



CONTACT INFORMATION  
Mining Records Curator  
Arizona Geological Survey  
3550 N. Central Ave, 2nd floor  
Phoenix, AZ, 85012  
602-771-1601  
<http://www.azgs.az.gov>  
[inquiries@azgs.az.gov](mailto:inquiries@azgs.az.gov)

The following file is part of the Cambior Exploration USA Inc. records

### **ACCESS STATEMENT**

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

### **CONSTRAINTS STATEMENT**

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

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

### **QUALITY STATEMENT**

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

# HIMAC RESOURCES, INC.

SUITE 508 - 475 HOWE STREET,  
VANCOUVER, B.C., CANADA  
V6C 2B3  
TELEPHONE (604) 688-6681  
TELEX 04-352848 VCR.

GMC	
RECEIVED	OCT 9 1984
FILE	BB-112
TO:	1.1.20

October 4, 1984

Mr. Bernard Free,  
c/o Gerber Minerals Corp.,  
#1 Tamarac Square Bldg.,  
Suite 413,  
7555 East Hampden Avenue,  
Denver, Colorado 80231

Dear Mr. Free:

Re: Rampo, Inc.,  
Big Ben Property,  
Yavapai Co., Az.

Further to our phone conversation of this date we enclose herewith one copy of the composite trench and soil sample plan (1"=50') together with a copy of the assayer's report.

This will confirm that we did not give up our option on the property because of any adverse physical conditions - we still think it deserves a good test.

We are sending the original of the map and one copy to Bill Poe and we wish both of you good luck.

Yours truly,

HIMAC RESOURCES, INC.

*L. S. Trenholme*

L. S. Trenholme  
Vice-President

LST/mgp  
encl. (2)

cc: Mr. Bill Poe,  
Rampo, Inc.



ACME ANALYTICAL LABORATORIES LTD.  
852 E. HASTINGS, VANCOUVER B.C.  
PH:253-3158      TELEX:04-53124

DATE RECEIVED FEB 3 1984

DATE REPORTS MAILED *Feb 7/84*

## GEOCHEMICAL ASSAY CERTIFICATE

A .500 GM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO<sub>3</sub> TO H<sub>2</sub>O AT 90 DEG.C. FOR 1 HOUR.  
THE SAMPLE IS DILUTED TO 10 MLS WITH WATER. ELEMENTS ANALYSED BY AA : AG.

SAMPLE TYPE : SAND

AU\* - 10 GM, IGNITED, HOT AQUA REGIA LEACH MIBK EXTRACTION, AA ANALYSIS.

ASSAYER *D. Toye* DEAN TOYE, CERTIFIED B.C. ASSAYER

NEW TYEE RESOURCES LTD

FILE # 84-0139

PAGE# 1

SAMPLE	AG PPM	AU* PPB
LO 150N	.2	5
LO 100N	.1	5
LO 50N	.1	85
LO 00S	.2	180
LO 50S	.2	10
LO 100S	.1	20
LO 150S	.1	15
LO 200S	.2	40
LO 250S	.2	5
LO 300S	.1	5
LO 350S	.1	5
LO 400S	.1	5
LO 450S	.1	5
LO 500S	.2	5
LO 550S	.1	5
LO 600S	.1	5
LO 650S	.1	5
LO 700S	.1	5

SAMPLE	AG PPM	AU* PPB
L1W 00S	.2	5
L1W 50S	.3	15
L1W 100S	.3	40
L1W 150S	.1	5
L1W 200S	.1	5
L1W 250S	.1	5
L1W 300S	.1	130
L1W 350S	.2	20
L1W 400S	.1	5
L1W 450S	.1	5
L1W 500S	.2	5
L1W 550S	.1	5
L1W 600S	.2	5
L1W 650S	.1	5
L2W 50S	.4	195
L2W 100S	.1	5
L2W 150S	.2	5
L2W 200S	.1	5
L2W 250S	.1	5
L2W 300S	.2	110
L2W 350S	.2	45
L2W 400S	.1	25
L2W 450S	.2	10
L2W 500S	.3	35
L2W 550S	.2	5
L2W 600S	.1	10
L2W 650S	.3	5
L2W 700S	.1	5

SAMPLE	AG PPM	AU* PPB
L3W 100N	.3	175
L3W 50N	.2	35
L3W 00S	.2	5
L3W 50S	.1	5
L3W 100S	.1	5
L3W 150S	.1	5
L3W 200S	.1	20
L3W 250S	.1	55
L3W 300S	.4	195
L3W 350S	.2	20
L3W 400S	.1	5
L3W 450S	.1	5
L3W 500S	.1	5
L4W 00S	.2	5
L4W 50S	.1	50
L4W 100S	.1	10
L4W 150S	.2	55
L4W 200S	.1	35
L4W 250S	.2	35
L4W 300S	.2	85
L4W 350S	.1	25
L4W 400S	.1	15
L4W 450S	.1	5
L4W 500S	.1	5
L5W 0S	.1	20
L5W 50S	.1	70
L5W 100S	.1	15
L5W 150S	.1	40
L5W 200S	.3	70
L5W 250S	.2	45
L5W 300S	.1	5
L5W 350S	.1	5
L5W 400S	.1	10
L5W 450S	.1	5
L5W 500S	.1	5

SAMPLE	AG PPM	AU* PPB
L6W 00S	.3	5
L6W 50S	.4	385
L6W 100S	1.0	480
L6W 150S	1.2	1550
L6W 200S	.5	280
L6W 250S	.3	40
L6W 300S	.2	30
L6W 350S	.3	5
L6W 400S	.3	5
L6W 450S	.2	5
L7W 00S	.2	5
L7W 50S	.2	80
L7W 100S	.2	25
L7W 150S	.4	100
L7W 200S	.1	40
L7W 250S	.1	5
L7W 300S	.2	5
L7W 350S	.2	75
L7W 400S	.2	105
L8W 00S	.3	5
L8W 50S	.1	25
L8W 100S	.2	20
L8W 150S	.2	5
L8W 200S	.1	110
L8W 250S	.3	95
L8W 300S	.1	20
L8W 350S	.1	190
L8W 400S	.2	60

## ARIZONA GOLD PROSPECTS

NAME ..... Organ Grinder ..... COUNTY. Yavapai ..... DISTRICT.....

TOPO SHEET. Arrastra Mtn. N.E. SECT. 2 ..... TWP. 12 N. RANGE. 10 W .....

ACCESS... 2 1/2 miles west from hwy 93  
44 miles north of Wickenburg  
Opposite Baghdad Road. ELEVATION.. 3,000'...

WATER... wells nearby POWER. OK .....

Date of Visit. Jan. 29/30, '82 Wm. Poe & Associates  
OWNERSHIP. Rte. #1 Downing, Mo. (816) 379-2540DESCRIPTION Property - all of sect. 2 T12N )  
5 cl. sect. 35 T13N ) R10W  
4 cl. sect. 36 T13N ) TOTAL ACRES 4Easy access after minor road work.  
Good topography and water available for heap leaching, etc.~~EXPENSES~~

REMARKS..... Short geological reconnaissance

Coarse (feldspar) porphyritic granite cut by med grain granite  
and variety of felsic to basic dykes.  
In SE 1/4 Sect. 2 outcrop and backhoe trenches show mineralization  
over 600' diameter zone, Note N-S alignment of 5 mineralized  
zones.Trenches show steep to horizontal fractures, (some curved)  
with much limonite and bright red staining of quartz.More or less random sampling of outcrops by Bill Poe has  
returned assays up to 0.36 oz/ton gold by A.A. analysis.

Select samples have assayed up to 1.8 oz. gold per ton.

Recommend:Stage I: Bulldozer trenching <sup>on</sup> flanks, <sup>at</sup> main showing, extensive  
bulk sampling  
Additional Reconnaissance and Mapping.

300  
JACOBS ASSAY OFFICE  
1435 So. 10<sup>th</sup> Avenue  
Tucson, Arizona 85713  
602-622-0813

R-1110  
c/o Mr. Bill Poe

March 31. 1982

PRELIMINARY TESTS

SAMPLE NO.	<u># 1</u>	as received.
Weight as received	<u>5</u>	lbs ; Size, all minus <u>3/8</u> inches
HEAD ASSAY:	Gold <u>0.042</u> oz/T,	Silver <u>0.20</u> oz/T
GOLD/200 grams	<u>0.258</u> mg;	SILVER/200 grams <u>1.37</u>

AMALGAMATION  
200 grams - 100 Mesh

800 cc water  
40 grams mercury  
1 gram sodium hydroxide  
Agitate 3 hours

AMALGAM

GOLD oz/T XXXXXXXX  
SILVER oz/T XXXXXXXX  
TOTAL mg Gold             
TOTAL mg silver           

Percent recovery

gold =           

silver =           

CYANIDATION<sup>200</sup>  
200 grams -- 100 Mesh

800 cc water  
2 grams sodium cyanide  
1.2 grams lime  
Agitate <sup>2</sup>4 hours

SOLUTION    TAILS

XXXXXXXX    0.009  
XXXXXXXX    0.05  
XXXXXXXX    0.062  
XXXXXXXX    0.34

Free sodium cyanide  
lb/Ton  
Solution = 3.20

Ore = 1.80

Lime lb/Ton  
Solution = 2.10

Ore = 0.90

Percent recovery

gold = 78.43

silver = 75.19

pH 12

METALLICS  
200 grams - 100 Mesh

10 minute screening  
time

→ Iron  
mg

METALLICS    PULP

Wt. g             
Oz/T gold             
Oz/T silver             
Wt. Gold mg               Wt. Gold mg             
Wt. silver mg               Wt. silver mg           

*mgdofant*  
Sigmund L. Smith, Registered  
Metallurgical Engineer  
Arizona & Colorado

# Arizona Testing Laboratories

817 West Madison • Phoenix, Arizona 85007 • Telephone 254-6181

For RAMPO  
Attn: Mr. Bill Poe  
Box 2498  
Wickenburg, Arizona 85358

Date March 4, 1982

## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER		Gold	Silver
5582	AR #1 SNV	0.98	0.10	AR #1 SNV		1.10	.15
	AR #2 AV	0.04	Nil	AR #2 AV		1.10	.05
	AR #2 BV	0.01	Nil	AR #2 BV		.020	.10
	AR #3 F.W.	0.25	0.20	AR #3 F.W.		.564	.50
	AR #4 G	0.02	Nil	AR #4 G		.005	.15
	OG #1	0.18	0.35	OG #1		.053	.30
	OG #1 Sec. 2	0.03	Nil	OG #1 Sec. 2		.016	.05
	OG #2	0.11	0.10	OG #2		.192	.75
	OG #2 Sec. 2	0.03	0.10	OG #2 Sec. 2		.036	.10
	OG #3 Hill	0.05	0.20	OG #3 Hill		.055	.10
	OG #4 30' near creek	0.02	Trace	OG #4 30' near creek		.028	.40
	OG #5	Trace	Nil	OG #5		.062	.15
	OG #6	0.07	0.10	OG #6		.038	.05

cc: Mr. Bill Poe  
Route 1  
Downing, MO 63536

Respectfully submitted,

ARIZONA TESTING LABORATORIES

*Claude E. McLean, Jr.*  
Claude E. McLean, Jr.



• 817 West Madison • Phoenix, Arizona 85007 • Telephone 254-6181

Date January 16, 1980

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
3777	#1	0.37	mine portal. for west prospect. Seeby				
	#3	0.48					
	#4	0.65					

ARIZONA TESTING LABOR

*Claude E.*  
Claude E. McLean, Jr.





# IRON KING ASSAY OFFICE ASSAY CERTIFICATE

BOX 14 - PHONE 632-7410  
HUMBOLDT, ARIZONA 86329



ASSAY  
MADE  
FOR

GLENN WALKER  
Dept. of Mineral Resources  
Mineral Bldg. Fairgrounds  
Phoenix, Ariz. 85007

May 26, 1977

REF NO.	DESCRIPTION	oz/ton Au	oz/ton Ag	% Fe	% Pb	% Zn	% Cu
'5-23-1	#1, 8" Qtz.	.262	1.26				
'5-23-2	#2, 3 ft Qtz.	.270	1.65				
'5-23-3	#3, 2 ft Qtz. 2nd hole	.034	0.87				
'5-23-4	#4, 1 ft Qtz. hole #3	.122	0.44				
'5-23-5	#5, 3 ft Qtz.	.024	0.34				
'5-23-6	#6, 6" flat Qtz	.154	0.55				
'5-23-7	#6, 6" flat Qtz	.032	0.29				

CHARGES 342.00

*Hank, here are the sample results  
from your Au claims W. of Bagdad,  
Oregon grinder.*

ASSAYER

PORPHYRY COPPER MINERALIZATION ASSOCIATED WITH  
THE CENTRAL ARIZONA GREENSTONE BELT  
CENTRAL ARIZONA GEOLOGICAL SOCIETY FIELD SYMPOSIUM  
FEBRUARY 23-24, 1985

FIELD GUIDE

DAY 2

COMPILED AND WRITTEN BY:

RICHARD J. LUNDIN, PRESIDENT, WALLABY ENTERPRISES INC.  
PHILLIP BLACET, CHIEF GEOLOGIST CYPRUS-BAGDAD COPPER CO.  
RALPH LADNER, PHELPS DODGE CORPORATION

## TABLE OF CONTENTS

### PART I:

Description of the History, Geology, and Mineral Potential of  
the Bagdad Mine. (page 1-10)

### PART II:

Description of the History, Geology, and Mineral Potential of  
the Copper Basin Mine area with a discussion of the influence  
of Laramide-Tertiary tectonism and intrusive activity on the  
existing Cu-Au mineralization.  
(Page 1-10)

## GEOLOGY OF THE BAGDAD MINE

BY

PHILLIP M. BLACET  
CHIEF GEOLOGIST  
CYPRUS BAGDAD COPPER COMPANY

### GEOLOGIC SUMMARY:

The Bagdad open pit mine is developed within and adjacent to a composite quartz monzonite stock of Late Cretaceous age, located approximately 100 miles northwest of Phoenix, Arizona. Copper and Molybdenum sulfide ore is presently being mined at a rate of 56-58,000 tons per day by the Cyprus Bagdad Copper Company, a subsidiary of AMOCO Minerals Company. Reserves exceed 400 million tons of sulfide ore averaging .46% Cu and about .02% Mo.

In many respects, the Bagdad orebody is similar to other Arizona Cu-Mo porphyry systems of Laramide age. A well defined ore zone occurs within an extensive stockwork of small veins and veinlets consisting predominantly of quartz, pyrite, chalcopyrite, and molybdenite. Calcite is a common gangue mineral and locally magnetite is conspicuous. Sphalerite, tetrahedrite, and galena are minor minerals generally occurring in relatively late or peripheral quartz veins, where they are frequently associated with higher than average silver values. Nearly monomineralic fracture fillings of pyrite, chalcopyrite, and molybdenite occur widely throughout the ore shell. There is a general tendency for molybdenite to increase with depth.

Conspicuous, widely disseminated indigenous chalcopyrite is restricted to a relatively late intrusion of porphyritic quartz monzonite (PQM) and a finer grained, quartz monzonite porphyry (QMP). For the purposes of geologic modelling, these two rock types are considered cogenetic textural varieties, and have been treated as a single modelling unit. At the present mining elevations, the PQM forms a large, irregular, dike-like body trending east-northeast across the central part of the composite stock and associated ore shell. Several lines of evidence indicate that the PQM was intruded into a subvolcanic environment and represents the upper part of a much larger Cu-Mo enriched body of quartz monzonite that energized and introduced copper and molybdenum to a complex hydrothermal system developed in the strongly fractured rocks above and adjacent to the PQM. Supporting this genetic model is the symmetrical arrangement of the ore shell and pyritic halo around the elongate body of porphyritic quartz monzonite.

Predating the PQM are two largely equigranular, medium-grained facies of the composite stock. The oldest of these intrusive units is a relative biotitic, strongly potassically altered granodiorite. This granodioritic facies of the Bagdad stock have been informally designated QM1. Probably because of its relatively high iron content and closely spaced fractures, the granodioritic facies commonly acted as an especially favorable

host for copper mineralization.

The predominant rock type within the composite stock is a medium grained, nearly equigranular to weakly seriate-porphyritic quartz monzonite (QM2) that may largely postdate the more biotitic QM1. Contacts between QM1 and QM2 are generally obscure, and it appears likely that at least locally the granodioritic QM1 may be a border facies grading inward to QM2. The Laramide stock intruded a complex Precambrian terrain that commonly is strongly mineralized for several hundred feet away from the outward

dipping intrusive contacts.

The youngest igneous rock recognized as part of the Laramide intrusive system is represented by dikes and probably plug-like bodies of granite porphyry (GRP). Although the GRP is somewhat similar to some varieties of conspicuously porphyritic, quartz phenocrystic QMP, the granite porphyry is essentially unmineralized, except for rare quartz-pyrite-sphalerite-galena veins, and appears to postdate the main stage of Cu-Mo mineralization. Pyrite is widely developed in the GRP, where it is associated with strong to pervasive phyllic-argillic alteration probably representing the waning stages of the

hydrothermal system.

Rock alteration studies within and adjacent to the Bagdad stock indicate that Cu-Mo mineralization generally is associated with a zone characterized by overprinting of moderate to strong potassic alteration (defined by secondary biotite and K-feldspar) by a later superimposed phyllic alteration (defined by sericite). The shift from widespread potassic alteration to later phyllic alteration probably reflects an inward collapse of temperature gradients during the declining stages of the hydrothermal system. Within the ore shell, Cu and Mo mineralization occurred during both the potassic and phyllic alteration phases, with the phyllic alteration generally diminishing in the deeper parts of the orebody. A strongly developed quartz-sericite-pyrite alteration halo surrounds the ore shell, dipping steeply away from the pit, and helping to define the geometry of the higher-grade portion of the orebody as an elliptical truncated cone increasing in

diameter with depth.

Limited fluid inclusion studies of quartz in veins associated with mainstage Cu-Mo mineralization and phyllic alteration (Nash and Cunningham, 1974) indicate ore deposition from hydrothermal solutions of moderate to high salinity (8 to 35% NaCl equivalent) at temperatures ranging from 225 to 375 degrees C. The presently exposed portion of the ore shell apparently formed at a depth of approximately 6,000 feet. Geologic evidence and physical-chemical constraints indicated by fluid inclusion data suggest that the Bagdad Cu-Mo hydrothermal system developed beneath a Late Cretaceous volcanic center in response to multiple intrusive pulses of granodioritic to granitic magma. Mineralization appears to be spatially and temporarily associated with the intrusion of the porphyritic quartz monzonite (PQM), probably resulting from a complex interaction between magma-derived heat and metal-enriched fluids, and groundwater. Widespread breccia piping and the occurrence of largely vapor filled fluid inclusions indicate localized venting and boiling of this major hydrothermal system.

#### DESCRIPTION OF GEOLOGIC MODELLING UNITS

Eight lithologic units are represented on the generalized geologic map used in this report. For simplicity of block modelling, these units commonly include two or more diverse lithologies.

##### Dumps and Tailings

Mine dumps and old mill tailings occur widely in the mine area. Because large tonnages of these unconsolidated materials will have to be relocated in order to significantly expand the pit, they constitute an important modelling unit.

##### Sanders Basalt

A succession of Late Miocene(?) olivine basalt flows, up to 100 or more feet thick, cap Sanders and Copper Creek Mesas east and north of the pit. Separating this basalt from the underlying Gila Conglomerate is a conspicuous, white rhyolite tuff approximately 30 feet thick.

##### Gila Conglomerate

Middle to Late Miocene terrestrial sediments consisting largely of weakly to moderately consolidated, alluvial fan and stream gravel, pebbly arkosic sandstone, with numerous interbeds and channel fillings of rhyolitic tuff and poorly sorted tuffaceous sandstone and mudstone. The Gila Conglomerate was deposited on an erosion surface with substantial relief so that, in the mine area, the thickness of this formation varies from less than 100 feet to approximately 1,000 feet.

### Porphyritic Quartz Monzonite (PQM)

The PQM, together with its finer grained equivalent QMP, represents an extremely important modelling unit. Even though this relatively late intrusive rock generally contains significant disseminated chalcopyrite, the abundance of this indigenous sulfide is highly variable and this rock largely coincides with low-grade ore and a central core or low-grade sulfide mineralization. Disseminated pyrite is ubiquitous within the PQM, but its abundance relative to chalcopyrite varies greatly; molybdenite commonly occurs as sparsely disseminated grains.

Texturally, the PQM ranges from distinctly porphyritic to seriate-porphyritic, with all the gradations to finer-grained, conspicuously porphyritic QMP. Generally the PQM is light gray, but approaches white in varieties with less than 5 percent

biotite.

A distinctive phenocryst population usually consists of 3-8% biotite (1-5 mm), 10-20% rounded quartz "eyes" (1.5-6 mm), 30-35% sodic plagioclase (2-10 mm), and 3-10% euhedral orthoclase (3-12 mm). These phenocrysts occur as an open mesh with a fine grained

interstitial groundmass of quartz and potassium feldspar.

### Breccia Pipes

Weakly to strongly mineralized breccias are widely occurring in the mine area. The two largest, presumably pipelike bodies of breccia are shown on the generalized geologic map. These breccias consist largely of a highly mixed assortment of closely packed, angular to subrounded fragments of Precambrian rock types in a strongly altered matrix of finer-grained breccia and comminuted rock. These breccias are unsorted, with fragments ranging in size from a few millimeters to more than a meter. Potassic alteration is strong to pervasive with crosscutting veinlets, alteration rims, and interstitial fillings of fine to coarsely crystalline biotite, K-feldspar, and quartz, commonly assuming an aplitic to pegmatitic aspect, with intergrown or disseminated chalcopyrite, pyrite, and minor molybdenite. Most of the sulfide mineralization occurs in quartz veinlets that cross-cut both the fragments and the matrix, indicating that the breccias formed prior to the culmination of the main stage of Cu-Mo mineralization. The age of the breccias is bracketed by the occurrence of rare Laramide quartz monzonite fragments and numerous quartz cross-cutting dikes and irregular stringers of PQM and QMP. A poorly defined spacial association between the breccias and the PQM suggests a

genetic relationship.



### Quartz Monzonite

Because vague or gradational contacts are common between the granodioritic facies of the Laramide quartz monzonite (QM1) and the more widespread less biotitic quartz monzonite (QM2), these two rock types have not been adequately delineated in the pit or subsurface. For this reason they have been combined to form a single modelling unit (QM). Both compositional and textural varieties are medium-grained, weakly seriate-porphyritic to hypidiomorphic-granular rocks. Biotite in the QM1 occurs largely or entirely as leafy secondary biotite, commonly forming prismatic aggregates that may be pseudomorphs after hornblende. In the QM2 biotite forms characteristic booklike phenocrysts or aggregates. Potassium feldspar is significantly more abundant in the QM2, where it is largely intergrown with quartz to form a fine-grained interstitial mosaic. Sparse quartz eyes (1-2 mm) are commonly present in the QM2, locally becoming conspicuous. Disseminated indigenous chalcopyrite has not been recognized in either variety of the QM.

### Alaskite Porphyry (alp)

This leucocratic Precambrian rock is in contact with the composite stock along most of its western margin. This distinctive rock is composed almost entirely of quartz and feldspar. Irregular quartz phenocrysts (1-4 mm) are conspicuous, and along with twinned albite phenocrysts (1-3 mm) are set in a fine-very fine-grained micrographic to myrmekitic groundmass of interlocking quartz and potassium feldspar with some albite. This granophyric intrusive rock is essentially devoid of mafic minerals, and the extremely low initial iron content probably explains why it is an extremely poor host for copper mineralization.

### Precambrian Complex

Because of the structural complexity of the Precambrian terrain adjacent to the Laramide composite stock, these intimately mixed and highly diverse rocks have been included as a single modeling unit. This complex consists predominantly of three metamorphosed Precambrian formations (Bridle Volcanics, Butte Falls Tuff, and Hillside Mica Schist) intruded by a wide assortment of igneous rocks ranging in composition from gabbro to granite, including pegmatite and aplite. Generally within the ore shell relatively high-iron rocks (Bridle Volcanics, gabbro, and quartz diorite) have acted as exceptional hosts for copper mineralization. Conversely, molybdenite mineralization seems to be independent of the host's initial iron content, and may in fact be localized in silicic rocks low in iron. Future block modelling should be revised to differentiate the more mafic

Precambrian as a separate modelling unit.



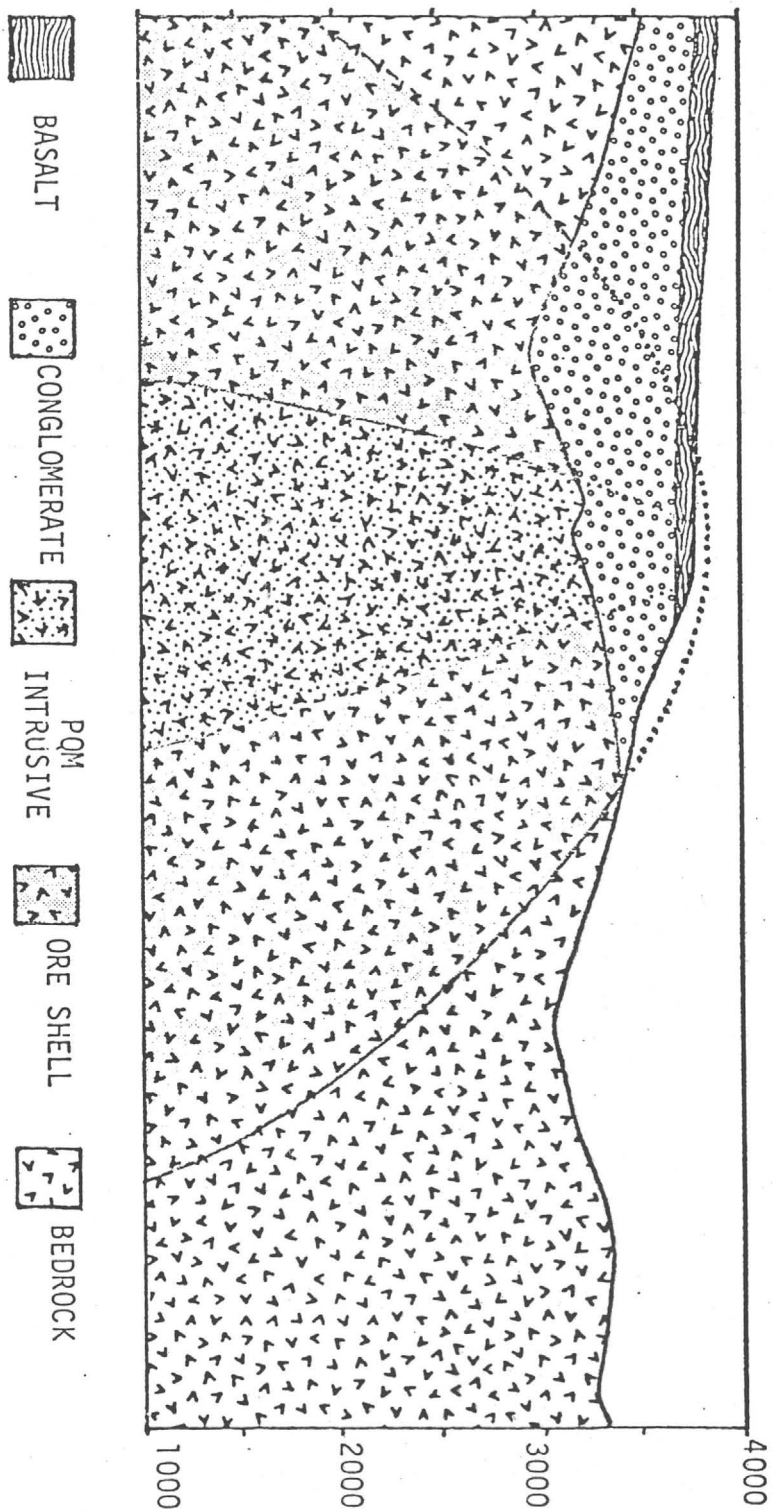
FIGURE 1. Generalized Geologic Map



CROSS-SECTION

98,500 E

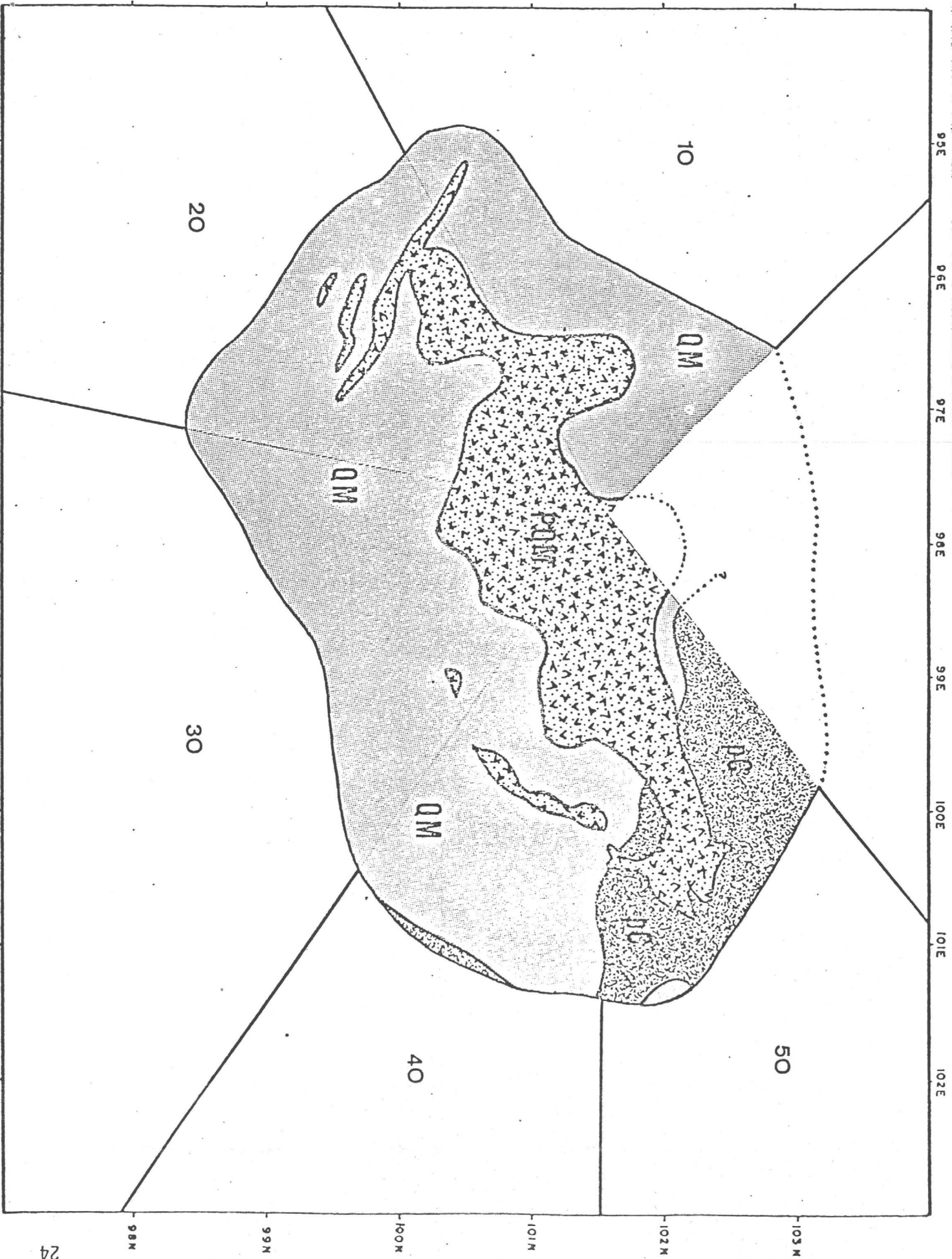
LOOKING EAST



SECTION SHOWING RELATIONSHIP BETWEEN PGM AND ORE SHELL  
WEATHERING ZONES HAVE BEEN OMITTED FROM SECTION

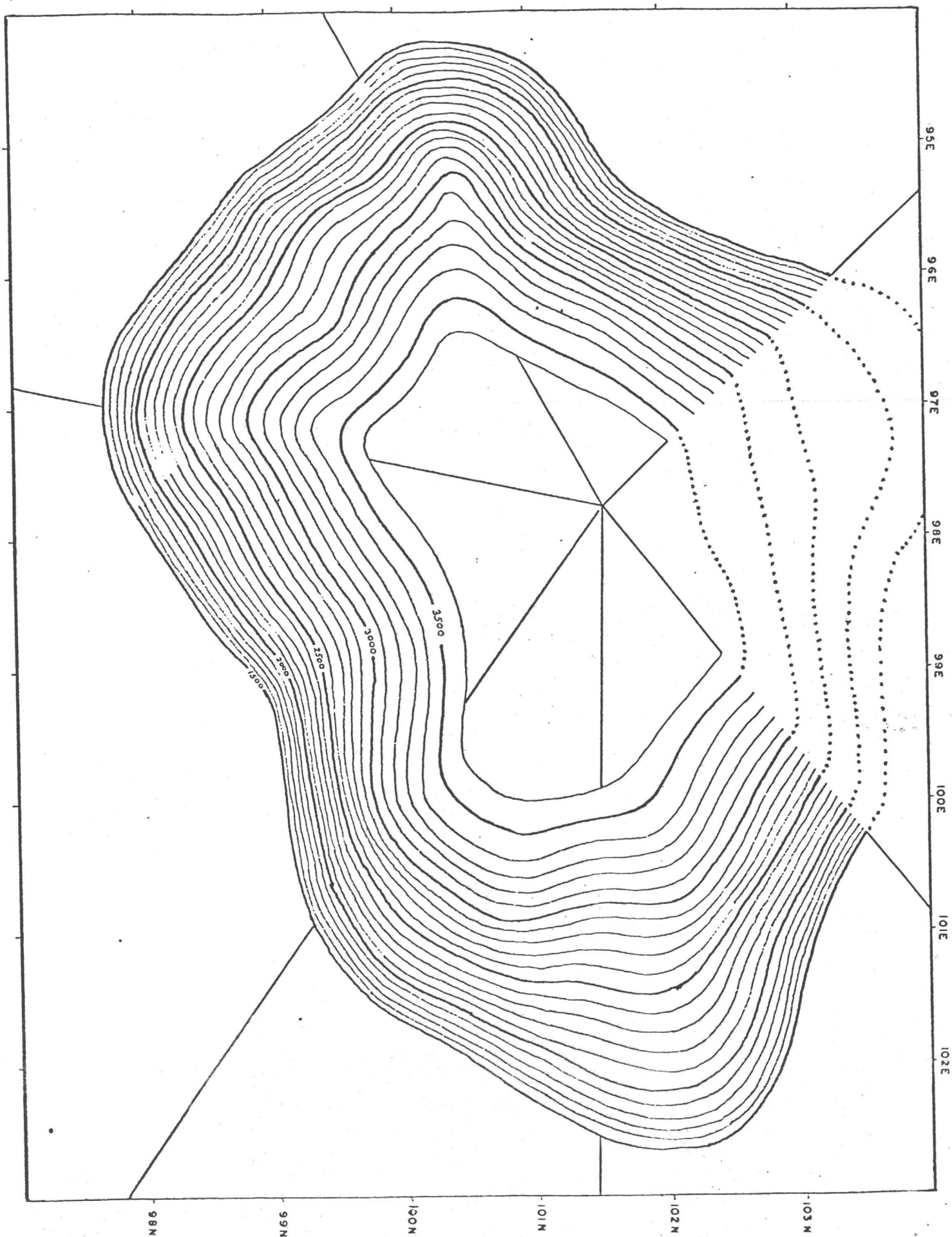
SCALE: 1 IN = 1000 FT

IDEALIZED GEOLOGIC MAP WITHIN THE ORE SHELL



2500 ELEVATION

TOP OF ORE SHELL CONTOUR

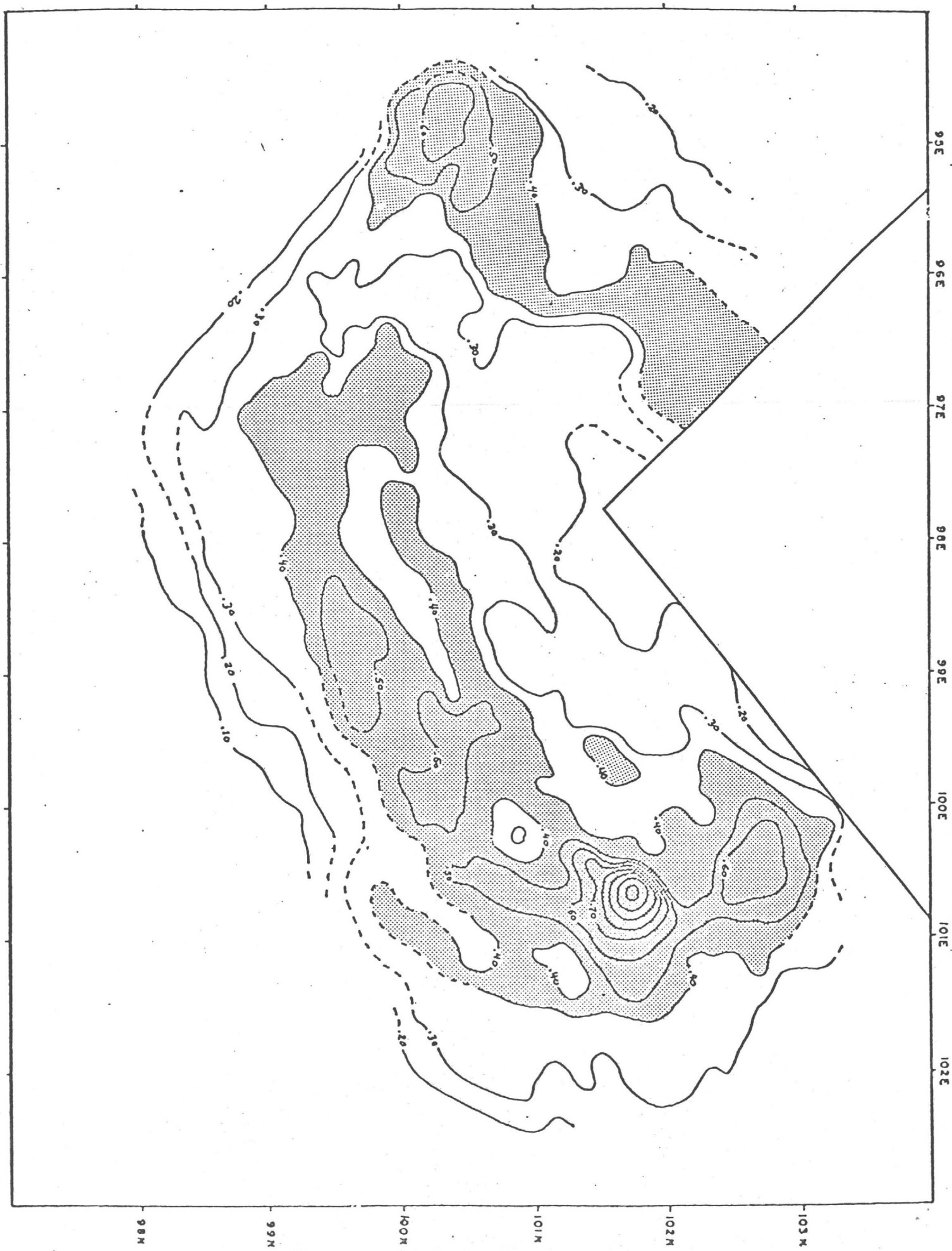




TOTAL COPPER CONTOUR

2000 ELEVATION

Scale: 1" = 1000'



\*.27 / lb of product ~~SK~~ copper

100,000 tons sulfuric acid

SK plant put in in 1975

~~NE~~

ENE trend. 1 mi wide x 20 mi long  
zone of late Mesozoic - Early Tertiary intrusions  
at which Daguerre is  $\sim \frac{2}{3}$  of way from  
SW to NE. All intru are hydro alter  
w/ py,  $\text{Fe}_2\text{O}_3$  trend can perhaps be  
traced SW to Bill Will. River Area  
and NE to San Francisco Pk.

see PP 278

Pe Bridal Volcs.

