CANADIAN OCCIDENTAL PETROLEUM LTD.

MINERALS DIVISION

GEOLOGY AND GEOCHEMISTRY OF THE ASH CLAIM GROUP

N.T.S. 115-H-3

Lat.: 61°30'N
Long.: 137°05'W

Claims:
Ash 1-36 Y67427-Y67462

By:
A.M. Seanor, B.Sc.

Duration of Work:
June 19 to July 4, 1973

August 28, 1973
Toronto

GEOLOGY AND GEOCHEMISTRY OF THE ASH CLAIM GROUP

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PLANS ACCOMPANYING REPORT

ABSTRACT

Geological, soil and rock geochemical surveys were carried out over the Ash claim group during the summer of 1973.

The claims are underlain by granodiorite in the northern 2/3 of the property while the southern 1/3 is composed of alternating bands of quartz-mica schists, marble, and hornblende gneisses.

The banded rocks, a part of the Yukon Group, are cut by several northwest-trending shear zones. Alteration in the form of skarn zones and chloritization is found along side these shear zones.

Some northeast-trending shear zones cut both the Yukon Group and the granodiorites, although no shears were observed crossing the contact between these two rock types. Highly altered (chloritized) rocks were found along these zones as well.

No economically significant mineralization was observed in the surface rocks. However, minor pyrrhotite and chalcopyrite were found along some of the northeast-trending zones in the hornblende gneisses.

The geochemical soil anomalies appear to be structurally controlled with a definite northeast trend to them. A more detailed geological and geochemical examination would be required to determine if these anomalies are economically significant.

An aeromagnetic high which is centered approximately 4 miles to the southeast extends into the property across the Yukon Group rocks. A magnetometer survey across the southern part of the property is recommended.

The claims over the granodiorite do not appear to be economically interesting.

INTRODUCTION

The Ash (1-36) claim group was staked as a result of a reconnaissance geochemical program completed during the summer of 1971 by Canadian Occidental Petroleum Ltd.

The staking was done under contract by Eastern Associates of Whitehorse during the period of Oct. 28-29, 1972 and recorded at Whitehorse on October 30, 1972.

This report will describe the geology of the claim area and the results obtained from a geochemical survey completed by Canadian Occidental Petroleum Ltd., Minerals Division. The work was done to determine the cause of the stream sediment copper anomalies detected in the sediments of the streams draining the area.

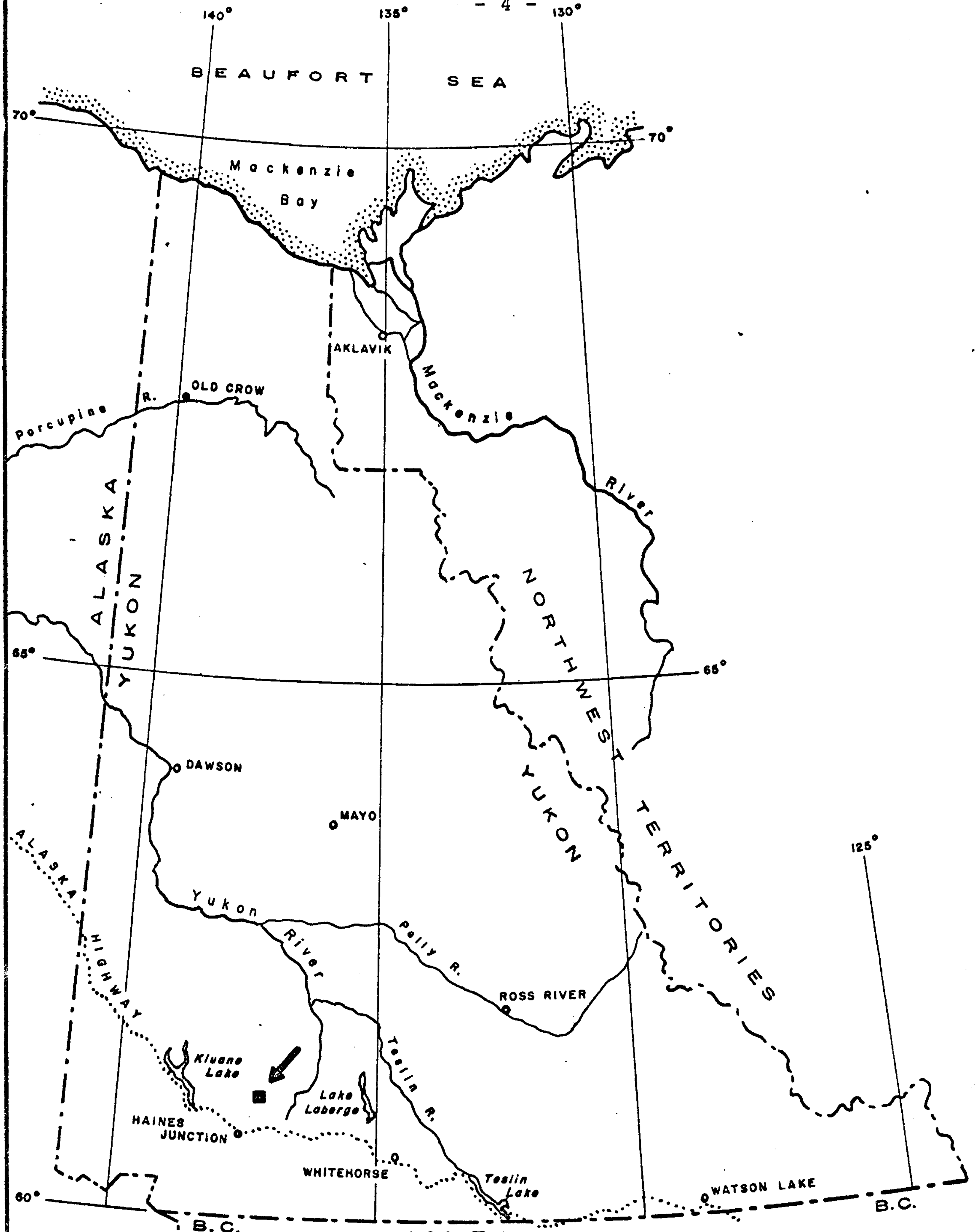
LOCATION AND ACCESS

The Claim Group is recorded on Claim Map 115 H/3 in the Whitehorse mining district. The property is located about four air miles west of the south end of Aishihik Lake and 76 miles northwest of Whitehorse, Y.T.

Access to the property is obtained by driving west along the Alaska Highway to mile 996 and turning north along the Otter Falls road to Aishihik Lake campsite, on the south end of Aishihik Lake. From here the final four miles is by helicopter to the Claim Group on the west side of Aishihik Lake (Fig. 1).

VEGETATION

About 40% of the property lies above the tree line, the latter occurs at an elevation of about 4000 feet.



LOCATION MAP

ASH CLAIM GROUP — 115-H-3

YUKON TERRITORY

July/73 S.

FIG. 1

The trees are mainly spruce except in some of the wetter areas where swamp spruce and alders predominate. Above the tree line the slopes are vegetated by dwarf birch to the tops of the hills where mosses and lichens predominate.

The area was burnt about 30 years ago, hence many of the trees, especially in the northeast section of the property, are quite small and dense.

WORK COMPLETED

1. Line Cutting

The line cutting was done by Eastern Associates, of Whitehorse, Y.T. during period of June 6 to June 13, 1973 under the leadership of Ray Morin.

The total footage cut amounted to 123,585 feet or 23.4 line miles. This then converts to 3080 feet per man per day.

2. Geological Mapping

The geological mapping was completed during the period of June 19-30, 1973 by A. Seanor. The work was carried out under the supervision of C. F. Gleeson, consultant geologist-geochemist.

3. Geochemical Sampling

The geochemical soil samples were collected by C. Andrews during the period June 19 - 30, 1973.

This work was carried out under the supervision of A. Seanor following instructions by C. F. Gleeson.

4. Names and Addresses of Personnel

Canadian Occidental Petroleum Ltd., Minerals Div.

C. F. Gleeson	764 Belfast Rd. Ottawa, Ontario	Consultant
A. M. Seanor	161 Eglinton Ave. E. #801,Toronto 12, Ont.	Geologist
C. J. Andrews	c/o Research Station Lethbridge, Alta.	Soil Sampler
C. Dubitski	7228-137 Ave. Edmonton, Alta.	Cook

Eastern Associates Ltd.

R. Morin	P.O. Box 4152 Whitehorse, Y.T.	Foreman
G. Grondin	895--4th Ave. Val D'Or, Que.	Line Cutter
G. Gordon	General Delivery Whitehorse, Y.T.	Line Cutter
R. Morand	P.O. Box 94 Val D'Or, Que.	Line Cutter
T. Carlick	General Delivery Whitehorse, Y.T.	Line Cutter

PHYSIOGRAPHY

The claim group is situated in the Yukon Plateau just northeast of the Shakwak Trench, a division of the Northern Plateau and Mountain Region of the Western Corillerans.*

The area varies in elevations from about 3600 ft. above sea level in the central eastern part of the property to about 5200 feet above sea level anong the western limits of the property. The slope generally decreases from west to east with rises in the north and south-eastern portions of the property to about 3800 ft. above sea level.

The two small lakes on the eastern side of the property appear to represent a relic drainage spillway formed during the last period of deglaciation.

The drainage on the property is mainly from west to east from the hills, and then north following the route of the spillway into Aishihik Lake.

The lower areas of the property are generally flat and swamps occur in several localities. These low flat areas are drained mainly by several small intermittent streams that dry up before the end of summer.

The area was completely glaciated in the past with the glaciers moving mainly from south to north. The

* Map of Physiographic Regions of Canada, 1254A,GSC,1969)

results of this glacial action was to down-cut the central portion of the property and to leave a thin covering of drift over most of the bedrock.

The shores of the small lakes are terraced. The terraces are made up of rounded boulders and cobbles. This suggests that the lakes were at one time much larger.

Since the last glaciation, a layer of white to grey ash has been deposited in the area. This deposit is a result of a recent volcanic eruption just west of the Yukon border. Its thickness on the property ranges from less than 1/4" to several inches. This ash layer has been dated at approximately 1220 years B.P.* and it is generally of a sand to coarse silt in size.

To obtain usable soil geochemical data, samples must be taken below this ash layer as this ash acts as a very effective shield against the transfer of metal ions from below.

GEOLOGY

Previous Work: Recently the area was mapped geologically (1":4m) by D.J. Tempelman Kluit** for the Geological

* Rampton, V.N.(1972) Int. Geol. Cong. Guide Book All p.20

** Tempelman-Kluit, D.J. (1973) Geology of Aishihik, Snag and Stewart River Map Sheets G SC Open File Report 161.

Survey of Canada. An aeromagnetic survey was also done by the government in 1966 (Map 3308G). There is no record or evidence of previous mineral exploration having been done on the claim group.

GENERAL GEOLOGY

The area is underlain mainly by the following mappable units:

1) Yukon Group consisting of layers of marble, mica schists, and hornblende gneisses occurring principally in the southwest, and

2) Granodiorite underlies the rest of the property. The granodiorite varies locally in its mafic constituents and may grade from a granodiorite to a hornblendite or diorite. Also Mafic dikes have been seen cutting some of the mica schists (Figure 14).

Mappable units on the property can be arranged from the youngest to oldest as follows:

Table 1.

TABLE OF FORMATIONS

Map Reference	Name	Age
1	Mafic Dikes	Assumed equivalent to Tertiary volcanic rocks to east and north.
2	Diorites	Probably Cretaceous, seen cutting Granodiorite and Mica Schist. Probably related to Tempelman-Kluit's Hornblende biotite Diorite*.
3	Granodiorites	Probably Triassic and relates to Tempelman-Kluit's Ruby Range Granodiorite*.
4	Mica Schist	Yukon Group rocks, Paleozoic or younger.
5	Hornblende Gneiss	"
6	Marble	"
6a	Skarn	"

*Tempelman-Kluit, D.J. (1973)

DESCRIPTION OF ROCK UNITS

A) Yukon Group

The Yukon Group is made up of a series of alternating bands of marble, mica schist and hornblende gneisses with local areas of skarn. These bands strike southeast and are repeated southward from the Yukon Group-granodiorite contact.

(i) Marble

The marble is a metamorphosed limestone and it is part of a larger marble band which extends to the southwest and which is terminated by a northwest trending fault on the east.

This unit is massive, coarse grained, crystalline, equigranular and it is made up mostly of white calcite and dolomite that weathers to a dull grey colour. In outcrop it appears as a massive large rounded hill much more resistant to weathering than surrounding mica schists. A thin band of marble was also found to parallel the mica schists and hornblende gneisses in the central part of the property.

(ii) Skarn

Skarn development in this area is usually around shear zones and near intrusive boundaries. The skarns are a result of metasomatic alteration of the Yukon Group rocks following the intrustion of the granitic rocks.

These skarns are composed of alternating bands of calcsilicate minerals and marble.

In outcrops they appear as sheared bands usually paralleling a marble band. The sheared appearance is due mainly to the calcsilicate rich bands being more resistent to weathering than the thinner calcite-dolomite layers.

In some skarns traces of sulphides could be seen. One skarn sample produced high copper values (430ppm). However, the majority of the skarm samples were low in copper.

(iii) Hornblende Gneiss

This rock type occurs in small areas localized near shear zones in the east central part of the property. Some chloritization is ubiquitous in the gneiss.

It weathers to a greenish brown colour and in some instances pyroxene and garnet crystals were seen in the gneisses.

The rocks contain about 60% mafics, 50% are hornblendes and about 10% are micas with the rest being made up of feldspars and a little quartz. The gneiss is medium to coarse grained. Limonite staining, either as streaks or as specks, are common and these gneisses contain the highest average metal values.

The hornblende gneisses generally are a slightly higher metamorphic grade rock than the mica schists, however, they are considered to be of the same age as the schists and the marbles and they are all placed in the Yukon Group.

(iv) Mica Schists

These schists may correctly be described as a quartz-mica schist. Schistosity is developed by alternating mica layers and quartz bands.

The quartz-mica schists are present principally in the south portion of the property.

The trend of the schistosity generally is northeast over most of the property. However, in the southeast it trends northwest.

The schist weathers to a characteristic layered grey colour. The schistosity is also expressed in the vegetation with the lichens on the rocks highlighting the colour variation in the rocks along strike.

