyrite veinlets. Within the Sugarloaf Peak alteration system the phyllic alteration zone appears to grade downward or westward into altered rock characterized by variably spaced quartz pyrite veinlets and sericite envelopes within a phase of alteration reflecting the transition from weak potassic to propylitic alteration. This type of alteration is exposed adjacent to the potassic hill in the center of Section 31. The gradation from near potassic to propylitic appears to take place over a width of from 300 to 500 feet.

A block of potassic alteration measuring 2000 by 3000 feet is exposed in the center of Section 31, Township 4 North, Range 20 West. The block is bounded on the north, south and west sides by major faults. The east side is the gradational change from potassic to phyllic, to the deep propylitic type of alteration discussed above. The potassic alteration is characterized by secondary orthoclase, minor magnetite and quartz-chalcopyrite veinlets with disseminated sulfides. Capping indicates a fairly high chalcopyrite to pyrite ratio in the Hancock Wash area with slightly decreasing chalcopyrite to the east.

It should be emphasized that changes in alteration are gradational, sometimes taking place over considerable distances, even though they are shown as distinct contacts on a map. It should also be pointed out that a single alteration facies may be represented by different sets of mineral assemblages at different levels within the system. For example, the propylitic alteration near the top of the system may be characterized by epidote, calcite and pyrophyllite, while the propylitic zone at great depth would be identified by an association of chlorite, sericite, and magnetite. In addition to this, a single mineral species may be associated with more than one facies of alteration. For example, chlorite is pervasive in the propylitic zone, a minor constituent of the pyritic or argillic zone, and absent in the phyllic zone. It reappears replacing biotite in the near or weak potassic zone and gives way to biotite in the zone of potassic alteration, however it is present in the deep barren core of some deposits.

METAL ZONING

The dispersion pattern of both lead and molybdenum reflect the exposed alteration pattern and corroborate the structural rotation inferred from the overall alteration pattern. Lead values ranging from 100ppm to greater than 1000ppm are reported from the pyritic altered area adjacent to Sugarloaf Peak. The area of intense phyllic alteration west of Sugarloaf Peak is characterized by only moderate lead values accompanied by highly anomalous molybdenum with values ranging from 5ppm to greater than 100ppm in an angular pattern concentric with the observed alteration pattern. Drill hole information from both the high lead and the high molybdenum areas define a zone averaging over 1000ppm zinc from the surface to a depth of 500 feet. Testing of selected surface samples shows that the

area contains anomalous bismuth and tin along with gold and silver values typical of porphyry copper environments elsewhere. Copper values of from 100ppm to 600ppm are reported from drilling in this zone of extremely high metal values. Minor chalcocite was noted in DDH S-5 and in validation drill hole, V-2, along the western margins of the phyllic alteration and turquoise coats a few fractures in a prospect pit along the southern edge of Kerr-McGee's claims.

MINERALIZATION

Primary copper mineralization occurs in the Hancock Wash area, associated with the favorable potassic alteration exposed there. Copper oxides fill fractures with copper pitch after disseminated chalcopyrite exposed in several prospect pits. A grab sample of unoxidized rock containing disseminated chalcopyrite taken from an adit assayed .38 percent copper and grabs of oxidized material ran between .04 and 1.14 percent copper. Hancock's drill holes in the bottom of the wash reportedly intersected values greater than 1.0 percent copper.

This zone of strong copper mineralization exposed at the surface covers a triangular shaped area 3000 feet long, reaching a maximum of 800 feet in width and enclosing 1,200,000 square feet. An area this size would contain 10,000,000 tons of rock for each 100 feet of depth. Although the actual copper values reported by Hancock may be in error, they do indicate the presence of a zone of intense disseminated copper mineralization down to a depth of at least 150 feet, which would indicate 15,000,000 tons of ore-grade copper mineralization exposed at the surface and amenable to open pit mining methods. This zone, together with the presence of scattered copper prospects in the adjacent potassic block of alteration,

strongly suggest the presence of a much larger zone of primary copper mineralization within shallow to moderate drilling depths. The potassic block measures 2000 by 3000 feet in plan, giving a target of 48,000,000 tons per hundred feet of thickness. The potassic block is bounded on three sides by faults, so additional targets exist along the direction of fault offset and their presence may be inferred from surface alteration features.

GEOPHYSICS

Congdon and Carrey had McPhar conduct an extensive Induced Polarization survey over their claims and, while McIntyre held an option on the prospect, they extended the survey somewhat and positioned two drill holes on the basis of that work. The opinion of a Kerr-McGee geophysist who reviewed this work concurred with the McPhar people, who felt that the major anomaly near Sugarloaf Peak is the reflection of a broad near-surface feature with decreasing sulfides below. The presence of the broad pyritic area could have been mapped by visual inspection and the shallow nature inferred from the six drill holes completed prior to doing the I. P. survey. McIntyre's work repeated the process but did not lead to any significant new ideas. Of interest however, are the weak anomalies in the Hancock Wash area at the west end of the map (Lines "H" and "H"12E) which indicate moderate sulfide content in an area of visible chalcopyrite.

Minex conducted a ground magnetometer survey which showed that their claims in Section 34, Township 4 North, Range 20 West generally overlie a magnetic low reflecting a very structurally complex area, possibly the regional schist-granite contact. Congdon and Carrey contracted an

aeromagnetic survey, which showed the pyritic area of alteration as a pronounced trough flanked by magnetic highs on both the north and south. These magnetics also show a regional gradient to the east of Kerr-McGee's claims under alluvial cover which has been interpreted to be the magnetic reflection of a regional contact between granite and schist.

A ground magnetometer survey was conducted by Company personnel over the ZALES Claims area in an attempt to locate faults and to get some information on the downdropped potassic zone covered by part of this claim group, however the results are generally inconclusive.

CONCLUSIONS AND RECOMMENDATIONS

The Sugarloaf Peak prospect is an area of porphyry copper type alteration and mineralization which exhibits favorable potential for a large tonnage of ore-grade copper mineralization, at least part of which would be amenable to open-pit mining methods. The most favorable target is the block of potassic alteration near the west end of Kerr-McGee's claims, on ground presently controlled by Burton Hancock of San Jose, California.

Results of surface sampling and values reported from shallow drilling on Hancock's claims indicate the presence of at least 15,000,000 tons of ore-grade copper mineralization at or near the surface in Hancock Wash. Projection of this zone beneath the adjacent potassic block gives a target potential of 48,000,000 tons per 100 feet of thickness.

A drill hole collared in Hancock Wash near the center of stronger copper mineralization would yield the most useful geologic information with regard to structure and alteration, as well as giving a third dimension to our estimate of potential copper mineralization. A 1000 to 1500 foot drill

hole is recommended to test this prospect, however, since the hole would be located on the Hancock Claim group, it will be necessary to obtain control of these claims prior to doing the work. The estimated cost of this drilling project is $20,000, which would be more than enough to cover our annual work requirements for the 1973-74 assessment year.

APPENDIX G

DRILL HOLE LOGS

KERR-McGEE CORPORATION - 1971-1973

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH S-1
Spudded To 1310 in '67
Completed ~~Prior to July,~~ 1965 68
Total Depth ~~Approx.~~ 2,000'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Coco 1 Sec 33 T. 4N R. 20W
Elevation
Hole Size NX 0-1616': BX 1616-2000'
Core Size NX 0-550': 700-1616'; BX 550-700'; 1616-2000'
Hole Angle Vertical
Collar ~~Coords.~~ 1030' N 32° W N.
from SE Cor Sec 33 E. T4N R20W

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'			NO SAMPLE					
50-100'	50'	90	1600	210	51				18984
100-150'	50'	92	1100	335	48				18985
150-200'	50'	93	1000	315	50				18986
200-250'	50'	97	1500	145	93				18987
250-300'	50'	116	1200	135	41				18988
300-350'	50'	69	1100	265	70				18989
350-400'	50'	101	1000	190	60				18990
400-450'	50'	163	800	116	160				18991
450-500'	50'	165	1000	135	190				18992
500-550'	50'	202	500	210	100				18993
550-600'				NO SAMPLE					
600-650'	50'	120	340	83	67				18994
650-700'				NO SAMPLE					
700-750'	50'	96	600	545	66				18995
750-800'	50'	120	210	55	52				18996
800-850'	50'			NO SAMPLE					
850-900'	50'	130	230	100	67				18997
900-950'	50'	143	230	100	54				18998

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

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf

Hole Number DDH S-1

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
950-1000'	50'	171	220	115	57		.50	18999
1000-1050'	50'	137	330	100	47		.47	19000
1050-1100'	50'	146	170	100	55		.55	B18951
1100-1150'	50'	100	165	65	59		.71	B18952
1150-1200'	50'	225	320	135	36		.27	B18953
1200-1250'	50'	100	145	85	72		.84	B18954
1250-1300'	50'	100	325	170	110		.65	B18955
1300-1350'	50'	105	200	140	46		.27	B18956
1350-1400'	50'	90	195	90	53		.54	B18957
1400-1450'	50'	120	175	105	70		.57	B18960
1450-1500'	50'	103	175	95	65		[illegible]	B18961
1500-1550'	50'	70	115	45	105		[illegible]	B18962
1550-1600'	50'			NO SAMPLE				
1600-1650'	50'	65	75	55	37		.67	B18963
1650-1700'	50'	55	85	100	41		.41	B18964
1700-1750'	50'	80	105	80	25		.31	B18965
1750-1800'	50'	100	110	50	52		1.7	B18966
1800-1850'	50'	80	100	45	31		.64	B18967
1850-1900'	50'	80	110	60	44		.73	B18968
1900-1950'	50'	80	80	50	58		1.2	B18969

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR-McGE[illegible]RPORATION

District Quartzite-Sugarloaf
Hole Number DDH S-1 NEAR WW-1
Spudded
Completed Prior to July, 1965
Total Depth Approx. 2,000!
Driller Gonsden & Garay
Logged By R. Ahern

County Yuma State Arizon[illegible]
Claim Sec 33 T. 4[illegible] R. 20[illegible]
Elevation
Hole Size NX 0-1616; BX 1616-2000'.
Core Size NX 0-550'; 700-1616'; BX 550-700'; 1616-200[illegible]
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0								Schist	• White, fine-grained quartz-sericite, gently dipping schistosity. Occasional calcite veinlets. No mafic minerals.	• Discernable superimposed alteration limited to alunite-pyrite-calcite. • Local zones of silica flooding.	Pyrite, 10% in schistosity. No oxidation, no chalcocite.
74											
100	26	100%	18984	90	51	210	+1000				
142	42	100%	18985	92	48	335	+1000				
161	19								• Grey, phyllic schist cut by veinlets of quartz, pyrite, and calcite. 2" quartz-calcite vein at 317'.	• Quartz-pyrite veins more abundant below 250'. Alunite veins persist, occasional serpentine coating fractures.	Abundant disseminated pyrite with minor local molybdenite.
181	20	100%	18986	93	50	315	+1000				
210	29										
250	40	40%	18987	97	93	145	+1000				
300	50	60%	18988	116	41	135	+1000				
350	50	60%	18989	69	70	265	+1000				
400	50	60%	18990	101	60	190	+1000		Light grey quartz schist, shattered and badly broken.	Quartz flooding with rare secondary orthoclase.	
450	50	60%	18991	163	160	116	+1000		Medium grey quartz feldspar schist, no mafics	• Alunite replacing feldspar, quartz veins and silica flooding; alunite • quartz-pyrite zone at 465'.	
456	4	0									
500	44	80%	18992	165	190	135	+1000				
550	50	80%	18993	202	100	210	500				
	---- BEGIN BX CORE ----										
620	10	100%	14716	112	30	120	264				
627		0									
637	10	100%	18994	120	67	83	340				

District Quartzite - Sugarloaf Hole Number DDH SL Page Number 2 of 4

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
700-		NX CORE						Argillic Schist	Grey, micaceous, fine-grained; locally brecciated.	Difficult to distinguish from metamorphism; chlorite and very rare calcite are possible alteration minerals.	Pyrite in veinlets and stringers along schistosity.
730								Fault Breccia	Rounded schist in clay matrix.		
750	50	100%	18995	96	66	545	600				
765								Schist	Medium greenish grey, fine-grained micaceous	Quartz-sericite chlorite; anhydrite(?) at 768'.	Prominent quartz veins cross-cutting schistosity.
793	43	100%	18996	120	52	55	210				
* 860	10	100%	14734	76	ND	90	216				
884		0						Schist	Quartz-sericite schist breccia.	Calcite veins with minor alunite, occasional quartz-pyrite veinlets.	Pyrite disseminated along schist planes and forming veins. Sulfides [illegible] 10%.
900	16	100%	18997	130	67	100	230				
914											3" quartz vein at 915'. Sharply reduced sulfide content, 3 to 5%.
920	20	100%	18998	143	54	100	230				
991								Phyllic Schist	Greenish grey, fine-grained.	Quartz-sericite-alunite; feldspar replaced by alunite.	Pyrite 5-10% in schist planes.
1000	9	100%	18999	171	57	115	220				
1050	50	90%	19000	137	47	100	330				
* 1060	10	100%	14736	80	20	110	236				
1070										Quartz-alunite-sericite with chlorite-pyrite and clay.	Pyrite 10% to 20%: larger quartz-pyrite veins, 1 or 2 per foot.
1100	30	100%	18951	146	55	100	170				
1117		0									Reduced sulfide content.
1150	33	100%	18952	100	59	65	165				
1200	50	100%	18953	225	36	155	320	Quartz Schist	Dark grey, dense, hard.	Clay, chlorite, gypsum.	Pyrite 5-10%.

District Quartzite - Sugarloaf Hole Number DDH SL-1

Depth	Int.	Core Recvy	Samp. No.	Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1250	50	40%	18954	100	72	85	145	Schist	Quartz-chlorite meta-sediments.	Sericite-epidote.	Pyrite 3-5%.
1300	50	90%	18955	100	110	170	325				Pyrite and quartz-pyrite veins more pronounced but total sulfides still less than 5%.
1350	50	90%	18956	105	46	140	200				
1400	50	40	18957	90	53	90	195	Quartz Schist		Quartz, chlorite, pyrite.	
1419								Schist	Core is badly broken, maybe fault zone.	Introduced chlorite is abundant.	
1428	9	100%	18960	120	70	105	175				
* 1440	10	100%	14735	80	ND	60	160				
1447								Porphyroblastic Schist	Dark grey flasile, schistosity is nearly horizontal. 2' quartz vein.	Abundant epidote after former feldspar, also veinlets	Quartz-pyrite-sphalerite-calcite veins, intense chalcopyrite tarnish in veins, 10%.
1454								Quartz Schist	Medium grey, dense, massive.	Epidote replacing feldspar chlorite along fractures, increases with depth.	Pyrite disseminated along planes of schist, 30-50%. Pyrite content increases to 10% below 1476'.
1466											
1490								2' Fault Breccia			
1500	53	100%	18961	103	65	95	175	Chlorite Schist	Porphyroblastic texture locally discernable.		Pyrite 5%.
1523	23	100%	18962	70	105	45	115				Low sulfide content, 2-5%.
1606								Quartz-Chlorite Schist	Medium-greenish grey; locally well healed breccia texture.		
1616											
			BEGIN	BX CORE				Breccia			
1627											
1650	23	100%	18963	65	37	55	75	Quartz Schist	Dense, massive, dark grey schistosity not apparent; breccia texture persists.	Quartz, secondary orthoclase; 2" quartz vein at 1664'.	5% pyrite in quartz-pyrite veins and disseminated.
1658								Breccia			

District Quartzite-Sugarloaf Hole Number DDH S[illegible]

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1700	50	100% R	18964	55	41	100	85	Schist Breccia	Dense, massive, medium to dark grey.	Quartz-secondary orthoclase, with minor epidote and chlorite in fractures. Occasional calcite veinlets.	3% pyrite disseminated along schist planes, increased to 5-8% below 1740'.
1750	50	100% R	18965	80	25	80	105				
1770									Rock is badly broken up.		
1800	50	100% R	18966	100	52	50	110				
1835								Hornfels	Dense, massive, dark grey; no schistosity visible.		
1850	50	80% R	18967	60	31	45	100	Quartz Schist	Somewhat porphyroblastic, massive with moderate brecciation.	Quartz-chlorite-pyrite.	
1900	50	100% R	18968	80	44	60	110	Breccia	Alternating zones of greenish gray schist and massive dark gray, siliceous rock; possibly intrusive monzonite.	Schist-chlorite-clay-monzonite-quartz flooding with biotite and quartz-calcite pyrite stringers.	Pyrite 10-15% with minor chalcopyrite tarnish. Molybdenite in quartz vein at 1666'.
* 1920-1925	5	100%	14713	68	5	80	144				
1950	50	100% R	18969	80	58	50	80				

* Samples taken and described by R. M. Corn.

KERR-McGEE CORPORATION

Assay Log

trict Quartzite-Sugarloaf
e Number DDH S-2
added
pleted Prior to July, 1965
al Depth Approx. 900'
iller Congdon & Carey
gged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

le Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
100	100	130	1400	70	51		.73		B18971
00-150	50	125	1800	95	55		.59		B18972
50-200	50	220	2700	95	112		[illegible]		B18973
00-250	50	135	1200	55	100		1.9		B18974
50-300	50	90	185	100	165		1.5		B18975
5-350	50	125	120	70	93		1.3		B18976
50-400	50	190	165	55	100		1.8		B18977
00-450	50	105	160	95	100		1.6		B18978
50-500	50	110	185	130	100		.77		B18979
500-550	50	175	140	85	260		3.1		B18980
50-600	50	185	110	50	85		1.7		B18981
00-650	50	90	145	70	115		1.6		B18982
650-700	50	85	165	100	80		.80		B18983
00-750	50	100	335	110	52		.77		B18984
750-800	50	120	260	115	68		.57		B18985
00-850	50	72	136	40	30		.75		14743
50-900	50	95	155	95	53		.56		B18986

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

KERR-McGEE CORPORATION

District Quartzite - Sugarloaf
Hole Number DDH S-2
Spudded
Completed Prior to July, 1965
Total Depth Approx. 200'
Driller Gonedon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0	P	UGGED	(NO CORE)								
25		NX CORE						Schist	Tan to light grey, vuggy; quartz and biotite quartz; feldspar porphyroblasts weathered to clay.	Calcite-chlorite-pyrite. gypsum noted in fractures.	Completely oxidized iron flooding and black hematite filling fractures and schist planes indicating 15% pyrite.
43											Only slight oxidation along fractures. Near vertical quartz-pyrite veinlet crosscuts horizontal veinlets following schistosity at 50'.
52									Fine-grained, no visible texture.		Very minor disseminated pyrite.
73								Schist	Gently dipping, mottled looking.		Pyrite stringers following schistosity predominate with quartz-pyrite veinlets crosscutting 10% pyrite. No chalcocite or chalcopyrite noted.
77									Shattered zone.		Partially oxidized.
100	75	65%	18971	130	51	70	+1000				
120									Light to medium grey; platey to massive.	Intense quartz-pyrite with minor chlorite and epidote; no calcite.	Only minor oxidation, sulfides equal 15-20%.
137									Massive, fine-grained.		10% pyrite in stringers along schistosity.
150	50	100%	18972	125	55	95	+1000				
* 170	10	100%	14741	192	30	35	440			Numerous gypsum veinlets	10-15% pyrite, no chalcocite or chalcopyrite:
183										accompany quartz-pyrite	local massive pyrite-gypsum veinlets.
200	17	100%	18973	220	112	95	+1000		Light to medium grey; fine-grained.	alteration.	

District Quartzite-Sugarloaf Hole Number DDH S-2

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
204								Schist	Porphyroblasts of orthoclase.	Abundant epidote-pyrite-quartz veinlets; porphyroblasts by epidote.	Pyrite 10%.
230									Core is badly broken.		Partial oxidation.
250	50	80%D	8974	185	100	55	+1000				
262 296								Schist	Fine-grained, medium grey.	Pyrite-chlorite-epidote.	5-10% disseminated pyrite; 15-20% below 296'.
300	50	60%D	8975	90	165	100	185	Porphyroblastic Schist.	Feldspar replaced by epidote in quartz matrix.	Quartz-epidote-pyrite with minor epidote.	15% pyrite disseminated and in veinlets.
315-325	10	100%	4717	180	10	90	184				
348									Massive quartz-pyrite-epidote zone.		
350	50	100%B	8976	125	93	70	120	Schist	Fissil, dark-grey, only rare porphyroblasts.	Quartz-pyrite-epidote.	5-10% pyrite in veinlets and finely disseminated with occasional ½" quartz-pyrite veins.
370								Porphyroblastic		Epidote replacing former feldspar; quartz flooding and veins.	
400	50	80%D	8977	190	100	55	165	Schist			
450	50	60%B	8978	105	100	95	160				
488								Quartz Schist	Dark grey, dense, massive, fine-grained.	Quartz flooding and in veinlets; epidote lining veinlets with locally massive epidote.	Massive pyrite in quartz veins.
500	50	80%D	8979	110	100	130	185				
532									Micaceous schist, thin laminations, greenish-grey.		Sparsely disseminated pyrite and quartz-pyrite veinlets.
550	50	100%D	8980	175	260	85	140				
564								Porphyroblastic Schist	Dark grey and green.	Epidote replacing former feldspar, locally massive epidote associated with quartz-pyrite zones.	
600	50	80%D	8981	185	85	50	110				

District Quartzite-Sugarloaf Hole Number DDH S-[illegible] Page Number 3 of 3

Depth	Int.	Core Recv	Samp. No.	Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
600								Quartz Schist	Massive, medium-grey.	Quartz-epidote; no calcite	Prominent white quartz vein at 604 contains abundant pyrite and minor molybdenite.
612								Phyllic Schist	Fine-grained, thinly laminated.	Quartz-epidote-pyrite.	
650	50	80%E	18982	90	115	70	145	Porphyro-blastic Schist	Dark grey, fine-grained chlorite-quartz ground-mass.	Quartz-epidote-chlorite alteration; epidote in quartz-pyrite veins and replacing former feldspar; minor chlorite along fractures; quartz flooding and occasional white quartz vein.	10% pyrite disseminated and in veins; pyrite content increases with depth.
700	50	100%E	18983	85	80	100	165				
750*	50	100%E	18984	100	52	110	335				
800	50	40%E	18985	120	68	115	260				
830	10	100%	14743	72	30	40	136				
848											
890	42	70%E	18986	95	53	95	155				
					LAST BOX						

* Samples taken and described by R. H. Corn.

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH S-3
Spudded
Completed Prior to July, 1965
Total Depth Approx. 2000'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 3 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
50		NO SAMPLE							
50-100	50	127	260	70	41				B18901
100-150	50	104	260	45	220				B18902
150-200	50	145	970	115	30				B18903
200-250	50	132	700	185	61				B18904
250-300	50	170	1000	170	90				B18905
300-400	100	145	640	205	108				B18906
400-450	50	290	320	120	95				B18908
450-500		NO SAMPLE							
500-550	50	116	350	115	60				B18907
550-650		NO SAMPLE							
650-700	50	100	272	200	70				14714
700-750	50	118	180	72	48				B18909
750-800	50	83	70	80	95				B18910
800-850	50	100	420	130	43				B18916
850-900	50	178	190	170	90				B18911
900-950	50	180	150	150	95				B18912
950-1000	50	170	260	115	64				B18913
1000-1050	50	NO SAMPLE							

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

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf

Hole Number DDH S-3

Hole Depth	Inter. Val.	Cu	Zn	Pb	Mo	Oz.Ag	Oz.Au	SAMPLE NUMBER
1050-1100	50	112	260	275	70			B18922
1100-1150	50	199	340	190	120			B18914
1150-1200	50	82	124	84	35			B18915, 23, 24
1200-1250	50	108	100	75	37			B18917
1250-1300	50	75	65	42	41			B18918
1300-1350	50	85	75	40	53			B18919
1350-1400			NO SAMPLE					
1400-1450	50	91	80	44	24			B18920, 21
1450-1500	50	95	65	30	33			B18929
1500-1550	50	80	80	50	27			B18925
1550-1600	50	166	73	40	66			B18926, 34
1600-1650	50	105	125	35	45			B18927
1650-1700	50	123	90	33	30			B18928
1700-1750	50	202	70	38	24			B18930
1750-1800	50	195	80	31	33			B18931
1800-1850	50	120	72	32	31			B18932 + 3
1850-1900	50	248	104	80	ND			14715

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH S-3
Spudded [illegible]
Completed Prior to July 1965 [illegible]
Total Depth Approx. 2000'
Driller Congdon & Carey
Logged By A. Grant [illegible]

County Yuma State Arizona
Claim Sec 3 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0											
83	NX	CORE						Schist	Very porous		
104	21	65%	118901	127	41	70	260		Schistosity at 90° to core.	Intense quartz-sericite: oxidized iron on fractures. Abundant talc.	Abundant cubic pyrite.
119											
131	12	20%	118902	104	220	45	260	Schist	No iron stain, abundant pyrite: abundant talc.		1/16" molybdenite veinlet at 35° to schistosity.
187											
196	9	70%	118903	145	30	115	970	Schist	Argillic schist.	Weak sericite: minor quartz.	Pyrite cubes: fine pyrite veinlets at 35° to schistosity: minor chalcopyrite.
* 225	10	100%	14744	128	-5	130	404				
233											
251	18	70%	118904	132	61	185	700	Schist	Argillic schist.	Chlorite-biotite micas: minor quartz-sericite.	Steep pyrite veinlets which cross at 90° and 45° to schistosity: minor chalcopyrite tarnish.
279											
288	9	70%	118905	170	90	170	8000		Argillic schist: numerous unorientiated porphyroblasts.	Quartz-sericite: abundant pyrite.	Near vertical 1½" bull quartz vein: steep pyrite veinlets with sphalerite. Some pyrite veinlets appear lenseoidal.
										338 - Slightly increased chlorite.	Abundant pyrite mostly in schist planes.
337										340-350 Intense silicification with occasional bull quartz vein.	Minor chalcopyrite tarnish: small graphite veinlet.
364	27	60%	118906	145	108	205	640			More chlorite than above-quartz-sericite.	More abundant pyrite.
412								415-419 Fault Zone			
421	9	100%	118907	290	95	120	320				
* 435	10	100%	14745	104	ND	100	244		Argillic Schist.	Intense quartz-sericite.	Small areas of dark mineral, likely tourmaline: some minor chalcopyrite tarnish.
492-535	36	80%	118907	116	60	115	350		Schistosity at 90° to core.	Abundant pyrite steep chlorite veinlets: tourmaline. Strong local silification.	

District Quartzite - Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
* 655	10	100%	14714	100	70	200	272				
709									Dark grey argillic schist to 727'. Light grey argillic schist to 764'. Dark schist may be result of biotite(?).	Strong silicification, few quartz veinlets. Quartz vein 1/3" at 30° to schistosity. Possibly contains pale yellow-green epidote.	Abundant pyrite; minor chalcopyrite tarnish on pyrite.
764	55	65%	318909	118	48	72	180				
* 770	10	100%	14746	48	-5	30	176				
793											
802	9	60%	318910	83	95	80	70		Light grey.	Anhydrite and massive chlorite veinlets; anhydrite also noted in groundmass.	- Minor chalcopyrite stain, however it is more than above. 858 - Calcite cuts across bull quartz which also contains large crystals of red sphalerite.
849											
859	10	40(?)	318910	100	43	130	420				
887								Medium to light grey Quartz Schist.	Medium to grey quartz schist; porphyroblastic texture. Below 907' color is light grey.	Quartz alteration groundmass seems to be mixture of quartz and biotite. Contains numerous grains of yellow-green epidote; inclusion of anhydrite with faint rim of chlorite.	Abundant disorientiated pyrite veinlets. Occasional quartz-pyrite almost parallel to schistosity.
916	29	100%	318911	178	90	170	190		Medium grey to greenish grey schist.	- Open quartz veinlets; abundant small anhydrite veinlets which cross schistosity. Minor sericite, possibly secondary biotite. Minor chlorite-quartz-sericite. Several vertical vuggy quartz and calcite veinlets. Pale yellow-green epidote throughout groundmass. Fine grained blebs of chlorite and/or biotite in groundmass. Open veinlets show very minor oxidation.	915 Quartz-pyrite ½" veinlet at 30° from vertical. Abundant disseminated and veinlet pyrite. - Occasional bull quartz veins. Small grains of molybdenite in pyrite veinlet within bull quartz at 933.5'. At 950' note massive fine-grained chlorite veinlet with large grain of chalcopyrite. - Quartz-pyrite veinlets with very minor chalcopyrite. Pyrite veinlets seem to be lined with chlorite. At 970' 3/4" quartz-pyrite veinlet in which the pyrite is well disseminated.
955	39	100%	318912	180	95	150	150	Medium to dark grey schist.	Mildly porphyroblastic texture.		
982	27	100%	318913	170	64	115	260				
* 1015	10	100%	14747	80	-5	115	188				

District Quartzite-Sugarloaf Hole Number DDH S-3 Page Number 3 of 5

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1082								Schist	Quartz schist	Quartz-sericite. Chlorite in groundmass along schist planes.	Quartz-pyrite veinlets.
1090	8	80%	018922	112	70	275	260				
1115								Dark grey Schist	Weak to moderate porphyroblastic texture; low sericite content.	Grains of calcite in groundmass; abundant grains of pale yellow-green epidote. Quartz-alunite. Abundant fine-grained chlorite throughout.	Disseminated and veinlet pyrite. Minor chalcopyrite in quartz-pyrite veinlets.
1140	25	90%	018910	199	120	190	340		Good porphyroblastic texture.	Phenocrysts are likely feldspars partially altered to alunite.	Pyrite-quartz veinlets; minor disseminated pyrite.
1160	20	80%	018921	70	33	140	200	Medium green grey schist	Good porphyroblastic texture.	Abundant greenish-yellow epidote in porphyroblastic texture. Quartz alteration. Calcite on veinlets.	Abundant pyrite. Quartz occasionally occurs in large grains. A 1/4" quartz-pyrite veinlet is well surrounded by layer of epidote.
1180	20	40%	018915	70	40	80	120	Dark grey Schist	Below 1194 color is light grey with increased quartz.	Abundant biotite-quartz. Abundant feldspars.	Good fine pyrite and minor fine chalcopyrite.
1205	25	80%	018920	102	30	62	90				
1215								Quartz Schist	Quartz schist light-grey.	Occasional quartz-pyrite vein or veinlet. Several fine quartz veinlets; less epidote than above.	Bull quartz with inclusions of epidote-feldspar mixture containing fair disseminated chalcopyrite.
1259	44	80%	018917	108	37	75	100			Calcite on fractures. 1208-Bull quartz with secondary orthoclase.	
1269									Argillic Schist	Quartz-sericite; calcite on fractures and in groundmass.	Quartz-pyrite veinlet system is mostly parallel to schistosity.
1280	11	70%	018916	75	41	42	65				
1304								Schist	Argillic schist which is well broken and fractured.	Abundant calcite on veinlets. Minor epidote. Fair chlorite. Iron oxidation evident at 1353 and 1358'. Probable anhydrite.	Possibly increased fine chalcopyrite associated with pyrite veinlets. Anhydrite and chlorite associated with possible epidote.
1365	10	100%	147448	36	-5	60	109				
1367	63	75%	018919	85	53	40	75				
1412									Porphyroblastic texture of quartz-epidote with chlorite, pyrite and minor chalcopyrite.	Abundant quartz with biotite and/or chlorite; probable secondary orthoclase.	1412-1429 Fair chalcopyrite (1-2%) with secondary biotite and epidote.
1429	17	95%	018920	71	23	50	80			Entire groundmass is recrystallized.	Sample was all of the split core in the interval.

District Quartzite-Sugarloaf Hole Number DDH 3

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1431								Medium to Dark Grey Schist	Weak to medium porphyroblastic texture; altered groundmass seems to contain inclusions of original dark schist. Below 1458 rock is light grey quartz schist.	Quartz-sericite with biotite. Abundant epidote throughout groundmass. Occasional grain of anhydrite. Secondary ortho-clase in small amounts.	Good disseminated pyrite with weak chalcopyrite. Occasional chlorite-pyrite veinlet.
1460	29	95%	B18922	110	26	40	80				
1469								Medium to Light grey Schist	Quartz schist.	Intense silicification with minor epidote, calcite on fractures. Possible secondary K-feldspar.	Fair chalcopyrite along with fine-grained disseminated pyrite.
1480	11	75%	B18923	92	33	30	65				
1495									Quartz schist.	Probable secondary feldspar. Epidote and chlorite in groundmass. Silicification is less intense below 1516'.	Fine disseminated pyrite with fair chalcopyrite. Below 1516' sulfide content drops.
1515	10	100%	14712	48	ND	40	128				
1541	46	70%	B18925	80	27	50	80	Medium to Dark Grey Schist.			
1563								Medium Grey Schist	Argillic Schist	Calcite in groundmass and on fractures; minor oxidation on a few fractures.	Low total sulfide.
									Quartz sericite.		
1579	16	80%	B18926	189	40	32	55				
1587	8	80%	B18931	120	120	58	110				Minor chalcopyrite.
1606								Quartz Schist		Quartz-sericite; partially argillic.	1607 - 1" quartz-pyrite vein with good molybdenite stringers. Pyrite is in center of quartz vein.
1616	10	90%	B18927	105	45	35	125				
1646								Quartz-Sericite Schist	1660-1672 - Fault zone	Phyllic to argillic	Low total sulfide.
1685	39	100%	B18928	123	30	33	90				

District Quartzite-Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
1685									Medium to dark grey schist.	Mostly quartz with abundant thin calcite on fractures. Abundant chlorite in schist planes.	1732 Quartz-chalcopyrite veinlet parallel to schistosity. Sulfide level slightly higher than above.
1734	49	50%	318930	202	24	38	70	Quartz Schist	As above	As above with less calcite. A few fractures are weakly oxidized.	Generally very low total sulfide. Occasional large quartz vein.
1788	54	60%	318931	195	33	31	80		Dark grey quartz schist.	Epidote in fair amount chlorite or possible biotite. Calcite on fractures. Calcite or anhydrite(?) with chlorite and pyrite in schist planes.	Increased sulfides with notable chalcopyrite. Quartz veinlets have pyrite at center with chlorite lining. Most of the pyrite is in schist planes. 1801.5 - Small specks of molybdenite in massive quartz vein.
1832	44	75%	318932	135	33	27	70		Quartz schist, medium to light grey. Below 1840' schist is light grey with quartz and low sulfide.	Strong silicification. Chlorite and/or secondary biotite found with quartz grains and quartz veinlets.	Increased total sulfide to 1840'. Below 1840' total sulfide is low. Rock material is well broken with occasional fault zone.
1855	23	60%	318933	96	30	42	75				
* 1860	5	100%	14715	248	ND	80	104				

DEEPEST CORE FOUND WAS 1857'.
TOTAL DEPTH IS UNKNOWN.
2000' PROBABLE TOTAL DEPTH.

* Samples taken and described by C. N. Corn.

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-4
Spudded
Completed Prior to July, 1965
Total Depth 790'
Driller Congdon & Carey
Logged By A. Grant

County Yuma State Arizona
Claim Sec 4 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	48	35	150	35				B18935
50-100'	50'	60	2200	160	68				B18936
100-150'	50'	68	2000	260	68				B18937-8
150-200'	50'	125	1600	255	100				B18939
200-250'	50'	112	1200	280	112				B18940
250-300'	50'	82	1700	270	57				B18944
300-350'	50'	110	2800	620	48				B18941
350-400'	50'	98	1100	250	44				B18942
400-450'	50'	110	1000	280	61				B18943
450-500'	50'	67	800	225	45				B18945
500-550'	50'	75	900	145	65				B18946
550-600'	50'	88	510	135	35				B18947
600-650'	50'	100	510	200	33				B18948
650-700'	50'	90	400	165	46				B18949
700-750'	50'	105	800	125	55				B18950
750-800'	50'	120	395	110	50				B18958-9

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

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-4 NEAR NW 2 of 9
Spudded
Completed Prior to July, 1965
Total Depth 790'
Driller Congdon & Carey
Logged By A. Grant

County Yuma State Arizona
Claim Sec 4 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0								Schist	Quartz-sericite: bleached white.	Abundant jarosite on fractures. Quartz veinlets with quartz grains in groundmass.	
30	30								Bleached argillic schist.	Intense quartz-sericite-alunite.	Abundant pyrite.
49	19	40%	318935	48	35	150	35			Intense quartz-sericite: good alunite in schist planes: minor epidote.	Abundant pyrite with minor chalcopyrite in schist planes.
100	51	80%	318936	60	68	160	+1000		Quartz-sericite schist	Pyrite is weakly oxidized.	Fair chalcopyrite on pyrite.
118	18	80%	318937	67	70	270	+1000		110-118' Rock is highly fractured.	Jarosite on most of the pyrite. Wide spread "bleeding" not apparent.	
147											
157	11	100%	318938	73	53	230	+1000				
184											
200	36	50%	318939	125	100	255	+1000		Quartz-schist.	Strong quartz-sericite-alunite. No mafic minerals.	Minor chalcopyrite on widespread pyrite.
212											
252	40	40%	318940	112	112	280	+1000		Quartz-schist.	Groundmass is 100% quartz, sericite. Occasional quartz veinlet.	Abundant pyrite, some with fair chalcopyrite tarnish.
261	9	100%	318941	82	57	270	+1000				
# 310	10	100%	14730	88	85	450	5600				
319									Quartz-schist.	Intense quartz-sericite-alunite. Coarser quartz than noted above.	Abundant pyrite. Occasional pyrite veinlet with associated epidote.
347	29	75%	318941	110	48	620	+1000				Occasional chalcopyrite on pyrite.

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
375									Quartz schist.	Intense quartz-sericite-alunite. More quartz than above. Minor limonite on occasional fracture.	Abundant disseminated pyrite and pyrite veinlets. Minor chalcopyrite tarnish on both kinds of pyrite.
404	29	60%	318942	98	44	250	+1000				
422									Quartz schist.	Intense quartz-sericite-alunite. Quartz is coarse in some places.	Abundant pyrite, some chalcopyrite tarnish.
460	38	85%	318943	110	61	280	+1000				
* 485	10	100%	14731	64	5	430	2880		Light medium grey quartz schist.	Note: Introduction of chlorite; may be slightly argillic.	5% pyrite with less chalcopyrite stain. Gently dipping veins following schistosity.
500	40	70%	318945	67	45	225	800		2" quartz vein at 509'	Weak oxidation along some veinlets.	
550	50	100%	318946	75	65	145	+1000			More intense silicification below 560'.	Pyrite as abundant thin stringers in schist planes.
600	50	100%	318947	88	35	135	510				
* 600	10	100%	14732	60	<5	125	416				
626	26	80%	318948	100	33	200	510				Blebs of pyrite disseminated throughout with minor chalcopyrite staining.
673								Quartz Schist	Porphyroblastic	Porphyroblasts altered to alunite.	Quartz-pyrite-sphalerite veinlets in schist planes.
692	20	100%	318949	90	46	165	400				
703										Chlorite introduced along fractures.	
723	20	100%	318950	105	55	125	800				
* 710-715	5	100%	14710	432	20	280	2000				
747								Quartz Sericite Schist	Light Grey		Quartz-pyrite sphalerite veins cross-cutting schist; disseminated pyrite throughout.
757	10	100%	318951	100	56	225	505				
* 760	10	100%	14733	68	<5	160	440				
784								Quartz Schist	Micaceous banding.	Not discernable.	Quartz-pyrite veinlets.
790	7	100%	318952	140	44	190	285				
								-790' - TOTAL DEPTH-			
									* Samples taken and described by R. H. Corn		

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-5
Spudded
Completed Prior to July, 1965
Total Depth 651.3'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX 0-500 BX 500 TO 651
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	68	33	115	15				18964
50-100'	50'	60	250	70	14				18965
100-200'	100'		NO SAMPLE						
200-250'	50'	1380	360	35	200				18966
250-300'	50'	137	900	70	180				18967
300-350'	50'	163	250	65	55				18968
350-400'	50'	164	270	60	150				18969
400-450'	50'	170	250	100	82				18970
450-500'	50'	112	95	60	120				18971

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

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-5
Spudded
Completed Prior to July, 1965
Total Depth 651.3'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size HX
Core Size HX 0-500 BX 500-651 T.D.
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0											Oxidized; disseminated; pyrite less than
20	20	--Not	Cored	----				Schist	Chloritic schist with	Chlorite, clay, weak.	3%.
									blebs of feldspar and		
50	30	100%	18964	68	15	115	33		quartz: occasional zones		
100	50	100%	18965	60	14	70	250		of quartzite, dark		
	----	Not	Cored----						greenish-grey.		
229	129								Light grey: original	Alunite-sericite-quartz.	20% oxidized, pyrite stringers coated
									mineralogy destroyed		with minor chalcocite; quartz-pyrite
									by alteration.		vein at 240'; pyrite in veinlets not
											disseminated.
245								Arkosic	Grey to greenish grey.		Pyrite veins and stringers in planes
								Schist			of schistosity.
250	31	100%	18966	1380	200	35	360				
282	32		18967	137	180	70	+1000				
	----	Not	Salvaged----								
342	60							Argillic	Light to medium grey:	quartz-alunite-gypsum	Pyrite in veinlets and in schist planes:
								Schist	greenish grey.		no chalcocite tarnish noted.
350	8	46%	18968	163	55	65	250				
365											
387	----	Not	Salvaged----								
400	50	56%	18969	164	150	60	270				Occasional chalcopyrite tarnish noted
											on non-crystalline pyrite.
420									Porphyroblastic texture.		
450	50	70%	18970	170	82	100	250				
474										More quartz veins with	
493	43	100%	18971	112	120	60	95			chlorite along fractures.	
	----	Not	Salvaged----								
651'							TOTAL DEPTH				

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SI-6
Spudded
Completed Prior to July, 1965
Total Depth 697'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 34 T. 4N R. 20W
Elevation
Hole Size ~~NX 0-466'; BX 466-696'~~
Core Size NX 0-466'; BX 466-697'
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	44	70	90	23				18971
50-100'	50'	144	1400	250	16				18972
100-150'	50'	123	3000	265	28				18973
150-200'	50'	80	1700	650	34				18974
200-250'	50'	125	1500	255	54				18975
250-300'	50'	60	800	240	40				18976
300-350'	50'	71	800	485	80				18977
350-400'	50'		NO SAMPLE						
400-450'	50'	101	700	220	60				18978
450-500'	50'	118	1000	140	57				18979
500-550'	50'	110	1000	270	48				18980
550-600'	50'	84	2300	465	59				18981
600-650'	50'	92	1600	335	90				18982
650-700' 697	50'	91	1800	375	35				18983

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

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-6
Spudded
Completed Prior to July, 1965
Total Depth 696'
Driller Congdon and Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 34 T. 4N R. 20W
Elevation
Hole Size HX 0-466'; BX 466-696'
Core Size HX 0-466'; BX 466-696'
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0	----	NO CORE	----					Schist	White, chalky brecciated with numerous quartz-pyrite veinlets.	Quartz-clay.	Limonite after pyrite in fractures only; completely oxidized.
25											
45	20	100%	18971	44	23	90	70				
	----	NOT SALVAGED	----						Light gray, brecciated below 86'.	Quartz-clay-pyrite-sericite.	Pyrite disseminated and in veinlets; very minor chalcocite coating pyrite; partially oxidized. 2" quartz-pyrite vein at 186' shows abundant pyrite with chalcocite tarnish.
75											
100	25	100%	18972	144	16	250	+1000				
150	50	100%	18973	123	28	265	+1000				
167								Quartz Sericite Schist	Tan to grey: minor oxidation: numerous breccia zones: schistosity nearly horizontal.	Quartz-sericite-pyrite; a quartz-gypsum veinlets with pyrite. Intense quartz-alunite-pyrite 198-202'.	Abundant pyrite stringers in schist planes with chalcopyrite tarnish: pyrite 5%.
198											
200	10	100%	14737	80	50	200	2400				
200	50	65%	18974	80	34	650	+1000				
225	25	100%	18975	125	54	255	+1000				
	----	NOT SALVAGED	----					Phyllic Schist	Light grey, speckled with pyrite: open zones of fault breccia.	Sericite-quartz-pyrite with occasional gypsum veinlets.	Pyrite is 10-20%, disseminated uniformly throughout.
253	28										
278	25	100%	18976	60	40	240	+1000				
303	25	NOT SALVAGED	----					Schist	Light grey; no mafic minerals.	Quartz-sericite-pyrite with numerous gypsum veinlets.	Pyrite veinlets exhibit chalcopyrite tarnish; some disseminated pyrite locally.
350	47	100%	18977	71	80	485	+1000				
355	10	100%	14738	28	100	190	224				

District Quartzite-Sugarloaf Hole Number DDH SL-6

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
415								Phyllic Schist	Light grey, schistosity generally horizontal. Prominent massive quartz vein 434-478'.	Quartz-sericite-pyrite-alunite with occasional veinlets of gypsum after anhydrite.	Pyrite stringers along schist planes equal 10%.
450	35	100%	18978	101	60	220	+1000	Fault Breccia 447-451'			
466		REDUCE	TO BX	CORE							Pyrite 10% to 20% disseminated and along schistosity: some sulfide grains exhibit chalcopyrite tarnish; pyrite more abundant at 470': quartz-pyrite-sphalerite-galena vein at 480'.
474								Quartz Vein			
481								Quartz Schist	Rock is mostly quartz with occasional porphyroblasts of chloritic material.	Quartz-pyrite with minor clay.	Pyrite is 10-20% occurring as stringers in gently dipping planes of schistosity.
495			14739	48	48	400	4720				
500	50	90%	18979	118	57	140	+1000				
550	50	90%	18980	110	48	270	+1000				
553								Phyllic Schist	Light grey, pearly sheen on all surfaces. No veinlets; minor stringers of chlorite.	Quartz-sericite-pyrite with clay: graphite at 600'.	Pyrite approximately 10%: in schist planes.
600	50		18981	84	59	465	+1000				
650			18982	92	90	335	+1000				
* 660	10		14711	68	15	600	2800				
* 690			14740	64	10	840	3680				
696			18983	91	35	375	+1000				
								TOTAL DEPTH - 696'			

* Samples taken and described by R. M. Corn

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-15
Spudded
Completed
Total Depth > 3650'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size Rotary 0-533'
Core Size NX 533-2000'; BX 2000-3650'
Hole Angle
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50'	50'	530	680	255	20	[illegible]			18921
50-100'	50'	66	810	135	22	[illegible]			18922
100-150'	50'	122	910	125	24	[illegible]			18923
150-200'	50'	82	620	175	19	[illegible]			18924
200-250'	50'		NO SAMPLE						
250-300'	50'	85	580	145	22	[illegible]			18925
300-350'	50'	73	300	90	24	[illegible]			18926
350-400'	50'	72	250	80	30	[illegible]			18927
400-450'	50'	73	260	95	32	[illegible]			18928
450-500'	50'	66	260	95	33	[illegible]			18929
500-550'	50'	95	104	30	33	[illegible]			18930 & B18988
550-600'	50'	250	185	100	45	[illegible]			B18989
600-650'	50'	80	155	85	41	[illegible]			B18990
650-700'	50'	40	300	50	31	[illegible]			B18991
700-750'	50'	145	170	62	87	[illegible]			B18992
750-800'	50'	65	135	45	50	[illegible]			B18993
800-850'	50'	110	740	80	55	[illegible]			B18994
850-900'	50'	70	225	75	52	[illegible]			B18995
900-950'	50'	100	130	50	75	[illegible]			B18996

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

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf

Hole Number DDH SL-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
950-1000'	50'	70	85	35	45	[illegible]		B18997
1000-1050'	50'	90	205	130	155	[illegible]		B18998
1050-1100'	50'	70	140	155	155	[illegible]		B18999
1100-1150'	50'	100	115	40	44	[illegible]		B19000
1150-1200'	50'	160	125	65	75	[illegible]		C18901
1200-1250'	50'	110	95	35	40	[illegible]		C18902
1250-1300'	50'	75	60	35	53	[illegible]		C18903
1300-1350'	50'	115	85	55	87	[illegible]		C18904
1350-1400'	50'		NO SAMPLE					
1400-1450'	50'	145	115	60	46	[illegible]		C18905
1450-1500'	50'	650	90	55	67	[illegible]		C18906
1500-1550'	50'	620	95	155	56	[illegible]		C18907
1550-1600'	50'		NO SAMPLE					
1600-1650'	50'	165	70	35	96	[illegible]		C18908
1650-1700'	50'		NO SAMPLE					
1700-1750'	50'	215	55	40	55	[illegible]		C18909
1750-1800'	50'	250	90	40	150	[illegible]		C18910
1800-1850'	50'		NO SAMPLE					
1850-1900'	50'	205	60	35	155	[illegible]		C18911
1900-1950'	50'	250	80	45	120	[illegible]		C18912
1950-2000'	50'	175	65	40	68	[illegible]		C18913
2000-2050'	50'	285	70	50	125	[illegible]		C18914
2050-2100'	50'	320	50	50	117	[illegible]		C18915
2100-2150'	50'	110	70	25	34	[illegible]		C18916

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SI-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
950-1000'	50'	70	85	35	45	[illegible]		B18997
1000-1050'	50'	90	205	130	155	[illegible]		B18998
1050-1100'	50'	70	140	155	155	[illegible]		B18999
1100-1150'	50'	100	115	40	44	[illegible]		B19000
1150-1200'	50'	160	125	65	75	[illegible]		C18901
1200-1250'	50'	110	95	35	40	[illegible]		C18902
1250-1300'	50'	75	60	35	53	[illegible]		C18903
1300-1350'	50'	115	85	55	87	[illegible]		C18904
1350-1400'	50'		NO SAMPLE					
1400-1450'	50'	145	115	60	46	[illegible]		C18905
1450-1500'	50'	650	90	55	67	[illegible]		C18906
1500-1550'	50'	620	95	155	56	[illegible]		C18907
1550-1600'	50'		NO SAMPLE					
1600-1650'	50'	165	70	35	96	[illegible]		C18908
1650-1700'	50'		NO SAMPLE					
1700-1750'	50'	215	55	40	55	[illegible]		C18909
1750-1800'	50'	250	90	40	150	[illegible]		C18910
1800-1850'	50'		NO SAMPLE					
1850-1900'	50'	205	60	35	155	[illegible]		C18911
1900-1950'	50'	250	80	45	120	[illegible]		C18912
1950-2000'	50'	175	65	40	68	[illegible]		C18913
2000-2050'	50'	285	70	50	125	[illegible]		C18914
2050-2100'	50'	320	50	50	117	[illegible]		C18915
2100-2150'	50'	110	70	25	34	[illegible]		C18916

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf

Hole Number DDH SL-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
2150-2200'	50'	155	240	350	29	[illegible]		C18917
2200-2250'	50'	205	75	40	45	[illegible]		C18918
2250-2300'	50'	185	175	45	330	[illegible]		C18919
2300-2350'	50'	185	85	15	57	[illegible]		C18920
2350-2400'	50'	200	100	35	31	[illegible]		C18921
2400-2450'	50'	110	165	20	58	[illegible]		C18922
2450-2500'	50'	130	95	10	35	[illegible]		C18923
2500-2550'	50'	115	100	10	66	[illegible]		C18924
2550-2600'	50'	95	80	10	26	[illegible]		C18925
2600-2650'	50'	50	140	10	28	[illegible]		C18926
2650-2700'	50'		NO SAMPLE					
2700-2750'	50'	105	55	35	45	[illegible]		C18927
2750-2800'	50'	105	55	25	27	[illegible]		C18928
2800-2850'	50'	65	55	5	40	[illegible]		C18929
2850-2900'	50'	100	60	15	26	[illegible]		C18930
2900-2950'	50'	110	50	7	49	[illegible]		C18931
2950-3000'	50'	75	50	10	29	[illegible]		C18932
3000-3050'	50'	60	55	15	34	[illegible]		C18933
3050-3100'	50'	175	75	45	35	[illegible]		C18934
3100-3150'	50'	550	90	45	50	[illegible]		C18935
3150-3200'	50'	80	65	5	28	[illegible]		C18936
3200-3250'	50'	80	55	5	27	[illegible]		C18937
3250-3300'	50'	95	70	10	37	[illegible]		C18938
3300-3350'	50'	215	65	15	43	[illegible]		C18939

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf

Hole Number DDH SL-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
3350-3400'	50'	190	80	20	33	53		C18940
3400-3450'	50'	115	75	15	35	50		C18941
3450-3500'	50'	110	110	20	36	56		C18942
3500-3550'	50'	160	70	30	64	44		C18943
3550-3600'	50'	320	70	20	39	59		C18944
3600-3650	50'	190	95	20	43	63		C18945

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-15
Spudded
Completed
Total Depth > 3650'
Driller ~~McIntire - Porcupine~~
Logged By R. Ahern

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size ~~5-1/8"~~ Rotary to 533'
Core Size NX 533-2000'; BX 2000-3650'
Hole Angle
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
0											
		ROTARY CUTTINGS									
50	50		18921	530	20	255	680				
		NX CORE						Quartz Sericite Schist	Medium-grey, medium-grained metasediments cut by quartz-pyrite and gypsum veinlets with minor chlorite along fractures.	Quartz-sericite-pyrite-gypsum veinlets parallel to schistosity while quartz-pyrite veinlets cross-cut it.	Pyrite disseminated and in veinlets: partial oxidation.
62	12		18987	95	290	210	+1000				
100	38		18922	66	22	135	810				
150	50	NO SAMPLE									
200	50		18923	122	24	125	910				
250	50	NO SAMPLE									
300	50		18924	82	19	175	620				
350	50		18925	85	22	145	580				
400	50		18926	73	24	90	300				
450	50		18927	72	30	80	250				
500	50		18928	73	32	95	260				
533	33		18929	66	34	95	260				
		NX CORE									
550	17	100%	318988	90	50	60	200	Porphyroblastic Schist	Dark grey, subhedral feldspar, chlorite and clay along schist planes. 1" quartz vein at 556'	Pyrite, very minor epidote and quartz, possible clay. 2" epidote-quartz-pyrite vein at 560'.	Unoxidized, 5-7% pyrite, mostly in veinlets parallel to schistosity; minor chalcopyrite-bornite tarnish; numerous epidote-quartz-pyrite veinlets cross-cut schistosity.

District Quartzite-Sugarloaf Hole Number DDH S[illegible] Page Number 2 of 6

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
550											
600	50	80%	318998	250	45	100	185	Porphyro-blastic Schist		Most former feldspar replaced by epidote.	
634									Minor brecciation		
650	50	100%	318999	80	41	85	155				
663	13		318999	40	31	50	300				
		NOT SALVAGED									
709								Quartz Sericite Schist	Medium to fine-grained metasediments, cut by calcite veins.		
729								Porphyro-blastic Schist	Dark gray, fine-grained groundmass of quartz and chlorite with sub- to euhedral feldspar.	Quartz-epidote-pyrite veinlets and epidote replacing former feldspar.	Prominent vein at 738'.
750	50	40%	318999	145	87	62	170				
800	50	60%	318999	65	50	45	135			Massive chlorite associated with pyrite veinlets.	10-20% pyrite disseminated and in veinlets.
850	50	60%	318999	110	55	80	740		Core is badly shattered below 785'.		

District Quartzite-Sugarloaf Hole Number DDH SL Page Number 3 of 6

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
900	50	60%	B18995	10	52	75	225	Porphyblastic Schist	Medium-grey.	Chlorite-quartz-epidote-chlorite in in 1/8 to 1/2" borders along pyrite and quartz-pyrite veins, epidote with quartz-pyrite veins and replacing feldspar, occasional calcite veinlets.	5-10% pyrite, occasional 1-2" pyrite-quartz-epidote veins.
950	50	80%	B18996	100	75	50	130				
1000	50	20%	B18997	70	45	35	85				
1050	50	30%	B18998	90	155	130	205				
* 1050			14749	60	5	110	216				
1065	15	100%	B18999	70	155	155	140				
		NOT SALVAGED									
1116								Quartz-Sericite Schist with Local Brecciation	Thin-bedded, obscurring original texture. Core is dense and massive. Sericite-clay along fractures.	Epidote replacing feldspar quartz flooding.	Pyrite veinlets in schist planes.
1150	34	90%	B19000	100	44	40	115				
1200	50	20%	C1890	160	75	65	125				
1250	50	40%	C18902	110	40	35	95				
1300	50	40%	C18903	75	53	35	60	Schist Breccia	Fragments of up to several inches in quartz-sericite-chlorite matrix.	Quartz-epidote-gypsum.	Pyrite filling fracture plane bounding and cutting through breccia fragments.
1350	15	100%	C18904	115	87	55	85				
1407											
1450	43	80%	C18905	145	46	60	115			Quartz-chlorite-calcite veins.	Prominent quartz-pyrite veins exhibit good chalcopyrite tarnish.
1500	50	40%	C18906	650	67	55	90				
1550	50		C18907	620	56	155	95				
		NOT SALVAGED									
1600								Quartz Sericite Schist Breccia	Medium to dark grey, mottled looking with veinlets and fractures abundant.	Quartz-chlorite-pyrite.	5-10% pyrite with occasional 1-2" quartz-pyrite veins.
1650			C18908	165	96	35	70				
		NOT SALVAGED									

District Quartzite-Sugarloaf Hole Number DDH SL- Page Number 4 of 6

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1737								Quartz Sericite	Dark grey fine-grained chlorite and calcite	Quartz-epidote-chlorite; quartz-pyrite veinlets.	Pyrite and quartz-pyrite veinlets cross-cutting schist.
1747	10	100%	C18909	215	55	40	55	Schist	lining fractures; mottled breccia appearing on outside surface.		
1764											
1784	20	90%	C18910	250	150	40	90				
		NOT SALVAGED									
1867										Occasional calcite veins, chlorite lined fractures abundant.	Low sulfide content, 3-5%
1900	33	80%	C18911	205	155	35	60				
1950	50	30%	C18912	250	120	45	80				
2000	50	30%	C18913	175	68	40	65		3' quartz vein at 1990' bounded by zones of abundant chlorite.		
		DX CORE								Local zones of intense silication and pyritization.	
2050	50	60%	C18914	285	125	50	70				
2100	50	60%	C18915	320	117	50	50				
2125								Schist	Scattered zones of	Quartz-epidote-chlorite.	
2150	50	80%	C18916	110	34	25	70	Breccia	porphyroblasts.		
2200	50	10%	C18917	155	29	350	240				
2250	50	80%	C18918	205	45	40	75			More numerous quartz-epidote pyrite vein zones and sinuous fractured filled veins with fine-grained quartz and pyrite.	Quartz-pyrite veins exhibit minor occurrences of molybdenum.
2300	50	100%	C18919	185	330	45	175				
2350	50	70%	C18920	185	57	15	85	Massive Quartz Sericite Schist	No visible brecciation. Porphyroblasts not altered.		Very low sulfide content.
2400	50	80%	C18921	200	31	35	100				
2450	50	80%	C18922	110	58	20	165				
2500	50	80%	C18923	130	35	10	95				
2550	50	20%	C18924	115	66	10	100				

District Quartzite-Sugarloaf Hole Number DDH SL Page Number 5 of 6

Depth	Int.	%Core Recv	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
2559								Quartz Schist	Dense, massive; few fractures coated with chlorite.	Quartz-pyrite-epidote veins numerous.	Pyrite disseminated weakly and in quartz pyrite-epidote veinlets.
2600	50	80%	C18925	95	26	10	80				
2650	50	10%	C18926	50	28	10	140				
2700										Quartz-epidote vein 6" at 2756'.	Pyrite 10-20%.
2750	50	30%	C18927	105	45	35	55				
2800	50	80%	C18928	105	27	25	55				
2850	50	60%	C18929	65	40	5	55				
2900	50	20%	C18930	100	26	15	60			Extreme silica flooding; numerous quartz-chlorite-pyrite veinlets; occasional epidote veins.	Minor sphalerite in a few of the pyrite veinlets.
2950	50	100%	C18931	110	44	7	50				
3000	50	40%	C18932	75	29	10	50				
3050	50	60%	C18933	60	34	15	55		Dark grey, dense quartz chlorite schist.	Numerous quartz and epidote stringers filling fractures.	
3100	50	60%	C18934	175	35	45	75				
* 3110			14750	44	<5	60	104				
3150	50	80%	C18935	550	50	45	90	Schist Breccia	Somewhat shattered; numerous chlorite lined fractures.	Quartz-epidote-pyrite-epidote-quartz matrix and occasional epidote fragments.	
3200	50	80%	C18936	80	28	5	65				
3250	50	100%	C18937	80	27	5	55			Extreme silica flooding at 3260-3280'.	
3280								Chlorite Schist	Horizontal fractures, 5-10 per inch coated with chlorite.		
3300	50	100%	C18938	95	37	10	70				
3319								Porphyroblastic Schist	Dark grey, dense, massive.	a. Former feldspar replaced by epidote, quartz-pyrite and quartz-epidote fracture fillings.	Occasional 1" quartz-epidote-pyrite veinlets contain sphalerite and rare molybdenite.
3350	50	100%	C18939	215	43	15	65				

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
3377								Quartz Schist	Dark grey, dense, massive, very siliceous.	Quartz-epidote-pyrite.	Very low sulfide content.
3400	50	80%	C18940	190	33	20	80				
* 3425			1475	280	5	30	152				
3430								Quartz Sericite Schist	Dark grey, minor fracturing; breccia texture on outer surface.		
3440	10	100%	C18941	115	35	15	75				
3455											
3500	45	25%	C18942	110	36	20	110		Local highly fractured zones exhibit abundant chlorite.		Occasional quartz-pyrite veins.
3550	50	30%	C18943	160	64	30	70				
3600	50	20%	C18944	320	39	20	70				
3650	50	15%	C18945	190	43	20	95				

[redacted]

Assay Log

District Quartzsite-Sugarloaf
Hole Number DDH SL-7
Spudded
Completed
Total Depth 1164.5
Driller Congdon & Carey
Logged By [redacted]

County Yuma State Arizona
Claim Sec 33 T. 7 N R. 20 W
Elevation 1180
Hole Size 5 1/8" Rotary
Core Size Not Cored
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50'	50'	52	330	30	27				18901
50-100'	50'	87	450	55	34				18902
						.09	Tr.		
100-150'	50'	54	160	54	30				18903
150-200'	50'	69	170	70	38				18904
		NO SAMPLE							
250-300'	50'	103	100	43	56				18906
						.05	.002		
300-350'	50'	104	190	70	76				18907
350-400'	50'	86	110	45	110				18908
400-450'	50'	95	125	58	68				18909
450-500'	50'	187	320	145	108				18910
						.11	.002		
500-550'	50'	185	390	200	230				18911
550-600'	50'	240	440	245	100				18912
600-650'	50'	NO SAMPLE							
650-700'	50'	117	150	81	105	.09	.001		18914
700-800'	100'	NO SAMPLE							
800-850'	50'	130	160	110	85				18917
						.02	.001		
850-900'	50'	136	160	115	77				18918
900-950'	50'	150	170	115	80				18919
950-1000'	50'	161	130	89	80				18920
* 1145-1164'	19'	220	60	23	115				18913

Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum $ per pound; silver $ per ounce; and gold $35.00 per ounce.

* NX core

[redacted]

Assay Log

District Quartzite-Sugarloaf
Hole Number RH S-10
Spudded
Completed
Total Depth 550 547.5
Driller Congdon & Carey
Logged By [redacted]

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

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50'	50'	64	40	32	30				18953
50-100'	50'	68	50	43	36				18954
100-150'	50'	50	110	71	70	.08	.001	<	18955
150-200'	50'	55	160	51	38				18956
200-250'	50'	217	150	55	36				18957
250-300'	50'	65	125	40	39				18958
300-350'	50'	56	90	38	44				18959
350-400'	50'	72	80	58	52				18960
						.06	.002	<	
400-450'	50'	65	80	68	46				18961
450-500'	50'	69	100	59	61				18962
500-550'	50'	100	100	48	56				18963
SCATTERED CORE RUNS WITH GOOD RECOVERY.									
347-353'	6'	97	60	31	30				18946
395-396'	1'	135	15	29	50				18947
460-462'	2'	97	70	61	35				18948

Dark Grey Meta-Quartzite

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

[redacted]

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH S-6
Spudded
Completed
Total Depth 1000'
Driller Congdon & Carey
Logged By [redacted]

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

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number	
380-383	3	125	35	23	29				18944	Quartz Sericite Schist
435-443	8	86	42	20	32	.06	.001		18945	
861-965	34	750	85	17	19				18915	

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

[redacted]

Assay Log

District Quartzite-Sugarloaf
Hole Number RH SL-13
Spudded
Completed
Total Depth > 900'
Driller Congdon & Carey
Logged By [redacted]

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size 5 1/8 Rotary
Core Size NX Where Cored
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50'	50'	98	55	14	24				18930
50-100'	50'	98	45	16	20				18931
100-150'	50'	80	40	16	45	.07	.001		18932
150-200'	50'	75	60	17	51				18933
200-250'	50'	68	90	60	47				18934
250-300'	50'		NO SAMPLE						
300-350'	50'	145	65	33	45				18935
350-400'	50'	193	60	29	48	.06	.002		18936
400-450'	50'	250	55	24	43				18937
450-500'	50'	202	75	23	57				18938
500-550'	50'	210	65	25	66				18939
550-600'	50'	198	75	26	58				18940
600-650'	50'	210	75	32	73	.05	.001		18941
650-700'	50'		NO SAMPLE						
700-750'	50'	255	70	31	86				18942
750-850'	100'		NO SAMPLE						
850-900'	50'	640	74	31	105	.06	.002		18943
Scattered	short NX	Core runs with very poor recovery.							
280-503'	223'	265	80	35	61	.07	.001		18905

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-1 (where located ? - NORTH)
Spudded 2/8/72
Completed 2/8/72
Total Depth 100'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 2 Sec 23 T. 4 N. R. 20 W.
Elevation 1175'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 255' N55°W of SE Cor. SUG #2

VALIDATION DRILL HOLE FOR CLAIMS SUG #1-10

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-25'	25'									Schist with disseminated pyrite and sericite.
25-30'	5'	91		40	45				20795	
30-40'	10'									
40-45'	5'			52	46				20796	
45-55'	10'									
55-60'	5'			30	90				20797	
60-70'	10'									
70-75'	5'	136		41	73				20798	
75-85'	10'									
85-90'	5'	58		30	51				20799	
90-95'	5'									
95-100'	5'	119	155	57	69				20800	

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-2
Spudded 2/9/72
Completed 2/9/72
Total Depth 80'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 13 Sec 4 T. 3 N. R. 20 W.
Elevation - 1250'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 200' N 60° W of E End Center SUG 13

VALIDATION DRILL HOLE FOR CLAIMS SUG #11-18

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-30'	30'									Schist with abundant pyrite
30-35'	5'	90	17	14	6				19285	
35-45'	10'									
45-50'	5'	38	10	15	5				19286	
50-60'	10'									Chalcocite coating pyrite
60-65'	5'	995		67	6				19288	
65-75'	10									
75-80'	5	19	320	52	2				19287	

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-3
Spudded 2/7/72
Completed 2/7/72
Total Depth 80'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 24 Sec 33 T. 4 N. R. 20 W.
Elevation 1175'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 655' N85°E of W End Center SUG #24

VALIDATION DRILL HOLE FOR CLAIMS SUG #19-26

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-30'	30'									
30-35'	5'		417	34	8				20402	Schist with pyrite-specularite-sericite chlorite alteration.
35-45	10'									
45-50'	5'	100	165	49	6				20403	
50-60'	10'									
60-65'	5'	72	160	31	7				20404	
65-75'	10'									
75-80'	5'	248	188	40	5				20405	

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-4
Spudded 2/9/72
Completed 2/9/72
Total Depth 80'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 32 Sec 33 T. 4 N. R. 20 W.
Elevation 1250'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 600' N80°W of E End Center SUG #32

VALIDATION DRILL HOLE FOR CLAIMS SUG #27-34

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0- 5'	5'									
5-10'	10'			86'	13				20406	Schist
10-20'	10'			218	22				20407	Intense Phyllic Alteration,
20-30'	10			245	10				20408	Quartz veinlets
30-40'	10'	99		236	18				20409	Sericite-pyrite
[redacted]-50'	10'	69	[redacted]	144	9				20410	
50-60'	10'			140	13				20411	
60-70'	10			121	17				20412	
70-80'	10	65	[redacted]	136	19				20413	
Average	-	78	[redacted]	166	15					

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-5
Spudded 2/9/72
Completed 2/9/72
Total Depth 100'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 27 Sec 4 T. 3 N. R. 20 W.
Elevation 1275'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 450' S87°W of NE Cor. SUG 37

VALIDATION DRILL HOLE FOR CLAIMS SUG #35-44

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									
15-20'	5'			41	7				19289	Schist
20-30'	10									Phyllic Alteration
30-35'	5'			151	14				19290	
35-45'	10'									Intense Sericitization with Quartz - Sulfide Veinlet
45-50'	5'	22	75	186	10				19291	
50-60'	10'									
60-65'	5'	23	300	247	6				19292	
65-75'	10'									
75-80'	5'			326	5				19293	
80-90'	10'									
75-100'	5'	20	[redacted]	157	8				19294	
Average -		22	625							

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-6
Spudded 2/8/72
Completed 2/8/72
Total Depth 100'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 49 Sec 34 T. 4 N. R. 20 W.
Elevation 1150'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 410' N75°E of SW Cor. SUG #79

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									Schist
15-20'	5'			93	14				20789	Pyritic Alteration
20-30'	10'									
30-35'	5'			81	7				20790	
35-45'	10'									
[illegible]-50'	5'			49	6				20791	
50-60'	10'									
60-65'	5'			41	6				20792	
65-75'	10'									
75-80'	5'	42		59	5				20793	
80-95'	15'									
95-100'	5'	38	375	60	4				20794	

NOTE: Some water collected in bottom of hole.

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-7
Spudded 2/10/72
Completed 2/11/72
Total Depth 70' + 30'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 58 Sec 34 T. 4 N. R. 20 W.
Elevation 1225'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 180' N60°E of SW Cor. SUG #58

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									
15-20'	5'			136	8				19297	Schist Pyrite-Sericite-[redacted] Alteration.
20-25'	5'									
25-30'	5'			67	13				19298	
30-45'	15'									
45-50'	5'			72	14				19299	
50-60'	10'									
60-70'	10'			85	7				19300	

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-8
Spudded 2/9/72
Completed 2/9/72
Total Depth 50' + 50'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 69 Sec 3 T. 3 N. R. 20 W.
Elevation 1300'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 375' N80°W of E End Center SUG 69

VALIDATION DRILL HOLE FOR CLAIMS SUG #65-74

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									Sericite Schist, with Chlorite, Specularite Alteration, No Pyrite.
15-20'	5'			92	2				19295	
20-45'	15'									
45-50'	5'			68	1				19296	
Average	-			80	2					

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-9
Spudded 2/7/72
Completed 2/7/72
Total Depth 100'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 76 Sec 34 T. 4 N. R. 20 W.
Elevation 1125'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 675' N80°E of W End Center SUG #76

VALIDATION DRILL HOLE FOR CLAIMS SUG #75-81

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-95'	95'									Alluvium
95-100'	5'			64	7				20401	

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-10
Spudded 2/11/72
Completed 2/11/72
Total Depth 70' + 30'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 86 Sec 3 T. 3 N. R. 20 W.
Elevation 1175'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 600' N60°E of SW Cor. SUG #86

VALIDATION DRILL HOLE FOR CLAIMS SUG #82-89

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									Schist
15-20'	5'			[redacted]	14				20784	Intense Propylitic Alteration with Chlorite, Sericite, Specularite, Pyrophyllite.
20-25'	5'									
25-30'	5'			[redacted]	7				20786	
30-45'	15'									
45-50'	5'			[redacted]	5				20787	
50-60'	10'									
60-65'	5'			[redacted]	5				20788	

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

[redacted]

Assay Log

District Quartzsite
Hole Number RH V-11
Spudded 2/11/72
Completed 2/11/72
Total Depth 80'
Driller Atkinson Drilling Co.
Logged By [redacted]

County Yuma State Arizona
Claim SUG 90 Sec 3 T. 3 N. R. 20 W.
Elevation 1200'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 165' S50°W of NE Cor. SUG 90

VALIDATION DRILL HOLE FOR CLAIMS SUG #90-97

Gross Value in Sulfide Minerals*

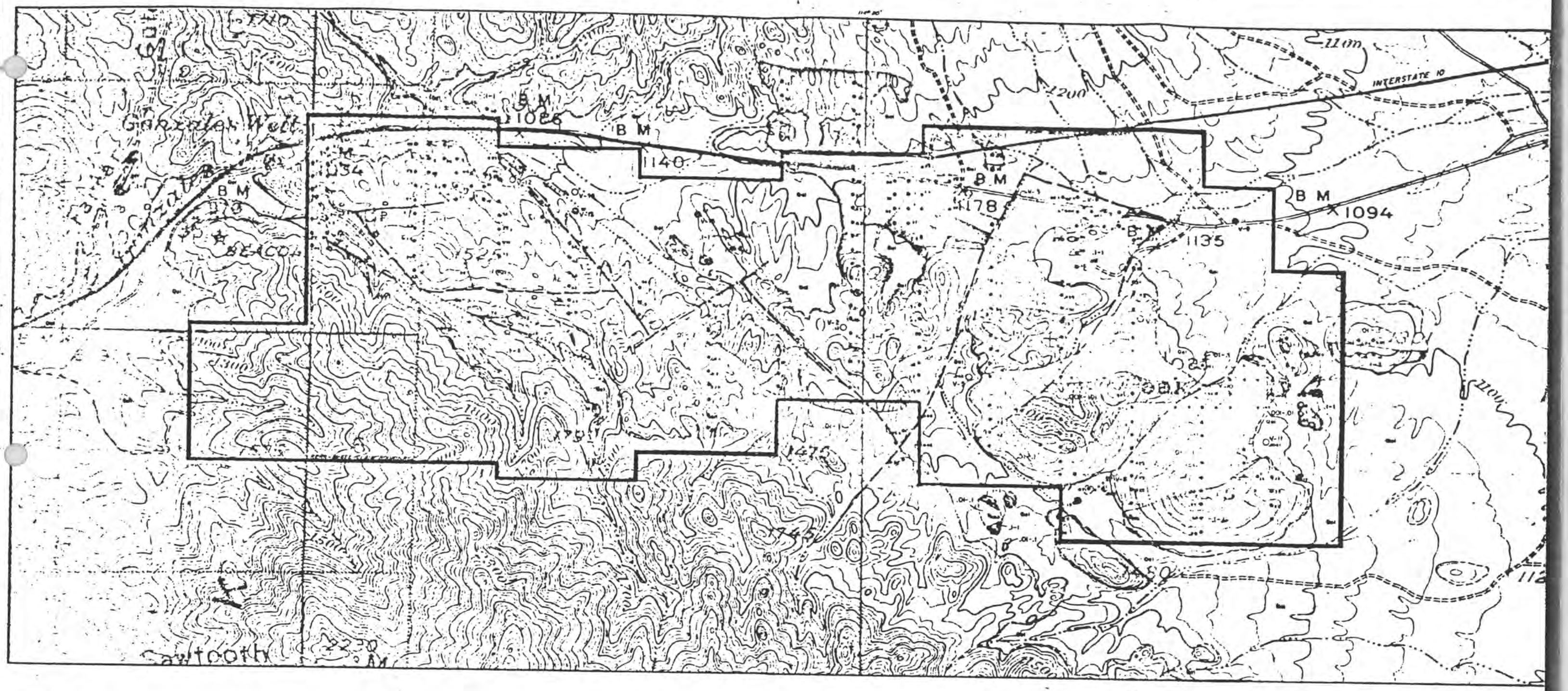
Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									
15-20'	5'			[redacted]	6				20779	Schist
20-30'	10'									Intense Specularite Alteration with Chlorite
30-35'	5'			1400	7				20780	
35-45'	10									
[illegible]-50'	5'			1100	3				20781	
50-60'	10'									
60-65'	5'			[redacted]	5				20782	
65-75'	10'									
75-80'	5'			99	3				20783	

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

APPENDIX H

MAPS - KERR-McGEE CORPORATION (1973)

- Alteration Map
- Lead Geochemical Map
- Molybdenum/Lead Ratio Map



Qal ALLUVIUM

GRAB SAMPLE LOCATION
GRID SAMPLE LOCATION
Mo/Pb RATIO

COMBINED MOLYBDENUM AND LEAD VALUES

> 1000 PPM

100-1000 PPM

< 100 PPM

MOLYBDENUM / LEAD VALUE RANGES

> 1

.1-1

.01-.1

.001-.01

OUTLINE OF KERR-McGEE SUG AND ZALES CLAIMS

KERR-McGEE ROTARY VALIDATION DRILL HOLE

FAULT, INDICATING HORIZONTAL MOVEMENT

FAULT, INDICATING VERTICAL MOVEMENT

MOLYBDENUM/LEAD RATIO
SUGARLOAF PEAK PROJECT

QUARTZSITE DISTRICT, YUMA COUNTY, ARIZONA

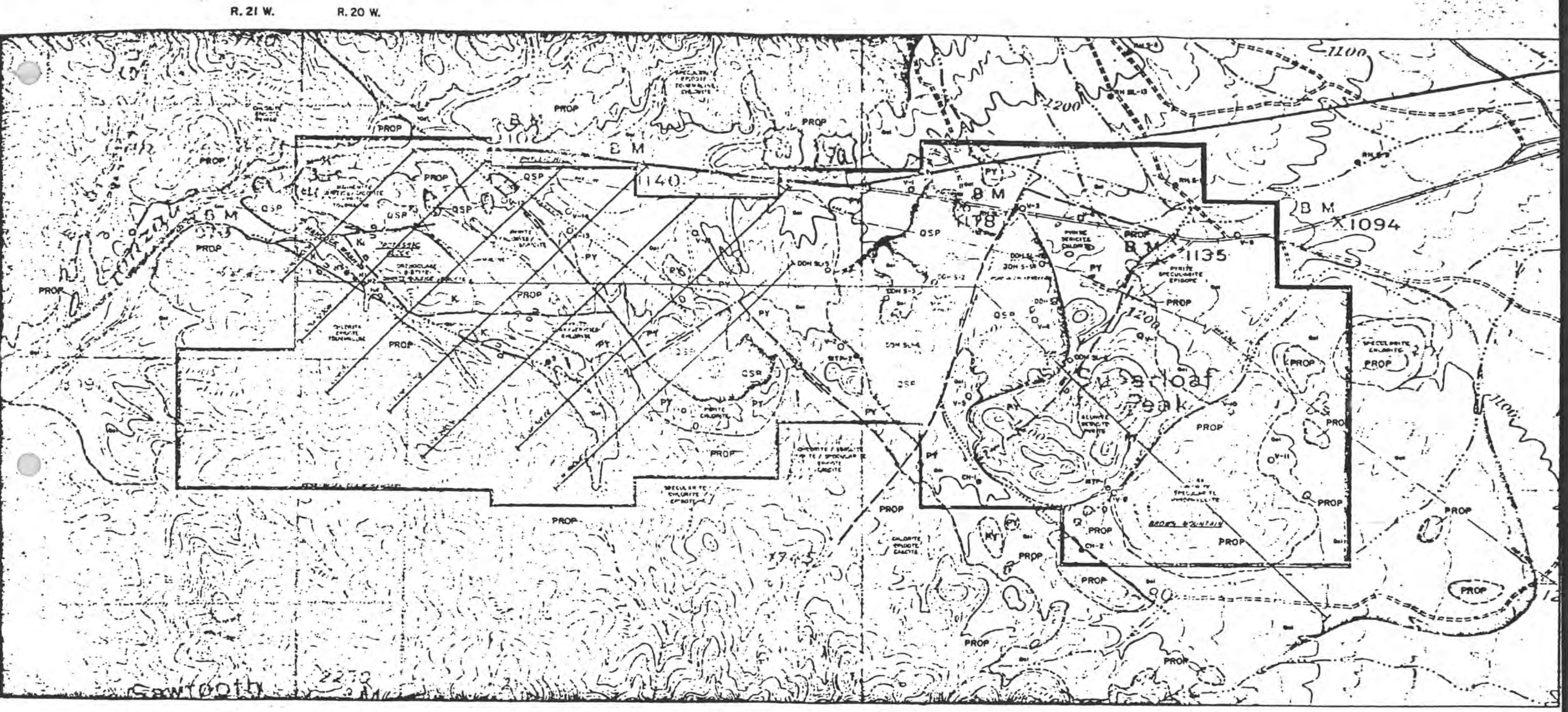
1" = 1000'

1000' 500' 0 1000' 2000'

C.I. 25'

MAY, 1975

To accompany: Exploration Potential of the Sugarloaf Peak Area, [redacted] May 1975



ALLUVIUM

POTASSIC ALTERATION

PHYLLIC ALTERATION

PYRITIC ALTERATION

PROPYLITIC ALTERATION INCLUDING ASSOCIATED TOURMALINE BRECCIA DIKE AND TALC

V-3 KERR-McGEE ROTARY VALIDATION DRILL HOLE

DDH SL-9, RH 8-8 CONGDON AND CAREY DIAMOND AND ROTARY DRILL HOLES

H2 HANCOCK DRILL HOLE

MTP-1 McINTYRE-PORCUPINE DRILL HOLE

CH-1 STONEWOOD CHURN DRILL HOLE

S SCOTT ROTARY DRILL HOLE

OUTLINE OF KERR-McGEE SUG AND ZALES CLAIMS

CROSS SECTION

MAGNETOMETER SURVEY LINE

FAULT, INDICATING HORIZONTAL MOVEMENT

FAULT, INDICATING VERTICAL MOVEMENT

ALTERATION MAP

SUGARL[illegible] PEAK PROJECT

QUARTZSITE DIST YUMA COUNTY, ARIZONA

1" = 1000'

1000 500' 0 1000' 2000'

CONTOUR INTERVAL 25'

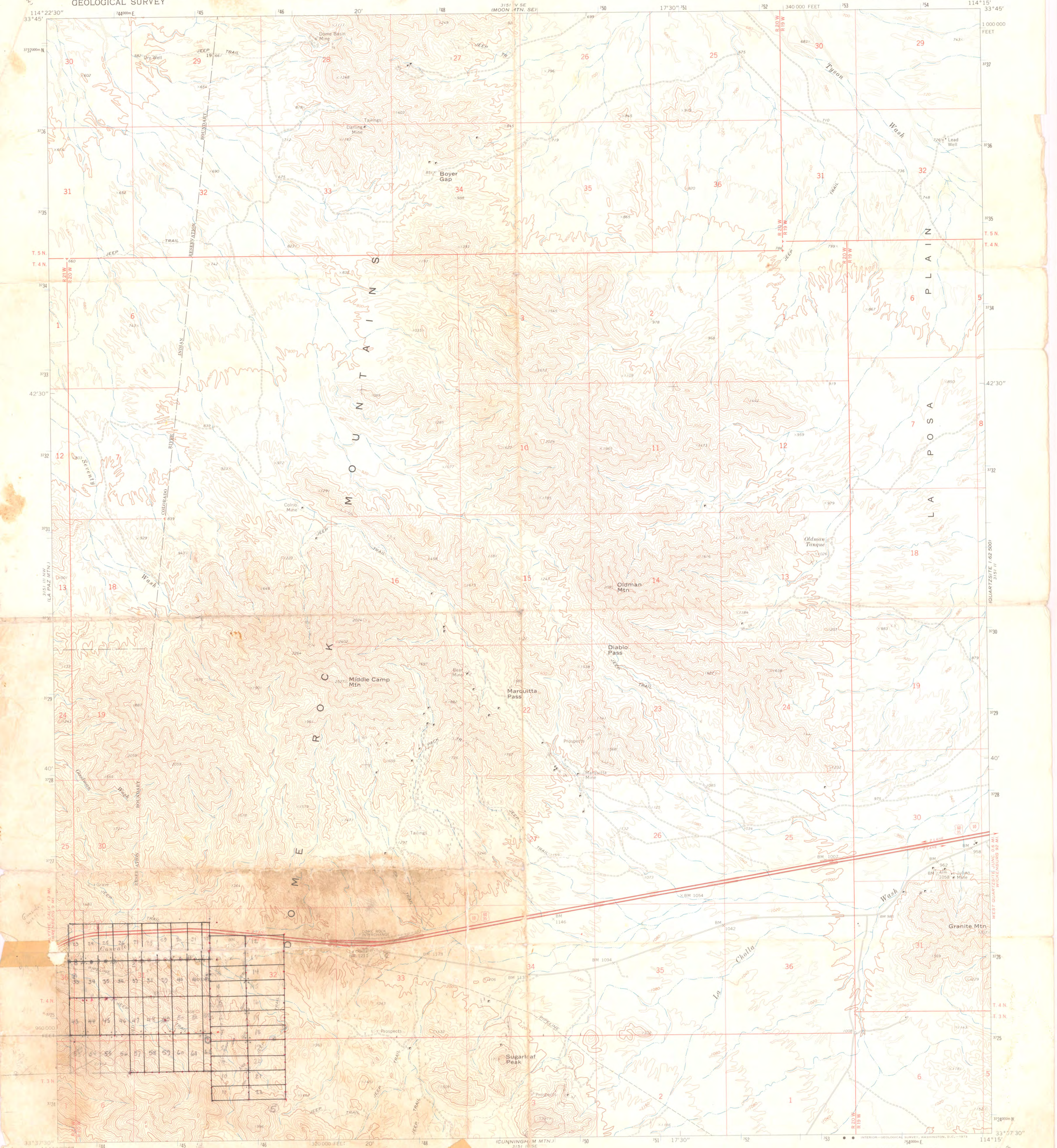
[redacted]

MAY, 1973

[redacted]

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

MIDDLE CAMP MTN. QUADRANGLE
ARIZONA–YUMA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 DOME ROCK MTS. 15' QUADRANGLE



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1970. Field checked 1971

Projection and 10,000-foot grid ticks: Arizona coordinate system, west zone (transverse Mercator)
1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue. 1927 North American datum

Where omitted, land lines have not been established

UTM GRID AND 19[illegible] MAGNETIC NORTH DECLINATION AT [illegible]R OF SHEET

SCALE 1:24 000

1 MILE — 7000 FEET — 1 KILOMETER

CONTOUR INTERVAL 40 FEET
DOTTED [illegible] PRESENT 20-FOOT CONTOURS
[illegible] MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1973

ROAD CLASSIFICATION

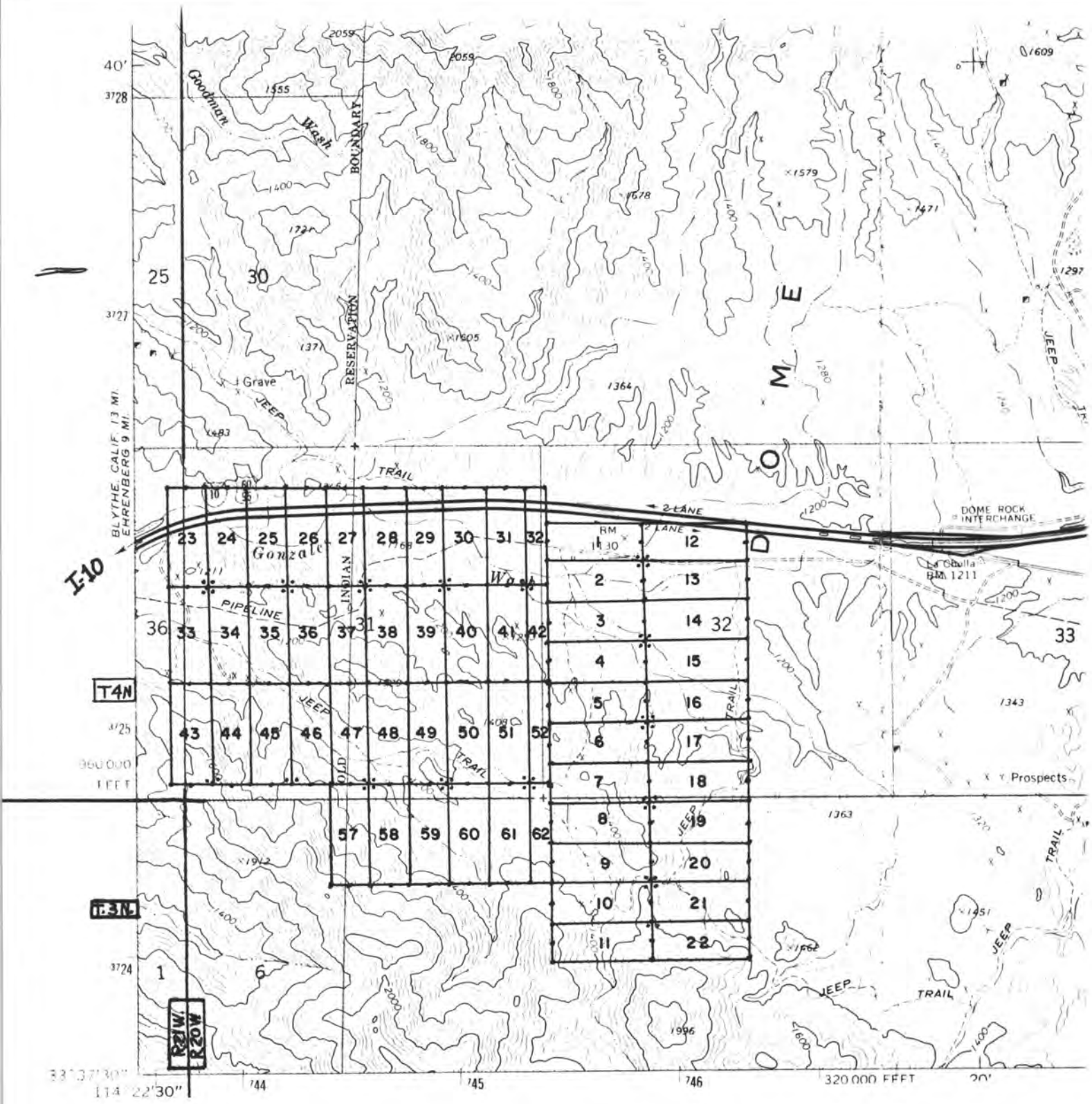
Primary highway, hard surface — Light-duty road, hard or improved surface
Secondary highway, hard surface — Unimproved road
Interstate Route — U. S. Route — State Route

ARIZONA
QUADRANGLE LOCATION

MIDDLE CAMP MTN., ARIZ.
NE/4 DOME ROCK MTS. 15' QUADRANGLE
N3337.5—W11415/75

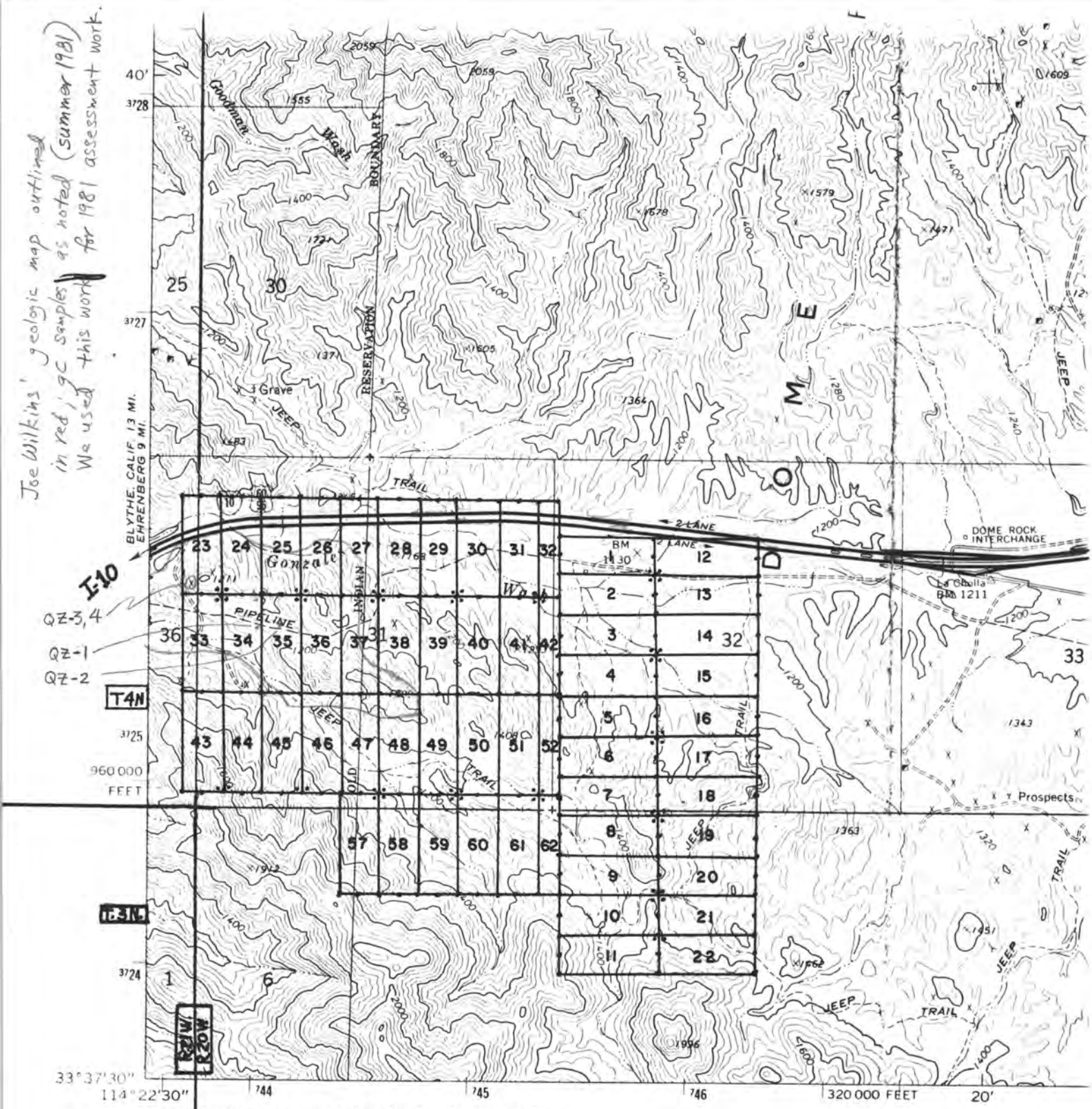
1971

AMS 3151 III NE—SERIES V898



Goodman Wash
RESERVATION BOUNDARY
INDIAN
Gonzale Wash
BLYTHE, CALIF. 13 MI.
EHRENBERG 9 MI.
I-10
T4N
T3N
R21W
R20W
DOME
DOME ROCK INTERCHANGE
La Cholla
BM 1211
2 LANE
JEEP TRAIL
PIPELINE
OLD
Prospects
Grave
360 000 FEET
320 000 FEET
114°22'30"

Joe Wilkins' geologic map outlined in red, gc samples as noted (summer 1981) We used this work for 1981 assessment work.



