92I/12W

REPORT ON THE COPPER PROPERTY

of

ASKOM MINING COMPANY

92I/NW-*

- 21, 22, 24, 25

A. C. SKERL

3rd July 1959

REPORT ON THE COPPER PROPERTY OF ASKOM MINING COMPANY, NEAR LILLOOET, B. C.

INTRODUCTION

On the 27th and 28th of June 1959 under the guidance of Messrs. J.E. Rickard and A. Jenner of Lillooet I made an examination of several of the copper prospects held by the Askom Mining Company.

SUMMARY

In a length of two miles on the west side of the Fraser River valley about 15 miles south of Lillooet Mr. J. E. Rickard has demonstrated the presence of appreciable copper mineralization at four places alongside a probable major fault that was not recognized in the mapping of the Canadian Geological Survey although it can be seen as a strong lineament on air photos.

No. 1 Prospect has a rock cut in partly oxidized and leached ore that averages 0.95% copper for six samples over a true width of at least 30 feet which soil sampling suggests could possibly be extended by excavating the overburden to give at least 100 feet of mineralization.

This is a promising property that justifies more intensive exploration along the whole zone using geochemical and geophysical methods followed up by bulldozing.

L O C A T I O N

The 24 claims are situated on the steep lower slopes of the east side of Askom Mountain, 15 miles south of Lillooet, in the valley of the Fraser River between elevations 2000 and 3500 feet. The area is dissected by the gorges of the Nesikep Creek and two of its tributaries as indicated on the accompanying sketch plan that is based on an air photo (B.C. 709:83).

The photographs that accompany this report illustrate the topography of the area.

C O M M U N I C A T I O N S

A gravel road from Lillooet along the west side of the Fraser valley follows a series of benches for 20 miles to serve various small farms.

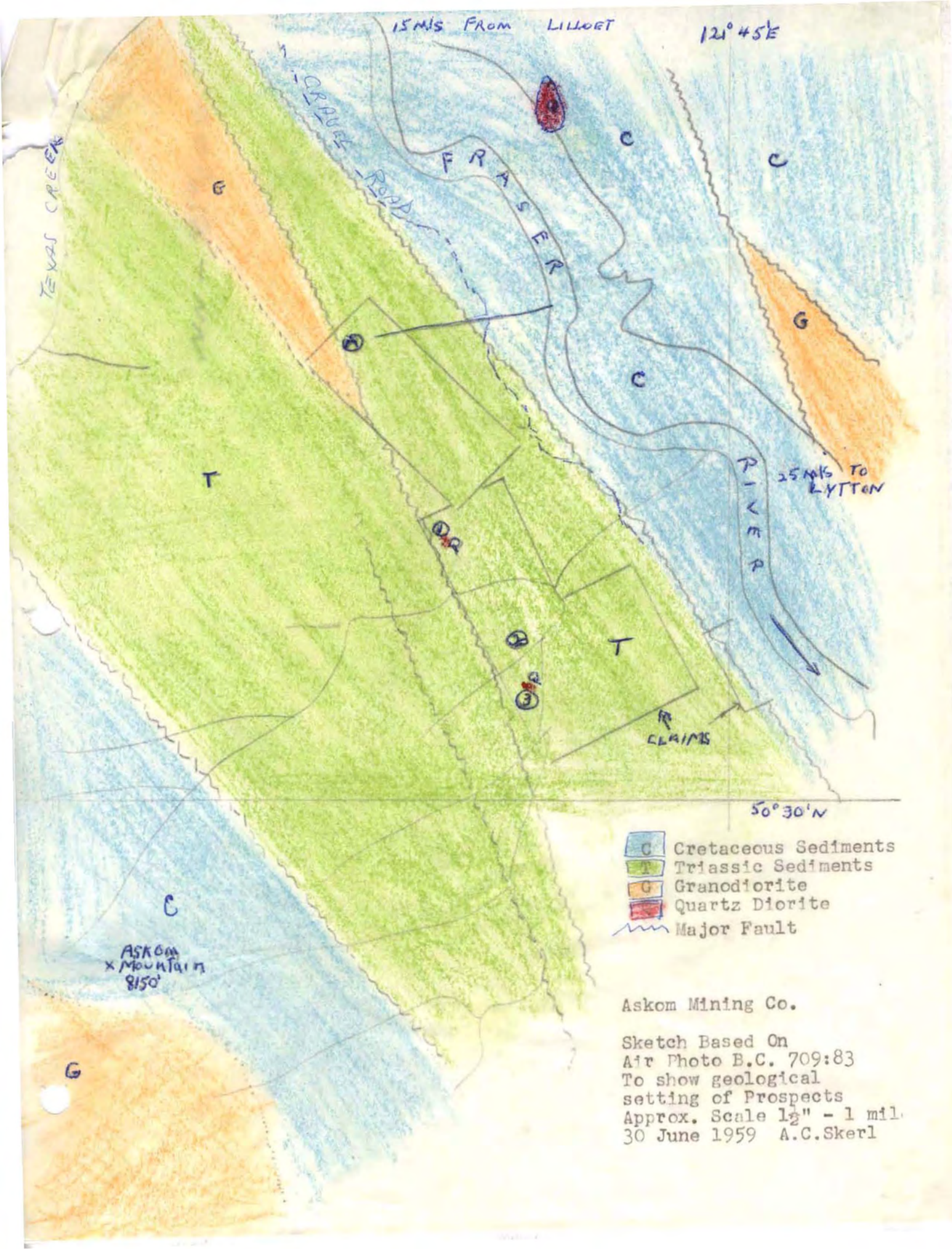
From the south end of this road a logging road extends up the valley side to a sawmill, at present shut down, at elevation 2700 feet. From here the southern half of the claims can be reached quite readily by trail.

The northern half of the property is accessible via steep trails starting from the gravel road at elevation 1000 feet.

T I M B E R, W A T E R a n d P O W E R

Ample timber is available in the claim area for all mining purposes. The presence of a sawmill is particularly advantageous.

Adequate water is present in the Nesikep Creek and its tributaries but in some sections of the claims pumping and fairly long hose lines will be necessary for diamond drilling purposes.