A characteristic limonite staining is noticeable in most of the outcrops of the mica schist.

The grain size is generally fine to medium.

Its relative age is considered to be older than the granodiorites and in places (e.g. L40W/65N) xenoliths of mica schists are caught up in the granodiorites and diorites.

B) Granodiorites

The unit occurs as a large intrusive covering about 2/3 the total claim area. It has a characteristic white grey colour on fresh surface and occurs as a medium to coarse grained prophyritic rock, exhibiting large individual crystals of plagioclase.

The granodiorite weathers to rounded shaped outcrops and exhibits a darker grey colour on weathered surfaces.

The rock appears to contain about 25% quartz, 15% potassium feldspar and about 40% plagioclase with the rest being divided equally between biotite and hornblendes.

In some areas the biotite imparts a northeast lineation to the granodiorite while in other places on the property the mafics cluster together to give a clotted appearance. In the latter areas the biotite becomes jagged and in someplaces even lathlike in shape. On the whole the biotites and hornblendes are generally quite fresh looking.

Limonite staining is common in the granodiorites and shows up in alteration rims around the biotites and as streaks or specks throughout the rock.

The granodiorites in the north eastern parts of the property are moderately magnetic due to the presence of about 5% disseminated magnetite in the rocks.

These rocks can be related to the granodiorites described by Tempelman-Kluit* as the Ruby Range. Granodiorites are probably Triassic in age.

* op cit.

C) Diorites

There are probably two ages of diorite on this property; one is younger and one is older than the granodiorite. A fine grained diorite dike (L22.4S) was seen cutting both the mica schist and the granodiorite.

In other places on the property, the diorites appear to be xenoliths caught up in the granodiorite. This may be so or it may only represent a local variation in the mafic content of the main intrusion. Lithologically the diorites resemble each other so they will be described as one unit.

The diorites appear as a fine-grained mafic rock containing about 30% biotite and 20% hornblende. The rest of the rock is made up of feldspars too fine-grained to distinguish in the hand specimens.

The diorites have a fairly dark grey colour on fresh surfaces and weather to a brownish grey colour.

In his paper on the Aishihik Lake Map Sheet, Tempelman-Kluit* describes a hornblende-biotite diorite and although he describes it as covering a greater extent than was mapped in the claim area, his description seems to justify correlating this diorite with his, and calling it Cretaceous in age.

* op cit.

D) Mafic Dikes

A mafic dike with chilled margins and striking east-west cuts the mica schists at L3W 4N.

This dike is dark grey, fine grained and massive.

It is thought that it may be related to Triassic volcanics which occur to the north and east of the claim group.

The dike is tentatively placed as being the youngest rock on the property even though no evidence was seen of it cutting the granodiorite or the diorites.

STRUCTURE

In the northeast corner of the property there is a large shear zone striking about $240^{o}T$ and disappearing under the small lake near the campsite. This direction of between $230^{o}T$ and $240^{o}T$ also is the most prominent lineation measured across the property; although the air photos also show that strong north-south, east-west, and north-west, south-east lineations are common.

The schistosity of the mica schists, strikes generally $240^{o}T$ except in the southeast sector of the property where the schistosity and the jointing in the granodiorites trend at approximately 320-330°T. This northwesterly trend was also measured as a secondary jointing in several areas throughout the property.

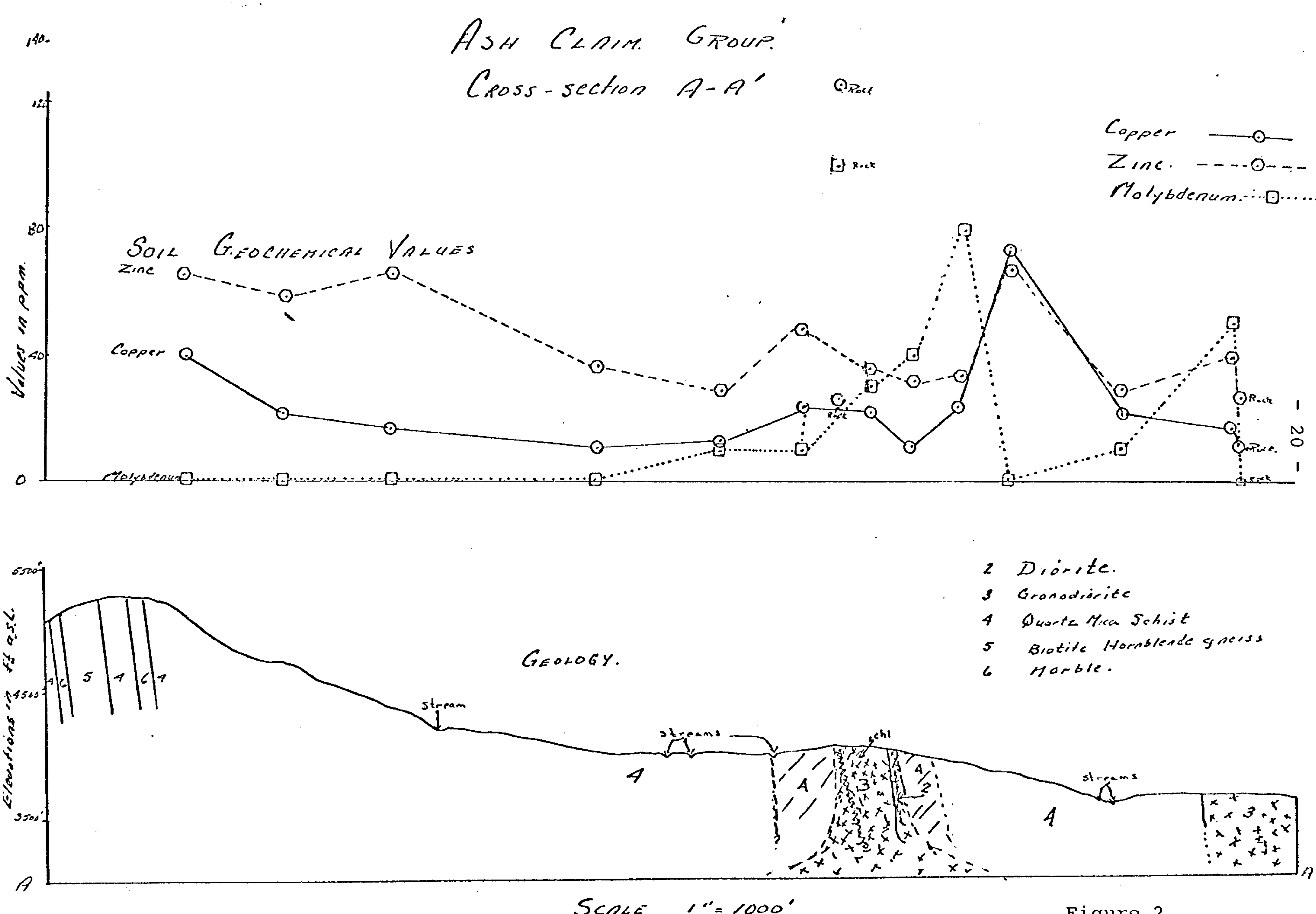
Several smaller shear zones were mapped especially in the southeast sector, of the claim group. These had a northwest strike to them also and they may be related to the numerous small faults mapped by Tempelman-Kluit* in that area. He dates these faults as being Tertiary in age and in the southeast portion of the property they seem to completely mask the northeast trends. This overprinting of the northeast trends by the northwest structures would indicate that the latter are younger than the northeast lineaments..

CROSS SECTION

Two cross sections were drawn across the property.

A-A^{1} is drawn from the southwest corner and includes the Yukon group rocks crossing the contact into the granodiorites on the east side (Figure 2).

* op cit.



ASH CLAIM GROUP
CROSS-SECTION A-A'
SOIL GEOCHEMICAL VALUES
Copper
Zinc
Molybdenum
Rock
Values in ppm
0
40
80
20
GEOLOGY
2 Diorite
3 Granodiorite
4 Quartz Mica Schist
5 Biotite Hornblende gneiss
6 Marble
stream
streams
schl
Elevations in ft a.s.l.
5500'
4500'
3500'
A
A'
SCALE 1" = 1000'

Figure 2

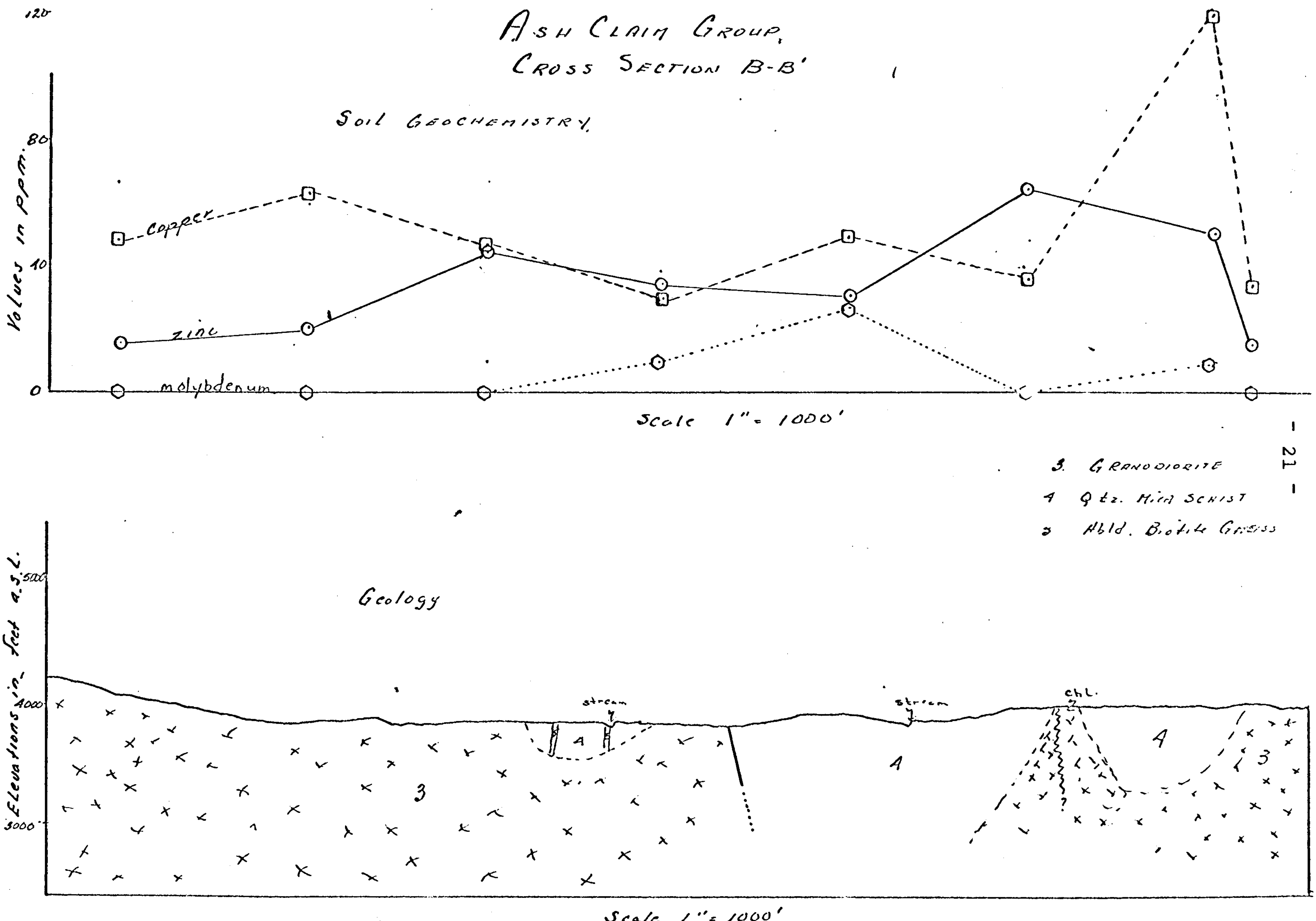

Ash Claim Group,
Cross Section B-B'
Soil Geochemistry.
Values in ppm.
120
80
40
0
copper
zinc
molybdenum
Scale 1" = 1000'
3. Granodiorite
4 Qtz. Mica Schist
2 Hbld. Biotite Gneiss
Geology
Elevations in feet a.s.l.
5000
4000
3000
stream
stream
chl.
3
4
Scale 1" = 1000'

Figure 3

B-B[1] runs from the southeast corner to the northwest part of the property(Figure 3).

6. Metamorphism

The granodiorites and diorites show very little metamorphism. In some granodiorites there appears to be some alterations of the hornblende to biotite as the biotite becomes more jagged and sometimes lath-like in shape showing up as minor lineations in the hand specimens.

The mica schists, marble and the hornblende gneisses are all strongly metamorphosed through the greenschist facies and perhaps as high as amphibolite facies in some rocks such as the gneisses.

7. Economic Geology

This area was staked and examined in the hope of finding a porphry-type copper deposit.

As far as the writer knows, no previous work was carried out on this property or in the immediate vicinity of the claim group. The nearest mineral occurences are on the east side of Ashihik Lake approximately 4 miles east of the property.

These deposits are made up of minor copper, magnetite and pyrite found in small areas of skarn. Several small mineral occurrences were found on this property near shear zones.

In the area between L16E-8N and L20E-6N, three small showings containing pyrrhotite and traces of chalcopyrite were found occurring in a hornblende gneiss next to a small shear zone. The strike of this zone is approximately 240°T and parallels the strike of the lineations of the mica schists. All rock samples taken from these areas showed anomalous high copper values (137 to 430 ppm) and one rock showed anomalous copper (430 ppm), zinc (96 ppm) and molybdenum (60 ppm).

This zone is about 600 feet long and about 150 feet wide. Small showings of disseminated and massive pyrrhotite occur at these locations within this zone. Trace amounts of chacopyrite were seen at one location (L28E-8N) along with pyrrhotite.

Minor amounts of molybdenite occur near L48E-12S. Here the molybdenite occurs as finely disseminated flakes in a small quartz vein cutting the granodiorite.

Another showing of finely disseminated and massive pyrrhotite is located on L48E-15N.

