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GREAT PLAINS DEVELOPMENT
COMPANY OF CANADA, LTD.,

YEAR END REPORT
SNIPPAKER CREEK PROPERTY
BRITISH COLUMBIA
N.T.S. 104-B

H.M. Visagie

October, 1974.

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A. SUMMARY

The 1974 field program on the Kim Claims at Snippaker Creek was designed primarily to accomodate an Induced Polarization program and magnetometer survey. The survey ran two weeks between September 3rd and September 17th. In addition to the geophysical program a minor amount of geological mapping and prospecting was undertaken on both the Kim and Tami claims.

The results of the geophysical program revealed no obvious drill targets. A few subtle trends towards the northeast part of the claim group were noted in the magnetometer survey. A few areas of intense sulphide mineralization were outlined by the Induced Polarization survey.

Prospecting on the Kim claims revealed an area of anomalous mineralization which previously had been snow covered. This area is called the Snow Zone. On the Tami claims only pyrite was noted in the area prospected and mapped.

The Kim claims are deemed to hold economic potential in the area of the Snow Zone. The Tami claims have not had enough geologic mapping to ascertain their economic potential.

B. INTRODUCTION

1. History

The Tami and Kim groups of mineral claims were staked in September 1971 for Great Plains Development Company of Canada Ltd., after anomalous results were received from a reconnaissance silt and soil sampling program in the area. Two groups, totalling 63 claims, were staked to cover the stream sediment anomalies.

In 1972, a program of linecutting and coincidental geochemical soil sampling was carried out between July 27 and August 14 on both groups. The program was designed to filter out areas within the claims block that would require a more detailed examination.

In 1973, geological mapping and additional soil sampling were undertaken on the Kim claim group. Five days of general reconnaissance and rock sampling of creek beds was the only work carried out on the Tami claims. An additional nine claims (Kim 26, 28, 30-36) were staked to adjoin the Kim group on its western boundary.

In 1974, a geophysical survey was conducted on the Kim claims and fill in mapping was undertaken on both the Kim and Tami groups. Six Poncho claims and one Tami claim were staked on the norhtern boundary of the Kim claims. Kim claims 1, 3, 5, 7, 9, 11 on the east were allowed to lapse.

2. Ownership and Stakers

A total of 73 claims are being held in ungrouped and grouped blocks. There are 30 Kim claims, 6 Poncho claims and 37 Tami claims.

Claims	Record Nos.	Anniversary Dates
Group 1		
Kim 2,4,6,8,10	55863, 65,67,69,71	September 28/75
Kim 12-20	55873-55881	September 28/75
Kim 21-25	55882-55886	September 28/76
Kim 27,29	55887, 55888	September 24/76
Kim 26,28,30-36	70621, 70622, 70624-29	September 24/76
Tami 20	55845	September 28/76
Tami 25-32	55850-55857	September 28/76
Tami 37	Recorded	

Group 2		
Tami 1-19	55826-55844	September 28/75
Tam 21-24	55846-55849	September 28/75
Tam 33-26	55858-55861	September 28/75
Ungrouped		
Poncho 1-6	72188-72193	October 1/75

Under terms of a joint venture agreement, Great Plains Development Company of Canada Ltd., holds 57.5% interest and Chevron Standard Ltd., retains 42.5% interest in all claims.

3. Location

The Tami, Poncho and Kim claim groups are located approximately 88 airmiles south of Telegraph Creek, B.C., near the confluence of Snippaker Creek and the Iskut River. The claims lie on the eastern flank of Snippaker Mountain at 130 degrees 56 feet west longitude and 56 degrees 36 feet north latitude. They are at an elevation ranging from 3,600 feet to 5,000 feet in generally step, rugged terraine. The property lies within the Liard Mining Division.

4. Economic Considerations

Supplies and equipment can be obtained from either Eddontenajon or Stewart and can be air lifted by fixed-wing aircraft to the head of Snippaker Creek. A helicopter is then required to ferry supplies four miles to the property.

The closest road to the property at present is the Stewart-Cassiar highway. If a road to the property was required, 55 miles of road construction would be necessary. However, if a road to Galore Creek is built along the Iskut valley as proposed, road construction required would only be about 12 miles. By road, assuming the above construction, the closest sea port is Stewart which is 155 miles away.

The Snippaker region is subject to heavy precipation year round, mostly in the form of snow. Three glaciers are in close proximity to the claim groups. Snow covers most of the claim group until mid August and returns late September.

Because only minor amounts of economic timber exist on the claim group, the area is deemed to have little economic potential other than mining and possible recreation. Wildlife consists of a few black bears, the occasional goat and a few grizzley bears.

5. Previous Exploration

In 1965, Silver Standard staked the Betty claim group which covers the present Snippaker Creek claim groups. The Betty group consisted of over 500 claims which were allowed to lapse during the following years. Work undertaken by Silver Standard consisted of geochemical sampling and prospecting.

In 1971 Great Plains acquired the Kim and Tami claims through staking. These groups were expanded to cover the present areas of interest. To date work has included geochemistry, geological mapping, an induced polarization and a magnetometer survey of selected areas.

6. Objectives

Past programs on Snippaker have met with marginal success. The Snippaker claims were found by a regional silt sampling program. Following staking of the Kim and Tami claims, lines were cut and geochemical soil sampling was undertaken. Anomalies in copper values were found on both claim groups. Prospecting on both claim groups revealed mineralized showings. Geologic mapping on the Kim group defined a zone of widespread mineralization. However, a geophysical program consisting of Induced Polarization survey and a magnetometer survey was not successful in defining a drill target on the Kim group. Therefore, past programs have been successful in defining a prospect and a mineralized zone (i.e. Snow Zone), however were not successful in defining a reliable drill target.

Next year the program will consist of two parts. The first objective is to drill a fence of shallow holes across the Snow Zone, map the trends of the quartz veins and hopefully define a deep drill hole exploration target. Secondly the Tami group will be mapped in detail and the property potential evaluated.

The overall objective at the Snippaker property is to prove sufficient tonnage of porphyry copper mineralization to constitute an ore body. Because of the remote location and rugged physical setting a minimum of 100 million tons of .5 copper mineralization is considered a minimum exploration target. At present insufficient data exists to speculate on the possibility of success.

C. EXPLORATION AND DEVELOPMENT

1. Research

In the Spring of 1974 a report (Appendix 1) on the fifteen thin sections from the Snippaker property were prepared by D.L. Cooke. The report substantiates the mapping carried out by the Great Plains staff.

2. Prospecting

The writer, noting the snow cover in the north to north-eastern sector of the Kim claims had receded compared to other years, undertook some prospecting. This prospecting led to the discovery of numerous showings of chalcopyrite, galena and sphalerite as well as large volumes of pyrite. To protect this new mineralized area six Poncho claims were staked.

3. Grid lines

Using a compass and chain, grid lines 0, 8E, 12E, 16E were extended from 33 N to 55 N; lines 20E, 28E from 0 to 33N; 4E from 0 to 16 south; lines 8, 12, 16 E from 28 to 44N and line 20W from 0 to 44N. Stations were marked by orange ribbon at 100 foot intervals.

4. Geological Mapping

Geologic mapping was confined to the northeast sector of both the Kim and Tami claims groups. Chaining by use of Topofil tied sample locations to established grid stations. If grid lines were not locally available, on altimeter and physical features were used for locating sample positions. Features were mapped on a 1 to 400 base map.

5. Geophysics

An Induced Polarization and Magnetometer survey were carried out on the Kim group between September 3/74 and September 17/74. The I.P. survey covered 8½ miles and the magnetometer survey covered 11½ miles. The extent of the survey was limited by snow cover and steep slopes especially in the north and east sectors of the claim group.

Survey details, instrumentation and interpretation of results are set forth in a report by T.R.B. Dundas which is included in this report as Appendix 2.

D. GEOLOGY

1. Regional Setting

The Snippaker Creek region is situated in a geologically complex setting. Proximal and westward to the property lies the northwestward trending Coast geoanticline, a complex of interlocking granitic bodies and metamorphic screens. The Bowser Basin, a successor basin of Jura-Cretaceous age, lies about fifteen miles to the east.

2. Structural Geology

The Snippaker Creek properties cover an area where Triassic volcanic units are intruded by Cretaceous intrusives. These volcanics and intrusives are in turn intruded by felsic rock units.

Prominent fault lineations are found to strike N 10 degrees E and N 70 degrees W. They appear to be steeply to vertically dipping. Intense shearing and fracturing has destroyed the original rock texture and fabric in areas which surround the structures.

3. Geologic Units

The outcrops of the Snippaker claim groups have been classified in four general units.

The units have been divided on the basis of features identifiable in hand specimens such that field identification can be readily made.

UNITS

A. Tuff - This unit contains various types of tuffs ranging from the fine grained and well bedded variety to a fragmental or lapilli type. For the most part the rocks are greenish grey soft and porous. Network of quartz veins weld the fractures.

B. Undivided flows and pyroclastics - This unit comprises andesitic and various fragmental flows. The andesites range from grayish-green to brownish gray in color and contain enhedral laths of fresh plagioclase feldspars averaging ¼ inch in length.

The fragmentals are characterized by a dense siliceous matrix containing large tuffaceous fragments up to several inches across. At times a strong degree of assimilation is seen and fragments are

welded into the matrix.

C. Intrusive Units - This unit contains rocks of granite, quartz monzonite and granodioritic composition. Generally these rocks are medium-grained hypidiomorphic and granular. Major constituents are plagioclase, feldspar, hornblende, granite and, to a lesser extent, orthoclose feldspar. Plagioclose forms subhedral to anhedral grains with interstitial anhedral quartz. Fairly well formed hornblende are common.

D. Felsic Unit - This unit is fine to medium grained, dense, buff to tan colored and locally porphyritic. Total destruction of original mafics, has given this unit its quartzfeldspathic composition.

4. Alteration

Most of the alteration encountered on the properties seems to be propylitic, the degree of which varies from unit to unit.

The tuffs and pyroclastics display a relatively low grade alteration assemblage consisting of pyrite, carbonate and epidote. Pyrite content varies considerably and is most intensely developed in localized shears and heavily fractured and broken ground. The pyrite so developed is usually characterized by a pronounced gossan. Pyrite is found mainly as fine grained disseminations with local concentrations approaching 30% by volume within the tuffaceous members. Carbonate and epidote development is less conspicuous, taking the form of micro-fracture fillings, elongate blebs and dispersions throughout the matrix.

The intrusive unit is much more diverse in its development of alteration products. The alteration assemblage is composed of pyrite, hematite, epidote, zoisite, carbonate, minor chlorite and possibly minor argillic alteration related to weathering processes. The intensity of alteration is greatest when in close proximity to the felsite.

