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by Barringer Research Limited

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INTRODUCTION

The following report deals with geophysical, geological and geochemical surveys carried out on the Minex Development Limited property in the Highland Valley area, B.C. The work was performed by Barringer Research Limited on behalf of Canadian Superior Exploration Limited who have the claims under option from Minex.

Barringer Research is a Toronto-based Company providing a complete range of research and consulting services for the exploration industry. The reports written by Barringer staff form an essential part of this present report.

The surveys were carried out during the period May 23rd to August 12th, 1968. Starting first with the preparation of a cut grid suitable for I.P. surveys, the geochemical soil sampling programme then began with four men doing the actual sampling under Barringer Research staff geologist, J. Murphy. The I.P. survey started soon after the commencement of the soil sampling, the crew consisting of four men led by Barringer geophysicist, R. Caven.

The grid covered the whole property as outlined in 5-200-1 opposite.

METHODS USED IN SURVEYS

(a) Induced Polarization Survey

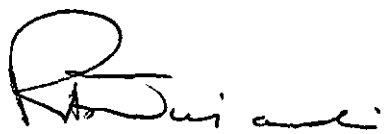
The equipment used was a Huntec 7.5 KVA high-powered pulse transient system with a 1½ second current-on time, followed by a 400 millisecond reading period. The primary coverage was effected with a pole-dipole electrode array with an 'a' spacing of 200 feet and with the distance to the on-line current electrode at 200 feet (n=1) and 400 feet (n=2) alternately. Survey lines were 400 feet apart over most of the grid. Some traversing was carried out with an n=4 (or 800 feet) spacing in follow-up investigations. In addition, four depth soundings were undertaken employing an expanding three-array. The field work was completed in the period June 8th - August 12th, 1968 by a four-man crew led by geophysicist, Mr. Roger Caven. No major difficulties in either equipment or ground contact conditions were encountered during the operation. A total of 22 line miles of grid coverage was completed, this figure not including any multitraversing of the same section that was done.

Further details of the survey are given in the accompanying report by Barringer Research.

(b) Geochemical Survey

The soil samples were collected at 100-foot intervals on lines 400 feet apart and totalled 1696 in number. All the lines of the Minex grid were sampled. The samples were taken from the "B" soil horizon occurring immediately below the surface A zone of humus and leaching. The depth of the samples varied from 6 to 12 inches, each sample being taken by means of a stainless-steel tube auger or hammer-mattock. The soil type was mainly a reddish-brown, sandy loam or clay. Organic matter was carefully removed from each sample.

The samples were analyzed for copper and molybdenum by Barringer Research Limited using the following methods:- first, the soil sample was air dried and then screened through an 80 mesh nylon screen and the fines collected. In the procedure for copper, a sample of the fines was digested with fuming perchloric acid for four hours; the siliceous sediment was allowed to settle and the solution then diluted with water. An aliquot was then taken of the solution and analyzed for copper using an atomic absorption spectrophotometer utilizing carefully prepared standards for calibration. In the method for molybdenum, a sample of the fines was taken and fused with a sodium carbonate/sodium chloride/potassium nitrate flux until frothing ceased. The fused mass was leached with water and an aliquot taken and mixed with a measured amount of hydroxylamine hydrochloride. Half a millilitre of a zinc dithiol solution was then added and the mixture shaken to develop a green colour in the dithiol with an intensity depending on the concentration of the molybdenum present. The colour developed was visually compared with a set of similarly prepared standards and the content of the unknown computed from the value of the matching standard.



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Canadian Superior Exploration Limited

GEOLOGY AND GEOCHEMISTRY OF THE MINEX PROPERTY
HIGHLAND VALLEY, B.C.
FOR
CANADIAN SUPERIOR EXPLORATION LIMITED
VOLUME I

PREPARED BY

BARRINGER RESEARCH LIMITED
304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA

OCTOBER - 1968

INTRODUCTION

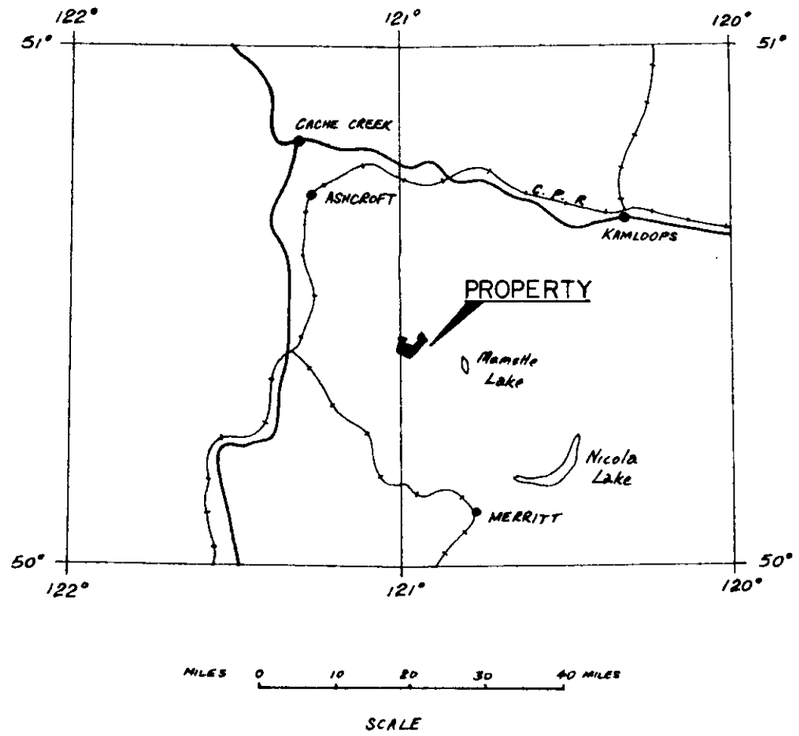
The Minex Property is located in south central British Columbia approximately 35 miles by road southeast of the town of Ashcroft. Access is by paved road from Ashcroft to the Bethlehem Copper junction and by dirt road from this point to the Minex ground. The unpaved section, about seven miles in length, is rough and poorly maintained, but quite passable to four wheel drive vehicles during the summer months.

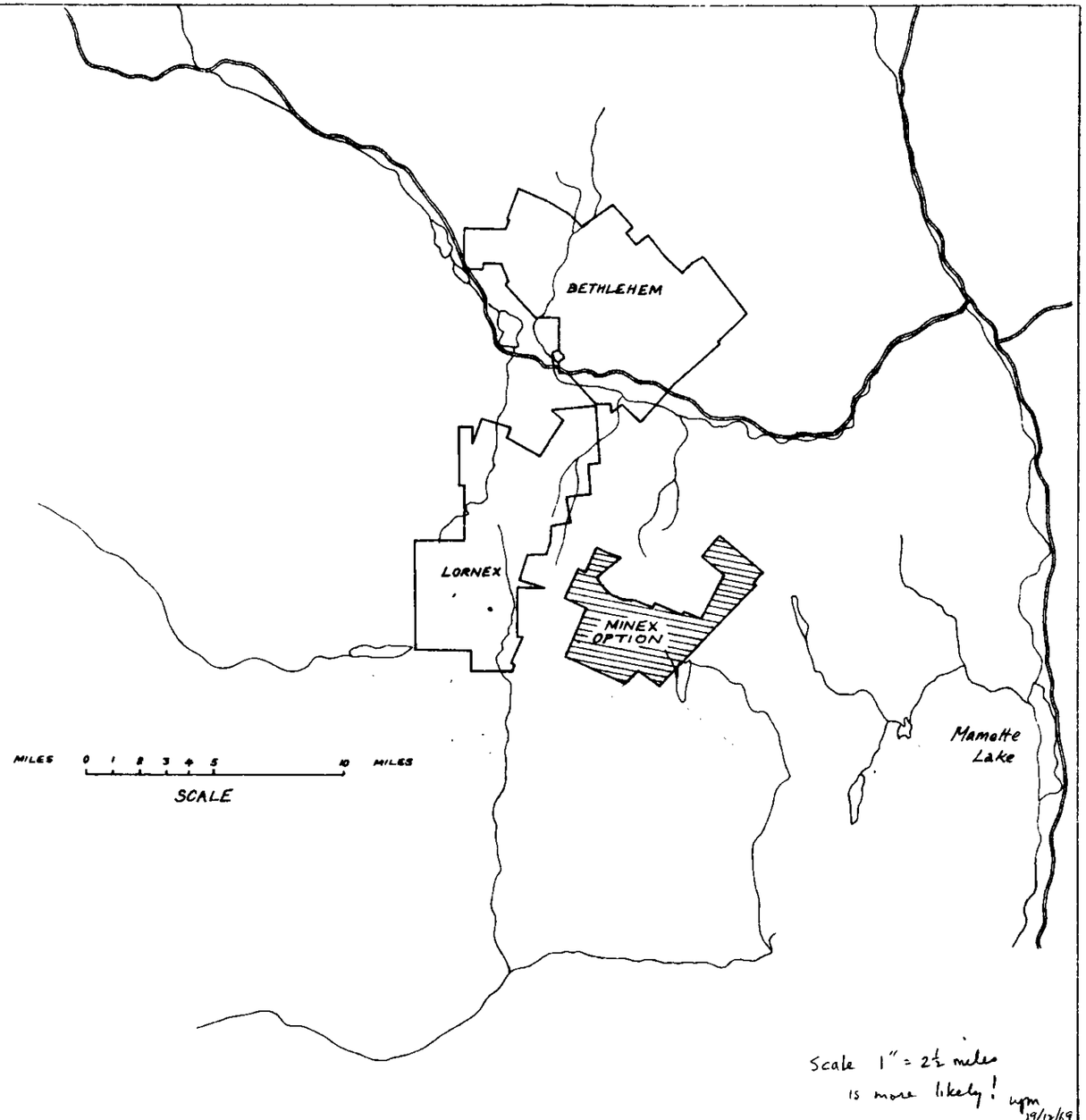
Ashcroft is situated on the east side of the Thompson River, a distance of four miles east of the Trans-Canada Highway. The main line of the Canadian Pacific Railway passes through the town while the Canadian National main line follows the opposite bank of the Thompson. From Vancouver to Ashcroft is a distance of 215 miles by highways 401 and 1. Kamloops is 60 miles east of Ashcroft via highways 1 and 97.

Principal agricultural activities are cattle ranching and the raising of fodder crops. Irrigation permits the harvesting of several crops per season. Mining activities make a significant contribution to the local economy. Ashcroft serves as townsite for employees of Bethlehem Copper and has a current population of approximately 800 people.

The Minex Property lies within the Kamloops Mining Division and consists of 34 claims grouped to give a "u" shaped property outline around the summit of Gnawed Mountain (Dwg. No. 5-200-1). Overall dimensions of the property are approximately two and a half miles by two miles. Geologically, the property lies near the centre of the Guichon Creek batholith.

Much prior work has been done on the Minex ground by a number of different groups. This work includes diamond and percussion drilling, trenching, geological mapping, geochemical sampling and an induced polarization survey. Results have proven a large area of low grade copper mineralization and indicated





N

A

Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

LOCALITY PLAN

SEPT. 1968 | DWG. 5-208-1

other areas of potential interest. The purpose of current work was to conduct a comprehensive and independent evaluation of the entire property and to reassess the results of previous work in the light of new data thus acquired.

Geological and geochemical work was conducted by a five man crew, four of whom devoted full time to the latter phase of the work. The entire property was mapped geologically on a scale of 1 inch equals 200 feet. The grid lines were used for primary control, pace and compass as secondary control. Much of the topography and culture of the property was mapped in addition to the geology.

Geochemical work consisted of an orientation survey followed by sampling of the 'B' horizon at hundred foot intervals along the grid lines.

Geophysical investigations consisted of an induced polarization survey conducted by a four man crew operating independent of the geological and geochemical party. The results of the IP work are contained in a separate report.

Geological and geochemical work was completed between June 3rd and July 9th 1968. Much of this period was devoted to making an accurate tie in of the grid system. Geophysical work was completed between June 8th and August 12th 1968.

The majority of data on regional geology and geomorphology contained herein was obtained from Memoir 262 of the Geological Survey of Canada (1952) by S. Duffell and K. C. McTaggart. The writer wishes to thank the staff of Lornex Mining Corp. Limited, particularly Wally Marsh and Bob Sullivan, for the valuable assistance and many courtesies extended during the course of the Minex programme.

SUMMARY AND CONCLUSIONS

In the Highland Valley area the following conditions appear to favor economic mineralization;

(1) the contact between Skeena quartz diorite and younger, more granitic rock
(2) the presence of quartz-porphyry intrusive with attendant brecciation
(3) faulting
(4) strong serecitic alteration of the host rock

The first two conditions are satisfied in the northwest corner of the Minex property and the presence of faulting is suggested by geophysical work. Serecitic alteration is present but appears very restricted and erratic in distribution.

The northwest corner of the Minex property is considered favorable for economic mineral occurrences. Geology, goechemistry and geophysics, the three exploration parameters applied to the evaluation of the property, all confirm that the most favorable ground lies north of line 48N and west of the 0+00E baseline. The possibility of finding significant mineralization outside this area is considered extremely remote.

The difficulty in properly evaluating this favorable area stems from the fact that the general trend of mineralization has not been established. The importance of determining such a trend cannot be overstated since the speed and economy of any systematic evaluation programme depend directly on this knowledge. To illustrate, at Lornex it might be assumed from the great size of the ore zone that practically any pattern of drill holes would serve to determine the tenor of mineralization. This would be an erroneous assumption since it was found that alternate bands of different grade material occur within the ore zone and that these bands have a very definite trend. In order to determine the true grade of the ore zone as a whole it was found just as important to drill perpendicular to this trend as it would be in evaluating

a vein type structure. Even a pattern of vertical holes laid out without prior knowledge of the mineralization trend would not necessarily have given a true picture of grade.

It may be that at Minex the mineralization shows no such preferred orientation and that vertical drill holes would be quite effective. However, geological and geophysical work indicate two distinct trends which could control mineralization. The former suggests mineralization may be controlled by a west-southwest contact, while the induced polarization survey has defined a northeasterly trend probable related to faulting. It seems logical to determine whether mineralization actually corresponds to either of these trends before resorting to other methods of evaluation. The indicated geophysical trend should have priority in exploratory drilling.

It should be kept in mind that the mineralization trends sought can be determined only by the detection of subtle grade differences, since the material as a whole is low grade. The higher grade bands are not apparent to the eye so the limits are really assay boundaries. Therefore, diamond drilling should be used in any attempt to prove or disprove the presence of mineralization trends since sample results from percusssion drilling are not considered sufficiently precise. Percussion drilling would be more useful once trends have been established or the mineralization has been proven to be relatively homogeneous.

To summarize, work to date has been insufficient to permit an accurate grade estimate of the known mineralization. Without these data it is impossible to assess the economic potential of the property. A systematic and closely supervised diamond drill programme is therefore required to determine whether the mineralized zone has ore making possibilities. The favorable geological setting in the northwest corner of the property encourages such an investigation.

The necessity of evaluating the favorable zone as a whole could possibly be avoided provided follow up drilling of geophysical targets outline higher grade lenses which could be exploited on their own merit.

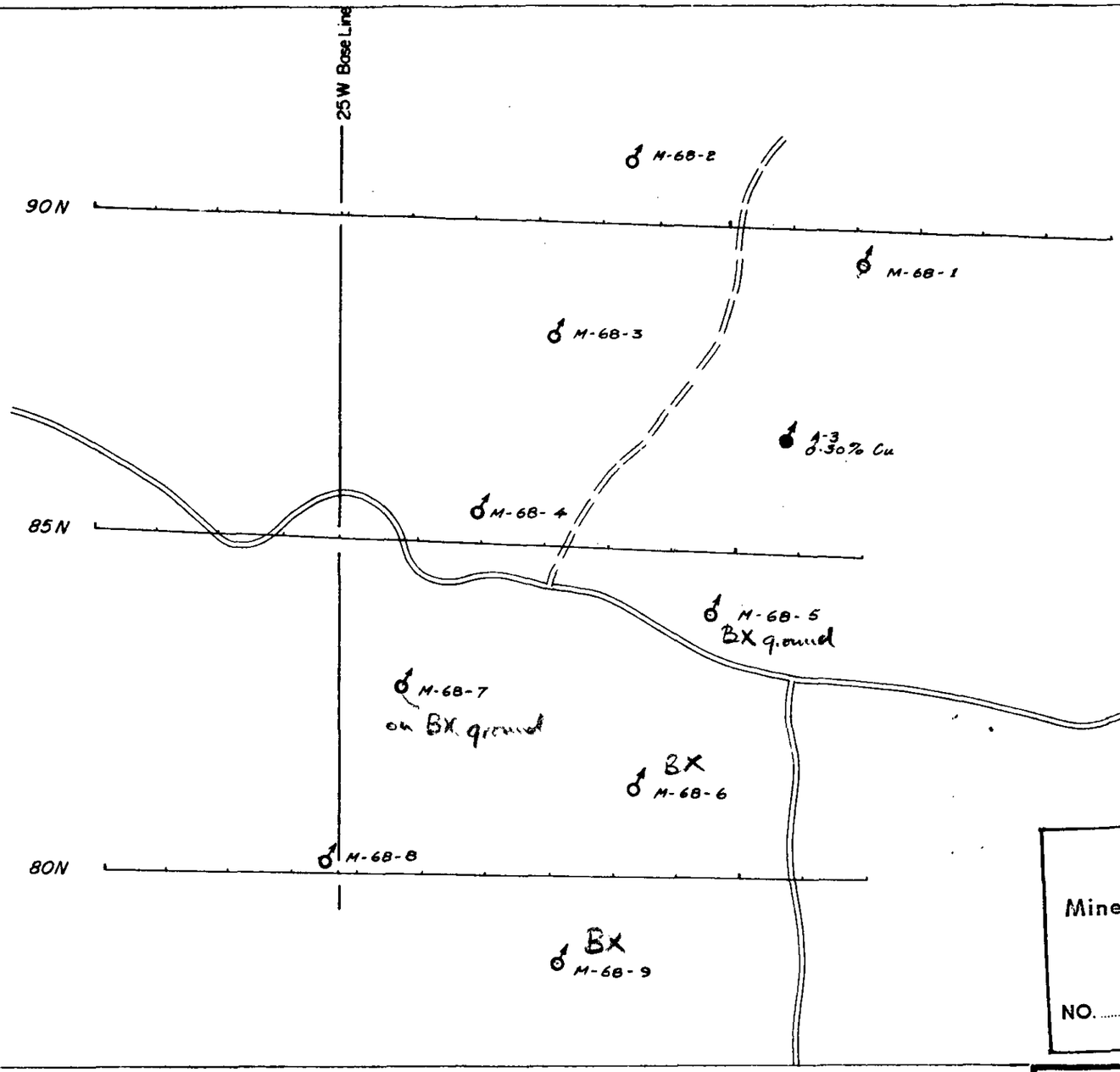
RECOMMENDATIONS

The following recommendations presuppose that the three drill targets resulting from the IP survey have been investigated as recommended in the corresponding report:

(1) Provided that the diamond drill hole drilled from coordinates 90N, 22+50W intersects a fault zone with associated mineralization of economic interest, then it is recommended that a series of holes be drilled to investigate the IP anomaly from line 90N to line 77N. These holes would bear S-45°E and have a maximum spacing of 400 feet.

