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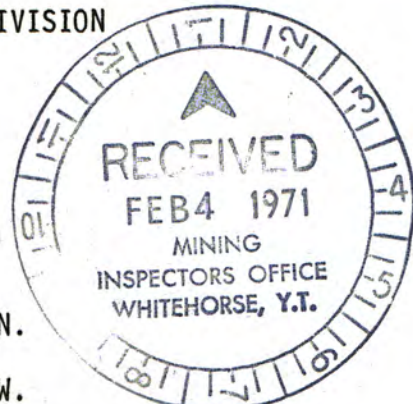
A GEOCHEMICAL REPORT

on

THE AMP CLAIMS

BURWASH AREA, WHITEHORSE MINING DIVISION

YUKON TERRITORY



Latitude 61° 25' N.

Longitude 139° 30' W.

N.T.S. Sheets 115G-5, 115G-6

by

T.L. Sadlier-Brown

E. O. Chisholm, P.Eng.

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work to the amount of

\$7,635.59

D.R. Craig
Resident Geologist or
Resident Mining Engineer

Considered as representation work under
Section 53 (4) Yukon Quartz Mining Act.

July 18th - August 18th, 1970

[Signature]
Commissioner of Yukon Territory

Y.T.

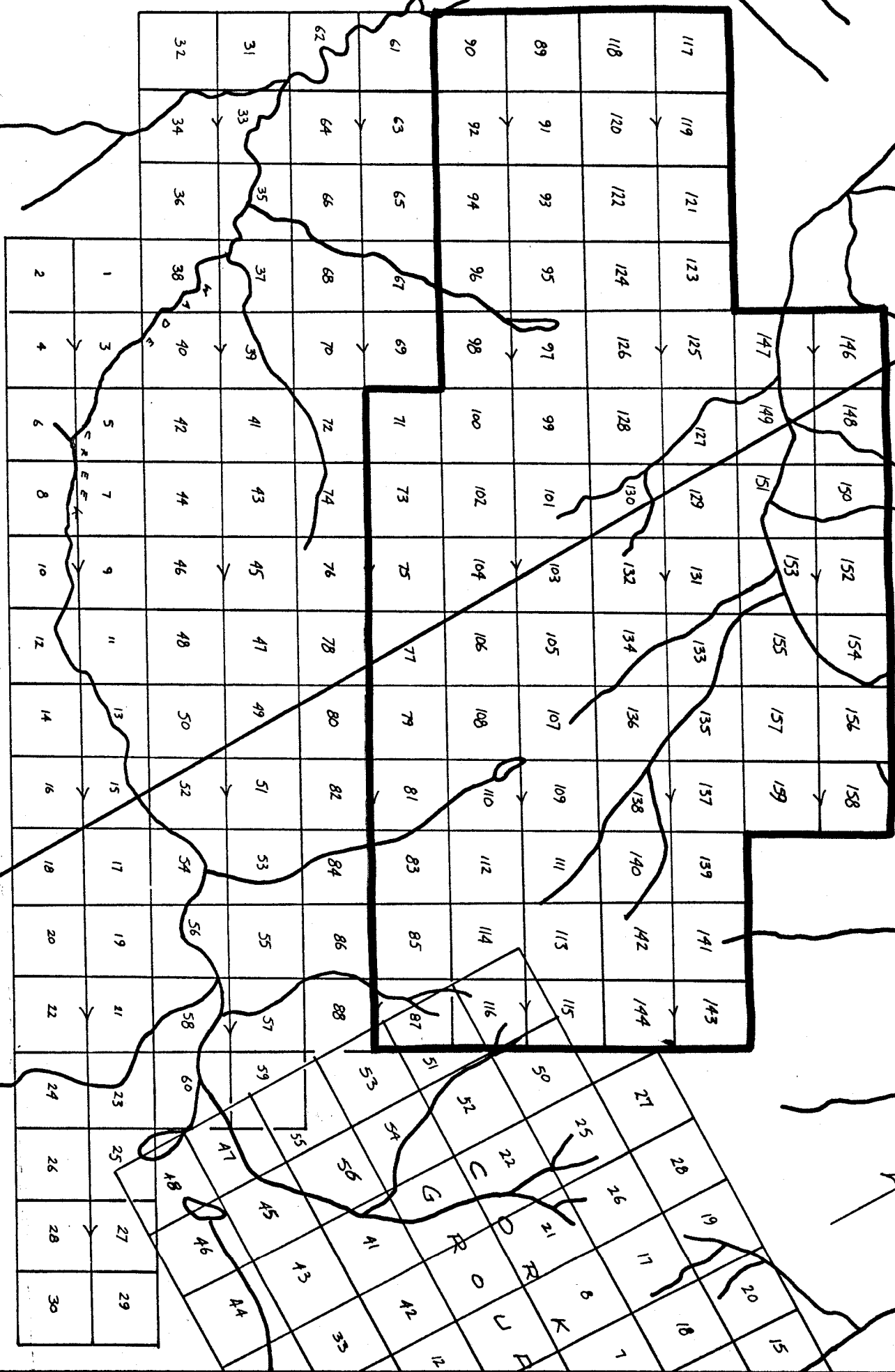


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MAPS

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I N T R O D U C T I O N

Location and Access

The Amp Group consists of 79 contiguous mineral claims located in the Kluane Range of the Western Yukon about 10 miles west of the Alaska Highway at the Duke River Crossing. It is accessible from the Alaska Highway at Mile 1111 by following the Quill Creek road to Nickel Creek, then continuing southwest along the valley and sometimes the bed of Quill Creek on a road suitable only for four wheel drive vehicles to the point where Quill Creek turns and flows from the southwest. The Amp Claims are located about a mile south of here.

Physiography

The property is at an elevation of 4500 to 5000 feet on the barren upland between Tatamagouche and Wade Creeks. Main valleys in the area trend northwest/southeast and contain considerable glacial material. Outcrop is present only on the mountainsides and in valleys of the smaller tributary creeks. Much of the area, particularly in the western part of the property, is level or gently sloping boggy grassland probably underlain by deep overburden.

General Geology

The claims are situated in the Kluane Range which in this area is formed primarily of Paleozoic and Mesozoic volcanic and sedimentary rocks.

These have been intruded by ultrabasic dikes which contain important nickel occurrences and by granite rocks of both Cretaceous and Tertiary age which may be sources of copper mineralization. In the immediate vicinity of the claim group the rocks are mostly the Triassic basalts and andesites of the Mush Lake Group which are known to host a number of copper occurrences. Northeast of the property is the Shawkak Fault, a major northwest trending feature paralleling the Kluane Ranges at their eastern limit.