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Topography by photogrammetric methods from aerial photographs taken 1970. Field checked 1971

Projection and 10,000-foot grid ticks: Arizona coordinate system, west zone (transverse Mercator)

1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue. 1927 North American datum

Where omitted, land lines have not been established

0 1000' 2000' 3000' 3500'
500'

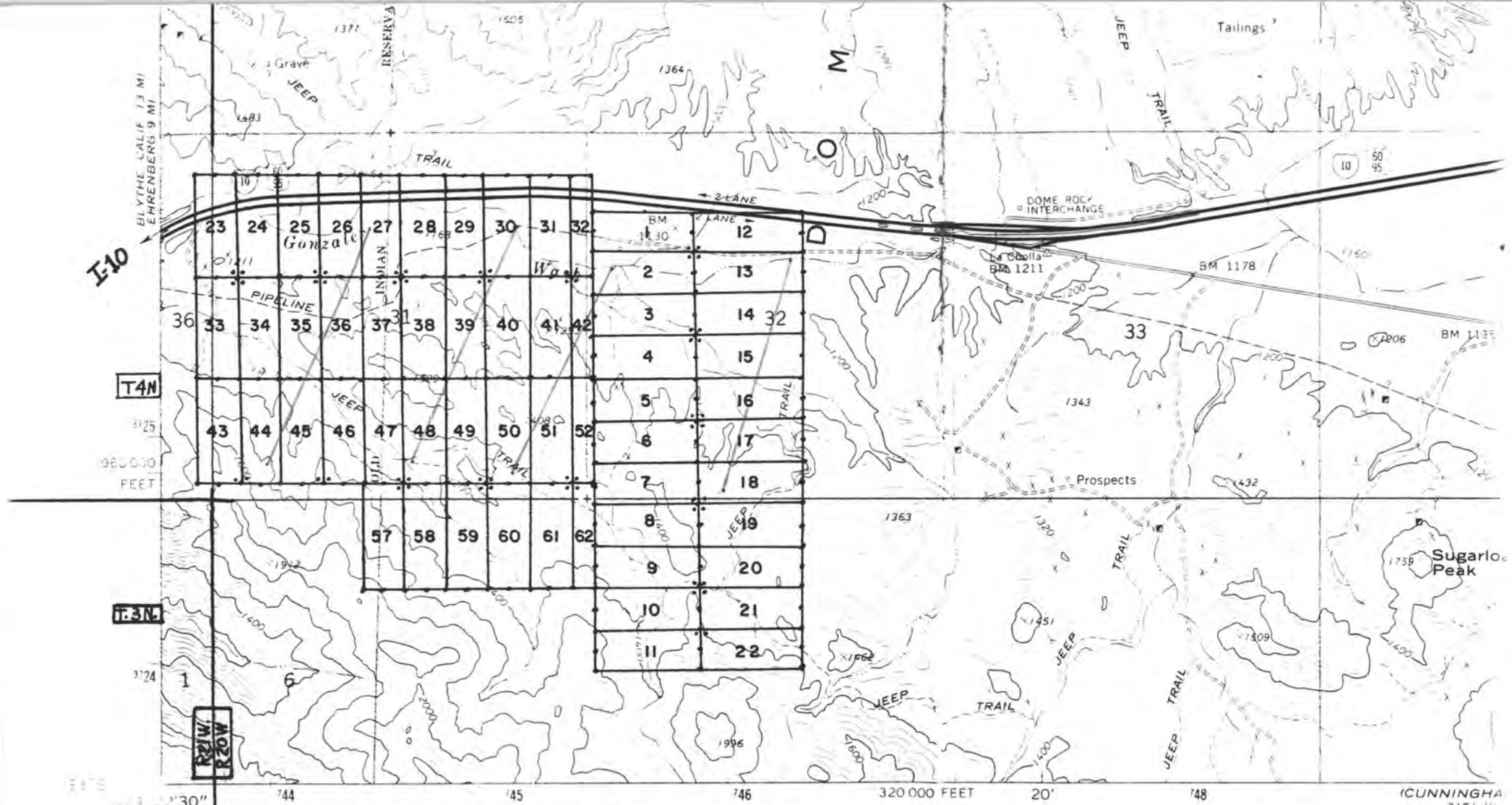
GN MN
1°29' 26 MILS
14° 249 MILS

UTM GRID AND 1971 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

MIDDLE CAMP MTN. QUADRANGLE

SE CLAIM GROUP
YUMA COUNTY ARIZONA
1980

FOR SALE



Mapped, edited and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1970. Field checked 1971

Projection and 10,000-foot grid ticks: Arizona coordinate system, west zone (transverse Mercator)

1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue. 1927 North American datum

Where omitted, land lines have not been established

0 1000' 2000' 3000' 500' 3500'

GN MN 1°29' 26 MILS 14° 240 MILS

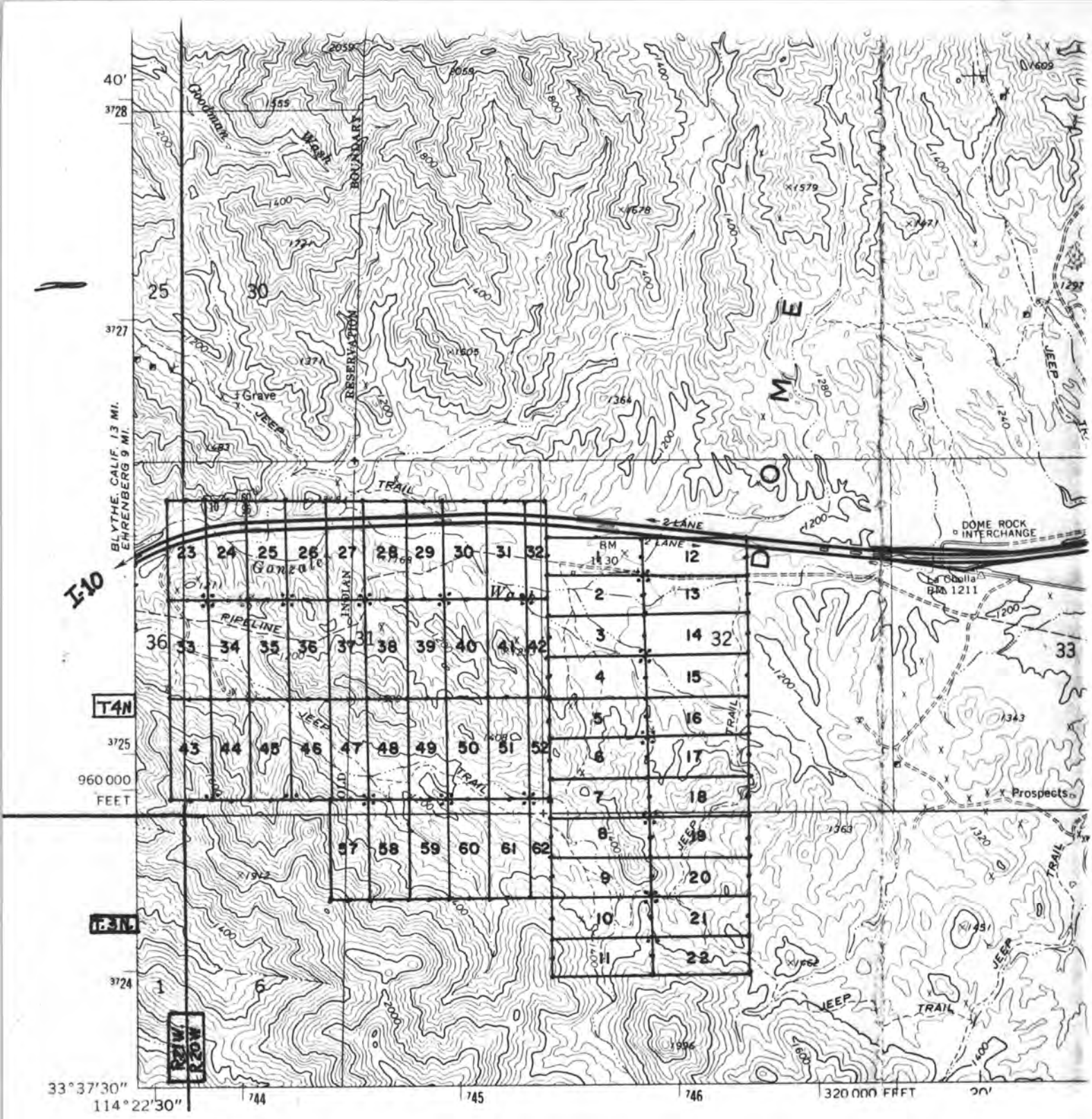
MIDDLE CAMP MTN. QUADRANGLE

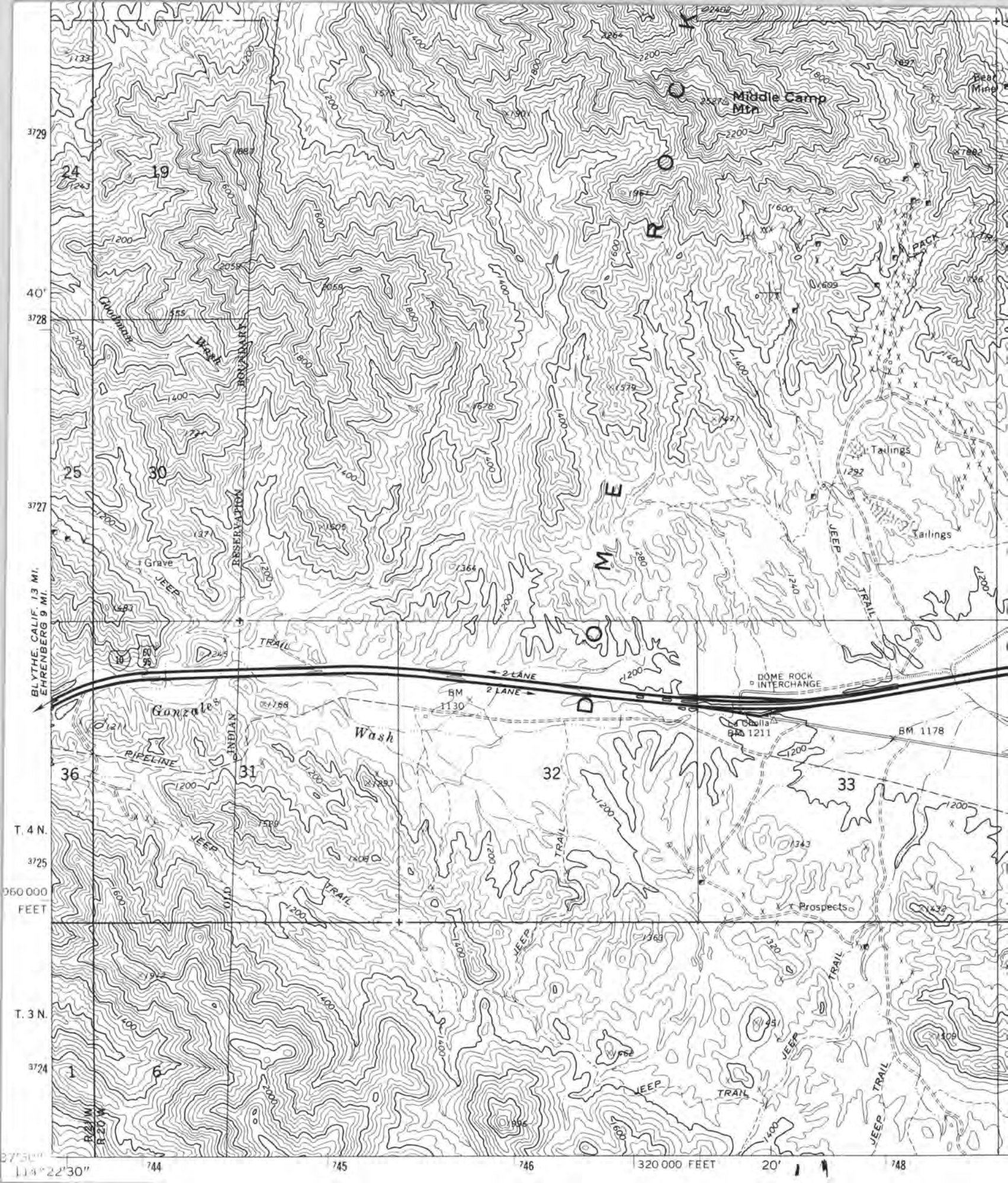
UTM GRID AND 1971 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SE CLAIM GROUP
YUMA COUNTY ARIZONA
1980

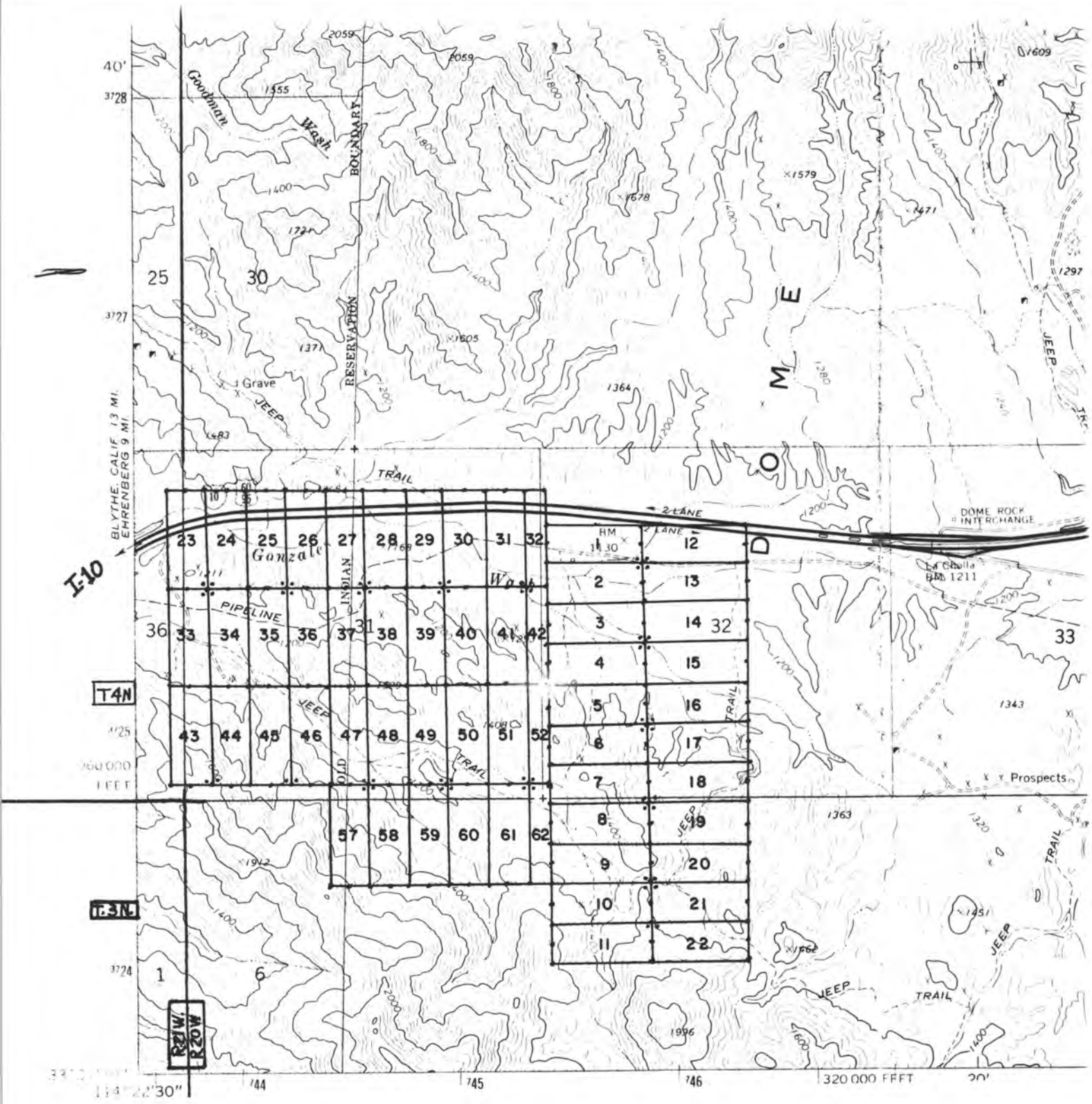
Rich Lundin Radiometric Survey Lines (Summer 1981) shown in red

THIS MAP COMPLIES WITH NAT
FOR SALE BY U. S. GEOLOGICAL SURVEY DENVER
A FOLDER DESCRIBING TOPOGRAPHIC MAPS


40'
3728
3727
3725
3724
960 000
FEET
T4N
T3N
R2W
R20W
I-10
BLYTHE, CALIF. 13 MI.
EHRENBERG 9 MI.
Goodman
Wash
INDIAN
RESERVATION
BOUNDARY
Grave
JEEP
TRAIL
Ganzale
Wash
PIPELINE
OLD
2 LANE
DOME ROCK
INTERCHANGE
BM
1130
La Cholla
BM 1211
Prospects
33°37'30"
114°22'30"
744
745
746
320 000 FEET
20'



Middle Camp Mtn
DOME ROCK
Goodman Wash
RESERVATION BOUNDARY
Grave
JEEP TRAIL
Tailings
Tailings
PACK TRAIL
BLYTHE, CALIF. 13 MI.
EHRENBERG 9 MI.
2 LANE
2 LANE
DOME ROCK INTERCHANGE
BM 1130
La Cholla
BM 1211
BM 1178
Gonzales Wash
INDIAN
PIPELINE
OLD
Prospects
T. 4 N.
T. 3 N.
960 000 FEET
320 000 FEET
R 21 W
R 20 W
37°30"
114°22'30"
20'
40'


Goodman Wash
BOUNDARY
RESERVATION
Grave
JEEP
TRAIL
BLYTHE, CALIF 13 MI.
EHRENBERG 9 MI.
I-10
2 LANE
DOME ROCK INTERCHANGE
La Cholla
BM 1211
Gonzale Wash
INDIAN
PIPELINE
OLD
Prospects
T4N
T3N
R21W
R20W
320 000 FEET

A

CF AIR FREIGHT

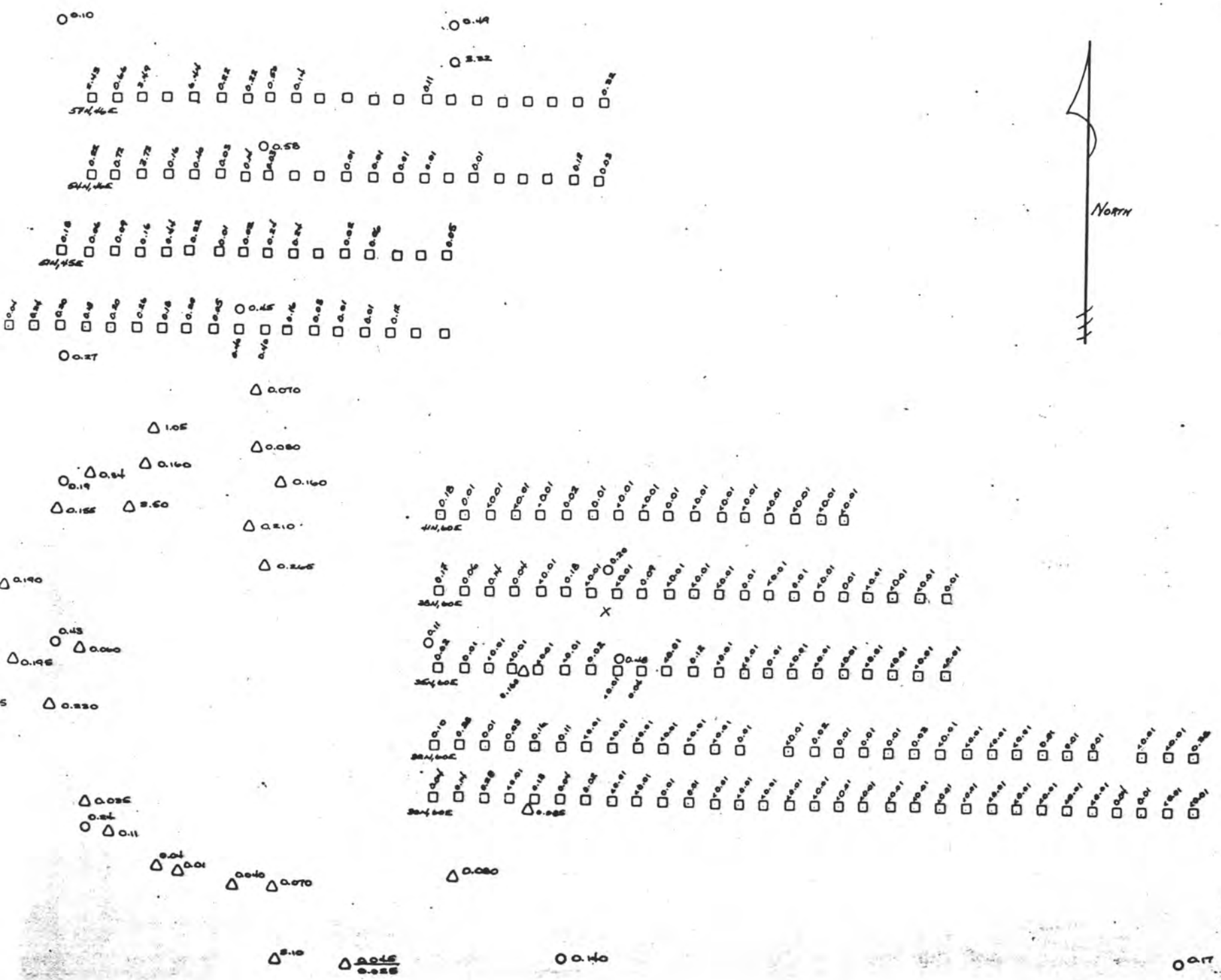
REMINDER

DATE: _____

THINGS I MUST DO TODAY

1. ***CALL CF AIR FREIGHT FOR PICKUP 746-1056***
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

SE
Claims



ROCK CHIP GEOCHEM
ppm Au

SUGARLOAF PROSPECT
YUMA CO., AZ

34 | 35
3 | 2

1" = 500'

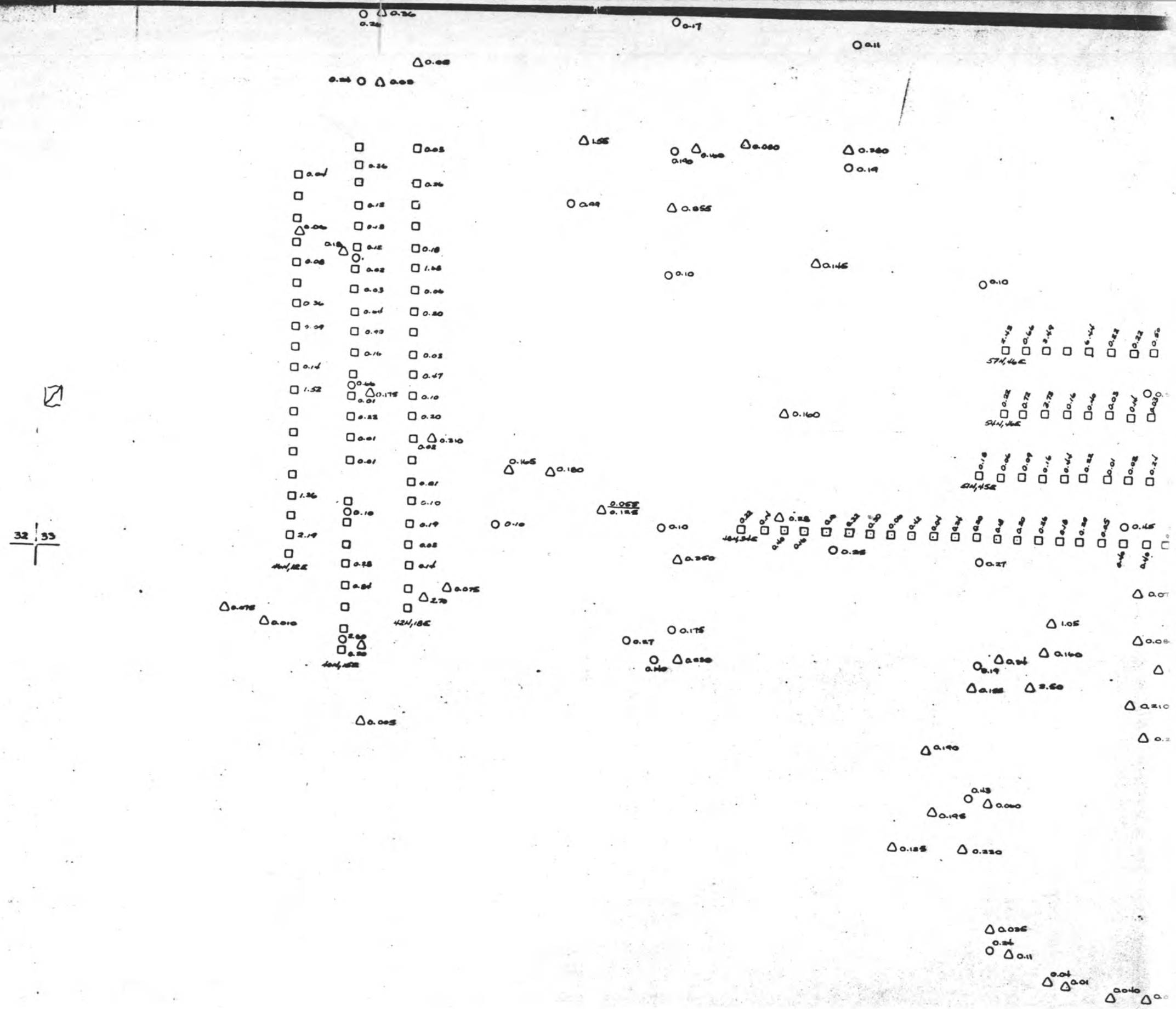
MGS 8/82

□* Utah International Inc. rock chip sample; no value indicates Au < 0.01 ppm.

○ Wallaby Enterprises rock chip sample; samples with values < 0.10 ppm Au not available.

△ Falmont Oil Corporation rock chip sample.

* northing and easting referenced to 00N, 00E at southwest corner EP 7E; indicates initial sample point on line.


32
33

WALLABY ENTERPRISES INCORPORATED

TUCSON OFFICES:
810 WEST GRANT ROAD - P.O. BOX 5964 - TUCSON, ARIZONA 85703 - (602) 623-0579
3425 WEST BARDOT STREET - TUCSON, ARIZONA 85741 - (602) 744-2700

PRESCOTT OFFICE:
122 EAST GURLEY - SUITE 203 - PRESCOTT, ARIZONA 86301 - (602) 445-8498

March 4, 1983

Mr. Tom Patten
7725 E. Manor Pl.
Tucson AZ 85715

Dear Tom:

I quickly put together some of the most basic information on the SE claim grp. and will try to get together with you next week. The map that I have enclosed does not include any of the AMAX, Utah, Bear Creek or Texas Gulf data. We have that information and will be plotting it this weekend. It generally confirms and enlarges the area of anomalous gold values. The key to the samples are below:

N=Newmont
F=Felmont
W=Wallaby for Westworld Oil & Gas
SE=Wallaby for Heinrichs GEOEX et al

I hope that the attached information will suffice until next week. If you need additional information before then, give me a call at our Bardot St. office number

Sincerely,

Richard J. Lundin, President
Wallaby Enterprises Inc.

P.S. Paul mentioned that you might be interested in our Michigan program. Give me a call so that I can fill you in .

Client Texasgulf Western Date November 24, 1982 RMGC Job No. 82-24-24T

Sample Number	Au ppm
QT-1	-0.02
2	-0.02
3	0.10
4	-0.02
5	0.14
6	0.02
7	-0.02
8	-0.02
9	-0.02
10	-0.02
11	-0.02
12	0.04
13	0.04
14	0.20
15	-0.02
16	-0.02
17	0.02
18	-0.02
19	-0.02
20	-0.02
21	-0.02
22	-0.02
23	-0.02
24	-0.02
25	-0.02
26	-0.02
27	-0.02
30	-0.02
QT-31	0.20

By Shirley J. Aiken

Shirley J. Aiken

REGISTERED ASSAYER CERTIFICATE NO. 14315 ROBERT G. CROOK Date Signed ARIZONA, U.S.A.

Robert G Crook

NORTH AMERICAN ASSAY COMPANY

1022 West 23rd Street
Tempe, Arizona 85282
(602) 894-0919

Job Number MA-35
Page 1 Of 2
Date May 4, 1982
Req. No.: 2831
Proj. No.: 1079

ANALYTICAL REPORT

Client I.D.	Lab #	Au (ppm)	Ag (ppm)
T5417	1	.21	<.1
T5418	2	.49	.2
T5419	3	.02	.6
T5420	4	.06	1.2
T5421	5	.06	26.8
T5422	6	.14	.5
T5423	7	.33	6.7
5424	8	.09	1.0
T5425	9	.60	.7
T5426	10	.12	.7

AMAX Exploration, Inc.
5/14/82
FLL (re-runs)
Pulps
Sugarloaf Peak
Quartzsite, Arizona

These analysis opinions or interpretations are based on observations and materials supplied by the client to whom and for whose exclusive and confidential use this report is made. The interpretations or opinions expressed represent the best judgements of North American Assay Company, all errors or omissions excepted; but North American Assay Company and its officers and employees assume no responsibility and make no warranty or representations as to the productivity, proper operations, or profitableness of any mineral deposit in connection with which such report is used or relied upon.

Client Name: AMAX Exploration, Inc.
Address: 130 S. Scott Avenue, Tucson, Arizona 85701
Telephone: 622-3854

Samples Submitted By: F. L. Leon
Date Received: April 27, 1982

REGISTERED ASSAYER CERTIFICATE NO. 14315 ROBERT G. CROOK Date Signed ARIZONA, U.S.A.

Robert G Crook

NORTH AMERICAN ASSAY COMPANY

1022 West 23rd Street
Tempe, Arizona 85282
(602) 894-0919

Job Number MA-488
Page 1 Of 2
Date August 5, 1982
Req. No.: 2918
Proj. No.: 1079

C.S. RECEIVED

ANALYTICAL REPORT

Client I.D.	Lab #	Au (ppm)	Ag (ppm)	Hg (ppm)	Sb (ppm)	As (ppm)
T-5446	1	.03	.6	.6	<.5	26
T-5447	2	.07	.6	.2	<.5	38
T-5448	3	<.01	.4	.2	1.5	<2
T-5449	4	.11	.2	.6	<.5	32
T-5450	5	<.01	1.0	.2	<.5	34
T-5451	6	.04	.4	.6	<.5	10
T-5452	7	.09	.8	.2	<.5	32
T-5453	8	.08	1.0	.2	<.5	20
T-5454	9	<.01	.6	.2	<.5	8
T-5455	10	.04	1.6	1.6	<.5	84

AMAX Exploration, Inc.
Date 8/16/82
Sampler LEON
Type of Sample RX.
Project Name & No. Sugarloaf Peak
Location Quartzsite, AZ
PROJ. 1079 SW/US P. Mts.

These analysis opinions or interpretations are based on observations and materials supplied by the client to whom and for whose exclusive and confidential use this report is made. The interpretations or opinions expressed represent the best judgements of North American Assay Company, all errors or omissions excepted; but North American Assay Company and its officers and employees assume no responsibility and make no warranty or representations as to the productivity, proper operations, or profitableness of any mineral deposit in connection with which such report is used or relied upon.

ent Name: AMAX Exploration, Inc.
Address: 10 E. Broadway, Suite 400, Tucson, Arizona 85701
elephone: 622-3854

Samples Submitted By: F. L. Leon
Date Received: July 21, 1982

Client I.D.	Lab #	Au (ppm)	Ag (ppm)	Hg (ppm)	Sb (ppm)	As (ppm)
T-5456	11	-.10	.4	.2	<.5	10
T-5457	12	.02	3.2	.2	<.5	20
T-5458	13	-.15	2.2	.2	<.5	28
T-5459	14	<.01	<.2	.1	<.5	178
T-5460	15	<.01	<.2	.2	<.5	84
T-5461	16	-.13	.6	.1	1.0	24
T-5462	17	<.01	.6	.1	<.5	20
T-5463	18	.01	2.6	.9	6.0	112

Client I.D.	Lab #	Au (ppm)	Ag (ppm)
T5427	11	2.46	2.3
T5428	12	.02	.5
T5429	13	1.38	.2
T5430	14	.11	1.0
T5431	15	.16	<.1
T5432	16	.11	3.2
T5433	17	.15	<.1
T5434	18	2.42	.5
T5435	19	.17	<.1
T5436	20	.38	1.0
T5437	21	.26	.5
T5438	22	.15	<.1
T5898	23	.03	<.1

APPPENDIX II

ANALYTICAL RE-RUNS (ppm)
SUGARLOAF PEAK PROSPECT (Au)
Quartzsite, Arizona

AMAX Sample #	WOG Sample #	Skyline (WOG) Au	Skyline (WOG) Ag	North American (AMAX) Au	North American (AMAX) Ag
T-5417	SP 056	.20		.21	-.1
T-5418	SP 103	.49	.2	.49	.2
T-5419	SP 105	.02	.4	.02	.6
T-5420(G17)	------	---	--	.06	1.2
T-5421	SP 108	.07	24.0	.06	26.8
T-5422	SP 109	.11	.2	.14	.5
T-5423	SP 140	.26	6.0	.33	6.7
T-5424	SP 142	.08	.2	.09	1.0
T-5425	SP 143	.68	.2	.60	.7
T-5426	SP 145-s	.10	.2	.12	.7
T-5427	SP 146	2.80	1.6	2.46	2.3
T-5428	SP 187	-.02	-.2	.02	.5
T-5429	SP 188	1.40	.2	1.38	.2
T-5430(G21)	------	---	--	.11	1.0
T-5431	SP 191-s	.10	.2	.16	-.1
T-5432	SP 192	.09	4.0	.11	3.2
T-5433	SP 193	.10	.2	.15	-.1
T-5434	SP 194	1.90	.4	2.42	.5
T-5435	SP 195	.17	.2	.17	-.1
T-5436	SP 229	.43	.6	.38	1.0
T-5437	SP 230	.19	.2	.26	.5
T-5438	SP 232	.09	.2	.15	-.1
T-5898	SP 233	-.02	-.2	.03	

FLL 5-21-82

Bondar-Clegg, Inc.
12980 West Cedar Dr.
Lakewood, Colorado
U.S.A. 80228
Phone: (303) 980-1404
Telex 45-693

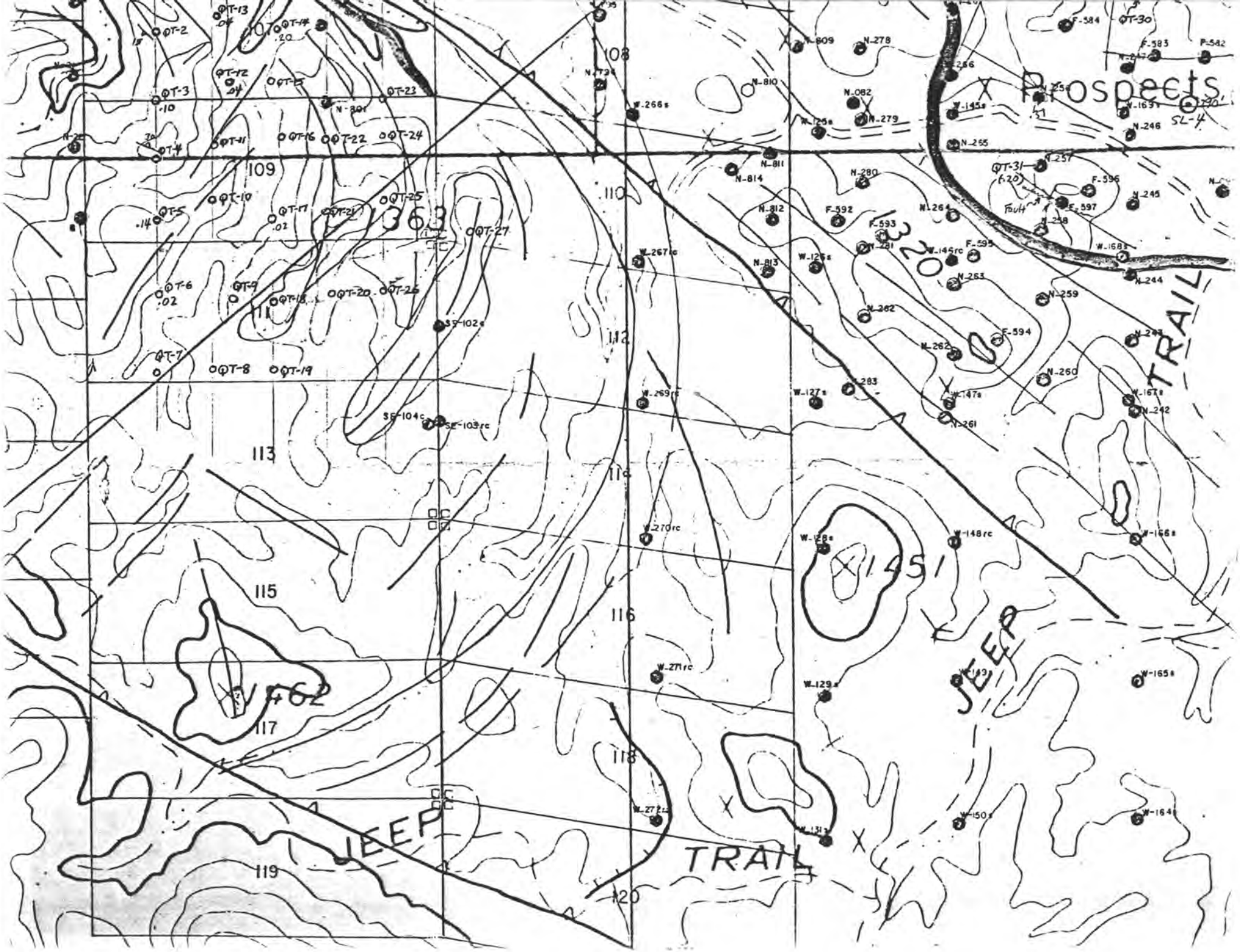
BONDAR-CLEGG

Geochemical Lab

Report: BC53-7 | Project: | Update: | Date: JANUARY 10, 1983 | Page: 1

REC#/	SAMPLE NUMBER	/T/S	AG/J1 PPm	AU/T1 PPB	AS/D2 PPm	HG/J1 PPB	SB/ 9 PPm
0001	B-7351	P	1.1 TRACE	.155 .125	7 3	90 25	2 1
0002	B-7352	P	9.1 7.5	.160 .125	51 48	215 60	70 28
0003	B-7353	P	0.7 TRACE	.310 .250	6 8	195 60	4 5
0004	B-7354	P	0.6 "	.130 .130	14 12	30 10	8 <1
0005	B-7355	P	0.6 "	.040 .060	15 16	25 5 L	2 <1
0006	B-7356	P	0.2 "	.020 .095	5 12	30 10	5 1
0007	B-7357	P	0.9 "	.250 .320	7 24	50 15 L	2 <1
0008	B-7358	P	0.4 "	.135 .060	16 16	10 5	4 2
0009	B-7359	P	0.2 "	.130 .095	17 29	500 <5	10 1
0010	B-7360	P	0.2 "	.090 .060	13 3	35 10 H	29 8
0011	B-7361	P	0.2 " L	.005 <30	7 4	25 <5	4 2
0012	B-7362	P	0.2 "	.025 60	15 14	10 <5 L	2 2
0013	B-7363	P	0.2 "	.030 30	8 15	35 5	3 3
0014	B-7364	P	0.2 "	.105 340	12 19	10 <5	4 2
0015	B-7365	P	0.2 "	.040 30	5 22	10 <5	7 3
0016	B-7366	P	0.2 "	70 95	37 43	10 <5	6 2
0017	B-7367	P	0.2 " L	5 <30	3 3	25 <5	5 3

Copper STA



Prospects
SL-4
Fault
1363
1320
1451
1462
JEEP TRAIL
JEEP TRAIL
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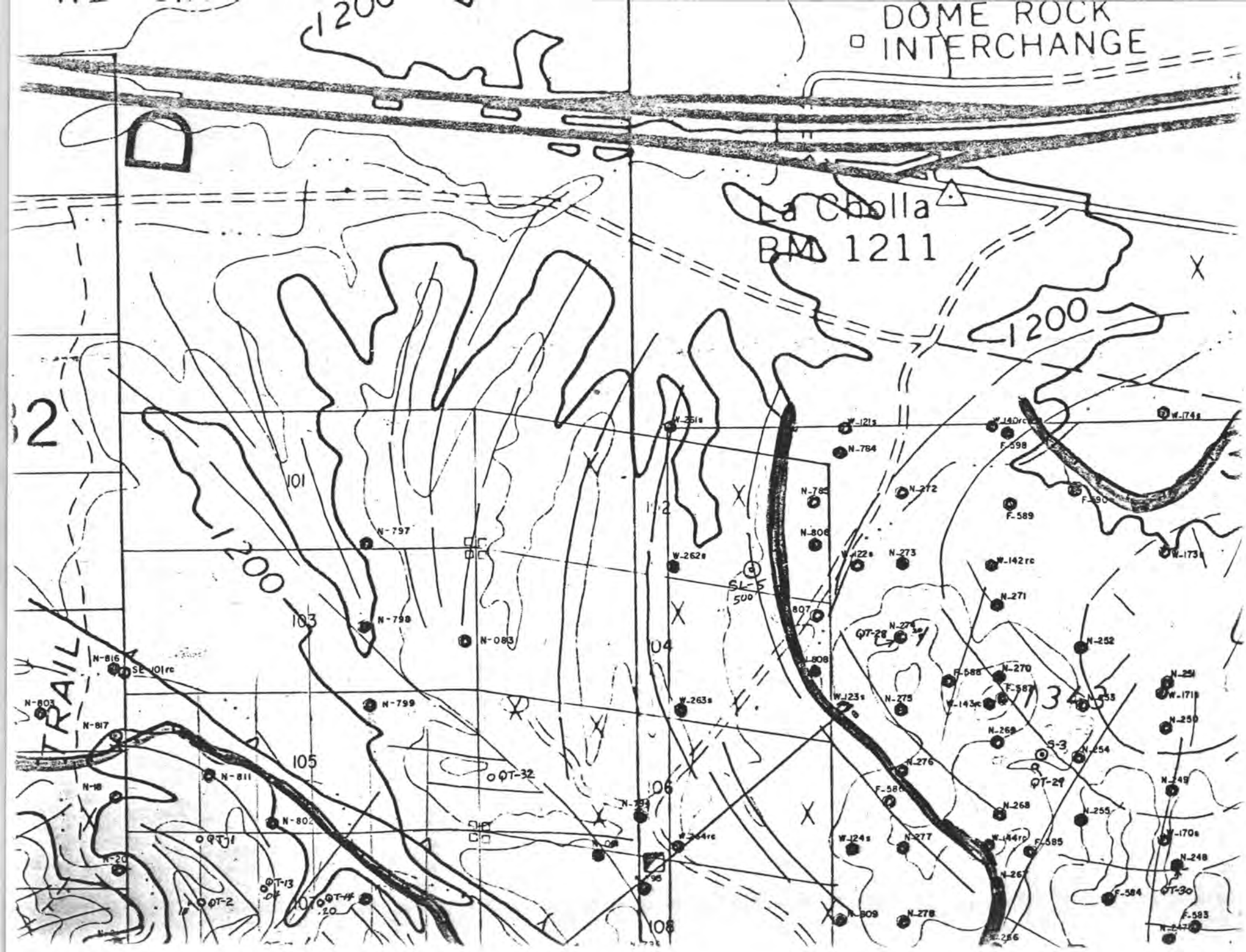
DOME ROCK
INTERCHANGE
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BM 1211
1200
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107
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TRAIL
N-797
N-798
N-799
N-083
N-816
SE-101rc
N-803
N-817
N-811
N-802
N-18
N-20
QT-1
QT-2
QT-13
QT-14
QT-32
W-262s
W-263s
W-264rc
W-121s
N-784
N-785
N-806
N-272
N-273
W-122s
W-142rc
N-271
N-274
QT-28
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W-123s
N-276
N-268
N-277
W-124s
N-278
N-809
N-252
N-270
N-269
S-3
QT-29
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N-255
N-249
N-248
QT-30
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F-585
F-589
F-598
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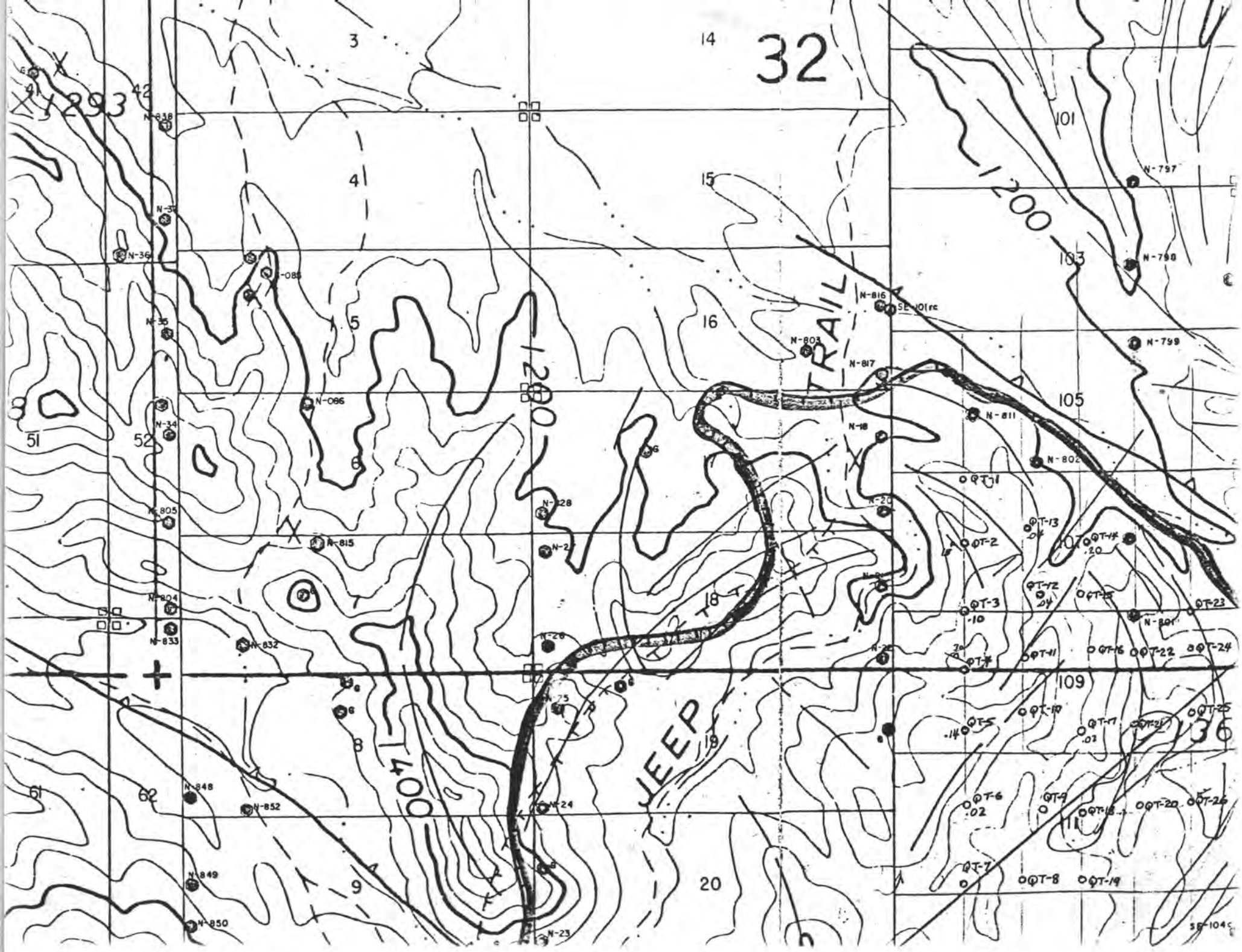
W-173s
W-171s
N-250
SL-5
500


32
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QT-1
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QT-3
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QT-6
QT-7
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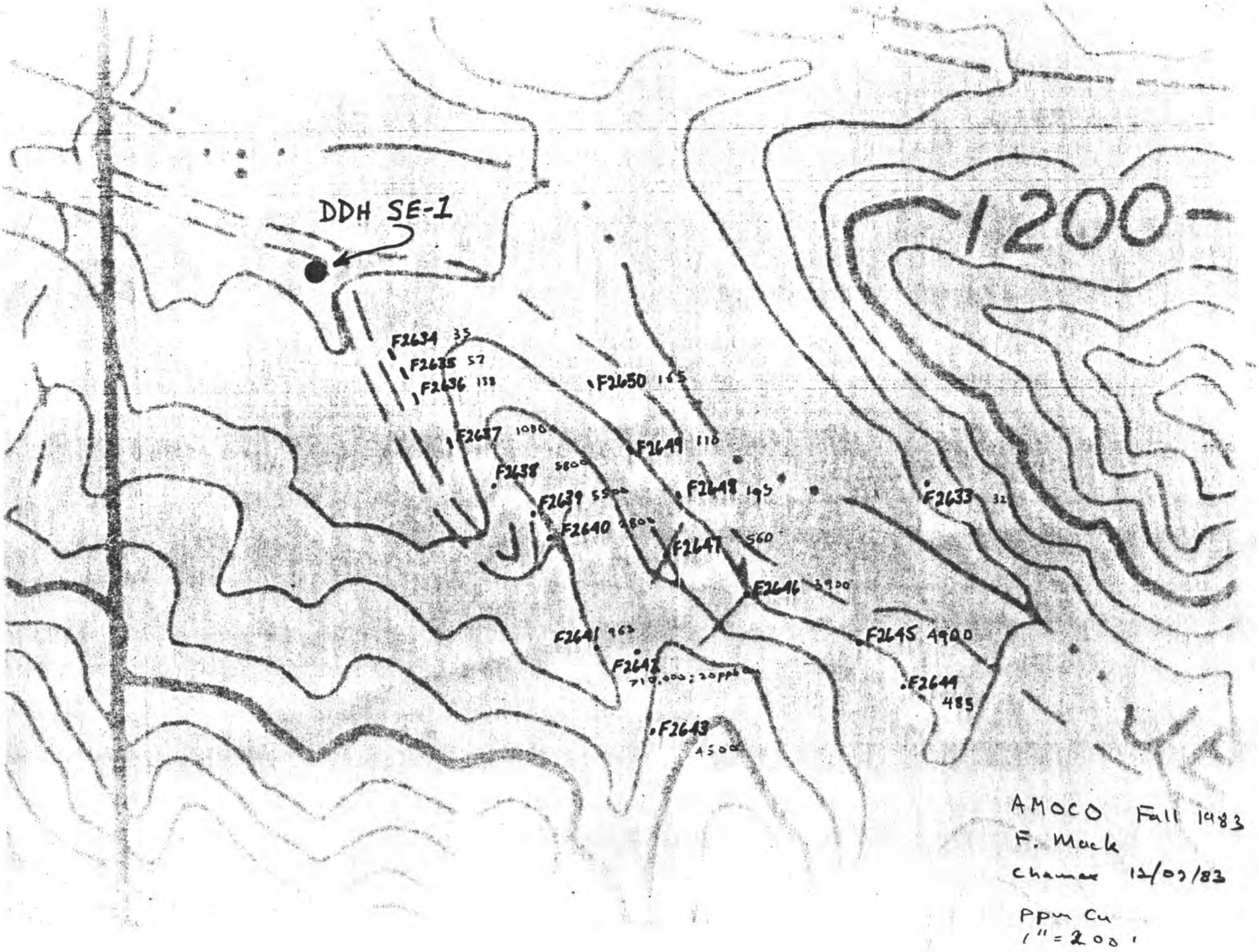
QT-22
QT-23
QT-24
QT-25
QT-26
SE-104c

1200
JEEP
JEEP
NEWMONT - 1982


DDH SE-1
1200
F2634 35
F2635 57
F2636 138
F2650 165
F2637 1080
F2649 110
F2638 580
F2639 5500
F2648 195
F2633 32
F2640 4800
F2647 560
F2646 3900
F2641 963
F2645 4900
F2642
710,000; 20ppb
F2644
485
F2643
4500
AMOCO Fall 1983
F. Mack
Chamar 12/07/83
ppm Cu
1" = 200'

AFFIDAVIT OF ANNUAL ASSESSMENT LABOR

(Geological, Geochemical and Geophysical work on a group of lode mining claims)

STATE OF ARIZONA

COUNTY OF YUMA

Before me personally appeared WILLIAM C. HIRT, a U.S. citizen over 18 years of age whose address is 810 West Grant Road, Tucson, AZ 85705 who, being first duly sworn, stated at least $ 5800 worth of geological, geochemical, and/or geophysical work was done upon or for the benefit of all of the following described contiguous group of lode mining claims:

Name of claim(s)	Recorded in Book/page(s)	BLM Serial Number
SE 1-52, 57-62	1168/643-758	AMC 105414-105471

situated in the Middle Camp-Oro Fino Mining District of Yuma County, State of Arizona, and that he is personally acquainted with these claims.

Such expenditure was made by, for or at the expense of Heinrichs GEOEXploration Company. Attached to this Affidavit is a copy of the Report of such work, as required by Title 30, United States Code, Section 28-1.

The foregoing work was performed and is intended to hold the above described mining claims during the annual assessment period ending at noon, Sept. 1, 1982.

Signature of Affiant: William C. Hirt

State of Arizona)
) ss
County of Pima)

Subscribed and sworn to before me this 14th day of October 1982

Mary H. Turner
Notary Public

My commission expires 11-16-84

HEINRICHS GEOEXPLORATION COMPANY

P.O. BOX 5964, TUCSON, ARIZONA 85703, 806 WEST GRANT ROAD, PHONE: (602) 623-0578

October 14, 1982

Summary Report on SE Claims

This detailed report is filed in compliance with the requirements of Title 30, United States Code, Section 28-1 for the SE Nos. 1-52, 57-62, a contiguous group of 58 lode mining claims situated in the Middle Camp - Oro Fino mining district of Yuma County, Arizona and owned by Heinrichs GEOEXploration Company, J. D. Loghry, William C. Hirt, and Wombat Mining Company.

The work consisted of geologic mapping and geochemical sampling and assaying; this work is described in items 15, 16, and 25 of the attached report by Richard J. Lundin (Exhibit A). The work was performed to evaluate the mineralization and to assist in planning further exploration and development work. The work was performed between September 1, 1981 and August 31, 1982 by or under the direct supervision of Norm Lehman and Joe Wilkins, graduate geologists employed by Gulf Mineral Resources Company, 2045 North Forbes Boulevard, Suite 106, Tucson, Arizona 85745, J. O Guthrie, graduate geologist (University of California at Santa Barbara and University of Massachusetts) with 13 years experience, E. Owens, graduate geologist (University of California, Riverside) and Steve Van Kouteren graduate geologist (Pennsylvania State University) each with one year of professional experience, all employed by Newmont Exploration Limited, 200 West Desert Sky Road, Tucson, Arizona 85704, Arturo Ona, graduate geologist (University of the Philippine Islands) with 21 years experience (Arizona registered geologist No. 14646) of Pillar, Lowell and Associates, 5115 North Oracle Road, Tucson, Arizona 85704, James D. Loghry, graduate geologist (Dartmouth, University of Arizona) with 25 years experience, of 2121 East Monte Vista Drive, Tucson, Arizona 85719, Bruce Kilpatrick, graduate geologist, of Quintana Minerals Corporation, 2475 North Jack Rabbit Avenue, Tucson, Arizona, and by Richard J. Lundin, graduate geologist (Beloit College) with 10 years of experience, of 3425 West Bardot Street, Tucson, Arizona 85741. The cost of the geochemical-geological survey exceeded $5800 and was paid for by the above-mentioned companies and individuals.

The location of the work performed in relation to points of discovery and boundaries of the claims is shown on Exhibit B which is attached hereto and made a part hereof. The basic findings of the geological and geochemical survey are that volcanic and intrusive rock types favorable for gold-silver mineralization exist within the claim boundaries and that anomalous areas of gold and copper mineralization have been delineated.

More exploration is under consideration for the property. All technical results are in the possession of Heinrichs GEOEXploration Co., 810 W. Grant Road, Tucson, AZ 85705.

Respectfully submitted,

William C. Hirt

MINERAL ENGINEERING CONSULTANTS AND CONTRACTORS. GEOPHYSICAL, GEOLOGICAL AND ECONOMIC APPRAISALS

William C. Hirt
Geological Engineer

WCH:mt

Date: October 11, 1982

EXHIBIT A

WALLABY ENTERPRISES

Mining District Data Base Program

1. Mine or Property Name: SE Grp. (Stray Elephant)

2. Mining District, County & State: Middle Camp-Oro Fino Dist., Yuma Co. AZ

3a. Quadrangles or Map Names: LaPaz Mtn. 7½ (1955) Middle Camp Mtn. 7½ (1980)

3b. Location: T 3N R 20W S 5,6,4 / 4N 20W 31,32,33 / 4N 21W 36

3c. Lat. _____ Long. _____

4. Any Former Names: Scott-Weaver Grp., Zales Grp., Hancock Wash Cu Prospect, Weaver Mine, Apodoes Mine, McIntyre Mine, Begg Mine

5. Owner: Heinrichs GEOEXploration Inc., J.D. Loghry, W.C. Hirt, Wombat Mng. Co.

6. Address (Owner): P.O. Box 5964 Tucson, AZ 85703

7. Operator: same as above

8. Address (Operator): same as above

9. Principal Metals: Cu,Au,Ag,Mo,U

10. Mining & Milling Operations: Kinds & Capacities

Present: currently inactive

Past: Mining and quarrying activity in the 1950's with shipments of Cu-Ag-Au ore that averaged approximately 1.10% Cu, .13 ozs. Ag and .002 ozs. Au per ton (approx. 100 tons of oxide ore shipped)

11. Number of Claims, Title, etc. (Please include a sketch map or plat showing location, T. R. & Sec., and the general outline of each group)
78 unpatented lode mining claims held by location and performance of annual work; 320 acres of state land under prospecting permit #83801

12. Previous Published or Unpublished Reports: Kincannon, 1926 (private report); Lee, W.T., 1908; Bancroft, H., 1911; Darton, N.H., 1925; Lausen, C., 1927; Housholder, E.R.,1956; (private report), Ahern,R., 1972;(private report) Crowl,W., 1978; ADMR file data

13. Names of Mining Companies or Governmental Agencies that have worked, or are now working on this property. Royal Investment Corp,Kerr-McGee Corp., McIntyre-Porcupine, Congdon & Carey, ADMR, Newmont Exploration Ltd., Gulf Minerals

14. Ore & Gangue Minerals: malachite, azurite, chrysocolla, tenorite, auriferous pyrite, galena, sphalerite, tetrahedrite, molybdenite, native gold and uraninite

15. Geology: Mapping has defined the following rock sequence:
(please include any Geologic Maps, Sketches or Cross Sections)
Paleozoic sediments, Triassic-Cretaceous intrusive and extrusive igneous rocks of basaltic, dacitic and felsic composition(rhyolites or felsic quartz crystal tuffs) Cata-clastically deformed Cretaceous-Tertiary volcanics, volcaniclastics and sediments (conglomerate and arkose sequences) Miocene? dacitic flows and intrusives. Quaternary bench gravels and alluvium.

16. Type of Mineralization-Metallurgical Considerations:
(please check appropriate box or boxes)

1. Syngenetic Au-Ag mineralization assoc. with siliceous, pyritic volcanic and volcaniclastic units. Associated with areas of argillic-sericitic alteration and alunite mineralization.
2. Disseminated and veinlet controlled Cu-Ag-Mo-U mineralization assoc. with potassically altered volcanics, metasediments and a qmp intrusive
3. Vein Au-Ag-Cu-Pb-Zn mineralization assoc. with qtz-magnetite veins.
4. Placer Au deposits

X	Vein or Lode	py,ccpy,ga,sphal,Au
	Stratiform	
X	Disseminated	py,ccpy,mo
X	Placer	Au
X	Oxide	mal,az,ten,chrys
X	Sulfide	py,ccpy,ga,sphal,mo
X	Other	uraninite

17. Ore Reserves: Dumps — tons @ — grade
untested Au placer reserves
Tailings — tons @ — grade
3.6×10^6 tons of oxide ore @ 1.57% Cu, (Housholder,1956)
15.0×10^6 tons of oxide and sulphide ore that would average 1.0% Cu, (Ahern, 1973)

18. Mine, Mill Equipment & Flow Sheet:
None

19. Road Conditions, Route: (see map) The property is adjacent to Interstate Highway 10 and is fully accessible by old roads and jeep trails

20. Water & Power Supply: Limited water is probably available from Gonzales well or Quartzite. The Colorado River remains as a potential source of water for any mining or milling operation.Power available from Blythe or Quartzite, 500 KVA line runs two miles south of property. Natural gas pipeline runs through the property.

21. Extent of Development: (Please include any maps, plans, sketches, longitudinal or cross sections of underground or surface workings)
Numerous shallow pits, adits, shafts.

22. Brief History: Property originally located in 1906 by Miguel Apodoes, worked in the 1920's as the Weaver or Weaver-Scott Mine, developed in the 1950's by Royal Investment Corp. who shipped several carloads of oxide Cu-Ag ore. Operated in the 1960's by Hancock Oil Co., leased by Kerr-McGee in the 1970's who drilled four core holes (Q1-Q4) then abandoned the property. Located by the present ownership in 1980.

23. Previous Sampling, Drilling & Other Studies on Dumps or Tailings:
Considerable surface sampling by Kerr-McGee, Gulf, Newmont, Royal Investment Corp., Congdon & Carey. Core drilling by Kerr-McGee and Royal Investment Corp.

24. Environmental-Social-Political Conditions & Considerations: Property located in a traditional area of past mining activity that has a large local small mine owner/operator group that supports mining and mineral exploration activity. The area is not within or adjacent to any proposed withdrawl or restricted use area.

25. Sampling: (see figure 1) numerous surface samples taken by Gulf and Newmont during the 1981-1982 period.
Sample Nos:

Sample Types or Types: rock chip and channel samples

26. Assaying:

27. Financial Terms, Conditions & Considerations: Property is open to lease with option to purchase from owners.

28. Remarks: Property has the potential for bulk tonnage Au-Ag deposits associated with pyritic, volcanic sequences; disseminated and stockwork Cu-Ag-Mo-U bulk tonnage deposits associated with extremely altered volcanic, volcaniclastic and intrusive units and placer gold deposits. Geological and geochemical surveys during 1981 and 1982 delineated areas with anomalous gold and copper mineralization and favorable rock types for the deposits described above. The property is only partially explored but has existing, developed reserves of Cu-Ag mineralization that can be currently mined by open pit methods. The potential of the property is largely untested.

29. Date: October 11, 1982 Signature _____
Richard J. Lundin

Mr. Lundin is a Mineral Exploration Consultant with 10 years of experience in the evaluation of base and precious metal deposits in the U.S. and abroad. He holds a BA degree in Anthropology and Geology from Beloit College, Wisconsin and is the President of Wallaby Enterprises Inc.

DKT 1304 PAGE 791

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STATE OF ARIZONA } ss. **20556**

County of Yuma

I hereby certify that the within instrument was filed and recorded

at the request of Henricks Gray Expl. Co.

1982 OCT 19 AM 9 00

_____, 19____ at _____ M.,

Docket 1304

on page 785-791

Witness my hand and official seal the day and year aforesaid.

GLENYS E. SCHMITT

County Recorder

By Elizabeth A. Burton

6.00

Box 5964

Tucson. Az. 85703

SE Claims

GOLD DEPOSITS NEAR QUARTZSITE, ARIZONA.

By Edward L. Jones, Jr.

INTRODUCTION.

This report is based on information obtained by the writer in April and May, 1914, while he was classifying the lands in the Colorado River Indian Reservation. The area considered includes the southern part of the reservation and the region extending eastward from the reservation to the Plomosa Mountains. The geology and ore deposits within the reservation were more particularly studied, the time allotted to the examination being too short to permit detailed work in the area farther east. For information concerning placers outside the reservation the writer is indebted to Mr. E. L. Dufourcq, who conducted the testing of placer ground near Quartzsite. Mr. W. W. McCoy, of San Bernardino, kindly furnished the early history of the La Paz district, and Mr. Edward Beggs, of Quartzsite, gave much useful information regarding the La Paz placers. In 1909 Howland Bancroft[1] made a geologic reconnaissance of northern Yuma County and much of the country around Quartzsite and farther west to the reservation line. In his report he mentions the La Paz district and briefly describes placers in the Plomosa Mountains and prospects on gold-bearing quartz veins in the vicinity of Quartzsite.

The map that accompanies the present report (Pl. IV) is compiled from the records of the General Land Office. The area within the reservation has been subdivided into sections; the land east of the reservation is unsurveyed. The mountainous areas in the reservation are indicated on this map by patterns showing the geologic rock formations; the mountains in the unsurveyed area are represented approximately by hachures.

GEOGRAPHY.

The topography of southwestern Arizona is characterized by small detached, generally northward-trending mountain ranges separated by broad aggraded desert plains. Quartzsite lies in the broad basin

[1] Bancroft, Howland, Reconnaissance of the ore deposits in northern Yuma County, Ariz.: U. S. Geol. Survey Bull. 451, 1911.

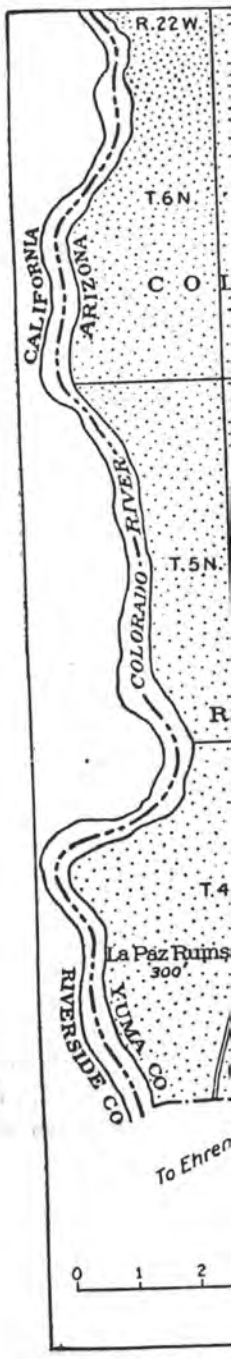
of Tyson Wash at the northern end of La Posa plain, in southwestern Arizona, between the Plomosa Mountains on the east and the Dome Rock Mountains on the west, at an elevation of about 850 feet. The distance between the Plomosa and Dome Rock mountains at the narrowest part of the plain is probably not less than 6 miles. Quartzsite is in the west-central part of Yuma County and is best reached by a daily automobile stage line, 25 miles long, from Bouse, Ariz., a station on the Arizona & California branch of the Atchison, Topeka & Santa Fe Railway. A road leading westward from Quartzsite traverses the southern end of the reservation and one leading southward traverses the broad stretch of desert to Yuma.

Most of the mountains in this region attain elevations not exceeding 2,000 feet above the surrounding desert. Ferrar Peak, 2,900 feet high, is the highest elevation near Quartzsite. The two small outlying ridges north of Tyson Wash rise not more than 800 feet above the surrounding bench lands, but the average relief is less than 500 feet. Gravel and wash covered bench lands slope gently westward from the Dome Rock Mountains nearly to Colorado River, where usually there is an abrupt descent of 100 feet to the river bottom lands.

Many shallow arroyos or washes drain to Colorado River, but none of them carries surface waters. Of these, Tyson Wash and Arroyo La Paz are the most prominent. Tyson Wash, with a length of 50 miles, heads south and west of Quartzsite in several branches, which unite and drain northward to the north end of the Dome Rock Mountains, where the channel turns sharply westward and debouches on the Colorado River bottom lands. Tyson Wash carries an underground water flow at Quartzsite, where small tracts are irrigated from shallow wells operated by windmills or small gasoline pumps. Arroyo La Paz heads in the Dome Rock Mountains and for most of its course forms the southern boundary of the Colorado River Indian Reservation. The water supply in the vicinity of the placer camps is very scanty. Water of a rather inferior quality is furnished by Gonzales well, near the reservation line, and a small or uncertain supply is obtained from "tanks" or holes eroded in the bedrock of arroyos. Of these, Goodman tank is the best known and most accessible, but even this water must be piped from depths of several feet from the sands that fill the excavation. The placers in the Plomosa Mountains were supplied with water through pipe lines leading from the wells near Quartzsite.

The climate of the region is extremely arid. The mean annual precipitation at Parker,[1] near the north end of the reservation, is

[1] Bancroft, Howland, Reconnaissance of the ore deposits in northern Yuma County, Ariz.: U. S. Geol. Survey Bull. 451, p. 13, 1911.



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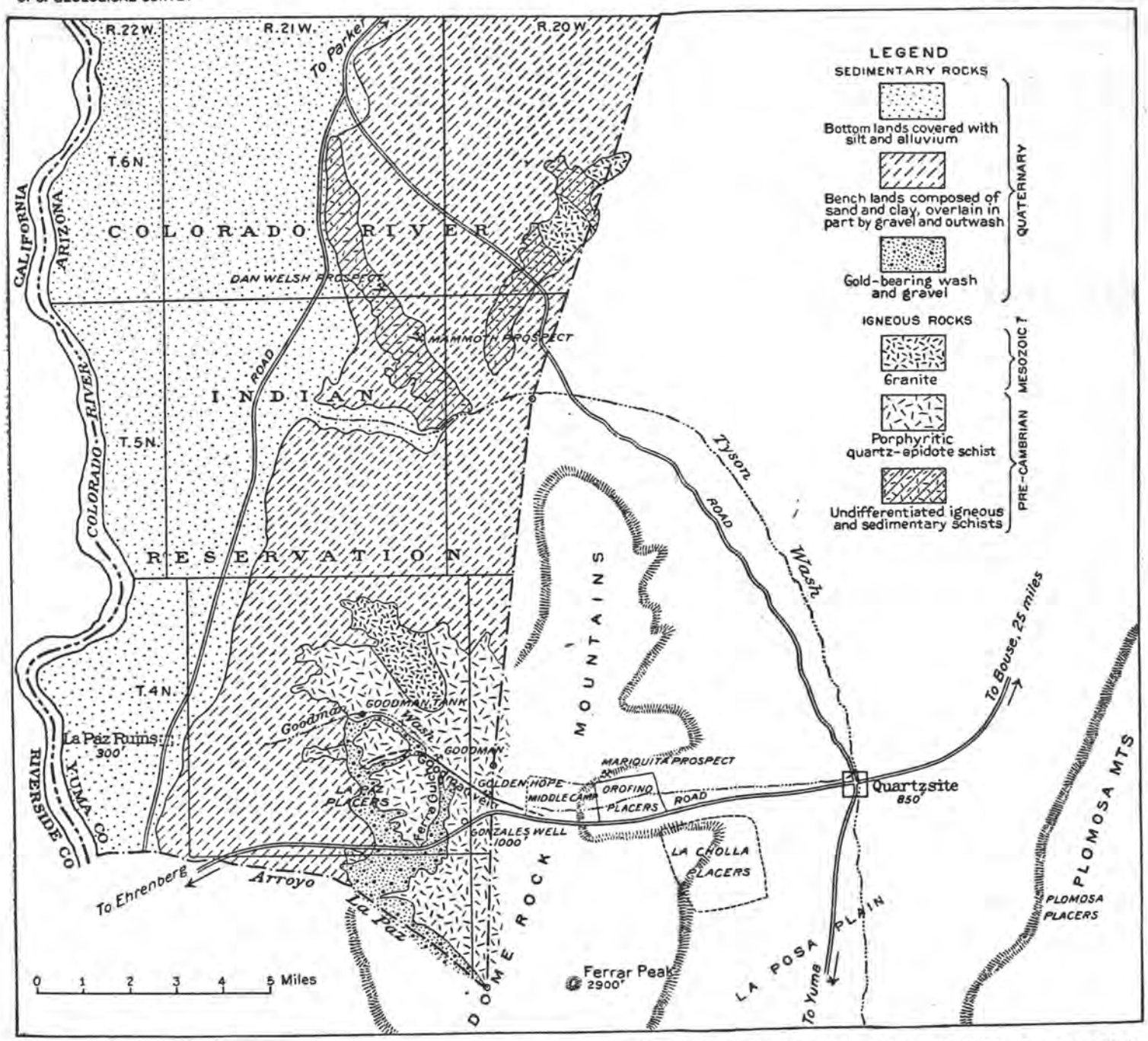

MAP SHOWING GEOLOGY OF SOUTHERN PART OF COLORADO RIVER INDIAN RESERVATION AND LOCATION OF PLACERS NEAR QUARTZSITE, ARIZ.

only 4.27 inches, and the mean annual temperature for a period of 12 years is 70.9° Fahrenheit. The summer is intensely hot, and work in the open is then almost impossible, but the winter is delightful. The vegetation of the region is scanty and includes no trees suitable for use as mining timber. The bottom lands of Colorado River support good growths of willow and mesquite and a few cottonwoods; in the larger arroyos there are sparser growths of thorny shrubs, including ironwood, ocotillo, palo verde, and mesquite; and on the bench lands and hill slopes there are several varieties of cactus and small shrubs.

GEOLOGY.

Character of the rocks.—In this investigation detailed geologic work was done only in the part of the Dome Rock Mountains that is included in the reservation, but the general geology of the Plomosa Mountains and the southern part of the Dome Rock Mountains is described by Bancroft.[1] Igneous and sedimentary rocks in complex association compose these mountains, and they range from pre-Cambrian schists and gneisses to Tertiary or Quaternary volcanic rocks. The placer areas specifically examined in the Dome Rock Mountains and in that part of the Plomosa Mountains here referred to are composed of intrusive igneous rocks, some of which are of schistose structure and others of holocrystalline granitic texture. The ages of these rocks could not be determined from the geologic evidence near by, although the schist is believed to be of pre-Cambrian age and the granite much younger and probably of Mesozoic age.

The ridges north of Tyson Wash are composed of intermixed schistose sedimentary and igneous rocks, into which are intruded narrow dikes of basic rocks, dikes and irregular masses of pegmatite and aplite, and an area of granite similar to that in the La Paz district. The metamorphosed sedimentary and igneous rocks are not differentiated on the map (Pl. IV). The rocks of sedimentary origin range from fine-grained silvery-white sericite schists to coarse-grained biotite schists with interbedded thin marble beds. Granite gneiss, amphibolite schist, quartz-epidote schist, and granite comprise the larger igneous masses in these ridges. Lava flows of Tertiary and Quaternary age occur throughout the eastern part of the Plomosa Mountains a short distance east of the area here considered.

Quartz-epidote schist.—A greenish-gray to black schistose porphyritic rock occupies the larger part of the Dome Rock Mountains within the reservation and probably much of the mountainous area east of the reservation. It forms relatively smaller areas of the ridges north of Tyson Wash. According to Bancroft it is the coun-

[1] Op. cit., pp. 22–36.

try rock in the vicinity of the New York-Plomosa placers east of Quartzsite. The rock is composed of quartz, orthoclase, and altered feldspars, some of calcic composition, more or less inclosed in an aggregate of epidote, sericite, chlorite, hornblende, and calcite. Locally magnetite is an important constituent. The rock exhibits varying degrees of schistosity, but large exposures show well-marked planes which trend from east-west to northwest-southeast and dip at an average of 30° to the north and northeast. The quartz-epidote schist is believed to have been derived from an intrusive igneous rock, probably a quartz monzonite or quartz diorite porphyry. This rock is of economic importance, for it contains the gold-bearing quartz veins in the La Paz district from which the placer deposits are derived.

Granite.—North of Goodman tank a light-colored granitic rock occupies a considerable area in the main Dome Rock Mountains and occurs in smaller masses in the ridges north of Tyson Wash. The rock is commonly of a medium-grained holocrystalline texture, but in places is coarsely granular, approaching a pegmatite. The crystals of quartz and feldspar are commonly intergrown. Orthoclase, oligoclase, and albite comprise the feldspars. Ferromagnesian minerals are variable constituents of the granite; in some localities they are practically absent or consist of sparsely distributed biotite and chlorite; in other localities hornblende, biotite, and chlorite are fairly abundant. The granite intrudes the quartz diorite and other schistose rocks of the region, and, as shown by the absence of dynamic metamorphism, is of much later age. The granite gneiss differs from the granite in composition by the arrangement of abundant biotite crystals in flow lines. Amphibolite and some of the biotite schists probably are derived from diabase and diorite.

Quaternary deposits.—Between the Plomosa and the Dome Rock mountains lies the gravel and wash covered desert of Quaternary deposits. Flanking the mountainous areas within the reservation, with their eastern limits undetermined, are the bench lands composed of unconsolidated sands, clays, and gravels deposited by Colorado River in Quaternary time during periods of aggradation. This bench-lands formation is correlated with the Chemehuevis gravel, as described by Lee,[1] who noted it at many places along Colorado River. Rapid erosion of the mountainous areas under desert conditions has produced thick wash deposits in the gulches and alluvial fans that extend for short distances from the base of the mountain slopes over the bench-lands formation. This material is unassorted and consists of angular rock fragments and sand. In the reservation

[1] Lee, W. T., Geologic reconnaissance of a part of western Arizona: U. S. Geol. Survey Bull. 352, pp. 43–47, 1908.

this wash is unconsolidated, but placer operators report that on the eastern slopes of the Dome Rock Mountains a cemented wash is overlain by incoherent material, and Bancroft reports that the placer workings in the Plomosa Mountains are in a conglomerate of the older rock fragments cemented by lime carbonate.

The bottom lands lying in the flood plain of Colorado River are deposits of river silt. During floods the plain is rapidly built up by fresh silt deposited from the heavily charged river waters.

PLACER MINES.

History.—Placer mining in this part of Arizona closely followed the discovery of the La Paz diggings. Part of the early history of these workings, in addition to that given by Mr. W. W. McCoy, was obtained from the report of J. Ross Browne in "Mineral resources of the States and Territories west of the Rocky Mountains," published in 1868. In January, 1862, Capt. Pauline Weaver was trapping along Colorado River, and at times would stray off into the mountains on prospecting trips for gold. The Indians, with whom he was on friendly terms, gave him some nuggets and, after Weaver had organized a party from Yuma, conducted him to the source of the gold. The party picked up $8,000 in nuggets within a short time, but had to return to Yuma, 150 miles distant, for provisions. A rush from southern California and Arizona points immediately started for these placers, and within a short time hundreds of miners were prospecting the country around the original location.

The town of La Paz was established at the base of the bench lands near the river, the houses being constructed of adobe bricks. La Paz soon became the supply point of the surrounding region, and maintained its population of about 1,500 until 1864, when, with the apparent exhaustion of the placers and the discovery of new diggings, large numbers left the district. From this time the population steadily decreased, until, with the creation of the additions to the Colorado River Indian Reservation in 1873, 1874, and 1876, which included much of the placer ground and greatly restricted mining, La Paz was practically deserted, and the site of the once flourishing town is now marked only by disintegrating adobe buildings.

