CUZIN OPTION

GEOLOGY, GEOCHEMISTRY, GEOPHYSICS, and DIAMOND DRILLING - 1977

VERNON MINING DIVISION
N.T.S 82-L-7E

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82-L-7E

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VERNON MINING DIVISION, B.C.

Geology, Geochemistry, Geophysics and Diamond Drilling - 1977

SUMMARY

In June of 1977 an exploration program consisting of line flagging, geological mapping, a magnetic survey, limited geochemical soil sampling, EM traverses, backhoeing and diamond drilling was carried out over a property located 50 kilometres east-northeast of the town of Vernon, British Columbia.

The purpose of this exploration program was the detection of a large tonnage stratabound, massive sulphide deposit within rocks believed to immmediately overlie the Shuswap Metamorphic Complex.

Geological mapping showed that the claim was underlain by weakly metamorphosed sediments that probably belonged to the Mount Ida Group, a division of the Shuswap Metamorphic Complex.

The magnetometer results indicated that very complex dipolar anomalies could be related to the probable occurrence of pyrrhotite mineralization, with the EM results indicating that some of these magnetic anomalies coincided with conductors.

The geochemical soil sampling failed to reveal the presence of any metal anomalies which, while surprising, was explainable from the backhoe results.

Trenching, using a backhoe, encountered graphitic and

pyrrhotite-bearing sediments in the vicinity of the coincident magnetic and EM anomalies and also encountered an extensive cover of hardpan which is now believed to have inhibited any geochemical expressions of metal anomalies.

Diamond drilling tested a zone of coincident magnetic and EM anomalies near an area where copper-bearing "float" was previously recognized. These results proved that the anomalies were caused by pyrrhotite and graphite respectively without any mineralization of economic significance.

This report contains detailed interpretations of the results of this program, with recommendations.

1. INTRODUCTION

In 1972, 50 kilometres east-northeast of the town of Vernon, B.C., logging operations exposed pyrrhotite and very weak chalcopyrite in sediments along road cuts, and chalcopyrite-bearing massive sulphide float in a bulldozer trench.

Forty-two claims were staked and these were optioned to Toronado Development Corporation Limited. A program of geological mapping and geochemical soil sampling was completed over the claims, which were then allowed to lapse.

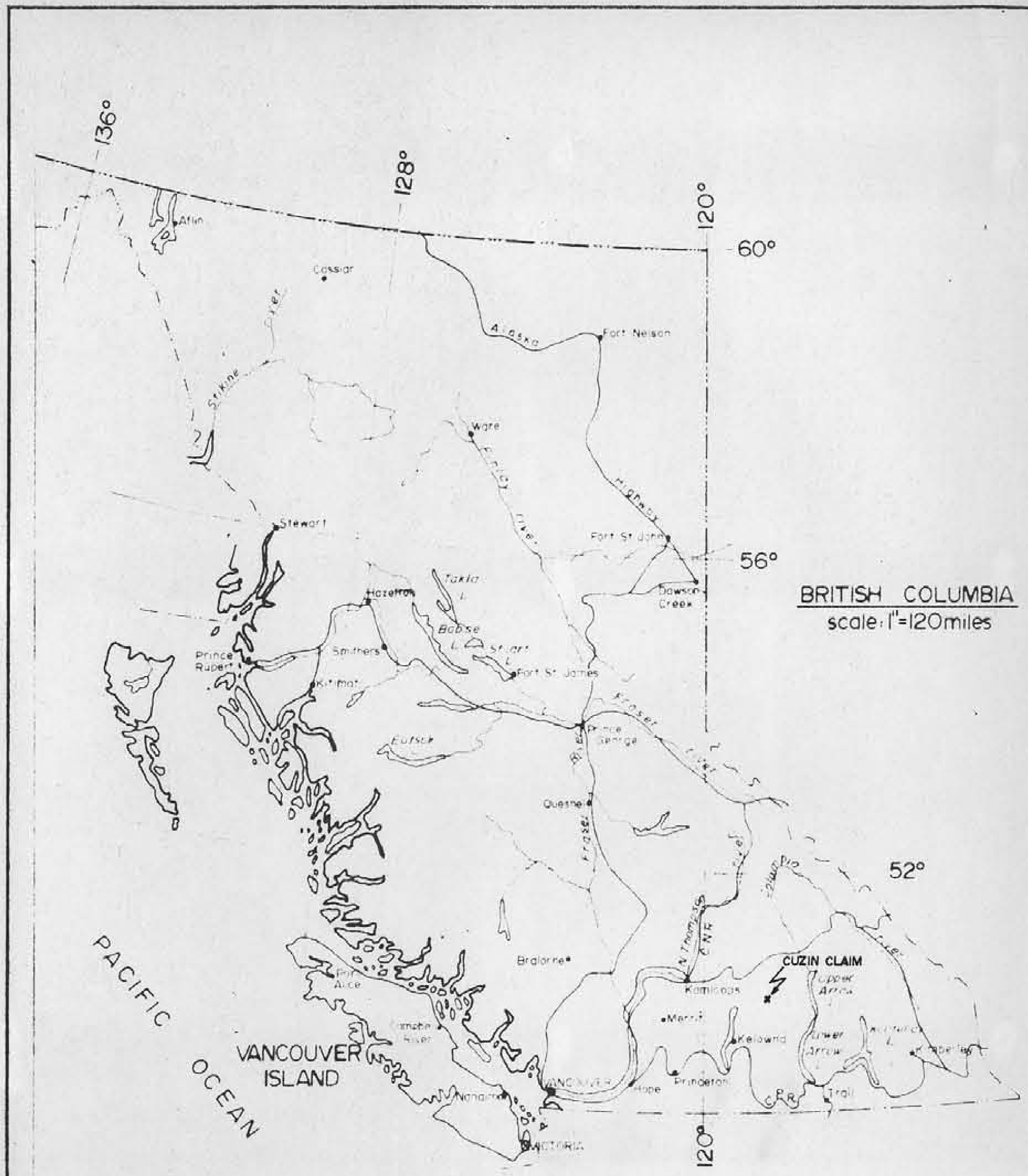
In May, 1977; Brican Resources Limited staked the 20-unit CUZIN claim. In June of that year, Rio Tinto Canadian Exploration Limited (Riocanex) optioned the claim and began a program of line flagging, geological mapping, magnetic surveying, and limited geochemical soil sampling, EM traverses, backhoeing and diamond drilling.

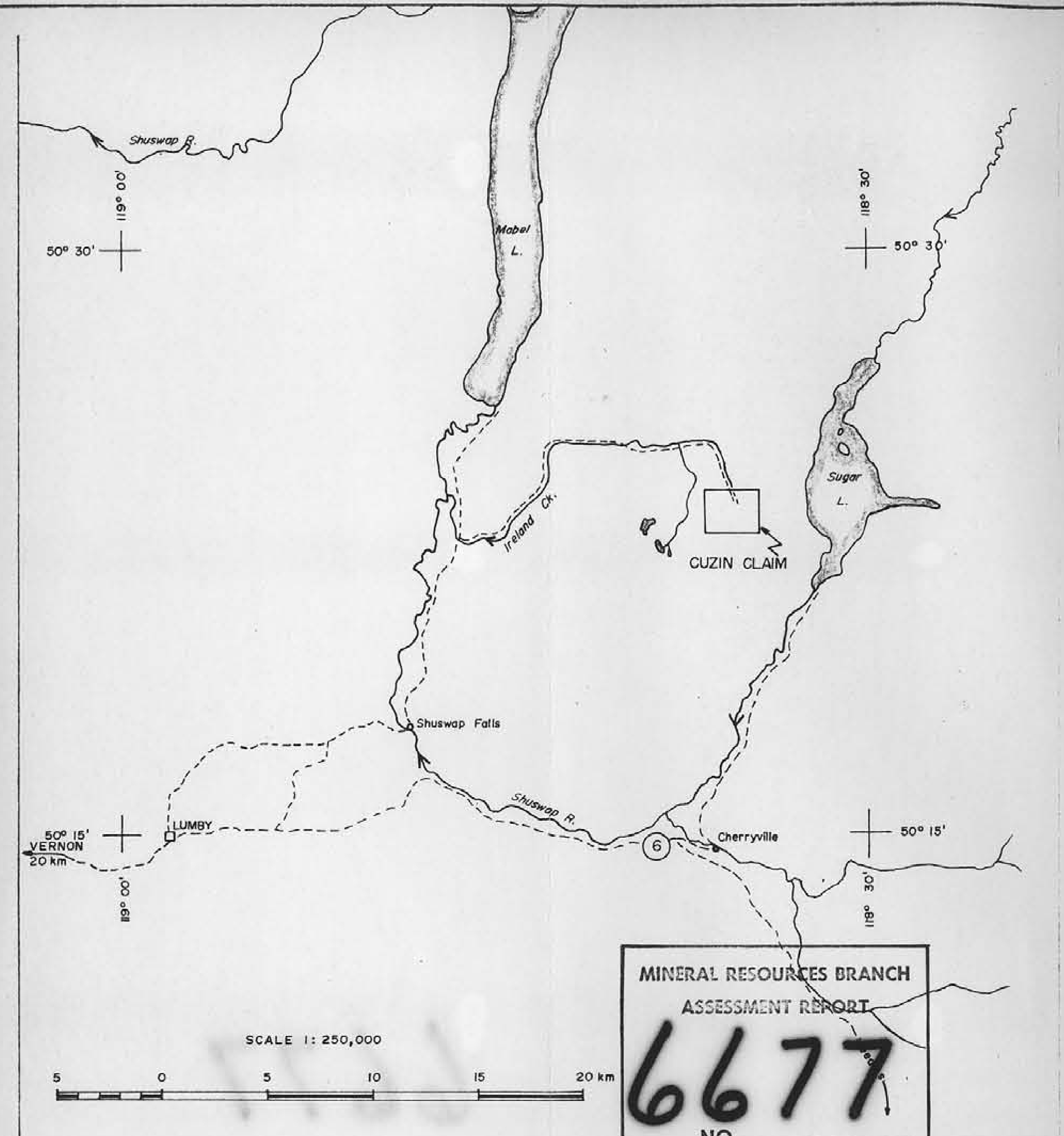
All geophysical field data and preliminary plots were forwarded to Toronto for draughting under the supervision and direct responsibility of J. A. McCance. D. B. Petersen supervised all other field operations and was responsible for the presentation of the results from all other activities and for implementation and coordination of the overall project.

This report has been jointly prepared by the authors and fairly describes the results of this 1977 Riocanex exploration program.