Pyrite is ubiquitous within the intrusive unit, forming mainly on mafic sites. Intensity of pyritization is variable from a minor development to total destruction of the mafics.

Hematite is most commonly found as a pink staining of plagioclase phenocrysts, often in association with stringers and irregular patches of epidote. The pink nature of the plagioclase and its similarity to K-feldspar makes distinction between the two somewhat difficult.

However, from the generally low content of orthoclase in these rocks, one can be resonably certain that most of the pink feldspar is being correctly identified as plagioclase.

Saussuritization of the intrusive units is most prevalent in the area adjacent to the felsite. Albite pseudomorphs were commonly crowded with bluish-green saussuritized grains.

Heavily oxidized pyrite has given rise to a generous gossan development in various areas on the Snippaker properties. Limonite and jarosite are the main constituents and form thick coatings on most fracture surfaces.

E. MINERALIZATION

Sulphide mineralization is widespread on the Snippaker claim groups. Sulphide identified, in decreasing order of abundance, include pyrite, chalcopyrite, sphalerite, galena, covellite, chalcocite and bornite copper carbonates of malachite and azurite are also present.

Little mineralization other than pyrite was observed by the writer on the Tami group. However the writer has only visited areas of the northern section of this claim block. In 1973, a small high grade showing was discovered in a highly sheared area of the felsite in the central part of the Tami property. This zone measured about two feet by six feet in surface expression and consisted of chalcopyrite, bornite, chalcocite, covellite and pyrite in varying amounts. Intense weathering and leaching occurs in the surrounding outcrops.

Though the Kim group has occurrences of sulphides across the entire claim group, the north eastern sector of the property appears to be the most economically interesting portion of the property. This sector is called the Snow Zone.

The Snow Zone is an area of patchy mineralization about 4,000' in diameter centred on line 12 East at 35 North. Though much outcrop does exist, a considerable amount of the area is overlain by snow, ice and glacial fill. The relationship between mineralized areas is obscurred by covered areas, weathered gossanous areas and inaccessible cliffs.

Mineralization in the Snow Zone consists of chalcopyrite and pyrite with associated malachite in quartz veins in the tuff, volcanic and intrusives units. Pyrite associated with silica flooding occurs in volumes of up to 15% in the volcanic units on line 16E, 44N.

Pyrite also occurs in substantial quantities (5%) throughout the granodiorite in the region below the toe of the Kim glacier. In the intrusive, patchy showings of chalcopyrite and malachite associated with quartz veining and fracture fillings occur. A number of high grade copper, lead and zinc quartz veins as well as lead and barite veins were noted in the northeastern part of the Snow Zone.

Twelve grab samples collected in 1974 program from the Snow Zone were assayed for Copper, gold silver and molybdenite. The results for molybdenite were not encouraging but for copper, gold and silver they were anomalous. Copper values ranged from .11% to 3.06%. Gold values ranged from trace to .08 oz/ton while silver values ranged from .08 to 2.29 oz/ton.

Massive specular hematite associated with quartz veining has been noted at 20W, 42N in $\frac{1}{4}$" to $\frac{1}{2}$" sheets along fractures. A large quartz-hematite outcrop about 20 feet in diameter exists at 24E and 24N. The hematite here occupies approximately 90% by volume of the outcrop and exhibits good rosette texture.

F. DISCUSSION

An economic porphyry deposit and the geologic features of the Snow Zone have some common characteristics. Premineralization faulting, intrusive rock, hydrothermal activity, and economic mineralization are general features of porphyry deposits. The Kim group exhibits similar features. It is cut by numerous faults some of which are recent but others are obviously premineralization. The intrusive units are represented by rocks of granodiorite, quartz diorite and granite composition. Hydrothermal activity has caused alteration of host rock throughout the property. The predominant alteration recognized is the pervasive nature and enveloping of propylitic minerals about fractures and veins. Patchy, moderate or intense pyritization occurs throughout the Snow Zone. Locally economic grades of mineralization, as indicated by grab sample assays, are obtainable. Because of the similarities between the features of the Kim group and the porphyry model a porphyry deposit is the type of ore occurrence expected to exist.

Information to date has both discouraged and encouraged the potential finding of a porphyry ore body on the Kim claims. The negative aspect of the property is the noticeable lack of high grade

hydrothermal alteration. This lack may be due to the failure to develop the higher grade (i.e. potassic)alteration in the emplacement of the Kim porphyry. If this is the case, an ore body is not expected to exist. Recent papers on porphyry deposits show a relationship between the failure to develop ore deposits and the lack of high grade hydrothermal alteration in the host rock. However this apparent surficial lack of potassic alteration may be due to erosion of the zone, covering by glacial debris or existence at depth within the rock units. The possible covering of the desired alteration zone combined with the surface mineralization are positive features of the claim group.

Since past programs of surface mapping, geochemical sampling and geophysical surveying have failed to define an area of maximum mineral potential, a new approach must be taken. The mineralization of the Kim porphyry is intimately associated with a quartz stock work found in the Snow Zone. A program designed to investigate the stock work by plotting trends of increasing quartz veining would probably lead to defining the best area for mineralization. The intimate relationship of alteration and mineralization, and in the case of the Kim claims, of mineralization and quartz stockwork would support this argument. Consequently a detailed investigation of trends in quartz veining and accompanying mineralization would be a recommended approach.

Sampling information needed to map quartz veining and mineralization trends is required to be unbiased and have dimension. Because of the bias in mapping weathered outcrops and the lack of dimension of surface sampling a drill program is recommended. Ideally a deep probe drilling program gridded across the Snow Zone would be recommended. However, in view of the high costs involved, a fence sampling program utilizing a Winkie Drill to drill 50 foot holes on a 200 foot spacing across the Snow Zone is recommended. This program would hopefully yield information which would point to the center of quartz veining and the area of best mineral potention.

G. CONCLUSIONS

1. A number of mineralized showings have been noted on the Tami group, however, not enough geological mapping and prospecting has been carried out to properly ascertain the economic potential of this group.

2. The Induced Polarization survey revealed a number of areas which are interpreted to represent zones of patchy sulphide mineralization. The significance of the results is not clear at present,

possibly because the extent of the survey was restricted by topography and snow cover. While the survey did cover several mineralized areas, other areas which appear to have equal or better potential could not be surveyed due simply to physical reasons.

3. The magnetometer survey covered a larger area than the I.P. survey. The magnetometer survey revealed a subtle increase in magnetic values trending to the northeast.

4. In summary, the geophysical surveys did not provide any obvious targets for a drill program. The information gathered from the surveys is not conclusive but neither is it instructive at present. The inconclusive nature of the results is possibly due to the limited extent of the survey, the coverage of which was controlled to a great degree by the terrain.

5. A significant number of mineralized showing exist on the Snow Zone of the Kim group which are characteristic of porphyry copper-type mineralization. These showings are found not only in the volcanic and tuff units but in the intrusive units as well.

RECOMMENDATIONS

. It is recommended:

1. the Poncho claims be prospected thoroughly and geologically mapped in detail;

2. that detailed geological mapping be conducted on the Tami claims;

3. that 200 feet of hand trenching and 750 feet of Winkie drilling on the Kim group be carried out to investigate the grade and extent of mineralization and to locate possible drill targets for testing by a larger diamond drill;

4. that the Snow Zone be mapped and sampled at a Scale of 1" = 100 feet with particular attention to sulphide content and ratios, alteration type and mineralization controls.

APPENDIX I

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PETROGRAPHIC REPORT
ON FIFTEEN THIN SECTION
SNIPPAKER CREEK AREA, B.C.

for

GREAT PLAINS DEVELOPMENT CO. OF CANADA LTD.
736 EIGHTH AVENUE S.W.
CALGARY, ALBERTA

by

D. L. COOKE, PH.D., P.ENG.
CONSULTING GEOLOGIST

March 14, 1974

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INTRODUCTION

The specimens from the Snippaker Creek property were examined in thin sections for Great Plains Development Co. of Canada Ltd. on the instructions of Mr. V. K. Read. This petrographic study was done to determine the nature, origin, and alteration of the host rocks.

The textures, primary minerals, and alteration products were identified optically. The volume percents of the minerals were visually estimated. Petrographic report sheets, with mineralogical descriptions and rock classifications, are presented for individual sections. These sheets form a part of this report.

SUMMARY AND CONCLUSIONS

1. The sections represent a series of granitic intrusive rocks, which were emplaced at shallow depths. Also represented are dike, fragmental, and extrusive units. These rocks range from acid to intermediate in composition. The intrusive rocks include granite, quartz monzonite and granodiorite. The lava flows and tuffs are andesites and more siliceous varieties. The intrusive and volcanic suites are believed to be derived from separate magmas. However, the feldspar and diorite porphyries, #MA - 5 and #E - 15, are probably dike equivalents of the volcanic suite.

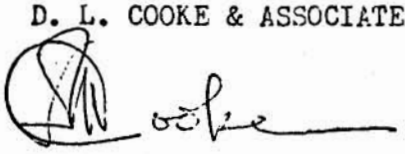
2. In the intrusives the porphyritic textures and medium to fine grained equigranular groundmasses are interpreted as the result of shallow plutonic and hypabyssal intrusion. Alteration has partially destroyed the original textures within the flows and pyroclastics. Slight foliation, due to shearing, is developed in some of the volcanic rocks.

3. Alteration in the samples is either propyllitic (chlorite, carbonate, epidote) or phyllic (sericite and quartz). The overall intensity of alteration is not particularly distinct in either of the two suite of rocks. Neither is there any pronounced intensity of fracturing.

4. Sulphide mineralization occurs mainly in the form of pyrite disseminations, and minor pyrite filling fractures. The correlation between rock type, alteration and pyrite mineralization is obscure. However, two broad observations are warranted. Within the intrusive rocks, pyrite seems to be more closely associated with the granitic than the other types. Pyrite is also abundant within the volcanic tuffs. It cannot be positively stated that either of these two rock types is the source of the sulphide mineralization.