Copper minerals are present throughout the range apparently related to both the volcanic rocks and the later intrusives. Although no showings were known in the area covered by the Amp Claims, promising occurrences of both types are located nearby.

History

No evidence of any work having been done was found on the claim group itself although the area has generally been fairly well prospected. The first and to date only production from the area has been from the placers of which Burwash Creek is the most important. The discovery of nickel float in Quill Creek and the subsequent location and development of the Wellgreen nickel property upstream caused considerable interest in the Kluane Range during the 1950's and many showings both of nickel and copper were located. Only the Wellgreen, which is now being readied for production by Hudson Bay Mining, has so far proved to be of economic interest. Exploration programs have however been carried out recently on properties nearby at the heads of Burwash and Quill Creeks.

G E O C H E M I C A L S U R V E Y

Specifications

Between July 18th and August 18th, 1970 a three-man sampling crew employed by Nicanex Mines Ltd. (N.P.L.) carried out a soil sampling survey of the Amp Group. The crew consisted of B. Patnode of Whitehorse, the party chief, J. E. Chisholm and R. Shenkarow, samplers, both of Vancouver, B.C.

Samples were taken at intervals of 200 feet along flagged and chained compass lines run at 800 foot intervals from a picketed base line. A total of 800 soil samples were taken from shallow holes dug with a long-handled mattock. An effort was made to sample the "B" soil horizon although this was not always possible. Specimens were placed in Kraft paper bags which were numbered with the grid line and station. These were then sent to Bondar and Clegg Ltd. of North Vancouver, B.C. where they were dried and sifted to -80 mesh. Weighed samples of each specimen were then dissolved in hot perchloric nitric acid and the resulting solutions were tested for copper using an atomic absorption unit. Results, quoted in parts per million (ppm) were plotted at a scale of 1000 feet to the inch and interpreted with the aid of samplers' field notes.

Values were plotted on an histogram to establish the threshold which was taken at 90 ppm.

