REPORT

on

SULTAN BASIN PROPERTIES

for

BRENMAC MINES LTD. (N. P. L.)

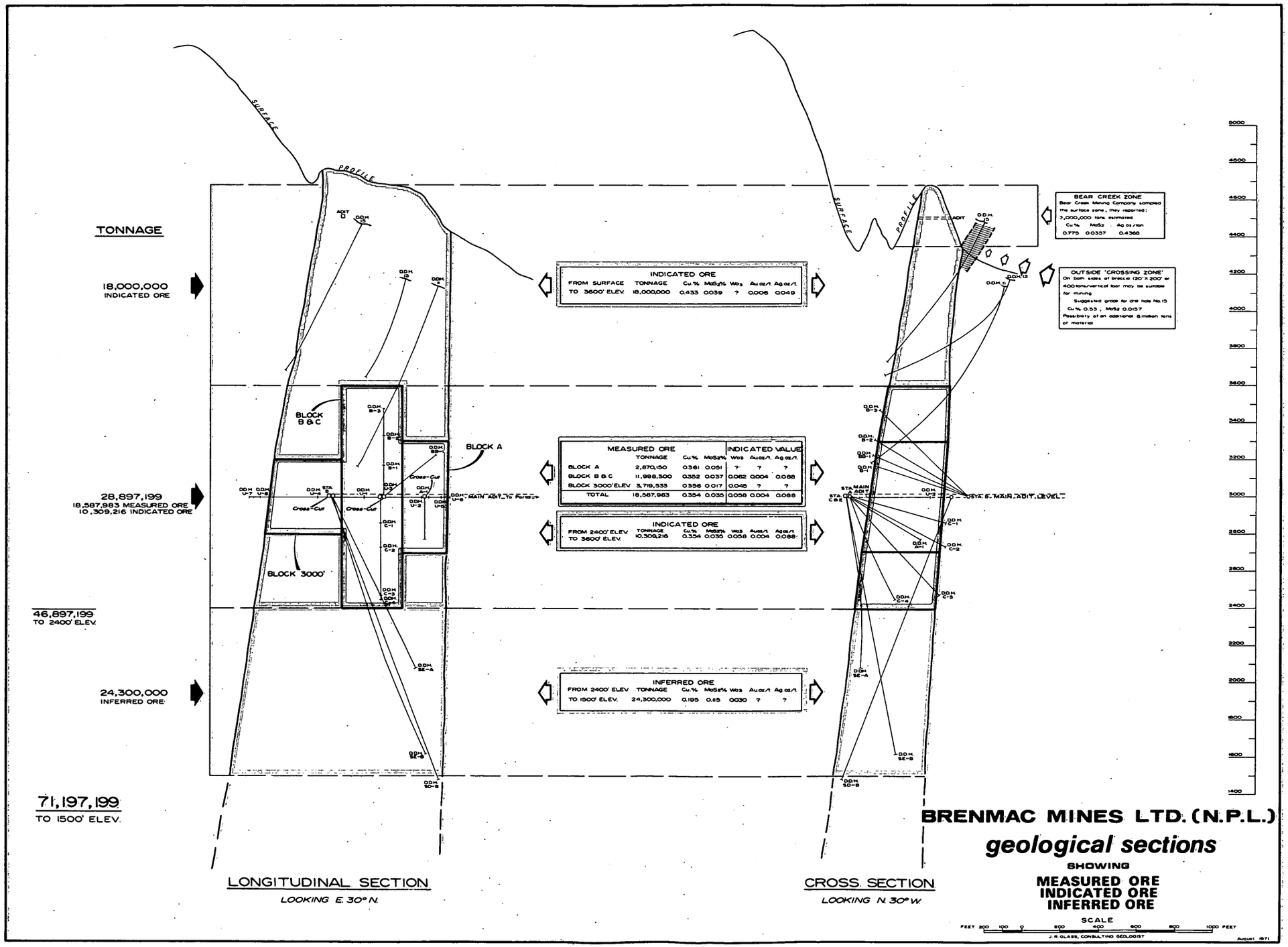
Snohomish County, Washington, U. S. A.

9

August 23, 1971

Rec'd. 11/1/71
with Mr. Griffiths
letter 10/29/71

James R. Glass
Consulting Geologist


TONNAGE
18,000,000
INDICATED ORE
28,897,199
18,587,983 MEASURED ORE
10,309,216 INDICATED ORE
46,897,199
TO 2400' ELEV.
24,300,000
INFERRED ORE
71,197,199
TO 1500' ELEV.
SURFACE
PROFILE
BLOCK B&C
BLOCK A
BLOCK 3000'
Cross-Cut
MAIN ADIT TO Portal
SYS. 6. MAIN ADIT LEVEL
INDICATED ORE
FROM SURFACE TO 3600' ELEV. 18,000,000 0.433 0.039 ? 0.006 0.049
MEASURED ORE
INDICATED VALUE
BLOCK A 2,870,150 0.361 0.051 ? ? ?
BLOCK B & C 11,998,300 0.352 0.037 0.062 0.004 0.088
BLOCK 3000'ELEV 3,719,533 0.356 0.017 0.045 ? ?
TOTAL 18,587,983 0.354 0.035 0.058 0.004 0.088
INDICATED ORE
FROM 2400' ELEV TO 3600' ELEV. 10,309,216 0.354 0.035 0.058 0.004 0.088
INFERRED ORE
FROM 2400' ELEV TO 1500' ELEV. 24,300,000 0.195 0.115 0.030 ? ?
BEAR CREEK ZONE
Bear Creek Mining Company sampled the surface zone, they reported:
3,000,000 tons estimated
Cu % MoS2 Ag oz/ton
0.775 0.0357 0.4368
OUTSIDE 'CROSSING ZONE'
On both sides of breccia 120' X 200' or 400 tons/vertical foot may be suitable for mining.
Suggested grade for drill hole No.13
Cu % 0.53 , MoS2 0.0157
Possibility of an additional 6 million tons of material.
5000
4800
4600
4400
4200
4000
3800
3600
3400
3200
3000
2800
2600
2400
2200
2000
1800
1600
1400
LONGITUDINAL SECTION
LOOKING E. 30° N.
CROSS SECTION
LOOKING N. 30° W.
BRENMAC MINES LTD. (N.P.L.)
geological sections
SHOWING
MEASURED ORE
INDICATED ORE
INFERRED ORE
SCALE
FEET 200 100 0 200 400 600 800 1000 FEET
J. R. GLASS, CONSULTING GEOLOGIST
August, 1971

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SUMMARY & CONCLUSIONS

Brenmac Mines Ltd (N. P. L.) is the beneficial owner of 98 mining claims and 16 state mineral leases, located in the Sultan Basin of Snohomish County, State of Washington, U. S. A.

Exploration, which has been carried out on these properties by Brenmac Mines Ltd (N. P. L.) since 1967, has outlined:

1. The Sunrise Breccia Pipe

A mineralized breccia pipe structure which contains 18, 587, 983 tons of "measured ore" and 36, 587, 983 tons of "indicated ore" and 24, 300, 000 tons of "inferred ore." The structure has not been delineated at depth so the ultimate tonnage is still unknown.

It is felt by the writer that the grade and tonnage of ore as indicated to date will sustain a mining and milling operation in the order of 20, 000 tons per day and to return a profit sufficient to justify the large capital investment.

Crossing Zone:

A zone of mineralized country rock crosses the Sunrise Breccia Pipe and is found both on the east and west sides of the breccia.

This zone could add some six million tons of potential ore to the Sunrise Breccia Pipe structure.

2. Mining

The shape of the Sunrise Breccia Pipe ore zone is such that an underground large-scale bulk method of mining can be used. The topography is advantageous as well; the ore zone outlined to date can be hauled via a proposed 10,000 foot tunnel without need of a shaft.

3. Metalurgy

Metallurgical tests indicate that the following recoveries can be obtained:

Copper	at least	90%
Molybdenum	at least	85%
Tungsten	at least	50%
Gold	about	50%
Silver	about	70%

4. Drill Hole Results and Bulk Samples

The comparison between the assay results of two flat diamond drill holes and the muck samples from one drift and one cross cut driven along these holes shows that the grade of the ore zone should be higher than the drill results have indicated to date.

5. Other Showings

(a) Mineralized Stock: A mineralized granite stock located approximately three miles southeast of the Sunrise Breccia Pipe contains an estimated 35,000,000 tons of material sampled by three diamond drill holes.

The suggested grade is:

Cu %	MoS_2 %	Ag oz/ton
0.31	0.025	0.14
0.32	0.028	?
0.24	?	?

Future work including additional diamond drilling will be carried out on this large structure.

(b) Hicks Breccia: A flat-lying breccia zone of dimensions 700 feet by 1200 feet was tested by one diamond drill hole. Economic mineralization in this zone appears to be low.

6. Geochemical Anomalies

A number of soil samples have indicated zones which contain anomalous amounts of heavy metal. One such zone correlates with a mineralized granodiorite stock found up slope from the geochemical anomaly. Follow up work will be done on these promising structures.

RECOMMENDATIONS

The recommended programme is designed to obtain additional information on this structure in order to reclassify indicated and inferred ore as measured ore, and to carry out the initial feasibility study which would include possible mining methods, plant design and projected cash flow.

1. Confirm the known mineralization and sample the zone to a depth of 1500 feet by diamond drilling from the 3000 foot level.

2. Make a study and decide on the mining method which would be most advantageous
   i) block caving
   ii) open stope
   iii) a combination of methods.

3. Perform additional metallurgical testing on the ore to further establish recovery rates and to decide on a flowsheet design for any proposed mill.

4. With this information an initial feasibility report will be prepared which will give expected cash flow and operating profit over the life of the mine.

BUDGET FOR PROPOSED PROGRAMME

Diamond drilling	$ 35,000.00
Assaying	4,000.00
Mining Method Study	10,000.00
Metallurgical Testing	10,000.00
Initial Feasibility Report	5,000.00
Geologist	3,000.00
Management Overhead	3,000.00
Field Camp & Supplies	5,000.00
Annual Assessment Work	10,000.00
Bulldozer work	2,000.00

Labour		$ 3,000.00
Contingency		10,000.00
	TOTAL	$100,000.00

INTRODUCTION

This report has been compiled for Brenmac Mines Ltd. (N. P. L.) at the request of Mr. L.N. Udell, President. The report presents a summation of all available information and the writer's interpretation of these results.

During the months of July and August 1971 the writer spent eleven days inspecting the underground workings, the outcrops, the split drill core from a number of the diamond drill holes and plotting and compiling the data which is presented in Appendix "A".

The information for this compilation was obtained from reports by Dr. A.C. Skerl, P. Eng., (1967-1968); by Cannon-Hicks Associates Ltd., P. Eng., (1970-1971); by Britton Research Limited, P. Eng., (1971); private report by W.C. Douglas, Mining Engineer, (1962) and from a published U.S. Government Report, Bulletin No. 36, Geology and Ore Deposits of the Sultan Basin, Snohomish County, Washington (1945)

PROPERTY AND LOCATION

The properties consist of 98 unsurveyed mining claims and 16 state mineral leases which make up a total of 11,905 acres all of which are located in eastern Snohomish County, Twps 28N, 29N, Range 10E,

Washington State, U. S. A. latitude 48° 6'; longitude 121° 30'. These properties are in the area known as the Sultan Basin, and can be reached by paved highway and a well maintained government secondary road from the town of Sultan, a distance of some 25 miles.

The claims are recorded in the Snohomish Court House and the leases are recorded at the Department of Natural Resources, Olympia, Washington. All ground is currently in good standing.

TOPOGRAPHY

The properties are in mountainous country, part of the Cascade Range. Elevations range from 1400 feet at valley level to 6100 feet at mountain peaks.

CLIMATE

The climate is normal for the mountainous area of the Pacific northwest. Annual precipitation is in the order of 70 inches of rain and 80 inches of snow. There are four months of freezing weather with temperatures dropping to a low of approximately -10° F.

RESOURCES AND FACILITIES

Important natural resources which can be supplied by the surrounding area include timber, water, road construction material and manpower.

High tension power lines are within 20 miles of the property and rail lines are within 25 miles.

American Smelting and Refining Co. Ltd smelting facilities are located at Tacoma, some 100 miles south-west of the property.

Tidewater is 50 miles west of the Sultan Basin.

HISTORY

Copper prospecting and minor production has been carried out in the Sultan Basin intermittently since the late 1800's, but since at that time the area was inaccessable, the development was slow. Until the year 1941 the total value of metals produced was only $134,831.00.

