

1972 Property Report

800478

AMAX VANCOUVER
OFFICE COPY

TITLE	1972 <u>Coles Creek</u> Program
AUTHOR	D.A. Silversides
DATE	October 1972
COMMODITY	Cu
Location-Area	Smithers
-Mining Division	Omineca
-Coordinates	Latitude 53°31'N Longitude 127°13'W
-N.T.S.	93 E 11
CLASS	Prospect Physical Work

AMAX Vancouver Office

AMAX VANCOUVER
OFFICE COPY

SUMMARY

A program of diamond drilling, geologic mapping, magnetic, geochemical, and induced polarization surveys was carried out on the Coles Creek Copper Property July 28 to September 1, 1972. The program was helicopter supported.

The total cost of the program amounted to \$63,634.00 Canadian. Financing was carried by Westcoast Petroleum Ltd. under a joint venture agreement. Field work was carried out by AMAX personnel.

A rounded figure of \$21.00/foot of diamond drilling was used as assessment costs, sufficient to keep the seventy-one Fab claims in good standing until 1981 and 1982.

Seven holes totalling 2800 feet of BQ wireline methods were drilled. Three holes were located in feldspar-biotite porphyry in the Core Area, one hole immediately west of the feldspar-biotite porphyry, and three holes in the vicinity of the quartz-feldspar porphyry breccia in the western part of the property.

Assay results for copper are as follows:

Hole CC-72-1 (length 633') - 100-150' - .12% Cu average
460-470' - .11% Cu
- remainder of hole assays less than .10% Cu

Hole CC-72-2 (length 408') - 80-100' - .13% Cu
120-160' - .16% Cu
170-180' - .28% Cu
200-220' - .13% Cu
240-260' - .15% Cu
300-310' - .10% Cu
400-408' - .12% Cu
- remainder of hole assays less than .10% Cu

Hole CC-72-3 (length 677') - 280-470' - .14% Cu
- remainder of hole assays less than .10% Cu

Hole CC-72-4 (length 318') - 8' - 27'6" - .11% Cu
27'6" - 52' - .56% Cu
52' - 100'6" - .17% Cu
190' - 210' - .15% Cu
- remainder of hole assays less than .10% Cu

- ii) fine grained porphyry dykes
- iii) aphanitic porphyry dykes

Holes CC-72-4 and CC-72-5 penetrated the quartz-feldspar porphyry breccia in the western part of the property. The breccia appears to be approximately 50 feet thick and consists of angular to rounded fragments of quartz-feldspar porphyry, Hazelton Group tuff, and fine grained feldspar-biotite porphyry, healed by greyish colored quartz. The feldspar-biotite porphyry fragments are similar to the dykes encountered in Hole CC-72-3, and are derived from a dyke outcropping 200 feet west of the drill holes. The cementing quartz is vuggy and contains pyrite, chalcopyrite, and magnetite in blebs up to 1/4" in diameter.

The combined data from these two drill holes and outcrop indicated that locally the breccia is relatively flat lying with an indicated strike of N15°W, and dip of 33°SW. Hole CC-72-7 was drilled 250 feet west of Holes 4 and 5, to intersect the downdip extension of the breccia. However, only Hazelton Group tuffs and basalt dykes were intersected.

Hole CC-72-6 intersected Hazelton Group volcanics and quartz diorite dykes. Hole 6 lies 1200 feet east of the large dyke-like mass of quartz diorite exposed in the western part of the property. It appears that the quartz diorite is a relatively large northeasterly elongated stock with several off-shoot dykes.

The geological mapping, geochemical soil sampling, magnetic, and induced polarization surveys were carried out in the western part of the property. Geologic mapping refined some aspects of the known geology (from 1971), but did not result in a marked change in the overall picture.

The induced polarization survey was carried out using AMAX portable gear, with a dipole-dipole array, 200 feet dipoles, one separation (n=1). Chargeability values of 30 to 60 milli-seconds (implied 3 to 6% by weight total sulphide) were found to occur in southwestward trending zones along the main creek.

A total of 234 soil samples were taken at 100 foot stations along picket lines spaced 400 feet apart, and along the main creek in the southwest part of the property. Samples were analyzed for Cu, Mo, Pb, Zn, and Ag.

Copper results indicate the northeast trending anomaly (80 ppm Cu and greater) in soils determined from previous years work extends southwestward. The highest part of the anomaly (i.e. values ranging up to 2400 ppm) is open to the southwest.

Threshold to anomalous (3 ppm and greater) molybdenum values are coincident with areas anomalous in copper.

A large area of anomalous zinc (160 ppm and greater) and lead (70 ppm and greater) values occur on the southeastern fringe of the area anomalous in copper and molybdenum.

No significant silver anomalies were detected in soils.

Six hundred feet of quartz diorite was chip sampled at 20 foot intervals for copper assay. Values ranged from .03% to .16% Cu.

A study of the Coles Creek deposit is currently being carried out by D.G. MacIntyre at the University of Western Ontario, to be incorporated into a MSc. thesis.

CONCLUSIONS

1. The feldspar-biotite porphyry in the Core Area is a multiple intrusive complex of monzonite(?) composition with three textural variations.

- a) Main stock, approximately 2000 feet x 1500 feet, medium to coarse grained porphyry.
- b) Fine grained feldspar-biotite porphyry dykes.
- c) Aphanitic feldspar-biotite porphyry dykes.

2. Fracturing, alteration, and veining within the margin and fringe of the feldspar-biotite porphyry complex is typical of porphyry coppers.

3. Diamond drilling has not produced viable grades of copper in the Core Area. It is possible that the top of the stock, and perhaps the best tenor of copper has been removed by erosion in the Core Area.

4. The only significant grades of copper obtained to date are in the breccia in the western part of the property. It appears that the breccia is probably irregular in outline.

5. Overburden depths over much of the flat valley floor of the main creek are likely in the vicinity of 60 to 150 feet. This is close to the optimum depth penetration of the portable unit used in the induced polarization survey. Therefore, the sulphide distribution as determined by the induced polarization survey may be more apparent than real.

6. Drilling targets remain to be tested. These include:

- a) The breccia in the west part of the property.
- b) The highest part of the copper anomaly in soils in the western part of the property.
- c) The area north and east of Holes CC-72-2 and 3, in the Core Area.

RECOMMENDATIONS (See Figure 20)

Consideration should be given to determining the extent of the breccia by diamond drilling, by means of short (approximately 400 feet) vertical holes. These should be located north and south of sites CC-72-4 and 5. The copper anomaly in soils in the west part of the property should be tested by an angle hole (-45°) drilled to the northwest.