Respectfully submitted,

D. L. COOKE & ASSOCIATES LTD.



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PETROGRAPHIC REPORT

NUMBER: #B - 15 LOCALITY: Snippaker Creek DATE: March 8, 1974

NAME AND CLASSIFICATION: ALTERED CRYSTAL TUFF

MEGASCOPIC DESCRIPTION: The specimen appears fine grained, waxy, green and weakly sheared.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Carbonate	25	Irregular carbonate grains are intimately mixed with epidote and carbonate within 1 - 3 mm. patches, which seem to be pseudomorphs after plagioclase.
2. Sericite	20	The matrix contains streaky fine grained sericite in great abundance.
3. Quartz	20	Irregular patches and grains of quartz occur throughout.
4. Epidote & Zoisite	20	Granular epidote and zoisite are abundant constituents of the feldspar pseudomorphs.
5. Saussurite & Leucoxene	10	Cloudy semi-opaque saussurite and leucoxene occur with epidote and zoisite alteration.
6. Apatite	3	Well-formed apatite crystals are the prominent accessory.
7. Pyrite	2	Euhedral pyrite crystals, which occur throughout, are slightly weathered to hematite.

TEXTURE: Evidence of a fine fragmental texture is preserved by the pseudomorphs after feldspar. These pseudomorphs occur in a streaky matrix of sericite, carbonate and quartz. Fragment size ranges from 1 to 3 mm.

CONCLUSION:

The abundance of epidote and zoisite in the pseudomorph fragments indicates that the original feldspar was probably intermediate in composition. Quartz is mainly secondary, and together with sericite it is believed to be partly hydrothermally derived. Alteration type is quartz-sericite or phyllic.

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PETROGRAPHIC REPORT

NUMBER: #B - 26 LOCALITY: Snippaker Creek DATE: March 8, 1974

NAME AND CLASSIFICATION: ALTERED FINE GRAINED TUFF

MEGASCOPIC DESCRIPTION: This aphanitic green specimen is characterized by irregular "bleached" patches.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	25	An_{24-28}. Plagioclase occurs as irregular, close-packed grains, which are cemented by chlorite and minor carbonate.
2. Chlorite	20	Chlorite forms an interconnected matrix between feldspar grains.
3. Epidote	15	Bleached areas contain abundant epidote, carbonate and quartz.
4. Carbonate	15	This secondary mineral is associated with epidote and quartz in the alteration of plagioclase.
5. Quartz	13	Irregular quartz grains are more abundant in the bleached portions of the section.
6. Sericite	7	There is a uniform scattering of sericite throughout.
7. Leucoxene	3	Granular leucoxene is secondary after plagioclase.
8. Apatite	2	Apatite occurs as an accessory mineral.

TEXTURE: The green portions of the rock consist of abundant anhedral fragments of plagioclase, cemented by chlorite and lesser carbonate and epidote. The light-coloured, bleached areas, contain epidote, carbonate, quartz and leucoxene - derived from the alteration of plagioclase

CONCLUSION:

The rock is believed to be a fine grained andesitic crystal tuff which has been subsequently altered to a light coloured mass by hydrothermal solutions. Alteration type is propyllitic.

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PETROGRAPHIC REPORT

NUMBER: #C - 8 LOCALITY: Snippaker Creek DATE: March 8, 1974

NAME AND CLASSIFICATION: GRANITE PORPHYRY

MEGASCOPIC DESCRIPTION: The specimen is medium to coarse grained, and grey in colour.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	35	An_{8-12}. Plagioclase is subhedral and coarse grained. It is affected by minor sericite alteration.
2. Quartz	20	Small equant quartz grains are scattered between larger feldspar grains.
3. Carbonate	13	Veinlets are filled mainly by secondary carbonate.
4. Chlorite	12	Chlorite occurs both with epidote alteration and with sericite of the matrix.
5. Epidote	10	Patches of epidote appear to be alteration products of other ferromagnesian minerals.
6. Sericite	6	Fine sericite is mixed with chlorite as matrix material. It is also moderately abundant within plagioclase grains.
7. Sphene & Leucoxene	2	Subhedral crystals of sphene, and cloudy leucoxene grains, are scattered throughout.
8. Apatite	1	Accessory apatite is moderately common.
9. Pyrite	1	Pyrite crystals occur as disseminations.

TEXTURE: Plagioclase tablets, 2 - 5 mm., give the section a weak porphyritic texture. The groundmass consists of a medium grained equigranular mixture of quartz and alkali plagioclase, with patches of chlorite and epidote.

CONCLUSION:

The specimen represents a shallow intrusion of soda granite composition. Alteration is weak propyllitic.

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PETROGRAPHIC REPORT

NUMBER: #D- 13 LOCALITY: Snippaker Creek DATE: March 11, 1974

NAME AND CLASSIFICATION: GRANITE PORPHYRY

MEGASCOPIC DESCRIPTION: The rock is grey and siliceous. It contains scattered phenocrysts of green mineral and abundant sulphide disseminations.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	25	An_{8-12}. Plagioclase phenocrysts, 1 - 4 mm. in length, are uniformly distributed.
2. Alkali Feldspar	20	An extremely fine groundmass consists of a "Salt and pepper" mixture of alkali feldspar and quartz.
3. Quartz	20	Quartz occurs with alkali feldspar to form the matrix.
4. Epidote	10	Large euhedral pseudomorphs, 1 - 4 cm. in length, now consist mainly of coarse epidote, with minor chlorite and leucoxene.
5. Chlorite	10	Chlorite occurs with epidote in the large pseudomorphs, and alone in other smaller ones.
6. Sericite	8	The plagioclase contains scattered sericite flakes.
7. Pyrite	4	Euhedral pyrite crystals are disseminated throughout.
8. Apatite	2	Large apatite crystals are most frequent within the mafic pseudomorphs.
9. Sphene	1	Sphene is also common within these pseudomorphs.

TEXTURE: The texture is porphyritic, consisting of 1 - 4 cm. pseudomorphs and 1 - 4 mm. plagioclase phenocrysts in a very fine grained groundmass of equigranular alkali feldspar and quartz.

CONCLUSION:

This rock is from a small (dike?) hypabyssal intrusion of soda granite composition. It has been modified to the stage of weak propyllitic alteration.

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PETROGRAPHIC REPORT

NUMBER: #D - 19 LOCALITY: Snippaker Creek DATE: March 11, 1974

NAME AND CLASSIFICATION: ALTERED ANDESITE

MEGASCOPIC DESCRIPTION: This is a dark green specimen which contains grey feldspar as well as dark mafic phenocrysts.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Chlorite	30	Secondary green chlorite permeates the section. It occurs in feldspar and ferromagnesian pseudomorphs, and as interstitial material in the matrix.
2. Plagioclase	25	2 - 6 mm. feldspar phenocrysts are completely replaced by a mixture of alkali plagioclase, epidote, chlorite and sericite. plagioclase laths in the groundmass are less altered.
3. Epidote	20	Epidote is a major secondary mineral derived from plagioclase and pyroxene (?) alteration.
4. Hornblende	10	Stubby crystals of green hornblende appear to be secondary after pyroxene, as well as primary.
5. Sericite	7	Some sericite is derived from the alteration of plagioclase.
6. Leucoxene	3	Granular leucoxene occurs after an unidentified mafic (?) mineral.
7. Biotite	3	Minute crystals of green-brown pleochroic biotite have recrystallized from the chloritic alteration products.
8. Magnetite	2	Granular magnetite is scattered within ferromagnesian pseudomorphs and later veinlets.
9. Pyrite	Tr.	Anhedral grains are found mainly in late veinlets which transect the alteration products.

TEXTURE: Hornblende, pyroxene, and plagioclase pseudomorphs, 1 - 5 mm. in length, are aligned in a sub-parallel "flow" structure. These crystals are set in a matted matrix of alkali plagioclase and interstitial chlorite.

CONCLUSION:

The section was taken from a volcanic flow of andesitic composition. Extensive propyllitic alteration is evident throughout. Sericite and biotite may be classed as superimposed weak phyllic alteration.

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Canada

PETROGRAPHIC REPORT

NUMBER: #E - 3A LOCALITY: Snippaker Creek DATE: March 11, 1974

NAME AND CLASSIFICATION: ALTERED ACID FLOW

MEGASCOPIC DESCRIPTION: Pyrite is disseminated throughout this grey, fine grained somewhat siliceous rock.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Sericite	30	Fine grained sericite is pervasive. It is also found within microphenocrysts together with chlorite.
2. Chlorite	25	Microphenocrysts contain variable amounts of chlorite. The groundmass is also permeated by chlorite.
3. Epidote	15	Small equant microphenocrysts are pseudomorphed by epidote, chlorite, and quartz alteration products.
4. Quartz	10	Quartz occurs as an alteration mineral, as small subrounded grains, and as matrix material.
5. Pyrite	6	Irregular pyrite grains are uniformly distributed.
6. Leucoxene	4	Granules of semi-opaque leucoxene are ubiquitous.
7. Apatite	Tr.	A few tiny prisms are present.

TEXTURE: The section has a microporphyritic texture. Pseudomorphs contain epidote, quartz, and chlorite, or chlorite and sericite. The groundmass is permeated by fine secondary sericite and chlorite. Grain size is less than 1 mm.

CONCLUSION:

Originally this was a fine grained extrusive rock. It now has the composition of a rhyolite, but may have been less siliceous originally. Alteration appears to be moderately strong and it is classified as phyllic.

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PETROGRAPHIC REPORT

NUMBER: #E - 15 LOCALITY: Snippaker Creek DATE: March 12, 1974

NAME AND CLASSIFICATION: ALTERED ANDESITE PORPHYRY

MEGASCOPIC DESCRIPTION: Stubby feldspar crystals are visible in a dark green aphanitic groundmass.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	30	An_{6-10}. Plagioclase phenocrysts, 1 - 3 mm. long are altered to epidote, albite, and minor sericite.
2. Chlorite	30	Chlorite occurs throughout the groundmass and as an alteration mineral associated with epidote and leucoxene.
3. Epdiote	20	Epidote permeates the plagioclase and ferromagnesian phenocrysts from which it is derived.
4. Quartz	10	Interstitial areas within the groundmass contain quartz and chlorite.
5. Leucoxene	5	This is one of the common alteration minerals of the ferromagnesians.
6. Apatite	3	Coarse, anhedral apatite crystals occur with the altered mafic phenocrysts.
7. Sericite	2	Minor sericite is associated with the alteration of plagioclase.

TEXTURE: The plagioclase and mafic phenocrysts, 1 - 3 mm. in size, account for the porphyritic texture. The groundmass consists of a medium grained matte of alkali plagioclase, quartz and chlorite.

CONCLUSION:

Alteration is strongly propyllitic. The medium grained texture of the matrix is interpreted as the result of andesite dike intrusion rather than extrusive flow.