(2) Provided that diamond drilling of the three geophysical targets does not indicate northeast trending zones of mineralization, then it would be advisable to check for trends paralleling the south contact of quartz porphyry with Skeena quartz diorite. An estimate of the tenor of mineralization would be obtained as well. To accomplish both objectives it is recommended that two lines of holes be drilled perpendicular to the above contact as illustrated in Dwg. No. 5-200-2. Each hole is to be drilled at 45° dip to a minimum depth of 425 feet, giving a horizontal coverage of 300 feet. Holes are spaced at 300 foot intervals so that the entire width of 1500 feet is completely cross sectioned to a depth of 300 feet. Holes are to be drilled in numerical order. All drill core is to be logged, split, sampled in 10 foot sections and the samples assayed for copper and molybdenum.

Total cost of this programme is estimated at $38,000.



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 2

N
A

Drilled
Proposed

Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

LOCATION PLAN OF PROPOSED DRILL HOLES

OCT. 1968	Scale 1"= 200'	DWG. 5-200-2

DISCUSSION OF RESULTS

Geology

Surface mapping of the northwest corner of the Minex ground indicates mineralized Skeena quartz-diorite intruded by a band of quartz porphyry trending northwest-southeast through the property. The Skeena formation is bounded to the south by later hornblende-biotite granite and, while no actual contact is exposed, this interface appears to have an irregular embayed outline such that the width of Skeena between the granite on the south and quartz-porphyry to the north varies from 1000 to 3000 feet. North of the quartz porphyry band the Skeena is thought to have a width of several thousand feet, though little work was done beyond the property limits. To the east it appears that the Skeena either pinches out or swings sharply northeast from the vicinity of the 0+00E baseline. There are only a few isolated exposures of Skeena to the east of this line.

There is some evidence to indicate that a remnant of quartz-diorite may extend, southward to the vicinity of line 40N between the 0+00E baseline and station 10E. Cuttings from one of several percussion drill holes completed during the summer were examined and judged to be Skeena in composition. Rock samples reportedly taken from trenches (now flooded) in the same area were also classified as Skeena quartz diorite.

Geological work has served to outline the area most favorable for economic mineralization and has provided a guide to assist in the interpretation of goechemical and geophysical results.

Geochemistry

The results of this work were discussed with John L. Walker, Consulting Geochemist, whose comments are as follows:

The results of orientation soil sampling carried out in early June indicated the general applicability of a geochemical soil survey in the area of investigation.

In the Highland Valley in general geochemical prospecting methods have been applied more as a regional guide to mineralization rather than pinpointing the best grade of metal in the bedrock. Factors such as the extent of alteration and fracturing of the bedrock, depth of oxidation, thickness and type of overburden all affect, in part at least, the level of concentration of metal present in the surface soils.

The widespread minor mineralization which is characteristic of the Highland Valley gives relatively high background values in the soils for both copper and molybdenum. Anomalous concentrations of these metals within this high background may indicate a potentially economic bedrock source on the basis of the geochemical data alone. The level of metal concentration in the overburden near surface should not be related to the tenor of mineralization in the bedrock as the strength of the surface anomaly may vary depending on numerous factors mentioned above. For this reason, therefore, it is necessary to examine the geochemical data in relation to the more detailed geological interpretation.

The concentration ranges selected for interpretation of the copper and molybdenum data are as follows:

Range	Cu ppm	Mo ppm
Background	0-120	0-12
Threshold	120-170	13-18
Anomalous 3rd Order	171-270	+18
2nd Order	271-470	
1st Order	+470	

Anomaly 1 NW section of the area. This is a widespread 1st order copper anomaly with associated but more restricted anomalous molybdenum area. Geologically this area is the most favorable for copper-molybdenum mineralization as it is underlain by the Skeena quartz diorite and porphyry - the general host rocks to the mineable metal in the Highland Valley. The widespread copper anomaly covers the entire mapped area of Skeena rocks whereas the anomalous molybdenum values are concentrated on the western side only and coincide to some extent with the Induced Polarization anomaly.

Anomaly 2 Central section of the area. This is essentially a copper anomaly with a few localized anomalous molybdenum values. The area is low lying and swampy and underlain by granite. Sulphide mineralization has not been observed in the immediate vicinity but outcrops are few. The anomaly is given a low priority rating at present as it may reflect accumulation of transported copper and molybdenum in the swampy conditions. However, there is a possibility that the Skeena rocks may extend into at least the northern portion of this anomaly.

Anomaly 3 NE section of the area. This is a low order copper anomaly with no molybdenum association. The area is underlain by barren granitic rocks and is of little economic significance.

Anomaly 4 North end of 40E baseline. This is a small copper and molybdenum anomalous area. There is no outcrop in the immediate vicinity and it is possible that this anomaly reflects underlying Skeena rocks adjacent to the projected extension of the quartz porphyry-breccia zone observed in the northwest corner of the property.

Geophysics

The results of geophysical work have been thoroughly discussed in a separate report prepared by Barringer Research Limited and are summarized here for the sake of completeness only.

Induced polarization results show a characteristically low uniform chargeability background and high, erratic resistivity values. Both conditions are consistent with fresh, massive, unaltered rock types of similar composition. Chargeability anomalies are broad, of low intensity and appear related to the east sides of resistivity breaks or lows interpreted to represent fault zones. These interpreted faults trend north to northwest and appear to gain intensity to the north while weakening in a southerly direction.

Weak chargeability anomalies having no corresponding resistivity lows suggest a sulphide content in the order of 1-2%. Depth soundings give no indication that mineralization improves with depth.

MINERALIZATION

Evidence of copper mineralization can be seen in practically every exposure of Skeena quartz diorite or quartz porphyry on the property. Mineralization also has limited distribution within the hornblende-biotite granite, especially near the Skeena contact. Thus, a large area has been impregnated with copper and associated molybdenum.

The secondary copper minerals - malachite and azurite are widely distributed throughout the favorable host rocks. Bornite and chalcopyrite, representing primary mineralization, also show an extensive but erratic distribution. Molybdenite was seen very infrequently but being extremely fine grained this mineral could be more widespread than megascopic observations would indicate.

Mineralization has three common methods of occurrence (1) as disseminations throughout the country rock (2) as coatings on the surfaces of minute fractures and (3) with a late system of quartz stringers cutting both quartz diorite and granite. Molybdenum is thought to favor the latter mode of occurrence.

GEOGRAPHY

The Highland Valley area lies within the Interior Plateau geographic province which is bounded on the west by the Coast Range and the north end of the Cascade Range and on the east by the Rocky Mountains. The Interior Plateau is an upland area characterized by relatively gentle slopes, though total relief may exceed 3000 feet. Elevations within the Plateau vary generally from 3500 to 6500 feet above sea level with the occasional promontory exceeding an elevation of 7000 feet. Deeply incised master streams, such as the Fraser and Thompson rivers, are another characteristic feature of the plateau area. It is along these rivers that the sharpest contrast in relief is seen, with elevations increasing rapidly from around 1000 feet in the valley bottoms to 3500 or 4000 feet at the edge of the Plateau proper. This elevation difference occurs over a very short horizontal distance so that the upland areas are separated by deep, steep sided valleys containing the principal drainage channels. Secondary streams reflect topography in that they tend to be gently graded within the Plateau itself but descend the escarpment to the master channels in a series of falls and rapids.

Below an elevation of 3000 feet the Ashcroft area enjoys a true desert climate with an average precipitation of approximately seven inches per annum. Vegetation is typical of desert areas with sage and bunch grass predominant. The more humid climate above 3000 feet supports tree growth and the slopes above this elevation are well forested with pine and spruce. Deciduous trees are found along the water courses. Tree growth terminates at an upper limit of 6500 feet.

Rocks are well exposed below the 3000 foot contour line. Above this elevation, within the forested area, outcrops are relatively scarce and are confined for the most part to the crests of glacial ridges.

The Minex Property covers a well forested well drained area on the southern

slope of Gnawed Mountain. This feature attains a maximum elevation of 5953 feet and represents a local topographic high. The property lies entirely above the 5000 foot contour line and maximum relief within the boundaries is estimated at 500 feet. Topography is characterized by a series of glacial ridges with a predominantly north-northwest trend. Some ridges rise several hundred feet above the adjacent valley bottoms but the crests are fairly level along strike. The effect is to make east-west traversing fairly arduous while north-south lines are easily traversed. Local drainage is controlled to some extent by these ridges but the overall pattern is a network of streams radiating from the summit of Gnawed Mountain in a generally southerly direction. Thus, many of the streams, particularly those with a southwest trend, cut through the glacial ridges (Fig. 5-200-3D). A few small ponds are contained within the property boundaries.

Rock exposures constitute less than 5% of the total property area, and are confined mainly to the crests of glacial ridges within the central and south-eastern portions. Individual outcrops are generally not large, most having dimensions of less than 100 feet. A few large exposures measure in the order of 400 by 800 feet.

Overburden is primarily glacial till consisting of scattered cobbles and boulders of granitic rock in a poorly sorted matrix which may exhibit rough banding into layers of sand, brown clay, grey clay and clayey sand. A thin mantle of organic material, usually no more than three or four inches deep, overlies the glacial cover. Depth of overburden normally varies from five to fifteen feet but attains a thickness of at least forty feet in low lying areas. Swamps cover only a small percentage of the property.

Surface deposits exhibit variable but pronounced magnetic properties capable of deflecting a compass needle by two or three degrees.

STRATIGRAPHY

The Minex Property is centrally located within the Guichon Creek batholith. This felsic intrusive complex trends north-northwest over a length of 40 miles and has a maximum exposed width of 18 miles.

The Guichon batholith intrudes Permian volcanics and sediments of the Cache Creek Group and Upper Triassic volcanics and sediments of the Nicola Group. This relationship is best seen along the Thompson River south of Ashcroft. The granitic rocks of the batholith are in turn overlain by Middle Jurassic sedimentary strata as well as Tertiary volcanics of the Kamloops Group. The latter volcanic units cap much of the northern section of the Guichon Creek intrusive. Age of the batholith has been placed at Lower Jurassic.

PETROGRAPHY

The Guichon Creek batholith is not homogeneous but is composed of various felsic types in the granite-quartz diorite range. Minor amounts of gabbroic rock have been noted along Guichon Creek.

The majority of rock within the property boundary was classified as granite. Only the northwest corner contains rocks of different composition, which have been described as quartz diorite and quartz porphyry with associated specularite breccia. Some narrow aplite dikes were also noted, particularly in the mineralized areas.

A brief description of the principal rock types follows:

"Skeena" Quartz-Diorite (Lornex Type)

The "Skeena" unit is considered a favorable host for mineralization within the Guichon complex. For this reason it is felt that much "Skeena" has been so named because of associated metallic mineralization rather than for mineral composition. To prevent possible confusion with other "Skeena" of different mineralogy the suffix "Lornex Type" has been added to the unit name of the rock type described as "Skeena" at the Minex property. The "Skeena" units at Minex and Lornex are identical in appearance.

At Minex the Skeena is restricted to the northwest corner of the property but extends at least a quarter mile to the north of the property boundary.

The Skeena quartz-diorite is a massive rock, medium grey in color, weathering to light brown. Texture is equigranular hypidiomorphic and grain size varies from medium to coarse. This unit has fairly strong magnetic properties.

The composition has been estimated as follows:

Quartz - medium grey colour, medium to coarse grain size, anhedral to sub-hedral 50%

Plagioclase feldspar - light grey to greenish grey colour, medium grained, sub-hedral 35%

Alkali feldspar - pink, medium grained, anhedral 5%

Biotite - black, tabular, euhedral to sub-hedral 6%

Hornblende - dark green, medium to coarse grained, equidimensional, sub-hedral 4%

Hornblende-Biotite Granite

This unit underlies the majority of the Minex area. According to verbal reports the same unit has been mapped elsewhere within the batholith as "Dot Lake Granite", and may be equivalent to what has been termed "Bethsaida" granodiorite as mapped on numerous properties in the area. The Bethsaida granodiorite at Lornex is distinctly different in appearance from the Minex Hornblende-Biotite granite but is probably quite similar in chemical composition. The two units are also similar in their spatial relationships with mineralized Skeena at Lornex and Minex. There is a possibility then that the Bethsaida granodiorite at Lornex (and other properties) is the porphyritic equivalent of what is termed hornblende-biotite granite at Minex.

Hornblende-biotite granite is a massive, uniform, barren rock, light pinkish grey on gresh surfaces and dark grey on weathered surfaces. The texture is medium grained panidiomorphic with euhedral crystals of feldspar, quartz, biotite, and hornblende. This rock unit has fairly strong magnetic properties due to fine accessory magnetite which may or may not be visible in band specimens.

Composition was estimated as follows:

Quartz - grey, equidimensional 5-10%

Feldspar - medium greenish-grey to pinkish grey (predominantly alkali feldspar)	75%
Biotite - black, medium grained	5%
Hornblende - dark green, euhedral, prismatic, medium grained with occasional coarse crystal	10-15%

Quartz Porphyry

Within the map area this unit is restricted to a narrow dike like body in the northwest corner but apparently extends west-southwest at least as far as the summit of Gnawed Mountain. At Bethlehem Copper three of the four known orebories are closely associated with the contacts of quartz porphyry intrusives. Within the Lornex orebody some of the higher grade material occurs adjacent to a lenticular body of quartz porphyry. The presence of this rock type can therefore be considered an encouragement for the occurrence of economic mineralization.

Quartz porphyry is light grey-green to light buff on fresh surfaces, weathering to grey white. Medium to coarse quartz phenocrysts, clear to grey in colour and sub hedral to euhedral in outline constitute 20% of the rock. The matrix consists of fine grained quartz and feldspar with about 10% mafic minerals, including an occasional phenocryst of hornblende. Distinctive features of this rock type are the absence of biotite and the absence of any appreciable magnetism.

Specularite Breccia

This unit is very restricted in area being confined to the northernmost extremity of the property. The attitude of this band as shown in Dwg. No. 5-200-3D is assumed to parallel the enclosing quartz porphyry, but this relationship has not been proven. Specularite breccia is considered to represent a clastic phase of the quartz porphyry intrusive. The brecciated phase consists essentially of fist size angular fragments of quartz-porphyry

cemented by specular hematite. Outside the property boundary similar material was noted but with a siliceous cement instead of specularite.

Aplite

This unit occurs as minor dikes cutting earlier rocks and appears to be most abundant within the mineralized section of Skeena quartz diorite as exposed by trenching. Aplite has a typical fine grained uniform appearance and reddish colour.

GEOLOGIC STRUCTURE

Regional

Faulting has much economic significance within the Highland Valley area. Three of the four Bethlehem ore bodies are associated with northerly to north easterly trending faults. At Lornex there is a complex fracture pattern but the ore body is definitely controlled by a series of north trending, highly altered fault zones.

Geologic contacts also play an important role in ore control. Three of the ore zones at Bethlehem are associated with the contact between quartz diorites of two different ages. The Lornex orebody lies within Skeena quartz diorite at the contact between this unit and younger Bethsaida granodiorite. According to work by J. M. Carr, B.C. Government Geologist, this contact, near the south end of the Lornex orebody, swings from north-south to south east. This would put Minex ground on the projected extension of the contact

Local

The most significant structural feature noted within the Minex property boundary is the quartz porphyry intrusive trending southeast through the northwest corner of the property. The north contact of this dike like body strikes S-48°E, the south contact strikes approximately S-65°E. This apparent convergence suggests a pinching out of the intrusive a short distance to the southeast. Observations of strong brecciation near the B.R.L. Campsite (Dwg. No. 5-200-3D) and quartz porphyry at the summit of Gnawed Mountain indicate fairly definitely that this intrusive actually continues at least 2500 feet to the southeast beyond the property limits. No attempt was made to trace the quartz porphyry to the northwest.

Two en echelon faults trending north-northeast are indicated about 1500 feet east of the 0+00 East Baseline between lines 44N and 52N. No further

evidence of faulting was noted on surface but in the northwest corner of the property geophysical work suggests a north to northwest striking fault zone as the cause of a resistivity break traceable over approximately 2500 feet of strike length. Topographically, this zone coincides very closely with a narrow valley, which tends to substantiate the geophysical interpretation. Several hematized, sericitized zones were noted, particularly in the mineralized trenches within the Skeena formation. These altered zones may be the result of fault movement, but such an association was not proven.

Aside from the aforementioned structures, the only other noteworthy feature is a system of steep to moderately dipping joints developed within the granite unit. Insufficient observations were taken to establish a definite joint pattern.

ECONOMIC CONSIDERATIONS

The economic importance of the Guichon Batholith is indicated by two large tonnage producing mines directly related to the intrusive. They are Bethlehem Copper Corp. Ltd. and Craigmont Mines Ltd. A third property, that of Lornex Mining Corp. Ltd., will almost certainly become a producer in the near future. Other potentially important properties currently under active exploration include Valley Copper Mines Ltd. and Highmont Mining Corp. Ltd.

Craigmont is located immediately adjacent to the southern contact of the batholith northwest of Merritt. This mine is a copper producer currently processing 5600 tons of ore per day. Reserves stand at 20,700,000 tons averaging 1.72% copper.

Bethlehem Copper, a copper-molybdenum producer, is located within the batholith. Mill capacity has recently been increased to 14000 tons per day. Ore reserves are 70 million tons averaging 0.60% copper with some molybdenum.

Lornex adjoins Bethlehem to the south. Published ore reserves are 330 million tons averaging 0.44% copper and 0.031% molybdenum. A production decision is imminent on this property which, at a planned mill rate of 40,000 tons per day, could become the largest tonnage mine in Canada.

The fact that Brenda Mines Limited in the Peachland area is going into production should provide some encouragement for Minex, and similar properties where the ore tenor appears to be appreciably lower than that of Bethlehem or Lornex. The Brenda ore body contains 177 million tons averaging only 0.183% copper and 0.049% molybdenum.

The Minex property is well situated regarding proximity to hydro power and all weather roads. Both these facilities could be extended from Bethlehem Copper or Lornex with very little difficulty. Water is not abundant on the property but some good sized lakes lie a short distance to the east.

