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CONSOLIDATED RED POPLAR
MINERALS LIMITED

COYOTE MOUNTAIN PROPERTY
Pima County, Arizona

November 25, 1968

Mr. Murray Cooper, President
Consolidated Red Poplar Minerals Limited
Suite 1024, 85 Richmond Street West
Toronto 1, Ontario

Dear Sir:

In accordance with your request, I have examined and evaluated your Company's Coyote Mountain properties in Pima County, Arizona.

Herewith I present the results of said examination, together with recommendations for proposed future exploration and an estimate of costs for such a program.

Yours very truly,

C. Philip Jenney

CPJ/ja

SUMMARY

Consolidated Red Poplar has acquired by purchase and staking 75 unpatented mineral claims, comprising 1500 acres in the Coyote Mountains 35 miles southwest of Tucson, Arizona. Exploration of this property has cost more than $125,000, including road building, diamond drilling and geophysical surveying.

No detailed geological work has been done to date so that information obtained from diamond drilling and other work cannot be plotted, accurately, on a meaningful base map.

However, road construction, diamond drilling and results of former underground work have indicated widespread copper mineralization on this ground, which might present a very interesting exploration picture if properly mapped.

CONCLUSIONS

The Consolidated Red Poplar property in the Coyote Mountains of Pima County, Arizona, covers an area of widespread copper mineralization in a favorable geologic setting. A number of large open-pit porphyry copper operations are producing from similar geologic settings in areas 30 miles away to the east, and to the southeast, and to the north.

The Red Poplar exploration target is, therefore, a large open-pit porphyry copper operation.

The numerous small high grade copper deposits discovered and operated in the early days cannot be exploited today at a profit.

If the recommended geologic mapping program is implemented, I would expect that your Company or some of the major companies operating in the area would be interested in carrying the project further. In other words, I expect the results of this mapping program to present an encouraging exploration picture.

RECOMMENDATIONS

I recommend that the sum of $35,000.00 U. S. dollars be expended in a photographing and geologic mapping program as set forth under Future Exploration below.

If results of this program are encouraging, further exploration plans can be presented for implementing by Consolidated Red Poplar, either alone or with partners, or by major companies which may be interested.

INTRODUCTION

The facts set forth herein were established during field examinations of the property on November 8, 11 and 12, plus discussions with Messrs. Darke and Murphy on November 13, 1968. Study of reports of former work occupied all or part of November 7, 9, 10, 17 and 19th.

The examination involved re-logging of all available diamond drill core, examination of all drill sites and underground examination of all open workings - with the exception of the "gumbusino" shafts and winzes of the West Mine area. In addition, the property and surrounding area were examined from the air during a helicopter flight.

During all field work I was accompanied and assisted by Mr. Lyle B. Murphy, resident engineer.

PROPERTY, LOCATION AND ACCESS

The property comprises 75 unpatented Lode Mining Claims (approximately 20 acres each) in a contiguous block covering 1500 acres, in Pima County about 40 miles southwest of Tucson, Arizona. Exact location and description is:

Township 16 South, Range 8 East, Coyote Mining District.

Claims:	Bonanza Pima	1-18, incl.	18
	Bonanza Crown	1- 6, incl.	6
	Bonanza Supreme	1-12, incl.	12
	Garnet	1-20, incl.	20
	Mendoza	1-19, incl.	19
		Total	75

I have not checked title to these claims in the Pima County Courthouse since I assume Attorneys for the Company have handled this. However, I have, with Mr. Murphy, visited various claim posts and corners in the field and am satisfied that all locations are in good order.

Mr. Murphy assures me that assessment work required to keep the claims in good standing until September 1, 1969, has been performed and recorded.

The area may be reached via Highway 86 (the Ajo Road) 35 miles to mileage marker 142, thence 11 miles south on a dirt road around the southern end of Coyote Mountain. Balance of travel on the property is via rough jeep road.

TOPOGRAPHY:

Maximum relief in the area is 2,300 feet from an elevation of 3,300 feet on the desert plain to something over 5,600 feet on the high ridges (see Plate 1 in pocket). This relief is significant when considered in conjunction with geologic picture presented in Figure 1.

HISTORY

The property is reported to have been located and worked originally in 1903 and up to 1928 was operated, intermittently, by Mr. Cavillo and his two sons. It is said that up to 150 men were employed at one time and the old surface workings were "hand steeled" with hand sorted ore

carried by burro down the hill to the railroad and shipped to El Paso. Several hundred tons assaying 2% copper and 28 shipments averaging 10% copper and 1.5 ounces of silver are reported. Most of these old workings are backfilled with waste and not available for examination.

After 1928 the claims lapsed and in 1960 were relocated by Mr. Lyle Murpny, who formed North American Metals and subsequently optioned the property to Consolidated Red Poplar Minerals Limited. Additional claims were added and, as I understand it, all required payments have been made and the only outstanding obligation is a royalty on production.

GEOLOGY

No detailed geologic mapping has been done to date in the Coyote Mountains. The only map presentation available is that shown here as Figure 1, which was compiled by Mr. William Kurtz in connection with a study of planar parellelism in the intrusives, schist, and altered sediments. This was offered as an M.A. Thesis in 1953-55 and mapping was based on U.S.G.S. topographic sheets, scale 1 inch to 1 mile, photostated up to 1 inch to one quarter mile. As far as I can determine, no attempt was made to locate points accurately in the field, in fact the distribution of the pegmatites on this map is described thereon as "diagramatic". A brief re-

ference to the map will indicate the extent of confusion involved.

Mr. Kurtz gives no mineralization information in his report and does not locate any of the old workings or copper showings. Subsequently, some of these have been spotted in a general way on various sketch maps by engineers and geologists walking through the area.

The main rock types are shown on Figure 1 and comprise metamorphosed limestones and quartzites with some "skarn" zones enclosed by alaskite and granite intrusives and cut by later pegmatite and lamprophyre dikes. South and west of the limestone is a mass of biotite gneiss which is probably an altered sediment.

MINERALIZATION

Copper oxide showings (malachite and azurite) are widely scattered throughout the property but are probably more pronounced in the area of altered sediments where the numerous old workings are located. In addition, showings of chalcopyrite, bornite and molybdenite have been encountered in drilling and on the surface in the intrusive rocks. In the sediments exposed in the old workings there is a definite suggestion of bedding control of the mineralization. On the other hand, many of the numerous fault structures varying from north-south to east-west in strike are also mineralized.

Within the limestone-quartzite "skarn" zones there are numerous short lenses of magnetite associated with copper mineralization. Lacking accurate map locations and a detailed geologic framework, it is impossible to form a logical picture of the relationship between all the mineralized areas.

Examination of the various underground workings still open shows the presence of numerous occurrences of tungsten minerals. These are revealed by fluorescence under an ultra-violet lamp. The presence of tungsten is confirmed by various assays from drill core and grab samples reported by Mr. Darke in a memo dated May 30, 1967.

The presence of sands with high magnetite and garnet and some oxydized copper content in the outwash plain of Section 35 below Cavillo's camp has been noted by Darke and others. No detailed investigation of these sands has been undertaken to date although work on them has been recommended. I do not know of any garnet concentrations of importance (other than those at Big Shanty in the Adirondack Mountains of New York State) but magnetic sands with copper oxides are common throughout Arizona and New Mexico. Therefore, I do not consider this occurrence particularly significant.

DEVELOPMENT BY CONSOLIDATED RED POPLAR

The exploration program conducted by your Company was initiated by an examination carried out by Mr. Darke with results reported under date of August 24, 1966. Investigations were pursued until completion of diamond drill hole No. C.M. 8 in July 1967. Since that time various mining companies have examined the property with a view to participation. Mr. Lyle Murphy remains in charge as Resident Engineer. I have been told that a total of $180,000 has been spent on the project to date, of which more than $125,000 can be readily accounted for by examination of the roads, drill holes, survey points, claim locations and other evidence of surface work.

Roads: At least seven miles of new roads were bulldozed and blasted in this difficult terrane to reach diamond drill sites. This work, while expensive, was more effective in exploring the property than was the diamond drilling, since many undiscovered copper showings were revealed in various road cuts. All of these, when located accurately, will form part of the overall mineralization picture.

Diamond Drilling: Twelve holes with a total of 2652 feet have been drilled. No core is preserved from C.M.5 but I have logged the balance of 2581 feet. There are a number of discrepancies in hole numbers and footages since many of

the early holes were lost in old workings, relocated without changing numbers, had numbers duplicated and core boxes mislaid, etc. However, this does not affect the overall picture since the first nine holes were drilled to establish an already known fact - that the old workings contained a good deal of high grade copper.

In my opinion, the significant holes were:

H.G. 1 (In so-called Copper Zone No. 2). This showed 291 feet of a highly altered limestone and pegmatite mixture with some minor fine sulphides. At 265 feet, one foot averaged 2.32% Cu and 0.48 oz. Ag and showed chalcopyrite and bornite.

H.G. 2 (Also Zone No. 2). Gave 197 feet of similar limestone-pegmatite mixture with a very significant intersection between 151 and 187 feet which averaged 4.07% Cu and 3.56 oz. Ag for a core length of 36 feet.

C.M. 8 - Located 900 feet northeast of H.G. 1 and H.G. 2 in the same limestone-pegmatite mixture intersected 5 feet between 316 and 321 feet in the hole which averaged 15.90% Cu and 5.34 oz. Ag. (Note that I do not agree with Mr. Darke's averaging of this extremely high grade intersection with the surrounding trash to give 1.25% Cu over 67 feet.)

To me, the significance of the above information is the occurrence at depth (these intersections are at elevations

of 4,000 and 4,100 feet) of important copper values. Elevations of the upper copper workings and showings on the crest of the ridge are 4,500 and 4,800 feet. Therefore, at this point high grade copper and minor mineralization have been discovered over a vertical range of 800 feet. I expect that detailed mapping will extend this range.

Geophysics: During the course of the Consolidated Red Poplar exploration program a ground magnetometer survey was conducted with the object of locating high magnetic areas which might pin-point zones of magnetite-copper similar to those seen underground in the Main Adit. Mr. Darke discusses these magnetic results in various reports and has presented a map dated November 28, 1967, showing them.

I am completely mystified by the results as presented. I have had a great deal of experience with magnetic surveys and do not understand how the very highly magnetic zones that I observed in the Main Adit area could give such low readings as shown on the map - up to 350 gamma. From my observations of the magnetic occurrences on the ground, I would have expected readings of the order of 10,000 gamma in local areas. Consequently, I would disregard the results of this survey.

FUTURE EXPLORATION

In my opinion, nothing effective can be done in

further exploration of the property without an accurate geologic map. Therefore, I propose that the property be photographed from the air to provide a base map on a scale of one inch to one hundred feet with contour interval of ten feet. Fiducial points and control on this would be established from our present surveys (all section and quarter section corners) and panelling for the survey could be done by Mr. Lyle Murphy who has had experience in this line. I have asked for an estimate for this work from Aero Service Corp. of Los Angeles and will complete this report on receipt of same. One day will be sifficient for flying time and time for computation of results will be reported with the estimate.

On receipt of the topographic map it will be necessary to hire a junior-senior type of geologist (preferably one seeking his Doctor's Degree) plus an assistant. "Junior" because he needs to be young and have strong legs and "Senior" because he needs to have the mental capacity to map accurately, assess and project the potential of the property.

I estimate that time required for this mapping will be three months - but it may be longer depending on whether or not it is considered advisable to extend the information obtained onto adjacent ground. The key to the situation is selection and obtaining the services of the senior geologist. Direction of the work would be the responsibility of a Con-

sulting Geologist with assistance from a Professor at the University under whose sponsorship the work would be undertaken.

Planning of further exploration, involving possible geophysical surveys and diamond drilling, must await completion of the geological mapping program.

COST ESTIMATE

Financial requirements for the mapping program may be summarized as:

Air Photos and Map as Proposed*	$ 7,855.00*
Panelling by L. Murphy	500.00
Road Construction and Repair	6,000.00
Geologist - 3 Months @ $700, $2,100	
Assistant - 3 Months @ $500, $1,500	3,600.00
Living Expense:	
2 Men, 3 Months @ $300	1,800.00
Drainage and Rock Sample Assays	500.00
Four Wheel Vehicle	3,000.00
Trailer Camp	2,000.00
Drafting, Office Expense, Telephone	1,000.00
Consultant's Fees and Supervision	5,000.00
Contingencies	3,745.00
Total U. S. Funds	$35,000.00

*Note: This information by telephone. Contract proposal will be forwarded on receipt and involves 16 map sheets 30" X 32" covering 1/4 section each. Scale: 1"- 100' with 10' contour interval. Cost is roughly $3.50 per acre.

The above is slighly less than I estimated in my letter of November 18, 1968 but, at present, I can see no

reason for estimating more. The vehicle and trailer would have some resale value.

With the information obtained for this expenditure, we should be able to judge what next prudent steps to take.

Respectfully submitted,

C. Philip Jenney, Ph.D.
Consulting Geologist

Tucson, Arizona
November 25, 1968

C. PHILIP JENNEY
CONSULTING GEOLOGIST

Victor 4-9413
372 LAKESHORE HY. WEST
OAKVILLE, ONTARIO

297-2014
ROUTE 6
400 GOLF VIEW DRIVE
TUCSON, ARIZONA

I, Charles Philip Jenney, of the Town of Oakville, in the Province of Ontario, do hereby certify as follows:

1. That I am a Consulting Geologist registered as a member in good standing of the Association of Professional Engineers of the Province of Ontario, and the State of Arizona.

2. That the following is a true statement of my education, experience, and affiliations:

Columbia University, New York.
1926-30, B.A. 1930.
1930-33, M.A. 1933, Ph.D. 1936 (Geology).
Princeton University, 1933-34.
1934-36, Geologist, Consolidated Oil Corp., New York.
1936-43, Mine and Exploration Geologist, McIntyre Porcupine Mines, Schumacher, Ontario.
1943-49, Mgr. Canadian Exploration, The American Metal Company of Canada, Ltd., Toronto, Ontario.
1949-55, Ass't Mgr. Exploration Dept., The American Metal Company, Ltd., New York.
1956---, Consulting Geologist, Oakville, Ontario, and Tucson, Arizona.

Societies:
Geological Association of Canada.
Geological Society of America.
Society of Economic Geologists.
American Institute of Mining & Metallurgical Engineers.
Canadian Institute of Mining & Metallurgical Engineers.

Experience:
Directed major exploration projects for The American Metal Company in Yukon; Coppermine River Area, N.W.T.; Great Slave Lake Lead-Zinc Area, N.W.T.; Labrador; New Brunswick; Quebec; Maine; Arizona; plus exploration and mine examination work in all provinces of Canada and most states of the U.S.A., and in the West Indies.

3. That I have no direct, indirect, nor expected interest in the properties or securities of Consolidated Red Poplar Minerals Limited.

C. Philip Jenney, Ph.D.

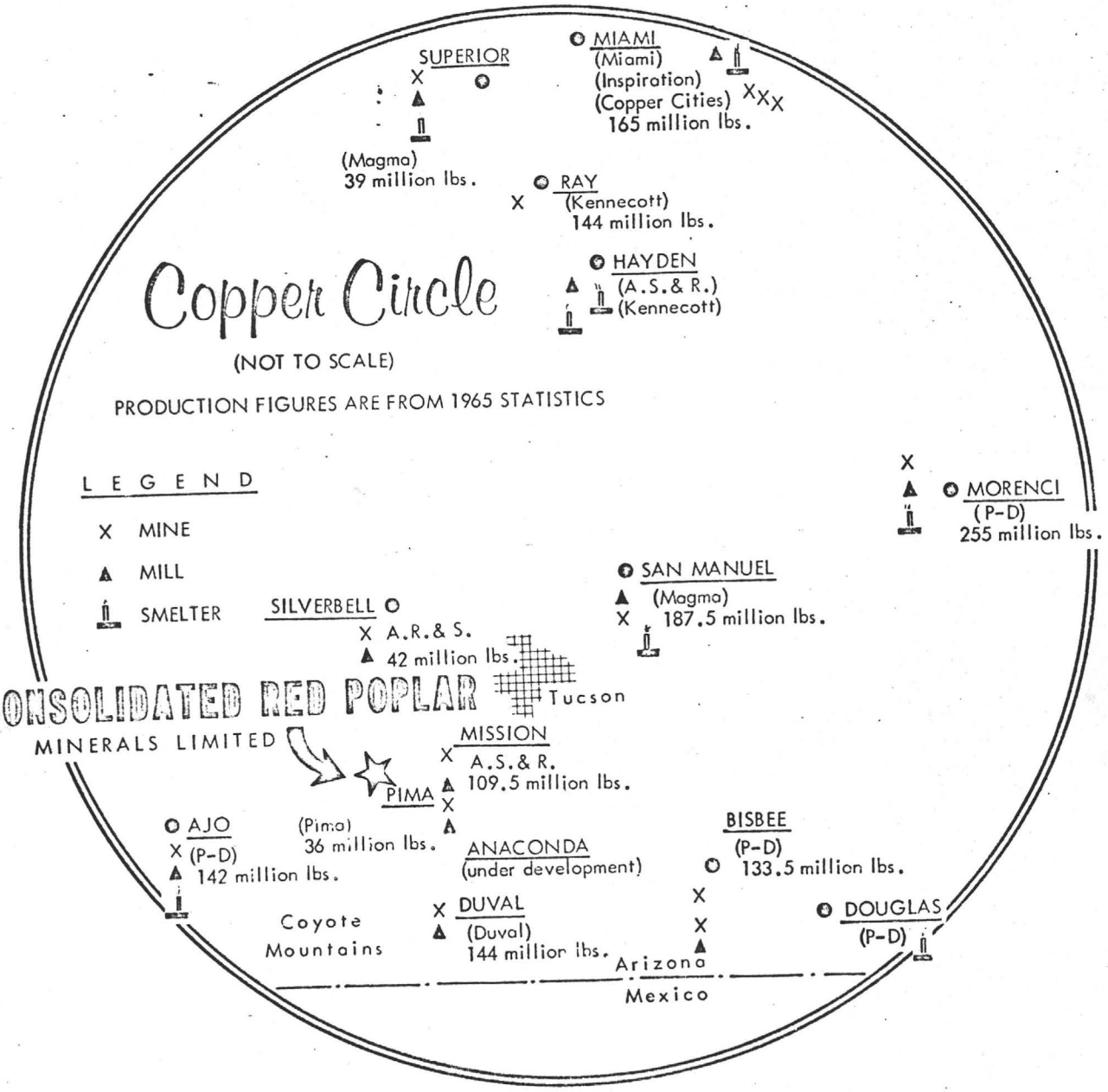
Tucson, Arizona
November 25, 1968

LOCATION MAP

Consolidated Red Poplar Minerals Limited

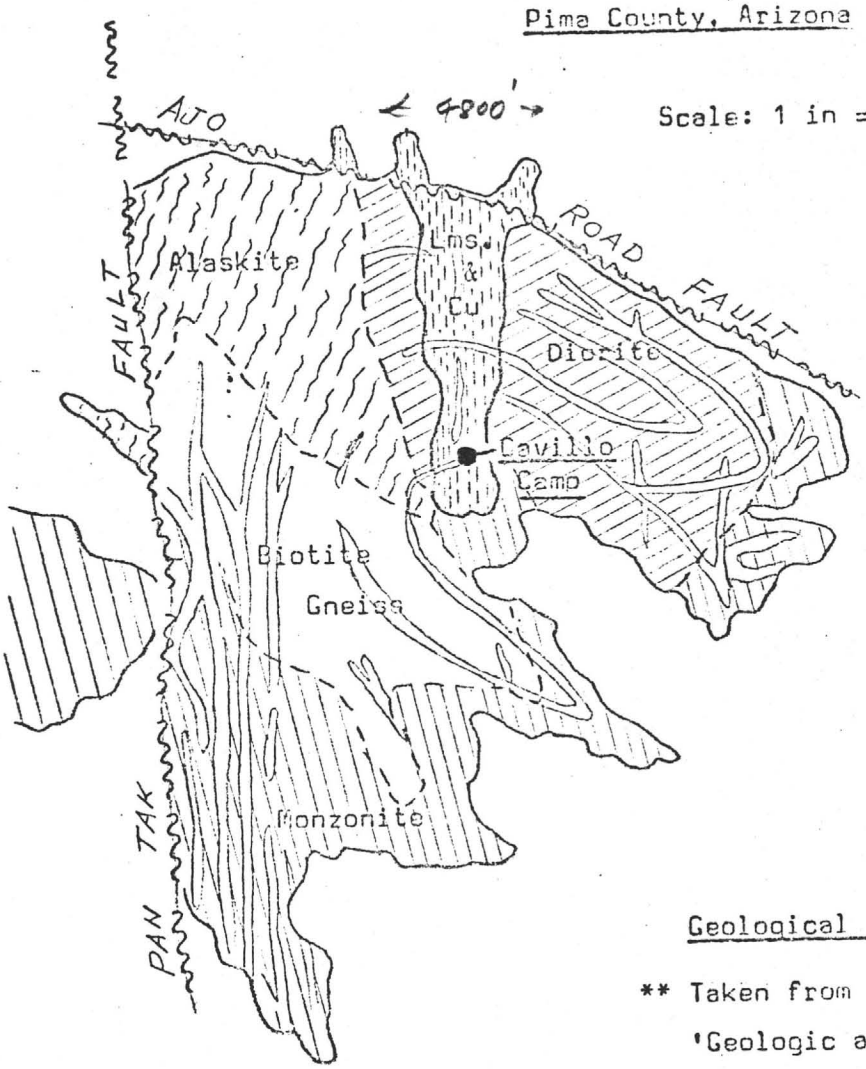
COYOTE MOUNTAIN PROPERTY
Pima Co., Arizona

KENNETH H. DARKE CONSULTANTS LIMITED
K.H. Darke
1/12/67


SUPERIOR
(Magma)
39 million lbs.
MIAMI
(Miami)
(Inspiration)
(Copper Cities)
165 million lbs.
RAY
(Kennecott)
144 million lbs.
HAYDEN
(A.S.& R.)
(Kennecott)
Copper Circle
(NOT TO SCALE)
PRODUCTION FIGURES ARE FROM 1965 STATISTICS
LEGEND
MINE
MILL
SMELTER
MORENCI
(P-D)
255 million lbs.
SAN MANUEL
(Magma)
187.5 million lbs.
SILVERBELL
A.R.& S.
42 million lbs.
Tucson
CONSOLIDATED RED POPLAR
MINERALS LIMITED
MISSION
A.S.& R.
109.5 million lbs.
PIMA
(Pima)
36 million lbs.
AJO
(P-D)
142 million lbs.
ANACONDA
(under development)
BISBEE
(P-D)
133.5 million lbs.
DUVAL
(Duval)
144 million lbs.
Coyote
Mountains
DOUGLAS
(P-D)
Arizona
Mexico

COYOTE MOUNTAIN AREA

Pima County, Arizona



Geological Sketch Map

** Taken from University Thesis 'Geologic and Tectonic Features of the Coyote Mountains, Ariz.' by J.C.Wargo & W.I.Kurtz.