Askom Mining Co.

Sketch Based On
Air Photo B.C. 709:83
To show geological
setting of Prospects
Approx. Scale 1½" - 1 mil
30 June 1959 A.C.Skerl

The B. C. Electric is about to construct a power line from its Seton power house at Lillooet to Lytton following the west side of the Fraser valley for at least 20 miles. This will bring power very close to any mining operation on the property.

G E O L O G Y

The general geology of the area is described in Memoir 262 of the Geological Survey of Canada on the Ashcroft Map Area by K.C. McTaggert.

The Fraser River valley has been formed along a zone of large scale faulting that stretches south from Lillooet for at least 200 miles. This fracture zone is of particular interest since it has several major ore-bodies associated with it both in B.C. and in Washington State. The individual faults often contain serpentinized dykes of basic rocks.

On the accompanying sketch map made from an air photo I have copied the salient features of the geology shown on map 1010 A in Memoir 262.

In the immediate vicinity of the Askom Mining Company's property a cross section from the Fraser River to the west would first show black argillites of the Lillooet Group of Cretaceous age bounded on the west by a major fault with associated serpentine dykes, followed by supposed Triassic rocks of both sedimentary and volcanic origin for 3 miles horizontally and 5000 feet vertically in which the property is situated. Another northwesterly fault separates these rocks from the Brew Group of shales, sandstones and conglomerate that occur for two miles and form the top of Askom Mountain. West of this is the main granite of the Coast Range Batholith.

Apparently McTaggert did not have the advantage of air photos when attempting to trace the individual faults of the fracture zone of the Fraser River valley. Thus it seems obvious in air photos B.C. 627:87, 700:78 and 83 that the major fault that he has passing through Lillooet is further west than he shows for 15 miles south of Texas Creek. It lies along the west side of the claims as shown on the map.

There is no actual exposure of the main fault but it is well-defined by the abrupt change to a steep slope on the west side. The copious scree material from above covers the actual position of the fault.

These conditions are well-illustrated in the various photographs.

Between the gorges of Nesikep Creek and its tributaries saddles have been left along depressions that mark the position of the fault.

P R O S P E C T S

At each of four saddles, just east of the fault, are various copper occurrences that were found by Mr. J. E. Rickard. The topography and relative positions of three of these prospects are shown in No. 2 Photo.

The mineralization consists of small stringers and disseminations of chalcopyrite, largely weathered to malachite and limonite, in a siliceous metamorphic rock or in quartz diorite. In each case there were only a few minor stains of malachite at the surface but within a few feet of depth the amount increased substantially and chalcopyrite was present.

The individual prospects, numbered 1 to 4, are indicated on the sketch plan and described as follows:

No. 1 P R O S P E C T

This is the principal showing at present because most of the work to date has been concentrated on it.

The accompanying plan (1" to 40') was made from a Brunton and tape survey but only the west limit of the outcrops was defined in the time available.

The steep gully shown and also seen in No. 3 photo probably marks the trace of the northwest striking main fault that is concealed by a cover of slide rock from the steep mountain side immediately to the west.

There are two distinct rock types; one is a fine-textured, silicified metamorphic rock of unknown origin and the other is a light coloured medium-textured quartz diorite.

Usually a persistant search by repeated hammering reveals the presence of malachite stains in the metamorphic rock of this section.

The main exposure is an L-shaped excavation that has been blasted out to a depth of 3 to 6 feet. In the northerly aligned upper cut (No. 4 photo) considerable malachite and chalcopyrite are present and a series of six samples that I cut gave an average of 0.95% copper for a length of 42½ feet. In the lower cut (No. 5 photo) there is a length of 30 feet that probably assays about 0.2% copper and then there is 10 feet at the lower end that is estimated to average 1% copper.

Several minor fractures in various directions were mapped but no predominant alignment is seen in the mineralization so that the true width is unknown. If the ore direction is assumed to be parallel to the supposed fault at N 35° W then the true width for the average of 0.95% copper is 30 feet.

A traverse at 200 feet to the south of the workings found mostly a light coloured quartz diorite with just a little malachite in two places. The intervening ground has still to be mapped in detail to define the actual contact between the metamorphics and the diorite.

Two lines of soil samples were taken for geochemical testing by the rubeanic acid method with the results shown on the map. One line, close to the workings where the overburden is shallow, gave a definite response for 120 feet in an easterly direction. The second line at about 250 feet to the north was at a lower elevation and in heavier overburden but still gave interesting results that suggest the mineralized zone trends northwest parallel to the fault.

The lack of indications within 100 feet of the gully marking the fault may be due to the masking effect of a thick layer of scree and (or) glacial material filling a depression that was scoured out originally by the ice moving down the Fraser valley.

The results to date are quite encouraging especially as considerable leaching is evident so that the grade of the fresh sulphide ore could be better than that obtained so far.