COST ESTIMATE

Estimated costs for 4000 foot drill programme:

Contract drilling of 4000 ft Ax hole @ 6.00 per foot	$24,000
Assaying 400 samples for Mo @ 6.00 per sample	2,400
Assaying 400 samples for Cu @ 3.00 per sample	1,200
Supervision of 4000 ft @ 2.50 per foot	10,000
Total Cost	$37,600
Say	38,000
Cost per foot	$9.50

BARRINGER RESEARCH LIMITED

Jay D. Murphy
Geological Engineer

JDM:np

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Carr J. M.	Geology of Bethlehem Mine, Highland Valley, (adapted from C.I.M. Special Volume No. 8 1966)
Carr J. M.	Geology of Lornex Deposit (adapted from Minister of Mines and Petroleum Resources, B.C. Annual Report 1966)
Duffell S. and McTaggart K.C.	Ashcroft Map Area, British Columbia, Geological Survey of Canada Memior 262 1952

SURVEY REPORT

REPORT OF INDUCED POLARIZATION SURVEY
MINEX OPTION, HIGHLAND VALLEY, B.C.
FOR
CANADIAN SUPERIOR EXPLORATION LIMITED

PREPARED BY

BARRINGER RESEARCH LIMITED
304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA

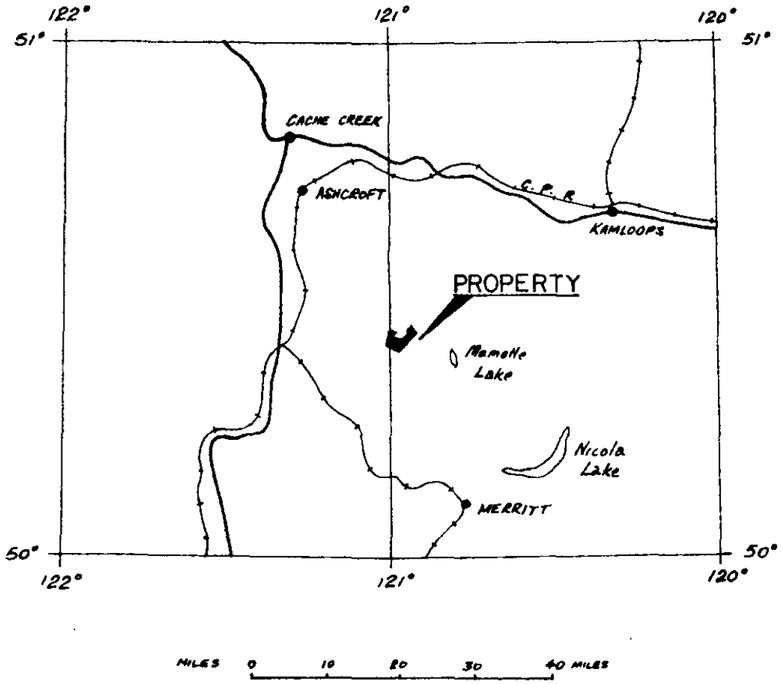
SEPTEMBER - 1968

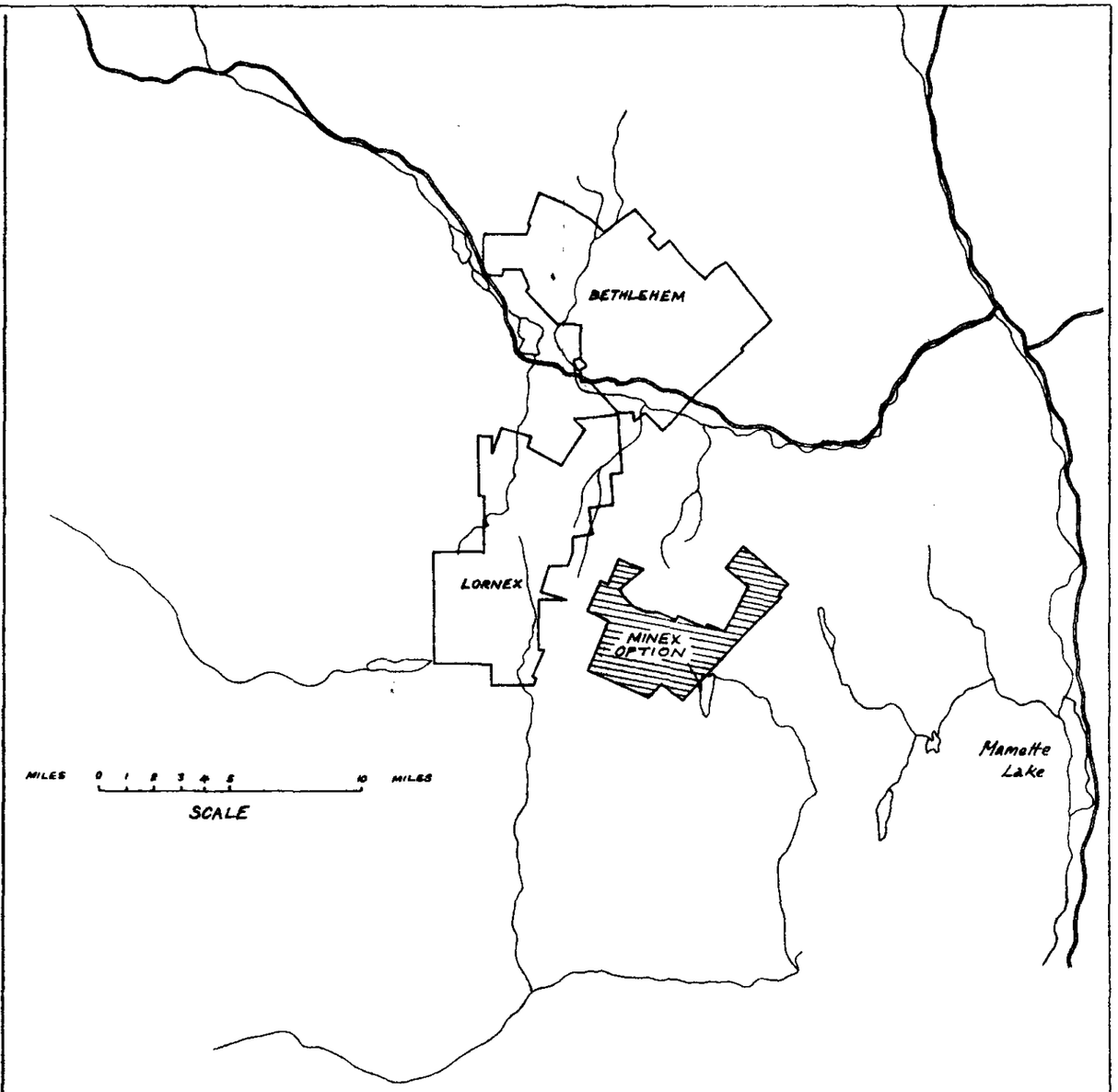
INTRODUCTION

The Highland Valley occurs within the Guichon batholith, a complex acid intrusive lying to the south of Ashcroft on the main trans-continental railway lines. The batholith has long been noted as a setting to widespread copper mineralization including some molybdenum, the potential of which is epitomized by the Bethlehem deposits which support a production of 10,000 tons/day. Continued exploration interest in the general vicinity has been heightened by the more recent discoveries at Lornex and latterly on the Valley Copper ground.

The mineralization itself typically is bornite and chalcopyrite disseminated through the host environment manifestly under controls provided by fracturing, faulting and centres of brecciation. Common alteration products are quartz epidote and sericite. Regionally, the major mineralization appears distributed about fault linears striking approximately N 20° E across the Highland Valley itself. In an apparent extension SSW from the Bethlehem ground, one of these linears occurs in the northwest corner of the subject property, and is distinguished there by local and fairly abundant showings of malachite and underlying copper sulphides. This is part of the Gnawed Mountain mineralization which has received considerable attention in past exploration.

The present programme was designed to seek extensions and possible repetitions of this mineralization in improved tonnages and/or grade, within the confines of the claims group. To this end, an induced polarization survey was mounted in conjunction with a co-ordinated programme of geologic mapping and geochemical soil sampling. The results of the geophysical work are reported herein in the light of all the data collected.





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A

Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

LOCALITY PLAN

SEPT. 1968 | DWG. 5-208-1

WORK UNDERTAKEN

The induced polarization method was applied in a primary coverage of the property on a grid of lines generally spaced at 400', but sometimes at 800' intervals. Initial coverage was accorded the northwest corner, and extended southwards and eastwards therefrom. In addition, detailed investigations were undertaken in one or two selected sections to determine variations in increasing depth beyond the limits of the normal traversing.

The equipment employed was a 7.5 KVA high-powered pulse transient system with a 1 1/2 second current-on time, followed by a 400 msec reading period. The primary coverage was effected with a pole-dipole electrode array with an 'a' spacing of 200' and with the distance to the on-line current electrode at 200' (n=1) and 400' (n=2) alternately. Some traversing was carried out with a n=4 (or 800') spacing in follow-up investigations. Results have been plotted in profile form and compiled into appropriate plans accompanying this report. In addition four depth soundings were undertaken employing an expanding three-array.

The field work was completed in the period 8th June - 12th August 1968 by a four-man crew led by Barringer geophysicist, Mr. Roger Cavèn. No major difficulties in either equipment or ground contact conditions were encountered during the operation. Overlap readings were undertaken at convenient points to determine the accuracy of the data, the repeatability proving to be within 10% for all such checks, but most commonly less than 5%. A total of 22.0 line miles of grid coverage was completed, this figure not including any multi-traversing of the same section that was done.

DISCUSSION OF RESULTS

The results of the programme are typified by a notably steady background in chargeability that for n=1 and 2 varies little from 2-2 1/2 msecs. At n=4 it rises only slightly to about 3 msecs. This manifest lack of relief means that no rock-type changes are being recognized by the IP, or indeed that no rock-type changes actually exist. To a large measure the outcrop geology as mapped tends to confirm the latter probability, the vast proportion of exposures in the south and east sections being identified as massive unaltered granite. However the general lack of relief in background also means that any anomalies recorded, even if quite weak, would have better than average resolutions, and that they would in fact possess an excellent chance of representing sulphide mineralization, presuming of course that an effective penetration to bedrock was being achieved.

That the consistently quiet background chargeabilities are not indeed due to a heavy widespread overburden is clearly demonstrated by the resistivity profiles which by contrast are extremely noisy and full of large and rapidly changing feature. Some of the local individual peakings reach amplitudes of 2000 ohm-metres and greater. Very rarely do resistivity values drop below 250 ohm-metres on the other hand, and even where they do, there is no discernible change (lower) in the chargeability background, as might be expected for a response wholly from overburden. Thus there is little doubt that whatever overburden exists within the grid area, it has been penetrated, and that in fact bedrock has provided the major contribution to the observed profiles over wide sections of the property. A measure of this is provided by the nearby Lornex property where resistivity backgrounds are in the order of 300-400 ohm-metres. A deep overburden trough on the same property returned a resistivity value of 50 ohm-metres.

To a considerable extent nevertheless the high resistivities obtained in the present coverage can not be viewed as a favourable circumstance. They

imply fresh rock, unfractured and unmineralized. Thus from this standpoint it is not too surprising that the chargeabilities are as unvarying as they are. However there have been some polarization anomalies recorded, these appearing in the northwest sector of the claims group, and notably in the limb of the property that extends up to Gnawed Mountain. Here on line 90N, the strongest single chargeability peaking has been resolved with an amplitude of 7 msecs at n=2. At n=1 the anomaly is barely present, and at n=4 it is diminishing again, thereby providing the suggestion of a relatively local source, as does the anomaly resolution itself. This anomaly in fact occurs in an area of known mineralization, and thus is important insofar as it describes extensions, both laterally and on strike. In the first case, as already noted, there is limited extent laterally, and there is no evidence for across-strike repetitions unless they occur to the east beyond the property boundary. In the second case however, the anomaly peaking on line 90N clearly belongs to a zone of polarization extending recognizably to line 56N, and perhaps beyond, again off the property.

What is interesting about this zone is that it appears fault-controlled. A definite contrast in resistivity marks the west side of the polarization zone from line 96N to at least line 77N, with an axial strike over this distance that bears approximately 20°N of E conformable to regional faulting. The contrast itself provides the higher resistivities on the side of the polarization anomaly, which while increasing the certainty of the fault interpretation does introduce uncertainty as to what extent the sulphides are represented by a local lowering of resistivity values, if any. As they stand, the resistivity profiles do not show any resistivity low in correlation with the chargeability high along the zone, as could be expected, and it must be assumed there isn't any. In fact there is the suspicion from place to place that the resistivity values have actually been locally increased a condition that if correct would indicate silicification incidental to the mineral setting.

As the chargeability zone extends south from line 90N it becomes weaker and more diffuse. At line 77N, the fault axis tends to swing more nearly north-south,

and change resistivity character. Instead of a definitive contrast the axis appears expressed thereon as a resistivity low, although by line 56N much the same contrast as in the north is hinted again. Thus the relationship between faulting and mineralization is considered valid over the full distance, even though there are spatial variations. One of the more important of these latter occurs on line 68N where the chargeability anomaly, albeit very broad, peaks at about 20W, a full 1200' east of the fault axis. This infers that the mineralization can become very widespread, which would be a very interesting circumstance were it not for the fact that the IP/resistivity data generally give evidence of a low tenor of sulphides, say 1-2% only. The weakness of the chargeability anomalies and the noted lack of resistivity low associations are indicators of this. A depth sounding with an expanding three electrode array at this peak (18W/68N) actually shows a decrease in chargeability beyond 'a'=400', rather suggesting that the peak itself is due to a local concentration of sulphides slightly above average, possibly in a vein-like incidence. If so previous drilling in the vicinity (DDH A-6) may not have intersected the chief source to the IP response.

Line 56N is the first line (going south) that has been traversed east of the BL. It is of more than passing interest therefore that it has encountered a chargeability zone at about 4W (n=1), and one that apparently has not been drill-tested in full (Hole A-5 occurs at 5E drilled 45° to the east for 976'). At n=4, this zone becomes considerably broadened extending to the vicinity of 6E on the section, and gives evidence of extending on strike to line 44N (fill-in) although only weakly south from line 52N. Beyond line 44N to the south, it peters out altogether. This zone is very similar to the first zone both in character of response and in its resistivity associations, and may well be regarded therefore as a repetition. There is even the suggestion that it too is fault controlled on its west side. Three depth soundings were taken at various positions along its strike, and each showed only a slight increase of chargeability with increasing penetration, implying that no real improvement in mineralization can be expected in depth, although the body of mineralization continues down.

Elsewhere on the grid, there is little of intrinsic interest. A fault scarp at approximately 47E on line 4N was investigated by a short traversing at n=4 to determine possibilities at depth beneath an adjoining swamp. A small increase in chargeability was observed but in amplitude and horizontal extent it appears of minimal potential.

CONCLUSIONS AND RECOMMENDATIONS

The induced polarization coverage, undertaken in this programme has resulted in the extension southwards in two main zones of the Gnawed Mountain mineralization. In these continuations there is evidence that faulting following regional trends is the chief controlling factor. However in general, the zones weaken as they extend southwards, thereby placing the emphasis for improved potential off the property to the north. Both geologic and geochemical considerations tend to confirm this probability.

However it is also concluded that some of the mineralization occurs in the form of fracture fillings, providing the chance for richer sections in what appears otherwise as a weakly disseminated sulphide environment. Because of this chance, and because of the factual information it would provide of the polarization zones in general, and particularly what might be projected to the north, drilling is recommended at the three sites given below. The holes have no ascribed priority, but each is worth drilling independent of the findings of the others (if need be).

DDH #1	Collar	:	5W on line 56N
	Bearing	:	grid east
	Depression	:	-60°
	Est. Length	:	500'
DDH #2	Collar	:	23W on line 68N
	Bearing	:	grid east
	Depression	:	-60°
	Est. Length	:	500'
DDH #3	Collar	:	22+50W on line 90N
	Bearing	:	grid east
	Depression	:	-45°
	Est. Length	:	650'

An alternative to the latter or in support of it would be a hole sited as follows:

DDH #4	Collar	:	25W on line 85N
	Bearing	:	grid east
	Depression	:	-45°
	Est. Length	:	500'

Both DDH's 3 and 4 are designed to intersect the postulated fault axis, penetrating into the polarization source material beyond it to the east. However all holes should reveal the likely incidence of fracture-controlled sulphide emplacements versus true disseminations, and what potential may be ascribed to the two chargeability zones, as defined.