The old placer workings are in the gulches and on the western hill slopes of the Dome Rock Mountains, from 6 to 8 miles from La Paz. Water at the diggings had either to be hauled from La Paz or a small supply obtained from the Goodman tank. Mr. McCoy states that water packed from La Paz to the placers brought $5 a gallon during the rush period. The gold was recovered entirely by dry washing in gold pans or wooden bowls called "bateas." Picks

and shovels were used to break up and handle the gold-bearing material, these implements being supplemented by Mexican miners by a steel bar 2 feet long. With such crude methods, it is apparent that only the coarser gold could be saved and only ground extremely rich would be payable. Nevertheless, it is estimated[1] that $1,000,000 was recovered in the first year, and as much more in each following year until 1868. Since that time the production probably has been comparatively small. The gold particles or nuggets ranged in value from 5 cents to $10, although $20 and $40 pieces were not uncommon, and the largest piece, or "chispa," taken out, found by Juan Ferrar, was valued at $1,160. The production per man per day frequently exceeded $100. With the introduction of the "dry-washer" machine, a few years after the district was discovered, greater quantities of material could be handled and a large saving of the gold effected, although by that time the richer ground had largely been worked over.

Dry-washer machines.—The machines used in "dry washing" are of several types, but probably the most efficient is that of the "bellows" type. In capable hands 6 cubic yards of material can be handled by a machine of the largest type by one man in eight hours, and the capacity of those of the smaller types, more commonly used, is 2 yards a day. The machine consists of a wooden framework, to which is attached a coarse screen, hopper, crank and gears, riffle board, and bellows. The material is passed through a screen having a quarter-inch mesh into a hopper having a capacity of 1 cubic foot, and then passes on to the inclined riffle board, 10 by 20 inches, which also is a screen surface with wooden riffles at right angles to its length. The pulsations of the bellows keeps the material in motion. Underneath the riffle board is a muslin cloth, stretched over the air chamber. The power for operating the bellows is a crank on geared wheels, and as the material passes over the riffle board the heavier particles are intercepted by the riffles and drop through the screen on to the cloth, while the waste material passes over the end of the board or is blown away by the air blast. The gold is obtained by panning the concentrates. It is apparent that the gold-bearing wash must run well above 50 cents per cubic yard in order that the operator may make miner's wages. Sporadic placer mining has been done with this machine by the miners at Quartzsite, but because of the variability of the gold content of the wash and the limitations of the machine no large areas have been thoroughly or continuously worked.

Areas of gold-bearing wash.—In the La Paz district the principal gulches or arroyos in which the gold-bearing wash occurs or to which

[1] Browne, J. R., Mineral resources of the States and Territories west of the Rocky Mountains, 1868.

the richest gulches are tributary are Goodman Arroyo and Arro La Paz, an arroyo at the southern boundary of the reservation. Fe rar Gulch, tributary to Arroyo La Paz, contained the richest an most productive placers of the district. Evidences of former wo are seen in the old excavations and piles of bowlders and angul rock fragments, in exposures of bedrock where the wash was sha low, and in the deeper deposits by old shafts from which small drift were driven in the hope of finding rich pockets. The thickness the gold-bearing wash is variable, ranging from a few feet on th mountain slopes to an unknown measure in La Paz Arroyo and in th gulch traversed by the Quartzsite-Ehrenberg road. Shafts have bee sunk in the wash to depths of 30 feet without reaching bedrock an it is reported that in places the wash is at least 60 feet deep. By fa the greater part of the auriferous material is unworked, especiall that in the lower courses of the arroyos, where the wash is dee Ferrar Gulch for most of its course has been practically worked ou No estimate could be made of the probable gold content of the was in the La Paz district because of lack of detailed data and of un certainty as to the limits of the wash, but in one area the deposi said to contain values of 50 to 75 cents per yard and much of it 3 feet or more deep, occupies at least 640 acres, and considerable area extend into the smaller gulches.

Character of gold-bearing wash.—The gold-bearing material con sists of sand and clay inclosing angular rock fragments of greatl variable size. Tests indicate that about 20 per cent of the wash wi pass through a quarter-inch screen, and the largest bowlders weig several hundred pounds. The material near the surface is unassorte and is unconsolidated, being readily worked with pick and shove That at depths of 15 or 20 feet is consolidated, but the cementing sub stance readily disintegrates on exposure to air. Deposits of was below the depths of test pits may prove to be similar to the outwas on the east slope of the Dome Rock Mountains and in the Plomos placers, where the material is firmly cemented with calcium carbon ate and requires crushing in order to free the gold. In Goodma Wash below the Goodman tank a deposit of calcareous tufa sev eral feet thick was noted. The ground stands sufficiently well to per mit the sinking of shafts without the use of timber. The wash readily worked in dry-washer machines, the only requirement bein that the ground must be dry. The gold is said to be distribute throughout the wash, though in the early workings the richest yie was obtained near bedrock. The size of the gold now recovered fro the deposits of the La Paz district probably averages only a fe cents, but, as already stated, the gold recovered from the early wor ings was much coarser. The gold is rough and angular, and particl of iron cling to some of the nuggets. Magnetite is always found

the concentrates, and bowlders of magnetite, the largest weighing several pounds, are frequently found on the surface.

Present and contemplated operations in the La Paz district.—Occasional dry washing is done by miners within the La Paz district, and yearly assessments are maintained by parties who hope to gain title to placer tracts when the restrictions on mining within the reservation are removed. The most extensive preliminary work has been done by a California company, which, in addition to making tests, has leveled the top of a small hill for a reservoir site. This site, which stands at an elevation of 850 feet, is about 600 feet above the Colorado River bottom lands. Water for the reservoir could be obtained from wells near La Paz, which in an air line is but 4½ miles distant. It is said that the company intends to hydraulic the gold-bearing wash from the smaller gulches and hillsides into the larger arroyos, where a dredge will be installed and the entire deposit systematically worked.

Placers on the east slope of Dome Rock Mountains.—There are several placer tracts on the east side of the Dome Rock Mountains in the large branch of Tyson Wash, west of Quartzsite, and in low-lying ground traversed by gulches tributary to it. Of these the Middle Camp, Orofino, and La Cholla placers are outlined roughly on the accompanying map. These placers have been worked intermittently on a small scale since the La Paz placers were discovered, and several attempts have been made to handle the ground on a large scale, but thus far these efforts have proved unsuccessful. At the time the region was visited the Orofino tract, owned by the Catalina Gold Mining Co., was the only one on which work was being done, and this work consisted of testing the ground, partly to determine its gold content and partly to determine the advisability of working the wash with dry concentrating machines of large capacity. The following information was obtained on the ground, the data as to the gold content and like matters being supplied by Mr. E. L. Dufourcq, the engineer in charge. The placer ground owned by this company comprises 640 acres of land in which test holes were sunk every few hundred feet. The holes ranged in depth from a few feet to 30 feet. The material taken from each excavation was run through a small concentrator to determine its gold content, and the results showed that the gold content ranges from a few cents to over $1 per cubic yard, the average being 38 cents. The colors run from less than 1 cent to 24 cents each and the gold is fine, being worth about $19 an ounce. The gold-bearing material differs from that of the La Paz placers in that it consists of unconsolidated rock débris and an underlying cemented gravel. The loose material ranges in depth from a few feet to 12 feet, and the cement is of variable depth—

both the unconsolidated and the cemented material. The machine used in making the tests was a Stebbins demonstration dry concentrator. This machine consists of a metal frame on which is a perforated steel table with riffles parallel to its length. Underneath the table is a fan which supplies an air blast that is conveyed in a tube to the table and passes out through the perforations. The dry wash is screened through a quarter-inch mesh at the head of the table, and as the material passes onto the table the lighter particles are blown away or worked over the lower side and the concentrates are collected at the end. The power is a small gasoline engine, which operates the fan and gives to the table a vibratory motion similar to that of a Wilfley table. Its capacity is about 1 cubic yard an hour.

The Middle Camp and La Cholla placer tracts were not visited, but their situation is similar to that of the Orofino tract, in the arroyos tributary to Tyson Wash. At the Middle Camp placer it is reported that a dry concentrating machine having bucket-dredge excavator and capacity of 1,000 yards per 10-hour day was installed, but proved a failure because of the moisture contained in the wash at depths of a few feet. In any dry concentrating process in order to attain maximum capacity and to make high saving of gold content it is essential that the material be absolutely dry, and even in this arid region some of the material holds sufficient moisture to greatly hamper the handling of large quantities of it. The bedrock of the La Cholla placer tract is reported to be schist derived from sedimentary rock. This schist is said to contain many small auriferous quartz veins, and the gold-bearing material is a hard siliceous cement that must be crushed before the gold can be recovered.

No survey was made of the placer ground on the east side of the Dome Rock Mountains, but the deposits are extensive enough to merit serious attention. It is believed that the deposits can be worked best by hydraulic methods, by means of storage reservoirs on one of the many small hills that overlook the placer ground. The water would have to be pumped from Colorado River with a lift of about 1,000 feet. The gold-bearing débris of the smaller gulches and mountain slopes could then be washed into the larger arroyos, where the entire deposit could be worked by dredge or by sluicing, although the slope of ground is rather low to permit easy disposal of the waste rock.

Deposits in the Plomosa Mountains.—Placer deposits on the southwestern slopes of the Dome Rock Mountains, 5 miles southeast of Quartzsite, have been worked intermittently on a small scale for many years. These placers were examined in 1909 by Howland Bancroft, and the following data are taken from his report.[1]

[1] Op. cit., pp. 87–88.

Of the companies that own placer tracts in this area, the New York-Plomosa Co.—

has installed large machinery, laid a 7-mile water-pipe line without any expansion joints, and has got all ready to work the placers. For some reason only one run had been made prior to May, 1909, the results of which were not available. * * *

There has been installed on the property the following machinery: Three 100-horsepower boilers, one 300-horsepower Corliss engine, two Williams mills, two Huntington mills, and various accessories. The pipe line which furnishes the water used on the property is approximately 7 miles long and is about 5 inches in diameter, the difference in elevation between the two terminals of the line being approximately 400 feet.

The ground has been prospected by a great many small tunnels with frequent openings to the surface and an occasional larger adit tunnel run along the bedrock. The vicinity had previously been prospected by "dry washers," and consequently the underground work resembles a network of small burrowings, some of which a man can scarcely drag himself through. * * *

In certain old drainage channels which led away from the southwestern part of the Plomosa Mountains is found an auriferous conglomerate of granite, schist, and quartz fragments cemented by lime carbonate. In thickness this conglomerate or "cement rock" varies from a few inches to a great many feet. * * * It was evidently the intention of the company to work the cemented material in mills.

A recent communication from Mr. Beggs states that these placers are again receiving attention, and that a dry concentrating plant, costing $60,000, is to be installed. Numerous tests have been made and a large area of ground has been blocked out, which is said to run 50 cents per cubic yard. Water in sufficient quantity for the needs of the camp was obtained in a well at a depth of 300 feet.

GOLD QUARTZ VEINS.

The auriferous quartz veins in the vicinity of the La Paz diggings were probably discovered at the same time as the placers, for in places they form conspicuous outcrops with abundant float. The decomposition of these veins has produced the placer gold for the largest areas of gold-bearing wash are found along the more persistent quartz veins on which mining has been done. These veins are generally distributed through the metamorphosed pre-Cambrian igneous and sedimentary rocks, although they are more numerous in the country rock of the La Paz placers than in the sedimentary schists. The veins are of two types—those that lie in the planes of schistosity and those that cut across them. In the La Paz district the veins of the first type are comparatively large and persistent, trending from east-west to northwest-southeast, and those of the second type consist of numerous north-south trending gash veins. On the west ridge north of Tyson Wash two large quartz veins of east-west trend cut

across the schistosity of the inclosing rocks, and other smaller veins trend in various directions. The larger veins of east-west trend have been mined or prospected, but those of the gash vein type, although reported to be gold-bearing, are too small for exploitation. The failure to develop these veins more fully is due to their remote situation and the inability of the owners to acquire title under the mineral laws, for all the prospects here described except one are within the reservation.

MINES AND PROSPECTS.

Goodman mine.—The Goodman mine is on the Goodman vein, which trends from northwest-southeast to east-west and can be traced for 3 miles, its eastern limits of outcrop being the wash-filled arroyo traversed by the Quartzsite-Ehrenberg road, and the faulted portions of its westward extension being traceable to the bordering bench lands about a mile south of the Goodman tank. The vein varies greatly in width, ranging from a mere seam to a vein 40 feet wide and averaging in width probably 10 feet. It occupies a shear or fault zone in the quartz-epidote schist. It dips generally to the north at angles ranging from 30° almost to 90°. The development consists of several inclined shafts sunk on the vein and connecting tunnels. One incline is 120 feet deep with connecting tunnel 140 feet long and 120 feet of drifts; another tunnel is 240 feet long. The vein material is a massive iron-stained quartz containing small cavities resulting from the weathering of pyrite, which is distributed through the vein but is usually more abundant along the walls and for a short distance in the inclosing wall rocks than elsewhere. The gold is contained in the pyrite and can at many places be seen in the oxidized ores. About $40,000 was obtained from the Goodman mine prior to 1900, and since that time Mr. W. E. Scott, of Quartzsite, has mined ore to the value of $9,000, the average tenor of which was $65 per ton. The ore was hauled 15 miles to Quartzsite and there treated in a small amalgamation mill. The mine is not worked at present, although yearly assessments are maintained.

Golden Hope claims.—The Golden Hope claims are on the Goodman vein near the east reservation line. The workings consist of two shafts, each about 30 feet deep, and two tunnels, 30 and 70 feet long, respectively, which cut the vein at shallow depths. In a recent communication Mr. Beggs stated that a large shoot of milling ore running $30 per ton in gold had been opened in these workings and that the company owning the property was contemplating the erection of a mill to treat the ores.

The west end of the Goodman vein is covered by claims located by Mr. Beggs, who stated that he obtained an assay of $200 per ton

in gold on ore taken from a small discovery hole sunk on the vein. The vein at the west end is of irregular shape; in places it is 40 feet wide but in a short distance pinches to a mere seam or is cut out by faults. The inclosing wall rocks are crumpled and folded quartz-epidote schists.

Mariquita prospect.—This property was not examined by the writer but is described as follows by Bancroft:[1]

The Mariquita prospect is located about 6 miles west of Quartzsite, the road leading to it branching from the Ehrenberg stage line some 4 miles out of Quartzsite. It is situated 2 miles north of the stage road, at an elevation of 1,100 feet on the southeastern side of a saddle which occurs midway in the Dome Rock Mountains.

Medium to fine grained quartz-mica schists, apparently intruded by much younger fine to medium grained granites or quartz monzonites, are the rocks in the immediate vicinity. The schists strike northwest-southeast and dip 20° NE., and they contain, besides the quartz and mica, much epidote and chlorite, with a large percentage of orthoclase feldspar and some unaltered but contorted biotite crystals.

A fairly large vein of quartz, carrying a little copper and gold, which has been roughly prospected, is the source of the ore extracted from this property. The vein strikes S. 20° E. and dips 20° NE., and lies in a slip or fault between parallel schist strata. In width the vein varies from a few inches to several feet, is fairly persistent in length, and apparently is lenticular. As the workings on the property are old and not very extensive, little accurate data on the size of the ore body were obtained.

Dan Welsh prospect.—The Dan Welsh prospect is on the summit of a ridge near the south boundary of sec. 32, T. 6 N., R. 21 W. Little work has been done on it, and it was deserted at the time of the writer's visit. The development consists of a shaft 12 feet deep and several open cuts and short tunnels, which explore a quartz vein whose average width is 2 feet. The vein trends east-west, dips from 60° N. to vertical, and can be traced 1,000 feet, pinching to a mere seam on the west side of the ridge 400 feet from the shaft and disappearing beneath outwash deposits on the east side of the ridge. The inclosing wall rocks are a sandy mica schist of sedimentary origin and granite gneiss and amphibolite schist of igneous origin, all of pre-Cambrian age. The schists trend about north-south and dip 20° E., and the fracture filled by the quartz vein cuts squarely across the schistose structure. The vein matter is a massive vitreous, iron-stained quartz containing plentiful disseminated pyrite cubes from an eighth to a quarter of an inch square or crystal aggregates an inch or more in diameter. The oxidized portion of the vein, which extends to the bottom of the shaft, contains cavities from which pyrite has been weathered. The iron oxides contain here and there specks of gold and along the fracture planes in the quartz there are

[1] Op. cit., pp. 81–82.

dendritic flakes suggesting secondary deposition. The ore is apparently of high grade; its exact tenor is not known. A stack of 50 sacks of ore was found in the gulch leading down from the prospects on the west slope of the ridge, and another pile of 20 sacks, with several tons of unsacked ore, was found at the shaft. It was reported that the owners of this prospect packed the ore to Colorado River, 6 miles distant, and there treated the ore in an arrastre with mercury to recover the gold, but they were not allowed to continue operations.

Mammoth prospect.—The Mammoth prospect is in sec. 12, T. 5 N., R. 21 W., near the base of an eastward-trending ridge. An old incline, now inaccessible, but probably several hundred feet deep, is sunk on a faulted quartz vein of variable width, which trends about N. 70° E., and is traceable to the west for 1,000 feet, mainly by abundant float. At the shaft the vein is 10 feet wide. No work has been done here in recent years, but in 1914 the prospect was relocated and is now known as the Apache No. 2. The country rock is a dark schistose porphyry containing prominent feldspars inclosed by biotite, chlorite, and epidote. The vein matter is a massive white quartz slightly stained with iron and copper salts, with sparsely disseminated pyrite. The ore is said to be valuable only for its gold content, but its tenor is not known.

10427°—Bull. 620—16——5

SKYLINE LABS, INC.
1775 W. Sahuaro • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

RECEIVED
OCT 15 1982
BOX 5964
TUCSON, AZ. 85703

REPORT OF ANALYSIS

JOB NO. UCW 008
October 13, 1982

HEINRICHS GEOEXPLORATION CO.
Box 5964
Tucson, Arizona 85703

Analysis of 4 Rock Chip Samples

ITEM	SAMPLE NO.	Au ppm	Ag ppm
1	SE 101RC	.017	.2
2	SE 103RC	.410	.4
3	SE 102C	.840	42.0
4	SE 104C	.220	.4

CC: Mr. R.J. Lundin
3425 W. Bardot
Tucson, Arizona 85741

REGISTERED ASSAYER CERTIFICATE NO. 9427 CHARLES E. THOMPSON SIGNATURE SIGNED Arizona U. S. A.

Charles E. Thompson
William L. Lehmbeck
Manager 10/14/82

SKYLINE LABS, INC.
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CC: Mr. R.J. Lundin
3425 W. Bardot
Tucson, Arizona 85741

In schist terrain:
milky qtz - from old qtzt layers (or ss)
clear qtz - vn. qtz

13 from gypsum zone
lim. w. blk hem is a good Cu indicator
Gysum on fracs. - derived from H_2SO_4 meeting Ca^{++} waters; H_2SO_4 from oxidizing sulfides

14 qtz-flooded rk w. fresh dissem py (black flecks)

15 silic rk w. many former py sites

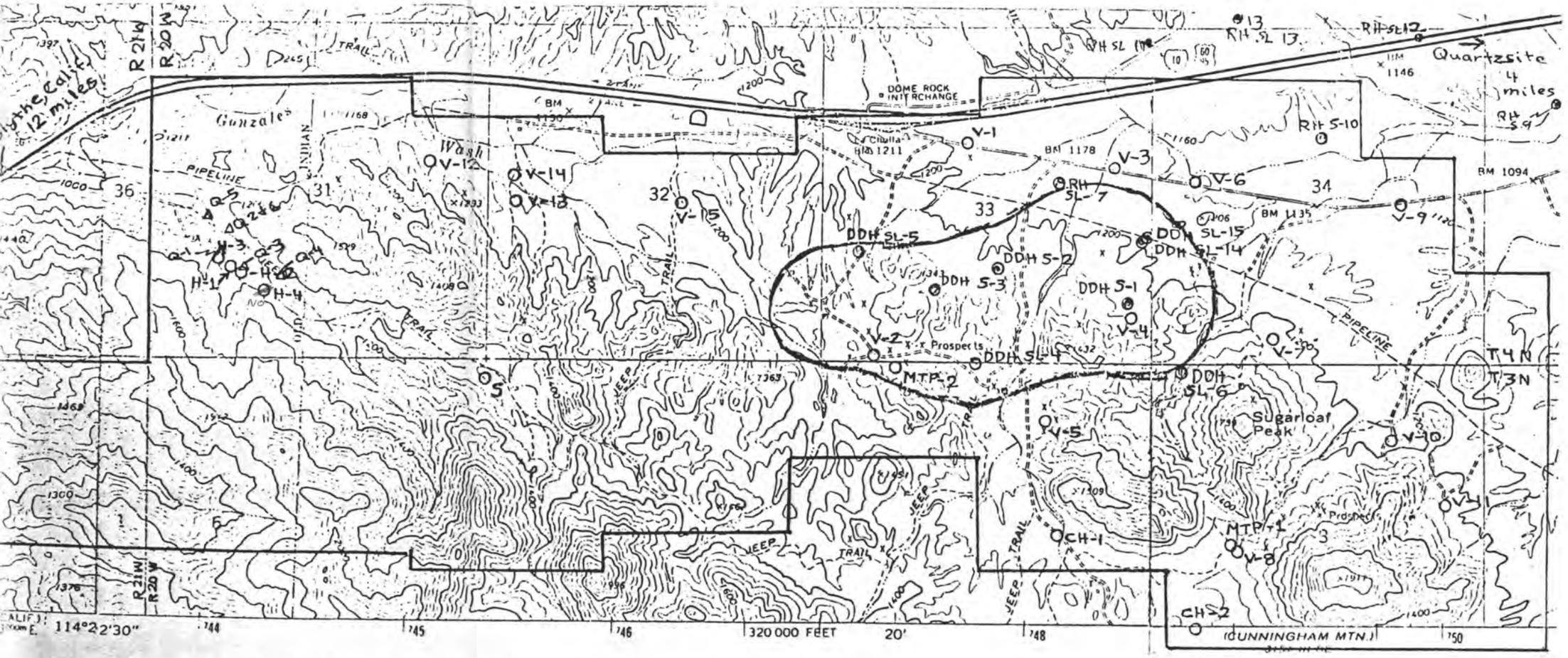
16 Shadow Mtn. qm (?)

17 potassic zone - Fe in vnlts + lim on frac indicates Cu

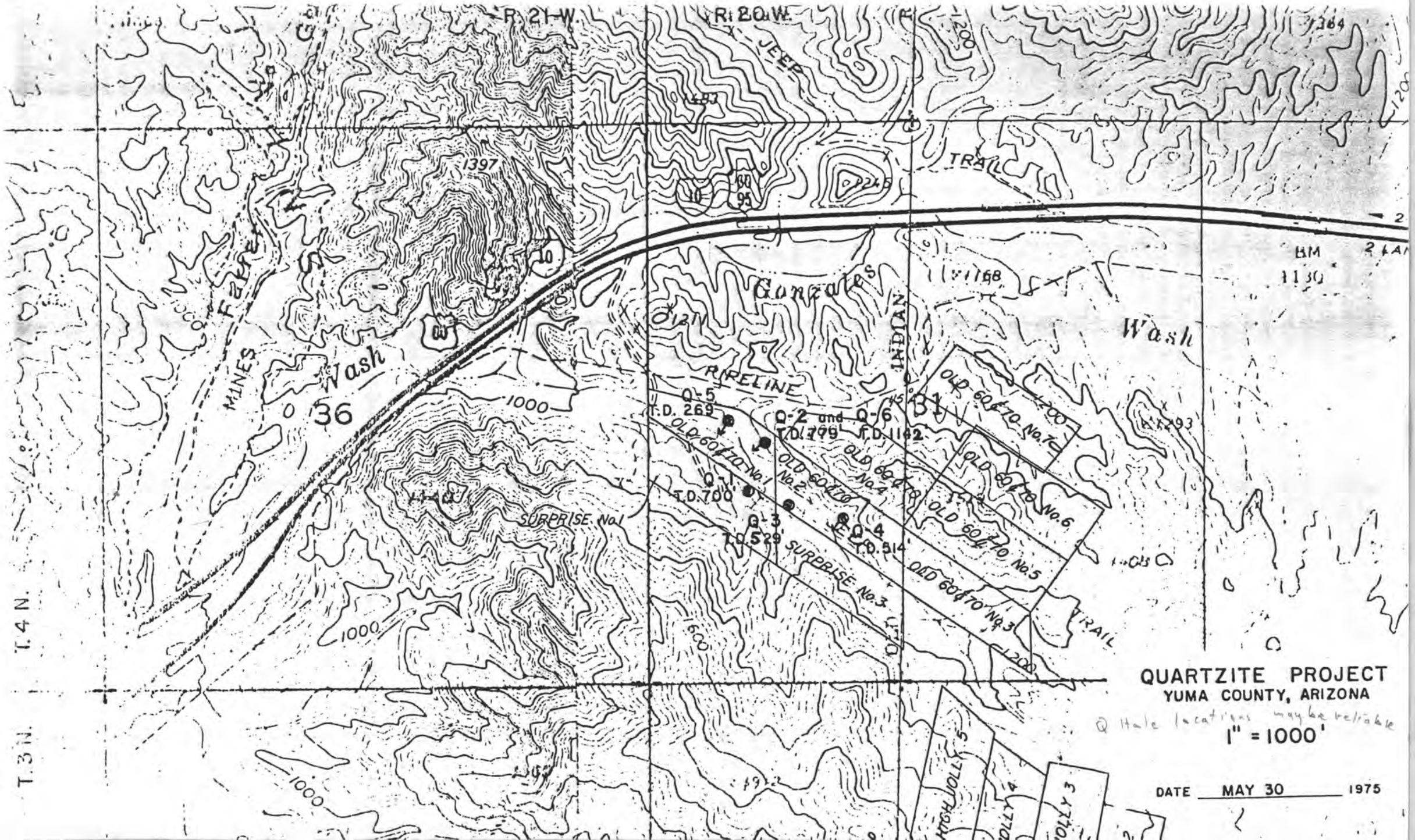
18 potassic zone - w. indigineous limonite

19 potassic zone - note brick-red maroon hem.; indicates Cu

20 potassic zone
~0.5-0.7% Cu acc. to Dick Ahearn



Hole locations not reliable.
H-4 is incorrect



QUARTZITE PROJECT
YUMA COUNTY, ARIZONA

@ Hole locations may be reliable

1" = 1000'

DATE MAY 30 1975

TELEX: 364412 INTR ID 894
FAX: 602/326-4019

HEINRICHS GEOEXPLORATION COMPANY

P.O. BOX 5964, TUCSON, ARIZONA 85703. 806 WEST GRANT ROAD. PHONE: (602) 623-0578

September 12, 1990

Mr. Kenneth H. Wright
President & CEO
Athena Gold Corporation
5301 Longley Lane, Suite 37B
Reno, NV 89511

RE: SE ("STRAY ELEPHANT") CLAIM GROUP
LA PAZ COUNTY, ARIZONA

Dear Mr. Wright:

This will confirm our telecon of August 10 which followed your letter to me of 23 August 1990.

Enclosed packet of information summarizes the situation, indicates the location and includes our "asking" terms. Details not included in Mr. Loghry's report are available for inspection here in Tucson. One preliminary feasibility study has concluded production could be initiated in about one year with a $2mm capital investment.

At any mutually convenient time, we will be glad to guide you around the premises. The area is a 2.5 hour Interstate 10 drive from Phoenix. Usually we need at least a few days notice for Mr. Loghry or myself to be available.

Very truly yours,

Walter E. Heinrichs, Jr., Co-owner.

WEH/jh

Encl: 1
cc: Hirt, Loghry, Lundin
(w/o encl)

Athena

#1408
Rec'd: 8/27/90
Tucson, Az
WHH.

August 23, 1990

Mr. Walter Heinrich
Heinrich Geological Exploration
P.O. Box 5964
Tucson, Arizona 85703

Re: Stray Elephant Project

Dear Mr. Heinrich:

I would first like to introduce our company, Athena Gold Corporation. Athena is a mining company headquartered in Reno, Nevada. Athena Gold Corporation, through its U.S. subsidiary Athena Gold Inc., owns the Talapoosa precious metals project. The Talapoosa is an advanced stage exploration precious metals property with a 19.0 million ton geological reserve located in Lyon County, Nevada. The Company will shortly enter into a joint venture with Placer Dome U.S., Inc for the exploration and development of the project.

Athena Gold Inc. is now seeking our second major property. Earlier this year I spoke to Frank Millsaps, Millsaps Mineral Service, Inc. of Salt Lake City, regarding mineral properties that would be of possible interest to our company. Frank give me your name and a brief description of the Stray Elephant. The criteria for our search is a project that has the strong potential for development and operation within a reasonable period of time in order that we can move from an exploration stage company to an operating company. Frank Millsaps indicated he thought your Stray Elephant oxide copper property held the potential for becoming a viable operation within our target time frame.

If the Stray Elephant is still available and you would be interested in discussing the project with us please call or write to me at the address listed below.

Yours very truly,

ATHENA GOLD INC.

Kenneth H. Wright
President & CEO

Athena Gold Corporation
5301 Longley Lane, Suite 37B, Reno, Nevada 89511 (702) 825-4334 Fax (702) 825-4173

Walt

December 15, 1990

Re: Proposed Deal, 42 SE Claims
Stray Elephant Gold Prospects
SE 1-22, 101-120
Sections 32, 33, T4N, R20W
Sections 5, T3N, R20W
La Paz County, Arizona

Mining Lease

$10,000 down

$1,000 per month advance royalty commencing first anniversary ---- OR

4% NSR production royalty, whichever is greater

$50,000 minimum annual work expenditure, to include drilling

Environmental and reclamation guarantees

Condemnation drilling of pads, facilities in the gold target areas

2 mile area of interest (excluding other existing claims)

30 day notice of lease relinquishment

Payments to be made to: Stray Elephant Claim Owners
Account No. 642-12128
First Interstate Bank of Arizona
Campbell Plaza Office
P.O. Box 40700
Tucson, AZ 85717

TRANSMISSION REPORT

(801) 433-6803

N. Lily

TELEX: 364412 INTR ID 894
FAX: 602/326-4019

HEINRICHS GEOEXPLORATION COMPANY

P.O. BOX 5964, TUCSON, ARIZONA 85703, 8~~06~~10 WEST GRANT ROAD, PHONE: (602) 623-0578

May 7, 1991

Wm. C. Hirt
Rich J. Lundin

Re: SE Claims

Dear Bill & Rich:

Enclosed is draft copy of agreement with N. Lily, with memo from Jim and me to Holcomb regarding changes and the Fax transmittal sheet. They now have the ball and, we seem to be close. If they insist on mixing clause, we will back off. The gold-silver issue was a simple inadvertency trying to define "secondary leaching".

Vicky's check received this morning. Hope Rich's Water Resources Associates connection is long and fruitful. Bill will be interested to learn that WRA is wholly owned by Yellowstone Resources and that GEOEX and Loghry's own small pieces of YEllowstone via the demised Adit Resources affair.

If Lily poops out or drags on interminably, we still have Hackman's group to fall back on. No further word from Teck Resources or Hoyl's as of now.

Cheers,

Walt.

Jim and Walt.

WEH:jh
cc: J. D. Loghry

EAl - Wm. C. HIrt
Room #365
Sheraton Concord Hotel
45 John Glenn Drive
Concord, CA 94520
(415)825-7700

Mr. & Mrs. Richard J. Lundin
372 Hackberry Circle
Prescott, AZ 8630~~8~~1
(602) ~~744-9128~~
778-6222

P.S. Keep your appendages crossed!
W.

TELEX; 364412 INTR ID 894
FAX; 602-3264019

HEINRICHS GEOEXPLORATION COMPANY

P.O. BOX 5964, TUCSON, ARIZONA 85703-0964 (810 WEST GRANT ROAD) (85705-Zip) PHONE: (602) 623-0578

TELECOPY TRANSMITTAL SHEET

FROM: WALT HEINRICHS

TO: NORTH LILY MINING CO.

ATTENTION: GEORGE HOLCOMB

TELEFAX NUMBER: (801) 433-6803 (Eureka, UT.)

SENDING: Cover sheet and eighteen (18) pages, equals

NINETEEN (19) total pages.

DATE SENT: 4/7/91 (03:32 AM)

Dear George: Here is our MEMO page plus document pages: 1, 6, 7, 8, 11, 16, 25, 27, 29, 30, 31, 32, 34, 37, 40, 43, and 44 with corrections and/or our suggested changes.

Regards,

Walt.

May 6, 1991

To: George Holcomb, John La Grange, North Lily Mines

From: Walter E. Heinrichs, James D. Loghry, Stray Elephant Claim Owners

Re: Stray Elephant SE Claims Lease Agreement, La Paz County, Arizona

Enclosed is a copy of your proposed agreement with corrections of misspellings and typographical errors and some amendments needed to make it an equitable deal.

p. 1 and throughout: Heinrichs GEOEXploration Company; James D. and Margaret R. Loghry.

p. 6, 7: leaching of gold and silver ores which may be present on the premises will not be construed as "Secondary Leaching" and shall be subject to the 4% net smelter return.

p. 7, para 5, line 6: subject to section _____ ?

p. 8, Section 6, leaching of ores whose primary values are in gold and silver shall be subject to a 4% net smalter return.

p. 20, Section 16. Mixing. We still object to the mixing of our ores with ores from other lands in a leaching operation, since it is impossible to determine ultimate recoveries from diverse ores. Since it is unlikely that you will need to mix ores in this situation, we suggest that you remove this section.

p. 26, line 5. Geological, geochemical and geophysical surveys are no longer applicable; they have been performed for a total of 5 years; assessment work must be physical - exploration drilling preferred. Expunge "geological or other surveys."

p. 27, Section 24, line 10. Remove phrase "which are now extant" since it seems to preclude future laws and regulations that might be imposed.

p. 30, para 1, line 5: insert Lessors reserve the right to force removal of undesirable machinery, buildings, structures, facilities, equipment and other property placed on the premises by Lessee.

p. 30, para 2. Insert "or reclaimed" after protected.

Walter E. Heinrichs

James D. Loghry

— 44 PAGES —

MINING LEASE WITH OPTION TO PURCHASE

THIS MINING LEASE WITH OPTION TO PURCHASE, hereinafter called the "Agreement," made and entered into as of the day of 1991 by and between Heinricks Geo Exploration Company, an Arizona Corporation whose post office address is Box 5961, Tucson, Arizona 85703, William C. Hirt, a single man whose address is 639 South 500 East, Salt Lake City, Utah 84102, James D. Loghey and Margaret R. Loghey, husband and wife, whose address is 2121 East Monte Vista Drive, Tucson, Arizona 85719, Richard J. Lundin and Vicki J. Lundin, husband and wife, whose address is 372 Hackberry Circle, Prescott, Arizona 86303 hereinafter collectively called "Lessor" and North Lily Mining Company, a Utah corporation, licensed and qualified to do business in the State of Arizona and whose address is 1111 Bahill Drive, Suite 210, San Bruno, California 94066-3035, hereinafter called "Lessee";

WITNESSETH

Lessor is the owner of certain unpatented lode mining claims, hereinafter called the "Premises," situated in the Middle Camp Orofino Mining District, La Paz County, Arizona, and more particularly described in Exhibit A attached hereto and by this

reference made a part hereof and hereafter referred to as the "Premises"; including the surface and subsurface thereof, all ores, minerals and mineral rights in, upon and under the Premises, all water and water rights, all easements and rights of way under the Premises or in any way pertaining thereto, and all right, title and interest hereafter acquired by Lessor in, to and under the Premises or any parts thereof.

This Agreement will set forth all of the terms and conditions under which Lessor grants to Lessee a mining lease of the Premises, together with the exclusive option to purchase the Premises, for the purposes and for the term hereinafter provided.

IN CONSIDERATION of the covenants and agreements hereinafter set forth, and of the sum of Twenty five thousand Dollars ($25,000.00) and other good and available consideration, the receipt and sufficiency of which is hereby acknowledged by Lessor the above parties agree to the following:

SECTION 1. GRANT

Lessor hereby grants, leases. and demises the Premises unto Lessee, its successors and assigns, for the term and for the purposes hereinafter provided, including, but without being limited to the surface and subsurface thereof, all ores, minerals and mineral rights, and all water and water rights in, upon and under the Premises, all interest of Lessor in all easements, licenses and rights of way heretofore reserved or granted in, upon or pertaining to the Premises, and all right, title and interest which may be acquired by or for Lessor or pertaining to the Premises or any part thereof, during the term of this Agreement. TOGETHER WITH the

exclusive option to purchase the Premises at any time during the initial four (4) year period of the term hereof all upon the terms and conditions hereinafter set forth (hereinafter called the "Purchase Option").

SECTION 2. TERM

The lease granted herein shall be for a term of ten (10) years from and after the date hereof, and so long thereafter as exploration, development, or mining operations are being conducted upon the Premises, unless sooner terminated in the manner provided in this Agreement or unless Lessee sooner exercises its Purchase Option, and the Purchase Option granted herein shall be for a term expiring at 12:00 noon, MST on the 4th anniversary hereof provided that the term hereof may be further extended by agreement of both parties and pursuant to the provisions concerning suspension of operations as set forth in Section 26 below.

SECTION 3. PURPOSE

The purpose of this Agreement are to grant to Lessee, its successors and assigns, the exclusive right to enter into and upon the Premises, and each and every part thereof, so long as this Agreement remains in effect, and to explore for, develop, mine, remove, leach in place, treat, produce, ship and sell, for its own account, all ores and minerals which are or may be found therein or thereon.

Lessee is hereby granted the right to make any use or uses of the Premises consistent with the forgoing purposes, including, but without being limited to, the full right, authority and privilege of placing and using therein excavations, openings, shafts, ditches

and drains, and constructing, erecting, maintaining, using, and at its election, removing any and all buildings, structures, plants, machinery, equipment, railroads, roadways, pipelines, electrical power lines and facilities, stockpiles, waste piles, tailings ponds and facilities, settling ponds, and all other improvements, property and fixtures as may be necessary, convenient, or suitable for mining, removing, beneficiating, concentrating, smelting, extracting, leaching, refining and shipping of ores, minerals or products thereof, or for any activities incidental thereto, or to any of the rights or privileges of Lessee hereunder.

Lessee is further granted the right, insofar as Lessor lawfully may grant the right, to divert streams, to remove lateral and subjacent supports, to cave, subside or destroy the surface or any part thereof, to deposit earth, rocks, waste, lean ore and materials on any parts of the Premises where it will not interfere with mining, to leach the same, and to commit waste to the extent necessary, usual or customary in carrying out any or all of the above rights, privileges and purposes; IT IS PROVIDED, however, that if any of Lessee's operations hereunder result in damage to Lessor's buildings, personal property or growing crops existing on the Premises on the date this Agreement is executed, Lessee shall reimburse Lessor for the reasonable value of the same.

Lessee shall explore, conduct geological and geophysical investigations, map, drill, or otherwise seek, in the manner and to the extent that Lessee, in its sole discretion, deems advisable, to locate and develop ores, minerals and metals in commercial quantities in and upon the Premises.

SECTION 4 DEFINITIONS

The following defined terms, wherever used in this Agreement, shall have the meanings set forth below:

A. "Lessor" shall mean all persons, individually and collectively, having and interest in the Premises and executing this Agreement or a counterpart or ratification hereof, other than Lessee.

B. "Ore" shall mean material from the Premises, the nature and composition of which, in the sole judgement of Lessee, justifies either (1) mining or removing from place during the term of this Agreement and shipping and selling the same, or delivering the same to a processing site for physical or chemical treatment, or (2) leaching in place during the term of this Agreement.

C. "Waste" shall mean earth, rock or material mined or removed from place in the Premises during the term of this Agreement, but which is not ore as defined above.

D. "Product" shall mean the following:

1) all ore mined or removed from place in the Premises during the term hereof and shipped and sold by Lessee prior to treatment, and

2) all concentrates, precipitates, and mill products produced by or for Lessee from ore mined or removed from place in the Premises or from ore leached in place in the Premises during the term of this Agreement.

3) all residue or tailing remaining after milling or other subsequent processing, of any ores produced from

the Premises to the extent such residue or tailing is reprocessed or sold.

E. "Net Smelter Returns" shall mean the net proceeds received by Lessee for Product sold by Lessee to a bona fide purchaser, after deductions for all of the following:

1) Custom smelting costs, treatment charges and penalties, including, but without being limited to, metal losses, penalties for impurities, and charges for refining, selling, and transportation from smelter to refinery and from refinery to market;

2) Costs of transporting Product from the premises to a concentrator to a smelter or other place of treatment;

3) Costs of transporting Product from the concentrator to a smelter or other place of treatment and

4) Production taxes, severance taxes, and sales, privilege and other taxes levied on Product or on the production or sale thereof.

Net Smelter Returns for Product treated at a smelter owned, operated or controlled by Lessee or treated on toll basis for Lessee shall be computed in the above manner with deductions for all charges and items of cost equivalent to the deductions set forth above.

F. "Secondary Leaching" shall mean any ore or product that is leached principally for any metal other than copper regardless of whether it is before ~~of~~ or after the copper leaching. Leaching of

copper, resting the pad, then resuming leaching does not constitute secondary leaching.

SECTION 5. ROYALTY, ADVANCE

To maintain this Agreement in force, Lessee will pay Lessor the following sums as a minimum advance royalty on or before the following dates:

A. $25,000.00 upon execution of this Agreement, being the consideration recited on page one of this Agreement.

B. As to Premises Under Exhibit A

First day of the fifth calendar month from and after the date hereof and on the first day of each month thereafter until production commences whichever is sooner.	$3,000.00

C. As to Premises Under Exhibit B

First day of the fifth calendar month from and after the date here of and on the first day of each month thereafter until production commences whichever is sooner and subject to section.	$2,000.00

Except as to the initial consideration payment, Lessee shall have no obligation to make any of the above payments, the due dates of which occur after termination of this Agreement in the manner hereinafter provided. The minimum advance royalty paid, as provided above, shall be applied as far as it will go in satisfaction of all production royalties thereafter payable as provided below for Product produced and sold from the Premises.

If the sum paid as advance royalty for any year or years exceeds the amount of production royalty payable for such year of years, Lessee shall have the right to apply the excess as a credit of set off, at the production royalty rates set forth below, against production royalty payable while this Agreement remains in effect, until by such application the advance royalty paid by Lessee has been exhausted.

SECTION 6. PRODUCTION ROYALTY

Lessee shall pay to Lessor a production royalty from primary leaching for all Product as defined above, shipped from the Premises during the term hereof and sold by or for Lessee at the rate of four percent (4%) of Net Smelter Returns,

Lessee shall pay to Lessor a production royalty from Secondary Leaching for all Product, as defined above, shipped from the Premises during the term hereof and sold by or for Lessee at a rate of two percent (2%) of Net Smelter Returns.

SECTION 7. EXPENDITURES

1. In recognition of Lessor's desire to have the Premises placed in commercial production as soon as reasonably practical Lessee shall from and after the date hereof, and until the termination of this Agreement, expend in its exploration, development, and other operation hereunder not less than the following sums, and at such times as hereinafter set forth respectively:

A. As an additional consideration to this Agreement and as an express condition under which Lessee may continue to exercise its rights to keep this

Agreement in force, Lessee shall expend seven Thousand Eight Hundred dollars ($7,800) on the Premises during a period of one hundred and twenty (120) days from and after the date hereof or by September 1, 1991, which ever first occurs.

B. $30,000.00 annually during each twelve month period beginning on September 1, 1991, on Premises under Exhibit A.

C. $20,000.00 annually during each twelve month period beginning on September 1, 1991, on Premises under Exhibit B.

2. Except under Section 7 A above, Lessee's expenditure obligation hereunder shall be suspended during any year in which Lessee shall mine and remove Product in commercial quantities in the expenditure area.

3. Any sum of money expended by Lessee in any year which is in excess of expenditures required to comply with the terms of this Section shall be credited against the required expenditures for any subsequent years.

SECTION 8 LESSEE'S OPTION TO PURCHASE THE PREMISES

At any time through twelve noon M.S.T. on the forth anniversary hereof, Lessee shall have the exclusive right and option to purchase the Premises by giving notice thereof to Lessor, If Lessee exercises its Purchase Option, the total purchase shall be the sum of five million Dollars ($5,000,000.00). The notice of

exercise shall specify a date (no later than the date sixty (60)) days from the date of exercise) and a place reasonably convenient to Lessor and Lessee for the closing. At the closing, Lessor shall deliver to Lessee a good and sufficient Mining Deed conveying to Lessee merchantable title to the Premises. Upon delivery of such Deed to Lessee, Lessee shall pay and deliver to Lessor an amount equal to the total purchase price less all sums and amounts permitted hereunder to be credited against the total purchase price, including all credits, adjustments and deductions permitted under the provisions of Section 19.

Upon such delivery and payment, the Purchase Option shall close, the advance and/or production royalty payments shall ceased and this Agreement shall terminate. No advance or production royalty payments made hereunder shall apply against the purchase price.

At any time prior to termination of this Agreement, either party may, by notice to the other party, designate a bank or title insurance company within the State of Arizona (or at other location as receives the prior approval of the other party) to serve as escrow agent to serve the parties hereto in lieu of the above closings, all subject to all of the terms and conditions of this Agreement. If an escrow agent is so designated, the parties forthwith shall execute and deliver to the escrow agent instructions setting forth the duties of the escrow agent and the terms of the escrow consistent with the terms and conditions of this Agreement. In such event and upon notice given Lessor by Lessee, Lessor shall forthwith make, execute and deliver to the escrow agent a Mining Deed to the Premises in the form described

above in this Section 8 Lessee thereupon shall make, execute and deliver to the escrow agent instruments and all sums and payments delivered to it by the parties hereto, and shall deliver the same to the parties hereto upon the terms and conditions of the escrow instructions.

SECTION 9. ROYALTY, TIME AND MANNER OF PAYMENT

Advance royalty shall be paid at the times set forth above.

Production royalty shall be paid no later that the expiration of the second month in the calendar quarter after the calendar quarter in which the Product is sold or shipped to a smelter for treatment, in said calendar quarter, whichever is later.

At the time of making each such payment, Lessee shall deliver to Lessor a statement showing the amount of such royalty and the manner in which it was determined, and shall submit to Lessor data reasonably necessary to enable Lessor to verify the determination.

The advance royalty and production royalty to be paid by Lessee hereunder is based upon the entire undivided interest in, and title to, all of the Premises as described above. If Lessor owns less that the entire undivided interest in all of the Premises, all royalty payments to be made by Lessee to Lessor hereunder shall be reduced to the same proportion thereof as the interest of Lessor in the Premises bears to all of the Premises.

Lessor hereby designates First Interstate Bank of Arizona, account number 642-12128 Campbell Plaza Office, Post Office Box 40700, Tucson, Arizona 85717 its depository and trustee to receive all payments by Lessee to Lessor, payable to Stray Elephant Claim Owners. All payments paid to the depository shall constitute a complete satisfaction of Lessee's

obligation with respect to such payments. Lessor, and all successors in interest to Lessor, may change the depository only upon written notice to Lessee designating a single substitute depository. Such change shall not be binding on Lessee until thirty (30) days after Lessee receives such notice. All payments may be made by cash, check, or draft of Lessee, or any assignee of Lessee, mailed or delivered on or before the dates specified. Deposit in the U.S. Mail of a properly addressed letter containing the payment is deemed to be payment under this Agreement.

No change of ownership of the premises or the right to receive production royalties, advance royalty, or annual advance royalty shall be binding upon Lessee, whether Lessee has actual or constructive knowledge of such change, until thirty (30) days after Lessee receives written notice evidencing such change and establishing the right, title or interests of the claiming party. In any event, all payments which Lessee may make will be made in accordance with the terms of this Section and no change of ownership shall entitle any persons to receive payments in any manner different from that provided for in this Section.

SECTION 10. TAXES

Lessor shall pay promptly before delinquency all taxes and assessments, general, special, ordinary, and extraordinary, that may be levied upon or assessed upon the Premises and upon all ore and Product therefrom while Lessee is engaged in exploration activities under this Agreement. Lessee shall promptly reimburse Lessor for such payments upon receipt of a duplicate receipt evidencing payment, provided, however, that Lessor may, at its

election, forward tax statements to Lessee for Payment and Lessee shall pay such taxes upon failure of Lessor to do so while this Agreement is in effect. After any major development of the Premises by Lessee or the construction by Lessee of any major capital improvement, and upon notice of the same by Lessee to Lessor, Lessee shall pay all of the above taxes and assessments promptly and before delinquency including those taxes assessed while Premises is classified as "Operating Mine" by the Arizona State Tax Authority.

All current taxes and assessments levied or assessed upon the Premises shall be prorated between Lessor and Lessee as of the date of execution of this Agreement. Lessee shall pay or reimburse Lessor for all taxes or assessments levied or assessed against the Premises for the portion of the year in which the agreement is terminated or expires according to the portion of the year that has expired prior to termination, excepting "operating mine" taxes.

Lessee shall have the right to contest in the courts or otherwise, in its own name or in the name of Lessor, the validity or amount of any such taxes or assessments, if it deems the same unlawful, unjust, unequal or excessive or to take such other steps or proceedings as it may deem necessary to secure a cancellation, reduction, readjustment or equalization thereof, before it shall be required to pay the same. Lessee shall not permit or suffer the Premises or any part thereof to be conveyed, or title lost to Lessor as the result of nonpayment of such taxes or assessments. Lessee shall furnish to Lessor duplicate receipts for all such taxes and assessments when paid.

Lessee shall not be liable for any taxes levied or measured by income or taxes applicable to Lessor based upon royalties or payments under this Agreement.

Nothing in the foregoing shall be constructed to obligate Lessee to pay such portion of any tax as is based upon the value of improvements, structures or personal property made, placed or used on any part or parts of the Premises, by or for Lessor or by an owner or lessee of surface rights other than Lessee. If Lessor receives tax bills or claims which are the responsibility of Lessee hereunder, the same shall be promptly forwarded to Lessee for appropriate action.

SECTION 11 WEIGHTS; ANALYSIS

Lessee shall measure ore, weigh other Product, and take and analyze samples thereof, in accordance with sound mining and metallurgical practice and shall keep accurate records thereof as a basis for computing royalty payments. These records shall be available for inspection by Lessor at all reasonable times, subject to the following Section 12.

SECTION 12. REPORTS: INSPECTION

A. Annual Reports for Mining and/or Production

Lessee shall deliver, each year during the term hereof after production commences to Lessor, copies of such maps, cross sections and other engineering data concerning the quality and location of ore and material mined from the Premises as Lessee customarily prepares or obtains for its own records, which information shall not require preparation of special records or reports by

Lessee. This information shall be furnished on or before the first day of March in each year during the term hereof, and the data contained therein shall be stated as it existed at the close of the preceding calendar year. Lessee shall not be required to disclose its own current estimates and calculations of the grades and tonnage of ore reserves.

If Lessor or its agents or representatives disclose to a third party without written authorization from Lessee, information furnished by Lessee in its reports to Lessor or obtained by Lessor through inspection or audit, Lessee thereafter may withhold any information it deems confidential.

B. Quarterly Reports for Mining and/or Production

On or before the first day of each January, April, July and October during the term hereof after production commences, Lessee shall deliver to Lessor detailed statements for the preceding calendar quarter, showing separately the respective quantity and average analysis of Product produced from the Premises during such quarter. Lessee shall deliver to Lessor the quarterly statements required under Section 9 above, showing calculation of royalty.

C. Reports on Termination

Upon termination of the Agreement (other than by exercise by Lessee of its Purchase Option), Lessee shall deliver

to Lessor or at Lessors request preserve for Lessor for six months from the date of termination all cuttings, core, data and a report of all exploration conducted by Lessee on or in that part of the Premises as to which this Agreement is being so terminated. This report shall show the location of all such exploration work, the results thereof, the character of any ore encountered, and Lessee's analysis of such ore; it is provided, however, that in its above reports upon termination, Lessee shall not be required to disclose information concerning, or which might lend to revel, processes, techniques or equipment developed by or for Lessee, or with which it may be experimenting, or any processes, techniques or equipment with which it is under obligation to any other person or company not to reveal.

D. Inspection

Lessor and its authorized agents, at Lessor's risk and expense, at all reasonable times, may enter upon the premises to inspect the same, and to measure the quantity and quality of ore mined therefrom or remaining therein, provided that Lessor shall not unreasonably or unnecessarily hinder or interrupt Lessee's operations. Lessor shall indemnify and save harmless Lessee, its successors and assigns, from and against all liability, claims and causes of action for injury to or death of persons, or damage to property, including, without limitation, the person or property of Lessor and agents,

and third parties, in any manner resulting, wholly or in part, from the exercise of the foregoing rights by Lessor or its authorized agents.

E. Audit

Lessor or its authorized agents, shall have the right to audit and inspect Lessee's accounts and records used in calculating production royalty paid to Lessor hereunder, which right may be exercised, as to each quarterly payment of production royalty, at any reasonable time during a period of one (1) year from and after the date on which the quarterly payment of production royalty was paid by Lessee.

SECTION 13. MANNER OF MINING

All of Lessee's operation hereunder shall be conducted in compliance with all applicable federal, state and local laws and regulations including without limitation those laws pertaining to bonding and environmental protection and in careful and workmanlike manner, in accordance with accepted practices of the mineral industry, without committing any unusual permanent waste or injury to any mine in the Premises,or interference with the subsequent operation thereof, if not reasonably necessary in Lessee's operations.

Lessee shall have no obligation, express or implied, to open or develop any mine in the Premises. Whenever Lessee deems it necessary or advisable, Lessee may discontinue or resume exploration, development, mining and production operations from time to time during the term hereof, so long as it meets its

obligations hereunder to pay taxes and advance royalty.

Nothing herein shall require Lessee to develop a separate worksite or worksites in the Premises, or prevent Lessee from exercising the cross-mining rights hereinafter provided.

SECTION 14. CROSS-MINING

For the purpose of enabling Lessee to conduct, with greater economy and convenience, the mining and removing of ore from the Premises, Lessee is hereby granted the right, if it so desires, to mine and remove ore, Product and materials from the Premises through or by means of shafts, openings or pits which may be made in or upon adjoining or nearby property owned or controlled by Lessee.

Lessee may, if it so desires, use the Premises and any shafts, openings and pits therein for the mining, removal, treatment and transportation of ores and materials from adjoining or nearby property, or for any purpose connected therewith.

For the purpose of enabling Lessee to conduct, to the best advantage of the parties hereto, and with greater economy and convenience, the mining, removal. handling and disposition of ore and Product from the Premises, and from other lands in which Lessee or its affiliated companies may be conducting mining operations, the operations of Lessee, and the said operations on other lands, may be conducted upon the Premises and upon any and all such other lands as a single mining operation, to the same extent as if all such other properties constituted a single tract of land. Nothing herein shall relieve Lessee from its obligations for payments or reports as set forth in this Agreement.

SECTION 15. STOCKPILING; WASTE

A. Stockpiling on other Lands

Lessee shall have the right, at any time during the term hereof, to stockpile any ore or Product mined or produced from the Premises at such place or places as Lessee may elect, either upon the Premises or upon any other lands owned or controlled by Lessee in and to any such ore or Product stockpiled on other lands shall not be divested by the removal thereof from the Premises, but shall not be divested by the removal thereof from the Premises, but shall be the same in all respects as though such materials had been stockpiled on the Premises. If such other lands are not owned by Lessee, Lessee shall obtain from the owners thereof a properly executed instrument under which the owners of said other lands agree to recognize the interests and liens of Lessor on ore and Product stockpiled on said other lands.

The stockpiling of ore or Product from the Premises on other lands shall not be deemed a removal or shipment thereof requiring payment of royalty thereon.

The tax covenants set forth in this Agreement shall apply to ore and product from the premises stockpiled on other lands.

B. Stockpiling on the Premises

Lessee shall have the right, at any time during the term hereof, to stockpile on the premises any ore or materials

mined or produced by Lessee or its affiliated companies from other lands. Lessor agrees to recognize the rights and interests of others in such ores and materials stockpiled on the Premises, and to permit the removal thereof for a reasonable time after termination of this Agreement, all without liability or expense to Lessor. All stockpiles on the premises shall be so placed as not to interfere with mining operations on the Premises.

C. Waste

Waste, overburden, surface stripping and other materials from the Premises may be deposited on or off the Premises. Such materials from other lands may be deposited on the Premises only if the same will not interfere with mining operations on the Premises. Nothing in this paragraph shall limit the above provisions in Paragraphs A ad B concerning stockpiling ore and Product on or off the Premises.

SECTION 16. MIXING

After ore and Product from the Premises have been sampled, where necessary, and weighed, or measured by volumetric survey, truck factors, or other industry practices, in such manner as will permit the computation of royalty to be paid hereunder, in accordance with accepted industry practice, bottle roll tests, and if deemed necessary by Lessee, Column leach tests will be performed by Lessee to determine leach factors of varying types of ores. If such factors are considered applicable by Lessee, they will also be used in computation of royalties to be paid hereunder. Lessee

may mix the said ores and Product from the Premises with ores, materials or products from other lands.

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SECTION 17. TREATMENT

The Premises, interpretation of which shall be at the sole discretion of Lessee. Lessee shall have the right, but shall not be required, to beneficiate, concentrate, smelt, refine, leach, and otherwise treat, in any manner, any ore, Product and materials mined or produced, including waste, from the Premises and from other lands. If there are variations in leach factors of foreign ores, Lessee will make appropriate adjustments in royalty computations so that an imbalance in benefits will not occur among royalty holders. When reasonably practical and at the discretion of Lessee, ores of different ownership will be leached on separate pads. Such treatment may be conducted wholly or in part at a plant or plants established or maintained on the Premises or on other lands. Such treatment shall be conducted in a careful and workmanlike manner. The tailings and residue from such treatment shall be deemed waste, and may be deposited on the Premises or on other lands.

SECTION 18. LESSOR'S LIEN

Lessor shall at all times have, possess, and hold a lien upon all ore and Product mined from the Premises and shipped therefrom but not sold to a bona fide purchaser, and upon all improvements placed upon the Premises by Lessee, as security for any unpaid balance of money due hereunder and as security for the performance by the Lessee of each and all of Lessee's covenants hereunder.

This lien may be enforced against any such property in like manner as liens conferred by chattel mortgages, or as any other lien security may be enforced under the laws of the State in which the Premises are situated. Nothing herein contained, however, is intended or shall be construed to prevent the sale, shipment and removal of ore or Product in the usual course of business, nor to prevent the removal of tools, machinery, equipment or other property at any time when Lessee is not in default. This lien shall not apply to ore or Product sold to third parties.

SECTION 19. TITLE TO PREMISES; PROTECTING TITLE

Lessor covenants that except as otherwise expressly provided herein, the premises are free from all encumbrances, that Lessor has good right to lease and/or sell the same in the above manner and form, and that as long as Lessee, its successors and assigns, keeps, performs and observes each of the agreements and conditions to be kept, performed and observed by Lessee as provided herein, Lessor, and heirs and assigns, will defend Lessee, and it s successors and assigns, in quiet and peaceable possession of the Premises, for the uses and purposes of this Agreement, against all persons lawfully claiming or attempting to claim the whole or any part thereof while this Agreement remains in effect.

If title to the premises or any part thereof, in the opinion of Lessees's counsel, is defective, Lessor shall, at the request of Lessee, cure such defects promptly. The costs thereof shall be paid by Lessor, but Lessor may request from Lessee advance royalties in an amount equal to such cost. If Lessor does not cure such defect with reasonable promptness, Lessee may do so and deduct the cost thereof from subsequent royalty payments or from the total purchase price in the event Lessee exercises its Purchase Option. Lessor agrees to execute all documents and do any and all things that may be necessary or desirable to assist in elimating the defect in title.

If Lessee exercises its Purchase Option, the purchase price will be reduced on a proportionate basis according to the part thereof, that Lessor does not own.

Lessee shall have the right to pay any liens or charges

incurred by Lessor or persons claiming by or under Lessor against the Premises, and any taxes and assessments on the Premises or property situated theron not herein specifically required to be paid by Lessee and to deduct all sums to so paid from payments to be made by Lessee to Lessor hereunder.

Lessee shall keep the title to the Premises and all ores mined therefrom free and clear from any and all liens and other encumbrances arising in any manner whatsoever from Lessee's operations hereunder.

SECTION 20. INSURANCE INDEMNITY

Prior to commencement of operations hereunder, Lessee shall obtain all workmen's compensation insurance, liability insurance, and policies of insurance against fre and other risks for which insurance is customarily obtained in similar operations. All such insurance shall be maintained by Lessee at its own expense throughout the durantion of this Agreement, and whenever Lessor reasonably so requests, Lessee shall furnish to Lessor evidence that such insurance is being maintained.

Lessee covenants and agrees to indemnify and save harmless Lessor from and against any and all liability, claims and causes of action for injury to, or death of, persons, and damage to, or loss or destruction of, property, resulting from its use or occupancy of the Premises or its operations hereunder, excepting, however, any liability, claims or causes of action resulting from, or attributable, wholly or in part, to the exercise of rights reserved hereunder to Lessor, its agents, or those claiming under them, on or about the Premises, it being the intent of this

Agreement that Lessee shall have no additional risk of liability by reason of the exercise of such reserved rights.

SECTION 21. ANNUAL ASSESSMENT WORK

A. Lessee shall perform all annual assessment work required by law to hold the upatented claims included in the Premises for each assessment year, as defined by statute, within the annual assessment period beginning September 1, 1990, and ending upon the date on which this Agreement expires or terminates for any reason; it is provided, however, that if this Agreement expires or is terminated on or before the first day of June in any such assessment year except for the year ending September 1, 1991, Lessee shall have no obligation to perform assessment work for such assessment year or thereafter.

If this Agreement expires or is terminated after the first day of June in any assessment year, Lessee shall have the right to enter unto the unpatented claims at any time or times during the remainder of said assessment year to perform or complete the above required assessment work for said assessment year, without payment or other obligation to Lessor or others.

Lessee shall prepare and record, for and in behalf on Lessor, an affidavit of labor and improvements during each assessment year for which Lessee performs the above assessment work, which affidavit shall be prepared and recorded as required by statutes of the state of Arizona and Lessee will timely file a copy of the affidavit with

the Arizona State Office of the Bureaux of Land Management (Mining Claims). The assessment work to be performed by Lessee hereunder may consist of, but is not limited to, excavation, road building, drill site preparation, drilling, trenching, pitting, geological or other surveys or other work selected by Lessee in its sole discretion, provided that the work so performed is of a type customearily accepted as assessment work and is of the value of at least the amount then required by applicable statute or government regulation.

SECTION 22. PATENT PROCEEDINGS

Upon request of Lessee at any time or times during the term hereof, Lessor forthwith shall begin and complete, in Lessor's name but at Lessees's expense, proceedings to patent any of the unpatented claims, Lessor shall execute any and all documents required for this purpose. If Lessor begins patent proceedings and Lessee therafter requests Lessor to discontinue them, or if this Agreement is terminated while patent proceedings are pending, Lessee shall have no further obligation with respect thereto except to pay any unpaid expenses accrued in such proceedings prior to its request to discontinue, or prior to termination, whichever first occurs.

SECTION 23. RELOCATION AND AMENDMENT OF CLAIMS

If the unpatented claims do not constitute a body of contiguous and adjoining claims without interior gaps, Lessee, in the name of Lessor shall have the right, but shall not be required to amend the location of any one or more unpatented claims for the

purpose of eliminating interior gaps, and Lessor promptly shall execute any documents necessary for the purpose. If the location of any unpatented claim was for any reason defective, Lessee shall have the right, but shall not be required, to relocate the defective unpatented claim in the name of Lessor for the purpose of curing the defect. All unpatented claims as amended or relocated hereunder shall be a part of the claims as though specifically described herein. Lessee, at its discretion, may repair or replace any claim location monuments or markers which have become wholly or partially obliterated or destroyed. Nothing in this Section shall limit the rights or increase the obligations of either party concerning defects in title as set forth in the above Secion 19.

SECTION 24. ENVIRONMENT COMPLIANCE, PERMITS, ENVIRONMENT INDEMNITY

Lessee agrees to indemnify and hold harmless Lessor from all evnironmental and reclamation damage or claims of whatsoever nature, including compliance with Federal, state and local environmental laws, regulations, and requirements resulting from its operations hereunder where such claim occurs during or after the term of this Mining Lease. Lessee shall comply with all laws and regulations, including Clean Air, Clean Water, Resource Conservation and Recovery, Comprehensive Environmental Response, Compensation and Liability acts and any other Federal, state and local laws which protect the environment, which are now extant and which apply to the operations which are the subject of this

DDP WEA.

Agreement. Lessee agrees to apply for and obtain permits required by every authority having jurisdiction prior to commencing operations and further agrees to operate wholly within its permitted authoirty. Lessee will provide to Lessor copies of all applications for permits to such Governmental Agencies.

Lessor agrees to cooperate with Lessee in its efforts to obtain any and all permits, zoning changes, variances, licenses, clearance, and other regulatory approvals from local, state or Federal departments, branches, agencies or any other regulatory body having jurisdiction thereof and agrees to sign, execute and deliver as promptly as possible to Lessee any application, permit, release or other document that may be necessary in obtaining the above-stated regulatory approvals with respect to the Premises.

SECTION 25. TERMINATION; REMOVAL OF PROPERTY

A. Termination by Lessor

In the event of any default by Lessee in the performance of its obligations hereunder, Lessor shall give to Lessee written notice specifying the default. If the default is not cured within sixty (60) days after Lessee has received the notice, or if Lessee has not within that time begun action to cure the default and does not thereafter diligently prosecute such action to completion, Lessor may terminate this Agreement by delivering to Lessee written notice of such termination, subject to Lessee's right to remove its property and equipment from the Premises, as hereinafter provided.

Lessor shall have no right to terminate this Agreement except as set forth in this Paragraph.

B. Termination by Lessee

Lessee shall have the right to treminate this Agreement as to all or any portion of the Premises at any time upon thirty (30) days written notice delivered to Lessor and designating the portion of the premises to which such termination applies. Uon such terminatin, all right, title and interest of Lessee under this Agreement shall terminate subject to the following Paragraph C. and Lessee shall not be required to make any further payments, or to perform any further obligations hereunder, concerning the portion of the premises to which such termination applies, except payments or obligation which have then accrued hereunder pursuant to the express provisions or this Agreement and which have not been paid or performed. If Lessee terminates this Agreement as to only a portion of the Premises, such partial terminatin shall not reduce the advance royalty payable to Lessee hereunder nor shall such partial termination reduce the total purchase price under the Purchase Option.

C. Removal of Property

Upon any termination of this Agreement, whether by expiration of the term hereof or any act of either party, Lessee shall have a period of one (1) year from and after the effective date of terminatin in which to remove from

the Premises all of its machinery, buildings, structures, facilities, equipment and other property of every nature and description erected, placed or situated thereon, except supports placed in shafts,drifts or openings therein. Any property of Lessee not so removed at the end of said one (1) year period shall become the property of Lessor. In the event of force majeure, as hereinafter set forth, the terms and conditions of this paragraph shall be appropriately extended.

Upon expiration of said removal period, Lessee shall place the Premises in a safe and orderly condition, with all shafts, caves and openings fenced or protected or reclaimed as may be required by law or by regulation of any duly constituted governmental authority having jurisdiction in the Premises.

SECTION 26. ASSIGNMENT

A. By Lessor

If, at any time during the term hereof, Lessor intends to sell, assign, transfer or convey the Premises, or any part thereof, Lessor shall deliver to Lessee at least thirty (30) days' prior written notice, describing all of the terms of the proposed sale, assignment, transfer or conveyance. Lessee shall have the exclusive right, during the above thirty (30) day period, at its election, to purchase the Premises described in said notice, for

a sum of money equal in value to the consideration which would be received by Lessor under the terms set forth in the written notice. If Lessee elects to purchasee the Premises described in the notice, Lessee shall so notify Lessor within the thirty (30) day period from and after the expiration of the above notice period. If Lessee has not notified Lessor of its above election within the thirty (30) day period, Lessor shall have the right, for an additional thirty (30) day period from and after the expiration of the above notice period, to sell, assign, transfer or convey its interest in the Premises as described in said notice, upon the terms and conditions set forth in said notice, but all subject, however, to this Agreement, and all rights of Lessee, its successors and assigns, hereunder, in and to the Premises. Upon expiration of the above second thirty (30) day period, any subsequent sale, assignment, transfer or conveyance of Lessor's interest in the Premises, or part therof, shall be subject to Lessee's foregoing right of first refusal, all upon the terms and conditions set forth above. The provisions of the foresaid paragraph shall not apply to any sale, gift or transfer to any descendant or relative of the Lessor or to any sale, gift or transfer to any descendant or relative within the second degree of any of the stockholder of the Lessor.

C. <u>Binding Effect</u>

All of the covenants, conditions and provisions of this

Agreement, including the obligation to pay royalty as required hereunder, shall run with the land, and shall inure to the benefit of, and be binding upon, the parties hereto, and their respective heirs, executors, administrators, successors and assigns.

SECTION 27. SUSPENSION OF OPERATIONS

A. Force Majeure

Lessee shall not be liable for failure to perform any of its obligations hereunder during periods in which performance is prevented by any cause reasonably beyond Lessee's control, which causes hereinafter are called "force majeure." For purposes of this Agreement, the term "force majeure" shall include, but shall not be limited to, fires, floods, windstorms, and other damage from the elements, strikes, riots, unavailability of transportation or necessary equipment, action or government authority, litigation, acts of God and acts of the public enemy. The duration of this agreement shall be extended for a period equal to the period for which performance is suspended by reason of force majeure. All periods of force majeure shall be deemed to begin at the time Lessee stops performance hereunder by reason of force majeure. Lessee shall notify Lessor of the beginning and ending date of each such period.

B. Suspensions Due to Economic Causes - If at any time during the term hereof if mining, processing or marketing

operations are determined by Lessee to be uneconomic due to unavailability of a suitable market for Product, prevailing costs of mining, processing or marketing with respect to prices available for Product, unavailability of equipment or of competent labor, or imposition of governmental statutes, requirements or regulations making it impractical to carry out such operations, Lessee shall have the right from time to time, to temporarily discontinue operations hereunder. Lessee shall promptly notify Lessor of the commencement and termination of each such temporary discontinuance.

C. Obligations During Suspensions of Operations - During any suspension of operations under either subparagraph (A) or (B) of this Section 26, Lessee shall continue to make payments necessary to hold and maintain the Premises and shall take all steps necessary to maintain the status and title of the Premises in good standing, including assessment work and tax payment requirements.

SECTION 27. DISPUTES NOT TO INTERRUPT OPERATIONS

Subject to the above right of Lessor to terminate this Agreement, disputes or differences between the parties hereto shall not interrupt performance of this Agreement or the continuation of operations hereunder. In the event of any dispute or difference, operations may be continued, and settlements and payments may be made hereunder, in the same manner as prior to such dispute or difference, until the matters in dispute have been finally

determined between the parties, and thereupon such payments or restitutions shall be made as may be required under the terms of the settlement or final determination of the dispute.

SECTION 29. NOTICES

Any notice required or permitted to be given hereunder shall be deemed properly given upon delivering the same to the party to be notified, or upon mailing the notice, by registered or certified mail, return receipt requested, to the party to be notified, at the address hereinafter set forth, respectively, or such other address within United States of America as the party to be notified may have designated prior thereto by written notice to the other.

Lessor: James D. Loghey
2121 East Monte Vista Drive
Tucson, Arizona 85719-2859

Lessee: North Lily Mining Company
1111 Bayhill Drive, Suite #210
San Bruno, California 94066-3035

Routine or regular reports and statements hereunder may be sent by regular mail addressed as above. If, after the proper mailing thereof, any of such sports and statements are not received when due, the addessee will notify Lessee in accordance with the above provisions for notice, and Lessee shall have a reasonable time to secure the delivery of the statment or report, or a duplicate thereof, without being in default hereunder.

SECTION 30. CONSTRUCTION OF AGREEMENT

This Agreement, and the rights and obligations of the parties hereunder, shall be governed by the laws of the state of Arizona.

Section headings in this Agreement are for convenience only, and shall not be considered a part of this Agreement, or used in its interpretation.

SECTION 31. RECORDING; PUBLIC DISCLOSURE

If requested by Lessee, the parties hereto shall execute a memorandum or short recording counterpart of this Agreement, which counterpart shall be in a form sufficient to constitute notice of this Agreement to third parties under the laws of Arizona, but which counterpart shall not contain the amounts or rates of royalty hereunder, or other terms of this Agreement which Lessee may elect not to disclose of record.

It is recognized by Lessor that public disclosure of the existence of this Agreement may hamper Lessee's efforts to complete its land position in the vicinity of the Premises and that such disclosure could work to the detriment of both Lessors and Lessee. Accordingly, Lessor hereby agree that shall not, without first having obtained the written consent of Lessee as to the form and content, disclose, by way of press release or public announcement, the existence of this Agreement or any of the terms hereof for a period of not less than one year from and after the effective date hereof; provided, however, that in the event counsel for Lessor shall render a written opinion to the effect that such information must be diclosed to shareholders or to the public or filed with a governmental department having jurisdiction in the Premises pursuant to applicable laws or regulations governing such disclosures or filings, Lessor shall have the right to make such disclosure upon first providing Lessee with a copy of the opinion

of Lessor's counsel together with a copy of the proposed disclosure or filing at least ten (10) days prior to the time such disclosure or filing is to be made.

The execution and recording of the above recording counterpart shall not limit, decrease or increase, or in any manner affect, any of the terms of this Agreement, or any rights, interests or obligations of the parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement all as of the day and year first above written.

Lessor

Heinrichs Geo Exploration Company
an Arizona Corporation

_____
Walter E. Heinrichs, President

_____
James D. Loghey

_____
Margaret R. Loghey

_____
Richard J. Lundin

_____
Vicki J. Lundin

_____
William C. Hirt

Lessee

North Lily Mining Company
A Utah Corporation

_____

Anton Hendriksz, President

STATE OF ARIZONA)
: ss.
County of _____)

On this _____ day of _____, 1991, before me _____, a Notary Public for the State of Arizona, personally appeared Walter E. Heinrichs, known to me to be the President of the corporation that executed the within instrument, and acknowledge to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal the day and year in this certificate first above written.

_____
Notary Public for the State of Arizona
Residing at Arizona
My Commission Expires: _____

STATE OF ARIZONA)
: ss.
County of _____)

On this _____ day of _____, 1991, before me _____, a Notary Public for the State of Arizona, personally appeared James D. Loghey, known to me to be the person who executed the within instrument.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal the day and year in this certificate first above written.

_____
Notary Public for the State of Arizona
Residing at Arizona
My Commission Expires: _____

STATE OF ARIZONA)
: ss.
County of _____)

On this _____ day of _____, 1991, before me _____, a Notary Public for the State of Arizona, personally appeared Margaret R. Loghey, known to me to be the person who executed the within instrument.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal the day and year in this certificate first above written.

_____
Notary Public for the State of Arizona
Residing at Arizona
My Commission Expires: _____

STATE OF ARIZONA)
: ss.
County of _____)

On this _____ day of _____, 1991, before me _____, a Notary Public for the State of Arizona, personally appeared Richard J. Lundin known to me to be the person who executed the within instrument.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal the day and year in this certificate first above written.

_____
Notary Public for the State of Arizona
Residing at Arizona
My Commission Expires: _____

STATE OF ARIZONA)
: ss.
County of _____)

On this _____ day of _____, 1991, before me _____, a Notary Public for the State of Arizona, personally appeared Vicki J. Lundin, known to me to be the person who executed the within instrument.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal the day and year in this certificate first above written.

_____
Notary Public for the State of Arizona
Residing at Arizona
My Commission Expires: _____

STATE OF UTAH)
: SS.
County of _____)

On this _____ day of _____, 1991, before me _____, a Notary Public for the State of Utah, personally appeared William C. Hirt, known to me to be the person who executed the within instrument.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal the day and year in this certificate first above written.

_____
Notary Public for the State of Utah
Residing at Utah
My Commission Expires: _____

EXHIBIT "A"

TO

MINING LEASE WITH OPTION TO PURCHASE

DATED _____, 1991

By and Between

Heindicho CEO Exploration Company, James D. Loghsy and Margaret Loghsy, Richard J. Lundin, and Vicki Lundin and William C. Hirt, as Lessor and North Lily Mining Company, as Lessee

Claim Name	Book	Page	AMC Serial No.
SE 23	1168	687-88	105436
SE 24	1168	689-90	105437
SE 25	1168	691-92	105438
SE 26	1168	693-94	105439
SE 27	1168	695-96	105440
SE 28	1168	697-98	105441
SE 29	1168	699-700	105442
SE 30	1168	701-02	105443
SE 31	1168	703-04	105444
SE 32	1168	705-06	105445
SE 33	1168	707-08	105446
SE 34	1168	709-10	105447
SE 35	1168	711-12	105448
SE 36	1168	713-14	105449
SE 37	1168	715-16	105450
SE 38	1168	717-18	105451
SE 39	1168	719-20	105452
SE 40	1168	721-22	105453
SE 41	1168	723-24	105454
SE 42	1168	725-26	105455
SE 43	1168	727-28	105456
SE 44	1168	729-30	105457
SE 45	1168	731-32	105458
SE 46	1168	733-34	105459
SE 47	1168	735-36	105460
SE 48	1168	737-38	105461
SE 49	1168	739-40	105462
SE 50	1168	741-42	105463
SE 51	1168	743-44	105464
SE 52	1168	745-46	105465
SE 57	1168	747-48	105466
SE 58	1168	749-50	105467
SE 59	1168	751-52	105468
SE 60	1168	753-54	105469
SE 61	1168	755-56	105470
SE 62	1168	757-58	105471

EXHIBIT "B"

TO

MINING LEASE WITH OPTION TO PURCHASE

DATED _____, 1991

By and between
Heindichs GEO Exploration Company, James D. Loghey and Margaret Loghey, Richard J. Lundin, and Vicki Lundin and William C. Hirt, as Lessor and North Lily Mining Company, as Lessee

Claim Name	Book	Page	AMC Serial No.
SE 1	1168	643-44	105414
SE 2	1168	645-46	105415
SE 3	1168	647-48	105416
SE 4	1168	649-50	105417
SE 5	1168	651-52	105418
SE 6	1168	653-54	105419
SE 7	1168	655-56	105420
SE 8	1168	657-58	105421
SE 9	1168	659-60	105422
SE 10	1168	661-62	105423
SE 11	1168	663-64	105424
SE 12	1168	665-66	105425
SE 13	1168	667-68	105426
SE 14	1168	669-70	105427
SE 15	1168	671-72	105428
SE 16	1168	673-74	105429
SE 17	1168	675-76	105430
SE 18	1168	677-78	105431
SE 19	1168	679-80	105432
SE 20	1168	681-82	105433
SE 21	1168	683-84	105434
SE 22	1168	685-86	105435
SE 101	1303	729-30	186704
SE 102	1303	731-32	186705
SE 103	1303	733-34	186706
SE 104	1303	735-36	186707
SE 105	1303	737-38	186708
SE 106	1303	739-40	186709
SE 107	1303	741-42	186710
SE 108	1303	743-44	186711
SE 109	1303	745-46	186712
SE 110	1303	747-48	186713
SE 111	1303	749-50	186714
SE 112	1303	751-52	186715
SE 113	1303	753-54	186716
SE 114	1303	755-56	186717
SE 115	1303	757-58	186718
SE 116	1303	759-60	186719
SE 117	1303	761-62	186720
SE 118	1303	763-64	186721
SE 119	1303	765-67	186722
SE 120	1303	768-70	186723

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Vancouver, British Columbia
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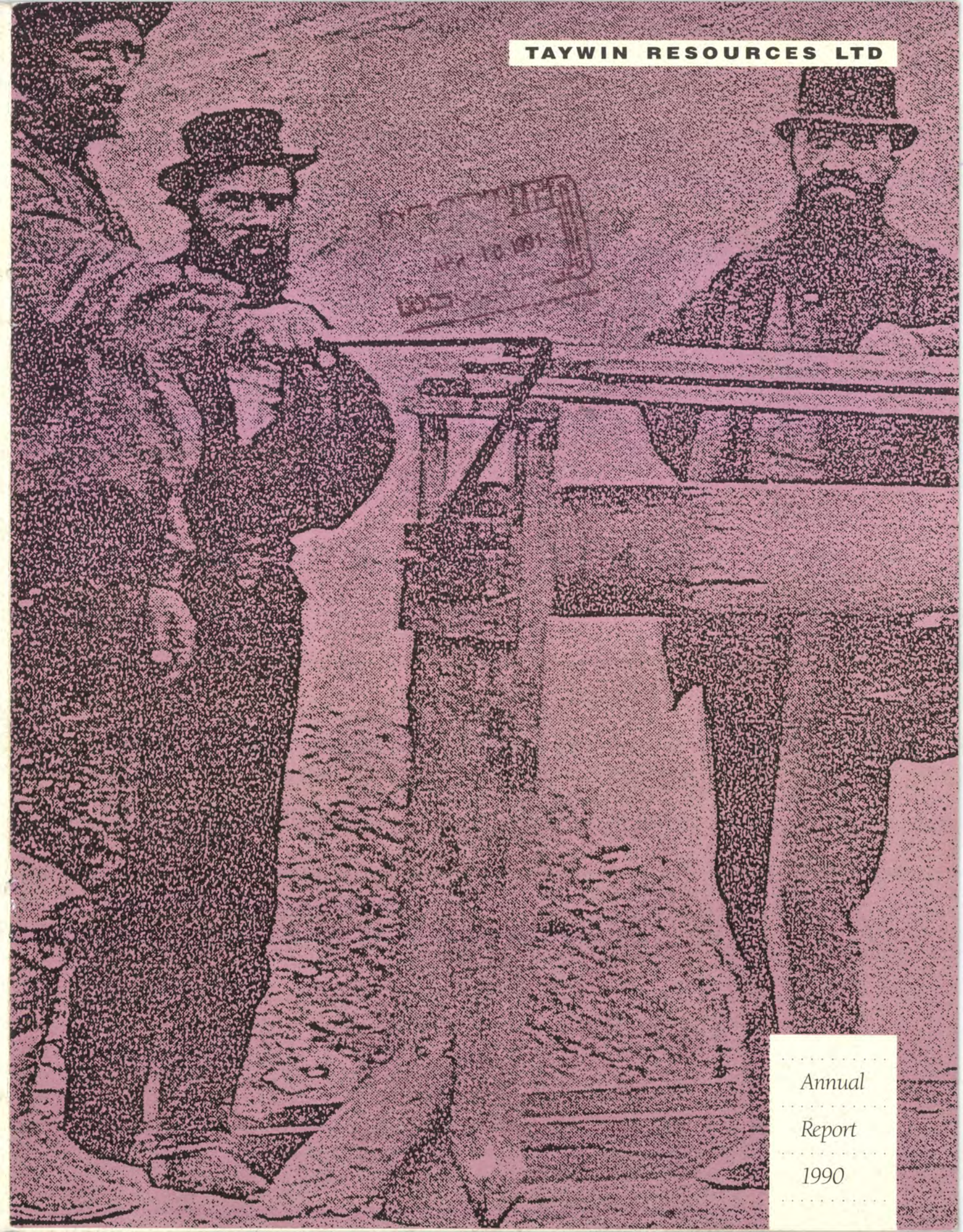
Telephone (604) 684-4260

Printed in Canada



CORPORATE DATA

OFFICERS

J. Donald Graham, *President*
William H. Owen, *Secretary*

DIRECTORS

Paul H. Atkinson
Henry M. Giegerich
J. Donald Graham
William H. Owen
Larry W. Reaugh
Robert A. Watts

CORPORATE ADDRESS

405 – 889 West Pender Street
Vancouver, British Columbia
Canada V6C 3B2
Telephone (604) 684-4260
Facsimilie (604) 682-0779

LEGAL

Lang Michener Lawrence & Shaw
2500 Three Bentall Centre
595 Burrard Street
Vancouver, British Columbia
Canada V7X 1L1

AUDITORS

De Visser & Company
201 – 960 Richards Street
Vancouver, British Columbia
Canada V6B 3C1

TRANSFER AGENT

Central Guaranty Trust
800 West Pender Street
Vancouver, British Columbia
Canada V6C 2V7

BANKER

Royal Trust
505 Burrard Street
Vancouver, British Columbia
Canada V7X 1R5

STOCK EXCHANGE

Vancouver Stock Exchange
VSE Symbol: TYN
U.S.A. – S.E.C. 12g3 – 2(b)
Exemption Number: 82-1545

CAPITALIZATION

Authorized – 25,000,000
Issued – 6,021,036

FOR INFORMATION CONTACT:

J. Donald Graham, President
405 – 889 West Pender Street
Vancouver, British Columbia
Canada V6C 3B2
Telephone (604) 684-4260

TYN

Cover photo, of Early B.C. Miners, courtesy of Public Archives of Canada

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
September 30, 1990

5. MINERAL PROPERTIES (cont.)

GOOD SPORT
A 50% interest in 26 mineral claims grouped into four properties located in the Nanaimo Mining Division. The Company has entered into a prospecting and joint venture agreement in which the Company has a first right of refusal on any claims staked by the prospector under this agreement. The Company has been granted an option to earn an additional 40% interest in the four properties in increments of 5%. However, the Company will lose its 50% interest in the four properties if the additional 40% interest is not earned. A 5% interest in each property may be acquired by incurring $25,000 in exploration costs, paying $2,500 in cash or shares, and recording all eligible exploration expenditures as assessment credits against the property. This option expires on December 31, 1993 (see Merry Widow).

MERRY WIDOW
A 100% interest in 57 crown granted mineral claims located primarily in the Rupert Land District, subject to a 2% and a 10.5% Net Profits Royalty. The Company is to pay the royalties out of net profits after deducting any preproduction costs incurred by the Company. The Company has the right to purchase the 10.5% royalty at any time for a purchase price in cash equal to the then present value of this royalty. If commercial production is not achieved prior to February 17, 1995, all rights of the vendor to this royalty will terminate. The Company also has the right to purchase the 2% royalty at any time for a purchase price of 75,000 shares of the Company. The Company entered into an option agreement dated August 24, 1990 (effective date September 7, 1990) with Noranda Exploration Company, Limited (NPL) ("Norex") to allow Norex an option to earn a 51% interest in the 26 claims of Good Sport and the 57 claims of Merry Widow. Norex is required to incur an aggregate of $1,500,000 in exploration expenditures, of which $250,000 must be spent within six months from the effective date, and make cash payments to the Company aggregating $225,000 ($35,000 received) to fully exercise the option.