The area north and east of Holes CC-72-2 and 3 is considered to be a low order target in view of results from the 1972 program. It should be considered only if encouraging results are obtained from the drilling recommended in the area of the breccia and the copper anomaly in soils.

Consideration should be given to carrying out a 4th separation induced polarization survey over the western half of the property, thus giving a more confident picture of the distribution of total sulphides.

INTRODUCTION

General Statement

A program of diamond drilling, geologic mapping, magnetic, induced polarization, and geochemical surveys was carried out on the Coles Creek Copper Property July 28 to September 1, 1972. The program was helicopter supported (see Figure 1 for location and access route).

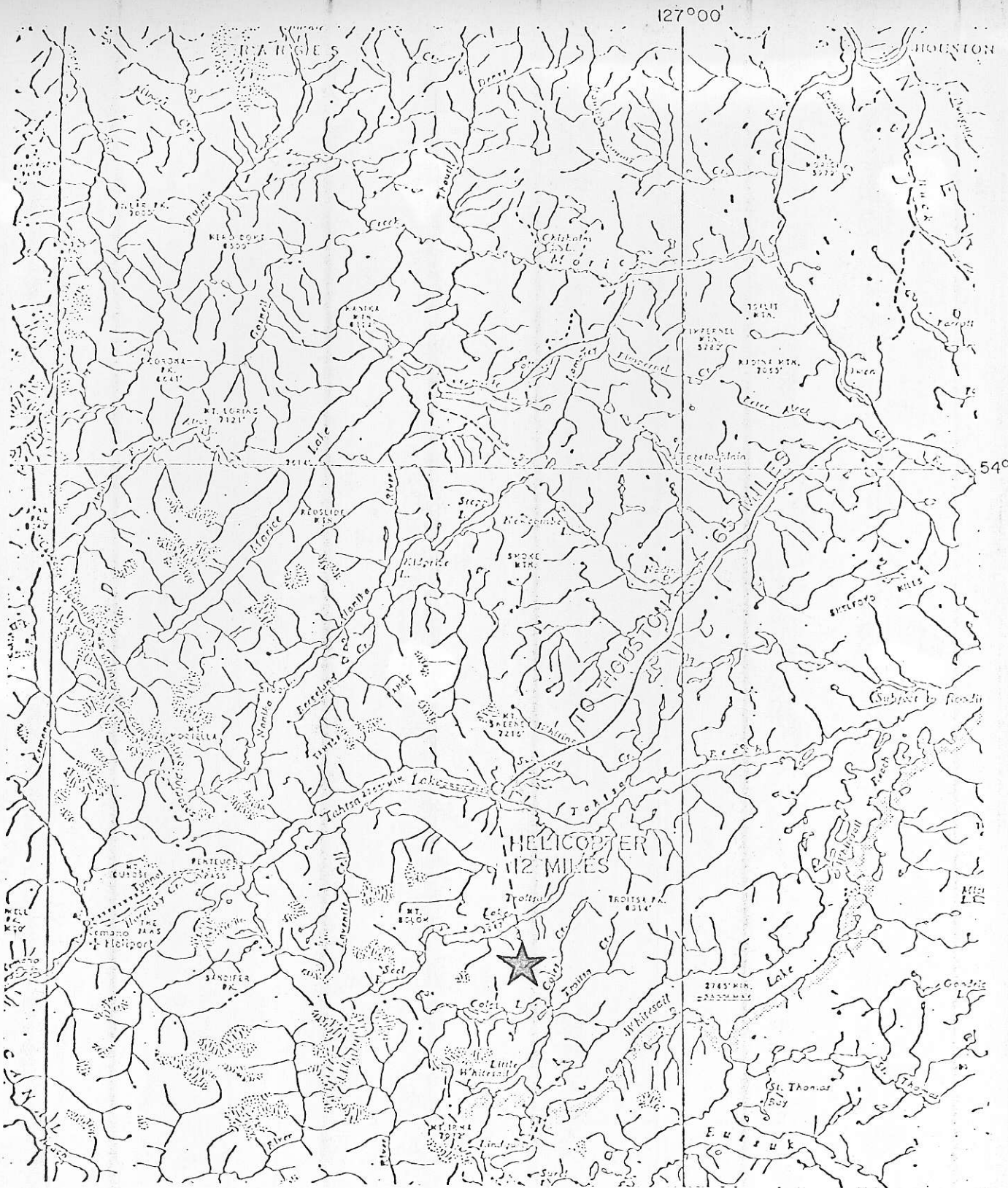
This report contains the results of the 1972 program. It also incorporates data from previous years, in the form of maps. It is recommended that the ⁽¹⁾ 1971 Report be read in conjunction with this report.

Work Done During Program

The following is a summary of work carried out on the property.

- July 24 to 27 - preparing and packing field gear in Smithers
- 26 to 27 - field examination by C.M. Trigg
- 28 to 31 - mobilization, camp construction, preparation of first drill site
- July 29 to August 1 - line cutting, seven line miles cut under contract by Gerald Auger
- Aug. 1 to 23 - diamond drilling by Coates Enterprises Ltd., seven holes totalling 2800 feet, includes mobilization and demobilization
- 12 to 14 - induced polarization survey - approximately seven line miles surveyed in the western part of the property (AMAX portable unit, personnel)
- 15 to 29 - geologic mapping and geochemical soil survey in the western part of the property
- 26 to 27 - outcrop chip sampling - 600 feet of continuous exposure of quartz diorite in the western part of the property sampled in 20 foot intervals

(1) 1971 Coles Creek Property - D.A. Silversides
AMAX Vancouver Office, December, 1971



AMAX POTASH LIMITED
 COLES CREEK COPPER PROPERTY
 OMINECA MINING DIVISION - BRITISH COLUMBIA

LOCATION MAP

SCALE: 1" = 10miles

Aug. 28 to 29 - magnetic survey, seven line miles at 100 foot stations in the western part of the property, Scintrex Fluxgate MF-2 unit

Aug. 30 to
September 1 - demobilization of camp

Analytical work was carried out in AMAX's Burnaby laboratory. Check assays were carried out by Acme Analytical Laboratories Ltd. and Chemex Labs Ltd. of Vancouver.

The property was visited by J.F. Allan and R.A. Barker August 10 to 12, and by C.M. Trigg August 19 to 21.