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16331 Bell Road,
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PETROGRAPHIC REPORT

NUMBER: #G - 9 LOCALITY: Snippaker Creek DATE: March 12, 1974

NAME AND CLASSIFICATION: GRANODIORITE

MEGASCOPIC DESCRIPTION: The specimen has the texture of a grey intrusive rock.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	20	An_{20-30}. Stubby plagioclase crystals are subhedral in outline, and these are partially altered to sericite, alkali feldspar, epidote, carbonate and chlorite.
2. Quartz	20	Quartz occurs as strained and fractured grains, which have ragg irregular outlines.
3. Chlorite	20	Chlorite is secondary after both plagioclase and mafic minerals It is associated with epidote, etc.
4. Epdiote	15	Epidote is most abundant in altered mafics, and less abundant in partially altered plagioclase.
5. Sericite	13	Moderate sericite alteration of the plagioclase is evident.
6. Carbonate	7	Carbonate is secondary mainly after plagioclase.
7. Sphene	4	Wedges of sphene occur in association with altered mafics.
8. Apatite	1	Abundant accessory apatite was noted.

TEXTURE: A medium grained equigranular texture is suggested by the random orientation of plagioclase, quartz, and mafic pseudomorphs. The quartz exhibits moderate undulatory extinction and fracturing.

CONCLUSION:

The sample is distinctly intrusive in origin. Depth of intrusion is moderately shallow. It has been modified by moderate propyllitic alteration and affected by dynamic stresses.

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16331 Bell Road,
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PETROGRAPHIC REPORT

NUMBER: #G - 23 LOCALITY: Snippaker Creek DATE: March 12, 1974

NAME AND CLASSIFICATION: GRANODIORITE

MEGASCOPIC DESCRIPTION: The specimen is greenish, medium grained and intrusive in appearance.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	28	$An_{30\pm5}$. Stubby, subhedral andesine crystals are close-packed and partially altered to sericite, epidote and carbonate.
2. Quartz	20	Equigranular quartz is jammed in between plagioclase crystals.
3. Sericite	15	This is secondary after plagioclase.
4. Chlorite	10	Interstitial mafic minerals are completely replaced by chlorite, carbonate and leucoxene.
5. Alkali Feldspar	7	Less than a third of the feldspar consists of interstitial grains and rims of alkali plagioclase, which exhibit poor chessboard to perthite structure.
6. Carbonate	7	Carbonate is distributed as small irregular grains.
7. Epidote	5	Minor quantities of epidote are confined to the plagioclases.
8. Magnetite	3	Accessory grains occur throughout.
9. Sphene	2	Accessory crystals are common.
10. Leucoxene	2	The mafics are altered to leucoxene, carbonate and chlorite.
11. Apatite	1	This is a minor accessory.

TEXTURE: A medium grained texture is exhibited. Subhedral plagioclase crystals appear closely packed. Equigranular quartz, mafic pseudomorphs, and alkali feldspars occur in the interstices between plagioclase crystals.

CONCLUSION:

A shallow intrusive source is suspected. Although non-porphyritic, the feldspar tablets crystallized slightly earlier than the remainder of the rock. Alteration lies between propyllitic and phyllic types.

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16331 Bell Road,
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PETROGRAPHIC REPORT

NUMBER: #K - 6 LOCALITY: Snippaker Creek DATE: March 13, 1974

NAME AND CLASSIFICATION: ALTERED TUFF

MEGASCOPIC DESCRIPTION: This is a fine textured rock which has a green and grey mottled colour.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	35	Ill-defined alkali feldspar crystals and fragments (?) are strongly sericitized and chloritized. Some potash feldspar replacement may also have occurred.
2. Sericite	25	Abundant sericite is scattered throughout, but mainly within plagioclase grains.
3. Chlorite	20	Secondary chlorite permeates all constituents. Mafic minerals are altered to chlorite and leucoxene.
4. Quartz	10	Fine equigranular quartz, and lesser alkali feldspar, are developed in the alteration of the matrix.
5. Epidote	5	Granular epidote occurs as scattered grains.
6. Magnetite	4	The matrix is crowded with patches of fine magnetite grains.
7. Leucoxene	1	This mineral is secondary after ferromagnesians.
8. Apatite	Tr.	Minor amounts of apatite are present.

TEXTURE: Only shadowy remnants of rock and crystal fragments are evident within the matrix of sericite, chlorite, and quartz. These alteration products are fine grained, and they have obscured the texture and nature of the original minerals.

CONCLUSION:
The specimen is tuffaceous - possibly a coarse tuff or lapilli tuff of intermediate composition. Strong quartz-sericite (phyllic) alteration has occurred.

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16331 Bell Road,
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PETROGRAPHIC REPORT

NUMBER: #MA - 5 LOCALITY: Snippaker Creek DATE: March 13, 1974

NAME AND CLASSIFICATION: ALTERED FELDSPAR PORPHYRY

MEGASCOPIC DESCRIPTION: This appears as a grey feldspar porphyry.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	25	An_{5-12}. Euhedral albite phenocrysts, 2 - 5 mm., exhibit twinning and moderate alteration to sericite, epidote, and minor chlorite and alkali feldspar.
2. Sericite	25	Sericite pervades the entire groundmass, leaving few remnants of the original texture and mineralogy.
3. Chlorite	18	Fine grained chlorite is closely associated with sericite, as well as with epidote.
4. Epidote	12	Coarse epidote occurs in patches as a secondary mineral derived from the alteration of mafic phenocrysts.
5. Potash Feldspar	10	A few phenocrysts and irregular secondary patches within plagioclase consist of potash feldspar.
6. Quartz	7	Quartz occurs as a secondary mineral in the groundmass and in pseudomorphs after mafic phenocrysts.
7. Sphene & Leucoxene	3	Crystalline sphene and granular leucoxene are common accessory minerals.
8. Pyrite	Tr.	A few grains are partially weathered to hematite.
9. Apatite	Tr.	Large apatite crystals, up to 1 mm., are accessory.

TEXTURE: The feldspar phenocrysts give the section its porphyritic texture. These phenocrysts are stubby and randomly oriented. Patches of epidote, quartz and chlorite probably represent mafic phenocrysts. The groundmass consists of fine sericite, alkali plagioclase, chlorite and minor quartz.

CONCLUSION:
The rock is a feldspar porphyry that intruded at shallow depth. It may be sill-like in form, and syenitic in composition. Strong phyllic alteration is indicated by the development of abundant sericite.

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PETROGRAPHIC REPORT

NUMBER: #MA - 13 LOCALITY: Snippaker Creek DATE: March 13, 1974

NAME AND CLASSIFICATION: SERICITIZED GRANITE (?)

MEGASCOPIC DESCRIPTION: This is a fine grained, mottled grey and green specimen containing abundant pyrite disseminations.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Sericite	40	All feldspars are completely altered to sericite, carbonate and minor amounts of chlorite.
2. Carbonate	25	This mineral is secondary after plagioclase.
3. Quartz	18	Fractured, coarse anhedral quartz grains are dispersed within the fine grained secondary minerals.
4. Chlorite	10	Chlorite is mixed with secondary sericite. It is more abundant in areas which have been derived from the alteration of mafic minerals.
5. Pyrite	4	Irregular grains occur as disseminations and fillings of narrow fractures.
6. Leucoxene	2	Some appears to be derived from magnetite, and some from the mafics.
7. Apatite	1	Apatite grains are accessory.

TEXTURE: Equigranular, coarse to medium grained quartz occurs in a fine grained secondary matrix of sericite, carbonate and chlorite. These secondary minerals are derived from plagioclase, and chlorite with leucoxene is derived from ferromagnesians.

CONCLUSION:
The section may be representative of either a medium grained granite or granodiorite. It is strongly sericitized (phyllic alteration). The abundance of carbonate is probably the result of alteration of intermediate plagioclase.

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PETROGRAPHIC REPORT

NUMBER: #MA - 15 LOCALITY: Snippaker Creek DATE: March 13, 1974

NAME AND CLASSIFICATION: QUARTZ MONZONITE

MEGASCOPIC DESCRIPTION: Grey feldspar phenocrysts are crowded into a mafic-rich matrix.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Plagioclase	35	An_{20-30} (?). The partial alteration of euhedral plagioclase to sericite, epidote and chlorite prevents accurate determination of its composition.
2. Quartz	20	Quartz is equigranular and interlocked with plagioclase and orthoclase.
3. Perthite	15	Large orthoclase perthite plates enclose smaller plagioclase crystals. Orthoclase also occurs in the matrix as small equigranular grains.
4. Sericite	10	Fine sericite permeates plagioclase crystals.
5. Chlorite	10	Chlorite is abundant in interstitial patches derived from the alteration of hornblende or biotite.
6. Epidote	5	Epidote occurs together with both chlorite and sericite.
7. Accessories	5	Magnetite, sphene and apatite are the common accessory minerals.

TEXTURE: A sub-porphyritic to equigranular texture is preserved. Large orthoclase crystals, and 1 - 4 mm. plagioclase tablets are set in a coarse equigranular matrix of plagioclase, orthoclase and quartz. Interstitial ferromagnesians are altered to chlorite and epidote.

CONCLUSION:
The intrusion is hypabyssal to plutonic in nature. Weak propyllitic alteration is evident.

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16331 Bell Road,
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Canada

PETROGRAPHIC REPORT

NUMBER: #R - 6 LOCALITY: Snippaker Creek DATE: March 13, 1974

NAME AND CLASSIFICATION: SERICITIZED INTRUSIVE (?)

MEGASCOPIC DESCRIPTION: The specimen is grey, siliceous and relatively fine grained.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Alkali Feldspar	30	Poorly defined alkali feldspar grains are strongly sericitized. Remnant twins are barely visible.
2. Sericite	30	Sericite is secondary and fine grained.
3. Quartz	30	Irregular grains and patches of quartz are scattered among the sericite and remnant feldspar.
4. Chlorite	8	The occasional patch of chlorite occurs with sericite.
5. Leucoxene	2½	Grains of leucoxene are secondary.
6. Hematite/Pyrite	½	Pyrite and associated hematite occur in small amounts.

TEXTURE: Shadowy tabular feldspar remnants (with scattered sericite) are suggestive of 2 - 4 mm. crystals. The section is now a fine grained quartz-sericite-feldspar rock, without much primary texture. Irregular grains of quartz and feldspar occur in a sericitic matrix.

CONCLUSION:

The original texture and mineralogy have been drastically modified. The sample is essentially a feldspar-quartz-sericite rock. It may have been derived from any of the intrusive types previously described. Alteration is a strong silica and sericite replacement.

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16331 Bell Road,
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PETROGRAPHIC REPORT

NUMBER: #S - 6 LOCALITY: Snippaker Creek DATE: March 13, 1974

NAME AND CLASSIFICATION: SERICITIZED TUFF

MEGASCOPIC DESCRIPTION: Numerous pyritic fractures cut across this grey-green aphanitic rock.