2. LOCATION AND ACCESS

The CUZIN claim (20 units) is situated at the head of Squaw Valley, approximately 50 air km east-northeast of the





RIO TINTO CANADIAN EXPLORATION LTD

CUZIN OPTION

LOCATION MAP

NOV. 1977 | DBP / dbp | DWG L. - 6522

town of Vernon, and approximately 30 air km northeast of the village of Lumby in the Vernon Mining Division. The claim is centered at geographic coordinates $50^{o}24'$ N, $118^{o}35'$ W, at a mean elevation of 1,350 m a.s.l. N.T.S. for the area is 82-L-7E. (See location map.)

Access is by paved highway from Lumby to Shuswap Falls, 16 km to the east, and then by the South Mabel Lake road for 10 km to the Ireland Creek turnoff. The claim is situated at mile 14 on the Squaw Valley road which starts at the Ireland Creek turnoff and follows Ireland Creek.

3. TOPOGRAPHY AND VEGETATION

The claim is situated on a gently northeast-facing slope at a mean elevation of 1,300 m a.s.l. Total relief is 550 m. (See drawing No. G-7349, "Base Map").

4. HISTORY

According to Taylor (1973), road cuttings made during the course of logging operations in 1972 exposed some zones of rusty, limonitised sediments and mineralized float in a trench, which led to the staking of a total of 42 NEWF, and A claims by H. Hachard. These were optioned to Toranado Development Corporation Ltd., who engaged D. P. Taylor to conduct a program of geological mapping and geochemical soil sampling over the claims.

The result of the mapping showed that weakly-to-moderately metamorphosed sediments were present on the property, some of which were weakly pyrrhotised, and accompanied, in some cases, by very weak chalcopyrite mineralization. Medium grade chalcopyrite in a siliceous and pyrrhotite-rich matrix was present in float in a bulldozer trench near a camp site.

One hundred and ten geochemical soil samples were taken along north-south lines spaced 4,500 feet apart. Sample spacing was 100 feet along the lines. The results showed that isolated values (Cu, Pb and Zn) of medium range were present.

The claims were allowed to lapse. Since this activity no other previous work is known to have occurred on this prospect.

In May 1977, Brican Resources Ltd. staked the 20-unit CUZIN claim to cover the rusty zones. Rio Tinto Canadian Exploration Limited optioned the claims in June and proceeded with a program of line flagging, geological mapping, and a magnetic survey over the entire claim; and EM traverses, geochemical soil sampling, trenching and diamond drilling in selected areas.

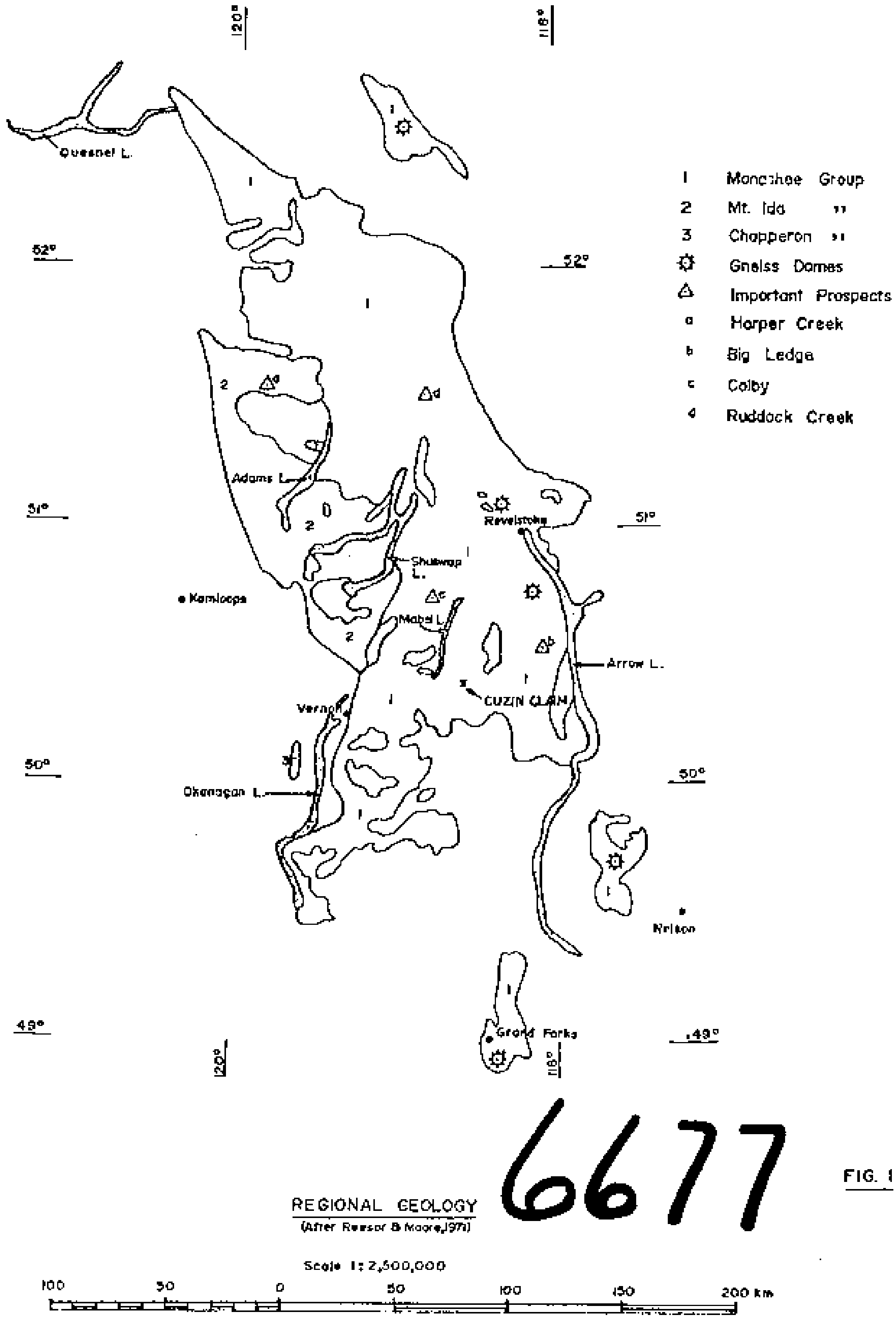
5. REGIONAL GEOLOGY

The CUZIN claim is situated in a north-northwesterly striking belt of rocks known as the Omineca Crystalline Belt. Flanked by the Eastern Marginal Belt to the east and the Intermontane Belt to the west, the Omineca Belt is composed of a variety of rock types that includes intrusives, volcanics, sediments, and metamorphic rocks. In time, these cover a span from the Proterozoic to the Tertiary. The sediments in this belt, according to Wheeler (1966), were deposited in a miogeosynclinal environment in the east, and a eugeosynclinal environment in the west. The several orogenies that included periods of volcanism and intrusion, occurred during the time of younger beds being laid on top of older, underlying beds. With burial, many of the rocks underwent regional metamorphism.

The CUZIN claim is underlain by rocks that belong to the Shuswap Metamorphic Complex (See Regional Geology, Fig.1). This is a major group of rocks that occurs towards the western edge of the Omineca Crystalline Belt and consists of a series of intensely-to-weakly metamorphosed sedimentary and volcanic rocks that occur from north of the North Thompson River in the north to the U.S. border in the south, and from the Upper Arrow Lake in the east to Okanagan Lake in the west. According to Jones (1959), the Shuswap Complex can be divided into three groups, the Monashee Group, the Mount Ida Group, and the Chapperon Group.

The Monashee Group is distinguished by the high-grade of metamorphism that has resulted in gneiss being the predominant rock-type present, with subsidiary schist, quartzite and marble. A feature of the Monashee Group is the pegmatite that is present as wisps, sills, and dykes. In some areas pegmatite is the predominant rock present.

The Mount Ida Group consists of the Chase, Silver Creek, Tsalkom, Mara, Sicamous and Eagle Bay Formations, which together, constitute a thickness of some 20,000 metres. The group consists of weakly metamorphosed sedimentary and volcanic units that are distinctly mappable and today are present as schists of various types, limestones and lesser argillites and slates.


120°
118°
Quesnel L.
52°
51°
50°
49°
1 Monashee Group
2 Mt. Ida "
3 Chapperon "
Gneiss Domes
Important Prospects
a Harper Creek
b Big Ledge
c Colby
d Ruddock Creek
Adams L.
Revelstoke
Shuswap L.
Kamloops
Mabel L.
Arrow L.
CUZIN CLAIM
Vernon
Okanagan L.
Nelson
Grand Forks
REGIONAL GEOLOGY
(After Reesor & Moore, 1971)
Scale 1: 2,500,000
100
50
0
50
100
150
200 km

6677

FIG. 1

The Chapperon Group contains rocks that are similar, in composition and grade of metamorphism, to those of the Eagle Bay Formation. It is possible that they belong to the same series of rocks, and are close stratigraphic equivalents.

Pegmatites are virtually absent in the Mount Ida and Chapperon Groups.

Jones (1959) concludes that the three groups described above belong to the same single series and that their differences are the result of their stratigraphic relationship. The Monashee Group, underlying the others, has suffered deepest burial and therefore has undergone the highest grade of metamorphism. The Mount Ida and Chapperon Groups, being stratigraphically higher, have experienced shallower burial and, therefore, lower grades of metamorphism.

In recent years, Reesor (1971) has proposed that a series of gneiss domes, spaced approximately 80 km apart along the eastern edge of the Shuswap Complex have caused the intense metamorphic grades that are associated with the Monashee Group. These domes have acted as cores and contain the highest grades of metamorphism. Lower grades of metamorphism envelope the cores. This implies that the Mount Ida and Chapperon Groups are not part of the same series as the Monashee Group, but are younger and were laid after the main events that led to the high-grade metamorphism of the Monashee Group.

In many areas underlain by the Shuswap Complex, the near-pervasive overburden in areas of gentle slope is certain to have caused inaccuracies in the mapping that has been done.

The broad area that is shown to be Monashee Group rocks is likely to contain bodies of younger rocks that do not outcrop.

Economically, the Shuswap Complex has proved to be interesting, and at the same time disappointing, for while a number of significant deposits are located within it, no worthwhile production has ever resulted.

Generally, the larger deposits are concordant with the enclosing strata. Mineralization is traceable over long strike distances, but the narrow widths, and in the case of those deposits that occur within the Monashee Group, the obliterating effects of the pegmatite dyking, have made proving of mineable tonnages difficult. At the present time, the Ruddock Creek, Big Ledge, Colby, and Harper Creek deposits have come closest to being economically feasible.

The Big Ledge deposit (Hoy, 1975), is a stratabound pyrrhotite-pyrite-sphalerite deposit that is traceable over a strike length of 10 km. The mineralization is confined to a rock unit that consists of a rusty weathering, calcareous quartzite, calc-silicate gneiss, and marble. This unit occurs in the "Mantling zone" of the Thor-Odin gneiss dome and has been tentatively correlated with the Lower Cambrian Hamill-Badshot Formation.