All drill core is stored on the property. Drill pulps are stored in AMAX's Vancouver laboratory. The camp and drill sites were cleaned up to meet pollution regulations.

The total cost of the program amounted to \$63,634.00 (See Appendix I). The bulk of the cost is for helicopter support (\$18,733.00, see Appendix II) and diamond drilling (\$28,633.00, see Appendix III).

Property Status

The Fab claims of the Coles Creek property total 71. These were regrouped into two groups (A and B) on September 5 in the Smithers recording office.

Assessment work was filed in Smithers on September 7. A rounded figure of \$21.00/feet of drilling was used. This includes drill costs, helicopter support and site preparation. This totalled \$58,800, sufficient to apply eight years assessment to each claim.

Table I summarizes the status of the Fab claims. Figure 2 shows location of the claims, with a division of their status according to data in Table I.

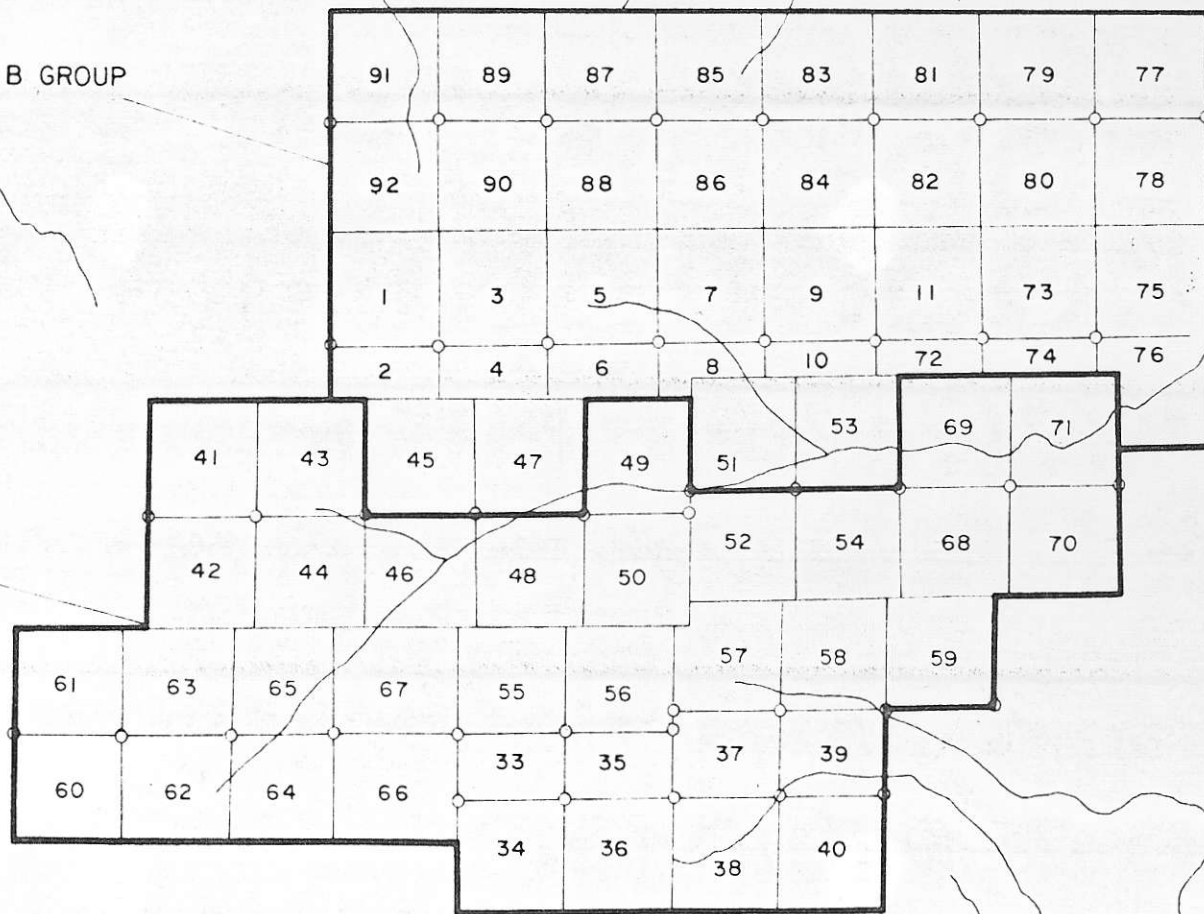
TABLE I

STATUS OF FAB CLAIMS, COLES CREEK PROPERTY

<u>Record Numbers</u>	<u>Claim Numbers</u>	<u>Due Date</u>
<u>A GROUP (Grouped September 5, 1972)</u>		
43461-43468	Fab 33-40	September 9, 1981
80524	41	September 29, 1982
80525	42	September 29, 1981
80526	43	September 29, 1982
80527	44	September 29, 1981
80529	46	September 29, 1981
80531	48	September 29, 1981
80532	49	September 29, 1982
80533	50	September 29, 1981
80535	52	September 29, 1981
80536-80539	54-56	September 29, 1981
80540-80542	57-59	September 29, 1982
93828-93835	60-67	September 30, 1981
100014-100017	68-71	July 14, 1982
<u>B GROUP (Grouped September 5, 1972)</u>		
43429-43439	Fab 1-11	September 9, 1981
80528	45	September 29, 1982
80530	47	September 29, 1981
80534	51	September 29, 1981
80536	53	September 29, 1981
100018-100038	72-92	July 14, 1982

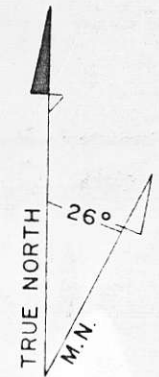
B GROUP

A GROUP



Troitsa Lake
1 mile

COLES CREEK



GROUPING
(1972)

1972 PROGRAM RESULTS

Geologic Mapping

Detailed geologic mapping of outcrops was carried out in the western part of the property. This area was mapped in a cursory manner in 1970 and 1971. The 1972 mapping did not significantly change the general picture in the western section.

The 1972 mapping is incorporated into previous year's work as shown in Figure 3.

Additional information as a result of this work is as follows:

a) Four map units have been added.

Basalt dykes - a fine grained, dark-black dyke, containing several blebs of quartz-calcite up to 1/4 inch in diameter outcrops in the main creek, east of line 88+00E. The dyke strikes northwest. Three of these dykes were intersected in Hole CC-72-7.

Black, feldspar porphyry dykes - fine to medium grained, black, crowded feldspar porphyry dykes were found in the main creek. The dykes cut quartz diorite between lines 84+00E and 88+00E, and between lines 104+00E and 108+00E.