- Limestone & Quartzite
- Diorite
- Alaskite
- Monzonite
- Biotite Gneiss
- Pegmatite

KENNETH H. DARKE CONSULTANTS LIMITED K.H.D.

K.H. Darke

January 10, 1969

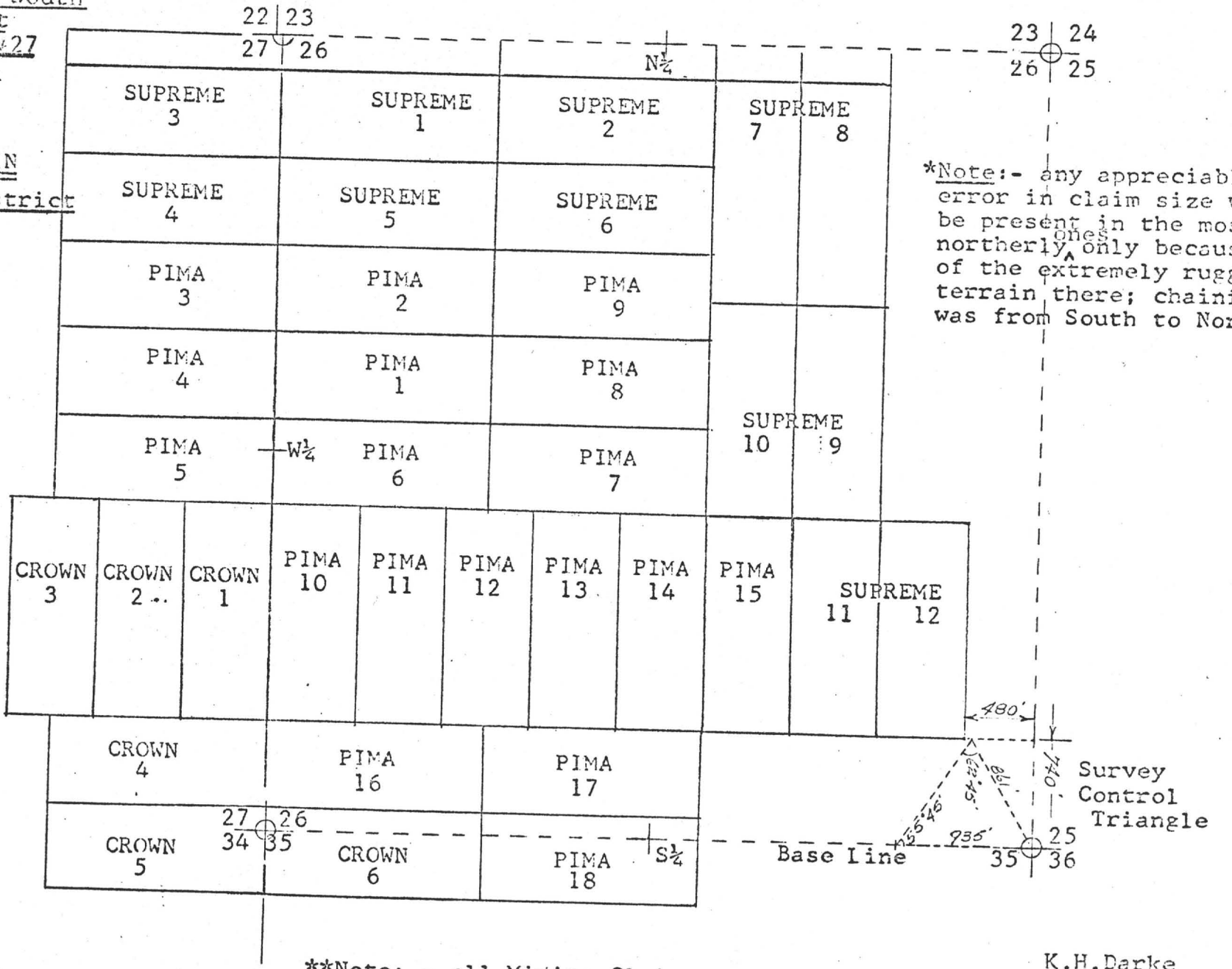
K.H. Darke

CLAIM LOCATION MAP of: - BONANZA PIMA 1-18
- BONANZA CROWN 1-6
- BONANZA SUPREME 1-12

Scale: 1 in. = 1000 ft.

Township 16 South
Range 8 East
Sections 26&27
Pima County
Arizona

COYOTE MOUNTAIN
Pima Mining District



*Note:- any appreciable error in claim size would be present in the most northerly ones only because of the extremely rugged terrain there; chaining was from South to North.

**Note: - all Mining Claims were originally Located as being 600 x 1500 ft. (Iyle B.Murphy)

K.H.Darke
Nov.27,1967
K.H.Darke

KENNETH H. DARKE CONSULTANTS LIMITED
K.H. Darke

COYOTE MOUNTAIN

Pima Mining District

Pima County, Arizona

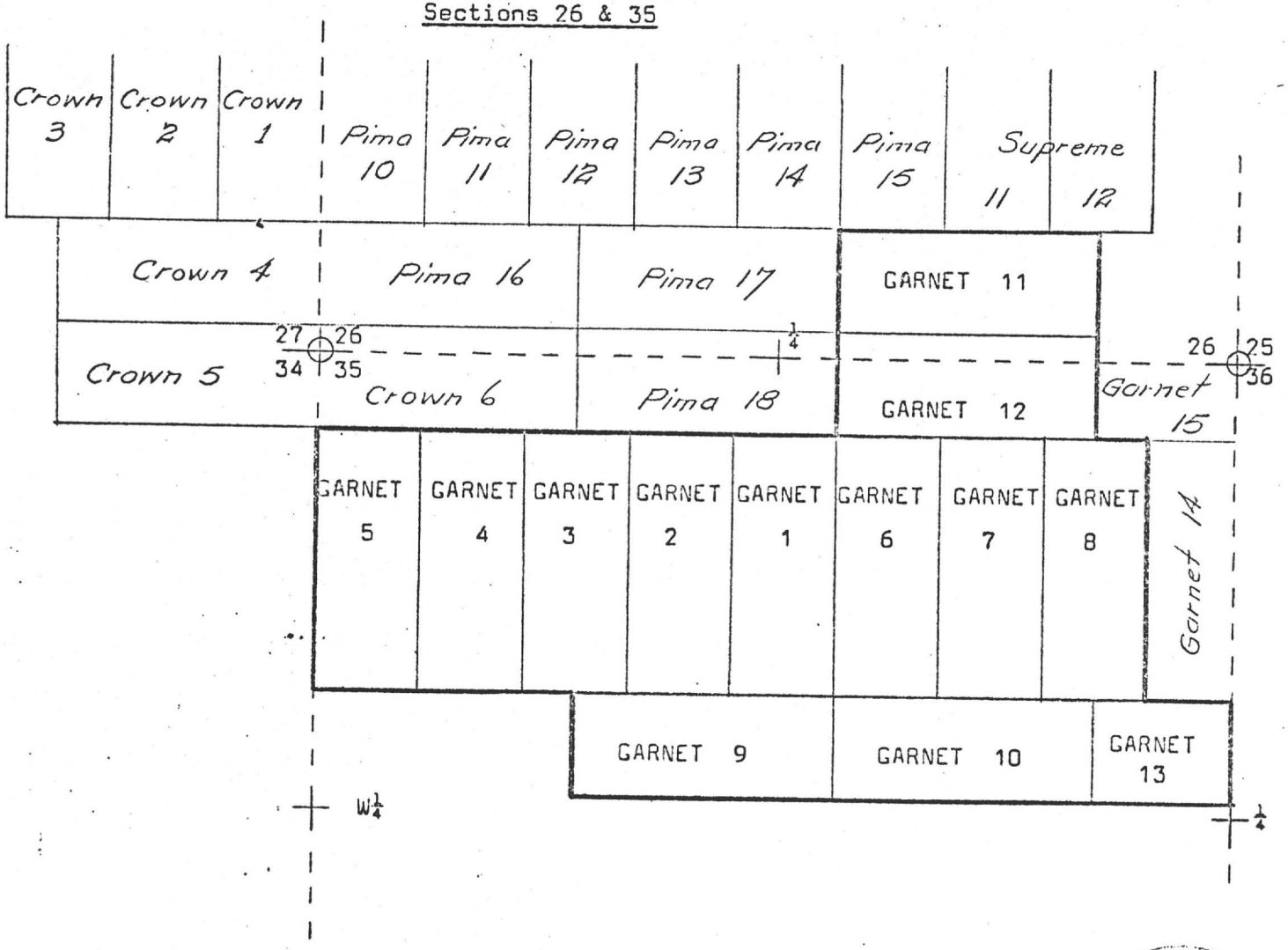
CLAIM LOCATION MAP of GARNET 1-13 Inclusive

Township 16 South

Range 8 East

Sections 26 & 35

Scale: 1 inch = 1000 feet



*NOTE:- all Mining Claims numbered Garnet 1-13 inclusive were originally located as being 600 x 1500 ft. in dimension.

KENNETH H. DARKE CONSULTANTS LIMITED

K.H. Darke

K.H. Darke

January 2, 1968

K.H. Darke

CONTENTS

	Page
Introduction	1.
Property Description	
1. Location	1.
2. Access	2.
3. Topography	2.
General Geology	3.
Economic Geology	
1. Minerals Present	3.
2. Host Rocks & Ore Controls	4.
3. Dimensions of Favourable Host Rocks	4.
4. Copper Occurrences in Adjacent Areas	5.
Previous Work	6.
1966 Exploration Program	
1. Geological Mapping & Sampling	6.
2. Magnetometer Survey Results	7.
1967 Exploration Program	
1. Diamond Drilling Results	7.
Table A : DDH# CM-7 Assays	9.
Table B : Diamond Drill Hole Summary	10.
2. Tungsten Assays	12.
3. Molybdenum Mineralization	12.
Additional Work Recommendations	13.
Additional Financing	14.
Certificate	

and two Arizona State Mineral Prospecting Permits. These Mining Claims and Prospecting Permits are described as follows :

(a) 69 unpatented Lode Mining Claims in a contiguous block situated in Sections 26, 27, 34, & 35, Township 16 South, Range 8 East, G.S.R.B.& M., Coyote Mining District, Pima County, Arizona described as follows :

Group I	- Bonanza Pima	1-18 inclusive	18
Group II	- Bonanza Crown	1-6 inclusive	6
Group III	- Bonanza Supreme	1-12 inclusive	12
Group IV	- Garnet	1-15 inclusive	15
Group V	- Mendoza	1-18 inclusive	18
			69 claims;
			Approximately 1380 Acres

(b) Mineral Prospecting Permits on State Land :
(Expire August 14, 1968)

P.P. 11081	- Section 36; T 16 S ; R 8 E	679 A.
P.P. 11082	- Section 2; T 17 S ; R 8 E	561 A.
	Total Acreage (Claims & Permits)	2620 A.

2. Access :

Access to the Property is readily gained from Tucson via paved Highway 86, and thence 11 miles via a good dirt road around the southern end of the Coyote Mountain Range. A rough, jeep-road leads from the Desert Plain up the Mountain to an area of old adits which constitute the main development workings.

3. Topography :

The Coyote Mountain claims encompass areas of desert plain, playas, and mountainous terrain - they start at an elevation of approximately 3,200 feet on the plains and rise sharply in a series of ridges and steep valleys to an elevation of 5,800 feet.

KENNETH H. DARKE CONSULTANTS LIMITED

34 PINE STREET SOUTH
P.O. BOX 983
TIMMINS, ONTARIO

TELEPHONE (705) 264-1910

Summary Report on the

COYOTE MOUNTAIN PROPERTY

Pima County, Arizona

for

Consolidated Red Poplar Minerals Limited

Introduction :

The Coyote Mountain Property contains a mixture of high and low grade copper-silver zones with associated tungsten and in part at least molybdenum mineralization. The Exploration Program completed to date has been of a limited, and of necessity preliminary nature only; however, it is your Consultant's considered opinion that there are numerous indications from both geological and geophysical veirwpoints that additional exploration of the Coyote Mountain Property will continue to enlarge areas containing mineralized zones of potential ore grade. An accelerated and comprehensive exploration program designed to block out continuous and substantial ore zones that are amenable to large tonnage open pit mining methods has been recommended.

Property Description :

1. Location :

The Coyote Mountain Property is located in Pima County approximately 40 miles southwest of Tucson, Arizona. Mineral rights presently controlled by Consolidated Red Poplar Minerals Limited consist of 69 unpatented Lode Mining Claims comprising a single contiguous block

General Geology :

The Coyote Mountains form the northern extremity of the Baboquivari Mountain chain that trends northward from the Mexican border. They are located in an area regionally bounded by north trending, high-angle faults and locally form part of a roughly elliptical Up-Thrust zone bounded by Thrust Faults. The overall effect of the faulting, and subsequent weathering, has been to give the Coyote Mountains a shape roughly triangular in plan, and a mass consisting of steep ridges rising very sharply from a flat, widespread desert plain.

The main rock types present on the claim group are altered paleozoic sediments (metamorphosed limestones & quartzites) enclosed and intruded by granitic type rocks (monzonite, alaskite) and diorite-gabbro. A large mass of biotite gneiss occurs to the south and west of the limestone. Younger dikes and sills of pegmatite and lamprophyre dikes occur extensively throughout the Coyote Mountains and the claim group.

The sediments, of variable dip and strike, represent only the faulted and weathered remnants of what once was a far more extensive area of deposition. These sediments, now enclosed by granitic type intrusives, represent a typical 'roof-pendant' structure.

Economic Geology :

1. Minerals Present :

The Coyote Mountain Property contains important concentrations of the secondary copper carbonates malachite & azurite on surface, and the primary copper sulphides chalcopyrite & bornite at depth below the oxidized zone. In general, the more soluble copper sulphides have been leached out of the surface outcrops leaving behind hard, resistant garnetiferous (skarn) zones, secondary copper carbonates and gossan zones.

Limited development workings from which copper-silver bearing ore was shipped to smelters prior to 1928 have shown that scattered, high-grade copper-magnetite zones also exist on the Property. In addition, sampling of these old workings and recent diamond drilling have disclosed the widespread occurrences of substantial tungsten mineralization; and the presence of economically interesting molybdenum values. Minor amounts of gold have also been found in association with the copper-silver

bearing sulphide zones.

2. Host Rocks & Ore Controls :

In general, host rocks for the copper mineralization are an impure metamorphosed and altered limestone formation (marble & skarn) and, in part, intruded sills of alaskite-pegmatite. The known high-grade zones constitute a typical 'Contact Metasomatic' type of deposit which is characterized by the presence of marble and 'skarn zones' containing abundant garnet-epidote mineralization.

Detailed geological mapping has definitely shown that the main mineralized zones are following a 'bedding control'. That is, known high-grade and potential ore-bearing zones have the same attitude (strike & dip) as the metamorphosed limestone host rock and intercalated granitic type sills. This concept of a general bedding control is essential to a proper understanding and comprehension of the potential mine making possibilities of the Property - especially in the vicinity of the old workings and other known high-grade mineralized zones.

In addition to the zones of massive sulphides, there are numerous fractured and brecciated areas in both the altered limestone and the granitic-type sills that contain important concentrations of secondary copper carbonates as well as disseminated zones of primary copper sulphides.

3. Dimensions of favourable Host Rocks :

Although it is difficult to determine the exact dimensions of the favourable limestone host rock and intercalated sills, copper mineralization has been found which indicates a minimum strike length of 5000 feet, true thickness of 1200 feet, and vertical extent of at least 1200 feet. The favourable copper-bearing host rocks disappear beneath the desert plain along both their north and south strike extensions; and dip beneath a ridge of alaskite near the western boundary of the claim group.

The presence of cross-cutting pegmatite dikes and local intrusives, as well as numerous regional faults with both vertical and horizontal displacements have somewhat complicated the detailed geological picture.

4. Copper Occurrences in Adjacent Areas :

The Coyote Mountain Claims are located in one of the most prolific copper producing areas in the world, and have the same geological environment and economic mineral assemblages present at many of the Tucson Regions' mines now in production. Large, tonnage, low grade, open pit mining operations are now the general methods employed to mine these deposits.

The two nearest producing areas to the Coyote Mountain Claims, the Silver Bell District located about 38 miles to the north, and the Pima District located about 35 miles east derive their principal copper ores from metamorphosed calcareous sedimentary rocks - the same geological environment as found on the Coyote Mountain Property. These producing mines have in general been found only because they are situated within and/or are adjacent to mountainous or hilly terrain. That is, the favourable host rocks outcrop within topographic highs. The areas of bedrock between these upthrust and presently elevated regions are buried beneath overburden and comprise the extensive, very flat desert plains that surround the Coyote Mountains.

Major discoveries made by four Companies during the past 10 years have established the Pima District as one of the principal copper camps in the United States. The ores (copper, silver, tungsten, molybdenum, gold) occur in limestone replacement deposits (skarn & marble), vein deposits, and disseminated deposits in both igneous and sedimentary rocks.

The Silver Bell mines are located in small rugged range rising above an extensive alluvial desert plain. From 1865 to 1930, oxidized copper ores were mined from replacement deposits in garnetized limestone (skarn) zones. Exploratory drilling to locate new orebodies begun in 1948 was successful; and in 1954 mining, by open pit methods, was started on two additional and quite widely separated zones. These latter deposits comprise disseminated copper sulphide zones contained in both igneous and sedimentary rocks. The structural setting, rock types, and copper mineralization found in the Silver Bell District is identical in almost all aspects to that found on Consolidated Red Poplar's Coyote Mountain Claims.

The association of copper with altered limestones (skarn zones) containing garnet and other lime silicate minerals, and with altered zones in acidic intrusives and sills is found throughout the Silver Bell - Coyote Mountain - Pima Districts. The presence of altered calcareous sedimentary remnants (roof pendants) enclosed in acidic, granitic type intrusives and sills is a common feature of all three districts.

Previous Work :

Previous work done on the Property, all prior to 1930, consisted of limited and generally shallow underground workings developed by means of adits, and numerous surface pits and trenches. Over 50 shipments of hand-sorted ore obtained from these old workings is reported to have been shipped to smelters. Smelter liquidation sheets covering 28 of these shipments gave an average grade of ore running about 10% copper plus approximately 1.5 ozs. silver.

All mining was done by primitive 'hand-steeling' methods - no mechanical drills were used. No extensive exploration was ever done on any of the deposits - copper bearing magnetite and specular hematite is still exposed in two of the adits; the other adits follow zones of copper mineralization throughout their length. Systematic sampling and detailed mapping of these old workings is not presently possible since many of the shafts and winzes were backfilled with waste as new entries were developed.

1966 Exploration Program :

A Preliminary Exploration Program designed to evaluate the Property in the immediate vicinity of the old workings and known copper showings was commenced in the latter part of 1966. This Preliminary Program included geological mapping; a limited Magnetometer Survey; limited sampling; and most important, preparation of access roads from the desert plain up the steep mountainside to proposed diamond drill sites adjacent to the old adits.

1. Geological Mapping & Sampling :

Detailed geological mapping and sampling confirmed the presence of high-grade copper-silver mineralization associated with zones of

magnetite and/or specular hematite within altered limestone (skarn) zones and intercalated granitic (alaskite,pegmatite) type sills. These mineralized skarn zones were found to extend intermittently along strike and throughout the entire mass of the favourable limestone host rock.

Sampling within the old workings also showed the presence of substantial tungsten values associated both with the massive sulphide zones and the intercalated sills.

2. Magnetometer Survey Results:

Because of the presence on the Property of high copper values directly associated with massive magnetite zones, it was thought initially that a Magnetometer Survey might prove to be a valuable exploration guide to finding possible further rich copper zones, and/or to delineating the known zones. These assumptions proved to be correct - results obtained on this initial Mag Survey were most encouraging and provided valuable information.

The Magnetometer Survey outlined or indicated at least five separate, generally north-trending, skarn zones all of which contain copper mineralization that in part at least is of economic importance. In addition, numerous local zones of relatively high magnetic readings were found that where known contained concentrations of magnetite with associated copper mineralization.

Magnetic highs, indicative of skarn zones, extend to or are present on all four boundaries of the area surveyed.

1967 Exploration Program :

The most important aspect of the 1967 Exploration Program was the completion of a limited diamond drilling program; sampling of drill core; additional geological mapping; and the acquisition of mineral rights and additional mining claims covering areas adjacent to the originally optioned Bonanza (36 claims) Group.

1. Diamond Drill Results :

The amount of diamond drilling completed to date has totaled approximately 2652 feet contained in twelve drill holes numbered CM - 1A,

1B, & 1C; CM 2 - 8 inclusive, and HG - 1 & 2. This Preliminary Drilling Program was not intended to 'block out' tonnages of mineable ore in the vicinity of known high-grade copper showings, but rather was designed to indicate the true mine-making potential of the overall Property by providing a clearer geological understanding of the conditions and mineral content present across as much of the full width of the favourable limestone horizon as possible. This preliminary drilling was also expected to reveal considerable information as to the extent and significance of prominent north-south and east-west trending faults present on the Property. In addition, these first drill holes were expected to give a much better indication of the nature and extent of the skarn zones, alaskite sills and cross-cutting pegmatite dikes than could be obtained from scattered outcrops only.

The diamond drilling was confined mainly to Adit Zone 1 (DDH's # CM - 1A to 7 inclusive); and to Copper Zone 2 (DDH's # HG -1 & 2); with one hole, DDH # CM - 8, put down approximately half way between the two aforementioned Zones. Numerous important target areas still remain to be tested.