The zone strikes about 240°T and it is 20' wide and 30' long. The occurrence is in a hornblende gneiss next to a chloritized shear zone. The shear zone rocks did not give anomalous values, however in the hornblende gneiss high values for copper were found to range from 180 ppm to 306 ppm.

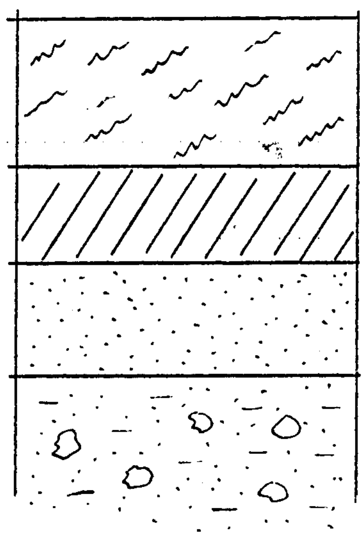
The copper mineralization found to date is low grade, however it occurs in rocks that have undergone some alterations (chloritization). It is recommended that further work be carried out to determine the extent and amount of copper mineralization which is associated with this alteration.

SOIL GEOCHEMISTRY

This area has been glaciated and at a later date covered completely by a greyish white volcanic ash. This ash layer varies in thickness from less than 1/4" to several inches.

In places this ash layer sits on top of an older organic layer (paleo A horizon"), below this layer is the "B" horizon which is developed on the glacial moraine.

A generalized soil profile would be as follows:



Depth in feet	Material Type
0	partly decomposed and living organic material (rootlets brown to black "A^{o}
0.25	decomposed organic matter black "A"
0.70	volcanic ash layer white to grey, sand size
0.73	B soil glacial moraine brown gravelly clay sand

To study the vertical metal distribution four profile pits were dug on the claim group. (Figure 4).

ASH CLAIM GROUP
SOIL PROFILES

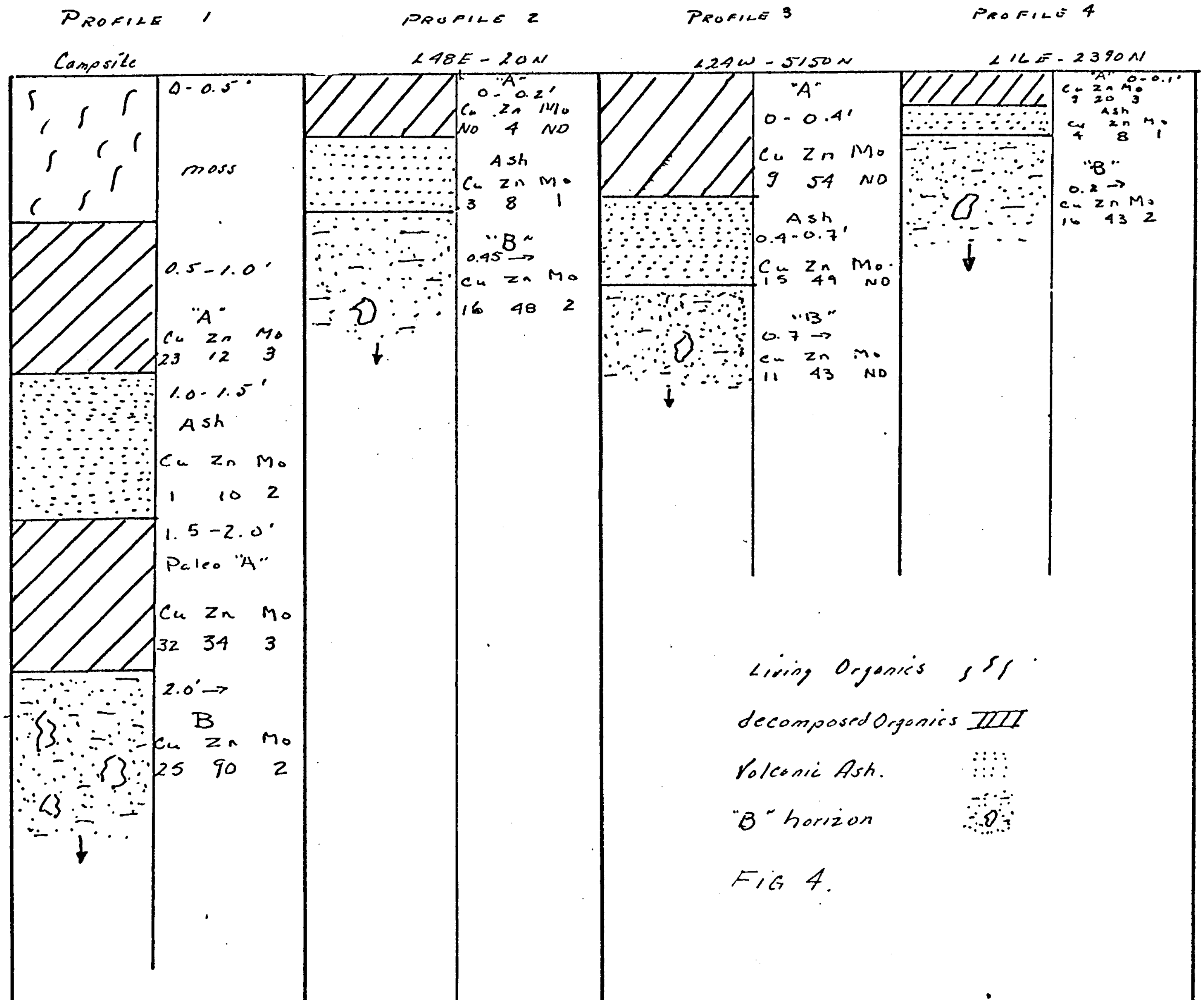


FIG 4.

Profile #1 was dug near the campsite up on the terraced slopes from the lakes. This pit has 6" of undercomposed organic material over another 6" of well decomposed peat. This peat covers the ash layer which appears at 6" of spotty white sand mixed in with stringers of a lower peat. This lower peat makes up another six inches and it is well decomposed and can be referred to as a "paleo A" layer. All this material rests atop the B horizon which is a brown coloured gravelly clay-sand that has developed on glacial moraine. The soil ranges in size from small pebble through cobble to boulders. The boulders generally are well rounded and made up of granodiorite and micaceous schists.

The metal values for each layer have been plotted in section (fig. 4). The ash layer has the lowest metal values while the B soil horizon shows the highest metal values.

Profile #2 does not have as many layers as is found in Profile #1. It was taken on the eastern side of the property on a low westerly facing slope. This profile consisted of 0.2 feet of living organic matter and woody peat over 0.2 feet of volcanic ash and these rest on the B horizon. The B horizon in this area is less bouldery than at the previous site. Again the B horizon soil gives the highest metal values.

Profile #3 was dug on an easterly facing slope on L24W on the northern part of the property. Here the peat and the volcanic ash are slightly thicker than in profile 2. Metal values in all soil types here are low.

Profile #4 was taken in a relatively low flat area and it has the thinnest layers of peat and ash, each being only about 0.1 feet thick. Here the "B" soil horizon contains the highest metal values.

Hence the soil profiles illustrated the need to obtain samples below the ash layer and in most places the "B" horizon soils were taken.

SAMPLING PROCEDURE

The area is covered by picket lines spaced 800 feet apart. These lines were cut by Eastern Associates of Whitehorse. The soil samples were taken every 400 feet along the grid and the "B" horizon sampled where possible (Figure 11). Some 112 rock chip samples were also collected.

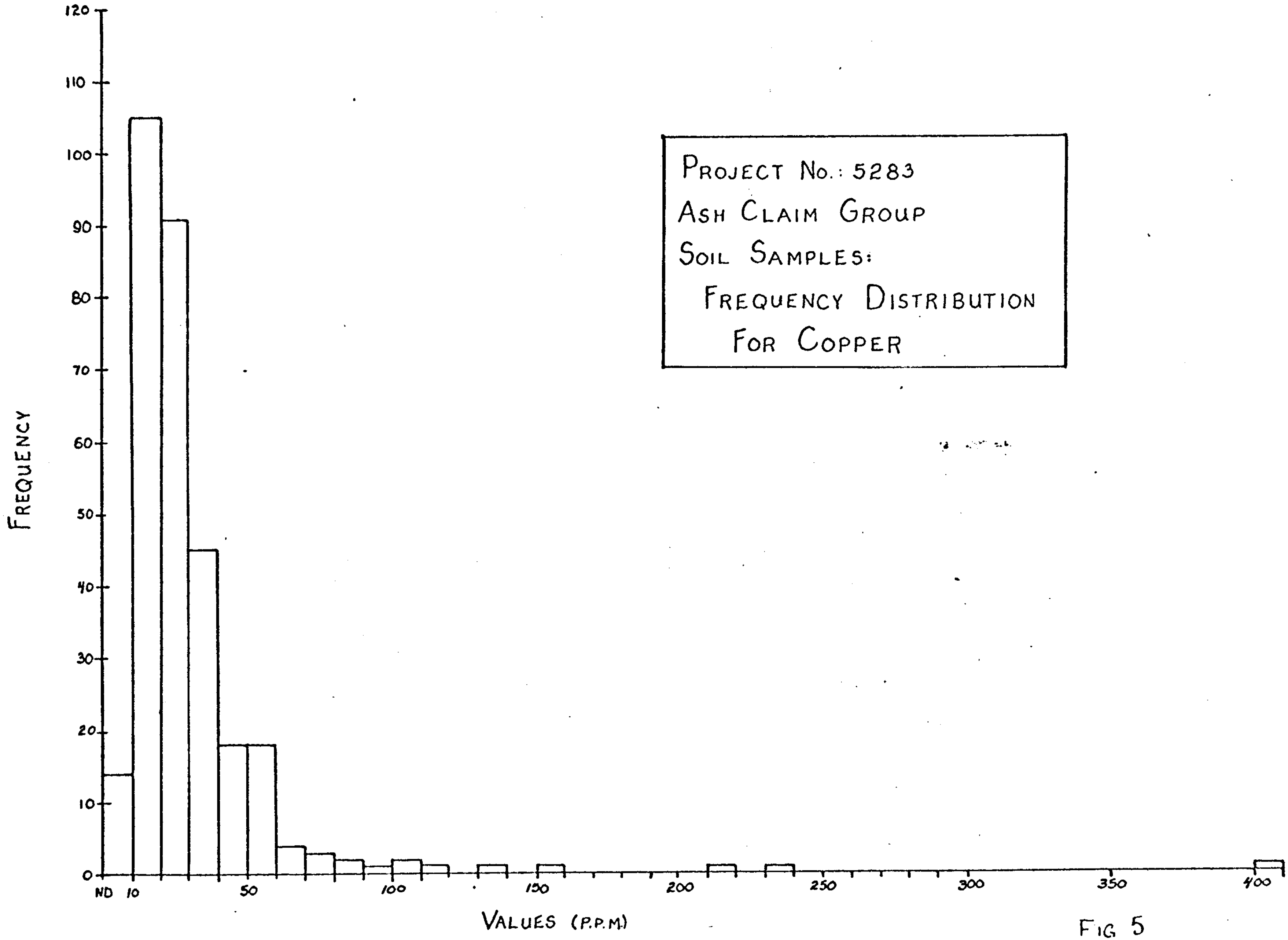
All soil samples collected were stored in special heavy duty high wet-strength kraft envelopes, semi-dried in the field and then sent to the Bondar-Clegg and Company Limited laboratory in Whitehorse for analysis.

LABORATORY PROCEDURE

Soil samples were dried and seived to minus eighty mesh and rocks were crushed to minus 100 mesh. These fractions were then analysed for copper, zinc and molybdenum using atomic absorption spectrometry after extraction with a hot solution of $HCl-HNO_3$ by Bondar-Clegg and Company Limited in Whitehorse.

STANDARD SAMPLES

To check the reproducibility and quality of the analytical work, standard samples were submitted regularly with each shipment. The standards were made using a bulk sample with high values for copper and a bulk sample with low values for copper. By combining these, high, medium and low value standards for copper were made up.



Project No.: 5283
Ash Claim Group
Soil Samples:
Frequency Distribution
For Copper
Frequency
120
110
100
90
80
70
60
50
40
30
20
10
0
ND
10
50
100
150
200
250
300
350
400
Values (P.P.M)