BARRINGER RESEARCH LIMITED

J. B. Boniwell
Chief Geophysicist

JBB:np

A P P E N D I X

to

REPORT ON GEOLOGICAL, GEOPHYSICAL & GEOCHEMICAL SURVEYS ON THE MINEX DEVELOPMENT LIMITED PROPERTY - NOVEMBER 20, 1968

"A" COST OF SURVEYS
(note: see copies of cheques and invoices accompanying this report)

1. Supervision:

(a) Reimbursement to Minex Development Ltd. for loan of Mr. T.R. Mattson for supervision and general duties during the surveys Cheque #1821 (Aug. 23/68) Period: May 23 to July 15/68	$ 1,211.67
(b) Dr. J.L. Walker (Consulting Geochemist, Barringer Research) Cheque #1798 Period June 4 to 7/68	471.25
TOTAL SUPERVISION	$ 1,682.92

2. Induced Polarization Survey by Barringer Research Ltd.:

(a) Period June 8-30/68, 19 crew-days @ $8,900 per month Cheque #1798	$ 6,764.00
(b) Period July 1-31/68, 25 crew-days @ $8,900 per month Cheque #1876	8,900.00
(c) Period Aug. 1-12/68, 9 crew-days @ $8,900 per month Cheque #1918	3,204.00
TOTAL for I.P. SURVEY	$18,868.00

3. Geochemical Survey by Barringer Research Ltd.:

(a) Period June 4-17/68, 14 crew-days @ $65 per man-day Cheque #1798 - sample collection	$ 3,640.00
(b) Period July 1-9/68, 5 crew-days @ $65 per man-day Cheque #1876 - sample collection	1,300.00

Appendix A

3. Geochemical Survey by Barringer Research Ltd.: (cont'd)

(c) Geochemical analysis:	
total copper, 1518 samples @ $1 each	$ 1,518.00
total molybdenum, 1515 samples @ $2.50	3,787.50
sample preparations, 1496 soils @ 20¢	299.20
22 rocks @ 50¢	11.00
Cheque #1876	
TOTAL for GEOCHEMICAL SURVEY	$10,555.70

4. Geological Mapping & Surveying, etc. by Barringer Research Limited:

(a) Period June 18-30/68, 11 crew-days @ $65 per day	$ 2,860.00
Cheque #1798 - assistants	
(b) Period June 4-30/68, 25 crew-days @ $125 per day	3,125.00
Cheque #1798 - geologist (J.Murphy)	
(c) Period July 1-9/68, 9 days @ $125 per day	1,125.00
Cheque #1876 - geologist (J.Murphy)	
TOTAL for GEOLOGICAL SURVEY	$ 7,110.00

5. Linecutting - Grid for Surveys:

(a) Advance to K. Owens re linecutting contract	$ 1,200.00
Cheque #1670	
(b) Period June 4-30/68, K. Owens	2,191.00
Cheque #1733	
TOTAL for LINECUTTING	$ 3,391.00

6. Transportation on Site:

(a) Barringer bill	$ 150.00
Cheque #1798	
(b) Redhawk Rentals Limited re 4-wheel drive truck - period May 23-June 23/68	355.50
Cheque #1665	
(c) Redhawk Rentals Limited Period May 23-June 23/68	162.75 CR.
TOTAL TRANSPORTATION	$ 342.75

TOTAL COST OF SURVEYS	$41,950.37

Summary:-

Supervision	$ 1,682.92
I.P. Survey	18,868.00
Geochemical Survey	10,555.70
Geological Mapping, Surveying, etc.	7,110.00
Linecutting	3,391.00
Transportation	342.75
	$41,950.37

AMOUNT APPLIED AS ASSESSMENT WORK:- $41,900.00

Appendix B

APPENDIX
"B" AFFIDAVIT

DOMINION OF CANADA:
PROVINCE OF ~~British Columbia~~ ONTARIO
To Wit:

In the Matter of Geophysical, geochemical and geological surveys performed by Barringer Research Limited on behalf of Canadian Superior Exploration Limited

I, John B. Boniwell

of Barringer Research Limited, 304 Carlingview Drive, Rexdale

in the Province of ~~British Columbia~~ Ontario, do solemnly declare that geological, geophysical and geochemical surveys were executed on the Minex Development Limited claims in the Highland Valley on behalf of Canadian Superior Exploration between June 1st and August 12th 1968. The following costs to Canadian Superior were involved:

a) Personnel

Name	Type of Work Performed	Rate Charged	Period Worked	Total Charged
J. Murphy	Geological	$125.00 per day	4th June-9th July	4403.35
J. Walker	Geochemical	$150.00 per day	4th June-7th June	471.25
S. Allen, B. Asbury, M. Howard, K. Rootham	Geochem. sampling line clearing & surveying trenching	$ 65.00/man day	4th June-9th July	7800.00
R. Caven, R. Finley, D. Goldthorpe, M. Sumner	Geophysical surveying	$8900.00/month	8th June-10th Aug.	18,868.00

b) Mobilization and transportation 650.00

c) Drafting and reporting 900.00

d) Geochemical analyses

1696 samples @ $3.70	6275.20	
22 samples @ $4.00	88.00	
3 samples @ $1.20	3.60	
		6366.80
		$39,459.40

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City of Toronto, in the Province of ~~British Columbia~~ ONTARIO, this 15th day of November 1968, A.D.

J. Boniwell

A Commissioner for taking Affidavits for British Columbia or
A Notary Public in and for the Province of ~~British Columbia~~ ONTARIO

A P P E N D I X
"B" AFFIDAVIT

GEOPHYSICAL, GEOCHEMICAL AND GEOLOGICAL SURVEYS PERFORMED ON BEHALF OF CANADIAN SUPERIOR EXPLORATION LIMITED ON THE PROPERTY OF MINEX DEVELOPMENT LIMITED

DOMINION OF CANADA:
PROVINCE OF ~~BRITISH COLUMBIA~~ Ontario.
To Wit:

In the Matter of

I, RAYMOND A. DUJARDIN

of Canadian Superior Exploration Limited
c/o Bull, Housser & Tupper, 1500 The Royal Bank Building,
675 West Hastings Street, Vancouver

in the Province of British Columbia, do solemnly declare that geological, geophysical and geochemical surveys were executed on the IDE, AM, VM, SNOW and ANN claims of Minex Development Limited at Gnawed Mountain in the Highland Valley area of British Columbia between May 23/68 and August 12/68. Expenses were incurred as follows:-

1.	Supervision Salaries	
	T.R. Mattson, May 23-July 5/68, 54 days @ $650/mo.+ benefits	$ 1,211.67
	J.L. Walker, Barringer Research, June 4-7/68, 3 days @ $150/day + expenses	471.25
		$ 1,682.92
2.	Induced Polarization Survey	
	Contractor's charges - Barringer Research of Toronto . . .	$18,868.00
	Period June 8-Aug.12/68	
3.	Geochemical Survey	
	Contractor's charges - Barringer Research Limited	$10,555.70
	Period June 4-July 9/68	
4.	Geological Mapping, Surveying, etc.	
	Contractor's charges - Barringer Research Limited	$ 7,110.00
	Period June 4-July 9/68	
5.	Linecutting	
	Contractor's charges period June 4-30/68	$ 3,391.00
6.	Transportation on site	$ 342.75
	T o t a l	$41,950.37

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

R A Dujardin

Declared before me at the City of Toronto, in the Province of ~~British Columbia~~ Ontario, this 4th day of December, 1968, A.D.

A Commissioner for taking Affidavits for ~~British Columbia~~ Ontario or
A Notary Public in and for the Province of ~~British Columbia~~ Ontario.

Appendix C

A P P E N D I X

"C" CLAIM SCHEDULE AND ALLOTMENT OF COSTS REPORTED UNDER APPENDIX A

All the following claims are registered in the name of Minex Development Limited and will be regarded as one group of 34 claims.
Total work to be applied (form "A") = $41,900.00

Claim Name	Record No.	Expiry Date	Total Work to be Applied
IDE 2	24995	Dec. 11/72	$1,400
IDE 9	25707	Mar. 19/77	$ 900
IDE 10	25708	"	"
IDE 11	25709	"	"
AM 12	31199	Feb. 18/73	$1,300
AM 14	31201	Feb. 18/69	$1,700
AM 16	31203	"	"
AM 17	31204	"	"
AM 18	31205	"	"
AM 19	31206	"	"
AM 20	31474	Mar. 31/76	$ 900
AM 21	31475	"	"
AM 22	31476	"	"
AM 23	31477	"	"
AM 24	31478	"	"
AM 25	31479	"	"
AM 26	31480	"	"
AM 27	31566	Apr. 10/76	"
AM 29	31567	"	"
AM 31	31568	"	"
AM 28	31481	Mar. 31/76	"
AM 30	31482	"	"
AM 32 Fr.	31483	"	"
VM 33	28225	Feb. 4/69	$1,700
SNOW 1	28226	"	"
SNOW 2	28227	"	"
VM 30	28288	Feb. 12/69	"
VM 31	28289	"	"
VM 32	28290	Feb. 12/70	"
VM 34	28294	Feb. 12/69	"
VM 35	28295	"	"
ANN 9 Fr.	45174	Mar. 5/76	$ 900
ANN 13 Fr.	45343	Mar. 17/76	"
ANN 19 Fr.	46154	Mar. 20/77	"
T o t a l			$41,900

Total -- 34 claims

Appendix D

A P P E N D I X

"D" QUALIFICATIONS OF PERSONNEL

(a) Raymond A. Dujardin

Mr. Dujardin is Senior Geologist for Canadian Superior Exploration Limited and has held that position since 1964.

He graduated in 1954 from the University of London (England) with the degree of B.Sc. (Honours) in Geology. He has also pursued short, post-graduate studies at the Royal School of Mines, London in applied geochemistry, geophysics, mining geology and surveying.

From 1954-1957 he was employed by H.M. Overseas Geological Surveys in British Guiana as geologist engaged in various surveys of the interior and evaluation of mineral resources. From 1958-1964 he was geologist-geochemist with Rio Tinto Canadian Exploration.

He is a Fellow of the Geological Association of Canada and the Geochemical Society.

In the work described in this report he initiated and laid out the programme subsequently completed by Barringer Research Limited and supervised the programme through several visits to the property.

(b) John B. Boniwell

Mr. Boniwell is a geophysicist employed by Barringer Research Limited, 304 Carlingview Drive, Rexdale, Ontario.

He is a graduate of the University of Tasmania, Hobart, Tasmania with the degree of B.Sc. (1949) and has been practising his profession as an exploration geophysicist for the last 17 years.

He is a Fellow of the Geological Association of Canada, a member of the Canadian Institute of Mining & Metallurgy, the American Institute of Mining & Metallurgical Engineers, the Canadian Exploration Geophysical Society and the Society of Exploration Geophysicists.

(c) Jay D. Murphy

Mr. Murphy is an Exploration Geologist employed by Barringer Research Limited, 304 Carlingview Drive, Rexdale, Ontario.

He is a graduate of the University of Manitoba and has been practising his profession as an engineer and geologist for the past 14 years.

His experience includes 7 years underground as Mining Engineer, Shift Boss and Mine Geologist, 3 years as Exploration Geologist in South America and 4 years as Exploration Geologist in Canada.

He is a member of the Association of Professional Engineers of the Province of Ontario.

(d) Roger J. Cavén

Mr. Cavén is a geophysicist employed by Barringer Research Limited, 304 Carlingview Drive, Rexdale, Ontario.

He is a graduate of the University of Toronto with the degree of B.A. Sc. with geophysics option.

He is a member of the following associations:
Associate Member Society of Exploration Geophysicists.
Associate Member Canadian Association of Physicists, Earth Science Division.
Associate Member Engineering Institute of Canada.
Registered as Engineer in Training Association of Professional Engineers, Province of Ontario.

He has applied for registration as Geophysicist in British Columbia.

Appendix E

Minex — Supervision

CANADIAN SUPERIOR EXPLORATION LTD. Nº 1820
TORONTO, ONTARIO

BANK OF MONTREAL
KING & YONGE STS
2411 PRUDENTIAL BLDG.
TORONTO, ONT.

DATE August 23, 1968

PAY *** FIFTEEN HUNDRED FIFTY-SIX & 11/100 DOLLARS *** $ 1,556.11

TO THE ORDER OF

MINEX DEVELOPMENT LIMITED
Room 1 - 558 Howe Street
Vancouver 1, B.C.

CANADIAN SUPERIOR EXPLORATION LTD.

PLEASE DETACH FOR YOUR RECORDS

CANADIAN SUPERIOR EXPLORATION LTD.

DATE	DETAIL	AMOUNT	DISCOUNT	NET AMOUNT
Aug. 23 1968	Statement - August 15/68 (attached)	$1,556.11		

Form 10

ACCOUNT	FACILITY	AMOUNT	ACCOUNT	FACILITY	AMOUNT
37 (P29)	94-01-01	$1,211.67	Minex		
(P32)	"	$ 344.44			

Nº 1820

Telephone:
688 - 1735

MINEX DEVELOPMENT LIMITED
(Non-Personal Liability)

Room 1 - 558 Howe Street
VANCOUVER 1, B.C.

August 15, 1968

To: Canadian Superior Exploration Ltd.
1111 West Hastings Street
Vancouver, British Columbia

FOR PAYMENT APPROVED
DATE Aug. 23/68 CHEQUE # 1820

ACCOUNT	AMOUNT
31 (P-29) 94-01-01 (P-32) "	$1211.67 $344.44

ACCOUNT WITH

Minex Development Limited
Suite 1 - 558 Howe Street
Vancouver, British Columbia

I N V O I C E

Re: Wages paid to T. R. Mattson on behalf of
Canadian Superior Explorations Ltd.

May 23 to 31/68		
Wages	$ 174.15	
Canada Pension	2.97	
Unemployment Insurance	.41	
Workmen's Compensation	2.34	$ 179.87 — Minex
June, 1968		
Wages	$ 650.00	
C.P.P.	9.90	
U.I.C.	4.08	
W.C.B.	23.38	$ 687.36 — Minex
July 1968		
Wages	$ 650.00	
C.P.P.	9.90	
U.I.C.	5.60	
W.C.B.	23.38	$ 688.88 ½ Minex ½ Yukon Projects (Fort Reliance)
Total.....		$1,556.11

Barringer Research
(Geochem. + Geology)
(+ I.P Survey.)

CANADIAN SUPERIOR EXPLORATION LTD. No. 1798
TORONTO, ONTARIO

BANK OF MONTREAL
2411 KING & YONGE STS
PRUDENTIAL BLDG.
TORONTO, ONT.

DATE 21st August, 1968

PAY *** SEVENTEEN THOUSAND SEVEN HUNDRED FOUR & 81/100 *** $17,704.81

TO THE ORDER OF

CANADIAN SUPERIOR EXPLORATION LTD.

BARRINGER RESEARCH LIMITED
304 Carlingview Drive
Rexdale, Ontario

PLEASE DETACH FOR YOUR RECORDS

CANADIAN SUPERIOR EXPLORATION LTD.

DATE	DETAIL	AMOUNT	DISCOUNT	NET AMOUNT
Aug. 21 1968	Invoices #3472 3474 3693	$17,704.81		

Form 10

ACCOUNT	FACILITY	AMOUNT	ACCOUNT	FACILITY	AMOUNT
37 (P29)	94-01-02	$17,510.25			
(P32)	94-01-05	$ 180.00			
"	94-01-08	$ 14.56			

Mines

No. 17

PAYABLE WITHOUT CHARGE AT ANY BRANCH OF THE BANK OF MONTREAL IN CANADA [illegible]

CANADIAN SUPERIOR EXPLORATION LTD. Nº 1876
TORONTO, ONTARIO

BANK OF MONTREAL
2411 KING & YONGE STS
PRUDENTIAL BLDG.
TORONTO, ONT.

DATE 24th Sept., 1968

PAY *** TWENTY-THREE THOUSAND TWENTY-FIVE & 50/100 DOLLARS *$23,025.50

TO THE ORDER OF

BARRINGER RESEARCH LIMITED
304 Carlingview Drive
Rexdale, Ontario

CANADIAN SUPERIOR EXPLORATION LTD.

PLEASE DETACH FOR YOUR RECORDS

CANADIAN SUPERIOR EXPLORATION LTD.

DATE	DETAIL	AMOUNT	DISCOUNT	NET AMOUNT
Sept. 24 1968	Invoices #3658 3755 3660 3851 3662 3866 3673 3896	$23,025.50		

Form 10

ACCOUNT	FACILITY	AMOUNT	ACCOUNT	FACILITY	AMOUNT
37 (P25)	94-01-04	$ 120.00			
(P28)	94-01-02	5,450.00			
(P29)	94-01-02	16,940.70			
(P32)	94-01-04	435.20			
"	94-01-05	60.00			
"	94-01-08	19.60			

Miner

Nº [illegible]

NEGOTIABLE WITHOUT CHARGE AT ANY BRANCH OF THE BANK OF MONTREAL IN CANADA, LARGE OUTSIDE LOCAL CLEARING

CANADIAN SUPERIOR EXPLORATION LTD.

TORONTO, ONTARIO

No 1918

BANK OF MONTREAL
KING & YONGE STS
2411 PRUDENTIAL BLDG.
TORONTO, ONT.

DATE October 17, 1968

PAY ** THREE THOUSAND SEVEN HUNDRED TWENTY & 24/100 DOLLARS $3,720.24

TO THE ORDER OF

BARRINGER RESEARCH LIMITED

CANADIAN SUPERIOR EXPLORATION LTD.

PLEASE DETACH FOR YOUR RECORDS

CANADIAN SUPERIOR EXPLORATION LTD.

DATE	DETAIL	AMOUNT	DISCOUNT	NET AMOUNT
Oct.17 1968	Invoices #3754 3991 4021 4036 4051	$3,720.24		

Form 10

ACCOUNT	FACILITY	AMOUNT	ACCOUNT	FACILITY	AMOUNT
37 (P-29)	94-01-02	$3,204.00		Miner	
(P-30)	94-01-04	$ 390.00			
(P-32)	94-01-04	$ 85.00			
"	94-01-05	$ 41.24			

No 10[illegible]

Gc. + Geol.

BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: June 28, 1968

PROJECT: 200.35

PERIOD COVERED:

PROGRESS BILLING: 1
SHIPPING REPORT:
WORK REPORT:
FED. SALES TAX: N/A
ONT. SALES TAX: N/A

Canadian Superior Exploration
7 King Street East
Toronto 1, Ontario

TERMS: NET

AUTHORITY: Letter of acceptance dated May 10, 1968

TO: Soil Sampling & geologic programme, Minex Property, Highland Valley, B. C.

(a)	Field operations (geochem), June 4-17, 1968 14 crew-days @ $65.00 per man-day		✓3,640.00 — gc
(b)	Surveying, trenching, etc. June 18-30 11 crew-days @ $65.00 per man-day		✓2,860.00 — geol.
(c)	Geologic mapping (J. Murphy) June 4-30 25 days @ $125.00 per day		✓3,125.00 — geol.
(d)	Supervision (J. L. Walker) 3 days @ $150.00 Expenses	450.00 21.25	✓471.25 — Super.
(e)	Mobilisation Local Transportation		500.00 150.00 } — Transport
			10,746.25

FOR PAYMENT APPROVED [signature]

DATE Aug 12/68 CHEQUE # 1798

ACCOUNT	AMOUNT
37 (P-29) 94-01-02	$10,746.25

$10,746.25
6764.00
194.56
$17704.81

INVOICE № 3472

BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: July 31, 1968

PROJECT: 200.35

PERIOD COVERED:

PROGRESS BILLING: 2
SHIPPING REPORT:
WORK REPORT:
FED. SALES TAX: N/A
ONT. SALES TAX: N/A

Canadian Superior Explorations
7 King Street East
Toronto 1, Ontario

TERMS: NET

AUTHORITY: Letter of acceptance dated May 10, 1968

TO: Geochemical, geologie programme, Minex Option, B. C.

July, 1968		
a) Field Operations, July 1-9, 1968 5 crew days @ $65.00 per man day	✓1,300.00	— gc
b) Geologie mapping (J. Murphy) July 1-9 9 days @ $125.00 per day	✓1,125.00	— geol.
c) Geochemical Analyses total cu, 1518 samples @ $1.00 each	✓1,518.00	} — gc. anal.
total Mo, 1515 samples @ $2.50 each	✓3,787.50	
Sample Preparations : Soils, 1496 samples @ $ .20	✓299.20	
Rock , 22 samples @ $ .50	✓11.00	
	8,040.70	

FOR PAYMENT APPROVED J.M. Murphy
DATE 9/24/68 CHEQUE #1876
ACCOUNT 37 (1-29) 94-01-02
AMOUNT $8040.70

Merrick Project

INVOICE No 3693

I.P

BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: June 28, 1968

PROJECT: 202.35

PERIOD COVERED:

PROGRESS BILLING: 1
SHIPPING REPORT:
WORK REPORT:
FED. SALES TAX: N/A
ONT. SALES TAX: N/A

Canadian Superior Exploration
7 King Street East
Toronto 1, Ontario

TERMS: NET

AUTHORITY: Letter of acceptance dated May 10, 1968

TO: IP Surveying, Minex Option, Highland Valley, B. C.