At Colby, mineralization (pyrrhotite, sphalerite, and minor pyrite and galena) is present in massive white marble, calc-silicate gneiss, and calcareous quartzite. The marble unit (Hoy, 1975) has been correlated with the Lower Cambrian Badshot Formation.

At Ruddock Creek, sphalerite, pyrrhotite, galena, pyrite and minor chalcopyrite occur in contorted lenses that are associated with siliceous calc-silicate gneiss, quartzite, and marble. Pegmatite dyking, which in places constitutes up to 50% of the rock, has caused severe contortion and obliteration of the mineralized horizon. (Hedley, 1963).

These three deposits described above occur within the Monashee Group. The Harper Creek deposit, on the other hand, has the Eagle Bay Formation as its host, and consists of conformable lenses of pyrite-chalcopyrite that are contained in weakly metamorphosed quartz-chlorite-sericite schists. According to L. Reinertson (personal communication), it seems likely that the mineralization accompanied the deposition of acid volcanics, for the mineralized lenses are confined to the more acidic phases. Subsequent metamorphism has obscured the exact nature of the original rock type, and probably caused some mobilization of the sulphide minerals, for the pyrite and chalcopyrite are now disseminated along foliation planes.

The table given below summarizes the tonnages and grades of the deposits described above. Although these figures are not final and could well change with more work being done on the respective properties, their inclusion is felt to be sufficiently accurate as to give a reasonable picture of the size and tenor of each deposit.

Tonnage/Grade Estimates - Deposits within the Shuswap Complex.

Deposit	Tons x 10^6	%Pb + Zn	%Cu	Remarks
Big Ledge	?	4	-	Width less than 3.5m ?
Colby	0.5	4	-	Approx. 1 million tons unmineable (less than 3.5m width).
Ruddock Creek	10	10	-	Inaccessible location
Harper Creek	100	-	0.4	Approx. 0.25% Cu cutoff
Harper Creek	200	-	0.35	" " " "

These figures assume a minimum mineable width of 3.5m.

6. WORK DONE IN 1977 AND PRESENTATION OF RESULTS

The following work was done by Riocanex during 1977.

6.1 Line Flagging

A total of 4.0 kilometres of north-south baseline segments were flagged along the east and west boundaries of the claim. Chain and compass techniques were then employed to place eleven, east-west oriented "grid" lines at an intended interval of 200 metres. Stations along these lines were marked by hanging a yellow nylon ribbon "flag" at intervals of 25 metres. However; check traverses revealed that anomalous magnetic effects were distorting compass bearings and that large gaps had occurred within the grid area. To determine the extent of this problem, the lines were tied into each other by chain and compass traverses along the logging roads and along the base lines. Where the interline spacing was greater than 250 metres, additional flagged lines were positioned such that all remaining "gaps" were less than 250 metres.

During line flagging; station elevations were recorded on all east-west lines by means of altimeter observations at

50 metre intervals east from the western claim boundary.

In summary; K. Brown and D. B. Petersen flagged and placed elevation control on 32.6 kilometres of east-west lines. In addition,1.25 kilometres of cross lines were flagged and 2.3 kilometres of road stations were flagged. Together with the 4.0 kilometres of baseline segments that were flagged, a total of 40.15 kilometres of flagging was completed.

This control grid together with elevation contours in metres above sea level, pertinent geographical features and claim information is presented as a"Base Map,"drawing G-7349 at a scale of 1:5000 and accompanies this report.

6.2 Geological Mapping

All the rock exposures on the claim were mapped. Except for one natural exposure on line 2,000 N, all other "exposures" on the claim were uncovered during road building in the course of routine logging operations. Thin sections were cut from representative specimens of each rock type, and studied under a polarizing microscope.

Both mapping of the property and thin section examinations were completed by T. M. Green under the supervision of D. B. Petersen.

Subsequently; trenching was employed as a means to identify the source of several coincident magnetic and electromagnetic (EM) anomalies recognized on the property. These trenches were mapped and sampled by D. B. Petersen with sample analysis being completed by the Kamloops Research and Assay Laboratory.

The combined results of geological mapping are presented with an appropriate legend as drawing G-7348. A scale of 1:5000 has been used.

The results of the thin section examinations completed by T. M. Green are incorporated into section 7.1 of this report entitled "Results and Interpretations - Geological Mapping".

6.3 Geophysics

6.3.1. Magnetic Survey

The instrument used for all magnetic traversing was a Scintrex fluxgate model MF-2 magnetometer. Requiring only "bulls-eye" levelling, it has a sensitivity of 20 gammas per scale division and a reading accuracy of 10 gammas on the most sensitive scale. On all other scales reading accuracy can be maintained at 1% of full scale. Five switch-selectable scales are available which allow the observer to monitor an overall range of relative vertical field magnetic values of ± 100,000 gammas.

Readings were taken nominally every 25 metres except where anomalous conditions were encountered or expected in which case intermediate 12.5 metre stations were read. Anomalous conditions for the present purpose can be summarized as areas of unusually high or low magnetic amplitude relative to an arbitrary background value, areas with magnetic gradients greater than 200 gammas per nominal station interval and areas of outcrop so as to facilitate any geological correlations.

Diurnal variation was monitored by completing closed loops to a previously established magnetic "base" station.

Twenty-four base stations were established at easily accessible points over the property through independent loops. These base control "loops" were tied to a prime magnetic base station located at 750m E on line 2000N where calibration of the magnetometer was completed. Diurnal checks were then facilitated by monitoring any of these twenty-four bases at intervals not exceeding 1½ hours. Corrections for any diurnal variation were applied by a linear distribution of observed variations at established bases over the time between base checks.

J. Lindsey established all magnetic base stations and completed traverses along lines 0N, 150N, 400N, 600N, 800N, 1000N, 1200N, 1400N, 1600N, 1800N and 2000N. D. B. Petersen completed magnetic traverses along lines 200N, 400N(A), 900N, 1250N, 1300N, 1650N and cross-lines 1 through 12.

All magnetic data, corrected for hourly drift and diurnal variation are presented as numerical values at each respective location in drawing M-7492. Additionally, magnetic anomalies are presented in a histogram-type format on drawing M-7493. Both Dwg. M-7492 and Dwg. M-7493 present data at a scale of 1:5000 with suitable legends in each case. On Dwg. M-7493 elevation contours have been added as elevation control was believed to be an important aspect in the interpretation of anomalous patterns. All flagged lines and prominent surface features are indicated on both maps relative to arbitrary northing and easting co-ordinates. These co-ordinates are suitable indicators for correlation with the claim boundaries presented on Dwg. G-7350 "Base Map".

6.3.2. Electromagnetic Traverses

The unit used for these EM traverses was a CEM instrument manufactured by Crone Geophysics Limited. The Horizontal Shootback method was employed using a medium operating frequency of 1830 Hz for basic coverage and a low frequency of 390 Hz in anomalous areas (more than 6° positive or negative). Coil separation was maintained at 50 metres during all traverses.

The Horizontal Shootback method, as described in Canadian Patent #631,506, involves two identical coils each being capable of transmitting and receiving. When transmitting the coils are accurately held with the plane of the coil horizontal. Both coils, in turn transmit and then measure the "dip angle" at their respective positions. Receiving, or measuring the "dip angle" requires that the plane of the receiver coil is tilted out of vertical until a minimum or "null" indication (audio and visual) is observed. The two dip angles (inclinometer tilt indications at null) are added together. The inclinometers and procedure are such that if no conductors are present, the "resultant dip angle", being the sum of the two receiver readings at null, equals zero. By convention, these "resultant dip angle" values are recorded and displayed at the mid point between the transmitter and receiver locations.

The two most important operational aspects observed during these EM traverses was the manner in which the coils were held and the relative orientation of the two operators. On this latter aspect both operators faced perpendicular to the line of traverse with the lead operator always to the left hand side of the trailing or "chief" operator.

D. Mark, Geotronics Surveys Limited, Vancouver was contracted to act as instructor and chief operator assisted by D. B. Petersen during traverses on lines600N and 1600N while D. B. Petersen functioned as chief operator assisted by S. Brewer for traverses on lines 150N, 1000N and 1800N.

In total 5.2 kilometers of EM traversing was completed on 5 selected line segments.

The numerical values of resultant dip angles recorded at the two operating frequencies are presented as Dwg.EM-7346, "EM Data". This 1:5000 scale plan map indicates the location of the various EM traverses in relation to arbitrary northing and easting co-ordinates which are suitable for correlation with the"Base Map"(Dwg. G 7350). Additionally, this data has been presented as EM profiles on drawing EM-7494.

6.4 Soil Geochemistry

A limited amount of soil geochemistry was conducted along selected line segments over zones designated as magnetically anomalous.

An attempt was made to use a hammer-type soil sampler that would enable samples to be taken from the zone immediately above the bedrock surface. It was anticipated that this sampler could penetrate the hardpan layer and as a result of obtaining soil samples near the bedrock interface, this sampling procedure would eleminate or reduce the effects of glacial action and down-slope dispersion of metal ions. On the CUZIN claim, however, the numerous boulders in the soil made penetration deeper than 30 centimetres impossible. After three attempts to collect samples, the machine was abandoned in favour of the conventional "B" horizon soil sampling approach.

Samples were collected by digging into the "B" horizon with a shovel and placing approximately 250 grams of this material in a brown Kraft paper bag. Each bag was numbered and sent to the Rio Tinto Canadian Exploration Laboratory in North Vancouver for analysis.

At the laboratory, the samples were dried, sieved to -80 mesh; 0.6 grams of this material was placed in a test tube and 2 millilitres of nitric acid and 1 millilitre of perchloric acid added to the test tube. After diluting the contents to 12 millilitres by adding water, the resultant sample was analysed for Cu, Pb, and Zn on a Techtron AA5 atomic absorption spectrophotometer.

In total 158 samples were collected by the writer and analysed by E. Paski Jr. The sample locations and the results are shown on drawing GC-7345, "Soil Geochemistry" at a scale of 1:5000.

6.5 Trenching

A 450-C John Deere Crawler Loader, owned and operated by S. Brewer of Vernon and capable of excavating to a depth of 5 metres, was used for all trenching. This approach was used in an attempt to expose bedrock on lines 600N and 1600N in areas that were magnetically and electromagnetically "anomalous". Where bedrock was reached, the trench was mapped and sampled by D. B. Petersen. Where hardpan was encountered and penetrated but bedrock not exposed, soil samples were taken at the hardpan/

bedrock interfaces. These samples are numbered 7,717,450 through 7,717,452 inclusive. On completion of the work, all pits and trenches were filled in.

This phase of exploration was directly supervised by D. B. Petersen.

6.6 Diamond Drilling

On completion of backhoeing diamond drilling was recommended. A single vertical hole was subsequently drilled to a depth of 84.7 metres on a coincident magnetic and EM anomaly that the backhoe had been unable to fully explore. This hole was collared on line 1600N at 1085E. A Longyear 34 drill with BQ wireline coring equipment, owned and operated by Bergeron Drilling and Exploration Limited was used.