E belt - w belt

E belt has most DIES

Massive sulfides in w belt - Bruce, Old Dick

Gold in gossan

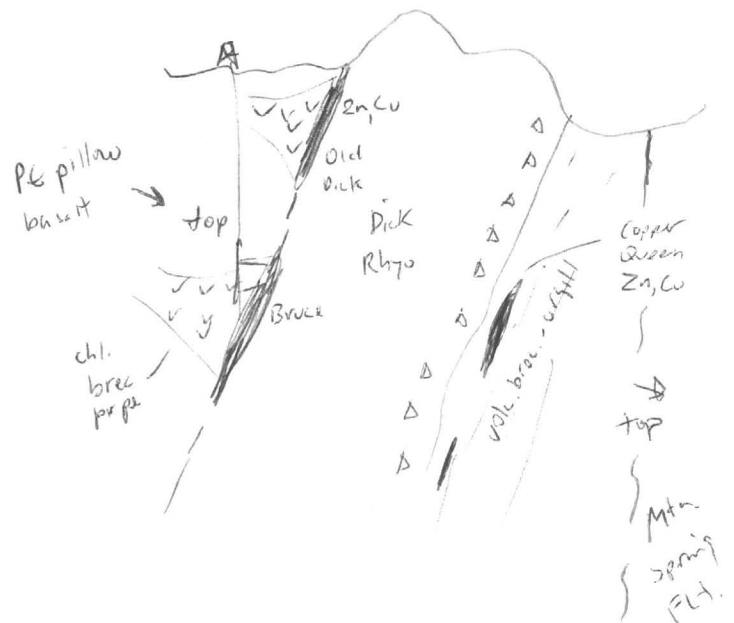
Fe content follows chalco. content

Most all mineraliz. is in  
structures.

POM is mineralizer

Cu Assay contour maps show  
flattened about ore body  
Mo generally increases at depth

potassic, sericitic, clay alter. types  
Bruce - Old Dick 3 of town  
- see USGS PP 278



#.27 / 1000 produces \$K copper

100,000 tons, sulfuric acid

St plant put in in 1975

~~NE~~

ENE trend. 1 mi wide x 20 mi long  
zone of late Mesozoic - Early Tertiary intrusions  
of which Daguerre is ~  $\frac{2}{3}$  of way from  
SW to NE. All intru are hydro alter  
w/ py, sp, trend can perhaps be  
traced SW to Bill Will. River Area  
and NE to San Francisco PK.

see PP 27B

E Bridal Volcs.

E belt - w belt

E belt has most BIFs

Massive sulfides in w belt - Bruce, Old Dick

Gold in gossan

Fe content follows chalco. content.

Most all mineraliz. is in  
fractures.

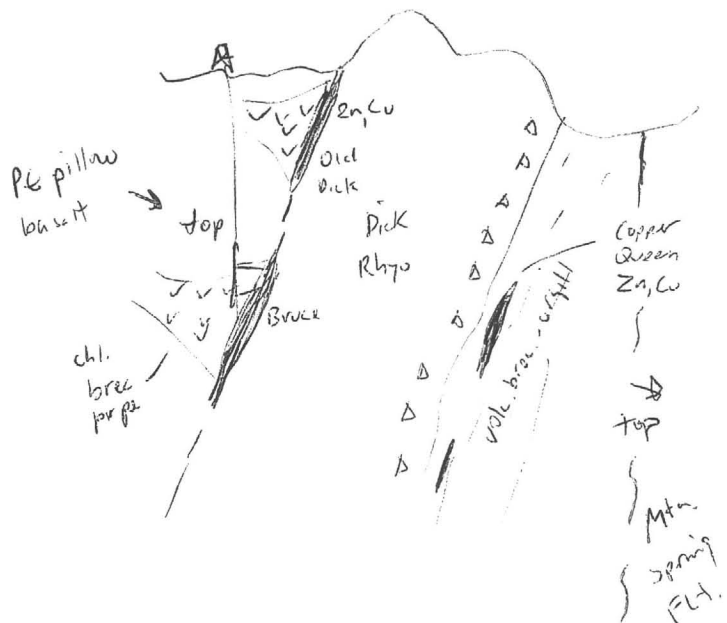
POM is mineralizer

Cu Assay contour maps show  
flattened domot ore body  
Mo generally increases at depth

potassic, sericitic, clay alter. types

Bruce - Old Dick 3 of town

- see USGS PP 27B





# Western Testing Laboratories

1275 Kleppe Lane, No.5  
Sparks, Nevada 89431  
(702) 331-3600

---

Report

on

PRELIMINARY  
BOTTLE-AGITATION CYANIDE LEACH TEST  
(Laboratory No. 166-2)

to

Ark Energy Ltd.  
675 W. Hastings, Suite 1103  
Vancouver, B. C. V6B 1N2

## SUMMARY

A recovery of 95.6 percent of the gold was obtained from an ore with a calculated head assay of 0.229 ounce of gold and 0.04 ounce of silver per ton of ore. The silver content of the ore is so low that silver is of negligible economic importance. Reagent consumption was modest.

## SAMPLE PREPARATION

A sample of approximately 70 pounds was composited from approximately 500 pounds of ore. The 70-pound composite was crushed to minus 3/4 inch, coned, and quartered; then, a sample of approximately five pounds was split from the 70-pound sample. The five-pound sample was ground to minus 80 mesh; a head assay was split out, and the remainder was set aside for cyanide testing.

## HEAD ORE ASSAY

The head ore was assayed by the fire-assay method, using three-assay tons of ore. Results were:

Gold 0.225 Ounce per Ton of Ore

Silver 0.08 Ounce per Ton of Ore



Report  
On  
Preliminary  
Bottle-Agitation Cyanide Leach Test  
(Laboratory No. 166-2)  
July 1, 1983--Page 2

## LEACH TEST

A bench-scale bottle-agitation cyanide leach test was conducted to obtain preliminary information regarding gold and silver recoveries and reagent consumptions by straight cyanidation treatment. The test procedure was, as follows.

A 400-gram portion of the ore was pulped with 600 milliliters of tap water. Lime, equivalent to 4.0 pounds per ton of ore, was added to the pulp to adjust the pH to 10.4. Granular sodium cyanide was added to the pulp to produce a solution containing 4.0 pounds per ton of solution. Leaching was accomplished by agitating the pulp in an open bottle rolling on the laboratory rolls for 72 hours. Aliquots of the solution were extracted at 24-hour intervals.

Table 1 presents the pH, free cyanide content, gold and silver recoveries in ounces per ton for each 24-hour period that leaching was maintained.

Table 1  
Time-Interval Recoveries and Reagent Additions

Leach Time (Hours)	pH	Free CN <sup>-</sup> (Lbs/T Water)	Preg Solution Assay	
			Au (Oz/T)	Ag (Oz/T)
0	10.4	4.0	---	---
24	10.2	3.0	0.190	Nil
48	10.1	2.5	0.219	0.02
72	10.0	2.1	0.219	0.04

Note: Free CN<sup>-</sup> is free cyanide.

Report  
On  
Preliminary  
Bottle-Agitation Cyanide Leach Test  
(Laboratory No. 166-2)  
July 1, 1983--Page 2

## LEACH TEST

A bench-scale bottle-agitation cyanide leach test was conducted to obtain preliminary information regarding gold and silver recoveries and reagent consumptions by straight cyanidation treatment. The test procedure was, as follows.

A 400-gram portion of the ore was pulped with 600 milliliters of tap water. Lime, equivalent to 4.0 pounds per ton of ore, was added to the pulp to adjust the pH to 10.4. Granular sodium cyanide was added to the pulp to produce a solution containing 4.0 pounds per ton of solution. Leaching was accomplished by agitating the pulp in an open bottle rolling on the laboratory rolls for 72 hours. Aliquots of the solution were extracted at 24-hour intervals.

Table 1 presents the pH, free cyanide content, gold and silver recoveries in ounces per ton for each 24-hour period that leaching was maintained.

Table 1

### Time-Interval Recoveries and Reagent Additions

Leach Time (Hours)	pH	Free CN- (Lbs/T Water)	Preg Solution Assay	
			Au (Oz/T)	Ag (Oz/T)
0	10.4	4.0	---	---
24	10.2	3.0	0.190	Nil
48	10.1	2.5	0.219	0.02
72	10.0	2.1	0.219	0.04

Note: Free CN- is free cyanide.

#### COLUMN-PERCOLATION LEACH TEST

A 50-pound charge of ore was placed in a 5.5-inch (inside diameter) clear plastic column to make a bed approximately 4.1 feet thick. A sodium hydroxide solution was percolated through the column until the pH of the effluent ranged between 9.0 and 10.0. Then, the ore charge was leached with a solution containing 4.0 pounds of NaCN and 4.0 pounds of NaOH per ton. A burlap cover was placed on top of the ore to disperse the solution, and a funnel was placed in the top of the column to direct the solution onto the burlap cover. The leach solution was placed in an overhead reservoir and was applied onto the burlap cover at the rate of approximately 10 gallons per square foot per day, which amounted to approximately 5.0 liters per day.

Solution flow for the column test was regulated by means of a screw-type pinch clamp on the line. The pregnant effluents were collected in covered plastic containers beneath the leach column. Each day, the volume of collected solution was measured, analyzed for free cyanide content, and assayed for gold and silver--using the atomic absorption analytical technique.

Upon completion of the leach period, the bed of ore was washed with tap water at the same application rate as for the leach solution. The tailings were fire assayed to determine the unleached precious metal values.

The daily operational log (showing the volume of leach solution applied and effluents collected, gold and silver recoveries from the pregnant effluents, as well as the percentage extractions of gold and silver values) is presented in Table 1.

#### CONCLUSIONS

An extraction of 72.2 percent of the gold contained in the ore was achieved in the column-percolation cyanide leach test. The amount of silver in the ore is of little economic importance; however, the acceptable gold recovery rate indicates that the ore is amenable to heap leaching. Reagent consumption was modest, with 2.0 pounds of sodium cyanide and 4.5 pounds of sodium hydroxide per ton of ore.

Table 1  
 Column-Percolation Leach Test, Log and Recovery

Solution Number	Leach Solution			Effluent (Liters)	Extraction	
	Liters Added	NaCN (gr)	NaOH (gr)		Au (Oz/T)	Ag (Oz/T)
1	5.0	----	10.0	----	-----	----
2	5.0	10.0	10.0	3.15	0.038	----
3	5.0	10.0	10.0	4.80	0.071	----
4	5.0	10.0	----	4.90	0.010	----
5	5.0	10.0	----	4.90	0.003	----
6	5.0	----	----	4.85	Nil	----
Total Extraction					0.122	Nil
Residue Assay					0.047	Nil
Calculated Head					0.169	Nil
Percent Extraction					72.2	Ø

Cyanide Consumption: 2.0 Lbs/Ton of Ore  
 pH Reagent: 4.5 Lbs/Ton of Ore

#### RECOMMENDATIONS

No further laboratory tests are recommended for this ore. The client may desire to perform a pilot leach test on 200 or 300 tons of the ore, prior to production-scale operations.

  
 B. M. Clem  
 General Manager

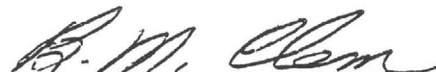
Table 1  
 Column-Percolation Leach Test, Log and Recovery

Solution Number	Leach Solution			Effluent (Liters)	Extraction	
	Liters Added	NaCN (gr)	NaOH (gr)		Au (Oz/T)	Ag (Oz/T)
1	5.0	----	10.0	----	-----	----
2	5.0	10.0	10.0	3.15	0.038	----
3	5.0	10.0	10.0	4.80	0.071	----
4	5.0	10.0	----	4.90	0.010	----
5	5.0	10.0	----	4.90	0.003	----
6	5.0	----	----	4.85	Nil	----
Total Extraction					0.122	Nil
Residue Assay					0.047	Nil
Calculated Head					0.169	Nil
Percent Extraction					72.2	Ø

Cyanide Consumption: 2.0 Lbs/Ton of Ore  
 pH Reagent: 4.5 Lbs/Ton of Ore

#### RECOMMENDATIONS

No further laboratory tests are recommended for this ore. The client may desire to perform a pilot leach test on 200 or 300 tons of the ore, prior to production-scale operations.

  
 B. M. Clem  
 General Manager

# Ark Energy Ltd.

Ste. 1103 - 675 West Hastings Street  
Vancouver, B.C. V6B 1N2  
Telephone (604) 687-3388

September 19, 1983

## NEW RELEASE

### COLUMN LEACH TEST VERY FAVOURABLE

Western testing laboratories, Sparks Nevada, have completed the "Column - Percolation Cyanide Leach Test" a five hundred pound bulk sample taken from the west pit on the Leach Claims in Yavapai County, Arizona. This sample represents an area 100' wide by 150' long and the test is to establish the amenability to heap leaching and the approximate percentage of gold recovery. The results of the test is attached.

Four more known zones with similar mineralization ranging from 50' to 100' in width and several hundred feet in length have been partially explored and are now being trenched, sampled and mapped prior to more drilling.

These large zones of fractured silicious ton granites can all be mined from one large open pit and we now know it can be heap leached for its gold content.

We are negotiating with several large and intermediate mining companies regarding possible joint venture to put this property into early production.

This News Release was prepared by H.L. Williams, President of Ark Energy Ltd. and takes full responsibility for its contents. The Vancouver Stock Exchange has neither approved nor disapproved of the contents of this report.

  
H.L. WILLIAMS  
President

HLW:ba



## Western Testing Laboratories

1275 Kleppe Lane, No. 5  
Sparks, Nevada 89431  
(702) 331-3600

---

Report

on

COLUMN-PERCOLATION CYANIDE LEACH TEST  
(Laboratory No. 202-1)

to

Ark Energy Ltd.  
675 W. Hastings, Suite 1103  
Vancouver, B. C. V6B 1N2

### SUMMARY

A recovery of 72.2 percent of the gold was obtained from an ore with a calculated head assay of 0.169 ounce of gold and nil silver per ton of ore. The silver content of the ore is so low that silver is of negligible economic importance. Reagent consumption was modest.

### SAMPLE PREPARATION

An ore sample, which was previously composited and crushed under Laboratory No. 166-2, was used for this test. Of approximately 65 pounds of ore remaining from the previous test, 50 pounds were split out for this column-percolation cyanide leach test. Since the ore had already been crushed to minus 3/4 inch, no other sample preparation was necessary.

### HEAD ORE ASSAY

The head ore was assayed by the fire-assay method, using three-assay tons of ore. Results were:

Gold 0.171 Ounce per Ton of Ore

Silver 0.04 Ounce per Ton of Ore



# Western Testing Laboratories

1275 Kleppe Lane, No.5  
Sparks, Nevada 89431  
(702) 331-3600

---

Report  
on  
COLUMN-PERCOLATION CYANIDE LEACH TEST  
(Laboratory No. 202-1)  
to

Ark Energy Ltd.  
675 W. Hastings, Suite 1103  
Vancouver, B. C. V6B 1N2

## SUMMARY

A recovery of 72.2 percent of the gold was obtained from an ore with a calculated head assay of 0.169 ounce of gold and nil silver per ton of ore. The silver content of the ore is so low that silver is of negligible economic importance. Reagent consumption was modest.

## SAMPLE PREPARATION

An ore sample, which was previously composited and crushed under Laboratory No. 166-2, was used for this test. Of approximately 65 pounds of ore remaining from the previous test, 50 pounds were split out for this column-percolation cyanide leach test. Since the ore had already been crushed to minus 3/4 inch, no other sample preparation was necessary.

## HEAD ORE ASSAY

The head ore was assayed by the fire-assay method, using three-assay tons of ore. Results were:

Gold 0.171 Ounce per Ton of Ore


Silver 0.04 Ounce per Ton of Ore



Report  
On  
Preliminary  
Bottle-Agitation Cyanide Leach Test  
(Laboratory No. 166-2)  
July 1, 1983--Page 4

#### RECOMMENDATIONS

Prior to heap leaching on a production basis, the ore should be subjected to a column percolation leach test.

  
B. M. Clem  
General Manager

Report  
On  
Preliminary  
Bottle-Agitation Cyanide Leach Test  
(Laboratory No. 166-2)  
July 1, 1983--Page 3

Upon completion of the leaching period, the pulp was filtered and washed free of cyanide solution, using warm tap water. The leached residue was dried and assayed by the fire-assay method, using three-assay tons of ore. Pertinent assay and recovery results of the test are presented in Table 2; percentage of recoveries and reagent consumption are presented in Table 3.

Table 2

Gold and Silver Recoveries  
By Bottle-Agitation Leach

Assays	Au (Oz/Ton)	Ag (Oz/Ton)
Head	0.225	0.08
Extraction	0.219	0.04
Residue	0.010	Nil
Calculated Head	0.229	0.04

Table 3

Percent Recovery and Reagent Consumption

Recovery (%)		Reagent Consumption (Lbs/Ton of Ore)	
Au	Ag	Sodium Cyanide (NaCN)	Lime (CaO)
95.6	N A	1.9	*4.0

\*Required to provide protective alkalinity.

CONCLUSIONS

An extraction of 95.6 percent of the gold contained in the ore was achieved in the preliminary bottle-agitation cyanide leach test. The amount of silver in the ore is of little economic importance; however, the high gold recovery indicates the ore is highly amenable to cyanidation. Reagent consumption was modest with 1.9 pound of sodium cyanide and 4.0 pounds of lime being required for the test.



Report  
On  
Preliminary  
Bottle-Agitation Cyanide Leach Test  
(Laboratory No. 166-2)  
July 1, 1983--Page 3

Upon completion of the leaching period, the pulp was filtered and washed free of cyanide solution, using warm tap water. The leached residue was dried and assayed by the fire-assay method, using three-assay tons of ore. Pertinent assay and recovery results of the test are presented in Table 2; percentage of recoveries and reagent consumption are presented in Table 3.

Table 2

Gold and Silver Recoveries  
By Bottle-Agitation Leach

Assays	Au (Oz/Ton)	Ag (Oz/Ton)
Head	0.225	0.08
Extraction	0.219	0.04
Residue	0.010	Nil
Calculated Head	0.229	0.04

Table 3

Percent Recovery and Reagent Consumption

Recovery (%)		Reagent Consumption (Lbs/Ton of Ore)	
Au	Ag	Sodium Cyanide (NaCN)	Lime (CaO)
95.6	N A	1.9	*4.0

\*Required to provide protective alkalinity.

CONCLUSIONS

An extraction of 95.6 percent of the gold contained in the ore was achieved in the preliminary bottle-agitation cyanide leach test. The amount of silver in the ore is of little economic importance; however, the high gold recovery indicates the ore is highly amenable to cyanidation. Reagent consumption was modest with 1.9 pound of sodium cyanide and 4.0 pounds of lime being required for the test.

rhyolite-porphyry. In the northern part of the area this sill has been intruded by a similarly flat lying vein of bull-quartz. In the southern part of the area the bull-quartz vein appears to underly the rhyolite sill. Several East-West trending adits have been driven along the rhyolite-quartz contact. Gold mineralization is presumably concentrated in this zone. A sample taken by the writer in the zone returned a value of 0.018 ounce per ton gold. Dump assays are reportedly in the 0.1 - ounce per ton range. Samples taken within the bull-quartz vein returned values ranging from trace to 0.01 ounce per ton gold.

The interface between the quartz and rhyolite on the property should be drill tested by drilling several short percussion holes in the locations indicated in Figure 2.

#### Upper Zone

The upper zone on the Dusty-Hill property is underlain by a grey, pegmatitic, pre-Cambrian granite (Unit 1) which has been invaded by a northwesternly trending zone of quartz sheeting which carries gold values. Locally the quartz has an opalescent blue color and a very fine-grained chalcedonic aspect. This zone of sheeting is a minimum of 20 feet thick.

Samples taken from within the zone or from dumps in front of the main adit driven in the quartz-gold zone returned assays ranging between 0.041 and 0.395 ounce per ton gold. A sample taken from 30 feet below this zone in other chalcedonic quartz veins returned values of 0.113 ounce per ton gold.

Several short percussion drill-holes should be drilled to test the grade of this interesting zone. Proposed locations are shown in Figure 2.

#### Big Stick

The Big Stick property was geologically mapped and geochemically sampled as shown in Figure 2. The area is underlain by pre-Cambrian pegmatitic

## ENDLESS ENERGY LTD:

### Summary Report on Exploration Activities, in Arizona, 1980 Field Season

#### Pack Rat Property

The Pack Rat property has been mapped at a scale of 1" = 100'. The area is underlain by at least three distinct granitic intrusives. The oldest is a tan-coloured pre-Cambrian granite (Unit 1) which has been intruded by a medium to coarse-grained quartz monzonite (Unit 2). These in turn have been cut by an epizonal quartz monzonite porphyry (Unit 3).

Probably emanating from the younger laramide porphyry are several sheet-like veins of silica. These subhorizontal units of silicification carry gold values. Locally small discontinuous andesitic sills are also associated with Unit 4.

Soil geochemistry indicates that the zones of quartz sheeting have associated anomalous gold and locally arsenic values. Grab samples from the quartz-sheeted zones returned gold values ranging between 0.01 and 0.138 ounce per ton.

A series of vertical percussion drill-holes should be drilled across the zone of interest, (see X - Section - Figure 1.) to test for the gold content of the sheeted-grartz zones.

#### ✓ Dusty-Hill

The Dusty-Hill upper and lower zones were geologically mapped and geochemically sampled. Results of these surveys are shown in Figure 2.

#### Lower Zone

The lower zone is underlain mainly by older pre-Cambrian granites which have been intruded by a flat-lying sill of rusty-brown, locally highly oxidized,

granites which contain northerly trending screens of biotite schist (Unit 1). These granites have been invaded by quartz sulphide veins which contain free-gold. Sulphides in the veins include pyrite and chalcopyrite which is locally altered to malachite and azurite. Samples from the quartz veins returned values ranging between 0.039 and 0.235 ounce per ton gold.

Several shallow percussion holes should be drilled in the locations shown in Figure 2 to test the gold-quartz veins.

Respectfully Submitted,



Stanley B. Reamsbottom, Ph. D., P. E.

September 25th, 1980



ROAD TO BAGDAD.

ROAD TO  
KING MAN

SANTA MARIA  
RIVER

RANCH HOUSE

ROAD

CREEK

SHAFT

OLD MILL SITE

DUSTY  
HILL

UPPER ZONE

LOWER ZONE

LARGE QUARTS

VIEN

SHAFTS

SANDY WASH

ROAD TO  
WICKENBURG

PHOENIX 100 M.  
33 MILES

N

ROAD TO BAGDAD.

ROAD TO  
KING MAN

SANTA MARIA  
RIVER

RANCH HOUSE

ROAD

CREEK

SHAFT

OLD MILL SITE

DUSTY  
HILL

UPPER ZONE

LOWER ZONE

LARGE QUARTS

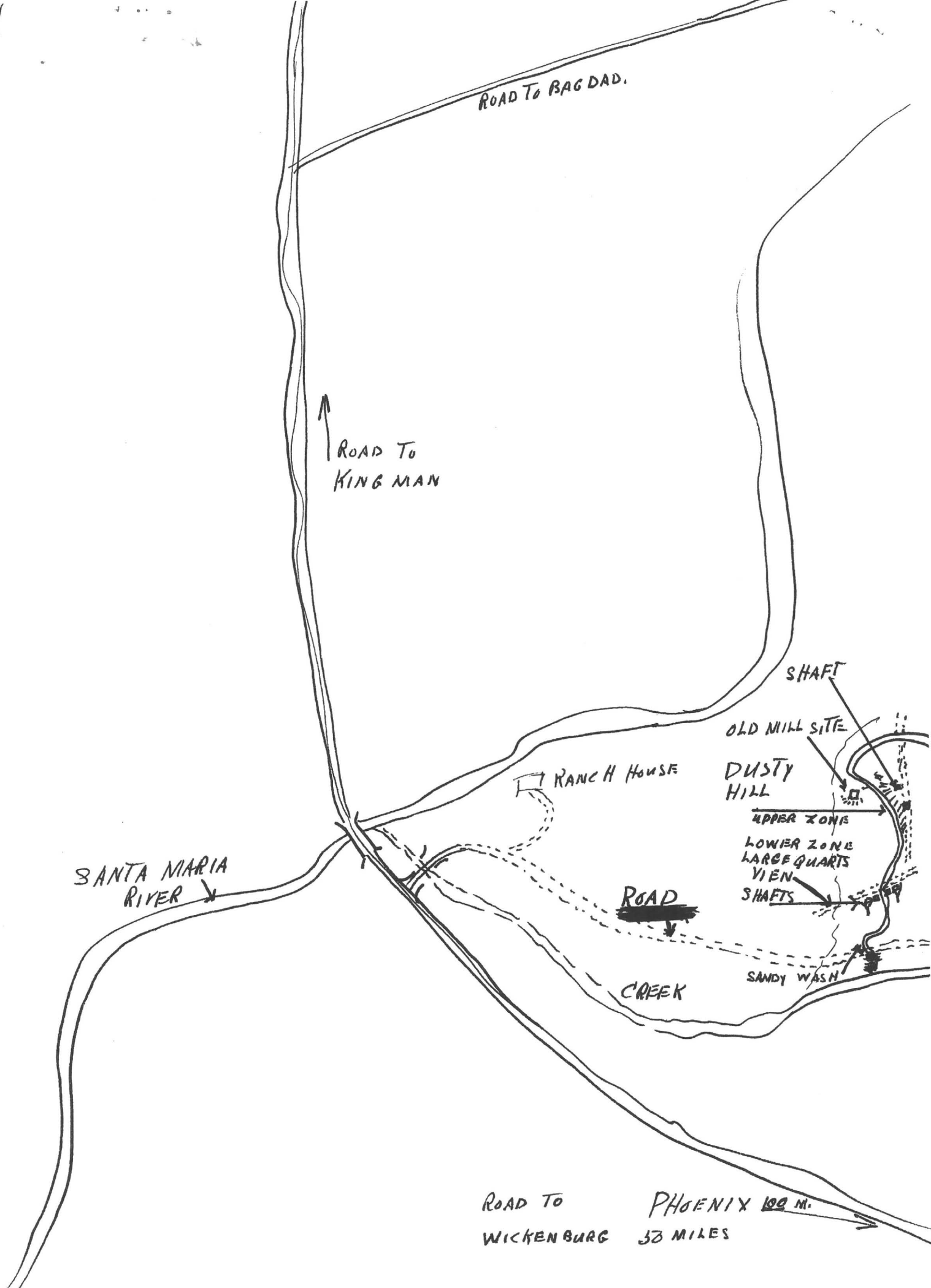
VIEN

SHAFTS

SANDY WASH

ROAD TO  
WICKENBURG

PHOENIX 100 M.  
33 MILES





*Harry L. Williams*

*President*

*Ark Energy Ltd.*

*Ste. 810 - 675 W. Hastings St.*

*Vancouver, B.C. V6B 1X2*

*Bus: (604) 687-3388*

*Res: (604) 738-4737*

GEOLOGICAL AND GEOCHEMICAL REPORT  
ON THE  
GOLDEN ARK PROPERTY,  
LEACH CLAIMS,  
YAVAPAI COUNTY, NEVADA, U.S.A.

FOR

ARK ENERGY LIMITED

BY

STANLEY B. REAMSBOTTOM      PH.D., P. ENG.

KYLE CONSULTANTS LIMITED

APRIL, 1980

## TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	1
INTRODUCTION	3
LOCATION & ACCESS	3
PHYSIOGRAPHY	3
PROPERTY	4
HISTORY	6
GEOLOGY	8
General	8
Property	8
MINERALIZATION	10
GEOCHEMISTRY	13
Treatment of Data	14
Presentation and discussion of results	15
Gold	15
Mercury	15
Conclusions on Geochem Survey	16
GENERAL CONCLUSIONS	16
RECOMMENDATIONS	17
Phase I	17
Phase II	17
ESTIMATED COSTS	18
Phase I	18
Phase II	19
REFERENCES	21
CERTIFICATE	22

## LIST OF FIGURES

<u>Figure</u>	<u>In Text</u>
1	Property location map: Leach claims
2	Property location map: Leach claims detail
3	Geology of Bagdad Area

### IN POCKET

4	Geology map: Leach claims 1"=500'
5	Geology map: Leach claims 1"-200'
6	Gold geochemistry
7	Mercury geochemistry
8	Probability plot of gold Mercury geochem data

#### SUMMARY:

The Golden Ark property is located near the town of Bagdad, Yavapai County, Arizona, U.S.A.

The property is underlain by two PreCambrian granitic plutons. Significant amounts of gold have been recognized in three, possibly four, separate, but closely related, areas on the property. The gold mineralization is concentrated within areas of alteration and oxidation which straddle the contact zones between "Younger" pegmatitic granites and "older" tan granites. These are characterized by pink feldspars (orthoclase or pink hematite stained potassium feldspar); pyrite cubes pseudomorphed by brown hematite and limonite; abundant oxide coatings on joint and fracture surfaces within the granites; and locally flecks of visible free-gold embedded in oxide pseudomorphs after pyrite.

The average values of 10 samples collected in May 1979 which ranged in value between 0.005 -2.66 ounces of gold per ton, was 0.3 ounces of gold per ton. Thirty-three samples collected by the writer ranged in value between 0.001-0.208 ounces of gold per ton and had an average value of 0.04 ounces of gold per ton. The average value of all samples collected from mineralized areas on the property in 1979 and 1980 is 0.15 ounces of gold per ton.

A reconnaissance geochemical survey of part of the mineral property indicated that the mercury content of soils may prove to be a more reliable indication of gold mineralization than the gold in the soils.

A small-scale leach test conducted in 1979, in which gold was extracted from 500 tons of near-surface material using cyanide solutions and absorbed on activated carbon, was reportedly successful.

The widespread distribution, grade, and possible leachability of gold mineralization within the Golden Ark property, makes it an attractive target for the development of a large gold deposit which may be mined by open-pit techniques and the gold extracted by a low-capital cost heap-leaching technique.