Fine grained, feldspar-biotite porphyry dykes - a single fine grained, feldspar biotite porphyry dyke occurs in outcrop between lines 88+00E and 92+00E in the main creek. What is believed to be the same dyke was intersected in Holes CC-72-4 and CC-72-5, thus the dyke has an apparent northeast strike and apparent dip of 45° to the southeast. The dyke is light red in color, with approximately 40% of the total volume made up of 1/16" in diameter feldspar phenocrysts, and poorly developed biotite books (5%), set in a light red aplitic matrix. Similar rock was intersected in Hole CC-72-3. Narrow stringers of fine grained feldspar-biotite porphyry also occur in outcrops of quartz diorite north of the base line, between lines 84+00E and 92+00E.

Quartz diorite breccia - portions of the quartz diorite in the main creek between lines 84+00E and 88+00E are comprised of a breccia, consisting of subangular fragments of quartz diorite and Hazelton Group up to two feet, set in a dark grey matrix. The fragments make up over 90% of the volume. Trace amounts of disseminated chalcopyrite occur in the breccia.

b) Tourmaline and minor amounts of fluorite occur in the western part of the property south of the base line between lines 72+00E and 84+00E. The fluorite was observed in only one outcrop in quartz diorite. Tourmaline was found to be relatively abundant in Hazelton Group rocks, adjacent and up to 1500 feet away from the quartz diorite. The tourmaline occurs on fractures with pyrite and magnetite, and up to 1/4" crystalline aggregates with magnetite.

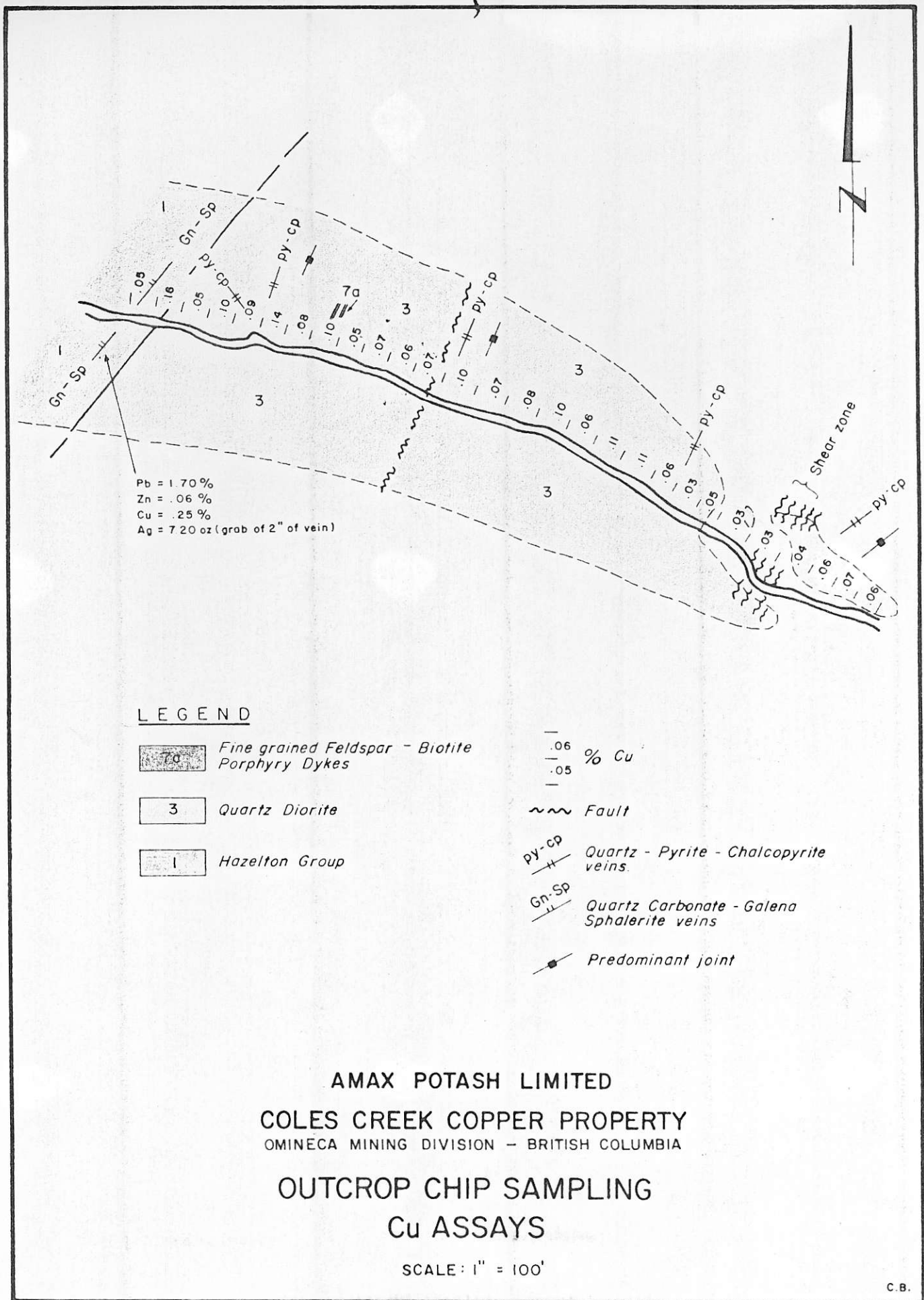
Outcrop Sampling

Six hundred feet of relatively continuous outcrop of quartz diorite located north of the base line between lines 84+00E and 92+00E was chip sampled (see Figure 3 for location). Random chips up to 1 inch in diameter were taken over 20 foot intervals. Each collected sample weighed approximately 15 lbs. Samples were assayed for Cu. Results are shown in Figure 4.

The quartz diorite is cut by 1/8" to 1/2" quartz-pyrite-chalcopyrite veins. The veins have a predominant northeast strike and vertical dip, parallel to the major joint direction. Vein spacing varies from 4 inches to 10 feet. Disseminated chalcopyrite and pyrite occurs in wallrock immediately adjacent to the veinlets. Sericite alteration is confined to vein envelopes.

A narrow (two inch) quartz-carbonate-galena sphalerite vein occurs in Hazelton Group rocks on the western end of the outcrop.

Assay results range from .03% to .16% Cu.



AMAX POTASH LIMITED
 COLES CREEK COPPER PROPERTY
 OMINECA MINING DIVISION - BRITISH COLUMBIA

OUTCROP CHIP SAMPLING
 Cu ASSAYS

SCALE: 1" = 100'

C.B.