High-grade copper-silver values were encountered in all four of the 'CM series' holes that intersected their target zones. The geology of the area has been complicated by both north-south and east-west trending faults which appear to have both vertical and horizontal displacements - these fault zones were responsible for two of the drill holes missing their targets. Substantial values in tungsten were also encountered in this drilling - these will be discussed later under a separate heading. Drill Hole CM - 2, Turquois Adit Zone, also intersected significant molybdenum mineralization.

The assay results from DDH # CM - 7 are considered by your Consultant to be especially encouraging and significant. One 30 feet section (core interval 50-80 ft.) containing 2.32% copper, 0.34 oz. silver and substantial tungsten could be of prime economic significance in itself. However, of more importance from the viewpoint of attaining the stated exploration purpose of outlining ore zones that are amenable to large tonnage, open pit mining methods is the fact that substantial lengths of core averaged out at from 0.53 to 1.03% copper plus substantial tungsten and some silver values. Anything over 0.5% copper or its equivalent with associated minerals is classified as potential ore in the numerous large tonn-

age mining operations present in Arizona.

A 138 ft. core length in CM - 7 (interval 12 - 150 ft.) averaged 0.63% copper plus substantial tungsten values where assayed. If the first 50 ft. of the drill hole is considered as containing only low grade mineralization that would be considered waste and stripped-off before mining, then we have a 216 ft. section (core interval 50 - 266 ft.) following that averaged 0.53% copper plus tungsten and some silver values. This grade would indicate potential open pit ore.

Drill hole #CM - 7 was also extremely significant since it not only extended the known high-grade zones encountered in CM - 5 (80 ft. of 2.52% copper 1.16 oz. silver) along strike, but also indicated that disseminated copper zones with associated tungsten mineralization exist between the known high grade zones present at the West Adit and the Turquois Adit.

Table A : DDH # CM - 7 - Various 'Breakdowns' of Assay Results.

Core Interval :	Footage :	% Copper :	Ozs. Silver :
12 - 80	68	1.03	0.015
12 - 150	138	0.63	0.06
12 - 211	199	0.48	0.05
12 - 266	254	0.45	0.06
12 - 297	285	0.40	0.06
50 - 150	100	0.87	0.08
50 - 211	161	0.58	0.06
50 - 266	216	0.53	0.07

Additional diamond drilling is definitely warranted along strike (north-south) direction from the cross-section tested, and down dip of the high-grade zones encountered in Adit Zone 1. Particularly in the vicinity of DDH # CM - 7 and the general West Adit Zone.

The two holes (HG - 1 & 2) drilled in Copper Zone 2, located approximately 1850 ft. south of CM - 7, showed that the copper-silver mineralization present in an old adit within one skarn zone tested apparently varied considerably in content along strike, but also extended to depth. It appears as if this apparent pinching-out of the known high-grade mineralized zone along strike may be due more to displacement of this zone along known faults in the area, rather than to any change in

the mineralization along the skarn zone itself. DDH # HG - 1 encountered only scattered copper and tungsten mineralization; HG - 2 encountered a 46 ft. core interval averaging 3.34% copper & 2.87 ozs. silver plus significant tungsten values down dip from high grade surface showings. This skarn zone in general and the high-grade zone in particular definitely warrants further testing both along strike and down dip. In addition, there are known copper-bearing zones in the general Copper Zone 2 region located both east and west of the skarn zone drilled that need further evaluation, as well as areas of magnetic highs that should be drilled.

Drill Hole # CM - 8, located approximately half way between Adit Zone 1 and Copper Zone 2, was drilled through an area of generally low to intermediate magnetic readings. That is, the ground to be tested by this drill hole was not expected to contain local magnetite-rich skarn zones with associated copper. Purpose of this drill hole in general was to test a portion of the Property that was from a geophysical viewpoint of little interest, although there were several surface showings of copper in the general area.

A 67 ft. core interval from 254 - 321 ft. averaged 1.25% copper and minor silver - the presence of tungsten was also noted but no assays were taken. Included within this 67 ft. interval was a five foot section from 316 - 321 ft. that contained 15.9% copper & 5.34 ozs. silver. This high-grade copper-silver zone was intersected approximately 350 feet down dip from surface showings and old pits. The remainder of the drill hole contained minor amounts of copper and traces of silver throughout but all values were below potential ore grade.

Table B : Diamond Drill Hole Summary

DDH #	General Location :	Length :	Remarks :
(a) Adit Zone 1	(L 34 + 00 S)		
CM -1A	Turquois Adit	68 ft.	- abandoned after encountering old workings.
CM -1B	Turquois Adit	96 ft.	- abandoned after encountering old workings.
CM -1C	L 31 + 00 S	224 ft.	- hole lost when core barrel broke off in hole. Good Tungsten; no Cu, Ag. ; fault displacement.

Table 8 : Diamond Drill Hole Summary (continued)

DDH #	General Location :	Length :	Remarks :
CM -2	Turquois Adit	56 ft.	- 13 ft. of 11.8% Cu; 5.99 ozs. silver; 3.73 lbs. WO_3; 0.5 lbs. Mo.
CM -3	Main Adit	308 ft.	- scattered copper mineralization; main zone displaced by fault; high Tungsten (WO_3).
CM -4	West Adit	157 ft.	- 11.0 ft. of 10.57% Cu; 5.58 ozs. Ag; - high Tungsten.
* CM -5	West Adit	82 ft.	- stopped at fault zone; 80 ft. of 2.52% Cu; 1.16 ozs. Ag; - high Tungsten.
32-42 42-51 - not sampled in core box.			
CM -6	West Adit	61 ft.	- encountered old workings, last 8.0 ft. in copper; same drill site as CM -7.
CM -7	West Adit	393 ft.	- high grade Cu, Ag, WO_3 zones; - 216 ft. avg. 0.53% Cu; 0.07 ozs. Ag; plus good Tungsten.
(b) Copper Zone 2			
HG -1	℄ 54 + 00 S	291 ft.	- scattered copper mineralization; some Tungsten. fault displacement.
HG -2	℄ 54 + 00 S	197 ft.	- 46 ft. avg. 3.34 % Cu; 2.87 ozs. Ag; - good Tungsten.
(c) CM -8	℄ 45 + 00 S	719 ft.	- 5 ft. avg. 15.9% Cu; 5.34 ozs. Ag; - indications Tungsten.
	Total Footage	2652 ft.	

2. Tungsten Assays :

Attached to this Report is a Table dated May 30, 1967 summarizing Tungsten (WO_3) assay results of samples taken from both diamond drill core and from grab samples taken from old workings in Adit Zone 1. These Tungsten assays are of extreme economic interest and fully demonstrate the correctness of earlier thoughts of your Consultants that Tungsten (Scheelite) might well constitute a most important byproduct of any large scale, open pit mining operation on the Coyote Mountain Property. Tungsten is considered by Anaconda to be one of the ore minerals that will be recovered in their large open pit operation now under development at Twin Buttes, Arizona - located approximately 28 miles east of the Coyote Mountains.

The samples of drill core assayed were selected only where indications of Tungsten were noted by the assayer while 'running' his copper assays. Even though these samples were taken over only part of the core lengths drilled, they already show that substantial thicknesses of Tungsten-bearing material exist in all the Drill Holes assayed to date. Of particular economic interest are the Tungsten values found in Drill Holes CM -4, 5, & 7 in association with copper-silver mineralization of the West Adit.

Further detailed and comprehensive sampling of all drill cores for possible Tungsten content is required; as well as an analysis of the assay results in conjunction with detailed mapping in order to determine their geological control. High Tungsten values have been found in both Pegmatite and Sulphide Zones. An ultra-violet lamp survey at night (since Scheelite, the Tungsten-bearing mineral present, is fluorescent) is also an obvious requirement in order to determine the Tungsten mineralization controls.

3. Molybdenum Mineralization :

Drill Hole CM -2 had a core length of 13.0 ft. which averaged 0.5 lbs. Molybdenum - this indicated grade is well above those levels considered to be of economic interest. Molybdenum mineralization was known to occur in the Turquois Adit since Powellite, a secondary product of the alteration of Molybdenite, is present on surface at the portal of the

Adit. Molybdenite itself has also been found in samples taken from the nearby Main Adit. The ultimate possible economic importance of the Molybdenum mineralization found to date is still to be determined - it forms a valuable byproduct at several Arizona mines.

Additional Work Recommendations :

Additional work recommendations have previously been presented in considerable detail to Management and are beyond the Scope of this present Report. The following summarizes the more important aspects of those recommendations :-

1. Diamond Drilling :

The most important aspect of the additional exploration program recommended at this time is the detailed evaluation and extension of the known and/or suspected mineralized zones by means of diamond drilling. Any valid conclusion as to the mine-making potential of the Coyote Mountain Property will ultimately be directly dependent on results achieved by this drilling. Therefore, it is deemed absolutely essential by your Consultant that an adequate amount of drilling be allocated for now, and that a proper support program be arranged.

Although exact footages to be drilled will be somewhat dependent on results obtained as the program progresses, a minimum total core footage of approximately 33,000 ft. is indicated for the next phase of the evaluation program.

Recommendations :

(a) Immediately employ two diamond drills to complete cross-sections of the favourable host rocks in Sections 26, 27 & 35; Township 16 South.

(b) Immediately employ one drill to test areas of magnetic highs presently located in Sections 26 & 27; Township 16 South.

(c) Employ one churn drill to test overburden-covered areas after completion of proposed reconnaissance Geophysical Surveys.

2. Property Map :

Immediately arrange to have a base map of the Coyote Mountain Area made from airial photos.

3. Grid Control Network :

(a) Extend present grid to cover all of Section 26 and part of Sections 27, 34, & 35.

(b) Layout a rough grid on Sections 1 & 2 / T 17 S.

(c) Establish a rough grid on Mendoza Claims.

4. Geological Mapping:

Conduct further reconnaissance and detailed geological mapping utilizing the services of both a senior and junior Geologist.

5. Magnetometer Surveys :

(a) Immediately complete a detailed Mag Survey over Section 26 and portions of Sections 27, 34, & 35.

(b) Conduct a reconnaissance Mag Survey over portions of Section 36 / T 16 S, Sections 1 & 2 / T 17 S, and the Mendoza Claims.

6. Induced Polarization Survey :

(a) Conduct an I.P. Survey along picket lines 24, 34, 44, & 56 + 00 S.

(b) Attempt to trace out high grade copper zones along strike in Adit Zone 1.

(c) Conduct reconnaissance I.P. Surveys over portions of Sections 35 & 36 / T 16 S & Sections 1 & 2 / T 17 S.

7. Tungsten Mineralization :

(a) Conduct an ultra-violet lamp survey (at night) over known copper zones on Section 26.

(b) Split and assay all drill core for possible Tungsten content.

(c) Obtain bulk samples from magnetite-rich sands in the vicinity of Section 1 / T 17 S and assay for possible Tungsten content.

Additional Financing :

(a) General

In order to obtain the substantial funds necessary to proceed with the work program recommended, it was mutually agreed to by Darke

Consultants and Management that it would be in the best interests of Consolidated Red Poplar Minerals Limited to arrange for additional Participants in the further evaluation of the Coyote Mountain Property. Subsequently, Darke Consultants approached a selected few large Mining Companies on the basis of a possible 'joint-venture' with Red Poplar, and others also if desired, on the implementation of the work program recommended. One such Company approached was Homestake Mining.

(b) Homestake Mining Company

After numerous meetings with the Management of Homestake Mining and after several Property Examinations by members of their Exploration Staff, Homestake Mining entered into an Agreement with Red Poplar on August 31, 1967 re the further evaluation of the Coyote Mountain Area. Subsequently, Homestake Mining sent a member of their Exploration Staff to Tucson, and proceeded to acquire additional mining claims as recommended by Darke Consultants; and to conduct reconnaissance geological mapping. A second Exploration Geologist, recently hired by Homestake, was also sent to Tucson during the latter part of September in order to aid in the pending Exploration Program.

On November 9, 1967 Red Poplar was informed by Management of Homestake Mining that it was forthwith terminating its Agreement with Red Poplar on the grounds that defects had been discovered "which appear to throw doubt on the validity of title to the claims." In a subsequent telephone conversation with Mr. Paul C. Henshaw, Vice President, Exploration for Homestake, I was informed that the decision to terminate said Agreement had been made in their Head Office at San Francisco, and not by their Exploration Staff in charge of the field program. My request at that time for details as to just what the alleged Title Defects might constitute was denied. I was also informed at that time that even if any so called defects were corrected by Red Poplar, then Homestake would still not necessarily honour the original Agreement.

On November 15, 1967, I discussed the title situation with Red Poplar's solicitor in Phoenix, Arizona and was informed again that in his opinion the Company has sufficient title to its Arizona mining claims. After numerous field checks of claim boundaries and discussions with the original locator of said claims, it is your Consultant's considered opinion that the mining claims involved in the Agreement between Homestake

and Red Poplar were initially located in the field with the utmost care and accuracy, by transit & chain survey, far greater that required by mining regulations and/or what is general practice on this matter in the State of Arizona.

(c) Current Negotiations :

During the past month, Darke Consultants have once again conducted Property Examinations with representatives of several large Mining Companies re their possible Participation on the further evaluation of the Coyote Mountain Area Property. Favourable responses have subsequently been received by Darke Consultants who have so informed Management of Red Poplar. Official Reports from those Companies that have completed Property Examinations are presently awaited. Other Examinations are tentatively scheduled.

Summary & Conclusions:

The Preliminary Exploration Program completed to date has shown that the Coyote Mountain, Arizona Property of Consolidated Red Poplar Minerals Limited contains numerous copper-silver bearing zones with associated tungsten and in part molybdenum mineralization. Assay grades of this mineralization where present in the main areas of possible economic interest are well above those limits generally set for potential ore in the numerous large-scale, open-pit mining operations prevalent in Arizona. Only a small portion of even these known higher grade mineralized zones have been tested to date.

Although the limited amount of diamond drilling previously scheduled and completed precluded any attempt to block-out tonnages of ore, it did indicate that the high-grade mineralized zones present in old workings and surface outcrops did extend at least intermittently to depth. This preliminary drilling also indicated that zones of disseminated mineralization of potential open-pit ore grade existed between the known high-grade horizons.

The substantial work program currently recommended is considered as the next logical phase in the evaluation of the Coyote Mountain Property. This program is designed to further test the extent and grade of the mineralized horizons and zones in between both along strike and down dip; and to investigate areas recently acquired for their possible economic mineral content. Overburden-covered areas within the surrounding desert plains that lie along or adjacent to the strike of the known mineralized horizons warrent close attention; as do the playa areas in Sections 35 & 36 / T 16 S & Sections 1 & 2 / T 17 S that contain substantial placer concentrations of magnetite sands with associated copper & tungsten mineralization and garnet, epidote & zircon crystals.

Respectfully submitted,

KENNETH H. DARKE CONSULTANTS LIMITED

K. H. Darke

Timmins, Ont.
March 1, 1968

K.H. Darke, B.A.Sc.
Consulting Geological Engineer

CERTIFICATE

The Management
Consolidated Red Poplar Minerals Limited
Suite 1024
85 Richmond Street West
Toronto 1, Ontario

I, KENNETH H. DARKE, of the Town of Timmins, in the Province of Ontario, do hereby certify:

1. I am a Consulting Geological Engineer with an office at 34 Pine Street South; Timmins, Ontario.

2. I am a graduate of the University of British Columbia in Geological Engineering and have practised my profession in this capacity for over eleven years.

3. I have no direct interest in Consolidated Red Poplar Minerals Limited, nor do I expect to receive any interest in the Property described in this Report or in the securities of the Company. My wife presently is the beneficial owner of 7500 shares of Consolidated Red Poplar Minerals Limited stock purchased by her on the open market at her own direction, but as such, may be construed by some to represent an indirect interest in the Company on my part.

4. My Report dated March 1, 1968 is based upon numerous personal visits to the Property over the past two years, and upon a study of the results obtained from all previous evaluation programs completed on the Property.

DATED this 1st day of March 1968.

Timmins, Ontario

K.H. Darke

K.H. Darke, B.A.Sc.
Consulting Geological Engineer

G953.4

INTER-OFFICE CORRESPONDENCE

COPIES TO: D. H. Freas

TO B. L. White, District Geologist

FROM J. B. Imswiler

DATE December 8, 1969

SUBJECT Preliminary Report on the Coyote Mountain Prospect, NE Coyote Mtns., Pima County, Arizona

SUMMARY AND CONCLUSIONS

The Coyote Mountain Prospect occurs as a roof pendant of metasediments in an acid igneous complex of alaskite and pegmatite. Copper mineralization occurs along contacts between pegmatite and partially digested blocks of metasediment. The copper mineralization is essentially restricted to the metasediments, and does not appear to be genetically related to the pegmatites.

The mineralized metasediments are of no economic interest. If petrographic analysis of the samples taken should show copper mineralization to be related to the intrusives, then further sampling and analyses should be done. If there is no relationship between the intrusives and copper mineralization, then the property is of no further interest to IMC.

INTRODUCTION

The Coyote Mountain prospect is located in the northeast part of the Coyote Mountains, Pima County, Arizona, and is about 40 miles southwest of the city of Tucson. The area may be reached by dirt road after leaving Highway 86 at a point 35 miles west of Tucson. Maximum relief in the area is 2,250 feet and the topography is extremely rugged.

The property consists of 75 unpatented mining claims owned by Consolidated Red Poplar Minerals, Ltd. These claims could be acquired at this time by lease/option on favorable terms.

Two days were spent in the field examining the property and collecting samples. Approximately one and one-half days were spent going over available data and in discussions with Dr. C. P. Jenney, agent for Consolidated Red Poplar, Ltd. and Mr. Frank Carrigan, a graduate student at the University of Arizona, who is currently conducting geological mapping in the area. The property was examined during the first week of December, 1969.

To:B. L. White, District Geologist
From: J. B. Imswiler
Re: Preliminary report on Coyote Mountain Prospect, Pima County, Arizona

GEOLOGY AND MINERALIZATION

Metasediments, biotite-gneiss, alaskite, pegmatite, and lamprophyre dikes crop out in this part of the Coyote Mountains. The biotite-gneiss and metasediments occur as remnant blocks of a partially digested roof pendant in an alaskite-pegmatite complex. The lamprophyre dikes are a younger feature and are of minor importance. The metasediments associated with copper mineralization are marble and tactite.

Copper mineralization occurs along contacts between pegmatite and metasediments. At the surface, this mineralization consists of azurite, malachite, and chrysocolla, and is primarily in metasediments. Some slight copper mineralization occurs in the pegmatites, but it is restricted to fracture coatings within 18 inches of the contact. One core sample showed bornite and chalcopyrite veining in pegmatite at a depth of 316 feet. As at the surface, this mineralization in pegmatite at depth is immediately adjacent to metasediments.

The pegmatite shows no copper mineralization or alteration beyond 18 inches from the pegmatite/metasediment contacts. For this reason I believe that the pegmatite is not genetically related to the copper mineralization. It appears that, for the most part, the mineralized pegmatites have been intruded along major northwest-striking faults in the metasediments. It is my opinion that these faults controlled pre-pegmatite copper mineralization and later controlled the emplacement of the pegmatite dikes.

I believe that the restricted mineralization in the pegmatites represents lateral secretion from the mineralized metasediments at the time of pegmatite intrusion. Post intrusion offsetting has occurred along north-south- and northeast-striking faults.

RECOMMENDATIONS

A number of pegmatite and alaskite rock samples were taken for petrographic analysis in order to determine more precisely whether or not there is any genetic relationship between these intrusives and copper mineralization. If these analyses indicate no genetic relationship exists, then I recommend that no further work be done on this property. If copper mineralization is associated with the intrusives, then I recommend that more sampling be done to determine the extent and degree of copper mineralization and alteration in the intrusives.

Respectfully submitted,

J. Bruce Imswiler

J. B. Imswiler

JBI:jh

December 8, 1969

Dr. C. Phillip Jenney
Consulting Geologist
Route 6, 400 Golf View Drive
Tucson, Arizona, 885704

Dear Dr. Jenney:

It was certainly a pleasure to meet both you and Mrs. Jenney on my visit to Tucson last week. I would like to take this opportunity to again thank you for your assistance and cooperation on my examination of the Coyote Mountain property, and for the gracious hospitality extended to me by both you and Mrs. Jenney throughout my visit.

Because of the break in the weather, I was able to visit the property on Saturday, December 6th and to take some preliminary samples. These samples, along with the core samples, will be sent out for petrographic analysis to determine the genetic relationship between the intrusives and copper mineralization. The results of this work will determine whether or not we are interested in doing further work on this property. As soon as I have received these results I will let you know our decision.

With best regards to both you and Mrs. Jenney, let me again thank you for everything.

Sincerely,

JBI:jh

J. Bruce Imswiler

To: B. L. White, District Geologist

From: J. B. Imswiler

Date: December 8, 1969

Subject: Preliminary Report on the Coyote Mountain Prospect, Pima County, Arizona

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I believe that the restricted mineralization in the pegmatites represents lateral secretion from the mineralized metasediments at the time of pegmatite intrusion. Post intrusion offsetting has occurred along north-south- and northeast- north-south-and north-east-striking faults.

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Respectfully submitted,

C. PHILIP JENNEY
CONSULTING GEOLOGIST

2433 Robin Drive
Clarkson, Ontario
822-5017

Route 6
400 Golfview
Tucson, Arizona
297-2014

January 25, 1970

Mr. J. Bruce Imswiller
International Minerals & Chemical Corp.
Exploration Division
400 South Wells Ave., Suite 133
Reno, Nevada 89502

Re: Coyote Mountain Property

Dear Bruce:

In your letter of December 8, 1969, you informed me that you had taken certain preliminary samples for petrographic analysis. From conversations with you I judged that results from these samples, and your further interest in the property - dependent thereon - would be available shortly.

This is merely to inform you that other interests have approached us regarding a property examination. If, therefore, you have your preliminary petrographic results at hand, I'd be glad to hear from you.

With best regards,

Sincerely,

C. P. Jenney

CPJ/ja
cc: Mr. Sam Taylor

COYOTE AND Adrian

Box 872
Douglas,
January 17, 1970

Dear Bruce:

Enclosed are the descriptions of your first batch. The others have been prepared and I'll work on them next.

Alteration in these samples is unusual and reminds me of some metallization I have seen in the Yerington district, Ruby range (Elko Co.) etc.

I have saved the rocks and slides-do you want these returned? In all cases in the future?