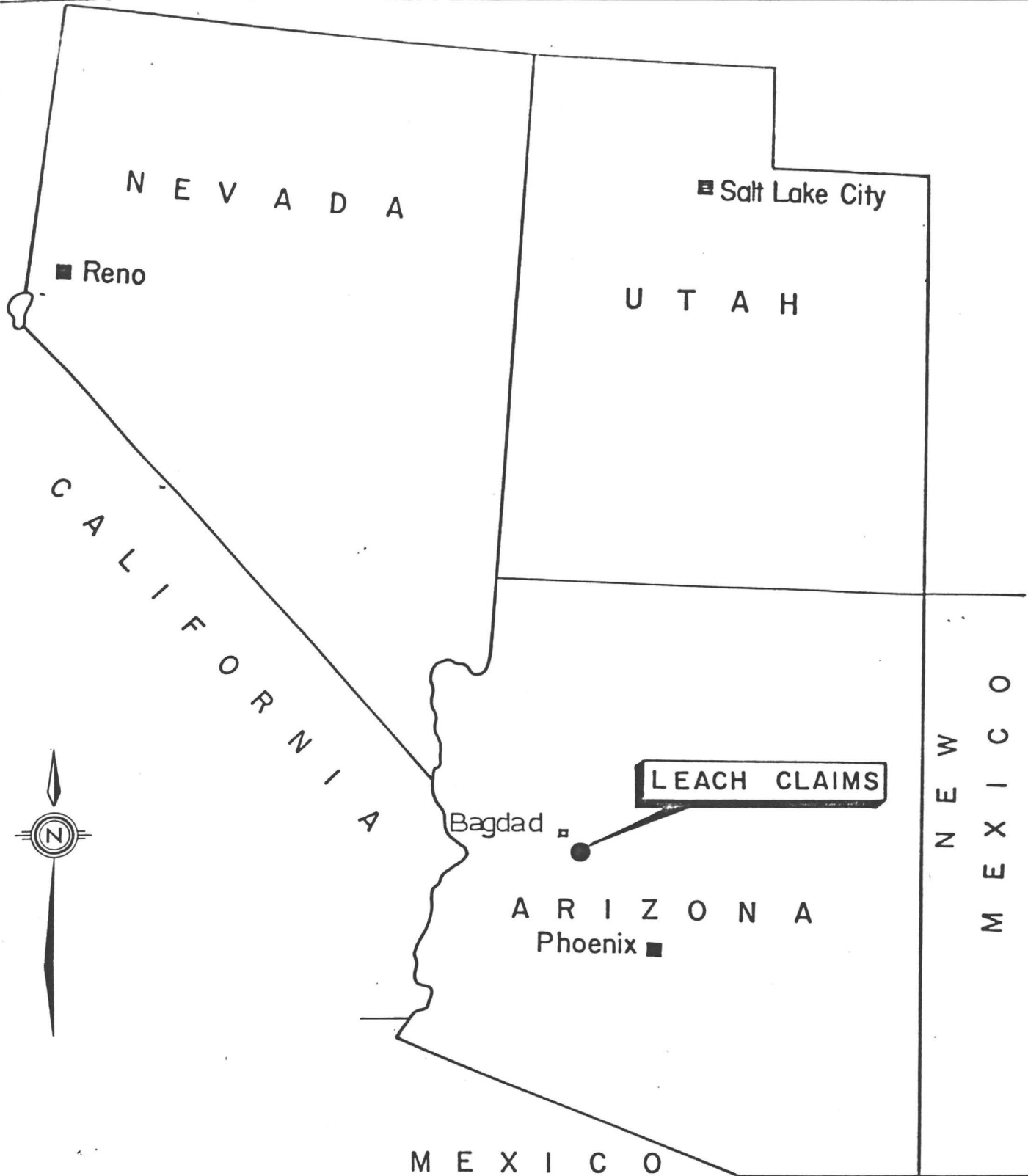
A two-phase programme of surface trenching, percussion drilling and bulk sampling with follow-up, large-scale, heap-leach testing, has been recommended for the economic evaluation and development of the mineral property. Depending on the size of the initial test-leach, the estimated cost of the two-phase programme is \$231,000. or \$273,100. Gold extracted from the test-heap would more than cover the cost of these evaluation programmes.

Figure 3: Geology Bagdad Area, Yavapai County, Arizona

Legend

Older PreCambrian:	gr	granite
"	sch	Yavapai schist
Laramide (Cret-Tert)	Li	dykes and plugs
Tertiary	Tr	rhyolite
Quaternary/Tertiary	QTb	basalt
Quaternary/Tertiary	QTs	silt, sand, gravel
	⌵	mine





ARK ENERGY LTD.

## LEACH CLAIMS

YAVAPAI COUNTY, ARIZONA  
Thorn Peak Quadrangle

## PROPERTY LOCATION MAP

KYLE CONSULTANTS LIMITED.

DRAWN BY : T.K.

CHECKED BY : S.R.

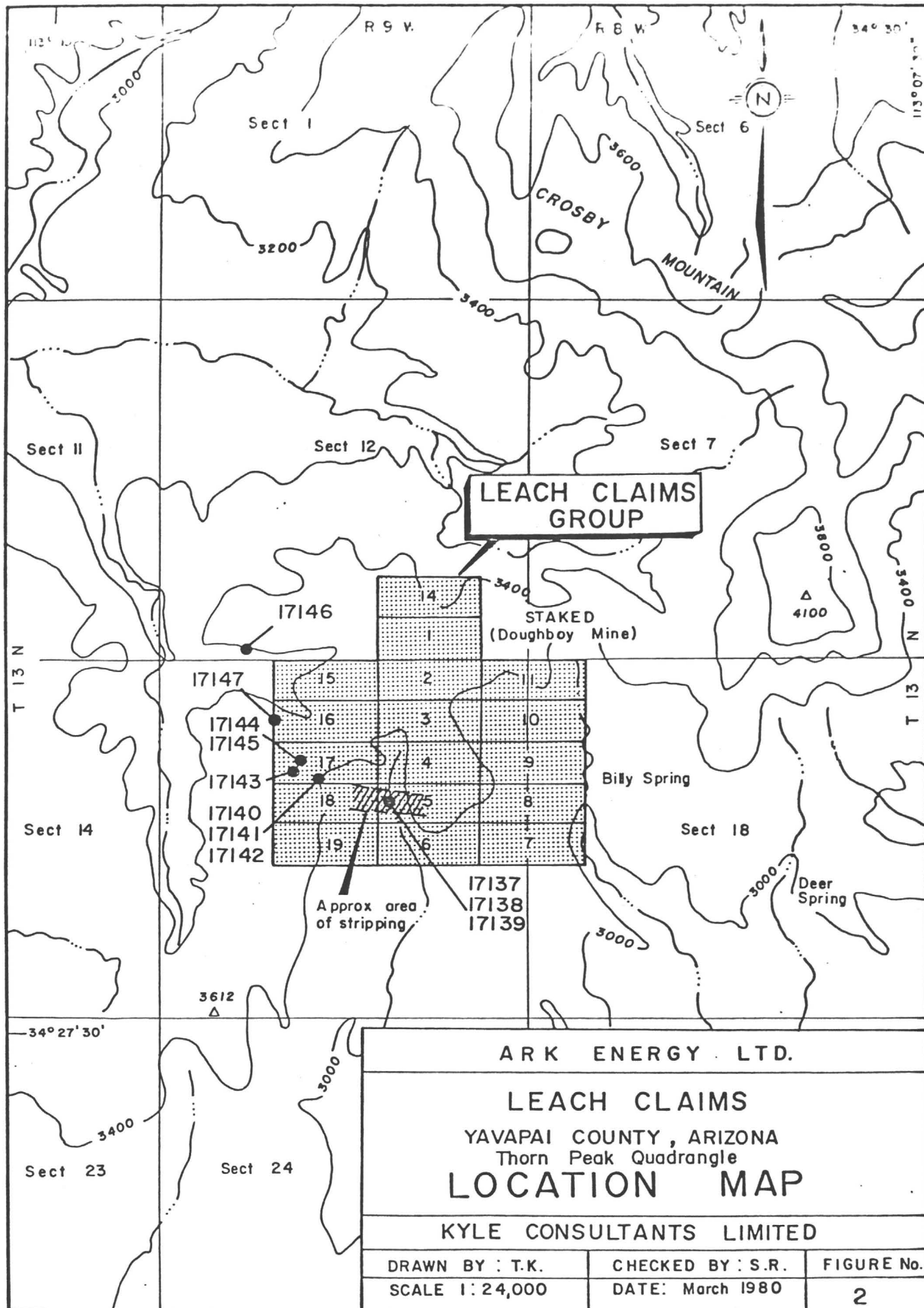
FIGURE No.

0 50 100  
MILES

DATE: March 1980

1





## INTRODUCTION

In the period February 2-10, 1980, the writer geologically mapped and geochemically sampled the Golden Ark Property (Leach Claims) in Yavapai County, Arizona, U.S.A.

The following report presents the results of these surveys and outlines a programme for the continued economic evaluation and development of the mineral property.

## LOCATION AND ACCESS

The Golden Ark Property is located approximately seven air-miles southeast of Bagdad in Yavapai County Arizona (T13N; R8, 9W; Sections 12,13 and 18). The pertinent map-sheet which covers the property is Thorn Peak (7.5 minute-series). The coordinates of a point at the centre of the property are  $113^{\circ} 08' 45''$  E;  $24^{\circ} 28' 10''$  N.

The property is a few miles to the east of Highway 97 which links the Bagdad-Hillside road (Highway 96) with the main Phoenix-Kingman road (Highway 93). A rough four-wheel drive road which leads to the property, leaves Highway 97 at Bridal Creek. Total distance of the property by road from Bagdad is approximately 16 miles. Prescott, the Yavapai County seat, is approximately 38 air miles east-northeast of the property. (Fig 1).

## PHYSIOGRAPHY

The property is part of a complex of semi-arid mountain ranges in the Prescott map-sheet which include the Bradshaw Mountains, the Santa Maria Mountains, the Mohon Mountains, the Weaver Mountains, and the Date Creek Mountains.

The ranges in the Bagdad area have no specific name. Elevations in the claim-area range from 2000 to 4344 feet with the average elevation on the property being approximately 3400 feet. This high, rocky-desert country of Arizona is characterized by abundant cacti (saquaro, prickly-pear, yucca) mesquite and other desert shrubs.

As streams run only intermittently, water for camp or mine operation would have to be pumped from wells drilled near the Santa Maria River or Bridle Creek.

#### PROPERTY

The property consists of seventeen claims staked by location and known as the Leach 1-11 and 14-19 inclusive. (Fig. 2) They were staked on August 2 and 9, 1979 by Harold E. Best of Apache Junction, Arizona.

Claims were recorded at the Yavapai County courthouse in Prescott on September 4 and 5, 1979. The claims were also filed with the Bureau of Land Management in Phoenix on October 1, 1979.

Ark Energy Ltd., of Vancouver, Canada, acquired the claims from Mr. Best's company, Quest Inc., for considerations of cash and a royalty from production.

Pertinent claim information is tabulated on the page following.

<u>CLAIM</u>	<u>STAKED</u>	<u>RECORDED YAVAPAI COUNTY</u>	<u>APPLICATION TO BLM MADE</u>	<u>BLM RECORD NO. ASSIGNED DEC. 3/79</u>	<u>RANGE</u>	<u>T13N SECTION</u>
Leach 1	Aug 2/79	Sept 4/79	Oct. 1/79	A MC 68490	9W	12
Leach 2	"	"	"	A MC 68491	9W	13
Leach 3	"	"	"	A MC 68492	9W	13
Leach 4	"	"	"	A MC 68493	9W	13
Leach 5	"	"	"	A MC 68494	9W	13
Leach 6	"	"	"	A MC 68495	9W	13
Leach 7	Aug 9/79	Sept 5/79	"	A MC 68496	8;9W	13;18
Leach 8	"	"	"	A MC 68497	"	"
Leach 9	"	"	"	A MC 68498	"	"
Leach 10	"	"	"	A MC 68499	"	"
Leach 11	"	"	"	A MC 68500	"	"
Leach 14	"	"	"	A MC 68701	9W	12
Leach 15	"	"	"	A MC 68502	9W	13
Leach 16	"	"	"	A MC 68503	9W	13
Leach 17	"	"	"	A MC 68504	9W	13
Leach 18	"	"	"	A MC 68505	9W	13
Leach 19	"	"	"	A MC 68506	9W	13

## HISTORY

The large porphyry copper-gold deposit at Bagdad was first discovered in 1882. The mine became active in the mid-thirties following a long period of dormancy and gradually increased its production from an underground operation utilizing block-caving mining methods (300 t.p.d.) in 1930 through a combination of block-caving and glory-holes (1945) to an open-pit operation in 1950 (4500 t.p.d.). The mine presently processes 40,000 tons of ore per day with a minimum grade of 0.5% copper.

In addition to the Cyprus Mine porphyry deposit at Badgad the area contains the Copper King zinc deposit and several gold-bearing veins, of which the Hillside and Crosby, have been notable producers.

The Hillside Mine, which is located to the north of Bagdad on Boulder Creek, was discovered in 1887 and produced 13,094 tons of ore which yielded 9329 ounces of gold and 219,918 ounces of silver between 1887 and 1949.

The Crosby Mine, which is 3 miles north-east of the Golden Ark property, produced intermittently between 1906 and the 1960's. Production records for the mine are vague and incomplete.

The small adits, shafts and pits on the Leach claims were probably sunk by "old-timers" during the period of initial mineral exploration in the Eureka district. The claim area had been staked several times prior to Mr. Best's restaking of the property in 1979.

A brief property examination in which several of the mineralized showings were sampled was undertaken in May 1979 (Sawyer, 1980).

Samples collected at this time gave significant values of gold which ranged between less than 0.005 ounces of gold per ton to 2.55 ounces of gold per ton. The description, assay values and approximate location of these samples is tabulated below and shown in Figure 2.

<u>Assay Tag No.</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>	<u>Description</u>
17137	0.699	0.16	# 1 Grab sample from first location, up hill to east of prospect.
17138	2.55		# 2 Grab sample from same vein as # 1, but 25 ft. to east.
17139	0.213		# 3 Grab, from same vein as # 1 but 10 feet east and 5 feet above sample #2.
17140	0.537	0.07	# 4 Grab sample from area of 4 or 5 old pits, approx. 300 feet northwest (310°) from samples #1,2,3.
17141	0.201		# 5 Special grab sample from large cut, shaft, and drift - 200 feet west of # 4 pits area.
17142	0.049		# 6 Chip sample across about 8 feet in west wall of pit which includes some hematitic stained material.
17143	0.132		# 7 Grab sample from a vein in the pit.
17144	0.361		# 8 Grab sample of selected material from a dump from another cut.
17145	0.230		# 9 Chip sample across 4½ feet.
17146	0.136		# 10 Grab sample of altered hematitic and limonitic material similar to that at the earlier locations.
17147	≈ 0.005		# 11 Grab sample from 4'-5' quartz vein between road and wash (southeast of wash) collected by Carl Clay.

In 1979 the previous property owner, Mr. Best, stripped approximately 500 tons of near-surface mineralized rock and heap-leached it on a small pad. Gold was extracted from the pile using cyanide solutions and adsorbed on activated carbon. According to Mr. Best, a significant amount of gold was recovered from the heap. Detailed metallurgical data on the test-leach are unknown to the writer.

### GEOLOGY

#### General:

The area around the Golden Ark Property is underlain by PreCambrian granitic rocks, granitic schists and greisses, the Yavapai schist and locally, centres of younger volcanic and intrusive rocks. (Fig.3)

The major mineralization of the district, including the copper-gold mineralization at Bagdad, is related to the younger stocks and intrusive rocks which were emplaced during the Laramide orogeny. (Late Cretaceous to early Tertiary time).

Gold mineralization on the Leach claims is probably genetically related to the Laramide orogeny.

#### Property

A 2500 x 4200 foot grid was established on part of the leach claims and the geology mapped at a scale of 1 inch to 200 feet.

Mapped units are shown in Figures 4 and 5, and a brief description of each is given below.

Schist (s) - Screens and inclusions of quartz, mica schist (Yavapai schist?) are commonly enclosed in the PreCambrian granites.

Tan Granite (TG) - This unit has a characteristic tan colour on weathered surface and crops out as blocky-bluffs with manganese stained joint-surfaces.

It is composed of coarse-grained, porphyritic, tabular crystals of potassium feldspar (1-3 cm) set in a medium-grained matrix of quartz, muscovite and minor biotite. The rock has a distinctly trachytoid texture and may have affinities with the syenites.

Foliate Tan-Granite (TGf) - This unit is similar to the tan granite. It differs in the respect that it has a pronounced foliation. Within the more foliate zones the rock has an "augen-gneissic" texture. "Eyes" of potassium feldspar have been wrapped-around by the micas of ground mass.

Zones of pervasive foliation are extensive within this unit and are not confined to the margins of the intrusive-bodies.

Coarse-Grained Pegmatitic Granite (PG) - The older tan-granites have been intruded by a grey to white coarse-grained granite with a distinctly pegmatitic aspect. Contacts between the granites trend N30E and several dike-like fingers or apophyses from the pegmatitic granite cut the tan-granite in the northwestern part of the mapped area (L25N, Fig. 5).

This unit is composed of coarse-grained (4-5 cm) crystals of potassium-feldspar (orthoclase) quartz, biotite, and large books of muscovite. Locally the rock contains clusters of black prismatic tourmaline crystals, which are indicative of the presence of boron-rich residual fluids during the late stages of the rocks crystallization.

The coarseness of grain and the presence of exotic minerals indicate that this granite crystallized slowly at depth from a water-rich, "sweaty" magma.

Bull-Quartz vein (Qu) - An east-west trending vein of white "bull" quartz cuts the older granites at about 17 + 00 N. The vein extends for approximately 2000 feet and varies in thickness from a few feet to 40 feet.



Andesite Dyke (DY) - A thin dyke of tan-coloured andesite cuts the granites between 10 + 00 16+ 00 N. The dyke trends west-northwest across the property and is locally highly jointed and shattered.

#### MINERALIZATION

Areas of mineralization and alteration are shown as AZ in Figure 5.

Four distinct zones have been recognized, three in the area between 0 + 00 and 12 + 00 N; and 10 + 00 E to 10+ 00 W and one between 0+ 00 N and 8 + 00 S and 16+ 00 E. (Fig. 5).

The mineralized areas appear to be closely related to the contact zones between the pegmatitic and tan granites and are concentrated mainly within altered pegmatitic granites, although the zone at 5+ 00 N; 8 + 00 W is within altered tan granites. It would therefore appear that mineralizing fluids have exploited zones of weakness and fracturing near the granite contacts.

Altered zones are characterized by pink-feldspars (orthoclase or hematite stained potassium feldspar); pyrite cubes, now pseudomorphed by hematite and limonite; red hematite and limonite stained joint and fracture surfaces; and locally, free-gold embedded in the pseudomorphs after pyrite. Surface samples collected from the altered, mineralized zones, when panned, invariably show good colours of fine-grained gold.

A series of 36 samples from dumps, shafts, or adits within the mineralized zones were collected and submitted to Southwestern Assayers and Chemists Inc., Tucson, Arizona for fire-assay.

The sample locations are shown in Figure 5. Their description and gold-silver values are given on the following page.

<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>Au</u> oz/ton	<u>Ag</u>
<u>Tank Pit Area</u>			
P 1	Grab sample from dump material. Tank pit area	0.008	nil
P 2	8' chip sample around pit face.	0.008	nil
P 3	8' chip from pit. Tank pit area	0.104	nil
P 4	Grab sample from trench in screen of mica schist Tank-pit area	0.003	nil
P 5	12' chip sample in hem-stained pegmatitic granite	0.032	nil
P 6	Chips within zone of red hem-stained altered granite with sulphides and obvious free-gold	0.008	nil
<u>Main Pit Area</u>			
P 7	8' chip sample around pit B.L. 6+25N.	<0.001	nil
P 8	Grab sample from dump around water filled shaft	<0.001	nil
P 9	Grab sample from 10' wide trench	0.035	nil
P 10	Grab sample from dump around small pit. Granite siliceous, limonite stained	0.018	nil
P 11	Grab sample from dump around 30' deep shaft	0.028	nil
P 12	Grab sample from dump around small pit	0.095	nil
P 13	Grab sample from dump around small pit	0.040	nil
P 14	Grab sample from dump around small pit	0.003	nil

<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>Au</u> oz/ton	<u>Ag</u>
P 15	Grab sample from dumps	0.035	nil
P 16	Grab sample from dumps around small pit	0.208	nil
P 17	Grab and chip sample from dumps and small pit	0.020	nil
P 18	Selected sample of red- hematite stained altered pegmatitic granite.	0.140	nil
<u>Western Pit Area</u>			
P 19	Grab sample from dump in front of 30 foot open cut	0.04	nil
P 20	Grab sample from dump around small shaft	0.030	nil
P 21	Chip sample taken over a wide area (150' X 100') in altered tan granite	0.175	nil ✓
<u>Main Pit Area</u>			
P 22	45' channel sample on surface of area which was stripped and moved to leach-pad in 1979	0.007	nil
P 23	25' channel sample on surface of stripped area	0.008	nil
P 24	50' channel sample on surface of stripped area	0.010	nil
P 25	Grab samples from mounds of surface material on stripped zone	0.018	nil
P 26	Grab sample from pit dumps 9+50N; 1+50W	0.015	nil
P 27	Grab sample from dump around shallow shaft 11+40N; 0+40E	0.020	nil
P 28	5+00N; 14+00E: Grab sample fo surface rock chips near contact between peg. and tan granites. Surface soils had panned free gold.	< 0.001	nil

<u>SAMPLE NO.</u>	<u>DESCRIPTION</u>	<u>Au</u> oz/ton	<u>Ag</u>
P 29	5+00N; 20+00E; Grab sample of rusty, limonite stained tan granites. Surface soils had panned free gold.	< 0.001	nil
<u>Eastern Zone</u>			
P 30	Grab sample from pit in red-hematite stained, altered peg. granite	0.035	nil
P 31	Grab sample from dump of small adit	0.045	nil
P 32	Grab sample from dump of adit. Note adit mainly in screen of mica-schist	0.004	nil
P 33	Selected chip sample of red-hematite stained altered peg. granite	0.030	nil
<u>Leach Pad</u>			
LP-1	Surface channel sample across leach pad	0.004	nil
LP-2	"	0.010	nil
LP-3	"	0.002	nil

Average gold-silver values of samples collected from the different areas are as follows:

	<u>Au</u> oz/ton	<u>Ag</u>
West Pit area	0.082	nil
Main Pit area	0.039	nil
Tank Pit area	0.027	nil
Eastern area	0.029	nil

#### GEOCHEMISTRY

A geochemical soil survey of the prepared grid was completed

to determine whether the mineralized areas had distinct geochemical signatures. The area has an extremely thin (generally less than 6 in.) soil-cover so that, consequently, no mature soil profile has developed. Samples were collected every 100 feet on the E-W lines of the grid, sieved, and placed in Kraft bags. The samples were submitted to Southwestern Assayers and Chemists Inc., Tucson, Arizona for atomic absorption analyses for gold and mercury.

Results are given in the geochemical maps (Figures 6 and 7 in pocket).

#### Treatment of Data

Statistical treatment of geochemical data can be facilitated by the use of a graphical technique using probability paper (Tennant and White, 1959).

A cumulative frequency curve can be produced by plotting element contents (ppm) against cumulative frequency (%) for the elements studied. The cumulative curves can be used to study the following parameters.

a) the mean (M) and standard deviation (SD). The mean of the logs of the contents is estimated by the value on the cumulative curve which corresponds to the 50th percentile. The standard deviation is estimated by the difference of the values which correspond to the 84th percentile and the mean.

Threshold concentrations for elements where 50 percent or more of the data are above the lower detection limit (mercury) are taken as the mean plus two standard deviations.

Values above this are anomalous. (ie. 2.3% of the population in a log-normal distribution).

For elements where more than 50 percent of the data are below the lower detection limit (gold) the top 2.3 percent of the data are considered anomalous.

# PROBABILITY PLOT

HG  
ppb

AU  
ppm

1000

500

100

0.1

0.08

0.06

0.04

0.02

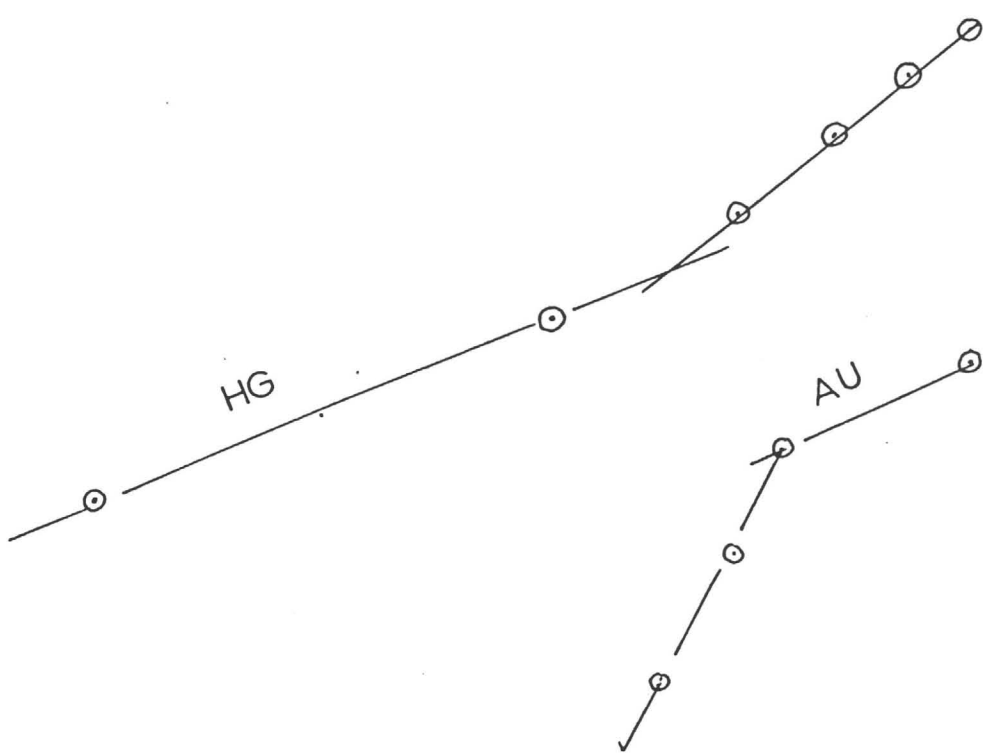
HG

AU

50 %

98 %

FIGURE 8



The three samples collected within the Western area showed no anomalous or high-background values in either gold or mercury. In addition spot-high-background values were noted at L10N,14E; L20N, 22E.

The higher mercury values occur within the defined mineralized zones or within or close to the contact zones between the Pegmatitic granites and the tan granites.

#### Conclusions on Geochem-Survey

Based on the above reconnaissance geochemical survey it would appear that mercury in soils is a good indicator of potential gold mineralization. Gold values in soils return spotty and erratic values within mineralized zones and may therefore not be as reliable indices as mercury.

#### GENERAL CONCLUSIONS

The Golden Ark property (Leach Claims) is underlain by two PreCambrian granitic plutons. Significant gold mineralization has been recognised and sampled within four, possibly five, separate but closely related areas on the property. Mineralization is confined to zones of alteration close to the contacts between the "younger" pegmatitic granites and "older" tan-granites.

The average values of 10-samples collected by Sawyer (1980) within the mineralized zones was in the order of 0.3 ounces of gold per ton. The average values of 33 samples collected by the writer from the mineralized zones was in the order of 0.04 ounces of gold per ton. The average value of all samples collected from mineralized areas on the property to date is in the order of 0.15 ounces of gold per ton.

The widespread nature of the gold mineralization within these near-surface areas of alteration and oxidation leads one to conclude that the Golden Ark property has excellent potential for the development of a large-tonnage gold deposit (or deposits) which would be amenable to open-pit mining.

Gold may be extracted from the ore by a low-capital cost heap-leaching technique.

For gold, "high background" values are taken as those between the 84th and 97.7th percentiles.

This designation of threshold and anomalous concentrations for gold and mercury follows that of Ashley and Keith (1976) who studied the geochemistry of gold deposits at Goldfield, Nevada.

#### Presentation and Discussion of results

The geochemical results have been plotted on probability paper (Fig 8) and are also shown in Figures 6 and 7 in pocket.

The straight-line curves of Fig. 8 show that the geochemical populations are log-normally distributed. The following pertinent data has been interpreted from the graph.

<u>Element</u>	<u>Range</u>	<u>Statistical Data</u>	<u>Threshold Concentration</u>	<u>Range of High Background Concentration</u>
Au	.02-1.22ppm	84 percentile -.025 ppm 97.7 percentile-.08 ppm	.08 ppm	.025-.08 ppm
Hg	10-310 ppb	M - 70 ppb M + SD - 110 ppb M + 2SD - 300 ppb	300 ppb	110 -300 ppb

#### Gold

Anomalous gold values were noted in the Main Pit area and the eastern zone. Note that samples collected within the mapped mineralized zones did not necessarily return anomalous or high-background gold values. Spot high-background values in gold were noted on lines 15N (4E, 8W); 20N (2E,10E,10W); 25N (4E).

#### Mercury

Anomalous and high-background values of mercury were recorded within the Main Pit and Tank Pit areas and also down valley from these mineralized zones on LON; 0-6W. Spot high-background values were associated with the Eastern area.



A small-scale leach-test conducted by the previous owner, Quest Inc., was reportedly successful.

Geochemical surveys on the property demonstrated that mercury in soils may prove to be a useful indicator of gold mineralization.

#### RECOMMENDATIONS

A two phase programme for the thorough economic evaluation and development of the Golden Ark property is recommended below.

##### Phase I

- 1) The zones of mineralization and alteration should be trenched and bulk sampled for gold and silver. In the order of 5000 feet of east-west-trending trenches should be cut and sampled across the main zones of mineralization.
- 2) In the order of 42 angle, down-hole-hammer percussion drill holes should be drilled across the trend of mineralized zones. Holes should be drilled to 200 feet. This would necessitate about 8500 feet of percussion drilling.
- 3) During the drill and bulk sampling programme, samples should be submitted for bench-scale metallurgical tests to determine the leachability of the gold-ore.

On completion of this phase of the programme, an estimate of the tonnage and grade of the mineralization can be made and its amenability to heap-leaching by cyanide solutions can be established.

##### Phase II

The second phase of the programme should involve a large-scale leach-test involving between 20,000 and 40,000 tons of ore.

Gold may be extracted from the ore by spraying sodium cyanide in solution onto the pile. Prior to addition of cyanide the pH of the system should be in the range 10-12. Maintaining the pH at this level helps prevent the

formation of toxic gases (HCN) and markedly improves the efficiency of the leaching process.

The soluble Au-Ag-CN complexes produced by the chemical reactions of the leaching process may be readily taken out of solution by adsorption on activated carbon.

The gold is then stripped from the activated carbon by an electrolytic process. Gold-bearing activated carbon is readily saleable to the Asarco smelter at Helena, Montana.

In the event that early results from the drill programme prove encouraging, start-up of Phase II can be accelerated so that pad preparation, mining and leach tests can be undertaken simultaneously with the drilling and evaluation programme.

#### ESTIMATED COSTS

##### Phase I

Percussion drilling: 8500 Feet @ \$7.00/foot	\$ 59,500.
Cat-work, trenching	3,000.
Assaying: Fire-assay. 1100 samples @ \$6/sample	6,600.
Labour (4 men/2 months)	12,000.
Metallurgical tests/consulting	5,000.
Supplies, accommodation	10,000.
Travel, vehicle rental	5,000.
Engineering, supervision	5,000.
Contingency	<u>10,000.</u>
	<u>\$116,100.</u>

Phase II(A) 20,000 ton test leach

Plant, equipment, chemicals	\$ 30,000.
Mining, pad preparation	50,000.
Assaying	5,000.
Engineering, supervision, consulting -	20,000.
Contingency	<u>10,000.</u>
	\$115,000.

(B) 40,000 ton test leach

Plant, equipment, chemicals	\$ 30,000.
Mining; pad preparation	90,000.
Assaying	7,000.
Engineering, supervision, consulting	20,000.
Contingency	<u>10,000.</u>
	\$157,000.

Total Phase I + Phase II (A) \$231,100.

Total Phase I + Phase II (B) \$273,100.

Note:

20,000 ton pad: assume 0.05 oz/ton Au Average grade;  
60% recovery of gold; \$500/oz gold.

Metal value recovered

= 20,000 X 0.05 X 0.6 X \$500. = \$300,000.

40,000 ton pad: assume 0.05 oz/ton Au ore grade

60% recovery of gold; \$500/oz gold

Metal Value Recovered

$$= 40,000 \times 0.05 \times 0.6 \times \$500$$

$$= \$600,000.$$

Both of the initial test-lifts would probably cover the development costs.  
The larger lift would obviously be the more profitable.

Respectfully submitted,



A circular professional seal for S. B. REAMSBOTTOM, a Professional Engineer in British Columbia. The seal features the text "PROFESSIONAL ENGINEER" around the top and "BRITISH COLUMBIA" around the bottom. The name "S. B. REAMSBOTTOM" is in the center.

Stanley B. Reamsbottom, Ph. D, P. Eng.

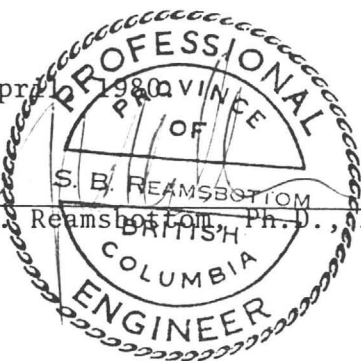
CERTIFICATE

I, Stanley B. Reamsbottom, DO HEREBY CERTIFY:

1. THAT I am a consulting geologist with office at # 930 789 West Pender St. Vancouver, B.C. V6C 1J2
2. THAT I am a graduate of the University of Aberdeen, Scotland, 1968 with a B. Sc. Geology (1st Class Honours) degree.
3. THAT I am a graduate of the University of British Columbia, Vancouver, with M. Sc. (Geology (1971) and Ph. D. (Geology) 1974, degrees.
4. THAT I am a registered member of the association of Professional Engineers of British Columbia.
5. THAT I have practised my profession for 10 years.
6. THAT I have no direct, indirect, or contingent interest in the mineral claims held by Ark Energy Limited, nor in the securities of Ark Energy Limited, nor do I intend to receive any such interest.
7. THAT this report dated April, 1980 is based on a personal examination of the Golden Ark property and on government reports on the area.

Dated at Vancouver, B.C. this 22nd day of April, 1980

Stanley B. Reamsbottom, Ph.D., P.Eng.



## REFERENCES

Anderson, C.A.,  
Scholz, E.A., and  
Strobell, J.D., Jr., 1955:

Geology and ore deposits of the Bagdad Area, Yavapai County, Arizona; U.S. Geol. Surv. Prof. Paper 278.

Ashley and  
Keith, 1975:

Distribution of Gold and Other Ore-Related Elements Near Ore Bodies in the Oxidized Zone at Goldfield, Nevada Geological Survey Professional Paper 843-A.

Heinen, H.J.,  
Peterson, D.G., and  
Lindstrom, R.E., 1978:

Processing gold ores using heap leach-carbon adsorption methods; U.S. Bur. Mines Information Circular 8770.

Koschmann, A.H., and  
Bergendahl, M.H., 1968:

Principal gold producing districts of the United States; U.S. Geol. Surv. Prof. Paper 610, pp. 45-51.

Tennant, C.B. and  
White, M.L., 1959:

Study of the Distribution of Some Geochemical Data; Economic Geology, Vol. 4, 1959, pp. 1281-1290.

Wilson, E.D., 1962;

A resume of the geology of Arizona; Ariz. Bur. Mines Bull. 171.

Wilson E.D.,  
Cunningham, J.B., and  
Butler, G.M., 1967:

Arizona lode gold mines and gold mining; Ariz. Bur. Mines Bull. 137, Revised 1967.

Harry L. Williams

President

Ark Energy Ltd.

Ste. 810 - 675 W. Hastings St.

Vancouver, B.C. V6B 1X2

Bus: (604) 687-3388

Res: (604) 738-4737

ROAD TO BAGDAD.

ROAD TO  
KING MAN

SANTA MARIA  
RIVER

RANCH HOUSE

SHAFT

OLD MILL SITE

DUSTY  
HILL

UPPER ZONE

LOWER ZONE

LARGE QUARTS

VIEN

SHAFTS

ROAD

CREEK

SANDY WASH

ROAD TO

WICKENBURG

PHOENIX 109 MI.

33 MILES

BAGDAD RD.

WATCH FOR TARN OFF

5 MILES ??

1500' ??