During the years 1959 and 1960 Bear Creek Mining Company, Kennecott's exploration subsidiary, examined and mapped the surface expression of the Sunrise Breccia Pipe. No diamond drilling was done during this programme. Bear Creek reported a surface zone which was thought to contain 3,000,000 tons of material grading 0.775% Cu, 0.0357% MoS_2 and 0.4368 oz/ton Ag.

Some time during the years 1962, 1963, the Malaspina Mining Company Limited of Vancouver, B.C. acquired an option to the property and performed a minor amount of small diameter diamond drilling. The results of this work were inconclusive.

During the years 1967 and 1968 Brenmac Mines Ltd. (N.P.L.) optioned the Sunrise property from the owners, staked additional claims in the area and acquired a number of state mineral leases.

Since then a vigorous and rewarding exploration programme has been carried out on the property by Brenmac Mines Ltd (N.P.L.) at a total cost of approximately 1.5 million dollars.

This work includes:

Diamond drilling.....	17,338 feet
Percussion drilling.....	800 feet
Underground development	
(a) adits.....	3,728 feet
(b) drifts.....	557 feet
(c) crosscuts.....	1,256 feet
Metallurgical testing of bulk samples.	

To date, Brenmac has indicated one zone of mineralization which contains 71 million tons of material; which according to present information appears to be capable of sustaining production, and some outside zones which may eventually add substantial tonnages to the overall production figures.

REGIONAL GEOLOGY

The geology of the Sultan Basin is described in Bulletin No. 36 of the Division of Mines and Geology, State of Washington by W. Carithers and A. K. Guard, 1945.

The oldest formation is a complex series of metamorphosed sediments of Paleozoic age. These sediments which were originally argillite or sandstone are now classed as hornfels.

This formation is overlain by a younger series of continental beds - conglomerate sandstone and argillites of Mesozoic age, and is intruded by a periodotite dyke which has been serpentinized.

All these formations are intruded by a batholith of quartz diorite of Mesozoic or Tertiary age.

Valley floors are generally covered by unconsolidated glacial material.

LOCAL GEOLOGY

The rocks underlying the Brenmac properties are part of the metamorphosed Paleozoic formation and are locally mapped as hornfels and metamorphosed quartzite.

These sediments are intruded by coarse crystalline quartz diorite, which is undoubtedly the source of mineralizing fluids.

MINERALIZATION

The most important mineralized structure found to date is the Sunrise Breccia Pipe. This zone has a surface expression at elevation 4400 feet to 4800 feet that is 650 feet long and up to 250 feet wide with the long axis in a direction N 30° W. This structure has been explored by diamond drilling and underground workings to an elevation of 1500 feet - a total vertical distance of 3300 feet, and it is still open at depth.

Dip of the hanging wall is 75° to the southeast and the dip of the foot wall is 85° to the southeast; the zone is therefore widening with depth. The zone is also increasing in length with depth.

At the 3000' level the breccia is an elliptical zone with the long axis 1000 feet long in a N 30° W direction and the short axis 400 feet long. The increase in size below this level is unknown.

The breccia fragments vary in size from less than one inch to several feet across. The intersticies are lined with quartz crystals, calcite, chalcopyrite, pyrrhotite, molybdenite and scheelite. At times disseminated chalcopyrite and molybdenite can be found in the fragments.

These are thought to be related to the "crossing zones."

The breccia is cut by a series of parallel faults that strike in a northeast direction and dip steeply to the southwest. One of these faults has offset the breccia 30 feet in a right hand direction.

In a general sense, the breccia has no dominant structural feature, and taken as a whole, is a pipe-like massive zone, shaped like an elongated inverted carrot with a lower limit that is unknown.

GRADE AND TONNAGE

The breccia pipe structure has been sampled by a number of surface pits, short adits, shallow drill holes, deep diamond drill holes and an underground adit with two crosscuts. Using this information in conjunction with projected operating costs and metallurgical recoveries, the classification of ore can be made using the U. S. Bureau of Mines definitions.

Measured Ore:

"'Measured Ore' is ore for which tonnage is computed from dimensions revealed in outcrops, trenches, workings and drill holes and for which the grade is computed from the results of detailed sampling. The sites for inspection, sampling and measurement are so closely spaced and the geologic character is so well defined that the size, shape and mineral content are well established. The computed tonnage and grade are judged to be accurate within limits which are stated, and no such limit is judged to differ from the computed tonnage or grade by more than 20 per cent."

Indicated Ore:

"'Indicated Ore' is ore for which tonnage and grade are computed partly from specific measurements, samples or production data and partly from projection for a reasonable distance on geologic evidence. The sites available for inspection, measurement and sampling are too widely or otherwise inappropriately spaced to outline the ore completely or to establish its grade throughout."

Inferred Ore:

"'Inferred Ore' is ore for which quantitative estimates are based largely on broad knowledge of the geologic character of the deposit and for which there are few, if any, samples or measurements. The estimates are based on an assumed continuity or repetition for which there is geologic evidence; this evidence may include comparison with deposits of similar type. Bodies that are completely concealed may be included if there is specific geologic evidence of their presence. Estimates of inferred ore should include a statement of the special limits within which the inferred ore may lie."

The following table is an outline of the different classes of ore in the Sunrise Breccia Pipe:

TONNAGE AND GRADE CALCULATIONS

MEASURED ORE				Indicated additional values to measured ore		
	Tonnage	Cu	MoS_2	Wo_3	Au	Ag
Block "A"	2,870,150	0.361	0.051	?	?	?
Block "B" and "C"	11,998,300	0.352	0.037	.062	0.004	0.088
Block 3000'	3,719,533	0.356	0.017	.045	?	?
TOTAL	18,587,983	0.354	0.035	.058	0.004	0.088
INDICATED ORE						
From 2400' el. to 3600' el.	10,309,216	0.354	0.035	.058	0.004	0.088
From 3600' el. to surface (4800' el.)	18,000,000	0.433	0.039	?	0.006	0.049
	28,309,216					
	Measured ore and indicated ore surface to 2400' elevation			46,897,199		
INFERRED ORE						
From 2400' el. to 1500' el.	24,300,000	0.195	0.115	.030	?	?
TOTAL	71,197,199	Surface 4800' elevation to 1500' elevation				

The measured ore in Block "A", Block "B" and "C" and Block 3000' is immediately adjacent to the 3000' level, is accessible via the adit and crosscuts and can be seen in two dimensions. The ore grade is calculated from the assay results of 25 diamond drill holes over a total length of 8,824 feet of core.

The grade of the indicated ore around the measured ore blocks between elevations 2400 feet to 3600 feet is calculated from the assay results of the above diamond drill holes.

The grade of the indicated ore above this zone, from elevation 3600 feet to surface at 4800 feet is calculated from the assay results of 2 diamond drill holes over a total length of 924 feet of core. The higher grade surface samples reported by Bear Creek Mining have been omitted from my calculation.

The grade of the inferred ore from elevation 2400 feet down to elevation 1500 feet is calculated from the assay results of 3 diamond drill holes over a total length of 1930 feet of core.

All drill core was sampled at intervals of 10 feet if practical, split and sent to the Bondar-Clegg laboratories in North Vancouver, B.C. where the assays were made. Check work on these assays was done by sending spot samples to Crest Laboratories, Vancouver, B.C. and Union Assay Office, Salt Lake City, Utah.

Possible Increase in Grade

A comparison between samples taken from two diamond drill holes and from muck samples of one drift and one crosscut on the 3000' level can be summarized as follows:

1. HOLE U-7 - flat hole on 3000' level; Azimuth 341°

Distance	Cu %	MoS_2 %
260 feet	0.390	0.017

Main Drift - Along Hole U-7; Azimuth 341°

Distance	Cu %	MoS_2 %
260 feet	0.442	0.021

Increase in muck samples over drill hole samples,

Copper	13.33%
Molybdenum	23.53%

2. HOLE U-10 - flat hole on 3000' level; Azimuth 60°

Distance	Cu %	MoS_2 %
289 feet	0.313	0.017

Crosscut 3003E - along Hole U-10; Azimuth 60°

Distance	Cu %	MoS_2 %
288 feet	0.339	0.020

Increase in muck samples over drill hole samples,

Copper	8.31%
Molybdenum	17.65%

This information suggests that there is a dramatic rise in the actual grade of the ore zone over the values calculated from the results of the diamond drilling. Further underground bulk sampling will be needed to establish the actual amount of this upgrading.

POSSIBLE INCREASE IN TONNAGE

The information at hand shows that the ore zone is increasing in size from surface to the 3000 foot level. If this rate of increase to the 1500 foot elevation remains the same there is the possibility of increasing the tonnage potential of the known zone to a total of more than 80, 000, 000 tons.

Since the breccia structure is "open" at depth a further increase in tonnage is expected. The ultimate tonnage of the whole zone is unknown at this time, and is a matter for speculation. It seems reasonable however to expect the mineralized structure to top the 100 million ton figure.

MINING METHOD

The shape and size of the breccia pipe and the nearly vertical attitude facilitates a large-scale underground bulk mining method. The rate of production and the mining method to be used can only be decided when more detailed information is available.

Block caving, sub-level caving, or long hole stoping or any combination of these methods appear at this time to be the most favoured.

The 71 million tons of ore currently indicated can be delivered to a mill without the need of a shaft. A proposed 10, 000 foot haulage tunnel on the 1500 foot level would be used to move this material.

METALLURGICAL TESTS

Preliminary metallurgical tests were carried out by Britton Research Limited on a composite sample of copper-tungsten-molybdenum ore from the Brenmac property. The sample which was chosen as a representative sample by Cannon-Hicks Associates Ltd., consisted of 3 bags of ore weighing 291 pounds.

The final results of this test work confirm the following recoveries:

Copper	at least	90%	-- concentrate + 26%
Molybdenum	at least	85%	-- concentrate + 54%
Tungsten	at least	50%	-- concentrate + 65%
Gold	about	50%	--acceptable grades
Silver	about	70%	- acceptable grades

A copy of the metallurgical testing is included in Appendix B.

OTHER ZONES OF MINERALIZATION

A number of outside mineralized zones have been located and partially tested during the last four years.

1. A mineralized granite stock of surface area of 1 million square feet located approximately three miles southwest of the Sunrise Breccia Pipe has been sampled by three diamond drill holes and by surface sampling. This zone contains an estimated 35 million tons of material with the following grade:

a) Surface chips - representative sample

0.34% Cu

0.037% MoS_2

Drill Holes:		Cu%	MoS_2%	Ag oz/ton
Hole R-1	460'	0.31	0.025	?
Hole R-2	410'	0.32	0.028	?
Hole R-3	150'	0.24	?	?

The extension of this zone correlates with one of the geochemical soil anomalies found during the early stages of the programme. Follow up work will be done on this area.

2. Crossing Zone - a zone of mineralized country rock crosses the Sunrise Breccia Pipe and is found both on the east and west sides of the breccia.

Samples from two diamond drill holes located on the north side of the breccia show that this mineralized zone is approximately 150 feet wide. The grade of the zone, calculated from the weighted average of the drill holes appears to be 0.33% Cu and 0.0067% MoS_2.

This zone could add some 6 million tons of potential ore to the Sunrise Breccia Pipe structure.

3. Adit Zone - at a distance of 500 feet from the portal of the adit on the 3000 foot level, copper mineralization is encountered, and a modest amount can be seen from that point until the mineralized breccia is cut - a horizontal distance of 2850 feet. This mineralization which is hosted by cherty argillite and hornfels occurs in three sets of fractures, the most prominent of which is parallel to the "crossing zones" with a strike of N 70° E and a 60° north dip. Other attitudes are N 45° E with a 70° north dip and horizontal.

Three areas of higher grade mineralization occur at 540 feet to 720 feet, 820 feet to 900 feet and 2100 feet to 2400 feet. The copper content of these zones has not been established but chip samples return assays from 0.1% to 0.4%.

The writer observed tungsten mineralization all along the better mineralized portion of the adit which visually compares favourably with the tungsten content of the breccia. No tungsten assays have been made to date.

It is anticipated that the intersection of these zones with the breccia pipe structure should cause an up-grading in the mineral content of the breccia.

General Statement

The mineralization that is indicated in the Sunrise Breccia Pipe is in the opinion of the writer sufficiently high to justify a mining and milling operation. A complete sampling programme to measure the exact mineral content of the indicated and inferred zones and a complete feasibility study will be needed to make final decisions on the size of any proposed operation, and the flowsheet design of any mill.

The possibility of increasing the tonnage of ore at depth, from the crossing zones, from the adit zones and from other mineralized structures is excellent. Even the small high grade mines in the area may be capable of modest high grade production once an operation is underway.

The Brenmac property with its mineralized breccia pipes, mineralized surrounding crackle zones and its mineralized granite stocks has many of the classic characteristics of the major porphyry type ore deposits and may yet be one of the major deposits of the Pacific North West.