Geochemistry for prospecting in this area might be a unique problem. Will you do some reconnaissance spectrographic work first? I recommend it.

best,

Sid

TELEPHONE CONVERSATION WITH SAM ON 1-22-70

ESSENTIALLY VERIFIED MY INITIAL FIELD IMPRESSION.

CONTACT METAMORPHISM IS ASSOCIATED WITH PEGMATITE DIKE INTRUSION. METALLIZATION MAY OR MAY NOT BE ASSOCIATED WITH PEGMATITE INTRUSION. ~~EXCEPT~~ REGIONAL METAMORPHISM OCCURRED AFTER METALLIZATION + INTRUSION. THE INTRUSIVE IS STERILE; NO HOPE FOR DISSEMINATED MINERALIZATION

JB

5728

The specimen is composed almost exclusively of andesine. These are large, irregular grains with intricately sutured borders; twinning is poorly developed. Later shearing has not modified the texture much but has resulted in straining and bending of the crystals. Granulation between the grains has just begun to appear. A few coarse epidote crystals, some intergrown with allanite, some with piemontite, occupy interstices. One altered biotite crystal was also noted.

Supergene alteration of chalcopyrite has resulted in replacement of biotite by allophane, sericite, and chrysocolla with traces of brochantite. Minute, parallel fractures in the plagioclase also carry chrysocolla and hisingerite.

The rock is a metasomatic one-the original material cannot be determined. Metallization occurred during the last phases of the metasomatism.

Minerals are present in the following estimated amounts: andesine 97%, chrysocolla 1%, and traces of epidote, piemontite, allanite, hisingerite, brochantite, and allophane.

5729

The specimen is composed largely of coarse, poikioblasts of microcline which enclose remnants of plagioclase both as perthitic stringers and as embayed crystal relics. Shear zones cutting the fabric carry chalcopyrite in a gangue of quartz. The chalcopyrite is now altered to hematite and chrysocolla.

The walls of these veins are replaced by plagioclase and stringers of coarse muscovite. Muscovite also lines fractures parallel to the stronger, mineralized shears.

As in 5728, metallization is related to introduction of plagioclase.

Minerals are present in the following estimated amounts: microcline 76%, quartz 15%, plagioclase 7%, and muscovite 2%.

5727

The specimen is a gneiss showing strong shearing effects-although composed of quartz and feldspars alone, a good foliation has developed by elongation of the grains. Quartz is more distorted than the plagioclase (andesine) and tends to "flow" around larger plagioclase grains. A few thin stringers of sericite parallel the foliation.

Late fractures carry chalcopyrite (now altered to hisingerite and chrysocolla), and near these grains the plagioclase is slightly sericitized with epidote.

Minerals are present in the following estimated amounts: quartz 28%, plagioclase 70%, sericite 1%, and traces of chrysocolla, epidote, and hisingerite.

5722

The specimen is a gneiss composed of large, strained plagioclase and orthoclase crystals set in a sheared matrix of quartz, orthoclase, and plagioclase. Quartz is most vulnerable to shearing and is rather well healed; the plagioclase in the matrix is marginally granulated.

One band cutting the fabric is studded with small garnet euhedra-traces of prochlore also occur here-and the garnet may represent former biotite. Locally the garnets are pseudomorphosed by sericite. Traces of magnetite and perovskite are present as accessories.

Minerals are present in the following estimated amounts: quartz 18%, orthoclase 22%, plagioclase 54%, garnet 3%, sericite 2%, and traces of prochlore, magnetite, and perovskite.

5721

The specimen is a tactite composed of large masses of garnet and diopside, and other areas rich in plagioclase. The garnet is quite clean-only a few pockets lined with prochlore were noted. Coarse diopside prisms occur in a band parallel to the edge of the garnet mass.

The other part of the specimen consists mainly of large, slightly strained plagioclase anhedra with crenulated borders. Interstitial pockets may carry fresh, unstrained quartz and orthoclase. Sericite in the plagioclase is rare.

Sulfides (bornite and chalcopyrite) occur throughout the specimen and seem compatible with the metamorphic assemblage. They generally occur at grain boundaries, or in cavities in garnet, and have replaced the silicates adjacent to them. Incipient supergene alteration has produced rims of chalcocite and late malachite.

5720

The specimen is a breccia derived from rocks similar to others in this suite. One fragment of quartz (polycrystalline) and one rich in plagioclase comprise the bulk of the sample.

The quartz is granular and shows little evidence of strain. Mineralization is confined to the plagioclase-rich area, however, Thick seams of bornite, chalcopyrite, and covellite and chalcocite fill the interstices among the now isolated plagioclase crystals. Introduction of the sulfides was preceeded by mild fracturing along which sericite replaced the plagioclase. Sulfides then replaced the plagioclase adjacent to the fractures. The sulfide grains are cut by a network of fractures filled with hydromicas.

January 29, 1970

Dr. C. Phillip Jenney
Consulting Geologist
Route 6, 400 Golf View Drive
Tucson, Arizona 85704

Re: Coyote Mountain Property

Dear Phil:

Thank you for your letter of January 25, 1970. The reason you have not heard from me is that I just got the results of the petrographic work back last week.

Enclosed please find a copy of my preliminary report and a copy of the petrographic results. The petrography essentially verified my initial impression. One surprise is that our "igneous" rocks appear to be largely metamorphic, i.e., gneiss.

One thing that strongly impressed me when I examined the property was that copper mineralization in "Alaskite" and "Pegmatite" is restricted to close proximity to metasediments. The petrographic work indicates this is due to partial digestion of mineralized sediments along contacts. Apparently the sediments were contact metamorphosed and mineralized before regional metamorphism.

Since there appears to be no genetic relationship between "Alaskite/" gneiss and copper mineralization, this property is of no further interest to IMC at this time.

Thank you again for your warm hospitality while I was in Tucson. This property was interesting geologically, and I enjoyed working on it. Perhaps we can get together on another sometime.

With best personal regards,

Sincerely,

JBI:jh
enc.

J. Bruce Imswiler

COYOTE MTN SAMPLES

S.A.W.?

VERIFY MY FINDINGS.

CONTACT METAMORPHISM ASSOC PEGMATITE DIKE INTRUSION. METALLIZATION ~~METALLIZATION~~ MAY OR MAY NOT BE ASSOC PEGMATITE INTRUSION. REGIONAL METAMORPHISM AFTER METALLIZATION + INTRUSION. INTRUSIVE STERILE NO ORE

B. L. White, District Geologist

J. B. Imswiler

December 8, 1969

Preliminary Report on the Coyote Mountain Prospect,
Pima County, Arizona

SUMMARY AND CONCLUSIONS

The Coyote Mountain Prospect occurs as a roof pendant of metasediments in an acid igneous complex of alaskite and pegmatite. Copper mineralization occurs along contacts between pegmatite and partially digested block of metasediment. The copper mineralization is essentially restricted to the metasediments, and does not appear to be genetically rehted to the pegmatites.

The mineralized metasediments are of no economic interest. If petrographic analysis of the samples taken should snow copper mineralization to be related to the intrusives, then further sampling and analyses should be done. If there is no relationship between the intrusives and copper mineralization, then the property is of no further interest to IMC.

INTRODUCTION

The Coyote Mountain prospect is located in the northeast part of the Coyote Mountains, Pima County, Arizona, and is about 40 miles southwest of the city of Tucson. The area may be reached by dirt road after leaving Highway 86 at a point 35 miles west of Tucson. Maximum relief in the area is 2,250 feet and the topography is extremely rugged.

The property consists of 75 unpatented mining claims owned by Consolidated Red Poplar Minerals, Ltd. These claims could be acquired at this time by lease/option on favorable terms.

Two days were spent in the field examining the property and collecting samples. Approximately one and one-half days were spent going over available data and in discussions with Dr. C. P. Jenney, agent for Consolidated Red Poplar, Ltd. and Mr. Frank Carrigan, a graduate student at the University of Arizona, who is currently conducting geological mapping in the area. The property was examined during the first week of December, 1969.

To:B. L. White, District Geologist
From: J. B. Imswiler
Re: Preliminary report on Coyote Mountain Prospect, Pima County, Arizona

GEOLOGY AND MINERALIZATION

Metasediments, biotite-gneiss, alaskite, pegmatite, and lamprophyre dikes crop out in this part of the Coyote Mountains. The biotite-gneiss and metasediments occur as remnant blocks of a partially digested roof pendant in an alaskite-pegmatite complex. The lamprophyre dikes are a younger feature and are of minor importance. The metasediments associated with copper mineralization are marble and tactite.

Copper mineralization occurs along contacts between pegmatite and metasediments. At the surface, this mineralization consists of azurite, malachite, and chrysocolla, and is primarily in metasediments. Some slight copper mineralization occurs in the pegmatites, but it is restricted to fracture coatings within 18 inches of the contact. One core sample showed bornite and chalcopyrite veining in pegmatite at a depth of 316 feet. As at the surface, this mineralization in pegmatite at depth is immediately adjacent to metasediments.

The pegmatite shows no copper mineralization or alteration beyond 18 inches from the pegmatite/metasediment contacts. For this reason I believe that the pegmatite is not genetically related to the copper mineralization. It appears that, for the most part, the mineralized pegmatites have been intruded along major northwest-striking faults in the metasediments. It is my opinion that these faults controlled pre-pegmatite copper mineralization and later controlled the emplacement of the pegmatite dikes.

I believe that the restricted mineralization in the pegmatites represents lateral secretion from the mineralized metasediments at the time of pegmatite intrusion. Post intrusion offsetting has occurred along north-south- and northeast-striking faults.

RECOMMENDATIONS

A number of pegmatite and alaskite rock samples were taken for petrographic analysis in order to determine more precisely whether or not there is any genetic relationship between these intrusives and copper mineralization. If these analyses indicate no genetic relationship exists, then I recommend that no further work be done on this property. If copper mineralization is associated with the intrusives, then I recommend that more sampling be done to determine the extent and degree of copper mineralization and alteration in the intrusives.

Respectfully submitted,

JBI:jh

J. B. Imswiler

C. PHILIP JENNEY
CONSULTING GEOLOGIST

2433 Robin Drive
Clarkson, Ontario
822-5017

Route 6
400 Golfview
Tucson, Arizona
297-2014

February 2, 1970

Mr. J. Bruce Imswiler
International Minerals & Chemical Corp.
400 South Wells, Suite 133
Reno, Nevada 89502

Re: Coyote Mountain Property
Pima County, Arizona

Dear Bruce:

Many thanks for your letter of January 29, 1970 and enclosed copy of your Preliminary Report and subsequent reports of the petrographic analyses. These proved most interesting and I agree with you that the "igneous" rocks mapped to date are largely gneiss. Frank Carrigan has been looking intensively for exposures of young granite, syenite or monzonite. Perhaps study of his 400 thin sections might give us a lead.

As you have heard, no doubt, relatively recent depth drilling on a number of copper-molybdenite porphyrys in the western U.S.A. and Canada, eg. Climax's Henderson in Colorado and the Boss Mountain in B.C., has discovered ore in younger acid intrusives underlying the original mining areas. In most cases (including both of the above) this new ore is higher grade than the original mines.

Since the Coyote Mountain mineralization was probably pre-regional metamorphism, our deep-drilling program, recommended in my report of November 10, 1969, is a search for a possible younger mineralized intrusive emplaced during the regional metamorphism period, controlled by pre-existing channelways and underlying the present roof pendant now exposed on the surface. Admittedly it's a long shot but I think it is a possibility for a large company that can afford the gamble.

Noranda is now in the process of having another serious look at the Four Metals and Ventura properties in Santa Cruz County with the above in mind. Of course they have their fortunate experience at Boss Mountain to encourage them.

I hope we can keep in touch and, as you say, perhaps get together on another one. I'd appreciate any information you may run across on these depth developments under or near existing Moly-Copper porphyry deposits. There is very little in print as yet.

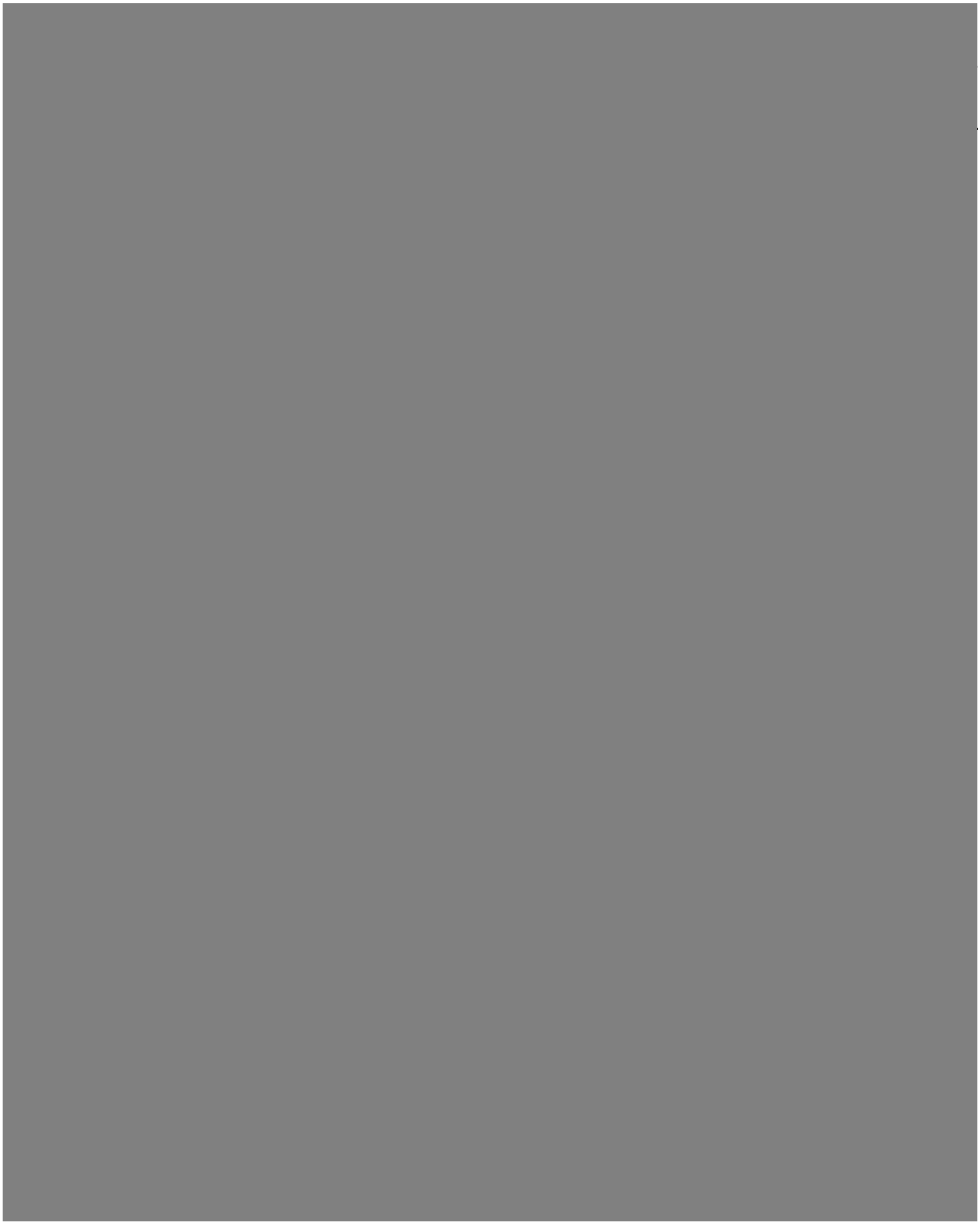
With best regards,

Sincerely,

Phil

C. P. Jenney

CPJ/ja
cc: Mr. Sam Taylor



Geological Society of America Bulletin, v. 93, p. 1176–1188, 6 figs., 1 table, November 1982.

File Copy

Summary Report on the

COYOTE MOUNTAIN PROPERTY

Pima County, Arizona

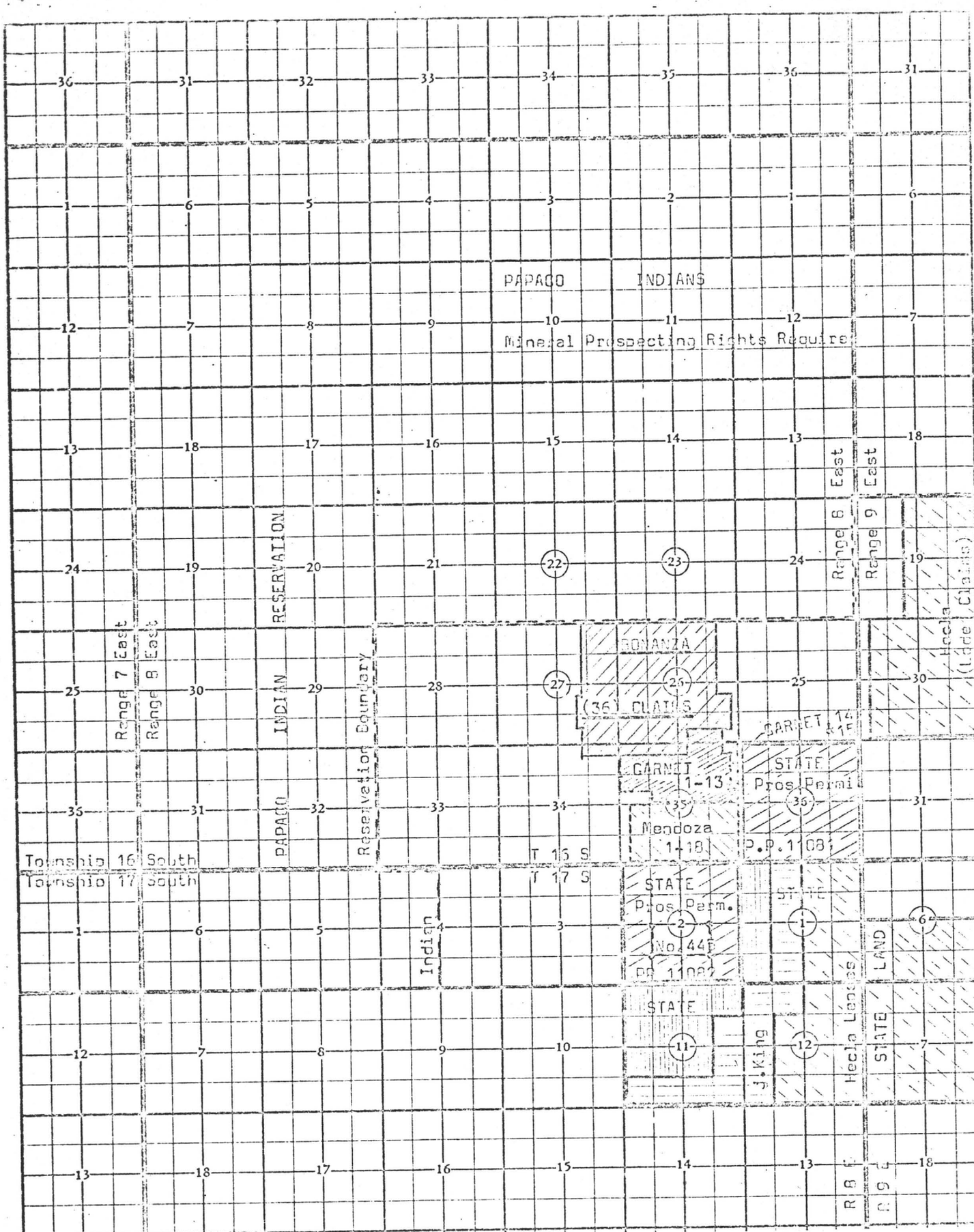
for

Consolidated Red Poplar Minerals Limited

Kenneth H. Darke Consultants Limited

March 1, 1968

Township 16 & 17 South Range 8 & 9 East [illegible] Principal Meridian



Mineral Rights Held By:

- Consol. Red Poplar Minerals
- Consolidat. Red Poplar (Relocations)
- State Land
- J. King (Mineral Rights)
- Hecla Mining