MICROSCOPIC DESCRIPTION:

Minerals	%	Remarks
1. Sericite	45	Anhedral elongate areas (1 - 3 mm.) consist essentially of fine grained sericite. These may be altered feldspar phenocrysts and/or rock fragments.
2. Chlorite	25	Abundant chlorite is associated with sericite alteration.
3. Quartz	25	Fine grained equigranular quartz, together with sericite and chlorite, makes up the groundmass.
4. Pyrite/Hematite	3	Pyrite occurs as disseminations and in fractures. Weathering to hematite is incipient.
5. Leucoxene	2	Granular streaks of leucoxene follow the direction of lineation.

TEXTURE: A pseudo "flow texture" is indicated by the parallel alignment of sericite pseudomorphs, which are "angular" to "euhedral" in appearance. The intervening matrix consists of a very fine mixture of sericite, chlorite and equigranular quartz.

CONCLUSION:
The primary "tuffaceous" appearance is preserved by the secondary alteration minerals sericite, chlorite and quartz. This is strong phyllic alteration. Development of weak lineation is the result of shearing stresses.

APPENDIX II

REPORT ON
INDUCED POLARIZATION and MAGNETIC SURVEYS
SNIPPAKER CREEK PROSPECT, STEWART, B.C.
-for-
GREAT PLAINS DEVELOPMENT COMPANY OF CANADA LTD.

REPORT ON

INDUCED POLARIZATION and MAGNETIC SURVEYS

SNIPPAKER CREEK PROSPECT, STEWART, B.C.

FOR

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA LTD.

BY

T.R.B. Dundas, M.Sc.

TABLE OF CONTENTS

INTRODUCTION

General

This report describes the results of Induced Polarization (I.P.) and Magnetic Surveys carried out by Kenting Exploration Services Limited, on the Kim Claim Group, Snippaker Creek Prospect, near Stewart, B.C. for Great Plains Development Company of Canada Ltd.

The field work was carried out in the period September 1, 1974 to September 19, 1974 under the direction of T.R.B. Dundas, Supervising Geophysicist.

The crew was accompanied by R. Visagie, Geologist for Great Plains Development Company of Canada Ltd.

The extent of the surveys was limited in part by snow cover and also by the steep slopes especially to the north and east. During the course of the survey some extra lines were chained in by the magnetometer operator.

SURVEY SPECIFICATIONS

A. INDUCED POLARIZATION SURVEY

Instrumentation

The equipment used for the Induced Polarization survey consisted of a Huntec Mark III pulse-type system combined with Newmont type receivers.

The Huntec Mark III Receiver presents digitally the primary voltage, Vp, and four (4) individual values (M_1, M_2, M_3 and M_4) of the decay curve in a single reading. Additional points on the decay curve may be obtained by changing the instrument parameters. The decay curve may be used to distinguish electromagnetic effects from the true Induced Polarization voltage.

The following specifications apply:-

Current - D.C. - 2.0 seconds "current on"
- 2.0 seconds "current off"
Alternate pulses have reversed polarity

Transmitter Power Available - 10.0 K Watt

Mark III - Integrating Time - 30 Milliseconds

- Delay Time From "Current Off" To Start Of Integration - 30 Milliseconds

- Time From "Current Off" To Centre of Each Integrated Chargeability:-

M_1 - 45 Milliseconds
M_2 - 90 Milliseconds
M_3 - 180 Milliseconds
M_4 - 360 Milliseconds

- Chargeability (M_1, M_2, M_3, M_4) - Expressed as percentage of primary voltage, Vp.

Newmont - Integrating Time - 450 Milliseconds

- Delay Time - 650 Milliseconds

Calculations

The apparent resistivity is calculated by dividing the primary voltage, Vp, by the current Ig flowing between the current electrodes, C_1 and C_2, and multiplying by a geometrical factor appropriate to the electrode array being used. The apparent resistivity is expressed in ohm-meters.

Electrode Array

The electrode array used was the gradient arrangement.

In this system the current electrodes C_1 and C_2 are placed a large distance apart so that the electric field generated can be considered parallel to the $C_1 - C_2$ direction. A large area between the current electrodes can then be surveyed with the potential electrodes.

The current electrode separation $C_1 - C_2$ was varied due to local topography but the $P_1 - P_2$ distance was maintained at 200 feet along the survey lines.

The results from each of these "gradient blocks" is contoured separately.

B. MAGNETIC SURVEY

A Geometrics G-816 Proton Precession Magnetometer was used for the magnetic survey and is capable of reading to an accuracy of 1 Gamma.

Readings were taken at 100 foot intervals along the suvrey lines in a series of loops which started and ended at previously established base stations. The readings were then corrected for diurnal drift.

RESULTS

The results are presented in the form of contoured plan maps at a scale of 1 inch = 400 feet.

Figure 1 - Apparent Chargeability

Figure 2 - Apparent Resistivity

Figure 3 - Magnetometer Survey

Figure 4 - Interpretation

GEOLOGY

The geology of the area has been mapped in detail by R. Visagie, Great Plains Development Company of Canada Ltd. during the period of the geophysical survey.

Generally the geology consists of granodiorite and granite porphyry intrusions into a series of tuffs and flows. Pyrite is extensive throughout parts of the area and malachite staining is also common in the northeast.

This is supported by the fact that residual magnetic anomalies show similar directions to the apparent chargeability anomalies on either side of the north-south fault.

This is supported by the fact that residual magnetic anomalies show similar directions to the apparent chargeability anomalies on either side of the north-south fault.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions can be made from the geophysical results.

(1) The maximum magnetic response represents the areas closest to the main intrusive at depth and are centered (a) Lines 12E-24E at baseline and still open to the east and south (b) Line 4E and still open to the north.

(2) The steep magnetic gradient to the southwest indicates that the intrusive is cut-off or plunges rapidly in this direction. Future surface work should therefore be concentrated to the east.

(3) The mapped north-south fault is a near surface feature, the apparent chargeability and residual magnetic response showing similar trends on either side.

(4) Sulphide mineralization was expected to form a halo around the location of the center of the main intrusive. Weak chargeability response occurs over the areas of maximum magnetic response supporting this idea.

(5) Drilling is recommended to test the areas showing maximum magnetic response, (a) anomaly at baseline 12E-24E (b) 1NE at 42N.

An estimate of the depth to the source of the magnetic response cannot be made as there is insufficient data.

Respectfully submitted,

KENTING EXPLORATION SERVICES LIMITED

T.R.B. Dundas, M.Sc.,
Supervising Geophysicist.

J.E. Wyder, Ph.D., P.Eng.,
Manager, Geo-Sciences Department.

APPENDIX III

COSTS INCURRED ON SNIPPAKER GROUP #1

Claims:
KIM 2, 4, 6, 8, 10, 12, 13-36 and TAMI 20, 25-30, 31, 32, 37

Costs on Petrographic Study and Assays

50% of the following:

- Petrographic examination (282.50) (D.L. Cooke and Assoc)	$141.25	
- Thin section preparation (60.00)	$ 30.00	
- Air Express (8.00)	$ 4.00	
- Assaying (Loring Labs) (516.60)	$258.30	
Sub Total	$433.55	$433.55

Cost on Geophysical Work

Helicopter - (5 hrs x $280.00/hr)	$1,400.00	
Mobilization of Camp (50% x 610.00)	305.00	
Demobilization of Camp (50% x 610.00)	175.00	
Mobilization and Demobilization of Contract Geophysical Crew (5 days x 275/day)	$1,375.00	
Geophysical Contract (15 days x 550/day)	$8,250.00	
Salary - Company Supervisor (12 days x $45/day)	540.00	
Camp Supplies	300.00	
Rentals - Truck (50% x $250.00)	125.00	
- Radio (50% x $80)	40.00	
Groceries - (2 men x 15 days x $10/man/day)	300.00	
(1 man x 12 days x $10/man/day)	120.00	
Sub Total	$12,930.00	$12,930.00

TOTAL $13,363.55

2367
15127

SNIPPAKER GROUP #2 - COSTS INCURRED

Mapping and Prospecting Costs Incurred

- Helicopter (4 hours x $280.00)	$1,120.00	
- Mobilization of Camp (50% of $610.00)	$ 205.00	
- Demobilization of Camp (50% of $350)	$ 175.00	
- Salary - Company Supervisor (3 days x $45/day)	$ 135.00	
- Groceries - 1 man x 3 days x $10/man/day	$ 30.00	
- Rentals - Truck - (50% of $250)	$ 125.00	
- Radio - (50% of $80)	$ 40.00	
Sub Total	$1,930.00	$1,930.00

Petrographic Study of D.L. Cooke & Assoc.

50% of : Petrographic Examination (282.50)	$ 141.25	
Cutting thin sections (60.00)	$ 30.00	
Air Express (8.00)	$ 4.00	
Assaying (516.60)	$ 258.30	
(Loring Labs)		
Sub Total	$ 433.55	$ 433.55
TOTAL		$2,363.55

APPENDIX IV

STATEMENT OF QUALIFICATIONS

I Rik Visagie reside at 46140 Camp River Road, Chilliwack, in the Province of British Columbia. I have a B.Sc (72) (Geology Major) from the University of British Columbia. I have worked in Exploration in British Columbia during the past 4½ years.

1970	Bethlehem Copper	Summer Student
1971	Bethlehem Copper	Summer Student
1972	Bethlehem Copper	(full time geologist)
1973	Great Plains	(full time geologist)
1974	Great Plains	(full time geologist)

Dated at Calgary this 25th day of October, 1974.