D. B. Petersen logged the core, split 7 sections for assaying and generally supervised the drill operations.

Kamloops Research and Assay Laboratory Limited performed all analyses on the core samples.

The results are described in section 7.5 of this report.

7. RESULTS AND INTERPRETATIONS

The following are the results of the work done on the CUZIN claim in 1977.

7.1. Geological Mapping

Geological mapping on the CUZIN claim showed that it is underlain by a sequence of weakly metamorphosed pelitic and tuffaceous sediments that have been metamorphosed to schists and gneisses of the greenschist to amphibolite facies.

Metamorphic grade increases towards the top of the sequence.

Five distinct units were recognised. The lower unit (if this was the bottom of the section) is a light grey to dirty brown, fine grained, banded, felspathic carbonate (unit 1), which in places contains up to 15% sericite. This unit is characterised by numerous 0.5 cm to 3 cm thick, brown, porous, corroded, recessive weathering bands.

The felspathic carbonate is overlain by a fine grained, medium to light grey, muscovite, biotite, quartz, felspar gneiss (unit 2). Thin-section TG-C-23 shows the rock to be composed of the following minerals: quartz 40%, felspar (orthoclase) 20%, biotite 20%, carbonate 10%, muscovite 3%, opaques 3%, graphite 2%, and hornblende and chlorite 2%.

Unit 3 overlies unit 2, and is a kyanite, garnet, porphyroblasic biotite, quartz schist, that in places approaches a gneiss. This unit is graphitic in places. Thin section TG-C-7 shows the overall composition to be as follows: quartz 35%, orthoclase 20%, biotite 35%, garnet 2%, kyanite 2%, graphite 5%, opaques 1%. Kyanite is present as anhedral grains approximately 5 mm by 2 mm in size. Garnet is present as anhedral grains up to 0.8 mm in diameter, and usually filled with inclusions of quartz and felspar.

A thin bed of medium to coarse grained amphibolite (unit 4) overlies unit 3. Unit 4 is in turn overlain by a rusty, medium to dark grey, fine grained, muscovite, biotite schist (unit 5) that is commonly graphitic. Thin section TG-C-1 contains quartz 40%, graphite 30%, biotite 10%, and opaques 1%.

The strikes and dips that were measured showed the strikes to be northerly to northwesterly, and to be dipping steeply to the northeast in the southwestern part of the claim, and at a much flatter angle over the remainder of the property. The trace of these beds against the sub-parallel northeasterly dipping topographic slope would be crescent-shaped. Such a pattern is recognizable in the magnetic data.

Traces of sulphide mineralization, predominantly pyrrhotite, accompanied by minor pyrite and rarely chalcopyrite, are found in all five units as thin lensoidal blebs that parallel the bedding. The best mineralized unit is the rusty unit 5, in which, however, sulphides rarely exceed 3 percent.

7.2 Geophysics

MAGNETICS: Two positive aeromagnetic features (G. S. C. aeromagnetic map 8502 G) trending N30° W are suggested by Petersen to represent pyrrhotite-rich beds conformable with the Eagle Bay sediments. With the disclosure of pyrrhotite-rich massive sulphide boulders on the CUZIN claim, a ground magnetic survey was completed as a direct exploration approach for a conformable massive sulphide deposit.

A very complex magnetic pattern resulted. This pattern, characterized by narrow high-gradient features displaying highly variable trends is presented on drawing M-7493.

General features can be recognized but a quantitative analysis is not possible. A major "U" shaped anomalous positive zone dominates the western half of the claim. This positive anomaly is characterized by variable width (50m to 400m or greater), contrasting amplitudes and sharp gradients throughout.

Magnetic relief over this "zone", while variable, is normally greater than 400 gammas above background. For these purposes background threshold values felt typical of non-anomalous areas have been set arbitrarily at amplitudes between 400 gammas and 600 gammas for the relative vertical magnetic field. A gap in this feature located at 600E, L-1300N and confirmed by results from cross-line II is suggested to result from the weathering-out and removal of the magnetic source by erosional processes. Along the southern limb of this anomalous zone the transition from above background values to values significantly below background is interpreted as marking the limits of the magnetic source. However, the intensity of the negative feature along the northern boundary of this south limb is interpreted to result from the magnetic source being generally up-slope from the sensor in this area.

A generally above background north-trending zone occupies the central part of this claim. The southern terminus of this anomaly appears to be L-600N. This zone appears conformable to topography with the responses becoming more complex towards the north. Amplitudes are generally 200 gammas to 400 gammas above background along this trend with variable widths again indicated.

A third major anomalous zone is located in the north-east quarter of the claim. Amplitudes rarely exceed 400 gammas above background with most values being less anomalous than 200 gammas. Although the pattern appears intermittent near 1800E, L-1800N, a "U" shaped pattern of variable width is indicated.

Other smaller, less continuous anomalies are also evident over parts of the property but do not appear to be significant zones and in some instances may reflect the presence of near surface magnetic "boulders".

Supported by geological evidence of north and northwest striking lithologic units, weakly pyrrhotized throughout, and dipping generally northeasterly it is quite possible that these crescent-shaped magnetic zones reflect a gently dipping conformable zone rich in pyrrhotite. Depth of cover over this zone is not believed extensive at any point on the property.

ELECTROMAGNETICS: Traverses were completed over selected segments of 5 grid lines, the general function being to establish the presence or absence of drill-targetable conductors in magnetically anomalous locales.

Resultant dip-angles presented as drawing EM-7494 show that magnetic anomalies on lines L-1800N, L-1600N, L-600N and L-150N are associated with electromagnetic conductors. A qualitative appraisal, relying solely upon the magnitude of the dip angles; being dependant on the conductivity of a body and the shape of the curve; dependant upon the shape of the conductor, was made for these conductors as follows.

The most prominent conductor recognized on L-1600N is interpreted as a flat-lying or gently easterly-dipping body of good but variable conductivity extending from 925E to 1200E. The pronounced positive peak immediately west of 925E, L-1600N suggests the coils were straddling the up-dip edge of this conductor near 900E.

A second generally flat-lying body of good conductivity is interpreted to extend from 1300E to 1500E, L-150N. The absence of a pronounced positive western flank is taken to suggest a target under a greater depth of cover than present on L-1600N (estimated as 5 metres). Similarly, a source of weaker conductivity extending from 50E to 250E, L-600N is interpreted to be at some depth.

The conductive zone extending from 0 to 500E, L-1800N is interpreted as representing multiple and possibly banded sources. While seemingly of moderate conductivities the attitudes of these sources remains unknown.

No other conductors were recognized from these traverses.

7.3 Soil Geochemistry

The 158 "B" horizon soil samples that were taken show background values to be approximately 15-20 ppm Cu, 5-8 ppm Pb and 70-80 ppm Zn. No anomalous Pb or Cu values are apparent. A single anomalous Zn sample (No. 7,717,294) has a value of 540 ppm Zn. This sample was taken at the site of an abandoned logging camp and consequently is regarded as being spurious, particularly as the associated Pb and Cu values were marginally above background and well below threshold values.

The soil samples that were taken in the backhoe trenches at the hardpan and/or near-bedrock interfaces returned the following values (in ppm's):

Sample Number	Cu	Pb	Zn
7,717,450	78	5	127
7,717,451	38	2	70
7,717,452	68	8	120

7.4 Trenching

Of the 11 pits and trenches that were dug on lines 600N and 1600N, only trenches 1, 2, 6 and 7 reached bedrock. The remainder encountered hardpan to a depth of 5 metres and did not reach bedrock. These hardpan layers were encountered below approximately 1 metre of soil cover.

Mapping results from within trenches 1, 2, 6 and 7 are shown in drawing G-7347,"Trenching Details", at a scale of 1:1000 and are discussed below. These results have also been included in drawing G-7348,"Geology" at a scale of 1:5000.

Trenches 1, 6 and 7 are underlain by graphitic and non-graphitic members of map unit 5, a dark to medium grey, fine-grained, quartz-biotite schist. Specimens of this schist from trench 7 contained disseminated pyrrhotite grains which parallel the bedding and displayed moderate magnetism. No other sulphides were noted in an examination under a binocular microscope. The specimens from trenches 1 and 6, while rusty, contained no visible sulphides and were not magnetic. Presumably, leaching has removed any contained pyrrhotite.

Trench 3 was underlain by grey, porphyroblastic, kyanite-garnet-biotite-quartz schist. This unit contained disseminated pyrrhotite grains, in very minor amounts, which parallel the bedding.

Chip samples from the trenches assayed as follows:

Trench	Sample No.	Length	%Cu	%Pb	%Zn	ozs/ton Ag	ozs/ton Au
2	C25345	2 m	0.003	0.02	0.01	Tr.	Tr.
1	C25346	45 m	0.003	0.02	0.01	Tr.	Tr.
7	C25347	20 m	0.010	0.02	0.02	Tr.	Tr.
6	C25348	3 m	0.016	0.03	0.02	0.12	0.008

7.5 Diamond Drilling

Diamond drill results show that rock unit 5 (quartz-biotite schist) and unit 3 (porphyroblastic biotite schist) were intersected by hole 77-1. Measurements on core from this hole, collared at 1610N, 1085E and drilled vertically to a depth of 84.7 metres, showed that these units while inclined, dip at a very flat angle and contain the source of the coincident magnetic and EM anomalies which were the proposed drill target.

Results are presented on drawing G-7349 "Composite Section" while the drill hole record is enclosed as "Appendix I".

Pyrrhotite was near-pervasive in unit 5 and is disseminated along bedding or foliation planes. An estimate of the overall grade of the pyrrhotite mineralization within this unit is approximately 1 percent, with local variations noted.

Steeply dipping, contorted zones containing crenulated stringers of calcite and quartz are confined to unit 5. These contorted zones display recognizable sharp contacts with the surrounding quartz-biotite schists and occur where the schists have been fractured and folded. Graphite slips and seams were also observed within these zones.

Unit 3 (porphyroblastic biotite schist) was intersected between members of unit 5 in the drill hole. Unit 3 contained very minor occurrences of pyrrhotite; estimated at 0.1% overall; and was devoid of the graphitic contorted zones described above. Silicified zones are, however, present in unit 3.

These zones are characterized by their sub-vitreous lustre, and light colour compared with the surrounding schist. The biotite within these zones is seen to be partially obliterated.