ROAD BY WASH

ROAD

GIBSON  
PANCH YARD

TRAILER

35-  
LEACH CLAIMS

OLD LEACH PAD

ROAD

DOUGH B.  
SHAFT

MAIN ZONE

WASH

TRENCH  
DOZER CUT  
WEST PIT

DOGS SHAFT

SHAFT TRENCH  
SNAKE PIT

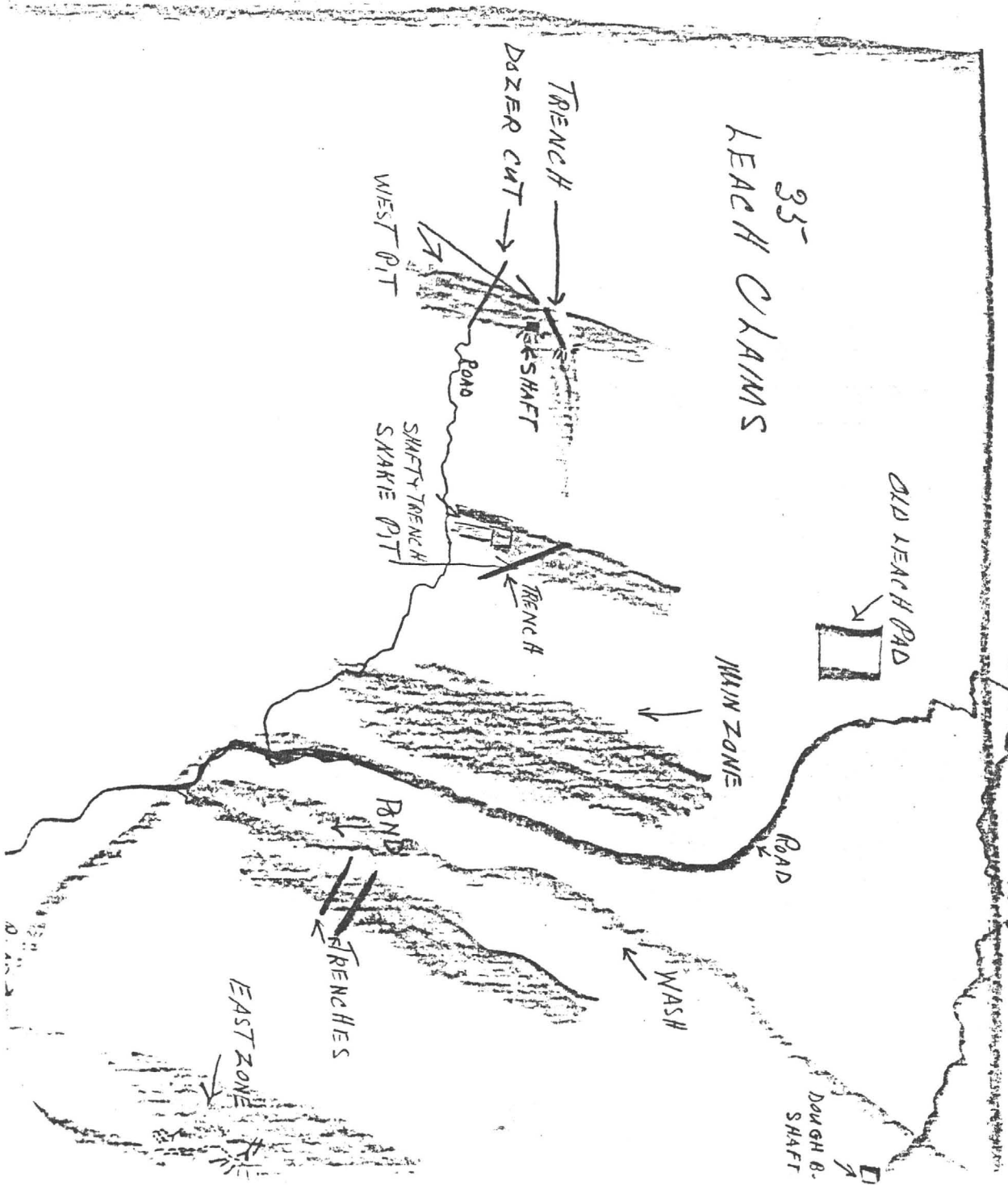
TRENCH

ROAD

TRENCHES

EAST ZONE

3.4 PHOENIX





	Au	Ag			
875	<	1.1			
76	<	2.3			
77	<	1.5			
78	<	.9			
79	<	1.0			
80	.23	4.1			
81	1.3	.7		ppm	oz/T
82	.09	4.5		Au	Ag
83	.01	1.6		901	.07 .2
84	1.6	1.3		02	.35 .5
85	.01	.9		03	.30 1.0
86	.30	.4		04	< .8
87	.10	<		05	< .2
88	<	.3		06	< <
89	.02	1.4		07	1.6 .9
90	.02	10		08	.74 .3
91	1.1	.6		09	1.9 2.6
92	.18	1.2		10	< <
93	4.4	1.1		11	< <
94	.36	3.3		12	.33 .2
95	.08	2.7		13	1.9 .9
96	<	1.4		14	1.3 2.0
97	<	.5		15	1.2 1.1
98A	.25	.2		16	1.5 12
98B	.01	.7		17	.58 14
99	.02	.6		18	3.7 81
900	.4	.5		19	.25 8.6

P.V.

5th dust

Big M

finger load

2.5 Hill

adjacent

Out AW

adjacent

Pomble dump

Eagle

Spencer

Kyanite

5th dust

Talky Harry Williams

ARK Energy - Vancouver  
(604) 687-3388Says other companies,  
interested

## LEACH CLAIM GROUP

MINESEARCH #: 100147

ALSO KNOWN AS: ;CARL CLAIMS;GOLDEN ARK PROJECT;  
ALSO KNOWN AS: ;DOUGHBOY MINE;

EXPL. STATUS: RESERVES DEVELOPMENT  
ACTIVITY STATUS: ACTIVE  
(PAST PRODUCER)

OWNER(S): ARK ENERGY LTD  
QUEST INC

- VENTURER, OP  
- VENTURER

STATE: ARIZONA *Eight SW Tin Granite*  
DISTANCE FROM: A FEW MILES SOUTH OF BAGDAD.  
TOWN: BAGDAD  
COUNTY: YAVAPAI  
LONGITUDE: 1130845  
LATITUDE: 342800

METAL(S): GOLD  
SILVER

OPERATION-TYPE: OPEN PIT

CURRENT AS OF: 1983

*leaches very well -  
bottle roll - 229g Au  
500lbs.  
some quartz, py is gone, FeOx colum leach -  
hematite, py, Au  
wide zones, 50-100' wide  
>200' long  
surface sampling, lots shafts & pits  
drilled, down-hole hammer - "lost gold" - didn't  
with air - drill dry recover  
- drill 2 places - a "leach" ground  
20 holes, 30-200 ft.*

GENERAL COMMENTS

THE COMPANY IS CURRENTLY NEGOTIATING WITH SEVERAL LARGE MINING COMPANIES FOR A POSSIBLE JOINT VENTURE ON THE PROPERTY. (PC 8/83)

LOCATION COMMENTS

TOWNSHIP 13N, RANGE 8-9 WEST. (ARK ENERGY FORM 12 4/14/80)

DESCRIPTION OF CLAIMS

THIS PROPERTY CONSISTS OF 19 LEACH CLAIMS. THE ORIGINAL 16 "CARL" CLAIMS AND THE AREA OF KNOWN MINERALIZATION WAS RESTAKED AS A GROUP OF 19 CLAIMS NAMED THE LEACH CLAIMS. (ARK ENERGY FORM 12K 4/14/80)

TRANSACTION REPORT

TRANSACTION DATE: 1980  
TRANSACTION TYPE: JOINT VENTURE

PARTY#1: QUEST INC  
DESIGNATION 1: JOINT VENTURER  
ORIGINAL INT 1: 100  
POTENTIAL INT 1: 30

*5 wide zones of gold,  
take a "pin" - see the gold!*

PARTY#2: ARK ENERGY LTD  
 DESIGNATION 2: JOINT VENTURER  
 ORIGINAL INT 2: 0  
 POTENTIAL INT 2: 70

### TERMS AND CONDITIONS

ARK IS REQUIRED TO PAY C\$23,000, C\$6,000 OF WHICH HAS BEEN PAID ALREADY. THE BALANCE IS TO BE PAID EITHER FROM THE PROCEEDS OF A PUBLIC OFFERING OR FROM PRODUCTION OF MINERALS FROM THE PROPERTY AT THE ELECTION OF QUEST, PROVIDED THAT IT IS PAID ON OR BEFORE 1/1/81. (ARK ENERGY FORM 12 4/14/80)

### GEOLOGY REPORT

ZONE NAME: N/A  
 GENESIS 1: HYDROTHERMAL  
 OREBODY TYPE 1: VEIN (LODE)  
 ORE 1: GOLD  
 CLASS 1: NATIVE  
 ORE CONTROL 1: FRACTURING  
 SHAPE 1: TABULAR  
 HOST-ROCK: RHYOLITE  
 COUNTRY-ROCK: GRANITE  
 LITH-UNIT: YAVAPAI SCHIST

### GEOLOGY COMMENTS

CLAIMS ARE UNDERLAIN BY PRECAMBRIAN GRANITIC ROCKS, GRANITIC SCHISTS, AND GNEISSES, AND YAVAPAI SCHIST, WITH LOCALLY YOUNGER CENTERS OF TERTIARY INTRUSIVE AND VOLCANIC ACTIVITY. THE MAJOR MINERALIZATION IN THE AREA, INCLUDING THE COPPER AND GOLD MINERALIZATION AT THE BAGDAD MINE, ARE RELATED TO THESE LATE CRETACEOUS OR EARLY TERTIARY INTRUSIVE ROCKS.

THE GOLD MINERALIZATION OCCURRING ON THE LEACH CLAIMS IS PROBABLY SIMILARLY RELATED GENETICALLY TO LARAMIDE INTRUSIVE ACTIVITY.

GOLD MINERALIZATION IS ASSOCIATED WITH ZONES OF LIMONITIC AND HEMATITIC ALTERATION WITHIN THESE RHYOLITIC OR LATE-STAGE ACID INTRUSIONS. (ARK ENERGY FORM 12 4/14/80)

### WORK HISTORY

1979: QUEST INC COLLECTED 11 GRAB SAMPLES AND PRODUCED GOLD FROM A SMALL OPEN-PIT AND HEAP-LEACHING OPERATION. NO RECOVERY FIGURES ARE AVAILABLE. (ARK ENERGY FORM 12 4/14/80)

### NATURE OF UNDERGROUND WORKINGS

THERE ARE A NUMBER OF OLD SURFACE PITS, TRENCHES, AND ONE OR TWO SMALL ADITS ON THE CARL CLAIMS. (ARK ENERGY FORM 12 4/14/80)

### CURRENT WORK PLAN

1983: FURTHER METALLURGICAL TESTING WILL BE CONDUCTED. (PC 8/83)

SUBCONTRACTORS

J.B.P. SAWYER, GRAB SAMPLES  
 STANLEY B. REAMSBOTTOM  
 WESTERN TESTING LABORATORIES

SAMPLE ANALYSIS INFORMATION

THE FIVE BEST GRAB SAMPLES ARE:

AU OZMT	AG OZMT
2.81	0
0.771	0.18
0.592	0.08
0.235	0
0.222	0

(ARK ENERGY FORM 12 4/14/80)

ORE AMENABILITY

THE GOLD ORE IS AMENABLE TO A CYANIDE LEACH. (ARK ENERGY FORM 12 4/14/80)

EXPLORATION COMMENTS

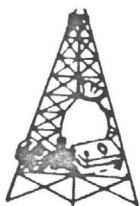
THE COMPANY HAS JUST COMPLETED A TRENCHING, SAMPLING, AND BULK-SAMPLING PROGRAM. THE 500-LB BULK SAMPLE WAS SENT TO WESTERN TESTING LABORATORIES IN NEVADA FOR LEACH TESTS, WHICH RETURNED 0.252 OZMT AU WITH A 95.6% RECOVERY RATE. THE AREA SAMPLED, WHICH IS 100 FT X 150 FT, IS ONE OF SEVERAL MINERALIZED AREAS. THE COMPANY RECOGNIZES THAT THE RECOVERY RATE IS HIGH AND PLANS TO HAVE COLUMN TESTS DONE TO MORE CLOSELY APPROXIMATE FIELD CONDITIONS. (PC 8/83)

THE PROPERTY WAS ORIGINALLY THOUGHT TO BE ONE VERY LARGE OPENPIT LEACHABLE DEPOSIT, BUT IT NOW APPEARS THAT THERE ARE FIVE KNOWN ANOMALIES, FOUR OF WHICH RANGE FROM 50 TO 500 FT WIDE AND UP TO 800 FT LONG. THREE OF THESE COULD BE MINED FROM ONE VERY LARGE OPEN PIT. (ARK ENERGY PR 1/4/83)

FEASIBILITY COMMENTS

FINANCING HAS BEEN ARRANGED THROUGH THE VANCOUVER STOCK EXCHANGE AND IS EXPECTED TO BE COMPLETED IN JANUARY 1983. (ARK ENERGY PR 1/4/83)

A 500 LB BULK SAMPLE WHICH WAS GROUND TO -80 MESH WAS LEACHED FOR 24, 48 AND 72 HOUR PERIODS WITH BOTH THE 48 AND 72 HOUR TESTS RETURNING 0.252 OZMT AU. THE RECOVERY RATE WAS 95.6%. (PC 8/83)



# TODAY'S MARKET LINE

"KEEPS YOU ON TOP OF YOUR INVESTMENTS"

PUBLISHED DAILY

702 - 626 West Pender Street, Vancouver, B.C., Canada V6B 1V9 (604) 684-8888  
Suite 1520 - 4 King Street West, Toronto, Ontario, Canada M5H 1B6 (416) 863-9583

TUESDAY  
MARCH 20, 1984  
ISSUE 056/84  
SUBSCRIPTION RATES  
1 year ..... \$315  
6 months ..... 165  
3 months ..... 95  
Europe ..... 425  
Single Copy ..... 1.50  
U.S. .... U.S.

CLOSE FOR MARCH 19, 1984.

TSE 300	V.S.E.	DOW JONES	SPOT CDN \$	GOLD N.Y.	GOLD LONDON	GOLD TORONTO	N.Y. SILVER	DEC. COPPER	INTEREST RATE	NOV. LUMBER	US FEDERAL FUNDS RATE
2412.0	1071.628	1171.38	78.24	394.50	394.50	4641.6	9.60	73.20	11%	205.5	10 1/16
- 10.7	- 2.742	- 12.98	- .39	Unch.	+ .80	+ 66.5	+ .05	- .25	---	- 3.0	+ 5/16
FIVE MOST ACTIVE TRADERS				SYMBOL	VOLUME	PRICE	CHANGE	%	TRADES		
RALEIGH ENERGY				RLE	524,000	.24	-.11	31.4	32		
FREEPORT RESOURCES INC.				FRI	510,000	.70	Unch.	---	29		
BRACE RESOURCES				BCE	250,897	2.86	+ .13	4.8	229		
KELLEY-KERR ENERGY				KYK	163,500	.66	+ .01	1.5	37		
AMIR MINES LTD.				AMM	140,500	.77	+ .07	10.0	28		

## AZORA MINERALS INCORPORATED (AZM)

Benito DiTerlizzi, President & Director, has announced that Azora, in the last few months, has started developing some of the oil leases acquired from WMT Operating Co. of Lubbock, Texas. In the Broadus South, (Howard County, Texas) the Company has participated in 8 wells - ALL SUCCESSFUL. In the Broadus North, we bought 2 producing wells, successfully drilled 3 more and currently drilling another 2 wells. Azora's interest ranges from 8% royalties to 100% W.I.

Due to the success of the current oil drilling and development program, WMT Operating Co., (the operator), has been approached by substantial investor groups, private investors and quite a few Vancouver public companies, all wishing to participate with Azora in the development of leases that WMT has acquired. The Company have started drilling 14 wells in the Wilkinson lease adjoining the Broadus.

Azora's monthly revenue is averaging \$50,000 and the assets, value discounted at 20%, are well above \$12,000 (US). Under the guidance of WMT Operating Co., the Company is developing into a successful junior oil corporation that plans to increase its participation from the current 71 wells to between 91 and 110 in 1984. Participation is by Carried Working Interest, Cash Contribution or Overriding Royalties.

The Management believes the Company is well positioned to show excellent results from these oil investments.

## BRIDGEWEST DEVELOPMENT CORPORATION (BWD)

T.W. Neild, President & Director, has announced that Bridgewest Development Corp. and Unistar Technologies Corp. have reached an agreement with Valdez Capital Corp. to borrow sufficient funds to complete PHASE I of a work program on their Trails End gold property in Arizona. Valdez has the right to back in for a 10% carried interest by converting its loan to an investment in the project.

The Trails End property has indicated assays from sampling over a 200' length from .28 oz/T Au to 2.68 oz/T Au. Bridgewest and Unistar will commence a rotary percussion drilling program, to prove up values over the 7,000' strike length, within the following week.

Drilling Results - Ontario Gold Prospect - Assay results from the first 2 holes drilled on the Roche Long Lac gold prospect near Geraldton, Ontario are now available. These 2 holes, intended to test the principal vein structures, contained no appreciable gold values.

The 3rd hole, drilled from an ice-covered lake on the property, intersected silicified sedimentary rocks and feldspar porphyry containing disseminated sulfide minerals. This geological environment hosted the principal gold ore bodies at both MacLeod-Cockshutt and Hard Rock, former producing mines situated W of the Roche property. Analytical work on samples from this hole is in progress.

## CENTENNIAL MINERALS LTD. (CTN)

Brian Mountford, President, has announced that Kilborn Engineering of Vancouver has been appointed to prepare a full technical and economic feasibility study on the Montana Tunnels' gold, silver, zinc and lead property in Jefferson County, Montana. Completion is scheduled for late July 1984.

Kilborn will be working closely with the Colorado School of Mines Research Institute and Hazen Research of Denver, who contracted in January 1984, to develop optimum plant design criteria. Metallurgical testing is well advanced on the 350 ton bulk sample with all results to date meeting expectations.



## ANGLO-BOMARC MINES (ANB) / GRANDE TRUNK RESOURCES (GAD) - CONTINUED

Recent assay results from drill holes, approx. midway between 83-47 and 83-49, reveal a very thick mineral zone that extends from 105' to 285'. Within the thicker zone, a number of horizons contain significant silver values. From 105 to 125', the average silver content is 4.39 oz./T Ag while a thicker zone, to 145', averages 3.25 oz. Ag. A lower zone, from 220' to 245', averages 5.13 oz. An adjacent hole, 200' NE, contains 2 corresponding drill intercepts: 1 from 165' to 185', averages 4.44 oz. and 1, from 470' to 485', averages 3.70 oz./T Ag. Minable 5 - 10' silver zones contain a minimum of 5 oz. Ag and high values of 13.3 oz. Ag. One to two percent combined lead and zinc values accompany the silver zones.

Of importance is the apparent flat-lying configuration of the mineralized horizons. All zones, thus far discovered, appear to be well suited to mining by adit-level room and pillar methods. An untested zone, with identical lithology, exists throughout an area that extends from 700 to 2500' E of the presently known mineralization." Also, "Preliminary operating cost estimates will be made on underground mining of the new Belmont deposit.", says Mr. Crowley.

## BRIDGEWEST DEVELOPMENT CORPORATION (BWD)

Terry W. Neild, President of Bridgewest Development Corporation, wishes to make the following announcement. Milt Hatcher, President of Unistar Technologies Corp., has just returned from a 4 day trip to the site at the Trails End property in Yavapai County, Arizona. Plen Dickson, of Adtec mining, is on site and co-ordinating the drilling program. Progress is continuing on an ongoing basis. To date, 3500' of vein location has been confirmed by surface trenching with a backhoe. The vein structure ranges in width from approx. 4' - 8' at the "Big Red Adit", to narrower widths and back to the wider widths at the Toby and Clorinda shafts with a 100' offset, due to falting approx. 500' from the main shafts. The control grid has been established and mapping started.

Rotary percussion drilling is in progress aiming at the 60 - 120' horizon. At this time, 2 drill holes have been completed to determine the width of the vein at depth. The third hole has been started on the offset vein towards the Big Red Adit. Assay samples have been sent to the lab and results should be known by the end of the week.

## EURO-AMERICAN FINANCIAL SERVICES LTD. (EFN)

David D. Coulson, President, has announced that notice is hereby given that an asset distribution of 1/4 of 1¢ per share payable in common shares of Silver Bird Mines Ltd. with a nominal value of 1¢ per share was declared payable on the 22nd day of March, 1984 by the Board of Directors. Silver Bird Mines is wholly owned subsidiary of the former Early Bird Mines Ltd. Silver Bird Mines was formed in 1969 and has been inactive since that time. This dividending of assets will be paid upon receipt of the necessary regulatory approvals in the Canadian Jurisdictions which we expect to obtain by mid summer.

For every 4 common shares of Euro-American Financial Services Ltd. held, the Company will issue 1 common share of Silver Bird Mines Ltd. It is the intention of Euro-American Financial Services Ltd. to vend all the mineral properties it holds into Silver Bird Mines in exchange for fully paid preferred shares equal to the book value of these assets. These properties are: (a) Uranium properties previously held in Early Bird Mines Ltd., located in Saskatchewan; (b) Gold and silver prospects which the Company has recently acquired, located in the Adams Lake area.

Shareholders are reminded that for future trading of Silver Bird Mines Ltd., round lots of 500 shares are advantageous. In order to obtain a round lot of Silver Bird Mines, as a result of the distribution, Shareholders would need 2,000 shares of Euro-American Financial Services Ltd.

It is the Company's intention to offer the new Silver Bird Shareholders the right to purchase additional shares. The funds will be used to provide the Company with additional working capital. The Rights Offering will be done simultaneously with the distribution of shares of Silver Bird Mines Ltd.

## KOKANEE RESOURCES LTD. (KKR)

Eric H. De Witt, President, has announced that, as of March 12, 1984, the following changes have taken place in respect of Officers and Directors of the Company: Peter J. De Witt - appointed as Secretary; Ambrose D. Trick - appointed as Director.

Peter De Witt graduated in 1975 from the University of B.C., with his Bachelor of Arts. Since then, he has been a Real Estate Salesman for MacAulay, Nicolls, Maitland and is presently with The Permanent.

Ambrose Trick graduated in 1974 with his degree in Business Administration from the University of Denver, Denver, Colorado. Since that time, he has been extensively involved in real estate development and finance, as well as construction in B.C. and Alberta.

## NEW RIDGE RESOURCES LTD. (NGM)

Murray Pezim, Chairman of the Board of New Ridge Resources Ltd., is pleased to announce that the Company is negotiating with a major Mining Corporation to acquire certain claims in northern Ontario.

B.D - 1.1.20

**CONFIDENTIAL**

**REPORT ON**

**ORGAN GRINDER AND BIG BEN PROPERTIES**

**YAVAPAI COUNTY, ARIZONA**

**PREPARED FOR**

**NEW TYEE RESOURCES LTD.**

**AND**

**HIMAC RESOURCES LTD.**

**BY**

**L.S. TRENHOLME, P.Eng.**

**VANCOUVER, B.C.**

**MARCH 7, 1984**

## TABLE OF CONTENTS

	PAGE
INTRODUCTION.....	1
SUMMARY.....	1
LOCATION, ACCESS, HISTORY.....	2
SUMMARY OF AGREEMENTS.....	3
LOCAL GEOLOGY.....	6
ECONOMIC POTENTIAL.....	8
RECOMMENDATIONS.....	9
BUDGET 1984.....	11

### MAPS

#### FOLLOWING PAGE

1.	General Location		Front
2.	Property	1"=2000'	1
3.	Local Geology	1"=1000'	3
4.	Drill Holes & Assays (Organ Grinder)	1" = 50'	In Pocket
5.	Big Ben Assay Plan	1" = 100'	4
6.	Big Ben Geochem	1" = 50'	In Pocket

### APPENDIX

#### EXPENDITURES TO DATE



## INTRODUCTION

The writer is Vice-president of both New Tyee Resources Ltd. and Himac Resources Ltd., and has conducted metal exploration for both companies since 1978.

The subject properties were examined early in 1982 in company with Mr. Bill Poe, President of Rambo Inc., who had leased certain claims and permits from the original owners.

At the time of the examination it was Poe's intention to proceed with a small heap leaching operation for his company's account. However, the writer advised him to do some preliminary bulldozer trenching, which was carried out in 1982.

In August 1983, he invited New Tyee to a second examination. This resulted in a letter agreement, followed by formal option agreements on the Organ Grinder in December 1983, and on the Big Ben in January 1984.

Exploration of these properties has been supervised by the writer with the co-operation and advice of Mr. Dave Howard, P.Eng., consulting geologist.

## SUMMARY

The Organ Grinder and Big Ben properties are located 45 miles north of Wickenburg, Arizona and are favourably situated with respect to transportation and water.

Gold, with associated silver (about 1:2.7) occurs in quartz veinlets cutting sheared Precambrian granite within extensive alteration zones marked by strong to intense soil colouration. Sampling of trenches and drill holes to date indicates that the granite host rock is also gold-bearing.

Recent soil sampling on the Big Ben property has partly delineated an anomalous zone which suggests an open-pit potential for upward of 2 million tons to a depth of 100 feet in this area alone.

Acquisition and exploration costs to date total about U.S. \$ 103,000.

An exploration budget of U.S. \$ 300,000 for 1984 is recommended and is considered adequate for making a production decision.

## GENERAL

### LOCATION

Section 2, Twp. 12 N., R 10 W.

Section 35, 36, Twp. 13 N, R 10 W

Topo Reference: Prescott 1:250,000

Arrastra Mtn. NE 1: 24,000

Elevation 2700' - 3,000'

### ACCESS

Phoenix to Wickenburg, 55 miles on Route 60

Wickenburg to Bagdad Road, 45 miles on Route 93

Highway to Organ Grinder, 3 miles, 4WD road

### HISTORY

Early work (no written records)

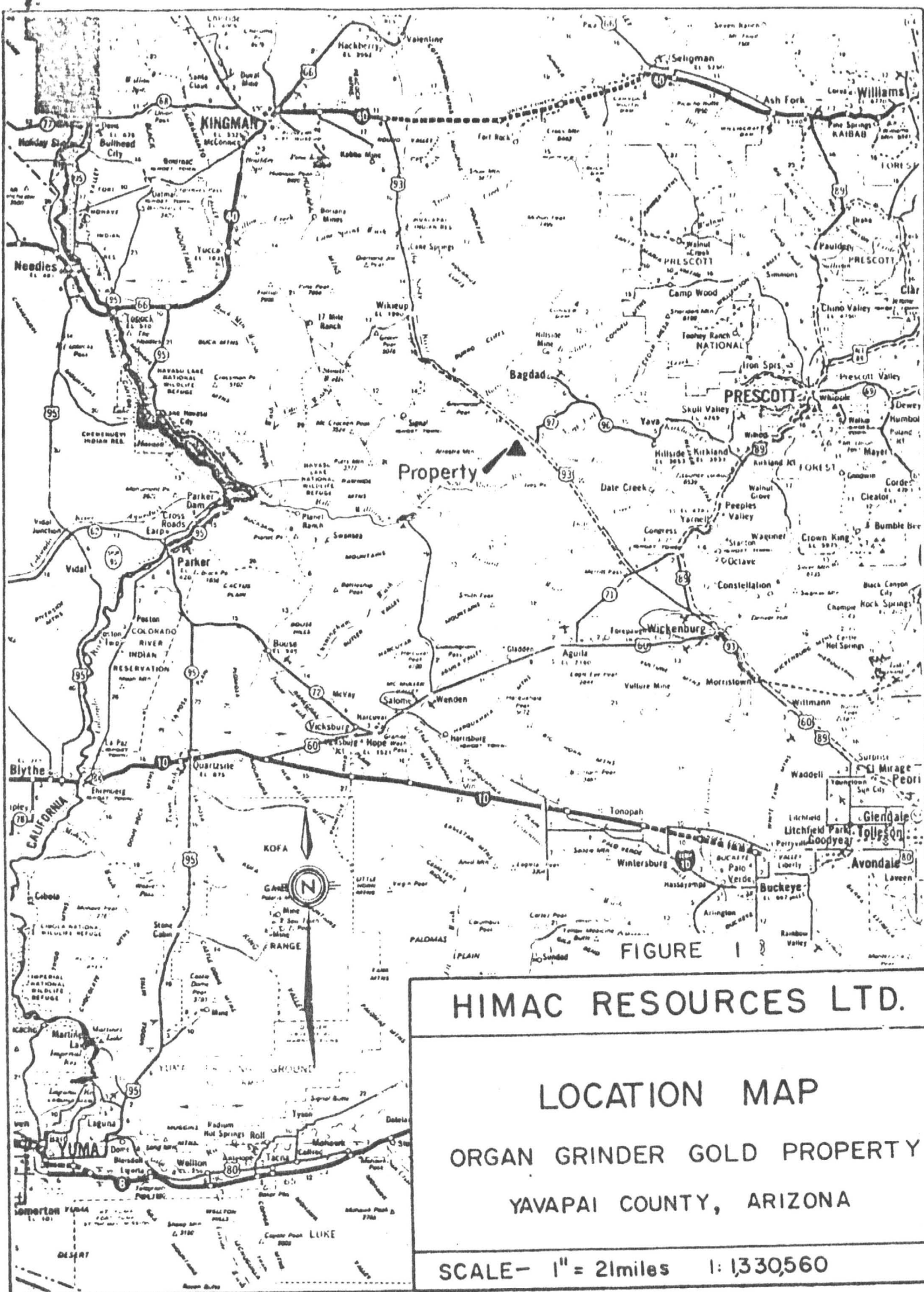


FIGURE 1

HIMAC RESOURCES LTD.

LOCATION MAP

ORGAN GRINDER GOLD PROPERTY

YAVAPAI COUNTY, ARIZONA

SCALE - 1" = 21miles 1:1330560

1. Big Ben adit reported to be 200 feet, now caved about 150 feet from portal.
2. About 20 old kpits on Big Ben on narrow gold-bearing quartz veins and stringers.
3. On Organ Grinder -
  - a) old backhoe trench
  - b) "Main Trench" by Rambo Inc., in 1982
  - c) extensive trenching by New Tyee in 1983
  - d) 925 feet reverse circulation drilling by New Tyee in January 1984
4. On Rig Ben -
  - a) geochemical survey by Himac and New Tyee in February 1984
5. Reconnaissance mapping by Howard & Trenholme 1983-84

#### SUMMARY OF AGREEMENTS

##### ORGAN GRINDER:

State of Arizona grants Prospecting Permits (P.P.) convertible to Mining Leases subject to 5% Royalty (Net Metal Proceeds)

1. P.P. 800565 granted to Henry Bain & Melvin Jones, September 24, 1980 on 40 acres, being SW 1/4 Sec. 2, T 12 N, R 10 W.

2. P.P. 84462 granted to Rampo Inc., July 21, 1982, being remainder of above Section 2, approximately 450 acres.
3. Rampo acquires rights from Henry Bain and Ana Marie Jones (successor to Melvin Jones) by Contract dated February 23, 1982, amended October 1, 1983.
  - a) Production Royalty 8% N.S.R. in total amount of \$ 300,00 including -
  - b) Advance (minimum) royalties of \$ 1,000 per month
4. August 24, 1983. Letter Agreement between New Tyee and Rampo leading to:
5. Exploration and Option Agreement December 9, 1984
  - a) Option exercisable to December 31, 1985 to obtain 70% interest in New Company
  - b) (i) \$ 1,000 per month commencing October 1, 1983, plus  
(ii) \$ 30,000 by June 30, 1985, plus  
(iii) \$ 50,000 by December 31, 1985.
  - c) New company assumes Rampo's obligations to Bain & Jones
  - d) Work commitments, total \$ 115,000

**BIG BEN (Ownership, contd)**

1. Prospecting Permit 79467 August 30, 1980, 40 acres

2. Prospecting Permit 73810 May 3, 1979 comprising 40 acres in Section 36, T 13 1N, R 10 W.
3. Five Located Mineral Claims (about 100 acres) in Section 35, T 13 N, R 10 W.

(4 by Bain & Jonese, 1 by Rampo Inc.)

**November 1, 1983** - Joint Venture Agreement between New Tyee Resources Ltd., (60%) and Himac Resources Inc. (40%) re: acquisition of property in T 13 N, R 10 W.

**December 9, 1984** - Exploration and Option Agreement on above property between Rampo Inc., and Himac Resources Inc., (on behalf of the Joint Venture).

#### **Principal Terms:**

1. Option to acquire 80% interest in New Company to December 31, 1985 with Rampo retaining 20% carried interest in New Company.

#### **2. Option Payments**

- a) On execution \$ 10,000 plus 15,000 shares Himac Resources Ltd.
- b) \$ 1,500 per month comencing April 1, 1984, plus,
- c) \$ 50,000 by June 30, 1985, plus,
- d) \$ 50,000 by December 31, 1985

3. **Work Commitments - \$ 115,000**

4. **Production Royalties (payable by New Company)**

a) On State Land

- i) to State of Arizona - 5%
- ii) to Rambo - 8% up to \$ 300,000,  
thereafter 2%

b) On Federal Land

- i) to Rambo - 5%

## **LOCAL GEOLOGY**

### **A. Precambrian**

The principal country rock is coarse to medium-grained granite which has been intensely metamorphosed with remarkable and widespread development of large (<2") feldspar porphyroblasts, locally with hematite staining.

The granite has been intruded, in approximate age sequence

by:

- 1) vein quartz, generally gold-bearing
- 2) grey-green basic dikes ("diabase") which appear to follow low angle shear planes (thrusts) of various orientations
- 3) pendants or down-faulted remnants of sedimentary and volcanic origin

- 4) Irregular bodies of aplite and fine-grained granite. These are of fresh, reddish to pinkish colour; some appear to be low-angle knoll "cappings"
- 5) Pegmatite dike swarms trending E-W to WNW and essentially vertical; thickness varies from inches to tens of feet

**B. Mesozoic** volcanics with associated sediments generally at higher elevations and draped over very irregular paleo-topography.

#### **STRUCTURE AND ALTERATION**

- 1) Preliminary mapping and reconnaissance have located strong vertical faults trending NW to NNW with amount and direction of movement not determined.
- 2) On the Organ Grinder "Discovery Zone" gold-bearing quartz stringers occur in a schistose zone striking NNE and dipping SE at 20°.
- 3) On the Big Ben a similar association is seen with respect to shears striking WNW and dipping northerly. In addition, some quartz stringers have random orientations, suggesting joint fillings.
- 4) The shearing and veining are contained in a broad zone of oxide colouration extending north from the "Discovery Zone" for more than 4000 feet and achieving its maximum width and intensity on the Big Ben property.
- 5) Trenches and drill holes indicate complete oxidation of



sulphide minerals to at least 150 feet vertical depth.