Observations

The completed copper geochemical map was used to locate 9 strong anomalous areas considered worth a more detailed examination. Their locations are as follows:

1. Lines 32N-56N, West of B.L.
2. Lines 24N-32N from 12+00E to 16+00E.
3. Lines 8S, 0, 8N, 16N, from 30+00E to 50+00E.
4. Line 16S, from 34+00E to 62+00E.
5. Lines 0; 8S from 70+00E to 80+00E.
6. Lines 16N-24N from 80+00E to 86+00E.
7. Line 24N from 58+00E to 70+00E.
8. Line 32N, 50+00E.
9. Line 0, from 2+00W to 12+00W.

Because of the reconnaissance nature of the survey and the wide spacings used the above areas are somewhat generalized and could actually constitute three or four larger anomalies rather than the nine mentioned if more detailed work were done. The topography of the area however suggests a number of different source areas which, at least for the present, should be treated separately.

Area 1

This anomaly is located in the northernmost part of the claim group on a ridge cut by two southerly flowing streams from which silt samples anomalous in copper were taken. The anomaly covers an area of about 1500 by 2000 feet with an adjacent subsidiary anomaly of about half this size. It is open to the north and east.

Country rock in the area consists of greenish andesites and basalts and, though no copper minerals have been observed in the area, bedrock sources appear to be in the vicinity of 40N, 8+00 or 9+00W, just northeast of 56N, 2+00 - 6+00W, and on the slope northeast of the base line between 40N and 48N.

Area 2

This is a smaller anomaly and may have a common source with the area mentioned above east of the base line between 40N and 48N.

Area 3

This is a spotty anomaly which could extend south along strike to join up with Area 4 resulting in a copper soil zone at least 4000 feet long and over 2000 feet wide. The source appears to be in the area between 0, 42+00E and 16N, 50+00E. A gossan reported to occur at 0+00, 41+00E gave good copper values (170 and 175 ppm) and may be an expression of this sulphide source.

Area 4

Located on high irregular ground between two creeks, this anomaly seems unlikely to be transported far from its bedrock source. It is located just east of a gabbro intrusive in an area which has not been thoroughly examined.

Area 5

A small anomaly on a northeast slope with its source in the vicinity of 0+00, 76+00E.

Area 6

A small but strong anomaly with a local source.

Area 7

A moderate to weak anomaly. Source is indicated to be south of Line 24 N between 58+00 and 68+00E.

Area 8

A small anomaly open to the east. May be caused by transportation and concentration of material in creek gulley.

Area 9

Near ridge on north facing slope and apparently from local source just south of line.

Results in the western half of the survey area were generally low (40 - 50 ppm Cu.) for this area. This may be attributed to what appears to be very heavy overburden in the area of gently sloping, poorly drained open country. If however the background value is dropped to account for this, three large anomalous areas of >70 ppm. Cu. appear. These are as follows:

- Area 10 - Line 40S - 48S from 20+00W to 30+00W.
- Area 11 - Line 24S - 48S from 48+00W to 52+00W.
- Area 12 - Line 24S + 32S from 32+00W to 38+00W.

No geological information is available for this area however the source for anomaly 12 appears to be local. Both Areas 10 and 11 are open to the south and could be an expression of downslope contamination.

DISCUSSION + CONCLUSIONS

The main soil-copper anomalies on the eastern part of the Amp Claims appear to form a rough linear striking south from the north end of the base line. Several possibilities are recognized as the source for the copper in this area. They are as follows:

1. Low grade copper minerals as normal constituents of Volcanic rocks.
2. Massive sulphide replacements and veins in the Mush Lake Volcanics and Limestones.
3. Porphyry type intrusives with related copper minerals cutting the volcanic rocks.

In the extreme northern part of the property there is evidence in favour of source No. 1. Two samples of green andesite from the main creek gully just west of the base line were assayed and found to contain .01% copper. This would give a value of 100 ppm. Cu. and might account for anomalous values in the soils particularly in mountainous terrain where mechanical erosion is rapid. A sample from a slide on the west side of the creek mentioned above, however, contained only a trace of copper. Rock samples from the anomalous area near Line 16N at about 40+00E also contained only traces of copper, suggesting the possibility of transportation, possibly downslope contamination. Limestone in the extreme northern part of the property was found to be stained with malachite, probably produced by oxidation of copper from adjacent volcanic rocks. This, however, has not definitely been established and a sample

assayed 1.60% Cu. which is high for mere surface staining. Furthermore, elsewhere along the same general geological trend copper sulphides occur as replacement bodies within the carbonate rocks themselves. The possibility of a similar occurrence here should not be ruled out.