ECONOMIC ASPECTS

Although further data on the economic aspects of the Brenmac property is required, the general possibilities must be considered at this time.

Using the price of copper at 50¢ per pound, molybdenum at $1.70 per pound, tungsten at $55.00 per unit, gold at $35.00 per ounce and silver at $1.60 per ounce, the following value can be assigned to the ore:

VALUE OF ORE

	Tonnage			
Block "A") Block "B") and "C") Block 3000')	18,587,983	Measured Gross Value	$4.31	
		Indicated additional gross value	$2.03	$6.34
Indicated Ore from 2400' el. to 3600' el.	10,309,216	Indicated Gross Value		$6.34
from 3600' el. to surface	18,000,000			$6.37
Inferred Ore from 2400' el. to 1500' el.	24,300,000	Inferred Gross Value		$5.56

Copper, molybdenum, gold and silver value calculated at 100%.

Tungston value calculated at 50%.

Production Costs:

Large scale underground bulk mining at the rate of 20,000 tons per day should be done at the following rates:

Operating Costs:		
Block Caving	$1.00 per ton	
Underground development	$0.75	
Concentrating	$0.80	
Overhead	$0.30	$2.85 per ton

Capital Costs:		
$2500.00 per unit --	$50,000,000.00	
Interest on money 10%	5,000,000.00	
	$55,000,000.00	$0.77 per ton
		$3.65 per ton

It is expected that a work force of roughly 800 men would be needed to operate a mine and mill of this size, and that with the life of the mine estimated at 10 years. Any increase in tonnage would increase this life proportionately.

Respectfully submitted,

James R. Glass,
Consulting Geologist

August 23, 1971.

CERTIFICATE

I, James R. Glass, residing at 910 Ash Street, Richmond, British Columbia, do hereby certify:

I am a Consulting Geologist with offices at 433 - 355 Burrard Street, Vancouver, British Columbia.

I further certify that:

1. I am a graduate of McGill University (1961) and hold a B. Sc. degree in Geology.

2. I have been practising in my profession for the past ten years.

3. I am a Fellow of the Geological Association of Canada and a member of the American Institute of Mining Engineers.

4. The information for the accompanying report was obtained from personal examination of the underground workings, the outcrops, the split drill core during the months of July and August and also from information obtained from reports by Dr. A. C. Skerl, P. Eng., (1967-1968); by Cannon Hicks Associates Ltd., P. Eng., (1970-1971); by Britton Research Limited, P. Eng., (1971); private report by W. C. Douglas, Mining Engineer, (1962) and from published U. S. Government Report, Bulletin No. 36, Geology and Ore Deposits of the Sultan Basin, Snohomish County, Washington (1945).

5. I have no direct or indirect interest whatsoever in the property described herein, nor in the securities of Brenmac Mines Ltd. (N. P. L.) and do not expect to receive any interest therein.

James R. Glass,
Consulting Geologist

August, 1971

APPENDIX "A"

BLOCK "A"

3000' Level	Area	Cu	MoS_2	AxCu	$AxMoS_2$
L - 1	625	.752	.215	470	134
L - 2	12,417	.224	.053	2,781	658
L - 3	21,230	.330	.035	7,006	743
L - 4	13,998	.507	.075	7,097	1,050
L - 5	5,685	.371	.027	2,109	153
L - 6	680	1.000	.300	680	204
L - 7	2,768	.689	.053	1,907	147
	57,403	.384	.054	22,050	3,089
FAN A	114,494	.350	.050	40,046	5,720
GRADE OF BLOCK					
	171,897	.361	.051	62,096	8,809

TONNAGE OF BLOCK

57,403 x 600 ÷ 12 = 2,870,150

BLOCK "B" AND "C"

3000' Level	Area	Cu	MoS_2	AxCu	$AxMoS_2$
L - 8	21,708	.610	.018	13,242	391
L - 9	55,602	.230	.014	12,788	778
L - 10	13,708	.463	.035	6,347	480
L - 11	8,241	.489	.015	4,030	124

BLOCK "B" AND "C" Continued

3000' Level	Area	Cu	MoS_2	AxCu	$AxMoS_2$
L - 12	7,912	.313	.020	2,476	158
L - 13	8,820	.311	.008	2,743	71
L - 14	3,082	.366	.076	1,128	234
L - 15	910	.246	.011	224	10
	119,983	.358	.019	42,978	2,246
FAN B	166,261	.371	.024	61,792	4,050
FAN C					
C - 1	44,945	.265	.021	11,910	944
C - 2	44,398	.395	.029	17,537	1,288
C - 3	40,268	.355	.090	14,295	3,624
C - 4	34,654	.433	.028	15,005	970
C - 5	24,827	.322	.158	7,994	3,923
C - 6	30,368	.341	.025	11,378	759
C - 7	14,105	.199	.123	2,807	1,735
C - 8	8,996	.307	.027	2,762	243
C - 9	15,479	.200	.016	3,096	248
C - 10	884	.364	.039	322	34
C - 11	3,964	.353	.033	1,399	131
	262,888	.337	.053	88,505	13,899
GRADE OF BLOCK					
	549,132	.352	.037	193,275	20,195

TONNAGE OF BLOCK

119,983 x 1200 ÷ 12 = 11,998,300

3000' LEVEL BLOCK

GRADE OF BLOCK

	Area	Cu	MoS_2	AxCu	$AxMoS_2$
L - 16	37,855	.258	.008	9,760	303
L - 17	5,771	.328	.012	1,895	69
L - 18	1,622	.243	.030	394	49
L - 19	13,510	.259	.020	3,618	279
L - 20	2,950	.365	.021	1,077	62
L - 21	3,233	.380	.022	1,229	71
L - 22	40,420	.454	.024	18,351	970
L - 23	3,155	.598	.026	1,885	82
L - 24	3,070	.492	.016	1,510	49
	111,586	.356	.017	39,719	1,934

TONNAGE OF BLOCK

111,586 x 400 ÷ 12 = 3,719,533

INDICATED TONNAGE - FROM 3600' ELEVATION TO SURFACE

	Footage	Cu	MoS_2	Au	Ag
GRADE					
Hole 13	484'	0.36	0.041	0.008	0.037
Hole 15	440'	0.514	0.0365	0.004	0.063
		0.433	0.039	0.006	0.049

TONNAGE

18,000,000

INDICATED TONNAGE

From 2400' Elevation to 3600' elevation

GRADE			Cu	MoS_2
	Block A	2,870,150	0.361	0.051
	Block B & C	11,998,300	0.352	0.037
	Block 3600'	3,719,533	0.356	0.017
			0.354	0.035

TONNAGE

10,309,216

INFERRED TONNAGE

From 2400' Elevation to 1500' elevation

	Footage	Cu	MoS_2	Wo_3
Hole SE-A	180'	0.195	0.090	?
Hole SE-B	810'	0.159	0.105	0.02
Hole SD-B	940'	0.227	0.129	0.044
		0.195	0.115	0.030

TONNAGE OF BLOCK

27,000 tons per vertical foot x 900' ÷ 12 = 24,300,000

TUNGSTEN GRADE

FAN B	Footage	Wo_3	Footage x Wo_3
Hole SD-B	500'	.011	5.50
Hole SE-B	280'	.02	5.60
Hole C-3	542'	.130	70.46
	1,322	.062	81.56

LEVEL	30 samples	.04 Wo_3
		.05 Wo_3
		.07 Wo_3

GOLD & SILVER GRADE

FAN B	Footage	Footage x Au oz/ton	Footage x Ag oz/ton
Hole 11	605'	0.0023 - 0.13	1.3915 - 78.65
Hole C-3	542'	0.006 - 0.042	3.252 - 22.764
	1,147'	0.004 - 0.088	4.6435 - 101.414

APPENDIX "B"

BRITTON RESEARCH LIMITED
Consulting Metallurgists
1612 WEST THIRD AVENUE
VANCOUVER 9, B. C.
CANADA

JOHN W. BRITTON, A.R.S.M., B.Sc., P.Eng.
PRESIDENT

PHONE: 738-7195
AREA CODE: 604

April 20, 1971.

Mr. D.M. Cannon, P.Eng.,
Cannon-Hicks Associates Ltd.,
714-744 West Hastings Street,
Vancouver 1, B.C.

Dear Don,

Re: BrenMac Mines Limited - Metallurgical tests

This is to confirm the results which we gave you by phone on April 16, 1971.

Copper-molybdenum flotation

In our latest test (see attached table), we recovered 98.3% of the total copper and 97.0% of the molybdenum in a rougher concentrate assaying 13.57% Cu and 3.33% MoS_2. In an earlier test, the results of which were attached to our letter dated March 9, 1971, we had obtained copper and molybdenum recoveries of 98.5% and 97.5% respectively in a rougher concentrate assaying 9.11% Cu and 2.18% MoS_2. 3-stage cleaning increased the grade to 24.96% Cu and 6.36% MoS_2; copper and molybdenum recoveries in the cleaned concentrate were 90.1% and 95.0%. The concentrate had relatively high lead (0.40%), zinc (0.80%) and bismuth (0.18%) assays. Work on other ores indicates, however, that it should be possible to reduce the impurities to satisfactory levels during subsequent separation of the copper and molybdenum; an acid leaching step would almost certainly be necessary but is not expected to present much of a problem. Some gold and silver would be recovered in the copper concentrate.

(Cont.)

RECEIVED
APR 21 1971

Tungsten flotation

In test 303-5, 84.3% of the tungsten in the ore was recovered by floating the copper-molybdenum tailings; the rougher concentrate assayed 0.58% WO_3. The concentrate was classified and the sands and slimes were cleaned separately. The final sands concentrate assayed 8.59% WO_3 and contained 63.4% of the tungsten in the original ore. It was evident that the grade could have been improved considerably by additional cleaning; an acid leaching step, as well as high intensity magnetic separation, would almost certainly also be required in order to produce a shipping-grade scheelite concentrate; if necessary, the concentrate could be treated chemically to produce artificial scheelite.

Due to the tendency for calcite to float, the slime fraction of the concentrate was much more difficult to clean. After 2 cleaning steps, the concentrate assayed only 1.24% WO_3; an attempt to depress the calcite in the 3rd cleaning resulted in almost all of the scheelite being lost into the cleaner tailing.

Combining the final sands concentrate with the slime concentrate after 2 cleanings gave a tungsten recovery of 74.8% at a grade of 4.52% WO_3.

As you appreciate, a considerable amount of additional work would be required to determine the best conditions for treating the ore. We feel, however, that it is reasonable to assume, for the time being, that the following results would be obtained when treating similar ore in a full-scale mill:

Copper: A recovery of at least 90% in a concentrate assaying more than 26% Cu.

Molybdenum: A recovery of at least 85% in a concentrate assaying over 90% MoS_2 (54% Mo) with acceptable amounts of impurities.

(Cont.)

Gold and silver: Recoveries of about 50% and 70% respectively in the copper concentrate.

Tungsten: A recovery of at least 50% in a concentrate of acceptable grade (over 65% WO_3).

We are preparing a full report on the tests and will forward copies to you as soon as possible.

Yours sincerely,

BRITTON RESEARCH LIMITED

John W. Britton, P.Eng.