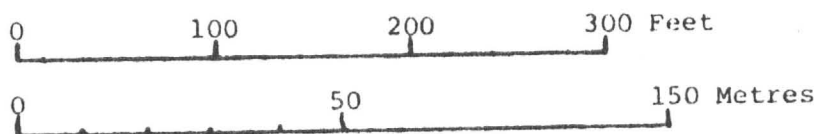
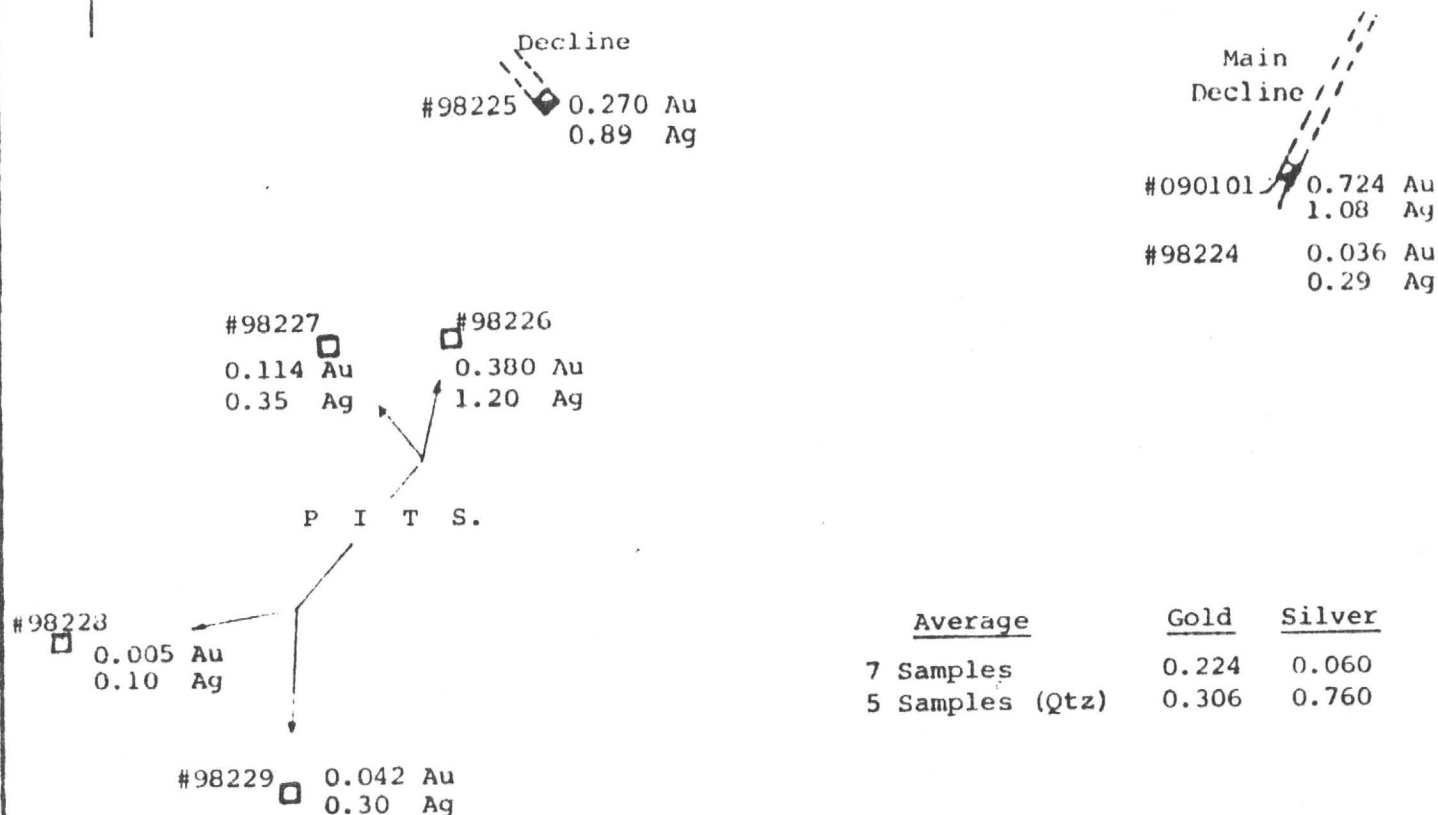
- 6) The only visible gold noted to date was enclosed in quartz at the Big Ben portal.
- 7) The granite appears to be the only favourable host rock.

#### ECONOMIC POTENTIAL

1. It is postulated that one million tons grading 0.04 ounces of gold per ton within 150 feet of surface would support a profitable operation in this environment.
2. Trench sampling on the Organ Grinder gave an average grade of 0.054 oz/ton over a strike length of 450 feet where the zone was interrupted by a zone of heavily sheared and bleached granite.
3. Drilling indicates a true thickness of 10 to 15 feet. Mediocre assay results are at least partially due to intersecting dike material at the projected ore zone horizon. There is some evidence that gold values persist through the fault and that more drilling should be done to the east.
4. Of four known remaining untested alteration zones on the Organ Grider property, two have returned high values from selected samples.
5. **Big Ben Property**
  - a) Random samples of quartz from various dumps averaged 0.306 ounces gold per ton.

HIMAC RESOURCES LTD.  
BIG BEN PROSPECT  
YAVAPAI COUNTY, ARIZONA

ASSAY PLAN



Sample	Description		Gold oz/ton	Silver oz/ton
090101	West Wall	10" Quartz	0.724	1.08
98224	West Wall	3.0' Granite	0.036	0.29
98225	Dump	Random Quartz	0.270	0.89
98226	Dump	Random Qtz & Granite	0.380	1.20
98227	Dump	Random Qtz.	0.114	0.35
98228	Dump	Random Red Granite	0.005	0.10
98229	Dump	Random Qtz & Granite	0.042	0.30

- b) The oxide colour anomaly is larger and more intensive than on the Organ Grinder property.
- c) A preliminary soil sampling program has outlined a distinctly anomalous gold zone measuring approximately 400' x 800' and open to the west.
- d) Assuming that the granite host rock carries appreciable gold, an ore potential for 26,000 tons per vertical foot is indicated.

## GENERAL

### Adjoining Property

- a) New Tyee has acquired by staking the greater part of 2 sections adjoining south of the Organ Grinder.
- b) New Tyee has acquired a Prospecting Permit on all of Section 1 adjoining east of the Organ grinder (about 500 acres).
- c) Himac (for the Joint Venture) has acquired a Prospecting Permit for all of Section 36 not covered by the Big Ben property.

## RECOMMENDATIONS

### A. BIG BEN

- 1. Extend control grid, mapping and soil sampling
- 2. Diamond Drilling: for geological control, say 6

holes @ 200' = 1200 feet

3. **Percussion Drilling:** to outline ore zones, say 70 holes @ 150' = 10,500 feet

4. **Reverse Circulation Holes** for grade confirmation, say 30 holes @ 150' = 4,500 feet

5. **Bulldozer trenching combined with drillsite preparation**

6. **Bench tests for leaching characteristics**

B. **ORGAN GRINDER**

1. **Establish control grid**

2. **Percussion drilling:** to extend "Discovery Zone" and to test northern zones, 3000 feet.

3. **Reverse Circulation Drilling:** as warranted, say 1000 feet

## 1984 BUDGET

## U.S. FUNDS

	BIG BEN \$	ORGAN GRINDER \$	TOTAL \$
1. Geochem Survey 600 samples @ 4.40	880	1,760	2,640
2. Diamond Drilling 1600' @ \$20/ft.	24,000	8,000	32,000
3. Percussion Drilling 13,500' @ \$6.0	63,000	18,000	81,000
4. Reverse Circulation Drilling 5,500' @ \$12.00	54,000	12,000	66,000
5. Assays	6,700	3,300	10,000
6. Bench Tests	20,000	5,000	25,000
7. Engineering & Labour 80 days (2 men) @ \$350	21,000	7,000	28,000
8. Supervision, Consulting	15,000	5,000	20,000
9. Travel, Miscellaneous	5,000	3,000	8,000
Sub-totals	209,580	63,060	272,640
10. Contingencies - 10%	21,000	6,300	27,300
11. 1984 Option Payments	15,000	10,000	25,000
TOTAL:	245,580 =====	79,360 =====	324,940 =====

*L. S. Trenholme*  
 L.S. TRENHOLME, P.Eng.

## APPENDIX

EXPENDITURES FOR NEW TYEE RESOURCES LTD.  
AND HIMAC RESOURCES LTD ON ORGAN GRINDER  
AND BIG BEN PROPERTIES, YAVAPAI COUNTY, ARIZONA  
TO MARCH 1, 1984

ORGAN GRINDER			U.S. Funds
1.	Acquisition: Initial	\$ 5,000.00	
	6 Monthly	6,000.00	\$ 11,000.00
		<hr/>	
	Staking	6,078.10	
	Prospecting Permit	3,900.00	9,978.10
		<hr/>	
	Legal		4,037.66
			<hr/>
			\$ 25,015.76
2.	Exploration		
	Assay	5,504.72	
	Consulting	15,051.28	
	Drillsite Preparaton	2,305.0	
	Drilling	9,131.25	
	Trenching	5,675.00	
	Travel	5,424.11	
	Field Supplies	436.33	
	Rentals	4,291.61	
	Maps, Reports	197.56	
	Wages	1,275.00	
	Miscellaneous	514.96	
		<hr/>	
			49,806.82
			<hr/>
	Total Organ Grinder (March 1/84)		\$ 74,822.58
			=====

**BIG BEN**

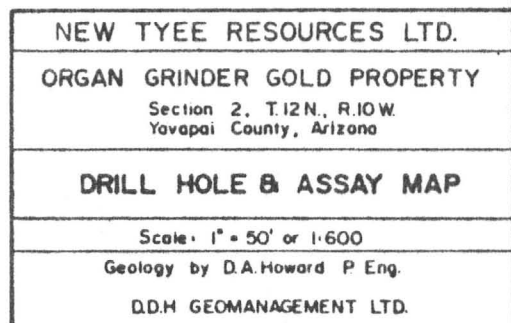
1.	Acquisition:		U.S. Funds
	Initial: Cash	\$ 10,000.00	
	15,000 shares @ .50	7,500.00	\$ 17,500.00
	Prospecting Permit		3,982.64
	Legal Costs		900.00
			\$ 22,382.64
2.	Exploration:		
	Assays	\$ 1,188.35	
	Consulting & Supervision	2,892.26	
	Wages	450.00	
	Rentals	406.99	
	Travel	662.49	
	Miscellaneous	505.37	
			5,650.56
	Total to March 1, 1984		\$ 28,033.20
			=====

**SUMMARY**

## U.S. FUNDS

	ORGAN GRINDER	BIG BEN	TOTAL
	\$	\$	\$
ACQUISITIONS	25,015.76	22,382.64	47,398.40
EXPLORATION	49,806.82	5,650.56	55,457.38
T O T A L	74,822.58	28,033.20	102,855.78
	=====	=====	=====

A444 - c.g. white, clear qtz with some silicified granite, some FeOx + casts in vuggy areas in qtz. - could run OK







# C. IEMEX LABS LTD.

212 BROOKSBANK AV  
NORTH VANCOUVER, B  
CANADA V7J 2

TELEPHONE: (604) 984-02  
TELEX: 043-525

• ANALYTICAL CHEMISTS

• GEOCHEMISTS

• REGISTERED ASSAYERS

## CERTIFICATE OF ASSAY

C : NEW TYEE RESOURCES INC.,

508 - 475 HOWE STREET  
VANCOUVER, B.C.  
V6C 2B3

Box 2493  
Wickenburg, Arizona  
85358

CERT. # : A8314166-00  
INVOICE # : 18314166  
DATE : 30-AUG-83  
P.C. # : NONE

CC: BILL POE ✓

Sample description	Prep code	Ag oz/T		Au oz/T					
		RUSH	FA	RUSH	FA				
49538	236	0.01		0.006		--	--	--	--
49539	236	0.02		<0.003		--	--	--	--
49540	236	0.01		<0.003		--	--	--	--
49541	236	0.01		0.003		--	--	--	--
49544	236	0.01		0.028		--	--	--	--
49545	236	0.12		0.030		--	--	--	--
49546	236	0.04		0.040		--	--	--	--
49547	236	0.10		0.048		--	--	--	--
49548	236	0.08		0.036		--	--	--	--
49549	236	0.01		0.018		--	--	--	--
49550	236	0.01		0.012		--	--	--	--
551 A	236	0.01		0.030		--	--	--	--
551 B	236	0.55		0.168		--	--	--	--
552	236	0.10		0.026		--	--	--	--
553	236	0.05		0.008		--	--	--	--
554	236	0.01		0.022		--	--	--	--
555	236	0.08		0.036		--	--	--	--
556	236	0.12		0.056		--	--	--	--
557	236	0.01		<0.003		--	--	--	--

191.576 0303

*[Signature]*

Registered Assayer, Province of British Columbia

DATE RECEIVED SEPT 26 1983

DATE REPORTS MAILED *Sept 27/83*

# ASSAY CERTIFICATE

SAMPLE TYPE : ROCK - CRUSHED AND PULVERIZED TO -100 MESH.  
AG & AU BY FIRE ASSAY

ASSAYER *Dean Toye* DEAN TOYE, CERTIFIED B.C. ASSAYER

DDH GEOMANAGEMENT PROJECT # NEW TYEE FILE # 83-2293 PAGE# 1

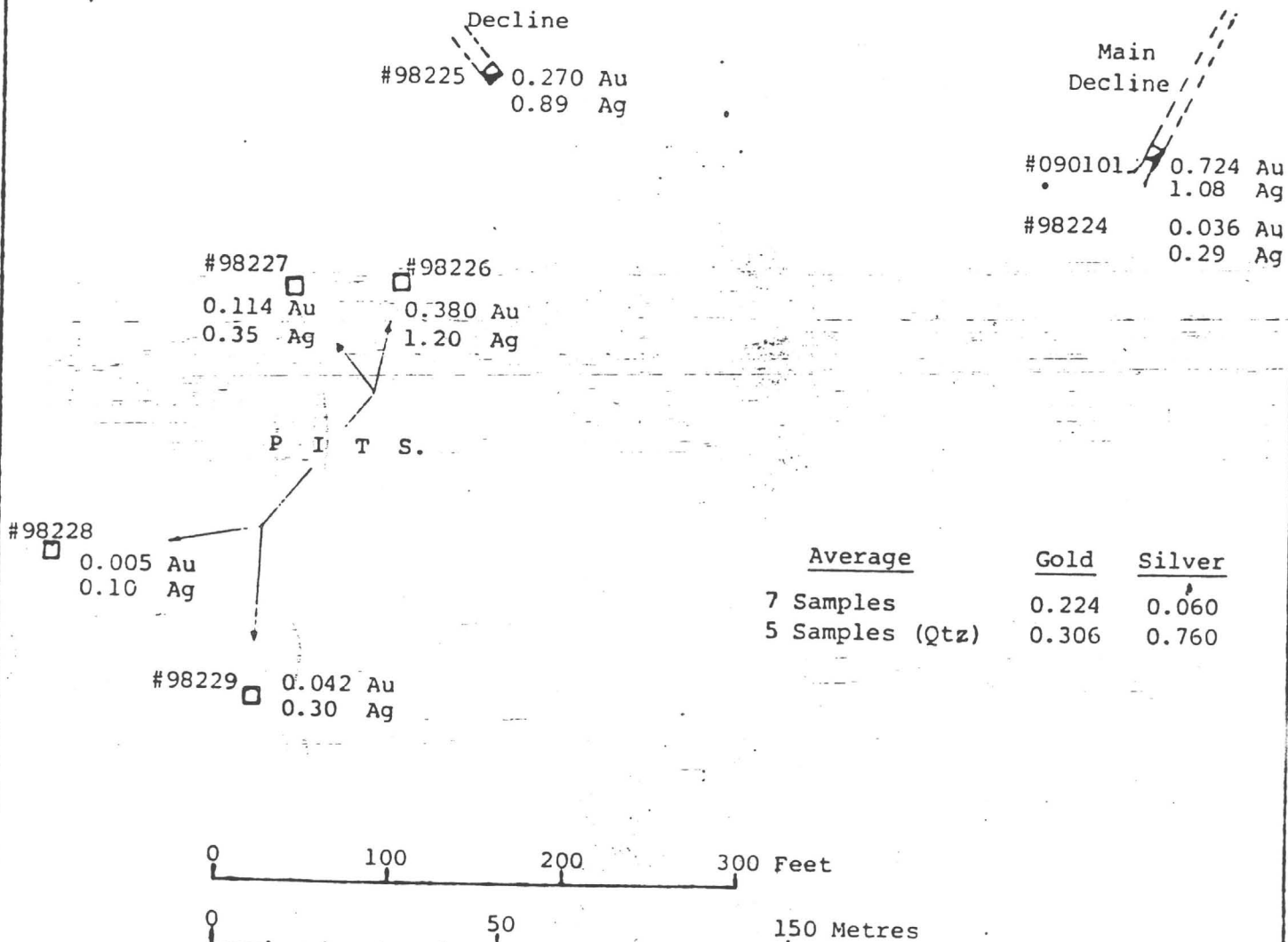
SAMPLE	AG	AU
	OZ/TON	OZ/TON
081003	2.83	2.414
081004	.01	.009
081005	.01	.015
081006	.01	.001
081007	.01	.003
081008	.01	.001
081009	.01	.001
081010	.01	.002
081011	.01	.001
081012	.01	.017
081013	.01	.037
081014	.01	.005
081015	.04	.076
081016	.06	.084
081017	.07	.087
081018	.09	.057
081019	.01	.011
081020	.04	.136
081021	.02	.061
081022	.01	.022
081023	.01	.009
081024	.01	.001
081025	.01	.001
081026	.01	.003
081027	.01	.012
081028	.01	.002
081029	.06	.052
081030	.01	.002
081031	.01	.004
081032	.01	.003
081033	.01	.005
081034	.01	.027
081035	.01	.035
081036	.03	.069
081037	.01	.001
081038	.01	.014
081039	.04	.009
081040	.01	.005

*note found*

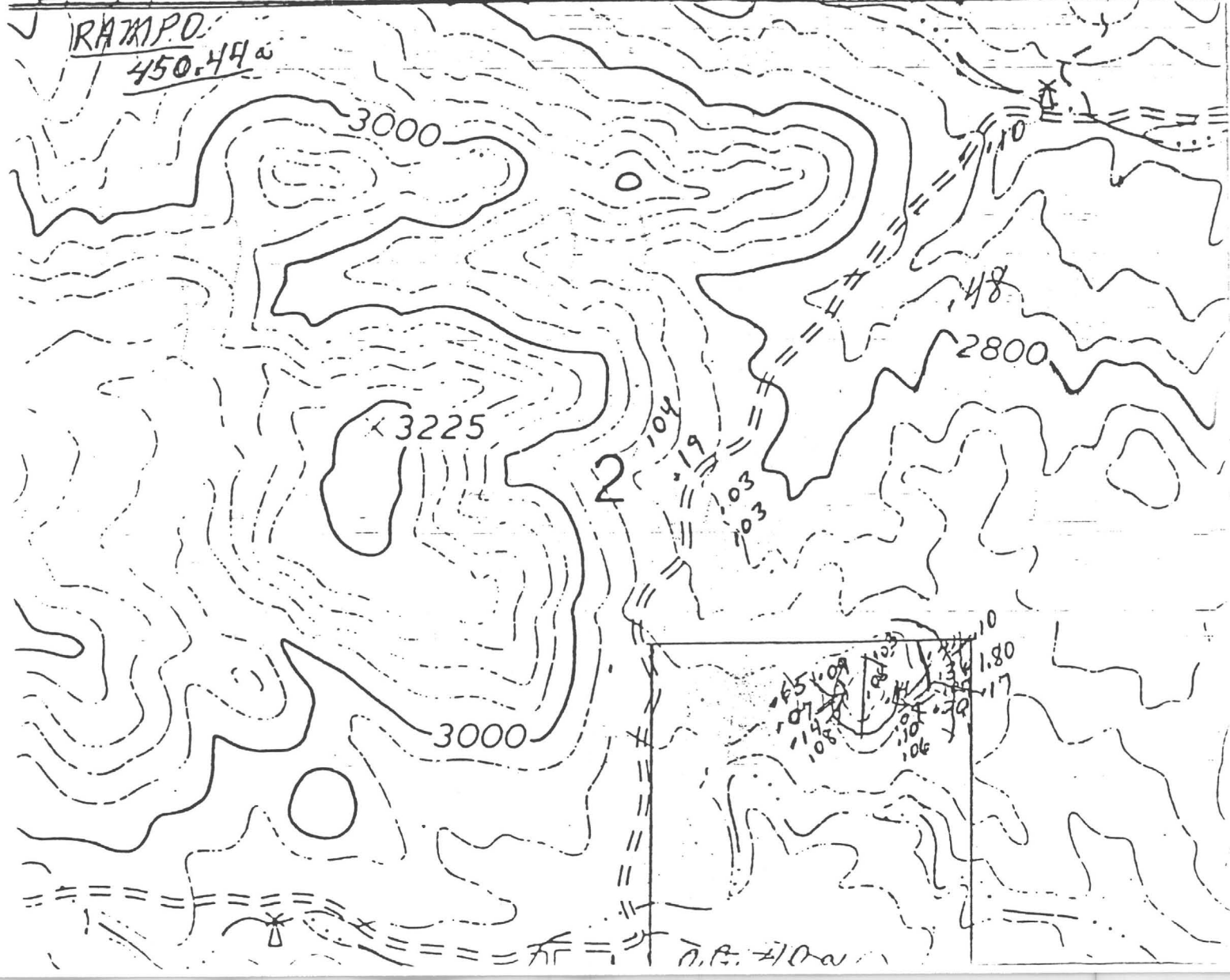
SAMPLE	AG OZ/TON	AU OZ/TON
081041	.01	.008
081042	.01	.001
081043	.01	.001
081044	.01	.012
081045	.01	.155
081046	.01	.106
081047	.01	.028
081048	.04	.143
081049	.01	.063
081050	.01	.012
081051	.01	.002
082351	.44	1.232



HIMAC RESOURCES LTD.  
BIG BEN PROSPECT  
YAVAPAI COUNTY, ARIZONA  
ASSAY PLAN



Sample	Description	Gold oz/ton	Silver oz/ton
090101	West Wall 10" Quartz	0.724	1.08
98224	West Wall 3.0' Granite	0.036	0.29
98225	Dump Random Quartz	0.270	0.89
98226	Dump Random Qtz & Granite	0.380	1.20
98227	Dump Random Qtz.	0.114	0.35
98228	Dump Random Red Granite	0.005	0.10
98229	Dump Random Qtz & Granite	0.042	0.30



# SAMPLE SHIPMENT NOTICE

CHEMEX LABS LTD.  
212 Brooksbank Avenue  
North Vancouver, B.C. Canada V7J 2C1  
Tel: 984-0221 Telex: 043-52597

PLEASE INDICATE

NEW TYEE RESOURCES LTD.  
#508-475 HOWE ST.  
VANCOUVER B.C.  
V6B 2B3  
(604) 688-6681  
COPY TO: BILL POE  
P.O. BOX 2498  
NICKENBURG AZ.  
85358

No. of Samples: 20  
Assay %: - FIRE ASSAY  
Geochem PPM: - GOLD/SILVER  
Rock Geochem PPM:-  
COPY TO:

Date: Aug 25/83  
Project No:  
REMARKS:

SAMPLE NO.	LOCATION TYPE	TYPE								
			Cu	Mo	Pb	Zn	Ag	Au		
49538	FLOOR	H-J 20'-30'					T	T		
49539		38-40					T	T		
49540		40-50					T	N		
49541		50-62					T	N		
49542	RIB	L-K 10'5/3.5'								
49543	RIB	18'5/3.5'					N	.03		
49544	MN FLOOR	6-16					T	.04		
49545	✓ FLOOR	MN 16-26					T	.06		
49546	✓ FLOOR	MN 26-36					T	.09		
49547	✓ "	MN 36-46					N	.03		
49548	✓ "	MN 46-56					N	.02		
49549	✓ "	MN 56-66					N	.03		
49550	"	MN 66-76					N	.03		
# 551	FLOOR	MN 76-86					T	.03		
552	"	MN 86-96					T	.03		
553	"	MN 96-106					T	.03		
554	"	MN 106-116					T	.03		
555	"	MN 116-126					T	.05		
556	"	MN 126-136					.05	.08		
# 557	ΔE	FLOOR 18'					T	T		







# Arizona Testing Laboratories

817 West Madison Street □ Phoenix, Arizona 85007 □ 602/254-6181

For New Tye Resources, Ltd.  
Attn: Mr. L. S. Trenholive  
#508-475 Howe St.  
Vancouver, BC V6C 2B3

Date August 26, 1983

## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
2509	S-13 F G +146 Wall Pinkish Sil. Aplite?	0.13	0.10				
	S-14 H-J 25-45 Floor Chips Patchy Hematite	0.01	Trace				
	S-15 H-K 77' Old Pit Q Strs, Rusty Granite	0.13	0.15				
	S-16 K-L 110' Wall Vert Rib 2.0'	Trace	Trace				
	S-17 K-L 120' Wall Vert Rib 3.0'	Nil	Trace				
	S-18 K + 36'N Qtz. Rubble	0.03	Trace				
	S-19 MN + 134 Weather- ed Granite	0.02	Trace				
	S-20 NO + 24 Floor Hem. Alt.	0.03	0.05				

Page 2 of-2 Pages

cc: Mr. Bill Poe  
Box 2498  
Wickenburg, AZ 85358

Respectfully submitted,

ARIZONA TESTING LABORATORIES

*Claude E. McLean, Jr.*

Claude E. McLean, Jr.







# Arizona Testing Laboratories

817 West Madison Street □ Phoenix, Arizona 85007 □ 602/254-6181

For New Tye Resources, Ltd.  
Attn: Mr. L. S. Trenholive  
#508-475 Howe St.  
Vancouver, BC V6C 2B3

Date, August 26, 1983

## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
	49538	Trace	Trace				
	49539	Trace	Trace				
	49540	Nil	Trace				
	49541	Nil	Trace				
	49542 No Sample						
	49543 No Sample						
	49544	0.03	Nil ✓				
	— 49545	0.04	Trace				
	— 49546	0.06	Trace				
	— 49547	0.09	Trace				
	— 49548	0.03	Nil...				
	— 49549	0.02	Nil				
	49550	0.03	Nil ✓				

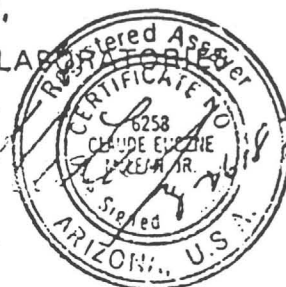
cc: Mr. Bill Poe  
Box 2498  
Wickenburg, AZ 85358

Respectfully submitted,

ARIZONA TESTING LABORATORIES

*Claude E. McLean, Jr.*

Claude E. McLean, Jr.





# Arizona Testing Laboratories

817 West Madison Street □ Phoenix, Arizona 85007 □ 602/254-6181

For New Tye Resources, Ltd.  
Att. Mr. L. S. Trenholive  
#508-475 Howe St.  
Vancouver, BC V6C 2B3

Date August 26, 1983


## ASSAY CERTIFICATE

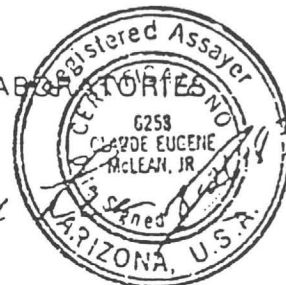
LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
	551	0.03	Trace				
	552	0.03	Trace				
	553	0.02	Trace				
	554	0.03	Trace				
	555	0.05	Trace				
	556	0.08	0.05				
	557	Trace	Trace				

cc: Mr. Bill Poe  
Box 2498  
Wickenburg, AZ 85358

Respectfully submitted,

ARIZONA TESTING LABORATORIES

  
Claude E. McLean, Jr.



# A CHEM ASSAY

15820 W. 8th Avenue  
Golden, Colorado 80401  
Phone 303-279-3611  
9/24/84

Gerber Minerals

*By B. Free*

Item	Sample No.	Au(oz/T)
------	------------	----------

1	GK: 1	.003
2	2	.045
3	BB: 1	.002
4	2	.057
5	3	.019
6	4	<.002
7	5	.063
8	6	.121
9	7	<.002
10	8	.958
11	9	.003
12	10	.016
13	11	.010

*B. Free*

*Frederick W. Holzhauser*

Frederick W. Holzhauser

Bulk Crushed to  $\frac{3}{4}$ "

Results Fri. AM

44.

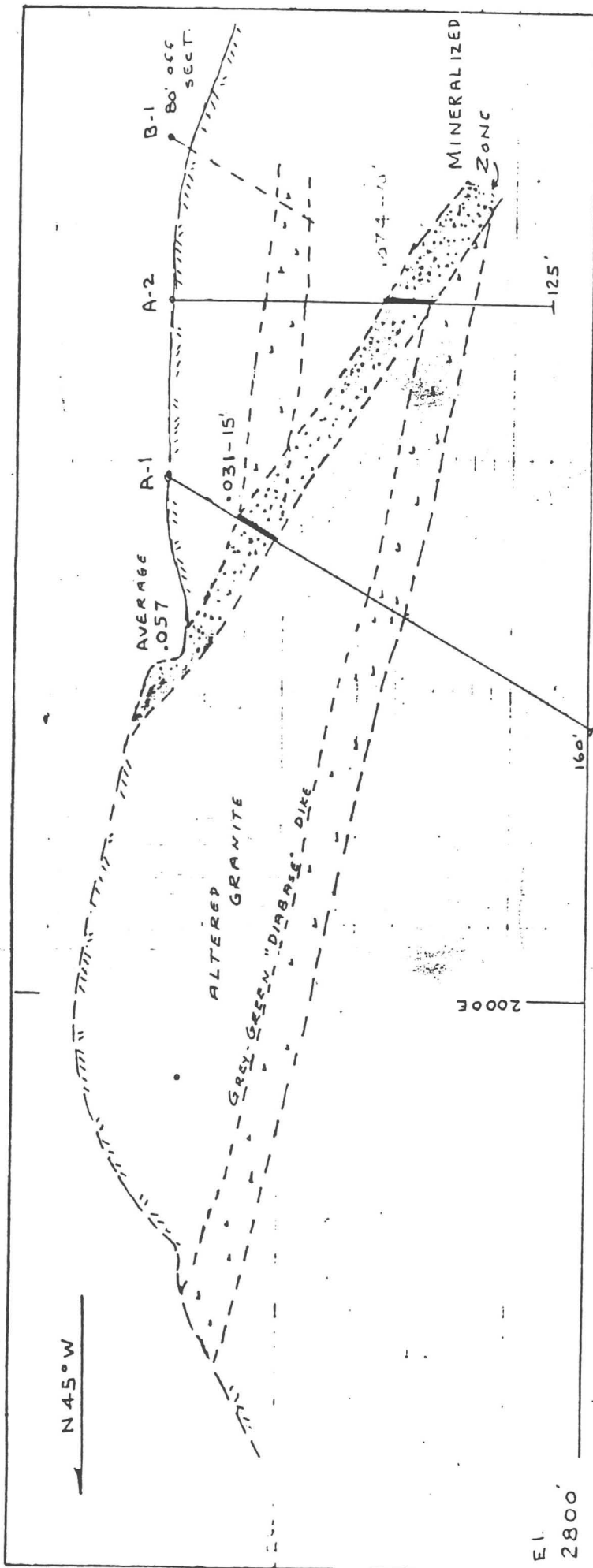
3"	.012
2"	.032
1"	.026
$\frac{3}{4}$ "	.048
$\frac{1}{2}$ "	.067
$\frac{1}{4}$ "	.055
$-\frac{1}{4}$ "	.152

Results from Jacobs over  
piston. Mike stated he would  
rerun  $\frac{1}{4}$ " and  $-\frac{1}{4}$ " because he  
felt they might be too high

202


$$\text{Assays: } \frac{.057}{100} = \frac{\text{oz/ton Gold}}{\text{feet}}$$

SURVEY. TRANSIT. TAPE, 067 JAN 1984

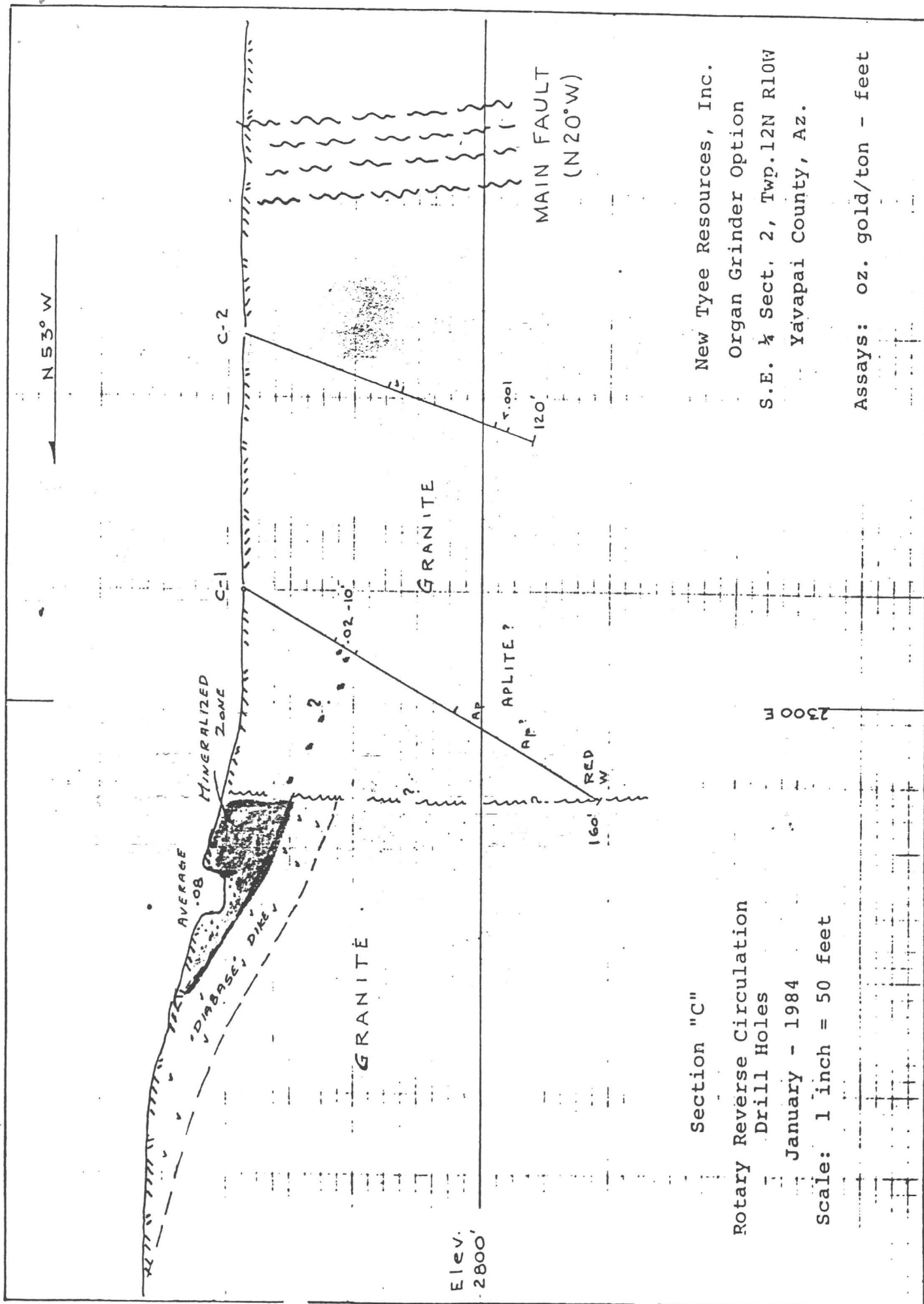


Section "A"  
 Rotary Reverse Circulation  
 Drill Holes  
 January - 1984  
 Scale: 1 inch = 50 feet

New Tyee Resources, Inc.  
 Organ Grinder Option  
 S.E. 1/4 Sect. 2, Twp. 12N R10W  
 Yavapai County, Az.