Fig 5

PROJECT NO.: 5283
ASH CLAIM GROUP
SOIL SAMPLES:
FREQUENCY DISTRIBUTION
FOR ZINC

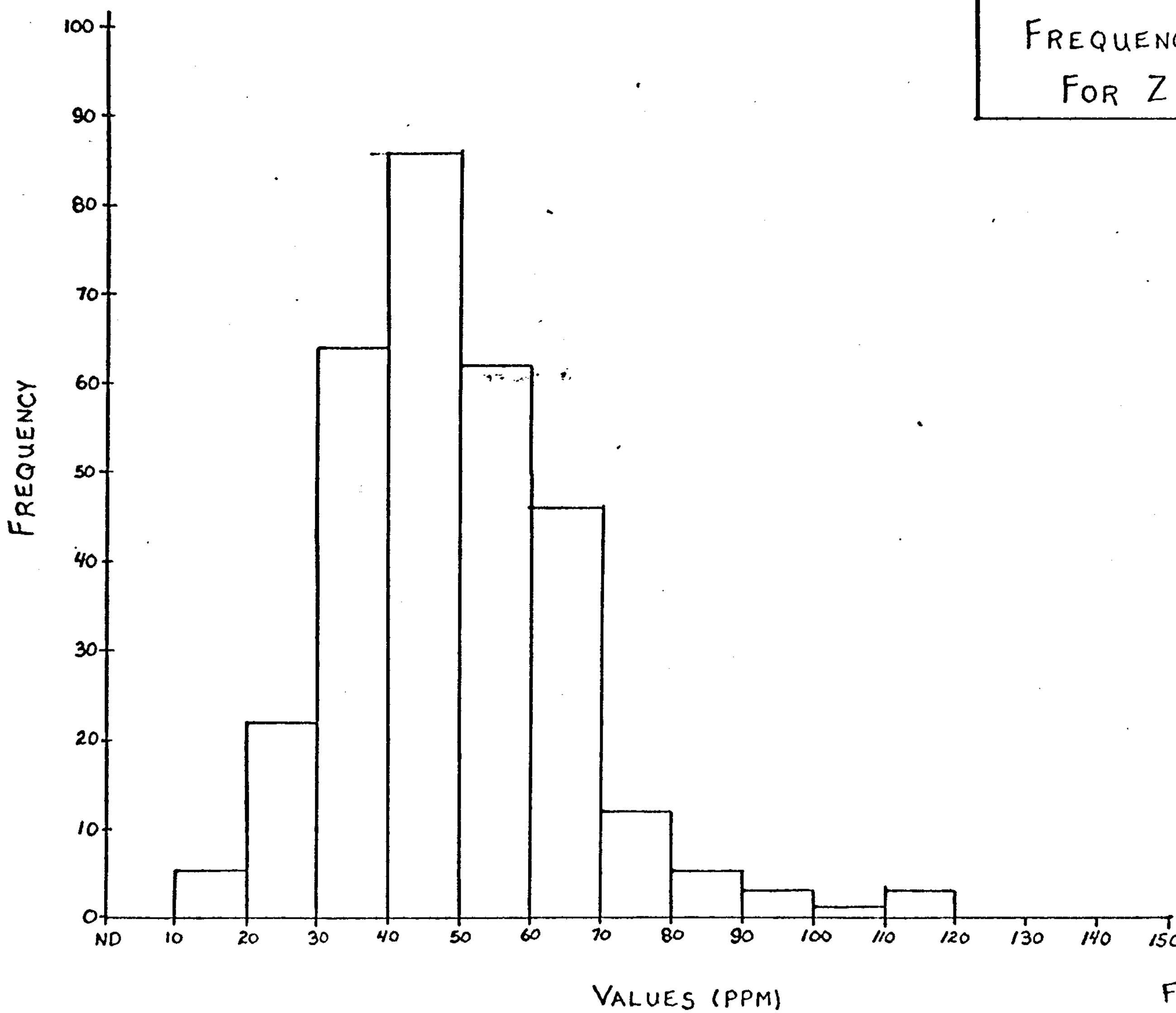


FIG 6

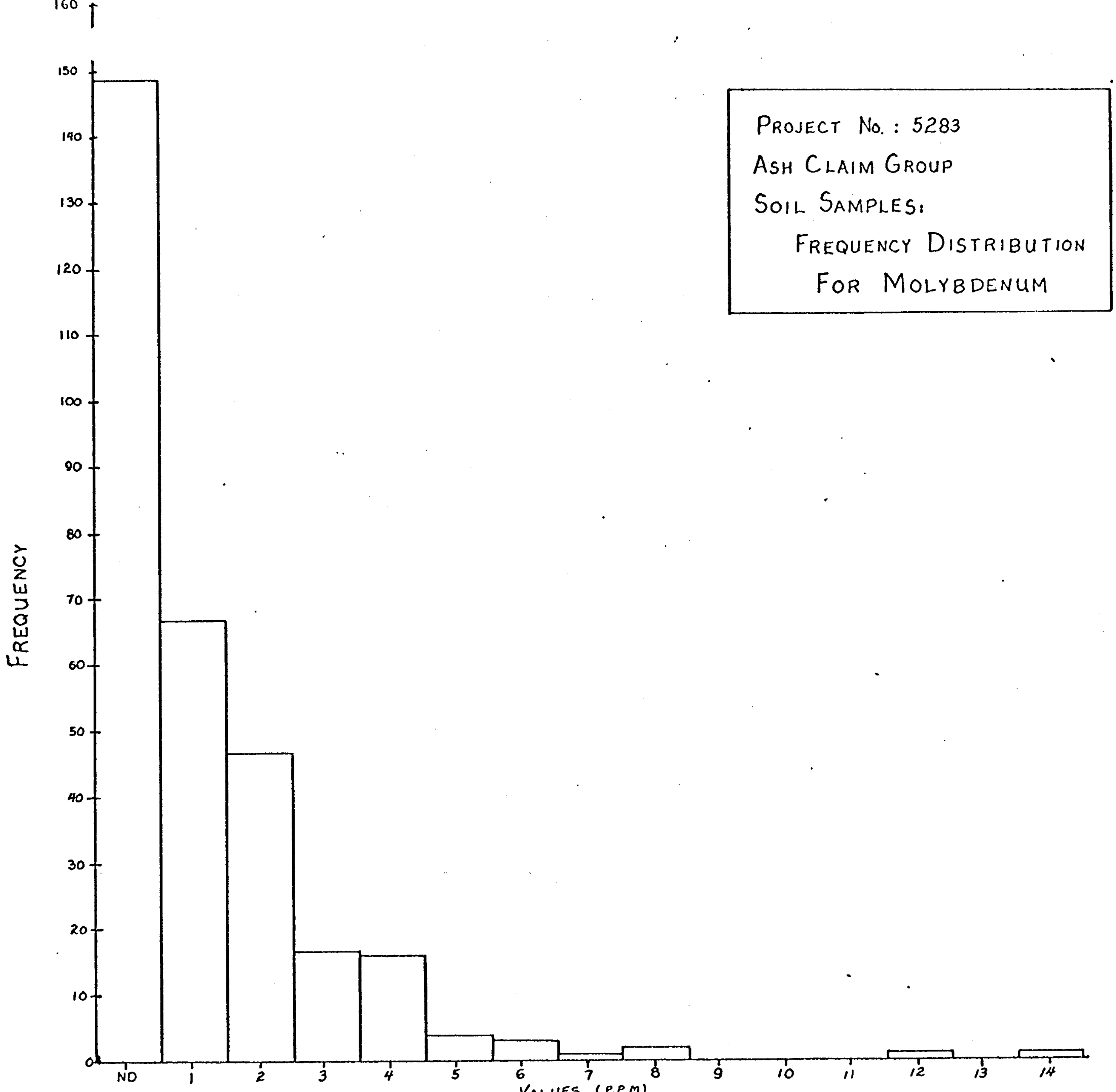

PROJECT No. : 5283
ASH CLAIM GROUP
SOIL SAMPLES:
FREQUENCY DISTRIBUTION
FOR MOLYBDENUM
FREQUENCY
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
ND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
VALUES (P.P.M.)

FIG 7

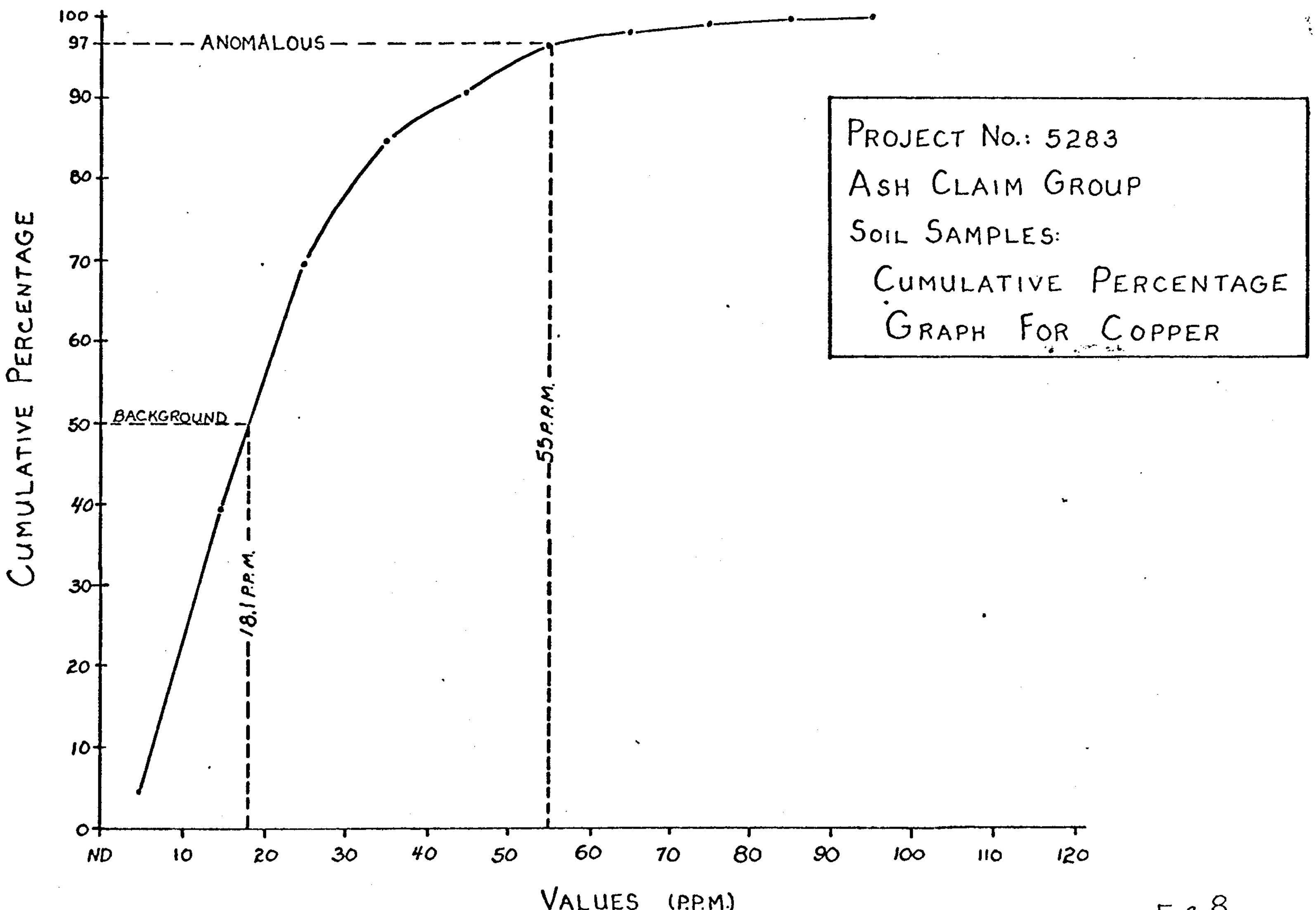
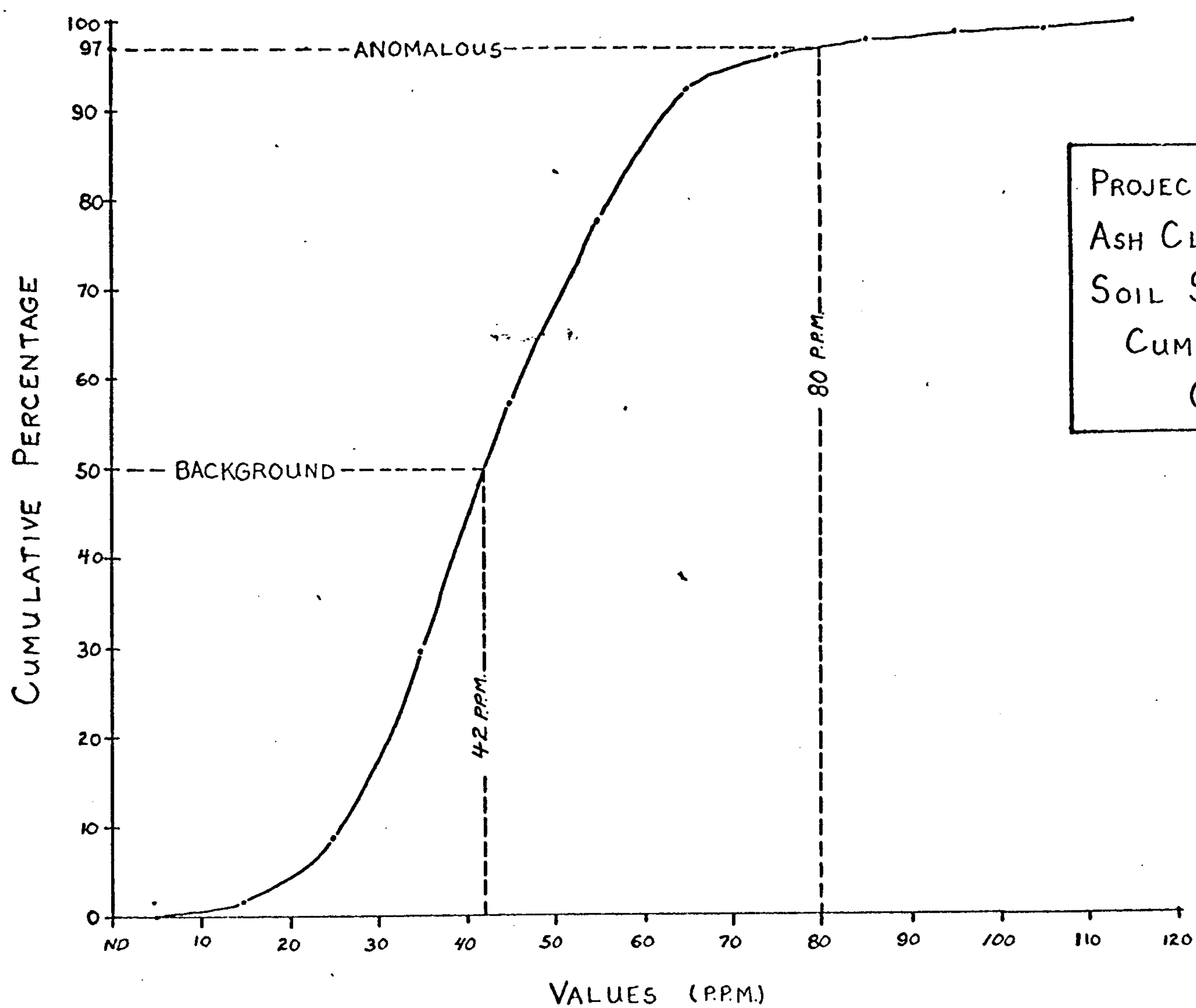

Project No.: 5283
Ash Claim Group
Soil Samples:
Cumulative Percentage
Graph for Copper
Cumulative Percentage
Values (P.P.M.)
Anomalous
Background
18.1 P.P.M.
55 P.P.M.
100
97
90
80
70
60
50
40
30
20
10
0
ND
10
20
30
40
50
60
70
80
90
100
110
120

Fig 8.



