

84-#227 - 12155

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

12,155

MGM OPTION
Mica Creek, B.C.

83-D-1

GEOPHYSICS AND GEOCHEMISTRY
1983

┌ C.D. Spence

December 1983 ┘

Owner: J.M. Leask

Operator: Riocanex Inc.

<u>CLAIMS</u>	<u>UNITS</u>	<u>RECORD NO.</u>
MGM	9	373/8
MGM 2	2	422/9
MGM 3	6	423/9
MGM 4	20	1004/8
MGM 5	5	1130/6
MGM 6	2	1131/6
MGM 7	8	1132/6

GOLDEN MINING DISTRICT

MGM OPTION
Mica Creek, B.C.
83-D-1
GEOPHYSICS AND GEOCHEMISTRY
1983

TABLE OF CONTENTS

	Page
1. INTRODUCTION	1
2. PROPERTY	
2.1 Location and Access	2
2.2 Claims	2/3
2.3 History	3/4
3. GEOLOGY	
3.1 General	5
3.2 Regional Geology	5
4. WORK BY RIOCANEX	
4.1 General	6
4.2 VLF Surveys	6
4.3 Geochemical Sampling	7
4.4 Mapping and Prospecting	7
5. DISCUSSION OF RESULTS	8/9
6. RECOMMENDATIONS	10

APPENDICES

I	GEOLOGICAL PLAN	J.M. Leask
II	PETER E. WALCOTT & ASSOC. Map W-326-1 Map W-326-2 Map W-326-3 Map W-326-4	Geophysical Grid Map Magnetometer Contours EM Profiles SE-88 Frequency Ratio 1012.5/112.5 EM Profiles SE-88 Frequency Ratio 3037.9/112.5
III	RIOCANEX REPORT	D. Sexsmith MGM Option VLF-EM Survey including Dwg. GP-7634
IV	SOIL SAMPLE AND ROCK SAMPLE LOCATIONS	Dwg. L-6778
V	SAMPLE RESULTS	Acme Analytical Laboratories
VI	COST STATEMENT	
VII	STATEMENT OF QUALIFICATIONS	

1. INTRODUCTION

The MGM claims covering a prospect for bedded lead-zinc was offered to Riocanex Inc. by J.M. Leask in late 1982. A field examination was carried out in May 1983 and it was recommended that Riocanex negotiate an option on the property and carry out a limited programme of geophysics to determine if a drillable target, reflecting extensions to the known mineralization could be found. Such a target, it was assumed, would be mineralization of the type known on the neighbouring Bend claims held by Cominco. Here, a massive sulphide deposit, the Canyon Zone, some 1200ft. long has been estimated to contain about 5 million tons of 3-6% zinc and lead. The massive pyritic and magnetite composing this zone suggested that any similar target on strike would clearly be detected, if at reasonable depth, by geophysical methods. High-grade sections with significant silver content in the Canyon Zone implied that a worthwhile reserve was possible.

This report describes the work done by Riocanex after an option agreement was concluded on 21 June 1983. The main work, an EM (Genie) survey conducted by Peter E. Walcott & Assoc. Ltd. was followed by minor check work by Riocanex.

2. PROPERTY

2.1 Location and Access

The MGM claims lie on the east side of Columbia Reach on McNaughton Lake above the Mica Dam (See Fig.1). They lie on map sheet 83-D-1 and are centred at 52° 04'N and 118°15'W. They cover even slopes facing SW from water level on Columbia Reach at 2500ft. asl to nearly 6000ft. Slopes are heavily wooded.

The claims are reached either by float plane or by boat from Mica Creek or Redrock Harbour, 15km down the lake to the N.W. Landing is made at the shore on to a section of the old Big Bend Highway. Access to other parts of the property are thence possible by remnants of this road and trails to the fire tower on Mt. Cummins.

2.2 Claims

The property consists of seven claims covering 52 units. All, pending only official acceptance of submitted assessment work, are in good standing to 1987.

The claims are as follows:

<u>Claim</u>	<u>Units</u>	<u>Record</u>	<u>Due Date</u>
MGM	9	373	20 Aug 87
MGM 2	2	422	19 Sep 87
MGM 3	6	423	19 Sep 87
MGM 4	20	1004	4 Aug 87
MGM 5	5	1130	28 Jun 88
MGM 6	2	1131	28 Jun 88
MGM 7	8	1132	28 Jun 88
	<u>52</u>		

2.2 Claims (continued)

The claims MGM 5-7 were staked by Riocanex in June 1983 but are subject to the agreement between Leask and Riocanex.

2.3 History

Mineralization in the Canyon Zone on Cummins River (See map by Leask - Appendix 1) was discovered in 1940 and was restaked in 1966 by Cominco when further showings were uncovered. Cominco mapped the property in 1967 and also drilled several short holes (13 holes - 786ft.) and trenched into the main showings on either side of Cummins Creek.

Under option from Cominco, Laura Mines in 1970 carried out geological mapping, soil sampling and deeper drilling. The property was then returned to Cominco. A second zone of mineralization, the North Road Zone was also found and extensively trenched but not successfully, drilled by Cominco. Cominco has, over the period, dropped some claims to currently hold only the 12 Bend claims (2-Post).

J. Leask in 1979 staked the MGM and MGM 2-3 claims to cover the North Road Zone and MGM 4 to protect southward extensions. Under an agreement with E & B Exploration Inc., Leask mapped the property in 1979 following regional reconnaissance. Leask, contrary to some earlier classification of the Canyon Zone as of fissure-type, interpreted it as sedimentary-exhalative and proposed that the North Road Zone was on strike and hence similar. The work by Leask is described in a report (Leask, J.M.).