Fig. 4

Geochemical Soil Sampling

Geochemical soil sampling coverage was extended in the southwestern part of the property. A total of 234 samples were taken at 100 foot stations along picket lines spaced 400 feet apart, and along the main creek. Samples obtained in the main creek were taken at slope break, immediately above the stream alluvium.

Samples were obtained from the B horizon (Fe enriched) and analyzed in AMAX's Burnaby laboratory. Laboratory procedures were the same as previous analytical techniques on samples collected in years prior to 1972.

Results are given in Figures 5, 6, 7, 8 and 9. Division of values into background, threshold, and anomalous are the same as the 1971 report describes.

<u>Copper</u> (Figure 5)	8- 30	ppm background
	40- 80	ppm background
	81-500	ppm anomalous
	>500	ppm highly anomalous

Copper results of the 1972 sampling indicate that the most westerly of the linear copper anomalies extends southwestward and is still open in this direction. Sampling in the main creek indicates anomalous values in copper over a large part of the western portion of the property.

<u>Molybdenum</u> (Figure 6)	0- 2	ppm background
	3- 4	ppm threshold
	5- 20	ppm anomalous
	>20	ppm highly anomalous

Threshold to highly anomalous values of molybdenum generally occur in areas coincident with anomalous copper.

<u>Zinc</u> (Figure 7)	10-160	ppm background
	161-220	ppm threshold
	>220	ppm anomalous

Zinc results indicate an extensive anomaly from samples in the main creek and on the north facing slope of the south ridge.

<u>Lead</u> (Figure 8)	4- 36 ppm background
	36- 69 ppm threshold
	>69 ppm anomalous

Anomalous lead coincides with the areas of anomalous zinc.

<u>Silver</u> (Figure 9)	.5-1.0 ppm background
	1.5-2.0 ppm threshold
	2.5+ ppm anomalous

Only a few sporadic anomalous values of silver were obtained in the 1972 sampling.

Magnetic Survey

The magnetic survey was extended in the southwestern part of the property. Approximately seven line miles at 100 foot stations were completed along picket lines spaced 400 feet apart. The instrument employed was the same as the 1971 survey, (1) Model MF-2 fluxgate magnetometer.

The results of the survey are shown in Figure 10. Included is the survey carried out in 1971. The survey indicates the large low in the western part of the property is bounded on the northwest and southeast sides by relatively high magnetic relief.

The 0 gamma contour corresponds in places to the margin of the quartz diorite. High readings (2000+ gammas) corresponds to Hazelton Group rocks containing abundant magnetite.

Induced Polarization Survey

Approximately seven line miles were surveyed using AMAX's portable unit. The unit was the same as the 1971 survey, (1) consisting of the IPR-7 Newmont-type receiver and the IPC-7 25 watt battery powered transmitter. One separation (n=1), with 200 foot dipoles in a dipole-dipole array, was used throughout the survey.

(1) 1971 Geophysical Report, Coles Creek Copper Prospect, Amax Vancouver Office, By G.M. DePaoli

The results of the survey are shown in Figure 11, contoured chargeability, and Figure 12, contoured resistivity. The 1972 data has been added to the 1971 data.

The contoured chargeability data indicates an anomaly of 30 milliseconds and greater extending along the main creek. An open anomaly exists in the southwestern part of the property.

The contoured resistivity presents a more complex picture than chargeability. High resistivities (600 to 1600 ohm meters) correspond to Hazelton Group rocks containing abundant magnetite south of the base line in the vicinity of line 80+00E. Relatively low (140 ohm meters to 300 ohm meters) correspond generally to areas underlain by quartz diorite.

Diamond Drilling Results

Seven holes totalling 2800 feet were drilled with DQ wireline equipment. The locations of these holes are shown on Figure 3. As well, hole locations are shown on the geochemical and geophysical maps.

All core was split and sent to AMAX's Vancouver Laboratory for assay. Check assays were carried out on selected samples by Chemex Labs Ltd. and Acme Analytical Laboratories Ltd.

Drill core is stored on the property. A representative suite of specimens is on file in the Vancouver Office.

Drill logs of individual holes are presented in Appendix IV. Vertical sections of the holes are given in Figures 13, 14, 15, 16, 18 and 19.

Hole CC-72-1 (See Figure 13)

Hole CC-72-1 was drilled to test the copper grade in the feldspar-biotite porphyry and the coincident subtle magnetic and apparent high chargeability anomalies. The pertinent geology of this hole is as follows:

0- 67' Overburden

67-573'6" Medium grained, feldspar-biotite porphyry, cut by

aphanitic feldspar-biotite porphyry dykes. Patchy to pervasive K-feldspar-biotite-clay alteration, abundant pyrite (3-8% estimated by volume)

573'6"-611' Medium to coarse grained feldspar-quartz-biotite porphyry

611 -633' Medium grained feldspar-biotite porphyry, pervasive K-feldspar-biotite-clay alteration

The medium grained feldspar-biotite porphyry and the aphanitic feldspar biotite porphyry are cut by two types of veins:

Type I - stockworks of varying abundance (1/4" to 3" vein spacing) of quartz-pyrite-magnetite-chalcopyrite veinlets. Patchy to pervasive K-feldspar and biotite alteration associated. Feldspar phenocrysts are altered to clay in zones of intense veining.

Type II - single to multiple veinlets from 1/4" to 2" thick, at steep angles to core axis (60° to 80°). Veins are quartz-pyrite-chalcopyrite-trace of molybdenite. Sericite envelopes occur on vein margins.

Hole CC-72-1 intersected an estimated 3 to 5% pyrite (by volume) throughout its entire length. The interval of feldspar-quartz-biotite porphyry (quartz monzonite porphyry) is pervasively sericitized, with an estimated 5% to 8% pyrite content, but contains no type I and II veinlets.

The pertinent assay data is as follows:

100-150'	.12% Cu
460-470'	.11% Cu

Remaining core - .01% to .09% Cu and .001% to .009% MoS₂.

Hole CC-72-2 (See Figure 14)

Hole CC-72-2 was drilled to test the inner fringe of the arcuate-shaped chargeability anomaly (see Figure 11) over the Central Core area. The pertinent assays obtained are as follows:

80-100'	.13% Cu
120-160'	.16% Cu
170-180'	.28% Cu
200-220'	.13% Cu

240-260'	.15% Cu
300-310'	.10% Cu
400-408'	.12% Cu

Remainder of the hole assays less than .10% Cu.