COYOTE MOUNTAIN PROPERTY

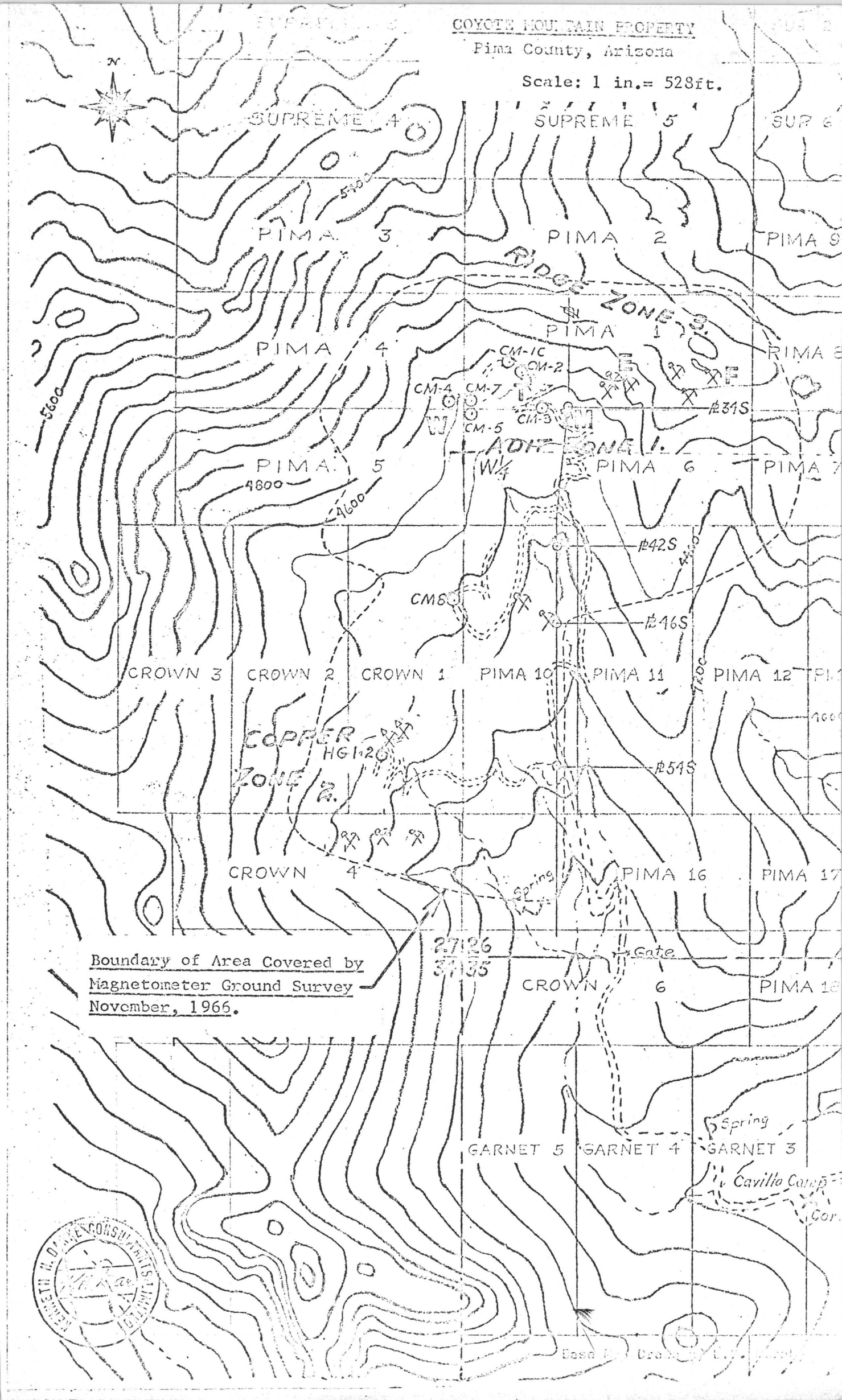
Pima County, Arizona

Scale: 1 inch = 1 mile

KENNETH H. DARKE CONSULTANTS LIMITED

K.H. Darke

Feb. 28, 1968


COYOTE MOUNTAIN PROPERTY
Pima County, Arizona
Scale: 1 in.= 528ft.
SUPREME 4
SUPREME 5
SUP 6
PIMA 3
PIMA 2
PIMA 9
RIDGE ZONE 3.
PIMA 1
PIMA 4
PIMA 8
CM-1C
CM-2
CM-4
CM-7
CM-3
CM-5
E
F
W
M
ADIT ZONE 1.
W1/4
PIMA 5
PIMA 6
PIMA 7
5600
4800
4600
4400
CM8
CROWN 3
CROWN 2
CROWN 1
PIMA 10
PIMA 11
PIMA 12
COPPER ZONE 2.
HG1-2
CROWN 4
PIMA 16
PIMA 17
Spring
Gate
CROWN 6
PIMA 18
GARNET 5
GARNET 4
GARNET 3
Cavillo Camp
Boundary of Area Covered by Magnetometer Ground Survey November, 1966.
KENNETH H. DARKE CONSULTANTS LIMITED

TUNGSTEN ASSAYS from split Diamond May 30, 1967

Drill core and Grab Samples; Coyote

Mountain Property, Arizona:-

Location DDH#	Sample No.	Interval	Footage	% WO_3	lbs.WO_3	Gross Value @ $1.50/lb
CM-1C	M2/136	120-136	16	0.13	2.6	$ 3.90
CM-3	M3/56	56-70	14	0.59	11.8	17.70
	M3/130	130-145	15	0.05	1.0	1.50
CM-4	M4	70-90	20	0.02	0.4	0.60
	M4/2	90-115	25	0.37	7.4	11.10
	485	118-129	11	0.10	2.0	3.00
CM-5	M5/491	10-11	1	0.047	0.94	1.41
	M5/492	11-25	14	0.43	8.6	12.90
CM-7	MM7	55-75	20	0.23	4.6	6.90
	M7/556	105-117	12	0.023	0.46	0.69
	M7/00	120-135	15	0.18	3.6	5.40
	M7/560	150-178	28	0.17	3.4	5.10
	M7/564	211-230	19	0.07	1.4	2.10
	M7/569	276-287	11	0.023	0.46	0.69
HG-1	HG1/67	67-95	28	0.025	0.50	0.75
	HG1/137	137-150	13	0.035	0.70	1.05
HG-2	HG2	60-80	20	0.005	0.10	0.15
	HG2/80	80-90	10	0.01	0.20	0.30
	HG2/120	100-120	20	0.145	2.9	4.35
	486	157-187	30	0.05	1.0	1.50

*NOTE:- Refer to attached Location Maps for accurate location of the following samples. (General area from which sample was taken is given here.)

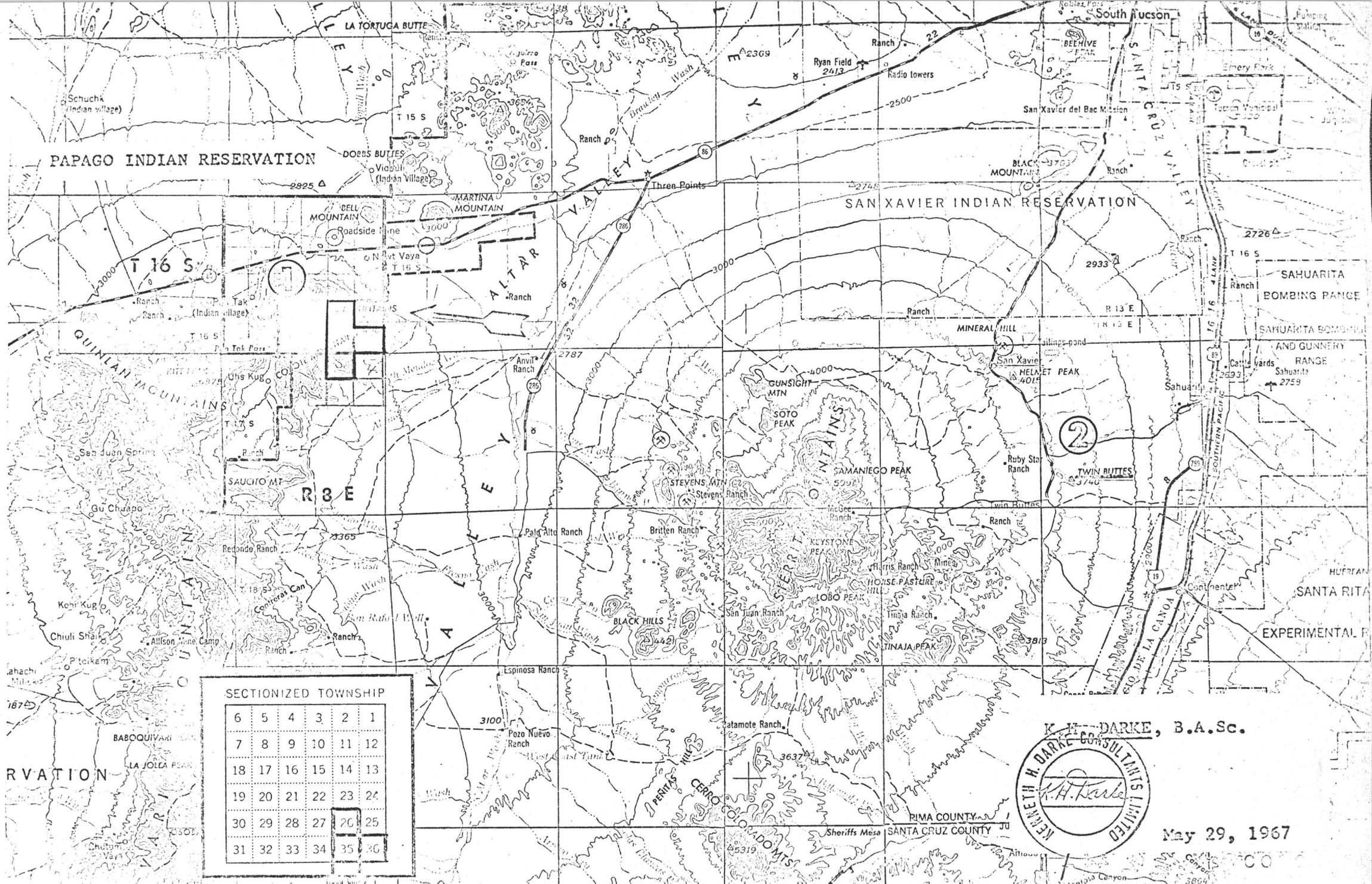
Main Adit	MA/160G	Sulphides	Grab	0.27	5.4	$ 8.10
	AALR	Alaskite	2	0.02	0.4	0.60
	MA5		5	0.925	18.50	27.75
East Adit	A2E	Pegmatite	Grab	0.055	1.10	1.65
	A3E	"	"	0.095	1.90	2.85
Turquois Adit	TA1	"	"	0.005	0.10	0.15
	TA2	"	"	0.25	5.0	7.50
Upper West Adit	AAW	"	"	0.184	3.68	5.52

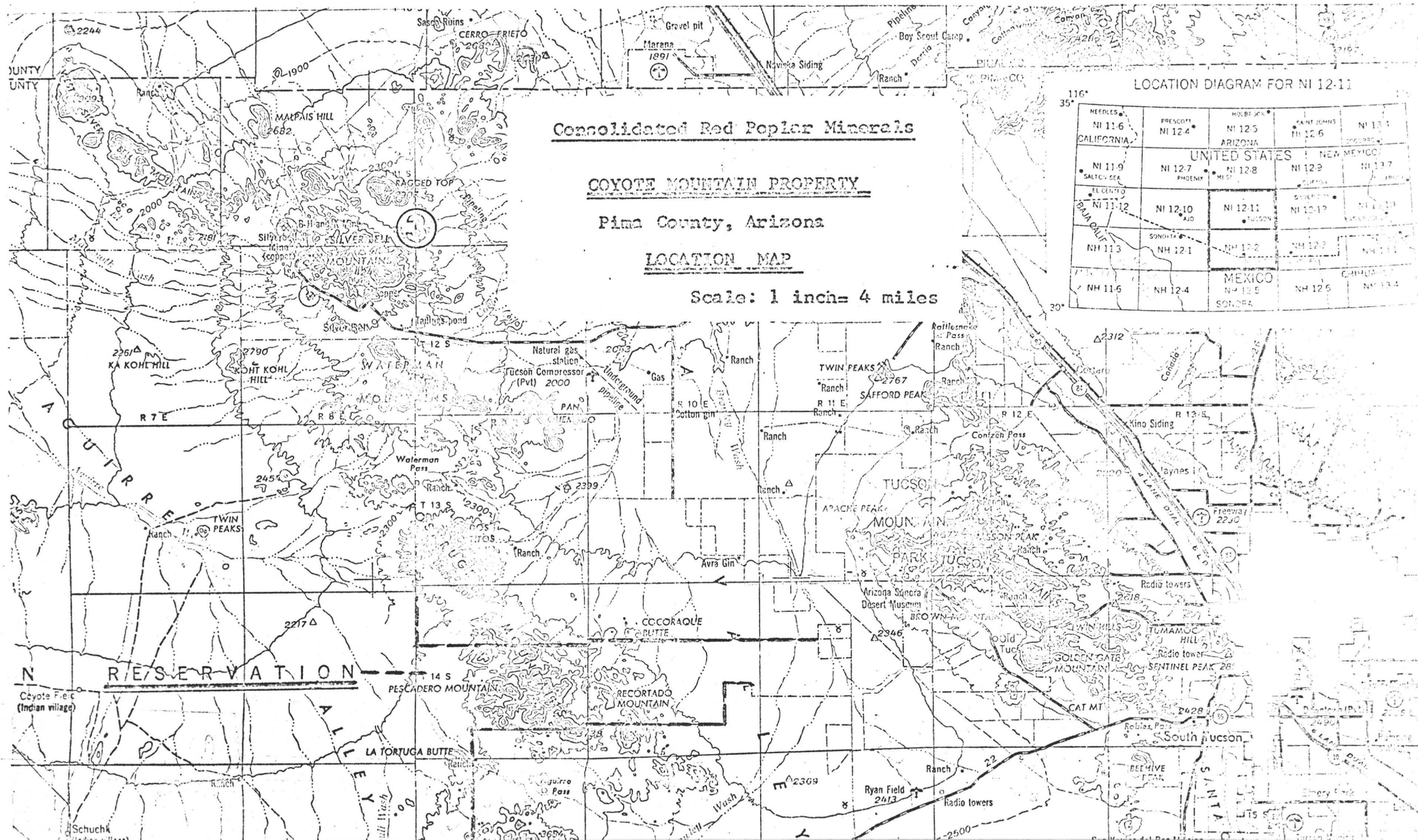
* * * * * * * * * * * * * * * * * * * *

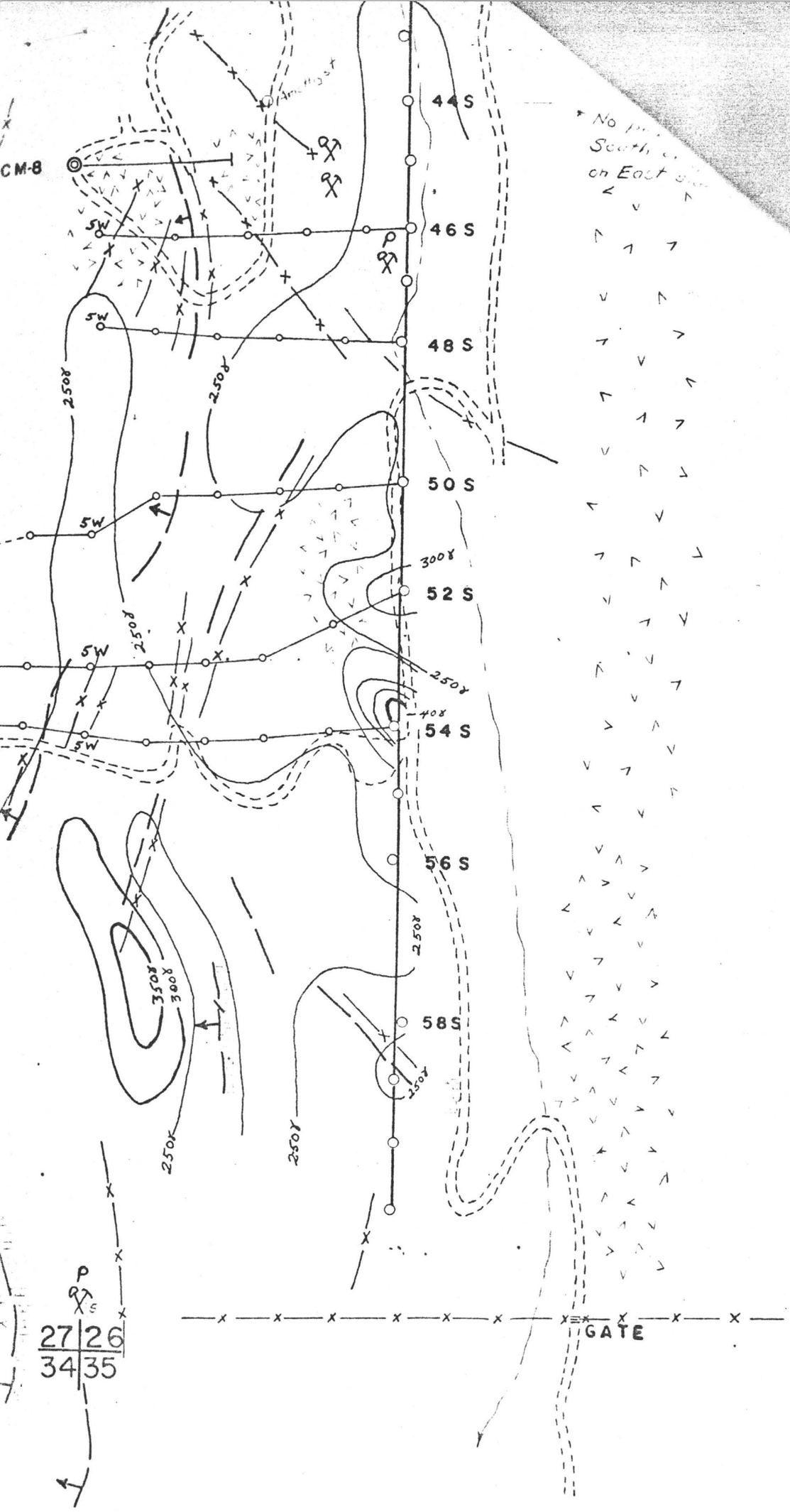
G.A. Russell

K.H. Danks, B.A.Sc.

K.H. Danks


PAPAGO INDIAN RESERVATION
SAN XAVIER INDIAN RESERVATION
SAHUARITA BOMBING RANGE
SAHUARITA BOMBING AND GUNNERY RANGE
SANTA RITA EXPERIMENTAL
South Tucson
Ryan Field
Radio towers
San Xavier del Bac Mission
Three Points
Roadside Mine
Nawt Vaya
Schuchk (Indian village)
Vidbull (Indian Village)
Pan Tak (Indian village)
Uhs Kug
San Juan Spring
Gu Chuapo
Kohi Kug
Chiuli Shaik
Allison Mine Camp
Pitoikam
Redondo Ranch
Contreras Can
Anvil Ranch
Pala Alto Ranch
Britten Ranch
Espinosa Ranch
Pozo Nuevo Ranch
Batamote Ranch
San Juan Ranch
Stevens Ranch
Ruby Star Ranch
Twin Buttes
Continental
Sahuarita
Cattle yards
Sheriffs Mesa
Ranch
Mines
Harris Ranch
Tinaja Ranch
Tucson Municipal
Emery Park
Pumping station
Gravel pit
Tailings pond
Canyon
Amado
Mendoza Canyon
Pitoikam
Chutum Vaya
Kahachi Mileka
T 16 S
T 15 S
T 17 S
R 8 E
R 13 E
R 13 E
T 16 S
T 15 S
T 18 S
ALTAR VALLEY
SANTA CRUZ VALLEY
QUINLAN MOUNTAINS
SAUCITO MT
MARTINA MOUNTAIN
BELL MOUNTAIN
DOBBS BUTTES
LA TORTUGA BUTTE
BLACK MOUNTAIN
BEEHIVE PEAK
MINERAL HILL
HELMET PEAK
GUNSIGHT MTN
SOTO PEAK
SAMANIEGO PEAK
STEVENS MTN
KEYSTONE PEAK
HORSE PASTURE HILLS
LOBO PEAK
TINAJA PEAK
BLACK HILLS
PEÑITAS HILL
CERRO COLORADO MTS
SIERRITA MOUNTAINS
RIMA COUNTY
SANTA CRUZ COUNTY
SOUTHERN PACIFIC
RIO DE LA CANOA
RVATION
SECTIONIZED TOWNSHIP
6 5 4 3 2 1
7 8 9 10 11 12
18 17 16 15 14 13
19 20 21 22 23 24
30 29 28 27 26 25
31 32 33 34 35 36
K. H. DARKE, B.A.Sc.
KENNETH H. DARKE CONSULTANTS LIMITED
May 29, 1967


Consolidated Red Poplar Minerals
COYOTE MOUNTAIN PROPERTY
Pima County, Arizona
LOCATION MAP
Scale: 1 inch= 4 miles
LOCATION DIAGRAM FOR NI 12-11
UNITED STATES
CALIFORNIA
ARIZONA
NEW MEXICO
MEXICO
SONORA
CHIHUAHUA
BAJA CALIF
MALPAIS HILL
RAGGED TOP
SILVER BELL MOUNTAINS
KA KOHL HILL
KOHT KOHL HILL
WATERMAN MOUNTAINS
Tucson Compressor (Pvt) 2000
Natural gas station
Underground pipeline
Cotton gin
TWIN PEAKS
SAFFORD PEAK
Rattlesnake Pass
Contzen Pass
Kino Siding
Waterman Pass
TUCSON MOUNTAIN PARK
APACHE PEAK
Avra Gin
Arizona Sonora Desert Museum
BROWN MOUNTAIN
COCORAQUE BUTTE
RECORTADO MOUNTAIN
PESCADERO MOUNTAIN
LA TORTUGA BUTTE
GOLDEN GATE MOUNTAIN
TUMAMOC HILL
SENTINEL PEAK
CAT MT
South Tucson
Ryan Field 2413
Radio towers
Coyote Field (Indian village)
Schuchk
Freeway 2230
Cortaro
Marana 1891
Navisha Siding
Boy Scout Camp
Gravel pit
Sasco Ruins
CERRO PRIETO
Silver Bell
Tailings pond
R 7 E
R 8 E
R 10 E
R 11 E
R 12 E
R 13 E
T 12 S
T 13 S
T 14 S
ACUIRRE
ALLEY
RESERVATION