PROJECT NO.: 5283
ASH CLAIM GROUP
SOIL SAMPLES:
CUMULATIVE PERCENTAGE
GRAPH FOR ZINC

FIG 9

PROJECT NO.: 5283
ASH CLAIMS GROUP
SOIL SAMPLES:
CUMULATIVE PERCENTAGE
GRAPH FOR MOLYBDENUM

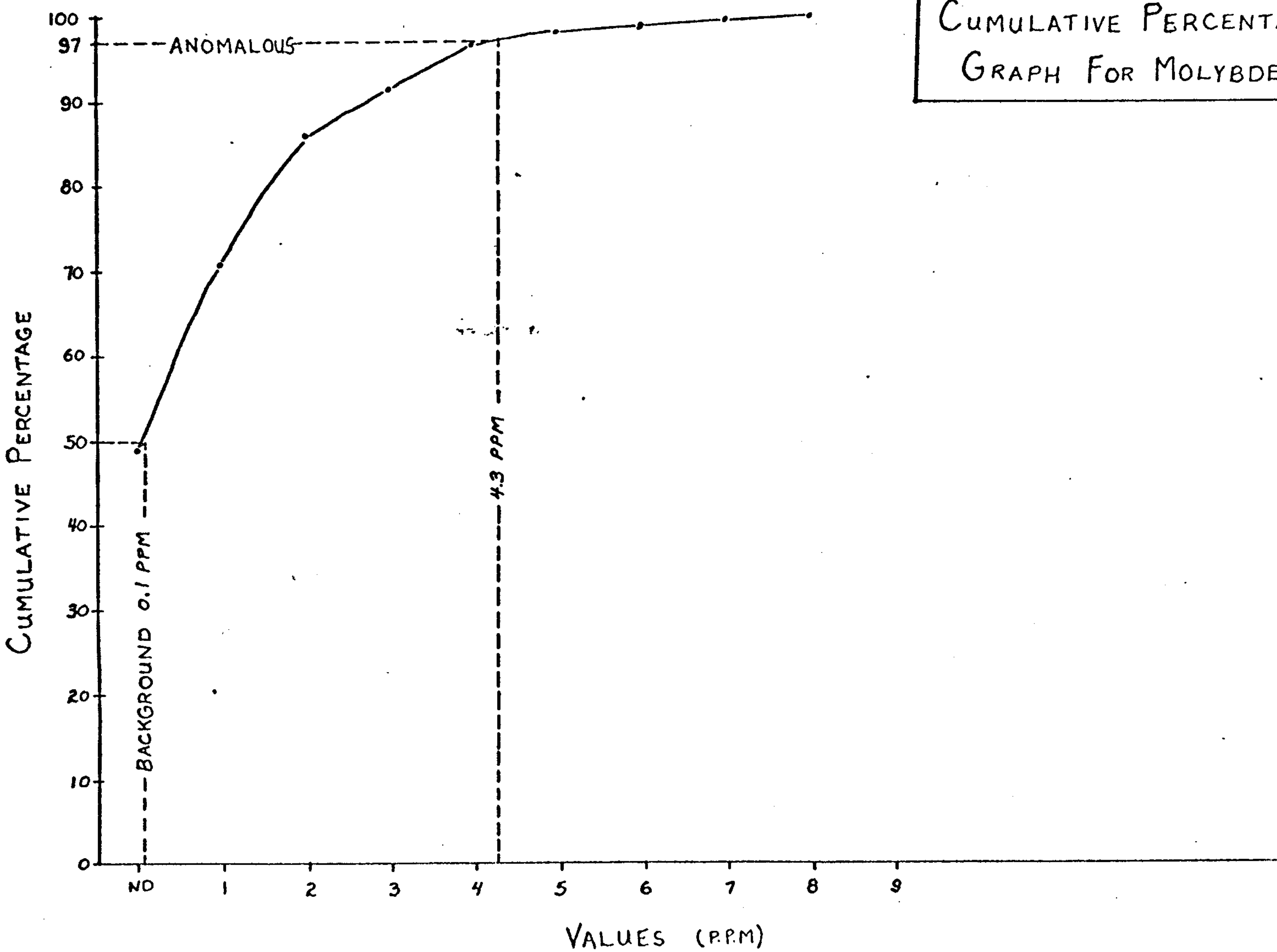


FIG 10

Table 2 shows the reproducibility of the standards about a mean.

The reproducibility for copper mean values of 630, 263 and 21 ppm was 3, 10 and 5 per cent respectively.

The values for zinc did not vary much in standards 1, 2 and 3 and the reproducibility was between 3 and 9 per cent.

The standard samples were too low in molybdenum to get accurate reproducibility results for the metal.

STATISTICAL TREATMENT OF RESULTS

To determine the background and anomalous values, the geochemical results were grouped into fixed ranges. After completion of the survey histograms (Figures 5, 6, 7) and cumulative frequency curves (figures 8, 9, 10) were drawn.

In this area the background values for copper, zinc and molybdenum in the soils are 18, 42 and 1 ppm respectively.

The anomalous values were selected as those occuring above at the 97% level. In this area the anomalous values for copper, zinc and molybdenum in the soils are 55, 80 and 5 ppm respectively.

TABLE 2

REPRODUCIBILITY OF STANDARDS ABOUT MEAN - ASH CLAIMS

Standard No.	COPPER ppm	COPPER % diff fr.mean	ZINC ppm	ZINC % diff fr.mean	MOLYBDENUM ppm	MOLYBDENUM % diff fr.mean
1 (5039)	610	3	26	10	2	0
(5239)	650	3	31	7	2	0
Arith. Mean	630	3	29	9	2	0%
2 (5040)	236	10	32	3	1	33
(5240)	290	10	34	3	2	33
Arith. Mean	263	10	33	3	1.5	33%
3 (5041)	20	5	36	4	ND	0
(5241)	22	5	33	4	ND	0
Arith. Mean	21	5	35	4	ND	0%

RESULTS OF SOIL SAMPLE SURVEYS

The results and sample numbers were plotted on the geochemical map at scale 1"=400' (Fig. 11). The values for each element were then contoured and the results of these contoured maps are summarized on the enclosed compilation map (Fig. 12).

ROCK GEOCHEMISTRY

Some 112 rock chip samples were collected on the property and analysed for copper, zinc and molybdenum (appendix 2).

The range of values and arithmetic averages of the rock samples from each major rock unit is listed in Table 3.

The highest copper average (177 ppm) is found in the skarn, followed by hornblende biotite gneiss (130 ppm) and altered granodiorite (65 ppm). Molybdenum averages are highest in the hornblende-biotite gneiss (8 ppm), followed by quartz veins (7 ppm), marble (4 ppm) and altered granodiorite (3 ppm). Zinc is low in all rock types, the highest values are confined to the mica schists and they average 78 ppm.

TABLE 3

AVERAGE METAL CONTENT OF ROCK UNITS ON ASH CLAIMS

Rock Unit	# of Samples	COPPER Range	COPPER Mean	ZINC Range	ZINC Mean	MOLYBDENUM Range	MOLYBDENUM Mean
Granodiorite	31	7-86	13	15-88	39	0-3	1
Altered Grano-diorite (Mainly chloritization)	10	6-180	65	12-81	36	0-12	3
Hornblende bio - tite Gneiss	12	11-430	130	10-96	49	0-66	8
quartz-mica schist	12	20-98	48	36-116	78	0-4	2
Marble	7	7-31	17	8-84	24	0-9	4
Skarns	3	12-490	177	7-39	23	2-3	2
Diorites	6	6-57	28	18-59	39	0-2	1
Mafic Dikes	3	17-28	23	29-62	41	0-0	0
quartz veins	7	10-55	25	4-16	8	0-42	7
quartz veins*	6	10-55	25	4-11	7	0-2	1

* Excluding single high value

DISCUSSION OF GEOCHEMICAL SOIL ANOMALIES

ANOMALY 1

This copper-zinc anomaly is centered at L0-40N. It is circular in shape with a slight elongation to the northeast. The 60 ppm copper contour outlines an area which is about 1000 feet in diameter. Anomalous values for copper range from 64 to 220 ppm and for zinc they range from 88 to 104 ppm.

There is no rock exposed in the immediate vicinity of the anomaly. It occurs near the base of an east slope in a stream bed. The general northeast flow of the creek changes direction here and appears to be directed north and east around the anomaly.

Geologically the anomaly appears to be underlain by granodiorite. The nearest outcrop is 600 feet to the south where a chloritized zone (shear zone?) occurs in the granodiorite. Rocks from here contain 24 to 50 ppm copper, 12 to 60 ppm zinc and less than 1 to 30 ppm molybdenum. The high molybdenum value came from an aplitic dike.

The cause of the anomaly could be related to copper mineralization in a chloritized shear zone in the granodiorite similar to that found 4000 feet to the southeast. Additional work would be required before one could determine if the anomaly reflects the presence of economically significant quantities of copper.

ANOMALY 2

This is a coincident copper-molybdenum anomaly that also occurs near the base of a hill on a northeast trending stream valley.

The copper anomaly is made up of two circular portions, one is centered at about 34E on BL 1 and the other is centered around L40E-12N. The 60 ppm copper contour shows the former to be about 600 feet in diameter, and the latter 1200 feet in diameter and it is open to the northeast.

Above normal copper values range from 74 to 230 ppm in the smaller part and from 60 to 152 ppm in the larger portion of the anomaly. The highest values (103 and 152 ppm) in the latter occur in swampy ground.

Flanking this anomaly to the west and coincident with it to the northeast is a northeast trending molybdenum anomaly which measures 2000 feet by 600 feet. Anomalous molybdenum values in the soil range from 4 to 8 ppm.

At the northeast end of anomaly 2 a small copper showing is present in hornblende gneiss, Geochemical values in rocks from the mineralized zones range from

180 to 300 ppm for copper, 1 to 4 ppm for molybdenum and 7 to 90 ppm zinc.

This anomalous zone is underlain by Yukon Group rocks (gneisses and schists) in contact with the granodiorite. The contact parallels the northern trend of the soil geochemical anomaly. Hence it would appear to be related to copper-molybdenum mineralization in this contact zone. Whether this mineralization is of economic significance can be determined only be additional work.

ANOMALY 3

This is a coincident copper-molybdenum anomaly running parallel and north of anomaly 2. The anomalous area, which is about 2800 feet long and 1700 feet wide, is elliptical in shape and consists of two portions, one in the northeastern part of the anomaly and the other in the southwestern part. These lobes are centered at L26E-20N and L16E-12N respectively.

The southwestern portion, which gives the highest values, can be outlined by a 60 ppm copper contour and a 4 ppm molybdenum contour. The metal values within this area range between 60 and 410 ppm for copper and 4 to 14 for molybdenum. This southwestern part is roughly 1200 feet long.

The northeastern portion has molybdenum values ranging from 4 ppm to 12 ppm and values from 60 ppm to slightly higher than 80 ppm for copper. This area is about 1400 feet long with the molybdenum concentrated around the northern part.

This anomaly is separated from Anomaly 2 by a small copper showing in a hornblende gneiss about 300' southwest of Anomaly 3. Geochemical values in rocks from the mineralized zone range from 137 to 430 ppm for copper, ND to 66 ppm for molybdenum and 11 to 96 ppm for zinc.

About 300 feet to the northwest of this anomaly is found a small outcrop consisting of highly altered rocks. A pegmatite dike cuts this marble and the chloritized granodiorite. This is considered to be on the contact between the older Yukon group rocks and the younger granodiorite.

This alteration may extend as far south as this geochemical anomaly because near the southwestern part of the anomaly a chloritized granodiorite sample was found.

In any case the anomaly, in part, appears to be structurally controlled as it has the general northeast trend to it; this is parallel to the dominant structural trend throughout this area. The general northeast trend of the creek changes in the vicinity of the anomaly and it appears to be diverted north and then east to enclose the anomaly on two sides. A similar change in drainage was found around anomaly 1. The area surrounding this anomaly is quite swampy and forms a type of depression.

The cause of this anomaly could be related to copper mineralization in a chloritized shear zone in a granodiorite as is found 300 feet to the southwest. To determine if this anomaly reflects the presence of economically significant quantities of copper additional work would be required.

ANOMALY 4

To the southwest of Anomaly 2 a coincident copper-zinc anomaly is found. This anomaly trends slightly north of west and it is elliptical in shape. It is 2100 feet long and 600 feet wide centered over L24E-12S.

The anomalous zinc values are concentrated in the central and northwestern part of the anomaly with values ranging from 60 to 120 ppm.

The anomalous copper values however, are concentrated along the southeastern part of the anomaly, with a range of values from about 40 ppm to 120 ppm.

The rock geochemistry produces very low metal values with maximum being 50 ppm and 70 ppm respectively for copper and zinc. Rock types found within this anomalous zone are mainly hornblende gneisses and mica schists.

A shear zone trending northwest underlies this anomaly and appears to truncate anomalies 2 and 3. A high zinc value (120 ppm) was found in a soil sample over this shear zone.

The zinc portion anomaly then would appear to be related to the northwest shear zone. However, the high copper in the southeast part may be an extension of Anomaly 2.

However, additional work would be required in order to determine the true cause of this anomaly and whether the anomaly reflects the presence of significant quantities of copper and zinc.

ANOMALY 5

A low intensity coincident copper-molybdenum anomaly is found centered over L40E-68N. This anomaly strikes northeast and it is elliptically shaped. It has a width of about 800 feet and is open to the northeast.

This anomaly can be outlined by the 60 ppm copper contours, with copper values ranging from 40 to 102 ppm. The molybdenum values range from a low of 1 ppm to a high of 5 ppm near the centre of the anomaly. This anomaly roughly parallels a strong northeast trending shear zone cutting the granodiorite about 1000 feet to the southeast.

Rock outcrops in the immediate area were a fresh looking granodiorite with jointing to the northeast. Rock geochemistry of samples taken in the vicinity of the anomaly show maximum copper values of 11 ppm and maximum molybdenum values of 1 ppm.

More detailed work would be required in the area to determine the cause of this anomaly. However, the lack of extensive alteration in the granodiorite would indicate that the source of the metal is a rather small one.

ANOMALY 6

A small circular zinc anomaly with maximum value of 115 ppm is centered at L0-56N within the large swamp in the north central section of the property.

Copper values in the soils surrounding this station are around 20 ppm and no molybdenum has been detected.

No rock outcrop was found in this area of the swamp. The nearest rocks exposed were approximately 1000 feet to the east and to the west and they all contained less than 45 ppm zinc.