John W. Britton, P.Eng.
Consulting Metallurgist

JWB/ls

Cannon-Hicks Associates (BrenMac project) - Composite #4 - Test 303-5

Individual results

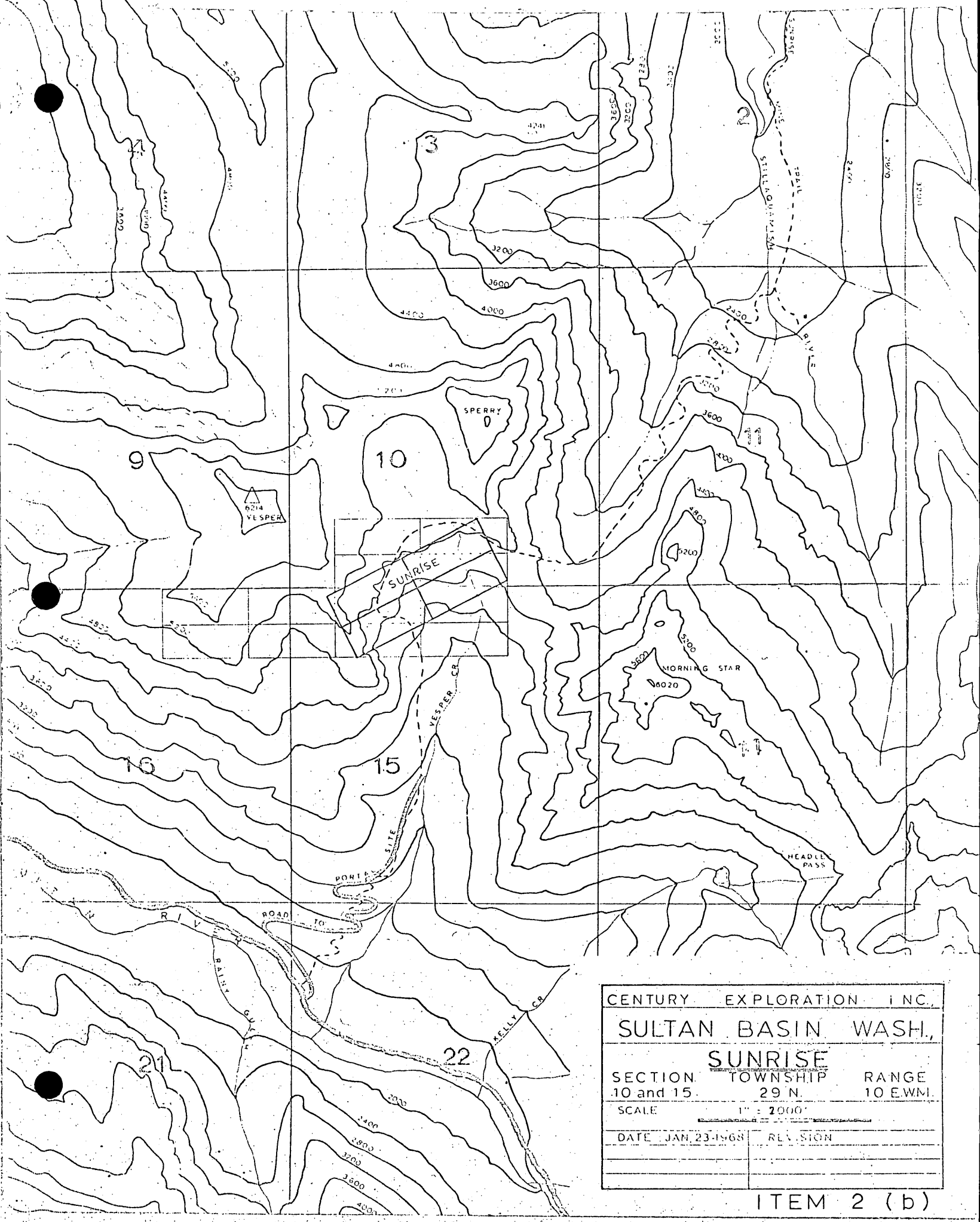
#	Product	Weight %	Assays Cu %	Assays MoS_2* %	Assays WO_3 %	Distribution % Cu	Distribution % MoS_2	Distribution % WO_3
1	Cu/Mo rougher concentrate	2.55	13.57	3.33	0.08	98.32	97.02	1.2
2	Final WO_3 sands concentrate	1.27			8.59			63.4
3	3rd WO_3 sands cleaner tailing	1.19			0.21			1.5
4	2nd " " " "	6.91			0.06			2.4
5	1st " " " "	4.09			0.05			1.2
6	Final WO_3 slimes concentrate	0.09	0.008	0.0049	1.13	0.57	1.39	0.6
7	3rd WO_3 slimes cleaner tailing	1.49			1.25			10.8
8	2nd " " " "	3.25			0.08			1.5
9	1st WO_3 slimes cleaning, 2nd conc.	0.62			0.20			0.8
10	1st WO_3 slimes cleaner tailing	6.17			0.06			2.1
11	1st WO_3 scavenger conc.	2.61	0.012	0.0022	0.09	0.09	0.07	1.4
12	2nd " " "	2.33	0.009	0.0020	0.10	0.06	0.06	1.3
13	WO_3 scavenger tailing	67.43	0.005	0.0019	0.03	0.96	1.46	11.8
14	Head (calculated)	100.00	0.35	0.088	0.17	100.00	100.00	100.0
14	Head (direct assays)		0.36	0.080	0.16			

Cumulative results

2	Final WO_3 sands concentrate	1.27			8.59			63.4
2 + 3	WO_3 sands conc. after 2 cleanings	2.46			4.54			64.9
2 to 4	" " " " 1 cleaning	9.37			1.24			67.3
2 to 5	Sands ex WO_3 rougher conc.	13.46			0.88			68.5
6	Final WO_3 slimes concentrate	0.09			1.13			0.6
6 + 7	WO_3 slimes conc. after 2 cleanings	1.58			1.24			11.4
6 to 8	1st WO_3 slimes cleaner concentrate	4.83			0.46			12.9
6 to 9	Combined WO_3 slimes cleaner concs.	5.45			0.43			13.7
6 to 10	Slimes ex WO_3 rougher conc.	11.62			0.23			15.8
2 to 10	WO_3 rougher concentrate	25.08	0.008	0.0049	0.58	0.57	1.39	84.3
2 to 11	WO_3 rougher + 1st scav. conc.	27.69	0.008	0.0047	0.53	0.66	1.46	85.7
2 to 12	Total WO_3 concentrates	30.02	0.008	0.0044	0.50	0.72	1.52	87.0
1 to 12	Total concentrates	32.57	1.07	0.26	0.47	99.04	98.54	88.2
2+6+7	Final WO_3 sands conc. + slime conc. after 2 cleanings	2.85			4.52			74.8

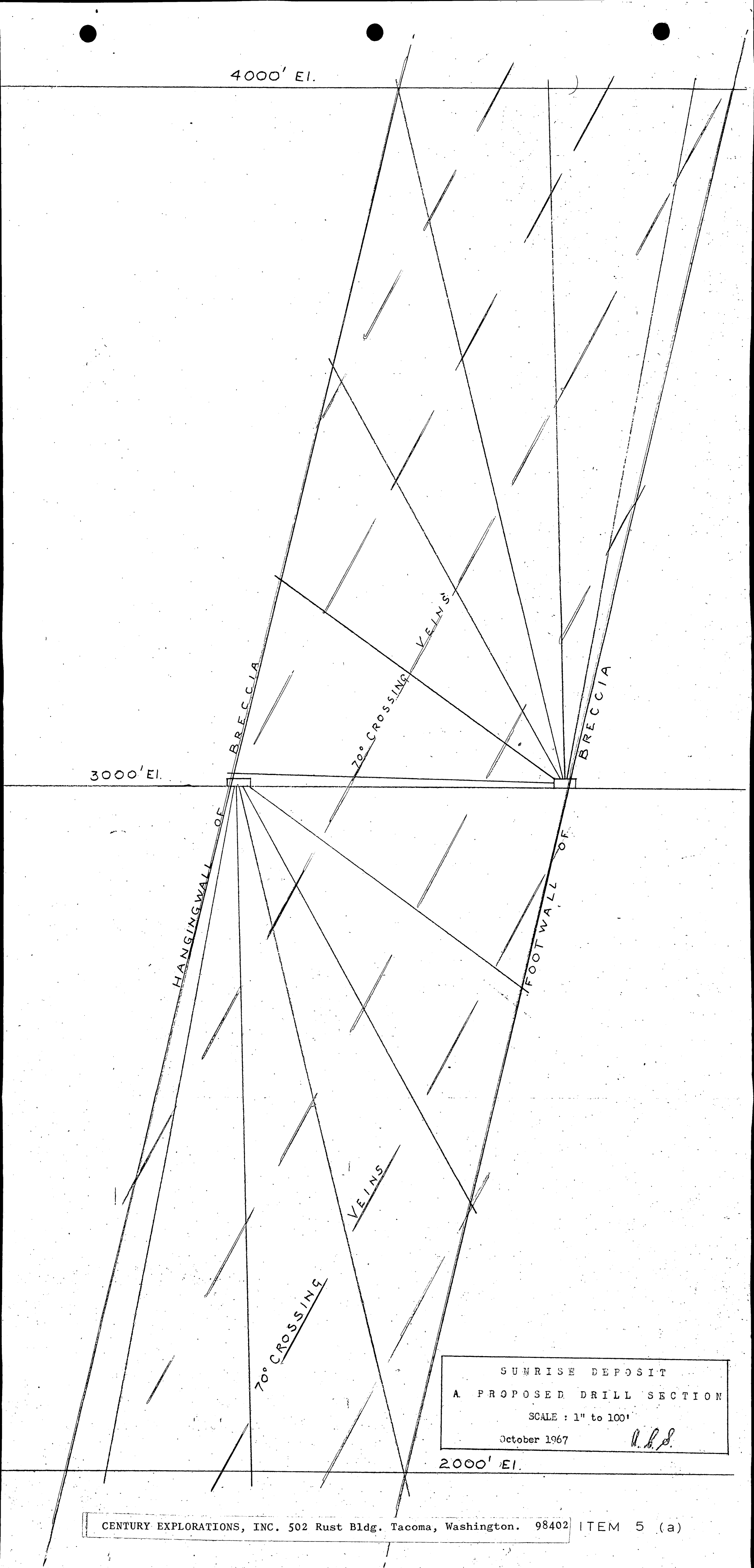
* Total Mo calculated as MoS_2

CENTURY EXPLORATIONS, INC. 502 Rust Bldg. Tacoma, Washington. 98402



CENTURY EXPLORATION INC.		
SULTAN BASIN WASH.,		
SUNRISE		
SECTION	TOWNSHIP	RANGE
10 and 15	29 N.	10 E.W.M.
SCALE	1" = 2000'	
DATE JAN. 23-1968	REVISION	

ITEM 2 (b)



CENTURY EXPLORATIONS, INC. 502 Rust Bldg. Tacoma, Washington. 98402

ITEM 5 (a)

OFFICIAL
COPY
O. M. E.
RECEIVED
FEB 28 1968
INITIALS | CODE

FOR SALE BY

METSKER MAPS

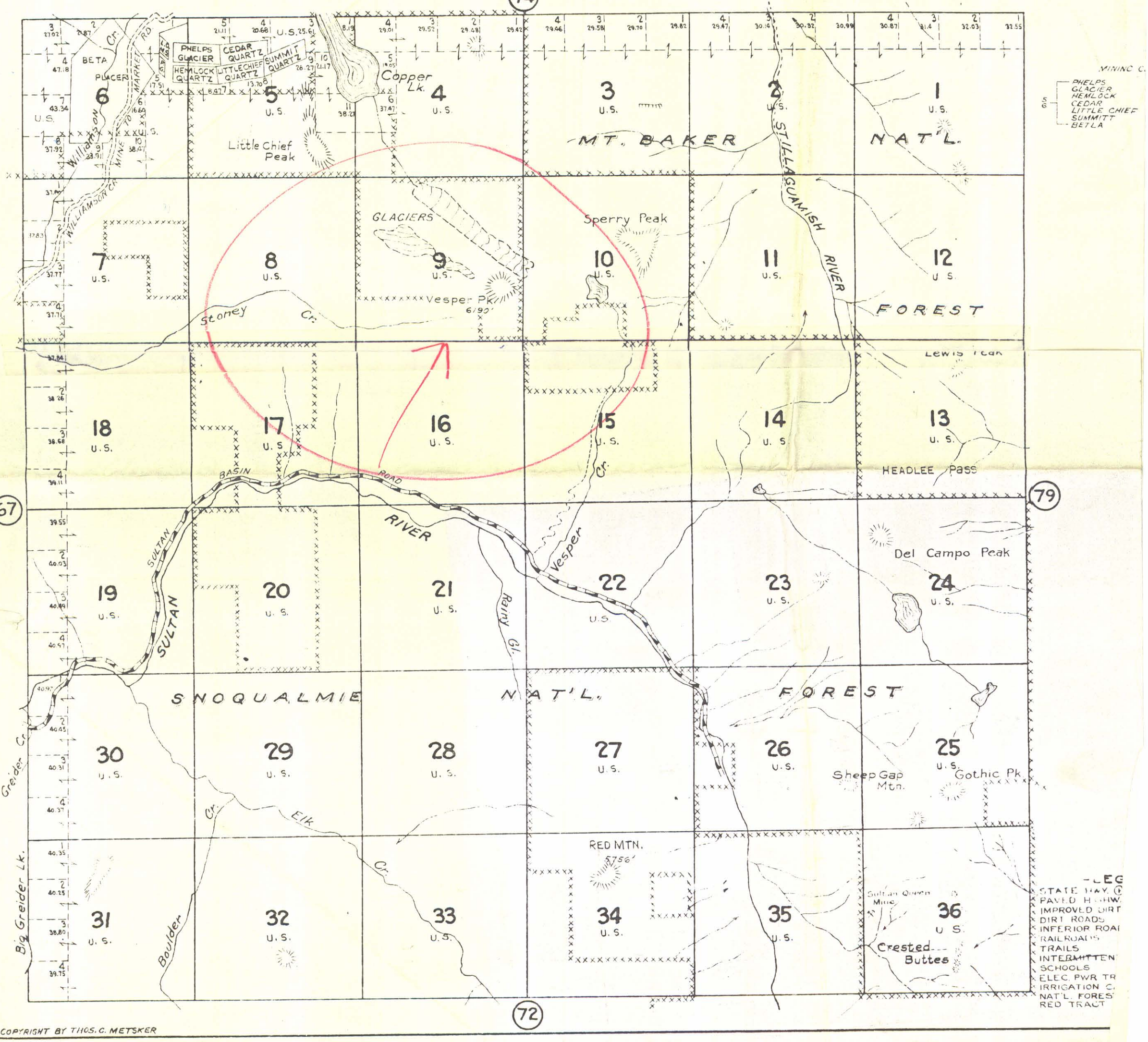
111 SOUTH 10TH ST. TACOMA, WASHINGTON
1020 THIRD AVE. SEATTLE, WASHINGTON

TOWNSHIP 29 N., RANGE 10 E.W.M.