June 8-30, 1968	
19 crew-days @ $8,900.00 per month ✓	6,764.00

FOR PAYMENT APPROVED
DATE Aug 21/68 CHEQUE # 1798
ACCOUNT: 37 (P-29) 94-01-02
AMOUNT: $6,764.00

Minex Project

No 3474

BARRINGER RESEARCH LIMITED

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

DATE: July 31, 1968

PROJECT: 202.35

PERIOD COVERED:

PROGRESS BILLING: 2
SHIPPING REPORT:
WORK REPORT:
FED. SALES TAX: N/A
ONT. SALES TAX: N/A

Canadian Superior Exploration
7 King Street East
Toronto 1, Ontario

TERMS: NET

AUTHORITY: Letter of acceptance dated May 10, 1968

TO: IP Surveying, Minex Option, Highland Valley, B. C.

July, 1968	25 days @ $8,900.00 per month	8,900.00

FOR PAYMENT APPROVED
DATE 9/24/68
CHEQUE # 1876
ACCOUNT
37 (P29)
96.01-02
AMOUNT
$8900.00

Minex Project

No 3658

BARRINGER RESEARCH LIMITED

ADVANCED TECHNIQUES AND INSTRUMENTATION FOR THE EARTH SCIENCES

304 CARLINGVIEW DRIVE
REXDALE, ONTARIO, CANADA
PHONE: 416-677-2491
CABLE: BARESEARCH

DATE: September 30, 1968

PROJECT: 202.35

PERIOD COVERED:

PROGRESS BILLING: 3
SHIPPING REPORT:
WORK REPORT:
FED. SALES TAX: N/A
ONT. SALES TAX: N/A

Canadian Superior Explorations
7 Kings Street East
Toronto 1, Ontario

TERMS: NET

AUTHORITY: Letter of acceptance dated May 10, 1968

TO: IP Surveying, Minex Option, Highland Valley, B. C.

August, 1968: 9 days @ $8,900.00 per month	3,204.00

(Field work complete August 10, 1968; Report submitted September, 1968)

FOR PAYMENT APPROVED

DATE Oct 7/68 CHEQUE # 1918

ACCOUNT	AMOUNT
37 (12-29) 94-01-02	$3204.00

Total 5 Invoices
$3,720.24

Owens — line cutting

PAYABLE WITHOUT CHARGE AT ANY BRANCH IN THE BANK OF MONTREAL IN CANADA AND AUTHORIZED AGENTS ABROAD

CANADIAN SUPERIOR EXPLORATION LTD. No. 1670
TORONTO, ONTARIO

BANK OF MONTREAL
2411 KING & YONGE STS
PRUDENTIAL BLDG.
TORONTO, ONT.

DATE 4th June, 1968

PAY *** TWELVE HUNDRED DOLLARS ONLY *** $ 1,200.00

TO THE ORDER OF

MR. KEN OWENS
101 Ranch
Ashcroft, B.C.

CANADIAN SUPERIOR EXPLORATION LTD.

PLEASE DETACH FOR YOUR RECORDS

CANADIAN SUPERIOR EXPLORATION LTD.

DATE	DETAIL	AMOUNT	DISCOUNT	NET AMOUNT
June 4th 1968	Advance re line cutting contract	✓$1,200.00		

Form 10

ACCOUNT	FACILITY	AMOUNT	ACCOUNT	FACILITY	AMOUNT
37 (P29)	94-01-02	$1,200.00			

No.

CANADIAN SUPERIOR OIL LTD.

CHEQUE REQUISITION

Please issue a cheque to:

Mr. Ken Owens
c/o 101 Ranch
Ashcroft, B.C.

Date: June 4/68

Amount $ 1,200.00

FOR PAYMENT APPROVED

DATE June 4/68 | CHEQUE # 1670

ACCOUNT | AMOUNT

37 (1-29)
94-01-02 | $1200.00

Information to be typed on cheque stub:

Advance on line cutting contract

Other remarks:

VOUCHER NO. FEA. 1

ACCOUNT							AMOUNT						
J.V.		General			P	Facility	Debit			Credit			

Prepared by: KW

Authorized by: RAD

Approved by: .....

Coded:

Examined:

CANADIAN SUPERIOR EXPLORATION LTD. Nº 1733
TORONTO, ONTARIO

BANK OF MONTREAL
KING & YONGE STS
2411 PRUDENTIAL BLDG.
TORONTO, ONT.

DATE 9th July, 1968

PAY *** TWO THOUSAND ONE HUNDRED NINETY-ONE DOLLARS ONLY **$2,191.00

TO THE ORDER OF

MR. K. OWENS
Box 155
Ashcroft, B.C.

CANADIAN SUPERIOR EXPLORATION LTD.

PLEASE DETACH FOR YOUR RECORDS

CANADIAN SUPERIOR EXPLORATION LTD.

DATE	DETAIL	AMOUNT	DISCOUNT	NET AMOUNT
9th July, 1968	Statements - June 15th & 30th 1968	$2,191.00		

Form 10

ACCOUNT	FACILITY	AMOUNT	ACCOUNT	FACILITY	AMOUNT
37 (P29)	94-01-02	$2,191.00			

STATEME.

June 15 19[illegible]

M Canadian Superior Exploration Ltd.

193900
254.
2191.00

In a/c With Ken Owens

Box 155 Ashcroft B[illegible]

TERMS Line Cutting Money Property

Base Line	17,200'			
3 Miles + 1,360'		@ 150		449.20
Cross Lines	17,800'	West of		
"	47,700'	East of		
"	3,300'	East of		
"	35,900'	East of		
	139,600'			
26 Miles + 2320'		@ 100		2641.40
				13720
Advance		OK		200000
				1937.00

OK

KW

STATEME_T

June 30th 1968.

M Canadian Superior Exploration Ltd.

In a/c With Ken Owens.

Box 155 Ashcroft B.C.

TERMS Miney Project

	Run Transit Line				
44	+18 N Run Line West				
	2500' ✓				
At	20 West Run Line South				
	1600' ✓				
At	25 West Run Line North				
	4800' ✓				
	Tie in New Grid To				
	old Grid.				
	$150.00 @ mile. =	8100		234.00	

OK [signature]

Redhawk – Transportation

+ [illegible]

CANADIAN SUPERIOR EXPLORATION LTD. Nº 1665
TORONTO, ONTARIO

BANK OF MONTREAL
2411 KING & YONGE STS
PRUDENTIAL BLDG.
TORONTO, ONT.

DATE 30th May, 1968

PAY *** SEVEN HUNDRED THIRTY-SEVEN & 25/100 DOLLARS *** $737.25

TO THE ORDER OF

REDHAWK RENTALS LTD.
1308 Hamilton Street
New Westminster, B.C.

CANADIAN SUPERIOR EXPLORATION LTD.

PLEASE DETACH FOR YOUR RECORDS

CANADIAN SUPERIOR EXPLORATION LTD.

DATE	DETAIL	AMOUNT	DISCOUNT	NET AMOUNT
May 30th 1968	Monthly rentals re contracts #1529 & #1572	$737.25		

Form 10

ACCOUNT	FACILITY	AMOUNT	ACCOUNT	FACILITY	AMOUNT
37 (P27)	94-01-08	$381.75			
(P29)	"	$355.50 → Mines			

Nº [illegible]

Redhawk Rentals Ltd.

4 WHEEL DRIVE VEHICLES

1308 HAMILTON STREET
NEW WESTMINSTER, B. C.
PHONE 521-7881

INVOICE

DATE May 30/68

May 23 - 1968

CHEQUE #1665

ACCOUNT	AMOUNT
37(P-29) 94-01-08	$355.50

Canadian Superior Exploration Limited,
#908, 7 King Street E.,
Toronto, Ont.

Re Contract No. 1572 - R. Dujardin

Rental Fee - per contract - May 23rd - June 23rd	$ 310.00
Sales Tax 5%	15.50
Insurance - at 1.00 per day	30.00
Total	$ 355.50

TERMS: First month&s rental
due on delivery of vehicle.

CANADIAN SUPERIOR EXPLORATION LTD. Nº 1787
TORONTO, ONTARIO

BANK OF MONTREAL
KING & YONGE STS
2411 PRUDENTIAL BLDG.
TORONTO, ONT.

DATE August 13, 1968

PAY *** SIX HUNDRED & 75/100 DOLLARS *** $ 600.75

TO THE ORDER OF

REDHAWK RENTALS LTD.
1308 Hamilton Street
New Westminster, B.C.

CANADIAN SUPERIOR EXPLORATION LTD.

PLEASE DETACH FOR YOUR RECORDS

CANADIAN SUPERIOR EXPLORATION LTD.

DATE	DETAIL	AMOUNT	DISCOUNT	NET AMOUNT
Aug. 13 1968	Statement - July 31/68	$600.75		

Form 10

ACCOUNT	FACILITY	AMOUNT	ACCOUNT	FACILITY	AMOUNT
37 (P25)	94-01-08	$668.06			
(P27)	"	$ 95.44			
(P29)	"	$162.75 CR.			

Mines Credit

No

STATEMENT

July 31 1968

M Canadian Superior Exploration Ltd.,

#908, 7 King Street, E., Toronto, Ont.

In Account With REDHAWK RENTALS LTD.
1308 HAMILTON STREET
NEW WESTMINSTER, B.C.

TERMS:

Misc

May	31	Credit Note re return of #68		Cr. 162	75
June	17 - July 17	Re Rental #76	381 75		
July	17 - Aug. 17	Re rental #76	381 75	763	50
		Balance outstanding		600	75

FOR PAYMENT
APPROVED
DATE Aug 13/68 CHEQUE # 1787
ACCOUNT AMOUNT
31 (1-29) $162.75 CR.
94-01-08

Total = $600.75

Addendum to

Report on Geological, Geophysical and Geochemical Surveys on the Minex Development Limited Property, Highland Valley Area, Kamloops Mining Division

Geochemical Methods:

1. The soil samples were taken with the aid of a steel tube-auger or hammer-mattock (grub-hoe). Most of the samples were collected at fairly shallow depths of 6 to 12 inches so that in most cases the grub-hoe was all that was necessary to clear away the superficial humus material ("A" Horizon) and expose the reddish brown sandy loam and clay comprising the "B" Horizon which was the horizon sampled.

2. The samples were packaged in soil sample envelopes supplied by Canada Envelope Company of Montreal and made of "High Wet Strength, Kraft" brown paper with a wet strength of 32 lbs, measuring 3 1/2 inches by 8 1/2 inches when the flap of the envelope is folded.

3. The samples were partially dried in the field by suspending them in the bags under the roof of a tent. The bags have holes pierced in them for stringing several together for this purpose. In the laboratory, the samples were dried in a warm oven while still in the bags. The samples were screened through an 80 mesh nylon screen, the fines being used for analysis.

4. The tests for total copper and total molybdenum were all carried out in the laboratory of Barringer Research Ltd., in Toronto. No field tests were carried out.

5. The tests were performed as follows:-

   (a) Total Copper

   A sample of the fines from screening the dried sample was digested with fuming perchloric acid for four hours in a pyrex beaker. The siliceous sediment was allowed to settle and the solution diluted to a measured volume with distilled and de-metallised water. An aliquot of the test solution was then taken and analysed for copper using an atomic absorption spectrophotometer manufactured by Perkins-Elmer. Carefully prepared standards were used for control and the copper analyses were carried out by Barringer Research of Toronto, as were those for total molybdenum.

   (b) Total Molybdenum

   A 1/4 gram sample of the fines was fused in a nickel crucible with 1 gram of a fusion mixture made up of 5 parts anydrous sodium carbonate, 4 parts sodium chloride and 1 part potassuim nitrate. The mixture was fused until frothing ceased and allowed to cool, then 2 millilitres of water added. After standing for several hours, the solution and melt were transferred to a calibrated test tube and adjusted to 5 millilitres with water. The solution was then boiled until the melt disintegrated.

(b) Continued....

A 2 millilitre aliquot of the resulting solution was pipetted into 2 millilitres of 2 1/2% hydroxylamine hydrochloride solution contained in a test tube. The tube was shaken to liberate carbon dioxide and left to cool below 30°C. Half a millilitre of 1% dithiol solution (hydrochloric acid) was then added and the mixture shaken gently at intervals over a period of 20 minutes. The resulting green colour developed was compared with a series of similarly prepared standards containing differing amounts of molybdenum. The standard matching the colour of the sample solution was found and knowing the amount of molybdenum therein the amount of the unknown was found via the formula:-

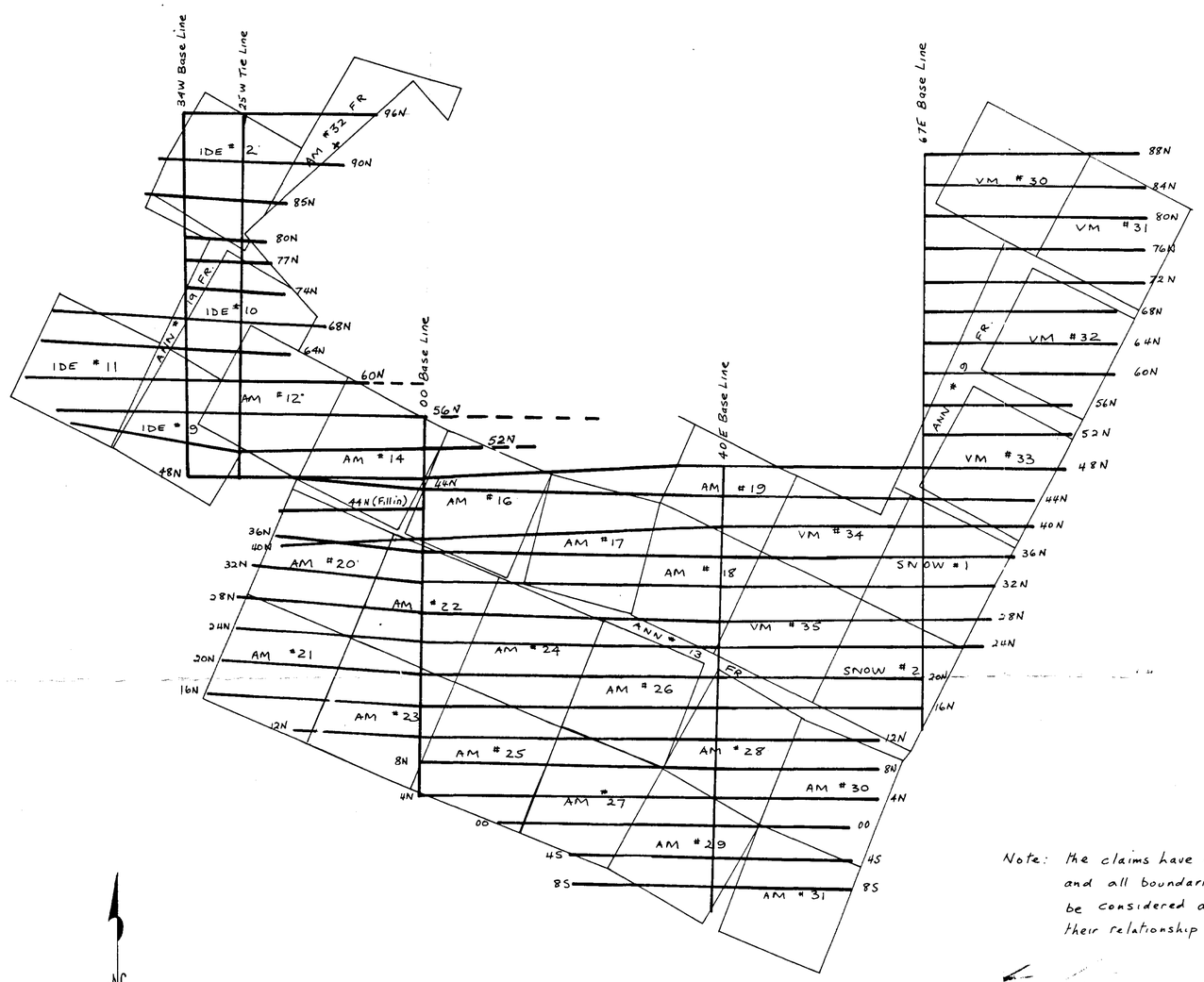
molybdenum in p.p.m. = 10 x micrograms of molybdenum in the matching standard.

Relationship of Grid to Claims

The enclosed map No. 5-202-1A shows the relationship of the cut grid to the claims.

R.A. Dujardin

A.P. Fawley, P. Eng.



Note: the claims have not been surveyed and all boundaries must therefore be considered approximate only in their relationship to the grid of lines.

1757

approximate Minex claim boundary

cut line

N.T.S.

To accompany:- "Report on Geological, Geophysical & Geochemical Surveys on the Minex Development Limited Property, Highland Valley Area, Kamloops Mining Division"

by:- R.A. Dujardin and A.P. Fawley P.Eng., dated: November 20, 1968

SCALE 1" = 1000'

0 1000 2000 3000 4000 5000

CANADIAN SUPERIOR EXPLORATION LIMITED

MINEX DEVELOPMENT LTD — Highland Valley B.C.

SURVEY GRID AND APPROXIMATE CLAIM BOUNDARIES (1)

R.A.D. | Feb. 18/69 | DWG. 5-202-1A

67E BASE LINE

88N

84N

80N

76N

72N

68N

64N

60N

56N

52N

48N

44N

40E BASE LINE

Much deadfall

Thick second growth spruce

Deadfall

Good open bush

Flat, open to thickly wooded

Flat, heavy growth small Jackpine

Good open bush Jackpine to 14"

LEGEND

1	Aplite
2a	Specularite Breccia
3	Quartz Porphyry
5	Hornblende – Biotite Granite
6	"Skeena" Quartz Diorite – Lornex Type

SYMBOLS (Geological)

- Outcrop Boundary
- Geological Contact - Defined, Assumed
- Strike and Dip of Jointing
- Strike and Dip of Vein
- Fault Indicated
- Rusted Zone

SYMBOLS (Cultural & Topographic)

- Streams (Permanent / Intermittent)
- Swamp
- Ridge Line
- Valley Bottom
- Rock Scarp
- Main Access Road
- Secondary Road / Trail
- Waste Dump
- Open Trench
- Caved Trench
- Water filled Trench
- Diamond Drill Hole (Inclined / Vertical)
- Percussion Drill Hole (Inclined / Vertical)
- Clearing - bulldozed to bedrock

INDEX

D	A
C	B

Work undertaken by BARRINGER RESEARCH LTD, Toronto, Canada.