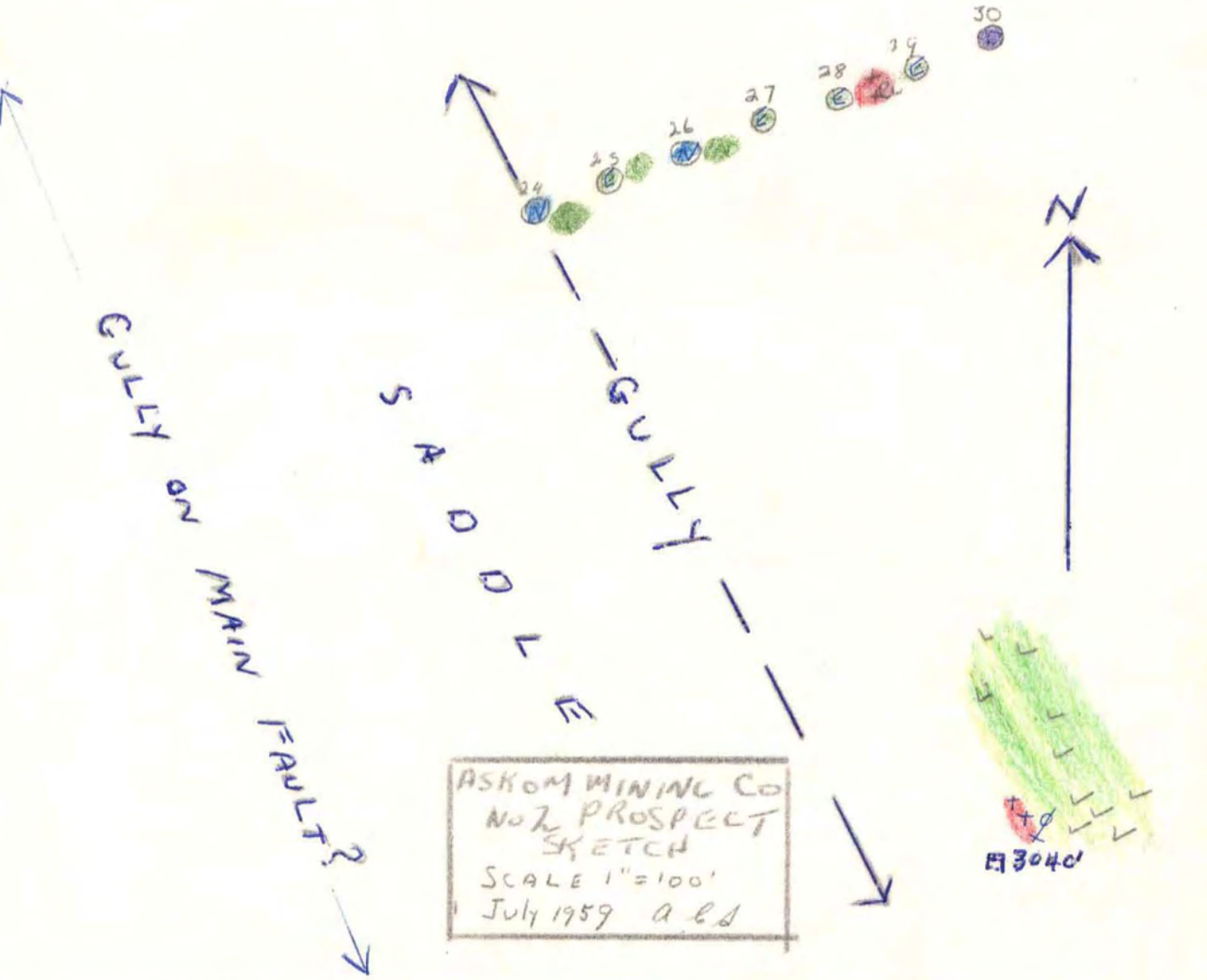
Much more excavating is required to explore the bedrock from the present workings to the fault and the fault itself. Further similar cuts to the north at say 200 feet intervals until the overburden gets too deep are also required.

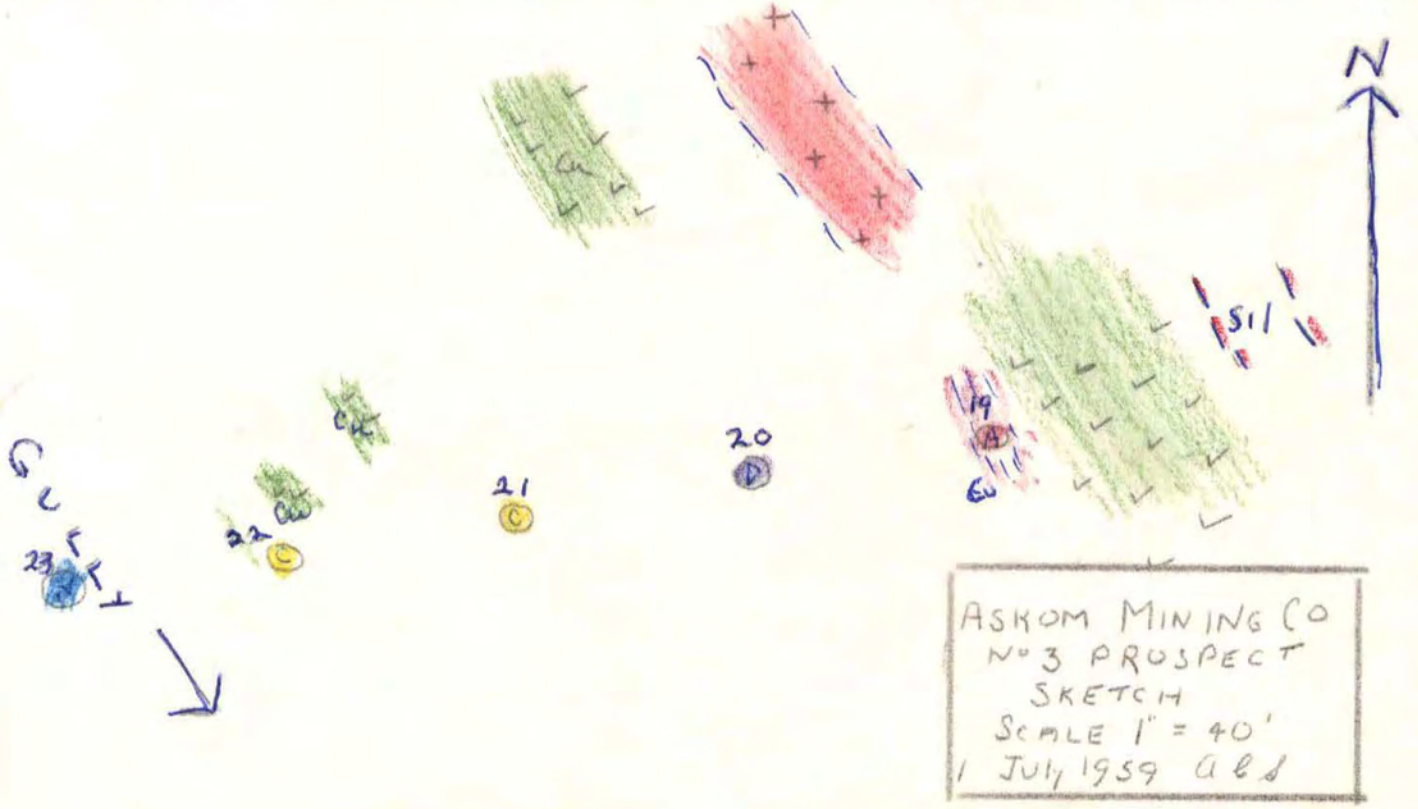
A bulldozer that is equipped with a ripping tooth is best for such work. A route will therefore have to be found to bring a machine up the steep slopes -- possibly from the northeast.