Assaying of 7 sections of core gave the following results:

Sample No.	%Cu	%Pb	%Zn	oz/tn Au	oz/tn Ag	Remarks
C24826	0.009	.38	.30	tr	.13	Contorted Zone
C24827	0.007	.10	.24	tr	0.05	Pyrrhotite-rich zone
C24828	0.006	.10	.20	0.005	0.04	Porphyroblastic Biotite Schist
C24829	0.003	0.08	.14	tr	0.02	Silicified zone
C24830	0.003	.10	.24	tr	0.05	Pyritic zone
C24831	0.004	.14	.24	tr	0.05	Quartz Biotite Schist
C24832	0.003	.12	.18	tr	0.01	Silicified zone

The sampling has attempted to include the several main rock types and mineral zones that were encountered in the hole.

8. DISCUSSION

Of the various exploration techniques that were used on the CUZIN claim; magnetics and electromagnetics have been the most concise in providing definitive targets in an environment of weakly to moderately metamorphosed Shuswap Complex sediments.

The near-pervasive overburden restricts the usefulness of geological mapping and the presence of hardpan, as determined from the backhoeing that was completed, seems likely to have inhibited the development of any soil geochemical anomalies.

Magnetics revealed several anomalous areas on this property. These anomalies were interpreted to represent pyrrhotite-bearing geologic strata but could equally represent the locales of "sheet-type" massive sulphide bodies. However; the characteristics of these surface magnetic anomalies showed a great variation due presumably to the short distance between sensor and source, and the complex magnetic properties of pyrrhotite. It was these complex magnetic patterns that made the selection of a unique magnetic target, prospectable for sulphide ores, extremely difficult.

Electromagnetic tests of selected magnetic areas revealed predominantly negative resultant dip-angle profiles with some positive angles. The cross-over points from negative to positive angles were interpreted as the up-slope "edge" of near surface conductors. These test results were considered definitive indications that shallow-dipping, near surface, sources of high conductivity had been located. These sources coincided with several of the main magnetic zones and as such required further exploration. Attempts at trenching and pitting, while uncovering graphitic and pyrrhotite-rich schists in some areas were generally considered less than successful and as a consequence a drill hole was collared to fully test one "target zone" as well as explore both hangingwall and footwall lithologies on this target.

Near-pervasive pyrrhotite and graphite-bearing contorted zones confined within a near surface member of the quartz-biotite schist (map unit 5) now appear to explain the most prominent geophysical target located on this claim. Projection of the lower interface of this "bed" to surface coincides with the EM "cross-over" point and a significant magnetic gradient centred at 950E L1600N (drawing G-7349 "Composite Section").

While the drill hole provided an explanation for the source of this surface geophysical "target", it failed to intersect any mineralization of economic consequence, and the question remains as to whether such mineralization could be present elsewhere on the property.

Three untested geophysical anomalies do not present sufficient additional encouragement to continue the search for a horizon of economic potential in light of the known sources for such geophysical targets that exist on this claim.

9. CONCLUSIONS

Although the pyrrhotite-rich massive sulphide float that was found in the spoil of a bulldozer trench at 1075E, L-1600N is likely to give rise to both magnetic and electromagnetic anomalies; negative drill results indicate that the source of such geophysical targets on this property are not likely to be horizons of economic potential. It is concluded that the source of the known massive sulphide boulders is not present on this property.

10. RECOMMENDATIONS

No further work is recommended on the CUZIN claim.

Respectfully submitted,

REGISTERED PROFESSIONAL ENGINEER
J. A. McCANCE
PROVINCE OF ONTARIO

J. A. McCance

D. B. Petersen

March 1978.

11. REFERENCES

CANADA — British Columbia Uranium Reconnaissance Program; National Geochemical Reconnaissance Map 6 - 1976; Open File 410.

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APPENDIX I

RIO TINTO CANADIAN EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE NO : 77-1

LOCATION : 1,610 N, 1,085 E

AZIMUTH : -

PROPERTY : CUZIN OPTION

DIP : -90° **LENGTH :** 84.7 m **ELEVATION :** 1,235 m **Claim No.:** CUZIN CLAIM

STARTED : 28th Nov. 1977 **CORE SIZE :** BQ w/line **DATE LOGGED :** 5th - 7th Dec. 1977 **SECTION :** 1,600 N

COMPLETED : 1st Dec. 1977 **DIP TESTS :** - **LOGGED BY :** D.B.Petersen

PURPOSE : To test zone of coincident magnetic and E.M. anomalies on line 1,600 N. **CONTRACTOR:** Bergeron Drilling and Exploration Ltd.

metres from	metres to	DESCRIPTION	SAMPLE Nº	metres from	metres to	LENGTH	% Cu	% Pb	% Zn	ozs/tn Au	ozs/tn Ag	
0	1	OVERBURDEN										
1	4	QUARTZ BIOTITE SCHIST; weathered, broken, blocky, graphitic. Bedding planes @ 75° - 80° to c/axis. Lensoidal wisps of quartz (approx. 1 mm thick) parallel to bedding. No visible sulphides.										
4	28.3	QUARTZ BIOTITE SCHIST; light to medium grey very weak to moderate pyrrhotite disseminated along bedding planes. Bedding planes @ 75° - 85° to c/axis. Occasional smears of graphite on slips.										
		4 - 7.3 m, Contorted Zone; schist brecciated and laced with randomly orientated wisps and stringers and irregular blebs of calcite from 1mm to 5 mm thick. Bedding @ 20° to c/axis. (Fault Zone ?).										
		7.3 m, 100 mm graphitic gouge, @ 30° to c/axis. (Fault ?).										
		9.2 - 9.3 m, graphitic.										
		10.3 m, graphitic slip @ 20° to c/axis.										
		10.7 - 12.2 m, bedding @ 70° to c/axis.										
		12.1 m, 3 mm pyrrhotite (very minor chalcopyrite ?).	C 24826	12.0	13.0	1 m	.009	.39	.30	tr	.13	
		12.7 - 12.8 m, Contorted Zone; as above										

RIO TINTO CANADIAN EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE Nº: 77-1

PAGE Nº: 2

metres from	metres to	DESCRIPTION	SAMPLE Nº	metres from	metres to	LENGTH	% Cu	% Pb	% Zn	ozs/tn Au	ozs/tn Ag
		bedding @ 20° - 30° to c/axis, graphitic,									
		silicified.									
		12.8 - 14.3 m, Schist; light grey, bed-									
		ding erratic, crenulated quartz and calcite									
		stringers.									
		14.3 - 15.2 m, Contorted Zone; as above,									
		bedding @ 20° - 30° to c/axis, occasional									
		graphite seams.									
		16.4 - 16.6 m, Contorted Zone, as above,									
		bedding @ 45° to c/axis, occasional graph-									
		ite seams.									
		16.6 - 19.7 m, bedding @ 75° to c/axis.									
		19.7 - 20.6 m, Contorted Zone; as above,									
		contacts @ 75° to c/axis, graphitic seams.									
		20.6 - 21.3 m, bedding @ 80° to c/axis.									
		21.3 - 22.0 m, Contorted Zone; as above,									
		contacts @ 80° to c/axis, graphitic.									
		22.0 - 23.8 m, bedding @ 80° to c/axis.									
		23.8 - 24.2 m, Contorted Zone; as above,									
		contacts @ 30° and 80° to c/axis, graphitic	C 24927	24.0	26.0	2 m	.007	.10	.24	tr	.05
		24.2 - 28.3 m, bedding @ 85° to c/axis.									
		24.2 - 26.5 m, estimated grade of pyrr-									
		hotite is 3%.									
		27.0 - 27.5 m, weakly silicified.									
		27.7 - 28.3 m, weakly silicified.									
28.3	65.9	PORPHYROBLASTIC BIOTITE SCHIST; kyanite,									
		garnet, quartz, and porphyroblastic biotite									
		grey, bedding @ 80° to c/axis, patchy zones									
		of weak to moderate pyrrhotite disseminated									
		along bedding planes.									
		32.6 - 33.2 m, Pegmatite Sill; quartz									
		50%, felspar 30%, muscovite 20%, @ 90° to	C 24828	35.0	36.0	1 m	.006	.10	.20	.005	.04
		c/axis, no visible sulphides.									
		38.5 - 40.0 m, Silicified; light grey,									
		glassy, biotite porphyroblasts partially									

RIO TINTO CANADIAN EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE No: 77-1

PAGE No: 3

metres from	metres to	DESCRIPTION	SAMPLE No	metres from	metres to	LENGTH	% Cu	% Pb	% Zn	ozs/tn Au	ozs/tn Ag
		destroyed, no visible sulphides.									
		40.8 - 41.2 m, Silicified, as above.									
		41.6 - 41.8 m, Silicified, as above.									
		41.9 m, Quartz Vein; 30 mm thick, 90°									
		to c/axis, no visible sulphides.									
		43.6 - 43.9 m, Quartz Vein; parallel to									
		bedding, no visible sulphides.									
		44.1 - 44.9 m, Silicified, as above.									
		45.5 - 46.0 m, Silicified, as above.									
		46.3 m, Quartz Vein; 50 mm thick, para-									
		llel to bedding, no visible sulphides.									
		46.4 - 48.3 m, Silicified, as above.	C 24829	47.0	48.0	1 m	.003	.08	.14	tr	.02
		48.5 - 53.8 m, Silicified, as above.									
		54.1 - 54.5 m, Silicified, weak.									
		55.0 m, graphitic zone.									
		55.0 - 55.3 m, Silicified, very weak.									
		64.7 - 64.9 m, Silicified, very weak.									
		65.6 - 65.7 m, Quartz Vein; parallel to									
		bedding, no visible sulphides.									
65.9	68.0	TRANSITION ZONE; alternating quartz biotite									
		schist and porphyroblastic biotite schist.									
		66.5 - 66.6 m, Quartz Vein; parallel to									
		bedding, no visible sulphides.									
		67.2 - 67.3 m, disseminated pyrite (?),	C 24830	67.0	67.5	0.5m	.003	.10	.24	tr	.05
		(non - magnetic), estimated grade 3%.									
68.0	END OF	QUARTZ BIOTITE SCHIST; same as 4 - 28.3 m.									
	HOLE	69.0 - 69.7 m, Contorted Zone; schist									
		brecciated and laced with stringers of cal-									
		cite, graphitic.	C 24831	70.0	71.0	1 m	.004	.14	.24	tr	.05
		72.5 m, Quartz Vein; 50 mm thick, para-									
		llel to bedding, no visible sulphides.									
		73.0 m, Quartz Vein; as above, 30 mm									
		thick.									
		73.6 - 74.0 m, Silicified; very weak.									
		74.3 m, Quartz Vein; 30 mm thick, para-									

RIO TINTO CANADIAN EXPLORATION LIMITED

DIAMOND DRILL RECORD

HOLE No: 77-1

PAGE No: 4

metres from	metres to	DESCRIPTION	SAMPLE No	metres from	metres to	LENGTH	% Cu	% Pb	% Zn	ozs/tn Au	ozs/tn Ag
		llel to bedding, no visible sulphides.									
		74.8 - 75.0 m, 7 Quartz Veins; each ap-									
		prox. 30 mm thick, parallel to bedding, no									
		visible sulphides.									
		75.0 - 76.2 m, Silicified; weak to mod-									
		erate.									
		76.4 - 76.6 m, Silicified; weak.									
		77.9 - 78.0 m, Contorted Zone; as above.									
		78.8 - 79.3 m, Silicified; weak.									
		80.5 - 81.4 m, Silicified; weak.	C 24832	80.0	81.0	1 m	.003	.12	.18	tr	.01
		82.2 - 82.7 m, Silicified; intense.									
		82.7 - 83.1 m, Silicified; moderate.									
		83.3 m, Calcite Vein; parallel to bed-									
		ding, 30 mm thick, no visible sulphides.									
		84.2 - 84.4 m, Silicified; intense.									
	84.7	END OF HOLE									
		Testing with a sensitive magnet showed									
		that the QUARTZ BIOTITE SCHIST is weakly to									
		moderately magnetic (pyrrhotite). The POR-									
		PHYROBLASTIC BIOTITE SCHIST is essentially									
		non-magnetic.									
		Testing with an ohmeter showed that the									
		graphitic seams that occur within the Con-									
		torted Zones of the QUARTZ BIOTITE SCHIST									
		are weakly conductive.									