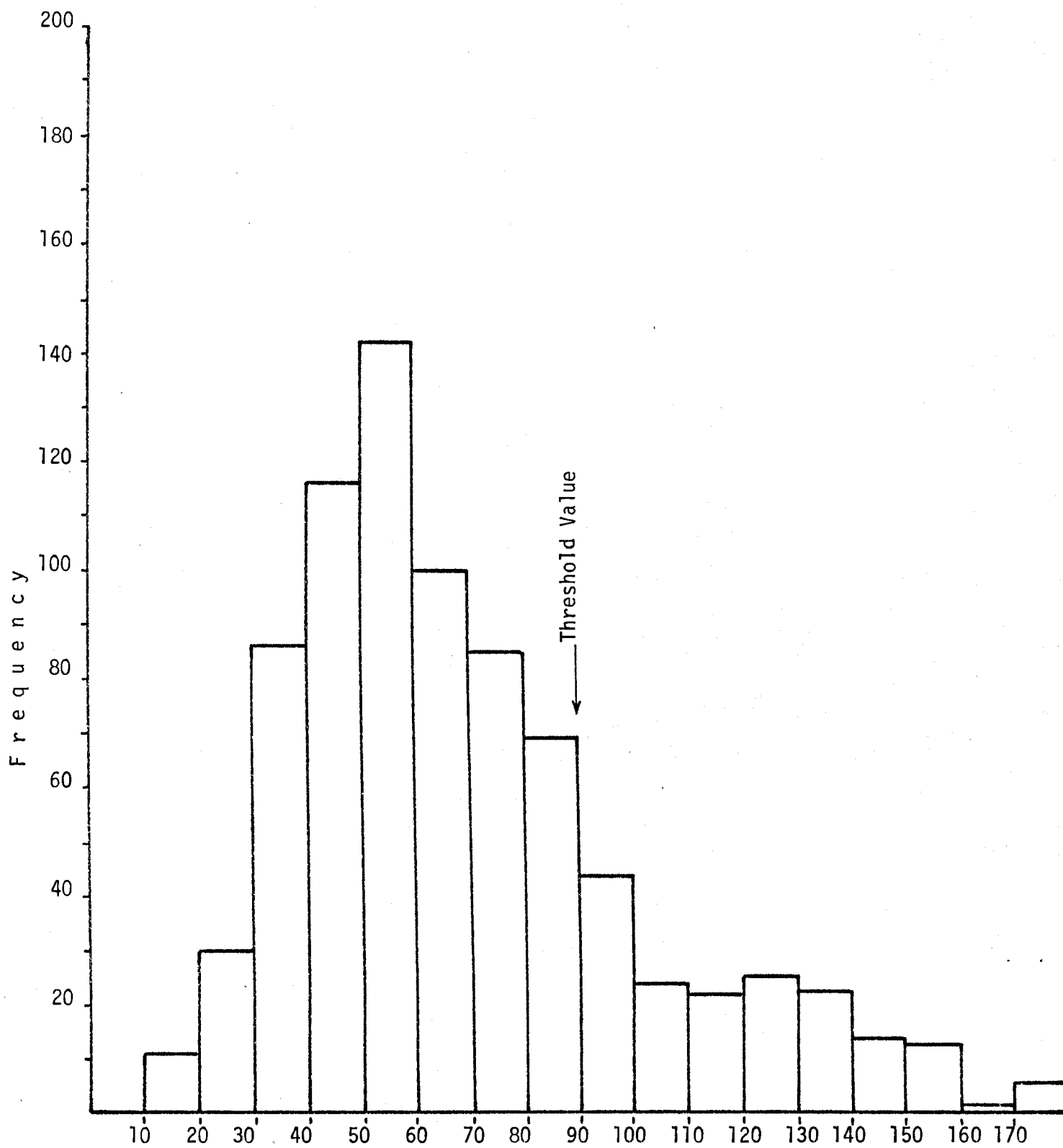
Intrusive rocks cutting the Mush Lake Volcanics Series are known to contain copper mineralization at several localities in the Kluane Range south of the claim area. So far no intrusive rocks have been discovered in place on the Amp Claims but there are areas of extensive overburden and only a small amount of geological work has so far been done. There is a possibility that the anomalous areas east of the base line centred around Line 8N at about 40+00E and those near the east ends of Lines 0 and 24N could have an intrusive or "porphyry" source.