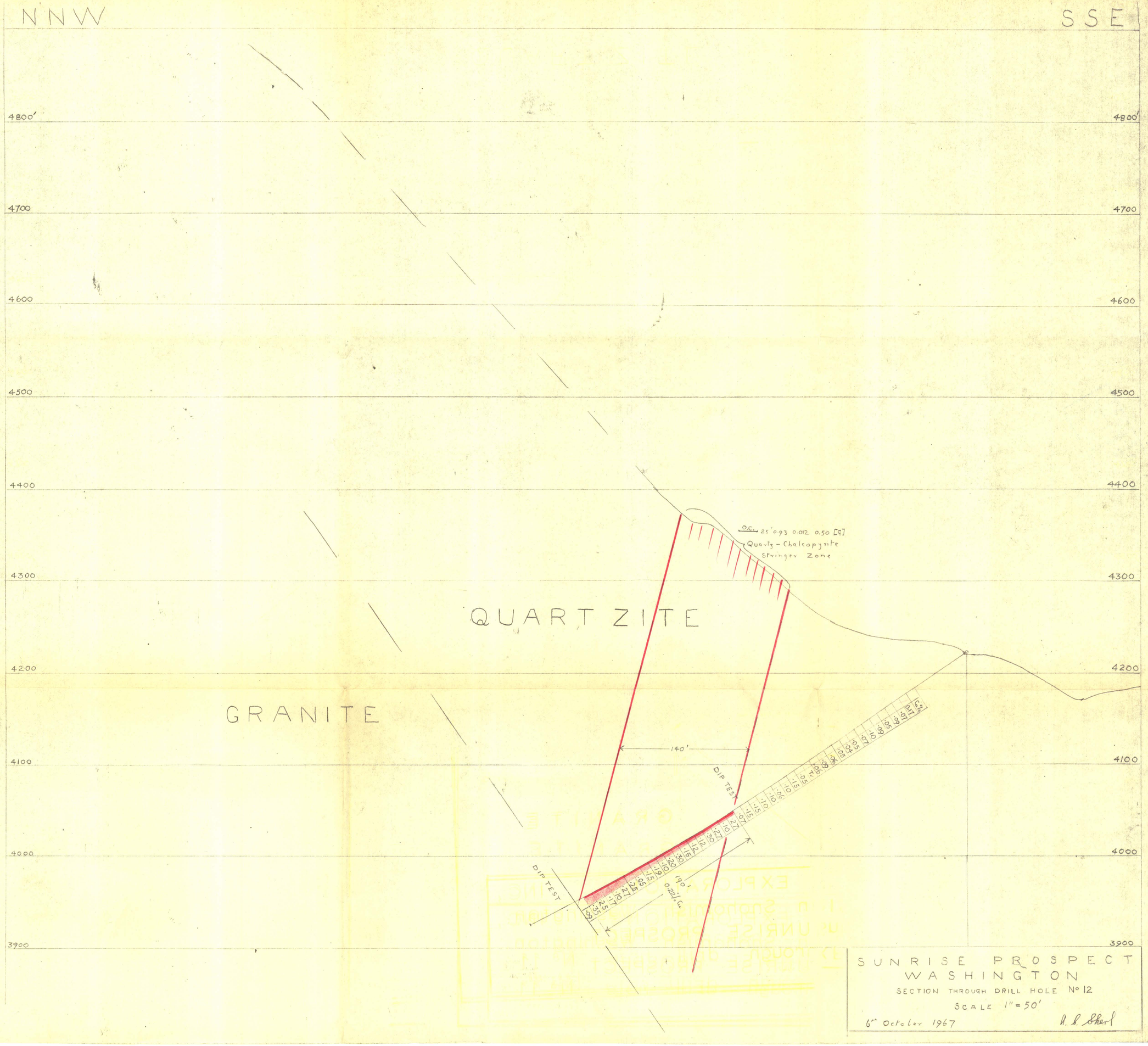
SNOHOMISH COUNTY

DATED: MAY 1960

SCALE 2 IN. = 1 MILE.

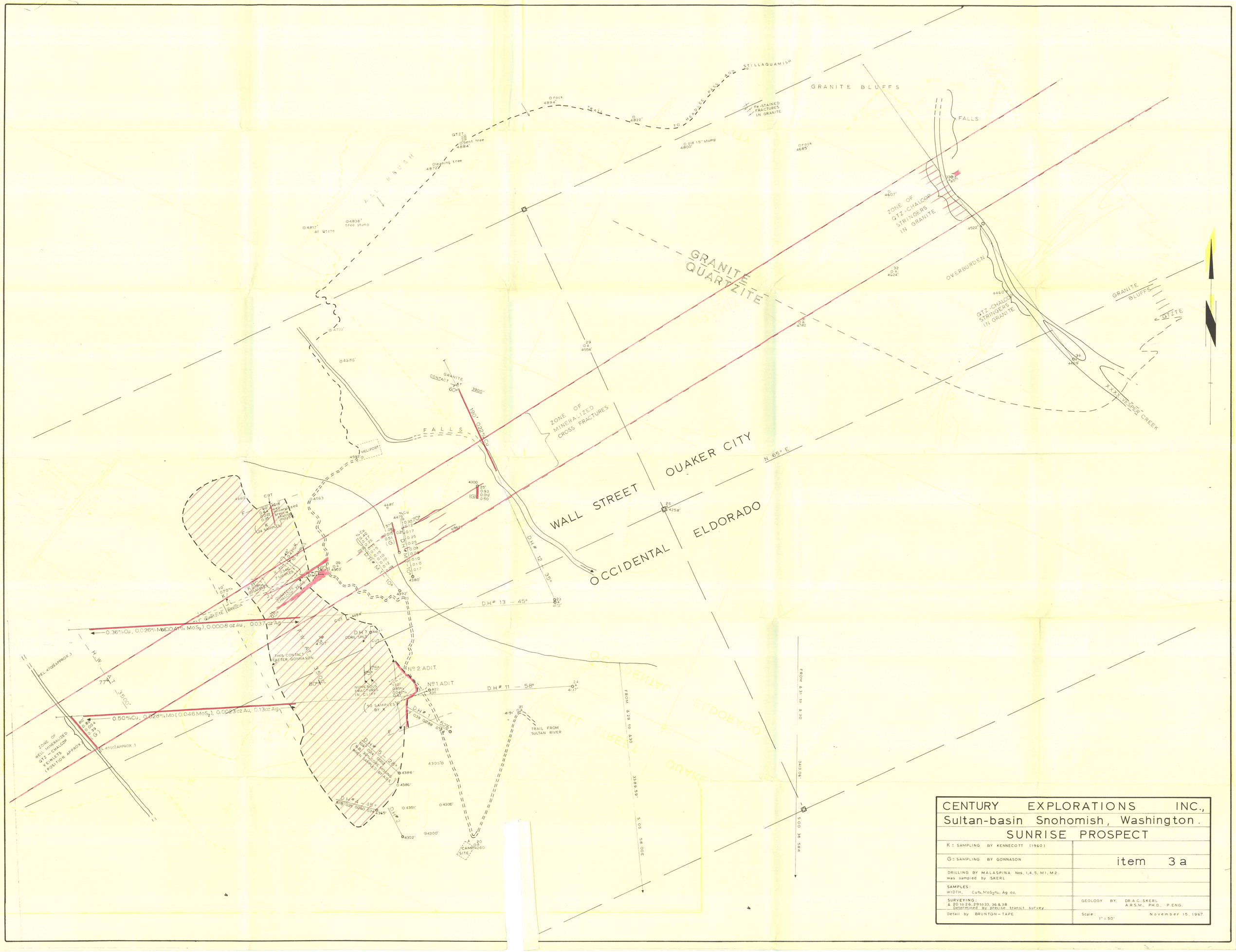


COPYRIGHT BY THOS. C. METSKER



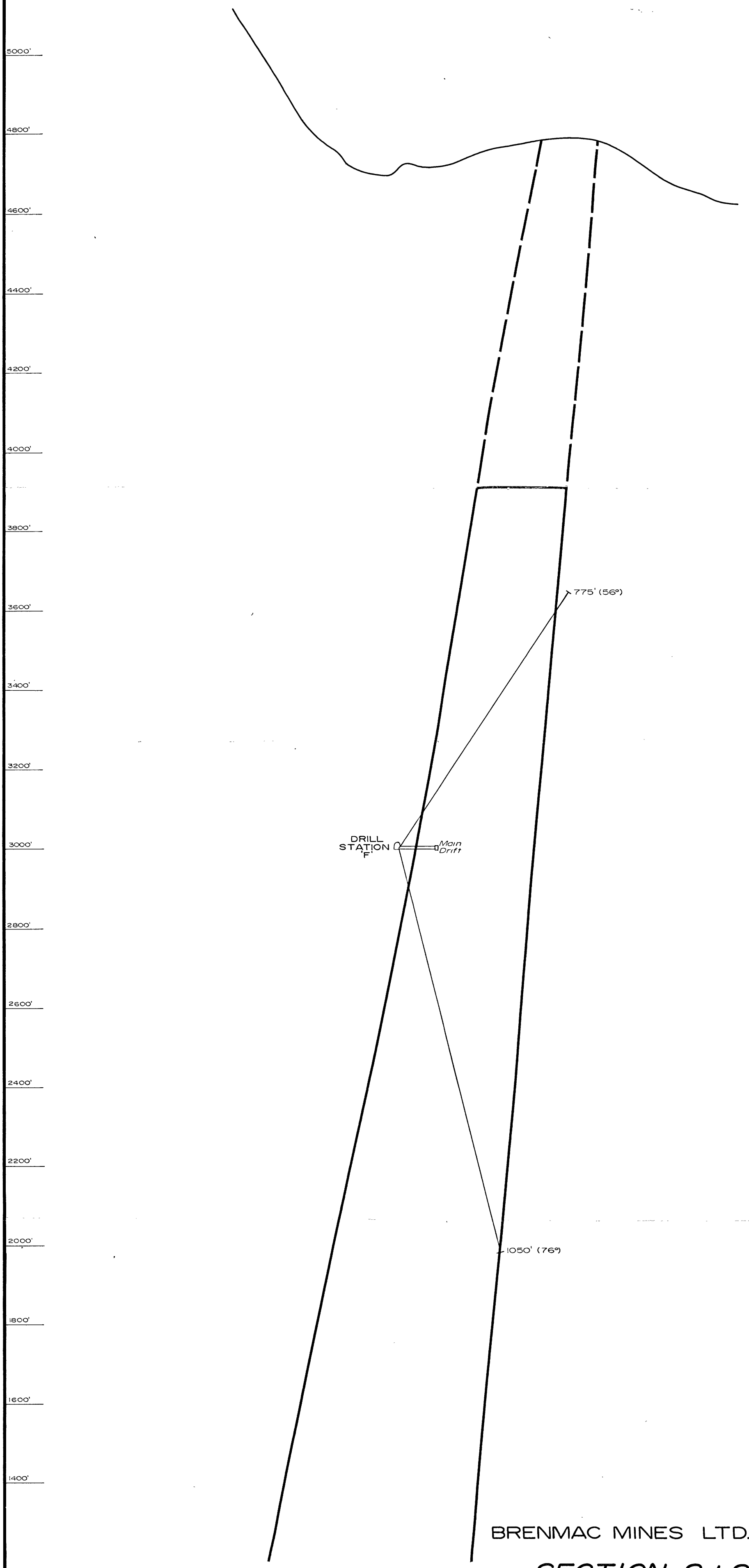
SUNRISE PROSPECT
WASHINGTON
SECTION THROUGH DRILL HOLE Nº 12
SCALE 1" = 50'
6th October 1967
A. L. Sherf

ITEM 3 (a)



CENTURY EXPLORATIONS INC.,
Sultan-basin Snohomish, Washington.
SUNRISE PROSPECT

K = SAMPLING BY KENNECOTT (1960)	
G = SAMPLING BY GONNASON	item 3a
DRILLING BY MALASPINA Nos. 1, 4, 5, M1, M2. was sampled by SKERL	
SAMPLES: WIDTH, Cu%, MoS_2%, Ag oz.	
SURVEYING: Δ 20 to 26, 29 to 33, 36 & 38 Determined by precise transit survey	GEOLOGY BY DR. A.C. SKERL A.R.S.M., PH.D., P.ENG.
Detail by BRUNTON-TAPE	Scale: 1" = 50' November 15, 1967



LOOKING N. 30°W.