H.M. Visagie (Rik)

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

SNIPPAKER CREEK PROSPECT

DETAILED GEOLOGY OF THE KIM GROUP

400 200 0 400 800
FEET
CONTOUR INTERVAL: 200 FEET

J.ARD M.D.
V.READ

N.T.S. 104 B/10
JAN., 1972

LEGEND

- 7 — GRANODIORITE, GRANITE PORPHYRY
- 4 — TUFF - fine grained, green, well bedded, grada tional to lapilli
- 3 — UNDIVIDED FLOWS & PYROCLASTICS

- AREA OF ROCK OUTCROP
- GEOLOGICAL BOUNDARY (ASSUMED)
- BEDDING (Steeply Dipping, Inclined, Vertical)
- FAULT (Steeply Dipping, Inclined, Vertical)
- THRUST FAULT (Defined, Assumed)
- FRACTURING (Steeply Dipping, Inclined, Vertical)
- DYKE (Defined, Assumed)
- GOSSAN
- SNOWFIELD, GLACIER BOUNDARY
- MINERALIZATION (Inplace, Float Or Talus)
  - ga = GALENA
  - cp = CHALCOPYRITE
  - az = AZURITE
  - ma = MALACHITE

5142
M2

SNOW COVERED

SNIPPAKER CREEK

GLACIER

LEGEND

④ FELSITE

③ INTRUSIVE (QUARTZ MONZONITE, GRANITE, FELDSPAR PORPHYRY)

② TUFF

① UNDIVIDED FLOWS & PYROCLASTICS

CLAIM POST

ROCK SAMPLE LOCATION
(Au, Ag, Cu, Pb, MoS2)
Au & Ag - Ounces per ton
Cu, Pb, MoS2 - Weight percent

5142
M3

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5142 MAP #3

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

SNIPPAKER CREEK - TAMI CLAIMS

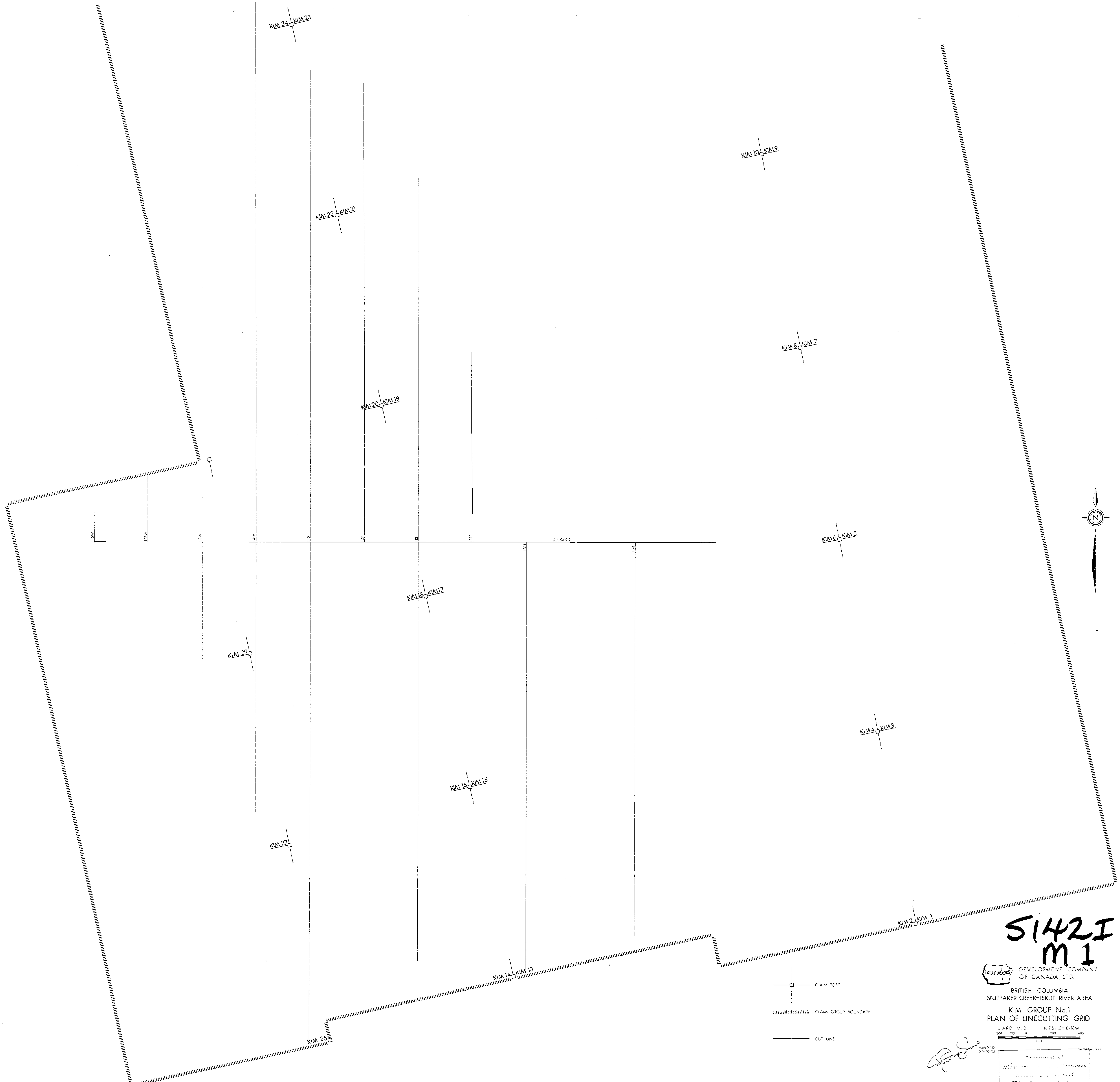
GEOLOGY

CONTOUR INTERVAL : 200 FEET

400 200 0 400 800
FEET

LIARD M.D.
V. READ

N.T.S. 104 B/10
MARCH 1974



5142I
M 1

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

BRITISH COLUMBIA
SNIPPAKER CREEK-ISKUT RIVER AREA

KIM GROUP No.1
PLAN OF LINECUTTING GRID

LIARD M.D. N.T.S. 104 B/10W

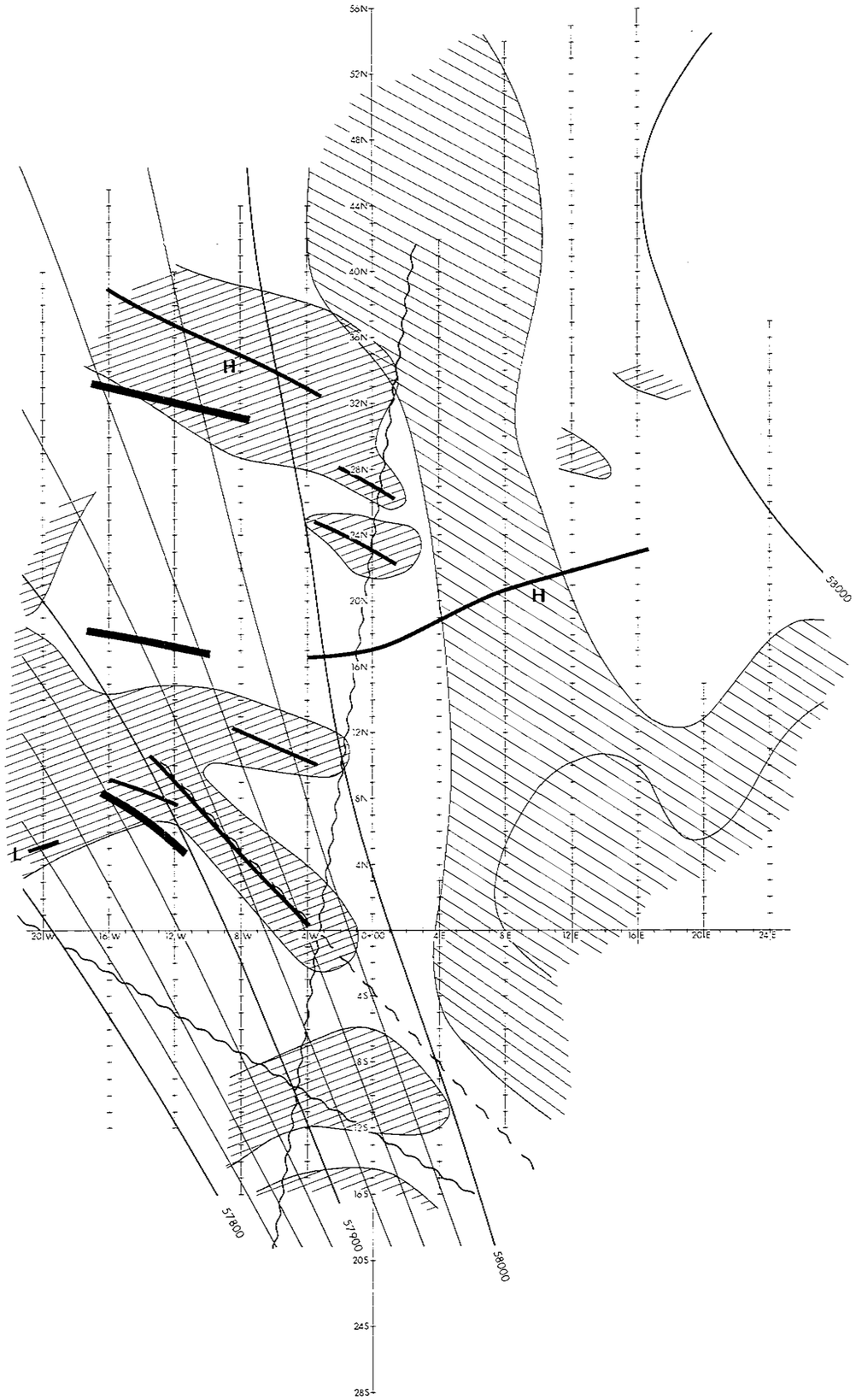
200 100 0 200 400
FEET

M. McINNIS
G. MITCHELL

September, 1972

Department of
Mines and ... Resources
ASSESSMENT REPORT
NO. 5142 MAP #1

TO ACCOMPANY GEOCHEMICAL REPORT BY M.D. McINNIS
ON THE TAMI AND KIM CLAIM GROUPS, SNIPPAKER CREEK-ISKUT
RIVER AREA, LIARD MINING DIVISION, DATED SEPTEMBER 26, 1972



N

5142
M7

LEGEND:

- FAULT - FIELD MAPPED
- FAULT - INTERPRETED
- MAGNETIC TRENDS
- AXIS OF CHARGEABILITY ANOMALIES
- AREAS OF HIGHER CHARGEABILITY
- L - H CORRESPONDING MAGNETIC RESPONSE - LOW OR HIGH TO CHARGEABILITY ANOMALIES
- MAGNETIC HIGH