To accompany report by R.A. Bruyn and A.F. Barclay dated Nov 20/68

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

SURFACE GEOLOGY

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-3A

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 3

1757

Good open Jackpine bush

Pond

Pond

Pond

Deadfall

Pond

Flat open, 4" to 10" Jackpine

Tinder type

Contact poorly defined

Aplitic phases

Open Jackpine

Pond

40E BASE LINE

67E BASE LINE

Knight Lake

40 N

36 N

32 N

28 N

24 N

20 N

16 N

12 N

8 N

4 N

00

4S

8S

N

—A—

LEGEND

- Aplite
- Specularite Breccia
- Quartz Porphyry
- Hornblende – Biotite Granite
- "Skeena" Quartz Diorite – Lornex Type

SYMBOLS (Geological)

- Outcrop Boundary
- Geological Contact - Defined, Assumed
- Strike and Dip of Jointing
- Strike and Dip of Vein
- Fault Indicated
- Rusted Zone

SYMBOLS (Cultural & Topographic)

- Streams (Permanent / Intermittent)
- Swamp
- Ridge Line
- Valley Bottom
- Rock Scarp
- Main Access Road
- Secondary Road / Trail
- Waste Dump
- Open Trench
- Caved Trench
- Water filled Trench
- Diamond Drill Hole (Inclined / Vertical)
- Percussion Drill Hole (Inclined / Vertical)
- Clearing - bulldozed to bedrock

INDEX

D	A
C	B

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 4

1757

To accompany report by R.A. Jayawardena and A.P. Fowley dated Nov 20/68

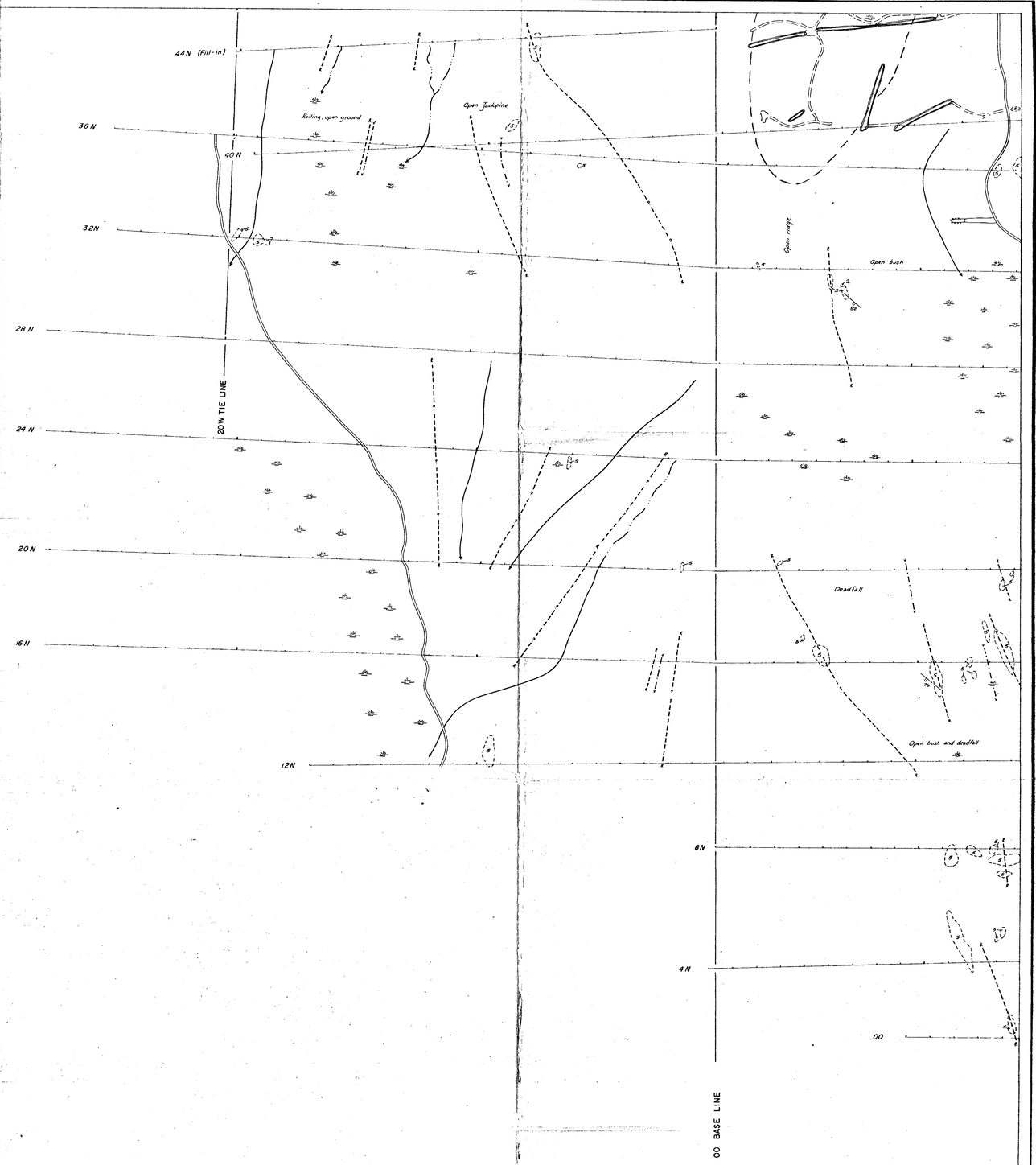
Work undertaken by BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

SURFACE GEOLOGY (3)

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-3B



1757

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 5

N

LEGEND

z	Aplite
5a	Specularite Breccia
y	Quartz Porphyry
x	Hornblende – Biotite Granite
c	"Skeena" Quartz Diorite – Lornex Type

SYMBOLS (Geological)

- Outcrop Boundary
- Geological Contact – Defined, Assumed
- Strike and Dip of Jointing
- Strike and Dip of Vein
- Fault indicated
- Rusted Zone

SYMBOLS (Cultural & Topographic)

- Streams (Permanent / Intermittent)
- Swamp
- Ridge Line
- Valley Bottom
- Rock Scarp
- Main Access Road
- Secondary Road / Trail
- Waste Dump
- Open Trench
- Caved Trench
- Water filled Trench
- Diamond Drill Hole (Inclined / Vertical)
- Percussion Drill Hole (Inclined / Vertical)
- Clearing – bulldozed to bedrock

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To accompany report by R A Dreyer and APF au by dated Nov 20/68

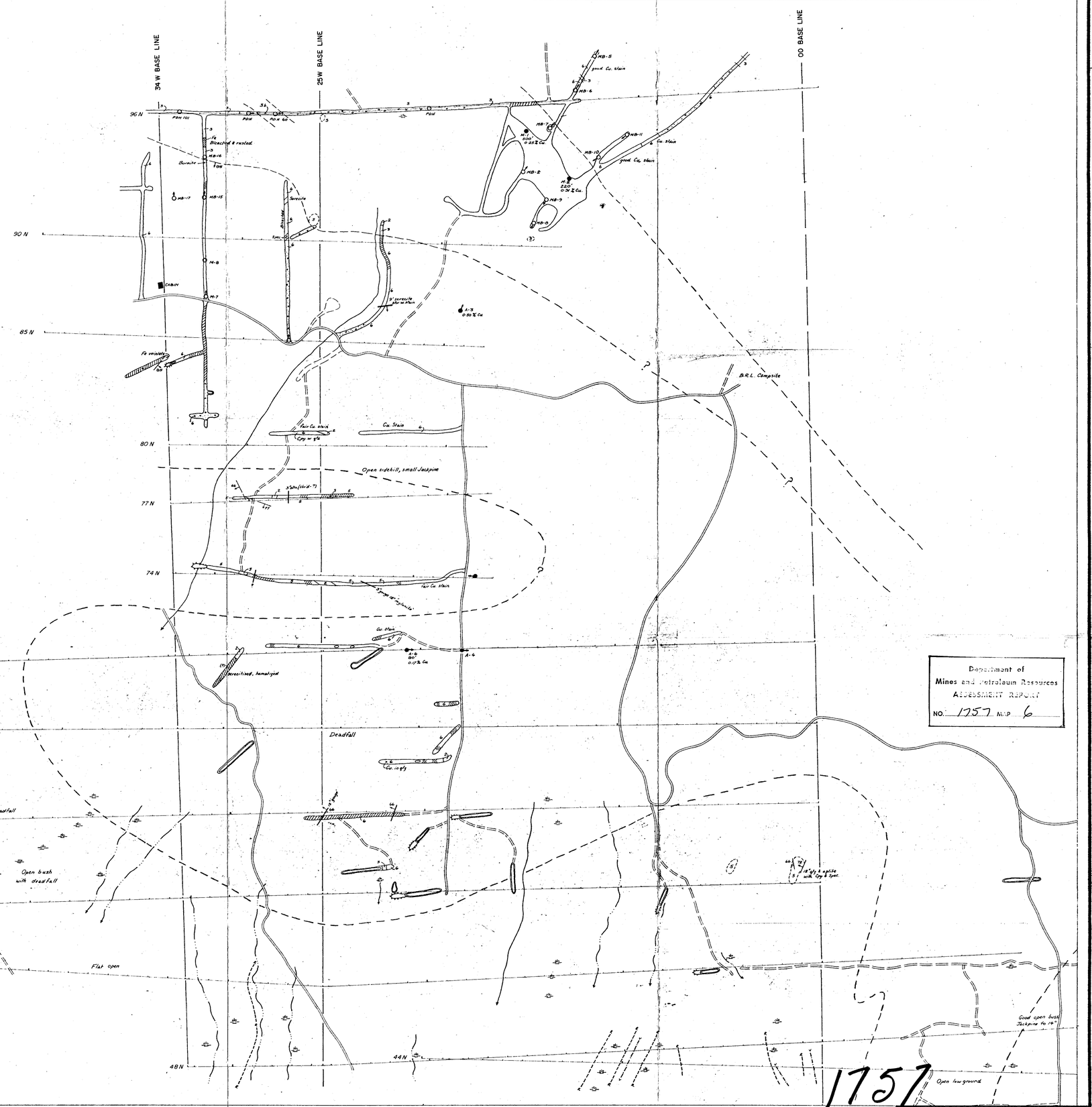
Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

SURFACE GEOLOGY (4)

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-3C



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 6

1757

To accompany report by R.A. Bryan and A.F. Fawley dated Nov 20/68

LEGEND

2	Aplite
3a	Specularite Breccia
3	Quartz Porphyry
5	Hornblende – Biotite Granite
6	"Skeena" Quartz Diorite – Lornex Type

SYMBOLS (Geological)

- Outcrop Boundary
- Geological Contact – Defined, Assumed
- Strike and Dip of Jointing
- Strike and Dip of Vein
- Fault Indicated
- Rusted Zone

SYMBOLS (Cultural & Topographic)

- Streams { Permanent / Intermittent
- Swamp
- Ridge Line
- Valley Bottom
- Rock Scarp
- Main Access Road
- Secondary Road Trail
- Waste Dump
- Open Trench
- Caved Trench
- Water filled Trench
- Diamond Drill Hole { Inclined / Vertical
- Percussion Drill Hole { Inclined / Vertical
- Clearing-bulldozed to bedrock

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Work undertaken by
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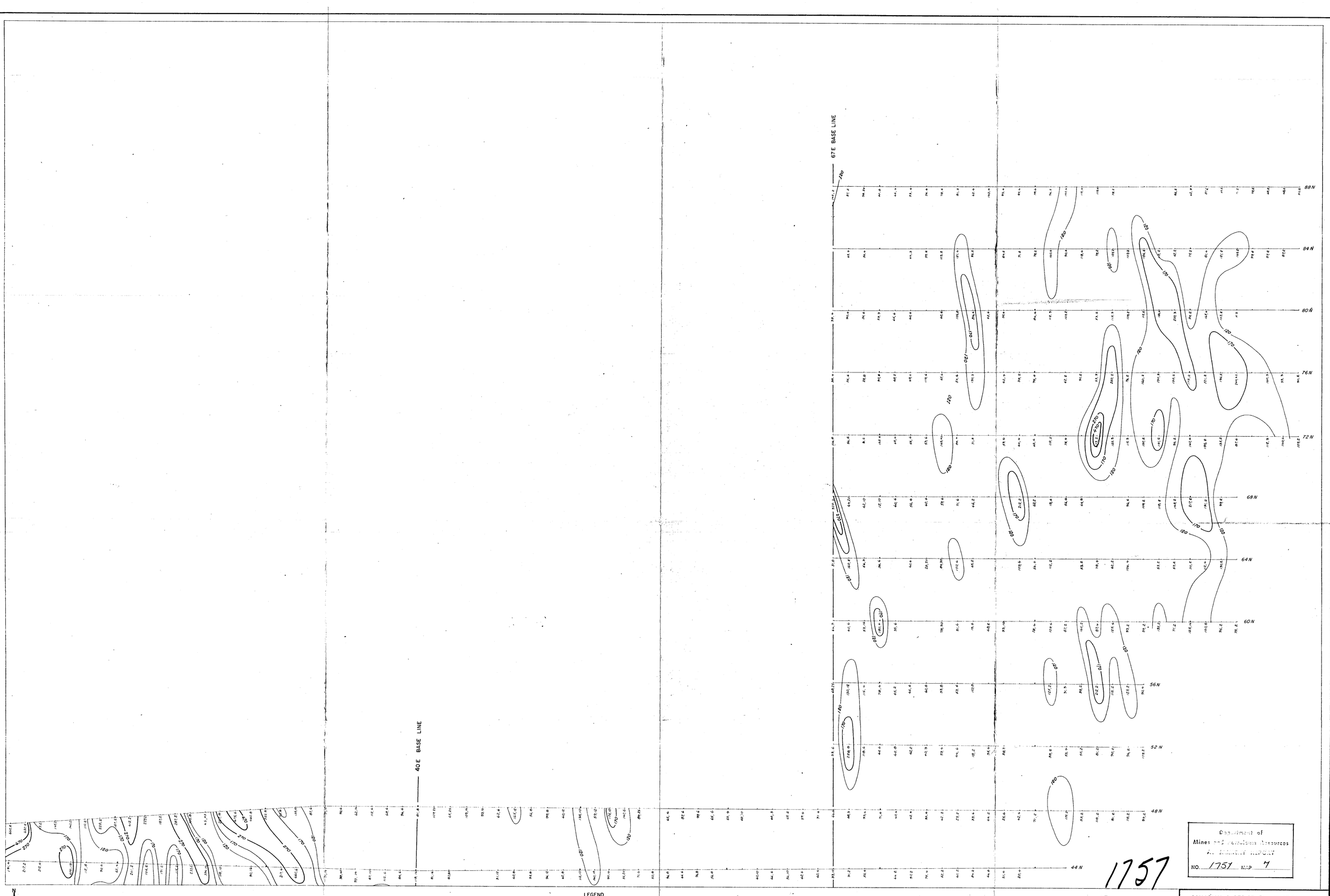
MINEX OPTION, HIGHLAND VALLEY, B.C.

SURFACE GEOLOGY

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-3D



LEGEND

120ppm Contour	<120 ppm	Background
170ppm Contour	121- 170ppm	Threshold
270ppm Contour	171- 270ppm	Anomalous, 3rd order
470ppm Contour	271- 470ppm	" , 2nd order
	471 > ppm	" , 1st order

120, 18 — Geochem. Values Cu, Mo

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Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 4

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To accompany report by R.A. Brynelsen and A.F. Rowley dated Nov 20/68

CANADIAN SUPERIOR EXPLORATION LTD.

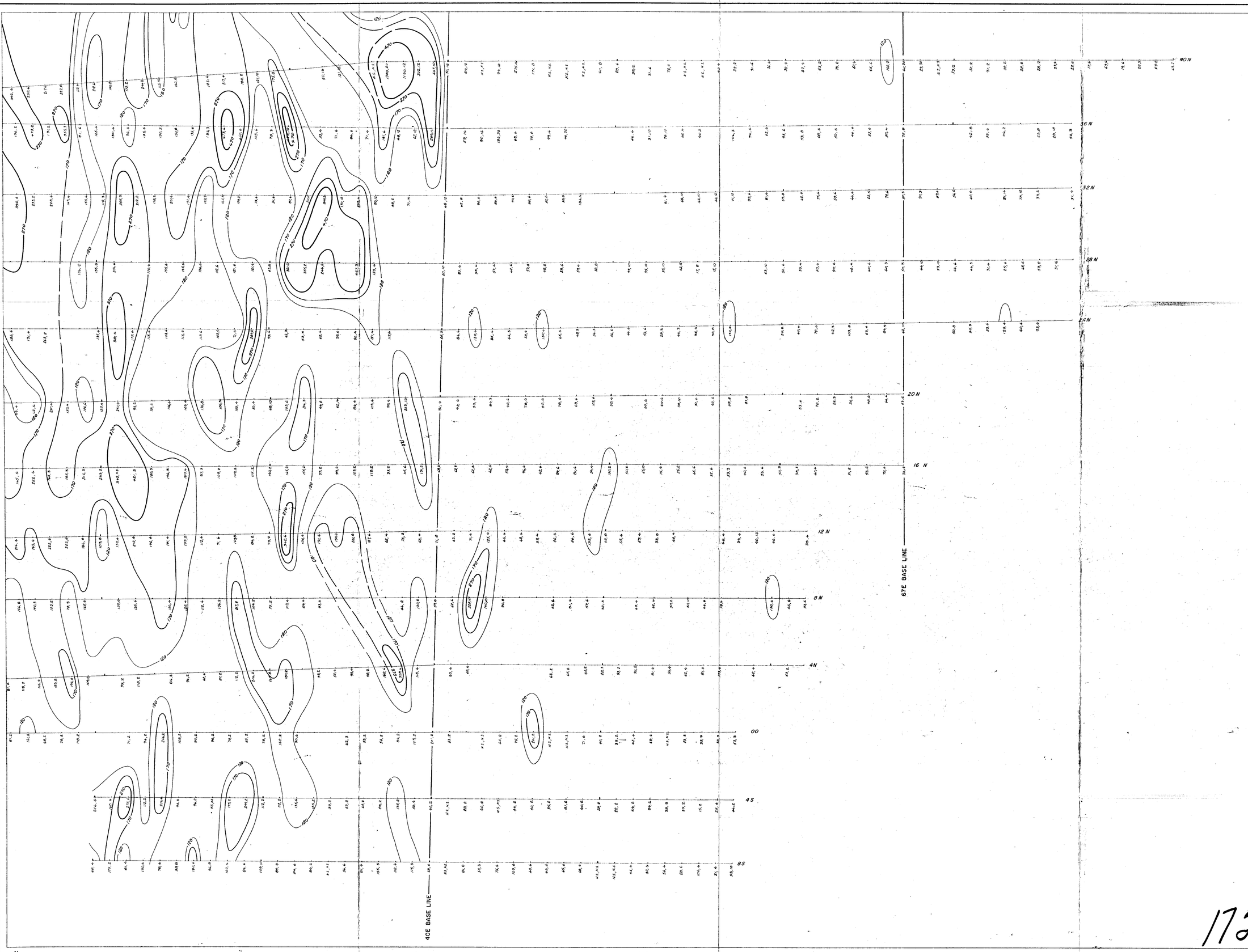
MINEX OPTION, HIGHLAND VALLEY, B.C.