No. 2 P R O S P E C T

This is on a saddle about 500 feet long and 3,000 feet south of No. 1 Prospect at an elevation of 3,060 feet.

A little malachite staining has been found in the preliminary prospecting here. A line of geochemical soil tests at the north end where the overburden is shallow gave only a weak response.


30
29
28
27
26
25
24
N
GULLY
SADDLE
GULLY ON MAIN FAULT?
ASKOM MINING CO
No 2 PROSPECT
SKETCH
SCALE 1" = 100'
July 1959 a & s
3040'


N
GULLY
20
21
22
23
19
ASKOM MINING CO
No 3 PROSPECT
SKETCH
SCALE 1" = 40'
1 July 1959 a & s

I suspect that the main fault lies in the gully that is about 300 feet west of the one that has been explored as shown in the accompanying sketch (1" to 100'). Soil sampling should therefore be extended across the area between the two gullies at each end of the saddle and half way between.

No. 3 P R O S P E C T

This is at the south end of another saddle and about 1500 feet south of No. 2 Prospect. It is immediately west of a pronounced gully as indicated on the accompanying sketch (1" to 40'). No digging has been done here yet. The main outcrop consists of metamorphosed greenstone 15 feet across and 50 feet long opposite the south end of a quartz diorite dyke. The mineralization consists of malachite and a little chalcopyrite that by excavation could well become 1% ore.

On the east side it is bounded by non-mineralized greenstone for 50 feet and then a siliceous zone.

For the 170 feet east to the gully there are only two small outcrops of similar mineralized greenstone.

A sample of the soil on the main outcrop gave a very strong chemical test for copper whilst three more tests at 50 feet intervals toward the gully gave definite indications.

On the air photo it is seen that the main fault passes 600 feet to the west of the gully at this prospect. It should be investigated in the hopes that still better mineralization exists there. Soil sampling may help.

A bulldoze cut is warranted along the line of the soil sampling already done and then parallel ones both north and south at say 200 feet intervals.

This area is readily approached with a bulldozer from the south via the saw-mill.

No. 4 PROSPECT

I did not have the opportunity of examining this prospect except at a distance through binoculars. It is at a narrow saddle in a white rock -- probably bleached granite or diorite -- in which a gently dipping darker band is stepped down by several faults as can be discerned in No. 6 photo.

It is reported that some of the rock is impregnated with malachite and I was shown some in the slide material on the roadside 3,000 feet below the outcrop.

The 5,000 feet of ground between Prospects 1 and 4 is mainly a huge slide area that is difficult to prospect.

DISCUSSION

It has been pointed out above that the Nos. 2 and 3 Prospects are not on the main fault although they are associated with gullies that could be the expression of a subsidiary fault that has localized the mineralization rather than the main fault. However it is very important to explore the main fault zone for signs of mineralization opposite Nos. 2 and 3 Prospects.

In each case the prospects are situated on saddles where the bedrock that is close to the fault has a better chance of being exposed. The much greater lengths of the fault zone between the saddles are concealed by scree material but could contain valuable ore-bodies.

The fresh mineralization consists solely of chalcopyrite with no associated pyrite to give rise to conspicuous outcrops when oxidized.

This area is readily approached with a bulldozer from the south via the saw-mill.

No. 4 PROSPECT

I did not have the opportunity of examining this prospect except at a distance through binoculars. It is at a narrow saddle in a white rock -- probably bleached granite or diorite -- in which a gently dipping darker band is stepped down by several faults as can be discerned in No. 6 photo.

It is reported that some of the rock is impregnated with malachite and I was shown some in the slide material on the roadside 3,000 feet below the outcrop.

The 5,000 feet of ground between Prospects 1 and 4 is mainly a huge slide area that is difficult to prospect.

DISCUSSION

It has been pointed out above that the Nos. 2 and 3 Prospects are not on the main fault although they are associated with gullies that could be the expression of a subsidiary fault that has localized the mineralization rather than the main fault. However it is very important to explore the main fault zone for signs of mineralization opposite Nos. 2 and 3 Prospects.

In each case the prospects are situated on saddles where the bedrock that is close to the fault has a better chance of being exposed. The much greater lengths of the fault zone between the saddles are concealed by scree material but could contain valuable ore-bodies.

The fresh mineralization consists solely of chalcopyrite with no associated pyrite to give rise to conspicuous outcrops when oxidized.

The drainage on the steep topography helps the complete leaching away of the chalcopyrite so that the surface expression of an ore-body could be quite insignificant. Fortunately the leached material is only a few feet thick so that the ore is found by shallow trenching.

It is most important to expose the nature of the fault underlying the gullies. It should be possible to do so with a bulldozer.

The kind of mineralization and its association with a large fault is favourable to the presence of considerably better grade ore than has been found in the limited exposures made to date.

GEOCHEMICAL PROSPECTING

The soil tests made so far indicate that this is a valuable method of outlining the copper bearing areas where the overburden is derived from the rock beneath. Samples should therefore be taken systematically in all favourable areas at 50 feet intervals in lines that are 200 feet apart. It is important to mark the individual sample positions on the ground as well as on a plan so that they can be found again without any doubt. A numbered stake or a blaze on a tree is best.

G E O P H Y S I C A L P R O S P E C T I N G

It is desirable to test the covered sections of the faults by means of a geophysical survey such as the self-potential method. This detects the small current of electricity that is associated with sulphides that are present in appreciable amounts in the bedrock.

The drainage on the steep topography helps the complete leaching away of the chalcopyrite so that the surface expression of an ore-body could be quite insignificant. Fortunately the leached material is only a few feet thick so that the ore is found by shallow trenching.

It is most important to expose the nature of the fault underlying the gullies. It should be possible to do so with a bulldozer.