Assays: oz. gold/ton - feet

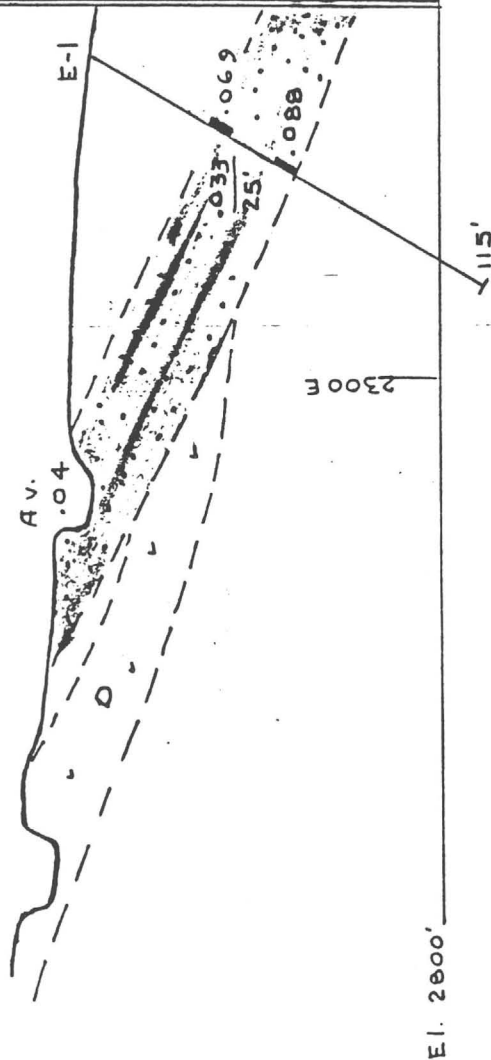






N 40° W

SECTION "E"



0 50 100  
FEET

SECTION

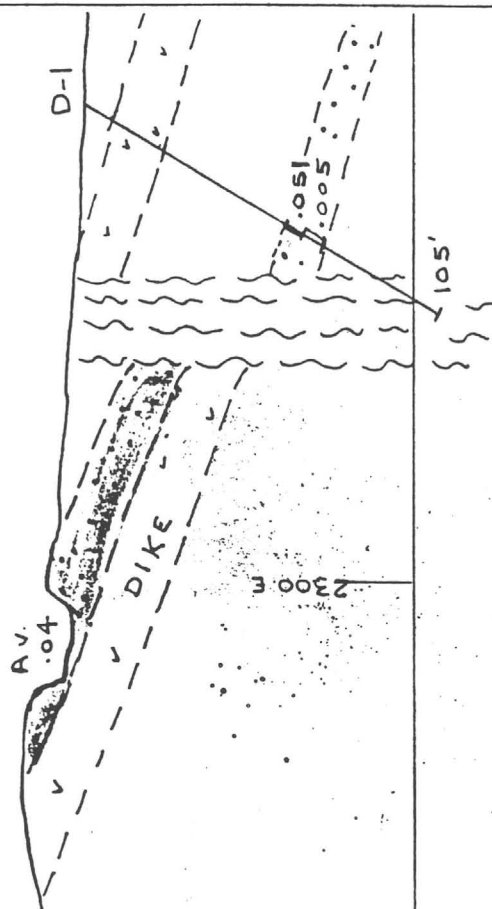
Rotary Reverse Circulation  
Drill Holes  
January - 1984

New Tyee Resources, Inc.  
Organ Grinder Option  
S.E. ¼ Sect. 2, Twp. 12N R10W  
Yavapai County, Ariz.

Assays: oz. gold/ton - feet

N 50° W

SECTION "D"



105'

ORGAN GRINDER DRILL HOLES

JANUARY - 1984

SAMPLES retained for Bill Poe at his request for further testing;  
remainder to be discarded.

Gold Assays (F.A. + A.A.)

Hole	From	To	North American		Acme
			PPM	oz/ton	oz/ton
A-1	25	30	0.33	0.009	0.014
	30	35	0.93	0.027	0.044
	35	40	0.77	0.022	0.037
C-1	45	50	0.85	0.024	0.032
	60	65	<0.01	-	0.001
D-1	60	65	1.08	0.031	0.051
	30	35	<0.01	-	-
E-1	55	60	2.54	0.074	0.088
	30	35	0.01	-	-
*A-2	70	75	0.51	0.015	
	75	80	2.73	0.079	
	80	85	2.38	0.069	
*B-1	90	95	0.03	0.0008	
	95	100	0.03	0.0008	

*L. S. Stenholm*

\*North American shipping these by air to Vancouver January 9/84

Bill Bill Poe has been given list (minus assay  
over the phone and I have put the list in  
with a copy to assay list later.

1-5

B.B-1120

GERBER MINERALS CORPORATION

PROJECT REPORT

by: Dr. B. Free

Denver, Colorado

November 6, 1984

Big Bend Gold Property

Yavapai County, Arizona

## TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	3
INTRODUCTION	3
LOCATION AND ACCESS	4
PHYSIOGRAPHY	5
OWNERSHIP & TENURE OBLIGATIONS	6
HISTORY	6
GEOLOGY	7
POTENTIAL FOR MINING	8
CONCLUSIONS	8
RECOMMENDATIONS	9
APPENDIX	

## SUMMARY

The Big Bend gold prospect is located 45 miles north of Wickenburg, Arizona, a short distance to the west of a major highway and major power line.

Gold and associated silver occurs in quartz veinlets and fractures of volcanics, but mainly in a highly sheared Precambrian granite. Strong oxidation alteration envelopes the gold/silver mineralization.

The prospect was in an early stage of ore development and exploration during 1983 and the first half of 1984 by the Himac/New Tyee joint venture of Vancouver, Canada when the venture was forced to terminate its option due to cessation of funding.

Indicated and potential gold/silver ore at an average grade of 0.05 oz. Au/ton and 1.2 oz. Ag/ton occurs on surface and in drill holes in the oxidized host rocks predisposed to heap leaching. The naturally fractured and jointed host rock may not require blasting and may yield direct pad-feed ore.

A potential of several million tons of ore is indicated. One laboratory column leach test indicated gold recovery to be over 70%.

The Big Bend property is now controlled by Gerber Minerals Corporation.

## INTRODUCTION

The property was first visited by this writer in May, 1984 while it was still under option to the Himac/N. Tyee joint venture.

An offer by Gerber Minerals to farm-in was disregarded by the joint venture, apparently for lack of interest in ownership dilution.

The joint venture was then in the midst of a fairly extensive drilling and surface work program with encouraging results. These results were enhanced by the discovery of a large geochemical gold anomaly in soils a short distance away from the original "discovery zone".

When, due to a sudden and unexpected withdrawal of the joint venture, the property reverted to the owner during September, 1984, this writer investigated into the reasons for the pull-out of the joint venture but could not find any geologically adverse conditions for terminating the project. It appears that the joint venture experienced an unexpectedly sudden financial problem forcing it to withdraw from all further expenditures.

Immediately, negotiations on the subject property were begun with the owners, Rambo, Inc.

Check sampling by the writer of surface exposures duplicated the results obtained by Rambo and the joint venture as well as by the state geologist of the State Land & Mineral Department in Phoenix.

#### LOCATION & ACCESS

State of Arizona

Sec. 35, 36, T. 13 N

Yavapai County

Sec. 1, 2, 11, 12, T. 12 N

Arrastra Mountains

(Figure 2)

The property is located approximately 100 miles northwest of Phoenix or 45 miles northwest of Wickenburg (Figure 1).

The main highway to Kingman/Las Vegas passes within 3 miles east of the property opposite the intersection of the Hillside Mine and Bagdad Mine road. The property is crossed by field roads and trails and can readily be traveled by field vehicles.

### PHYSIOGRAPHY

The Arrastra Mountains are one of the mountain ranges typical of the Basin/Range physiographical complex. Trending in a general north-south direction, they protrude from surrounding basins.

The topography is rugged to moderately rugged.

Relief in the property area is moderately rugged with elevation differentials of 300 - 500 feet. Mean elevation is 2900 ft.

The topography of the property itself does not represent a problem with regard to moving equipment. Minor road preparation is required.

Situated in central Arizona, the climate supports Sonoran desert type vegetation consisting of succulents and desert shrub. Soil development is poor. Rock exposure is excellent.

Seasonal run-off supports ephemeral streams. High yield, moderately deep aquifers are indicated by active water wells. Elevation and temperature permit year-round operations very conducive to heap leaching processes.

## OWNERSHIP & TENURE OBLIGATIONS

The property comprises 2,040 acres more or less in a mix of contiguous Arizona State Prospecting Permits and unpatented lode mining claims. Rampo, Inc. of Lake Havasu City, Arizona controls all the rights with 4 mining claims subject to a total minimum advance royalty payment of \$1,000 per month.

Annual assessment work and lease rental cost are as follows:

68 mining claims @ \$100/claim	\$6,800.00
680 acres Prospecting Permits	
@ \$1.00/acre	<u>680.00</u>
Total	\$7,480.00

The state of Arizona requires a \$10,000 surface reclamation bond.

The option agreement between Rampo and New Tyee Resources was terminated on August 1, 1984 with the joint venture claiming to have spent \$107,000 on the property since August 24, 1983.

Gerber Minerals Corporation leased the property from Rampo for an annual minimum royalty succeeded by a 15% net profit royalty once the property is in production and after Gerber Minerals recovered its investment.

No work commitments are due.

## HISTORY

No written record exists for the time before the involvement of Rampo, Inc. and the operations of the New Tyee/Himac joint venture. Apart from old surface trenches and a small adit, no work other than



sporadic sampling of dumps and outcrops was conducted by various individuals. The results of more extensive work obtained by the recent operators are appended to this report.

4

## GEOLOGY

The area was never mapped in any detail, and the geology observed is best described by Mr. Trenholme of New Tyee and confirmed through field checks by this writer.

In general, large parts of the property are underlain by a very coarse-grained granite to granodiorite with phases consisting almost exclusively of large ( 2") euhedral feldspar crystals. Pegmatitic veins and dikes criss-cross this complex.

This "granite" is thought to be Precambrian in age and possibly a metamorphic derivative of an earlier like intrusive. Younger volcanic lithologies are "draped" over this granite and preserved in discontinuous segments. These lithologies are cut by younger basic dikes.

Faults and other structural features appear to conform to typical Basin/Range tectonism.

The most intriguing features are hematitic alteration zones within an even broader alteration envelope of silification expressed by a stockwork of stringers, veinlets and occasional veins of several feet thickness of massive quartz, that are either barren or mineralized with gold. But, gold also occurs within this hematitic alteration zone as a pervasive constituent in both the altered "granites" as well as in the volcanics.

Although significant but sporadic gold values in the range of 0.3 to 0.9 oz. Au/ton occur occasionally within the quartz veins, the true potential lies in the low grade but widespread gold mineralization within these alteration envelopes.

Secondary oxidation has been determined to reach depths in excess of 100 feet but primary oxidation may be much more extensive. Only minor sulfide mineralization is indicated by spotty secondary copper and iron hydroxides.

Note: No exploration has been conducted outside the known zones of established and indicated mineralization.

#### POTENTIAL FOR MINING

Indications and potential to establish several million tons of ore grading in the range 0.04 - 0.06 oz. Au/ton are rated very good. Known mineralization occurs from surface to as-yet-undetermined depth in gently rolling hills permitting removal downhill from apex to valley floor. The natural contours and topography are conducive to easy construction of leach pads including gravity flow of solutions.

Climate and elevation permit year-round operation and a high degree of leaching efficiency.

Access, energy and water are readily available; so are labor force and a mining-friendly state government.

#### CONCLUSIONS

- i. Gold/Silver mineralization conducive to heap-leach recovery

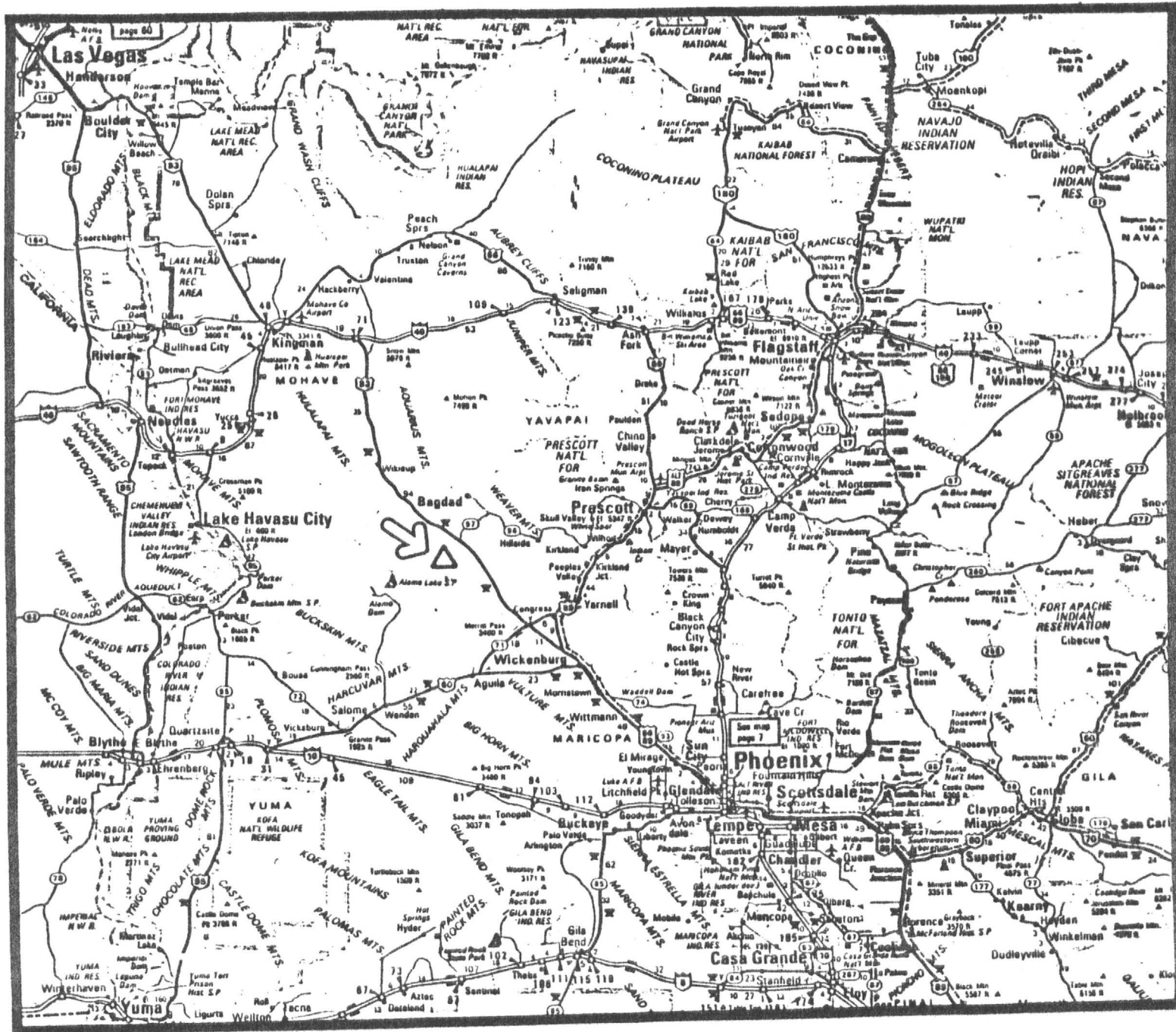
is indicated to occur in sufficient quantity to sustain a mining operation.

- ii. fracturing and jointing of the host rock may permit mine-run ore to be placed on leach pads without crushing.
- iii. neither mineralogical or lithological cyanicides or reaction retardants are known to occur with the ore.
- iv. about \$100,000 worth of preliminary exploration work of acceptable quality has already been conducted.
- v. the property is unexplored to a large extent.
- vi. to test the already known development targets to indicate 2 to 3 million tons of ore will require a maximum of \$450,000 in total including acquisition and maintenance of mineral rights.
- vii. no work commitments other than assessment work are required.
- viii. a rough and conservative cash flow model (Tables 1 and 2) indicates favorable economics based on realistic parameters and assumptions.
- ix. considering the risk level of the project, a joint venture partner should be sought.

#### RECOMMENDATIONS

It is recommended that:

- negotiations for the Big Bend (Organ Grinder) property be finalized.
- efforts be made to secure a joint venture partner.
- a two-year exploration/ore development program be funded with \$500,000 under the operatorship of Gerber Minerals Corporation.



# GERBER MINERALS CORPORATION

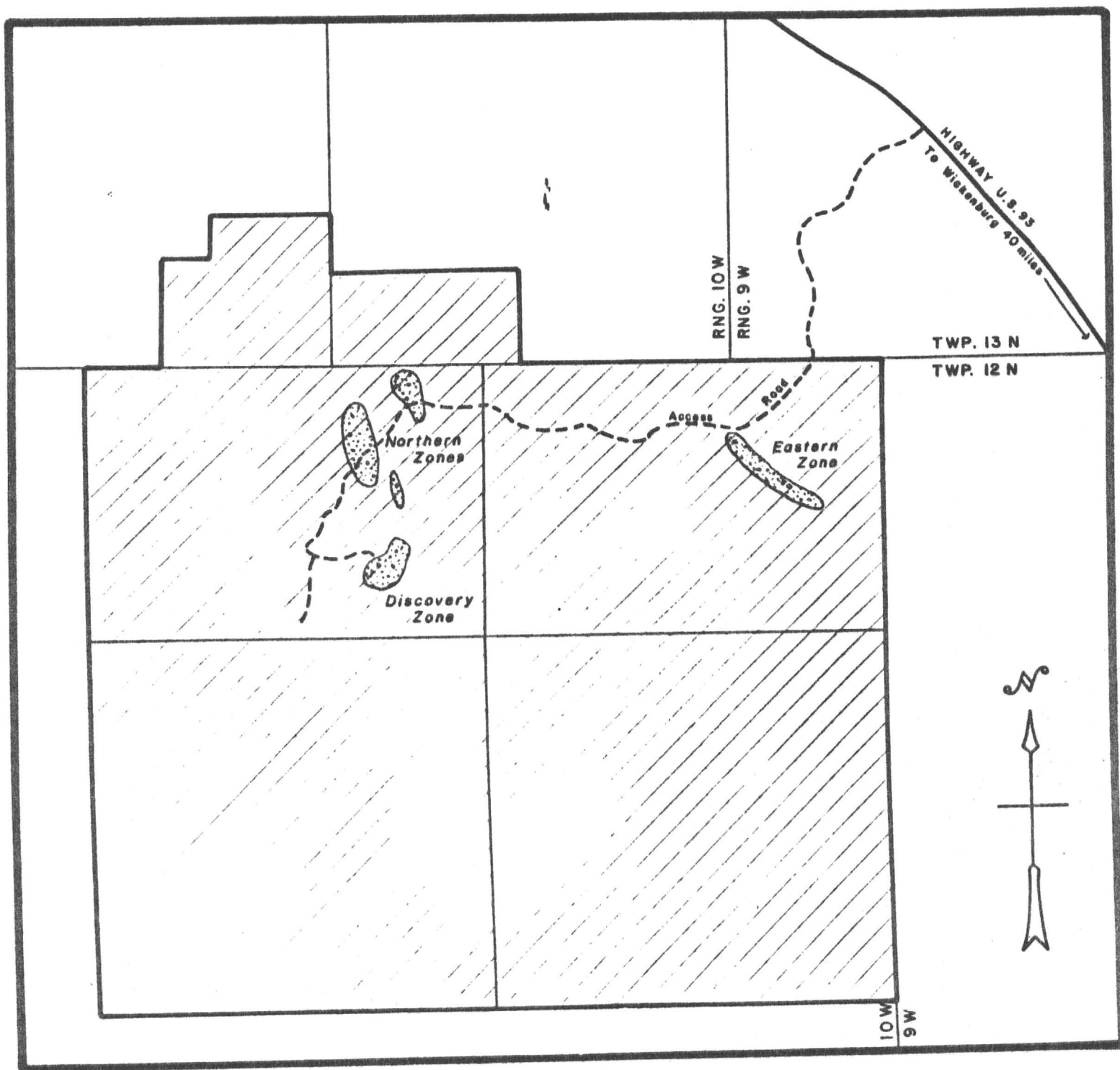
BIG BEND PROPERTY  
YAVAPAI COUNTY, ARIZONA

## LOCATION MAP

Scale : 1" = 36 Miles

November 8, 1984

FIGURE 1



# GERBER MINERALS CORPORATION

BIG BEND PROPERTY  
YAVAPAI COUNTY, ARIZONA

## PROPERTY MAP

Scale : 1" = 2000'

November 8, 1984

FIGURE 2

TABLE 1

HEAP LEACH CASH FLOWS FOR ARIZONA PROJECT, YAVAPAI COUNTY, ARIZONA  
 2,500,000T @.05ozAU/T@350/oz-OPERATING COSTS 5.5/T@ 500,000T/YR FOR 5 YEARS  
 PREPROD 2 YEARS - HEAP REC 70% SMELT REC 98% CAPITAL \$4,500,000PREPROD 2 YEARS

DATE	1985	1986	1987	1988	1989	1990	1991
YEAR	-1	0	1	2	3	4	5
ORE-MEASURED			2500000	2000000	1500000	1000000	500000
ORE-INDICATED			500000	500000	500000	500000	500000
ORE-INFERRED							
ORE-TOTAL			3000000	2500000	2000000	1500000	1000000
MILL RATE TONS/YEAR			0	4	3	2	1
PROPERTY LIFE							
CAPITAL-ACQUISITION	1000000	3000000	4000000				
CAPITAL-IMPROVEMENTS		500000	500000				
CAPITAL-WORKING	1000000	3500000	4500000				
CAPITAL-TOTAL	350	.05	17.5				
ADVANCE ROYALTIES							
ORE VALUE/TON 15% DEPLETION RATE			.98				
ORE VALUE/TON 22% DEPLETION RATE			.7				
MINE DILUTION			0.69				
RECOVERY/15 SMELTER							
RECOVERY/15 MILL							
RECOVERY/15 TOTAL							
RECOVERY/22 SMELTER							
RECOVERY/22 MILL							
RECOVERY/22 TOTAL							
VALUE/TON			12.01				
COST-MINING			2				
COST-MILLING			2.5				
COST-GENERAL AND ADMINISTRATION			1				
COST-TOTAL (OPERATING)			5.5				
BGROSS VALUE-ANNUAL			6002500	6002500	6002500	6002500	6002500
-COST-SMELTER DEPRECIATION			.5				
-COST-SMELTER DEPRECIATION							
-COST-CONCENTRATE HANDLING							
-COST-ROYALTIES			1				
-COST-TOTAL POST-MILLING			500000	500000	500000	500000	500000
-TOTAL POST-MILLING COSTS			4956500	3687500	3632500	3632500	3632500
BASE FOR DEPLETION			2750000	2750000	2750000	2750000	2750000
-DEPRECIATION AND AMORTIZATION			600000	880000	840000	840000	840000
-TAX-LOCAL			3350000	3630000	3590000	3590000	3590000
-COST-TOTAL (OPERATING)			1606500	57500	42500	42500	42500
INCOME-OPERATING			743475	28750	21250	21250	21250
-DEPLETION			863025	28750	21250	21250	21250
INCOME-TAXABLE			396992	13225	9775	9775	9775
TAX-FEDERAL			400000				
-INVESTMENT CREDIT			0	13225	9775	9775	9775
TAX-TOTAL FEDERAL			1909025	2330525	2381475	2381475	2381475
PROFIT			600000	880000	840000	840000	840000
+SMELTER DEPRECIATION AND AMORTIZATION			743475	28750	21250	21250	21250
+MINE AND MILL DEPRECIATION AND AMORTIZATION			1343475	908750	861250	861250	861250
+DEPLETION			3252500	3239275	3242725	3242725	3242725
+CASH FLOW ADDITIONS							0.57
CASH FLOW							
INTERNAL RATE OF RETURN							
GOLD IN KIND							
TOTAL GOLD IN KIND			1046000	2315000	2370000	2370000	2370000
							10471000



DATE	1985	1986	1987	1988	1989	1990	1991
YEAR	-1	0	1	2	3	4	5
ORE-MEASURED							
ORE-INDICATED							
ORE-INFERRED							
ORE-TOTAL							
MILL RATE TONS/YEAR							
PROPERTY LIFE							
CAPITAL-ACQUISITION							
CAPITAL-IMPROVEMENTS							
CAPITAL-WORKING							
CAPITAL-TOTAL							
ADVANCE ROYALTIES							
ORE VALUE/TON 15% DEPLETION RATE							
ORE VALUE/TON 22% DEPLETION RATE							
MINE DILUTION							
RECOVERY/15 SMELTER							
RECOVERY/15 MILL							
RECOVERY/15 TOTAL							
RECOVERY/22 SMELTER							
RECOVERY/22 MILL							
RECOVERY/22 TOTAL							
VALUE/TON							
COST-MINING							
COST-MILLING							
COST-GENERAL AND ADMINISTRATION							
COST-TOTAL (OPERATING)							
GROSS VALUE-ANNUAL							
-COST-SMELTER DEPRECIATION							
-COST-SMELTER DEPRECIATION							
-COST-CONCENTRATE HANDLING							
-COST-ROYALTIES							
-COST-TOTAL POST-MILLING							
-TOTAL POST-MILLING COSTS							
BASE FOR DEPLETION							
-COST-OPERATING							
-DEPRECIATION AND AMORTIZATION							
-TAX-LOCAL							
-COST-TOTAL (OPERATING)							
INCOME-OPERATING							
DEPLETION							
INCOME-TAXABLE							
TAX-FEDERAL							
-INVESTMENT CREDIT							
TAX-TOTAL FEDERAL							
PROFIT							
*SMELTER DEPRECIATION AND AMORTIZATION							
*MINE AND MILL DEPRECIATION AND AMORTIZATION							
*DEPLETION							
*CASH FLOW ADDITIONS							
CASH FLOW							
INTERNAL RATE OF RETURN							
*SOLD IN KIND							
TOTAL GOLD IN KIND							

ORGAN GRINDER DRILL HOLES

JANUARY - 1984

SAMPLES retained for Bill Poe at his request for further testing;  
remainder to be discarded.

Gold Assays (F.A. + A.A.)

Hole	From	To	North American		Acme oz/ton
			PPM	oz/ton	
A-1	25	30	0.33	0.009	0.014
	30	35	0.93	0.027	0.044
	35	40	0.77	0.022	0.037
C-1	45	50	0.85	0.024	0.032
	60	65	<0.01	-	0.001
D-1	60	65	1.08	0.031	0.051
	30	35	<0.01	-	-
E-1	55	60	2.54	0.074	0.088
	30	35	0.01	-	-
*A-2	70	75	0.51	0.015	
	75	80	2.73	0.079	
	80	85	2.38	0.069	
*B-1	90	95	0.03	0.0008	
	95	100	0.03	0.0008	

*L. S. Greenholm*

\*North American shipping these by air to Vancouver January 9/84

Bill Bert Smith has been given the list (minus assay)  
over the phone and I have prepaid his field work.  
Will send complete assay list later.

LST



A444 - c.g. white, clear gtz with some silicified granite, some FeOx + casts in vuggy areas in gtz. - could run OK

444. 475

$$= 7.02 \text{ qft}$$


140 50.5 = 7090

**SPENDING**



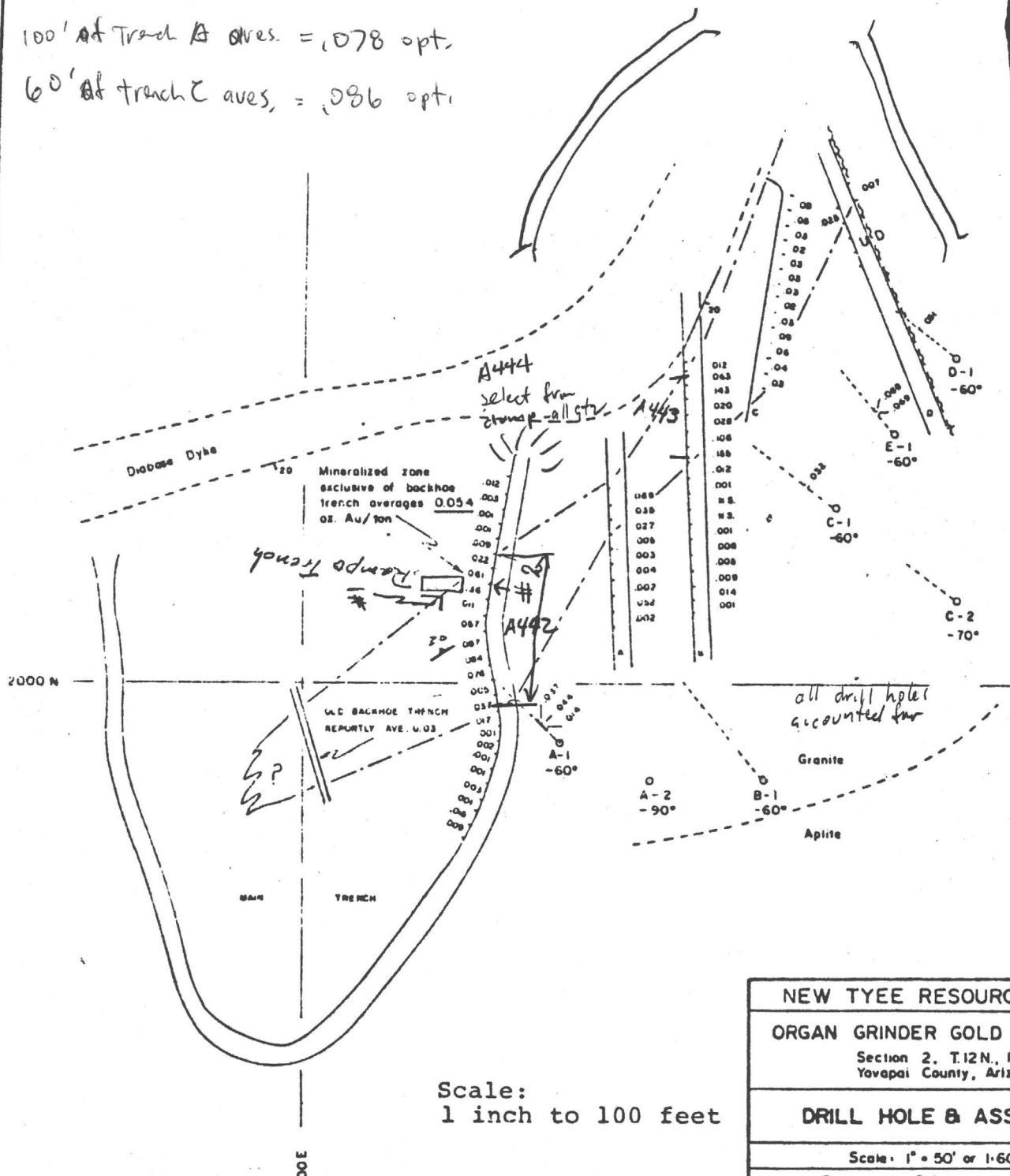
1

A442, 443 - crushed orange-red granite  
 - crush foliation ~ NE, 30° NW - stuff  
 looks dead - c.g. PE granite, occas. zones  
 w/ sooty FeOx along fracts and red stain -  
 rare, thin (L/I) qtz veins. - local mafic  
 dike intru. -

A444 - c.g. white, clear qtz with some silicified  
 granite, some FeOx + casts in vuggy areas  
 in qtz. - could run OK

100' At Trench A aues. = .078 opt.

60' At Trench C aues. = .086 opt.



NEW TYEE RESOURCES LTD.

ORGAN GRINDER GOLD PROPERTY

Section 2, T.12N., R.10W.  
 Yavapai County, Arizona

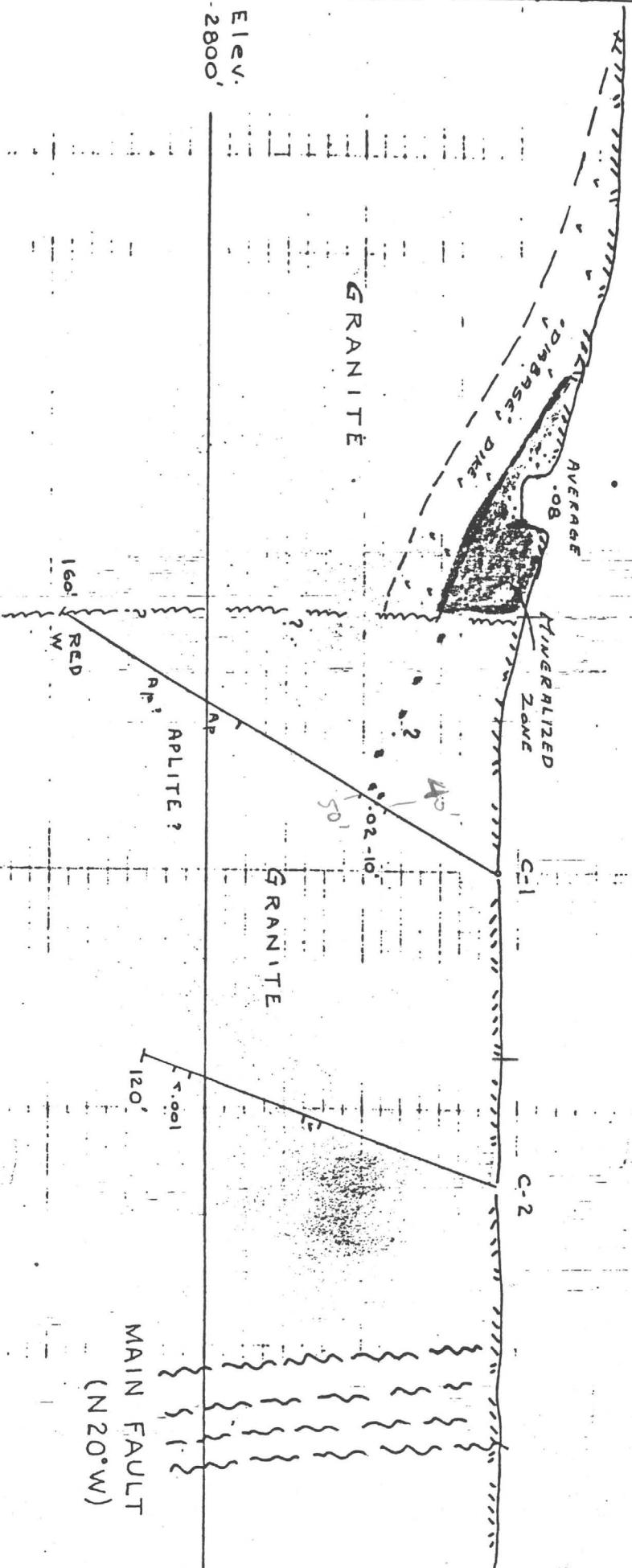
DRILL HOLE & ASSAY MAP

Scale: 1" = 50' or 1:600

Geology by D.A. Howard P. Eng.

D.D.M. GEOMANAGEMENT LTD.

٤٠٠



Section "C"

## Rotary Reverse Circulation

## Drill Holes

January - 1984

Scale: 1 inch = 50 feet

New Tyee Resources, Inc.

### Organ Grinder Option

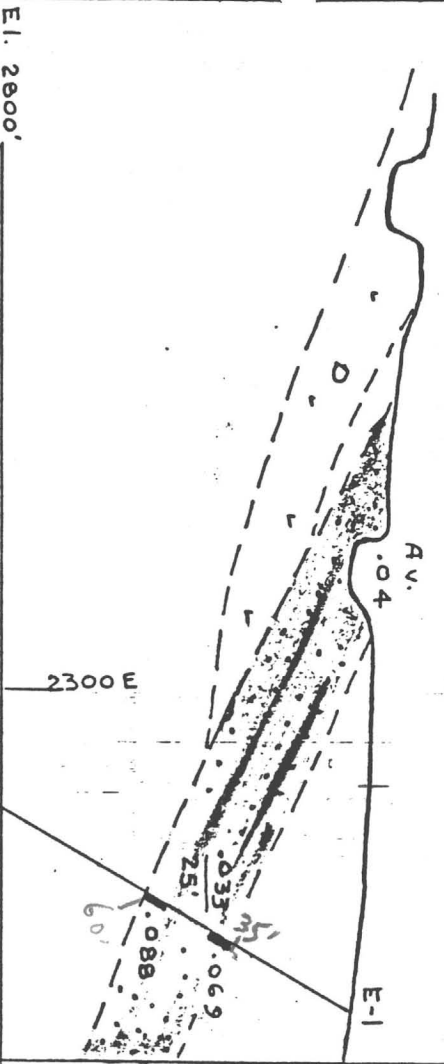
S.E.  $\frac{1}{4}$  Sect. 2, Twp. 12N R10W

Yavapai County, Az.