CONSOLI

SECTI

COYOTE M

PIMA C

TOWNSHIP

RANGE 8

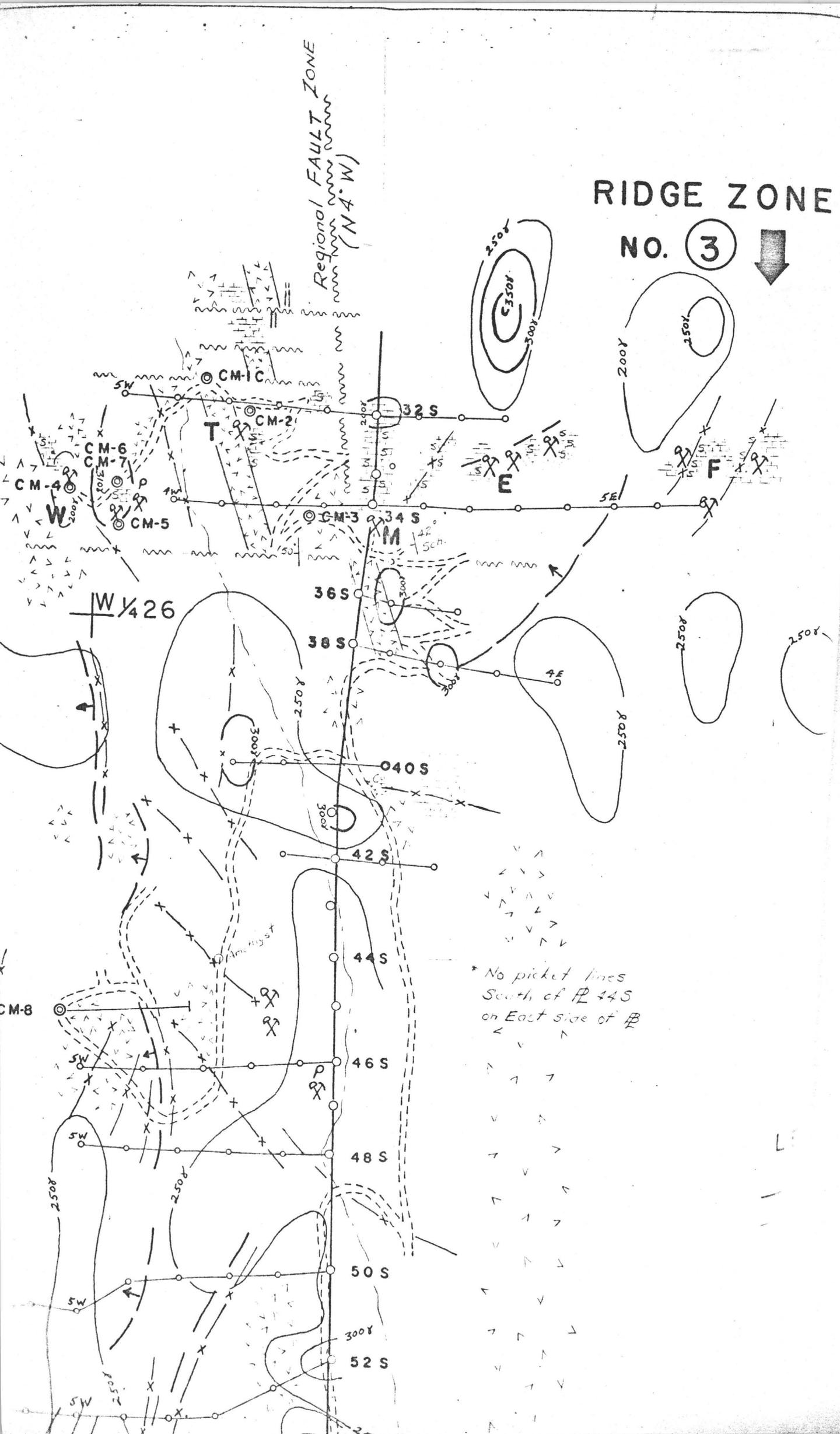
STADIA SU

DRAWN BY

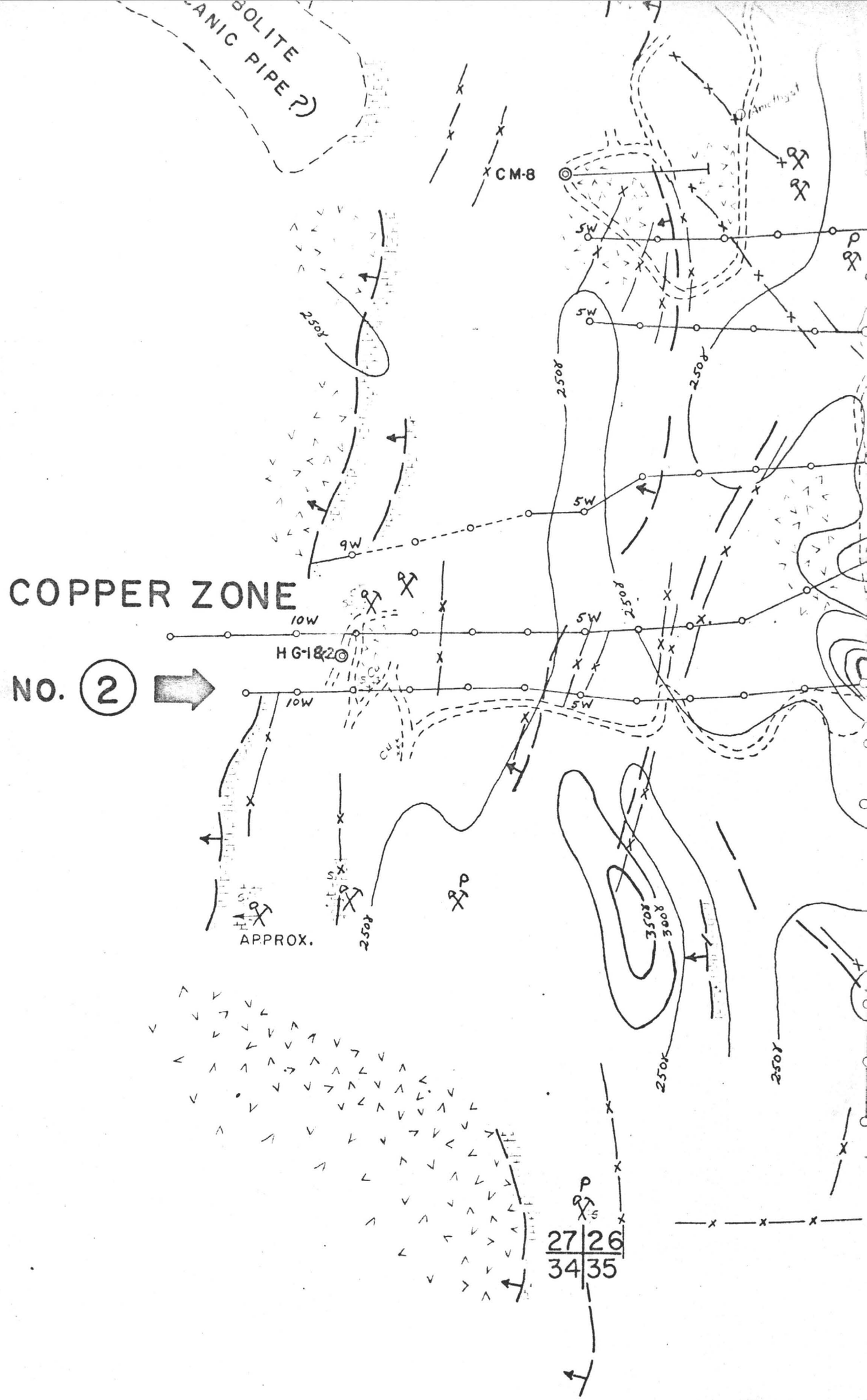
DATE: NO

SCALE: 1

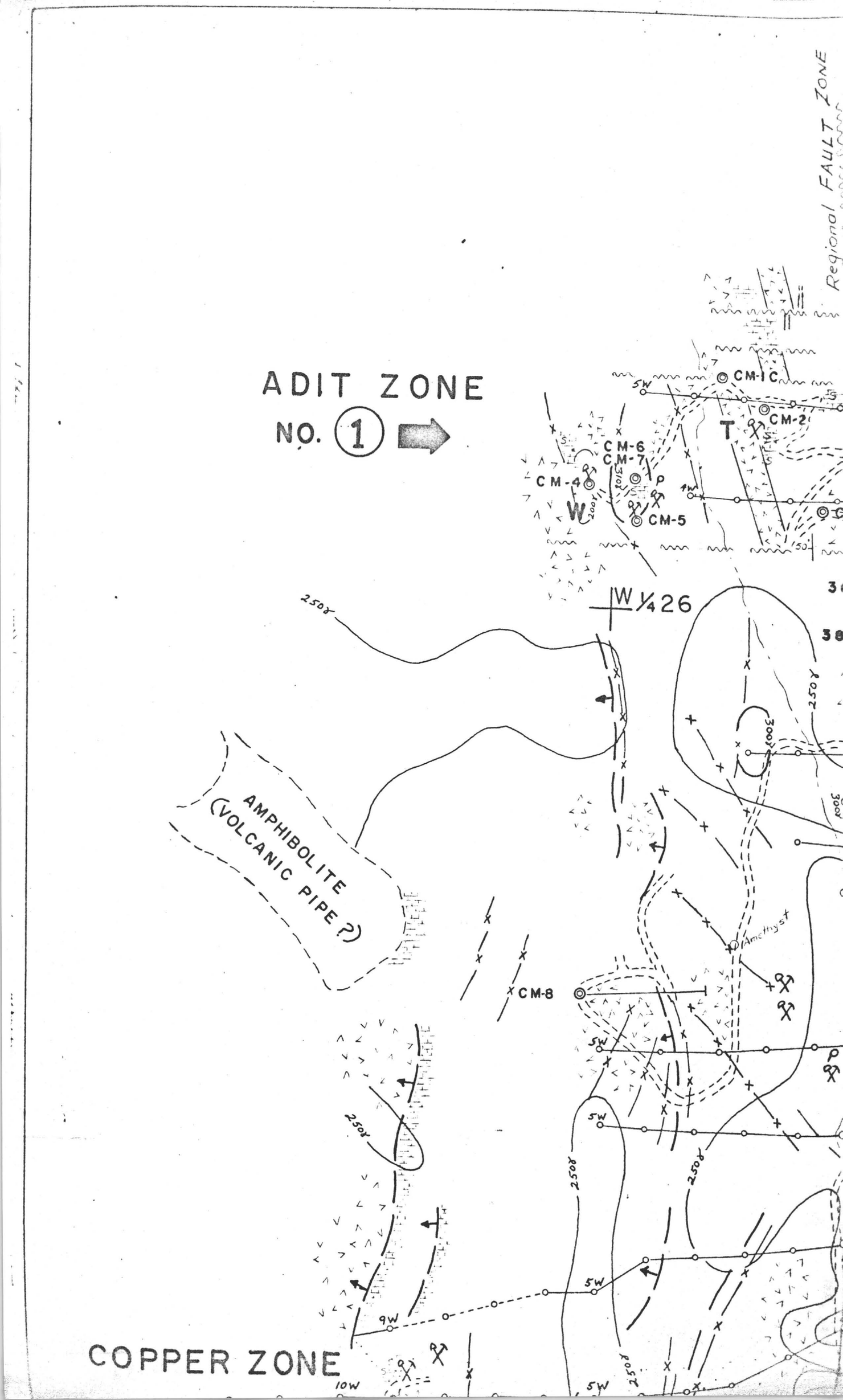
KENNETH H. PARKE CONSULTANTS INC.



RIDGE ZONE
NO. 3
Regional FAULT ZONE
(N4°W)
CM-1C
CM-2
CM-3
CM-4
CM-5
CM-6
CM-7
CM-8
T
E
F
W
M
32 S
34 S
36 S
38 S
40 S
42 S
44 S
46 S
48 S
50 S
52 S
W 1/4 26
42° Sch.
Amethyst
* No picket lines South of PL 44S on East side of PL

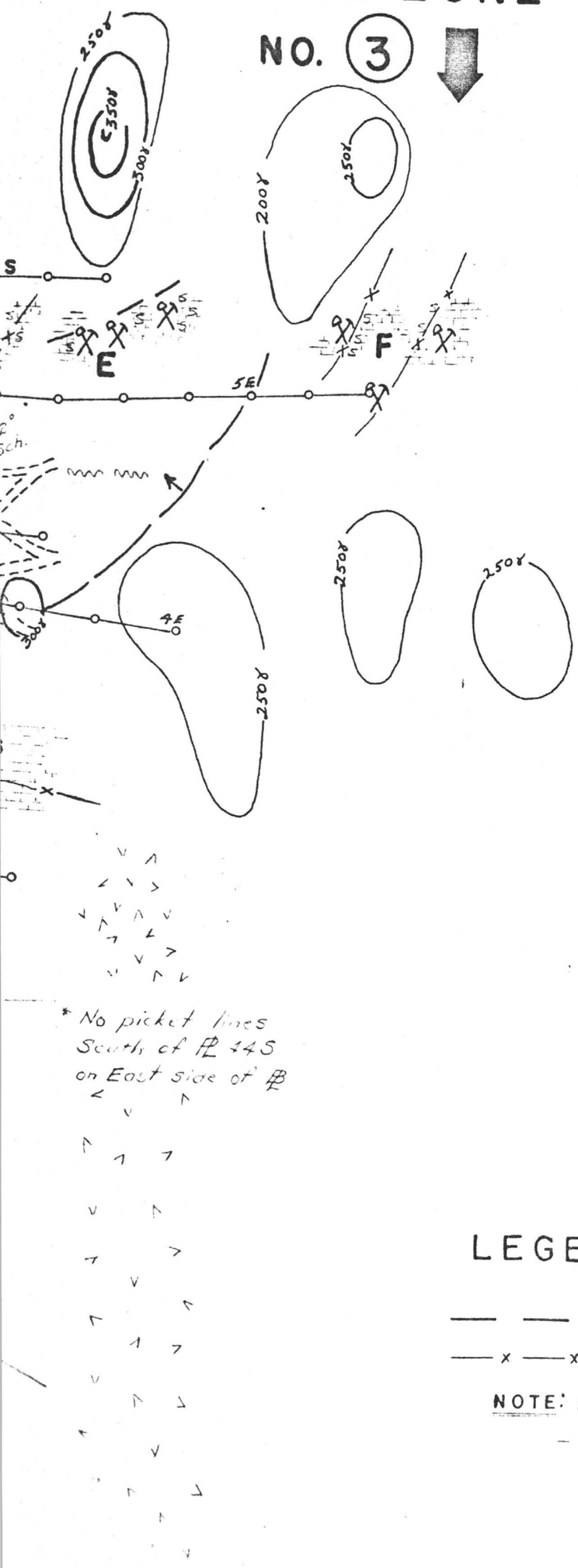


BOLITE
CANIC PIPE ?)
CM-8
5W
5W
5W
9W
10W
10W
5W
5W
HG-1&2
COPPER ZONE
NO. 2
APPROX.
250γ
250γ
250γ
250γ
250γ
250γ
350γ
300γ
250γ
250γ
27 26
34 35

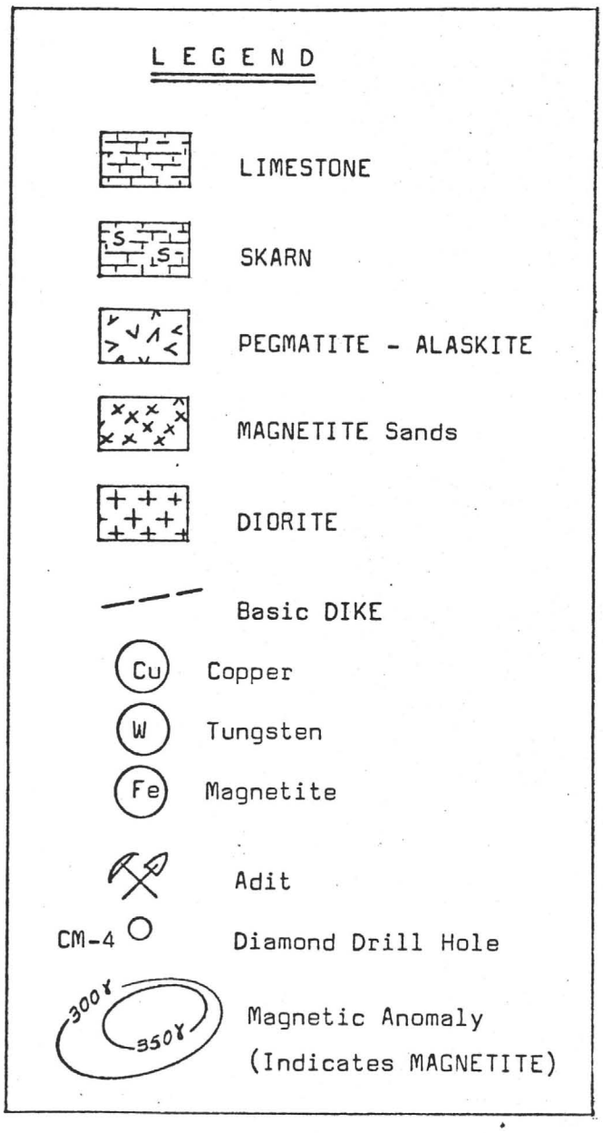

Regional FAULT ZONE
ADIT ZONE
NO. 1
CM-1C
CM-2
CM-6
CM-7
CM-4
CM-5
W
T
W 1/4 26
250'
300'
AMPHIBOLITE
(VOLCANIC PIPE?)
CM-8
Amethyst
5W
9W
10W
COPPER ZONE

RIDGE ZONE

NO. 3



* No picket lines South of PL 44S on East side of PL



LEGEND

— — — LIMESTONE TRENDS

—x—x— SKARN TRENDS

NOTE: APPROX. EDGE OF OUTCROPPING

– Outcrop Trends by L.B. Murphy

Adit

CM-4 Diamond Drill Hole

300γ 350γ Magnetic Anomaly (Indicates MAGNETITE)

LEGEND

— — — LIMESTONE TRENDS

—x—x— SKARN TRENDS

NOTE: APPROX. EDGE OF OUTCROPPING

- Outcrop Trends by L.B. Murphy

CONSOLIDATED MINERALS, INC.

SECTIONAL PLAN
COYOTE MOUNTAIN PROPERTY
PIMA COUNTY, ARIZONA
TOWNSHIP 16 SOUTH
RANGE 8 EAST

STADIA SURVEY: LYLE B. MURPHY

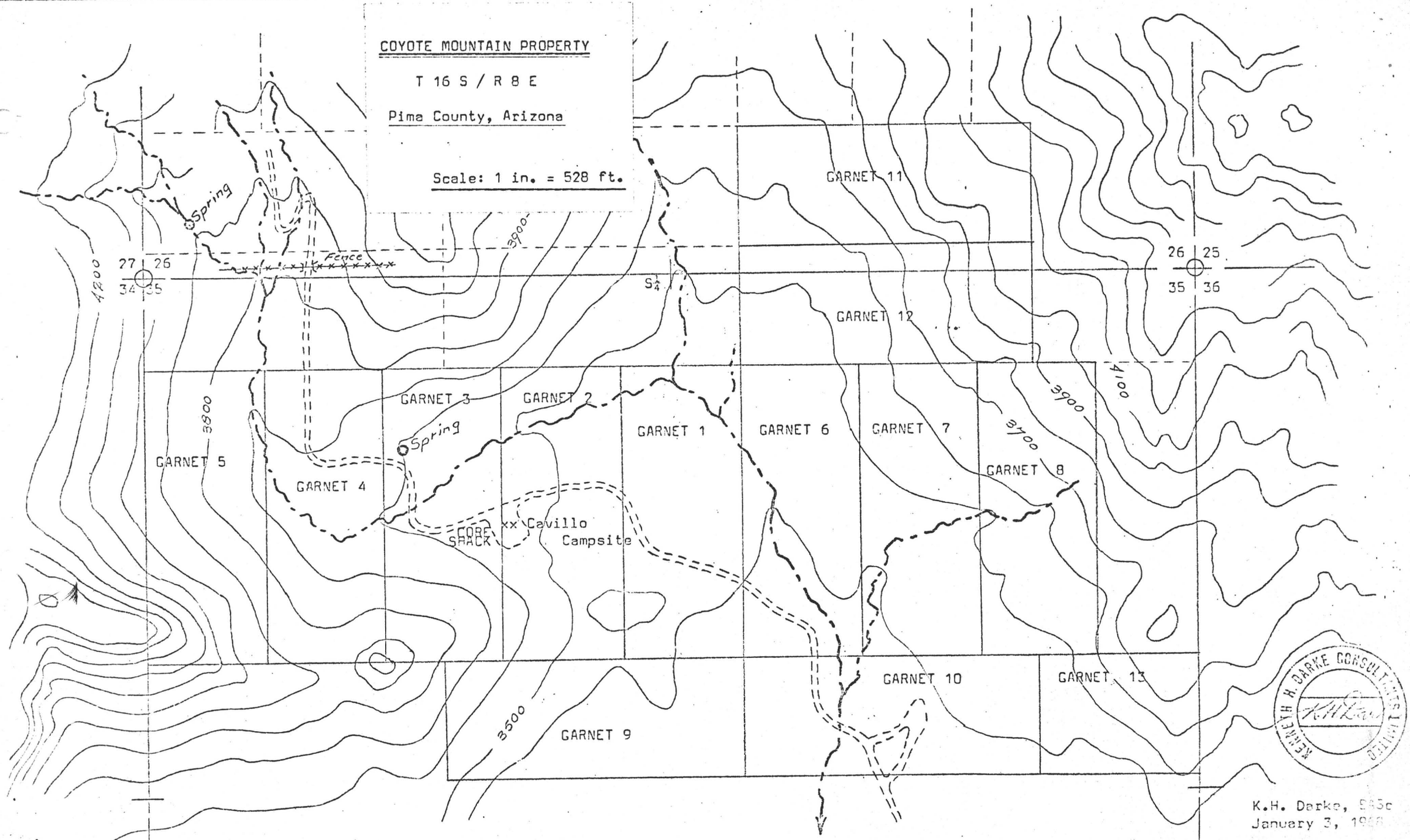
DRAWN BY: W.L.

DATE: NOV. 28 1967

SCALE: 1" = 200'

KENNETH H. DARKE CONSULTANTS LIMITED

KENNETH H. DARKE
CONSULTANTS LTD.