GEOCHEMICAL SOIL SURVEY
COPPER

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-4A

Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

5-200



LEGEND

120ppm Contour	<120 ppm	Background
170ppm Contour	121 – 170ppm	Threshold
270ppm Contour	171 – 270ppm	Anomalous, 3rd order
470ppm Contour	271 – 470 ppm	" , 2nd order
	471 > ppm	" , 1st order

140, 18 — Geochem Values: Cu, Mo

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Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 8

To accompany report by R.A. Bingham and A.P. Fawley dated Nov 20/68

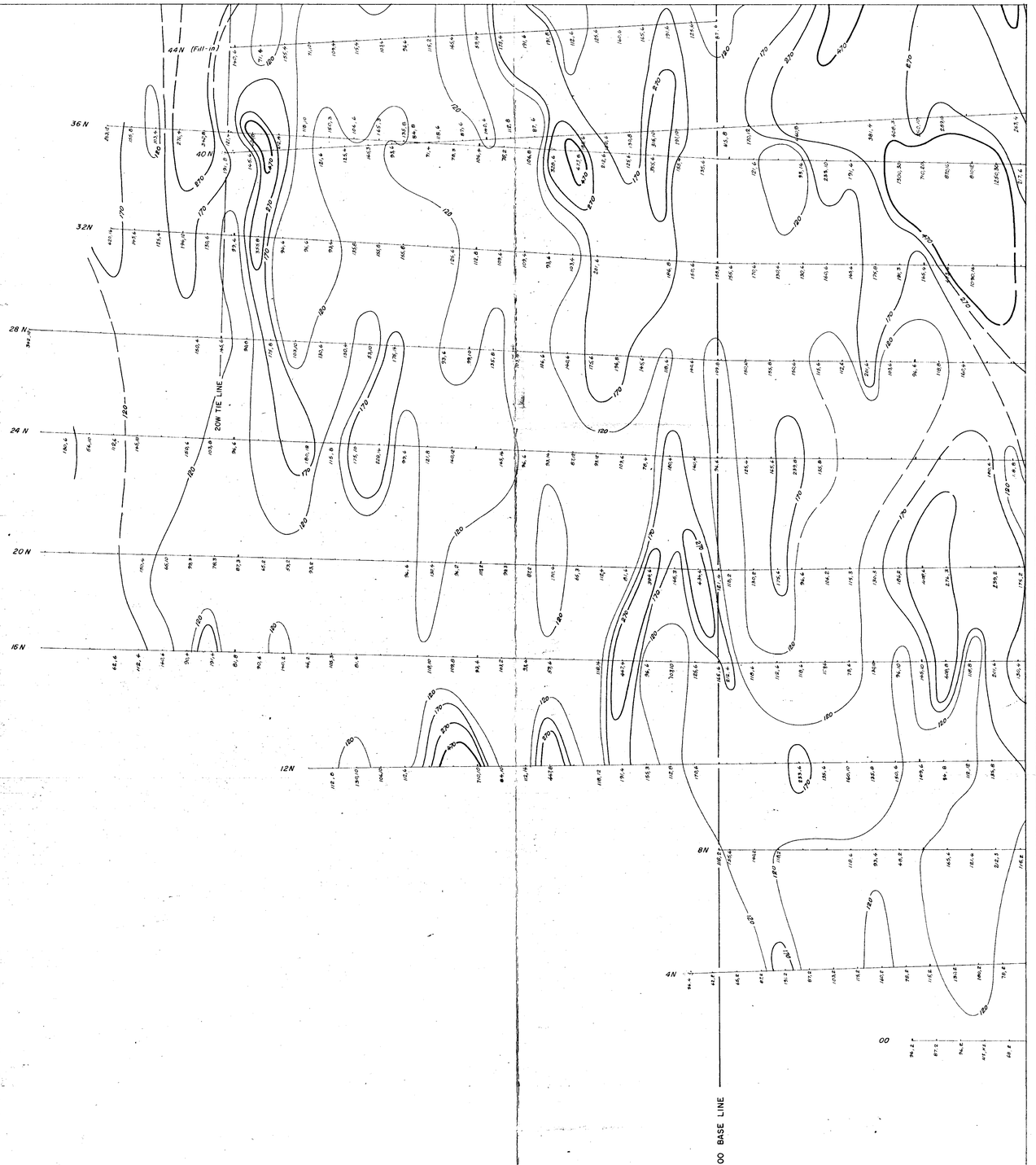
Work undertaken by BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

GEOCHEMICAL SOIL SURVEY
COPPER

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-4 B



1757

N

—A—

LEGEND

120ppm Contour	<120 ppm	Background
170 ppm Contour	121 - 170ppm	Threshold
270ppm Contour	171 - 270 ppm	Anomalous, 3rd order
470ppm Contour	271 - 470 ppm	" , 2nd order
	471 > ppm	" , 1st order

160, 18 — Geochem. Values: Cu, Mo

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To accompany report by R.A. Bringas and A.P. Fawley dated Nov. 3/68

Work undertaken by
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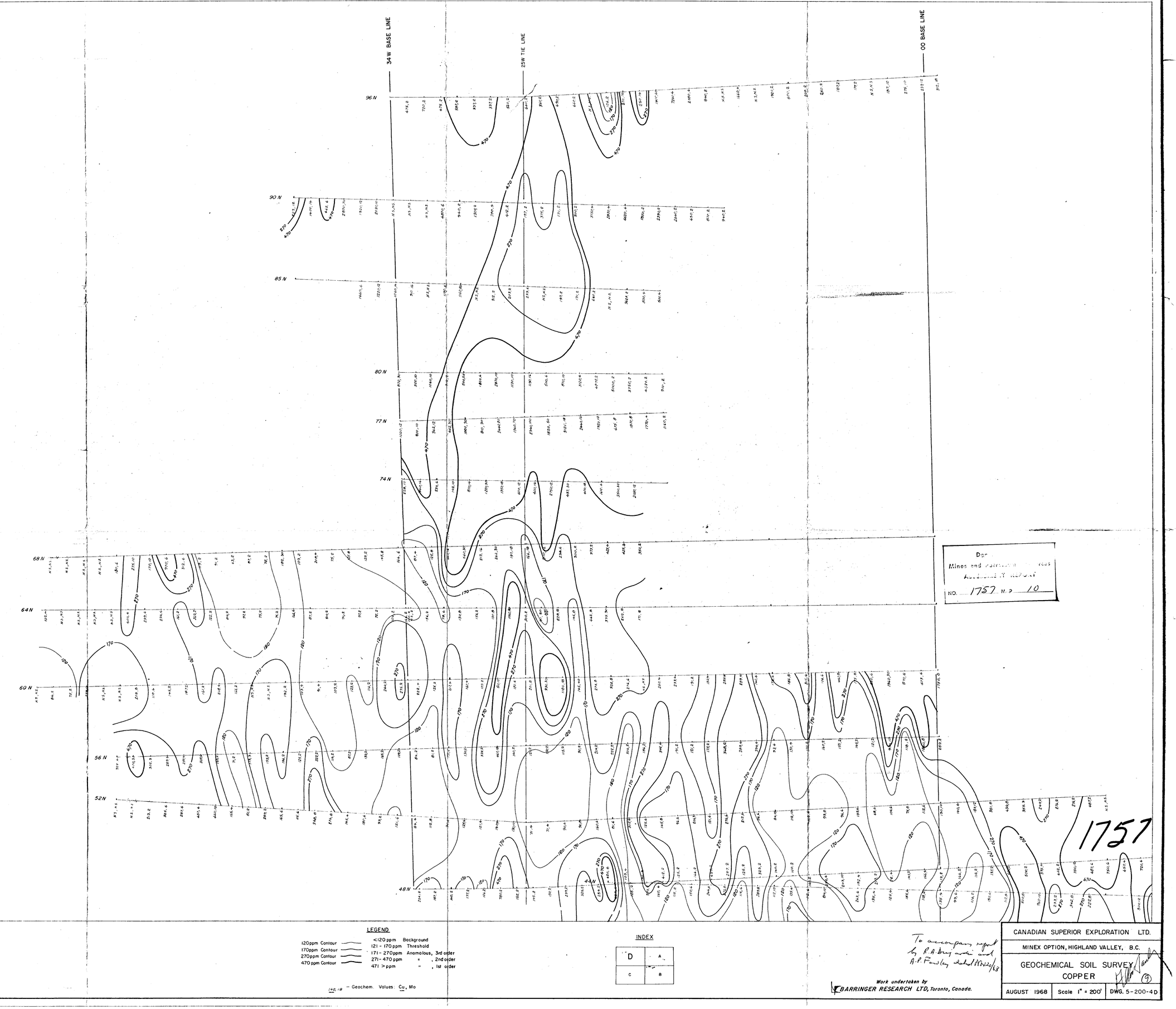
CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

GEOCHEMICAL SOIL SURVEY
COPPER

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-4 C



Dpr
Mines and [illegible] Roads
Assessment Report
NO. 1757 M.P. 10

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N

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LEGEND

120ppm Contour	<120 ppm	Background
170ppm Contour	121 - 170 ppm	Threshold
270ppm Contour	171 - 270ppm	Anomalous, 3rd order
470 ppm Contour	271 - 470 ppm	" , 2nd order
	471 > ppm	" , 1st order

140, 18 – Geochem. Values: Cu, Mo

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To accompany report by R.A. Brayne and A.P. Pawley dated Nov 20/68

Work undertaken by
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CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

GEOCHEMICAL SOIL SURVEY
COPPER

(9)

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-4D

67E BASE LINE

88N
84N
80N
76N
72N
68N
64N
60N
56N
52N
48N
44N

40E BASE LINE

LEGEND

<12 ppm Background
12 – 18 ppm Threshold
18> ppm Anomalous

12ppm Contour
18ppm Contour

140, 18 — Geochem. Values: Cu, Mo

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To accompany report by R.A. Longworth and A.F. Pawley dated Nov 20/68

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BARRINGER RESEARCH LTD, Toronto, Canada.

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 p 11

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CANADIAN SUPERIOR EXPLORATION LTD.

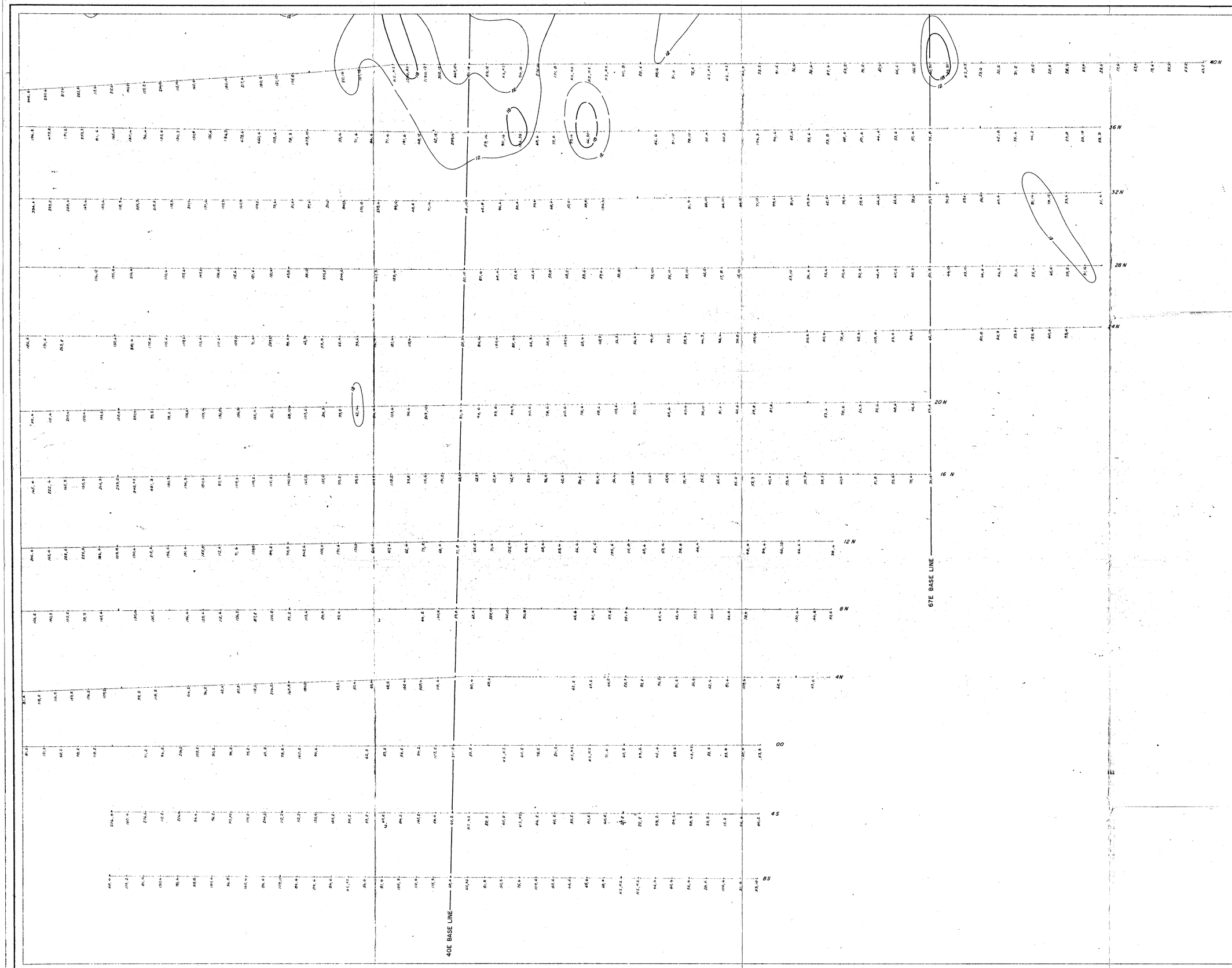
MINEX OPTION, HIGHLAND VALLEY, B.C.

GEOCHEMICAL SOIL SURVEY
MOLYBDENUM

(10)

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-5A

5-200



LEGEND

<12ppm Background
12 - 18ppm Threshold
18> ppm Anomalous

12ppm Contour
18ppm Contour

140,18 — Geochem Values: Cu, Mo

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Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 12

To accompany report by R.A. Brignell and A.P. Pawluk dated Nov 20/68

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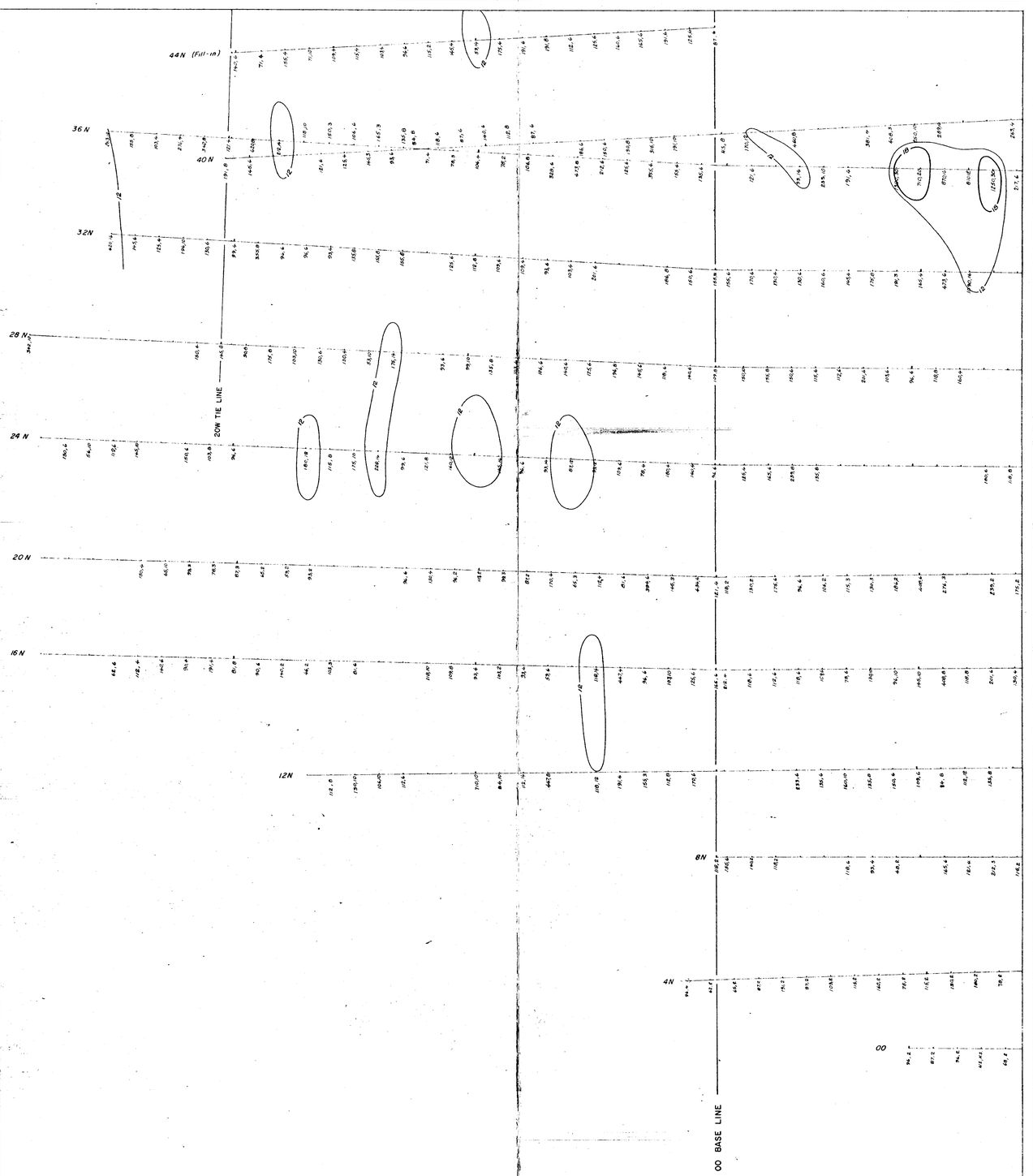
CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

GEOCHEMICAL SOIL SURVEY
MOLYBDENUM

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-5B



LEGEND

<12 ppm	Background
12 - 18 ppm	Threshold
18 > ppm	Anomalous

12ppm Contour

18ppm Contour

140, 18 – Geochem. Values: Cu, Mo

N

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Department of Mines and Petroleum Resources