The kind of mineralization and its association with a large fault is favourable to the presence of considerably better grade ore than has been found in the limited exposures made to date.

GEOCHEMICAL PROSPECTING

The soil tests made so far indicate that this is a valuable method of outlining the copper bearing areas where the overburden is derived from the rock beneath. Samples should therefore be taken systematically in all favourable areas at 50 feet intervals in lines that are 200 feet apart. It is important to mark the individual sample positions on the ground as well as on a plan so that they can be found again without any doubt. A numbered stake or a blaze on a tree is best.

G E O P H Y S I C A L P R O S P E C T I N G

It is desirable to test the covered sections of the faults by means of a geophysical survey such as the self-potential method. This detects the small current of electricity that is associated with sulphides that are present in appreciable amounts in the bedrock.

R E C O M M E N D A T I O N S

1. Take further soil samples in all likely covered areas.
2. Bulldoze trenches across the promising overburden areas.
3. Conduct a geophysical survey.

The results of these three methods of exploration should determine whether ore-bodies are present that would warrant diamond drilling.

C O S T S

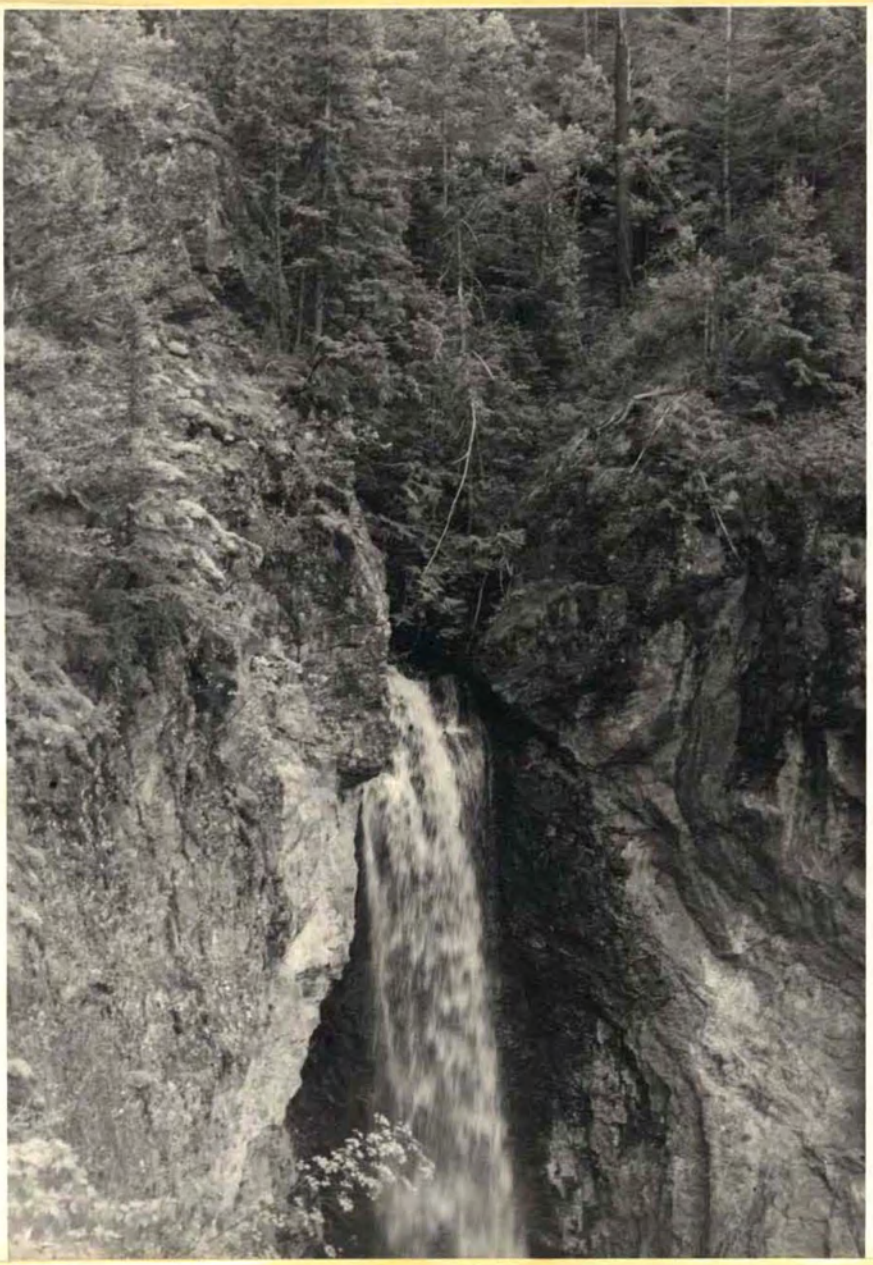
1. One man should be able to collect between 50 and 100 samples per day. Processing in lots of 50 or more can be done by a technician for about 50¢ per sample.