K.H. Darke, B.Sc
January 3, 1968

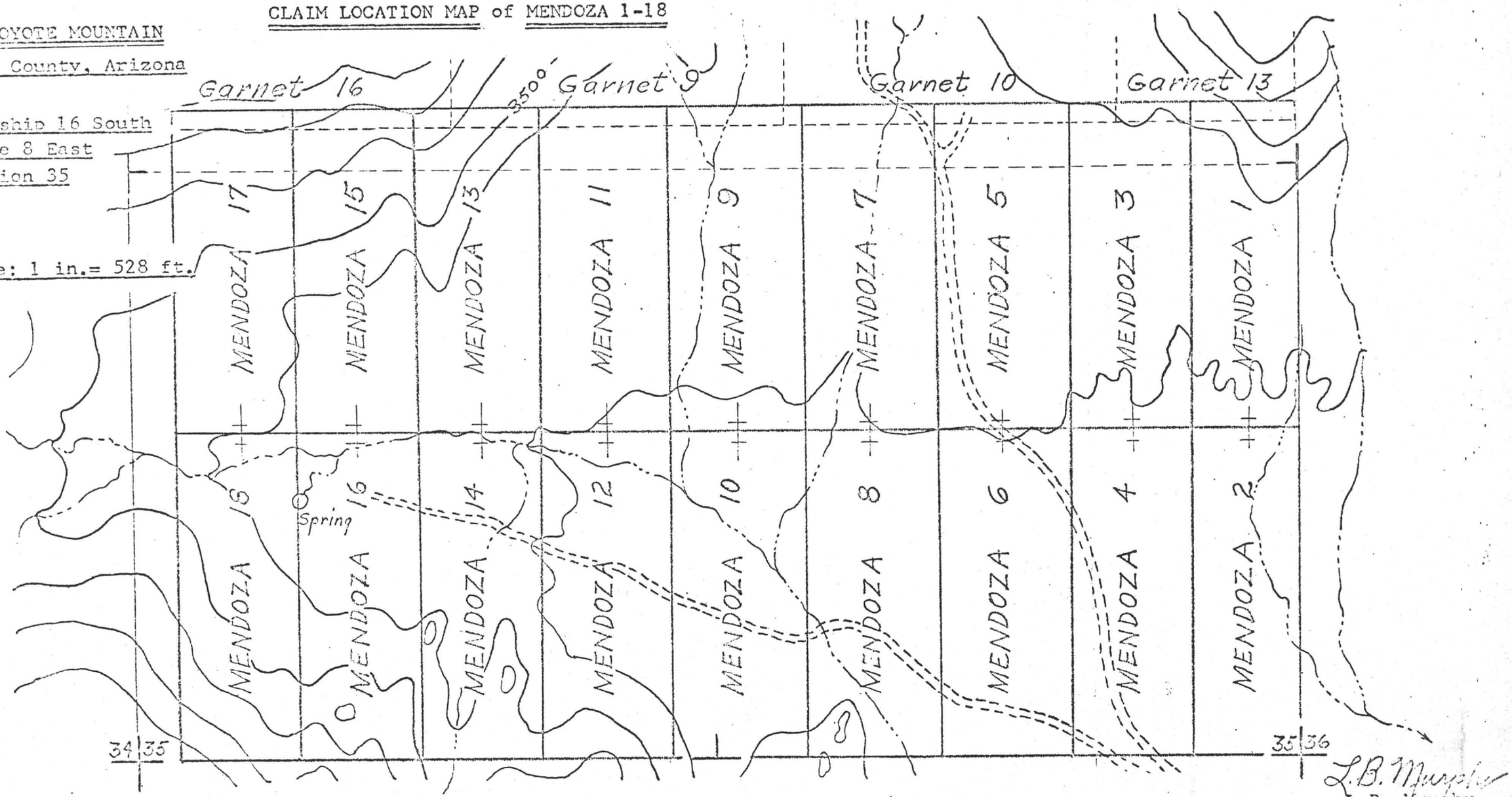
CLAIM LOCATION MAP of MENDOZA 1-18

COYOTE MOUNTAIN

Pima County, Arizona

Township 16 South
Range 8 East
Section 35

Scale: 1 in.= 528 ft.



L.B. Murphy

L.B. Murphy

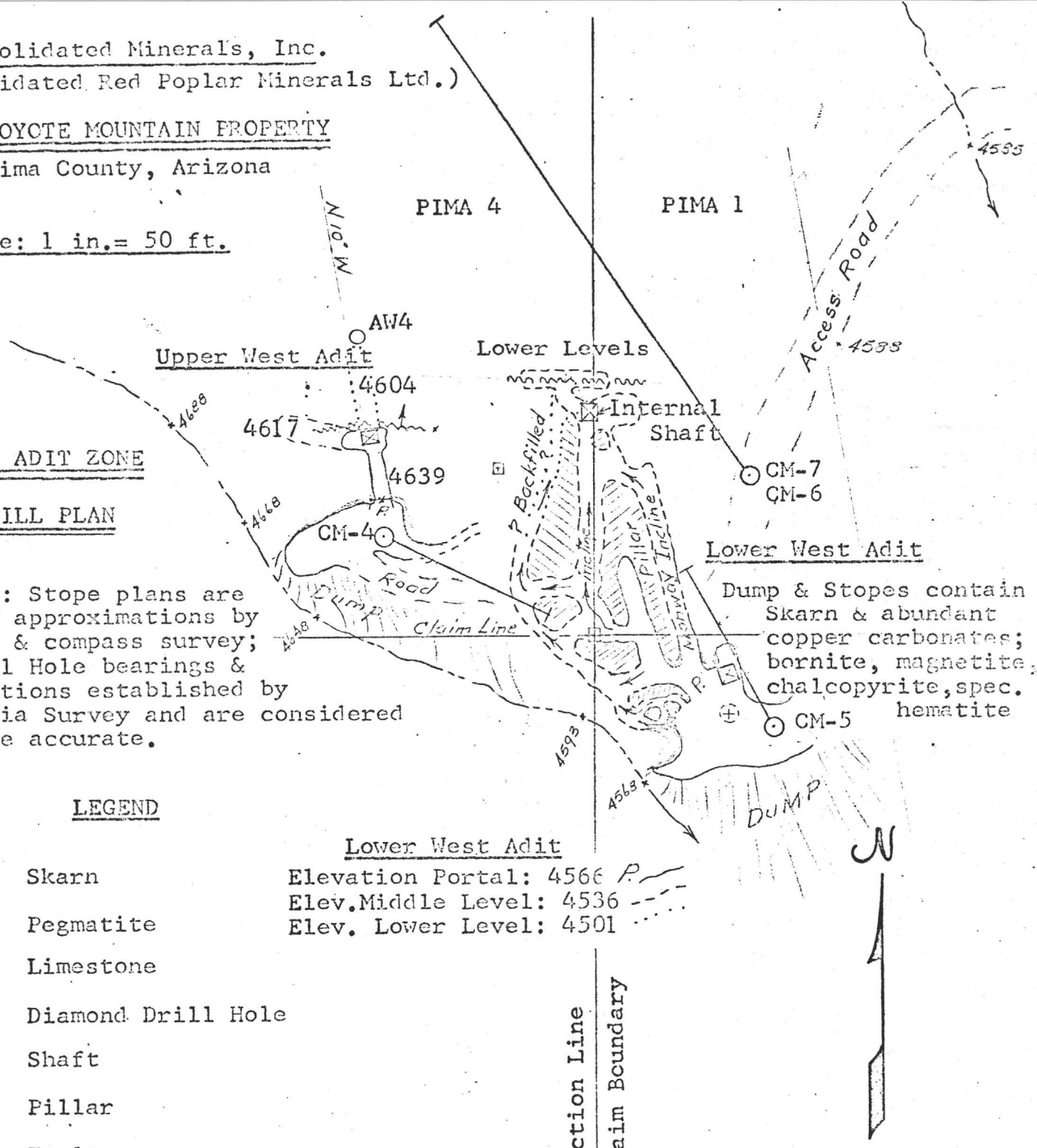
February 2,196

Consolidated Minerals, Inc.
(Consolidated Red Poplar Minerals Ltd.)

COYOTE MOUNTAIN PROPERTY

Pima County, Arizona

Scale: 1 in.= 50 ft.



WEST ADIT ZONE

DRILL PLAN

*Note: Stope plans are only approximations by pace & compass survey; Drill Hole bearings & locations established by Stadia Survey and are considered to be accurate.

LEGEND

- Skarn
- Pegmatite
- Limestone
- Diamond Drill Hole
- Shaft
- Pillar
- Fault
- AW4 ○ Tungsten Sample

Lower West Adit

Elevation Portal: 4566 P
Elev. Middle Level: 4536 - - -
Elev. Lower Level: 4501 · · · ·

PIMA 5 | PIMA 6

Section Line | Claim Boundary

W½ 26

4578

Section 27 | Section 26

Station: DDH#	Length: ft.	Dip:	Bearing:	Elevation:
CM-4	157	66°	S 25°58'E	4639
CM-5	80	40	N 29°W	4566
CM-7	393	61	N 34°25'W	4590

K.H. Darke

K.H.Darke, B.A.Sc.

February 3, 1968

Coyote Mountain Property
Pima County, Arizona

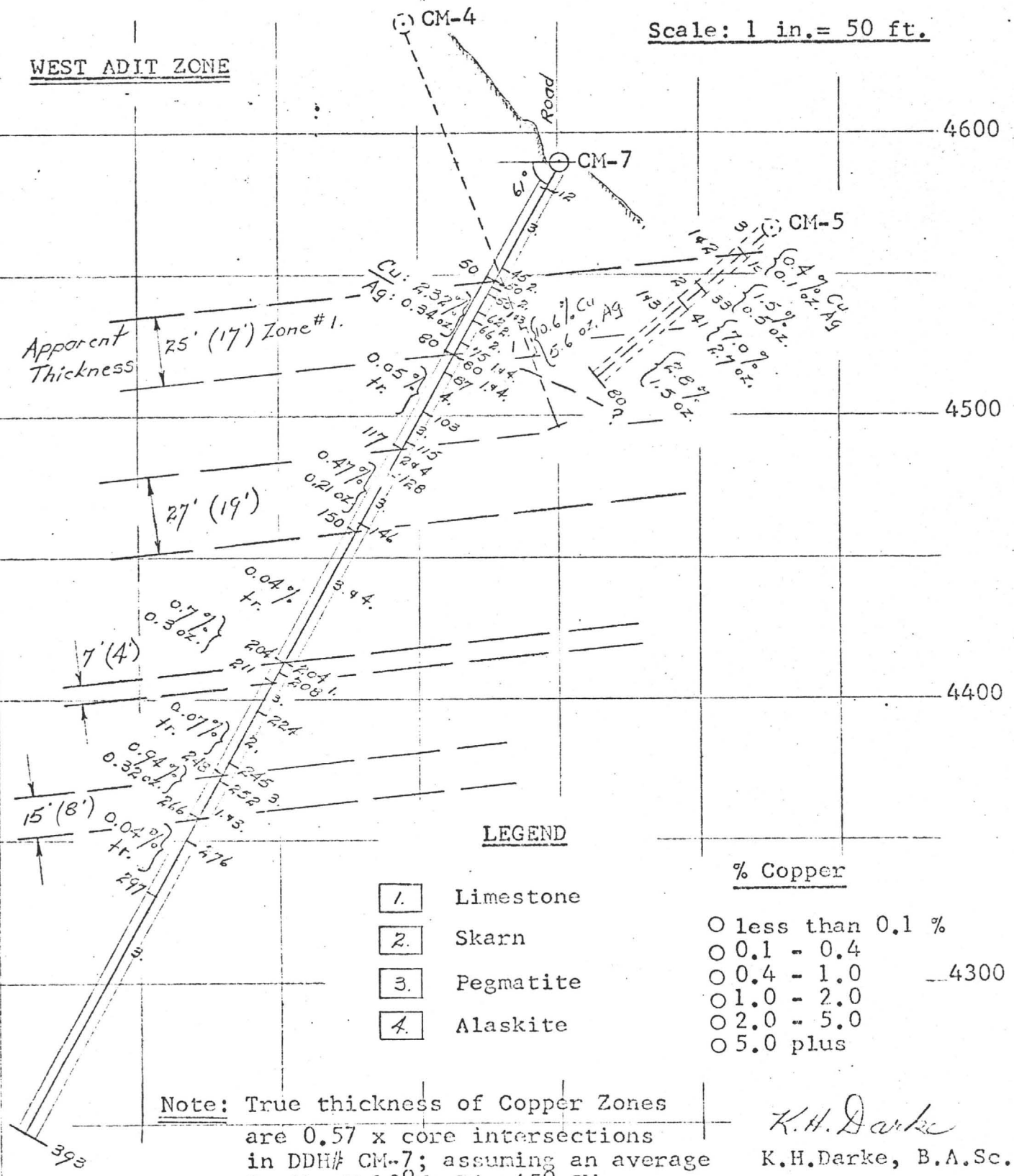
NW SE

4700 4700

CROSS-SECTION along
DDH# CM-7

Section Plane Bearing N 34°25' W (looking NE)

Scale: 1 in.= 50 ft.



LEGEND

1.	Limestone
2.	Skarn
3.	Pegmatite
4.	Alaskite

% Copper

- ○ less than 0.1 %
- ○ 0.1 - 0.4
- ○ 0.4 - 1.0
- ○ 1.0 - 2.0
- ○ 2.0 - 5.0
- ○ 5.0 plus

Note: True thickness of Copper Zones are 0.57 x core intersections in DDH# CM-7; assuming an average Strike N 10°W; Dip 45° SW.

K.H. Darke

K.H.Darke, B.A.Sc.
February 3, 1968

Coyote Mountain Property

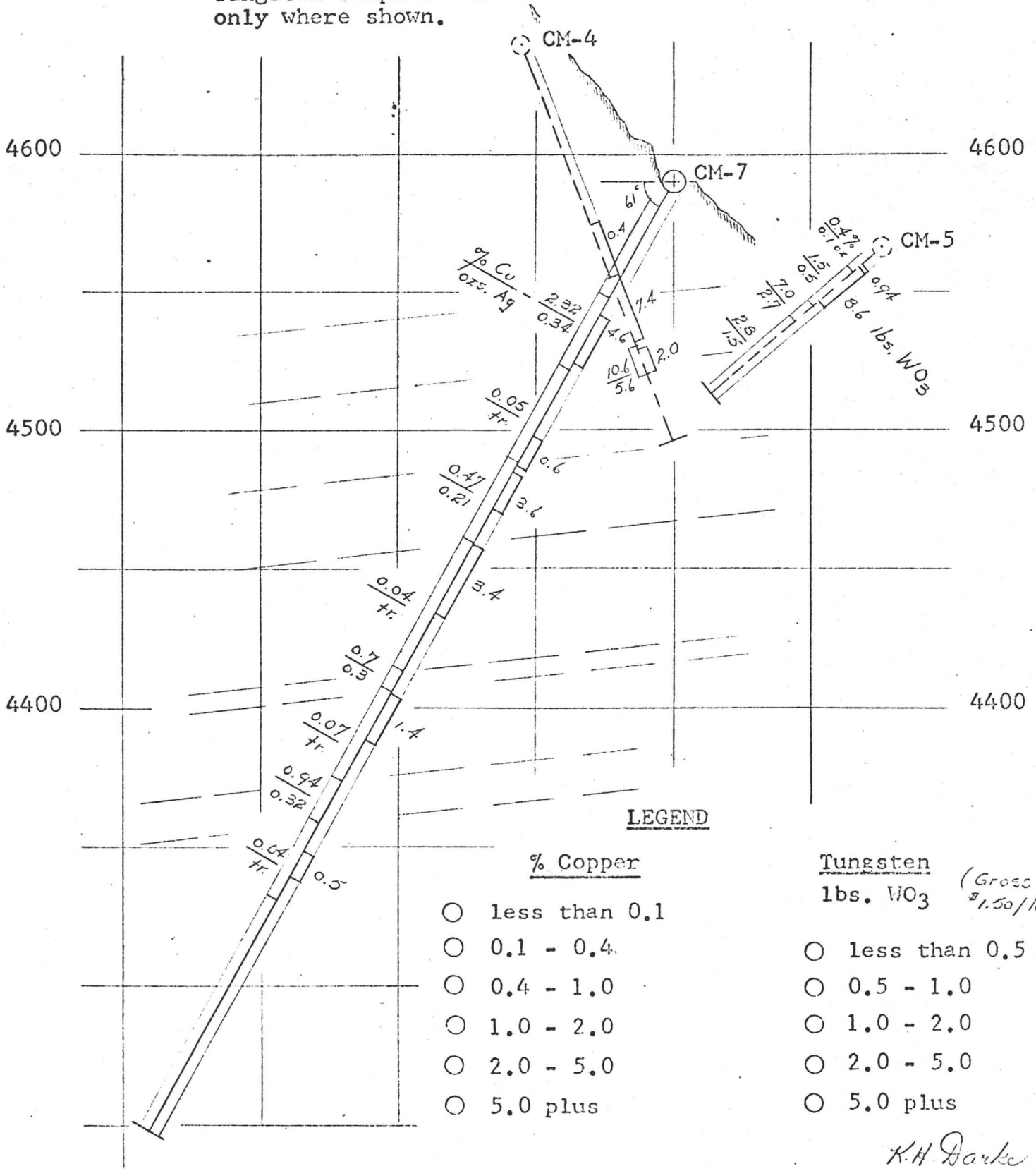
Pima County, Arizona

WEST ADIT ZONE — CROSS-SECTION along DDH# CM-7

NW SE

- Assays: Cu, Ag, WO_3.
Tungsten samples were taken only where shown.

Scale: 1 in.= 50 ft.



LEGEND

% Copper

- ○ less than 0.1
- ○ 0.1 - 0.4
- ○ 0.4 - 1.0
- ○ 1.0 - 2.0
- ○ 2.0 - 5.0
- ○ 5.0 plus

Tungsten lbs. WO_3 (Gross Value @ 1.50/lb.)

- ○ less than 0.5
- ○ 0.5 - 1.0
- ○ 1.0 - 2.0
- ○ 2.0 - 5.0
- ○ 5.0 plus

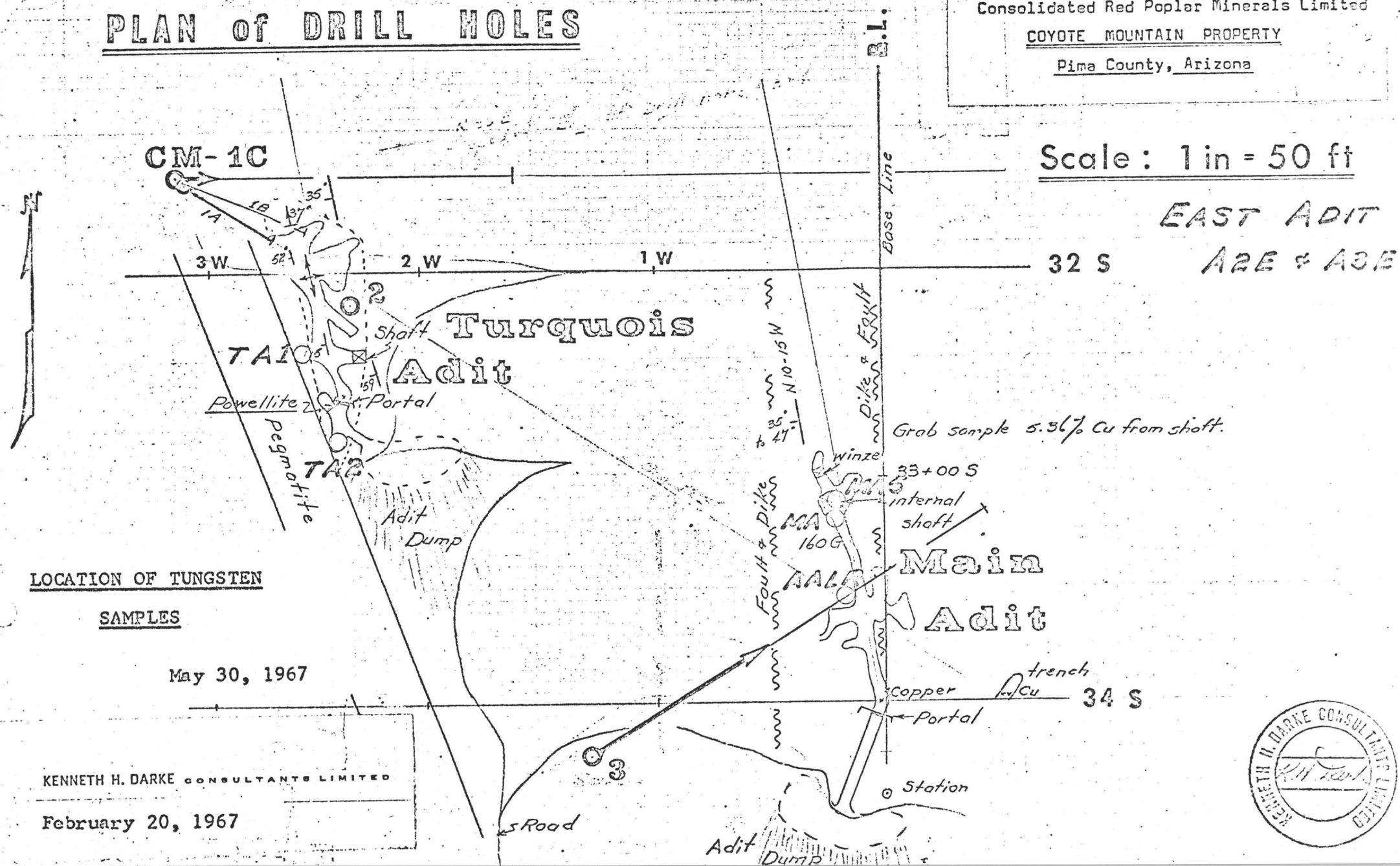
K.H. Darke

K.H.Darke
February 3,1968

PLAN of DRILL HOLES

Consolidated Red Poplar Minerals Limited
COYOTE MOUNTAIN PROPERTY
Pima County, Arizona

Scale : 1 in = 50 ft



LOCATION OF TUNGSTEN SAMPLES

May 30, 1967

KENNETH H. DARKE CONSULTANTS LIMITED

February 20, 1967

KENNETH H. DARKE CONSULTANTS LIMITED

ABSTRACT

GEOLOGY OF A PORTION OF COYOTE MOUNTAINS,
PIMA COUNTY, ARIZONA

by

William L. Kurtz

The Coyote Mountains are located about 30 miles west of Tucson, Arizona. Quartz-monzonite, diorite, granite, meta-sediment, biotite gneiss, alaskite, pegmatite, and lamprophyric and rhyolitic dikes crop out within the mountain mass.

Two phases in the genesis of the first six rock types are considered. The first phase may have involved the intrusion of bodies of basic and acidic magma into a terrain which included sandstone and limestone (now meta-sediment) and a calcium poor sandy argillite (now biotite gneiss). The second phase involved a period of regional syn-kinematic metamorphism with local metasomatism, which formed the textures and in part the structures and mineral compositions of the rocks. If an igneous chapter does not exist then the rocks may have been derived from sediments. The pegmatites are thought to have been formed by replacement.

The dominant structure is a planar parallelism which has an average strike of N25W and dips moderately to steeply to the west.

INTRODUCTION

General Statement

The rocks of the Coyote Mountains, Arizona, were studied in the field and in thin section in order to describe the rocks and their relationships to each other, and to postulate a sequence of events which led to their formation.

Seven rock types were distinguished: meta-sediment, diorite, quartz-monzonite, granite, biotite gneiss, alaskite, and pegmatite. Each of these rock types is described in detail. Several miscellaneous rocks are briefly described, namely: rhyolitic and lamprophyric dikes, Cretaceous (?) sediments, and volcanics.

The principal internal structure is a planar parallelism which is developed within all the major rocks except the pegmatites. This planar parallelism has a general northwest strike and dips southwest at moderate to steep angles. The area is bordered on the north by the Ajo Road fault, which separates the Coyote complex from the sediments and volcanics exposed north of the fault.

All the rocks within the Coyote complex, except the pegmatites and dikes, show the effects of a regional synkinematic metamorphism with some metasomatism. This metamorphism has affected rocks of possible igneous and sedimentary origin.