6. SHARE CAPITAL
Authorized share capital consists of 25,000,000 common shares without par value.

	Number of Shares	$
Issued at September 30, 1989 and 1990	6,021,036	2,769,012

OPTIONS
Stock options are outstanding to directors and employees, subject to regulatory approval, to acquire up to 401,000 shares at a price of $0.27 per share exercisable prior to August 14, 1992, 63,000 shares at a price of $0.27 per share exercisable prior to September 9, 1991, 5,000 shares at a price of $0.37 per share exercisable prior to February 6, 1992 and 63,000 shares at a price of $0.41 per share exercisable prior to February 23, 1992.

WARRANTS
Share purchase warrants are outstanding to acquire up to 764,000 shares at a price of $0.21 per share exercisable prior to April 26, 1991.

7. COMPARATIVE FIGURES
Certain of the comparative figures have been restated to conform to the current year's presentation.

PRESIDENTS REPORT

During the year ending September 30, 1990, Taywin reduced its emphasis on exploration. Instead, efforts were directed to seeking more mature projects and to acquiring senior joint venture partners able to advance Taywin's existing projects. As a result, a number of joint venture proposals were received from major mining companies.

The proposal of Noranda Exploration Company, Limited was selected as the most beneficial for the Merry Widow property. Noranda contributed $35,000 to Taywin, which helped to offset some of the costs your company incurred in acquiring the property. We are pleased to report that Noranda is currently carrying out a $250,000 exploration program. Noranda must spend $1.5 million to earn a 51% interest in the property. Drilling results are expected by calendar year end.

During the year an agreement was signed with Placer Dome Inc. whereby Placer explored Taywin claims near the Electrum property on Vancouver Island. At year end Placer completed their program as they were unable to identify a bulk-tonnage gold-bearing deposit.

In line with its policy of seeking more mature projects, Taywin has been examining a number of precious and base metal submissions. In spite of deteriorating financial markets, good properties that are professionally evaluated and presented can be financed. Our 1991 goal is to select a promising project, bring it to a feasibility stage and to production if warranted.

Taywin carried out exploration early in the year. The Merry Widow drilling results released in the fall of 1989, were widely recognized as an exploration success. The fieldwork carried out on this property in the summer of 1990 by Dr. G.E. Ray and his team of B.C. Government geologists added significantly to the understanding of the deposits. As well, trenching and site restoration were done on the Electrum claims located on the west coast of Vancouver Island.

In the past year, Taywin allocated substantial funds to a more active presentation of its merits to the investment community. This project, carried out by Ms. Judi MacGillivray, has broadened the base of investors and brokers following our company.

We look forward to an active year marked by acquisitions and joint ventures. The board of directors would like to express appreciation for the continuing interest and support of the company's shareholders.

On behalf of the Directors

J. Donald Graham

J. Donald Graham, P.Eng., President

1990 HIGHLIGHTS

- Conclusion of the Stage II drilling program and underground rehabilitation on the Merry Widow.
- Signing a Merry Widow option and joint venture agreement with Noranda Exploration Company, Limited.
- Placer Dome Inc's exploration of Taywin ground near the Electrum.
- Prefecting title of the Merry Widow crown granted mineral claims.
- Trenching program on Anomaly Creek, Electrum property.
- In-depth study of the Merry Widow by B.C. government geologists expert in the precious metal skarn deposits present on this property.

CORPORATE PROFILE & MISSION

Taywin Resources Ltd. is a Canadian mining exploration and development company based in Vancouver, British Columbia. The company is directed and managed by professionals with a record of accomplishments in major North American mining houses. Taywin has been listed on the Vancouver Stock Exchange since 1985. The trading symbol is TYN.

Previously, Taywin has acquired and explored undeveloped but promising mining properties in British Columbia. These holdings are currently at various stages of exploration. However, the company is now evaluating more advanced precious and base metal projects, particularly those projects that are uneconomic for firms with larger overheads. These opportunities also exist through arrangements with junior exploration companies. Taywin has the professional resources necessary to efficiently bring these smaller properties into production.

Left to right: Paul Atkinson, Henry Giegerich, Don Graham, Bill Owen, Bob Watts

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

September 30, 1990

1. NATURE OF OPERATIONS

The Company is involved in the acquisition, exploration and development of resource properties and is currently in the exploratory stage of development of its mineral properties. The underlying value of these mineral properties and related deferred costs is dependent upon confirmation of the Company's interest in the underlying claims and the existence of economic mineral reserves.

2. SIGNIFICANT ACCOUNTING POLICIES

MINERAL PROPERTIES AND DEFERRED COSTS

The cost of resource properties and related exploration costs are deferred until the properties are placed into production, sold or abandoned. These costs will be amortized over the estimated useful life of the properties following the commencement of production or written off if the properties are sold, allowed to lapse, or abandoned.

Cost includes the cash consideration and the fair market value of shares issued on the acquisition of mineral properties. Properties acquired under option agreements or joint ventures, whereby payments are made at the sole discretion of the Company, are recorded in the accounts at such time as the payments are made. The proceeds from options granted are applied to the cost of the related property and any excess is charged to earnings.

PRINCIPLES OF CONSOLIDATION

These financial statements include the accounts of the Company and its wholly owned subsidiary, Biogold Research Ltd.

3. LOSS PER SHARE

Loss per share has been calculated using the weighted-average number of shares outstanding during the year.

4. RELATED PARTY TRANSACTIONS

During the year, the Company incurred the following transactions with directors, officers and/or companies owned and/or controlled by them: professional fees of $70,937, administration services of $1,135, and exploration and administration expense reimbursements of $9,327.

5. MINERAL PROPERTIES

The Company's mineral properties are located in British Columbia, Canada.

	1989	Additions	Option Proceeds	Deletions	1990
Taylor-Windfall	$ 376,814	$ —	$ —	$ —	$ 376,814
Electrum	682,123	8,377	(2,000)	—	688,500
Atlin Ruffner	14,330	—	—	—	14,330
Good Sport	36,137	—	—	—	36,137
Merry Widow	420,021	43,016	(35,000)	(3,710)	424,327
Stakawus	1,825	—	—	(1,825)	—
	$ 1,531,250	$ 51,393	$ (37,000)	$ (5,535)	$ 1,540,108

During the year, the Company received a total of $37,000 in option payments, $3,710 in commissions from the Canadian Exploration Incentive Program and the Stakawus property was written off.

TAYLOR-WINDFALL

A 100% interest in three crown granted mineral claims located in the Clinton Mining Division.

ELECTRUM

A 100% interest, subject to a 5% NSR royalty, in 13 mineral claims and a 100% interest in an additional claim, all located in the Alberni Mining Division. The Company entered into an option agreement dated March 1, 1990 with Placer Dome Inc. ("Placer") to allow Placer an option to acquire a maximum interest of 65% in one of the claims. Placer is required to incur an aggregate of $250,000 in exploration expenses and make cash payments to the Company aggregating $37,000 ($2,000 received) in order to exercise the option. This agreement was terminated by Placer as of September 28, 1990.

ATLIN RUFFNER

A 100% interest in 28 crown granted mineral claims located in the Atlin Mining Division.

CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION

For the year ended September 30, 1990

	1990	1989
CASH PROVIDED BY (USED IN):		
OPERATING ACTIVITIES		
Net loss for the year	$ (205,696)	$ (79,522)
Add non-cash items:		
Depreciation	571	—
Write-off of mineral property	1,825	—
	(203,300)	(79,522)
Adjustments for non-cash working capital components:		
Accounts receivable	(4,145)	5,766
Prepaid expenses	(668)	(6,883)
Accounts payable	(96,257)	89,363
	(304,370)	8,724
INVESTING ACTIVITIES		
Purchase of mineral properties	—	(8,457)
Exploration and development costs	(51,393)	(454,005)
Mineral property option proceeds	37,000	—
Recovery of exploration costs	3,710	—
Fixed assets	(1,696)	(1,055)
	(12,379)	(463,517)
FINANCING ACTIVITIES		
Issue of share capital	—	470,720
INCREASE (DECREASE) IN CASH DURING THE YEAR	(316,749)	15,927
CASH – BEGINNING OF YEAR	463,788	447,861
CASH – END OF YEAR	$ 147,039	$ 463,788

CONSOLIDATED STATEMENT OF LOSS AND DEFICIT

For the year ended September 30, 1990

	1990	1989
REVENUE		
Interest	$ 29,752	$ 43,920
EXPENSES		
Advertising and public relations	56,539	7,617
Audit and accounting	6,162	6,805
Bank charges	503	315
Depreciation	571	—
Insurance	12,505	4,917
Legal fees	35,843	12,899
Printing, office and stationery	21,072	9,351
Professional fees	60,918	46,463
Rent and telephone	15,008	5,888
Salaries and benefits	11,570	9,600
Travel	3,242	553
Trust and filing fees	8,621	9,476
	232,554	113,884
OPERATING LOSS FOR THE YEAR	(202,802)	(69,964)
GENERAL EXPLORATION EXPENSES	(1,069)	(9,558)
WRITE-OFF OF MINERAL PROPERTY	(1,825)	—
NET LOSS FOR THE YEAR	(205,696)	(79,522)
DEFICIT – BEGINNING OF YEAR	(884,057)	(804,535)
DEFICIT – END OF YEAR	$ (1,089,753)	$ (884,057)
LOSS PER SHARE (note 3)	$ (0.03)	$ (0.02)

See accompanying notes to consolidated financial statements

PROPERTY HOLDINGS

- Merry Widow
- Taylor Windfall
- Electrum
- Atlin Ruffner

P R O P E R T I E S

MERRY WIDOW

GOLD, COPPER, SILVER, MAGNETITE

Location: *Vancouver Island, 40km from Port McNeill, British Columbia*
Ownership: *Option leading to a joint venture 51% Noranda Exploration Company, Limited, 49% Taywin*
Land Position: *57 crown granted claims plus 26 claims, 64 units under option from James Laird*

HISTORY

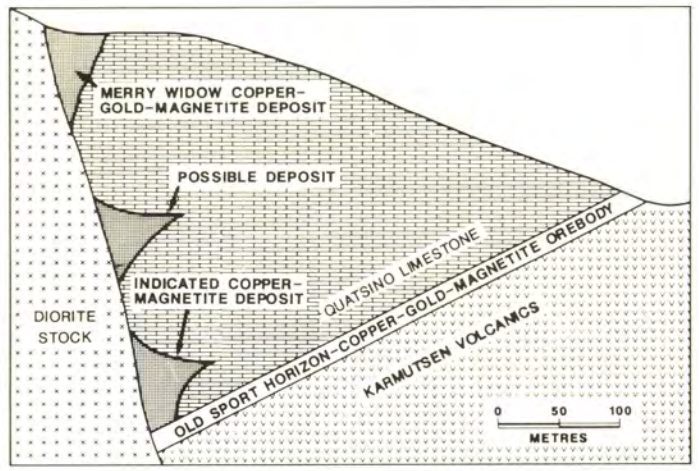
The Merry Widow has an impressive history. Earliest holdings and exploration by Quatsino Copper Gold Mines Ltd. date back to 1897 when timber cruisers discovered high grade copper mineralization. A prospectus prepared in 1927 reported values in copper, gold, silver, nickel and cobalt. Magnetite, a valuable iron ore, was also found on the property. One of the main ore bodies was the extensive Old Sport Horizon. Seeing the potential for production, Cominco purchased and developed the northern half of the Old Sport Horizon as the Old Sport Mine. The Depression shut down this operation; however, in 1957, Empire Development established an open pit mine elsewhere on the property. Strong gold-copper mineralization was encountered in this mine as well, but it was avoided due to the possibility of contaminating the iron ore. Iron mining ceased in 1967.

Cominco obtained from Quatsino a license to mine the southern extension of the Old Sport Horizon. In 1967, Cominco proceeded to develop this copper-gold orebody on the Quatsino ground as the Benson Lake mine. The Old Sport Horizon produced 91 million pounds of copper, 385,000 ounces of silver and 125,000 ounces of gold until its closure in 1972.

In 1988, several companies, including Taywin, examined and sought to acquire the Merry Widow property from Quatsino. Taywin was successful in its bid for all of Quatsino's holdings which included the iron mine and the Benson Lake mine. A 12.5% net profits royalty is payable to Quatsino.

MERRY WIDOW – A 'SKARN' DEPOSIT

Although skarn deposits have been studied and mined since the Middle Ages, more research is being done to develop new and better ways to find this type of ore deposit. Lawrence D. Meinart, in his article, Variability of Skarn Deposits: Guides to Exploration, explains why ... "In recent years, the search for ore deposits has focused increasingly on high-grade deposits such as some skarns, because these rich ore bodies can produce profitably even in times of rising costs and tight markets."



■ GENERALIZED GEOLOGICAL SECTION

The Merry Widow, a skarn deposit, shares the arena with other skarn operations in British Columbia, western U.S.A. and in Australia. They can be important high-grade sources of copper, iron ore, gold, zinc, etc. and a host of byproduct base and precious minerals.

This summer, Dr. G.E. Ray, an international expert on precious metal enriched skarn deposits and his B.C. government team of geologists conducted an in-depth study of the Merry Widow property as part of their four year project on the subject. Results will be reported as they become available.

F I N A N C I A L S T A T E M E N T S

CONSOLIDATED BALANCE SHEET

September 30, 1990

	1990	1989
ASSETS		
CURRENT		
Cash	$ 147,039	$ 463,788
Accounts receivable	4,232	87
Prepaid expenses	7,551	6,883
	158,822	470,758
FIXED ASSETS	2,180	1,055
MINERAL PROPERTIES (note 5)	1,540,108	1,531,250
	$ 1,701,110	$ 2,003,063
LIABILITIES		
CURRENT		
Accounts payable	$ 21,851	$ 118,108
SHAREHOLDERS' EQUITY		
SHARE CAPITAL (note 6)	2,769,012	2,769,012
DEFICIT	(1,089,753)	(884,057)
	1,679,259	1,884,955
	$ 1,701,110	$ 2,003,063

See accompanying notes to consolidated financial statements

APPROVED BY THE DIRECTORS:

Donald Graham A.A. Davis

AUDITORS' REPORT

To the Shareholders of Taywin Resources Ltd.,

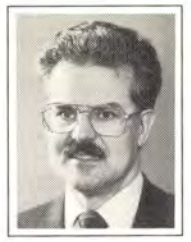
We have examined the consolidated balance sheet of Taywin Resources Ltd. as at September 30, 1990 and the consolidated statements of loss and deficit and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of the company as at September 30, 1990 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Vancouver, B.C.
October 17, 1990

De Visser & Company
Chartered Accountants

DIRECTORS



J. DONALD GRAHAM
President and Director

Mr. Graham, P.Eng., has 30 years of international mining experience in areas of reserve calculation, mine design and financing. He was Chief Engineer at Lornex Mining Corporation (Highland Valley Copper) and has provided consulting services to the mining industry. He holds a degree in Geological Engineering and a post-graduate degree in Mining Engineering from the University of B.C. Mr. Graham became President of Taywin in 1985.

WILLIAM H. OWEN
Secretary and Director

Mr. Owen, a former president of an international heavy construction / mining firm, has developed an excellent reputation in the mining community over the past 40 years. He currently is President of both Incline Industries Ltd., an investment company and Netherlands Pacific Mining Co. Inc.

PAUL H. ATKINSON
Director

Mr. Atkinson, P.Eng., provides the company with 30 years of mining experience including plant design, mine acquisition and finance. He holds positions of President, Coast Technical Services Inc., Chairman, Goldome Financial Corp., Director, Shamrock Resources and Director of Pegasus Gold Inc.

HENRY M. GIEGERICH
Director

Mr. Giegerich, P.Eng., worked for 35 years with Cominco Ltd. In addition to managing the Red Dog project from exploration to mine production, he was responsible for bringing the Polaris Mine into production. Mr. Giegerich now operates his own mining consulting service.

LARRY W. REAUGH
Director

Mr. Reaugh has been active in the mining industry for 27 years. His skills in construction engineering and mine financing are well known. As President and CEO of Rea Gold Corp., he holds a major interest in the successful producing Samatosum silver mine in British Columbia.

ROBERT A. WATTS
Director

Mr. Watts, B.Sc., C.A., has held senior executive positions with Placer Development Inc. and Pegasus Gold Inc. He also has operated his own management firm providing financing, administrative and organization services to companies with developing mines. He currently is President, CEO and Director of Pan Orvana Resources Inc.

PROPERTIES

EXISTING INFRASTRUCTURE

Previous mine operations and district amenities make this property an attractive candidate for production. Direct airline connections from Vancouver are available at Port Hardy, an hour's drive from the property. An all-weather access road is maintained for logging purposes. The 1,600 foot long Kingfisher Adit, driven by Empire Development, remains in perfect condition. The adit, draw points, raises and sublevels are well positioned for mining the deeper mineralization. Due to partial stripping by the existing open pit, shallower mineralization can be mined at a low strip ratio. The large BHP Utah copper-gold milling facility is within hauling distance of the property.

Geologist examining Merry Widow diamond drill core.

PROPERTY DEVELOPMENT

On September 7, 1990, Taywin signed an option and joint venture agreement with Noranda Exploration Company, Limited to further explore the Merry Widow property. Under the agreement, Noranda has made a commitment to spend $250,000 on exploration and drilling by March 1991.

Further, Noranda has the option to earn a 51% interest in the property by making cash payments totalling

Ore transport tower remaining from previous Merry Widow operation.

$225,000 and incurring exploration expenditures of $1,500,000 within two years. Taywin would retain 49% ownership on all of the Merry Widow claims.

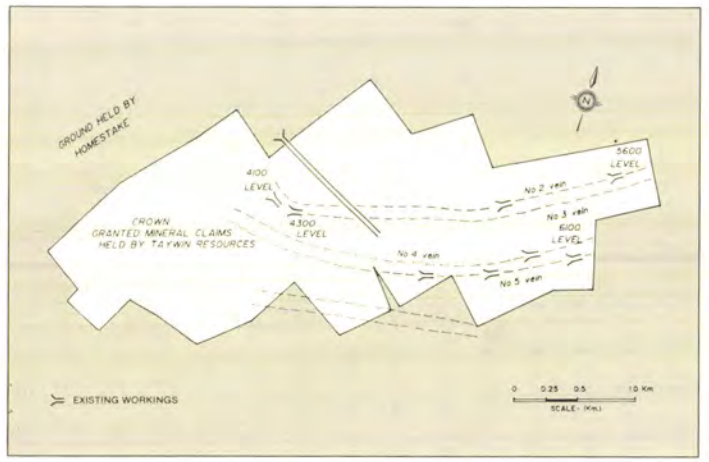
To date, Noranda has completed a line grid and soil sampling on the property. It is anticipated that drilling will follow completion of the geophysical survey now under way.

P R O P E R T I E S

ATLIN RUFFNER
SILVER, LEAD, ZINC

Location: *22km north of Atlin, British Columbia*
Ownership: *100% Taywin*
Land Position: *28 crown granted claims*

This northern British Columbia property, originally explored during the Klondike Gold Rush days, was staked in 1918. Significant mineralization has been exposed in several thousand feet of underground workings. Proven and possible reserves stand at 64,000 tons with an average grade of 19 oz/ton silver and 5%–10% combined lead-zinc. The deposit was mined in mid-1981 but conflicting titles and economics forced a closure. Taywin acquired the 28 Atlin Ruffner claims in 1988. Homestake Mineral Development Company has made some interesting discoveries while drilling adjacent to these claims. The Atlin Ruffner reserve base could increase through further surface and underground exploration.



Atlin Ruffner Mineral Claims

TAYLOR WINDFALL
GOLD

Location: *225km north of Vancouver, British Columbia*
Ownership: *100% Taywin*
Land Position: *3 crown granted claims*

Taylor Windfall Panorama

In 1920, prospector E.J. (Whitewater) Taylor discovered he had little difficulty in recovering gold from hand-mortared rock on this Taseko Lake property in southwestern B.C. His first workings, containing high grade residually enriched gold, were confirmed in B.C. Ministry of Mines' 1922 findings which reported values of 187.8 oz/ton gold and 23 oz/ton silver.

After shutdowns in the 1940's and 1950's, the claims were reactivated through surface exploration and drilling in 1984. Targets were bulk tonnage and high grade, epithermal gold/silver deposits.

In 1990, ASARCO funded a major drilling program on claims adjacent to the Taylor Windfall. The success of this program has again attracted attention to the Taseko Lake area. Taywin is seeking joint venture partners to further explore this historic property.

P R O P E R T I E S

ELECTRUM
GOLD, SILVER

Location: *Zeballos, British Columbia (Vancouver Island)*
Ownership: *100% Taywin with a 5% net smelter return to B.P. Minerals*
Land Position: *14 claims, 142 units*

This 6,000 acre property, optioned from B.C. Minerals Ltd. in 1986, has returned high grade samples up to 9.72 oz/ton gold and 224.0 oz/ton silver in one of the two mineralized zones.

Placer Dome conducted a mapping and sampling program in July, 1990 on a claim adjacent to the main Electrum property. Results did not support Placer's earlier indications of a large, low-grade gold deposit in this area.

Diamond drilling the Electrum vein

The Electrum claims show strong geochemical, heavy mineral, alteration and structural indications of gold deposits which merit further exploration. When the logging roads in these claims join the Vancouver Island network, the high-grade electrum vein will be re-evaluated for mining.

TAYWIN'S CONTRIBUTION TO THE ENVIRONMENT

ELECTRUM PROPERTY

January 1990: A trenching program is undertaken to further test for mineralization. Trenching is located in a previously logged area. Surface disturbances occur mainly as stripping overburden from the bedrock surface and reopening of old logging roads ...

ACTION PLAN

To ensure Taywin's participation in the preservation of our environment, a reclamation program was put in place. As of this writing, we are pleased to say that all trenches have been backfilled with the exception of the Electrum vein where further work is planned.

In addition, the backfilled trenches disturbed by Taywin in previous years have been seeded and fertilized with the most compatible mix and type for the region as recommended by the B.C. Ministry of Forests.

Taywin will continue its commitment to environmental awareness and preservation in all its projects.

Excavator used for trenching reclamation of Electrum

R.A.

KERR-McGEE CORPORATION
INTERNAL CORRESPONDENCE

TO E. E. Jones

FROM R. M. Corn

DATE May 25, 1973

SUBJECT Sugarloaf Peak Area, Quartzsite Mining District, Yuma County, Arizona

The geologic relationships, alteration, mineralization, and exploration potential of the Quartzsite prospect are thoroughly covered in Dick Ahern's report, and in my opinion, he has done an excellent job in deciphering the complex structural relationships of the prospect. I would like to add a few comments emphasizing certain general features of the porphyry copper alteration system at Quartzsite and its indicated favorable exploration potential.

COPY

The alteration system at Quartzsite contains an impressive amount of disseminated base-metal mineralization. The area of quartz-sericite-alunite-pyrite alteration near Sugarloaf Peak in the eastern part, and originally higher part, of the alteration system contains large volumes of mineralized rock, exhibiting lead and zinc values in excess of .15 to .20 percent each, combined with molybdenum values that vary 100 to 1000 parts per million. These relatively high lead-zinc and molybdenum values are similar to, and higher than, metal values encountered in a similar alteration environment at Red Mountain, Arizona, where they appear to be a direct reflection of the ore-grade primary copper mineralization, occurring at greater depth in the alteration system.

Both alunite and tourmaline are abundant minerals in the Quartzsite alteration system. The occurrence of both of these minerals is believed to indicate that major amounts of the volatile elements, sulfur,

fluorine, and boron were introduced into the alteration system during the period of hydrothermal alteration and metallization. The widespread and abundant alunite, associated with relatively high lead-zinc and molybdenum values, is believed to reflect a center of potassic alteration that should contain abundant anhydrite associated with copper and molybdenum mineralization at greater depth in the alteration system. Surface exposures of quartz-sericite-alunite-pyrite alteration are known to reflect deeper potassic alteration with associated anhydrite and ore-grade primary copper mineralization at El Salvador, Chile, Cananea, Mexico, and Red Mountain, Arizona. Although drilling has not been carried to sufficient depth at Red Mountain, Colorado to define ore-grade copper mineralization, the quartz-sericite-alunite-pyrite alteration exposed at the surface has been shown to be a direct reflection of abundant anhydrite and increasing copper values at depth. Intense quartz-sericite-alunite-pyrite alteration, similar to that at Quartzsite, is considered to be a direct indication of centers of potassic alteration and ore-grade copper mineralization that occur at depth at Cananea, Mexico. Interestingly, tourmaline is also a widespread constituent of the alteration system at Cananea.

The occurrence of disseminated copper mineralization on the Hancock claims in the western part of the altered area is of considerable interest, not just because this represents several million tons of potential ore-grade copper mineralization, but primarily because it represents the copper mineralization expected to be associated with potassic alteration in a position originally at greater depth in the alteration system. Although the copper mineralization is obscurred by faulting, oxidation, and alluvial cover, detailed examination of exposures near the Hancock workings

indicates that both the intrusive and metamorphic rocks formerly contained disseminated primary chalcopyrite mineralization of ore-grade or near ore-grade values. The indicated disseminated primary chalcopyrite mineralization on the Hancock property is believed to be part of, and a reflection of, primary chalcopyrite mineralization that is associated with potassic alteration toward the center of the alteration system in the western part of the Quartzsite prospect.

In summary, the combination of the features described above, widespread intense quartz-sericite-alunite-pyrite alteration associated with substantial disseminated lead, zinc, and molybdenum values, within what appears to have originally been the upper part of the alteration system, together with the indicated primary copper mineralization, associated with potassic alteration at a position originally at greater depth in the alteration system, is believed indicative of a very favorable exploration potential for ore-grade primary copper mineralization within the Quartzsite porphyry copper alteration system.

RMC/ps

COPY

R. A.

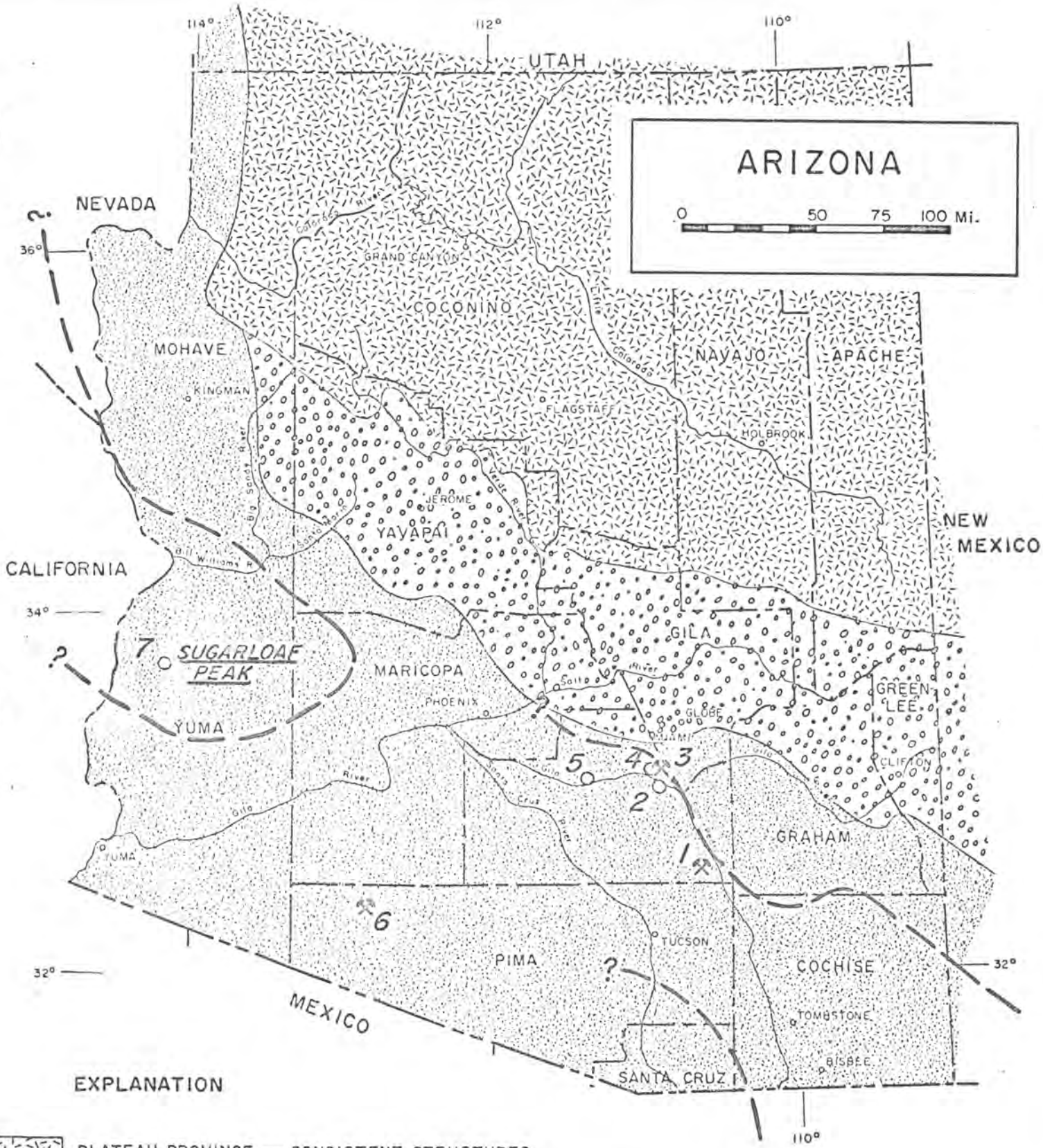
EXPLORATION POTENTIAL OF THE SUGARLOAF PEAK AREA, QUARTZSITE MINING DISTRICT, YUMA COUNTY, ARIZONA

by

Richard Ahern

May 25, 1973

Kerr-McGee Corporation



EXPLANATION

PLATEAU PROVINCE — CONSISTENT STRUCTURES

MOUNTAIN ZONE — CONSISTENT TO INCONSISTENT STRUCTURES

BASIN AND RANGE PROVINCE — INCONSISTENT STRUCTURES

POSTULATED LOCATION OF FLAT OR THRUST FAULT LOBE

PROSPECTS ○ AND MINES ⚒ WITH POST MINERAL STRUCTURAL ROTATION

1. San Manuel — Kalamazoo (Newmont)
2. Kelvin (Kerr-McGee)
3. Ray (Kennecott)
4. Granite Mountain (Kerr-McGee)
5. Florence (Continental Oil)
6. Ajo (Phelps Dodge)
7. Sugarloaf Peak (Kerr-McGee)

FIGURE 1

SUMMARY

The Sugarloaf Peak prospect is an area of porphyry copper type alteration and mineralization located in west-central Yuma County, Arizona. The area has a history of placer gold production, but only minor base metal values. Consequently the district has not received much attention from major mining companies.

Detailed mapping of the alteration system together with extensive geochemical sampling indicates that Sugarloaf Peak was originally a vertical alteration-mineralization system similar to that associated with other porphyry copper deposits. The system has been structurally rotated 90° to the east and offset by major faults, with strike and/or dip movement.

The most favorable target for ore-grade copper mineralization is at, or near, the surface in the zone of exposed potassic alteration near the west end of the Kerr-McGee claims. Results of surface sampling and reported values from shallow drill holes indicate the presence of a triangular shaped area of ore-grade copper mineralization at or near the surface which could contain 10,000,000 tons of ore-grade copper mineralization for each hundred feet of depth. Projection of this zone beneath the adjacent zone of potassic alteration would yield substantially greater tonnage with a prospect target of 48,000,000 tons per hundred feet of thickness.

To test this prospect, a 1000 to 1500 foot diamond drill hole is recommended, to be collared near the center of exposed copper mineralization in Hancock Wash. This would yield the most useful geologic information, as well as give a third dimension to our estimate of the potential copper mineralization.

GENERAL

The Sugarloaf Peak prospect is an area of porphyry copper type alteration and mineralization located in the Quartzsite Mining District of west central Yuma County, Arizona. The area of interest lies south of U.S. Highway 60 & 70, now I-10, and east of Quartzsite Pass, where I-10 cuts through the Dome Rock Mountains.

The district is credited with over 10,000 ounces of placer gold production, however there has been no significant base metal production from this part of Arizona. Burton Hancock is reported to have shipped two carloads of material from the Surprise Claims, running 49 tons of 1.1 percent copper and 54 tons of 2.1 percent copper. Lehre Eardman reports shipping a truckload of lead-silver ore from the Leadville Mine. Exposed mineralization and sampling by us indicates that these figures are at least reasonable.

This report is based on extensive field work in the district, including geologic mapping and geochemical sampling of the area covered by Kerr-McGee's claims, some ground magnetic work and evaluation of results from shallow validation drill holes, as well as on data obtained from other sources, such as Congdon and Carrey. They controlled the area by location and options from 1962 thru 1971 and did more than 14,500 feet of rotary and diamond drilling, as well as conducting extensive Induced Polarization and aeromagnetic surveys.

GEOLOGY

The Sugarloaf Peak area is underlain by Precambrian schist and granite, which has been intruded by a complex stock of probable Laramide age and overlain by a Tertiary quartz porphyry flow. These units are partially covered by Late Tertiary and Quaternary gravels.

The main mass of the Dome Rock Mountains south of U.S. Highway I-10 is schist, with a few outcrops of schist north of the highway. The schist is representative of the greenschist facies of regionally metamorphosed intermediate volcanics and interbedded sedimentary units. Previous workers in the district from the Arizona Bureau of Mines have considered the schist to be of Cretaceous age, however there is little or no evidence for this. The rock is very similar to nearby outcrops in California and northern Yuma County that are of Precambrian age, and correlated with the Yavapai schist of central Arizona. There are no other schists of Cretaceous age in the region, however the metamorphosed volcanics were equated with unmetamorphosed Cretaceous-Tertiary andesites exposed in central and southern Yuma County. The lithologic similarity to Precambrian schists, the large extent of outcrop, and the lack of any real evidence correlating the metamorphosed volcanics with the unmetamorphosed Tertiary volcanics all suggest that the schist is better correlated with the Precambrian Yavapai schist.

The Precambrian granite is exposed in the mountains north of the highway except for a few exposures to the south where I-10 cuts through the mountains at Quartzsite Pass near the western edge of the map. The granite is generally coarse with less than five percent mafic minerals, mostly biotite and chlorite.

The Cretaceous intrusive stock varies in composition from aplite to biotite-diorite porphyry, but most exposures are monzonite porphyry. The biotite-diorite phase appears to be confined to the contact with the Precambrian granite. Aplite occurs as occasional dikes and possibly as a breccia zone in the NW 1/4, SE 1/4 Section 31, Township 4 North, Range 20 West.

100

A quartz porphyry or rhyolite porphyry caps Sugarloaf Peak. Large outcrops of porphyry occur along the flanks of Brown Mountain to the east, and capping a small hill just north of Brown Mountain. Scattered outcrops found north of the Dome Rock exit ramp appear to be remnants of a major flow. A very small block of rhyolite is exposed south of Brown Mountain, however this occurrence appears to be intrusive whereas those on Brown Mountain are flows. The outcrop at Sugarloaf Peak could be a cap or it could represent a neck or plug. It is at an elevation considerably above the other occurrences, and the contact is covered with talus. Adits along the flanks of Sugarloaf Peak do not penetrate to the core. A caliche cemented conglomerate surrounds the small hill of quartz porphyry near the southeast corner of Section 34, Township 4 North, Range 20 West. Late Tertiary gravels and Quaternary alluvium fill deep valleys along both the east and west flanks of the mountain range and lap up onto the pediments at Sugarloaf Peak, partially obscuring outcrops.

STRUCTURE

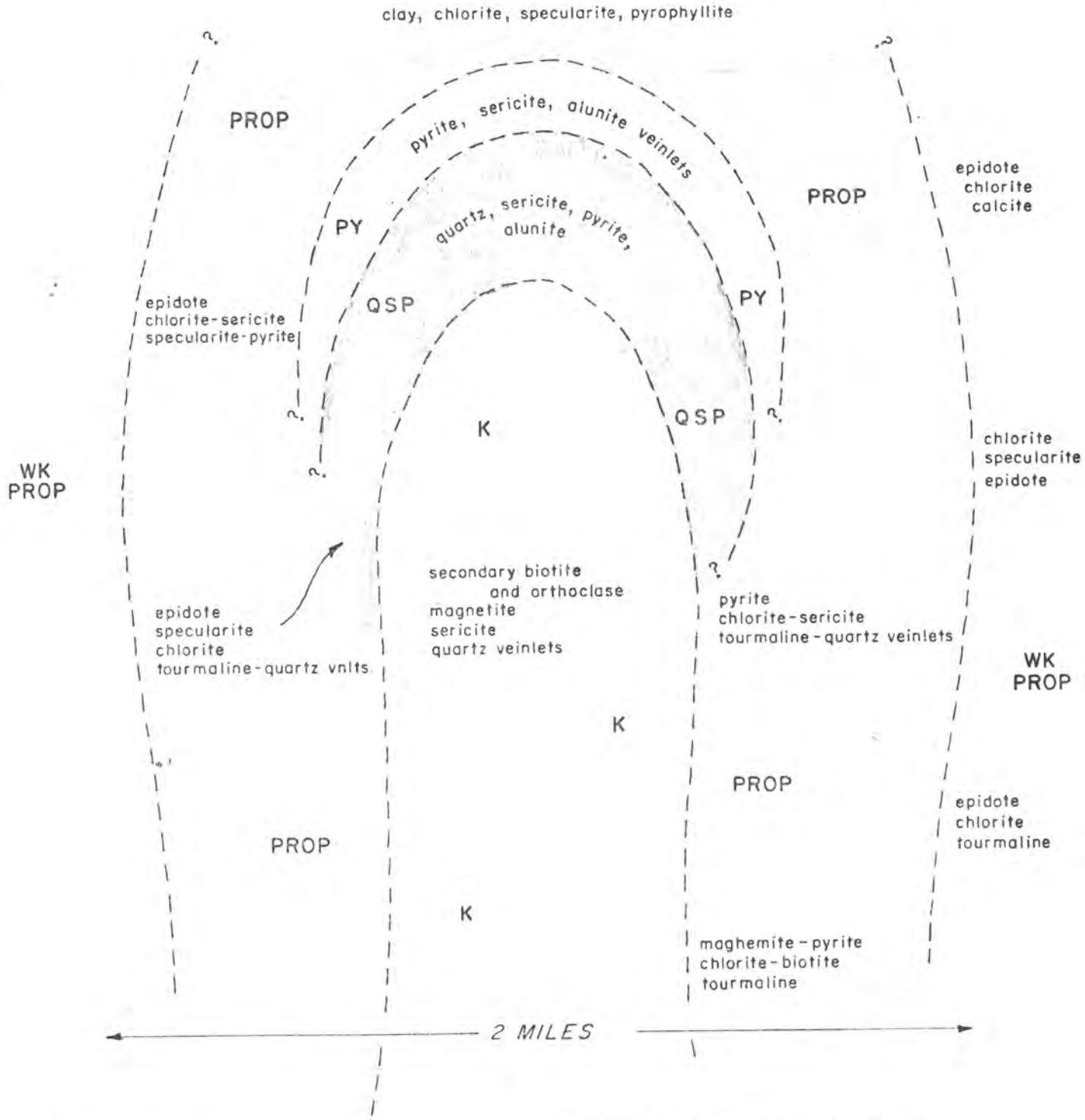
The Sugarloaf Peak prospect lies within a province of structural rotation and low-angle faulting. These structural elements are related to crustal distension and are similar to those observed along the west side of the San Pedro River, such as have been described at the San Manuel-Kalamazoo Mine and at Kerr-McGee's Kelvin and Granite Mountain prospects.

There are no marker horizons in the schist, however structural rotation to the east has been interpreted from detailed mapping of the alteration pattern and from the metal zoning relationships. Fault offsets are evidenced by abrupt discontinuities in the alteration pattern and are generally coroborated by corresponding changes in the geochemical pattern.

The horizontal position of the alteration pattern has been determined from review of drill hole information evidencing a decrease in alteration grade with depth in the area of drilling just west of Sugarloaf Peak. Northeast striking faults, dipping steeply westward to nearly flat lying, are related to gravity sliding during structural rotation and/or post rotation block faulting. Their displacements are generally of only a few hundred feet. In addition to these faults, major northwest trending, right lateral strike slip faults have been mapped. This structural trend can be projected into the Sugarloaf Peak area from the Plomosa Mountains to the east and appears to extend across the Dome Rock Mountains into the area of alluvial cover to the west. Displacement, as indicated by offset segments of the alteration system, may be 500 to 1000 feet along any one slip plane, however there are numerous slip planes within the area mapped and the total offset may be on the order of 5000 feet within that area.

ALTERATION

The observed alteration and metal dispersion patterns are shown on the accompanying maps of the Sugarloaf Peak area. Figure 2 is a diagrammatic presentation of the original alteration pattern. The alteration types and their associated metals are described in order of their probable occurrence, extending downward from the ore time surface above the central core of a typical porphyry copper alteration system. At Quartzsite this is equivalent to starting about one-half mile east of Sugarloaf Peak and moving westward over the surface along a horizontal axis.



ALTERATION

K	POTASSIC
QSP	PHYLLIC
PY	PYRITIC
PROP	PROPYLITIC
WK PROP	WEAK PROPYLITIC

HYPOTHETICAL SYSTEM OF
PORPHYRY COPPER ALTERATION

WITH RESTRICTED ENVELOPE OF QUARTZ-SERICITE-PYRITE
MODELED AFTER RED MOUNTAIN, SANTA CRUZ CO., ARIZONA

SUGARLOAF PEAK

QUARTZSITE DISTRICT YUMA COUNTY ARIZONA

R. AHERN
MAY, 1973

FIGURE 2

Propylitic alteration is both the exterior and the uppermost facies of alteration and is generally characterized by epidote, chlorite, carbonate, and an absence of sulfides or quartz veinlets. This type of alteration is gradational into unaltered rock at a distance from the center of the alteration system. The change is particularly difficult to recognize in greenschist, however, because the metamorphic mineral assemblage is nearly the same as that of propylitic alteration.

Exposures of hydrothermal propylitic alteration immediately west of Sugarloaf Peak are typical of the upper high level of alteration occurring near the core of the alteration system. Chlorite and epidote are accompanied by specularite with lenses and zones of sericite and pyrophyllite. Occasional major quartz specularite vein zones and some calcite veinlets are also present. Exposures north of highway I-10 exhibit chlorite, epidote and specularite with quartz tourmaline veinlets. This is characteristic of deeper propylitic alteration than that discussed above, and probably reflects a position near the propylitic-phyllic interface, with the quartz veinlets extending out beyond the zone of pyritic alteration. The area of propylitic alteration along the southern edge of Kerr-McGee's claims is generally weaker than the two areas just described. Chlorite, epidote, and specularite are associated with calcite veins to the southeast, and with minor calcite and moderate tourmaline to the west.

Pyritic alteration at Sugarloaf Peak is characterized by disseminated pyrite controlled by planes of schistosity, generally without quartz veinlets. Abundant alunite veinlets occur along the north slope of Sugarloaf Peak, with intense sericite and clay on the south edge. The pyrite zone occurs at Sugarloaf Peak as a cap which separated the

propylitic and phyllic zones when in their original upright position. This zone does not generally extend to any great depth along the flanks of the system.

Phyllic alteration consisting of quartz, sericite, and pyrite is exposed over an area one mile long and from 3000 to 5000 feet wide just west of Sugarloaf Peak. This facies is generally characterized by intense sericitization with abundant disseminated pyrite and closely spaced quartz pyrite veinlets. Within the Sugarloaf Peak alteration system the phyllic alteration zone appears to grade downward or westward into altered rock characterized by variably spaced quartz pyrite veinlets and sericite envelopes within a phase of alteration reflecting the transition from weak potassic to propylitic alteration. This type of alteration is exposed adjacent to the potassic hill in the center of Section 31. The gradation from near potassic to propylitic appears to take place over a width of from 300 to 500 feet.

A block of potassic alteration measuring 2000 by 3000 feet is exposed in the center of Section 31, Township 4 North, Range 20 West. The block is bounded on the north, south and west sides by major faults. The east side is the gradational change from potassic to phyllic, to the deep propylitic type of alteration discussed above. The potassic alteration is characterized by secondary orthoclase, minor magnetite and quartz-chalcopyrite veinlets with disseminated sulfides. Capping indicates a fairly high chalcopyrite to pyrite ratio in the Hancock Wash area with slightly decreasing chalcopyrite to the east.

It should be emphasized that changes in alteration are gradational, sometimes taking place over considerable distances, even though they are shown as distinct contacts on a map. It should also be pointed out that a single alteration facies may be represented by different sets of mineral assemblages at different levels within the system. For example, the propylitic alteration near the top of the system may be characterized by epidote, calcite and pyrophyllite, while the propylitic zone at great depth would be identified by an association of chlorite, sericite, and magnetite. In addition to this, a single mineral species may be associated with more than one facies of alteration. For example, chlorite is pervasive in the propylitic zone, a minor constituent of the pyritic or argillic zone, and absent in the phyllic zone. It reappears replacing biotite in the near or weak potassic zone and gives way to biotite in the zone of potassic alteration, however it is present in the deep barren core of some deposits.

METAL ZONING

The dispersion pattern of both lead and molybdenum reflect the exposed alteration pattern and corroborate the structural rotation inferred from the overall alteration pattern. Lead values ranging from 100ppm to greater than 1000ppm are reported from the pyritic altered area adjacent to Sugarloaf Peak. The area of intense phyllic alteration west of Sugarloaf Peak is characterized by only moderate lead values accompanied by highly anomalous molybdenum with values ranging from 5ppm to greater than 100ppm in an angular pattern concentric with the observed alteration pattern. Drill hole information from both the high lead and the high molybdenum areas define a zone averaging over 1000ppm zinc from the surface to a depth of 500 feet. Testing of selected surface samples shows that the

area contains anomalous bismuth and tin along with gold and silver values typical of porphyry copper environments elsewhere. Copper values of from 100ppm to 600ppm are reported from drilling in this zone of extremely high metal values. Minor chalcocite was noted in DDH S-5 and in validation drill hole, V-2, along the western margins of the phyllic alteration and turquoise coats a few fractures in a prospect pit along the southern edge of Kerr-McGee's claims.

MINERALIZATION

Primary copper mineralization occurs in the Hancock Wash area, associated with the favorable potassic alteration exposed there. Copper oxides fill fractures with copper pitch after disseminated chalcopyrite exposed in several prospect pits. A grab sample of unoxidized rock containing disseminated chalcopyrite taken from an adit assayed .38 percent copper and grabs of oxidized material ran between .04 and 1.14 percent copper. Hancock's drill holes in the bottom of the wash reportedly intersected values greater than 1.0 percent copper.

This zone of strong copper mineralization exposed at the surface covers a triangular shaped area 3000 feet long, reaching a maximum of 800 feet in width and enclosing 1,200,000 square feet. An area this size would contain 10,000,000 tons of rock for each 100 feet of depth. Although the actual copper values reported by Hancock may be in error, they do indicate the presence of a zone of intense disseminated copper mineralization down to a depth of at least 150 feet, which would indicate 15,000,000 tons of ore-grade copper mineralization exposed at the surface and amenable to open pit mining methods. This zone, together with the presence of scattered copper prospects in the adjacent potassic block of alteration,

strongly suggest the presence of a much larger zone of primary copper mineralization within shallow to moderate drilling depths. The potassic block measures 2000 by 3000 feet in plan, giving a target of 48,000,000 tons per hundred feet of thickness. The potassic block is bounded on three sides by faults, so additional targets exist along the direction of fault offset and their presence may be inferred from surface alteration features.

GEOPHYSICS

Congdon and Carrey had McPhar conduct an extensive Induced Polarization survey over their claims and, while McIntyre held an option on the prospect, they extended the survey somewhat and positioned two drill holes on the basis of that work. The opinion of a Kerr-McGee geophysist who reviewed this work concurred with the McPhar people, who felt that the major anomaly near Sugarloaf Peak is the reflection of a broad near-surface feature with decreasing sulfides below. The presence of the broad pyritic area could have been mapped by visual inspection and the shallow nature inferred from the six drill holes completed prior to doing the I. P. survey. McIntyre's work repeated the process but did not lead to any significant new ideas. Of interest however, are the weak anomalies in the Hancock Wash area at the west end of the map (Lines "H" and "H"12E) which indicate moderate sulfide content in an area of visible chalcopyrite.

Minex conducted a ground magnetometer survey which showed that their claims in Section 34, Township 4 North, Range 20 West generally overlie a magnetic low reflecting a very structurally complex area, possibly the regional schist-granite contact. Congdon and Carrey contracted an

aeromagnetic survey, which showed the pyritic area of alteration as a pronounced trough flanked by magnetic highs on both the north and south. These magnetics also show a regional gradient to the east of Kerr-McGee's claims under alluvial cover which has been interpreted to be the magnetic reflection of a regional contact between granite and schist.

A ground magnetometer survey was conducted by Company personnel over the ZALES Claims area in an attempt to locate faults and to get some information on the downdropped potassic zone covered by part of this claim group, however the results are generally inconclusive.

CONCLUSIONS AND RECOMMENDATIONS

The Sugarloaf Peak prospect is an area of porphyry copper type alteration and mineralization which exhibits favorable potential for a large tonnage of ore-grade copper mineralization, at least part of which would be amenable to open-pit mining methods. The most favorable target is the block of potassic alteration near the west end of Kerr-McGee's claims, on ground presently controlled by Burton Hancock of San Jose, California.

Results of surface sampling and values reported from shallow drilling on Hancock's claims indicate the presence of at least 15,000,000 tons of ore-grade copper mineralization at or near the surface in Hancock Wash. Projection of this zone beneath the adjacent potassic block gives a target potential of 48,000,000 tons per 100 feet of thickness.

A drill hole collared in Hancock Wash near the center of stronger copper mineralization would yield the most useful geologic information with regard to structure and alteration, as well as giving a third dimension to our estimate of potential copper mineralization. A 1000 to 1500 foot drill

hole is recommended to test this prospect, however, since the hole would be located on the Hancock Claim group, it will be necessary to obtain control of these claims prior to doing the work. The estimated cost of this drilling project is $20,000, which would be more than enough to cover our annual work requirements for the 1973-74 assessment year.

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-1
Spudded 2/8/72
Completed 2/8/72
Total Depth 100'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 2 Sec 23 T. 4 N. R. 20 W.
Elevation 1175'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 255' N55°W of SE Cor. SUG #2

VALIDATION DRILL HOLE FOR CLAIMS SUG #1-10

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-25'	25'									Schist with disseminated pyrite and sericite.
25-30'	5'	91		40	45				20795	
30-40'	10'									
40-45'	5'			52	46				20796	
45-55'	10'									
55-60'	5'			30	90				20797	
60-70'	10'									
70-75'	5'	136		41	73				20798	
75-85'	10'									
85-90'	5'	58		30	51				20799	
90-95'	5'									
95-100'	5'	119	155	57	69				20800	

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-2
Spudded 2/9/72
Completed 2/9/72
Total Depth 80'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 13 Sec 4 T. 3 N. R. 20 W.
Elevation 1250'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 200' N 60° W of E End Center SUG 13

VALIDATION DRILL HOLE FOR CLAIMS SUG #11-18

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-30'	30'									Schist with abundant pyrite
30-35'	5'	90	17	14	6				19285	
35-45'	10'									
45-50'	5'	38	10	15	5				19286	
50-60'	10'									Chalcocite coating pyrite
60-65'	5'	995		67	6				19288	
65-75'	10									
75-80'	5	19	320	52	2				19287	

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-3
Spudded 2/7/72
Completed 2/7/72
Total Depth 80'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 24 Sec 33 T. 4 N. R. 20 W.
Elevation 1175'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 655' N85°E of W End Center SUG #24

VALIDATION DRILL HOLE FOR CLAIMS SUG #19-26

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-30'	30'									
30-35'	5'		417	34	8				20402	Schist with pyrite-specularite-sericite-chlorite alteration.
35-45'	10'									
45-50'	5'	100	165	49	6				20403	
50-60'	10'									
60-65'	5'	72	160	31	7				20404	
65-75'	10'									
75-80'	5'	248	188	40	5				20405	

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-4
Spudded 2/9/72
Completed 2/9/72
Total Depth 80'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 32 Sec 33 T. 4 N. R. 20 W.
Elevation 1250'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 600' N80°W of E End Center SUG #32

VALIDATION DRILL HOLE FOR CLAIMS SUG #27-34

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0- 5'	5'									
5-10'	10'			86'	13				20406	Schist
10-20'	10'			218	22				20407	Intense Phyllic Alteration,
20-30'	10			245	10				20408	Quartz veinlets Sericite-pyrite
30-40'	10'	99		236	18				20409	
40-50'	10'	69	3300	144	9				20410	
50-60'	10'			140	13				20411	
60-70'	10			121	17				20412	
70-80'	10	65	1000	136	19				20413	
Average	-	78	2150	166	15					

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-5
Spudded 2/9/72
Completed 2/9/72
Total Depth 100'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 27 Sec 4 T. 3 N. R. 20 W.
Elevation 1275'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 450' S87°W of NE Cor. SUG 37

VALIDATION DRILL HOLE FOR CLAIMS SUG #35-44

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									
15-20'	5'			41	7				19289	Schist
20-30'	10									Phyllic Alteration
30-35'	5'			151	14				19290	
35-45'	10'									Intense Sericitization with Quartz - Sulfide Veinlets
45-50'	5'	22	75	186	10				19291	
50-60'	10'									
60-65'	5'	23	300	247	6				19292	
65-75'	10'									
75-80'	5'			326	5				19293	
80-90'	10'									
75-100'	5'	20	1500	157	8				19294	
Average -		22	625							

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-6
Spudded 2/8/72
Completed 2/8/72
Total Depth 100'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 49 Sec 34 T. 4 N. R. 20 W.
Elevation 1150'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 410' N75°E of SW Cor. SUG #79

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									Schist
15-20'	5'			93	14				20789	Pyritic Alteration
20-30'	10'									
30-35'	5'			81	7				20790	
35-45'	10'									
45-50'	5'			49	6				20791	
50-60'	10'									
60-65'	5'			41	6				20792	
65-75'	10'									
75-80'	5'	42		59	5				20793	
80-95'	15'									
95-100'	5'	38	375	60	4				20794	

NOTE: Some water collected in bottom of hole.

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-7
Spudded 2/10/72
Completed 2/11/72
Total Depth 70' + 30'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 58 Sec 34 T. 4 N. R. 20 W.
Elevation 1225'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 180' N60°E of SW Cor. SUG #58

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									
15-20'	5'			136	8				19297	Schist Pyrite-Sericite-Alunite Alteration.
20-25'	5'									
25-30'	5'			67	13				19298	
30-45'	15'									
45-50'	5'			72	14				19299	
50-60'	10'									
60-70'	10'			85	7				19300	

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-8
Spudded 2/9/72
Completed 2/9/72
Total Depth 50' + 50'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 69 Sec 3 T. 3 N. R. 20 W.
Elevation 1300'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 375' N80°W of E End Center SUG 69

VALIDATION DRILL HOLE FOR CLAIMS SUG #65-74

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									Sericite Schist, with Chlorite, Specularite Alteration, No Pyrite.
15-20'	5'			92	2				19295	
20-45'	15'									
45-50'	5'			68	1				19296	
Average	-			80	2					

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-9
Spudded 2/7/72
Completed 2/7/72
Total Depth 100'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 76 Sec 34 T. 4 N. R. 20 W.
Elevation 1125'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 675' N80°E of W End Center SUG #76

VALIDATION DRILL HOLE FOR CLAIMS SUG #75-81

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-95'	95'									Alluvium
95-100'	5'			64	7				20401	

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-10
Spudded 2/11/72
Completed 2/11/72
Total Depth 70' + 30'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 86 Sec 3 T. 3 N. R. 20 W.
Elevation 1175'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 600' N60°E of SW Cor. SUG #86

VALIDATION DRILL HOLE FOR CLAIMS SUG #82-89

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									Schist
15-20'	5'			700	14				20784	Intense Propylitic Alteration with Chlorite, Sericite, Specularite, Pyrophyllite.
20-25'	5'									
25-30'	5'			900	7				20786	
30-45'	15'									
45-50'	5'			430	5				20787	
50-60'	10'									
60-65'	5'			700	5				20788	

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-11
Spudded 2/11/72
Completed 2/11/72
Total Depth 80'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim SUG 90 Sec 3 T. 3 N. R. 20 W.
Elevation 1200'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 165' S50°W of NE Cor. SUG 90

VALIDATION DRILL HOLE FOR CLAIMS SUG #90-97

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-15'	15'									
15-20'	5'			830	6				20779	Schist
20-30'	10'									Intense Specularite Alteration with Chlorite
30-35'	5'			1400	7				20780	
35-45'	10									
45-50'	5'			1100	3				20781	
50-60'	10'									
60-65'	5'			500	5				20782	
65-75'	10'									
75-80'	5'			99	3				20783	

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-13
Spudded 7/28/72
Completed 7/28/72
Total Depth 140'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim ZALES 15 Sec. 32 T. 4 N. R. 20 W.
Elevation 1125'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 160' N40°E of W End Center ZALES #15

VALIDATION DRILL HOLE FOR CLAIMS ZALES #15,17,19,21,22

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-140'										Badly Weathered Bedrock. No Fresh Sulfides.
NOTE:	15 gpm water at 80'!									

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-14
Spudded 7/28/72
Completed 7/28/72
Total Depth 20'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim _____ Sec ____ T. ____ R. ____
Elevation _____
Hole Size _____
Core Size _____
Hole Angle _____
Collar Coords. 105' S54°E of W End Center ZALES #13.

VALIDATION DRILL HOLE FOR CLAIMS ZALES #11 and 13

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-20'	20'									Alluvium
TE: Old bit left in bottom of drill hole.										

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-15
Spudded 7/29/72
Completed 8/1/72
Total Depth 263'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim ZALES 4 Sec 32 T. 4 N. R. 20 W.
Elevation 1175'
Hole Size 4 3/4" 0-260'
Core Size NX 260-263'
Hole Angle Vertical
Collar Coords. 300' N70°W of E End Center ZALES #4

VALIDATION DRILL HOLE FOR CLAIMS ZALES #1 thru 10

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-142'	142'									Alluvium
142-260'	118'									Oxidized Schist
260-263'	3'	60	81	15	10	.7	Nil.		21546	NX Core Weak Pyritic Alteration with Fresh Sulfides
NOTE: 15 gpm at 95'.										

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

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-1
Spudded 7-8-74
Completed 7-24-74
Total Depth 700'
Driller L. Moore
Logged By B. Riederer

County Yuma State Arizona
Claim Zales #33 Sec. 31 T. 4N R. 20W
Elevation 1175'
Hole Size NX
Core Size NX
Hole Angle
Collar Coords.

GROSS VALUE IN SULFIDE MINERALS*

Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag oz/t	Au oz/t		~~Gross Value~~
5	5	[redacted]							
10	5	0.38							
15	5	0.37							
20	5	0.29							
25	5	0.48							
30	5	0.26				0.09	.001		
35	5	0.44							
40	5	0.18							
45	5	0.41							
50	5	0.36							
55	5	0.41							
60	5	0.23							
65	5	[redacted]							
7[illegible]	5	[redacted]							
75	5	1.21							
80	5	1.47							
85	5	[redacted]							
						0.08	.004		
90	5	[redacted]							
[illegible]	5	[redacted]							
100	5	0.42							

*Gross value calculated from copper ¢/pound; lead ¢/pound; zinc ¢/pound; molybdenum $ /pound; silver $ /ounce; and gold $ /ounce.

KERR-McGEE CORPORATION
Assay Log

District Quartzite
Hole Number C-1

Page 2

Hole Depth	Inter -val	Cu	Zn PPM	Pb PPM	Mo PPM	Ag OZ/T	Au OZ/T		Gross Value
105	5	0.32							
110	5	[redacted]							
120	10	[redacted]	36	11	22				
130	10	0.47	35	9	23				
140	10	[redacted]	53	13	21				
						0.16	.002		
150	10	[redacted]	56	20	73				
160	10	[redacted]	59	17	36				
170	10	[redacted]	41	7	9				
180	10	1.20	62	16	43				
190	10	[redacted]	60	17	83	0.05	.005		
200	10	0.20	66	22	16				
210	10	0.18	92	21	13				
220	10	0.07	101	28	13				
230	10	0.07	88	27	8	0.01	.003		
240	10	0.19	26	30	15				
250	10	0.03	< 5	43	21				
260	10	0.03	30	40	43				
270	10	0.[illegible]2	18	19	9				
280	10	0.009	6	12	4	0.01	.003		
290	10	0.005	15	8	2				
300	10	0.004	21	7	5				
310	10	0.009	27	15	8				
[illegible]	10	0.01	41	23	43				
[illegible]	10	0.02	66	15	11	0.04	.001		
340	10	0.003	82	20	12				

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-1

Page 3

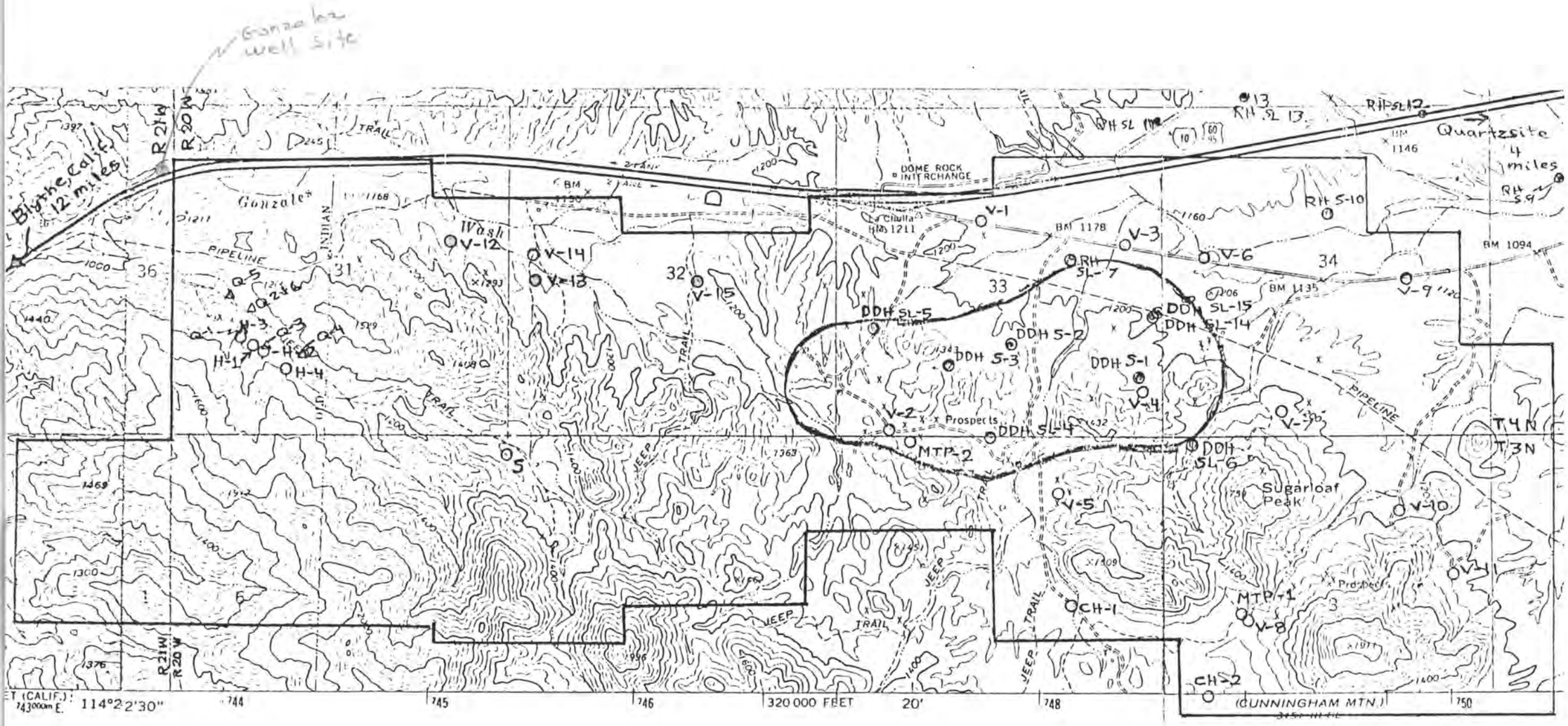
Hole Depth	Inter -val	Cu PPM	Zn PPM	Pb PPM	Mo PPM	Ag	Au		Gross Value
350	10	535	22	16	418				
360	10	416	33	14	15				
370	10	497	22	9	29				
380	10	574	28	6	21	0.04	.002		
390	10	303	19	12	24				
400	10	413	36	20	17				
410	10	0.53%	58	31	45				
420	10	[illegible]	35	105	34	0.18	.002		
430	10	[illegible]	30	19	82				
440	10	1125	19	13	38				
450	10	369	27	18	21				
460	10	285	24	13	18				
470	10	129	36	9	14	0.04	.001		
480	10	59	43	22	17				
490	10	37	40	21	22				
500	10	33	49	28	28				
510	10	44	38	26	23				
520	10	40	51	13	23				
530	10	37	50	17	23				
540	10	46	43	15	22				
550	10	69	54	24	19	0.04	.002		
560	10	304	52	46	14				
570	10	221	47	26	19				
580	10	66	45	9	18				
590	10	84	50	10	16				

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-1

Page 4

Hole Depth	Inter -val	Cu PPM	Zn PPM	Pb PPM	Mo PPM	Ag	Au		Gross Value
600	10	77	22	12	14				
610	10	46	43	35	17				
620	10	36	29	15	17				
630	10	47	39	7	16				
640	10	107	28	18	20				
650	10	31	35	16	25	0.01	.001		
660	10	42	31	17	18				
670	10	34	40	13	15				
680	10	28	35	11	16				
690	10	29	37	10	14				
700	10	39	36	11	18				



Drill Hole Map

Kerr McGee 1972-3

KERR-McGEE CORPORATION

COPY

District Quartzsite
Hole No. Q - 4
Spudded 3-19-75
Completed 3-31-75
Total Depth 514'
Driller Joy Mfg. - Leo Moore
Logged By B. Leedy

County Yuma State Arizona
Claim Sec. 31 T. 4N R. 20W
Elevation Approx. 1100'
Hole Size
Core Size NX
Hole Angle -57° S. 20° W.
Collar Coords.

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	%		Rock Type	Rock Description	Alteration	Mineralization
0-26	26		33901	66		23	66	Overburden			
26-28		100						Quartz-sericite shist	Oxidized-highly fractured-fine grained schistose	Quartz-sericite-pyrite	Pyrite - strong goethite and jarosite short intervals of hematite after pyrite.
[illegible]	24		33902	129		24	55				
28-55		80						Quartz monzonite	Oxidized-highly fractured-fine grained intrusive coarser grained and weakly biotized 47'-49'	Quartz-sericite-pyrite with tourmaline on fractures and veinlets clay on open fractures	Pyrite-strong goethite with jarosite after pyrite Bright yellow-green tetrag. platy. mineral on fractures 42'-48'
40-50	10		33903	86		63	156				
50-60	10		33904	90		66	105				
55-77		100	~~[illegible]~~	~~[illegible]~~		~~[illegible]~~	~~[illegible]~~	Quart-monzonite	Partially oxidized medium grained quartz orthoclase-plagioclase monzonite with disseminated pyrite. Oxidized on fractures with heavy geothite, and jarosite	Quartz, sericite, pyrite with tourmaline on fractures and vnlts. Clay on open fractures	Pyritic- Blue-black tarnish on py-fig. black mineral (-cc(?)) and bornite 55-60, 65-73
[illegible]	10		33905	98		58	56				
[illegible]	10		33906	105		46	54				
77-78		70						Quartz-monzonite	Rubble		
[illegible]	20		33907-08	157		42	64				
78-114		95						Quartz-monzonite	Partially oxidized rocks remain highly fractured with mylonized and slickenside zones. Heavy goethite	Quartz, sericite, pyrite weak clay on fractures Much less tourmaline	Pyritic- some weak cp. 84-90 Bornite tarnish on py-cp. Yellow-green tetrag. mineral 55-90'
	(102-108 30% Recy.)										
100-110	10		33909	55		46	52				

District rtzsite Hole Number 4 COPY Page Num 2

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									72-79; 90-114		
114-123		100						Quartz-monzonite	Totally oxidized, highly sheared and fractured. Heavy goethite and clay on fractures.	Quartz, sericite, pyrite, tourmaline vnlts.	Pyrite
[illegible]	10		[illegible]	[illegible]		31	51				
						24					
123-127		100						Quartz, sericite schist, shear zone	Oxidized highly sheared with heavy goethite jarosite and clay on fractures. Schistosity inclined 60°	Quartz, sericite, pyrite, with tourmaline vnlts.	Pyrite
[illegible]	10		339 11	114		74	51				
[illegible]	10		339 12	[illegible]		91	46				
[illegible]	10		339 13	[illegible]		58	16				
127-158		90						Quartz-monzonite	Oxidized-highly fractured with heavy goethite, jarosite and clays on fractures shear zone 143-158 with heavy clay and mylonite	Quartz, sericite, pyrite with tourmaline disseminated and as vnlts.	Pyrite. Weak dendritis Neotosite on fracture 68. yellow oxide on fractures 139-140-148 possible nonironite
[illegible]	10		339 14	[illegible]		55	12				
[illegible]	10		339 15	[illegible]		144	12				
[illegible]	10		339 16	[illegible]		46	126				
[illegible]	10		339 17	311		14	44				
158-192		50						Fault zone	Partially oxidized highly sheared with much rubble, mylonized sulfides. Heavy clay and serpentine (tele)	Quartz, sericite, pyrite with tourmaline disseminated and in vnlts.	Pyrite- Neot. on fractures
	(no core 177-181)										
[illegible]	10		3 8 1	342		15	25				
192-201		100						Quartz-monzonite	Partially oxidized continues fractured but not as highly sheared. Hu., goethitite-Neo8 on fractures.	Quartz, sericite, pyrite,	Pyritic - weak cu ox 194-198
[illegible]	5		319 9	316		10	17				
201-218		90						Quartz-monzonite shear zones	Totally oxidized rocks highly fractured and sheared. Mylonized 201-202, 206-209, heavy goethite and clay, chacolote	Quartz, sericite, pyrite	Pyritic - Neot. on fractures

District [illegible]tzsite Hole Number - 4 Page Num. 3

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo	Fe	Zn	Rock Type	Rock Description	Alteration	Mineralization
[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]		brown earthy material at 210-211.		
[illegible]	10		33921	[illegible]		[illegible]	[illegible]				
218-231		90						Quartz-monzonite	Oxidized-rocks fractured but not as highly sheared. Weak goethite Neot. on fractures.	Quartz,sericity,pyrite with tourmaline disseminated and in vnlts. Hu.,quartz tourmaline,pyrite at 223.	Pyritic - Neot. on fractures
[illegible]	[illegible]		33922	[illegible]		[illegible]	[illegible]				
231-241		95						Quartz-monzonite	Oxidized-rocks highly fractured and with heavy clay moderate goethite	Quartz, sericite,pyrite with tourmaline disseminated and in vnlts. Quartz and calcite vn. at 232.	Pyritic - Neot. on fractures
[illegible]	[illegible]		33923	[illegible]		[illegible]	[illegible]				
241-258		90						Quartz-monzonite	Oxidized to 250 - partially oxidized below. Continues fractured- and sheared 244-250. Hi clay on fractures.	Quartz,sericity,pyrite with tourmaline disseminated and in vnlts. Calcite units 251.	Pyritic- weak chrysocolla and Neot. 243-248. Weak disseminated cp and fibrous malachite and neotocite 252-255
[illegible]	10		33924	[illegible]		16	34				
258-268		90						Quartz-monzonite	Totally oxidized to 265. partially oxidized below - rocks highly fractured but not sheared. Heavy goethite and clay.	Quartz,sericite,pyrite with tourmaline disseminated and in vnlts.	Pyritic, Neot. on fractures 5-10% py 266-267
[illegible]	10		33925	[illegible]		[illegible]	[illegible]				
[illegible]	10		33926	[illegible]		16	34				
[illegible]	10		33927	[illegible]		[illegible]	[illegible]				
[illegible]	10		[illegible]	49		5	21				
268-300		100						Shear-zone	Rocks highly sheared and mylonized.	Sericite, clay, serpentine quartz,tourmaline,pyrite vnlts. areal the rocks somewhat.	Pyritic-disseminated and vnlts. Much mylonized
300-310	10	100	33929	36		40	26	Quartz-tourmaline,pyrite, breccia. Quartz sericite,schist	Fine grained schistose rocksbrecciated and arealed with quartz-tourmaline.	Silicic with tourmaline-pyrite	5-10% disseminated and vn.py.
[illegible]	10		33930	24		18	48				
310-330		100						Quartz-eye schist	Fine grained quartz chlorite,sericite, schist. with quartz eyes 1-5mm. plagioclase	Quartz veins with weak quartz, sericite halos 1-3mm.	Disseminated vn. py. (approx. 2%) Magnetite clost, weak disseminated at 328.
[illegible]	10		33931	55		20	49				

District rtzsite Hole Number 1 - 4 Page Num' 4

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
330-339		100						Quartz eye schist	"	Quartz veins and weak biotized vnlts.	Disseminated and vein pyrite (1-2%) Vein weak disseminated cp. Spec. hematite unit at 339.
[illegible]	10		33932	32		[illegible]	27				
[illegible]	10		33933	41		10	45				
[illegible]	10		33934	41		18	45				
339-377		100						Quartz eye schist	Quartc chlorite,sericite schist. Rocks sheared with clay and hematite 341-342-sheared with mylonized sulfides 353 rocks quite fractured but well arealed	Chloritic-weak biotite on fractures. Moderate magnetite to 340, 351-356, weak magnetite 366-368 from 368 increase in quartz,sericite with disseminated and vnlts. of magnetite and weak chlorite. Breccia zones with quartz tourmaline, pyrite.	Weak disseminated pyrite thin quartz pyrite veins. (up to ½") with moderate-strong quartz sericite halos.
[illegible]	10		33935	35		[illegible]	66				
[illegible]	10		33936	45		5	14				
[illegible]	10		33937	53		5	56				
377-399		100						Quartz eye schist	"	Increase in sericite. Less chlorite-377-384, then increase in chlorite, quartz, pyrite vns. with halos continue. Some with late stages tourmaline. Rocks weak magnetite	Weak disseminated and vein pyrite
[illegible]	10		33938	54		19	54				
[illegible]	10		33939	36		26	65				
[illegible]	10		33940	61		16	88				
[illegible]	10		33941	[illegible]		[illegible]	[illegible]				
[illegible]	10		33942	49		18	51				
[illegible]	10		33943	38		16	46				
399-450		100						Quartz eye schist	Quartz,chlorite,sericite eip,schist. Rocks remain weak magnetic. Breccia zone (up to 6") with quartz,tourmaline, pyrite. Rocks sheared weak erg at 440. Strange shear and rocks highly arg. and chlorite 447-449. Strong quartz-tourmaline at 400'.	Fractures and vnlts. in become increasingly chlorite,epi,pyrite with chlorite rather than quartz,sericite halos. A few quartz, tourmaline pyrite vnlts. remain with quartz sericite, halos. Weak hematite on open fractures	Weak disseminated and moderate to strong vein pyrite
[illegible]	10		33944	43		24	52				
[illegible]	10		33945	22		14	49				
450-574		100						Quartz eye schist	Rocks increase in chlorite and epi. Weak shear zone 500-501, 504-505.	Fractures and vnlts. with quartz, chlorite,epi, pyrite continue. Epi flooding with strong chlorite,pyrite on fracture	Pyrite predominantly on fractures and vnlts.
[illegible]	10		33946	31		12	56				
[illegible]	10		33947	33		16	48				
[illegible]	10		33948	22		12	56				

Distric Quart te

Hole Number - 4

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Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
[illegible]	[illegible]		[illegible]	[illegible]		[illegible]	[illegible]			and veins. begins at 478	
[illegible]	4		[illegible]	[illegible]		[illegible]	[illegible]			continues to end of hole.	
										Tourmaline continues on	
										late fracture.	

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-5
Spudded 4-2-75
Completed 4-25-75
Total Depth 269'
Driller L. Moore
Logged By B. Leady

County Yuma State Arizona
Claim Zulos #33 Sec 31 T. 4N R. 20W.
Elevation 1040'
Hole Size NX
Core Size NX.
Hole Angle -45°
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu ppm	%Zn ppm	%Pb ppm	% Mo ppm	oz.Ag	oz.Au		Gross Value
0 - 30	30	420	24	30	12				
40	10	228	22	16	14				
50	10	146	8	10	6	0.08	—		
60	10	160	10	12	12				
70	10	134	28	12	6				
80	10	98	14	8	6				
90	10	88	26	10	6				
100	10	96	19	10	4	0.11	.001		
110	10	98	12	6	8				
120	10	112	11	6	8				
130	10	100	12	6	7				
140	10	100	10	8	12				
150	10	58	32	22	10	0.07	.001		
160	10	62	20	10	8				
170	10	66	28	14	11				
180	10	70	22	74	44				
190	10	74	21	42	16				
200	10	70	19	70	11	0.06	—		
210	10	82	21	48	12				
220	10	700	33	120	14				
230	10	190	34	22	12				
240	10	200	54	20	13				
250	10	252	72	32	22				
260	10	184	66	28	12				
269	9	200	68	14	15	0.09	.002		

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-5
Spudded
Completed
Total Depth
Driller L. Moore
Logged By R. Ahern

County Yuma State Ariz.
Claim Bales #33 Sec 31 T. 4N R. 20W
Elevation 1040'
Hole Size
Core Size
Hole Angle -45°
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	[illegible]	~~Gross Value~~	
0-2						T		T	—	33951
									—	
						0.08	Tr	18	—	33952
-50	10					—	—	—		33953
60	10									33954
70	10									33955
80	10					0.11	.001	13		33956
90	10									33957
100	10									33958
110	10									33959
120	10									33960
130	10					0.07	.001	26		33961
140	10									33962
150	10									33963
160	10									33964
170	10									33965
180	10					0.06	Tr	39		33966
190	10									33967
200	10									33968

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

COPY

KERR-McGEE CORPORATION

COPY

District Quartzsite
Hole Number Q - 1
Spudded July 8, 1974
Completed July 24, 1974
Total Depth 700'
Driller Leo Moore
Logged By B. Riederer

County Yuma State Arizona
Claim Zales #33 Sec 31 T-4N R-20 W
Elevation 1150
Hole Size NX
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays % Cu	Mo		Rock Type	Rock Description	Alteration	Mineralization
5	5	100%	30001	0.58				0'-3': fine grained granular quartz in a silicified and sericitized matrix.	Minor sericite	Chrysocolla on fractures; limonite on fractures
								3'-4': very fine grained clay and sericite	Moderate sericite	Completely oxidized
								4': fine grained granular quartz in a silicified and sericitized matrix.	Minor sericite	Limonite, chrysocolla and malachite on fractures; minor disseminated malachite.
10	5	100%	30002	0.38			Fault Zone (?)	10'-18': Ground material with short (<1') intervals of the above.		Completely oxidized.
15	5	100%	30003	0.37				18': fine grained granular quartz in a very fine grained quartz rich matrix.	Minor sericite	Limonite, brochantite, chrysocolla and malachite on fractures; minor disseminated Cu minerals as above; very minor quartz veins.
20	5	100%	30004	0.29				Same as above except more intense fracturing below 23'	Minor sericite	Abundant malachite and limonite on fractures 22'-23' hematite rich.
25	5	100%	30005	0.48			Fault Zone (?)	25'-27': fault gouge and ground material		Completely oxidized.
								27': fine grained granular quartz in silicified and sericitized matrix.	Minor sericite	Limonite and chrysocolla on fractures.
30	5	100%	30006	0.26				Same as above	Minor sericite	Chryscolla on fractures; up to 3% malachite both disseminated on fractures.
35	5	100%	30007	0.44				32': granular quartz in an extremely quartz rich matrix	Minor sericite 35'-intense sericite for one inch.	3% to 10% malachite both disseminated and on fractures; limonite on fractures.

District ctzsite COPY Hole Number 0 - 1 COPY Page No. 2

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu %	Mo			Rock Type	Rock Description	Alteration	Mineralization
									schistosity approx.		
									normal for core.		
40	5	100%	30008	0.18					36': fine grained gran-	Weak sericite	Chrysocolla and limonite on
									ular quartz in a silica		fractures.
									rich and weak sericite		
									matrix, unit		
									becoming more schistose		
									with increase in sericite.		
45	5	100%	30009	0.41					Fine grained granular	Weak sericite.	Chrysocolla both disseminated and
									quartz in a weak sericite		on fractures, limonite on fractures,
									and quartz matrix.		41': hematite rich.
50	5	100%	30010	0.36					Same as above.	Weak sericite.	Chrysocolla, malachite and brochantite
											on fractures.
											46': hematite rich
											below 46' light yellow green soft
											mineral along fractures (jarosite
											limonite, clay and sericite).
55	5	100%	30011	0.41					50'-52 1/2':fine grained	Strong sericite	Limonite with disseminated and on
									granular quartz in a		fractures; chrysocolla.
									strong sericitized and		
									quartz matrix with		
									minor clay.		
								Fault Zone(?)	52 1/2': fault gouge		
									53':fine grained	Weak sericite	53': hematite rich
									granular quartz in a		minor disseminated chrysocolla
									silicified and weak		
									sericitized matrix.		
60	5	100%	30012	0.23					55': fine grained	Weak sericite	Completely oxidized
									granular quartz in a		
									quartz and weak sericite		
									matrix.		
								Fault Zone(?)	55 1/2'-56: fault gouge		
									56':fine grainge granular	Weak sericite	Minor malachite and chrysocolla
									quartz in a quartz and		both disseminated and on fractures
									weak sericite matrix.		light yellow green soft mineral
											(jarosite, limonite, clay and sericite)
											on fractures.
65	5	100%	30013	0.59					Fine grained granular	Weak sericite	60': hematite rich, limonite on
									quartz in a quartz and		fractures.
									weak sericitized matrix.		