The pertinent geology is as follows:

- 0- 60' Overburden (clay-boulder till)
- 60-408' Feldspar-biotite porphyry
- 64-136' Pervasive sericite alteration of porphyry. Porphyry cut by pyrite-quartz-tourmaline-chalcopyrite-minor bornite veinlets at high angles (60° - 80°) to core axis. 8 to 15 veinlets per 10 foot section of core.
- 136-408' Sericite patchy, confined to vein margins. Clay-chlorite alteration is pervasive to 208', patchy to 408'.

Hole CC-72-2 did not intersect any Type I veining.

Hole CC-72-3 (See Figure 15)

Hole CC-72-3 was drilled in the western part of the Core Area at an angle of -70° to the southwest in order to test any lateral change. Pertinent assay data is as follows:

280-470'	.14% Cu
----------	---------

Remainder of hole $<0.1\%$ Cu, .001% to .003% MoS_2

The pertinent geology is as follows:

- 0 - 80' Overburden - clay boulder till
- 80 -321'6" Medium to coarse grained feldspar-biotite porphyry, cut by stockworks of quartz-pyrite-magnetite-chalcopyrite, with K-feldspar, biotite-clay alteration (Type I veining), and quartz-pyrite-sericite-chalcopyrite-molybdenite veinlets (Type II veining).
- 321'6"-435' Dyke swarm of fine grained feldspar-biotite porphyry (micro porphyry) cutting coarse grained feldspar biotite porphyry. Pervasive K-feldspar alteration.
- 435 -482' "Micro porphyry" dyke - pervasive K-feldspar-biotite alteration.
- 482 -677' Coarse grained, feldspar-biotite porphyry.

Type I and Type II veining is very common down to core footage 482 feet. Veining becomes more sporadic after 482 feet and the coarse grained feldspar-biotite porphyry is relatively unaltered.

Copper grades show a marked increase with the presence of the fine grained feldspar-biotite porphyries. It appears that the feldspar-biotite porphyry stock in the Central Core area is a complex, being comprised of a main body of coarse grained porphyry cut by aphanitic porphyry (Hole 1) and fine grained porphyry dykes (Hole 3). The general trend of the dykes is unknown due to limited data. Similarity of mineralogy (bulk composition of monzonite?) of all three porphyries suggest they are related to a common magmatic event.

Hole CC-72-4 (See Figure 16)

Hole CC-72-4 was drilled to test the outcrop of breccia in the western part of the property.

Pertinent assay data is as follows:

8' - 27'6"	.11% Cu
27'6"- 52'	.56% Cu
52' -100'6"	.17% Cu
190' -210'	.15% Cu

Remainder of the hole assays less than .10%.

The hole intersected the following rock types:

0' - 8'	Overburden
8' - 27'6"	Hazelton Group
27'6"- 52'	Breccia
52' - 68'	Fine grained, feldspar-biotite porphyry
68' - 87'8"	Breccia
87'8"-100'6"	Fine grained, feldspar-biotite porphyry
100'6"-318'	Hazelton Group

The breccia consists of angular to rounded fragments of quartz feldspar porphyry, Hazelton Group tuff, and fine grained, feldspar-biotite porphyry, healed by greyish colored quartz.

The fragments are predominantly quartz-feldspar porphyry, and are pervasively sericitized.

The cementing quartz is vuggy and contains pyrite, chalcopyrite, and magnetite in blebs up to 1/4" in diameter. Rare

quartz-pyrite-chalcopyrite veins cut the breccia. Magnetite has in places been converted to hematite.

The Hazelton Group is cut by quartz-pyrite-magnetite veinlets with blebs of chalcopyrite. Veining is the most abundant adjacent to the breccia. Chlorite alteration is patchy, and generally most prevalent on vein margins.

Hole CC-72-5 (See Figure 16)

Hole CC-72-5 was drilled from the same set-up as Hole 4, in order to determine the local attitude of the breccia.

Pertinent assay data obtained is as follows:

6' - 60'6"	.60% Cu
60'6"- 75'3"	.08% Cu
75'3"-140'	.16% Cu

The hole intersected the following rock types:

0	-	6' Overburden
6	-	27'6" Hazelton Group
28	-	60'6" Breccia - same as Hole 4
60'6"-	75'3"	Fine grained, feldspar biotite porphyry
75'3"-	83'6"	Breccia
83'6"-	140'	Hazelton Group

No changes in rock types from that obtained in Hole 4 were encountered.

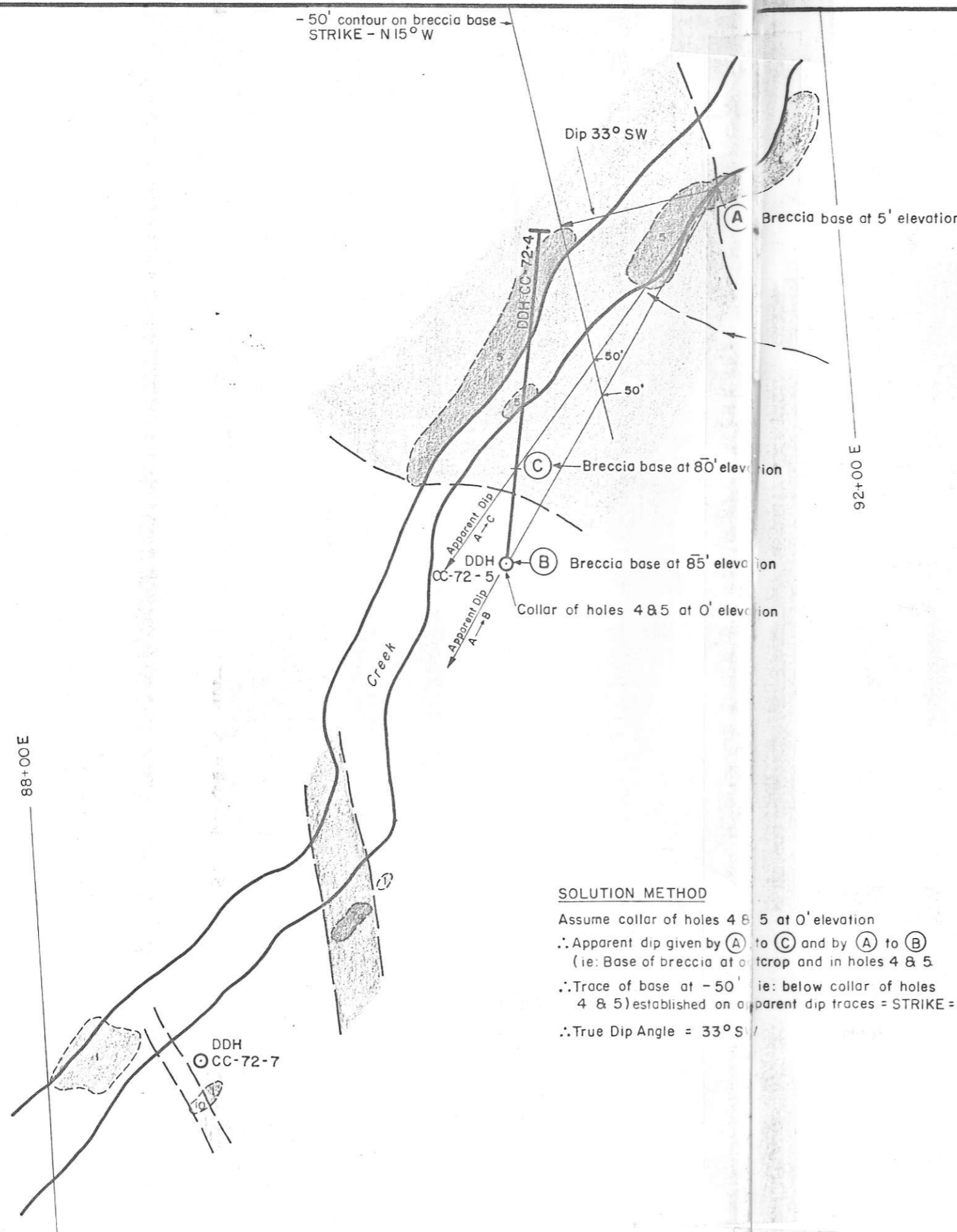
Data from Holes 4 and 5, and from outcrops (see Figure 17) indicates that in the immediate vicinity of the holes, the breccia strikes N15°W and dips 23°SW.