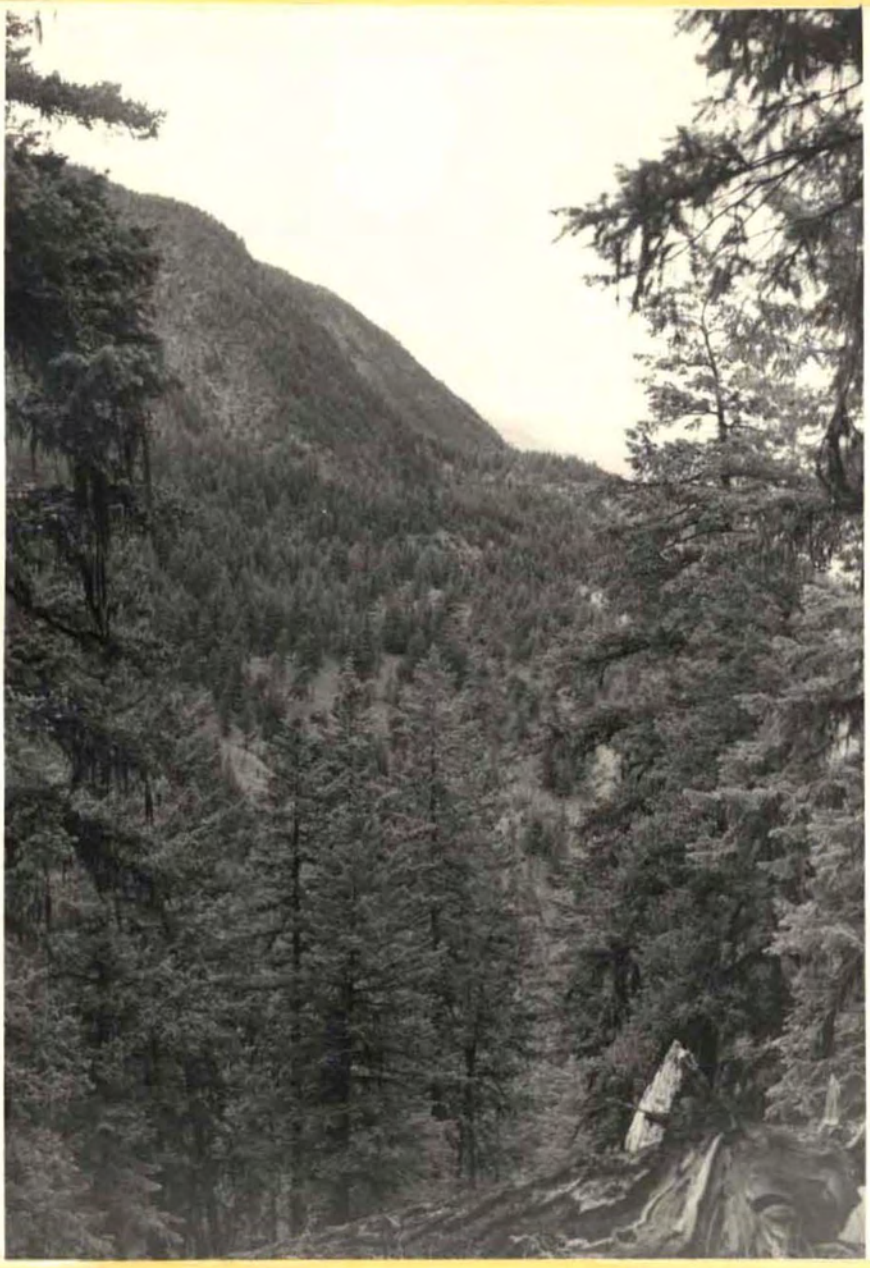
   If about 500 samples are collected in the various favourable areas their total cost would then amount to about $400.
2. A large bulldozer at $150 per day for 12 days would cost $1,800.
3. A geophysical survey along the fault zone for 3 miles could be conducted for about $2,000.

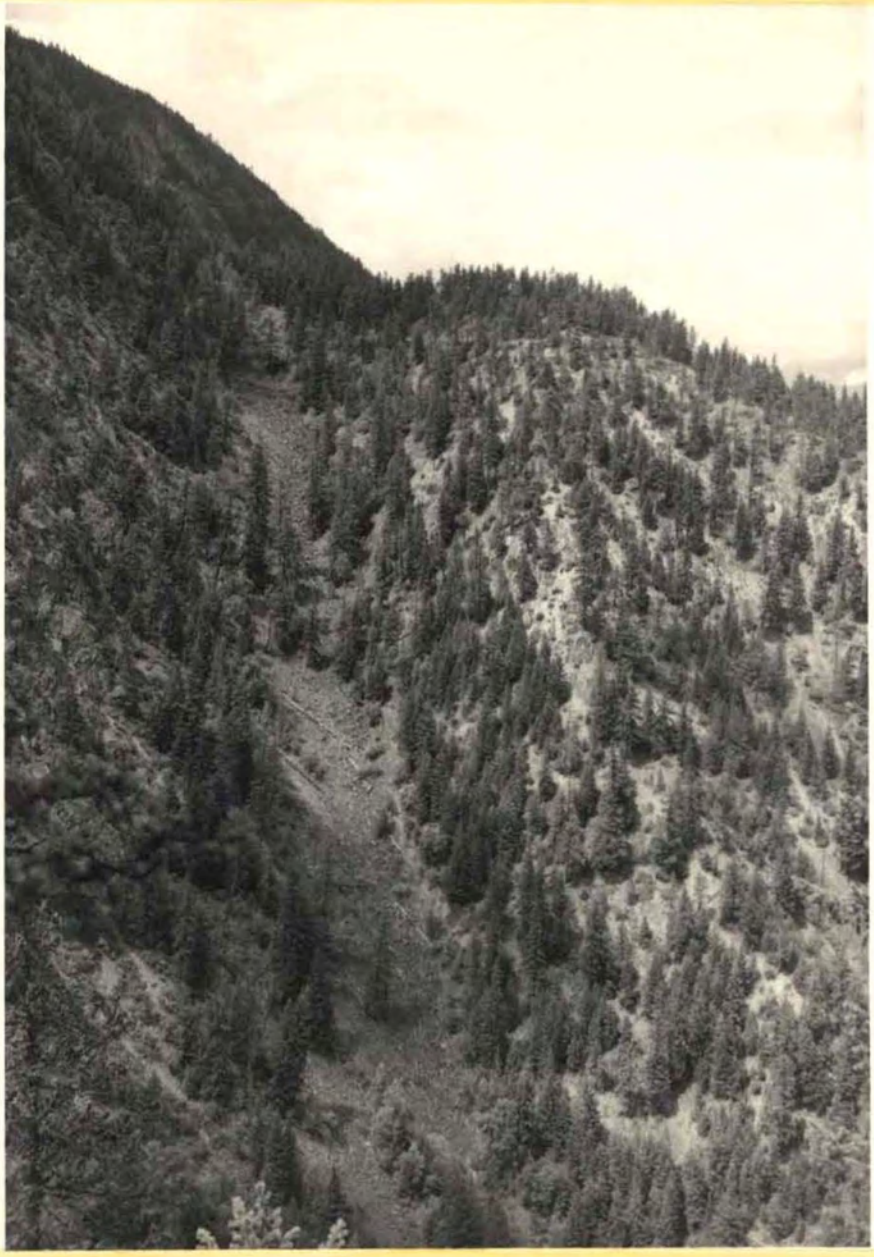
Thus to carry out my present recommendations the sum of at least $5,000 should be available.