Because of its intensity and mono-element (Zn) nature, this anomaly is not considered to be economically significant.

ANOMALY 7

A small coincident copper-zinc anomaly is located in the southwest part of the property. It is approximately 2200 feet in length and 600 feet in width. It trends northeast and it is located at L28E-8N. This anomaly can be outlined by the 80 ppm zinc contour.

The copper is concentrated in the eastern part of the anomaly and appears to be underlain by a mica schist. Rocks from this area contain less than 66 ppm copper, 1 to 8 ppm molybdenum and 36 to 100 ppm zinc.

The higher soil zinc values were found in the western part of the anomaly with two stations having values greater than 100 ppm. In this area the anomaly appears to parallel the granodiorite-Yukon Group contact.

More detailed geochemical soil sampling and a geological examination of this area may help to determine the economic significance of this anomaly.

AEROMAGNETIC ANOMALIES

An aeromagnetic survey was carried out in the area by the G.S.C. in 1966 and the results have been published on map #3308G (Figure 13).

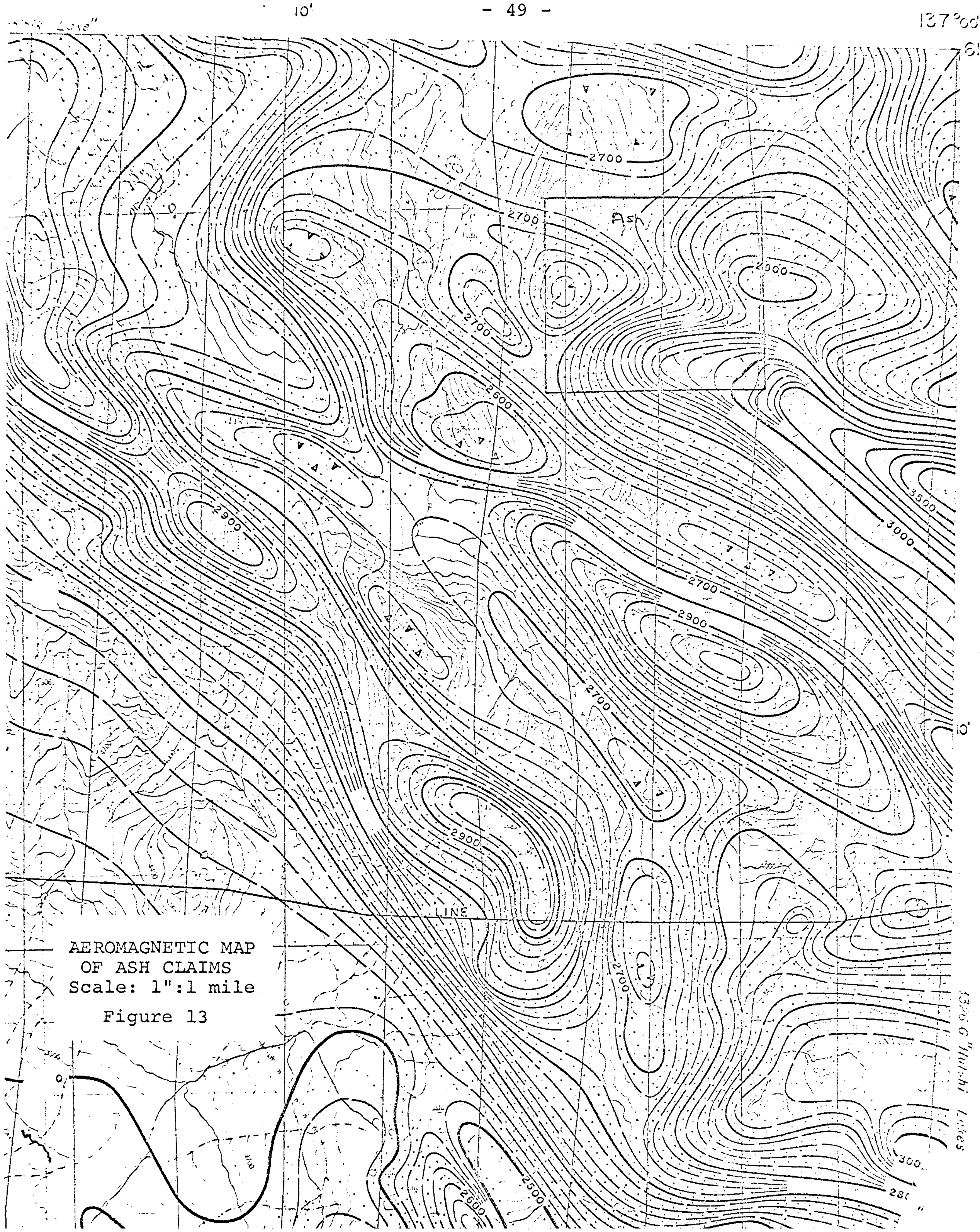
The results show a northwest trending high located in the southeast corner of the claim group.

It runs along just south of the larger of the two small lakes and coincided with the general northwest trend found on the property. This high runs through the Yukon Group rocks and becomes much weaker as it crosses into the granodiorites.

Although the granodiorites in the north central sector of the property are moderately magnetic, the aeromagnetic map indicates that this region is underlain by a magnetic low.

The hornblende gneisses and mica schists that are found around the shear zones appear to strike parallel to the trend of the magnetic high. These rocks also exhibit strong magnetism and may be the cause of the magnetic high.

A ground magnetic survey could be carried out in this area to better localize this magnetic high and to study its relationship with the geochemistry and geology.



AEROMAGNETIC MAP
OF ASH CLAIMS
Scale: 1":1 mile

Figure 13

CONCLUSIONS AND RECOMMENDATIONS

The causes of the stream sediment anomalies in this area appear to be due to presence of copper mineralization near shear zones in hornblende gneisses. The anomalous soil geochemistry sites cannot be explained entirely from the surface expressions of the geology. However, the soil geochemistry anomalies do appear to be structurally controlled.

The granodiorite in the north part of the property appears very fresh and with no apparent alterations and no mineralization was found.

The claims in the southeast part of the property where granodiorite intrudes Yukon Group rocks should be retained pending a more detailed geological and geochemical survey over this area. This survey would allow one to prospect more thoroughly the geochemical soil anomalies, the copper showings and zones of alteration.

The high aeromagnetic anomaly centered to the southeast of the property should be examined and evaluated and a magnetometer survey should be carried out over the southern half of the claim group.

SIGNED: ______________________
A. M. Seanor, B.Sc.

APPROVED: ______________________
C. F. Gleeson, Ph.D., P. Eng.

August 28th, 1973

TORONTO

APPENDIX I

CLAIM POST DATA

When the lines were cut all claim posts were tagged and stood upright on the property except for one set of posts which could not be found due to heavy snow cover. Later these posts were tagged and stood upright by Can-Oxy personnel during period of mapping and soil sampling.

Claim post Data as found on each post is recorded below.

Ref. No. on map	Claim	Tags	Location	Staker	Date
1	Ash 1	Y67427-1	L25W/15S	R. Morin	Oct. 28/73
	2	Y67428-1	L25W/15S	" "	" "
2	Ash 1	Y67427-2	BL1-28W	" "	" "
	2	Y67428-2	BL1-28W	" "	" "
	3	Y67429-1	BL1-28W	" "	" "
	4	Y67430-1	BL1-28W	" "	" "
3	Ash 3	Y67429-2	L30W/16N	" "	" "
	4	Y67430-2	L30W/16N	" "	" "
	5	Y67431-1	L30W/16N	" "	" "
	6	Y67432-1	L30W/16N	" "	" "
4	Ash 5	Y67431-2	L31W/32N	" "	" "
	6	Y67432-2	L31W/32N	" "	" "
	7	Y67433-1	L31W/32N	" "	" "
	8	Y67434-1	L31W/32N	" "	" "
5	Ash 7	Y67433-2	L31+50W/46N	" "	" "
	8	Y67434-2	L31+50W/46N	" "	" "
	9	Y67435-1	L31+50W/46N	G. Grondin	" "
	10	Y67436-1	L31+50W/46N	" "	" "
6	Ash 9	Y67435-2	L3250W+6250N	" "	" "
	10	Y67436-2	L3250W+6250N	" "	" "
	11	Y67437-1	L3250W+6250N	" "	" "
	12	Y67438-1	L3250W+6250N	" "	" "
7	Ash 11	Y67437-2	L3350W+77N	" "	" "
	12	Y67438-2	L3350W+77N	" "	" "
8	Ash 13	Y67439-1	L0-16S	" "	Oct. 29/73
	14	Y67440-1	L0-16S	" "	" "

Ref. No. on Map	Claim No.	Tag No.	Location	Staker	Date Staked
9	Ash 13	Y67439-2	L0-0+00	G. Grondin	Oct.29/7
	14	Y67440-2	L0-0+00	" "	" " "
	15	Y67441-1	L0-0+00	" "	" " "
	16	Y67442-1	L0-0+00	" "	" " "
10	Ash 15	Y67441-2	L0+1450N	" "	" " "
	16	Y67442-2	L0+1450N	" "	" " "
	17	Y67443-1	L0+1450N	R. Voisine	" " "
	18	Y67444-1	L0+1450N	" "	" " "
11	Ash 17	Y67443-2	L0+50E/29+50N	" "	" " "
	18	Y67444-2	" " " "	" "	" " "
	19	Y67445-1	" " " "	" "	" " "
	20	Y67446-1	" " " "	" "	" " "
12	Ash 19	Y67445-2	L1+70E/44+50N	" "	" " "
	20	Y67446-2	" " " "	" "	" " "
	21	Y67447-1	" " " "	" "	" " "
	22	Y67448-1	" " " "	" "	" " "
13	Ash 21	Y67447-2	L2+50E/59N	" "	" " "
	22	Y67448-2	L2+50E/59N	" "	" " "
	23	Y67449-1	L2+50E/59N	" "	" " "
	24	Y67450-1	L2+50E/59N	" "	" " "
14	Ash 23	Y67449-2	L350E/74+50N	" "	" " "
	24	Y67450-2	L350E/74+50N	" "	" " "
15	Ash 25	Y67451-1	L31E-19+50S	C. Desautel	" " "
	26	Y67452-1	L31E-19+50S	" "	" " "
16	Ash 25	Y67451-2	L31E+0+50N	" "	" " "
	26	Y67452-2	L31E+0+50N	" "	" " "
	27	Y67453-1	L31E+0+50N	" "	" " "
	28	Y67454-1	L31E+0+50N	" "	" " "
17	Ash 27	Y67453-2	L32E+15N	" "	" " "
	28	Y67454-2	L32E+15N	" "	" " "
	29	Y67455-1	L32E+15N	" "	" " "
	30	Y67456-1	L32E+15N	" "	" " "
18	Ash 29	Y67455-2	L31+50E/29N	" "	" " "
	30	Y67456-2	" " " "	" "	" " "
	31	Y67457-1	" " " "	" "	" " "
	32	Y67458-1	" " " "	" "	" " "
19	Ash 31	Y67457-2	L31+30E/43N	" "	" " "
	32	Y67458-2	L31+30E/43N	" "	" " "
	33	Y67459-1	L31+30E/43N	R. Laramie	" " "
	34	Y67460-1	L31+30E/43N	" "	" " "
20	Ash 33	Y67459-2	L30+60E/57+60N	" "	" " "
	34	Y67460-2	" " " "	" "	" " "
	35	Y67461-1	" " " "	" "	" " "
	36	Y67462-1	" " " "	" "	" " "
21	Ash 35	Y67461-2	L30+20E/71+50N	" "	" " "
	36	Y67462-2	" " " "	" "	" " "

APPENDIX II

GEOCHEMICAL ANALYSIS AND DESCRIPTION OF ROCK SAMPLES

Sample Number	Location	Rock Type	Description	ppm Cu	ppm Zn	ppm Mo	Ni
Ash 1	450'E/L48E-60N	Aplite	f-grd.,texture vein in grano-diorite	not analysed			
2	450'E/L48E-60N	Altered grano-diorite	med-grd.,gos-sen,along shear zone	12	52	1	
3	400'E/L48E-54N	chlor.grano-diorite	along shear zone,some chloritization	6	48	1	
4	BL2-41E	granodiorite	c-grd,massive 35% mafics	not analysed			
5	L48E-12S	granodiorite	massive,very f-grd,beside quartz vein	not analysed			
6	L48E-12S	contact rock granodiorite-quartz	jointed 080°T possible pyrite	not analysed			
7	L48E-68N	granodiorite	massive 30% mafics, med-c.grd.	11	32	1	
8	L48E-63+75N	granodiorite	similar to Ash 7	8	47	1	
9	L48E-60N	granodiorite	"	8	44	0	
10	L48E-76N	granodiorite	"	not analysed			
11	L48E-15N	hornblende biotite gneiss	med-grd.with disseminated pyrrhotite & chalcopyrite	306	22	4	94
12	L48E-11+60N	chloritized granodiorite	massive 30% (20% biotite)	180	16	1	
13	L48E-7N	granodiorite	similar to Ash 7	11	26	ND	
14	BL1-48E	granodiorite	"	12	34	1	
15	L48E-12+25S	qtz. granodio-rite,contact	med-grd.join-ted 080°T possible Mo.	24	16	42	

Sample Number	Location	Rock Type	Description	ppm Cu	ppm Zn	ppm Mo
Ash 16	L48E-12+25S	altered granodiorite	massive chloritization	8	16	3
17	BL1-23+60E	granodiorite	massive 50% mafics, lim. stains traces pyrite	86	30	0
18	BL1+23+60E	diorite	mafic rich phase, lath shaped mafics	16	59	0
19	BL1-23+60E	amphibolite	c-g. mafic rock local increase in mafics	128	34	2
20	BL1-23+60E	diorite	massive diorite dike cutting granodiorite	22	20	2
21	L24E-7+90N	chlorite schist	schistose 100°T limonite stains	300	74	3 (Ni-100)
22	L24E-7+90N	hornblende gneiss	some chloritization, dis. pyrrhotite & chalcopyrite	430	96	66 (Ni-122)
23	L24E-7+90N	diorite	mafic rich phase near shear zone	not analysed		
24	L40W-4S	marble	massive white med-grained	30	84	3
25	L40W-8S	skarn	disseminated pyrite calcite stringers	490	22	3
26	L40W-12S	hornblende gneiss	fine-grained lim. staining	15	10	8
27	L40W-16S	quartz	qtz. vein with lim. staining	10	4	1
28	L40W-16S	mica schist	high mafics 50% biotite	21	62	1
29	L40W-52N	schist-diorite contact	diorite shows lineations of mafics	100	96	14