District Quartzsite COPY Hole Number 0 - 1 COPY Page Nu 3

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu %	Assays Mo			Rock Type	Rock Description	Alteration	Mineralization
									63'-67': fine grained granular quartz in a strong silica and minor sericite matrix	Minor sericite	2% to 4% chrysocolla both disseminated and on fractures.
70	5	100%	30014	[redacted]					67'-fine grained granular quartz in a silicified and weak sericitized matrix schistosity near norman.	Weak sericite	68'-69': hematite rich malachite on fractures.
75	5	100%	30015	1.21					75': very fine grained granular quartz in a silicified and strong sericitized matrix.	Strong sericite	Limonite on fractures; malalcnite on fractures and along schistosity 72': azurite (?)
80	5	100%	30016	1.47					Very fine grained granular quartz in a quartz rich and strong sericite matrix.	Strong sericite	Limonite on fractures Malachite along fractures and schistosity
								Fault Zone (?)	77'-78½': fault gouge		
									78½': very fine grained quartz in a quartz sericite matrix unit has become much more schistose due to sericite.	Strong sericite	Malachite and limonite on fractures
85	5	100%	30017	[redacted]					Fine grained granular quartz in a quartz-sericite matrix. Below 82½' rock has become highly fractured also trace of feldspar laths	Moderate to strong sericite	Malachite on fractures, limonite along fractures. Below 82½' completely oxidized
90	5	100%	30018	[redacted]					Fine grained granular quartz in a weak quartz sericite matrix with minor feldspar laths	Weak to moderate sericite	Completely oxidized
95	5	100%	30019	0.50					Fine grained feldspar laths (2-5mm), scattered biotite clots in a quartz rich matrix. Highly fractured.	Weak to moderate sericite , biotite along some fractures	Limonite on fractures malachite along fractures
100	5	100%	30019	0.50					Fine grained feldspar	Weak to moderate	Limonite on fractures

District rtzsite COPY Hole Number 1 COPY Page Num 4

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu %	Mo PPM			Rock Type	Rock Description	Alteration	Mineralization
									laths (2-5mm),scattered	sericite, biotite	Malachite along fractures
									biotite clots in a quartz	along some fractures	
									rich matrix. Highly		
									fractured.		
100	5	100%	30020	0.42				Fault Zone	98'-100': fault gouge		
105	5	100%	30021	0.32					Fine grained feldspar	Weak to moderate	Limonite disseminated and on fractures
									laths (2-5mm), scattered	sericite	104'-105' - Native Cu
									biotite clots in a		Malachite on fractures
									quartz rich matrix.		
110	5	100%	30022	[redacted]					Fine grained biotite	Sericite on fractures,	3-5% disseminated chalcopyrite
									and granular quartz in	Strong biotite	10:1 chpy: py ratio
									a quartz rich matrix	below 109' to 113'	105' - pyrite-sericite veinlet
									Unit is schistose	moderate sericite and	109' - chalcopyrite-anhydrite(?)
										weak biotite	on fracture.
											113' - 3/4" pyrite-sericite vnlt.
120	10	100%	30023	[redacted]	22				Fine grained biotite,	Strong biotite	2-4% chalcopyrite disseminated
									quartz, blue quartz eyes		and vnlt 10:1 chpy:py ratio.
									(scattered)		
									121-123 fractured	Moderate sericite	
									sericitized zone.		
130	10	100%	30024	0.47	23				Biotite, quartz, blue	Strong biotite	2-5% chalcopyrite both disseminated
									quartz eye schist. Well		and vnlt; 10:1 chpy:py ratio
									developed schistosity		135': 1/8" chpy vnlt.
140	10	100%	30025	[redacted]	21				Fine grained biotite,	Strong biotite	3 to 5% chalcopyrite both disseminated
									quartz, blue quartz		and vnlt; 10:1 chpy:py ratio
									eyes (to 4mm) schist.		137'-138': limonite on fracture
150	10	100%	30026	[redacted]	73				Fine grained biotite,		
									quartz, scattered	Strong biotite	3 to 5% chalcopyrite both disseminated
									blue quartz eyes		and vnlt; 10:1.5 chpy:py ratio
									(to 3mm) schist		
									158'-159': fractured	Moderate sericite	
									sericitized zone		
160	10	100%	30027	[redacted]	36				Biotite, quartz,	Strong biotite	3 to 5% chalcopyrite both disseminated
									scattered blue quartz		and vnlt; 1.5 chpy:py ratio
									eyes(2-3mm) schist		
170	10	100%	30028	[redacted]	9				Biotite, quartz schist	Strong biotite	2% chalcopyrite both disseminated
									with scattered blue		and vnlt; 10:1½ chpy:py ratio
									quartz eyes to 4mm.		161': chalcopyrite- chlorite vnlt
									Chlorite on fractures		167': ½" sericite-pyrite vnlt

District [illegible]tzsite COPY Hole Number [illegible] COPY Page Num[illegible] 5

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu %	Assays Mo PPM	Rock Type	Rock Description	Alteration	Mineralization
180	10	100%	30029	1.20	43		Fine grained biotite quartz achist. Quartz decreasing and schistosity less well developed than above; more highly fractured chlorite scattered on some fractures.	Strong biotite	2 to 4% chalcopyrite, 10:1.5 chpy:py ratio 171': chalcopyrite=chlorite vnlt 177': ½" chalcopyrite unlt along fractured part of core
190	10	100%	30030	1.20	83		Biotite, quartz schist with scattered blue quartz eyes (to 3mm) 182'-187': increase in sericitization	Strong biotite Moderate sericite	4 to 6% chalcopyrite both disseminated and vnlt; 5:1 chpy:py ratio 185'- chalcopyrite anhydrite (?) vnlt
200	10	100%	30031	0.20	16		Fine grained biotite quartz schist chlorite on some fractures	Strong biotite	1 to 2% chalcopyrite both disseminated and vnlt, 2:1 chpy:py ratio 193'-194': strong magnetite pyrite cubes scattered along fractures Numerous chalcopyrite-chlorite vnlt
210	10	100%	30032	(PPM) (1800)	13		Biotite, quartz well developed schist Chlorite increasing along fractures	Moderate biotite and chlorite	1 to 2% chalcopyrite 2:1 chpy:py ratio.
220	10	100%	30033	695	13		Biotite-chlorite, quartz schist - minor feldspar laths to 3mm	Moderate biotite Moderate chlorite on fractures	~2% sulfides 2:1 chpy:py ratio 213': chalcopyrite-chlorite vnlt 210': pyrite-chlorite vnlt 216': magnetite crystals cluster
230	10	100%	30034	700	8		Biotite-chlorite quartz schist minor feldspar laths to 3mm.	Moderate biotite Moderate chlorite on fractures	~1% sulfides both disseminated and vnlt, 1:1 chpy:py ratio
240	10	100%	30035	1900	15		Same as above. 236': quartz-sericite schist; well developed schistosity	Same as above. Strong sericite	Same as above. ~1% sulfides on fractures and disseminated. 1:1 chpy:py ratio Below 236' 1% sulfides on fractures and 1:5 chpy:py ratio.
250	10	100%	30036	273	21		Quartz-sericite schist 242-244 increase in quartz and decrease in schistosity	Strong sericite	<1% sulfides on fractures 1:5 chpy:py ratio
260	10	100%	30037	296	43		Quartz - sericite schist with well developed schistosity	Strong sericite	<1% sulfides on fractures 1:10 chpy:py ratio

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Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu PPM	Mo PPM	Rock Type	Rock Description	Alteration	Mineralization
							255'- biotite-chlorite quartz schist, well developed schistosity with minor feldspar laths along schistosity	Strong chlorite	<1% sulfides on fractures 1:10 chpy:py ratio
270	10	100%	30038	161	9	Fault Zone(?)	261-262½' fault zone 262½: quartz-sericite schist	Strong sericite, minor chlorite on fractures	<1% sulfides negl. chalcopyrite below 256": abundant limonite on fractures and disseminated
280	10	100%	30039	90	4		Same as above	Same as above	Same as above
						Fault zone (?)	274-277 fault zone 277: mixed zone of quartz sericite schist and chlorite biotite-quartz schist with the quartz becoming more granular	Calcite on fractures minor calcite on fractures moderate chlorite and biotite	limonite on fractures and and disseminated 289: pyrite vnlt
290	10	100%	30040	51	2		Same as above	Same as above	Same as above
300	10	100%	30041	43	5		297:fine grained quartz schist	moderate beotite	<1% pyrite both disseminated and vnlt, negl. chalcopyrite 296: limonite on fracture
310	10	100%	30042	93	8		Biotite-quartz schist	Moderate biotite	301: ½" pyrite vnlt, negl. chalcopyrite
						Fault zone (?)	304-309: Fault zone 309: chlorite-sericite biotite-minor quartz schist.	Strong sericite-chlorite calcite on fracture	305: hematite rich 309: Trace cholcopyrite disseminated and on fracture
320	10	100%	30043	1009	48		Chlorite-biotite quartz minor sericite schist	Moderate chlorite and biotite	314:chalcopyrite-pyrite-calcite on fracture <1% sulfides 1:1 chpy:py ratio Sulfides both disseminated and vnlt.
330	10	100%	30044	172	11		Chlorite-biotite quartz minor sericite schist 324: chlorite minor biotite-clay-sericite schist: well developed schistosity	Moderate chlorite and biotite Moderate chlorite-sericite	<1% sulfides 1:1 chpy:py ratio 1% sulfides 1:1 chpy:py ratio
340	10	100%	30045	34	12		Chlorite-minor biotite-clay-sericite schist	Moderate chlorite -	<<1% sulfides 1:1 chpy:py ratio
350	10	100%	30046	535	48	Fault zone (?)	340'-341':fault zone 341': quartz sericite	Strong sericite	345': pyrite-chalcopyrite-quartz

District ___ [illegible] COPY Hole Number ___ COPY Page Num 7

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu PPM	Mo PPM	Rock Type	Rock Description	Alteration	Mineralization
							minor chlorite		sericite vnlt
							schist. Schistosity		<1% sulfides
							more massive		
360	10	100%	30047	416	15		Light grey very fine	Strong Sericite	<1% sulfides 1:2 cnpy:py ratio
							grained matrix of		354': 3/8" pyrite-sooty chalcocite vein
							quartz, sericite and		357':pyrite-sooty chalcocite along
							minor chlorite		fractures
							Well developed schist-		358': ¼" chaleopyrite-chalcocite vnlt
							osity and moderately		359½':pyrite-sooty chalcocite vnlt
							fractured.		
370	10	100%	30048	497	29		White sericite minor	Intense sericite	1% sulfides, negl. chalcopyrite
							clay schist		sulfides along schistosity and minor
									vnlt.
380	10	100%	30049	574	21		White sericite minor	Intense sericite	371: 1/8" horizontal quartz vnlt
							clay schist		372:hairline pyrite-chalcopyrite vnlt
									375:increase in cnpy:py ratio
									(3:1), oxidation along vnlts and ends
									at 376'.
							376':clear quartz eyes,	Strong sericite	<1% sulfides, negl chalcopyrite
							sericite, minor clay		minor disemminated specularite
							in a fine grained		380': ¼" pyrite-chalcopyrite-
							quartz matrix schist		chalcocite-calcite vnlt
									hematite along fractures.
390	10	100%	30050	303	24	Fault zone (?)	380-381½ Fault zone		
							381½ quartz; sericite	Moderate sericite	minor oxidation,
							black silicate(one direction		<1% sulfides, negl chalcopyrite
							of leavage, H~6-possibly		387' - pyrite along schistosity
							tourmaline) schist		
							386½-387-above black		
							silicate increases to		
							make up most of matrix		
							388: quartz sericite	Moderate sericite	Disseminated magnetite crystals make
							schist-dark color due	Strong magnetite	up to 10% of rock.
							to disseminated magnetite		
400	10	100%	30051	413	17		390: quartz sericite	Moderate sericite	392: ½" pyrite-chalcocite(?) vnlt
							magnetite schist		disseminated magnetite
							dark color due to		<1% sulfides, negl. chalcopyrite
							magnetite		394: 1/16" magnetite vnlt.
							395: magnetite		395: 1% pyrite
							decreases to trace and		398: <1% pyrite

District ctzsite COPY Hole Number - 1 COPY Page No. 6

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu PPM	Assays Mo PPM	Rock Type	Rock Description	Alteration	Mineralization
							schistosity and		
							sulfides increase		
							398: magnetite		
							minor, low sulfides.		
410	10	100%	30052	[redacted]	45		403:magnetite decreases	Moderate sericite	1% sulfides, negl. chpy
							to near zero, quartz-		below 406' magnetite increases
							sericite-tourmaline		along fractures
							(?) schist		
						Fault zone (?)	407½-408½: fault zone		
							408½: quartz-sericite	Strong sericite	2-3% sulfides, 5:1 cpy:py ratio
							schist.		
420	10	100%	30053	[redacted]	34		411: Near horizontal		
							white quartz vein		
							with closts of chalcopyrite		
							to ½"		
							412½: clear quartz eyes	Weak sericite	1-2% disseminated chalcopyrite
							-sericite-rare K-spar		
							weakly schistose.		
							413':broken interval-		
							quartz-chalcopyrite vein.		
							414: quartz-sericite	Strong sericite	1% chalcopyrite-disseminated
							schist.		
							415': contact:vertical		
							white quartz vein		
							with clots of chalcopyrite		
							to ½" and clear quartz	Moderate sericite	
							eyes- sericite-minor		
							feldspar laths 3 to 4mm		
							-weakly schistose		
							417: quartz eye-	Moderate sericite	2-3% disseminated sulfides
							sericite, feldspar		5:1 chalcopyrite:pyrite ratio
							laths to 3mm in a		
							quartz matrix-weakly		
							schistose.		
430	10	100%	30054	[redacted]	82		425: white quartz		423: bornite scattered among
							vein with clots of		chalcopyrite
							chalcopyrite to 1".		
440	10	100%	30055	1125	38		431: fine grain quartz	Moderate sericite	<1% disseminated chalcopyrite
							sericite schist		
							432: white quartz		

District Q. czsite COPY Hole Number 1 COPY Page Num 9

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu PPM	Assays Mo PPM			Rock Type	Rock Description	Alteration	Mineralization
									vein barren of sulfides		
									437: fine grain quartz	Weak sericite	<1% disseminated sulfides
									minor sericite -		negl. chalcopyrite
									feldspar rich(40%)		
									very weak schistosity.		
450	10	100%	30056	369	21				449:fine grain quartz	Moderate sericite	<1% sulfides negl chalcopyrite
									sericite - K-spar		
									schist (granulite?)		
460	10	100%	30057	285	18				454: fine grain	Strong sericite	451-oxidation
									quartz-sericite		<1%sulfides negl. chalcopyrite
									weakly schistose		
470	10	100%	30058	129	14				460:fine grain	Moderate sericite	Very minor disseminated pyrite
									quartz-sericite		
									feldspar laths to		
									4mm schist		
480	10	100%	30059	59	17				473: fine grain	Moderate sericite	thin (1/16") pyrite veinlets.
									quartz sericite		
									schist-minor		
									feldspar laths		
								Fault zone (?)	478: Fault zone (?)		
490	10	100%	30060	37	22				482: very fine grain	Strong to moderate	<1% pyrite
									quartz-sericite schist	sericite	486-487: oxidation
									very minor biotite,		
									feldspar laths, minor		
									epidote along schistosity		
500	10	100%	30061	33	28				Very fine grain quartz	Moderate sericite	<1% pyrite
									sericite schist		
									with feldspar laths		
									increasing below 491		
									493: same as above	Strong sericite	<1% pyrite-clays coating some
									except sericite has		pyrite vnlts.
									increased.		
									497: very fine grain	Moderate sericite	<1% pyrite
									quartz, sericite -		498: ½" epidote vnlt
									quartz eyes to 4mm		
									minor epidote- minor		
									feldspar laths schist.		
510	10	100%	30062	44	23			Fault zone (?)	506½:Fault zone (?)		
									508: very fine grain	Moderate sericite	<1% pyrite
									quartz-sericite		

District 1 tzsite COPY Hole Number 1 COPY Page Num 10

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu PPM	Assays Mo PPM			Rock Type	Rock Description	Alteration	Mineralization
									quartz eye, minor		
									epidote and feldspar		
									lath schist.		
								Fault zone (?)	509-509½:fault zone(?)		
									509½:same as above 508'	Moderate sericite	oxidation
520	10	100%	30063	40	23			Fault zone (?)	514: Fault zone (?)		
									516:very fine grain	Moderate sericite	partial oxidation along fractures
									quartz-sericite, quartz		
									eye, minor epidote and		
									feldspar lath schist		
								Fault zone (?)	517: Fault zone (?)		
									518: very fine grain	Moderate sericite	Partial oxidation along
									quartz sericite-quartz		
									eye, minor epidote and		
									feldspar lath schist.		
530	10	100%	30064	37	23			Fault zone (?)	527: Fault zone (?)		
540	10	100%	30065	46	22				531:fine grain quartz	Strong sericite	Minor pyrite along fractures
									sericite-quartz eye	grading into moderate	
									minor biotite clots	sericite	
									to 2 mm, minor epidote		
									very minor feldspar		
									lath schist.		
550	10	100%	30066	69	19				549:very fine grain	Strong sericite	Hairline pyrite-chalcocite(??)
									quartz-sericite, minor		unlts along schistosity
									quartz eye schist		
560	10	100%	30067	304	14			Fault zone (?)	551: Fault zone (?)		
									557:very fine grain	Moderate sericite	<1% pyrite both disseminated and
									quartz-sericite		vnlt
									minor chlorite-minor		559- hairline magnetite unlt
									quartz eye schist.		
570	10	100%	30068	221	19				562:fine grain quartz	Moderate sericite	1% disseminated and vnlt pyrite
									sericite-minor		563 - hairline magnetite vnlt
									biotite (?) - chlorite-		567 - oxidation along vnlts
									quartz eye (to 2mm)		
									minor feldspar		
									lath schist.		
580	10	100%	30069	66	18				Same as above	Moderate sericite	1% pyrite disseminated vnlt
590	10	100%	30070	84	16				Very fine grain quartz	Moderate sericite	Pyrite along fractures.
									sericite - minor		581 - oxidation along verticle fracture
									biotite - chlorite		585- pyrite-epidote-calcite vug

District rtzsite Hole Number Q Page Num 11

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu PPM	Mo PPM			Rock Type	Rock Description	Alteration	Mineralization
									quartz eye- Kspar		disseminated radiating tourmaline
									lath schist - minor		
									epidote vnlts		
									589-very fine grain	Strong sericite	1-2% disseminated fine grain pyrite
									quartz - sericite -minor		disseminated tourmaline
									quartz eye schist		595-unidentified blue-gray H~4½ mineral
600	10	100%	30071	77	14				595-very fine grain	Moderate sericite	597-1/8" tourmaline vnlt
									quartz - ssericite schist		negl. pyrite
									with minor quartz eyes		
									to 4mm-minor K-spar		
									-very fine grain		
									biotite matrix (??)		
									minor epidote		
610	10	100%	30072	46	17				Same as above	Moderate sericite	Below 602 -minor disseminated
									except increase		magnetite
									in epidote vnlts.		606 - 3" epidote-pyrite vnlt.
620	10	100%	30073	36	17				Same as above	Moderate sericite	612 - 1/8" magnetite vnlt.
											614 - 3/8" magnetite vnlt.
											616 - disseminated magnitite
											<1% pyrite
630	10	100%	30074	47	16				Very fine grain quartz	Moderate sericite	620 - ½" magnetite vnlt.
									sericite-quartz eye-		627 - ½" epidote vnlt.
									epidote vnlt.- K-spar		630 - oxidation along vert. fracture
									schist.		
640	10	100%	30075	107	20				631-white sericite	Intense sericite	<1% disseminated pyrite
									fine grain quartz schist		disseminated tourmaline
									633-fine grain	Moderate sericite	pyrite along fractures with epidote
									quartz-sericite-very		disseminated magnetite
									fine grain biotite-K-spar		634-oxidation on vert fractures
									laths to 3mm - quartz		
									eyes to 4mm epidote		
									vnlt schist.		
650	10	100%	30076	31	25				Same as above	Moderate sericite	<1% disseminated pyrite
											642 - ½" epidote vnlt.
											646-647 - oxidation on vert fractures
											648-650- oxidation on vert fractures
											minor disseminated magnetite
660	10	100%	30077	42	18				Same as above	Moderate sericite	651 - 1/16" magnitite vnlt.
											653 - oxidation on vert fracture
											652 - 1/8" magnetite vnlt.

District tzsite COPY Hole Number 2 - 1 COPY Page Num 2

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo			Rock Type	Rock Description	Alteration	Mineralization
											pyrite along schistosity
670	10	100%	30078	34	15				Fine grain quartz-	Moderate sericite	Minor pyrite or schistosity
									minor sericite		665 - 1/8" epidote vnlt.
									minor K-spar - fine		
									grain biotite schist.		
680	10	100%	30079	28	16				Same as above except	Moderate sericite	Minor pyrite
									increase in intensity		
									of epidote vnlts. and		
									increase in K-spar.		
								Fault zone (?)	681-682-Fault zone(?)		
									682-fine grain quartz	Moderate sericite	Up to 1% pyrite confined to
									minor sericite- K-spar		schistosity
									fine grain biotite -		negl. magnetite
									epidote vnlt. schist.		
690	10	100%	30080	29	14				Same as above	Moderate sericite	<1% pyrite
700	10	100%	30081	39	18				Same as above	Moderate sericite	692-intense epidote vnlts.
(EOH)											

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-2
Spudded 7-29-74
Completed 8-14-74
Total Depth 779'
Driller Leo Moore, Joy Mfg Co
Logged By B Riedener

County Yuma State Arizona
Claim ZALES #33 Sec 31 T. 4N R. 20W
Elevation 1060
Hole Size NX 0-779'
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu PPM	%Zn PPM	%Pb PPM	%Mo PPM	oz.Ag	oz.Au		~~Gross Value~~ Sample No.
0 - 10	10	62	11	17	9				28763
20	10	61	10	14	5				28764
30	10	39	21	13	7				28765
40	10	70	12	29	8				28766
50	10	45	45	26	6				28767
60	10	253	13	33	13				28768
70	10	183	5	19	5				28769
80	10	62	4	15	8				28770
90	10	256	21	38	8				28771
100	10	81	8	11	7				28772
110	10	63	22	14	7				28773
120	10	141	26	16	17				28774
130	10	78	20	7	16				28775
140	10	LOST SAMPLE - NO RESULTS							28776
150	10	15	37	8	7				28777
160	10	27	15	10	11				28778
170	10	52	5	17	7				28779
180	10	43	32	21	7				28780
190	10	44	16	17	5				28781
200	10	40	18	12	6				~~28781~~ 28782

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

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-2

Page 2

Hole Depth	Inter-val	Cu PPM	Zn PPM	Pb PPM	Mo PPM	Ag	Au		Sample Number Gross Value
200-210	10	42	21	7	9				28783
220	10	42	8	13	3				28784
230	10	41	16	15	8				28785
240	10	36	37	21	9				28786
250	10	27	28	28	6				28787
260	10	35	25	22	9				28788
270	10	42	22	15	11				28789
280	10	80	18	16	9				28790
290	10	43	20	18	18				28791
300	10	44	16	24	14				28792
310	10	41	25	19	11				28793
320	10	32	28	11	9				28794
330	10	54	28	12	20				28795
340	10	80	21	14	23				28796
350	10	61	18	6	7				28797
360	10	58	16	24	10				28798
370	10	43	16	19	7				28799
380	10	82	12	9	9				28800
390	10	94	23	9	14				28801
400	10	87	23	8	14				28802
410	10	103	12	10	9				28803
420	10	86	24	19	8				28804
430	10	51	22	7	10				28805
440	10	66	19	22	9				28806
450	10	46	30	28	11				28807

KERR-MCGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-2

Page 3

Hole Depth	Inter -val	Cu PPM	Zn PPM	Pb PPM	Mo PPM	Ag	Au		SAMPLE NUMBER Gross Value
450-460	10	25	12	27	9				30808
470	10	36	23	18	10				30809
480	10	51	58	10	4				30810
490	10	43	27	11	11				30811
500	10	40	13	8	21				30812
510	10	32	17	23	10				30813
520	10	51	21	15	9				30814
530	10	43	22	13	14				30815
540	10	50	19	18	25				30816
550	10	95	17	11	19				30817
560	10	69	18	42	12				30818
570	10	44	15	23	33				30819
580	10	41	10	21	7				30820
590	10	61	19	28	7				30821
600	10	33	17	30	14				30822
610	10	41	25	28	5				30823
620	10	56	36	27	9				30824
630	10	84	54	52	6				30825
640	10	40	26	33	5				30826
650	10	48	38	29	7				30827
660	10	49	37	24	3				30828
670	10	37	28	38	7				30829
680	10	42	44	27	5				30830
690	10	34	19	26	4				30831
700	10	37	20	23	2				30832

KERR-MCGEE CORPORATION

Assay Log

District Quartzsite

Hole Number Q-2

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Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag	Au		Sample Number ~~Gross Value~~
700 - 710	10	26	24	33	5				30833
720	10	27	16	44	14				30834
730	10	28	21	41	5				30835
740	10	32	18	52	11				30836
750	10	34	19	46	7				30837
760	10	22	16	45	5				30838
770	10	30	14	47	7				30839
779	9	27	10	28	2				30840

COPY

KERR-McGEE CORPORATION

District Quartzsite
Hole Number Q - 2
Spudded July 29,1974
Completed August 14,1974
Total Depth 779'
Driller Leo Moore
Logged By B. Riederer

County Yuma State Arizona
Claim Zales #33 Sec 31 T. 4N R. 20W
Elevation 1060
Hole Size NX
Core Size NX
Hole Angle 90°
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu PPM	Assays Mo			Rock Type	Rock Description	Alteration	Mineralization
0								Quartz-Monzonite	Very minor plag.up to 70% K-spar with laths to 5mm. generally<1% mafics altered to chlorite and sericite	Moderate sericite	Sulfides completely oxidized
								GY size 3 to 5. MM eqigranular			
10	10	100%	28763						Negl. plag up to 65% K-spar with laths to 3mm.<1% mafics altered to chlorite-sericite	10-11:intense sericite and kaolin 11-18:strong sericite and moderate kaolin 18: moderate sericite	Sulfides completely oxidized 18: minor fresh pyrite
20	10	100%	28764						Negl. plag. to 75% K-spar with laths to 6mm.<1% mafics. to 25% quartz.	Moderate sericite Kaolin along fractures	21: chalcorite (?) coating vnlt. 25: chalcorite (?) coating vnlt. sulfides oxidized.
30	10	100%	28765						to 5% green plag. with pheno to 5mm to 70% K-spar with laths to 3 up to 25% quartz.<1% mafics altered to chlorite and sericite	Moderate sericite Kaolin along fractures Plag. altered to green sericite	to 33'-sulfides oxidized below this only partial oxidation on fractures <1% disseminated pyrite
40	10	100%	28766						to 3% green plag. with pheno. to 3mm. to 70% K-spar with laths to 4mm. 3-5% mafics altered to chlorite sericite to 22% quartz.	Kaolin along fractures Moderate sericite Plag. altered to green	Partial oxidation on fractures 1% disseminated pyrite 49- 3/8" pyrite vnlt.
50	10	100%	28767						1-2%green plag. to 75% K-spar with laths to 5mm.<1% mafics altered to chlorite and sericite.	Moderate sericite Kaoline along fractures plag. altered to green sericite	1% disseminated pyrite 57-62-minor light green brittle AUTUNITE occuring along fractures in thin micacous flakes

District rtzsite Hole Number (COPY Page Numt 2

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
									to 22% quartz.		
60	10	100%	28768						Negl. plag. to 75% K-spar with laths to 7mm, <<1% mafics altered to sericite and chlorite to 25% quartz.	Moderate sericite Kaoline along fractures	1% disseminated pyrite with chalcocite (?) tarnish.
70	10	100%	28769						5-9% green plag. with pheno to 5mm, to 65% K-spar with laths to 8mm, 3to 5% mafics altered to chlorite and sericite. to 20% quartz	Moderate sericite Kaoline along fractures Plag. altered to green sericite.	1% disseminated pyrite 75': trace magnetite octahedral
80	10	100%	28770						Same as above 87- 1to 3% green plag. with pheno to 4mm to 70% K-spar with laths to 5mm, 1-2% mafics altered to chlorite and sericite to 25% quartz	Same as above Moderate sericite 89-91 intense kaoline along fractures plag altered to green sericite	<1% disseminated pyrite <1% disseminated pyrite with chalcocite (??) coating partial oxidation along fractures and disseminated.
90	10	100%	28771						3 to 6% green plag with pheno to 4mm, to 70% K-spar with laths to 8mm 2-4% mafics altered to chlorite, to 20% quartz	Moderate sericite Kaoline along fractures plag altered to green sericite.	<1% disseminated pyrite partial oxidation along fractures
100	10	100%	28772						Same as above	Same as above except increase in coarse grain sericite (muscovite)	1-2% disseminated pyrite with chalcocite (??) coating
110	10	100%	28773						1-3% green plag. with pheno to 3mm, to 70% K-spar with laths to 5mm 3-5% mafics altered to chlorite and sericite; below116'sericite becomes coarse	Moderate sericite plag altered to green sericite	1-2% disseminated pyrite 115- vert. chalcocite (?) vnlt. 118 - partial oxidation on fracture
120	10	50% (120'-124')	28774						1% green plag with pheno to 3mm, to 65% K-spar with laths to 8mm, 3-5% mafics altered to chlocite and sericite, 50% recovery to 120'-124'	Moderate sericite plag altered to green	1% disseminated pyrite 120-124 - thin chalcocite (??) vnlts.

District rtzsite Hole Number 2 COPY Page Numt 3

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
130	10	100%	28775						Same as above	Moderate sericite	1% disseminated pyrite
									131: 1-2% green plag with pheno to 3mm, 65-70% K-spar with laths to 8mm, 5-8% mafics altered to chlorite and sericite, to 20%quartz	Moderate sericite plag altered to green sericite.	<1% disseminated pyrite
									133: 1-2% green plag with pheno to 3mm, 70% K-spar with laths 10mm 2-3% mafics altered to chlorite and sericite, to 25% quartz.	Moderate sericite plag altered to green sericite.	<1% disseminated pyrite
140	10	100%	28776						1-2% green plag with pheno to 3mm, 65-70% k-spar with laths to 5mm, 1-2% mafics altered to chlorite and sericite, to 26% quartz.	Moderate sericite plag. altered to green sericite.	1% pyrite 148-149 thin chalcocite (??) vnlts.
150	10	100%	28777						Same as above	Same as above	1% pyrite
160	10	100%	28778						Negl. plag, 50-60% K-spar with laths to 4mm, negl. mafics, 30-33% anhedral quartz	Moderate to strong sericite. 166-K-spar almost completely destroyed - intense sericite 168- moderate sericite	1% disseminated pyrite with minor chalcocite (??) coating and vnlts.
170	10	100%	28779						1-2% green plag 60-65% K-spar with laths to 4mm, 1-2% mafics altered to chlorite and sericite.	Moderate sericite 176- strong to intense sericite.	1% disseminated pyrite
180	10	100%	28780						1% green plag with pheno to 3mm, 60-65% K-spar with laths to 4mm, negl mafics altered to chlorite and sericite. 183- core broken- possible fault zone	Strong to intense coarse sericite 183 - moderate to strong sericite.	1% disseminated pyrite 183-186: partial oxidation
190	10	100%	28781						Same as at 180'	Strong to intense sericite.	1% disseminated pyrite Minor chalcocite (??) vnlts. 198- trace chalcopyrite.

District rtzsite Hole Number - 2 COPY Page Numb 4

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
200	10	100%	28783						1% green plag with pheno to 3mm, to 65% K-spar with laths to 6mm,1-2% mafics altered to chlorite and sericite, to 30% quartz	Strong to intense sericite. 203-moderate sericite 206-moderate to strong sericite. plag. altered to green sericite.	1% disseminated pyrite trace chalcopyrite.
210	10	100%	28783						Negl. plag.,65-70% K-spar with laths to 7mm 1-2% mafics altered to chlorite and sericite, to 35 % quartz.	Strong sericite. 212-moderate sericite	1% disseminated pyrite very minor chalcocite (??) coating
220	10	100%	28784						Same as above	Moderate sericite	1% disseminated pyrite 219-1/8" pyrite-chalcocite (??) vnlt.
230	10	100%	28785						Negl. plag. 65% K-spar with laths to 7mm,<2% mafics, <35% quartz.	Moderate sericite 224-226½-intense coarse sericite 226½ moderate sericite.	1% disseminated pyrite 229- near vert. chalcocite(??) vnlt.
240	10	100%	28786						Negl. plag. to 65% K-spar with laths to 10mm 4-6% biotite(chlorite?) to 30% quartz.	Weak sericite	1% disseminated and vnlt. pyrite negl. chalcopyrite minor to weak disseminated magnatite below 238. 239- strong magnetite.
250	10	100%	28787						Negl. plag. 65-70%K-spar with laths to 5cm,3-5% mafics altered to chlorite and sericite to 25% quartz, core is cut by thin near vert. pyrite-chlorite vnlts.	Weak to moderate sericite and chlorite	1% sulfides 1:15 chalcopyrite: pyrite
									245-246-strong sericitized zone.		245: epidote
								Schist	250:2" unit of fine grain quartz-sericite-chlorite schist	Strong sericite	2% sulfides 1:10 chalcopyrite:pyrite <1% disseminated tourmaline.
									250:3" negl. plag. 65-70% K-spar with laths to 4mm. 3-5% mafics altered to chlorite and sericite, to 30% quartz	Weak sericite	
								Schist	255-very fine green quartz	Strong sericite	

District :tzsite Hole Number 2 COPY Page Numl 5

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
									sericite rock - not highly schistose		
									256- negl. plag.60-65% K-spar with laths to 3mm.1-2% mafics altered to chlorite	Moderate sericite	
270	10	100%	28789					Schist	262-263 very fine grain quartz sericite schist contact at 55° to core	Strong sericite	<1% pyrite
									263: negl. plag. 60-65% K-spar with laths to 10mm,(mostly 3-6mm), 3-6% mafics altered to chlorite and sericite to 30% quartz.	Weak sericite	1% pyrite Core is intermit. cut by hairline tourmaline vnlts. 267-2" sericitic zone with bornite and chalcopyrite
									269 very fine grain quartz sericite rock cut by hairline tourmaline vnlts at 35° to core.		
280	10	100%	28790					Fault zone(??)	270-274 Fault zone		
									274: negl. plag. 60% K-spar with laths to 3mm 2% mafics altered to chlorite and sericite to 40% quartz below 275 sericite is coarse.	Weak to moderate	1-2% sulfides 1:15 chalcopyrite:pyrite 276: 3/8" radiating tourmaline
290	10	100%	28791						285-286-increase in green plag altered to sericite	281-282moderate to strong sericite 283-284 same as above	2-3% sulfides 1:15 chalcopyrite:pyrite Minor disseminated tourmaline
300	10	100%	28792						291-293negl. plag 30-40% K-spar altered to sericite>50% quartz	Strong sericite	1% pyrite 291-pyrite-rutile or tourmaline cluster 292-296:3% pyrite negl. chalcopyrite
									293:5%plag. altered to sericite, 50% K-spar with laths to 7mm, 1%mafics altered to chlorite and sericite,40% quartz	Weak to moderate sericite 297-298 orthoclase flooding (?)	293-1/8:pyrite vnlt. 296-½" pyrite vnlt. 299: brown red hem along fractures and disseminated
310	10	100%	28793						5-8% plag. altered to green sericite, 50-60% K-spar with laths to	Weak to moderate coarse sericite.	2% pyrite

Hole Number Q - 2

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Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
320	10		28794				10mm. 1% biotite and chlorite, to 40% quartz fractures at 60° to core. Plag. <2% altered to green sericite 60-65% ortho with laths to 8mm. 2% mafics altered to chlorite1-3% disseminated tourmaline.	Weak sericite	1½% pyrite 316-pyrite-quartz-sericite-tourmaline vein
330	10		28795				<1% altered to green sericite.45% ortho 50% tourmaline vnlts cutting core at all ∠ and disseminated	Weak sericite	324- pyrite-quartz-sericite-tourmaline vein at 45° to core axis 330- ½" pyrite-tourmaline vein 1½% pyrite.
340	10		28796				1% altered to green sericite 45% ortho 50% tourmaline vnlts cutting core at all ∠ and disseminated. 331-334 increase in sericite.		1% pyrite disseminated
350	10		28797				336- very fine grain quarts sericite, minor feldspar altered to sericite.	Moderate sericite	<1% pyrite disseminated and vnlt.
							340.5- 1-2% plag.altered green sericite, 40-50% ortho with laths to 6mm 1% mafics to chlorite disseminated tourmaline coarse sericite, silica content varies from 30-50% with corresponding increases of feldspar A gradual increase in quartz to 50% below 350 and feldspar altered to sericite	Weak sericite	2-3% pyrite disseminated 349-3/8" pyrite-quartz vein 351- quartz-tourmaline vnlt disseminated tourmaline

District artzsiet Hole Number Q - 2 COPY Page Num. 7

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
360	10		28798						>50% quartz sericite minor to feldsparth laths to 3-4mm, 2-3% disseminated tourmaline	Medium to strong sericite. 365-368 Strong sericite	2-4% pyrite disseminated and vnlt. 365-368 - 5% pyrite disseminated
370	10		28799						>50% quartz, sericite minor feldspar laths.		2-3% pyrite disseminated and vnlt.
								Schist	373- 2" unit of quartz sericite pyrite schist.		
380	10	100%	28800						<50% quartz, sericite minor disseminated tourmaline, minor K-spar laths to 4mm, negl. mafics altered to chlorite and sericite.	Moderate sericite 386-391 strong sericite	2-3% disseminated and vnlt. pyrite
390	10	100%	30801						Same as above	Moderate sericite	2-4% disseminated pyrite
400	10	100%	30802						Same as above	Moderate sericite	1-3% disseminated pyrite 400'- 1/8" tourmaline vnlt at 70° to core. 405' - near vert. tourmaline-quartz vnlt.
410	10	100%	30803						Same as above	Moderate sericite	2-4% pyrite
420	10	100%	30804					Fault zone(?)	415-418 fault zone 418:<50% quartz sericite minor K-spar laths to 4mm, negl. mafics.	Moderate sericite	1% pyrite
430	10	100%	30805						420: 40% K-spar laths 3-5mm, < 50% quartz, 5% mafics altered to chlorite and sericite.	Weak sericite	2-4% disseminated pyrite negl. chalcopyrite
									421: < 50% quartz sericite minor mafics to chlorite and K-spar laths.	Moderate sericite	
440	10	100%	30806					Schist	432-433 very fine grain sericite quartz schist.	Strong sericite	Negl. sulfides
									433-434 > 60% quartz sericite, 10% mafics altered to chlorite.	Moderate sericite	1% pyrite
									434-> 50% quartz coarse sericite, minor disseminated tourmaline	Moderate to weak sericite.	3-5% sulfides 1:20 chalcopyrite:pyrite

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
							minor feldspar laths and mafics altered to chlorite and increasing below 435'.		
450	10		30807				441- feldspar laths (2-6mm) 30-40%, quartz to 50%, mafics to chlorite 5-8%, coarse sericite	Weak to moderate sericite	2-4% sulfides 1:25 chpy:py. 442 - 1/8" pyrite vnlt. 447- black pyrite quartz tourmaline(?) fine grain vnlt. 450- 7" quartz pyrite tourmaline vnlt.
460	10		30808				451-452- sub. quartz in a very fine grain quartz sericite schist.		2-5% pyrite
							452- quartz 50% sericite, negl. mafics to chlorite, minor feldspar laths to 3mm.	Weak sericite	2-4% pyrite 454- pyrite, quartz, tourmaline vnlt. at 55° to core.
							454-feldspar laths to 5mm 30-40%, quartz 50%, mafics to chlorite 5-8%	Weak sericite	2% pyrite 455- pyrite tourmaline quartz vnlt. 457⅓-½" pyrite quartz tourmaline vnlt. at 80° to core.
							459-fine grain quartz > 50% sericite, minor feldspar laths to (2mm)		460- near vert quartz vnlt.
470	10		30809				461-very fine grain quartz sericite schist	Strong sericite	<1% pyrite
							462-fine grain quartz 50% sericite, minor feldspar laths to 2mm, trace mafics to chlorite, minor disseminated tourmaline	Weak to medium sericite	2-4% pyrite 464-pyrite, quartz, tourmaline vnlt 466- 2" bull quartz vein with a ½-1" quartz sericite, chlorite schist on each side of quartz vein.
480	10		30810			Schist	471- very fine grain grey-green clay quartz sericite schist, schistosity not well developed at 50% to core.	Strong to intense sericite	3-6% disseminated pyrite cubes 473- 2" bull quartz vein
							473-color becomes almost black.		
							474-474½-quartz 40-50% minor feldspar laths to (2mm), minor hematite(?) stains, disseminated		2% pyrite

District Q. .zsite Hole Number Q - 2 COPY Page Numl 9

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
									and vnlt. tourmaline to		1-2% disseminated pyrite trace
									10%. 474½ same as 471		chpy. weak magnetite.
									and 473.		
									479- quartz 30-40%,K-spar	Strong sericite	4-6% pyrite disseminated
									40-50%, reded quartz,		
									hematite stain.		
490	10		30811						483- normal contact	Intense sericite	<1% pyrite cubes
									schist-very fine grain		Weak magnetite
									quartz, sericite		
									biotite or tourmaline.		
									484-quartz 30-40%,K-spar	Strong sericite	3-5% pyrite disseminated
									minor laths to 5mm.		484-tourmaline vnlt at 75° to core
									35-40% tourmaline		487- pyrite-tourmaline vnlt. at 70% to core
									disseminated vnlt.		
									485-very fine grain	Intense sericite	<1% pyrite disseminated
									quartz,sericite,biotite,		
									or tourmaline schist.		
								Fault zone	487- fault plane at		
									45° with 1½" quartz		
									pyrite, sericite		
									Quartz> 50% sericite	Strong sericite	4-6% pyrite disseminated
									pyrite rock show minor		497- 1/8" pyrite vnlt.
									schistosity, trace relict		
									K-spar, weakly dessimated		
									tourmaline.		
500	10		30812						Ditto, below 505' rock	Medium sericite	4-6% pyrite disseminated
									increases with K-spar		505- calcite on fault
									to 30% laths to 7mm		509-thin tourmaline vnlts at 70° to core
510	10		30813						Quartz>50%, sericite, K-spar		4-6% trace chpy.
									20-30%, minor disseminated		517- pyrite, quartz, tourmaline vein
									tourmaline minor mafics		519-½" pyrite-quartz vein
									to chlorite		
								Fault zone	514-515- fault zone		
									515- quartz>50% sericite	Medium strong sericite	3-5% sulfides 1:10 chpy:py
									relict K-Spar, minor		chpy. on fractures
									K-spar to 20%, minor		
									disseminated tourmaline		
									hematite stains.		
520	10		30814						Same as above	Same as above	4-6% pyrite

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Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
530	10		30815						530-quartz > 50% coarse sericite, disseminated tourmaline, minor feld-spar	Strong sericite	3-6% pyrite disseminated
								Schist	538½ very fine grain quartz sericite, minor tourmaline vnlt. Shist. below 539-vntl. very broken possibly fault zone	Intense sericite	1% pyrite weak magnetite
540	10		30816						546-quartz > 50%, sericite disseminated fine grain tourmaline, unit is weakly schistose also minor relict K-spar	Medium strong sericite	2-4% disseminate pyrite 546- ½ quartz pyrite vein
550	10		30817						Same as above	Medium strong sericite	2-3% disseminated pyrite
560	10								563-quartz sericite disseminated and vnlt. tourmaline schist	Strong sericite	4% pyrite
								Fault zone	565-567 fault zone Quartz sericite minor tourmaline	Medium sericite	<1% pyrite
570	10		30818						Same as above relict K-spar		
								Fault zone	562 - fault zone Quartz sericite	Medium sericite	
									563-Quartz sericite minor tourmaline vnlt. schist	Medium to strong sericite	<1% pyrite
								Fault zone	565-567 fault zone 567-Quartz coarse sericite dark color due to disseminated tourmaline and dark quartz.	Medium sericite	<1% pyrite
580	10	30819						Granite	572-Quartz, sericite trace K-spar laths to 2mm, minor disseminated tourmaline, dark quartz	Weak to medium sericite	<1% pyrite disseminated minor cubes 579- 1/8" pyrite vnlt.
590	10		30820					Granite	Very fine grain quartz sericite, K-spar laths to 2mm. (increase in these from above)	Weak sericite	<1% pyrite and disseminated minor cubes 585-Quartz, tourmaline, pyrite vnlt. at 75° to core 587- Quartz, tourmaline, pyrite vnlt. 589-Quartz, tourmaline pyrite vnlt.

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Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
600	10		30821						Same as above.	Weak sericite	<1% pyrite
									595- Bull quartz 2"then		
									8" broken interval.		
									596- Quartz, coarse	Weak to medium sericite	<1% pyrite
									sericite, dark fine grain		Neg. oxidation
									sericite, minor K-spar		600- Quartz, sericite, tourmaline,
									laths (2mm), minor		pyrite vnlt.
									calcite on fractures.		
610	10	100	30822					Schist	601-Quartz, sericite,	Medium sericite	<1% pyrite
									fine grain schist		Quartz, tourmaline, pyrite vnlts.
											along schistosity.
								Granite	601½-Fine grain quartz	Weak to medium sericite	1% pyrite chalcopyrite
									sericite, K-spar laths		Negl. oxidation
									to 2mm.		603-Quartz, pyrite, tourmaline, sericite
											vnlt., at 45° to core.
									604-605-fine grain quartz	Weak to medium sericite	2% pyrite along schistosity and quartz
									sericite schist		sericite, tourmaline, pyrite along schist.
									605- Very fine grain	Weak sericite	1% pyrite
									quartz sericite, K-spar laths		607- Chlorite on fractures
									to 2mm, weakly schistose,		
									minor tourmaline dark		
									color due to tourmaline		
									and dark quartz.		
620	10	100	30823						Very fine grain quartz		
									sericite, K-spar laths		
									to 4mm, minor mafics to		
									chlorite below 619	Weak sericite	1% sulfides disseminated and vnlt.
									above rock becomes more		Minor chpy. on fractures
									schistose		615- ½" pyrite vnlt.
630	10	100	30824					Schist	622-Very fine grain quartz	Medium sericite	2% sulfides disseminated and vnlt.
									sericite-chlorite-biotite		1:15 chpy:py Chpy. on fractures
									trace K-spar laths to		Minor pyrite cubes along schistosity
									to 3mm. schist.		625- Calcite along fractures
								Granite	628--629-Fine grain	Weak sericite	1% pyrite
									quartz sericite, K-spar		Minor oxidation
									laths to 3mm.		Quartz, pyrite, tourmaline vnlt.
									629-Very fine grain	Weak to medium sericite	1% pyrite, trace chpy. on fractures
									quartz sericite, minor		
									K-spar laths, rock		
									weakly schistose, dark		

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
									color due to dark quartz		
									and mafics to chlorite		
								Fault zone (?)	632-633 fault zone		
									633-Fine grain quartz		1% pyrite
									sericite, K-spar laths		Traces oxidation on some fractures
									to 4mm, minor mafics		640-Trace disseminated magnetite
									to chlorite		640.5- 1mm. pyrite chpy. quartz tour-
											maline vnlt.
640	10	100	30825						Same as above.		
									643-Fine grain quartz		1% pyrite minor chpy. on fracture
									sericite, K-spar laths		
									to 4mm, minor chlorite,		
									light color due to		
									decrease in dark quartz		
650	10	100%	30826					Schist	656:Very fine grain	Moderate sericite	<1% pyrite
									quartz sericite, biotite		
									chlorite schist with		
									relict K-spar laths and		
									minor calcite on fractures.		
									657: Fine grain quartz	Weak sericite	1-2% pyrite, trace chalcopyrite
									sericite, trace chlorite		on fractures
									K-spar laths to 3mm		Trace of oxidation
									dark quartz.		
660	10	100%	30827						665-Dark gray extremely	Moderate sericite	2-3% pyrite
									fine grain quartz,		
									sericite, mica(chlorite		
									and biotite) non		
									schistose, trace K-spar		
									laths to 2mm.		
670	10	100%	30828						275½-Fine grain quartz	Weak sericite	1-2% pyrite
									sericite, K-spar laths		677- ½" pyrite vnlt at 5° to core
									to 3mm, minor chlorite		Minor oxidation along some fractures
									biotite and tourmaline		
680	10	100%	30829						Same as above	Weak sericite	1% pyrite
690	10	100%	30830						Same as above	Weak sericite	1-2% pyrite
700	10	100%	30831						Same as above	Weak sericite	1% pyrite
											700'-Quartz, tourmaline, pyrite vnlt.
											at 70° to core.
710	10	100%	30832					Fault zone(?)	716-716½-Fault zone		702: Ditto
									716½-Fine grain quartz	Weak sericite	707: 1/16" pyrite chalcopyrite vnlt.

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Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
											at 30° to core.
									sericite, K-spar laths		715½: 1" pyrite vein
									to 4mm, minor chlorite		715: Trace chalcopyrite on fractures
									biotite, trace magnetite		
720	10	100%	30833						Same as above	Weak sericite	1% pyrite
730	10	100%	30834					Schist	Below 336 unit is		739: Thin pyrite chalcopyrite vnlt.
									becoming distinctly		1% pyrite with trace of chalcopyrite
									schistose due to increase		
									in micas and grades into		
									fine grain quartz		
									sericite, minor K-spar		
									laths, biotite, chlorite		
									schist - core highly		
									broken.		
740	10	100%	30835						747: Fine grain quartz	Weak sericite	1-2% disseminated pyrite
									sericite, K-spar laths		Trach chalcopyrite on fractures
									to 2mm, minor mafics		Kaoline on fracture
											Trace magnetite.
750	10	100%	30836						Same as above	Weak sericite	1-2% disseminated pyrite
760	10	100	30837					Schist	760: 6" broken interval	Moderate sericite	
									of fine grain quartz		
									sericite schist		
									760'6"-fine grain	Weak sericite	1-2% disseminated pyrite
									quartz sericite, K-spar		
									lath schist.		
770	10	100%	30838						Same as above		
780	10	100%	30839					Fault Zone (?)	775-776 fault zone		
									776- Fine grain quartz	Weak sericite	<1% disseminated pyrite
									sericite trace chlorite		
									biotite grading into		
									a very fine grain quartz		1-2% disseminated pyrite
								Schist	Sericite minor		779- Bull quartz vein at 40° to core
									disseminated tourmaline		
									schist at 40° to core.		

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-3

Page 2

Hole Depth	Inter -val	Cu PPM	Zn PPM	Pb PPM	Mo PPM	Ag	Au		Gross Value
120-125	5	Tr							30100
125-130	5	100							31201
140	10	25	27	18	7				31202
150	10	995	30	31	17				31203
160	10	54	21	30	7				31204
170	10	148	19	37	9				31205
180	10	452	28	48	6				31206
190	10	1200	60	83	7				31207
200	10	2800	68	27	43				31208
210	10	3100	42	20	43				31209
220	10	4900	35	13	14				31210
230	10	3600	37	47	9				31211
240	10	500	75	20	12				31212
250	10	2500	52	26	27				31213
260	10	2800	89	24	18				31214
270	10	3100	50	39	15				31215
280	10	[illegible]	56	44	11				31216
290	10	4100	43	47	33				31217
300	10	4300	42	42	26				31218
310	10	3700	55	61	29				31219
320	10	4200	36	52	69				31220
330	10	[illegible]	65	35	72				31221
340	10	[illegible]	76	26	114				31222
350	10	[illegible]	67	43	165				31223
360	10	3400							31224

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-3
Spudded
Completed
Total Depth 529'
Driller L. Moore
Logged By

County YUMA State Arizona
Claim Zales #46 Sec 31 T. 4N R. 20W
Elevation 1070
Hole Size NX
Core Size NX
Hole Angle
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au		Gross Value
0 - 30	30								NOT SAMPLED
30-35	5	.11							30082
40	5	.02							30083
45	5	.02							30084
50	5	.03							30085
55	5	.05							30086
60	5	.06							30087
65	5	.06							30088
70	5	.04							30089
75	5	.05							30090
80	5	.06							30091
85	5	.07							30092
90	5	.06							30093
95	5	.02							30094
100	5	.01							30095
105	5	.01							30096
110	5	.01							30097
115	5	Tr							30098
120	5	Tr							30099

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

KERR-McGEE CORPORATION
Assay Log

District Quantasite
Hole Number Q-3

Page 3

Hole Depth	Inter -val	Cu PPM	Zn	Pb	Mo	Ag	Au		Gross Value
360 - 370	10	1880							31225
380	10	1485							31226
390	10	615							31227
400	10	3200							31228
410	10	498							31229
420	10	460							31230
430	10	90							31231
440	10	38							31232
450	10	49							31233
460	10	23							31234
470	10	153							31235
480	10	162							31236
490	10	181							31237
500	10	46							31238
510	10	95							31239
520	10	985							31240
529	9	212							31241

COPY

KERR-McGEE CORPORATION

District Quartzsite
Hole No. Q - 3
Spudded
Completed
Total Depth 529'
Driller L. Moore
Logged By

County Yuma State Arizona
Claim Zales #46 Sec. 31 T. 4N R. 20W
Elevation 1070'
Hole Size NX
Core Size NX
Hole Angle
Collar Coords.

0-30 Alluvium Cemented boulders of mixed rock from outside altered area.

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu %	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
30-55	72		300 82	.11				Quart-monzonite	Intensaly fractured;	Quartz-sericite-pyrite	Oxidized: Few thin sones perserved
55-75	20		300 83-84	.02					egi-granular quartz-	numerous thin darker gray	fresh pyrite; scattered brochantite
75-95	20		300 85-86	.04					K-feld with ±5%	Quartz-tourmaline vnlts;	along fractures limonite after
95-115	20		300 87-88	.06					plagioclase; (albite)	kaolin and sericite on	chalcopyrite; Very minor covellite;
115-135	20		300 89-90	.07					no ferro mags; grain	fractures; serocite on	minor chalcacite coating pyrite grains;
135-155	20		300 91-92	.07					size approx. 1-3 mm.	fractures	sulfides disseminated.
155-175	20		300 93-94	.07					(Quartz-K-feld)		
									Plagioclase ± 5mm.		
									Possible fault zone		
									42' - 46'		
102	10		~~300 95-96~~						"	"	Partially oxidized
95-102	7		300 95-96	.01							
112	74								"	"	Unoxidized; total sulfides ±4% py:cpy
102-112			300 97-98	.01							ratio. ±20:1; Disseminated sulfides;
125			300 99-100	Trace							fine grained. Partial oxidation
135			31201-02	Trace	7	18	27				160-180 feet.
140-145			31203	.01	17	31	30				
145-155			31204	.01	7	5	21				Calcite veinlet at 138'
155-165			31205	.005	8	11	18				168'-1" gouge zone
165-175			31206	.005	6	43	23				
179					~~7~~	~~6~~	~~20~~		Same	Same	Same
180-190			31207	.12	7	53	66	Quartz-monzonite	Introduction brownish		Slight increase cpy assco. with
									biotite		introduction biotite
186								Sericite Schist	Mineralogically	Quartz-sericite-pyrite	Fine grain pliss. py. and larger
190-200			31208	.28	43	27	65		similar to granite		disseminated 3mm. cubes pyrite. No cpy.
200-210			31209	.31	43	20	72		material described		

District [illegible]zsite Hole Number 0-3 COPY Page Num. 2

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu%	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									Rhyolite dike (?) Normal contact relationships.		
186.5								Quartz-monzonite	Intensely fractured-eqi-granular quartz-K-feld with 5% (albite) plagioclase, little or no biotite.	Quartz-sericite-pyrite	Increase in cpy. 1:2 py:cpy ratio ±2% total sulfides.
191			See page					Sericite shist	Same as 186	"	Same as 186
198								Quartz-monzonite	Similar to unit described 30-186 with development of shistose texture	"	Unozidized cpy. to py. 1:1 total sulfides ±2%
199.5								Probable fault zone			
202-210	10		31209	.31%	34	20	42	Quartz-monzonite	Intensely fractured granular quartz-K-feld with 10% plagioclase albite. Minor biotite scattered through interval. Assumes crude schistose texture in places below 250'. Few thin calcite vnlts.	Quartz-sericite-pyrite	Unoxidized cpy to py ratio 2:1 Total sulfides ±2%
210-220	10		31210	.49	14	13	35				
220-230	10		31211	.36	9	47	37				
230-240	10		31212	.49%	12	20	75				
240-250	20		31213+14	.27%	22	25	20				
250-260	10		31215	.31%	15	37	20				
260-270	10		31216	[illegible]	71	44	56				
270-300	20		31217+18	.42%	25	45	42				
300-320	20		31219-20	.40%	47	56	45				
320-330	10		31221	[illegible]	72	35	65				
~~230-240~~	~~10~~		~~31211~~	~~.36~~	~~9~~	~~47~~	~~37~~	Quartz-monzonite	Quartz-K-feld. No albitization noted. Increase in poorly developed biotite Minor calcite filling granular intersities fractured. Grain size ±2mm. scattered quartz vnlts.	Quartz-pyrite-sericite	Unoxidized ±2% total sulfides very fine grained. Py:cpy ratio approx 2:1 Cpy. along few fractures 80° calcite and quartz vnlt.with py. and cpy at 326' Massive cpy at 329 filling fracture at 60° to vert.
230-340	10		31222	[illegible]	144	26	76				
~~230-240~~			~~31212~~	~~.50%~~	~~12~~	~~20~~	~~75~~				

District Quartzsite Hole Number 0 - 3 Page Numt 3

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu %	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
344								Shear zone	Intensively fractured	Quartz-sericite-pyrite	Unoxidized pyrite and minordisseminated
344-358	10		31223	[illegible]	165	43	67		serpentized shear zone		cpy in chudely schistoze rocks
358-366	10		31224	.34%					slip planes. Crudely		362-373 oxidation on serpentized
366-376	10		31225	.19%					schistoze		slip planes.
376-386	10		31226	.15%							
386-396	10		31227	.16%				Biotite schist	Quartz eyes:calcite in	Quartz-sericite-pyrite	Unoxidized. Minor cpy ±1% total sulfides.
396-406	10		31228	.32%					shist planes		1:2 cpy to py ratio.
406-426	20		31229-30	.05%							
425					Cu Values			Shear zone	Intensively fractured		Minor oxidation of serpentized slip
426-436	10		31231	30	in PPM				fault gouge 443-445		planes 453-455.
436-446	10		31232	38					serpentized slip planes		
446-456	10		31233	49					crudely schistose with		
									blocks of granitic		
									textured rock noted in		
									upper portion hole.		
									Fault gouge 462-464		
456-466	10		31234	23					472-474		
466-476	10		31235	153					Slip planes 60-70°		
476-486	10		31236	162							
481								Biotite schist	Dark gray quartz-K-feld	Quartz-sericite-pyrite	Unoxidized pyrite along fractured
486-496	10		31237	121					±5% albite biotite		Minor pyrite in shist planes.
496-506	10		31238	46							Little or no calcopyrite noted.
506-516	10		31239	25							
513								Probable fault zone			
516-526	10		31240	955							
525 -	TD(529)							Shist	Quartz eyes. limonite	Minor epidote-clay	Partially oxidized on fractures
526-528	2		31241	212					after probable specular	alteration	Minor pyrite <1% disseminated on shist
									hematite		planes and on fractures

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-4
Spudded 3-14-75
Completed 3-31-75
Total Depth 514'
Driller L. Moore
Logged By R. Leedy

County Yuma State Arizona
Claim Zulos #44 Sec 31 T. 4N R. 20W.
Elevation 1110'
Hole Size NX
Core Size NX.
Hole Angle -90° S50°W.
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu ppm	%Zn ppm	%Pb ppm	% Mo	oz.Ag	oz.Au		Gross Value
0 - 26	26	60	66	23					
- 40	14	128	55	24					
- 50	10	86	156	63					
- 60	10	90	108	66					
- 70	10	108	86	59					
- 80	10	105	84	46					
- 90	10	180	30	27					
- 100	10	134	98	58					
110	10	85	52	46					
- 120	10	173	84	30					
130	10	314	51	74					
140	10	.06%	86	96					
150	10	.05%	76	98					
160	10	.08%	102	88					
170	10	.10%	62	144					
180	10	[redacted]	136	96					
190	10	222	44	14					
200	10	342	28	18					
210	10	310	17	10					
220	10	.13%	24	42					
230	10	.12%	22	55					
240	10	.06%	23	24					
250	10	.19%	18	14					
260	10	.20%	34	10					
270	10	200	10	12					
280	10	104	34	16					
290	10	41	20	18					
300	10	49	21	5					
310	10	306	36	60					
320	10	74	48	18					
330	10	85	49	20					
340	10	92	57	30					
350	10	41	45	16		0.08	.002		
360	10	43	45	18					
370	10	35	64	20					
380	10	45	34	8					
390	10	153	54	8					

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

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KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-4

Page 2

GROSS VALUE IN SULFIDE MINERALS*

Hole Depth	Inter -val	Cu ppm	Zn ppm	Pb ppm	Mo	Ag	Ag		Gross Value
390 - 400	10	94	54	18		0.02	.001		
410	10	176	68	26					
420	10	60	59	16					
430	10	54	62	10					
440	10	49	51	10					
450	10	36	46	16		0.13	.001		
460	10	43	52	24					
470	10	22	49	14					
480	10	37	50	12					
490	10	33	48	16					
500	10	22	50	12					
510	10	35	61	20					
514	10	47	62	36		0.05	.003		

*Gross value calculated from copper ¢/pound; lead ¢/pound; Zinc ¢/pound; molybdenum $ /pound; silver $ /ounce; and gold $ /ounce.

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-4
Spudded
Completed
Total Depth 514
Driller L. Moore
Logged By R Ahern

County Yuma State Ariz
Claim Zalec #44 Sec 31 T. 4N R. 20W
Elevation 1110'
Hole Size NX
Core Size NX
Hole Angle
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	ppm U_3O_8	Gross Value eU	eTh	
0 - 10	10										
20	10										
30	10										
40	10										
50	10							48			33903
60	10							24			33904
70	10							22			33905
80	10							32			33906
90	10							102	46	28	33907
100	10							22	8	37	33908
110	10							19			33909
120	10							10	11	32	33910
130	10							12			33911
140	10							22			33912
150	10							19			33913
160	10							29			33914
170	10							37	64	34	33915
180	10							80	~~64~~	~~34~~	33916
190	10							34			33917

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number RH V-12
Spudded 7/27/72
Completed 7/27/72
Total Depth 95'
Driller Atkinson Drilling Co.
Logged By R. Ahern

County Yuma State Arizona
Claim ZALES Sec 31 T. 4 N. R. 20 W.
Elevation 1100'
Hole Size 4 3/4"
Core Size
Hole Angle Vertical
Collar Coords. 285' S61°E of NW Cor. ZALES #14

VALIDATION DRILL HOLE FOR CLAIMS ZALES #12, 14, 16, 18, 20, 23

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample No.	
0-35'	35'									Alluvium
35-45'	10'			44	2				A26994	Schist, Weak Phyllic Alteration Quartz, Sericite, Pyrite
45-55'	10'			50	6				A26993	
55-65'	10'			18	9				A26992	
65-75'	10'			10	16				A26991	
75-85'	10'			8	8				A26990	
85-95'	10'	24		5	2				A26989	
NOTE:	5 to 10 gal/min. water from bottom 20 feet.									

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

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-4

Page 3

Hole Depth	Inter-val	Cu	Zn	Pb	Mo	Ag oz/t	Au oz/t	PPM U_3O_8	Gross Value	
400 - 410	10									33939
420	10									33940
430	10					0.13	.001	14		33941
440	10									33942
450	10									33943
460	10									33944
470	10									33945
480	10									33946
490	10					0.05	.003	11		33947
500	10									33948
510	10									33949
514	4									33950

KERR-McGEE CORPORATION

Assay Log

District Quartzsite

Hole Number Q-5

Page 2

Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag oz/T	Au oz/T	ppm U_3O_8	Gross Value	
210	10									33969
220	10									33970
230	10									33971
240	10					0.09	.002	11		33972
250	10									33973
260	10									33974
267	7									33975

COPY

KERR-McGEE CORPORATION

COPY

District Quartzite
Hole No. Q-5
Spudded 04/02/75
Completed 04/16/75
Total Depth 269'
Driller Joy Manufacturing
Logged By W. P. Leedy

County Yuma State Arizona
Claim Sec. 31 T. 4 N. R. 20 W.
Elevation
Hole Size
Core Size NX
Hole Angle
Collar Coords.

Depth	Int.	Core Rcvy %	Samp. No.	Assays ppm Cu	Assays ppm Mo		Rock Type	Rock Description	Alteration	Mineralization
25	25							Overburden		
30	5	80	33951	420	12		Quartz-Monz.	Oxidized=meta-stable ortho- (30-40%) over short intervals. 1-3% dissem. & un.tourmaline-2' of rubble-clay on fractures		
40	10	95	33952	228	14			Oxidized-pred. lens of pyrite - hem halos. short intervals of stable ortho. 1-2% dissem. tour. White clay on fractures 2" silic at 38'.		
50	10	95	33953	146	6			As above-jar a/pyrite 40-44-Rubble 42-46-Increase in clay on fracture.		
60	10	80	33954	160	12			2" qtz sericite w/15% voids of hem a/pyrite. Remainer of interval as above-except highly fracture-Rubble 52-60'		

District rtzite COPY Hole Number 5 COPY Page Numb 2

Depth	Int.	% Core Recvy	Samp. No.	Assays Cu	Assays Mo	Rock Type	Rock Description	Alteration	Mineralization
70	10	80	33955	134	6	Quartz-Monz.	Rubble to 66'. 66-67' hem. relics a/py. (10-15%)Rock has 40% musco-vite/sericite w/stable ortho-fresh enhedral py less frac.(10-15/ft)py-& qtz. tour.on frac. Less clay on open frac.		
80	10	100	33956	98	6		Strong qtz-ser-py-alt. to 75'-QM is fresher - stable ortho(30%)-chlor-ite(5-10%)1-2% dissem py most in mafic sites-Qtz tour on frac. Occassional Mu dendrites on frac.		
90	10	100	33957	88	6		Highly frac. w/increase in clay 82-87',totally oxid. w/hem & goe a/py some jarosite-less oxid below 88', goe&nontronite on frac. Py dissem in mafic sites-now chloritized		
100	10	100	33958	96	4		Incr.in sericite making rock wkly schistose to 95', Below 95' incr.in chlor-(10%)less dissem py-stable ortho(30%)		
110	10	100	33959	98	8		Wkly py-chlor-QM contin to 105',105-109' qtz.py vnlts. up to 1/4"-Oxid hem a/py.(10% py-10% ser in vns)Below 109' incr.qtz-ser-clay - dissem tour.		

District Quartzite COPY Hole Number Q-5 COPY Page Num 3

Depth	Int.	% Core Rcvy	Samp. No.	Assays ppm Cu	Assays ppm Mo			Rock Type	Rock Description	Alteration	Mineralization
120	10	100	33960	112	8			Quartz-Monz.	Continues qtz-ser-clay to 116',Heavy py frac & vns 112-115',w/hem a/py Frac 116' inc chlor (5-10%) dissem py stable orthoclase (30%)		
130	10	100	33961	100	7				Chloritized(5-10%)QM continues to 125',less than 1%py.wk goe on frac.from 125'inc.frac clay-inc goe a/py.		
140	10	80	33962	100	12				Rubble-interval highly frac w/hv goe a/py Heavy clay.		
150	10	90	33963	58	10				Rock highly frac but w/fresh py-qtz-ser-chlor py w/qtz py tour units.		
160	10	90	33964	62	8				Continues as above w/ more intense shearing-inc. in sericite & clay from 154' less chlor.		
170	10	100	33965	66	11				Continues as above-frac & sheared to 166', from 166' rock more massive w/intrusive character-but remain qtz-ser-py-assemblage-2/2-3% chlor locally heavy py on frac-occassional cp grains-incr. in tourmaline.		
180	10	100	33966	70	44				As above-less chlor-incr. in tour.		

District__ uartzite COPY Hole Number__ -5 COPY Page Nur 4

Depth	Int.	% Core Rcvy	Samp. No.	Assays Cu	Mo	Rock Type	Rock Description	Alteration	Mineralization
190	10	95	33967	74	16	Quartz-Monz. alteration	As above-tour halos on py vns-mylonized sulfides 184,186-187'-inc.in clay.		
200	10	90	33968	70	11		Same as above-rubble 191-193', mylonized 198' less py on vns-more dissem. white clay on frac.		
210	10	100	33969	82	12		Rock continue w/intrusive character but altered to qtz-ser-py-tour.		
230	10	100	33970	700	14		Same as above w/strong-somewhat vuggy qtz-tour py wwl-wle'. Rock incr. sheared-becoming mylonized below 217'.		
230	10	90	33971	190	12		As above-mylonized & strongly sheared to 229' Euhedral py cubes(to 5mm) in ctz-ser-tour-sch @ 225'. Intrusive character below 228' alt.to qtz-ser-tour-py w/1-2% chlor.		
240	10	100	33972	200	13		As above from 228-235' Rubble 235-237'. From 237' dark chlor-"tectonic" schist w/dissem pyrite 2-3%.		
250	10	100	33973	252	22		Tectonic fabric through out. Highly chloritic to 243'w/dissem & vn py-wk.hem on frac. From 243'-qtz-ser-chlor-py-schist. Locally 10% dissem. pyrite.		

District Quartzite COPY Hole Number 2-5 COPY Page Num 5

Depth	Int.	% Core Recvy	Samp. No.	Assays Cu	Assays Mo			Rock Type	Rock Description	Alteration	Mineralization
260	10	80	33974	184	12			Schist	Entire interval strongly mylonized to chlorite-sericite and mylonized pyrite.		
269 T.D.	9	100	33975	200	15				As above-Sericite below 266' - 8" white qtz. vn @ 261', & 4" white qtz-chlor @ 265'.		
TOTAL DEPTH											

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-6
Spudded 4-26-75
Completed 5-30-75
Total Depth 1140'
Driller L. Moore
Logged by B. Leedy

County Yuma State Arizona
Claim Zalus #33 Sec. 31 T. 4N R. 20W.
Elevation 1075
Hole Size NX
Hole Angle ~~45~~ -45° S 50°W.
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu ppm	%Zn ppm	%Pb ppm	%Mo ppm	oz. Ag.	oz. Au		Gross Value
0-20	20	180	54	24	10				
30	10	168	18	16	14				
40	10	164	24	128	14				
50	10	188	14	25	8	0.04	—		
60	10	138	18	16	6				
70	10	140	14	14	8				
80	10	640	32	32	40				
90	10	284	26	18	10				
100	10	176	24	16	6	0.04	.001		
110	10	132	34	17	5				
120	10	434	56	15	6				
130	10	442	14	18	6				
140	10	166	46	18	6				
150	10	540	58	14	4	0.04	.002		
160	10	192	24	20	10				
170	10	182	50	20	8				
180	10	104	24	18	8				
190	10	106	26	22	8				
200	10	146	42	22	5	0.05	.001		
210	10	128	36	19	7				
220	10	238	34	24	5				
230	10	150	28	26	3				
240	10	162	36	22	4				
250	10	112	36	36	4	0.06	—		
260	10	136	20	16	8				
270	10	290	54	74	8				
280	10	328	32	30	9				
290	10	260	24	20	12				
300	10	412	16	22	22	0.11	—		
310	10	120	16	20	24				
320	10	140	28	22	10				
330	10	128	32	16	10				
340	10	166	20	20	10				
350	10	148	20	18	8	0.10	—		
360	10	92	34	16	8				
370	10	116	42	12	6				
380	10	112	36	12	8				
390	10	86	30	12	8				
400	10	140	24	16	20	0.04	.001		

*Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum per pound; silver per ounce; gold per ounce.

KERR-McGEE CORPORATION
Assay Log

District Quartzsite Page 2
Hole Number Q-4

GROSS VALUE IN SULFIDE MINERALS*

Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag	Ag		Gross Value
400 - 410	10	94	54	16	8				
420	10	148	48	32	9				
430	10	130	24	28	6				
440	10	146	34	24	4				
450	10	126	28	20	6				
460	10	150	20	19	6				
470	10	142	38	34	6				
480	10	112	34	54	6				
490	10	115	40	58	8				
500	10	124	24	23	10	0.07	.003		
510	10	104	48	16	6				
520	10	258	82	26	7				
530	10	110	54	30	4				
540	10	204	28	17	12				
550	10	120	10	16	12				
560	10	184	10	16	16				
570	10	194	14	16	10				
580	10	320	10	14	6	0.08	.001		
590	10	1980	10	14	80				
600	10	428	12	22	12				
610	10	1800	8	13	10				
620	10	3800	22	23	4				
630	10	1800	14	27	14	0.17	.002		
640	10	304	10	17	6				
650	10	160	9	20	12				
660	10	98	9	6	8				
670	10	104	6	8	14				
680	10	126	8	14	8				
690	10	144	10	8	8				
700	10	120	6	4	14				
710	10	82	17	12	14				
720	10	404	26	18	34				
730	10	96	20	14	4				
740	10	86	18	12	4				
750	10	86	20	14	4				
760	10	88	12	8	4				
770	10	154			3				
780	10	298			6				
790	10	252			4				
800	10	100			2				
810	10	~~100~~			~~4~~				
820	10	122			4				
830	10	92			-1				
840	10	78			2				

*Gross value calculated from copper ¢/pound; lead ¢/pound; Zinc ¢/pound; molybdenum $ /pound; silver $ /ounce; and gold $ /ounce.

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-6

Page 3

GROSS VALUE IN SULFIDE MINERALS*

Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag	Ag		Gross Value	
840-850	10	62			5					
860	10	84			4					
870	10	114			2					
880	10	102			12					
890	10	98			10					
900-910	10	76			-1					
920	10	86			-1					
930-940	10	96			-1					
950	10	104			-1					
960	10	88			-1					
970-980	10	88			-1					
990-1000	10	88			-1					
1010	10	1400			12					
1020	10	112			18					
1030	10	32			10					
1040	10	64			10					
1050	10	38			8					
1060	10	30			10					
1070	10	44			12					
1080	10	34			14					
1090	10	78			10					
1100	10	20			12					
1110	10	28			13					
1120	10	62			14					
1130	10	34			20					
1136	6	38			24					

*Gross value calculated from copper ¢/pound; lead ¢/pound; Zinc ¢/pound; molybdenum $ /pound; silver $ /ounce; and gold $ /ounce.

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-6
Spudded
Completed
Total Depth
Driller L. Moore
Logged By R. Ahern

County Yuma State Arizona
Claim Pyles #33 Sec 31 T. 4N R. 20W
Elevation 1075'
Hole Size
Core Size
Hole Angle -45° S.50°W
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	PPM U3O8	Gross Value	
										33976
										33977
						0.04	Tr	21		33978
50										33979
60	10									33980
70	10									33981
80	10					0.04	.001	23		33982
90	10									33983
100	10									33984
110	10									33985
120	10									33986
130	10					0.06	.002	26		33987
140	10									33988
150	10									33989
160	10									33990
170	10									33991
180	10					0.05	.001	46		33992
190	10									33993
200	10									33994

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

KERR-McGEE CORPORATION

Assay Log

District Quartzsite
Hole Number Q-6
Spudded
Completed
Total Depth
Driller L. Moore
Logged By R. Ahern

County Yuma State Arizona
Claim Pilot #33 Sec 31 T. 4N R. 20W
Elevation 1075'
Hole Size
Core Size
Hole Angle -45° S.50°W
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	%Cu	%Zn	%Pb	% Mo	oz.Ag	oz.Au	PPM U3O8	Gross Value	
										33976
										33977
						0.04	Tr	21		33978
50										33979
60	10									33980
70	10									33981
80	10					0.04	.001	23		33982
90	10									33983
100	10									33984
110	10									33985
120	10									33986
130	10					0.06	.002	26		33987
140	10									33988
150	10									33989
160	10									33990
170	10									33991
180	10					0.05	.001	46		33992
190	10									33993
200	10									33994

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

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-6

Page 2

Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag OZ/T	Au OZ/T	PPM U_3O_8	Gross Value	
200 - 210	10									33995
220	10									33996
230	10					0.06	Tr	18		33997
240	10									33998
250	10									33999
260	10									34000
270	10									34601
280	10					0.11	Tr	19		34602
290	10									34603
300	10									34604
310	10									34605
320	10									34606
~~330~~										
350	10					0.10	Tr	17		34607
340	10									34608
350	10									34609
360	10									34610
370	10									34611
380	10					0.04	.001	16		34612
390	10									34613
400	10									34614

KERR-McGEE CORPORATION
Assay Log

District Quartzite
Hole Number Q-6

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Hole Depth	Inter -val	Cu	Zn	Pb	Mo	Ag oz/T	Au oz/T	PPM U3O8	Gross Value	
400-410	10									34615
420	10									34616
430	10									34617
440	10									34618
450	10									34619
						0.07	.003	23		
460	10									34620
470	10									34621
480	10									34622
490	10									34623
500	10									34624
510	10									34625
520	10									34626
530	10									34627
540	10									34628
						0.08	.001	12		
550	10									34629
560	10									34630
570	10									34631
580	10									34632
590	10									34633
600	10									34634
610	10					0.17	.001	17		34635
620	10									34636
630	10									34637

KERR-McGEE CORPORATION
Assay Log

District Quantzsite
Hole Number Q-6

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Hole Depth	Inter -val	Cu PPM	Zn	Pb	Mo PPM	Ag	Au		Gross Value	
										34638
										34639
										34640
										34641
										34642
										34643
										34644
										34645
										34646
										34647
										34648
										34649
										34650
		156			3					34651
		298			6					34652
		252			6					34653
		100			2					34654
		122			?				?	34655
		122			4					34656
		92			<1					34657
		78			2					34658
		62			5					34659
		184			4					34660
		[illegible]								34661
										34662

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q6

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Hole Depth	Inter -val	Cu PPM	Zn	Pb	Mo PPM	Ag	Au		Gross Value	
		114			2					34661
		102			12					34662
		98			10					34663
		?			?				?	34664
		76			<1					34665
		86			<1					34666
		?			?				?	34667
		96			<1					34668
		104			<1					34669
		88			<1					34670
		?			?				?	34671
		88			<1					34672
		?			?				?	34673
		88			<1					34674
1000 - 1010	10	1400			12					34675
1020	10	112			18					34676
1030	10	32			10					34677
1040	10	64			10					34678
1050	10	38			8					34679
1060	10	30			10					34680
1070	10	44			12					34681
1080	10	36			14					34682
1090	10	78			10					34683
1100	10	20			12					34684
										34685

KERR-McGEE CORPORATION
Assay Log

District Quartzsite
Hole Number Q-6

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Hole Depth	Inter -val	Cu PPM	Zn	Pb	Mo PPM	Ag	Au		Gross Value
1100 - 1110	16	28			13				
1120	10	62			14				
1130	10	34			20				
1136	6	38			24				

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District Quartzsite
Hole No. Q - 6
Spudded
Completed
Total Depth 1142'
Driller Joy Mfg.
Logged By W. P. Leedy

County Yuma State Arizona
Claim Sec. 31 T. 4N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle
Collar Coords.

Depth	Int.	Core Rcvy	Samp. No.	Assays PPM Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
0-19	19		33976	110	10	24	54		Overburden		
19-30	11	100%	339787	168	14	16	18	Quartz Monzonite Alteration	Schistose quartz monzonite strongly silicified with heavy development of muscovite (sericite, hematite boxwork and relics on pyrite. (10-20% from 26'-29'). Rocks totally oxidized.		
30-40	10	100%	33978	168	14	125	26		As above with increase in clay. Rocks totally argillized 31', 38' and 39'. Chlorite clay rubble 32'-35'.		
40-50	10	100%	33979	188	8	25	14		As above, rocks more strongly silicified, clay remains on open fractures but less dessimination. Partially oxidized, some fresh pyrite (2-5% disseminated)		
50-60	10	100%	33980	138	6	16	18		As above, jarosite, hematite, and pyrite on fractures. Strong clay 48-51', 59-60'.		

District Quartzite COPY Hole Q - 6 Page 2 COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									Rocks partially oxidized		
									and pyrite grained,		
									corroded and embayed		
									occasional bornite		
									tarnish on pyrite.		
60-70	10	100%	33981	140	8	16	16		Rocks less silicified,		
									but strongly sericitic		
									63'-68'. Stable orthoclase		
									(10-20%) clay continues		
									on open fractures.		
									Weak disseminated		
									tourmaline (1-2%)		
70-80	10	100%	33982	640	40	32	22		As above to 75'. Shear		
									zone 75'-77' with rocks		
									mylonized. From 77'		
									rocks less fractured		
									denser with fresher		
									feldspar (stable ortho-		
									clase 20-30%) No hematite		
									weak goethite in		
									fracture. Decrease in		
									pyrite (1-2%) Very weak		
									copper oxide at 77'.		
80-90	10	95%	33983	284	10	18	26		Dense quartz monzonite,		
									with stable (grey)		
									feldspars. From 84'		
									increase in chlorite		
									(disseminated 1-2% and		
									on fractures). Weak		
									bornite tarnish and		
									disseminated pyrite.		
									Bornite with pyrite		
									(1:4) on fracture 89'		
90-100	10	100%	33984	176	6	16	24		Quartz monzonite with		
									increase in chlorite		

District Quartzite COPY Hole Q - 6 Page 3 COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									and weak epidote on		
									fractures. Weak (2-3%)		
									chlorite and very weak		
									(<1% disseminated cp		
									and cc. Copper sulfides		
									locally stronger on quartz		
									pyrite vein at 93'.		
									Quartz monzonite appears		
100-110	10	?	33985	132	5	17	14		fresh, with stable		
									feldspars (possibly some		
									relic orthoclase)		
									Disseminated chlorite in		
									what appears to be mafic		
									sites. Most sulfides with		
									chlorite.		
110-120	10	100%	33986	434	6	15	56		Quartz monzonite,quartz		
									sericite, pyrite, stable		
									orthoclase (30%) weak		
									clouded chlorite mafics-		
									2% disseminated tourmaline		
									in mafic sites. Quartz,		
									sericite micro veinlets		
									continue 40-50'. Irregu-		
									lar quartz, pyrite,		
									tourmaline veins (¼-2")		
									at 113'-116'-117'and		
									118'. Weak cc tarnish		
									on pyrite. Partially		
									oxidized from 114' with		
									clay and sericite on		
									open fractures.		
120-130	10	100%	33987	442	6	18	14		Quartz monzonite highly		
									fractured and sheared/		
									oxidized with goethite		
									and jarosite and pyrite.		
									Heavy clay on fracture		
									and throughout rock		
									Occasional specks of		

District Quartzite COPY Hole Q-6 Page 4 COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									Cu Ox in fractures and very weak ce tarnish on few remaining pyrite xlc.		
130-140	10	95%	33988	166	6	18	46		Broken and oxidized as above to 135'. Then less fractured, non-oxidized quartz monzonite as above, with stable orthoclase, weak chlorite and quartz, sericite veinlets with bleached haols.		
140-150	10	100%	33989	540	4	14	58		As above, hairlike quartz, sericite veinlets continue. Rock increase silifiel and increase in disseminated tourmaline from 146'. Heavy quartz, sericite, pyrite (10%) 149'-150'.		
150-160	10	100%	33990	122	10	20	24		Very heavy pyrite (20-30%) with quartz, sericite 150-151'. Then as above, quartz monzonite with stable orthoclase, weak chlorite 1-2% disseminated pyrite, thin quartz, seri-cite veinlets (10-20')		
160-170	10	100%	33991	182	8	20	50		As above to 162'. 162'-166' Strongly sericitic 40-50% schist with quartz, m. (1-2%) Trace Cu Ox at 164'. From 166' quartz monzonite as above but increased		

District Quartzite COPY Hole 0 - 6 Page 5 COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									silification-less chlorite		
									increase in clouded		
									feldspars, Increase		
									fractures and sheared		
									169'-170' with increase		
									in clay.		
170-180	10	100%	33992	104	8	18	24		Strongly fractured and		
									sheared mylonized, increase		
									in tourmaline on veinlets.		
180-190	10	100%	33993	106	8	22	26		Continues sheared, increase		
									in clay, slight decrease		
									in pyrite, fragments of		
									quartz monzonite as above.		
190-200	10	90%	33994	146	5	22	42		Continues sheared,		
									mylonized. Fragments of		
									quartz monzonite-quartz		
									sericite,pyrite. Oxidized		
									with much rubble from		
									196' increase in clay.		
200-210	10	95%	33995	128	7	19	36		Sheared, rocks clay		
									(sericite and goethite		
									and pyrite) Shear falls		
									40°-60° from axis of core.		
210-220	10	90%	33996	138	5	24	34		Continues sheared as above.		
220-230	10	90%	33997	150	3	26	25		Sheared almost total clay		
									and sericite with quartz,		
									tourmaline, goethite and		
									pyrite.		
230-240	10	70%	33998	162	4	22	36		As above, some larger		
									coherent fragments of		
									quartz monzonite-clay		
									sericite. Mostly rubble.		

D. ict Quartzite COPY Hole Q - 6 Page 6 COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
240-250	10	90%	33999	122	4	30	36		Less sheared but still highly fractured. Fragments of quartz monzonite with stable orthoclase, weak chlorite (3-5%) Oxid-sulfides. Weak clay sericite on fractures.		
250-260	10	95%	34000	136	8	16	20		Highly sheared, mylonized again, with heavy clay sericite.		
260-270	10	80%	34001	380	8	24	54		Less sheared but continues highly fractured. Pebbly rubble in quartz-clay matrix. 260'-262'. Fragments include quartz and silicified quartz monzonite 263'-267' quartz, chlorite, wericite, feldspar (argillized) schist. From 267' silicified and argillized quartz monzonite.		
270-280	10	100%	34002	328	9	30	32	Schist and Quartz Monzonite	As above to 273'. Then quartz, chlorite, sericite schist, with feldspar relics. From 276' increased silicified with less chlorite. Interval partially oxidized.		
280-290	10	95%	34003	260	12	20	24	Schist	Increase in fractures and shearing. Rocks have quartz monzonite texture to 284'. Rubble 284-285' From 285' rocks become sericitic (40-50%) schist with quartz porphroblacts		

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									and disseminated pyrite		
									(1-3%) Totally oxidized.		
290-300	10	95%	34604	412	22	22	16	Schist	Sericitic schist continues		
									Increase in pyrite (oxid)		
									and tourmaline veinlets.		
									Considerably broken with		
									much rubble. Highly		
									silicified 299'		
300-310	10	95%	34605	120	24	20	16		Strongly silicified rocks		
									continue to 303' then rocks		
									almost wholly sericite-		
									pyrite. Increase in pyrite		
									(5-7%) Locally 20-30%		
									Rocks strongly sheared		
									with mylonized sulfides		
									below 307'. Total quartz		
									tourmaline, pyrite 309'-310'		
310-320	10	100%	34606	140	10	22	28		Rocks become less schistose		
									but continue as strong		
									quartz, sericite, pyrite		
									altered with tourmaline		
									disseminated and fractured.		
									Weak sericite halos on		
									quartz, tourmaline		
									pyrite veinlets.		
320-330	10	100%	34607	128	10	16	32		As above, less fractured		
									and increase silicified		
									from 328'.		
330-340	10	100%	34608	166	10	20	20	Quartz	Continue strong quartz,		
								Sericite	sericite pyrite altered		
								Pyrite	with tourmaline disseminated		
									and as veinlets. Disseminated		
									zone outward from veinlets.		
									Sheared 336'-337' original		

D ict Quartzite COPY Hole 0 - 6 Page 8 COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									rock was probably quartz		
									monzonite		
340-350	10	70%	34607	148	8	18	20		As above. 345'-346'		
									mylonized zone fig. sericite		
									schist with euhedral		
									cubes of pyrite (1-2%)		
									Less tourmaline this		
									interval. (3' of core lost		
									340'-345')		
350-360	10	95%	34610	92	8	16	34	Quartz.Pyrite	Quartz, sericite, pyrite		
								Tourmaline	as above but rocks become		
								Calcite	increasingly sheared and		
									mylonized with thin $CaCO_3$		
									veinlets 357' Dark sericite		
									or chlorite 358' Fragmented		
									sericite schist as above		
									Follows incline of 55°		
360-370	10	100%	34611	116	6	12	42		Continues quartz sericite		
									pyrite Strongly schistose		
									(45°) 360'-363'. 364'-		
									366' granular, other		
									intervals (quartz, monzonite?)		
									weak chlorite (1-2%).		
									Decrease in tourmaline		
									(<1-2%)		
370-380	10	100%	34612	112	8	12	36		Quartz, sericite, pyrite		
									with increase in clay.		
									Dark green sericite on shears.		
									Increas in pyrite on fractures		
									Tourmaline 3-5%		
380-390	10	100%	34613	86	8	12	30		As above, clay somewhat heavier		
									on fractures. Less pyrite on		
									fractures.		

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
390-400	10	100%	34614	140	20	16	24		As above, increase in tourmaline fractures, some shearing and mylonization. Heavy pyrite (20-30%) over 2" intervals at 398' and 400'. Muscovite, quartz, tourmaline with pyrite at 400'.		
400-410	10	100%	34615	94	8	16	54		Quartz, sericite, pyrite as abovd. Irregular quartz orthoclase, chlorite margins, veins ½ to 2" at 400'-401'. Increase in pyrite, tourmaline on fractures Tourmaline veinlets with quartz, sericite halos at 410'. Chlorite disseminated and on shears.		
410-420	10	100%	34616	148	9	32	45		Rocks become fig. granular with quartz, orthoclase (untwinned feldspar) and weak chlorite with pyrite and tourmaline disseminated and on fractures. Tourmaline veinlets with quartz sericite halo at 412'. ¼" calcite vein at 416' Increase in quartz sericite, pyrite from 417'		
420-430	10		34617	130	6	28	24		Continues predominantly quartz, sericite, pyrite decrease in chlorite. Increase in silicification. Quartz, pyrite veins ½" at 425' and 430'.		

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
									Quartz, tourmaline, pyrite (4") at 429'.		
430-440	10	95%	346 17	146	4	35	34	Quartz Sericite Pyrite	Quartz, sericite, pyrite slight increase in chlorite from 435'. Increase in disseminated pyrite (2-3%) Decrease in tourmaline veinlets.		
440-450	10	90%	346 18	126	6	20	28		Quartz, sericite, pyrite more fractured and sheared. Dark sericite on shears. Tourmaline veinlets with quartz, sericite, pyrite halo 440' ½" quartz, pyrite, tourmaline vein at 448' Strongly silicified from 448' with disseminated pyrite (<1%) and tourmaline (1%) shears Incline 40°		
450-460	10	100%	346 20	150	6	14	20		Continues strong slicification with quartz veins 1/16" to 2" and tourmaline veinlets. Light green waxy clay on fracture at 457'. Decrease in pyrites.		
460-470	10	100%	346 21	142	6	34	38		Rocks continue strongly silicified with thin quartz calcite, pyrite, veinlets. Decrease in tourmaline. Dark sericite in shears.		