Kamloops Research & Assay Laboratory Ltd.

WEST TRANS CANADA HIGHWAY — BOX 946 — KAMLOOPS, B.C. V2C 5N4
TELEPHONE 372-2784

B.C. LICENSED ASSAYERS
GEOCHEMICAL ANALYSTS

CERTIFICATE OF ASSAY

TO Rio Tinto Canadian Exploration Ltd.,
4 - 465 Victoria St.,
Kamloops, B. C.

Certificate No. K-1487
Date November 3, 1977.

I hereby certify that the following are the results of assays made by us upon the herein described chip samples

Kral No.	Marked	GOLD	SILVER	Cu	Pb	Zn				
		Ounces Per Ton	Ounces Per Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1	C 25345	Tr	Tr	.003	.02	.01				
2	C 25346	Tr	Tr	.003	.02	.01				
3	C 25347	Tr	Tr	.010	.02	.02				
4	C 25348	.008	.12	.016	.03	.02				
	Tr denotes "trace"									

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

Kamloops Research & Assay Laboratory Ltd.

B.C. LICENSED ASSAYERS
GEOCHEMICAL ANALYSTS

WEST TRANS CANADA HIGHWAY – BOX 946 – KAMLOOPS, B.C. V2C 5N4
TELEPHONE 372-2784 - TELEX 048-8320

CERTIFICATE OF ASSAY

TO Rio Tinto Canadian Exploration Ltd.,
4 - 465 Victoria St.,
Kamloops, B. C.

Certificate No. K-1524

Date December 21, 1977.

I hereby certify that the following are the results of assays made by us upon the herein described drill core samples

Kral No.	Marked	GOLD Ounces Per Ton	SILVER Ounces Per Ton	Pb Percent	Zn Percent	Cu Percent	Percent	Percent	Percent	Percent
1	24826	Tr	.13	.38	.30	.009				
2	24827	Tr	.05	.10	.24	.007				
3	24828	.005	.04	.10	.20	.006				
4	24829	Tr	.02	.08	.14	.003				
5	24830	Tr	.05	.10	.24	.003				
6	24831	Tr	.05	.14	.24	.004				
7	24832	Tr	.01	.12	.18	.003				

Tr denotes "trace"

NOTE:
Rejects retained three weeks
Pulps retained three months
unless otherwise arranged.

Registered Assayer, Province of British Columbia

APPENDIX II

Appendix II

COST STATEMENT

GEOLOGY, GEOCHEMISTRY, GEOPHYSICS, DIAMOND DRILLING

AUGUST 8 - DECEMBER 4, 1977

SALARIES & WAGES		
J. Lindsey, Aug 8-14, Sep 5-11 (14 days @$36/day)	$ 504.00	
K. Brown, Aug 12-23, Aug 26-Sep 18, Sep 22-30 (45 days @$36/day)	1620.00	
D. Petersen, Aug 11-28, Sep 22-Oct 2, Oct 4-9,20,22,24,25,28,29, Nov 2,3,6,21-27, Nov 30-Dec 3 (55 days @$83/day)	4565.00	
T. Green, Sep 8-11 (4 days @$45/day)	180.00	$ 6,869.00
EMPLOYEE BENEFITS (20% of above wages)		1,373.80
RENTAL EQUIPMENT		
Leisure Time Sales Scamper Trailer, Aug 12-Sep 12, (4.5 wks @$173/wk)	$ 861.74	
Host Rent A Car, Aug 5-12, 7 days @$175.48/week	175.48	1,037.22
RIOCANEX EQUIPMENT		
Misc. Field Equipment, 118 man days @$3/man day	$ 354.00	
4X4 Chevy Pickup, 75 days @$10/day	750.00	
MF-2 Magnetometer, 13 days @$7/day	91.00	
Repairs to pickup truck	40.00	
Shipment of magnetometer	17.50	1,252.50
DIAMOND DRILLING		
Bergeron Drilling Ltd.		
278 feet @$14/ft (83 m)	$3892.00	
171 man hrs @$10/hr + 10%	1881.00	
15 gals soluble oil @$5.74/Gal + 10%	94.71	
13 BQ core boxes @$4/ea	52.00	
Mobilization/Demobilization (Lump sum)	300.00	6,219.71

Appendix II

Continued

TRENCHING *

Stan Brewer, Oct 24-28, 450 John Deere Backhoe, 35 hrs @$30/hr		$ 1,050.00

BULLDOZING (SNOW REMOVAL)

Chaput Logging Ltd., Nov. 28, Dec 2, 20 hrs @$33/hr	$ 660.00	
Ohashi Bros Logging Ltd., Dec 7, 11.5 hrs @$30/hr	345.00	1,005.00

FOOD & ACCOMMODATION

See salaries & wages above for dates, 118 days @$6.31/day		744.48

FUEL		247.03
SUPPLIES		40.94

GEOCHEMICAL ANALYSIS AND ASSAYS

Kamloops Research & Assays		
12 rock samples for Au, Ag, Cu, Pb, Zn @$24/each	$ 288.00	
Bondar-Clegg		
1 core sample for Au, Cu @$9.50	9.50	
Riocanex Lab		
156 soil samples for Cu, Pb, Zn @$3.45/each	538.20	
Samples Shipment	5.95	841.65

ELECTROMAGNETIC (CEM) SURVEY

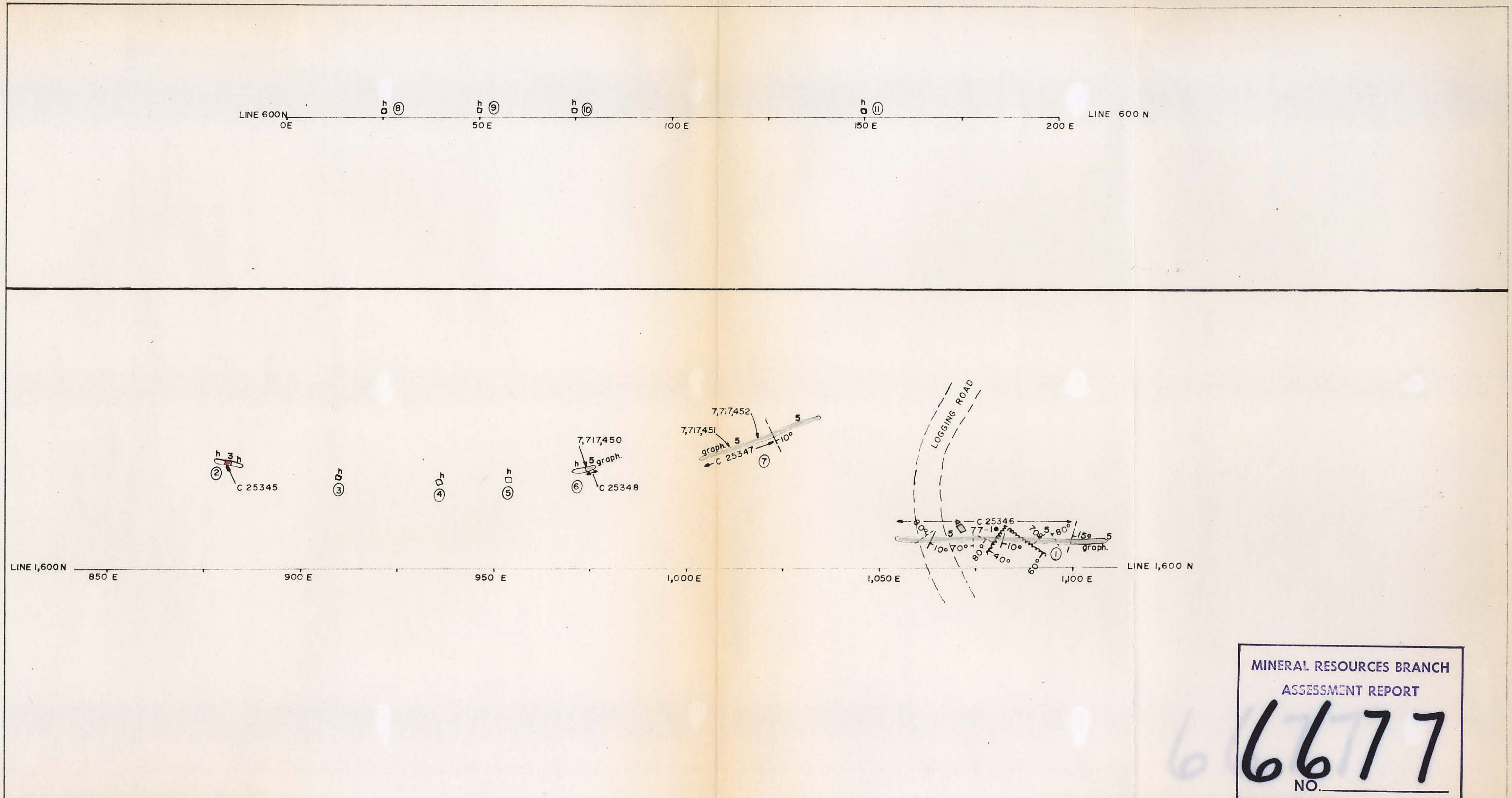
Geotronics Surveys Ltd. (Dec 19-22)		
D. Mark, Dec 19-20, 2 Days @$150/day	$ 300.00	
Airfare, Vernon Return, Dec 19, 20	75.05	
E.M. Horizontal Shoot-Back, Dec 20-23, 3 days @$30/day	90.00	
E.M. Shipment	26.10	
Report Preparation	75.00	566.15