BRENMAC MINES LTD. (N.P.L.)

SECTION 8+25 N

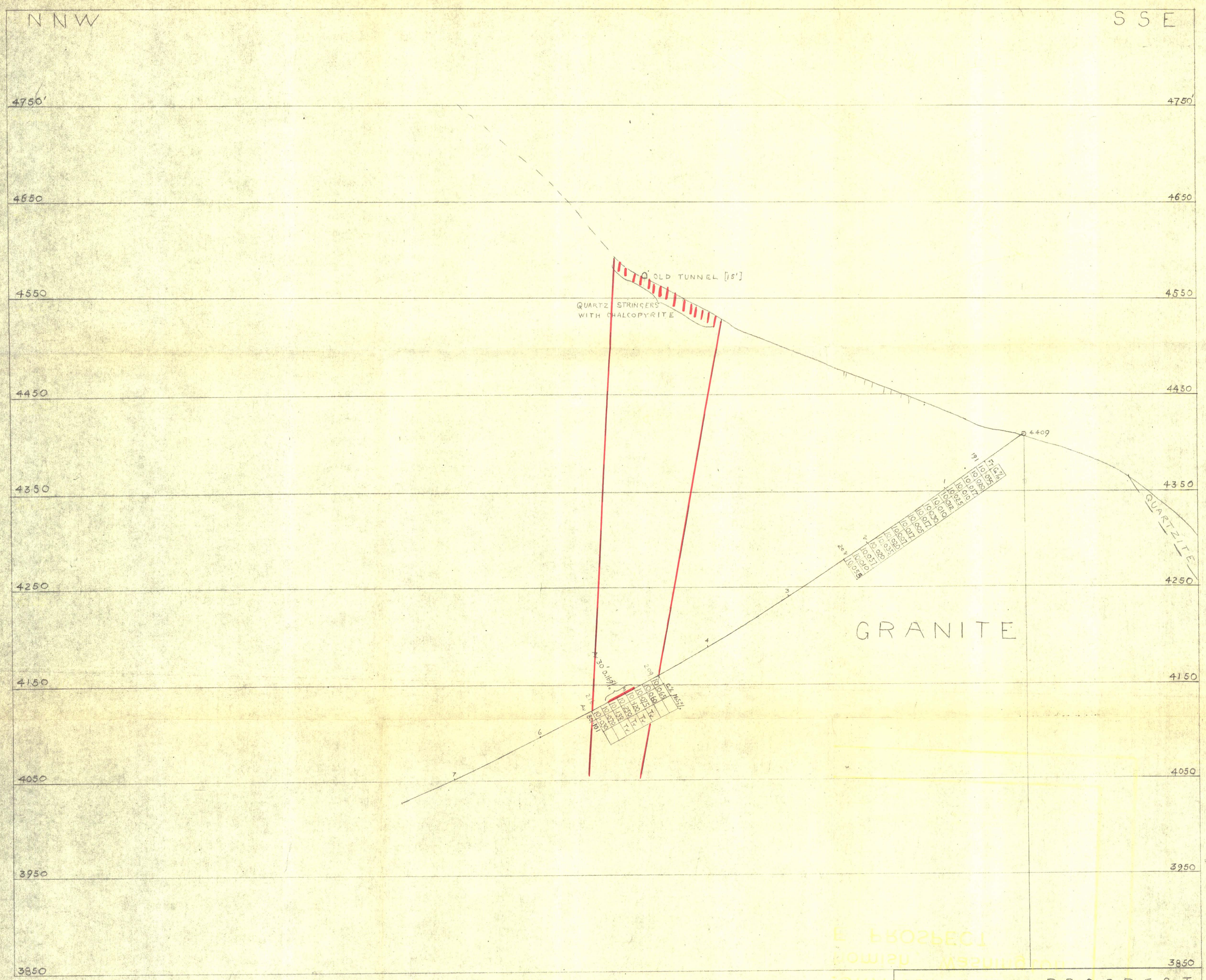
SULTAN BASIN PROJECT

STATE OF WASHINGTON

SCALE 1" = 200'

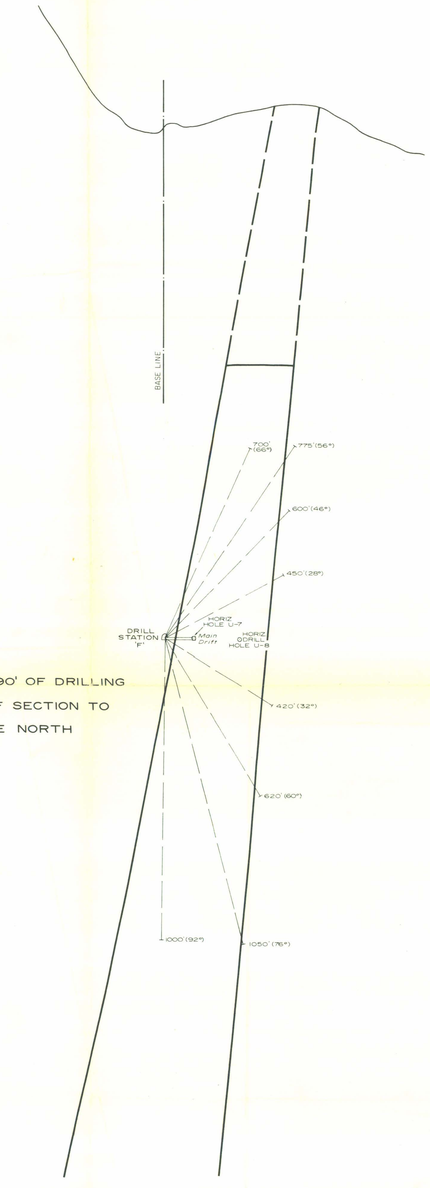
200 100 0 200 400 600

Nov 71



SUNRISE PROSPECT
WASHINGTON
SECTION THROUGH DRILL HOLE Nº 14
SCALE 1" = 50'
November 1967

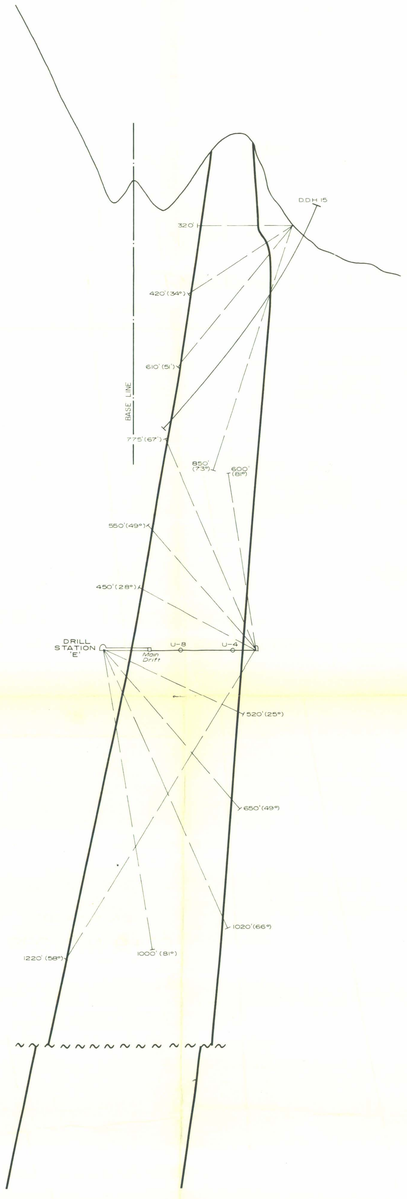
ITEM 3 (a)



3090' OF DRILLING
OFF SECTION TO
THE NORTH

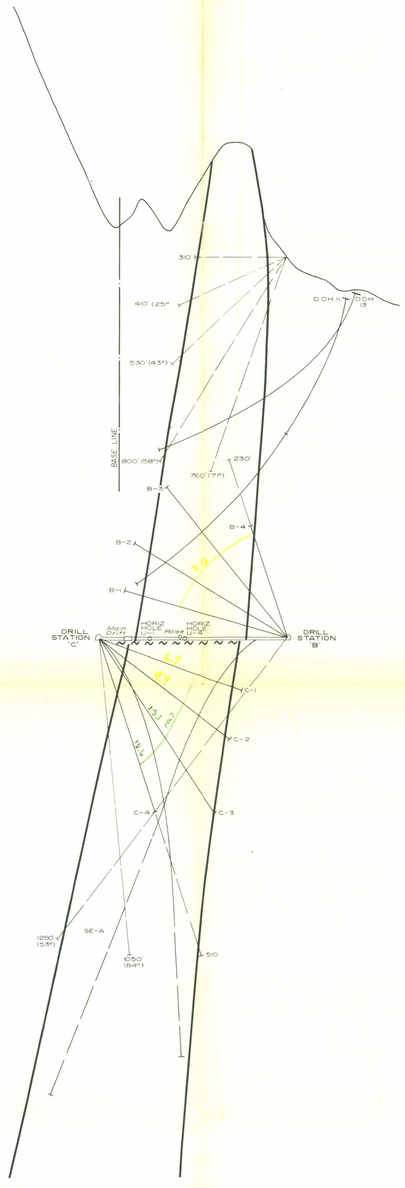
SECTION 8+25N

LOOKING N 30° W



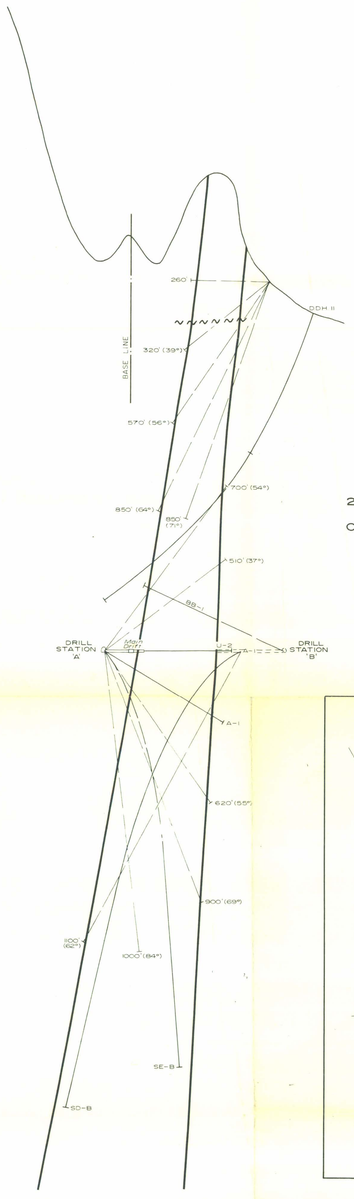
SECTION 6+55 N

LOOKING N 30° W



SECTION 3+85 N

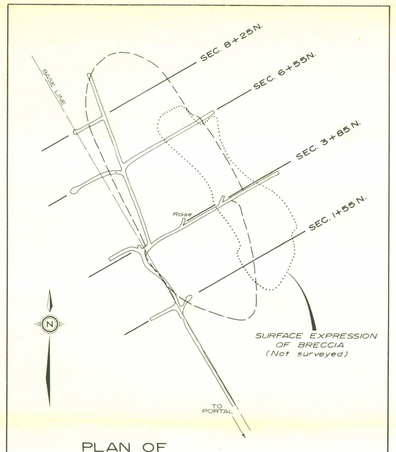
LOOKING N 30° W



SECTION 1+55N

LOOKING N 30° W

2100' OF DRILLING (700' HOLES)
OFF SECTION TO THE SOUTH



PLAN OF
3000' LEVEL
SCALE 1" = 200'

PROPOSED DRILL HOLE

PREVIOUS DRILL HOLE

BRENMAC MINES LTD. (N.P.L.)