MINING RECORDER

NO. 1757 MAP 13

1757

To accompany report by R.A. Bryan and A.P. Pawley dated Nov. 30/68

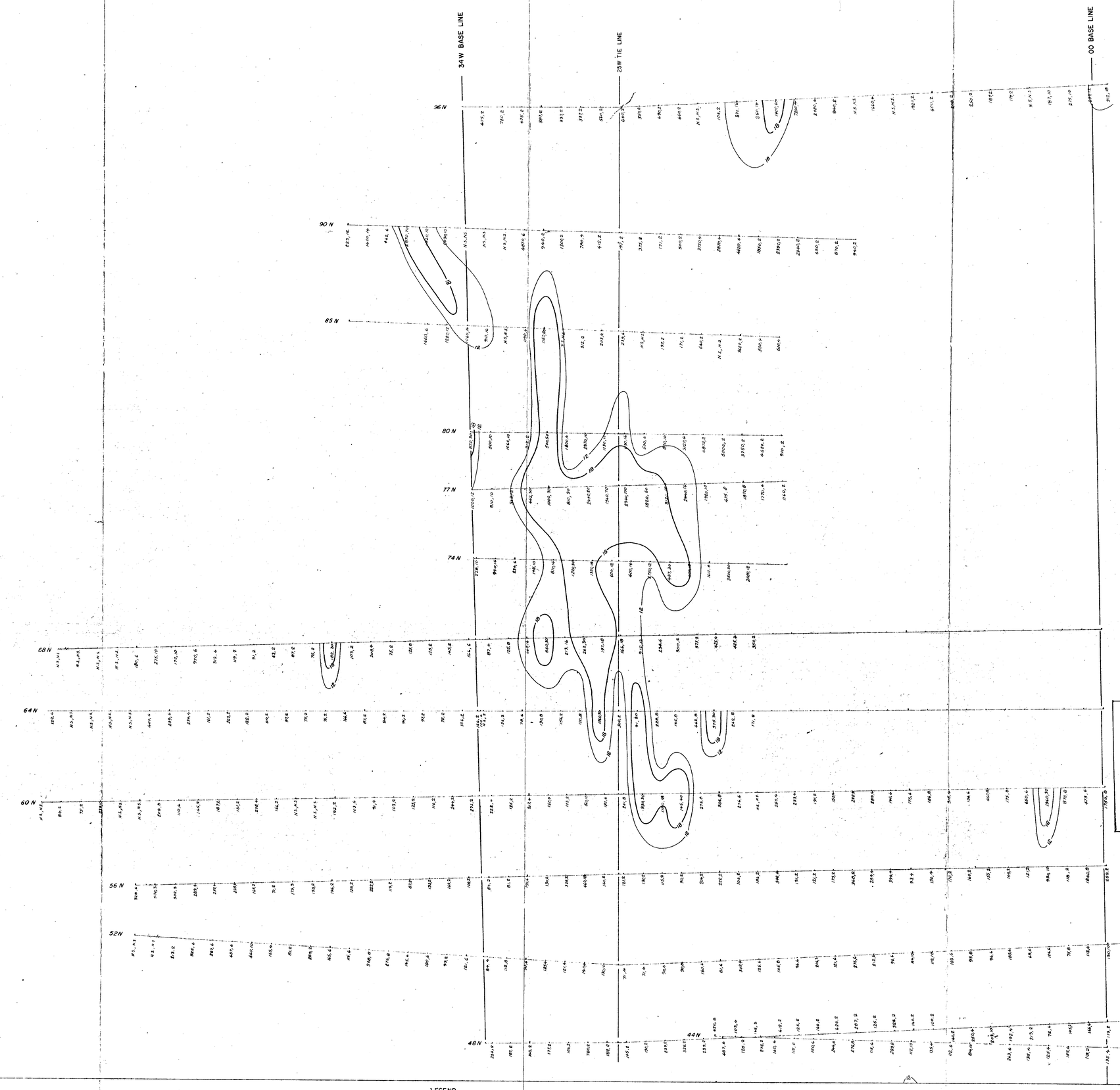
Work undertaken by BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

GEOCHEMICAL SOIL SURVEY
MOLYBDENUM (13)

AUGUST 1968	Scale 1" = 200'	DWG. 5-200-5C



Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 14

LEGEND

<12 ppm Background
12 - 18 ppm Threshold
18 > ppm Anomalous

12ppm Contour
18ppm Contour

140, 18 — Geochem. Values: Cu, Mo

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1757 To accompany report by R.A. Dufresne and A.P. Pawlyn dated Nov 21/68

Work undertaken by BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

GEOCHEMICAL SOIL SURVEY
MOLYBDENUM

AUGUST 1968 | Scale 1" = 200' | DWG. 5-200-5D

67E BASE LINE

88N

84N

80N

76N

72N

68N

64N

60N

56N

52N

48N

44N

40E BASE LINE

20E 30E 50E 60E 70E 80E

LEGEND

N

-A-

Pole – Dipole

P_1 P_2 P_3 P_4 C_1 ∞ Current East C_2

a = 200'

(n = 1) Chargeability – Scale 1" = 5 millisecs
(n = 2)
(n = 4)
(n = 1) Resistivity – Scale 1" = 500 ohm metres
(n = 2)
(n = 4)

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To accompany report by R.A. Davidson and A.P. Fawley dated Nov. 20/68

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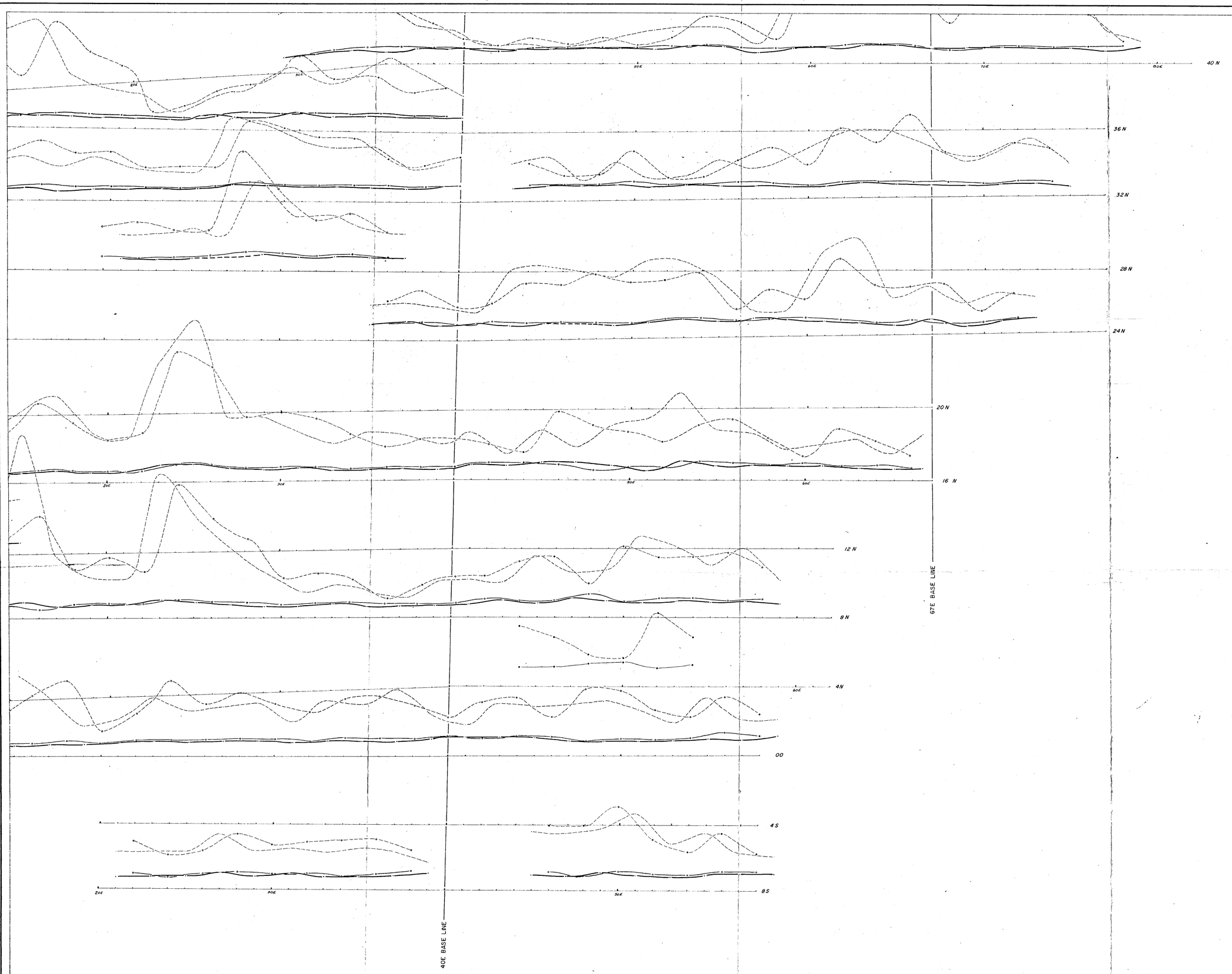
CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

INDUCED POLARIZATION & RESISTIVITY SURVEY
POLE – DIPOLE

AUGUST 1968 | Scale 1" = 200' | DWG. 5-202-2A

(19)



LEGEND

Pole – Dipole

P_2 a P_1 na C_1 ∞ Current East C_2

a = 200'

(n=1) Chargeability – Scale 1" = 5 millisecs
(n=2)
(n=4)
(n=1) Resistivity – Scale 1" = 500 ohm metres
(n=2)
(n=4)

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To accompany report by

Work undertaken by
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Department of
Mines and Petroleum Resources
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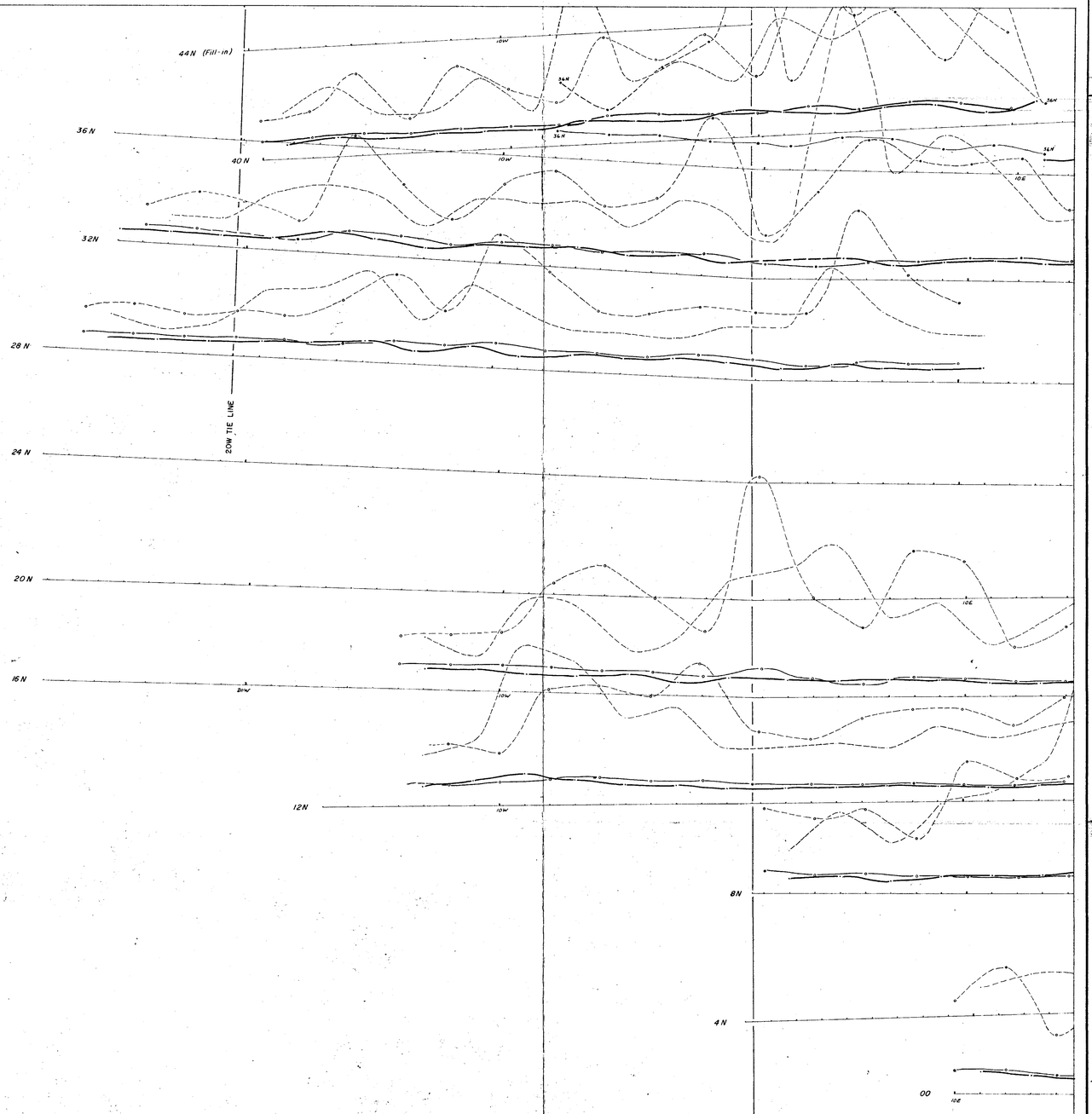
CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

INDUCED POLARIZATION & RESISTIVITY SURVEY
POLE – DIPOLE

(15)

AUGUST 1968 | Scale 1" = 200' | DWG. 5-202-28



N

LEGEND

Pole – Dipole

P_2 a P_1 na C_1 ∞ C_2

a = 200'

Current East

(n=1) Chargeability – Scale 1" = 5 millisecs
(n=2)
(n=4)
(n=1) Resistivity – Scale 1" = 500 ohm metres
(n=2)
(n=4)

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To accompany report by R.A. Barrington and A.P. Fawley dated Nov 30/68

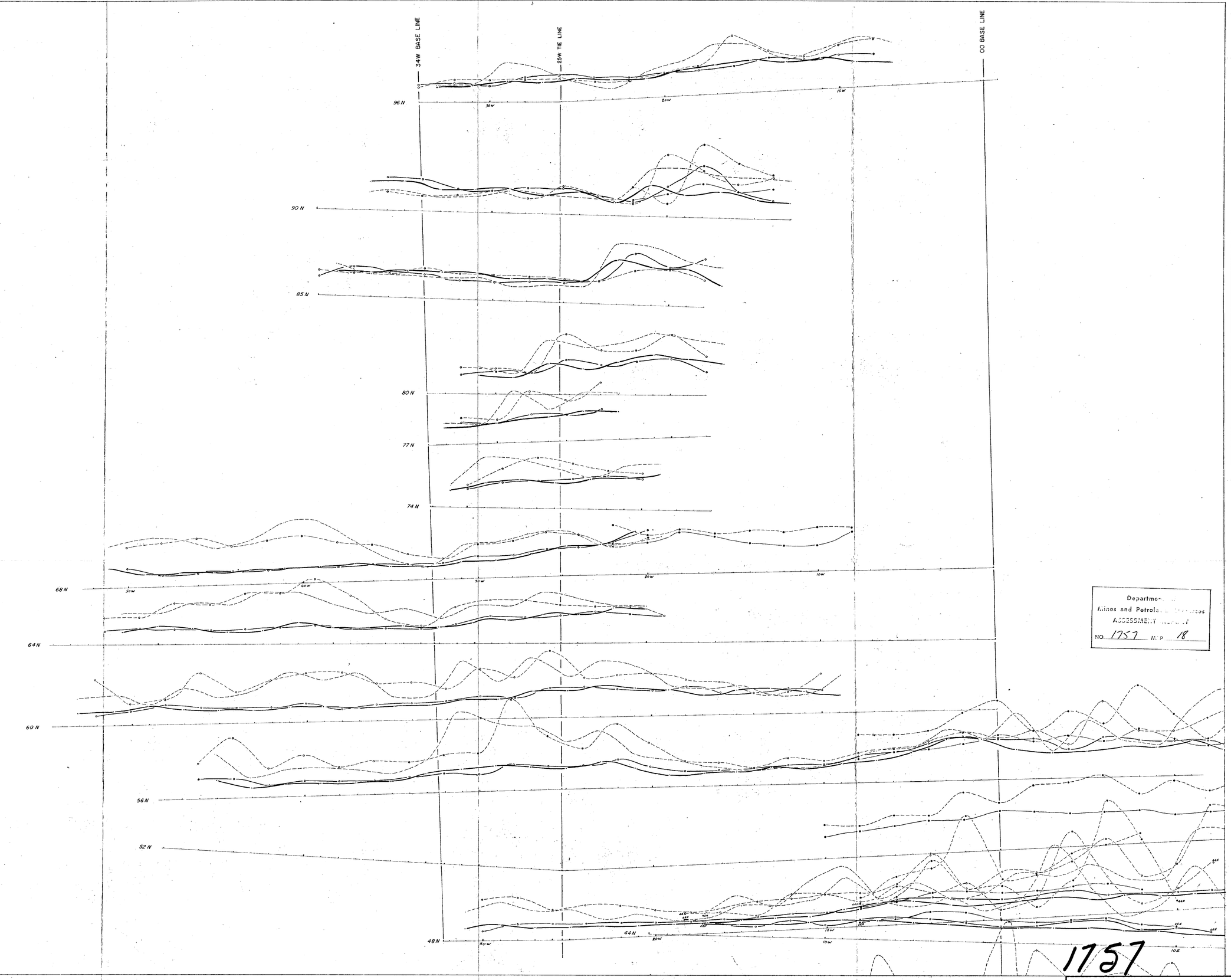
Work undertaken by
BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

INDUCED POLARIZATION & RESISTIVITY SURVEY
POLE-DIPOLE

AUGUST 1968	Scale 1" = 200'	DWG. 5-202-2C



Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1757 MAP 18

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LEGEND

Pole – Dipole

P_c a P_1 na C_1 ∞ C_2 Current East

a = 200'

(n=1) Chargeability – Scale 1" = 5 millisecs
(n=2)
(n=4)
(n=1) Resistivity – Scale 1" = 500 ohm metres
(n=2)
(n=4)

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To accompany report by R.A. Barringer + A.P. Fowler Dated Nov. 29/68

Work undertaken by BARRINGER RESEARCH LTD, Toronto, Canada.

CANADIAN SUPERIOR EXPLORATION LTD.

MINEX OPTION, HIGHLAND VALLEY, B.C.

INDUCED POLARIZATION & RESISTIVITY SURVEY
POLE – DIPOLE

AUGUST 1968	Scale 1" = 200'	DWG. 5 - 202 - 2D