Hole CC-72-6 (See Figure 18)

Hole CC-72-6 was drilled in the western fringe of the Core Area. Pertinent assay data is as follows:

230-240'	.12% Cu
260-270'	.11% Cu
290-300'	.29% Cu

Remainder of the hole assays less than .10% Cu.



LEGEND

- 10 Basalt Dyke
- 70 Fine grained Feldspar - Biotite Porphyry Dykes
- 5 Quartz - Feldspar Porphyry Breccia
- 1 Hazelton Group

SOLUTION METHOD

Assume collar of holes 4 & 5 at 0' elevation
 ∴ Apparent dip given by (A) to (C) and by (A) to (B)
 (ie: Base of breccia at outcrop and in holes 4 & 5)
 ∴ Trace of base at -50' (ie: below collar of holes 4 & 5) established on apparent dip traces = STRIKE = N 15° W
 ∴ True Dip Angle = 33° S

AMAX POTASH LIMITED
 COLES CREEK COPPER PROPERTY
 OMINICA MINING DIVISION - BRITISH COLUMBIA
SOLUTION of ATTITUDE of BRECCIA
 in VICINITY of DDH's CC-72-4 & 5

SCALE: 1 = 50'

Fig. 17

The following rock types were intersected:

0-142'	Overburden
142-194'	Hazelton Group
194-206'	Quartz diorite
206-275'	Hazelton Group
275-285'	Quartz diorite
285-293'	Hazelton Group
293-312'	Quartz diorite
312-326'	Hazelton Group

Hazelton Group rocks are cut by narrow quartz-pyrite-magnetite veinlets, spaced 2 to 8 inches apart. Sporadic quartz-pyrite-chalcopyrite veinlets with sericite envelopes are present in the quartz diorite.

Hole 6 is located 1200 feet east of the nearest quartz diorite outcrop. Intersections of this rock type in Hole 6 suggests it is a relatively large stock with several off-shoot dykes.

Hole CC-72-7 (See Figure 19)

Hole CC-72-7 was drilled 250 feet west of Holes 4 and 5 to test the down dip extension of the breccia. No breccia was intersected, indicating either:

- a) it is displaced by faulting
- b) the breccia is irregular.

All assay results ran less than .10% Cu

Rock types intersected are as follows:

0	- 8'	Overburden - stream boulders, sand
8	- 67'	Hazelton Group
67	- 94'6"	Basalt dyke
94'6"	-103'6"	Hazelton Group
103'6"	-118'6"	Basalt dyke
118'6"	-293'6"	Hazelton Group
293'6"	-298'	Basalt dyke

Hazelton Group tuffs and andesite flows are cut by hairline to 1/8" quartz-pyrite-magnetite-minor chalcopyrite veinlets, having 1 to 4 inches spacing. The basalt dykes cut the veining.

Check Assays

Check assays on selected samples were carried out by Chemex and Acme Laboratories. Table II shows their comparison with AMAX laboratory results. AMAX results have good correspondence with results by Chemex and Acme.

Au and Ag Assays

Selected samples were assayed for Au and Ag by Chemex Labs Ltd. Results are shown on Table III. The only appreciable gold and silver values detected are from Hole CC-72-5, footage interval 40 - 50 feet. This interval contains 1.02% Cu (1.16% from AMAX assay).