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
470-480	10	100%	34622	112	4	58	36	Schist	Rocks strongly sheared and mylonized, from 472' with increase in sericite, clay, tourmaline, veinlets. Shear follows 40°-20° from axis of core		
480-490	10	100%	34623	115	5	58	40		Rocks continue strongly sheared 3" irregular quartz, orthoclase vein at 485'. Quartz, sericite, pyrite schist 485'-487' chaotic shearing below 487'.		
490-500	10	95%	34624	124	10	23	24		Sheared as above, somewhat more silicified. Less pyrite. Calcite on fractures and irregular pods.		
500-510	10	100%	34625	104	6	16	48		Continues sheared, considerable rubble to 505' from 505'-509' rocks fig. granular quartz, or 2-5% chlorite, 3% pyrite, occasional flakes of cp. Increase silic from 509'.		
510-520	10	90%	34626	258	7	26	82		Rocks strongly sheared again with increase in sericite and chlorite.		
520-530	10	100%	34627	110	4	36	54		As above, occasional relic fragment of fig. granular rocks.		
530-540	10	100%	34628	204	12	17	28		Continues sheared with heavy clay, sericite. 2-6" white "bull" quartz		

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	%	%	Rock Type	Rock Description	Alteration	Mineralization
									veins purple fluorite with white quartz at 535'		
540-550	10	100%	34629	120	12	16	10		As above becoming increasingly silic, from 543'. Breccia with quartz, tourmaline matrix at 544'. Rocks have granular texture with strong quartz, sericite, pyrite alteration. Strong sericite from 548'.		
550-560	10	100%	34630	184	14	16	10	Quartz, Sericite, Pyrite	Continues granular and strongly sericitic (quartz sericite pyrite) to 557' then increased silicification and increase in tourmaline with quartz calcite veins 1/8" to ½" with cp clots and occasional blebs.		
560-570	10	100%	34631	194	10	16	14		Quartz sericite pyrite with heavy clay and quartz calcite cp vein to 562' Then rocks become granular with stable orthoclase (30-40%) very weak, chlorite (1-3%) disseminated pyrite (2-3%) and tourmaline (1-2%) to 565'. Then increased argillized with increase in quartz tourmaline.		
570-585	10	100%	34632	320	6	14	10		Increased sheared 568'-571' then granular as above with slight increase in cp.		

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
580-590	10	100%	34633	1880	80	14	10	Quartz, Monzonite ?	Granular rocks, quartz, sericite, pyrite with 1:1 cp pyrite ratio. Quartz, tourmaline veinlets at 582' and vuggy ½" quartz, calcite at 583'.		
590-600	10	100%	34634	428	12	22	12		Continues quartz, sericite pyrite, but with decrease in cp 1:5 ratio.		
600-610	10	100%	34635	1800	10	13	8		Quartz, sericite, pyrite with cp continues, short intervals of stable orthoclase (600'-604') Decrease in cp slight increase in pyrite.		
610-620	10	100%	34636	3800	6	23	22		As above increase in fracturing, more mineralization on fractures.		
620-630	10	100%	34637	1800	14	27	14		As above, higher fracture continues, stable orthoclase somewhat less cp (1-2%)		
630-640	10	100%	34638	304	6	17	10		As above, increase in stable orthoclase. Decrease in cp (<<1%) Increase in calcite and clay on fracture especially from 635'-640'.		
640-650	10	100%	34639	160	12	20	9	Quartz Sericite Pyrite	Strong quartz, sericite pyrite, tourmaline disseminated and fractured decrease from		

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Zn	Zn	Rock Type	Rock Description	Alteration	Mineralization
									643' Increase clay		
									645'-649', predominantly		
									on fracture. Almost no cp.		
650-660	10	100%	34640	78	8	6	8		Quartz sericite pyrite		
									as above. Little or no		
									tourmaline. Increase in		
									fracture and shear from		
									652'. Intense shearing		
									and mylonization from		
									658'. Slight decrease		
									in pyrite. Shear follows		
									incline of 70°		
660-670	10	100%	34641	104	14	8	6		Continues strongly sheared		
									and mylonized to 665'		
									then strong quartz		
									sericite, pyrite. Decrease		
									in disseminated pyrite		
									(<1%) none on fracture.		
670-680	10	100%	34642	126	8	14	8	Quartz Monzonite ?	Strong quartz sericite		
									pyrite to 678'. Then		
									increase in stable		
									orthoclase and tourmaline		
									on fracture and		
									disseminated. Weak hematite		
									halos on disseminated		
									pyrite.		
680-690	10	100%	34643	144	8	8	10		Strong schistose quartz		
									sericite pyrite with		
									tourmaline on fracture		
									and disseminated. Increase		
									sheared 686'689' with		
									strong clay sericite		
									at 688'.		

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
690-700	10	100%	34644	120	14	6	6		Continues strong quartz sericite pyrite with 1% disseminated pyrite. Moderately sheared from 698'.		
700-710	10	90%	34645	82	14	12	18		Continues sheared with rubble to 706'. Rocks are granular with quartz orthoclase chlorite (2-5%) with increase in calcite veinlets. Weak hematite with pyrite.		
710-720	10	100%	34646	464	34	18	26		Quartz, chlorite, sericite orthoclase. Rocks granular to weak schistose. cp on fracture at 718'-720'. Calcite vein at 715' with weak hematite and pyrite.		
720-730	10	100%	34647	96	4	24	20		As above with very weak epidote veinlets. Much less pyrite (1%)		
730-740	10	100%	34648	36	4	12	18		As above, increase in pyrite 1-2% on fracture.		
740-750	10	100%	34649	36	4	14	20		As above		
750-760	10	100%	34650	88	4	8	12		Decrease in chlorite (1-3%) Increase in quartz sericite stable orthoclase (10-30%) Quartz vein ½" flanked by chlorite pyrite at 752'.		

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Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	%	in	Rock Type	Rock Description	Alteration	Mineralization
760-770	10	100%	34651	150	3				Quartz monzonite with 1-3% chlorite. Increase in fractures with quartz tourmaline quartz veinlets with quartz sericite halos.		
770-780	10	100%	34652	288	6				As above, somewhat less chlorite orthoclase, quartz, sericite. Increase in quartz veinlets.		
780-790	10	100%	34653	252	6				Quartz monzonite with increase in chlorite (5-10%) Stable orthoclase 10-30%. Slight increase in pyrite with weak hematite halos.		
790-800	10	100%	34654	100	2				Increase fractures with rocks increas silic and sericite. Quartz, tourmaline clay, sericite on fractures at 792'. Open fractures with calcite at 790'-794'-797'-798'. Heavy quartz, calcite, pyrite on vein (1") at 799'.		
800-810	10	95%	No Results in Assay Sheets					Quartz Monzonite	Quartz, sericite, pyrite with stable orthoclase, no mafics, quartz-pyrite veinlets with quartz, sericite halos cut by quartz veins. (Latest) tourmaline cut, quartz pyrite is cut		

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	%	Zn	Rock Type	Rock Description	Alteration	Mineralization
									by calcite which is cut		
									by quartz. Weak hematite		
									halos around pyrite cp.		
810-820	10	90%	34658	122	4				As above, increased		
									silification with increase		
									of pyrite on fracture		
									Less silification with		
									stable orthoclase, weak		
									chlorite from 816'. Weak		
									hematite halos around		
									sulfides.		
820-830	10	100%	34657	92	<1				Quartz monzonite with		
									weak chlorite. Quartz		
									pyrite and tourmaline		
									veinlets. with weak		
									quartz, sericite haols.		
									Weak hematite halos		
									around sulfides.		
830-840	10	100%	34655	78	2				Quartz monzonite-quartz		
									sericite, pyrite Increased		
									fracture and shear with		
									increase in silic. Increase		
									of pyrite on fracture.		
									Highly sheared and		
									mylonized from 839'.		
840-850	10	90%	34654	62	5			Schist	Interval continues		
								Breccia	highly sheared and		
									mylonized. Brecciated		
									and vuggy zones have		
									quartz, calcite vein		
									and calcite lining		
									cavities. Shear follows		
									incline of 55°- 80°.		
									Heavy quartz, soft		
									chlorite from 845'		

District Quartzite COPY Hole Q - 6 Page 18 COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
850-860	10	100%	34660	54	4			Breccia	Breccia with quartz chlorite matrix. Soft vuggy vugs and fractures lined with calcite.		
860-870	10	100%	34661	114	2				Breccia with quartz chlorite matrix as above. Occasional flakes of cp. Very small (20x to 5cc) Clots of yellow green mineralization possibly autunite.		
870-880	10	100%	34662	102	12				As above ½"-½" pyrite vein parallel to core 874' -876'		
880-890	10	100%	34663	98	10				As above- calcite pyrite vein 887' parallel to core.		
890-900	10	100%	34664	No	Results				Quartz pyrite (20%) Tourmaline vein 890'-891' then as above with fewer breccia fragments and less pyrite.		
900-910	10	100%	34665	26	<1			Schist	As above to 903' then increasingly sheared and more sericitic. Mylonized 904-907'.		
910-920	10	100%	34666	86	<1				Schistose fragmented rock with quartz chlorite sericite matrix. Very weak epidote end of interval. Weak hematite and pyrite.		

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
920-930	10	100%	34667	No Results					As above rocks less fragmental more schistose (80%)		
930-940	10	100%	34665	86	<1				As above little or no pyrite. Rock becomes increasingly magnetic. Occasional cp.		
940-950	10	100%	34669	104	<1				As above fragmental volcanics with quartz chlorite sericite matrix Very weak magnetite calcite on fracture and in vugs. Most fragments quartz sericite with occasional magnetite.		
950-960	10	100%	34670	88	<1	#			Rocks as above increase in epidote on fracture. ½" calcite vein with very weak epidote and bornite at 954'		
960-970	10	100%	34671	No Results					As above sheared at 974' Increase in epidote (5%)dessiminated and fractured. Decrease in chlorite. Rocks more siliceous from 977'		
970-980	10	100%	34672	88	<1	±%			As above Increase in fractures continue more siliceous.		
980-990	10	100%	34673	No Results					As above Slickenside fracture with hematite at 987'.		

COLLAR COORDINATES:	ELEVATION: 1040' A.S.L.	CONTRACTOR: Boyles Bros	PROJECT: La Paz
N E	BEARING:	CORE SIZE: NQ	LOCATION: La Paz County, A
STARTED: 8/20/83	INCLINATION: Vertical	LOGGED BY: F Mack	HOLE NO: SE-1
COMPLETED: 8/22/83	TOTAL DEPTH: 150'	SCALE: 1" = 10'	SHEET 3 OF 3

150

SECTION

FRACTURING

MINERAL

GEOLOGY

+10% Pyrite

B.O.H.

DESCRIPTIVE GEOLOGY

REC'Y/HOLE: 94%

DRILLING INTERVAL	140	150
% CORE RECOVERED	(10.0')	100%
CORE SIZE	← NQ →	
SAMPLE INTERVAL	140'	150'
% REC'Y./ SAMP. INT.		100%
ESTIMATED % Cu		
A.A. % ppm Cu		29
A.A. % ppm Au		0.1
R.Q.D.		12
% ppm Ag		0.4
%		
%		
%		
ASSAYS Spl no.		1714

COLLAR COORDINATES: N E	ELEVATION: 1040' A.S.L.	CONTRACTOR: Boyles Bros.	PROJECT: La Paz D-82-1
STARTED: 8/20/83	BEARING: ~~Vert~~	CORE SIZE: NQ	LOCATION: SE Claims, La County, Ariz.
COMPLETED: 8/22/83	INCLINATION: Vertical	LOGGED BY: F. Mack	HOLE NO: SE-1
	TOTAL DEPTH: 150'	SCALE: 1" = 10'	SHEET 1 OF 3

SECTION: Clay; Sericite

FRACTURING

MINERAL: Sulphide Zone — Oxide Zone

GEOLOGY

DESCRIPTIVE GEOLOGY

0-10' Overburden, no recovery (Tricone)

1' gg

10'-38' Quartz latite tuff - laminated with layers ±1mm thick, mod. broken, loc. black streaks poss. chlorite or smeared black CuOx, frac. loc. coated w/ spotty black CuOx, loc. lt. gray color, strongly argillized, abun sericite, no vis. sulphides

No vis sulphides

Occas. black CuOx on frac.

2' gg

38'-116' Siltstone w/low-grade greenschist metamorphic overprint, med to loc dark gray, fine grained to loc. gritty, finely laminated, abun muscovite mica, sericite and chlorite, pyrite occurs as disseminations and veinlets mostly <1/4" wide, amounts vary from <1/2% to 1-2% toward the lower portions of the interval, lamina dip mostly 25° while fracs. dips vary from 25° to vertical, mod frac., tr cpy

RECY/HOLE: 94%

DRILLING INTERVAL	% CORE RECOVERED	CORE SIZE	SAMPLE INTERVAL	% REC'Y./SAMP. INT.	ESTIMATED % Cu	ppm Cu	ppm Au	R.Q.D. %	ppm Ag	%	%	%	ASSAYS
10'	0			0				0					
18'	(6.9') 86%			86%	<0.10	39	0.2	32	1.1				
25'	(5.8') 83%			83%	0.25	23	0.2	15	0.7				
32'	(7.0) 100%			92%	0.15	74	0.2	9	0.7				
42'	(9.2) 92%			90%	0.17	52	0.3	38	1.2				
51'	(8.1') 90%			82%	0.20	67	0.3	26	1.2				
59'	(6.6') 82%			93%	0.18	92	0.2	32	1.0				
65'	(8.4'?) 100%												
	(7.8') 87%												

NQ

SAMPLE INTERVAL	ASSAYS
1701	
1702	
1703	
1704	
1705	
1706	

COLLAR COORDINATES: N E	ELEVATION: 1040' A.S.L.	CONTRACTOR: Boyles Bros.	PROJECT: La Paz D-82-1
STARTED: 8/20/83	BEARING:	CORE SIZE: NQ	LOCATION: SE Claims La County, AZ
COMPLETED: 8/22/83	INCLINATION: Vertical	LOGGED BY: F. Mack	HOLE NO: SE-1
	TOTAL DEPTH: 150'	SCALE: 1" = 10'	SHEET 2 OF 3

140 130 120 110 100 90 80 70 SECTION

FRACTURING

MINERAL

GEOLOGY

99 1.5'

2' 99

DESCRIPTIVE GEOLOGY

116-150' B.O.H. Quartz latite, lt gray color, fn. grained, loc laminated (thin), loc porphyritic, strongly altd (poss metamorphism), loc. black streaks (poss. chlorite), minor to mod frac., py mostly in minor amts < ½% abun sericite, some SiO_2 flooding toward B.O.H., pyrite occurs as diss. & sm. blebs-minor vnlts ±1mm wide

REC'Y/HOLE: 94%

140' 122 116' 107' 101' 89' 78' 74'

DRILLING INTERVAL

% CORE RECOVERED	CORE SIZE
97%	NQ
(17.5') 92%	
(5.5') 97%	
(8.7') 95%	
(5.7') 88%	
(10.4) 77%	
(8.5') 100%	
(4.6') 74%	

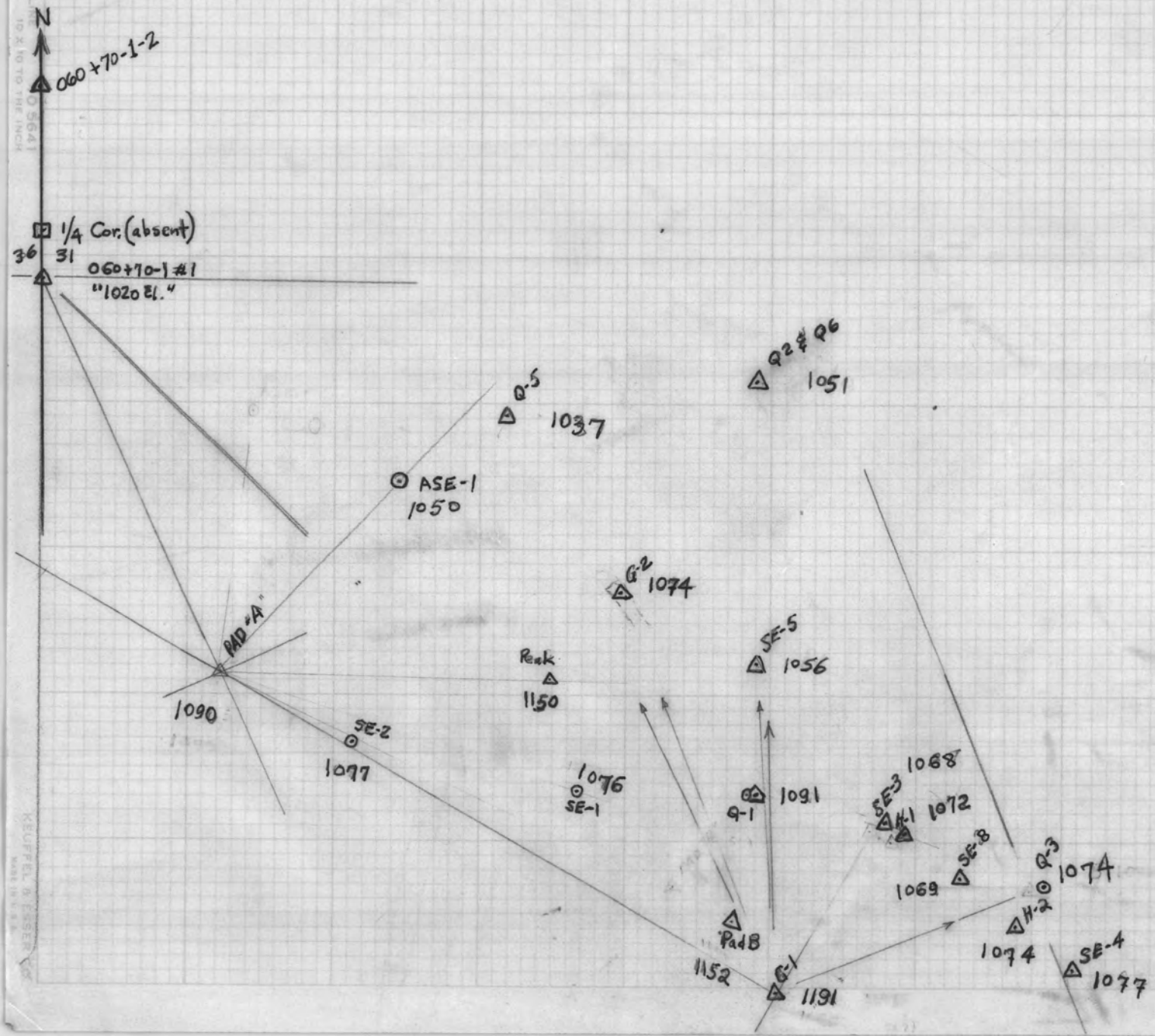
140' 130' 120' 110' 100' 90' 80' 70'

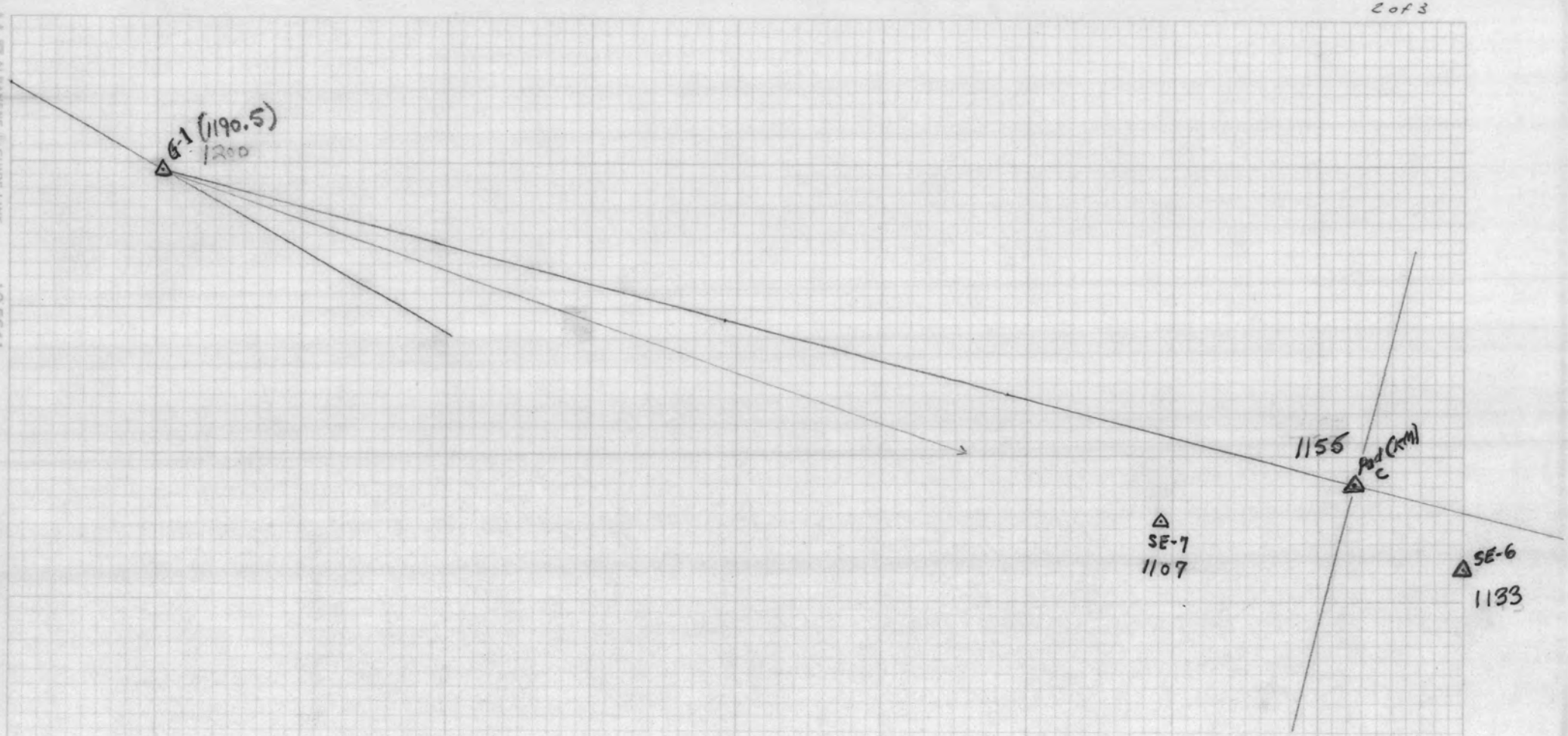
SAMPLE INTERVAL

% REC'Y./SAMP. INT.	ESTIMATED % Cu	A.A. ppm Cu	A.A. ppm Au	R.Q.D.	ppm Ag	%	%	%	ASSAYS Spl. no.
97%		35	0.1	30	6.7				1713
97%		19	0.1	39	0.6				1712
94%		32	0.2	16	1.0				1711
96%		16	0.4	8	1.1				1710
88%		32	0.3	35	1.4				1709
82%		63	0.3	14	1.4				1708
88%		78	0.1	28	1.2				1707

STATION	B.S.	F.S	V.A.	V.A	H.A. (RT. L)	BEARING	S.D.	H.D.	Δ ELEV FT.	ELEV. FT.	COMMENTS
060+70-1-1 HI 3.8' HT 4.5	060+70-1-2		5.70	+	0.00	N				1020.00	– Estimated from USGS. Quad. contours.
"	"	PAD A	6.85	+	156.52	S23.5E	591.65	587.40	70.00	1090.00	
"	"	PAD B	5.90	+	133.73	S43.3E	1295.40	1288.54	132.45	1152.45	
"	"	G-1	7.00	+	135.33	S44.66E	1417.76	1407.22	171.23	1191.23	✓ Good Elev.
PAD A HI 4.5' HT 4.5'	060+70-1-1	RDH SE-2	3.50	-	143.00		206.56	206.20	12.59	1077.00	
	"	PAD B	4.80	+	141.35		783.96	781.21	65.37	1155.00	
"	"	G-1	(6.80 apx.)	+	145.20		892.00	885.73	104.87	1194.87	– (Apx. elev.). use: 1190.5
"	"	OTCP HILL	7.60	+	115.75		454.50	450.51	59.58	1149.58	
"		DDH SE-1 AMOCO	6.40	-	66.50		361.43	359.18	40.00	1050.00	
G-1	PAD A	Q-1	21.63	-	53.55		293.12	272.48	100.43	1090.80	
"	"	G-2	11.52	-	37.69		600.20	588.10	117.47	1073.75	
"	"	SE-5	17.38	-	56.15		473.77	452.13	135.08	1056.15	
"	"	Q-2, Q-6	9.61	-	57.50		852.55	840.60	140.27	1050.96	
"	"	Q-3	18.36	-	127.70		390.95	371.06	116.85	1074.38	
"	"	SE-7	3.34	-	170.54		1455.15	1452.68	84.61	1106.62	
"	"	KM PAD C	1.21	-	166.34		1692.25	1691.87	35.76	1155.47	
"	"	Q-5	10.06	-	33.97		898.82	885.01	154.55	1036.68	
Q-3	G-1		18.13	+	0.00		390.60	371.22	115.49	1189.87	– Good elev.
"	"	SE-8	3.10	-	28.84		99.03	98.89	5.34	1069.04	
"	"	H-2	.94	-	313.59		52.54	52.53	.87	1073.51	
"	"	SE-4	1.39	+	264.13		125.22	125.18	3.05	1077.42	
"	"	H-1	.57	-	39.79		203.96	203.95	2.02	1072.36	– Adit Portal is 4'-8' SW. of H-1.
"	"	SE-3	1.63	-	41.35		234.39	234.29	6.66	1067.71	
KM PAD C	G-1		1.20	+	0.00		1692.20	1691.83	35.43	1155.80	
"	"	SE-6	6.72	-	203.52		192.95	191.63	22.41	1133.39	
"	"	G-3	3.25	+	186.13		1211.30	1209.35	68.59	1224.39	

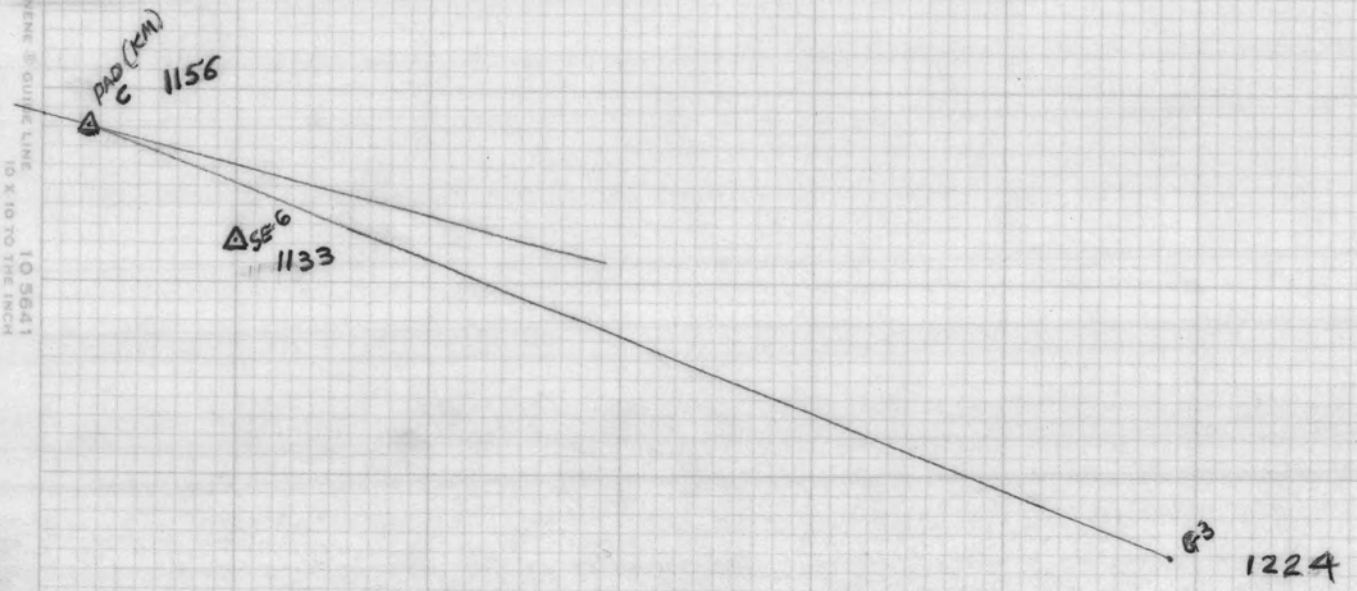
PAGE 1 of 3
SE Claims
7/20-22/90
1" = 200'





PAGE 2 of 3
SE Claims
7/20-22/90
1" = 200'

K+E ALBANENE ® GUIDE LINE 10 X 10 TO THE INCH 10 5641
KEUFFEL & ESSER CO. MADE IN U.S.A.



SE Copper Deposit Survey
7/20-22/90 - T1A & Red-2
Heinrichs, Loghry, & Lundin
Scale: 1" = 200'
PAGE 3 of 3

K+E ALBANENE ® GUIDE LINE 10 X 10 TO THE INCH 10 5641
KEUFFEL & ESSER CO. MADE IN U.S.A.

RECEIVED
APR 1983
CO.
RENO, NEVADA

CLIENT: AMOCO MINERALS
GEOLOGIST: M. BROCH
NUMBER OF SAMPLES: 168

AGEOLOGIST ,
PRIORITY: 0

REPORT NUMBER: BV123-0487
PROJECT: NONE GIVEN
DATE: 15-APR-83

SEE APPENDIX FOR EXPLANATION OF DIGESTION,ANALYSIS,SAMPLE TYPE, AND SIEVE SIZE CODES.

REC#	SAMPLE NUMBER	T	S	ELEMENT / DIGESTION / ANALYSIS CODE	AU F/1 PPB
0001	S1-01	D	1		15
0002	S1-02	D	1		15
0003	S1-03	D	1		95
0004	S1-04	D	1		25
0005	S1-05	D	1		45
0006	S1-06	D	1		60
0007	S1-07	D	1		80
0008	S1-08	D	1		80
0009	S1-09	D	1		60
0010	S1-10	D	1		65
0011	S1-11	D	1		95
0012	S1-12	D	1		20
0013	S1-17	D	1		235
0014	S1-18	D	1		30
0015	S1-19	D	1		145
0016	S1-20	D	1		75
0017	S1-23	D	1		10
0018	S1-24	D	1		15
0019	S1-25	D	1		15
0020	S1-26	D	1		25
0021	S1-27	D	1		15
0022	S1-28	D	1		5
0023	S1-29	D	1		10
0024	S1-30	D	1		10
0025	S1-31	D	1		5
0026	S1-32	D	1		5
0027	S1-33	D	1		L 5
0028	S1-34	D	1		5
0029	S1-35	D	1		5
0030	S2-6	D	1		15
0031	S2-7A	D	1		15
0032	S2-09	D	1		60
0033	S2-10	D	1		30
0034	S2-11	D	1		45
0035	S2-13	D	1		190

Sample no.
line no.

---CONTINUED NEXT PAGE---

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REC#	SAMPLE NUMBER	DIGESTION / ANALYSIS CODE T/ S	ELEMENT AU F/1 PPB
0112	S1-13	R 7	90
0113	S1-14	R 7	20
0114	S1-15	R 7	95
0115	S1-16	R 7	160
0116	S1-21	R 7	155
0117	S1-22	R 7	15
0121	S2-1	R 7	15
0122	S2-2	R 7	15
0123	S2-3	R 7	120
0124	S2-4	R 7	3860
0125	S2-5	R 7	145
0126	S2-7B	R 7	20
0127	S2-8	R 7	295
0128	S2-10.2	R 7	10
0129	S2-12	R 7	365
0130	S2-14	R 7	205
0131	S2-16	R 7	245
0132	S2-18	R 7	60
0133	S2-19	R 7	15
0134	S2-20	R 7	75
0135	S2-21	R 7	40
0136	S2-22	R 7	25
0137	S2-24	R 7	L 5
0138	S2-28	R 7	L 5
0139	S2-30	R 7	L 5
0140	S2-32	R 7	15
0141	S3-30	R 7	5
0142	S4-02	R 7	285
0143	S4-03	R 7	65
0144	S4-04	R 7	45
0145	S4-05	R 7	690
0146	S4-06	R 7	985
0147	S4-07	R 7	365
0148	S4-08	R 7	25
0149	S4-09	R 7	1730

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CLIENT: AMOCO MINERALS
GEOLOGIST: M. BROCH AGEOLOGIST ,
NUMBER OF SAMPLES: 168 PRIORITY: 0

REPORT NUMBER: BV123-0487
PROJECT: NONE GIVEN
DATE: 15-APR-83

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DIGESTION / ANALYSIS CODE REC# /SAMPLE NUMBER/ T/ S			ELEMENT AU F/1 PPB
0036	S2-15	D 1	290
0037	S2-17	D 1	175
0041	S2-23	D 1	40
0042	S2-25	D 1	L 5
0043	S2-26	D 1	L 5
0044	S2-27	D 1	70
0045	S2-29	D 1	L 5
0046	S2-31	D 1	60
0047	S2-33	D 1	10
0048	S3-1	D 1	215
0049	S3-2	D 1	1100
0050	S3-3	D 1	90
0051	S3-4	D 1	65
0052	S3-5	D 1	60
0053	S3-06	D 1	115
0054	S3-07	D 1	400
0055	S3-08	D 1	60
0056	S3-09	D 1	360
0057	S3-10	D 1	155
0058	S3-11	D 1	120
0059	S3-12	D 1	95
0060	S3-13	D 1	105
0061	S3-14	D 1	20
0062	S3-15	D 1	80
0063	S3-16	D 1	1650
0064	S3-17	D 1	310
0065	S3-18	D 1	85
0066	S3-19	D 1	110
0067	S3-20	D 1	105
0068	S3-21	D 1	55
0069	S3-22	D 1	15
0070	S3-23	D 1	25
0071	S3-24	D 1	75
0072	S3-25	D 1	140
0073	S3-26	D 1	5

---CONTINUED NEXT PAGE---

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PRIORITY: 0

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PROJECT: NONE GIVEN
DATE: 15-APR-83

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DIGESTION / ANALYSIS CODE REC#	/SAMPLE NUMBER/	T/	S	ELEMENT AU F/1 PPB
0074	S3-27	D	1	5
0075	S3-28	D	1	25
0076	S3-29	D	1	30
0077	S3-31	D	1	50
0081	S4-1	D	1	145
0082	S4-18	D	1	200
0083	S4-24	D	1	25
0084	S4-25	D	1	15
0085	S4-27	D	1	25
0086	S4-30	D	1	20
0087	S5-01	D	1	130
0088	S5-02	D	1	50
0089	S5-03	D	1	220
0090	S5-04	D	1	70
0091	S5-05	D	1	1100
0092	S5-06	D	1	100
0093	S5-07	D	1	20
0094	S5-08	D	1	20
0095	S5-09	D	1	10
0096	S5-10	D	1	15
0097	S5-11	D	1	100
0098	S5-12	D	1	55
0099	S5-13	D	1	535
0100	S5-14	D	1	95
0101	S5-15	D	1	15
0102	S5-16	D	1	50
0103	S5-18	D	1	10
0104	S5-19	D	1	105
0105	S5-20	D	1	L 5
0106	S5-21	D	1	5
0107	S7-2	D	1	35
0108	S7-3	D	1	L 5
0109	S7-4	D	1	5
0110	S7-09	D	1	L 5
0111	S7-10	D	1	L 5

---CONTINUED NEXT PAGE---

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GEOLOGIST: M. BROCH
NUMBER OF SAMPLES: 168

AGEOLOGIST ,
PRIORITY: 0

REPORT NUMBER: BV123-0487
PROJECT: NONE GIVEN
DATE: 15-APR-83

SEE APPENDIX FOR EXPLANATION OF DIGESTION,ANALYSIS,SAMPLE TYPE, AND SIEVE SIZE CODES.

REC#	SAMPLE NUMBER	DIGESTION / ANALYSIS CODE T	S	ELEMENT AU F/1 PPB
0150	S4-10	R	7	45
0151	S4-11	R	7	105
0152	S4-12	R	7	50
0153	S4-13	R	7	175
0154	S4-14	R	7	30
0155	S4-14.4	R	7	100
0156	S4-17.5	R	7	L 5
0157	S4-19	R	7	15
0161	S4-20	R	7	905
0162	S4-21	R	7	395
0163	S4-22	R	7	320
0164	S4-23	R	7	75
0165	S4-26	R	7	5
0166	S4-28	R	7	L 5
0167	S4-29	R	7	15
0168	S6-9.2	R	7	10
0169	S6-11	R	7	L 5
0170	S6-13.5	R	7	L 5
0171	S6-14	R	7	L 5
0172	S6-15	R	7	105
0173	S6-16	R	7	L 5
0174	S6-17	R	7	480
0175	S6-18	R	7	15
0176	S6-19	R	7	30
0177	S6-20	R	7	135
0178	S7-5	R	7	45
0179	S7-6	R	7	55
0180	S7-8	R	7	60

---END---

RECEIVED
RENO, NEVADA

CLIENT: AMOCO MINERALS
GEOLOGIST: M. BROCH
NUMBER OF SAMPLES: 168

AGEOLOGIST ,
PRIORITY: 0

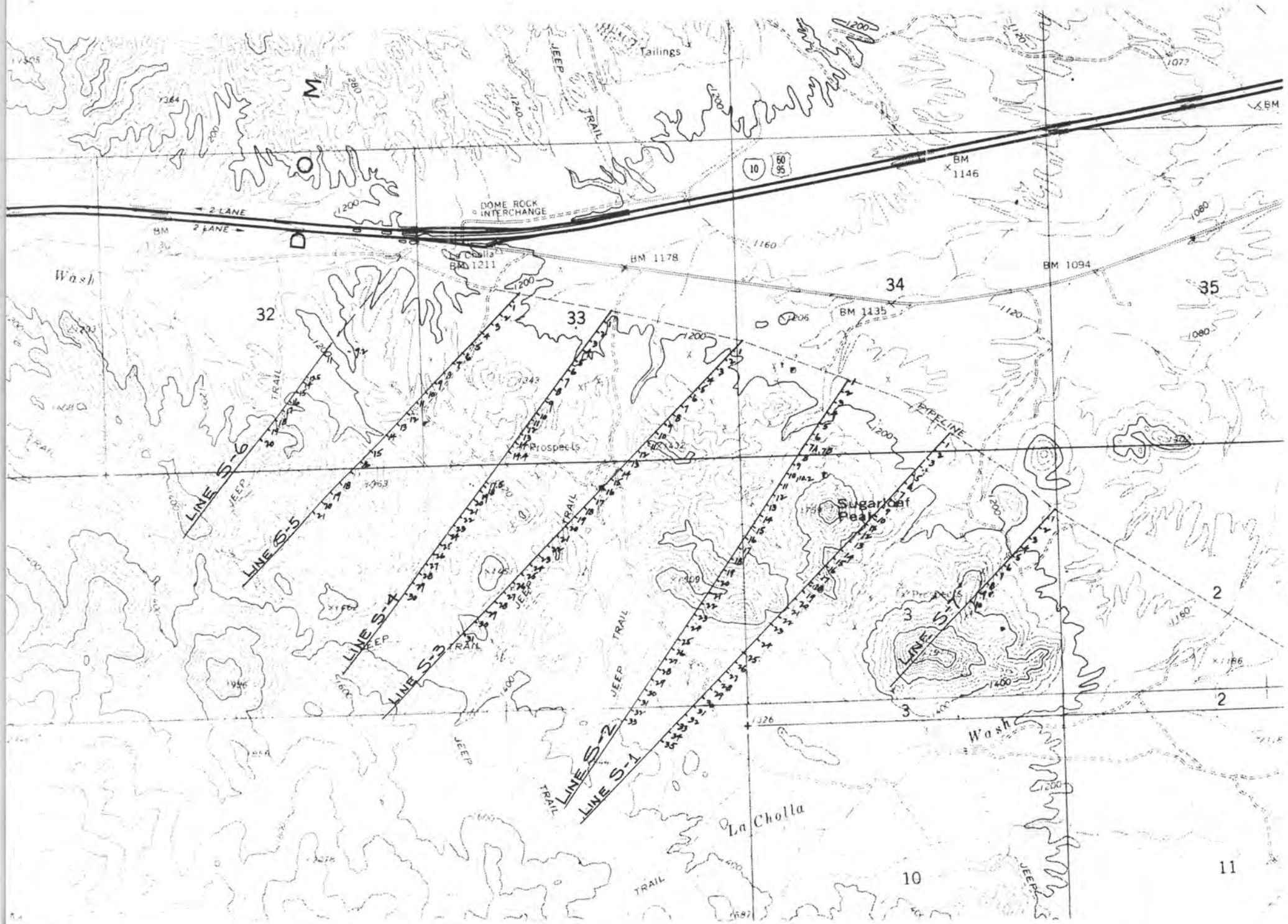
REPORT NUMBER: BV123-0487
PROJECT: NONE GIVEN
DATE: 15-APR-83

SEE APPENDIX FOR EXPLANATION OF DIGESTION,ANALYSIS,SAMPLE TYPE, AND SIEVE SIZE CODES.

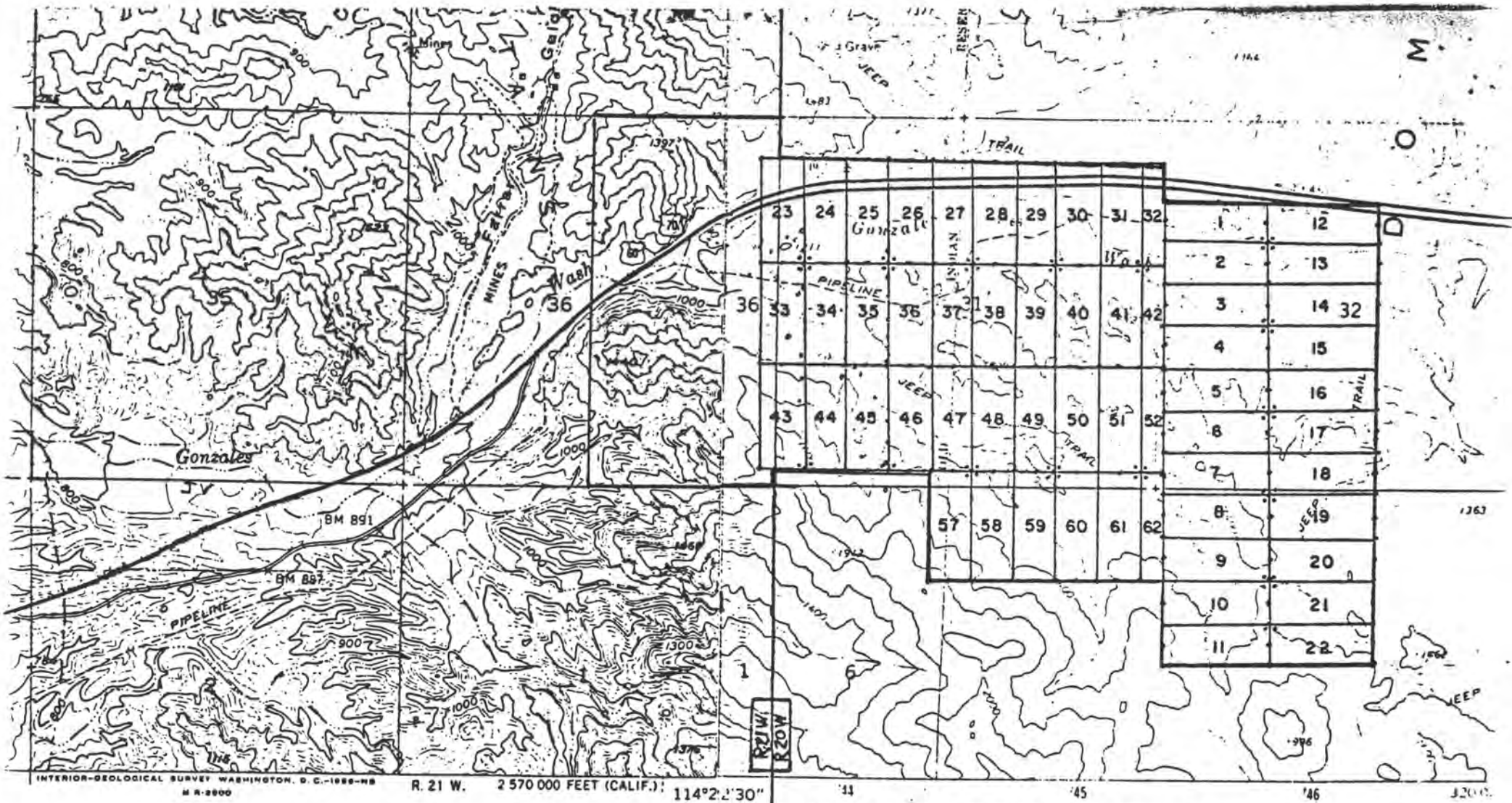
REC#	SAMPLE NUMBER	T	S	ELEMENT / DIGESTION / ANALYSIS CODE: AU F/1 PPB
0001	S1-01	D	1	15
0002	S1-02	D	1	15
0003	S1-03	D	1	95
0004	S1-04	D	1	25
0005	S1-05	D	1	45
0006	S1-06	D	1	60
0007	S1-07	D	1	80
0008	S1-08	D	1	80
0009	S1-09	D	1	60
0010	S1-10	D	1	65
0011	S1-11	D	1	95
0012	S1-12	D	1	20
0013	S1-17	D	1	235
0014	S1-18	D	1	30
0015	S1-19	D	1	145
0016	S1-20	D	1	75
0017	S1-23	D	1	10
0018	S1-24	D	1	15
0019	S1-25	D	1	15
0020	S1-26	D	1	25
0021	S1-27	D	1	15
0022	S1-28	D	1	5
0023	S1-29	D	1	10
0024	S1-30	D	1	10
0025	S1-31	D	1	5
0026	S1-32	D	1	5
0027	S1-33	D	1	L 5
0028	S1-34	D	1	5
0029	S1-35	D	1	5
0030	S2-6	D	1	15
0031	S2-7A	D	1	15
0032	S2-09	D	1	60
0033	S2-10	D	1	30
0034	S2-11	D	1	45
0035	S2-13	D	1	190

sample no.
line no.

---CONTINUED NEXT PAGE---



Tailings
JEEP TRAIL
DOME ROCK INTERCHANGE
2 LANE
2 LANE
BM 1146
BM 1178
BM 1211
BM 1094
BM 1135
Wash
32
33
34
35
LINE S-6
LINE S-5
LINE S-4
LINE S-3
LINE S-2
LINE S-1
LINE S-7
Prospects
Sugarloaf Peak
PIPELINE
La Cholla
Wash
10
11
2
3



Mapped, edited and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1970. Field checked 1971

Projection and 10,000-foot grid ticks. Arizona coordinate system, west zone (transverse Mercator)

1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue. 1927 North American datum

Where omitted, land lines have not been established

0 1000' 2000' 3000'

500' 3500'

ROAD CLASSIFICATION

Heavy-duty — Light-duty

Medium-duty — Unimproved dirt

U. S. Route — State Route

ARIZONA

GLE LOCATION

LA PAZ MTN., ARIZ.—CALIF

NW/4 DOME ROCK MTS 15' QUADRANGLE

N3337.5—W11422.5/7.5

1955

MIDDLE CAMP MTN. QUADRANGLE

SE CLAIM GROUP

YUMA COUNTY ARIZONA

1980

DRAFT

MEMORANDUM

To: AGS, Inc.
Re: Stray Elephant Project
From: D. Wahl
Date 7/14/88

Possible Resource Potential

Eight rotary percussion holes have been drilled along approximately 3100 strike feet of a copper oxide-mineralized structure system at the Stray Elephant project in western Arizona. This drilling indicates that acid soluable oxide mineralization occurs in relatively thin, steep tabular bodies which grade into acid insoluable sulphide mineralization at depths of <200' below topographic surface. Drill sample assays, surface sample assays, topographic expression, and geologic parameters were combined to yield possible resource estimates for ten blocks within the 3100' strike length tested zone.

Block	Strike Length	True Thick. CuOx (*)	Drilled Possible Reserves (tons)	Maximum Credible Resource (tons)	Max. Cred. Dimensions (strike,width,depth) (feet)
SE1	300'	12'	43,092	720,000	300 x 200 x 150
SE2	300'	5.1'	18,468	360,000	300 x 100 x 150
SE3	160'	8.6'	16,416	288,000	160 x 150 x 150
SE4	225'	35.9'	96,957	202,500	225 x 100 x 150
SE5**	150'	37.6'	67,720	243,000	150 x 125 x 150
SE6	350'	27.4'	137,897	504,000	350 x 100 x 180
SE7	350'	0'	0	336,000	350 x 75 x 160
SE8	170'	17.1'	34,887	204,000	170 x 125 x 150
Arroyo	850'	--	----	637,500	850 x 75 x 125
West	250'	--	----	450,000	250 x 150 x 150
			415,437	4,196,500	

(*) = True CuOx (acid soluable copper) thickness from following intersects:

SE1	100-135'	0.75% Cu
SE2	25-40'	0.76% Cu
SE3	20-45'	0.50% Cu
SE4	40-145'	0.48% Cu
SE5**	0-110'	0.52% Cu ** = intersect from Q1
SE6	55-115'	0.81% Cu
	160-180'	0.70% Cu
SE7	No significant mineralization	
SE8	15-65'	0.49% Cu

DRAFT

Block SE1 SE1 was drilled near the footwall of the Stray Elephant shear system (see cross sections, 1":100' & 1":200' scale location maps). SE1 was originally planned to be drilled more into the fault system hanging wall at a higher elevation on Outcrop Hill. Drill equipment limitations precluded reaching the intended drill site. It is very likely that a hole collared higher on Outcrop Hill would have encountered significantly more CuOx mineralization than was encountered in SE1.

Mineralization encountered in Block SE1 was modeled as a steeply dipping tabular body ca. 12' thick. Water table and essentially the sulfide zone were encountered at ca. 135'. The "drilled possible reserves" were calculated by assuming that CuOx mineralization in a 12' thick slab extends from water table to the surface. The interpreted ore body being the hypotenuse of the right triangle of the vertical drill hole allows the tabular "ore" body to be longer than depth to water in the drill hole. Also, there is significant topographic relief above the drill collar. I consider a 150 "depth" for this tabular body as relatively conservative. "Length" for the SE1 block drilled possible reserves is strike length area of influence for SE1 relative to adjacent drill holes. Block SE1 drilled possible reserves therefore are 11.97' x 150' x 300' = 538,650 cubic feet / 12.5 cubic feet/ton = 43,092 tons.

Block SE1 maximum credible resources (possible >0.5% acid soluable Cu) are based on surface assays, field mapping, Cyprus drilling, and other drilling. The dimensions for this maximum credible resource are 300' (strike) x 150' (depth) x 200' (width). The strike and depth parameters are analogous to those described for the drilled possible reserves. The 200' width is based on presence of multiple steep and low angle mineralized fractures/shears north of and/or above the SE1 collar. Surface samples SES11, SES19-24 were collected within this zone.

Realize that it is somewhat unlikely that this entire block would be mineralized. My opinion is that two or three steep tabular bodies 20-50' thick, and thinner(?) low angle thrust-related lenses could exist within the block. Local CuOx grades above 0.50% Cu would not be beyond reasonable expectations.

Block SE2 Drilled possible reserves were calulated based on SE2 drill intersects and CuOx mineralization as assayed in surface samples SES12-14. The maximum credible resource block would envision CuOx mineralization further north into the fault system hanging wall.

Block SE3 Drilled possible reserves calculated in similar fashion as described above. Maximum credible resource assumes SE3 passed under CuOx mineralization. Surface and underground mapping in the Stray Elephant Tunnel suggests that two steep CuOx zones may be expected in this block.

Block SE4 SE4 was drilled on trend with high angle fractures from which 40(?) tons of 2(?)% copper was shipped. Two steep

tabular bodies possible in this block.

Block SE5 SE5 encountered no significant copper mineralization, but passed under the projected collar of Kerr-McGee's Q1 drill hole. Block SE5 drilled possible reserves were calculated using Q1 data. Maximum credible resource potential assumes SE5 was below oxide mineralization.

Block SE6 SE6 hit two mineralized zones. Maximum credible resource potential requires more parallel structures.

Block SE7 SE7 encountered no significant mineralization. It was drilled on the footwall side of the structure probably responsible for SE6 mineralization. Maximum credible resource requires mineralized hanging wall structures.

Block SE8 SE8 is in an area which may contain two mineralized structures. Maximum credible resource potential assumes SE8 drilled under best CuOx mineralization.

Arroyo Block The Arroyo Block is that area along the Stray Elephant structure between SE4 and SE7 which is covered by alluvial material. Previous drilling in the arroyo has not encountered the CuOx zone. Thus, a relatively thin (75') width is assigned to this block. Also, depth to water table (& end of oxide potential) will probably be shallow under this drainage.

West Block The West Block is that part of the Stray Elephant structure west of SE2, extending to the west end of the claim group. A large amount of quartz veining there suggests that oxide potential could exist over a relatively wide zone.

Additional resource potential may exist along the Stray Elephant structure east of the drill tested zone. Areas of interest east along the fault zone are marked by weak to moderate CuOx staining.

MEMORANDUM

To: AGS
Re: Stray Elephant Project
From: D. Wahl
Date 6/25/88

Notes on Drill Logs

Collar elevations taken with hand-held altimeter with collar of SE3 set as base elevation 1080'.

Lithology calls: GRAN, SCH, QTZ = granite > schist > vein quartz as relative amounts of respective rock chips in sample interval. Calls between schist and sheared granite tentative.

Rock color: TAN, GRAY = tan fragments > gray fragments.

Mineralization: FeOx = hematite, limonite staining and oxidized pyrite; CHY, CUP?, CU?, CC, PY, CP, EPI = chrysocolla > cuprite (?) > native Cu (?) > chalcocite > fresh pyrite > chalcopyrite > epidote.

Assays: Hot Cu = CN Cu; Cold Cu = A.S. Cu; Total Cu = Cu % (AA).

Surface Samples

Apparently I lost my train of thought after collection of surface sample SES22 where I was attacked by a nest of vipers. Sample SES23 as plotted on the geologic sketch map is Mountain States' SES22-B (light ore), and my SES24 is given by Mountain States as SES23.

RECEIVED
SEP 2 1988
BOX 5954
TUCSON, AZ 85703

Cyprus - 1988

STRAY ELEPHANT SAMPLE DESCRIPTIONS

(SES1 = Stray Elephant Surface sample #1; abbreviated on geologic sketch map by designation S1; location marked in field by aluminum tag on nail)

SES1 Select CuOX-, FeOx-stained quartz from 1/2" to 10" thick vein. Chips along 25' of vein strike.

SES2 Select FeOx-, +/- CuOx-stained quartz at dump. Selected as "best" Au sample.

SES3 N60E 1 - 1.5' thick quartz vein in granite as exposed in large dozer cut; modest FeOx. Chips over 30' of strike.

SES4 Brecciated gossan pod along fault zone where little quartz is developed; moderate CuOx. Chips over 10' of strike.

(SES5-10 collected from Stray Elephant "tunnel". All samples are chips from both sides and back of adit.)

SES5 30' SW from portal. Modest CuOx in sheared granite. Most shears are low angle.

SES6 93' SW from portal (5' from winze at end of "tunnel"). Good CuOx in schist.

SES7 74' SW from portal. Good CuOx in granite; near area of best CuOx mineralization.

SES8 59' SW from portal. FeOx dominated sheared granite; little CuOx.

SES9 24' SW from portal. Sheared granite; very little CuOx.

SES10 10' SW from portal. Interbedded argillized and sheared schist and granite sill(?) layers; trace CuOx.

SES11 CuOx-stained schist (metasediments) west side of Outcrop Hill in prospect near drill hole SE1. Chips across all sides of prospect.

SES12 CuOx-stained schist in prospect near SE2. Chips across prospect.

SES13 FeOx/CuOx-stained schist(?) in prospect near granite-schist contact at western-most Stray Elephant drill pad (undrilled "minipad"). Chips across prospect.

SES14 CuOx-stained schist in second pit south of west "minipad";

adjacent to SES13. Footwall to fault zone. Chips across prospect near floor where best visible CuOx exposed.

SES15 Select iron-stained quartz from quartz veins and pods in granite on ridge north of west "minipad". Sample collected from numerous veins over 50' radius. Selected for best gold potential.

SES16 Slightly iron-stained spotted chloritic schist in prospect in system footwall on ridge approximately 450' S10E from drill hole SE4. Chips across prospect.

SES17 Select FeOx-stained quartz from 6-10" quartz vein near drill hole SE6 (eastern-most drill hole Phase 1 drilling). Chips along vein as exposed in small prospect pit.

SES18 Select FeOx-stained quartz from 2' thick shattered quartz zone between drill holes SE6 & SE7. Chips along 10' of strike.

(SES19-22 collected on NW-trending upper drill road west side of Outcrop Hill above drill hole SE1)

SES19 Good to excellent CuOx in granite just above low angle contact (sill/thrust?) with schist. Chips along drill road to sample lower 8-10' of the granite.

SES20 CuOx poor granite stratigraphically above basal CuOx-bearing granite of SES19. Chips for ca. 30' along drill road.

SES21 Chips for ca. 50' along drill road through fractured and locally quartz-veined granite. Local CuOx, but bulk of sample is CuOx poor.

SES22 Prospect face at end of drill road where good CuOx coats fractures. Chips over ca. 25' along face above snake infested rubble. Spectacular CuOx coats some fractures, but most of sample relatively low in CuOx.

SES23 Sheared, CuOx-stained granite above and NW from sample SES22. Chips along ridge line for ca. 80'.

SES24 Relatively unmineralized thrust sliver of granite which makes up topographic high of Outcrop Hill. Chips collected across top and sides of knob.

Cyprus 1988
Page 2 of 2 pages.

District Quartzite Hole 0-6 Page 20

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Ag	Zn	Rock Type	Rock Description	Alteration	Mineralization
990-1000	10	100%	346 74	88	4			Schist	As above. Increase in epidote with local flooding occasional pyrite.		
1000-1010	10	100%	346 75	1700	12				As above High epidote flooding. High chlorite		
1010-1020	10	100%	346 76	112	18				Strong sericite 1011'-1013' with weak (<1%) cp and cc tarnish on pyrite. Then increase chlorite as above. Increase in epidote from 1010'. Calcite in late fractures. Continues moderately sheared.		
1020-1030	10	100%	346 77	32	10				Strong epidote flooding (40-50%) with disseminated euhedral pyrite occasional epidote calcite hematite on late fractures. Massive tourmaline epidote at 1028'. (From TS weak biotite along fractures)		
1030-1040	10	100%	346 78	64	10				Rocks increaslingly sheared. Increase in calcite hematite strong epidote continues. Tourmaline pyrite veins at 1036' increase in sericite below 1036' Vuggy open fracture with quartz pyrite calcite epidote cp at 1037'		

District Quartzite Hole Q-6 Page 21

COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
1040-1050	10	100%	34679	35	8				Quartz sericite chlorite schist with heavy epidote flooding (to 40%) Tourmaline in veinlets and irregular patches Pyrite (.1-2mm) 1-3% disseminated and in open cavities associated with quartz calcite and epidote tourmaline. Larger clots euhedral Occasional cp. Few open fractures with hematite goethite		
1050-1060	10	100%	34680	30	10				As above strong epidote tourmaline to 1054' then decrease in epidote slight increase in quartz sericite. Less pyrite cp. Weak hematite on fractures.		
1060-1070	10	100%	34681	44	12				Weak biotite along fractures and in patches Strong epidote 1060'-1065'. Then decrease with increase in silic Increase in pyrite end of interval cp on fractures 1069'.		
1070-1080	10	100%	34682	36	14				Rocks continues strongly fractured and sheared up 1076-1080' Beginning of interval strong epidote flooding as above.		

COPY

District Quartzite Hole Q-6 Page 22

COPY

Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Ag	Zn	Rock Type	Rock Description	Alteration	Mineralization
1080-1090	10	100%	34683	28	10				Rock increse silicified		
									Strong epidote flooding		
									to 1083'. Massive quartz		
									tourmaline pyrite at		
									1084'. Strongly sheared		
									below with clay hematite		
									on shears. Decrease in		
									pyrite calcite continues		
									on late fractures.		
1090-1100	10	100%	34684	20	12				Strongly silicified		
									highly sheared Rock		
									continues very weak		
									epidote chlorite.		
1100-1110	10	100%	34685	25	13				As above Intense		
									shearing 1104' Slight		
									increase in epidote		
									1" quartz pyrite vein		
									at 1107' with sericite		
									halo. Weak hematite		
									continues on fractures.		
1110-1120	10	100%	34686	62	14			Schist ?	As above. Strong quartz		
									sericite alteration with		
									weak (1-3%)epidote		
									chlorite. Rocks tend to		
									be more massive than		
									schistose. Very weak		
									pyrite (<<1%) Hematite		
									on fractures. 2" calcite		
									vein at 1101'.		
1120-1130	10	100%	34687	37	20				Continues strong silicified		
									Increase in epidote		
									chlorite below 1125'		
									Hematite on fractures		
									Sheared from 1129'.		

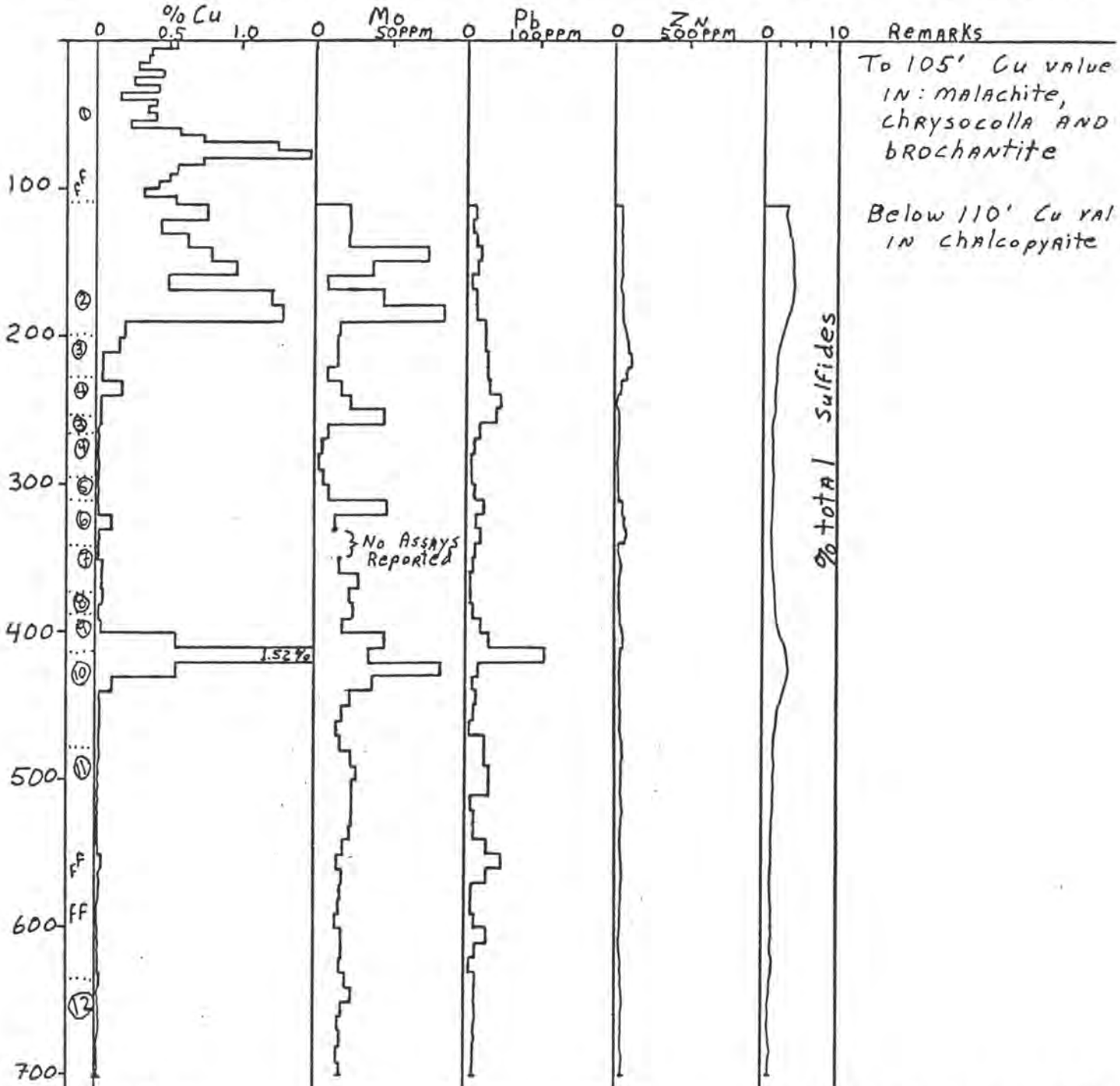
Depth	Int.	Core Rcvy	Samp. No.	Assays Cu	Mo	Pb	Zn	Rock Type	Rock Description	Alteration	Mineralization
1130-1142	12	95%	34c88	35	24			Schist	Strongly sheared with much rubble. Increase in sericite clay. Quartz veinlets with epidote halos. Hematite on fractures.		

KERR-McGEE CORPORATION
SUMMARY DRILL HOLE LOG
SCALE 1 inch = 100 feet

PROJECT Quartzsite
LOCATION Yuma County, Arizona

DRILL HOLE NO. Q-1
BEARING
TOTAL DEPTH 700'

PAGE 1 OF 1
DIP 90°
BY B.F.R.



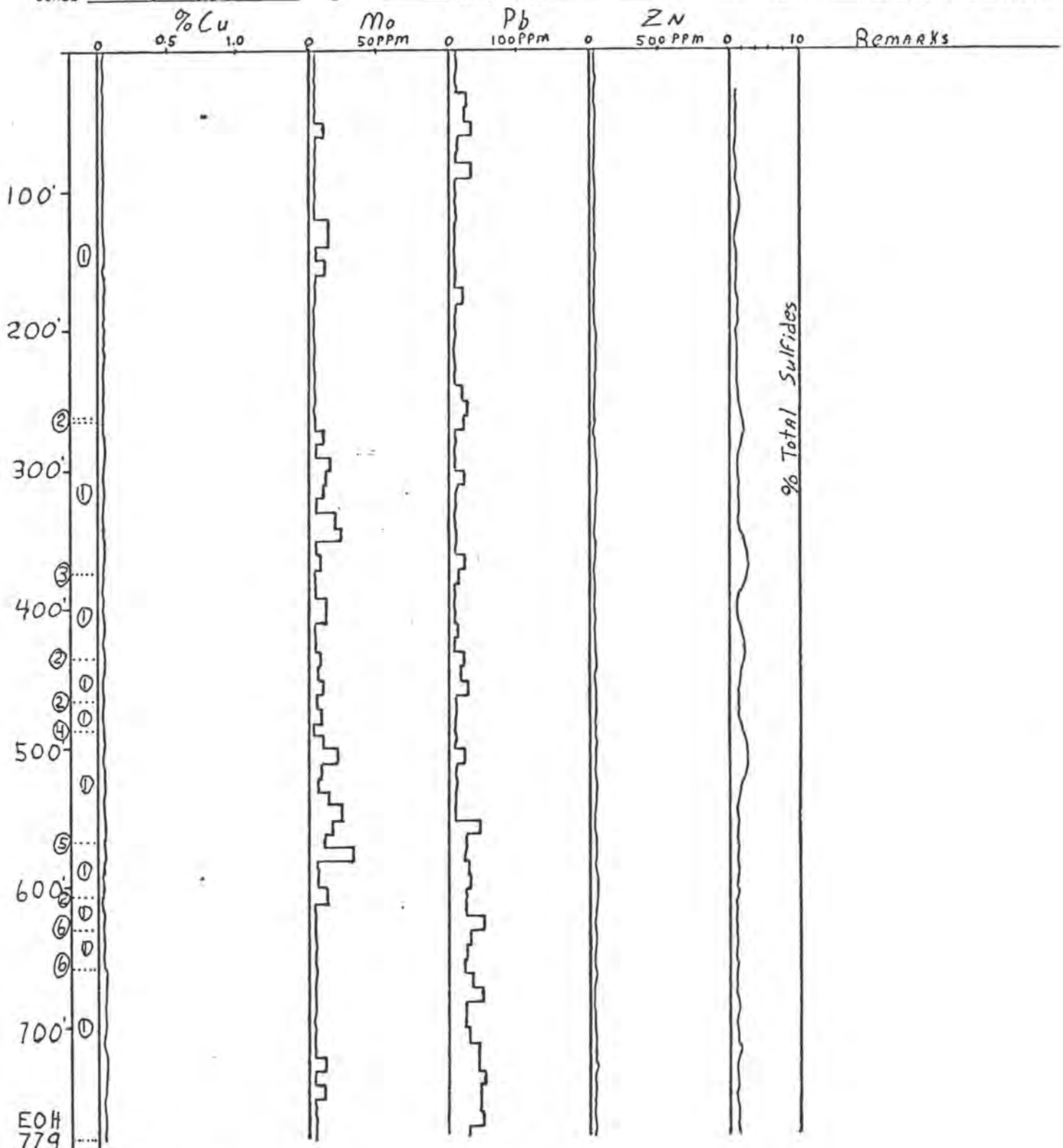
1. Fine grain granular quartz in a quartz and sericite matrix (f denotes feldspar laths)
2. biotite-quartz schist with scattered blue quartz eyes
3. biotite-quartz-chlorite schist (minor feldspar laths)
4. quartz-sericite schist
5. biotite-quartz schist
6. chlorite-minor biotite-clay-sericite schist
7. quartz-sericite-minor chlorite schist
8. quartz-sericite-minor clay schist
9. quartz-sericite-clay-quartz eye schist
10. Fine grain quartz-feldspar-minor sericite schist with 1'-3' bull quartz veins
11. quartz-sericite-quartz eye-epidote schist (f denotes feldspar laths)
12. Fine grain quartz-sericite-biotite-quartz eye-minor feldspar lath-chlorite schi

KERR-McGEE CORPORATION
SUMMARY DRILL HOLE LOG
SCALE 1" = 100'

PROJECT Quartzsite
LOCATION Yuma County
ARIZONA

DRILL HOLE NO. Q-2
BEARING
TOTAL DEPTH 779

PAGE 1 OF 1
DIP 90°
BY B.E.R.



1 granite
2 very fine grain quartz-sericite schist
3 fine grain quartz-sericite-pyrite schist
4 very fine grain quartz-sericite-biotite and/or tourmaline schist
5 fine grain quartz-sericite-minor tourmaline schist
6 very fine grain quartz-sericite-chlorite-biotite-trace K-spar schist

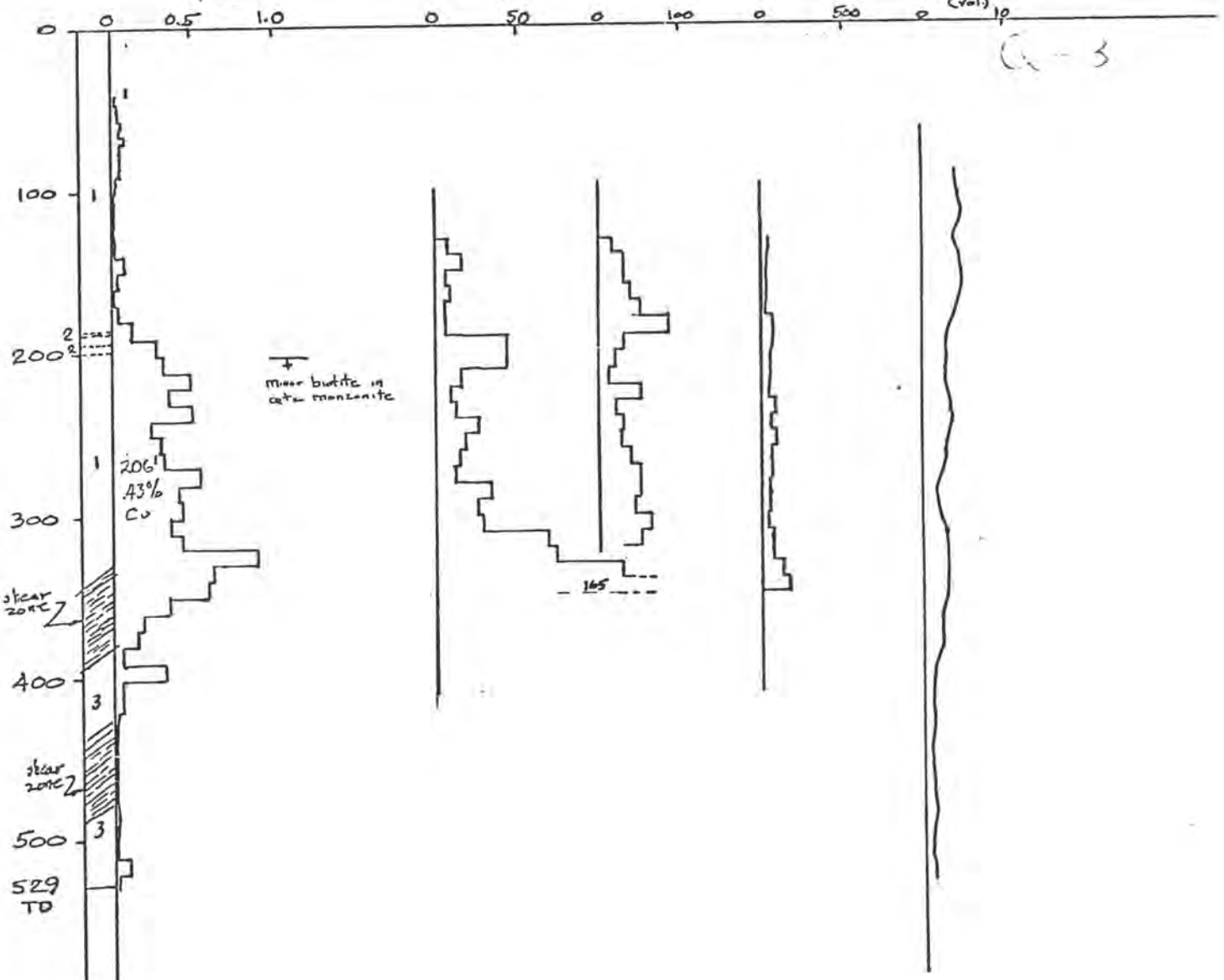
KERR-McGEE CORPORATION
SUMMARY DRILL HOLE LOG

SCALE 1" = 100'

PROJECT Quartzite
LOCATION Yuma Co. Az.

DRILL HOLE NO. [illegible]
BEARING
TOTAL DEPTH [illegible]

PAGE 1 of 1
DIP
BY



1) Quartz Monzonite - QSP alteration ±2% total sulfides (vol.)
10% albite Crudely shistose

2) Sericite Shist - Rhyolite dices & sills (?)

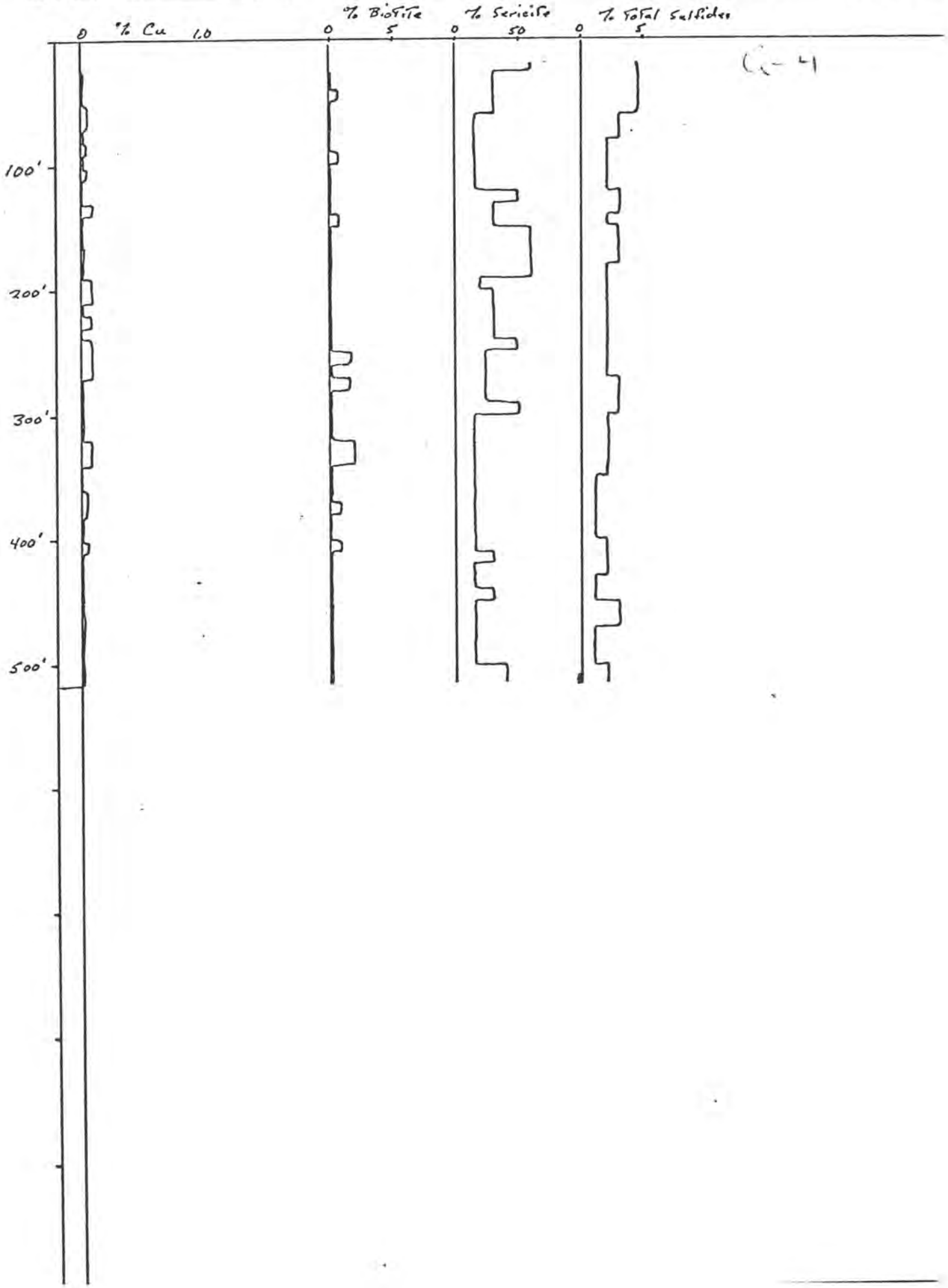
3) Biotite shist Qtz-K-feld ±5% albite

4)

KERR-McGEE CORPORATION
SUMMARY DRILL HOLE LOG
SCALE 1" = 100'

PROJECT Quartzsite
LOCATION Yuma Co. Az.

DRILL HOLE NO. W-4 PAGE 1 OF 1
BEARING S 20° W DIP -60
TOTAL DEPTH 514 BY WPL

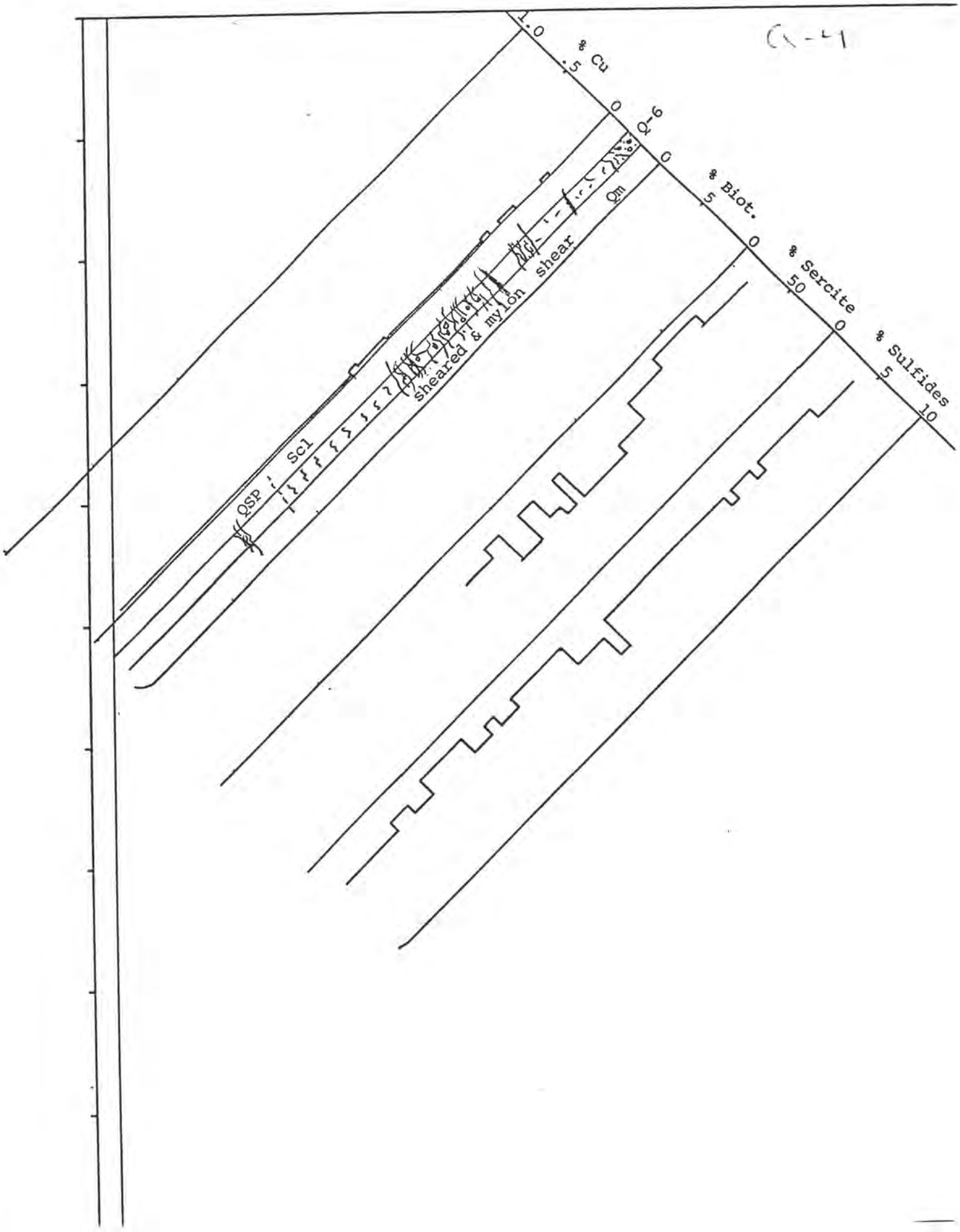


KERR-McGEE CORPORATION
SUMMARY DRILL HOLE LOG
SCALE 1"=100'

PROJECT Quartzite
LOCATION Yuma County
ARIZONA

DRILL HOLE NO. W-4
BEARING S.50°W.
TOTAL DEPTH 514'

PAGE 1 OF 1
DIP -45°
BY W.P.L.

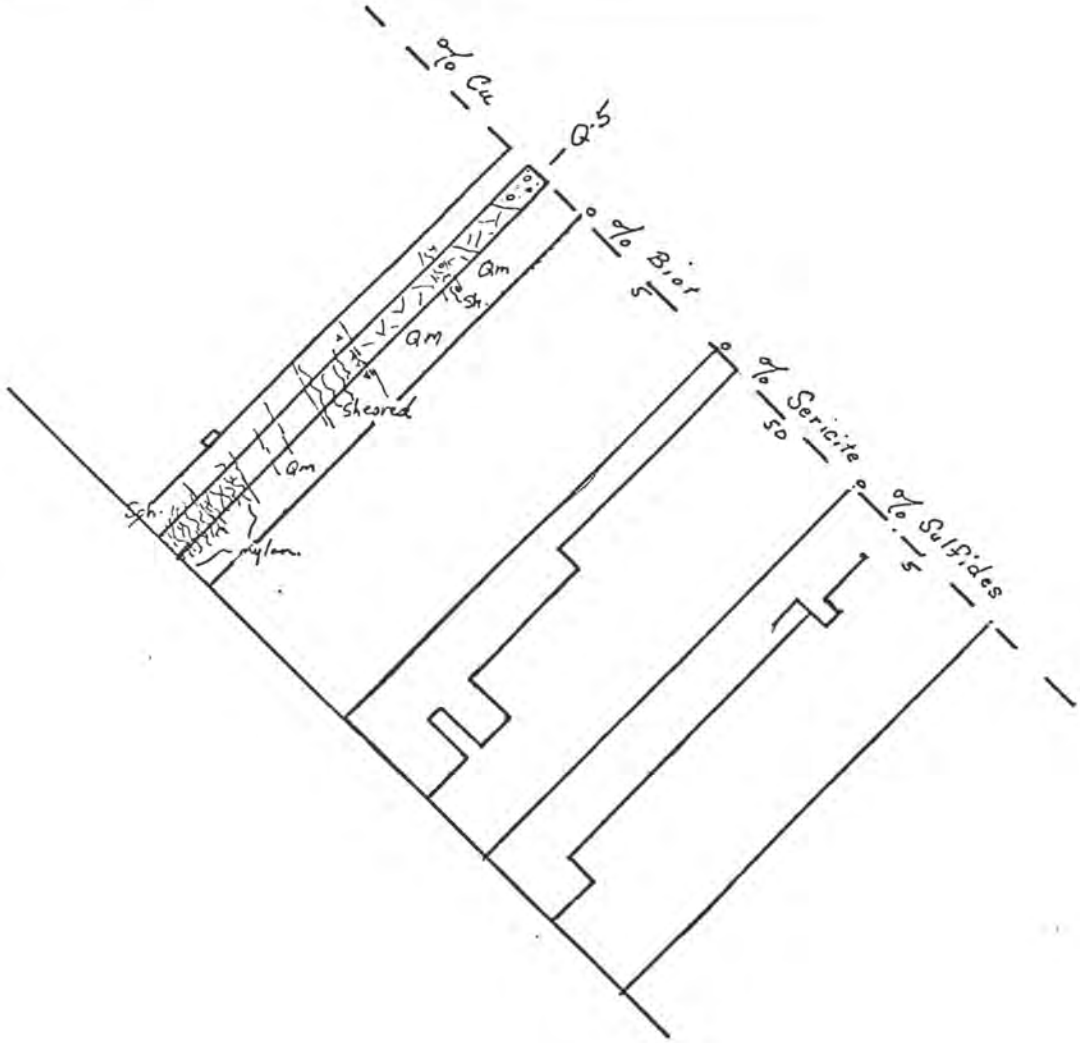


KERR-McGEE CORPORATION
SUMMARY DRILL HOLE
SCALE 1" = 100'

PROJECT QUARTZITE
LOCATION Yuma Co, Arizona

DRILL HOLE NO. U-5
BEARING
TOTAL DEPTH 269'

PAGE 1 OF 1
DIP -45°
BY WPLeed

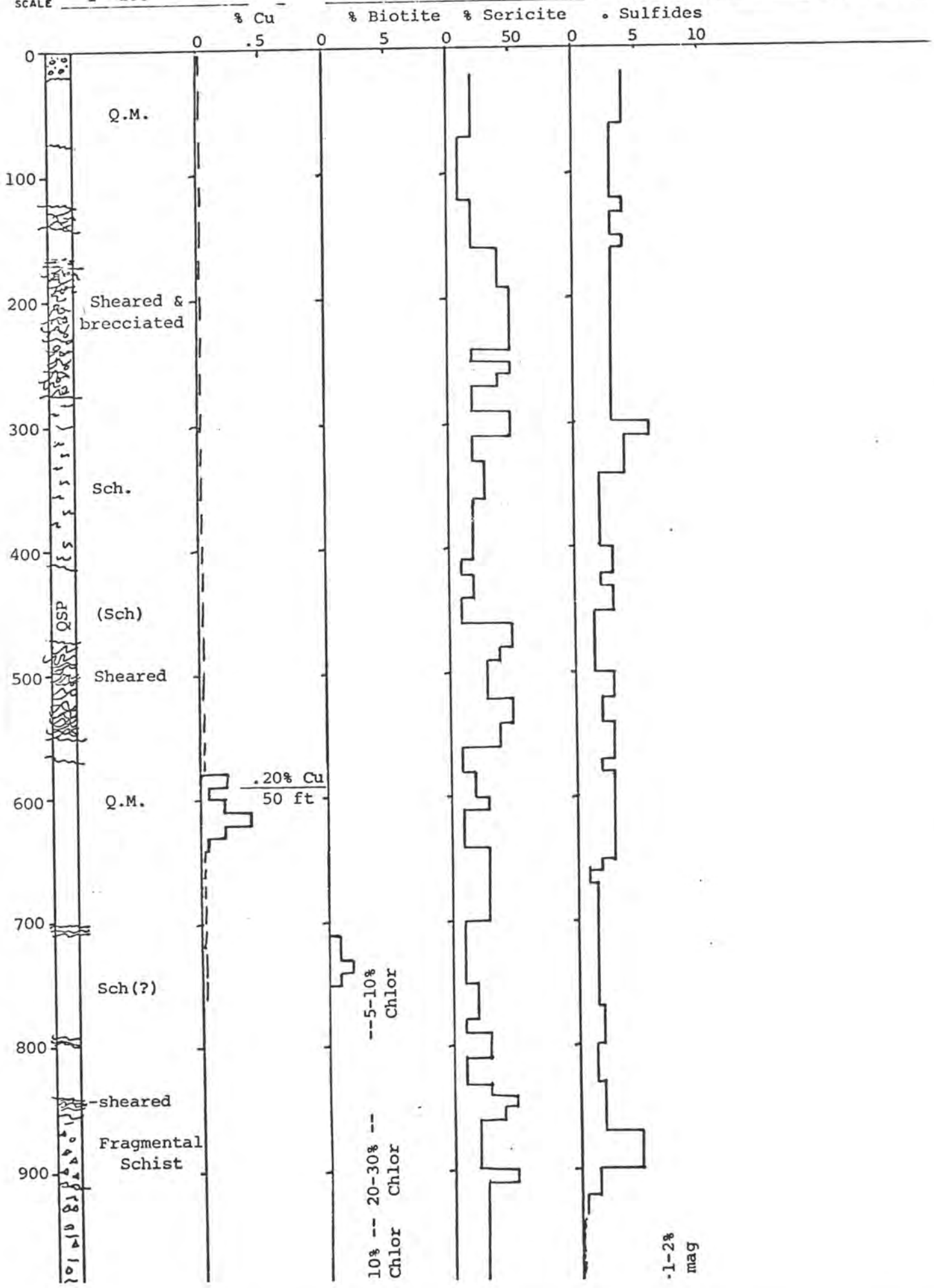


KERR-McGEE CORPORATION
SUMMARY DRILL HOLE LOG
SCALE 1"=100'

PROJECT Quartzite
LOCATION Yuma County, Arizona

DRILL HOLE NO. Q-6
BEARING S.50° W.
TOTAL DEPTH 1142'

PAGE 1 OF 1
DIP -45°
BY W.P.L.



KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH S-1
Spudded To 1310 in '67
Completed ~~Prior to July,~~ 1965 68
Total Depth ~~Approx.~~ 2,000'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Coca 5 Sec 33 T. 4N R. 20W
Elevation
Hole Size NX 0-1616': BX 1616-2000'
Core Size NX 0-550': 700-1616'; BX 550-700'; 1616-2000'
Hole Angle Vertical
Collar ~~Coords.~~ loc 1030' N32°W N.
from SE Cor Sec 33 E. T4N R20W

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'			NO SAMPLE					
50-100'	50'	90	1600	210	51				18984
100-150'	50'	92	1100	335	48				18985
150-200'	50'	93	1000	315	50				18986
200-250'	50'	97	1500	145	93				18987
250-300'	50'	116	1200	135	41				18988
300-350'	50'	69	1100	265	70				18989
350-400'	50'	101	1000	190	60				18990
400-450'	50'	163	800	116	160				18991
450-500'	50'	165	1000	135	190				18992
500-550'	50'	202	500	210	100				18993
550-600'				NO SAMPLE					
600-650'	50'	120	340	83	67				18994
650-700'				NO SAMPLE					
700-750'	50'	96	600	545	66				18995
750-800'	50'	120	210	55	52				18996
800-850'	50'			NO SAMPLE					
850-900'	50'	130	230	100	67				18997
900-950'	50'	143	230	100	54				18998

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

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH S-1

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
950-1000'	50'	171	220	115	57		.50	18999
1000-1050'	50'	137	330	100	47		.47	19000
1050-1100'	50'	146	170	100	55		.55	B18951
1100-1150'	50'	100	165	65	59		.91	B18952
1150-1200'	50'	225	320	135	36		.27	B18953
1200-1250'	50'	100	145	85	72		.84	B18954
1250-1300'	50'	100	325	170	110		.65	B18955
1300-1350'	50'	105	200	140	46		.39	B18956
1350-1400'	50'	90	195	90	53		.59	B18957
1400-1450'	50'	120	175	105	70		.67	B18960
1450-1500'	50'	103	175	95	65		[illegible]	B18961
1500-1550'	50'	70	115	45	105		.3	B18962
1550-1600'	50'			NO SAMPLE				
1600-1650'	50'	65	75	55	37		.67	B18963
1650-1700'	50'	55	85	100	41		.41	B18964
1700-1750'	50'	80	105	80	25		.31	B18965
1750-1800'	50'	100	110	50	52		1.0	B18966
1800-1850'	50'	80	100	45	31		.69	B18967
1850-1900'	50'	80	110	60	44		.73	B18968
1900-1950'	50'	80	80	50	58		1.2	B18969

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR-McGEE CORPORATION

Assay Log

istrict Quartzite-Sugarloaf
ole Number DDH S-2
pudded
ompleted Prior to July, 1965
otal Depth Approx. 900'
riller Congdon & Carey
ogged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

ole Depth	Inter-val	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
)-100	100	130	1400	70	51		.73		B18971
100-150	50	125	1800	95	55		.58		B18972
150-200	50	220	2700	95	112		1.2		B18973
200-250	50	135	1200	55	100		1.8		B18974
250-300	50	90	185	100	165		1.6		B18975
0-350	50	125	120	70	93		1.3		B18976
350-400	50	190	165	55	100		1.8		B18977
400-450	50	105	160	95	100		1.6		B18978
450-500	50	110	185	130	100		.77		B18979
500-550	50	175	140	85	260		3.1		B18980
550-600	50	185	110	50	85		1.7		B18981
600-650	50	90	145	70	115		1.6		B18982
650-700	50	85	165	100	80		.80		B18983
700-750	50	100	335	110	52		.47		B18984
750-800	50	120	260	115	68		.59		B18985
800-850	50	72	136	40	30		.75		14743
850-900	50	95	155	95	53		.56		B18986

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

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH S-3
Spudded
Completed Prior to July, 1965
Total Depth Approx. 2000'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 3 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50			NO SAMPLE						
50-100	50	127	260	70	41				B18901
100-150	50	104	260	45	220				B18902
150-200	50	145	970	115	30				B18903
200-250	50	132	700	185	61				B18904
[illegible]-300	50	170	1000	170	90				B18905
300-400	100	145	640	205	108				B18906
400-450	50	290	320	120	95				B18908
450-500			NO SAMPLE						
500-550	50	116	350	115	60				B18907
550-650			NO SAMPLE						
650-700	50	100	272	200	70				14714
700-750	50	118	180	72	48				B18909
750-800	50	83	70	80	95				B18910
800-850	50	100	420	130	43				B18916
850-900	50	178	190	170	90				B18911
900-950	50	180	150	150	95				B18912
[illegible]-1000	50	170	260	115	64				B18913
1000-1050	50		NO SAMPLE						

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

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf

Hole Number DDH S-3

Hole Depth	Inter. Val.	Cu	Zn	Pb	Mo	Oz.Ag	Oz.Au	SAMPLE NUMBER
1050-1100	50	112	260	275	70			B18922
1100-1150	50	199	340	190	120			B18914
1150-1200	50	82	124	84	35			B18915, 23, 24
1200-1250	50	108	100	75	37			B18917
1250-1300	50	75	65	42	41			B18918
1300-1350	50	85	75	40	53			B18919
1350-1400			NO SAMPLE					
1400-1450	50	91	80	44	24			B18920, 21
1450-1500	50	95	65	30	33			B18929
1500-1550	50	80	80	50	27			B18925
1550-1600	50	166	73	40	66			B18926, 34
1600-1650	50	105	125	35	45			B18927
1650-1700	50	123	90	33	30			B18928
1700-1750	50	202	70	38	24			B18930
1750-1800	50	195	80	31	33			B18931
1800-1850	50	120	72	32	31			B18932 + 3
1850-1900	50	248	104	80	ND			14715

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-4
Spudded
Completed Prior to July, 1965
Total Depth 790'
Driller Congdon & Carey
Logged By A. Grant

County Yuma State Arizona
Claim Sec 4 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	48	35	150	35				B18935
50-100'	50'	60	2200	160	68				B18936
100-150'	50'	68	2000	260	68				B18937-8
150-200'	50'	125	1600	255	100				B18939
200-250'	50'	112	1200	280	112				B18940
250-300'	50'	82	1700	270	57				B18944
300-350'	50'	110	2800	620	48				B18941
350-400'	50'	98	1100	250	44				B18942
400-450'	50'	110	1000	280	61				B18943
450-500'	50'	67	800	225	45				B18945
500-550'	50'	75	900	145	65				B18946
550-600'	50'	88	510	135	35				B18947
600-650'	50'	100	510	200	33				B18948
650-700'	50'	90	400	165	46				B18949
700-750'	50'	105	800	125	55				B18950
750-800'	50'	120	395	110	50				B18958-9

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

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-5
Spudded
Completed Prior to July, 1965
Total Depth 651.3'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX 0-500 BX 500 to 651
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	68	33	115	15				18964
50-100'	50'	60	250	70	14				18965
100-200'	100'		NO SAMPLE						
200-250'	50'	1380	360	35	200				18966
250-300'	50'	137	900	70	180				18967
300-350'	50'	163	250	65	55				18968
350-400'	50'	164	270	60	150				18969
400-450'	50'	170	250	100	82				18970
450-500'	50'	112	95	60	120				18971

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

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-6
Spudded
Completed Prior to July, 1965
Total Depth 697'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 34 T. 4N R. 20W
Elevation
Hole Size NX 0-466'; BX 466-696'
Core Size NX 0-466'; BX 466-697'
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		SAMPLE NUMBER
0-50'	50'	44	70	90	23				18971
50-100'	50'	144	1400	250	16				18972
100-150'	50'	123	3000	265	28				18973
150-200'	50'	80	1700	650	34				18974
200-250'	50'	125	1500	255	54				18975
250-300'	50'	60	800	240	40				18976
300-350'	50'	71	800	485	80				18977
350-400'	50'		NO SAMPLE						
400-450'	50'	101	700	220	60				18978
450-500'	50'	118	1000	140	57				18979
500-550'	50'	110	1000	270	48				18980
550-600'	50'	84	2300	465	59				18981
600-650'	50'	92	1600	335	90				18982
650-~~700~~' 677	50'	91	1800	375	35				18983

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

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-7
Spudded
Completed
Total Depth 1164.5
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 7 N R. 20 W
Elevation 1180
Hole Size 5 1/8" Rotary
Core Size Not Cored
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Inter-val	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50'	50'	52	330	30	27				18901
50-100'	50'	87	450	55	34				18902
						.09	Tr.		
100-150'	50'	54	160	54	30				18903
150-200'	50'	69	170	70	38				18904
		NO SAMPLE							
250-300'	50'	103	100	43	56				18906
						.05	.002		
300-350'	50'	104	190	70	76				18907
350-400'	50'	86	110	45	110				18908
400-450'	50'	95	125	58	68				18909
450-500'	50'	187	320	145	108				18910
						.11	.002		
500-550'	50'	185	390	200	230				18911
550-600'	50'	240	440	245	100				18912
600-650'	50'	NO SAMPLE							
650-700'	50'	117	150	81	105	.09	.001		18914
700-800'	100'	NO SAMPLE							
800-850'	50'	130	160	110	85				18917
						.02	.001		
850-900'	50'	136	160	115	77				18918
900-950'	50'	150	170	115	80				18919
950-1000'	50'	161	130	89	80				18920
* 1145-1164'	19'	220	60	23	115				18913

Gross value calculated from copper ¢ per pound; lead ¢ per pound; zinc ¢ per pound; molybdenum $ per pound; silver $ per ounce; and gold $35.00 per ounce.

* NX core

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH S-8
Spudded
Completed
Total Depth 1000'
Driller Congdon & Carey
Logged By R. Ahern

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

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number	
380-383	3	125	35	23	29				18944	Quartz Sericite Schist
435-443	8	86	42	20	32	.06	.001		18945	
861-965	34	750	85	17	19				18915	

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

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number RH S-10
Spudded
Completed
Total Depth 550 547.5
Driller Congdon & Carey
Logged By R. Ahern

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

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50'	50'	64	40	32	30				18953
50-100'	50'	68	50	43	36				18954
100-150'	50'	50	110	71	70	.08	.001	<	18955
150-200'	50'	55	160	51	38				18956
200-250'	50'	217	150	55	36				18957
250-300'	50'	65	125	40	39				18958
300-350'	50'	56	90	38	44				18959
350-400'	50'	72	80	58	52				18960
						.06	.002	<	
400-450'	50'	65	80	68	46				18961
450-500'	50'	69	100	59	61				18962
500-550'	50'	100	100	48	56				18963
	SCATTERED CORE RUNS WITH GOOD RECOVERY.								
347-353'	6'	97	60	31	30				18946
395-396'	1'	135	15	29	50				18947
460-462'	2'	97	70	61	35				18948

Dark Grey Meta-Quartzite

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

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number RH SL-13
Spudded
Completed
Total Depth > 900'
Driller Congdon & Carey
Logged By .R. Ahern

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size 5 1/8 Rotary
Core Size NX Where Cored
Hole Angle Vertical
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50'	50'	98	55	14	24				18930
50-100'	50'	98	45	16	20				18931
100-150'	50'	80	40	16	45	.07	.001		18932
150-200'	50'	75	60	17	51				18933
200-250'	50'	68	90	60	47				18934
250-300'	50'		NO SAMPLE						
300-350'	50'	145	65	33	45				18935
350-400'	50'	193	60	29	48	.06	.002		18936
400-450'	50'	250	55	24	43				18937
450-500'	50'	202	75	23	57				18938
500-550'	50'	210	65	25	66				18939
550-600'	50'	198	75	26	58				18940
600-650'	50'	210	75	32	73	.05	.001		18941
650-700'	50'		NO SAMPLE						
700-750'	50'	255	70	31	86				18942
750-850'	100'		NO SAMPLE						
850-900'	50'	640	74	31	105	.06	.002		18943
Scattered	short NX	Core runs with very poor recovery.							
280-503'	223'	265	80	35	61	.07	.001		18905

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

KERR-McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-15
Spudded
Completed
Total Depth > 3650'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size Rotary 0-533'
Core Size NX 533-2000'; BX 2000-3650'
Hole Angle
Collar Coords. N.
E.

Gross Value in Sulfide Minerals*

Hole Depth	Interval	Cu ppm	Zn ppm	Pb ppm	Mo ppm	oz.Ag	oz.Au		Sample Number
0-50'	50'	530	680	255	20	[illegible]			18921
50-100'	50'	66	810	135	22	[illegible]			18922
100-150'	50'	122	910	125	24	[illegible]			18923
150-200'	50'	82	620	175	19	[illegible]			18924
200-250'	50'		NO SAMPLE						
250-300'	50'	85	580	145	22	[illegible]			18925
300-350'	50'	73	300	90	24	[illegible]			18926
350-400'	50'	72	250	80	30	[illegible]			18927
400-450'	50'	73	260	95	32	[illegible]			18928
450-500'	50'	66	260	95	33	[illegible]			18929
500-550'	50'	95	104	30	33	[illegible]			18930 & B18988
550-600'	50'	250	185	100	45	[illegible]			B18989
600-650'	50'	80	155	85	41	[illegible]			B18990
650-700'	50'	40	300	50	31	[illegible]			B18991
700-750'	50'	145	170	62	87	[illegible]			B18992
750-800'	50'	65	135	45	50	[illegible]			B18993
800-850'	50'	110	740	80	55	[illegible]			B18994
850-900'	50'	70	225	75	52	[illegible]			B18995
900-950'	50'	100	130	50	75	[illegible]			B18996

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

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf

Hole Number DDH SL-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
950-1000'	50'	70	85	35	45	80		B18997
1000-1050'	50'	90	205	130	155	[illegible]		B18998
1050-1100'	50'	70	140	155	155	[illegible]		B18999
1100-1150'	50'	100	115	40	44	[illegible]		B19000
1150-1200'	50'	160	125	65	75	[illegible]		C18901
1200-1250'	50'	110	95	35	40	[illegible]		C18902
1250-1300'	50'	75	60	35	53	[illegible]		C18903
1300-1350'	50'	115	85	55	87	[illegible]		C18904
1350-1400'	50'		NO SAMPLE					
1400-1450'	50'	145	115	60	46	[illegible]		C18905
1450-1500'	50'	650	90	55	67	[illegible]		C18906
1500-1550'	50'	620	95	155	56	[illegible]		C18907
1550-1600'	50'		NO SAMPLE					
1600-1650'	50'	165	70	35	96	[illegible]		C18908
1650-1700'	50'		NO SAMPLE					
1700-1750'	50'	215	55	40	55	[illegible]		C18909
1750-1800'	50'	250	90	40	150	[illegible]		C18910
1800-1850'	50'		NO SAMPLE					
1850-1900'	50'	205	60	35	155	[illegible]		C18911
1900-1950'	50'	250	80	45	120	[illegible]		C18912
1950-2000'	50'	175	65	40	68	[illegible]		C18913
2000-2050'	50'	285	70	50	125	[illegible]		C18914
2050-2100'	50'	320	50	50	117	[illegible]		C18915
2100-2150'	50'	110	70	25	34	[illegible]		C18916

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
2150-2200'	50'	155	240	350	29	[illegible]		C18917
2200-2250'	50'	205	75	40	45	[illegible]		C18918
2250-2300'	50'	185	175	45	330	[illegible]		C18919
2300-2350'	50'	185	85	15	57	[illegible]		C18920
2350-2400'	50'	200	100	35	31	[illegible]		C18921
2400-2450'	50'	110	165	20	58	[illegible]		C18922
2450-2500'	50'	130	95	10	35	[illegible]		C18923
2500-2550'	50'	115	100	10	66	[illegible]		C18924
2550-2600'	50'	95	80	10	26	[illegible]		C18925
2600-2650'	50'	50	140	10	28	[illegible]		C18926
2650-2700'	50'		NO SAMPLE					
2700-2750'	50'	105	55	35	45	[illegible]		C18927
2750-2800'	50'	105	55	25	27	[illegible]		C18928
2800-2850'	50'	65	55	5	40	[illegible]		C18929
2850-2900'	50'	100	60	15	26	[illegible]		C18930
2900-2950'	50'	110	50	7	49	[illegible]		C18931
2950-3000'	50'	75	50	10	29	[illegible]		C18932
3000-3050'	50'	60	55	15	34	[illegible]		C18933
3050-3100'	50'	175	75	45	35	[illegible]		C18934
3100-3150'	50'	550	90	45	50	[illegible]		C18935
3150-3200'	50'	80	65	5	28	[illegible]		C18936
3200-3250'	50'	80	55	5	27	[illegible]		C18937
3250-3300'	50'	95	70	10	37	[illegible]		C18938
3300-3350'	50'	215	65	15	43	[illegible]		C18939

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR McGEE CORPORATION

Assay Log

District Quartzite-Sugarloaf
Hole Number DDH SL-15

Hole Depth	Inter. Val.	Cu ppm	Zn ppm	Pb ppm	Mo ppm	Oz.Ag	Oz.Au	SAMPLE NUMBER
3350-3400'	50'	190	80	20	33	53		C18940
3400-3450'	50'	115	75	15	35	50		C18941
3450-3500'	50'	110	110	20	36	56		C18942
3500-3550'	50'	160	70	30	64	44		C18943
3550-3600'	50'	320	70	20	39	54		C18944
3600-3650	50'	190	95	20	43	63		C18945

* Gross value calculated from copper per pound; lead per pound; zinc per pound; molybdenum per pound; silver per ounce; and gold per ounce.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH S-1
Spudded
Completed Prior to July, 1965
Total Depth Approx. 2,000'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX 0-1616; BX 1616-2000'.
Core Size NX 0-550'; 700-1616'; BX 550-700'; 1616-200
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0								Schist	White, fine-grained	Discernable superimposed	Pyrite, 10% in schistosity. No oxidation,
74									quartz-sericite, gently	alteration limited to	no chalcocite.
									dipping schistosity.	alunite-pyrite-calcite.	
100	26	100%	18984	90	51	210	+1000		Occasional calcite vein-	Local zones of silica	
									lets. No mafic minerals.	flooding.	
142	42	100%	18985	92	48	335	+1000				
161	19										
181	20	100%	18986	93	50	315	+1000		Grey, phyllic schist		Abundant disseminated pyrite with minor
210	29								cut by veinlets of		local molybdenite.
250	40	40%	18987	97	93	145	+1000		quartz, pyrite, and cal-	Quartz-pyrite veins more	
									cite. 2" quartz-calcite	abundant below 250'. Alunite	
300	50	60%	18988	116	41	135	+1000		vein at 317'.	veins persist, occasional	
										serpentine coating frac-	
350	50	60%	18989	69	70	265	+1000			tures.	
400	50	60%	18990	101	60	190	+1000		Light grey quartz schist,	Quartz flooding with	
									shattered and badly	rare secondary orthoclase.	
450	50	60%	18991	163	160	116	+1000		broken.		
456	4	0							Medium grey quartz feld-	Alunite replacing feld-	
500	44	80%	18992	165	190	135	+1000		spar schist, no mafics	spar, quartz veins and	
										silica flooding; alunite	
550	50	80%	18993	202	100	210	500			quartz-pyrite zone at 465'	
	---- BEGIN BX CORE ----										
620	10	100%	14716	112	30	120	264				
627		0									
637	10	100%	18994	120	67	83	340				

District Quartzite - Sugarloaf Hole Number DDH SL-1

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
700		NX CORE						Argillic Schist	Grey, micaceous, fine-grained; locally brecciated.	Difficult to distinguish from metamorphism; chlorite and very rare calcite are possible alteration minerals.	Pyrite in veinlets and stringers along schistosity.
730								Fault Breccia	Rounded schist in clay matrix.		
750	50	100%	18995	96	66	545	600				
765								Schist	Medium greenish grey, fine-grained micaceous	Quartz-sericite chlorite; anhydrite(?) at 768'.	Prominent quartz veins cross-cutting schistosity.
793	43	100%	18996	120	52	55	210				
* 860	10	100%	14734	76	ND	90	216				
884		0						Schist	Quartz-sericite schist breccia.	Calcite veins with minor alunite, occasional quartz-pyrite veinlets.	Pyrite disseminated along schist planes and forming veins. Sulfides [illegible] 10%.
900	16	100%	18997	130	67	100	230				
914											3" quartz vein at 915'. Sharply reduced sulfide content, 3 to 5%.
920	20	100%	18998	143	54	100	230				
991								Phyllic Schist	Greenish grey, fine-grained.	Quartz-sericite-alunite; feldspar replaced by alunite.	Pyrite 5-10% in schist planes.
1000	9	100%	18999	171	57	115	220				
1050	50	90%	19000	137	47	100	330				
* 1060	10	100%	14736	80	20	110	236				
1070										Quartz-alunite-sericite with chlorite-pyrite and clay.	Pyrite 10% to 20%: larger quartz-pyrite veins, 1 or 2 per foot.
1100	30	100%	18951	146	55	100	170				
1117		0									Reduced sulfide content.
1150	33	100%	18952	100	59	65	165				
1200	50	100%	18953	225	36	155	320	Quartz Schist	Dark grey, dense, hard.	Clay, chlorite, gypsum.	Pyrite 5-10%.

District Quartzite - Sugarloaf Hole Number DDH SL-1

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1250	50	40% B	18954	100	72	85	145	Schist	Quartz-chlorite meta-sediments.	Sericite-epidote.	Pyrite 3-5%.
1300	50	90% B	18955	100	110	170	325				Pyrite and quartz-pyrite veins more pronounced but total sulfides still less than 5%.
1350	50	90% B	18956	105	46	140	200				
1400	50	40 B	18957	90	53	90	195	Quartz Schist		Quartz, chlorite, pyrite.	
1419								Schist	Core is badly broken, maybe fault zone.	Introduced chlorite is abundant.	
1428	9	100% B	18960	120	70	105	175				
* 1440	10	100%	14735	80	ND	60	160				
1447								Porphyroblastic Schist	Dark grey fissile, schistosity is nearly horizontal.	Abundant epidote after former feldspar, also veinlets	Quartz-pyrite-sphalerite-calcite veins, intense chalcopyrite tarnish in veins, 10%.
1454									2' quartz vein.		
1466								Quartz Schist	Medium grey, dense, massive.	Epidote replacing feldspar, chlorite along fractures, increases with depth.	Pyrite disseminated along planes of schist, 30-50%. Pyrite content increases to 10% below 1476'.
1490								2' Fault Breccia			
1500	53	100% B	18961	103	65	95	175	Chlorite Schist	Porphyroblastic texture locally discernable.		Pyrite 5%.
1523	23	100% B	18962	70	105	45	115				
1606								Quartz-Chlorite Schist	Medium-greenish grey; locally well healed breccia texture.		Low sulfide content, 2-5%.
1616											
			BEGIN	BX CORE							
1627								Breccia			
1650	23	100% B	18963	65	37	55	75				
1658								Quartz Schist Breccia	Dense, massive, dark grey schistosity not apparent; breccia texture persists.	Quartz, secondary orthoclase; 2" quartz vein at 1664'.	5% pyrite in quartz-pyrite veins and disseminated.

District Quartzite-Sugarloaf Hole Number DDH SL-1

Depth	Int.	%Core Rcvy	Samp. No.	Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1700	50	100%	B 18964	55	41	100	85	Schist Breccia	Dense, massive, medium to dark grey.	Quartz-secondary orthoclase, with minor epidote and chlorite in fractures Occasional calcite veinlets.	3% pyrite disseminated along schist planes, increased to 5-8% below 1740'.
1750	50	100%	B 18965	80	25	80	105				
1770									Rock is badly broken up.		
1800	50	100%	B 18966	100	52	50	110				
1835								Hornfels	Dense, massive, dark grey; no schistosity visible.		
1850	50	80%	B 18967	80	31	45	100	Quartz Schist	Somewhat porphyroblastic, massive with moderate brecciation.	Quartz-chlorite-pyrite.	
1900	50	100%	B 18968	80	44	60	110	Breccia	Alternating zones of greenish grey schist and massive dark grey, siliceous rock; possibly intrusive monzonite.	Schist-chlorite-clay-monzonite-quartz flooding with biotite and quartz-calcite-pyrite stringers.	Pyrite 10-15% with minor chalcopyrite tarnish. Molybdenite in quartz vein at 1666'.
* 1920-1925	5	100%	14713	68	5	80	144				
1950	50	100%	B 18969	80	58	50	80				

* Samples taken and described by R. M. Corn.

KERR-McGEE CORPORATION

District Quartzite - Sugarloaf
Hole Number DDH S-2
Spudded
Completed Prior to July, 1965
Total Depth Approx. 900'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0	PLUGGED (NO CORE)										
25		NX CORE						Schist	Tan to light grey, vug-gy: quartz and biotite-quartz: feldspar porphy-roblasts weathered to clay.	Calcite-chlorite-pyrite, gypsum noted in fractures.	Completely oxidized iron flooding and black hematite filling fractures and schist planes indicating 15% pyrite.
43											Only slight oxidation along fractures. Near vertical quartz-pyrite veinlet cross-cuts horizontal veinlets following schistosity at 50'.
52									Fine-grained, no visible texture.		Very minor disseminated pyrite.
73								Schist	Gently dipping, mottled looking.		Pyrite stringers following schistosity predominate with quartz-pyrite veinlets crosscutting 10% pyrite. No chalcocite or chalcopyrite noted.
77									Shattered zone.		Partially oxidized.
100	75	65%	B18971	130	51	70	+1000				
120									Light to medium grey; platey to massive.	Intense quartz-pyrite with minor chlorite and epidote: no calcite.	Only minor oxidation. sulfides equal 15-20%.
137									Massive, fine-grained.		10% pyrite in stringers along schistosity.
150	50	100%	B18972	125	55	95	+1000				
* 170	10	100%	14741	192	30	35	440				
183										Numerous gypsum veinlets accompany quartz-pyrite alteration.	10-15% pyrite, no chalcocite or chalcopyrite: local massive pyrite-gypsum veinlets.
200	17	100%	B18973	220	112	95	+1000		Light to medium grey, fine-grained.		

District Quartzite-Sugarloaf Hole Number DDH S-2

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
204								Schist	Porphyroblasts of orthoclase.	Abundant epidote-pyrite-quartz veinlets; porphyroblasts by epidote.	Pyrite 10%.
230									Core is badly broken.		Partial oxidation.
250	50	80%B	18974	185	100	55	+1000				
269								Schist	Fine-grained, medium grey.	Pyrite-chlorite-epidote.	5-10% disseminated pyrite; 15-20% below 296'.
296											
300	50	60%B	18975	90	165	100	185	Porphyroblastic Schist.	Feldspar replaced by epidote in quartz matrix.	Quartz-epidote-pyrite with minor epidote.	15% pyrite disseminated and in veinlets.
315-325	10	100%	14717	180	10	90	184				
348									Massive quartz-pyrite-epidote zone.		
350	50	100%B	18976	125	93	70	120	Schist	Fissil, dark-grey, only rare porphyroblasts.	Quartz-pyrite-epidote.	5-10% pyrite in veinlets and finely disseminated with occasional ½" quartz-pyrite veins.
370								Porphyroblastic Schist		Epidote replacing former feldspar; quartz flooding and veins.	
400	50	80%B	18977	190	100	55	165				
450	50	60%B	18978	105	100	95	160				
488								Quartz Schist	Dark grey, dense, massive, fine-grained.	Quartz flooding and in veinlets; epidote lining veinlets with locally massive epidote.	Massive pyrite in quartz veins.
500	50	80%B	18979	110	100	130	185				
532									Micaceous schist, thin laminations, greenish-grey.		Sparsely disseminated pyrite and quartz-pyrite veinlets.
550	50	100%B	18980	175	260	85	140				
564								Porphyroblastic Schist	Dark grey and green.	Epidote replacing former feldspar, locally massive epidote associated with quartz-pyrite zones.	
600	50	80%B	18981	185	85	50	110				

District Quartzite-Sugarloaf Hole Number DDH S-2

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
600								Quartz Schist	Massive, medium-grey.	Quartz-epidote; no calcite	Prominent white quartz vein at 604 contains abundant pyrite and minor molybdenite.
612								Phyllic Schist	Fine-grained, thinly laminated.	Quartz-epidote-pyrite.	
650	50	80%B	18982	90	115	70	145				
700	50	100%B	18983	85	80	100	165	Porphyroblastic Schist	Dark grey, fine-grained chlorite-quartz groundmass.	Quartz-epidote-chlorite alteration; epidote in quartz-pyrite veins and replacing former feldspar; minor chlorite along fractures; quartz flooding and occasional white quartz vein.	10% pyrite disseminated and in veins; pyrite content increases with depth.
750	50	100%B	18984	100	52	110	335				
800	50	40%B	18985	120	68	115	260				
830	10	100%	14743	72	30	40	136				
848											
890	42	70%B	18986	95	53	95	155				
					LAST	BOX					

* Samples taken and described by R. M. Corn.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH S-3
Spudded [illegible]
Completed Prior to July 1965 [illegible]
Total Depth Approx. 2000'
Driller Congdon & Carey
Logged By A. Grant [illegible]

County Yuma State Arizona
Claim Sec 3 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0											
83	NX	CORE						Schist	Very porous		
104	21	85%	318901	127	41	70	260		Schistosity at 90° to	Intense quartz-sericite;	Abundant cubic pyrite.
119									core.	oxidized iron on fractures.	
										Abundant talc.	
131	12	20%	318902	104	220	45	260	Schist	No iron stain, abundant		1/16" molybdenite veinlet at 35° to schist-
187									pyrite; abundant talc.		osity.
196	9	70%	318903	145	30	115	970	Schist	Argillic schist.	Weak sericite; minor quartz.	Pyrite cubes; fine pyrite veinlets at
* 225	10	100%	147[illegible]	128	-5	130	404				35° to schistosity; minor chalcopyrite.
233											
251	18	70%	318904	132	61	185	700	Schist	Argillic schist.	Chlorite-biotite micas;	Steep pyrite veinlets which cross at 90°
										minor quartz-sericite.	and 45° to schistosity; minor chalcopyrite
279											tarnish.
288	9	70%	318905	170	90	170	4000		Argillic schist; numer-	Quartz-sericite; abundant	Near vertical 1½" bull quartz vein; steep
									ous unorientiated por-	pyrite.	pyrite veinlets with sphalerite. Some
									phyroblasts.		pyrite veinlets appear lensoidal.
337										338 - Slightly increased.	Abundant pyrite mostly in schist planes.
										chlorite.	Minor chalcopyrite tarnish; small graphite
										340-350 Intense silicifica-	veinlet.
364	27	60%	318906	145	108	205	640			tion with occasional bull	
										quartz vein.	
412								415-419		More chlorite than above-	More abundant pyrite.
421	9	100%	318908	290	95	120	320	Fault Zone		quartz-sericite.	
* 435	10	100%	147[illegible]	104	ND	100	244				
499-									Argillic Schist.	Intense quartz-sericite.	Small specs of dark mineral, likely
535	36	80%	318907	116	60	115	350		Schistosity at 90° to	Abundant pyrite steep chlor-	tourmaline; some minor chalcopyrite
									core.	ite veinlet; tourmaline.	tarnish.
										Strong local silification.	

District Quartzite - Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
* 655	10	100%	14714	100	70	200	272				
709									Dark grey argillic schist to 727'. Light grey argillic schist to 764'. Dark schist may be result of biotite(?).	Strong silicification, few quartz veinlets. Quartz vein 1/3" at 30° to schistosity. Possibly contains pale yellow-green epidote.	Abundant pyrite; minor chalcopyrite tarnish on pyrite.
764	55	65%	B18909	118	48	72	180				
* 770	10	100%	14746	48	-5	30	176				
793											
802	9	60%	B18910	83	95	80	70		Light grey.	Anhydrite and massive chlorite veinlets; anhydrite also noted in groundmass.	Minor chalcopyrite stain, however it is more than above. 858 - Calcite cuts across bull quartz which also contains large crystals of red sphalerite.
849											
859	10	40(?)	B18916	100	43	130	420				
887								Medium to light grey Quartz Schist.	Medium to grey quartz schist; porphyroblastic texture. Below 907' color is light grey.	Quartz alteration groundmass seems to be mixture of quartz and biotite. Contains numerous grains of yellow-green epidote; inclusion of anhydrite with faint ring of chlorite.	Abundant disorientiated pyrite veinlets. Occasional quartz-pyrite almost parallel to schistosity.
916	29	100%	B18911	178	90	170	190		Medium grey to greenish-grey schist.	Open quartz veinlets; abundant small anhydrite veinlets which cross schistosity. Minor sericite, possibly secondary biotite. Minor chlorite-quartz-sericite. Several vertical vuggy quartz and calcite veinlets. Pale yellow-green epidote throughout groundmass. Fine-grained blebs of chlorite and/or biotite in groundmass. Open veinlets show very minor oxidation.	915 Quartz-pyrite ½" veinlet at 30° from vertical. Abundant disseminated and veinlet pyrite. Occasional bull quartz veins. Small grains of molybdenite in pyrite veinlet within bull quartz at 933.5'. At 950' note massive fine-grained chlorite veinlet with large grain of chalcopyrite. Quartz-pyrite veinlets with very minor chalcopyrite. Pyrite veinlets seem to be lined with chlorite. At 970' 3/4" quartz-pyrite veinlet in which the pyrite is well disseminated.
955	39	100%	B18912	180	95	150	150	Medium to dark grey schist.	Mildly porphyroblastic texture.		
982	27	100%	B18913	170	64	115	260				
* 1015	10	100%	14747	80	-5	115	188				

District Quartzite-Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1082								Schist	Quartz schist	Quartz-sericite. Chlorite in groundmass along schist planes.	Quartz-pyrite veinlets.
1090	8	80%	B18922	112	70	275	260				
1115								Dark grey Schist	Weak to moderate porphyroblastic texture; low sericite content.	Grains of calcite in groundmass; abundant grains of pale yellow-green epidote. Quartz-alunite. Abundant fine-grained chlorite throughout.	Disseminated and veinlet pyrite. Minor chalcopyrite in quartz-pyrite veinlets.
1140	25	90%	B18914	199	120	190	340		Good porphyroblastic texture.	Phenocrysts are likely feldspars partially altered to alunite.	Pyrite-quartz veinlets; minor disseminated pyrite.
1160	20	80%	B18923	70	33	140	200	Medium green grey schist	Good porphyroblastic texture.	Abundant greenish-yellow epidote in porphyroblastic texture. Quartz alteration. Calcite on veinlets.	Abundant pyrite. Quartz occasionally occurs in large grains. A ½" quartz-pyrite veinlet is well surrounded by layer of epidote.
1180	20	40%	B18915	70	40	80	120	Dark grey Schist	Below 1194 color is light grey with increased quartz.	Abundant biotite-quartz. Abundant feldspars.	Good fine pyrite and minor fine chalcopyrite.
1205	25	80%	B18924	102	30	62	90				
1215								Quartz Schist	Quartz schist light-grey.	Occasional quartz-pyrite vein or veinlet. Several fine quartz veinlets; less epidote than above.	Bull quartz with inclusions of epidote-feldspar mixture containing fair disseminated chalcopyrite.
1259	44	80%	B18917	108	37	75	100			Calcite on fractures. 1208-Bull quartz with secondary orthoclase.	
1269									Argillic Schist	Quartz-sericite; calcite on fractures and in groundmass.	Quartz-pyrite veinlet system is mostly parallel to schistosity.
1280	11	70%	B18918	75	41	42	65				
1304								Schist	Argillic schist which is well broken and fractured.	Abundant calcite on veinlets. Minor epidote. Fair chlorite. Iron oxidation evident at 1353 and 1358'. Probable anhydrite.	Possibly increased fine chalcopyrite associated with pyrite veinlets. Anhydrite and chlorite associated with possible epidote.
* 1365	10	100%	14748	36	-5	60	109				
1367	63	75%	B18919	85	53	40	75				
1412									Porphyroblastic texture of quartz-epidote with chlorite, pyrite and minor chalcopyrite.	Abundant quartz with biotite and/or chlorite; probable secondary orthoclase.	1412-1429 Fair chalcopyrite (½-1%) with secondary biotite and epidote.
1429	17	95%	B18920	71	23	50	80			Entire groundmass is recrystallized.	Sample was all of the split core in the interval.

District Quartzite-Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1431								Medium to Dark Grey Schist	Weak to medium porphyroblastic texture; altered groundmass seems to contain inclusions of original dark schist. Below 1458 rock is light grey quartz schist.	Quartz-sericite with biotite. Abundant epidote throughout groundmass. Occasional grain of anhydrite. Secondary orthoclase in small amounts.	Good disseminated pyrite with weak chalcopyrite. Occasional chlorite-pyrite veinlet.
1460	29	95%	B18922	110	26	40	80				
1469								Medium to Light grey Schist	Quartz schist.	Intense silicification with minor epidote, calcite on fractures. Possible secondary K-feldspar.	Fair chalcopyrite along with fine-grained disseminated pyrite.
1480	11	75%	B18929	92	33	30	65				
1495									Quartz schist.	Probable secondary feldspar. Epidote and chlorite in groundmass. Silicification is less intense below 1516'.	Fine disseminated pyrite with fair chalcopyrite. Below 1516' sulfide content drops.
* 1515	10	100%	14712	48	ND	40	128				
1541	46	70%	B18923	80	27	50	80	Medium to Dark Grey Schist.			
1563								Medium Grey Schist	Argillic Schist	Calcite in groundmass and on fractures; minor oxidation on a few fractures.	Low total sulfide.
1579	16'	80%	B18926	189	40	32	55		Quartz sericite.		
1587	8	80%	B18934	120	120	58	110				
1606								Quartz Schist		Quartz-sericite; partially argillic.	Minor chalcopyrite. 1607 - 1" quartz-pyrite vein with good molybdenite stringers. Pyrite is in center of quartz vein.
1616	10	90%	B18927	105	45	35	125				
1646								Quartz-Sericite Schist	1660-1672 - Fault zone	Phyllic to argillic	Low total sulfide.
1685	39	100%	B18928	123	30	33	90				

District Quartzite-Sugarloaf Hole Number DDH S-3

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
1685									Medium to dark grey schist.	Mostly quartz with abundant thin calcite on fractures. Abundant chlorite in schist planes.	1732 Quartz-chalcopyrite veinlet parallel to schistosity. Sulfide level slightly higher than above.
1734	49	50%	B18930	202	24	38	70	Quartz Schist	As above	As above with less calcite. A few fractures are weakly oxidized.	Generally very low total sulfide. Occasional large quartz vein.
1788	54	60%	B18931	195	33	31	80		Dark grey quartz schist. Epidote in fair amount chlorite or possible biotite. Calcite on fractures. Calcite or anhydrite(?) with chlorite and pyrite in schist planes.		Increased sulfides with notable chalcopyrite. Quartz veinlets have pyrite at center with chlorite lining. Most of the pyrite is in schist planes. 1801.5 - Small specks of molybdenite in massive quartz vein.
1832	44	75%	B18932	135	33	27	70		Quartz schist, medium to light grey. Below 1840' schist is light grey with quartz and low sulfide.	Strong silicification. Chlorite and/or secondary biotite found with quartz grains and quartz veinlets.	Increased total sulfide to 1840'. Below 1840' total sulfide is low. Rock material is well broken with occasional fault zone.
1855	23	60%	B18933	96	30	42	75				
* 1860	5	100%	14715	248	ND	80	104				

DEEPEST CORE FOUND WAS 1857'.
TOTAL DEPTH IS UNKNOWN.
2000' PROBABLE TOTAL DEPTH.

* Samples taken and described by R. M. Corn.

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-4
Spudded
Completed Prior to July, 1965
Total Depth 790'
Driller Congdon & Carey
Logged By A. Grant

County Yuma State Arizona
Claim Sec 4 T. 3N R. 20W
Elevation
Hole Size
Core Size NX
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0								Schist	Quartz-sericite: bleached white.	Abundant jarosite on fractures. Quartz veinlets with quartz grains in groundmass.	
30	30								Bleached argillic schist.	Intense quartz-sericite-alunite.	Abundant pyrite.
49	19	40%	B18935	48	35	150	35			Intense quartz-sericite: good alunite in schist planes: minor epidote.	Abundant pyrite with minor chalcopyrite in schist planes.
100	51	80%	B18936	60	68	160	+1000		Quartz-sericite schist.	Pyrite is weakly oxidized.	Fair chalcopyrite on pyrite.
118	18	80%	B18937	67	70	270	+1000		110-118' Rock is highly fractured.	Jarosite on most of the pyrite. Wide spread "bleeding" not apparent.	
147											
157	11	100%	B18938	73	53	230	+1000				
184											Minor chalcopyrite on widespread pyrite.
200	36	50%	B18939	125	100	255	+1000		Quartz-schist.	Strong quartz-sericite-alunite. No mafic minerals.	
212											
252	40	40%	B18040	112	112	280	+1000		Quartz-schist.	Groundmass is 100% quartz, sericite. Occasional quartz veinlet.	Abundant pyrite, some with fair chalco-pyrite tarnish.
261	9	100%	B18944	82	57	270	+1000				
* 310	10	100%	14730	88	85	450	5600				
319									Quartz-schist.	Intense quartz-sericite-alunite. Coarser quartz than noted above.	Abundant pyrite. Occasional pyrite veinlet with associated epidote.
347	29	75%	B18941	110	48	620	+1000				Occasional chalcopyrite on pyrite.

District Quartzite Hole Number DDH SL-4

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
375									Quartz schist.	Intense quartz-sericite-alunite. More quartz than above. Minor limonite on occasional fracture.	Abundant disseminated pyrite and pyrite veinlets. Minor chalcopyrite tarnish on both kinds of pyrite.
404	29	60%	B18942	98	44	250	+1000				
422									Quartz schist.	Intense quartz-sericite-alunite. Quartz is coarse in some places.	Abundant pyrite, some chalcopyrite tarnish.
460	38	85%	B18943	110	61	280	+1000				
* 485	10	100%	14731	64	5	430	2880		Light medium grey quartz schist.	Note! Introduction of chlorite; may be slightly argillic.	5% pyrite with less chalcopyrite stain. Gently dipping veins following schistosity.
500	40	70%	B18945	67	45	225	800		2" quartz vein at 509'.	Weak oxidation along some veinlets.	
550	50	100%	B18946	75	65	145	+1000			More intense silicification below 560'.	Pyrite as abundant thin stringers in schist planes.
600	50	100%	B18947	88	35	135	510				
* 600	10	100%	14732	60	<5	125	416				
626	26	80%	B18948	100	33	200	510				Blebs of pyrite disseminated throughout with minor chalcopyrite staining.
673								Quartz Schist	Porphyroblastic	Porphyroblasts altered to alunite.	Quartz-pyrite-sphalerite veinlets in schist planes.
692	20	100%	B18949	90	46	165	400				
703										Chlorite introduced along fractures.	
723	20	100%	B18950	105	55	125	800				
* 710-715	5	100%	14710	432	20	280	2000				
747								Quartz Sericite Schist	Light Grey		Quartz-pyrite sphalerite veins cross-cutting schist; disseminated pyrite throughout.
757	10	100%	B18958	100	56	225	505				
* 760	10	100%	14733	68	<5	160	440				
784								Quartz Schist	Micaceous banding.	Not discernable.	Quartz-pyrite veinlets.
790	7	100%	B18959	140	44	190	285				
								-790' - TOTAL DEPTH-			

* Samples taken and described by R. M. Corn

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-5
Spudded
Completed Prior to July, 1965
Total Depth 651.3'
Driller Congdon & Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 33 T. 4N R. 20W
Elevation
Hole Size NX
Core Size NXO-500 BX 500-651 7.0
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0											Oxidized; disseminated; pyrite less than
20	20	--Not	Cored	----				Schist	Chloritic schist with	Chlorite, clay, weak.	3%.
									blebs of feldspar and		
50	30	100%	18964	68	15	115	33		quartz: occasional zones		
100	50	100%	18965	60	14	70	250		of quartzite, dark		
	----	Not	Cored----						greenish-grey.		
229	129								Light grey: original	Alunite-sericite-quartz.	20% oxidized, pyrite stringers coated
									mineralogy destroyed		with minor chalcocite; quartz-pyrite
									by alteration.		vein at 240'; pyrite in veinlets not
											disseminated.
245								Arkosic	Grey to greenish grey.		Pyrite veins and stringers in planes
								Schist			of schistosity.
250	31	100%	18966	1380	200	35	360				
282	32		18967	137	180	70	+1000				
	----	Not	Calvaged----								
342	60							Argillic	Light to medium grey:	quartz-alunite-gypsum	Pyrite in veinlets and in schist planes:
								Schist	greenish grey.		no chalcocite tarnish noted.
350	8	46%	18968	163	55	65	250				
365											
387	----	Not	Salvaged-----								
400	50	56%	18969	164	150	60	270				Occasional chalcopyrite tarnish noted
											on non-crystalline pyrite.
420									Porphyroblastic texture.		
450	50	70%	18970	170	82	100	250				
474										More quartz veins with	
493	43	100%	18971	112	120	60	95			chlorite along fractures.	
	----	Not	Salvaged----								
651'							TOTAL DEPTH				

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-6
Spudded
Completed Prior to July, 1965
Total Depth 696'
Driller Congdon and Carey
Logged By R. Ahern

County Yuma State Arizona
Claim Sec 34 T. 4N R. 20W
Elevation
Hole Size HX 0-466': BX 466-696'
Core Size HX 0-466': BX 466-696'
Hole Angle Vertical
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
0	----NO CORE----							Schist	White, chalky brecciated with numerous quartz-pyrite veinlets.	Quartz-clay.	Limonite after pyrite in fractures only; completely oxidized.
25											
45	20	100%	18971	44	23	90	70				
	----NOT SALVAGED----										
75									Light grey, brecciated below 86'.	Quartz-clay-pyrite-sericite.	Pyrite disseminated and in veinlets: very minor chalcocite coating pyrite: partially oxidized. 2" quartz-pyrite vein at 186' shows abundant pyrite with chalcocite tarnish.
100	25	100%	18972	144	16	250	+1000				
150	50	100%	18973	123	28	265	+1000				
167								Quartz Sericite Schist	Tan to grey: minor oxidation: numerous breccia zones: schistosity nearly horizontal.	Quartz-sericite-pyrite; quartz-gypsum veinlets with pyrite. Intense quartz-alunite-pyrite 198-202'.	Abundant pyrite stringers in schist planes with chalcopyrite tarnish: pyrite 5%.
198											
200	10	100%	14737	80	50	200	2400				
200	50	65%	18974	80	34	650	+1000				
225	25	100%	18975	125	54	255	+1000				
	-----NOT SALVAGED-----										
253	28							Phyllic Schist	Light grey, speckled with pyrite: open zones of fault breccia.	Sericite-quartz-pyrite with occasional gypsum veinlets.	Pyrite is 10-20%, disseminated uniformly throughout.
278	25	100%	18976	60	40	240	+1000				
303	25	NOT SALVAGED-----						Schist	Light grey; no mafic minerals.	Quartz-sericite-pyrite with numerous gypsum veinlets.	Pyrite veinlets exhibit chalcopyrite tarnish; some disseminated pyrite locally.
350	47	100%	18977	71	80	485	+1000				
355	10	100%	14738	28	100	190	224				

District Quartzite-Sugarloaf Hole Number DDH SL-6

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
415								Phyllic Schist	Light grey, schistosity generally horizontal. Prominent massive quartz vein 434-478'.	Quartz-sericite-pyrite-alunite with occasional veinlets of gypsum after anhydrite.	Pyrite stringers along schist planes equal 10%.
450	35	100%	18978	101	60	220	+1000	Fault Breccia 447-451'			
466	----	REDUCE	TO BX	CORE	----						
474								Quartz Vein			Pyrite 10% to 20% disseminated and along schistosity: some sulfide grains exhibit chalcopyrite tarnish; pyrite more abundant at 470': quartz-pyrite-sphalerite-galena vein at 480'.
481								Quartz Schist	Rock is mostly quartz with occasional porphyroblasts of chloritic material.	Quartz-pyrite with minor clay.	Pyrite is 10-20% occurring as stringers in gently dipping planes of schistosity.
495			14739	48	48	400	4720				
500	50	90%	18979	118	57	140	+1000				
550	50	90%	18980	110	48	270	+1000				
553								Phyllic Schist	Light grey, pearly sheen on all surfaces. No veinlets: minor stringers of chlorite.	Quartz-sericite-pyrite with clay: graphite at 600'.	Pyrite approximately 10%: in schist planes.
600	50		18981	84	59	465	+1000				
650			18982	92	90	335	+1000				
* 660	10		14711	68	15	600	2800				
* 690			14740	64	10	840	3680				
696			18983	91	35	375	+1000				
								TOTAL DEPTH - 696'			

* Samples taken and described by R. M. Corn

KERR-McGEE CORPORATION

District Quartzite-Sugarloaf
Hole Number DDH SL-15
Spudded
Completed
Total Depth > 3650'
Driller ~~Holmbire - Porcupine~~
Logged By R. Ahern

County Yuma State Arizona
Claim Sec T. R.
Elevation
Hole Size ~~5-1/8"~~ Rotary to 533'
Core Size NX 533-2000'; BX 2000-3650'
Hole Angle
Collar Coords. N.
E.

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu	Mo			Rock Type	Rock Description	Alteration	Mineralization
0											
		ROTARY CUTTINGS									
50	50		18921	530	20	255	680				
		NX CORE						Quartz Sericite Schist	Medium-grey, medium-grained metasediments cut by quartz-pyrite and gypsum veinlets with minor chlorite along fractures.	Quartz-sericite-pyrite-gypsum veinlets parallel to schistosity while quartz-pyrite veinlets cross-cut it.	Pyrite disseminated and in veinlets; partial oxidation.
62	12		18987	95	290	210	+1000				
100	38		18922	66	22	135	810				
150	50	NO SAMPLE									
200	50		18923	122	24	125	910				
250	50	NO SAMPLE									
300	50		18924	82	19	175	620				
350	50		18925	85	22	145	580				
400	50		18926	73	24	90	300				
450	50		18927	72	30	80	250				
500	50		18928	73	32	95	260				
533	33		18929	66	34	95	260				
		NX CORE									
550	17	100%	18988	90	50	60	200	Porphyro-blastic Schist	Dark grey, subhedral feldspar, chlorite and clay along schist planes. 1" quartz vein at 556'	Pyrite, very minor epidote and quartz, possible clay. 2" epidote-quartz-pyrite vein at 560'.	Unoxidized, 5-7% pyrite, mostly in veinlets parallel to schistosity; minor chalcopyrite-bornite tarnish; numerous epidote-quartz-pyrite veinlets cross-cut schistosity.

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
550											
600	50	80%	B18989	250	45	100	185	Porphyro-blastic Schist		Most former feldspar replaced by epidote.	
634									Minor brecciation		
650	50	100%	B18990	80	41	85	155				
663	13		B18991	40	31	50	300				
		NOT SALVAGED									
709								Quartz Sericite Schist	Medium to fine-grained metasediments, cut by calcite veins.		
729								Porphyro-blastic Schist	Dark grey, fine-grained groundmass of quartz and chlorite with sub- to euhedral feldspar.	Quartz-epidote-pyrite veinlets and epidote replacing former feldspar.	Prominent vein at 738'.
750	50	40%	B18992	145	87	62	170				
800	50	60%	B18993	65	50	45	135				
										Massive chlorite associated with pyrite veinlets.	10-20% pyrite disseminated and in veinlets.
850	50	60%	B18994	110	55	80	740				
									Core is badly shattered below 785'.		

District Quartzite-Sugarloaf Hole Number DDH SL-15 Page Number 3 of 6

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
900	50	60%	B18995	10	52	75	225	Porphyblastic Schist	Medium-grey.	Chlorite-quartz-epidote-chlorite is in 1/8 to 1/2" borders along pyrite and quartz-pyrite veins, epidote with quartz-pyrite veins and replacing feldspar, occasional calcite veinlets.	5-10% pyrite, occasional 1-2" pyrite-quartz-epidote veins.
950	50	80%	B18996	100	75	50	130				
1000	50	20%	B18997	70	45	35	85				
1050	50	30%	B18998	90	155	130	205				
* 1050			14749	60	5	110	216				
1065	15	100%	B18999	70	155	155	140				
	-----	NOT SALVAGED	-----								
1116								Quartz-Sericite Schist with Local Brecciation	Thin-bedded, obscurring original texture. Core is dense and massive. Sericite-clay along fractures.	Epidote replacing feldspar, quartz flooding.	Pyrite veinlets in schist planes.
1150	34	90%	B19000	100	44	40	115				
1200	50	20%	C18901	160	75	65	125				
1250	50	40%	C18902	110	40	35	95				
1300	50	40%	C18903	75	53	35	60	Schist Breccia	Fragments of up to several inches in quartz-sericite-chlorite matrix.	Quartz-epidote-gypsum.	Pyrite filling fracture plane bounding and cutting through breccia fragments.
1350	15	100%	C18904	115	87	55	85				
1407											
1450	43	80%	C18905	145	46	60	115			Quartz-chlorite-calcite veins.	Prominent quartz-pyrite veins exhibit good chalcopyrite tarnish.
1500	50	40%	C18906	650	67	55	90				
1550	50		C18907	620	56	155	95				
	-----	NOT SALVAGED	-----								
1600								Quartz Sericite Schist Breccia	Medium to dark grey, mottled looking with veinlets and fractures abundant.	Quartz-chlorite-pyrite.	5-10% pyrite with occasional 1-2" quartz-pyrite veins.
1650			C18908	165	96	35	70				
	-----	NOT SALVAGED	-----								

District Quartzite-Sugarloaf Hole Number DDH SL-5

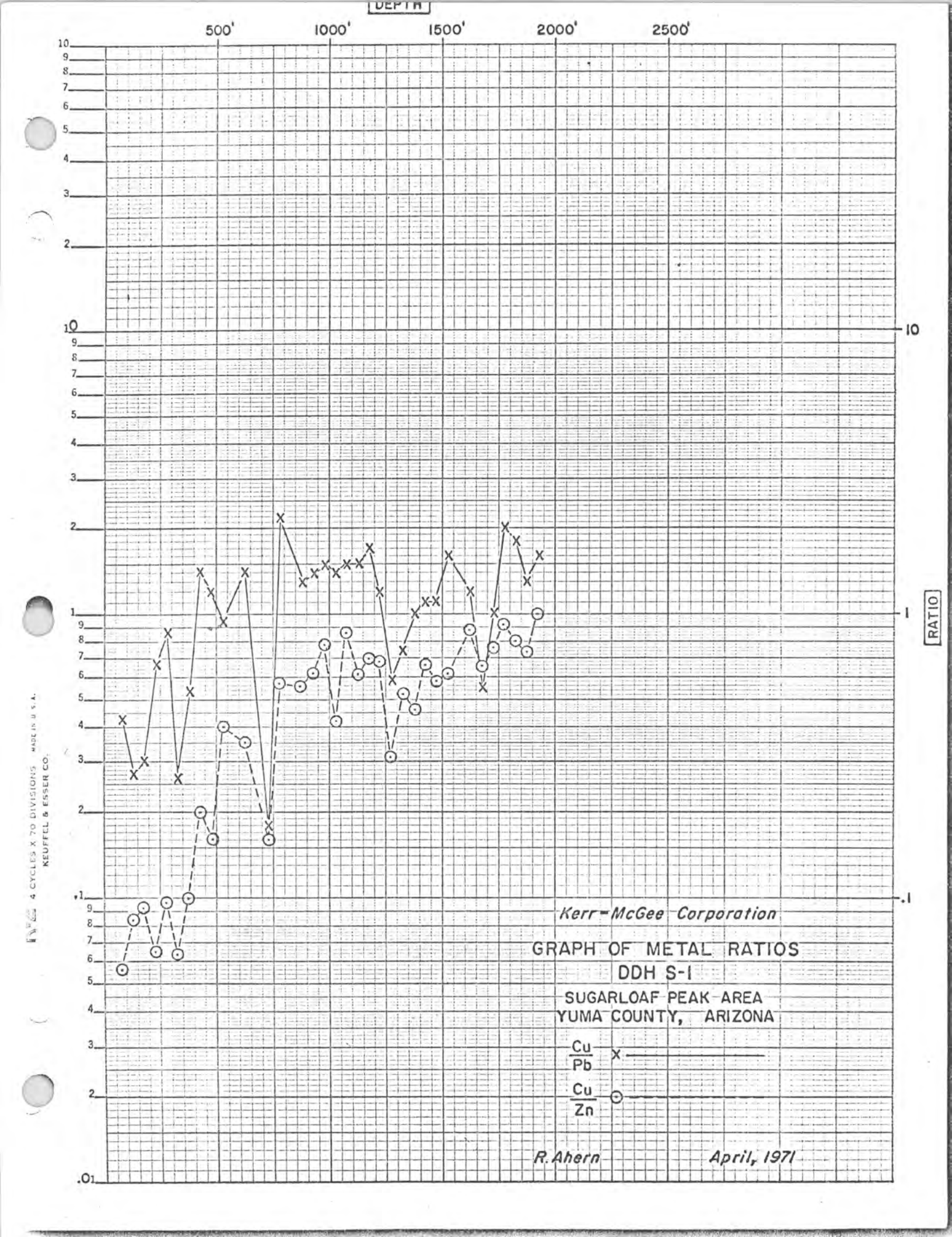
Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
1737								Quartz Sericite Schist	Dark grey fine-grained chlorite and calcite lining fractures; mottled breccia appearing on outside surface.	Quartz-epidote-chlorite; quartz-pyrite veinlets.	Pyrite and quartz-pyrite veinlets cross-cutting schist.
1747	10	100%	C18909	215	55	40	55				
1764											
1784	20	90%	C18910	250	150	40	90				
	-----	NOT SALVAGED	-----								
1867										Occasional calcite veins, chlorite lined fractures abundant.	Low sulfide content, 3-5%.
1900	33	80%	C18911	205	155	35	60				
1950	50	30%	C18912	250	120	45	80				
2000	50	30%	C18913	175	68	40	65		3' quartz vein at 1990' bounded by zones of abundant chlorite.		
	-----	BX CORE	-----								
2050	50	60%	C18914	285	125	50	70			Local zones of intense silication and pyritization.	
2100	50	60%	C18915	320	117	50	50				
2125								Schist Breccia	Scattered zones of porphyroblasts.	Quartz-epidote-chlorite.	
2150	50	80%	C18916	110	34	25	70				
2200	50	10%	C18917	155	29	350	240				
2250	50	80%	C18918	205	45	40	75			More numerous quartz-epidote pyrite vein zones and sinuous fractured filled veins with fine-grained quartz and pyrite.	Quartz-pyrite veins exhibit minor occurrences of molybdenum.
2300	50	100%	C18919	185	330	45	175				
2350	50	70%	C18920	185	57	15	85	Massive Quartz Sericite Schist	No visible brecciation. Porphyroblasts not altered.		Very low sulfide content.
2400	50	80%	C18921	200	31	35	100				
2450	50	80%	C18922	110	58	20	165				
2500	50	80%	C18923	130	35	10	95				
2550	50	20%	C18924	115	66	10	100				

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Recvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
2558								Quartz Schist	Dense, massive: few fractures coated with chlorite.	Quartz-pyrite-epidote veins numerous.	Pyrite disseminated weakly; and in quartz-pyrite-epidote veinlets.
2600	50	80%	C18925	95	26	10	80				
2650	50	10%	C18926	50	28	10	140				
2700											
2750	50	30%	C18927	105	45	35	55			Quartz-epidote vein 6" at 2756'.	Pyrite 10-20%.
2800	50	80%	C18928	105	27	25	55				
2850	50	60%	C18929	65	40	5	55				
2900	50	20%	C18930	100	26	15	60			Extreme silica flooding; numerous quartz-chlorite-pyrite veinlets; occasional epidote veins.	Minor sphalerite in a few of the pyrite veinlets.
2950	50	100%	C18931	110	44	7	50				
3000	50	40%	C18932	75	29	10	50				
3050	50	60%	C18933	60	34	15	55		Dark grey, dense quartz-chlorite schist.	Numerous quartz and epidote stringers filling fractures.	
3100	50	60%	C18934	175	35	45	75				
* 3110			14750	44	<5	60	104				
3150	50	80%	C18935	550	50	45	90	Schist Breccia	Somewhat shattered; numerous chlorite lined fractures.	Quartz-epidote-pyrite-epidote-quartz matrix and occasional epidote fragments.	
3200	50	80%	C18936	80	28	5	65				
3250	50	100%	C18937	80	27	5	55			Extreme silica flooding at 3260-3280'.	
3280								Chlorite Schist	Horizontal fractures, 5-10 per inch coated with chlorite.		
3300	50	100%	C18938	95	37	10	70				
3319								Porphyro-blastic Schist	Dark grey, dense, massive. Former feldspar replaced by epidote, quartz-pyrite and quartz-epidote fracture fillings.		Occasional 1" quartz-epidote-pyrite veinlets contain sphalerite and rare molybdenite.
3350	50	100%	C18939	215	43	15	65				

District Quartzite-Sugarloaf Hole Number DDH SL-15

Depth	Int.	%Core Rcvy	Samp. No.	Assays Cu ppm	Mo ppm	Pb ppm	Zn ppm	Rock Type	Rock Description	Alteration	Mineralization
3377								Quartz Schist	Dark grey, dense, massive, very siliceous.	Quartz-epidote-pyrite.	Very low sulfide content.
3400	50	80%	C18940	190	33	20	80				
* 3425			14751	280	5	30	152				
3430								Quartz Sericite Schist	Dark grey, minor fracturing; breccia texture on outer surface.		
3440	10	100%	C18941	115	35	15	75				
3455											
3500	45	25%	C18942	110	36	20	110		Local highly fractured zones exhibit abundant chlorite.		Occasional quartz-pyrite veins.
3550	50	30%	C18943	160	64	30	70				
3600	50	20%	C18944	320	39	20	70				
3650	50	15%	C18945	190	43	20	95				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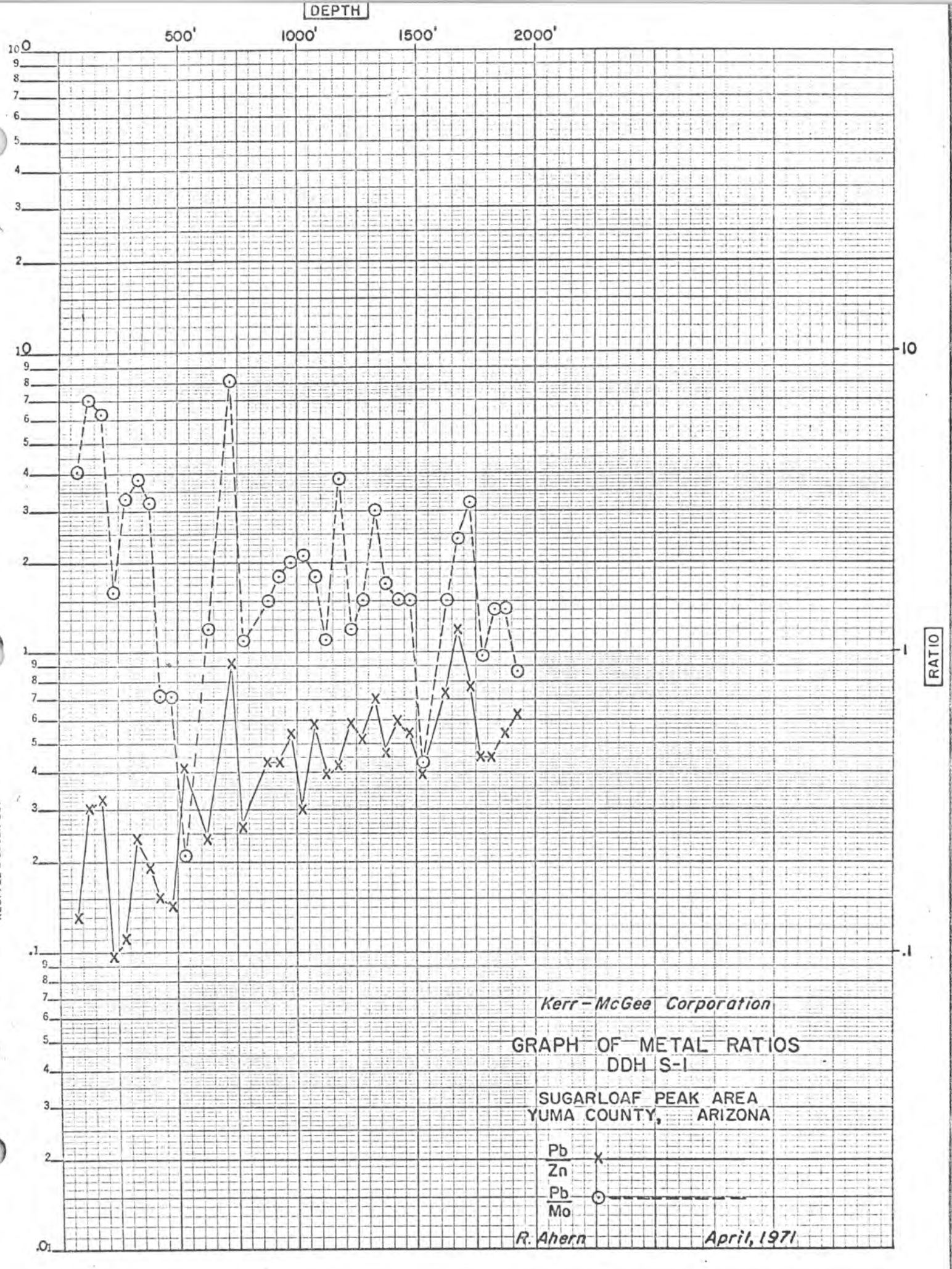
500'
1000'
1500'
2000'
2500'
10
1
.1
.01
RATIO
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH S-1
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb X
Cu/Zn ⊙
R. Ahern
April, 1971
4 CYCLES X 70 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.


DEPTH
500'
1000'
1500'
2000'
RATIO
10
1
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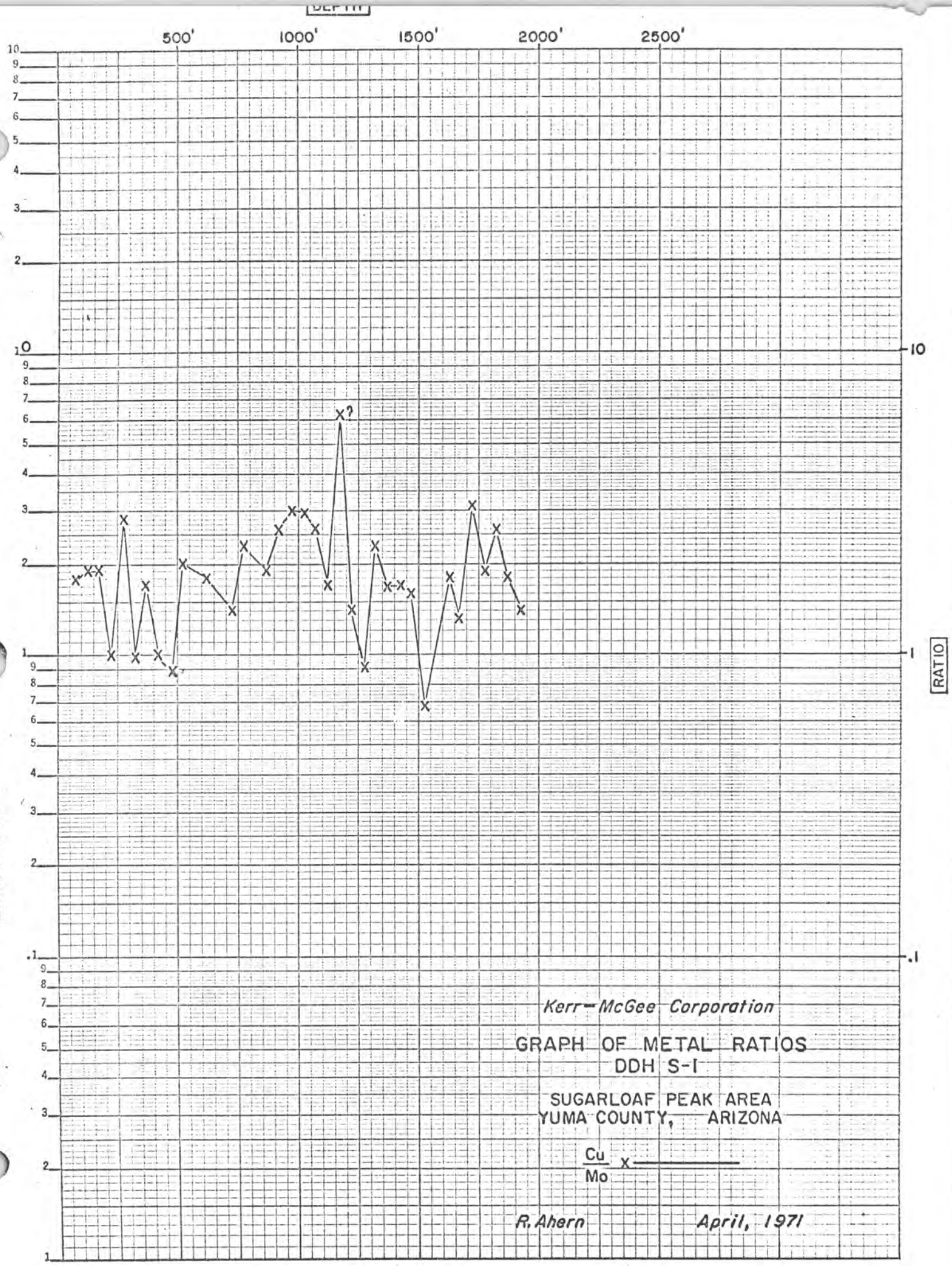
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH S-1
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Pb/Zn
Pb/Mo
R. Ahern
April, 1971
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
MADE IN U.S.A.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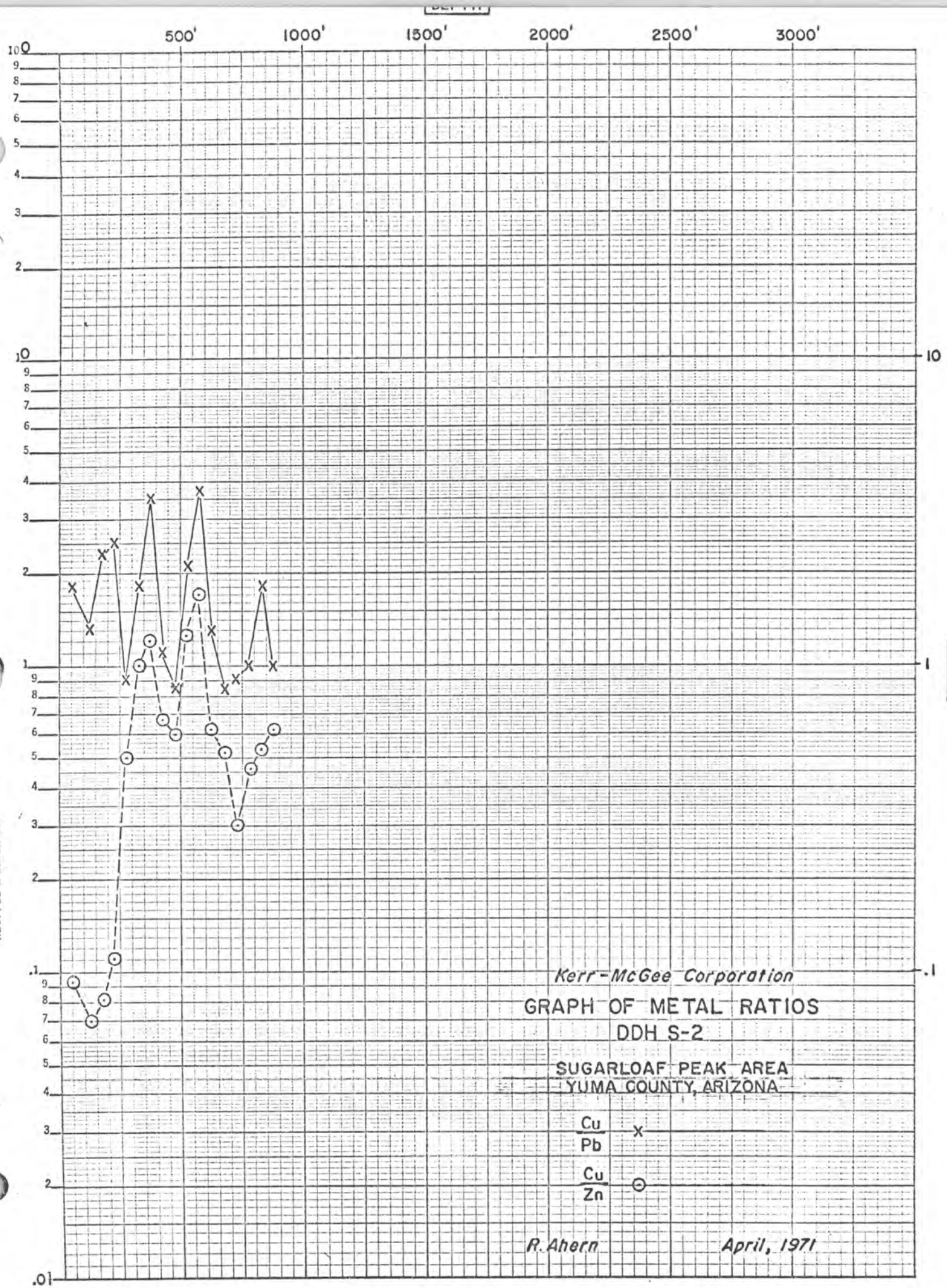
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH S-I
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Mo X
R. Ahern
April, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.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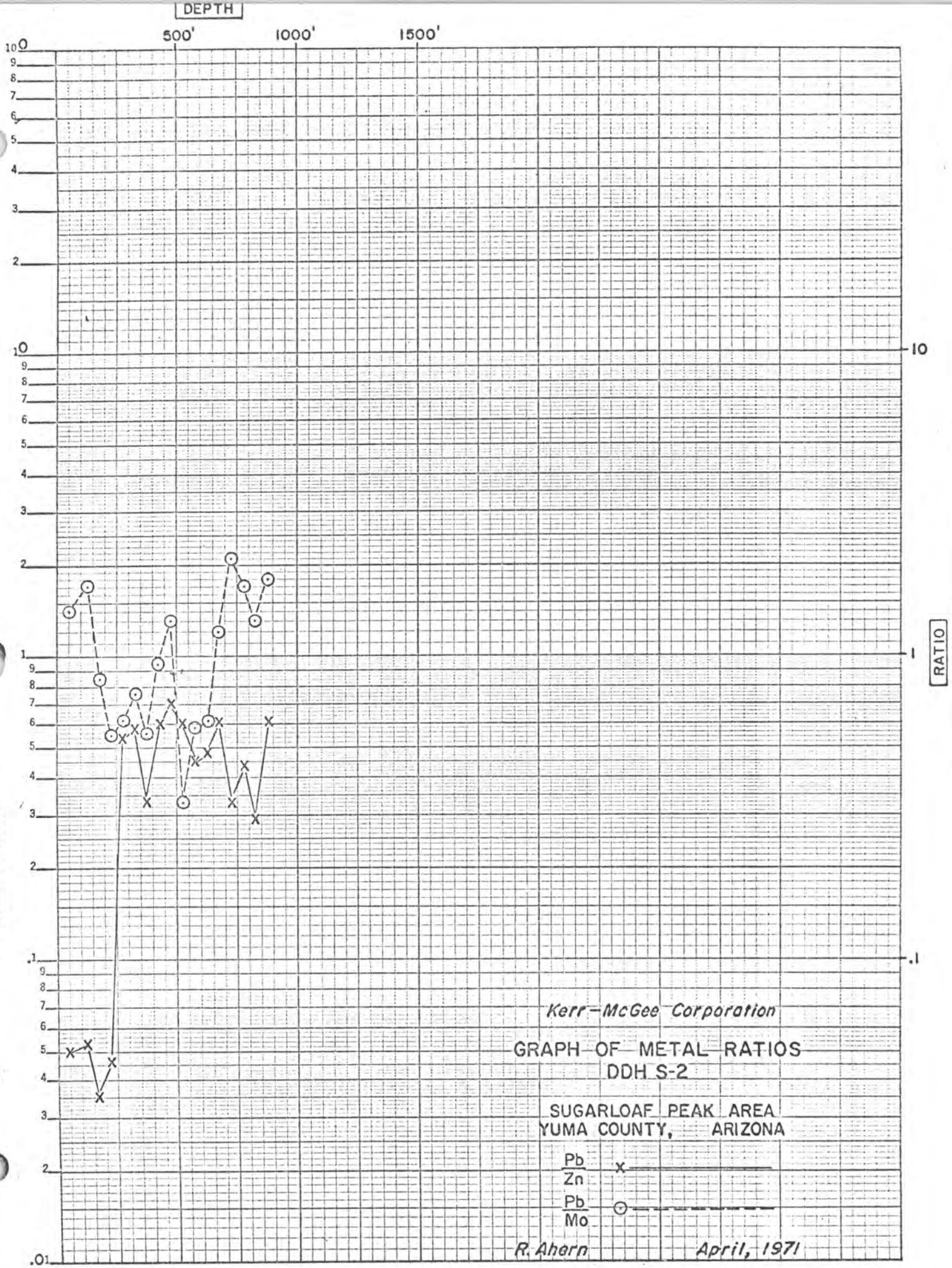
DDH S-2
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb
Cu/Zn
R. Ahern
April, 1971
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
MADE IN U.S.A.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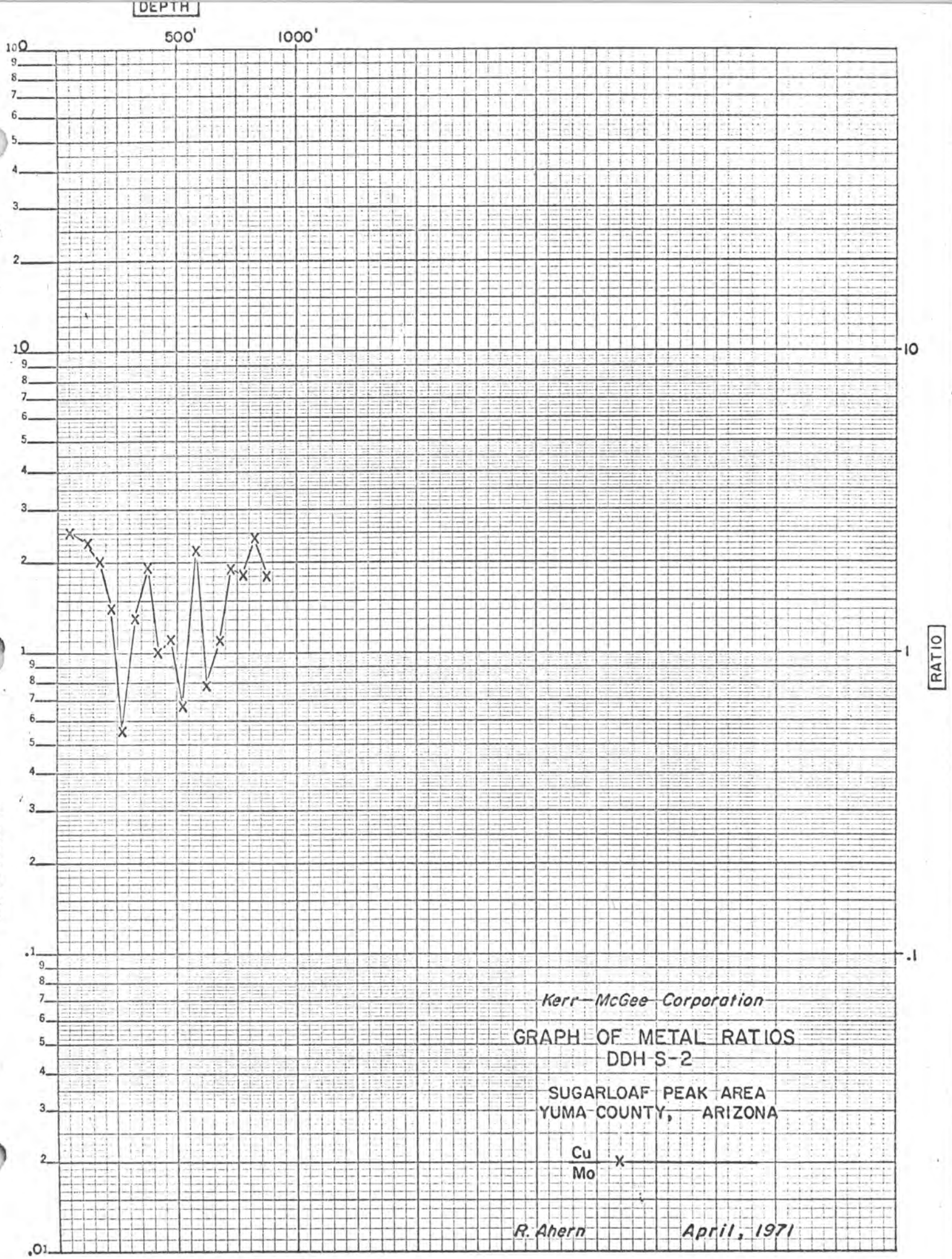
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH S-2
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Pb/Zn
Pb/Mo
R. Ahern
April, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.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GRAPH OF METAL RATIOS
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SUGARLOAF PEAK AREA
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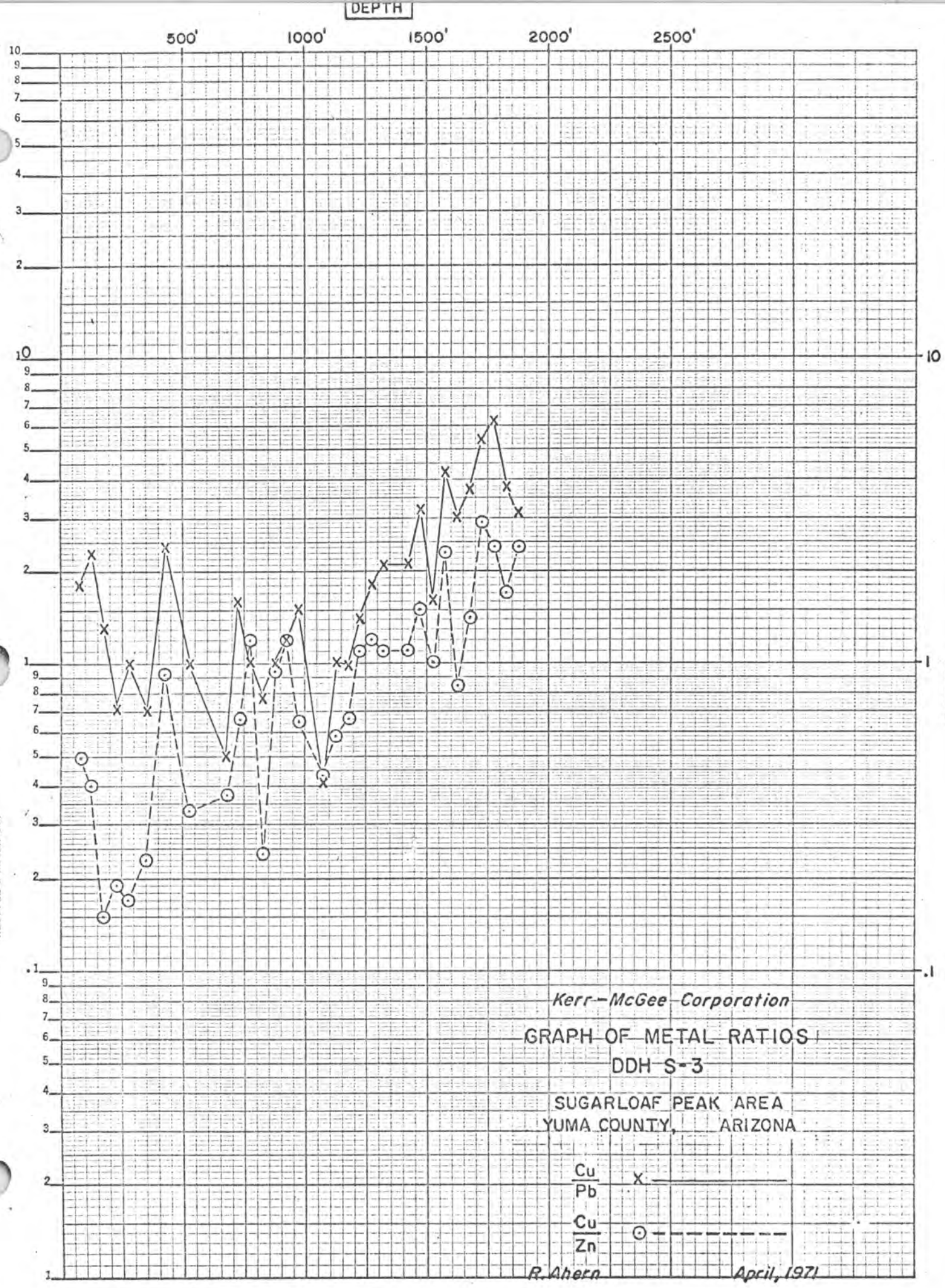
Cu
Mo
R. Ahern
April, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.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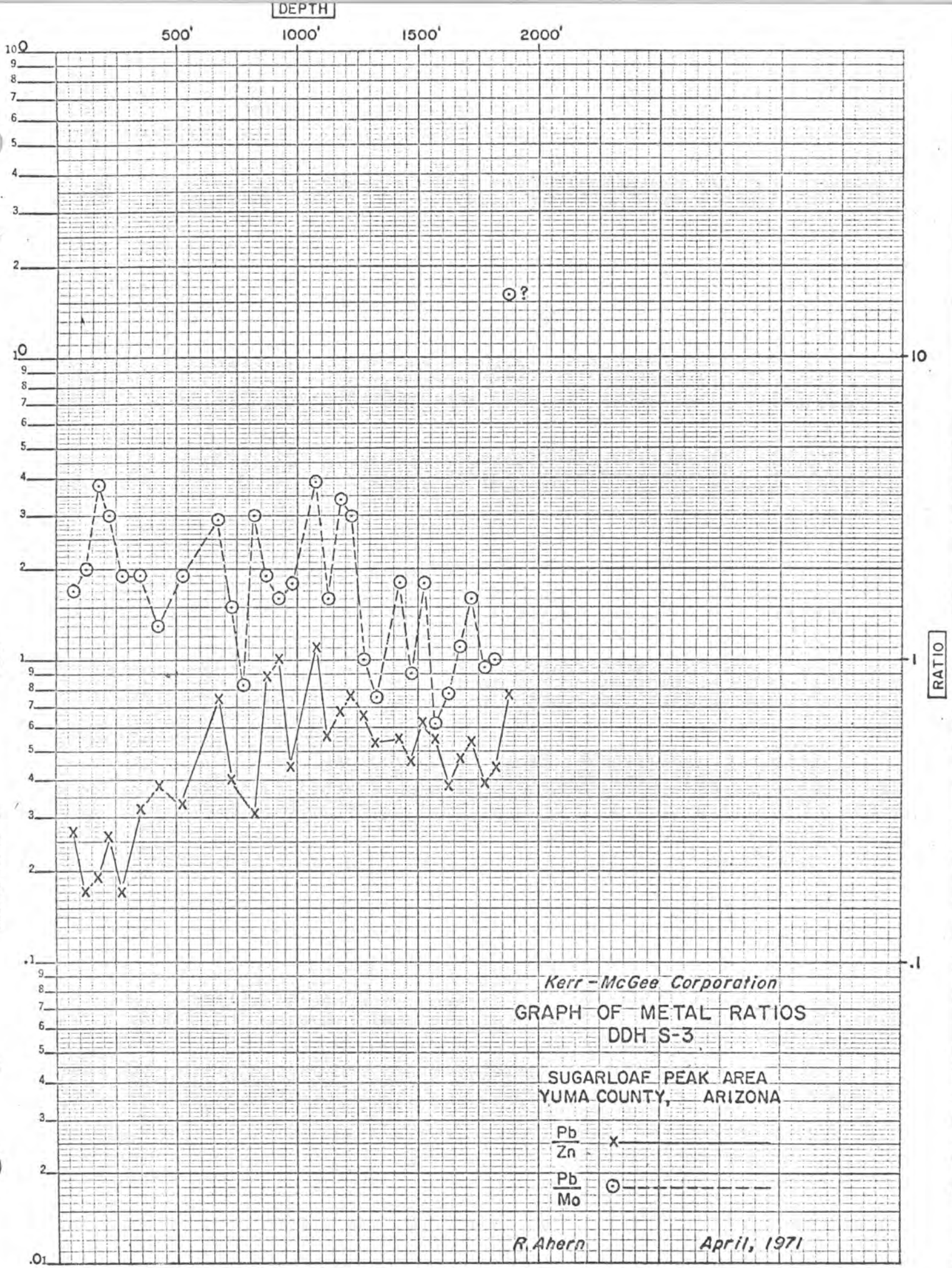
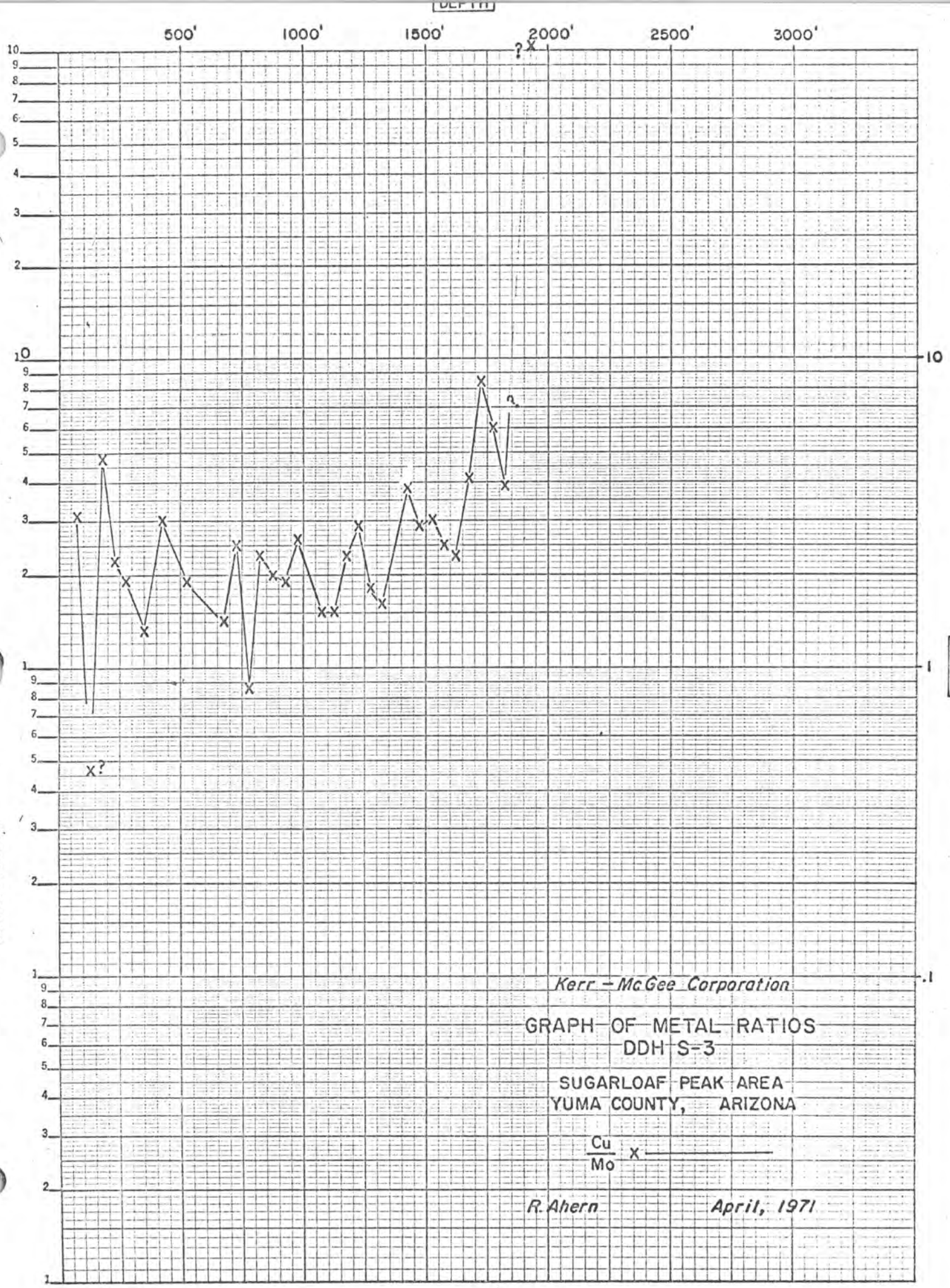
GRAPH OF METAL RATIOS
DDH S-3
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb
Cu/Zn
R. Ahern
April, 1971