Sample Number	Location	Rock Type	Description	ppm Cu	ppm Zn	ppm Mo
Ash 30	BL2-36+40W	diorite	lath-shaped micas	12	38	1
31	BL2-36+90W	qtz. amphi-bolite contact	qtz. vein cut-ting amphibo-lite	13	11	1
32	BL2-40W	hornblende biotite gneiss	biotite sal-ined along fracture	34	59	ND
33	L4/20W-60N	sheared grano-diorite	med. grd.,gos-sen	46	81	12
34	L4/20W-60N	qtz.mica schist	f-grd. lim. staining	40	85	1
35	L40W-21+50N	amphibolite	c-grd.dike,cut-ting granodio-rite	19	14	ND
36	L40W-38N	gabbro	c-grd.dike cut-ting granodio-rite	24	29	ND
37	L32W-14+40S	mica schist	med-grd. schis-tose limonite stainings	98	100	ND
38	L30E-21N	mica schist	schistose 008^{o}T perhaps sheared granodiorite	37	102	4
39	L16E-5+50N	hornblende biotite gneiss	schistose 330T lim. staining traces pyrite	56	82	4
40	L20E-7N	quartz	vein of quartz cutting grano-diorite	12	6	2
41	L20E-7N	hornblende gneiss	disseminated pyrrhotite lim. stains	132	11	ND
42	L20E-7N	altered grano-diorite	med.grd.,mas-sive limonite staining	180	12	5
43	L48E-15N	marble skarn	green colour fractures,060' pyroxene crys-tals in shear zone	12	7	2

Sample Number	Location	Rock Type	Description	ppm Cu	Zn	Mo
Ash 44	L48E-15N	hornblende gneiss	traces chalcopyrite	180	90	1
45	L16W-12+90N	quartz mica schist	layers of qtz. & mica, lim. stains	61	88	4
46	L55E-27N	granodiorite	med-grd., 30% mafics	16	88	1
47	L4W-26N	mica schist	f-grd., schistose 150°T	20	58	ND
48	L4W-26N	quartz	quartz vein cutting schists	15	6	1
49	L8W-25N	granodiorite	inequigranular some limonite staining	5	15	ND
50	L18-50W/13N	mica schist	schistose 250°T 50% mafics	25	36	8
51	L16W-19+20N	granodiorite	crystals aligned near contact with Yukon Group	8	42	0
52	L16W-15+50N	hornblende gneiss	lim. staining near contact with granodiorite	49	100	2
53	L17+20W-16+50N	granodiorite	massive 30% mafics (10% biotite).	15	42	1
54	L32/50W-13+70S	marble	fracture running 120°T chloritization	31	13	1
55	L32W-14S	hornblende gneiss	chloritized large feldspar crystals	not analysed		
56	L32W-14+60S	qtz. mica schist	inequigranular 125°T near shear zone	81	116	0
57	L32W-21S	marble	c-grd massive white	9	8	9

Sample Number	Location	Rock Type	Description	ppm Cu	ppm Zn	ppm Mo
Ash 58	L9+30W-56N	granodiorite	jointed 40^{o}T,30% mafics	17	31	0
59	L8+60W-62+15N	granodiorite	similar to Ash 58	8	35	1
60	L15+25E-52+40N	granodiorite	"	7	42	2
61	L16E-65N	"	"	8	30	2
62	L16E-72N	"	"	8	43	1
63	L78SE-64N	"	"	8	22	1
64	BL2/11E	"	"	7	38	0
65	L0-69+40N	"	"	8	32	1
66	L1W-31+50N	skarn	traces of pyrite near shear zone	50	12	0
67	L8E-16S	qtz. mica schists	f-grd. schistoses,muscovite and biotite	29	74	2
68	L7+75E-52+25N	granodiorite	similar to Ash 58	11	40	2
69	L8E-62+55N	granodiorite	"	8	50	1
70	L7+80E-67+90N	"	"	8	33	1
71	L7+90E-74+10N	diorite	f-grd. diss. pyrite,lineations of biotite	57	50	2
72	BL2-11+80E	granodiorite	magnetite 30% mafics jointed 049^{o}T	10	42	0
73	L1W-31+50N	hornblende gneiss	some chloritization	40	49	3
74	L1W-31+50N	aplite	very f-grd. high quartz with some mafics chloritized	24	60	30

Sample Number	Location	Rock Type	Description	Cu (ppm)	Zn (ppm)	Mo (ppm)
Ash 75	L9W-34N	granodiorite	similar to Ash 72	9	51	2
76	L3W-5N	marble	in shear zone near a dike	7	8	8
77	L3W-5N	marble	some mafics caught up close to dike	9	8	4
78	L3W-5N	marble	some chloritization next to dike	24	36	ND
79	L3W-5N	mafic dike	very fine grd. strike 235°T	28	62	ND
80	L3W-5N	mafic dike	some large feldspar laths	not analyse		
81	L3W-5N	mafic dike	similar to Ash 79	not analysed		
82	L3W-5N	hornblende gneiss	fine grained N side of dike	11	72	4
83	L3W-6N	mica schist	slightly further from dike	84	90	2
84	L19E-11N	quartz	rusty quartz vein	55	6	1
85	L19E-11N	altered granodiorite	cut by Ash 84 chloritized	34	24	1
86	L16E-1+60S	mica Schist	schistose fine grained	56	64	4
87	L23.50E-15+30S	hornblende gneiss	slightly magnetic	50	70	ND
88	L15+50E-28+50N	marble	fractured and cut by Ash 89	11	12	4
89	L15+50E-25+50N	amphibolite	mafic rick dike	38	36 (Ni 66)	ND
90	L15+50E=25+50N	pegmatite	xenolith surrounded by Ash 88, lim.stain.	23	8	3

Sample Number	Location	Rock Type	Description	ppm Cu	Zn	Mo
Ash 91	L15+50E-25+50N	granodiorite	disseminated pyrite horn-blends chlori-tized	49	36	4
92	L24+50E-5S	gabbro	dike rock mag-netic	not analysed		
93	L23+50E-15S	skarn	fracture 340°T perhaps some pyrite	30	39	2
94	L8E-16S	quartz	quartz vein cutting a mica schist 340°T	48	9	ND
95	L24E-73+90N	granodiorite	30% mafics magnetic	12	36	3
96	L32E-75N	granodiorite	similar to Ash 95	8	28	ND
97	L32E-2+10N	diorite	highly magnetic 60% mafics	52	46	2
98	L32E-4+60N	granodiorite	similar to Ash 95	11	37	2
99	L32E-5S	diorite	lineations of biotites,highly magnetic	6	18	1
100	L48E-57N	chloritized granodiorite	chloritized fractures 240°T slightly mag-netic	10	52	1
101	L40E-50N	gabbro	xenolith caught up in granodiorite	12	84	ND
102	L32E-72N	granodiorite	similar to Ash 95	10	34	ND
103	L41E-49+15N	"	"	14	56	ND
104	L40E-53N	"	"	18	48	ND

Sample Number	Location	Rock Type	Description	ppm Cu	Zn	Mo
Ash 105	L40E-56N	Granodiorite	similar to Ash 95	12	33	1
106	BL2-44E	"	"	10	30	1
107	L20+50E-6+50N	pegmatite	vein in grano-diorite weathered out sulphides	not analysed		
108	L21E-7N	hornblende gneiss	disseminated pyrrhotite traces chalcopyrite	250	13	2
109	L17E-1±30S	altered granodiorite	chloritized in shear zone mafics altered	not analysed		
110	L17E-1+30S	altered granodiorite	larger hornblende laths magnetic	126	26	ND
111	L21E-3S	quartz mica schist	40% mafics schistosity lost due to minor drag folding	24	55	ND
112	L21E-3S	mafic dike	dike cutting Ash 111, strike 220°T	17	31	ND

APPENDIX III

LINE CUTTING INFORMATION

(1) Number of man days required to cut lines	40
(2) Footage cut as cross lines	105,985
(3) Footage cut as Base lines	17,430
(4) Total footage cut	123,415
(5) Average progress per man per day	3,080 feet

(6) 40% above tree line (4000' a s l)

mainly spruce & tag alders below tree line.

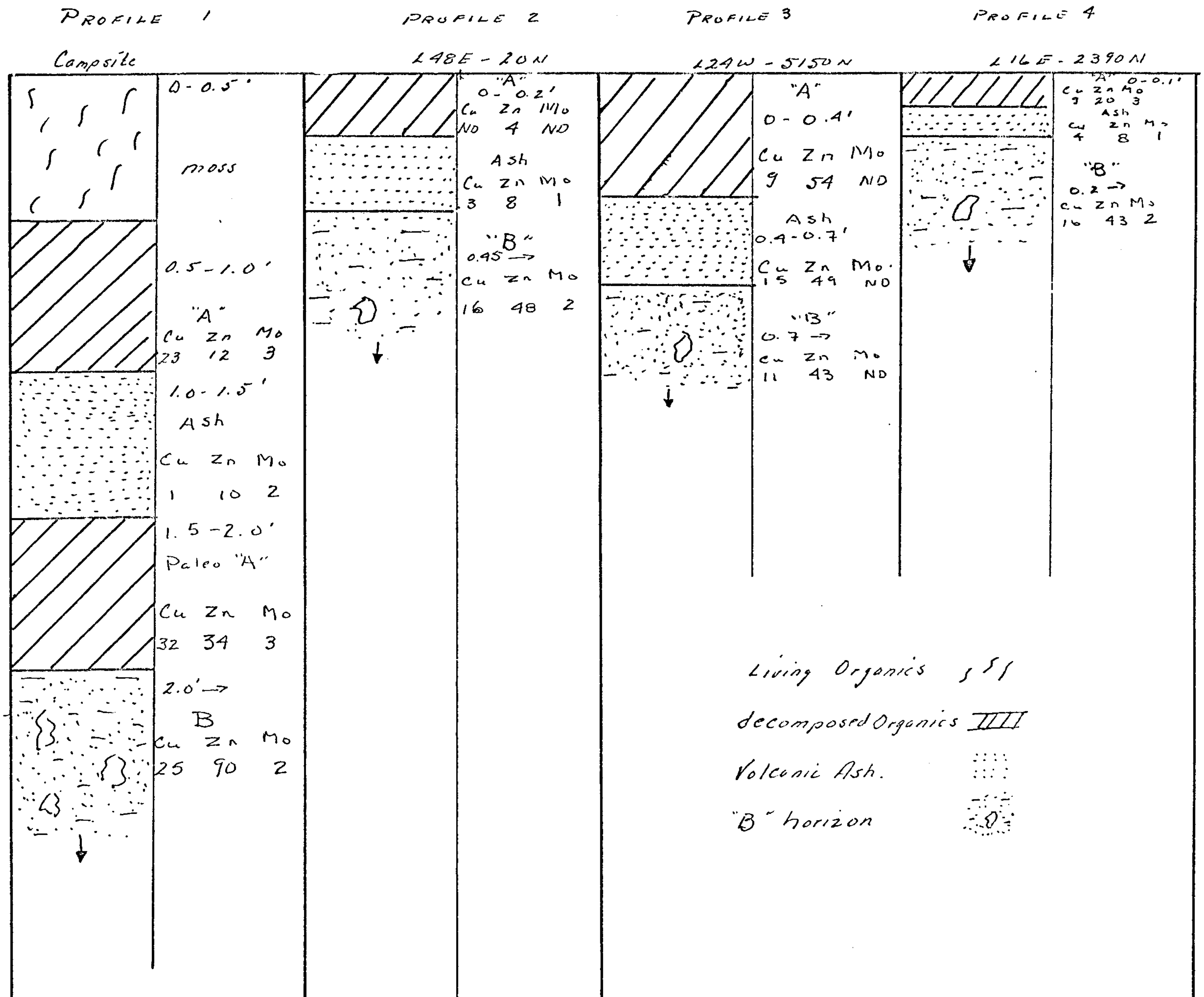
APPENDIX IV

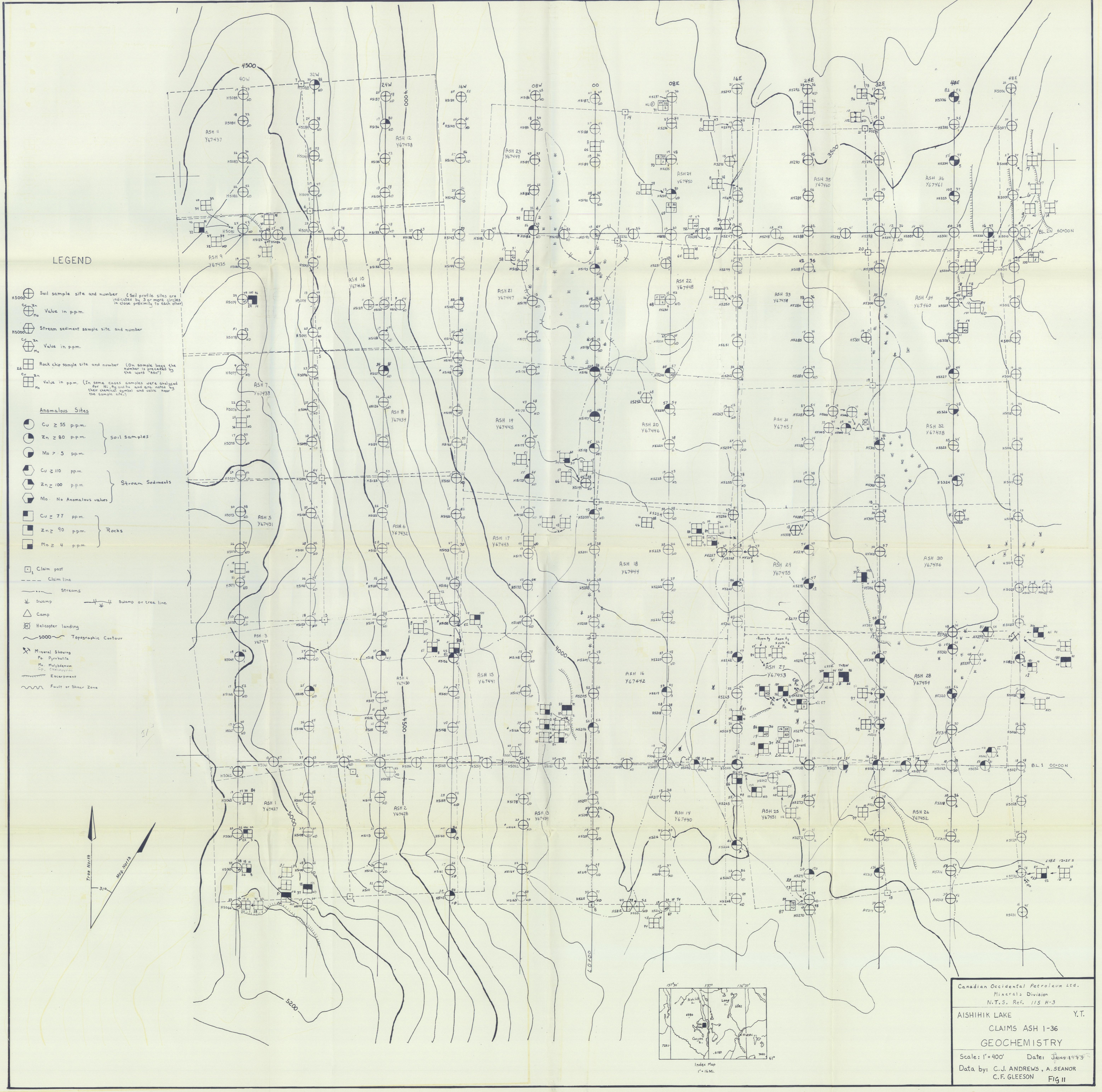
SUMMARY OF GEOCHEMICAL SAMPLES COLLECTED AND ANALYSED