Assays: oz. gold/ton - feet

N 40° W

SECTION "E"

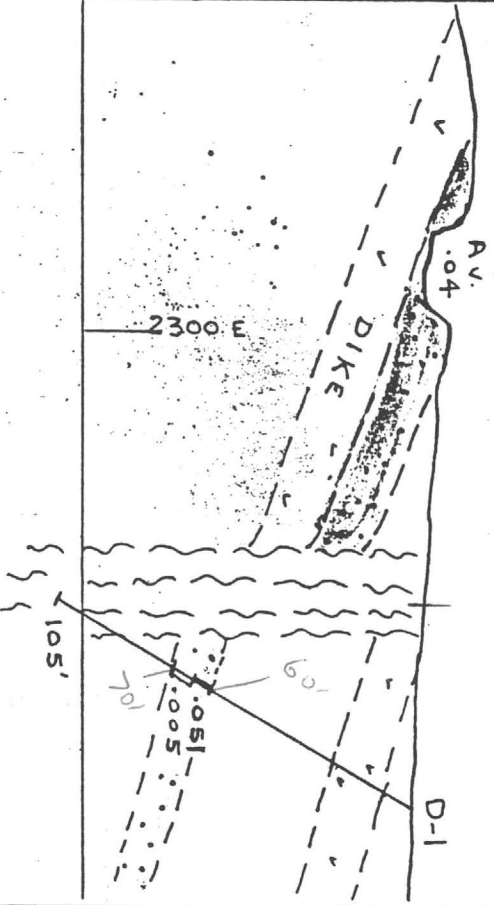


0 50 100  
FEET

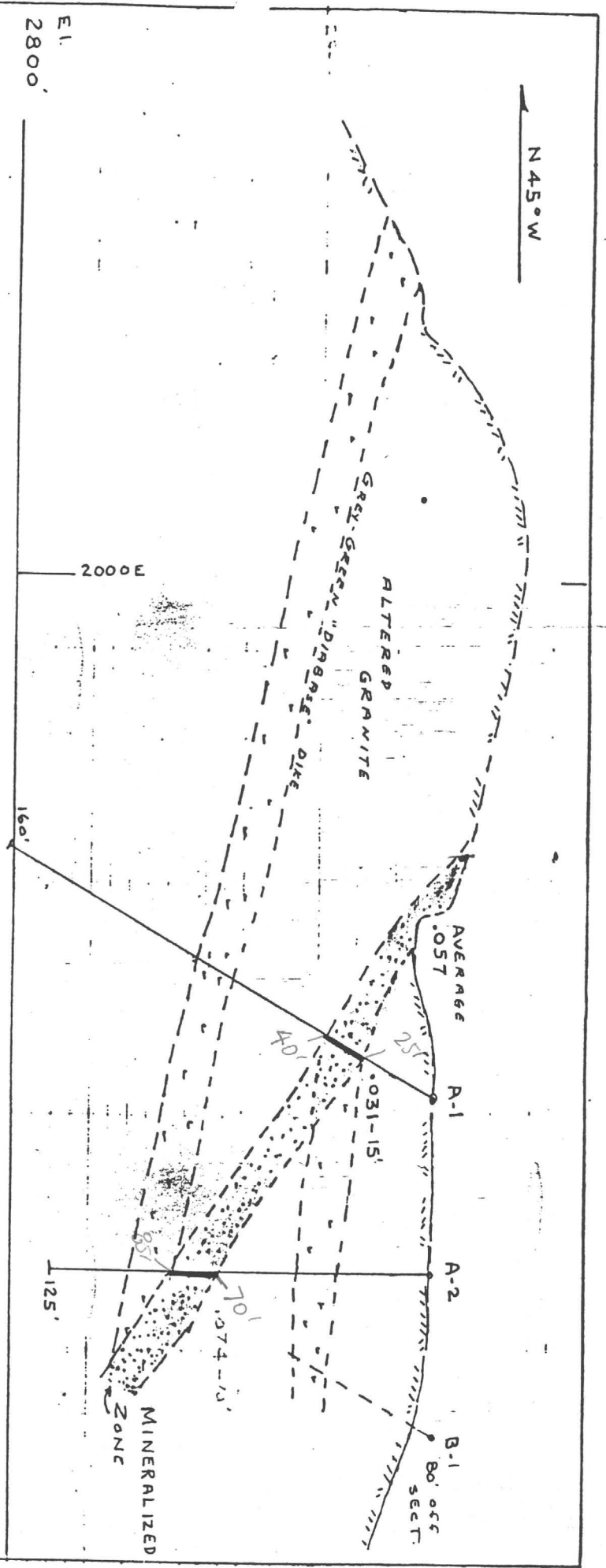
SECTION  
Rotary Reverse Circulation  
Drill Holes  
January - 1984

N 50° W

SECTION "D"



New Tyee Resources, Inc.  
Organ Grinder Option  
S.E. 1/4 Sect. 2, Twp. 12N R10W  
Yavapai County, Ariz.  
Assays: oz. gold/ton - feet



El.  
2800'

Section "A"

Rotary Reverse Circulation  
Drill Holes

January - 1984

Scale: 1 inch = 50 feet

New Tyee Resources, Inc.

Organ Grinder Option

S.E. 1/4 Sect. 2, Twp. 12N R10W

Yavapai County, Az.

Assays: oz. gold/ton - feet

N 40° W

B-1  
APLITE  
DIP?

AV. 04

MINERALIZER  
DIKE  
DIKE

GRANITE

0 50 100  
FEET

El. 2800'

165'

# SECTION B

Rotary Reverse Circulation  
Drill Holes

January - 1984

New Tyee Resources, Inc.

Organ Grinder Option

S.E. ¼ Sect. 2, Twp. 12N R10W

Yavapai County, Ariz.

Assays: oz. gold/ton - feet

2100 E

July 29, 1979

Mr. Melvin H. Jones  
Box 1196  
Wickenburg, Arizona

Re: Organ Grinder Claims S.2 S.2 S.W., Sec. 36, T. 13N, R. 10W.,  
Salt River Basin Meridian, Yavapai County, Arizona.

Dear Sir:

On June 25, 1979, as per your request, I made a preliminary survey of the geology and economic minerals of the eastern part of the Organ Grinder Claims at the location described above. Additional information was gained from publications of the Arizona Bureau of Geology and Mineral Technology.

The geologic environment in the Organ Grinder Claims area appears deceptively simple. There are numerous exposures of plutonic intrusives (Yavapai Series (?)) of Precambrian (?) Age which appear to be either granite or quartz monzonite. Some of this rock is of unusual crystalline structure with phenocrysts ( $\frac{1}{2}$ " - 1") of feldspar in a coarse-grained ground mass of minerals typical of granitic-type rocks.

These phenocrysts fail to exhibit the striations generally found on at least one of the cleavage faces of plagioclase. For this reason and others (alteration debris, color), I prefer (in the absence of petrographic or spectrographic analysis) to identify the phenocrysts as orthoclase (or microcline?). Intruded into this granitic-type rock are numerous dikes or veins of pink-stained quartz, some of sufficient thickness to provide topographic expression because of their superior resistance to weathering and erosion.

To the west (as well as considerably south) of your claims are vast exposures of metamorphosed plutonic rock of unknown age (Precambrian (?)). The portion of this gneiss nearest the Organ Grinder Claims is covered with Cenozoic basalts. The same basalts extruded over large areas of granitic-type rocks north and east of the claim area. These basalts are discontinuous today but the large basalt dike which intersects the creek bed approximately 200 yards S.W. of the existing adit indicates the flows covered the entire region at some time in the past. The volcanics are probably of Late-Middle Tertiary Age.

25/79



The margins of the siliceous veins in the plutonic rock are surprisingly difficult to delineate. As a result of this fact, the chip-channel sample I secured from the Adit was from a 40" vertical line which was central to and about one half the height of the adit. The sample location was approximately 30' from the portal of the 100' long adit and approximately 2' short of the end of the timbering on the left side of the adit. This sample was marked Number 1. The strike of the adit vein is N. 10° E. and the dip is approximately 15° E.

The second and third samples were taken in an exploration pit located approximately 175' N. 40° W. of the adit portal. The entire exposed section of quartzose rock (approximately 30") furnished 2 chip-channel samples. The sample from the southern end of the pit was marked Number 2. The third sample (Number 3) was taken from the N.W. side of the pit as a check on the consistency of the vein and assayer. The exposure was insufficient to establish strike and dip.

After nominal crushing and quartering, samples averaging about 12 oz. each were sent to Robert E. Craig & Co., Sun Valley, California, for fire assays for gold only. (The silver assay was done inadvertently—not at my request). I have enclosed the assayer's report.

The average assay of 0.116 oz. of gold per ton of rock is disappointing but not unexpected since this claim obviously has been investigated before. The fact that substantial values were found in all three assays, makes the Organ Grinder Claims an unusual mineralized area. If sufficient contiguous volume of gold-bearing rock can be established on the claims, a large-scale operation with ore of this value is economically feasible.

A search of the records of gold placers of Arizona, shows no successful placer mining operations in any portion of the drainage area down-stream from the Organ Grinder Claims. This suggests a study of the size of gold particles might be important in an evaluation of the claims. If free-milling gold that can be panned is present in the lode, this would be a negative indication for widespread gold mineralization.

I suggest and recommend the following:

1. Secure appropriate permits and leases from the state of Arizona. (This is a state-owned section.)
2. Map and sample all siliceous outcrops on the claims.

B305

3. If steps 1 and 2 are encouraging, contract for limited exploration drilling.

If you have any questions concerning this report on the Organ Grinder Claims or would like a joint visit to the claims, please advise. I plan to be in Central Arizona near the end of August.

Sincerely yours,

1 Encl  
As stated

GEORGE E. FENDICK  
B.E. (Civil Engineering)  
M.S. (Geology)  
Mining Consultant

5814 Eaton Street  
Los Angeles, CA 90042

GEF/lcb

*Booth*

25 February 1980.

MEMORANDUM FOR THE RECORD.

Organ Grinder Gold claims, <sup>Arroyo</sup> ~~Hualapai~~ Mountains, <sup>Yavapai</sup> ~~Mojave~~ County,  
S. of Wickieup, Arizona near Santa Maria river. Secs. 35-36.  
T-13-N, R-10-W, SR B&M.

This is to confirm other reports, and information, on the above mentioned gold claims. These claims contain Au veins in hard rock. Ore samples were taken by Henry Bains (Circle City, Arizona) and the writer, on January 3, 1980. Mr. Francis Campbell (Circle City, Az.) accompanied the samplers.

Samples and assay results follow (See Incls. #1 and #2):

Sample #1. Chip Channel cut of vein at portal of Adit. Assay Report gives 0.37 oz. per ton Au. At today's prices, this ore is valued at \$238.65 per ton.

Sample #2. Composite grab sample of outcrop on claims some distance to the West of Sample #1 (along high ridge). Assay report shows 0.48 oz. per ton Au. At today's prices this is valued at \$309.60 per ton of ore.

Sample #4. Grab sample from outcrop to the South of Sample #1. Report shows 0.65 oz. Au per ton. At today's prices this ore is valued at \$419.25 per ton.

The above samples were taken by Mr. Bains.

Sample "Cottonwood W." was taken by the writer, from silicious outcrops (stained brown by small amounts of ferric iron). This was a composite sample taken from Cottonwood wash, below the claims to the South. The assay showed only a trace of Au.

The Organ Grinder claims merit extensive additional exploration

*Melvin H. Jones*

1601 Sandhill Rd. #36  
Las Vegas, Nev. 89104  
ph. 457 2175

# Arizona Testing Laboratories

817 West Madison • Phoenix, Arizona 85007 • Telephone 254-6181

For Mr. Henry Bain  
Post Office Box 297  
Morristown, AZ. 85342

Date January 16, 1980

## ASSAY CERTIFICATE

LAB NO.	IDENTIFICATION	OZ. PER TON		PERCENTAGES			
		GOLD	SILVER	COPPER			
3777	#1	0.37	<i>mine ported. for west prospect. Seely</i>				
	#3	0.48					
	#4	0.65					

Respectfully submitted,

ARIZONA TESTING LABOR

*Claude E. McLean, Jr.*  
Claude E. McLean, Jr.



Grab samples taken by the undersigned Feb., 27, 1975 (see map Exhibit B):

#1 Composite grab sample of several small exploration pits on small hill N. of Cottonwood wash, Claim No. 8.	Au .05 oz.	Ag .32
#2 Grab sample on small pit on claim No. 7. Vein size obscured.	.20 oz.	.40
#3 Grab sample from 2 foot vein on inclined shaft portal, Claim No. 2.	.60 oz.	.40
#4 Grab sample from 6 foot wide outcrop in Cottonwood wash, Claim No. 5.	.14 oz.	2.06
<u>The average of the foregoing is:</u>	<u>.25 oz.</u>	<u>1.94</u>

Chip channel samples taken by the undersigned May 1, 1975 (see map Exhibit B): (Sample location marked with white paint),

A. Inclined shaft collar sample. 2½ foot vein.	Au .22 oz.	Ag 1.78
B. Small open pit near top of small hill. 2 ft. vein. Sample from both sides of pit. Claim No. 1.	.42 oz.	1.12
C. Small pit on side of small wash. 2 foot vein. Near road. claim No. 3.	.10 oz.	1.150
D. Cottonwood-wash, n. side. 2½ foot vein, claim No. 5.	.12 oz.	.48
E. Cotton wood wash, n. side. 2½ foot vein, claim No. 7.	.04 oz.	.56
<u>The average of the foregoing is:</u>	<u>.18 oz.</u>	<u>1.01</u>

It is pointed out that the above sampling, by the writer, is too limited to be conclusive, and is inadequate to determine the potential value of the claims. It confirms to a degree, the sampling assays of Mr. Bain (which were also added to this report)

There is minor copper on the property, in a sporadic pattern but insufficient to be of commercial value at today's prices. There is also minor silver as the above assays indicate.

From the cursory examination of the claims, as outlined above, the claims have much merit as a potential gold producer. While not so indicated by the above assays, the undersigned is of the opinion that claims nos. 7 and 8 merit more investigation as a possible large body of ore.

Recommend painstaking channel cut sampling, mapping of ore outcrops, followed by a drilling program.

*Melvin H. Jones*  
MELVIN H. JONES  
Mining Geologist.

Box 406  
Wickenburg, Arizona. 85358



Analysis No. 12329  
July 21, 1979

Samples submitted by;  
George E. Bundick  
5814 Eaton Street  
Los Angeles, California. 90042

Au - Gold .142 oz. per ton  
Ag - Silver .34 oz. per ton

SAMPLE MARK: #1 Vein Inside Adit  
= \$42.38 per ton  
= \$ 3.16 per ton

Au - Gold .097 oz. per ton  
Ag - Silver .21 oz. per ton

SAMPLE MARK: #2 Exploration Pit-S  
= \$28.95 per ton  
= \$ 1.95 per ton

Au - Gold .109 oz. per ton  
Ag - Silver .29 oz. per ton  
Analysis and report; by  
ROBERT E. CRAIG & COMPANY

SAMPLE MARK: #3 Exploration Pit-NW  
= \$32.53 per ton  
= \$ 2.69 per ton

*Robert E. Craig*  
Robert E. Craig

GOLD @\$298.50 per oz.  
SILVER @\$9.30 per oz.



12 May 1975.

AMENDED REPORT

RECONNAISSANCE GEOLOGICAL INVESTIGATION OF THE BIG BEN GOLD CLAIMS,  
4 1/2 miles NW Wickenburg, Aravaipa Mountains, Yavapai County, Arizona.

The undersigned, accompanied by Mr. D.D. Seely, box 74, Silver Lake, Kansas, 66530 and Mr. Henry Bain, 41711 Grand River, Novi, Michigan, 48050 (owners of the Big Ben claims), examined the nine (9) lode claims comprising the Big Ben group on February 27, 1975. Then again, visited the claims on May 1, 1975, with Mr. Seely, who was arranging to have some annual assessment work accomplished.

The claims are in Yavapai County and two (2) miles west of US highway 93 (on orite the turnoff to Gardad, Arizona). See attached map "A". The main reason for amending this report is, that the original mapping data was erroneous. Messrs. Seely and Bain spend their winters in Wickenburg, Arizona and use their spare time for prospecting. Mr. Seely, operated the Hidden Treasure mine, out of Salome, Arizona, many years ago.

The general area of the claims is Pre-Cambrian pluton granitic rocks. Some ~~are~~ granitic granites are there, that are very interesting in that they have large phenocrysts and laths of feldspar. Some laths are several inches in length. In the mentioned formation, are faults, joints, and fissures containing auriferous bearing minerals megascopically identified as reddish felsites, feldspars, and iron stained quartz. These minerals are much younger than the granitic rocks.

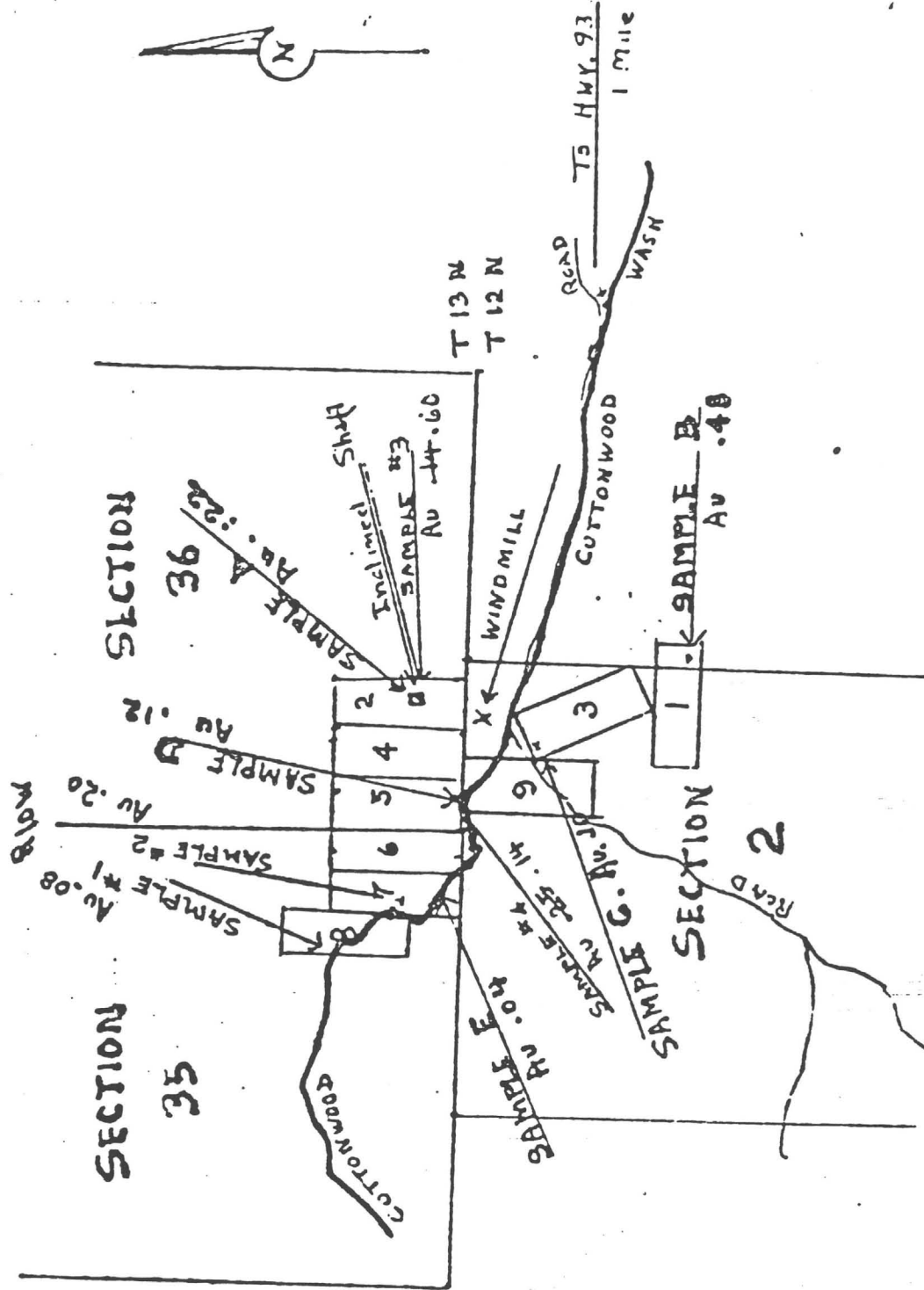
On claim, Big Ben No.2 is an old inclined shaft dipping about 25 deg. to the North for about 200 feet and then drifting to the right about 50 feet (I am told). I am also told there is a winze therein. It was not explored by the writer, as the portal is caved in, with only a small opening. The shaft apparently follows about a 2 foot vein of reddish gold bearing quartz. Two (2) samples were taken from the portal area (see samples outlined below and map B)

The Big Ben claims generally trend to the west along Cottonwood wash and several outcrops of apparent gold bearing rock were noted. Several of these outcrops are in excess of six (6) feet in width. There are several old prospect holes on the hills on the side of the wash. Apparently these old workings are 40 or more years old. There is no evidence of recent mining operations.

Reference the Henry Bain assay reports which are attached for background information. (Exhibits C and D). The writer does not have specific information as to where each sample was obtained. All samples were "grab" samples, according to Mr. Bain:

SAMPLE ANALYSIS

	AVERAGE GRADE	
	AS	AP
Report 12-1-74	.86/oz.	2.43 oz.
Report 12-31-74	.42 oz.	1.29 oz.
Report 1-13-75	.36 oz.	1.01 oz.
Report 1-27-75	2.91 oz.	4.60 oz.
Report 3-16-75 (See bank #1)	.24 oz.	.86 oz.
Average of above	.95 oz.	2.05 oz.



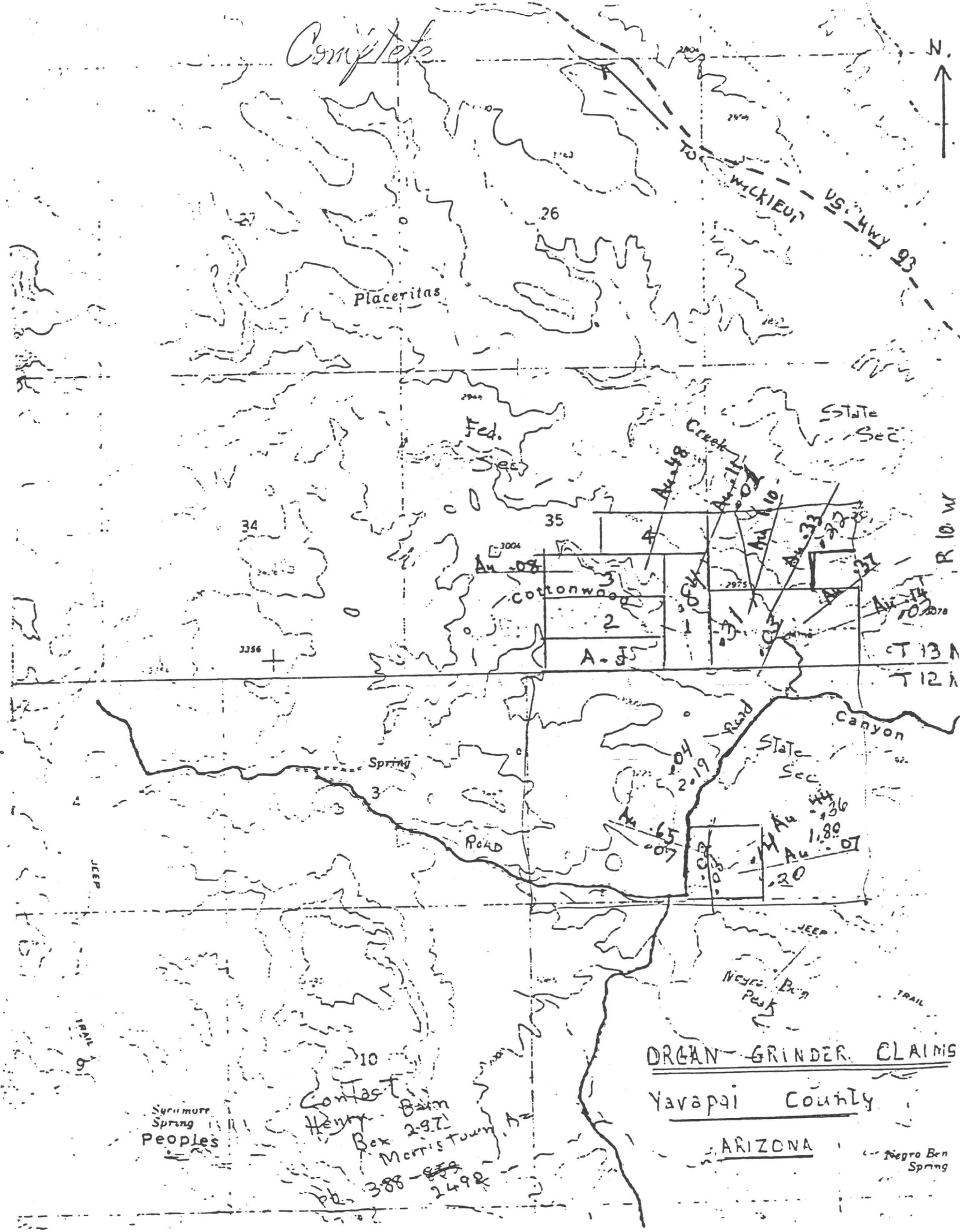
# BIG BEN CLAIMS

Approx. Locations

Showing Sampling (initial)



Complete



ORGAN GRINDER CLAIMS

Yavapai County

ARIZONA

Negro Ben Spring

#### HIMAC RESOURCES LTD.

**OPTION ON ARIZONA GOLD CLAIMS SOUGHT** - For the past 2 months Himac Resources Ltd. have been searching for precious metal properties of merit in the SW U.S. and have selected several for possible acquisition. In particular, Himac are negotiating to take an option on the Big Ben property 40 miles north of Wickenburg, Arizona, adjoining the Organ Grinder property now being investigated by New Tyee Resources Ltd.

Reporting this, vice-president L.S. Trenholme, P. Eng., says the Big Ben property embraces a large and conspicuous surface colour anomaly attributed to oxidation of iron sulphides in fractured and sheared Precambrian granite. Within this, several old shafts and pits have been sunk on quartz veins and stringers up to 10 inches wide. Recent random sampling of vein material from 5 locations in a 600 by 300 foot area returned gold assays ranging from 0.042 to 0.724 oz/ton and averaging 0.306 oz gold and 0.76 oz silver per ton.

In view of encouraging results from trenching a similar geological setting half a mile to the south on the Organ Grinder property, it is reasonable to expect that the altered granite containing the gold-bearing quartz veins on the Big Ben property may itself be gold bearing; if so, there appears to be potential for very large reserves of open-pit ore amenable to heap leaching.

Subject to regulatory approval of the agreement, Himac will proceed promptly with bulk sampling by trenching and rotary drilling.

#### NEW TYEE RESOURCES LTD.

**DRILLING ON ARIZONA GOLD PROPERTY STARTED** - Hiro Ogata, president of New Tyee Resources Ltd. announces that reverse circulation rotary drilling has started on the Organ Grinder property, 40 miles north of Wickenburg, Arizona. This initial drilling phase is being supervised by vice president L.S. Trenholme, P.Eng., and consultant D. Howard, P.Eng. The aim is to confirm the downward extension of significant gold mineralization in trenches in shattered and altered Precambrian granitic rocks.

The first 3 holes have been completed to an average depth of 150 feet. Material from the holes is being sent to North American Laboratories in Phoenix with check assays being done by Acme Analytical Laboratories in Vancouver, B.C.

#### NEW TYEE RESOURCES LTD.

#### HIMAC RESOURCES LTD.

**SECOND PHASE DRILLING RECOMMENDED FOR ARIZONA GOLD PROJECT** - New Tyee Resources Ltd. has reported the first stage of drilling 7 reverse circulation holes on the Organ Grinder property in Yavapai county, Arizona has been completed. The Discovery Zone, previously defined over a 600-foot strike length by surface samples, averaged 0.056 ounce gold per ton. The recent drilling program has now confirmed that the zone is associated with a low angle thrust and that it extends down dip in excess of 150 feet and is still open. The average grade of the mineralized zone, based on final assays from the four holes (A-1, C-1, D-1, E-1) received to date, is 0.042 ounce gold per ton over a true thickness of 10 feet. Preliminary assays, to be checked, from the deepest intersection, in Hole A-2, show a substantial improvement in grade down dip.

New Tyee's position in this area has been enhanced by the joint acquisition, with Himac Resources Ltd., of an option on the adjacent Big Ben property (New Tyee 60%, Himac 40%) where a geochemical soil survey has been completed recently over a portion of an extensive alteration zone. The survey has defined a strongly anomalous zone of gold mineralization measuring approximately 400 feet by 800 feet and open to the west. This is considerably larger and appears to be a higher grade than the original Organ Grinder zone. It contains numerous old pits and shallow shafts from which random samples of vein material have assayed from 0.114 to 0.724 ounce gold per ton. The exploration program is seeking large reserves of open-pit gold ore amenable to heap leaching.

D. Howard P.Eng., recommends the next phase of exploration be diamond drilling to better define the structural controls of mineralization, followed by an extensive program of rotary and/or percussion drilling to block out the deposit.

# ANGLO CANADIAN MINING CORPORATION (ANP) - CONTINUED

The Cowan gold property is close to existing infrastructure, such as the custom milling facility at nearby Beardmore. With the strong possibility of low capital cost to get the property started and the encouraging results to date, we believe this an exciting and attractive prospect.

## ARK ENERGY LTD. (ARK)

H.L. Willaims, President, has announced that fine, visible, native gold was exposed in 2 new trenches S of the Pond Zone on the Leach Claims in Yavapai County, Arizona. The trenches are about 75' to 100' long and 50' apart running parallel to each other. These trenches will be sampled and assayed. Additional trenching will be bulldozed to further expose this exciting new discovery.

Previous leach tests, "bottle agitation and column leach tests", were carried out on a 500 lb. bulk sample from the West Zone that averaged 0.171 oz/T Au of ore with a recovery of 72.2% by Western Testing Laboratories confirming these ores are amenable to heap leaching.

Ark Energy Ltd. owns 100% of the leach claims subject only to a 15% net profit carried interest.

## CAPRI RESOURCES LTD. (CPI)

F. Holcapek, P. Eng., Director, has announced assay results for the 3 final diamond drill cores, and the drill logs for all 7 NQ diamond drill holes, have been received. A comparison of assays and drill logs indicates the following:

- 1) Casing in the 7 holes averaged 40', hence sections of exposed granodiorite - quartz stockwork showing ore potential have not been recovered - no samples.
- 2) Circulation was lost in every hole at bedrock, and therefore no sludge samples could be taken.
- 3) Zones of quartz veining or quartz stockwork gave extremely low core recovery (10% to 40%). This is due to associated soft bands of strong oxidation, which were washed away.
- 4) Because of the above, assay values are low and can only be taken as a guideline of mineralization.

D.D.H. #5 - This hole was drilled at -50°, in direction S 45° W, and was located 310' SW of DDH #3. The purpose of this drill hole was to test the section between the King Vein and the Quartzite Vein.

Results - Casing from 0 to 20'. Lost circulation at 20'. From 20 to 116', we encountered intensive quartz stockwork within silicified and intensively sheared schistose argillites. Average core recovery was 45%. Low gold values were encountered over nearly entire core length.

D.D.H. #6 - This hole was drilled at -50°, in direction S 45° W, and was located 460' SW of DDH #1. The purpose of this drill hole was to test outcropping quartz stockwork in granodiorite and also to intersect the Colt Vein.

Results - Casing from 0 to 42'. Lost circulation at 42'. From 42 to 95', we intersected quartz stockwork in granodiorite. Only 40% of core was recovered. From 67 to 71.5', a quartz vein (Colt Vein) was cut and, from 76 to 82', we discovered an unknown quartz vein. Only 25% of core in this latter vein was recovered.

### Assays

Interval	Width	Gold Grade	Description
67.0 - 71.5'	4.5'	.346 oz/T	Quartz fragments, 40% Recovery
71.5 - 76.0'	4.5'	.005 oz/T	Granite & Quartz, 50% Recovery
76.0 - 82.0'	6.0'	.006 oz/T	Quartz fragments, 25% Recovery
67.0 - 82.0'	15.0'	.108 oz/T	Average of above

D.D.H. #7 - This hole was drilled at 90° and location was the same set up as DDH #6. The purpose of this drill hole was to test quartz stockwork and intersect the Colt Vein.

Results - Casing from 0 - 90'. Hit Colt drift at 90'. The target zone was above the drift and therefore no core was recovered.

Drift samples from the Colt Vein, as reported by Hogg in his 1926 report, assayed as follows:

Sample #	Location	Width	Gold	Description
133	13' N of X-Cut Tunnel	2.5'	0.46 oz/T	oxidized breccia incl. .5' quartz in granodiorite
134	35' N of Tunnel	2.5'	0.505 oz/T	oxidized material & quartz vein

Results - Results of the assays are considered inconclusive because of poor recovery; and, in some cases, no recovery of core in sections of interest. The area of DDH #5 has to be resampled, possibly by bulk samples from surface trenches. DDH #6 and #7 definitely intersected a wide zone of quartz stockwork in granodiorite and the Colt Vein System, showing values.

A comparison of the Hogg underground samples, from the Colt workings, with the diamond drill core samples shows a large discrepancy which is apparently caused by loss of oxidized breccia material from core samples. A summary report on all results of the diamond drill program is now being prepared.

## BLUE SKY OIL & GAS LTD. (BKY) (BKY.PRA)

B.W. Harrison, President, has announced that for the 9 months ended January 31/84, Bluesky's cash flow from operations and net income, before extraordinary income, increased by 62% over the corresponding period last year. Cash flow for the first 9 months was \$13,176,391 or 48.7¢ per share vs. \$8,119,848 or 30.7¢ per share in the same period last year. Net income, before extraordinary income, totalled \$6,150,933 or 22.7¢ per share as compared to \$3,787,519 or 14.3¢ per share for the corresponding period last year. Including an extraordinary gain on the sale of securities, earnings per share for the 9 months were \$6,922,878 or 25.6¢.

# GERBER MINERALS CORPORATION

ONE TAMARAC SQUARE BLDG. • 7555 EAST HAMPDEN AVENUE, SUITE 413 • DENVER, CO 80231  
PHONE (303) 695-6976 • TELEX 45-0162 BLACK GOLD DVR

February 27, 1985

Mr. Gary Parkison  
Nicor Mineral Ventures  
2341 South Friebus Avenue  
Suite 12  
Tucson, Arizona 85713

Re: Big Bend Property

Dear Mr. Parkison:

Further to our conversation on the telephone I am sending you all the material in my possession regarding work by New Tyee/Himac et al.

Gerber Minerals is currently under the terms of the lease including state lease rentals and bonding.

For a 60% interest in a joint venture between Gerber Minerals and a partner, the partner, is expected to assume all direct cost for acquisition and exploration up to \$300,000 at which point Gerber Minerals will contribute proportionately to its share (40%).

We appreciate your interest in our Company.

Very truly yours,

GERBER MINERALS CORPORATION



Bernhard Free  
President

BF; smw  
encl.

# GERBER MINERALS CORPORATION

ONE TAMARAC SQUARE BLDG. • 7555 EAST HAMPDEN AVENUE, SUITE 413 • DENVER, CO 80231  
PHONE (303) 695-6976 • TELEX 45-0162 BLACK GOLD DVR

December 11, 1984

Mr. Clancy J. Wendt  
District Manager  
Nicor Minerals Venture  
2341 South Friebus Avenue  
Suite 12  
Tucson, Arizona 85713

Re: Arizona Gold Prospect

Dear Mr. Wendt:

Sequential to our recent conversation in Spokane I am sending you a brief report on our gold prospect in Arizona.