Appendix II

Continued

TRANSPORTATION

Airfare Van to Kamloops Return, Sep 1	$ 71.40	
Airfare Kelowna to Quesnel, Aug 17	89.40	
Airfare Van to Kelowna, Sep 8	37.50	
Airfare Van to Kamloops, Aug 12	35.75	
Taxi from Kamloops Airport, Sep 6	7.00	$ 241.40
TOTAL		$21,488.88



3	Grey, porphyroblastic, kyanite, garnet, biotite, quartz schist.
5	Dark-to-medium grey, fine grained, graphitic, quartz biotite schist.
10°	Bedding
10°	Contacts
50°	Fracturing
70°	Faults
(1)	Trenches
(5)	Pits
C 25345	Rock samples
7,717,451	Bedrock-hardpan interface soil samples
graph.	Graphite
▶	Mineralised float
h	Hardpan
77-1●	Diamond Drill Hole

N

N. T. S. 82 · L · 7 E

SCALE 1 : 1,000

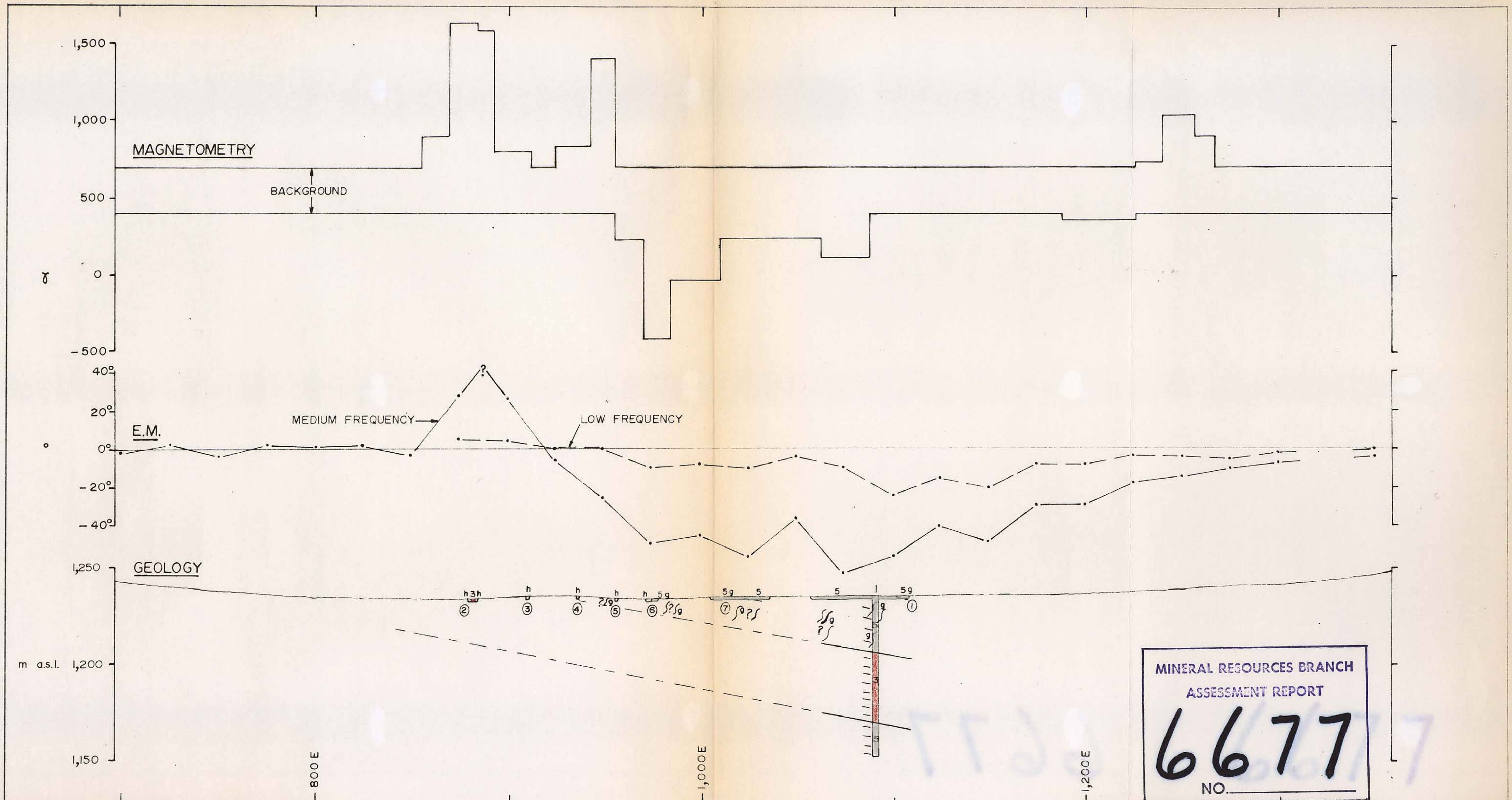
25 0 25 50 75 100 m

RIO TINTO CANADIAN EXPLORATION LTD.

CUZIN OPTION

TRENCHING DETAILS

Oct. 1977 | D.B.P. / d.b.p. | DWG. G 7347



- 3 — Grey, porphyroblastic, kyanite, garnet, biotite, quartz schist.
- 5 — Dark-to-medium grey, fine grained, graphitic, quartz biotite schist.
- ʃʃ — Contorted Zones
- —— Contacts (observed)
- — — " (projected)
- — — Bedding
- ① Trenches
- ③ Pits
- Diamond Drill Hole
- g Graphite
- h Hardpan

N.T.S. 82·L·7E

SCALE 1:2,000

100 0 50 100 m

RIO TINTO CANADIAN EXPLORATION LTD.		
CUZIN OPTION		
COMPOSITE SECTION		
LINE 1,600 N		
LOOKING NORTH		
Dec. '77	DBP/dbp	DWG. G 7349

LINE 2,000 N
LINE 1,800 N
LINE 1,600 N
LINE 1,400 N
LINE 1,000 N
LINE 900 N
LINE 600 N
LINE 150 N
2,000 N
1,000 N
0 N
0 E
1,000 E
2,000 E
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6677
• 77-1 Diamond Drill Hole
ppm Zn 70
ppm Cu 30
ppm Pb 5
Sample Number 7,717,310
N.T.S. 82-L-7E
SCALE 1 : 5,000
100 0 100 200 300 400 500 m
RIO TINTO CANADIAN EXPLORATION LIMITED
CUZIN OPTION
SOIL GEOCHEMISTRY
Oct 1977
DWG. GC 7345

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6677

N

Minimum Frequency (1 38 Hz)
Coil Separation : 50 Metres
Low Frequency (3 90 Hz)

77-1 ● Diamond Drill Hole

N.T.S. 82-L-7E

SCALE 1: 5,000

100 0 100 200 300 400 500 m

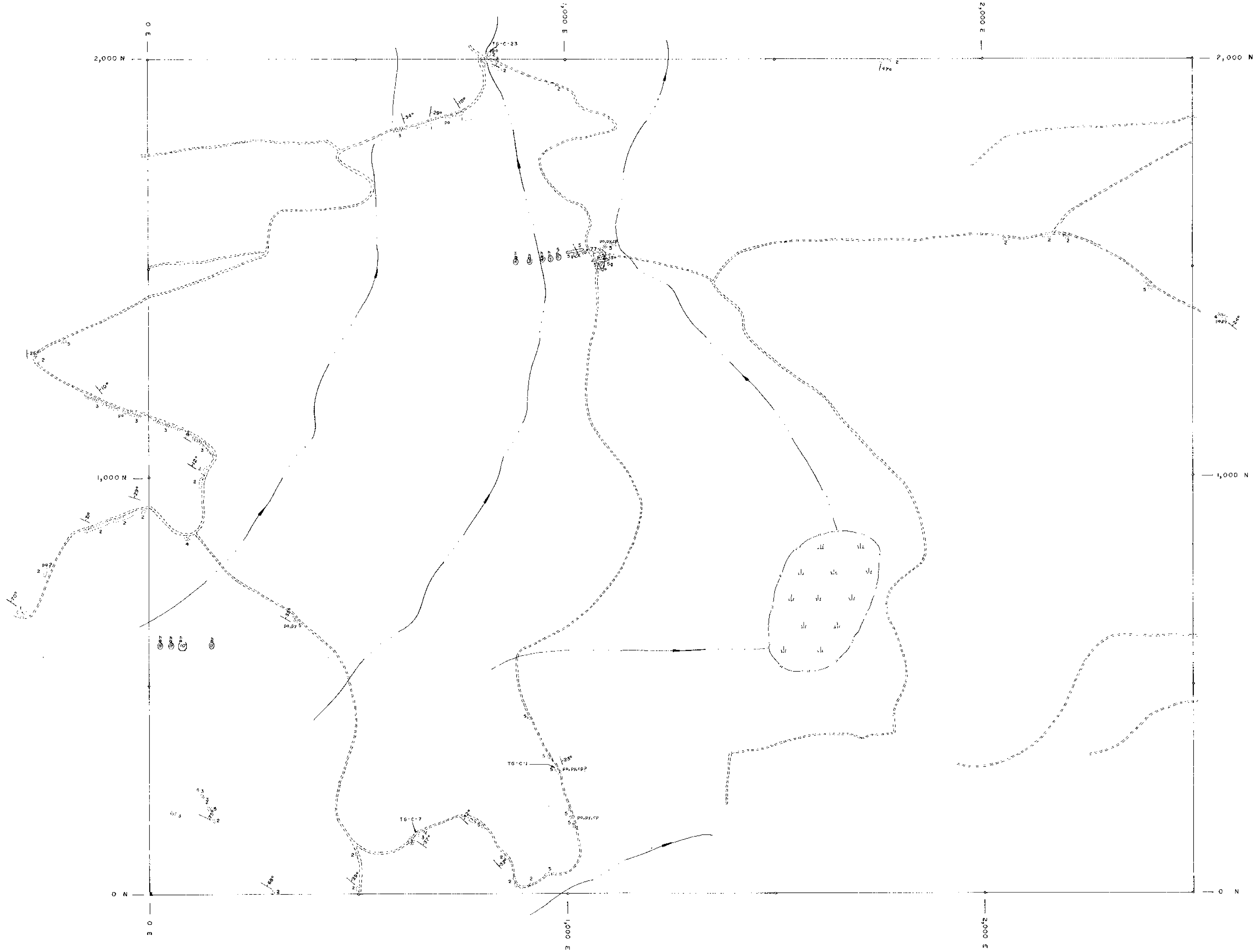
RIO TINTO CANADIAN EXPLORATION LIMITED

CUZIN OPTION

CRONE CEM HORIZONTAL SHOOT BACK

EM DATA

Oct. 1977	08P/ 4sp	DWG. EM - 7346



5	Dark to medium grey, fine grained, graphitic, biotite quartz schist.
4	Fine to medium grained amphibolite.
3	Medium to dark grey, porphyroblastic, kyanite, garnet, biotite quartz schist.
2	Light to medium grey, fine grained, muscovite, biotite, quartz, felspar gneiss.
1	Light to medium grey, fine grained, banded, felspathic carbonate; contains minor sericite.