K&E SEMI-LOGARITHMIC 4 CYCLES X 70 DIVISIONS MADE IN U.S.A. KEUFFEL & ESSER CO.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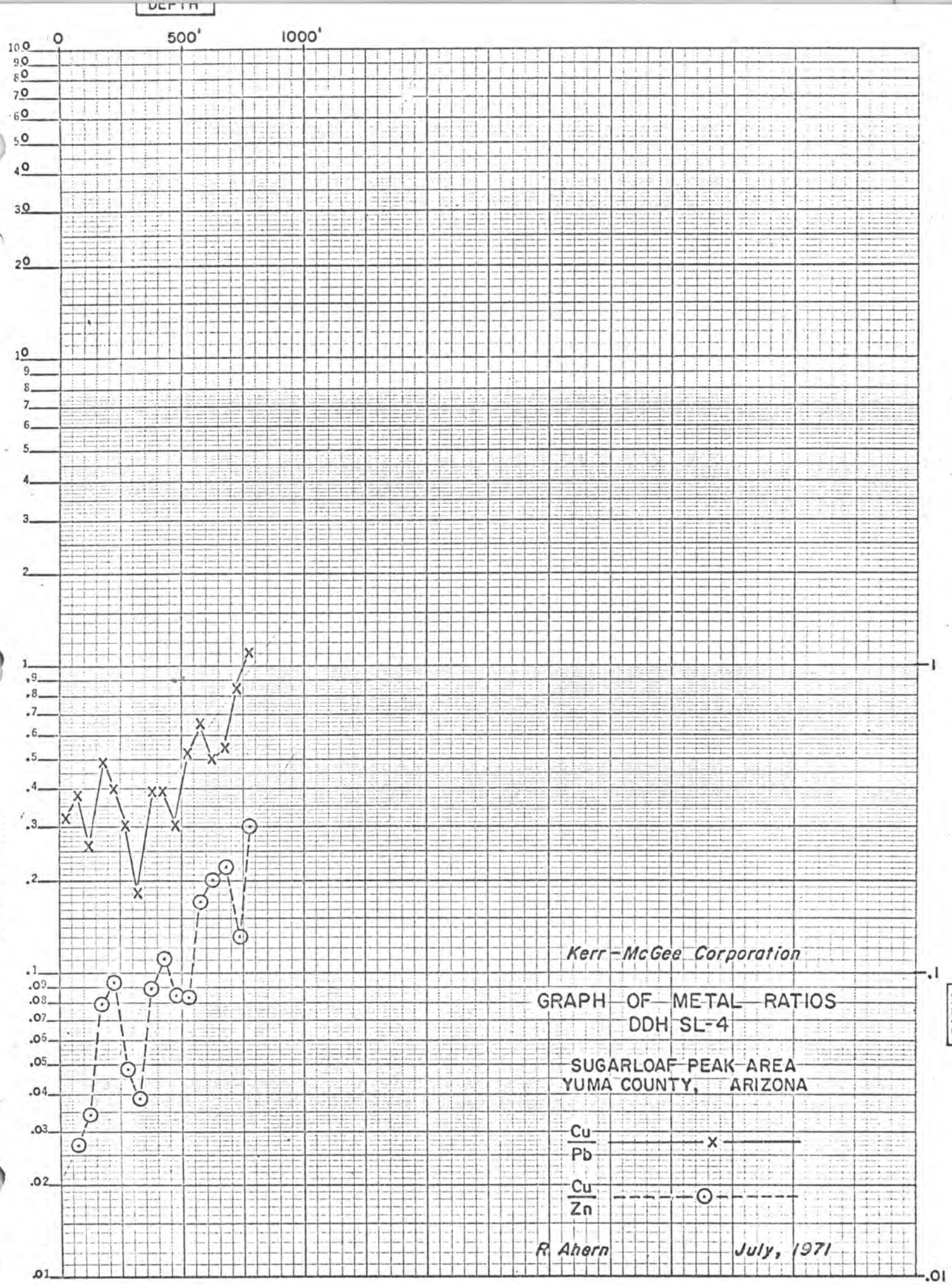
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.
Kerr - McGee Corporation
GRAPH OF METAL RATIOS
DDH S-3
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Mo X
R. Ahern
April, 1971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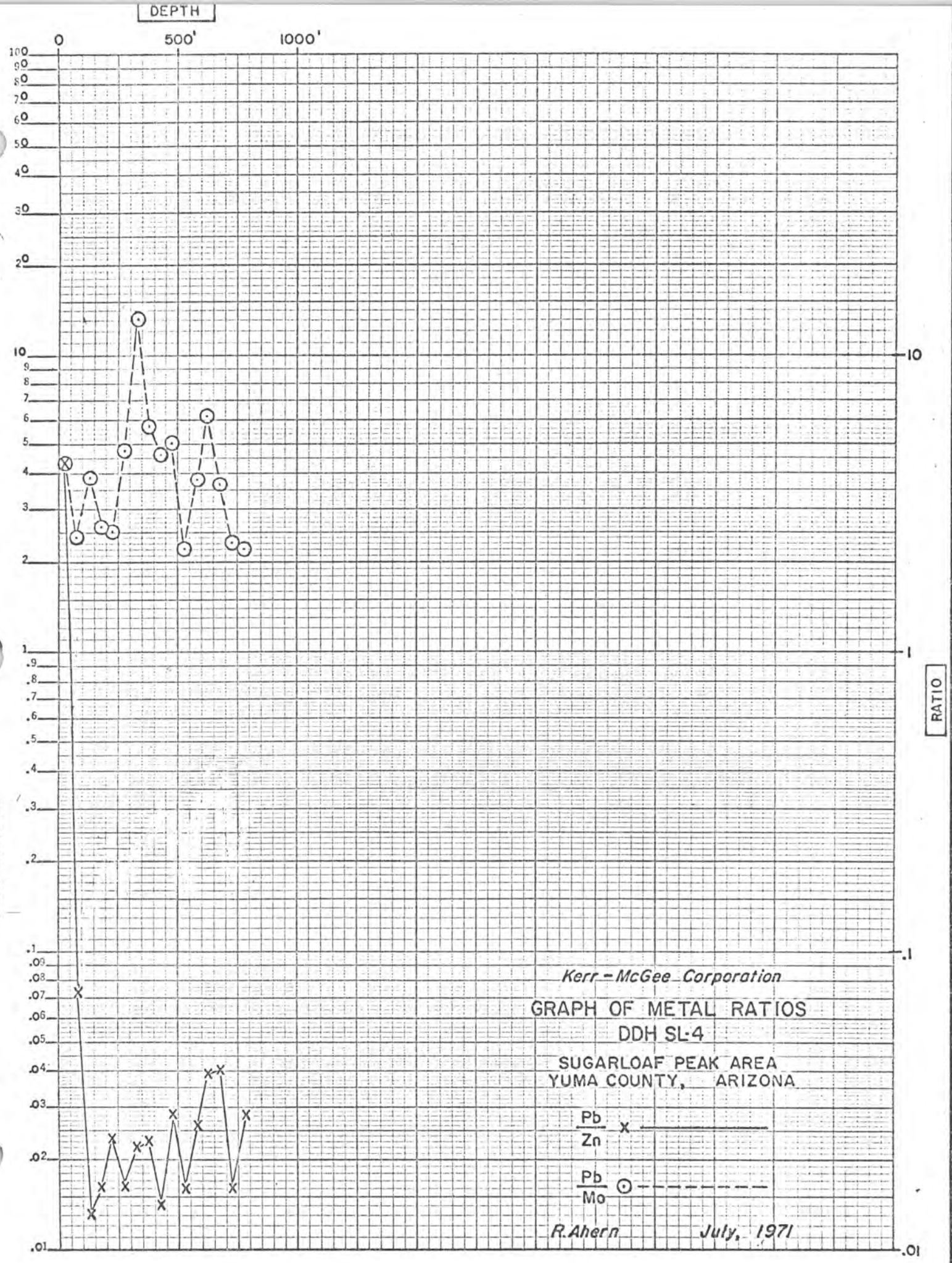
RATIO
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-4
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb
Cu/Zn
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.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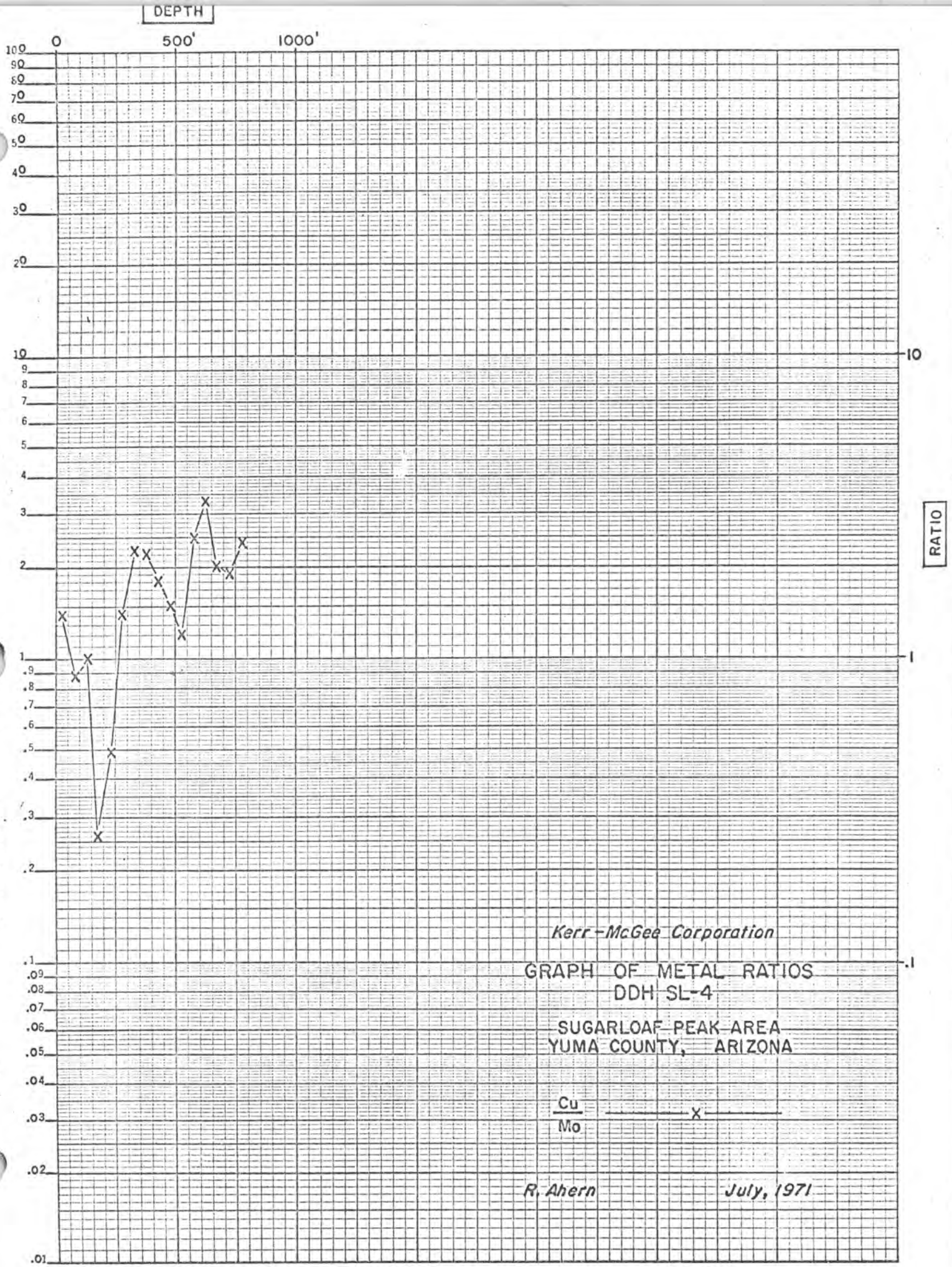
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Pb/Zn
Pb/Mo
R. Ahern
July, 1971
KEUFFEL & ESSER CO.
4 CYCLES X 70 DIVISIONS
MADE IN U.S.A.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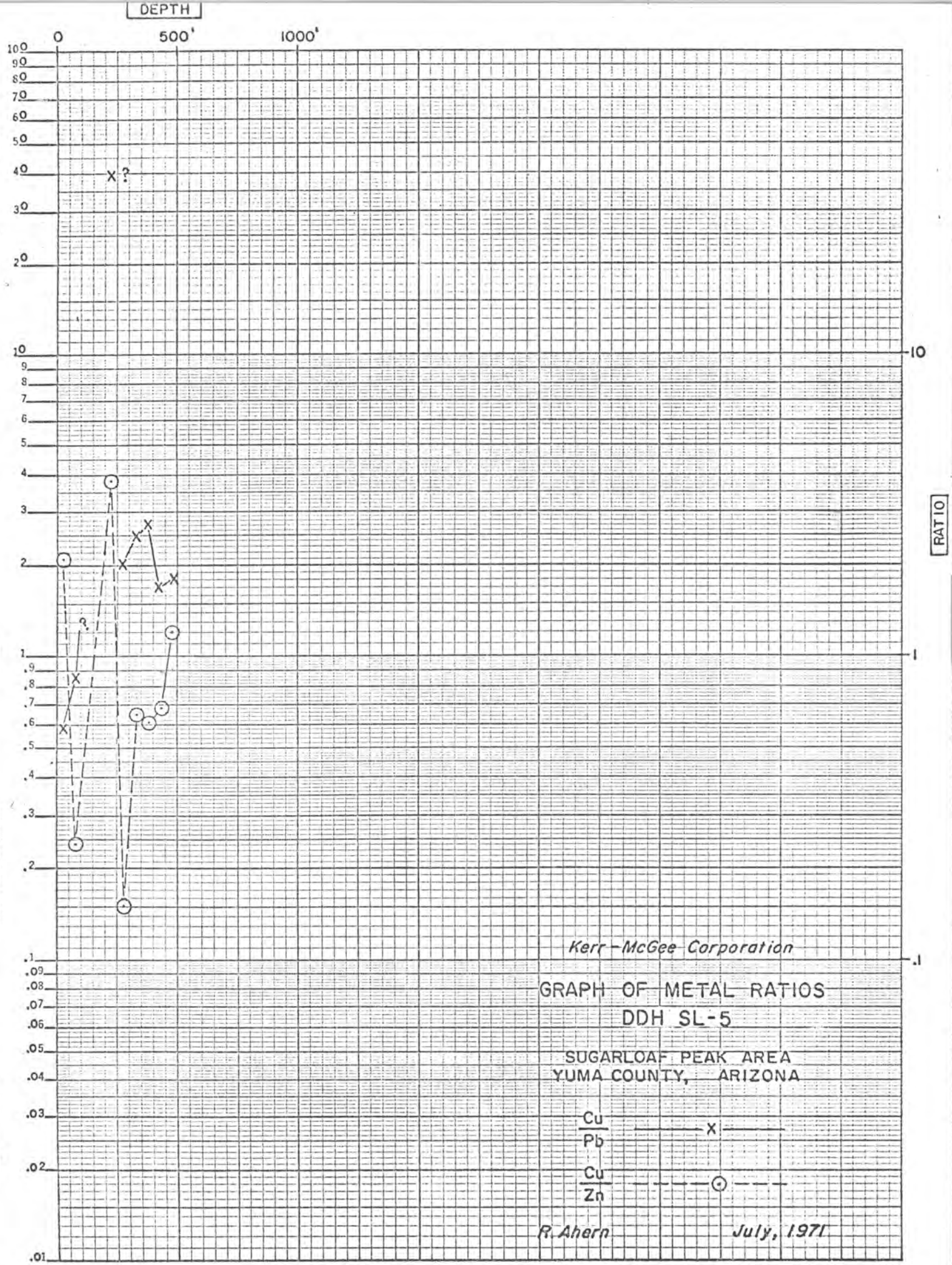
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-4
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Mo
R. Ahern
July, 1971
KEUFFEL & ESSER CO.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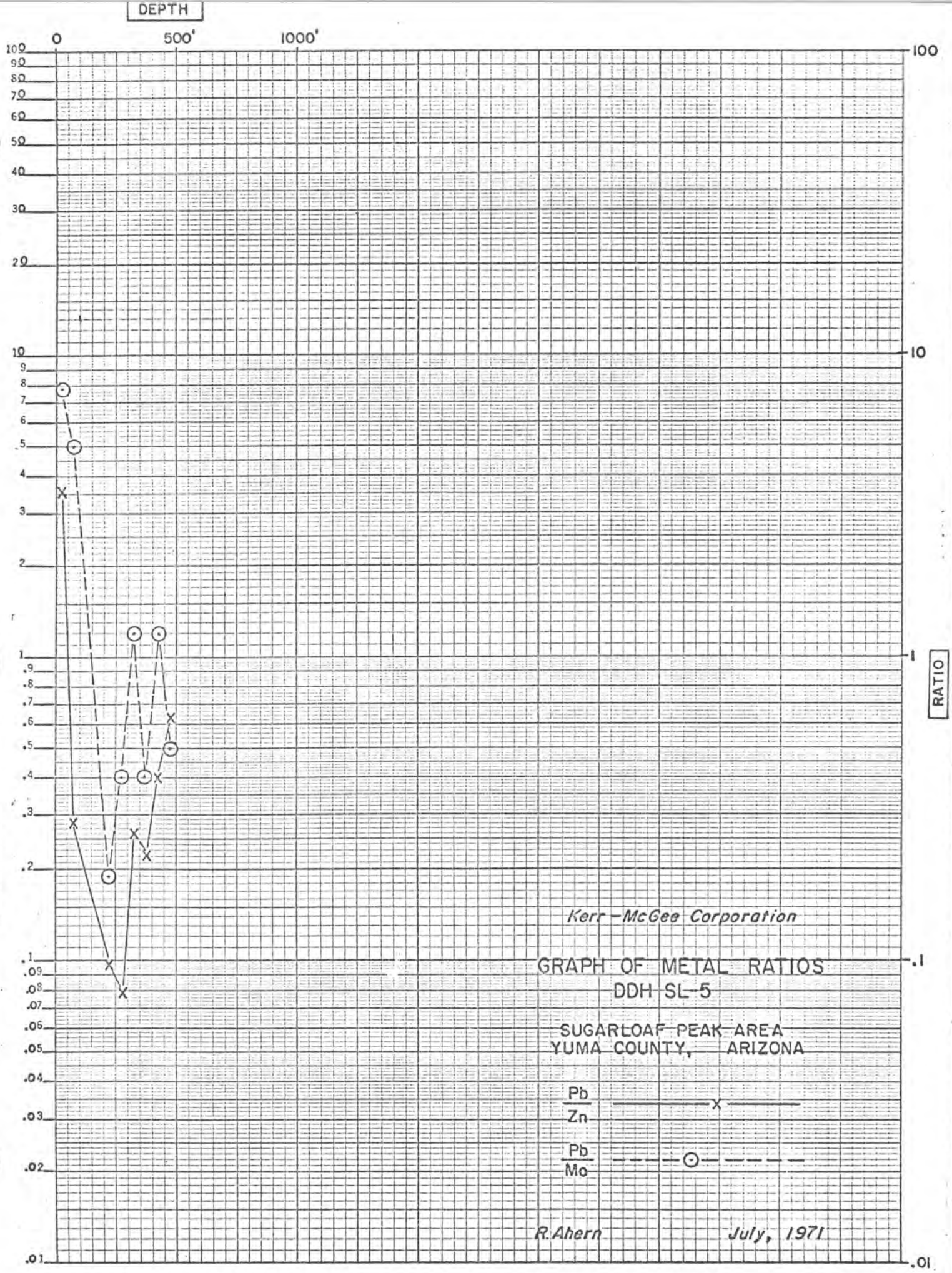
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-5
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb
Cu/Zn
R. Ahern
July, 1971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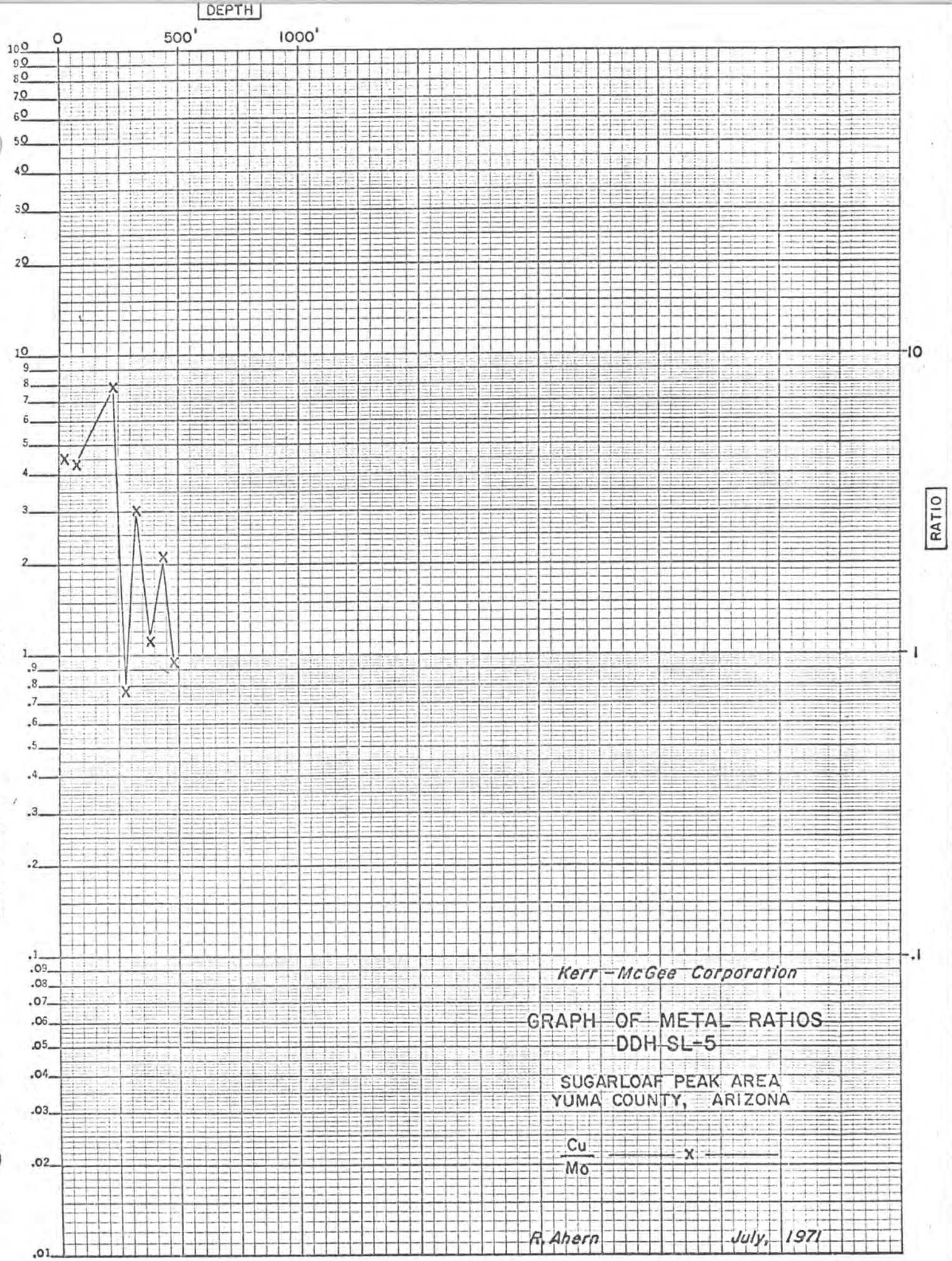
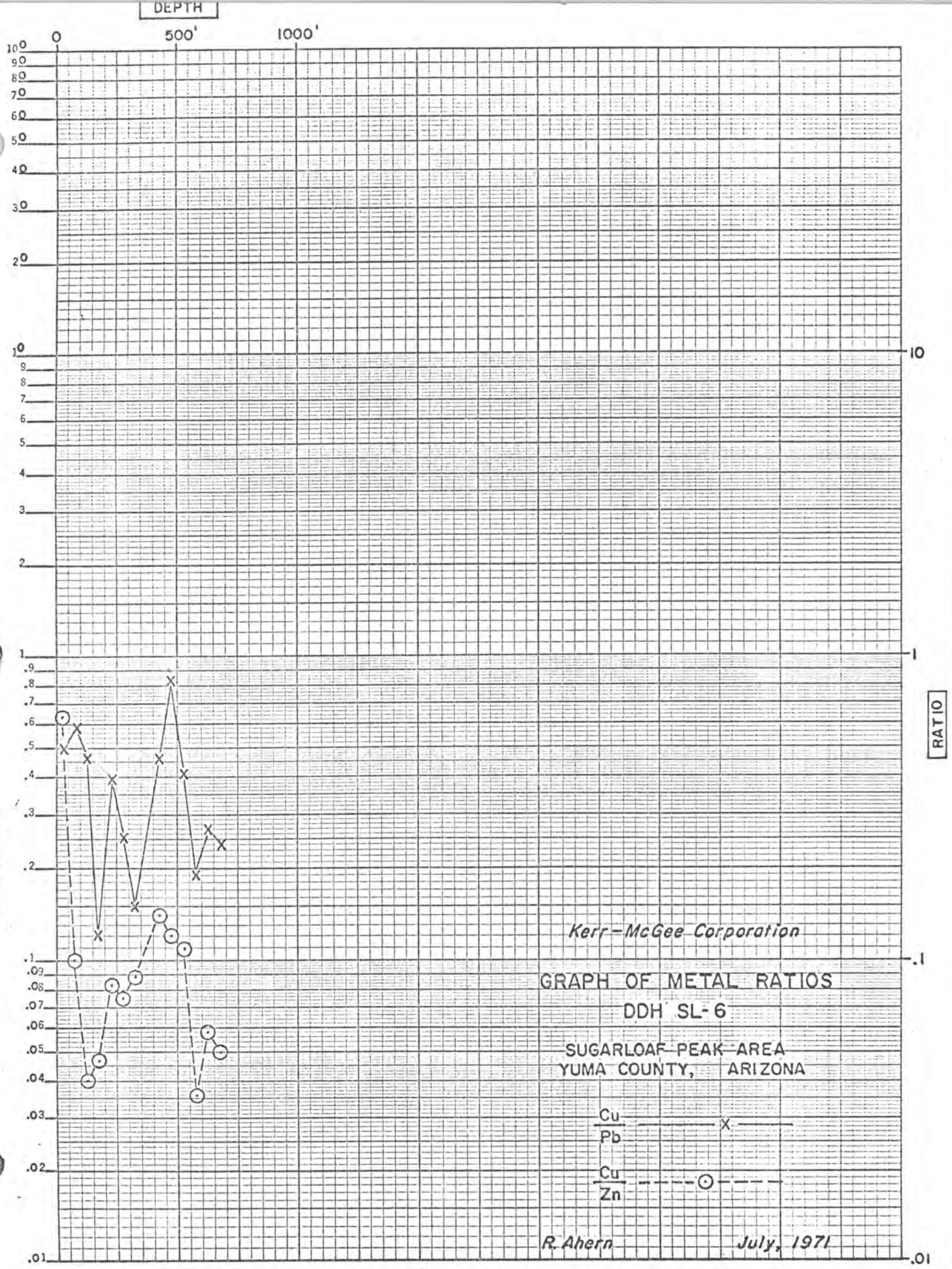
RATIO
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-5
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Pb/Zn
Pb/Mo
R. Ahern
July, 1971
K&E 4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.



K&E SEMI-LOGARITHMIC 46 5010
4 CYCLES X 70 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.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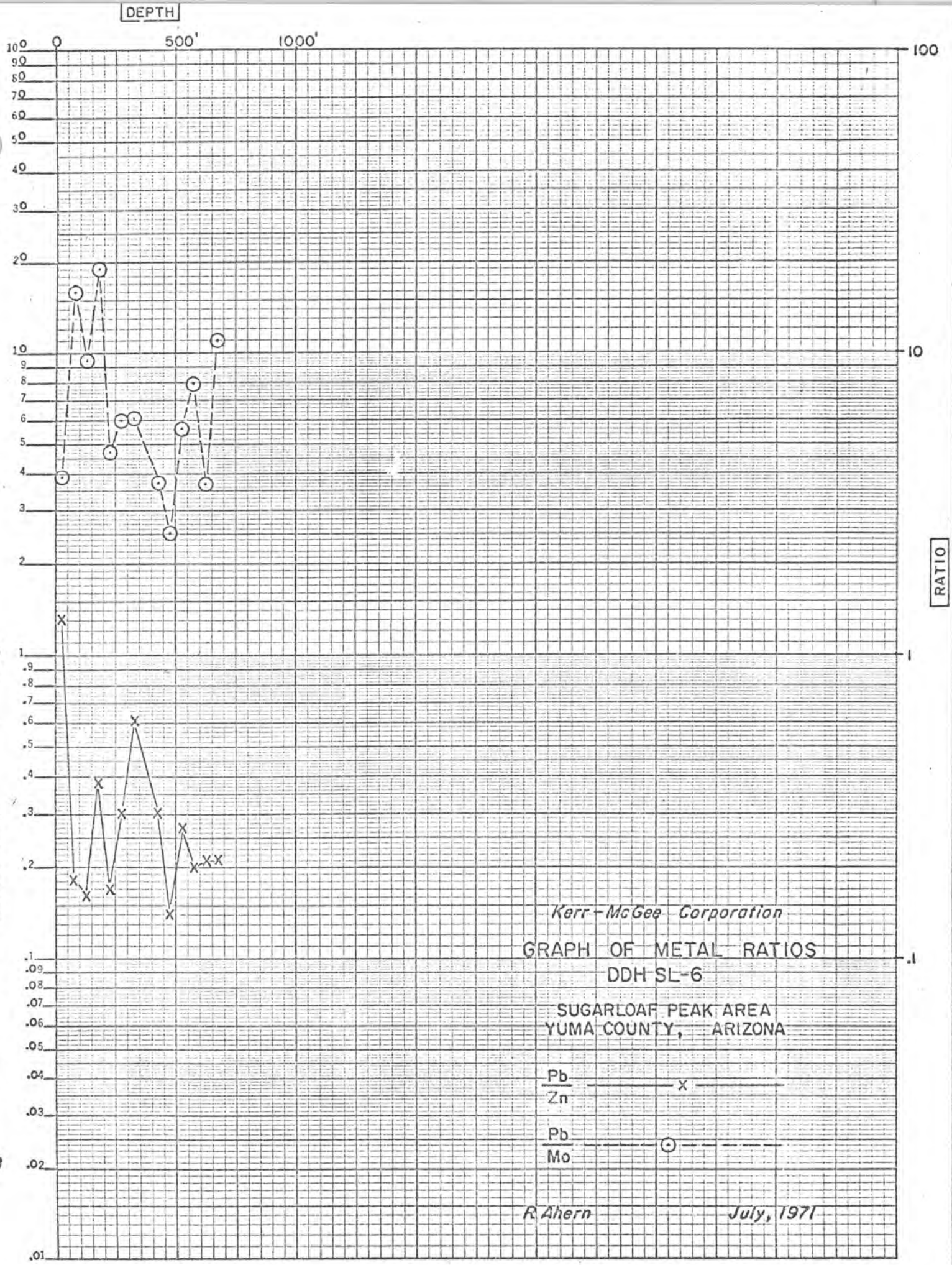
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-6
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb
Cu/Zn
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.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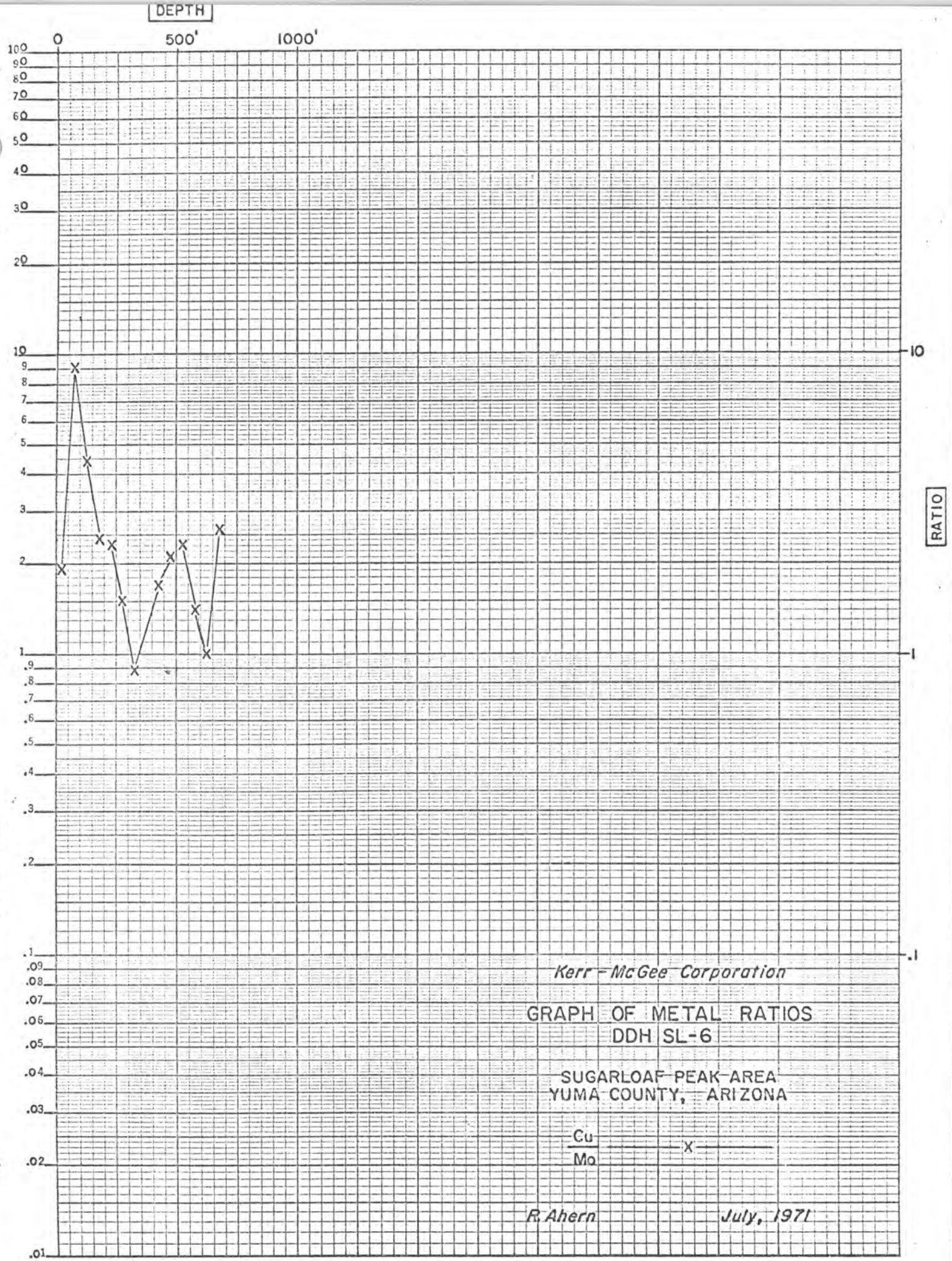
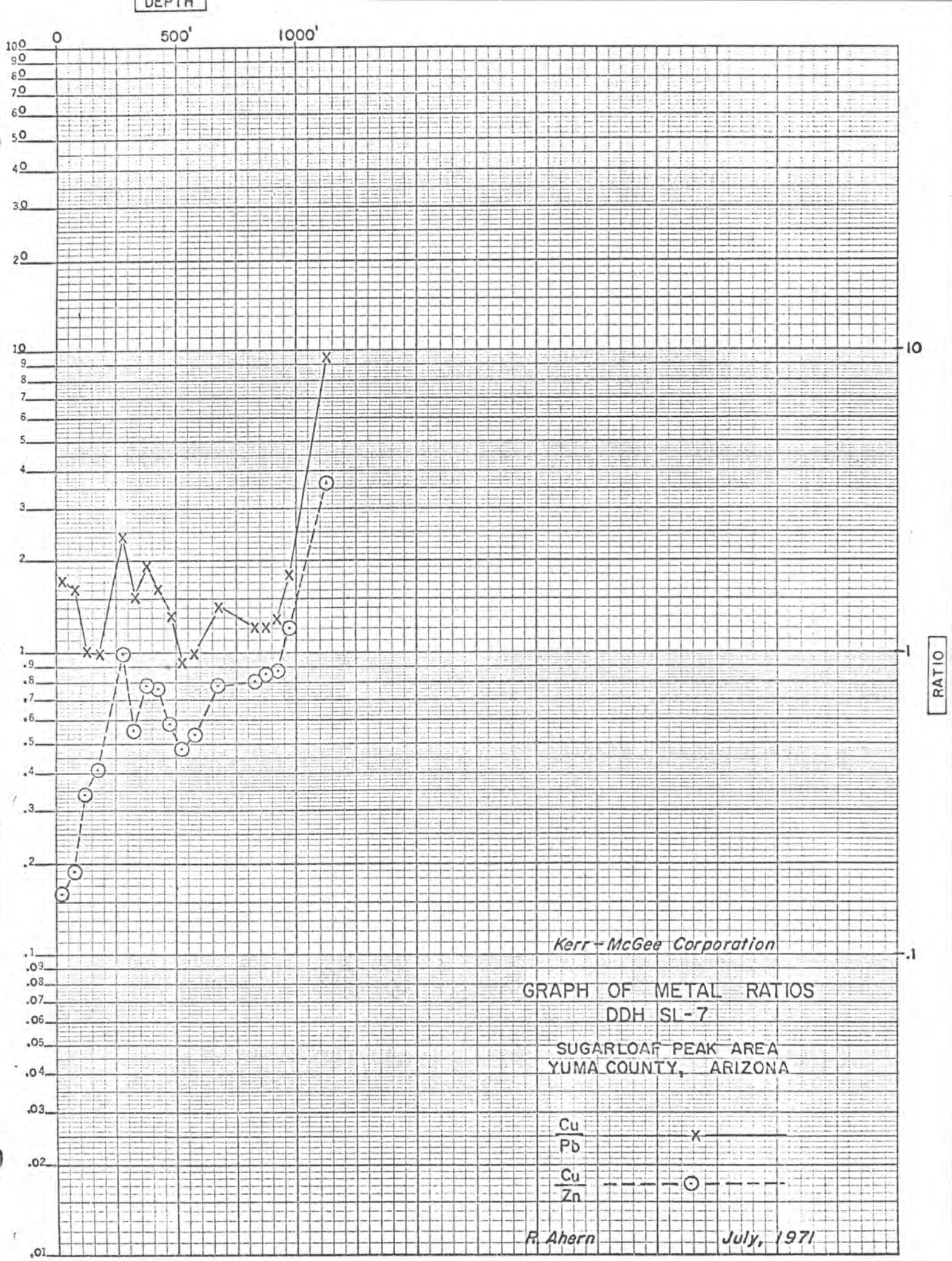
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-6
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Pb/Zn
Pb/Mo
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.



4 CYCLES X 70 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.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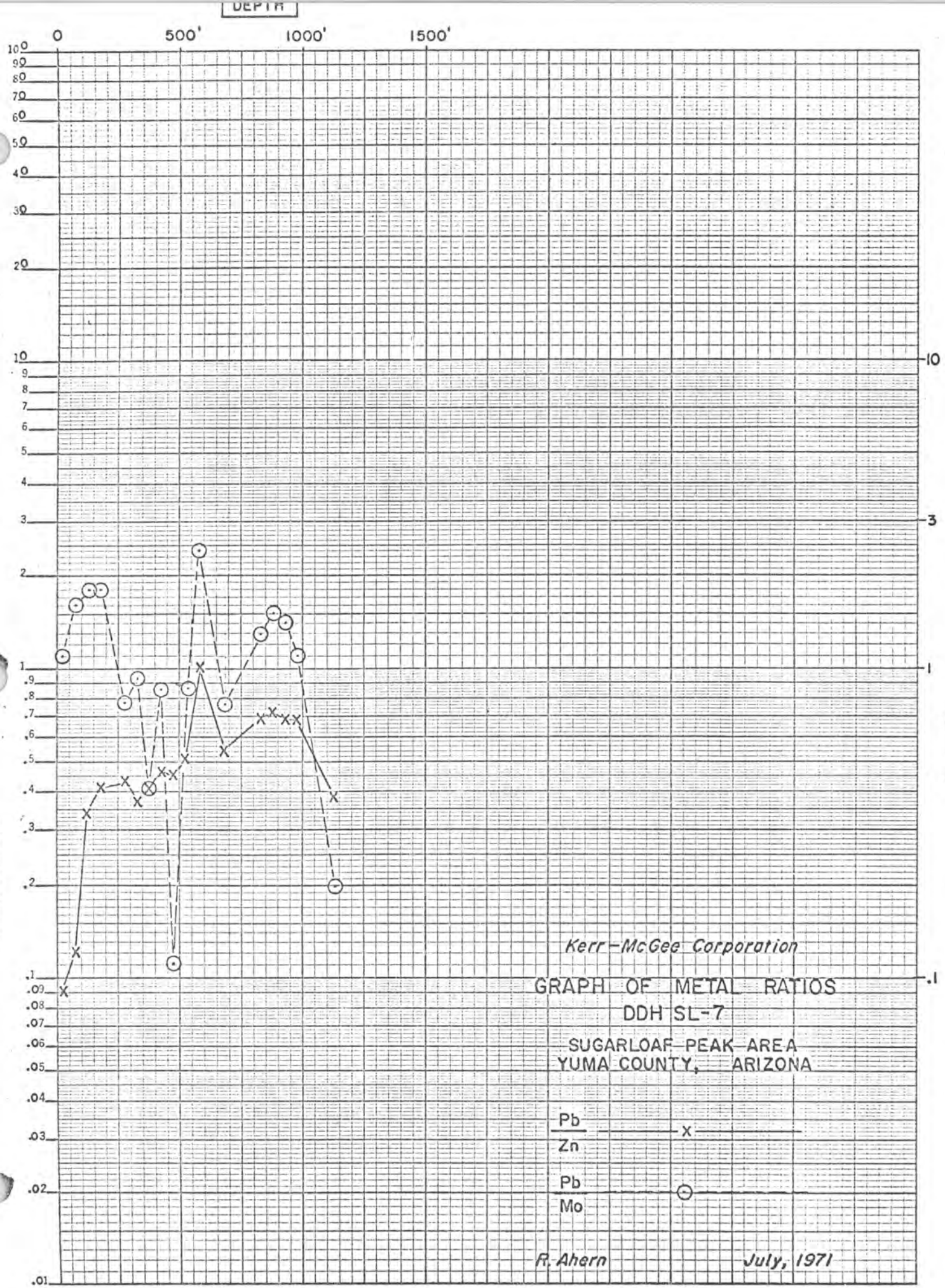
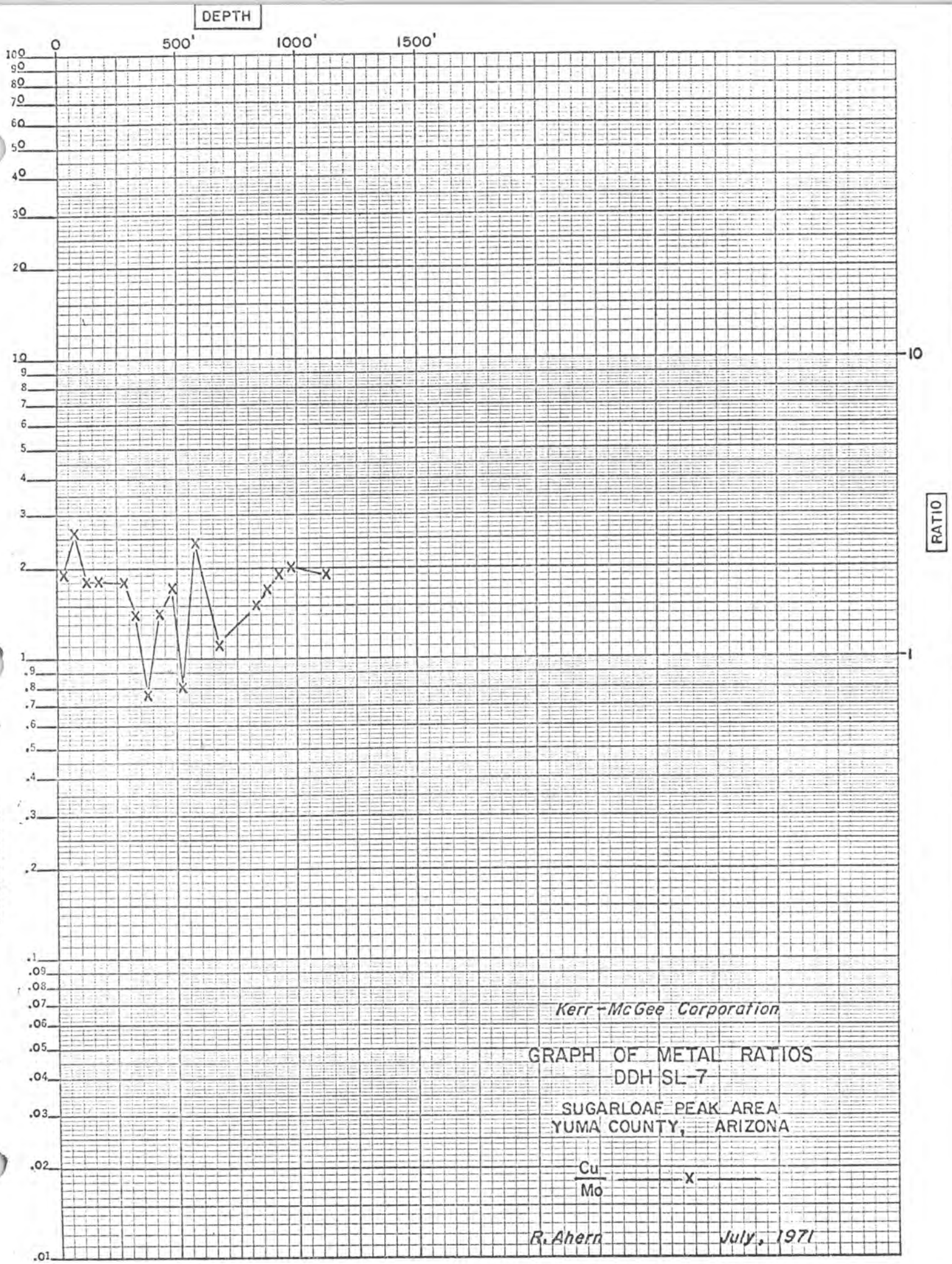
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-7
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb
Cu/Zn
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.



KEUFFEL & ESSER CO.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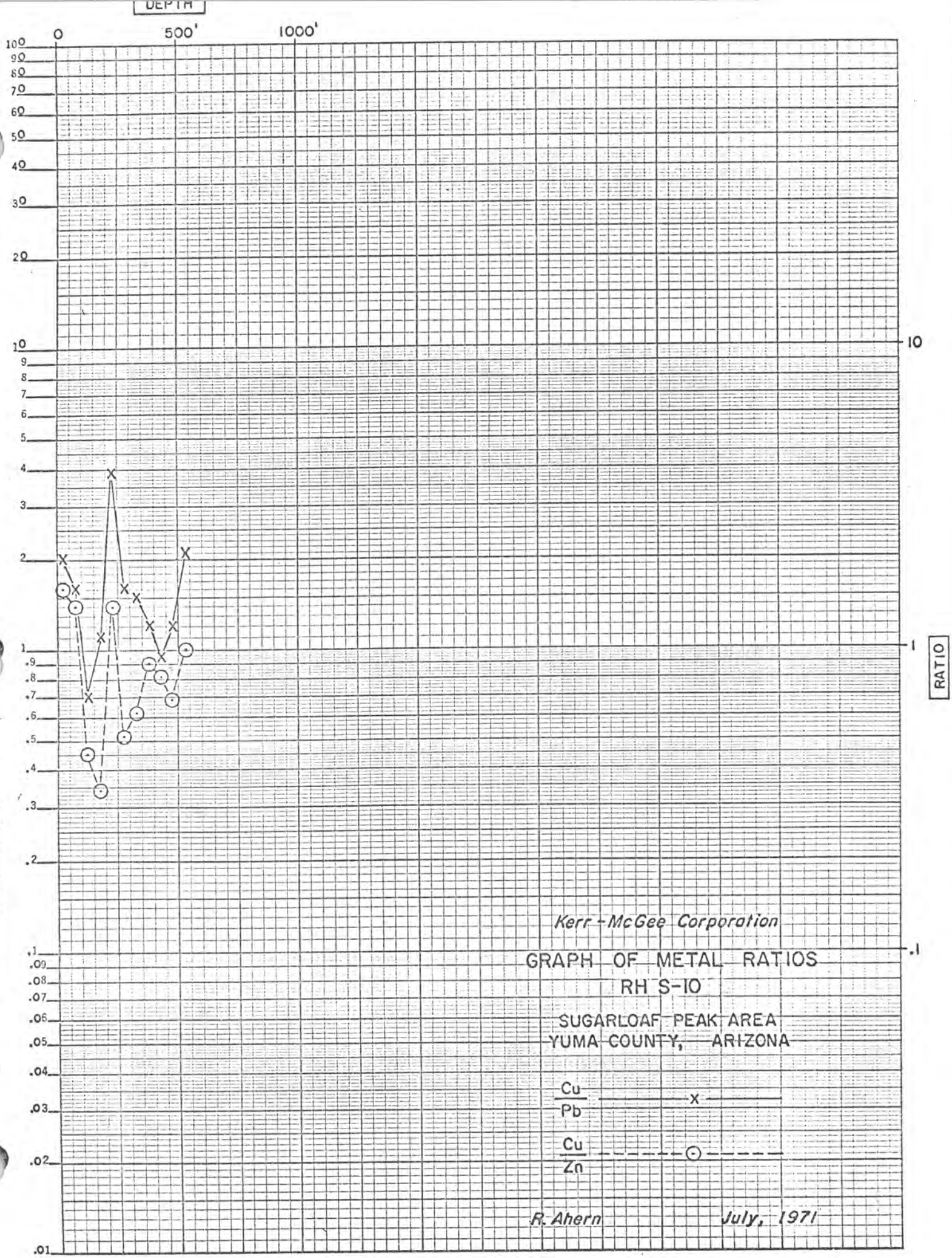
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-7
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Mo —X—
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.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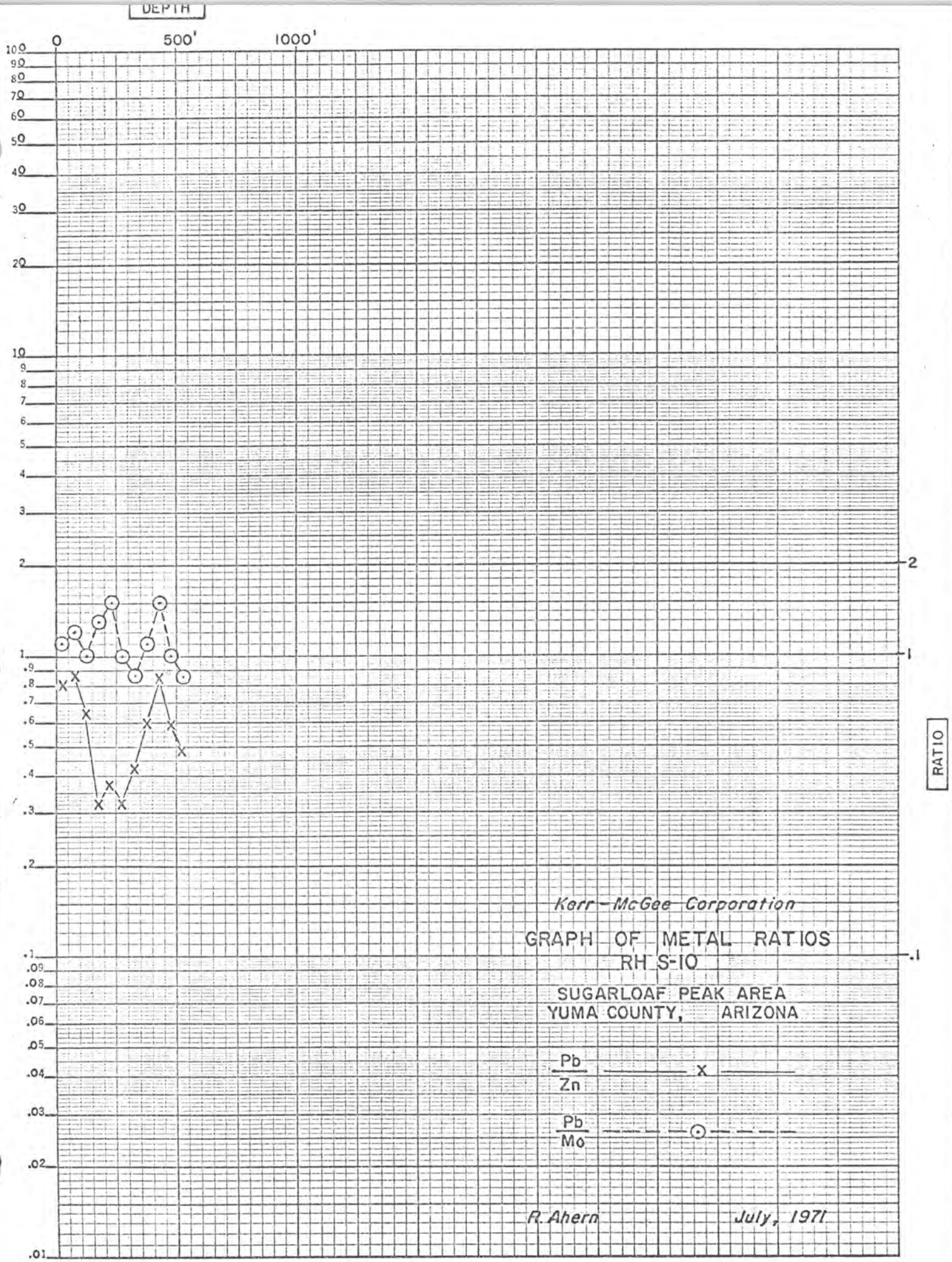
RATIO
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
RH S-10
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb
Cu/Zn
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.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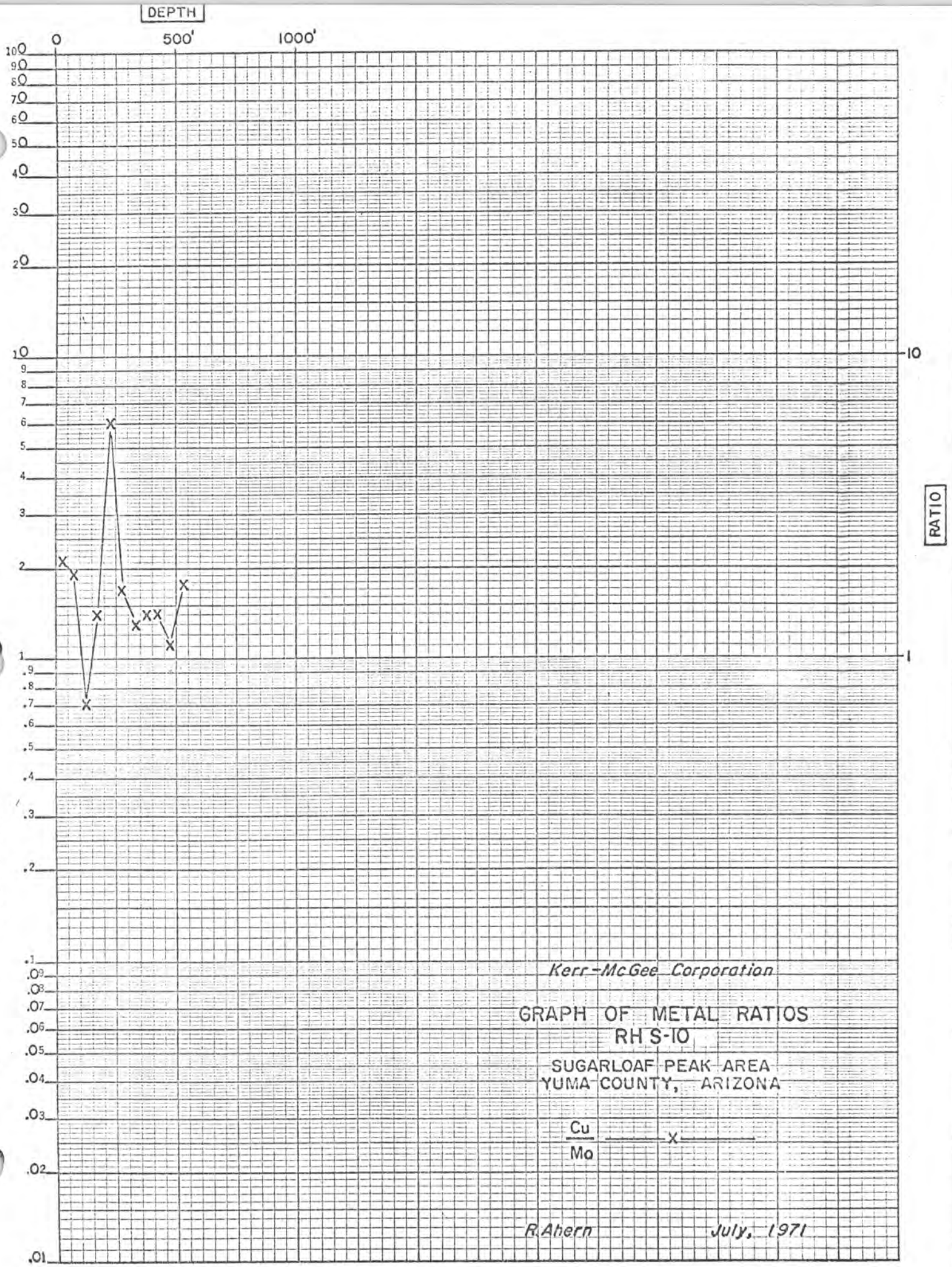
GRAPH OF METAL RATIOS
RH S-10
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Pb/Zn
Pb/Mo
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.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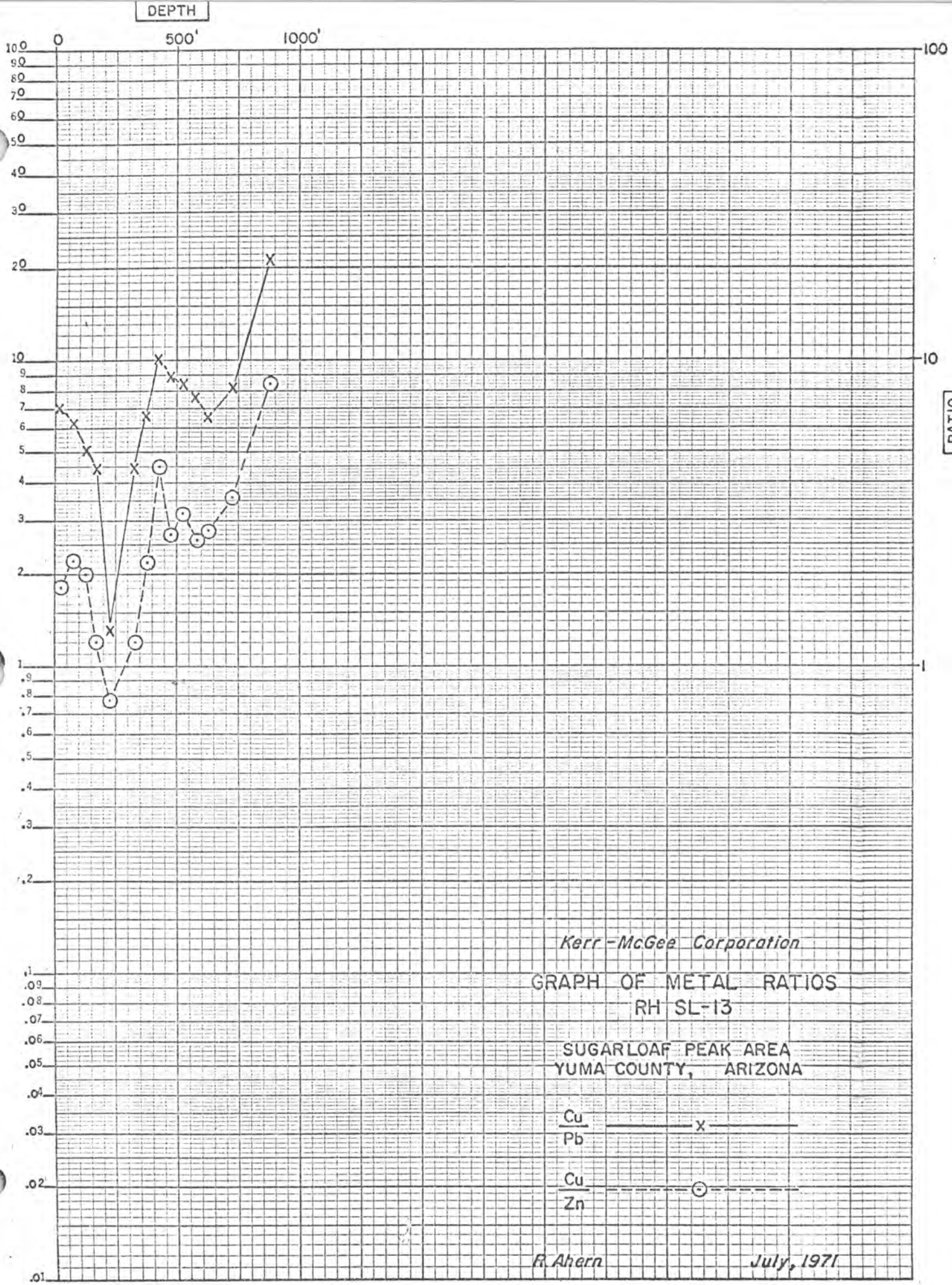
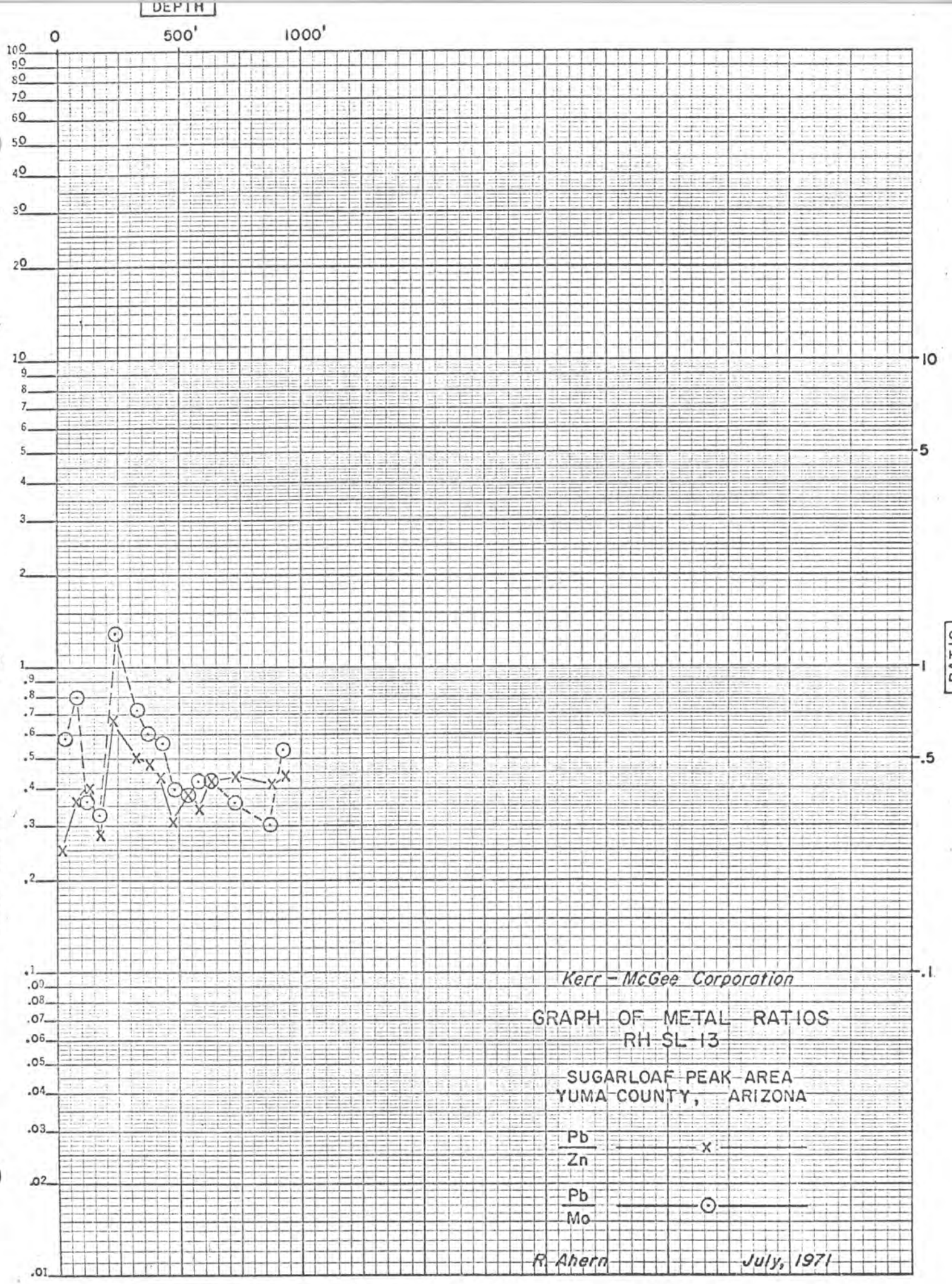
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
RH S-10
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu / Mo
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO.
MADE IN U.S.A.



4 CYCLES X 70 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.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Kerr-McGee Corporation
GRAPH OF METAL RATIOS
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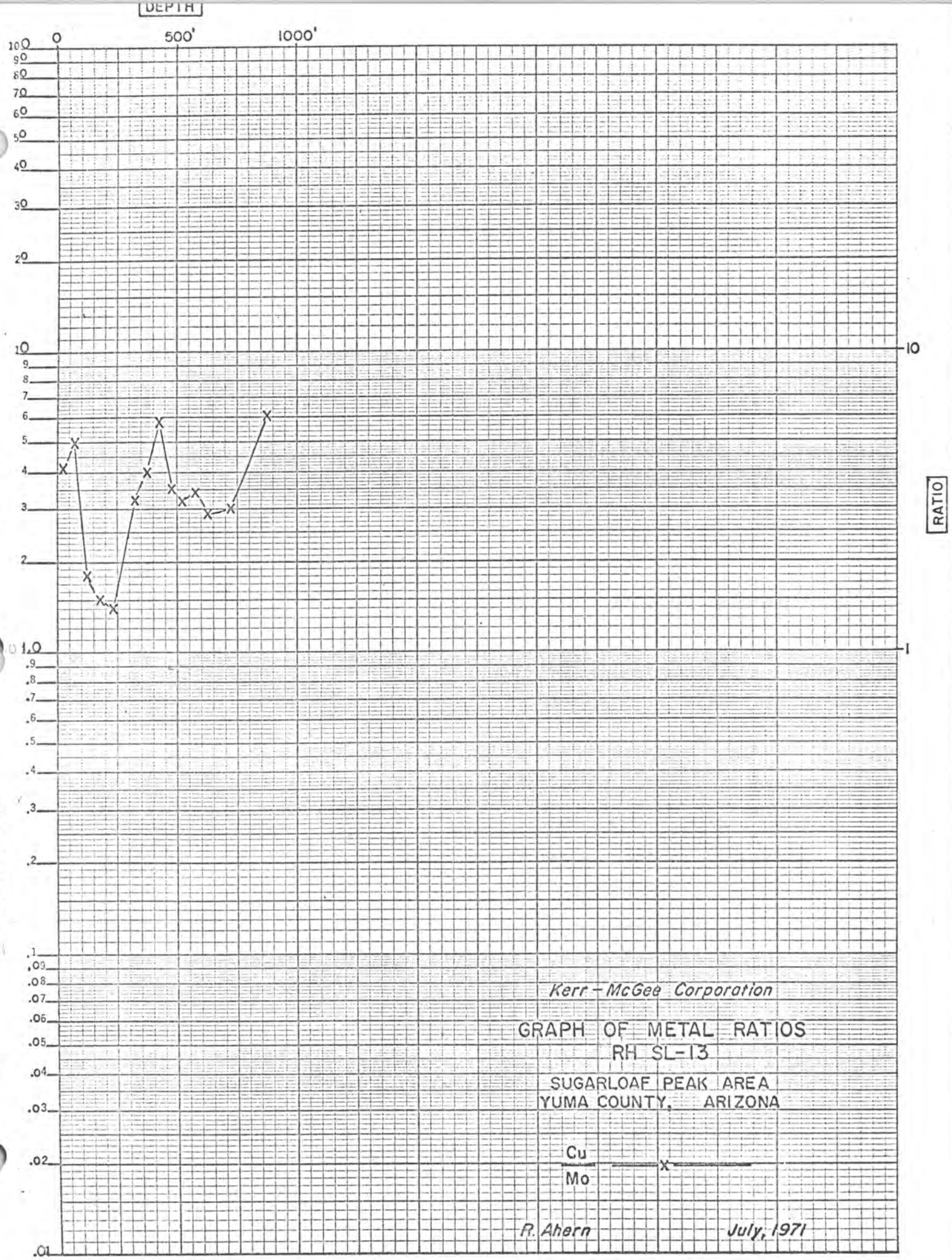
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Pb/Zn
Pb/Mo
R. Ahern
July, 1971
K&E 4 CYCLES X 70 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.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RATIO
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
RH SL-13
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu
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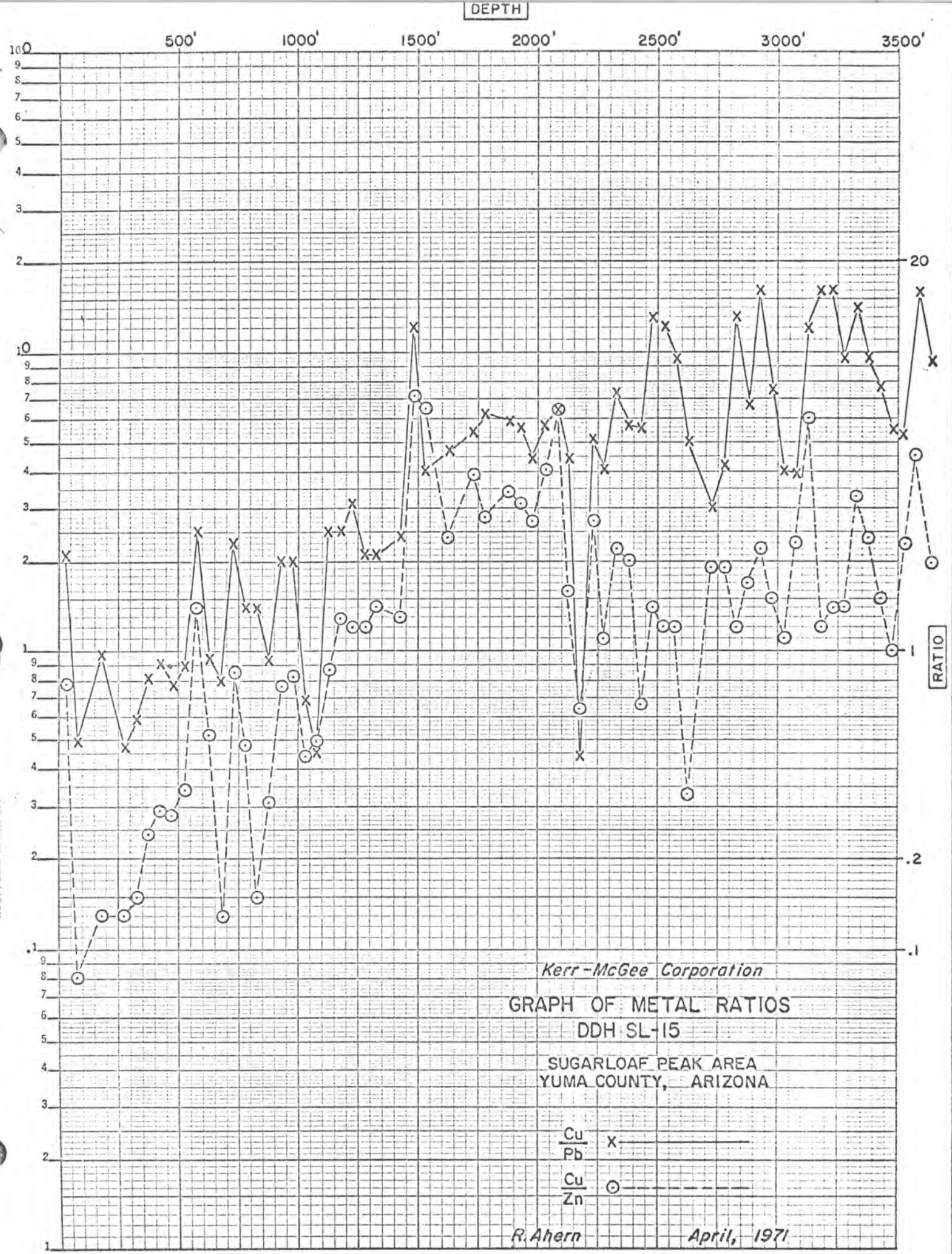
R. Ahern
July, 1971
4 CYCLES X 70 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.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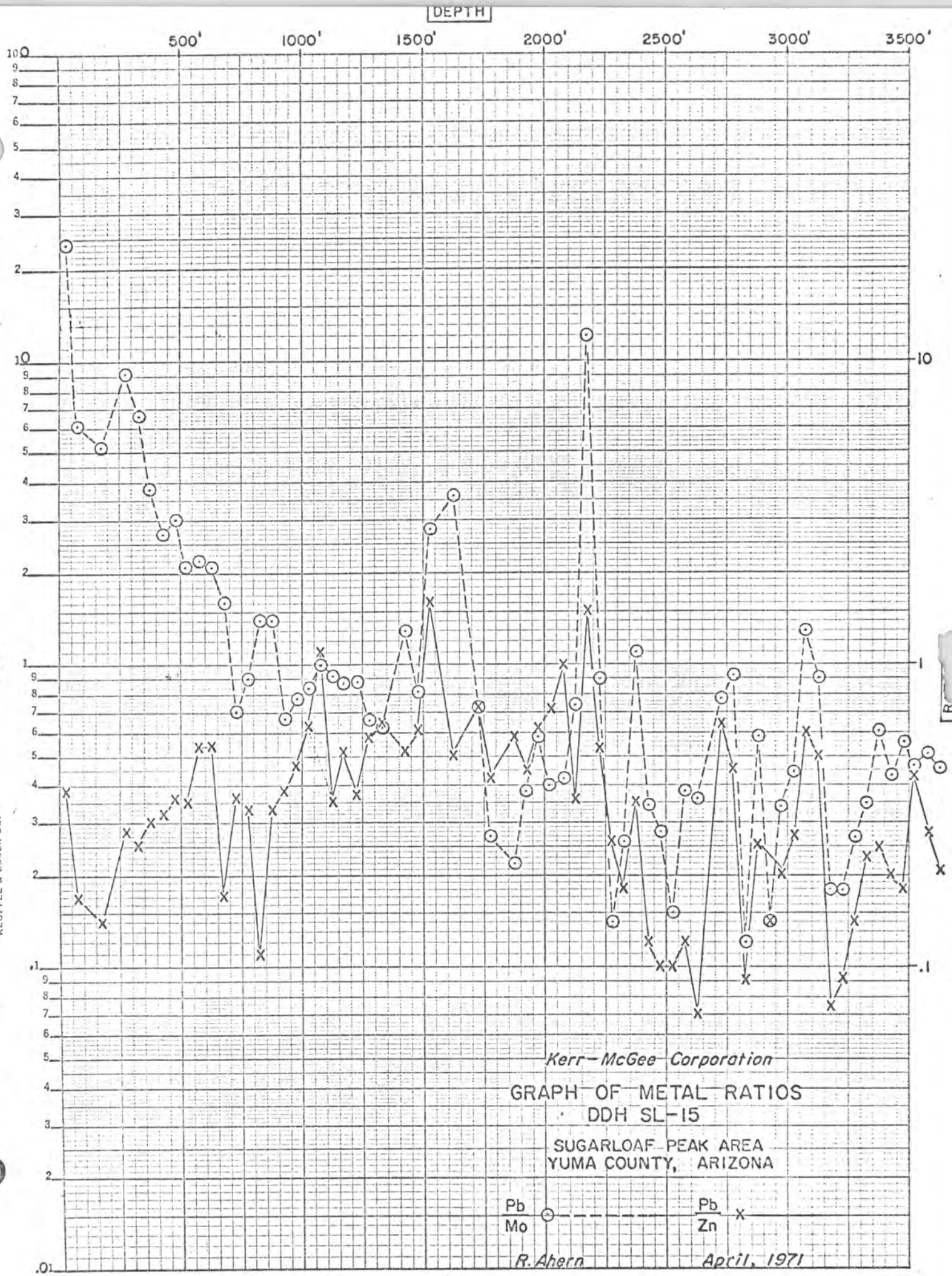
Kerr-McGee Corporation
GRAPH OF METAL RATIOS
DDH SL-15
SUGARLOAF PEAK AREA
YUMA COUNTY, ARIZONA
Cu/Pb
Cu/Zn
R. Ahern
April, 1971



K&E SEMI-LOGARITHMIC 46 6010
4 CYCLES X 70 DIVISIONS MADE IN U.S.A.
KEUFFEL & ESSER CO.