SUMMARY

The preceding pages have described the petrography and structure of the Coyote Mountains, in so far as it is known. In summary, a sequence of events thought most likely for the genesis of the Coyote Mountains is postulated. The events proceed from oldest to youngest.

1. Intrusion of a basic magma into a sedimentary terrain which included a calcium poor, sandy argillite and sandstone and limestone.
2. Intrusion of a siliceous body (Alaskite).
3. Regional synkinematic metamorphism and metasomatism--formation of meta-sediment, biotite gneiss, diorite, quartz-monzonite, granite, and alaskite and deformation of alaskite.
4. Formation of replacement pegmatites.
5. Emplacement of rhyolitic and lamprophyric dikes.
6. Deposition of Cretaceous (?) sediments and volcanics.
7. Ajo Road fault (and north-south faulting to the west). Minor faults within the mountains mass.
8. Erosion to present day topographic form.

If the features presented are interpreted differently, especially those thought to indicate igneous activity, a different sequence of events may account for the Coyote Mountains. The possibility of the rocks forming from a series of sedimentary rocks, subsequently metamorphosed and metasomatosed is not negated.

In the sequence given above the events are shown relative to one another and no definite statement has been made as to age. Several facts

may shed light on the age problem. The main structures in the pre-Cambrian rocks of southern Arizona trend northeast-southwest (see Tectonic Map of the United States). This has been referred to in the literature as the pre-Cambrian "grain". The structures in the Coyote Mountains are N25W and dip steeply to the southwest and thus transect the pre-Cambrian grain and suggest that their trend may be later than the pre-Cambrian "grain". The simple mineralogy of pegmatites has been used by some workers to signify a pre-Cambrian age. It is thought by these workers that pre-Cambrian time was one of great pegmatite-breeding solutions. If this be the case the simple mineralogy of the Coyote Mountain pegmatites may be an indication of pre-Cambrian age. In any consideration of the origin of these rocks a date later than pre-Cambrian should definitely be kept in mind. In the area discussed no definite age or ages for the postulated events can be stated as there is no evidence present. Dating of these rocks will have to await a regional study coupled with detailed investigation of critical areas in southern Arizona.

Trace Analysis

Assays

ROCKY MOUNTAIN GEOCHEMICAL LABORATORIES

519 North Washington Ave.

Phone: 445-4393

PRESCOTT, ARIZONA 86301

CHEMICAL ANALYSIS CERTIFICATE

Date November 1, 1969

Client Dr. C. Philip Jenney
Consulting Geologist
Route 6, 400 Golf View Dr.
Tucson, Arizona 85704

Submitted by F. Carrigan

Date Received 10/29/69

Report on 11 Rock Samples

Analysis COPPER, MOLYBDENUM

Remarks Copper done by Atomic Absorption method.
Molybdenum done by Colorimetric method.

Results given in parts permillion.

The minus (-) sign is read "less than".

Sample pulps will be saved.

cc: Mr. F. Carrigan
file

REGISTERED ASSAYER
CERTIFICATE NO.
6847
EDWIN ADAM
JOHNSON
Date Signed
ARIZONA, U.S.A.

All values are reported in parts per million unless specified otherwise. A minus sign (—) is to be read "less than" and a plus sign (+) "greater than." Values in parenthesis are estimates. This analytical report is the confidential property of the above mentioned client and for the protection of this client and ourselves we reserve the right to forbid publication or reproduction of this report or any part thereof without written permission. 10,000 ppm = 1% 34.3 ppm = 1 Troy Oz. per Ton

RC- Series Rock Samples
Results given in parts per million.

SAMPLE NO.	COPPER	MOLYBDENUM
RC-15 - SKARN	5	-1
RC-16 - GRANITE	25	1
RC-17 - LIMESTONE	45	1
RC-18 - SKARN	-5	-1
RC-19 - QUARTZITE	5	1
RC-20 - IN TEST PIT LIMESTONE BUT NOT MINERALIZED.	90	-1
RC-21 - GRANITE ABOVE RC-20	80	3
RC-22 - SKARN	10	-1
RC-23 - QUARTZITE	10	-1
RC-24 - LIMESTONE	70	-1
RC-25 - GRANITE	50	-1

CONSOLIDATED RED POPLAR MINERALS, LIMITED

COYOTE MOUNTAIN PROPERTY
Pima County, Arizona

FINAL REPORT Nov. 10, 1969

November 10, 1969

Mr. Murray Cooper, President
Consolidated Red Poplar Minerals, Limited
Suite 1024, 85 Richmond Street West
Toronto 1, Ontario

Dear Sir:

In accordance with your instructions, I am submitting herewith my final report on exploration possibilities and further development of your Coyote Mountain property in Pima County, Arizona.

This sets forth results of work accomplished since my report and recommendations to you dated November 25, 1968. I have included some information contained in that report, for the sake of completeness, so that data herein covers all facts obtained to date.

Any company interested in participation in further development of your property should be prepared, after expense of a preliminary examination, sampling and mapping program, to expend at least $200,000 in deep diamond drill testing.

Yours very truly,

C. Philip Jenney

CPJ/ja

SUMMARY

Consolidated Red Poplar has acquired by purchase and staking 75 unpatented mineral claims, comprising 1500 acres, in the Coyote Mountains 40 miles southwest of Tucson, Arizona. Assessment work has been completed and filed, or will be filed, keeping this property in good standing until August 31, 1971. Exploration and development of the claim group has cost more than $160,000 to date, including road building, diamond drilling, airborne surveying and geological surveying.

Widespread copper mineralization is indicated by this work and detailed geology of the area has been mapped and is now being compiled by Mr. Frank Carrigan, a candidate for the Master of Arts Degree at the University of Arizona. Completion of this thesis work is expected in about two months time. In the meantime, this present report sets forth the geologic facts as determined to date.

CONCLUSIONS

The Consolidated Red Poplar property covers an interesting geologic area with widespread copper mineral indications. The exploration target is a large open-pit porphyry copper operation.

Present indications, pending completion of Mr. Carrigan's final report on the geology, are that copper-molybdenite mineralization is controlled by a series of north-south and east-west fractures and occurs in a relatively pure limestone which, with other sediments, is a roof-pendant in a surrounding mass of pegmatitic granite. Only about one third of the property mapped by airborne methods on a scale of 100 feet to the inch, contour interval 10 feet, has been surveyed geologically.

Originally it was hoped that disseminated copper mineralization could be found in the intrusive rocks surrounding the roof-pendant sediment remnants. Unfortunately, only meagre reconnaissance work has been done in these surrounding areas and little or no drainage or rock sampling. Therefore, the potential of two-thirds of this property, while mapped topographically in detail, remains untested.

RECOMMENDATIONS

I recommend that Consolidated Red Poplar, having carried this project to its present stage at a good deal of expense for a small company, expend no further funds on exploration and development.

In my opinion, the next exploration step should be geologic mapping of the unexplored two-thirds of the property covered by the detailed topographic map, plus detailed drainage and rock sampling of that area. If this should lead to discovery of a geochemical anomaly, geophysical methods could be employed for additional guidance. In any case, encouraging results would require extensive diamond drilling expenditures for determination of possible mine-making potential. Such expenditures are beyong the capacity of Consolidated Red Poplar.

Therefore, I recommend that one of the major companies that have expressed interest in the property prior to this time, be approached and offered an opportunity to examine the property and participate in its further development.

Lacking discovery of additional targets in the unmapped granite area referred to above, the ground underlying the mineralized sediment area should be tested by at least 20,000 feet of deep diamond drilling at a cost estimated at $200,000. A proposed location program for this drilling is set forth below.

INTRODUCTION

The exploration program conducted by your Company on this property was initiated in August 1966, and the first stage - which included the drilling of twelve holes for a total of 2,652 feet - under the supervision of Mr. K. H. Darke was completed in July 1967.

In November 1969 I examined the property and recommended the topographic and geologic mapping program which is now approaching completion. The only outstanding feature of the program is the finalizing of Mr. Carrigan's geologic report on detailed mapping results on the property. My report, herewith, presents generalized mapping and geologic results to date.

PROPERTY, LOCATION AND ACCESS

The property comprises 75 unpatented Lode Mining claims (approximately 20 acres each) in a contiguous block covering 1,500 acres, in Pima County about 40 miles southwest of Tucson, Arizona. Exact location and description is:

Township 16 South, Range 8 East, Coyote Mining District.

Claims:	Bonanza Pima	1-18, incl.	18
	Bonanza Crown	1- 6, incl.	6
	Bonanza Supreme	1-12, incl.	12
	Garnet	1-20, incl.	20
	Mendoza	1-19, incl.	19
		Total	75

I have recorded assessment work on these claims under date of August 8, 1969 (Book 3557, pages 175-178) which holds them in good standing until August 31, 1970. Within the next two weeks I will record further work to hold them until August 31, 1971.

The area may be reached via Highway 86 (the Ajo Road) 35 miles west of Tucson to mileage marker 142, thence 11 miles south on a dirt road around the southern end of Coyote Mountain. Balance of travel on the property is via rough jeep road.

TOPOGRAPHY

Maximum relief in the area is 2,250 feet from an elevation of 3,200 feet on the desert plain to 5,450 feet on the high ridges (see Plate 1 in pocket). This relief is significant when considered in conjunction with geologic features presented in accompanying maps.

HISTORY

The property is reported to have been located and worked originally in 1903 and up to 1908 was operated, intermittently, by Mr. Cavillo and his two sons. It is said that up to 150 men were employed at one time and the old surface workings were "hand steeled" with sorted ore carried by burro down the hill to the railroad and shipped to El Paso. Several

hundred tons assaying 23% copper and 28 shipments averaging 10% copper and 1.5 ounces of silver are reported. Most of these old workings are backfilled with waste and not available for examination.

After 1928 the claims lapsed and in 1960 were relocated by Mr. Lyle Murphy, who formed North American Metals and subsequently optioned the property to Consolidated Red Poplar Minerals Limited. Additional claims were added and, as I understand it, all required payments have been made and the only outstanding obligation is a royalty on production.

GEOLOGY

The first detailed geologic mapping done on this property has just been completed and results are now being compiled by Mr. Frank Carrigan in preparation for his M. A. thesis under the auspices of the Department of Geology at the University of Arizona. Dr. Willard Lacy, head of the Department, and the writer have supervised this work. Base control is a map in sixteen sheets on a scale of 1" - 100' with contour interval of 10' with topography determined by air photography flown by Aero Service Corp. of Hollywood, California. Two of these sheets, with some preliminary geology and a 500 foot scale reduction of the whole area covered are in the map pocket of this report. Examination of this material will show precision of this information and extent of the area mapped geologically.

Mr. Carrigan's most recent work has been concentrated on surface geologic mapping. Although he has yet to study the old diamond drill cores and numerous thin sections of various specimens obtained in the field, he has determined that presently known mineralization is confined to an area of sedimentary limestones and quartzites which are engulfed and surrounded as a "roof pendant" in a mass of pegmatitic granite.

The sedimentary series represented by the "roof pendant" appears to trend north to northeast, with many local variations, and dip about 40° west.

A generalized section would be:

Graywacke.
Quartzite and Limestone, interbedded.
Skarn zone.
Limestone with some quartzite, interbedded.
Pure white limestone.
Skarn zone.
Limestone.
Skarn zone.
Hornblenite - a reconstituted sediment.
Pegmatitic Granite - with many phases varying from typical granite to diorite.

Mr. Carrigan is now attempting to work out the precise details of this complicated mass of partially digested sediments.

At least two sets of well developed fractures cut these rocks. One set strikes approximately east-west while the other trends north to N 15° E. Most dip steeply, from

vertical to 80° in either direction. These are definite fractures but show no strong shearing. All are related to mineralization but no evidence of extensive hydrothermal alteration (sericite, Kaolin, etc.) has been found although epidote alteration is widespread.

A few younger lampropyre dikes have been located in the area.

MINERALIZATION

Copper silicate and oxide showings (chrysocolla, malachite and azurite) are widely scattered throughout the property and some sulphides (chalcopyrite and bornite) are also present. Molybdenite and scheelite are found in places, particularly in the old workings. Copper showings are more numerous in the skarn and limestone areas of the sediments and appear to be related to the fracturing pattern. However, in the old workings there is, in places, a definite suggestion of bedding control of the mineralization. Within the limestone-quartzite "skarn" zones there are numerous short lenses of magnetite associated with copper mineralization. They will be plotted on the final map presented by Mr. Carrigan. A number of copper occurrences (but by no means all known showings) have been plotted for purposes of illustration on the two accompanying map sheets.

Examination of the various underground workings still open shows the presence of numerous occurrences of scheelite which flouresces under an ultra-violet lamp. The presence of tungsten is confirmed by various assays from drill core and grab samples reported by Mr. Darke in a memo dated May 30, 1967.

The presence of sands with high magnetite and garnet and some copper silicate and oxide content in the outwash plain of Section 35 below Cavillo's camp has been noted by Darke and others. No detailed investigation of these sands has been undertaken although work on them has been recommended by previous investigators. I do not know of any garnet concentrations of importance in the southwestern U.S.A. but magnetic sands with copper oxides are common throughout Arizona and New Mexico. Therefore, I do not consider this occurrence particularly significant.

DEVELOPMENT BY CONSOLIDATED RED POPLAR

The exploration program conducted by your Company was initiated by an examination carried out by Mr. Darke with results reported under date of August 24, 1966. Investigations were pursued until completion of diamond drill hole No. C.M.8 in July 1967. I have been told that a total of $180,000 had been spent on the property to that time. With the present expenditure of $35,000 the total should be over $200,000. I am sure accurate figures are available from Company records

but I do not have them before me.

Road Building: Some seven miles of road construction were necessary to reach original drill sites and the present program required repair and new construction of about five miles of road. These are shown on the accompanying maps.

Diamond Drilling: Twelve holes with a total of 2652 feet were put down in the first program. This BX core is stored in the basement of the Arizona Bureau of Mines building in Tucson and available for examination. These holes are located on the accompanying maps and the following is a summary of the logs and results:

Hole	Dip	Bearing	Depth Feet	Remarks
CM 1-A	45°	123°	68.6	Limestone & Pegmatite. Lost in old workings.
CM 1-B	50°	113°	96	Ditto.
CM 1-C	50°	East	224	Limestone & Pegmatite. Lost when core barrel broke.
CM 2	90°		54	Limestone - lost in old workings.
CM 3	50°	58°	308	Pegmatite - lost in old workings.
CM 4	66°	S 26 E (108)	157	Limestone & Pegmatite. Lost in old workings.
CM 5	40°	N 29 W (324)	82	Limestone & Pegmatite. Lost in old workings. Reported 80' averaging 2.52% Cu and 1.16 oz. Ag.
(CM 6) (CM 7)	61°	N 34 W (288)	393	Limestone & Pegmatite. Reported 12' to 80'-68' av. 1.03% Cu and 50'-150'-100' av. 0.87% Cu.
CM 8	70°	N 87 E	719	Limestone & Pegmatite. Reported 316'-321'-5' av. 15.90% Cu. & 5.34 oz. Ag.

Hole	Dip	Bearing	Depth Feet	Remarks
H.G.1	60°	130°	291	Limestone & Pegmatite. Reported 1' @ 265' av. 2.32 Cu and 0.48 oz. Ag. with bornite & chalcopyrite.
H.G.2	60°	28°	197	Limestone & Pegmatite. Reported 36' between 151' and 187' av. 4.07 Cu and 3.56 oz. Ag.

It is obvious from the above record that the first holes were drilled to establish an already known fact - that the workings contained a good deal of high grade copper. However, results from H.G.1, H.G.2 and CM 8 - drilled on what is known as Zone No. 2 - show that significant amounts of copper have been found at lower elevations. Therefore, the vertical range of copper occurrence is on the order of 800 feet.

Geophysics: During the course of the Consolidated Red Poplar exploration program a ground magnetometer survey was conducted with the object of locating high magnetic areas which might pin-point zones of magnetite-copper similar to those seen underground in the main adit. Mr. Darke discusses these magnetic results in various reports and has presented a map dated November 28, 1967, showing them.

Geochemistry: A very limited program of drainage and rock sampling has been done on the property to date with only 38 drainage samples and 11 rock samples taken. Drainage sample values ranged up to 4,000 p.p.m. in copper and 7 in molybdenum. As expected the main concentration of high values was found below the upper high grade old workings on the northern ridge of the property. However, some significant values were obtained in the northeast trending drainage, north of the ridge, and in the northeastern corner of the property. A few values have ranged from 135 to 220 p.p.m. in copper and deserve further investigation.

FUTURE EXPLORATION

It is assumed by the writer that any company or group interested in further exploration of the property would carry out a drainage and rock sampling program, together with geologic reconnaissance mapping of the, as yet, unexamined portions of the property. This would be in connection with its examination to determine further interest, if any.

Thereafter I consider it necessary to drill a rather widespread grid of holes on 1,000 foot spaced centers to test the ground immediately underlying the "roof-pendant" sediments which have shown high grade copper mineralization in places spread over an area of at least 200 acres and through a vertical range of 800 feet. I propose that the first two holes be

sited as follows and drilled vertically to at least 2,000 feet in depth. These are shown on the attached map and are located at:

Hole	Latitude	Departure
P-1	107,300 N	94,805 E
P-2	106,285 N	94,640 E

Further drilling locations would depend on results from these first two holes. However, the grid should be kept widespread (I suggest 1,000 foot centers) since the target sought for is a large one and, although the holes are directed at some of the higher grade lenses found by earlier drilling, these are not the targets. These are considered only as possible leakage or channel-ways derived from a large volume underlying mass in the pegmatitic granite where lower grade mineralization would be controlled by the two (or more) prominent intersecting fracture zones found on the surface.

Assessment of results from the first two holes would take into account not only mineralization and assay values but degree and extent of hydrothermal alteration encountered. Obviously the further extension of the drilling spread should be in the direction of most intense alteration encountered, plus spread of copper values, and not confined to the search for narrow intersections of high grade material.

I have estimated the arbitrary figure of $200,000

for 20,000 feet of vertical drilling since I believe that this program is likely to extend at least that far. This would be without absolutely negative results from the first two holes - which I consider highly unlikely in this geologic setting.

Respectfully submitted,

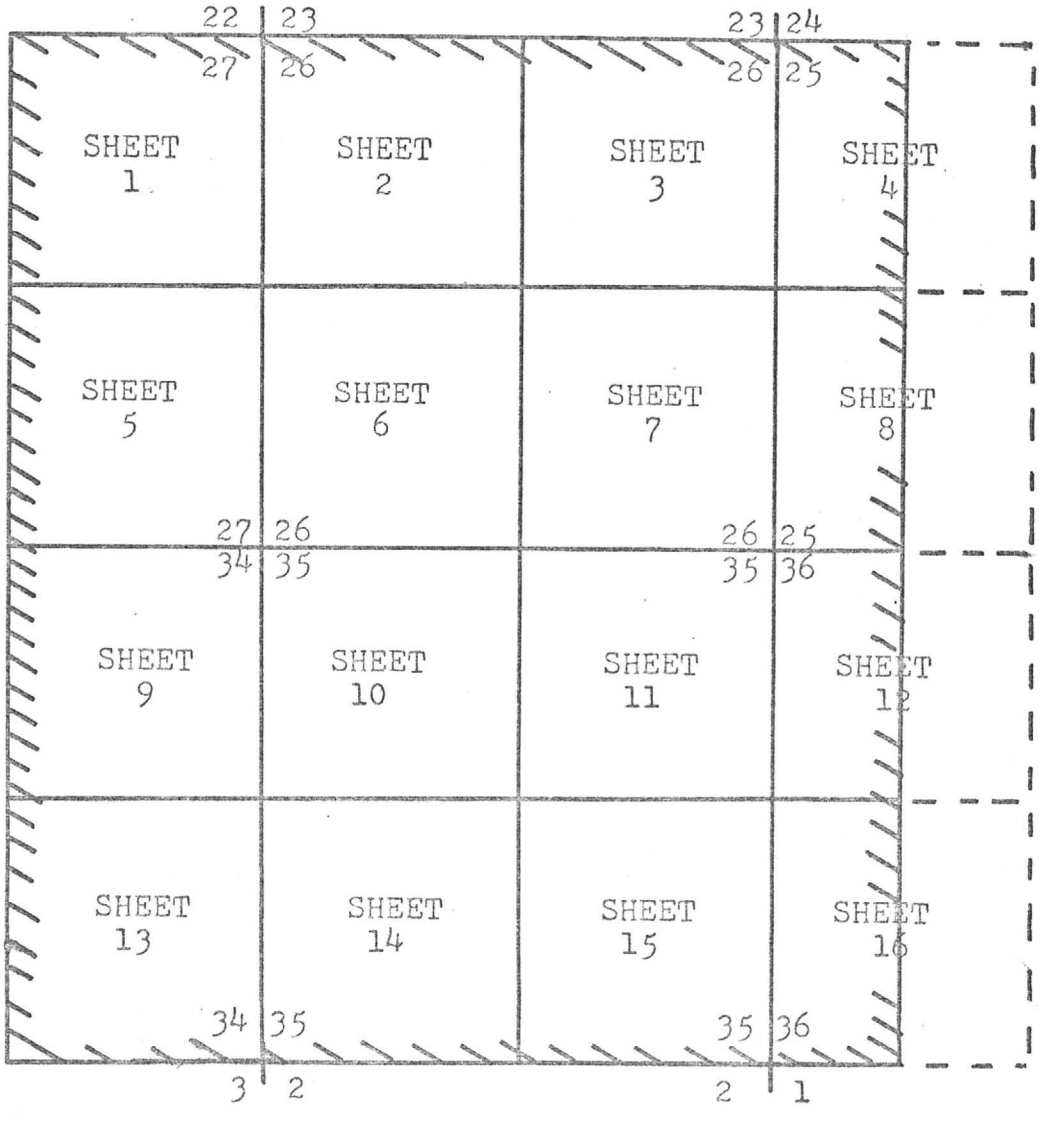
C. P. Jenney, Ph. D.
P. Eng. Arizona & Ontario

Tucson, Arizona
November 10, 1969

North

R 8 E

T 16 S



CONSOLIDATED RED POPLAR MINERALS LIMITED

Coyote Mountain Property
Pima County, Arizona

AREA COVERED BY TOPOGRAPHIC MAP

Scale: 1" = 1000'