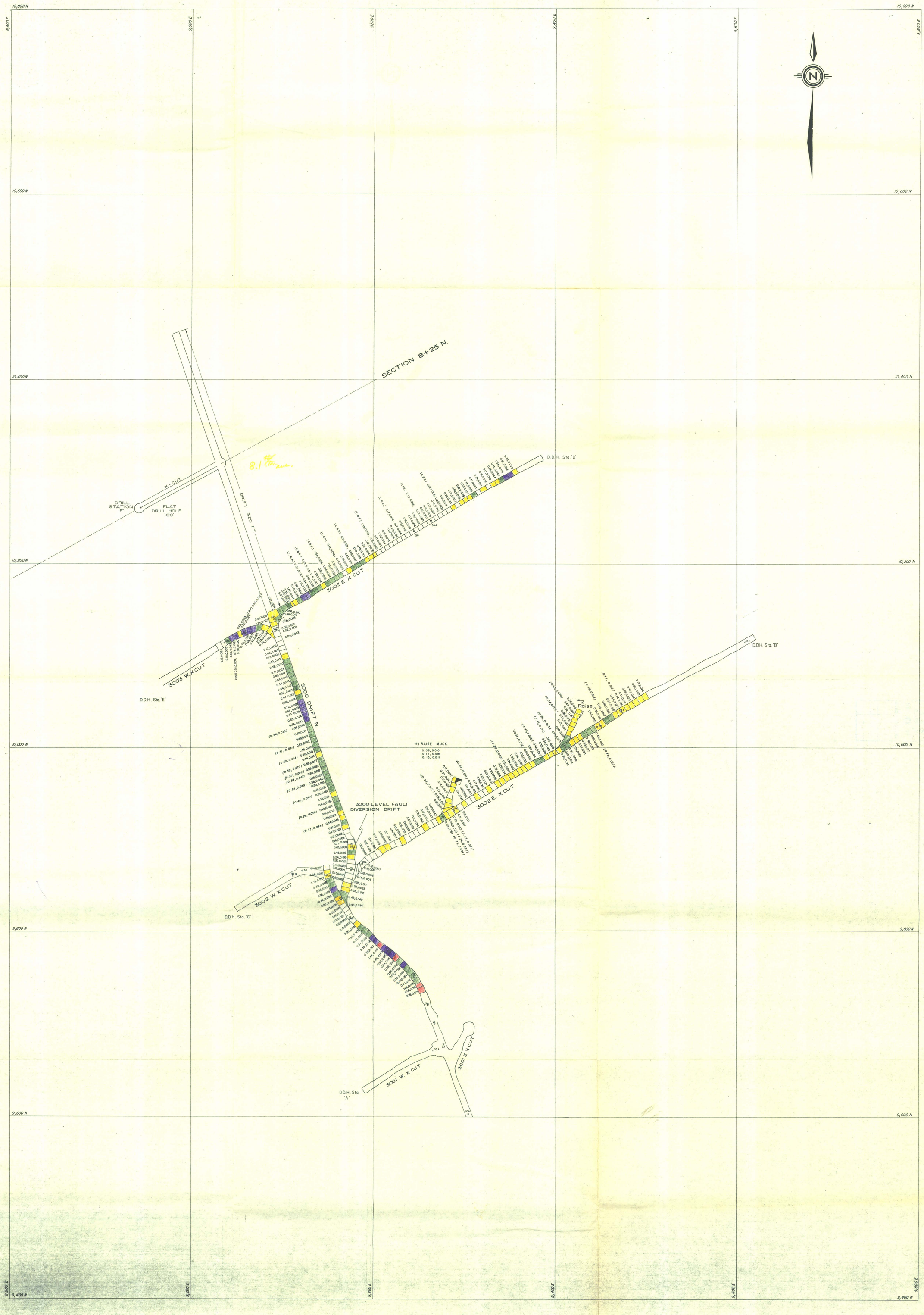
GEOLOGICAL SECTIONS

SULTAN BASIN PROJECT
STATE OF WASHINGTON

SCALE 1" = 200'

FEET 200 100 0 200 400 600 800 FEET

NOVEMBER 1971



Equivalent Cu (0.015 % MoS_2 @ 1.70 = 0.06 % Cu @ 52.5¢)

- > 20 = red
- > 15 = purple
- > 10 = green
- > 5 = yellow
- < 5 = bleach

LEGEND

0.46 , 0.125 — % Cu. , % MoS_2

* 0.23 , 0.001 — % Cu. , % MoS_2 (NEW ASSAY)

(0.25, 0.075) — % Cu. , % MoS_2 (OLD ASSAY)

(C&R) 0.28, 0.013 — (Crushed & Riffled) % Cu, % MoS_2

CANNON-HICKS ASSOCIATES LTD.

BRENMAC MINES LTD. (N.P.L.)

ASSAY PLAN-3000' LEVEL

SULTAN BASIN PROJECT

STATE OF WASHINGTON

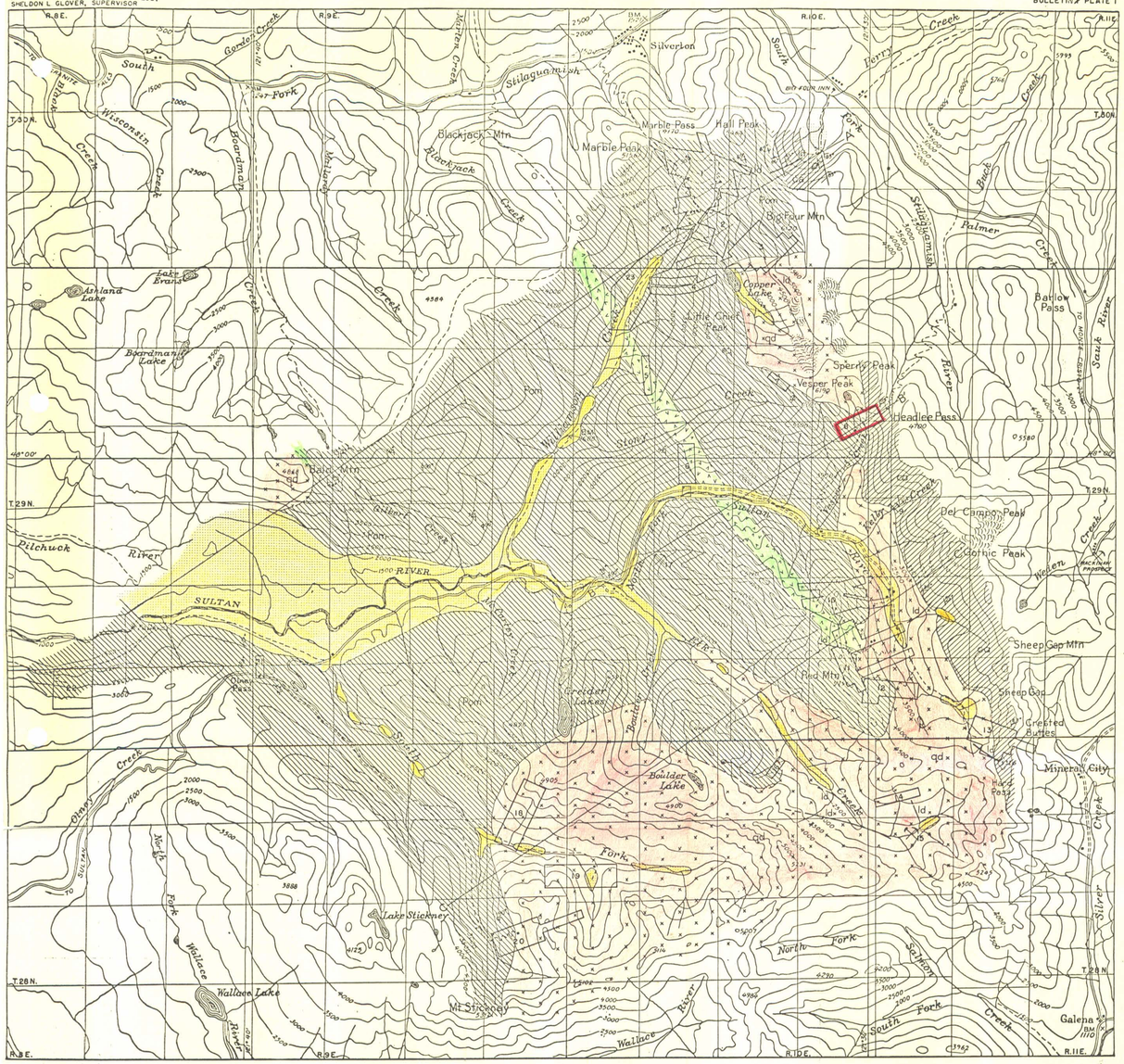
SCALE 1" = 40'

Feet 60 40 0 40 60 Feet

REVISED: SEPT. 10, 1970

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION AND DEVELOPMENT
DIVISION OF MINES AND MINING GEOLOGY
SHELDON L. GLOVER, SUPERVISOR

BULLETIN No. 36 PLATE I



EXPLANATION

BEDDED ROCKS

QUATERNARY

Qg — GLACIOFLUVIAL DEPOSITS (Silt, sand, and gravel)

MESOZOIC (?)

CONGLOMERATE-ARGILLITE SERIES (Principally quartzitic conglomerate and sandstone. Some interbedded argillite)

PALEOZOIC

Pom — OLD METAMORPHIC SERIES (Principally sedimentary in origin; some serpentine included)

IGNEOUS INTRUSIVE ROCKS

TERTIARY

Id — LATE DIKES

MESOZOIC OR TERTIARY

qd — QUARTZ DIORITE

pr — PERIDOTITE (Mostly serpentinized)

40 — STRIKE AND DIP OF BED

40 — STRIKE AND DIP OF OVERTURNED BEDS

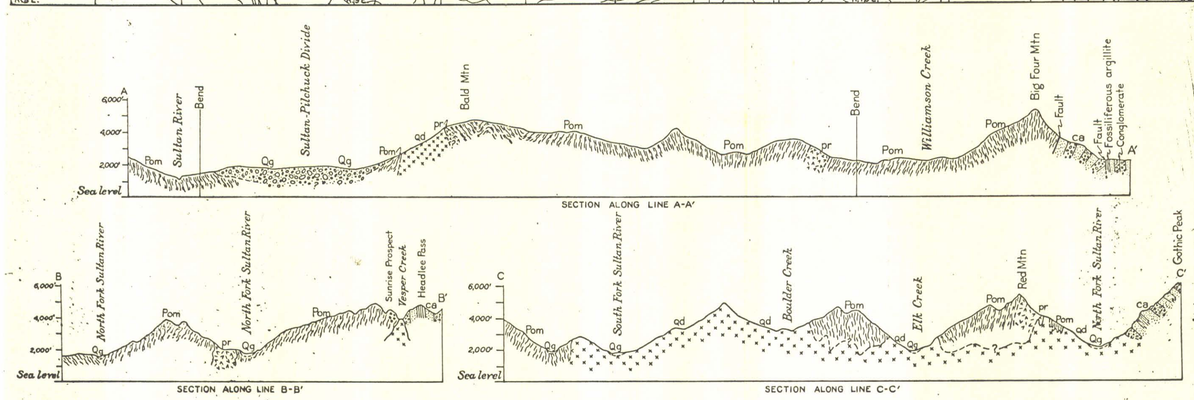
70° — FAULT, SHOWING DIP

PROSPECTS WITH UNKNOWN OR ABANDONED BOUNDARY LINES

12 — APPROXIMATE BOUNDARIES OF MINING PROPERTIES. NUMBERS REFER TO NAME IN LIST BELOW

LIST OF MINING PROPERTIES

1 45 MINES, INC.
2 MILWAUKEE
3 SILVER HORSE-SHOE
4 LITTLE CHIEF
5 ALA DICKSON
6 MOUNTAIN CEDAR
7 48-55
8 SUNRISE
9 KELLY CREEK
10 SULTAN BASIN MINING CO.
11 FLORENCE RAE
12 DORIS
13 SULTAN KING
14 MARVEL
15 JONES
16 BLUE STONE
17 NEWHOUSE
18 ST. THEREJA
19 GOLDEN EAGLE
20 KROMONA MINES, INC.
21 BORDER QUEEN
22 LOCKWOOD PYRITE
23 ALPHA AND BETA PLACERS



SECTION ALONG LINE A-A'

SECTION ALONG LINE B-B'

SECTION ALONG LINE C-C'