po	Pyrrhotite
py	Pyrite
cp	Chalcopyrite
g	Graphite
h	Hardpan
▸	Mineralised float
77-1	Diamond Drill Hole

	Outcrops
/20°	Bedding strikes and dips
/20°	Contacts
	Pits
	Trenches
	Logging roads
	Creeks
	Swamps
TG-C-23	Thin section sample locations

N.T.S 82·L·7E

SCALE 1:5,000

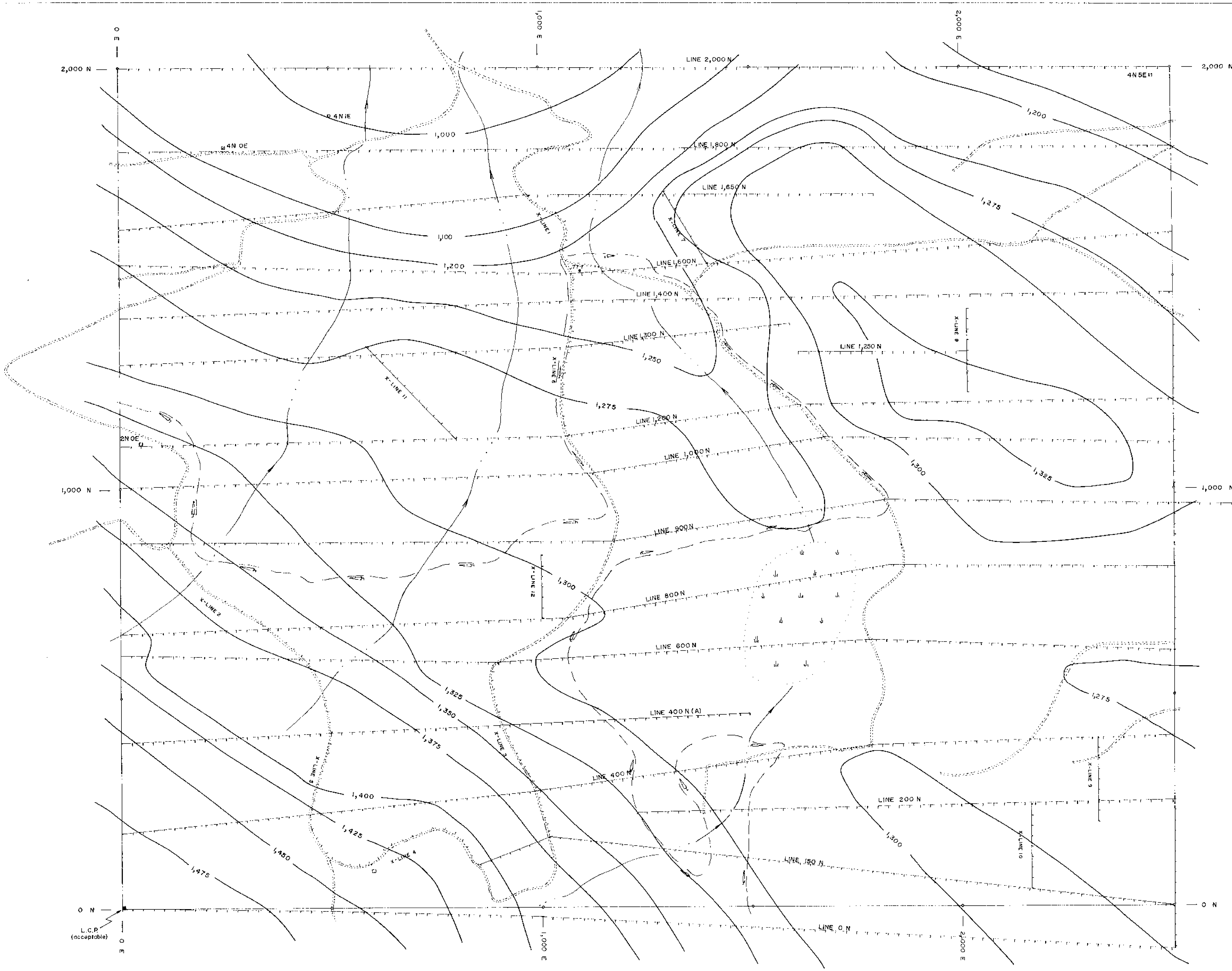
100 0 100 200 300 400 500 m

RIO TINTO CANADIAN EXPLORATION LIMITED

CUZIN OPTION

GEOLOGY

Oct. 1977	TMG, DBP /dbp	DWG. G 7348



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6677

Main Logging Roads — Logged Areas — Creeks — Contours (m a.s.l.) — Swamps — Claim Boundary (True Location) — Claim Posts (As Surveyed, Acceptable) — Claim Posts (As Surveyed, Unacceptable) — Flagged Lines — 77-1 • Diamond Drill Hole

N.T.S. 82·L·7E

SCALE 1:5,000

100 0 100 200 300 400 500 m

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CUZIN OPTION

BASE MAP

Sept. 1977 | D.B.R / d.b.p | DWG. G 7350

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6677

LEGEND

▲ Magnetic Base Station

Negative | Positive

N.T.S. 82-L-7E

SCALE 1:5,000

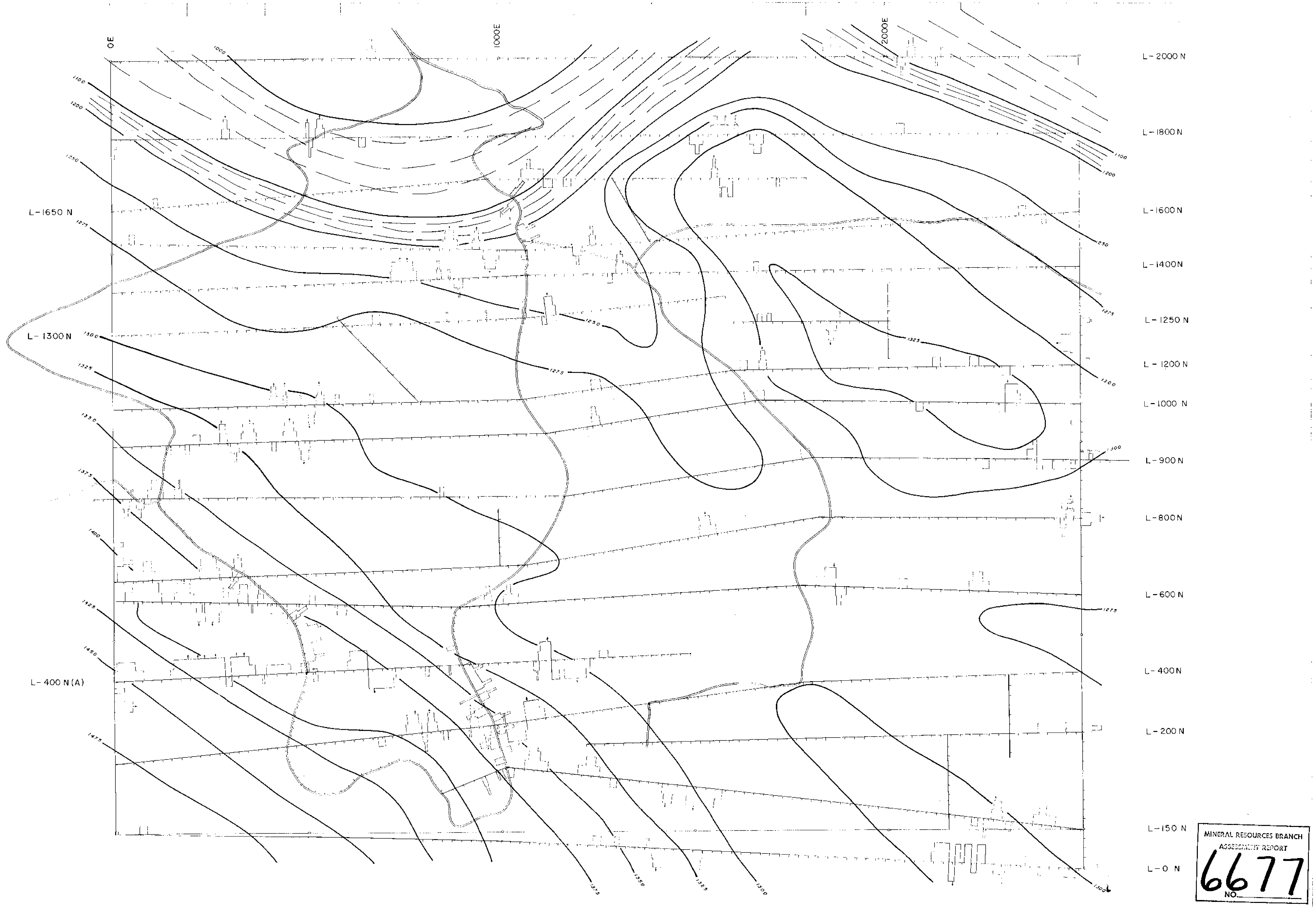
100 0 100 200 300 400 500m

RIO TINTO CANADIAN EXPLORATION LIMITED

CUZIN OPTION

VERTICAL FIELD - MAGNETIC DATA

DATE: OCT. 1977 | J. McC. / e. b. | DWG. M-7492



LEGEND:

1300 —— Topographical contours (m a s l)
Contour interval 25 m.

Positive
Negative

Positive Peak
1·0 cm 400 gammas above base = 1000 gammas
0·5 cm 200 " " " = 800 "
Base Level 400-600 gammas
0·5 cm 200 gammas below base = 200 gammas
1·0 cm 400 " " " = 00 "
Negative Peak

N.T.S. 82-L-7E

SCALE 1:5,000

100 0 100 200 300 400 500 m

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CUZIN OPTION

MAGNETOMETER ANOMALIES

DATE: OCT. 1977. D.P., J.McC. /e.b. DWG. M-7493

0E
1000E
2000E
L-2000 N
L-1800 N
L-1650 N
L-1600 N
L-1400 N
L-1300 N
L-1250 N
L-1200 N
L-1000 N
L-900 N
L-800 N
L-600 N
L-400 N (A)
L-400 N
L-200 N
L-150 N
L-0 N
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 6677
N
LEGEND:
+20°
-20°
Medium frequency readings (1830 Hz)
Low frequency readings (390 Hz)
Coil separation = 50m
1cm = 20°
N.T.S. 62-L-7E
SCALE 1:5,000
RIO TINTO CANADIAN EXPLORATION LIMITED
CUZIN OPTION
CRONE CEM. - HORIZONTAL SHOOTBACK
EM. PROFILES
DATE: OCT. 1977.
J. McC./e.b.
DWG EM-7494