As a matter of policy we joint venture our prospects after we have completed the acquisition and initial evaluation. Raw data and other information from the property are on file in our office if required.

If you or any of your staff wishes to visit the property contact Bill Poe at (602) 855-4428 in Lake Havasu City. Bill will be happy to give a tour although the property can readily be found by the map and access description.

Please let me know of your decision at your earliest convenience.

Best wishes for the Seasons.

Very truly yours,

GERBER MINERALS CORPORATION



Bernhard Free  
President

BF/smw

Encl.

Bill Poe  
Lk Hav. City  
602-885-4428  
Rampco Inc. -  
Gerber Minerals  
206

MINING LEASE

This Mining Lease (hereinafter, "Lease" is made and entered into effective as of the 5th day of December, 1984 by and between RAMPO, Inc. (hereinafter referred to as "Owner"), and Gerber Minerals Corporation, a Colorado corporation qualified to do business in Arizona, lessee (hereinafter referred to as "Lessee"), which has an office and place of business at 7555 E. Hampden Avenue, Suite 413, Denver, Colorado 80231.

Recitals

A. Owner owns certain unpatented mining claims and Arizona Prospecting Permits situated in Yavapai County, State of Arizona and more particularly described in Exhibit "A" attached hereto and by this reference incorporated herein.

B. Owner desires to grant unto Lessee, and Lessee desires to acquire from Owner, a mining lease of such unpatented mining claims and Arizona Prospecting Permits pursuant to which Lessee will have the sole and exclusive right to explore for, develop, extract, mine, market, sell or otherwise dispose of all locatable minerals therefrom.

Agreement

Now, therefore, for and in consideration of the Production Royalty and/or Minimum Royalty Payments and mutual covenants contained and provided for herein, the receipt and sufficiency of which are hereby admitted and acknowledged, the parties hereto agree as follows:

1. Grant

(a) Owner hereby grants, leases, lets and demises unto Lessee, its successors and assigns, all of the lands described in Exhibit "A", together with all of the rights, privileges, and easements thereto incident (all of which is hereinafter called the "Premises", for the purpose and with the sole and exclusive right and privilege during the term of this Lease of exploring for, developing, mining, treating, shipping, and other-



wise exploiting and disposing of any and all locatable metals, ores, and minerals of every kind and character whatsoever, precious and base, metallic and non-metallic, which are or may hereafter be found in, on, or under the Premises (hereinafter called the "Subject Minerals").

(b) Owner further grants to Lessee the sole and exclusive right and privilege to do any and all things which Lessee shall deem necessary to accomplish any or all of the purposes and rights set forth in this Lease, including, without limitation, the sole and exclusive right and privilege to enter as far as Owner has control upon the Premises for purposes of surveying, exploring for, prospecting for, sampling, drilling, developing, mining (whether by underground, strip, open pit, solution mining or other methods), stockpiling, removing, shipping, processing, marketing or otherwise disposing of any of the Subject Minerals; to construct, use, maintain, repair, replace, and relocate buildings, roads, tailing ponds, waste dumps, ditches, pipelines, power and communication lines, structures, mills, processing facilities, utilities, and other improvements and facilities reasonably required by Lessee for the full enjoyment of the Premises for the purposes set forth in this Lease; to use so much of the Premises and the surface controlled by Owner and subsurface thereof as may be reasonably necessary, convenient or suitable for the storage, and/or permanent disposal of wastes, residues, tailings or other by-products of development, production or other operations; to use so much of the surface and subsurface of the Premises as may be reasonably necessary, convenient, suitable for or incidental to any of the rights and privileges of Lessee hereunder or otherwise reasonably necessary to effect the purpose of this Lease; to use easements and all rights which are incidental to any or all of the rights specified, mentioned, or referred to herein.

## 2. Title

Except as expressly provided to the contrary in Exhibit "A", Owner represents and warrants: (a) that it is the sole legal and equitable owner of the entire and undivided possessory right and ownership of the Premises, without limitation or restriction whatsoever, except for paramount title in the United States of America and the State of Arizona; (b) that all of the unpatented mining claims and Arizona Prospecting Permits that comprise the Premises were properly located


GERBER MINERALS CORPORATION  
- PROPRIETARY



in accordance with federal and state law; (c) that the locations have been properly maintained in accordance with federal and state law; (d) that all filings and recordings of notices of location, affidavits, instruments, notices and other documents have been made to the extent required by, and in compliance with, the Federal Land Policy and Management Act of 1976, regulations thereunder, and any other applicable federal or state law or regulation; (e) that the Premises are free and clear of all leases, liens, and other encumbrances; (f) that it has full power and authority and is authorized to execute this Lease; and (g) that it has full power and authority to convey the Premises to Lessee.

### 3. Title Information and Defects

Promptly upon execution of this Lease, Owner shall furnish to Lessee copies of any title information in Owner's possession or control relating to the Premises that has not already been furnished to Lessee, including location notices, status reports, and proofs of assessment work or annual labor. Owner will do anything lawfully within its power to protect and defend the Premises against claims and demands of all persons claiming the whole or any part thereof. Lessee shall have the right, but not the obligation, to take whatever action it deems necessary or desirable to perfect, defend, or cure title to any of the Premises, and Owner shall execute all documents and take such other actions as may be reasonably necessary to assist Lessee. The costs and expenses incurred by Lessee in perfecting, defending or during such title shall be credited as Royalty Payments under Section 5 of this Lease to the extent said defects existed on the date of execution hereof or were thereafter caused by the act of Owner. Without diminishing Owner's warranties hereunder, in the event that title to the Premises or any portion thereof is less than the interest in the Subject Minerals stated in Exhibit "A", then the Production Royalty and Royalty Payments herein provided shall be paid to Owner only in the proportion that Owner's interest bears to the interest in the Subject Minerals in the Premises or portion thereof stated in Exhibit "A". If at any time Lessee discovers or is informed that title to the Premises or any portion thereof is less than the interest in the Subject Minerals stated in Exhibit "A", and without waiving any other rights and remedies against Owner, Lessee may withhold and retain as its property from Royalty Payments and/or Production Royalty thereafter becoming due to Owner hereunder any amounts representing payments previously made to Owner





for an interest in excess of Owner's actual interest in the Premises or portion thereof.

4. Term of Lease

This Lease shall commence on the date hereof and shall continue thereafter unless terminated pursuant to the provisions of Section 18.

5. Royalty Payments

The Royalty Payments shall be payable as provided in this Section 5. Upon execution of this Lease, on or before the dates set out below, Lessee shall pay Owner the following amounts (each such amount being herein referred to as a "Royalty Payment") if Lessee is to keep this Lease in effect.

\$60,000 annually in quarterly installments of \$15,000 each, the first installment being due on signing this agreement and all subsequent installments quarterly thereafter.

The above Royalty Payments shall be applied against any Net Proceeds Royalty. The obligation of Lessee to make Royalty Payments to Owner as herein provided shall cease upon termination of this Lease for any reason, or when the value of the "Net Proceeds Royalty" exceeds the amount of the Royalty Payment in any year of operation.

6. Net Proceeds Royalty

There is hereby reserved to Owner as "Net Proceeds Royalty" fifteen percent (15%) of the net profit value as that term is hereinafter defined realized by Lessee from the production of gold and associated minerals from the Premises.

Net Proceeds shall be calculated by deducting from the gross revenues realized (or deemed to be realized) from the sale (or deemed sale) of Products, such costs and expenses attributable to Development, Mining, and the marketing of Products as would be deductible under generally accepted accounting principles and practices consistently applied as employed by the Lessee, including without limitation:

(a) All costs and expenses of replacing, expanding, modifying, altering or changing from time to time the Mining facilities. Costs and expenses of improvements (such as haulage ways or mill facilities) that are also used in connection with workings other than the Premises shall be charged to the Premises only in the proportion that their use in connection with the Premises bears to their total use.

(b) Ad valorem real property and unsecured personal property taxes, and all taxes, other than income taxes, applicable to Mining of the Premises, including without limitation all state mining taxes, sales taxes, severance taxes, royalties, license fees and governmental levies of a similar nature.

(c) Allowance for overhead in accordance with Section 2.12 of the Accounting Procedure.

(d) All expenses incurred relative to the sale of Products, including an allowance for commissions at rates which are normal and customary in the industry.

(e) All amounts payable to the Lessee during Mining pursuant to any applicable operating or similar agreement in force with respect thereto.


(f) The actual cost of investment prior to beginning of Mining which shall include all expenditures for Exploration and Development of the Premises incurred.

(g) Interest on monies borrowed or advanced for costs and expenses, at an annual rate equal to 2 percentage points above the Prime Rate, but in no event in excess of the maximum permitted by law.

(h) An allowance for reasonable working capital and inventory.

(i) Reasonably anticipated reclamation costs.

It is intended that the Lessee shall recoup from net cash flow all of its contributions for Exploration, Development, Mining, and marketing Products before any Net Proceeds are distributed to any person holding a Net Proceeds interest. No deduction shall be made for income taxes, depreciation, amortization or depletion. If in any year after the beginning of Mining of the Premises an operating loss relative thereto is incurred, the amount thereof shall be considered as and be included with outstanding costs and expenses and carried forward in determining Net Proceeds for subsequent



periods. If Products are processed by the Lessee, or are sold to an Affiliate of the Lessee, then, for purposes of calculating Net Proceeds, such Products shall be deemed conclusively to have been sold at a price equal to fair market value to arm's length purchasers FOB the concentrator for the Premises, and Net Proceeds relative thereto shall be calculated without reference to any profits or losses attributable to smelting or refining.

7. Payment of Net Proceeds

Payments of Net Proceeds shall commence in the calendar year next following the calendar year in which Net Proceeds are first realized, and shall be made 45 days following the end of each calendar quarter during which Net Proceeds are realized, and shall be subject to adjustment, if required, at the end of each calendar year.


8. Accounting Procedure

The financial and accounting procedure to be followed by the Lessee or its assignees under the Lease are set forth in "Exhibit B" attached hereto.

All statements rendered to Owner by Lessee shall be conclusively presumed to be true and correct after sixty (60) days from the date they are delivered to Owner unless within said sixty-day period Owner takes exception thereto and makes written claim on adjustment within such sixty-day period, the statement shall thereafter be permitted. No adjustments favorable to Lessee shall be made unless in connection with a claim of Owner.

9. Manner of Making Payments

All payments to Owner required by this Lease shall be paid by Lessee's check payable to the order of Owner, or at Lessee's option, to the Valley National Bank (bank) at (address) P.O. Box 688 Lake Havasu City, Arizona 86408 or its successor bank, for Owner's credit. A single payment or tender to said depository bank shall be made by mail or by delivering a check to it and such a payment shall effectively and for all purposes whatsoever constitute full payment of the amount thereof to Owner to the same extent as if made to it directly. Such depository bank shall continue as depository under this Lease regardless of change in ownership in the Premises or in any payments that accrue hereunder.




#### 10. Manner of Work

All of the work which may be performed by Lessee hereunder shall be performed in a good and workmanlike manner and in accordance with sound mining and engineering practices, but the timing, nature, manner and extent of any exploration, development, or mining operations shall be within the sole discretion of Lessee. Lessee shall comply with all laws, rules, and regulations pertaining to any operation or activities hereunder of federal, state and local authorities. If Lessee at any time, and from time to time after commencing operations or production, desires to shut down or cease operations or production for any reason, it shall have the right to do so, provided it makes the payments set forth in Section 5 of this Lease or terminates this Lease as provided in Section 18 hereof.

Lessee may use and employ such methods of mining as it may desire or find most profitable. Lessee shall not be required to mine, preserve, or protect in its mining operations any ore containing good or other product containing Minerals ("product" as used in this Section 10 includes concentrates, precipitates, and other mixtures resulting from the recovery process), which under good mining practices cannot be mined or shipped at a reasonable profit to Lessee at the time encountered. Any decision as to the manner and form in which ores or other products containing Minerals are to be sold shall be made by Lessee in its sole discretion.

Lessee shall have the right to mix, underground, at the surface, or in the processing plants, any ores containing Minerals or other products containing minerals produced from the Premises or any portion thereof with ore containing minerals or other products containing minerals from any other lands, provided that the mixing is accomplished only after the products have been determined or ascertained by sound engineering principles. An accurate record of the tonnage or volume of products and the analysis of products from each property going into such mixture shall be kept and made available to Owner at all reasonable times. The tonnage or volume of ores containing minerals from the Premises, together with the analysis thereof, shall be used as the basis of the allocation between various properties of Royalty to be paid.



11. Owner's Technical Information

Promptly following the execution of this Lease, Owner shall make available to Lessee for inspection and copying all geological, geophysical, geochemical and engineering data and information in Owner's control, or which Owner can reasonably obtain, which relates to the Premises.


12. Records, Inspection and Confidentiality

So long as this Lease remains in force and effect, Owner and Owner's agents, duly authorized in writing, may enter upon the Premises to inspect the same, during normal business hours, at such times as shall not unreasonably hinder or interrupt the operations and activities of Lessee. Upon written request of Owner, Lessee shall make available to Owner all records of assay reports, weight tickets or other facts, data pertaining to the calculation of Net Proceeds Royalty under this Lease. Lessee shall not be obligated to furnish Owner with access to any interpretative data that deals with geologic concepts or other internal proprietary data, information or analysis. Owner shall enter upon the Premises at Owner's own risk and expense and hereby indemnifies and holds Lessee harmless from any loss, damage, claim or demand by reason of injury to or the presence of Owner, Owner's agents, representatives, licensees, guests, or any of them, on the Premises or approaches thereto.

Owner agrees to treat all information acquired hereunder as confidential and agrees that Owner shall not use the name of Lessee, its parent, subsidiaries or affiliates in any document or press release, or disclose any information Owner may obtain hereunder to third parties or to the public without first having obtained the written approval of Lessee.

13. Amendment, Relocation and Patent of Claims;  
Changes in Federal Mining Law

This Lease shall constitute full irrevocable power and authority during the term hereof for Lessee to file




additional and/or amended location notices on any of the unpatented mining claims subject to this Lease. Further, this Lease shall constitute full and irrevocable power and authority during the term hereof for Lessee to apply for a United States mineral patent in the name of Owner to any or all of the unpatented mining claims that comprise the Premises, and Owner agrees to assist in such application in any manner requested by Lessee. If Lessee files such additional and/or amended location notices as to such unpatented mining claims or applies for a United States mineral patent to any or all of such unpatented mining claims and such action is unsuccessful or the application is rejected in whole or in part, Lessee shall not be liable to Owner for such loss in any manner whatsoever provided Lessee has proceeded in good faith in making such action of making such application. The rights of Lessee and Owner under this Lease shall extend to any and all such amended and patented mining claims.

If Federal law shall hereafter provide a tenure system for federally-owned minerals or lands in which mineral resources may exist and such system is at variance with or in substitution for the existing system provided for mining locations under the General Mining Law of 1872, as amended, and if such law shall give the owners of unpatented mining claims an option to acquire rights under the new law in exchange for or in modification of their existing rights, this Lease shall constitute full power and authority to Lessee to make such election. In the event such election is made, in order to keep this Lease in force and effect as to such unpatented mining claims, Lessee shall pay all minimum or advance royalties, rentals, bonus payments, or other fees required by such substituted or modified tenure system.

#### 14. Assessment Work and Recording

Thereafter, so long as this Lease remains in force and effect, Lessee shall perform all assessment work or annual labor required by Federal and State laws and




regulations to maintain the unpatented mining claims and prospecting permits subject to this Lease, and shall record and file affidavits of such performance (or notices of intent to hold such mining claims and prospecting permits) in the appropriate county and Bureau of Land Management offices as required or permitted by Federal or State law or regulations, including, without limitation, the Federal Land Policy and Management Act of 1976 (the "Act"). Lessee shall not be liable for the loss of unpatented mining claims and prospecting permits for failure to perform assessment work or annual labor, or for failure to comply with the Act, provided it performs work or records and files such affidavits or notices which it reasonably and in good faith, in accordance with accepted practices of the mining industry, believed to be sufficient to satisfy such work or recording and filing requirements. Lessee shall have the authority to operate, operating plans and transfer of interest for the premises as may be required by law.

15. No Implied Covenants

Owner understands, and expressly acknowledges and agrees, that no implied covenant or condition whatsoever shall be read into this Lease relating to exploration, development, prospecting, mining or production, of the time therefor, or to any obligation of Lessee hereunder, or to the measure of diligence thereof. The payment of Royalty Payments made to Owner hereunder shall be in lieu of any such obligations that might otherwise be implied by law.

16. Protection From Liens and Damages

Lessee will save, protect and hold harmless Owner against any and all claims, demands, or judgments for injury, loss, or damage arising out of Lessee's activities or operations on the Premises. Lessee shall keep the Premises and the whole and every part thereof free and clear of liens for labor done or work performed upon the Premises or materials furnished to it for the exploration, development or operation thereof under this Lease, but Lessee shall have the right to dispute or contest the validity of such liens. Lessee's liability under this Section shall terminate upon termination of this Lease for any reason, except for causes of action accruing before the date of termination.




17. Taxes

So long as this Lease remains in effect, Lessee shall pay all lawful public taxes and assessments, whether general, specific, or otherwise, assessed and levied upon or against the mining rights or attributable to Lessee's operations, or upon any ores or other products thereof, or upon any producing mine or any property or improvements placed on the Premises by Lessee; provided that if any tax is now or hereafter levied on or measured by production, including severance, gross proceeds, and similar taxes, the Owner shall pay a prorata share of such taxes attributable to the Royalty reserved herein. If Lessee so elects, it may initially pay such taxes levied on or measured by production, and then deduct Owner's prorata share of such taxes from any Royalty Payments thereafter due Owner. Lessee shall have the right to contest in the courts or otherwise, the validity of amount of any taxes or assessments if Lessee deems the same to be unlawful, unjust, unequal or excessive, or to take such other steps or proceedings as Lessee may deem necessary to secure a cancellation, reduction, readjustment or equalization thereof before Lessee shall be required to pay the same, but in no event shall Lessee permit or allow title to the Premises to be lost as the result of nonpayment of any taxes, assessments, or other such charges while this Lease is in effect. Owner agrees to pay any and all taxes assessed or levied on Royalty Payments made to it by Lessee.

18. Right of Offset; Disputes or Adverse Claims

If Owner fails to duly satisfy and discharge any mortgage, lien, or encumbrance chargeable solely to Owner on the Premises or suffers or permits any lien or encumbrance to be imposed upon the pay and discharge any such mortgage, lien or encumbrance and Lessee may reimburse itself for any such payment by withholding and retaining from Royalty Payments any amounts so paid by Lessee without prejudice to any right of Lessee to recover from Owner or against the Premises in any manner or by any remedy whatsoever, and Lessee shall have all of the rights and remedies against Owner which the mortgagee, lienor, or creditor had immediately prior to the time of such payment. Upon the request of Lessee, Owner shall promptly make, execute, acknowledge and deliver to Lessee any and all such instruments (in form and substance satisfactory to Lessee) which Lessee in its sole judgment, shall deem necessary or desirable to fully effectuate the provisions of this paragraph.






In case of suit, adverse claims, dispute, or questions as to title to the Premises or ownership of any Royalty Payment, Production Royalty, or other payment or interest therein payable to Owner, Lessee may withhold payment due Owner until such suit, claim, dispute, or questions have been finally resolved, and Lessee shall have sixty (60) days after being furnished with instruments evidencing such resolution within which to make payment.

19. Default; Termination by Owner

The breach by Lessee of any obligation arising under this Lease (the word "obligation" shall specifically be construed so as to include the paying of any amounts due and owing pursuant to the provisions of Sections 5 and 6, as well as any other payments due under other terms and provisions of this Lease), shall not work a forfeiture, condition or termination of this Lease, nor cause a termination or reversion of the estate created hereby, nor by grounds for cancellation in whole or in part. If Owner considers that there had been a breach of any obligation, Owner shall notify Lessee, in writing, of the facts relied upon as constituting a breach hereof and Lessee, in default, shall have sixty (60) days after receipt of the notice in which to commence compliance with the obligations imposed by virtue of this Lease. Such period of time shall be shortened to thirty (30) days if the alleged default is Lessee's failure to make the Royalty Payments required by Section 5.

20. Termination by Lessee

Lessee shall have the right at any time and from time to time to terminate this Lease by giving notice of such election to terminate in the manner set forth in Section 24 of this Lease; provided, however, that such notice may not be given within the last sixty (60) days of the assessment work year unless Lessee shall have performed all assessment work or annual labor for that assessment work year and shall have agreed to record and file affidavits of such assessment work or annual labor as required or permitted. Upon such termination, Lessee shall be relieved of all further obligations hereunder for such portion of the Premises as to which notice of termination is given, as of the date of the termination set forth in the notice, and all sums which may be due under this Lease up to and including the effective date of termination shall be settled and




adjusted between the parties; provided that, if Lessee terminates this Lease as to less than all of the mining claims and prospecting permits comprising the Premises, such termination shall not reduce the Royalty Payments stated herein.

## 21. Evidence of Release

In the event of termination of this Lease as to all or any part of the Premises, Lessee shall surrender peaceably to Owner possession of the Premises covered by the notice of termination and shall execute and deliver to Owner such documents as are required by law or requested in writing by Owner to release this Lease from record. Lessee shall deliver to Owner a copy of such instrument releasing and terminating its interest under this Lease to any such portion of the Premises. If requested to do so within ninety (90) days after termination of this Lease as to all or any portion of the Premises, Lessee shall deliver to Owner copies of all factual information, such as geological data, assays, claim maps, logs, drill hole locations, and other similar factual data, obtained by Lessee in its operations on the Premises or portions thereof as to which this Lease is terminated. It is expressly understood and agreed that Lessee is not obligated to furnish Owner with interpretative data that deals with geologic concepts or other internal proprietary data, information or analysis.

## 22. Rights After Termination

Lessee shall have the right, for a period of one (1) year after termination of this Lease to remove all buildings, improvements, equipment, structures, residue or tailings remaining after the initial processing or milling of the crude ores mined from the Premises, and personal property erected or placed in or upon the Premises by Lessee; provided that such right of removal shall not extend to foundations and mine timbers in place unless Owner shall have given Owner's prior written consent thereto. This one-year period shall be extended by any period of force majeure as provided in Section 22 of this Lease arising during such one-year period. Any such property not removed within the time provided herein shall become the sole property of Owner, and Lessee shall have no further right, title, interest, obligation, or liability with respect thereto. Lessee shall also have the right of reasonable ingress to and egress from the Premises for so long



after termination of this Lease as is necessary for Lessee to accomplish such reclamation and restoration of the Premises or to make such inspections as may be required of Lessee by State or Federal law. In the event of termination of this Lease as to less than all of the Premises pursuant to Section 18, Lessee shall have the right to, and is hereby granted, reasonable easements and right-of-way across the lands as to which this Lease is terminated to provide access to the portion of the Premises as to which this Lease remains in effect.


### 23. Assignment

Lessee shall have the right to freely assign this Lease in whole or in part or to sublease all or portions of the Premises at any time during the term hereof and to contract with others to work any mine or mines upon the Premises. Lessee shall notify Owner promptly of any such assignments or subleases.

Any conveyance or obligation by Owner of interests in the Premises or assignments or rights under this Lease shall be subject to this Lease and shall not be binding upon Lessee until Lessee has been furnished with the original or a certified copy of the instrument effecting such conveyance or assignment. If the interests or rights of Owners become held by two or more parties, Lessee may, in its discretion, require such parties to appoint a single agent with full authority to receive notices and Royalty Payments which may become due such parties hereunder.

### 24. Force Majeure

If Lessee is unable, wholly or in part, to perform any of the terms or covenants of this Lease, other than the covenant to pay Royalty Payments, by reason of damage or delay resulting from disaster, disturbances, shortage or unavailability of labor or material or equipment, strikes, lockouts, other industrial disturbances, acts of God, acts of the public enemy, war, blockade, riot, insurrection, lightning, fire, storm, flood, inclement weather, explosion, or any regulations, governmental delay and restraints (including, but not limited to, land use and environmental controls or the inability to obtain necessary permits), or on account of any eventuality or conditions, whether or not similar to those specifically enumerated above, beyond the reasonable control of Lessee, Lessee shall



be excused from performance of any obligation affected by such condition during the period required to overcome the delay and for sixty (60) days thereafter, and the time for performance of Lessee's obligations affected by said condition and the term of this Lease shall be extended for a like period. Lessee agrees to give notice promptly to Owner of such events of force majeure after the occurrence or discovery thereof and to use reasonable diligence to remove causes of force majeure as may occur from time to time; provided, however, the disposition, settlement or handling of strikes, lockouts, or other labor difficulties and disturbances shall be entirely within the discretion of Lessee.

#### 25. Recording of Short Form Notice

The parties hereby agree to enter into a memorandum of this Lease (short form) for the sole purpose of recordation in the real property records sufficient to give record notice, pursuant to the laws of the State of Arizona, of the existence of this Lease. This Lease shall not be recorded without the written consent of Lessee.

#### 26. Notices

Any notice, election, or other correspondence required or permitted hereunder shall be deemed to have been properly given when made in writing and effective when delivered personally to the party to whom directed, or when deposited in the United States certified mail, or when sent by telegraph, with all necessary postage or charges fully prepaid, return receipt requested (or in the case of a telegram, confirmation of delivery), and addressed to the party to whom directed at its below specified address:

As to Lessee: Gerber Minerals Corporation  
7555 E. Hampden Avenue,  
Suite 413  
Denver, Colorado 80231

As to Owner: RAMPO, Inc.  
2887 Daytona Avenue  
Lake Havasu City, Arizona 86403

Either party hereto may change its address for the purpose of receiving notices or communications hereunder by furnishing notice thereof to the other party in compliance with this Section 24.

27. Entire Agreement

This Lease contains the entire agreement, express or implied, or the parties hereto, and the parties agree that no promises or representations of any nature which shall be binding upon them have been made by either of them to the other which are not set forth herein.

28. Construction


This Lease and the rights of the parties hereunder shall be governed by the laws of the United States and the state of Arizona. If this Lease or any provision hereof is found to be inconsistent with or contrary to any such law or regulation thereunder, this Lease shall be regarded as being modified to the extent required to comply with such law or regulation, and, as so modified, shall continue in full force and effect. The headings used herein are for convenience or reference only and shall not be taken or construed to define or limit any of the terms or provisions hereof. Unless otherwise provided or unless the context shall otherwise require, words imparting the singular number shall include the plural number, words imparting the masculine gender shall include the feminine gender, and vice versa.

29. Subsequent Changes

It is understood and agreed that no change, alteration or modification of this Lease or any of the covenants and agreements herein contained shall be effective unless made in writing, dated subsequent hereto, and signed by all parties.

30. Inurement

This Lease shall inure to the benefit of and shall be binding upon all of the heirs, executors, legal representatives, administrators, successors in interest and assigns of the parties hereto.



IN WITNESS WHEREOF, the parties have executed this Lease effective as of the day and year first above written.

OWNER:

By *B. E. Poe*  
Billy E. Poe, President  
RAMPO, Inc.  
LESSEE:

GERBER MINERALS CORPORATION

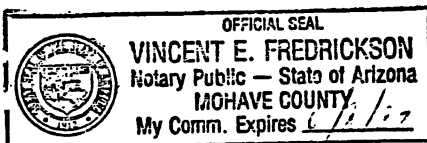
By *Bernhard Free*  
Bernhard Free, President

STATE OF ARIZONA  
COUNTY OF MOHAVE

SS.

GERBER MINERALS CORPORATION  
PROPRIETARY

On the 7th day of December, 1984,  
personally appeared before me Billy E. Poe,  
who being by me duly sworn  
(or affirmed), did say that he is the President of  
RAMPO, Inc., and acknowledged to me that  
said company executed the same.



*Vincent E. Fredrickson*  
Notary Public

My Commission Expires: 6/1/87

*[Handwritten mark]*

EXHIBIT "A"

Property Description

All located in the State of Arizona, Yava-pai County.

Unpatented Lode Mining claims in Section 35,  
Township 13 N, Range 10 W.

Organ Grinder No. 1 claim	BLM #19152
Organ Grinder No. 2 claim	BLM #19153
Organ Grinder No. 3 claim	BLM #19154
Organ Grinder No. 4 claim	BLM #104544
Organ Grinder No. 5 claim	BLM #207151

Section 36, Township 13 N, Range 10 W.

Arizona prospecting permit #79467	(40 acres)	July 30, 1980
Arizona prospecting permit #89360	(40 acres)	July 30, 1984

Section 2, Township 12 N, Range 10 W.

Arizona prospecting permit #80056	(20 acres)	September 24, 1980
Arizona prospecting permit #84462	(450.44 acres)	July 21, 1982
Arizona prospecting permit #89786	(20 acres)	

Unpatented Lode Mining claims  
Sections 11 and 12, township 12 N, Range 10 W.

BLM # 213676	BLM # 213692	BLM # 213708	BLM # 213724
BLM # 213677	BLM # 213693	BLM # 213709	BLM # 213725
BLM # 213678	BLM # 213694	BLM # 213710	BLM # 213725
BLM # 213679	BLM # 213695	BLM # 213711	BLM # 213726
BLM # 213680	BLM # 213696	BLM # 213712	BLM # 213727
BLM # 213681	BLM # 213697	BLM # 213713	BLM # 213728
BLM # 213682	BLM # 213698	BLM # 213714	BLM # 213729
BLM # 213683	BLM # 213699	BLM # 213715	BLM # 213730
BLM # 213684	BLM # 213700	BLM # 213716	BLM # 213731
BLM # 213685	BLM # 213701	BLM # 213717	BLM # 213732
BLM # 213686	BLM # 213702	BLM # 213718	BLM # 213733
BLM # 213687	BLM # 213703	BLM # 213719	BLM # 213734
BLM # 213688	BLM # 213704	BLM # 213720	BLM # 213735
BLM # 213689	BLM # 213705	BLM # 213721	BLM # 213736
BLM # 213690	BLM # 213706	BLM # 213722	BLM # 213737
BLM # 213691	BLM # 213707	BLM # 213723	BLM # 213738



red stained granite generally  
in area of + 20 pph Au; also  
seems to not include areas of  
bouldery outcrop. The red granite  
is crossbed, is weakly argillitic alt,  
with red granodioritic clay? - see  
some sooty FeOx along some faults.  
Rare qtz veins strike E-W,  
dip shallow N, ~1' thick.  
- A445 is red granite - random

A446 - duplicate sample of 98224 -  
W. wall - main bedrock - 3.0' of red  
granite just below 3/2" vein. Vein is  
~1-3' thick - massive qtz - sample has shown  
some yellow vein in 4/16" then crushed  
granite and large - to 1" - red K-spar phenos.

Random grab  
of red stained Pt gran  
A 445

Surveyed Base Line

T2M N10 W  
T2M N10 W

RD - DUMP QUARTZ (in. and/or)  
RD - DETRITAL QUARTZ  
RD - R.R. GOLD IN SOIL

0.2 pph = 20 pph

New Tyee Resources Ltd.

Himac Resources Ltd.

Part of

BIG BEN PROPERTY

YAMPAI COUNTY, ARIZONA

Volcanics

Pegmatite Dikelets

Apatite

Basic Dikes (low angle)

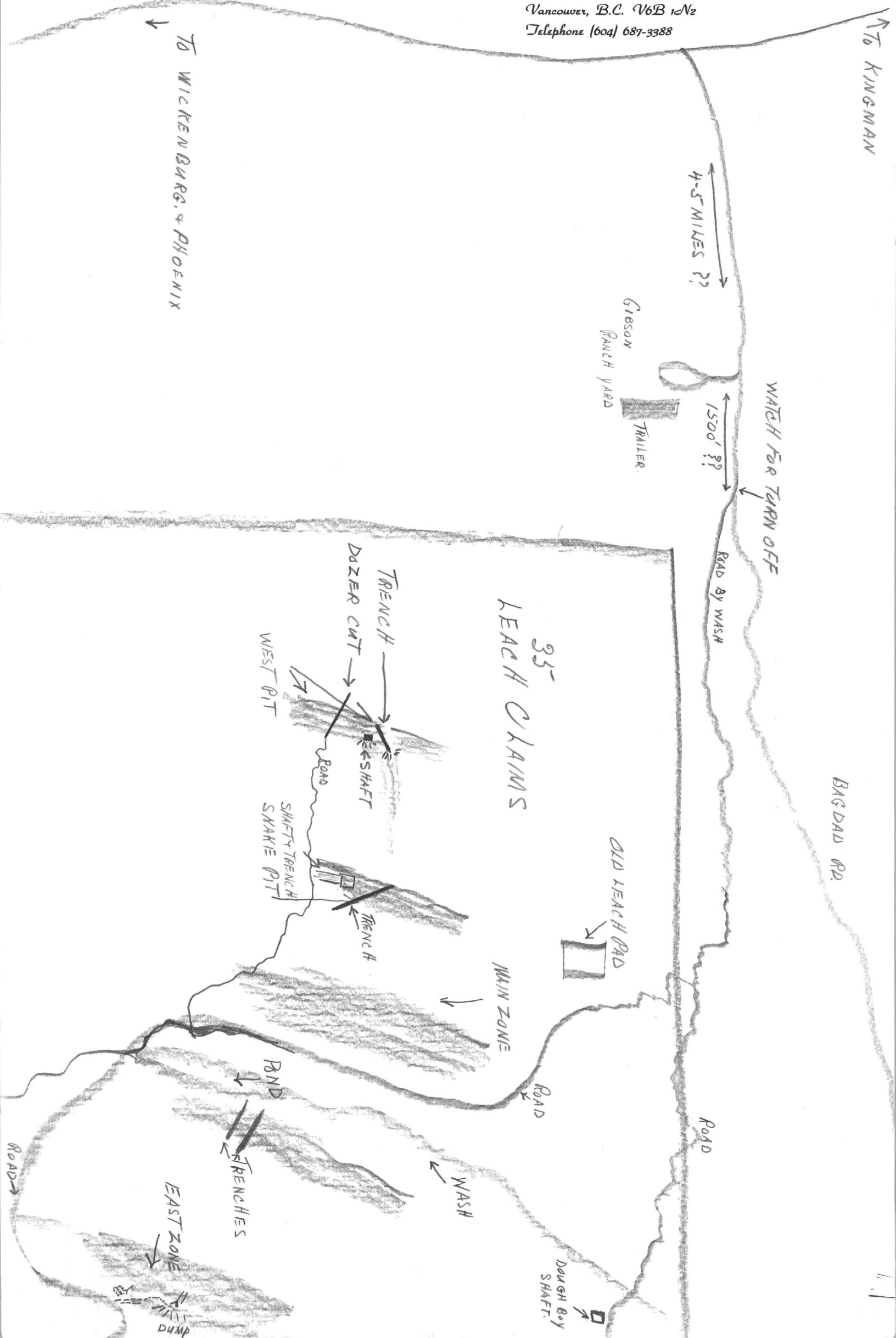
GENERAL - Granite with large  
Feispor Porphyroblasts

Scale  
0 100 200  
Feet



# Ark Energy Ltd.

Ste. 810-675 West Hastings Street  
Vancouver, B.C. V6B 1N2  
Telephone (604) 687-3388



Big Bend Oregon bridge Property - Gerber Minerals

A-1 -60° 140' 15' - .031<sup>opt</sup>

A-2 . vert 125' 10' - .074

B-1 -60° 165' none

C-1 -60° 160' ~~15'~~ - .024

C-2 -70° 120' ~~5' - .051~~ none

D-1 -60° 105' 5' - .051

E-1 -60° 115' 5' - .069 ; 5' - .088 ; que. to  
25' - .033

w/ no values in between = .031