The anomalies west of the base line on Lines 24S through 48S are, at the present time, completely unknown and their sources are only a matter of speculation. Although low (70 - 79 ppm) they are still twice background in an area of fairly heavy overburden and, along with the stronger anomalous areas to the east, warrant a close investigation.

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

Of the 12 different anomalous zones described above, all are presently considered to warrant further investigation. This should begin with geological examinations of each zone preferably in conjunction with a prospecting program. It might then be possible to eliminate certain areas if satisfactory explanations can be found for the source of the soil anomalies. In other areas however these sources will be obscure or perhaps related to potentially economic copper mineralization. In these cases additional geochemical work will be required as the reconnaissance nature of the present survey with its wide line spacings did not delineate the anomalies with any degree of accuracy. Detailed work should all be grid controlled and done using sample points at 100 foot intervals on lines 400 feet apart. Geological mapping with emphasis on surficial conditions should accompany any such survey.

The type of geophysical work if any that may be required will depend entirely upon the findings of the geologist in the field particularly as, in this area, either massive or disseminated sulphide might be expected. The most expensive type of survey would probably be the Induced Polarization method and provision should be made to permit this work during the same field season as the geology and geochemistry is carried out. This would then permit any additional physical work to be planned for the following season with more efficiency than might otherwise be possible.



AMP GROUP

COPPER GEOCHEMISTRY FREQUENCY CHART

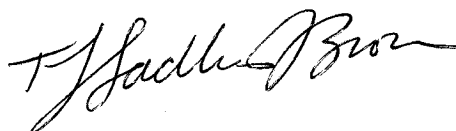
An estimate of the costs involved for this work is as follows:

Prospecting and Geological Examination	\$ 1,400
Line Cutting and Marking	1,200
Detailed Geochem.	3,200
Geological Mapping	1,700
Geophysical Survey	(Allow) 7,500

TOTAL

\$ 15,000

Respectfully submitted,



T. L. Sadlier-Brown




E. O. Chisholm, P.Eng.

C E R T I F I C A T E

I, Edward O. Chisholm of the City of Vancouver in the
Province of British Columbia, hereby certify that:

1. I am a geologist with offices at 821-602 West
Hastings Street, Vancouver, B. C.
2. I am a graduate of the University of Toronto,
Ontario, Master of Arts, 1945.
3. I am a member of the Professional Engineers of
Ontario and British Columbia.
4. This report is based on my personal knowledge of
the work performed on the property.

DATED AT VANCOUVER, BRITISH COLUMBIA


Edward O. Chisholm, P.Eng.
Jan 7/71

STATEMENT OF QUALIFICATIONS

T. L. SADLIER-BROWN

Education:

Four years Geology, Carleton University, Ottawa, Ontario.

Experience:

Summer field experience with the Geological Survey of Canada in Northwest Territories, Northern British Columbia and Ottawa; with Hollinger Consolidated Gold Mines in Northern Ontario; with McIntyre Porcupine Mines in Northern Quebec; with Mattagami Syndicate in Northern Quebec; with Southwest Potash Corporation in Central British Columbia.

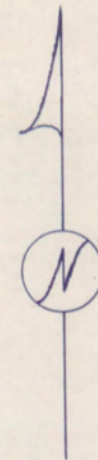
Full time field and office experience in geology and related fields with Geological Survey of Canada (as Technical Officer); with Mt. Costigan Mines Ltd, in Nova Scotia; with Atlas Explorations Ltd. in Yukon, Alaska and British Columbia; with P. H. Sevensma Consultants in Yukon and Northern British Columbia; and with Nicanex Mines Ltd. (N.P.L.) in Southern British Columbia and Yukon.

DATED AT VANCOUVER, BRITISH COLUMBIA



T. L. Sadlier-Brown

Jan 7/71



LEGEND

- Sample point (Value in PPM Cu) . . . 17
- Stream defined
- approximate
- Claim Post
- Claim Boundary
- Ridge Crest

Copper Geochemical Plan

AMP CLAIMS

Scale: 1000 ft to the inch

[Handwritten signature]

Nov. 1970