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

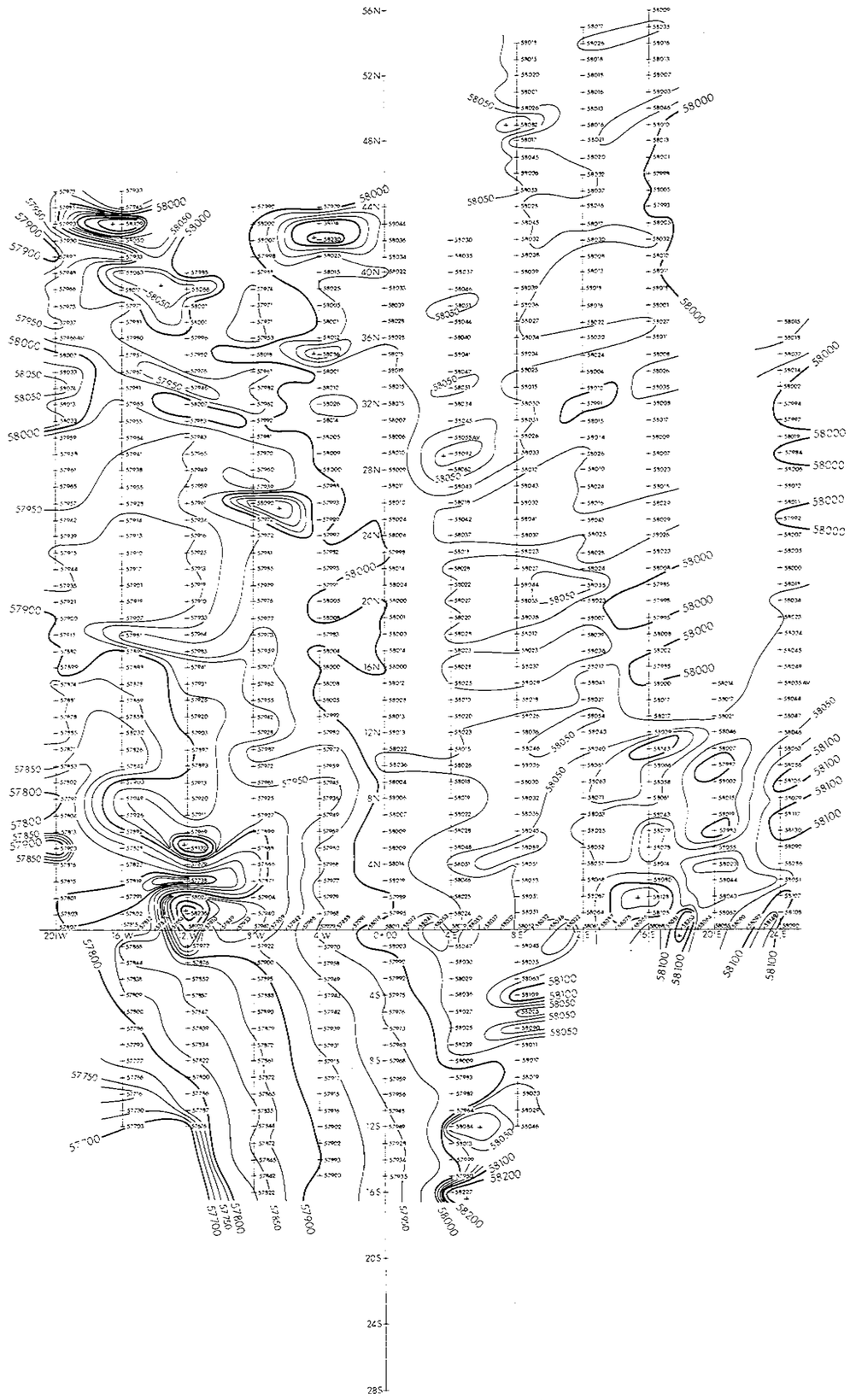
SNIPPAKER CREEK AREA

COMPOSITE INTERPRETATION

TO ACCOMPANY REPORT BY: T.R.B. DUNDAS, M.Sc.

KENTING EXPLORATION SERVICES LIMITED — CALGARY ALBERTA

SCALE: 1" = 400'	DATE: OCTOBER 1974
JOB NO.: 2035	FIGURE NO.: 2
C.I.: —	DRAWN BY: PHW



5142
M6

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

SNIPPAKER CREEK AREA

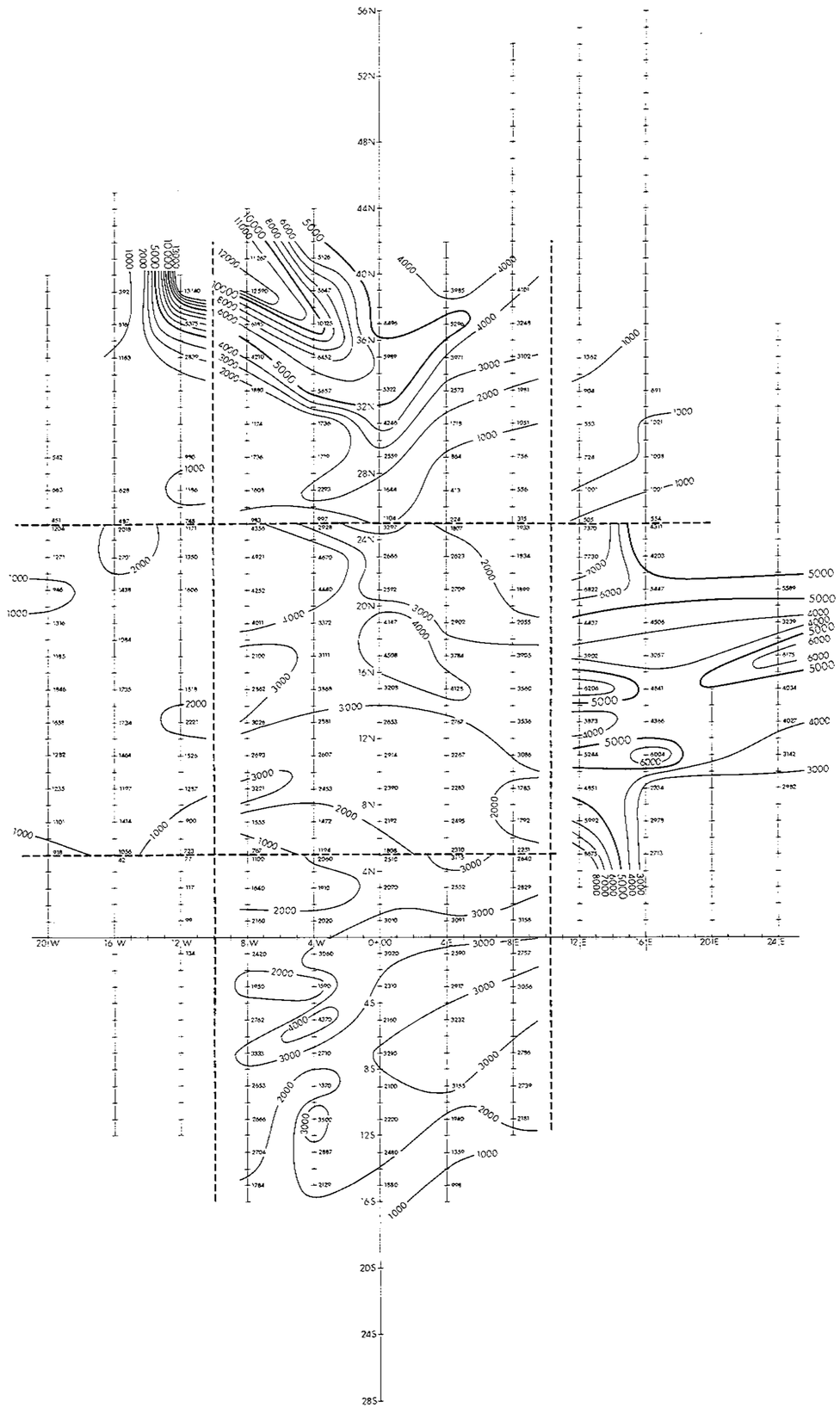
MAGNETOMETER SURVEY

TO ACCOMPANY REPORT BY:

T.R.B. DUNDAS, M.Sc

KENTING EXPLORATION SERVICES LIMITED — CALGARY ALBERTA

SCALE: 1" = 400'	DATE: OCTOBER 19
JOB NO: 2035	FIGURE NO: 3
C.I. 25 gammas	DRAWN BY: PHM



5142
M5

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

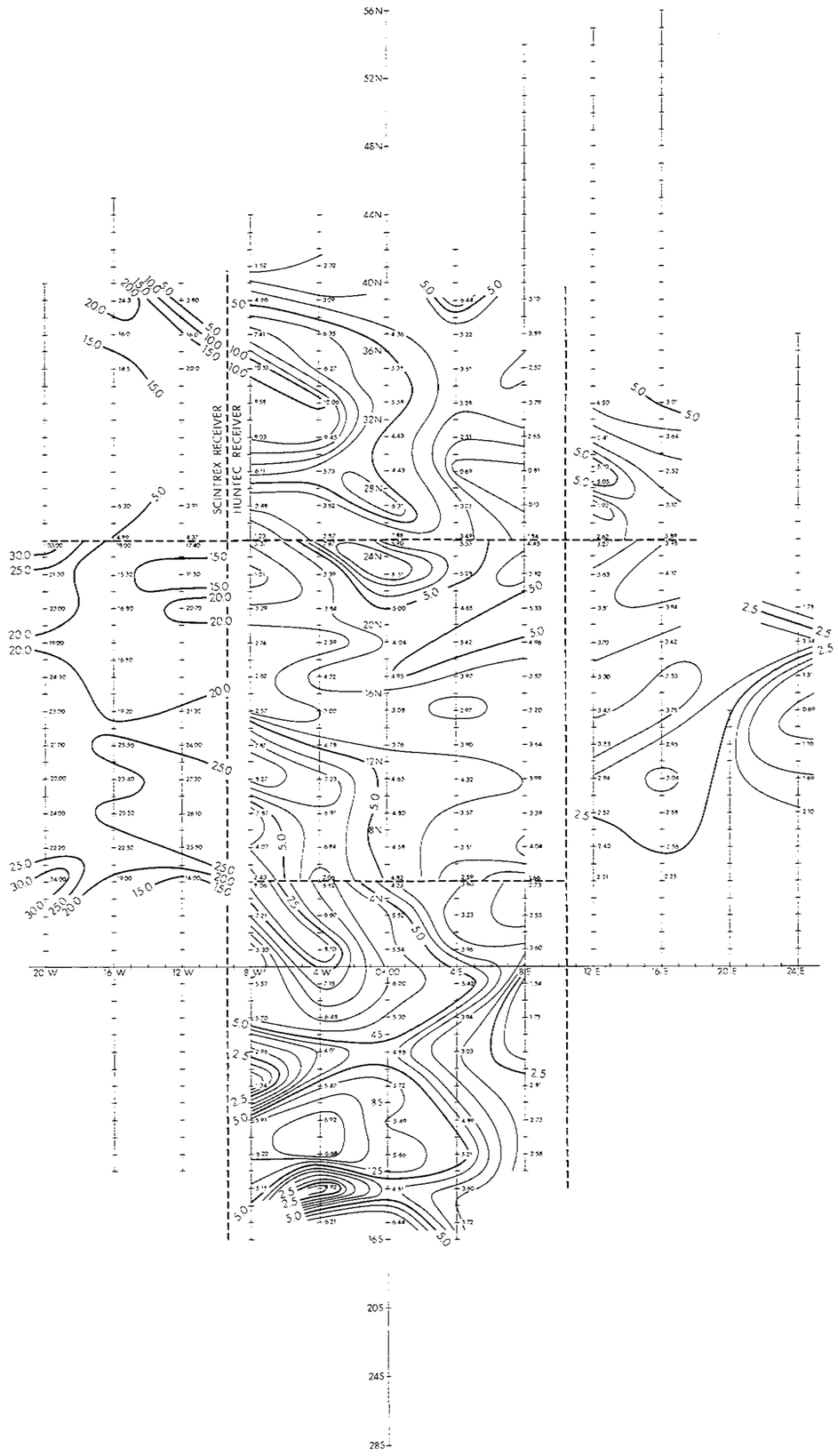
SNIPPAKER CREEK AREA

APPARENT RESISTIVITY

TO ACCOMPANY REPORT BY: T.R.B. DUNDAS, M.Sc.