AMAX Vancouver Office

October, 1972

D.A. Silversides

CHECK ASSAYS - COLES CREEK DRILL CORE

Hole	Footage	Sample	Original		Acme		Chemex	
			MoS ₂ %	Cu%	MoS ₂ %	Cu%	MoS ₂ %	Cu%
1	67 - 70	33651	(.001)	.08	.003	.07		
	140 - 150	33659	.003	.12	.003	.11		
	380 - 390	33683	.003	.09	.003	.08		
	460 - 470	33691	.002	.11	.002	.10		
2	80 - 90	33710		.14				.13
	90 - 100	33711		.12				.12
	100 - 110	33712		.06				.05
	110 - 120	33713		.09				.09
	120 - 130	33714		.19				.18
	130 - 140	33715		.18				.17
	140 - 150	33716		.15				.15
	150 - 160	33717		.13				.09
	160 - 170	33718		.09				.09
	170 - 180	33719	.002	.28	.001	.26		
	280 - 290	33730		.03	.001	.03		
	3	210 - 220	33755	.001	.07	.001	.11	
280 - 290		33763		.11				.10
290 - 300		33764		.13				.12
300 - 310		33765		.10				.09
310 - 320		33766		.10				.09
320 - 330		33767	.001	.18	.002	.17		
330 - 340		33768	.001	.44	.002	.43		
340 - 350		33769		.14				.13
350 - 360		33770		.14				.13
440 - 450		33779	.003	.20	.002	.21		
4		20 - 27.5	33804		.10			
	27.5 - 37.5	33805		.60	.022	.58		
	37.5 - 47.5	33806		.55		.51		
	47.5 - 52	33807		.52	.023			.50
	52 - 60	33808		.10				.09
	60 - 68	33809		.16				.14
	68 - 78	33810		.12				.11
	78 - 88	33811		.39				.34
5	6 - 10	33835		.10				.09
	10 - 20	33836		.29				.28
	20 - 28	33837		.24				.22
	28 - 40	33838		.68	.007	.67		
	40 - 50	33839		1.16				1.02
	50 - 60.5	33840		.78	.020	.76		
	60.5 - 70	33841		.08				.07
	70 - 75.25	33842		.09				.09
	75.25 - 83.5	33843		.45				.43
AMAX Standards	33842A		.42	.017	.45		.46	
	33844A		.55	.031	.55		.56	

TABLE III
Au, Ag ASSAYS (By Chemex Labs Ltd.)

Hole	Footage	Sample No.	% Cu	Oz/Ton Ag	Oz/Ton Au
2	80 - 90	33710	0.13	0.01	<0.003
	90 - 100	33711	0.12	<0.01	<0.003
	100 - 110	33712	0.05	0.01	<0.003
	110 - 120	33713	0.09	<0.01	<0.003
	120 - 130	33714	0.18	0.03	<0.003
	130 - 140	33715	0.17	0.03	<0.003
	140 - 150	33716	0.15	0.03	<0.003
	150 - 160	33717	0.09	0.01	<0.003
	160 - 170	33718	0.09	<0.01	<0.003
3	280 - 290	33763	0.10	0.01	<0.003
	290 - 300	33764	0.12	0.03	<0.003
	300 - 310	33765	0.09	0.03	<0.003
	310 - 320	33766	0.09	0.01	<0.003
	340 - 350	33769	0.13	<0.01	<0.003
	350 - 360	33770	0.13	<0.01	<0.003
4	20 - 27.5	33804	0.09	0.03	<0.003
	47.5 - 52	33807	0.50	0.04	<0.003
	52 - 60	33808	0.09	0.03	<0.003
	60 - 68	33809	0.14	0.09	<0.003
	68 - 78	33810	0.11	0.01	<0.003
	78 - 88	33811	0.34	0.06	<0.003
5	6 - 10	33835	0.09	0.03	<0.003
	10 - 20	33836	0.28	0.06	<0.003
	20 - 28	33837	0.22	0.04	<0.003
	40 - 50	33839	1.02	0.15	0.008
	60.5 - 70	33841	0.07	0.03	<0.003
	70 - 75.25	33842	0.09	0.03	<0.003
	75.25 - 83.5	33843	0.43	0.06	<0.003
AMAX		33842A	0.46	0.12	<0.003
Standards		33844A	0.56	0.07	<0.003

APPENDIX I

SUMMARY OF TOTAL PROJECT COSTS

ADMINISTRATIVE EXPENSES

8601 - Staff salaries, field management and report writing by D.A. Silversides.....	\$ 3,687.50
8610 - Fringe costs of 10.33% on above.....	380.92
8602 - Wages - temporary field personnel.....	3,601.01
8610 - Fringe costs on above temporary personnel.....	223.00
8602 - Wages - temporary drafting personnel.....	657.07
8610 - Fringe costs of drafting personnel.....	36.05
8620 - Telephone.....	137.70
8622 - Postage.....	47.00
8626 - Reproduction of Maps.....	197.31
8631 - Office/drafting supplies.....	102.20
8658 - Field personnel aviation insurance.....	248.70
SUB TOTAL	\$ 9,318.66

FIELD EXPENSES

8680 - Shipping of field gear.....	\$ 364.60
8681 - Drilling Expense.....	28,633.20
8683 - Line Cutting.....	875.00
8684 - Helicopter Charter.....	18,733.50
8689 - Materials and Supplies.....	773.30
8690 - Maintenance of Equipment.....	77.37
8691 - Assay Costs.....	693.00
8692 - Camp Board and Accommodation.....	956.40
8694 - Project Travel Expenses.....	369.30
8696 - Fees for recording assessment work.....	2,840.00
SUB TOTAL	\$ 54,316.00

TOTAL EXPENDITURES \$ 63,634.66
=====

APPENDIX II

1972 HELICOPTER COSTS

COLES CREEK PROPERTY - 1972 HELICOPTER COSTS

Date	Machine	Hours:Minutes	Used For	Cost
July 28, 1972	206	4:45	Move camp gear, AMAX personnel - Tahtsa Reach - Coles Creek	\$1,201.75
Aug. 1, 1972	S-58-T	6:00	Move drill equipment from Troitsa Lake to Coles Creek	\$3,750.00
Aug. 2, 1972	206	1:40	Camp supply from Smithers	\$ 430.01
Aug. 6, 1972	S-58-T	3:15	Move drill - Hole #1 to Hole #2	\$2,063.75
Aug. 8, 1972	S-58-T	2:30	Move drill - Hole #2 to Hole #3	\$1,587.50
Aug. 10, 1972	206	2:00	Bring in I.P. crew - 30 mins. Bring in R.A.Barker, J.F.Allan - 1:30. Charged to #005	\$ 129.00
Aug. 12, 1972	S-58-T	2:45	Move drill - Hole #3 to Hole #4	\$1,746.25
Aug. 15, 1972	204	2:35	Move drill - Hole #5 to Hole #6	\$1,330.40
Aug. 19, 1972	S-58-T	1:30	Bring in mud	\$ 952.50
Aug. 20, 1972	204	2:45	Move drill - Hole #6 to Hole #7	\$1,416.25
Aug. 23, 1972	204	6:10	Move drill equipment, Coates personnel to Tahtsa Reach	\$3,114.18
Sept. 1, 1972	206	4:00	Move camp, AMAX personnel to Tahtsa Reach	\$1,012.00

Helicopter Rates: 206 - \$258.00/hr.
 204 - \$515.00/hr.
 S-58-T - \$635.00/hr.

NOTE: Each helicopter trip into Coles Creek involves 1 hour 30 minutes average ferry time, from Smithers and return.

TOTAL \$18,733.59

=====

APPENDIX III

DIAMOND DRILL COSTS