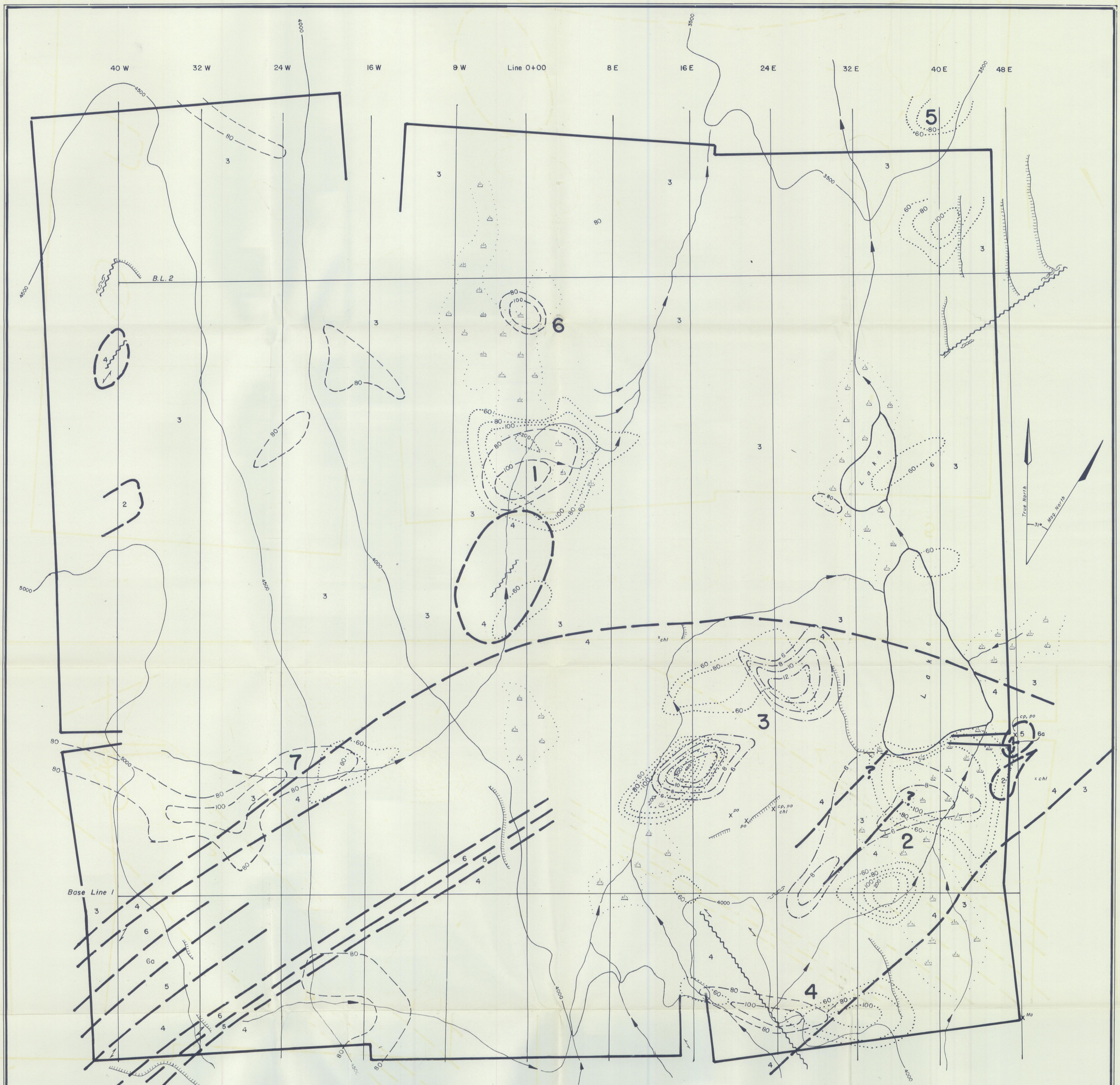
Total number of soil samples collected and analysed	309
Total number of stream sediments collected and analysed	18
Total number of rocks collected and analysed	103
Number of standard samples shipped	6
Total number of samples analysed	436
Total number of determinations (Cu,Zn,Mo)	1315*

* 7 samples also analysed for Ni.

ASH CLAIM GROUP
SOIL PROFILES




LEGEND
H5000 Soil sample site and number (Soil profile sites are indicated by 3 or more circles in close proximity to each other)
Cu Zn Mo Value in p.p.m.
H5000 Stream sediment sample site and number
Cu Zn Mo Value in p.p.m.
26 Rock chip sample site and number (On sample bags the number is preceded by the word "ASH")
Cu Zn Mo Value in p.p.m. (In some cases samples were analysed for Ni, Ag and Au and are noted by their chemical symbol and value near the sample site.)
Anomalous Sites
Cu ≥ 55 p.p.m.
Zn ≥ 80 p.p.m.
Mo > 5 p.p.m.
Soil samples
Cu ≥ 110 p.p.m.
Zn ≥ 100 p.p.m.
Mo No Anomalous values
Stream Sediments
Cu ≥ 77 p.p.m.
Zn ≥ 90 p.p.m.
Mo ≥ 4 p.p.m.
Rocks
Claim post
Claim line
Streams
Swamp
Swamp or tree line
Camp
Helicopter landing
5000 Topographic Contour
Mineral Showing
Po. Pyrrhotite
Mo. Molybdenum
Cp. Chalcopyrite
Escarpment
Fault or Shear Zone
True North
Mag North
Index Map
1" = 16 Mi.
BL 2N 60+00N
BL 1 00+00N
Canadian Occidental Petroleum Ltd.
Minerals Division
N.T.S. Ref. 115 H-3
AISHIHIK LAKE Y.T.
CLAIMS ASH 1-36
GEOCHEMISTRY
Scale: 1" = 400' Date: June 1973
Data by: C.J. ANDREWS, A. SEANOR
C.F. GLEESON
FIG 11



LEGEND

GEOCHEMICAL CONTOURS

	Background Value	Anomalous Value
Cu	18 p.p.m.	55 p.p.m.
Zn	42 p.p.m.	80 p.p.m.
Mo	1 p.p.m.	5 p.p.m.

10 Anomaly Number

SYMBOLS

- Swamp
- Stream
- 4000 Topographic contour
- Property boundary
- B.L. 32 E Base & Picket line
- Scarp
- x[py] Mineral showing -
  - py Pyrite
  - cp Chalcopyrite
  - po Pyrrhotite
  - Mo Molybdenite
- Fault or shear zone
- Schistosity
- Geological boundary, implied
- Gossan
- chl Chlorite alteration

GEOLOGY

Age	No.	Rock
	1	Mafic dike
Cretaceous	2	Diorite
Triassic	3	Granodiorite
Yukon Group Paleozoic	4	Qtz mica schist
	5	Hornblende gneiss
	6	Marble
	6a	Skarn

CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION

115-H-3

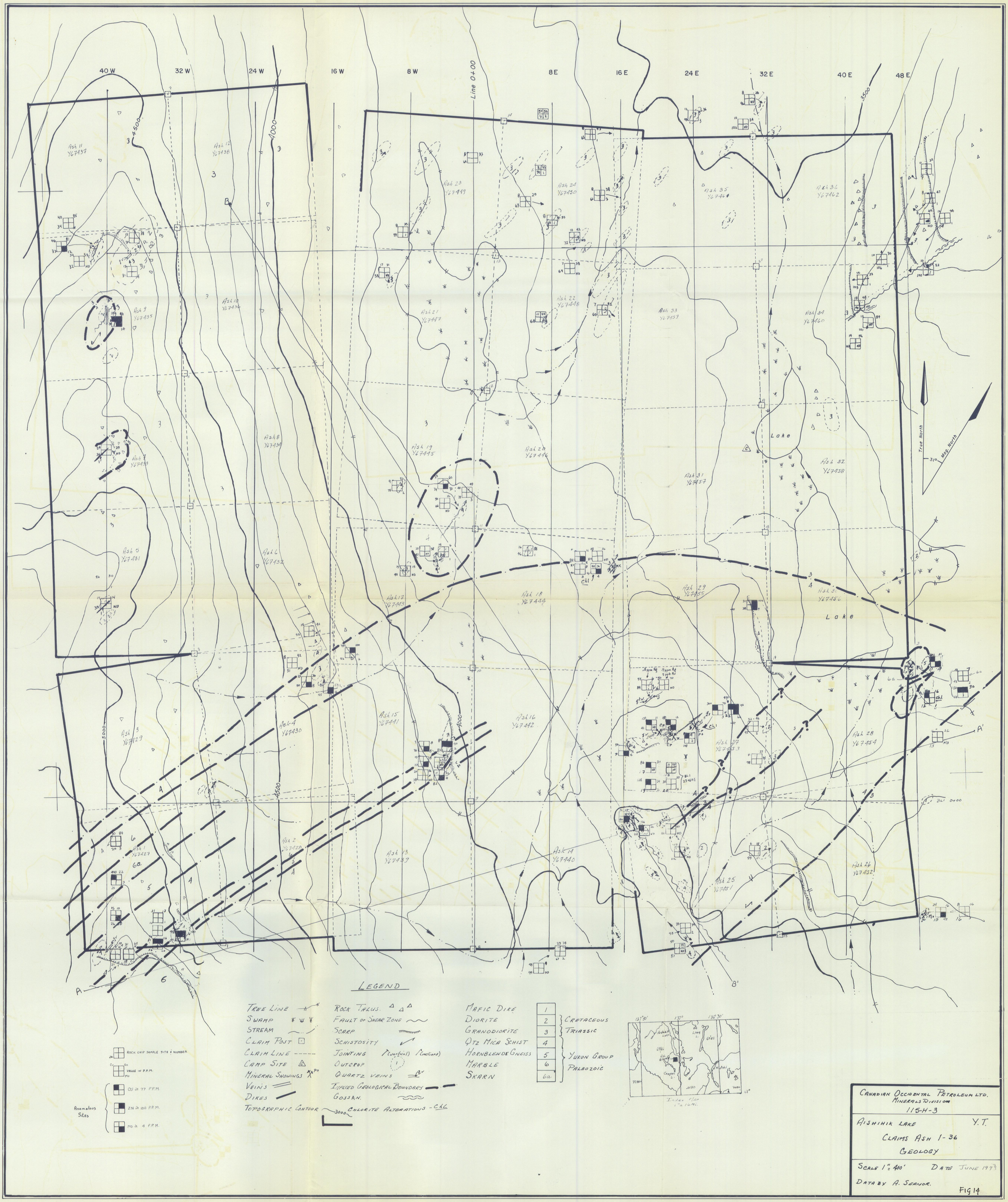
ASH CLAIMS

AISHIHIK LAKE — YUKON TERRITORY

GEOLOGY & GEOCHEMISTRY

400 0 400 800
SCALE IN FEET

Data by - A.SEANOR Fig 12 June 1973


40 W
32 W
24 W
16 W
8 W
Line 0+00
8 E
16 E
24 E
32 E
40 E
48 E
True North
Mag North
Lake
LEGEND
TREE LINE
SWAMP
STREAM
CLAIM POST
CLAIM LINE
CAMP SITE
MINERAL SHOWINGS
VEINS
DIKES
TOPOGRAPHIC CONTOUR
ROCK TALUS.
FAULT or SHEAR ZONE
SCARP
SCHISTOSITY
JOINTING (vertical) (inclined)
OUTCROP
QUARTZ VEINS
IMPLIED GEOLOGICAL BOUNDARY
GOSSAN.
CHLORITE ALTERATIONS - CHL
1 MAFIC DIKE
2 DIORITE
3 GRANODIORITE
4 QTZ MICA SCHIST
5 HORNBLENDE GNEISS
6 MARBLE
6a SKARN
CRETACEOUS
TRIASSIC
YUKON GROUP
PALEOZOIC
ROCK CHIP SAMPLE SITE & NUMBER
Cu Zn Mo VALUE IN P.P.M.
Anomalous Sites
CU ≥ 77 P.P.M.
ZN ≥ 100 P.P.M.
MO ≥ 4 P.P.M.
Index Map 1" = 16 Mi.
CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
115-H-3
AISHIHIK LAKE Y.T.
CLAIMS ASH 1-36
GEOLOGY
SCALE 1" = 400' DATE JUNE 1973
DATA BY A. SEANOR.
FIG 14