KENTING EXPLORATION SERVICES LIMITED — CALGARY ALBERTA

SCALE: 1" = 400'	DATE: OCTOBER 1974
JOB NO.: 2035	FIGURE NO.: 2
C.I.: 1000 OHM METERS	DRAWN BY: PHW



5142
M 4

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

SNIPPAKER CREEK AREA

APPARENT CHARGEABILITY

TO ACCOMPANY REPORT BY: I.R.B. DUNDAS, M.Sc.

KENTING EXPLORATION SERVICES LIMITED — CALGARY ALBERTA

SCALE: 1" = 400'	DATE: OCTOBER 1974
JOB NO.: 2035	FIGURE NO.: 1
C.I.: 05, 10 & 50 %	DRAWN BY: PHW

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

SNIPPAKER CREEK PROPERTY

DETAILED GEOLOGY OF THE KIM GROUP

400 200 0 400 800
FEET

CONTOUR INTERVAL: 200 FEET

LIARD M.D.
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N.T.S. 104 B/10
JAN., 1974

LEGEND

- 7 — GRANODIORITE, GRANITE PORPHYRY
- 4 — TUFF - fine grained, green, well bedded, gradational to lapilli
- 3 — UNDIVIDED FLOWS & PYROCLASTICS

- AREA OF ROCK OUTCROP
- GEOLOGICAL BOUNDARY (ASSUMED)
- BEDDING (Steeply Dipping, Inclined, Vertical)
- FAULT (Steeply Dipping, Inclined, Vertical)
- THRUST FAULT (Defined, Assumed)
- FRACTURING (Steeply Dipping, Inclined, Vertical)
- DYKE (Defined, Assumed)
- GOSSAN
- SNOWFIELD, GLACIER BOUNDARY
- MINERALIZATION (Inplace, Float Or Talus)
  - ga = GALENA
  - cp = CHALCOPYRITE
  - az = AZURITE
  - ma = MALACHITE

5142 II
Map 9

N

CREEK

SNIPPAKER

GLACIER

LEGEND

④ FELSITE

③ INTRUSIVE (QUARTZ, MONZONITE, GRANITE)

② TUFF

① UNDIVIDED FLOWS & PYROCLASTICS

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 5142 MAP #10

GREAT PLAINS DEVELOPMENT COMPANY OF CANADA, LTD.

SNIPPAKER CREEK - TAMI CLAIMS

GEOLOGY

5142 II
M 10

400 200 0 400 800

LIARD M.D.
V. READ

N.T.S. 104 B/10
MARCH 1974

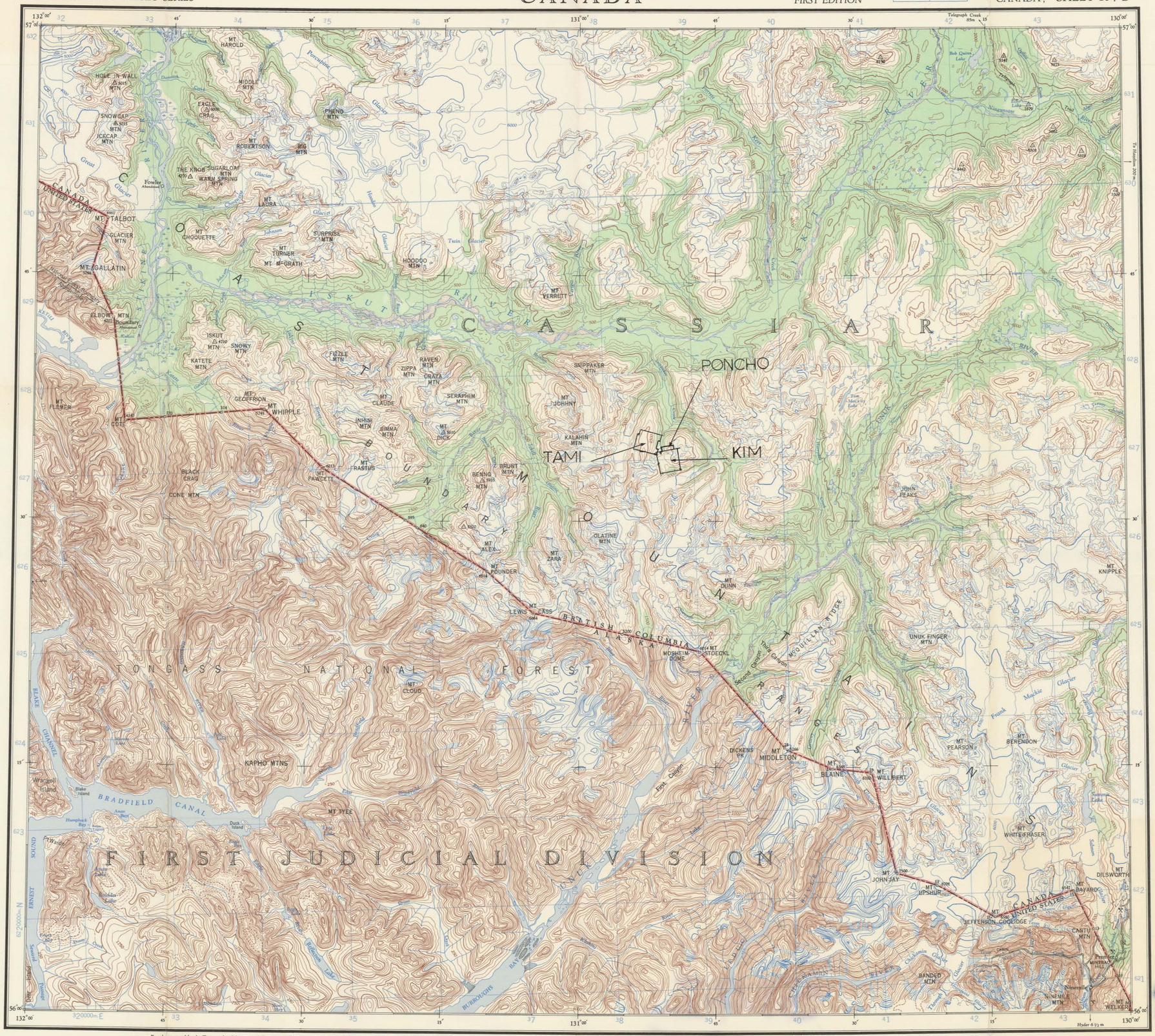
NATIONAL TOPOGRAPHIC SERIES

CANADA

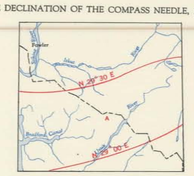
FIRST EDITION

Refer to this Map as: 104 B EDITION 1 ASE SERIES A 502

CANADA, SHEET 104 B



THE DECLINATION OF THE COMPASS NEEDLE, 1955



The declination of the compass needle at any place along a red line is the declination given on that red line. At other places the declination is between those given on the neighbouring red lines; thus at the place marked A, the declination is between N29°00'E and N29°30'E. The easterly declinations of the compass needle are decreasing 4 minutes annually.

Based on control by the Topographical Survey and International Boundary Commission, Department of Mines and Technical Surveys
Compiled, drawn and printed by the ARMY SURVEY ESTABLISHMENT R.C.E. Department of National Defence, 1952-55.
Aerial photography by the R.C.A.F. 1949.
Area in Alaska from the Bradfield Canal map of the United States Geological Survey.

REFERENCE

Road, Hard Surface, All Weather	More than 2 Lanes / Dual No. 2 Lanes
" Loose Surface, All Weather	2 Lanes Wide or More
" " " Less than 2 Lanes	All Weather / Dry Weather
Cart Track, Trail	Cart Track / Trail
Railway, Multiple Track	
" Single Track	
Boundary, International	
" Province or State	Marker
" County or District	
" Reservations, Indian, Military, etc.	

ISKUT RIVER

CANADA–UNITED STATES

Scale 1 : 250,000

1 Inch to 4 Miles Approximately

Miles 0 5 10 15 20 Miles

Kilometres 0 5 10 15 20 25 30 Kilometres

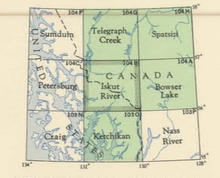
Copies may be obtained from
The Map Distribution Office,
Dept. of Mines and Technical Surveys,
Ottawa.

Contour Interval 500 Feet in Canada. Contour Interval in U.S.A. 200 and 250 Feet.
Elevations in Feet above Mean Sea Level.

Universal Transverse Mercator Projection.
North American Datum 1927
Preliminary 1952

REFERENCE

Horizontal Control Point	Spot Elevation, in feet 124
Contours, Elevation	Forest, Woods Scrub
" Depression	Swamp or Marsh
" Approximate	
Glacier or Snowfield	
Stream, Intermittent	W. L. 125 Ferry
Dam	Lighthouse Mud Sand
Falls	
Airfield, on Land Water Landing Ground Anchorage	
Power Transmission Line	



NOTE. On the above index the sheets published are shown tinted green

GRID ZONE DESIGNATION 9V	TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 1000 METRES
100,000 M. SQUARE IDENTIFICATION: UP VP / UN VN	SAMPLE POINT: HORIZONTAL CONTROL POINT
40	UN 6 2 7 4
IGNORE the SMALLER figures of any grid number: these are for finding the full coordinates. Use ONLY the LARGER figures of the grid number: example 32 0000	SAMPLE REFERENCE: UN6274
If reporting beyond 10' in any direction: prefix Grid Zone Designation as	9VUN6274

IN THE SAME METRE
UNIVERSAL TRANSVERSE MERCATOR GRID

5142 M8

ISKUT RIVER
SHEET 104 B
NO. 9-10
AMS SERIES Q 501