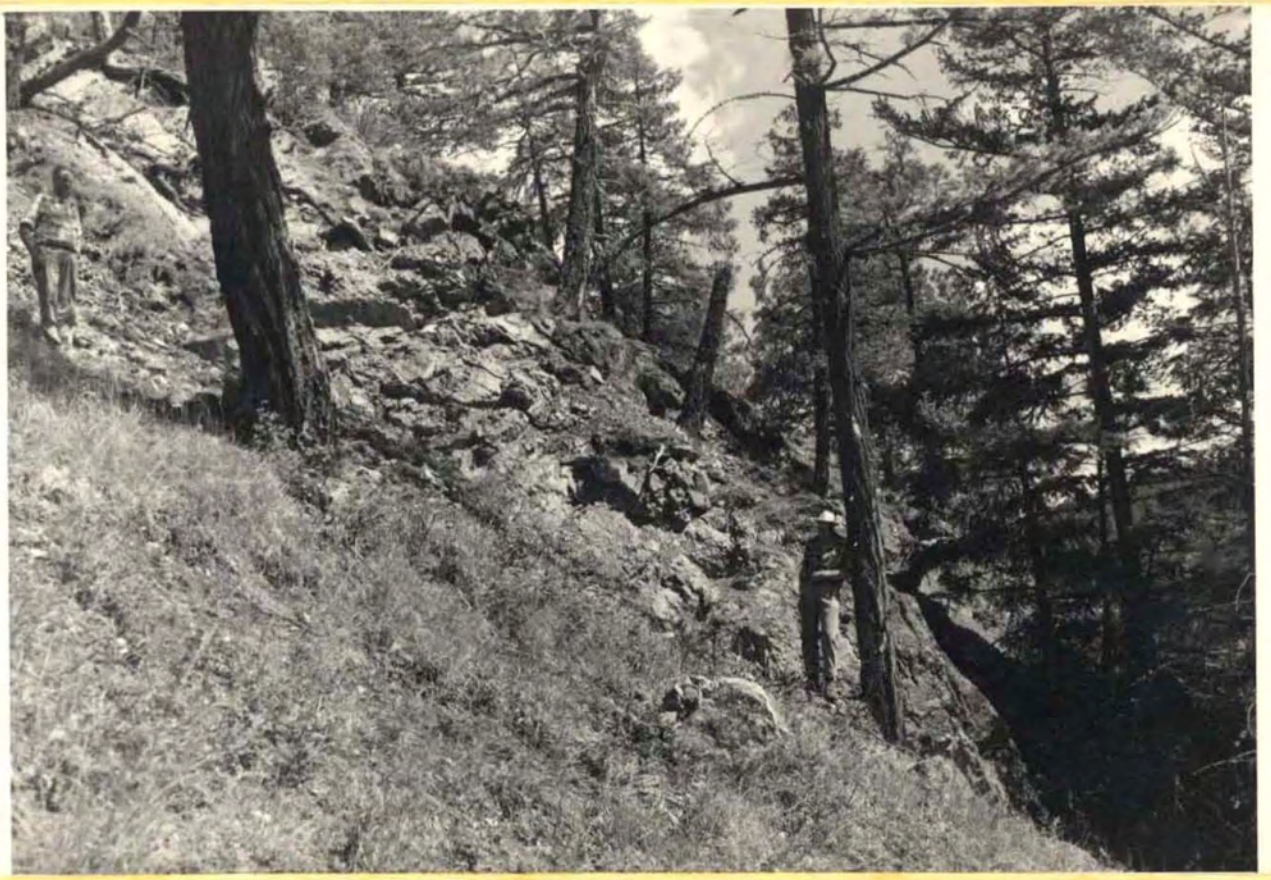
If diamond drilling is then recommended an expenditure of say $20,000 will be necessary for exploratory holes.

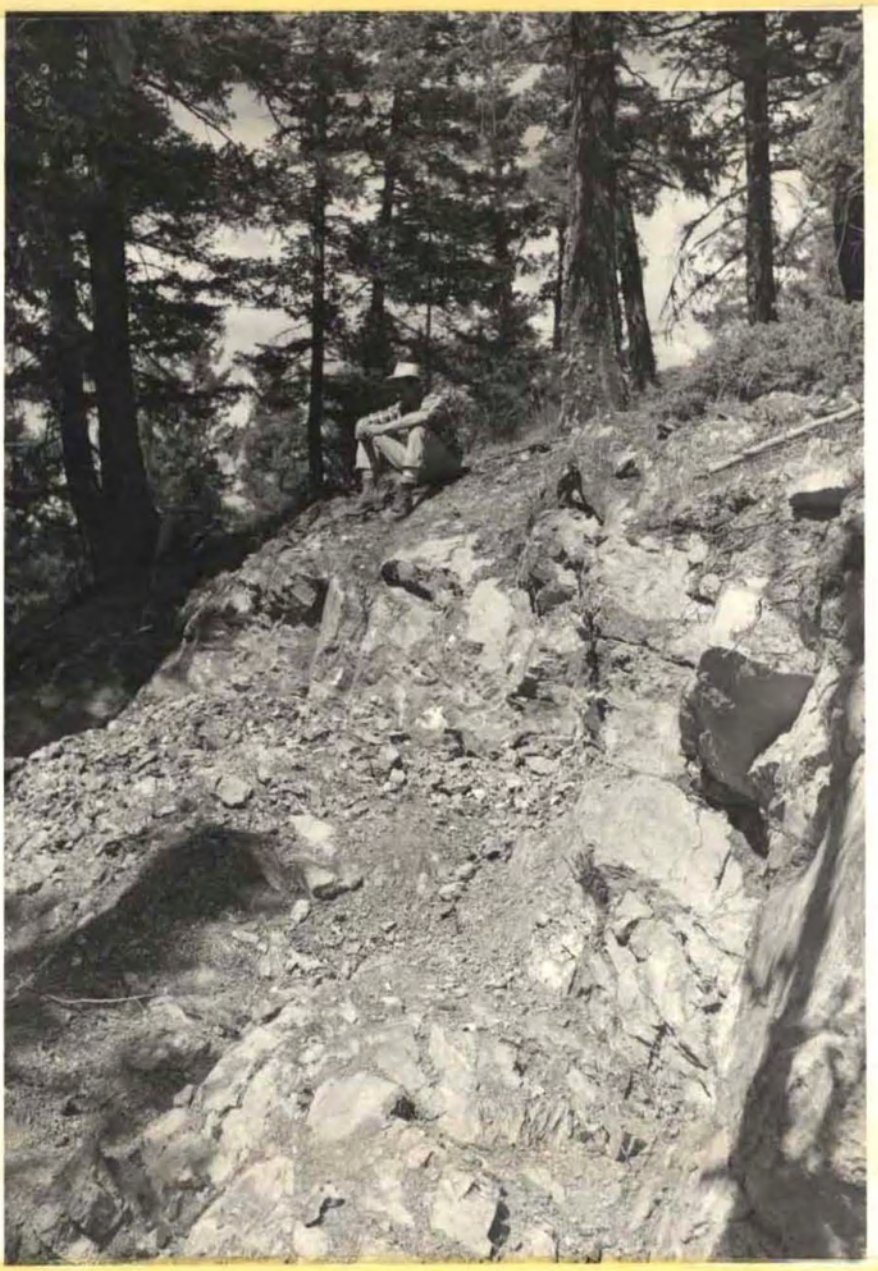
"A.C. Skerl"