GEOLOGIC MAP AND SECTIONS OF THE SULTAN BASIN, SNOHOMISH COUNTY, WASHINGTON

BASE FROM U. S. GEOLOGICAL SURVEY

TRUE NORTH — MAGNETIC NORTH 23½°

APPROXIMATE MEAN DECLINATION, 1921

Scale

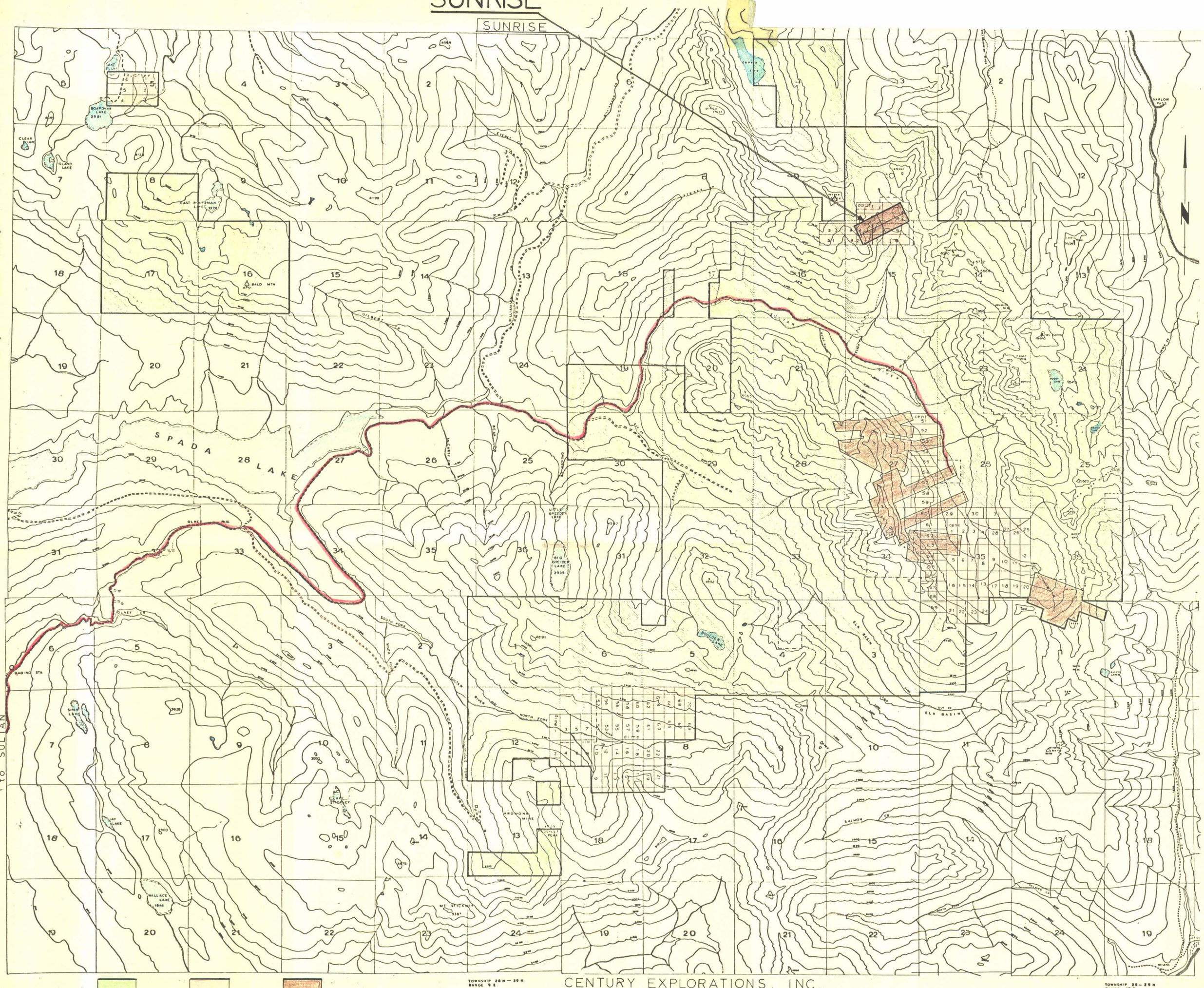
1 ½ 0 1 2 MILES

CONTOUR INTERVAL 500 FEET
DATUM IS MEAN SEA LEVEL

GEOLOGY BY A.K. GUARD AND WARD GARITHERS
SURVEYED IN 1943-44
DRAWN BY V.L. FENLEY

ITEM 3 (e)

SUNRISE



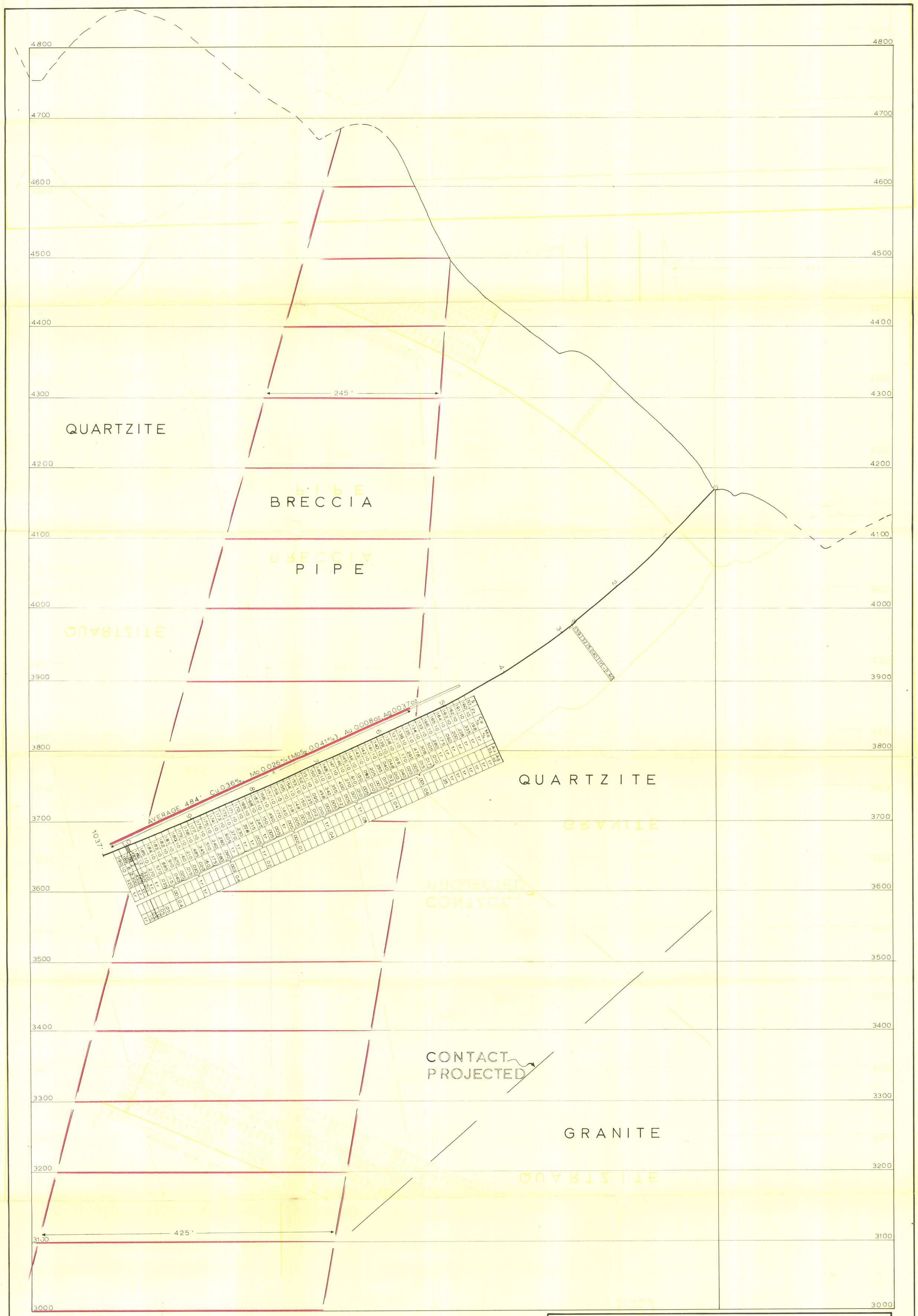
LEASES CLAIMS OPTIONS

TOWNSHIP 28 N — 29 N
RANGE 9 E
1" = 4000'
Oct 10-67

CENTURY EXPLORATIONS, INC.,
SULTAN BASIN scale 1" = 4000'

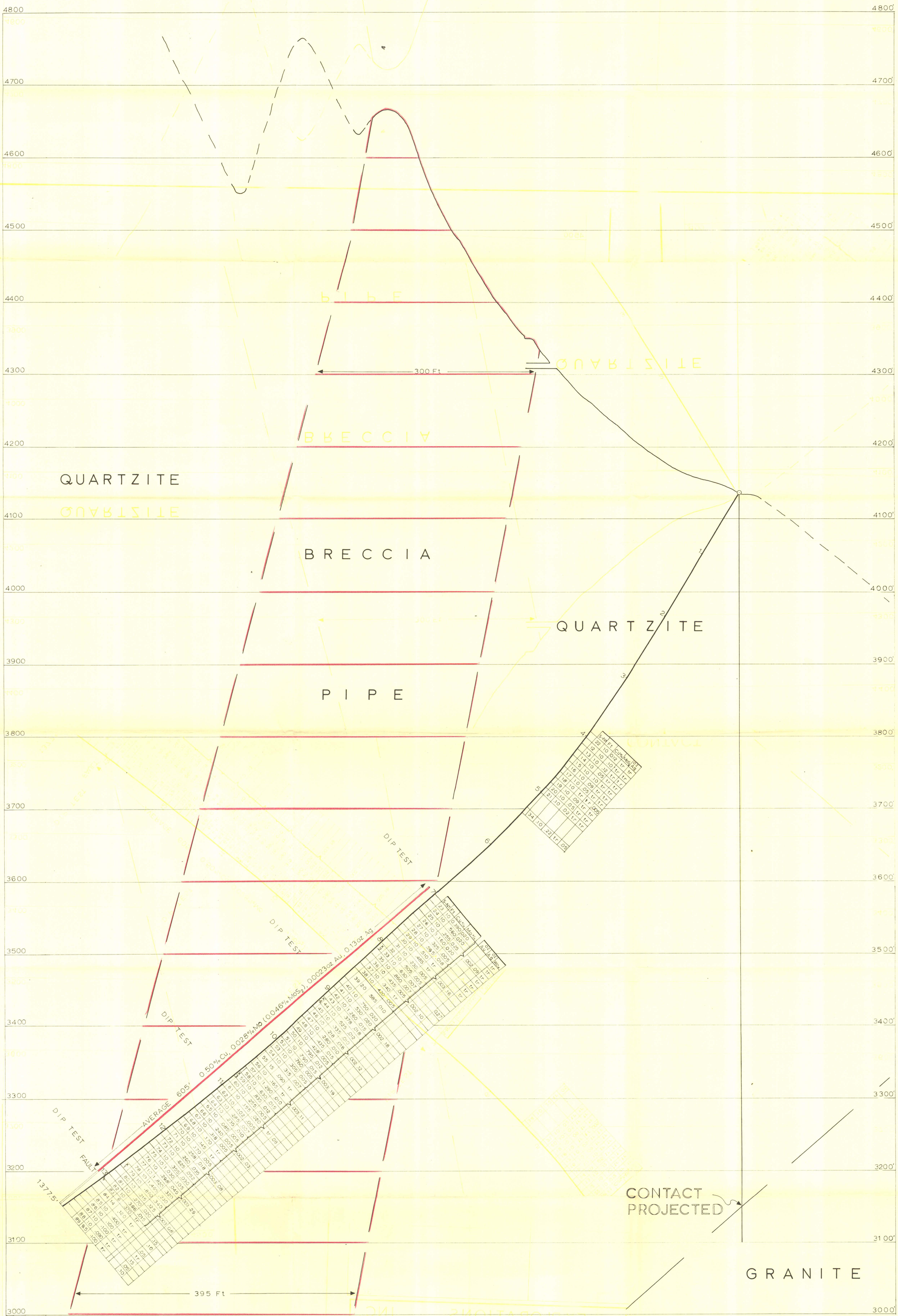
TOWNSHIP 28 — 29 N
RANGE 10 E
1" = 4000'
Oct 10-67

ADJACENT LAND ITEM 2 (b)



CENTURY EXPLORATIONS INC.,
Sultan-basin Snohomish Washington.
SUNRISE PROSPECT
Section through drill hole N° 13.

Scale 1" = 50'	November 15, 1967.		item 3a	DR A.C.SKERL A.R.S.M., PH.D., P.ENG.



CENTURY EXPLORATIONS INC.,			
Sultan-basin Snohomish Washington.			
SUNRISE PROSPECT			
Section through drill hole N° 11.			
Scale: 1" = 50'	November 15, 1967.	item 3a	DR. A.C. SKERL A.R.S.M., PH.D., P.ENG.