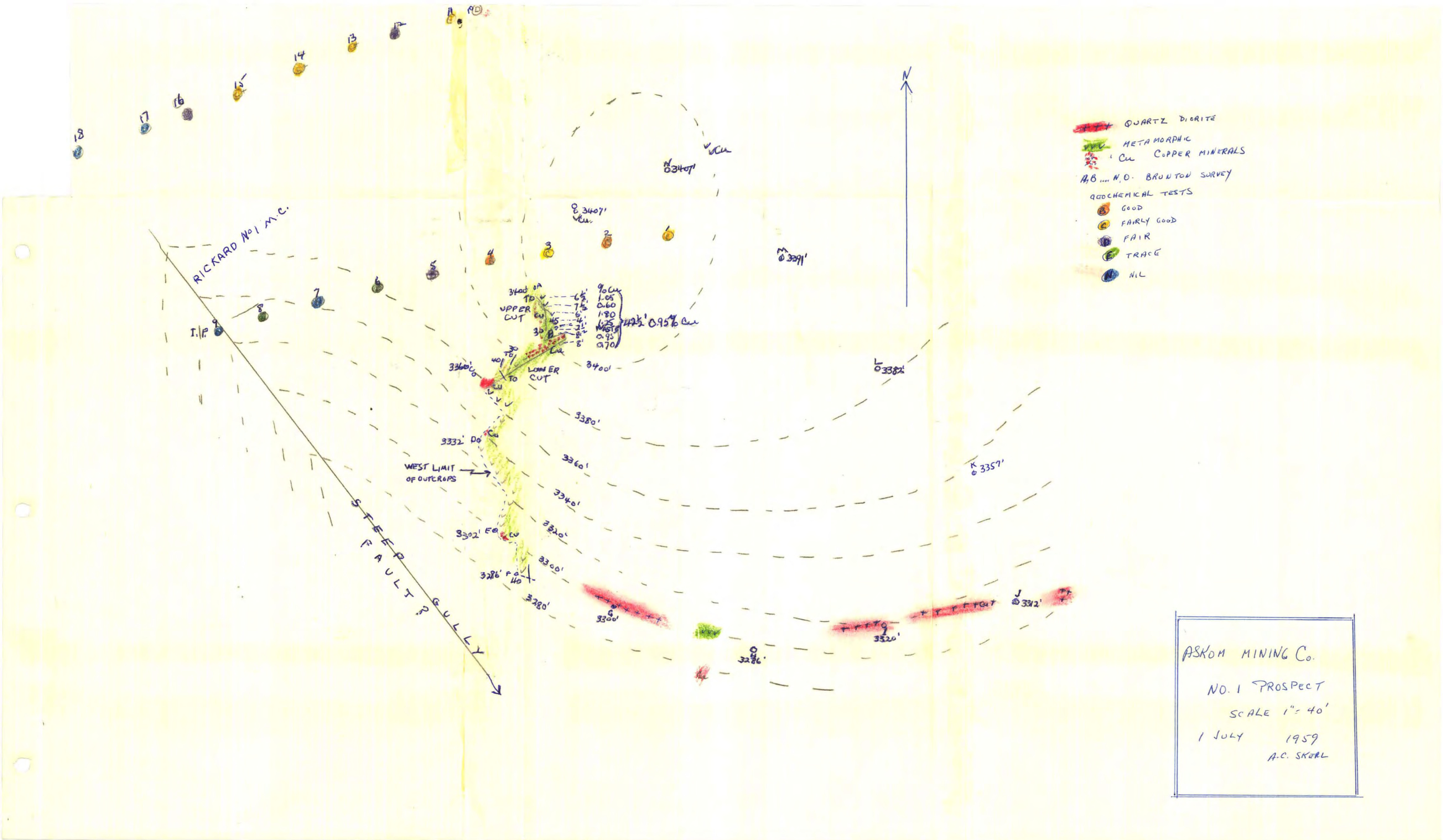











QUARTZ DIORITE
METAMORPHIC
Cu COPPER MINERALS
A,B .... N,O. BRUNTON SURVEY
GEOCHEMICAL TESTS
GOOD
FAIRLY GOOD
FAIR
TRACE
NIL
N
RICKARD No 1 M.C.
STEEP GULLY
FAULT?
UPPER CUT
LOWER CUT
WEST LIMIT OF OUTCROPS
0.95% Cu
3400'
3380'
3360'
3340'
3320'
3300'
3280'
ASKOM MINING Co.
NO. 1 PROSPECT
SCALE 1" = 40'
1 JULY 1959
A.C. SKERL