Mapping by Cominco, seen by Riocanex led to similar conclusions except that the two were seen as on opposite limbs of a syncline.

Riocanex concurred in these general interpretations of mineralization being strataform and in 1983 carried out further work.

3. GEOLOGY

3.1 General

No geological work except minor prospecting over a magnetic anomaly was done by Riocanex. The geophysical programme was conducted using geological interpretations by Leask (op.cit.) and variations from this seen in work by Cominco. Descriptions below are taken from Leask's work.

3.2 Regional Geology

The property overlies parts of a conformable series of quartzites, carbonates and pelites of the Proterozoic Windermere Supergroup and up through the Lower Cambrian Gog Group and into the Middle Cambrian Tsar Creek and Kinbasket Formations. These, in the area of the property, lie on the western limb of the Porcupine Anticline and trend NW-SE.

Exposures on the property are poor.

4. WORK BY RIOCANEX

4.1 General

Based on observations at the Canyon zone on Cummins River, that the conformable sulphide zone was pyritic and contained abundant magnetite, the prospective area of the MGM claims, i.e. along strike of and over the N. Road zone, was covered by EM and magnetic surveys. This work was done under contract by Peter E. Walcott and Associates and is described in a report (Walcott 1983) with conclusions. It is described briefly below and maps from this report are enclosed as Appendix II.

Detection by the Walcott surveys of a strong magnetic anomaly with a probable conductor and another conductor prompted some limited follow up with VLF (EM-16) and soil sampling by Riocanex. This work is presented here.

4.2 VLF Surveys

VLF surveys were carried out on the southeastern part of the grid (lines 2 -13) to check an anomaly on lines 2 -4 detected by the Genie (SE-88) survey to assess a strong magnetic anomaly and to survey lines omitted by the Genie survey. This work was done by D. Sexsmith and A. Winkler of Riocanex from 4 - 9 September and by A. Winkler and R. Ney on 4 October. The work is fully described with conclusions in the report by D. Sexsmith (1983), attached hereto as Appendix III.

4.3 Geochemical Sampling

To assist in the assessment of the possible conductors and the magnetic features covered by the VLF surveys, 33 soil and 4 rock samples were collected over the magnetic anomaly and 21 soil samples over the conductors on lines 2S-4S. Sample locations are shown on Map L-6778 (Appendix IV).

At each of these stations, a sample of "B" horizon soil was collected, placed in a kraft paper envelope and shipped to Acme Analytical Laboratories in Vancouver. At the Acme Laboratory, the soil samples were oven-dried at 60°C, then screened to -80 mesh with the over-sized material discarded. A 0.5g subsample of the -80 mesh was then analyzed on an Induced Argon Plasma instrument after digestion in hot, dilute aqua regia. All of the samples were analyzed for 30 elements. Results are presented in Appendix V.

Four rock samples were crushed to -80 mesh and analyzed in the same manner as the soils above. Results are presented in Appendix V.

4.4 Mapping and Prospecting

Minor prospecting and mapping was done while the VLF survey was being done. Observations are discussed below.

5. DISCUSSION OF RESULTS

While the Genie (SE-88) survey was not entirely satisfactory and coverage was not complete, it, with magnetic survey and subsequent VLF work, has adequately covered the favourable area. The magnetic surveys show the area to be relatively flat with no anomalous response over or near the N. Road zone, nor any related to the Genie anomaly on lines 2S-4S. The major magnetic feature, the long E-W anomaly trending diagonally across lines 1S-13S was found to be non-conductive in the VLF survey. This VLF also confirmed that sharp flexures in the EM response on line 9S and 10S, and apparently coinciding with the magnetic anomaly, were not real.

Prospecting on the magnetic anomaly, which in detail was found to have sharp peaks, uncovered massive quartzite and mica schists of the Tsar Creek Formation. The magnetic anomaly was found to be caused by two or more narrow (less than 1m) bands of disseminated magnetite in dirty quartzite with interbeds of muscovite, minor chlorite and other phyllosilicates. The magnetic zone usually contains 1-5% magnetite with thin lenses of a higher content. The magnetite beds are conformable with other observed bedding and are thus inferred to be a stratigraphic feature. Its apparent divergence from the strike postulated by Leask may imply the existence of other faults or that the structure is not as postulated. The presence of magnetite in this zone, and in the Canyon River sulphide zone towards which it generally trends, implies a correlation of the two. The lack of any base metal concentration as seen in the geochemical results and the lack of sulphides however imply

that the magnetic feature is not an attractive target.

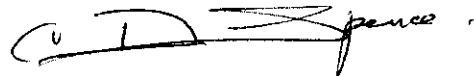
The Genie (SE-88) anomaly on lines 2S-4S is, as described by Sexsmith, not reflected in the magnetic results or in trustworthy VLF results. Again there is no suggestion of anomalous base metals in the soils. This anomaly is not deemed to be a valid target.

Other VLF anomalies appear to be cross-cutting in light of the magnetic trend or to be related to topography. None are seen as justifying more work.

6. RECOMMENDATIONS

The work by Riocanex has explored the possibility that a target representing stratiform mineralization of significant dimensions occurs near or at the N. Road prospect or its immediate strike extensions. No such target can be seen in the geophysical results or in the limited geochemical checking of these. No other targets were developed.

It is recommended that no more work be done.

A handwritten signature in black ink, appearing to read "C.D. Spence". The signature is stylized with a large, sweeping initial "C" and "D".

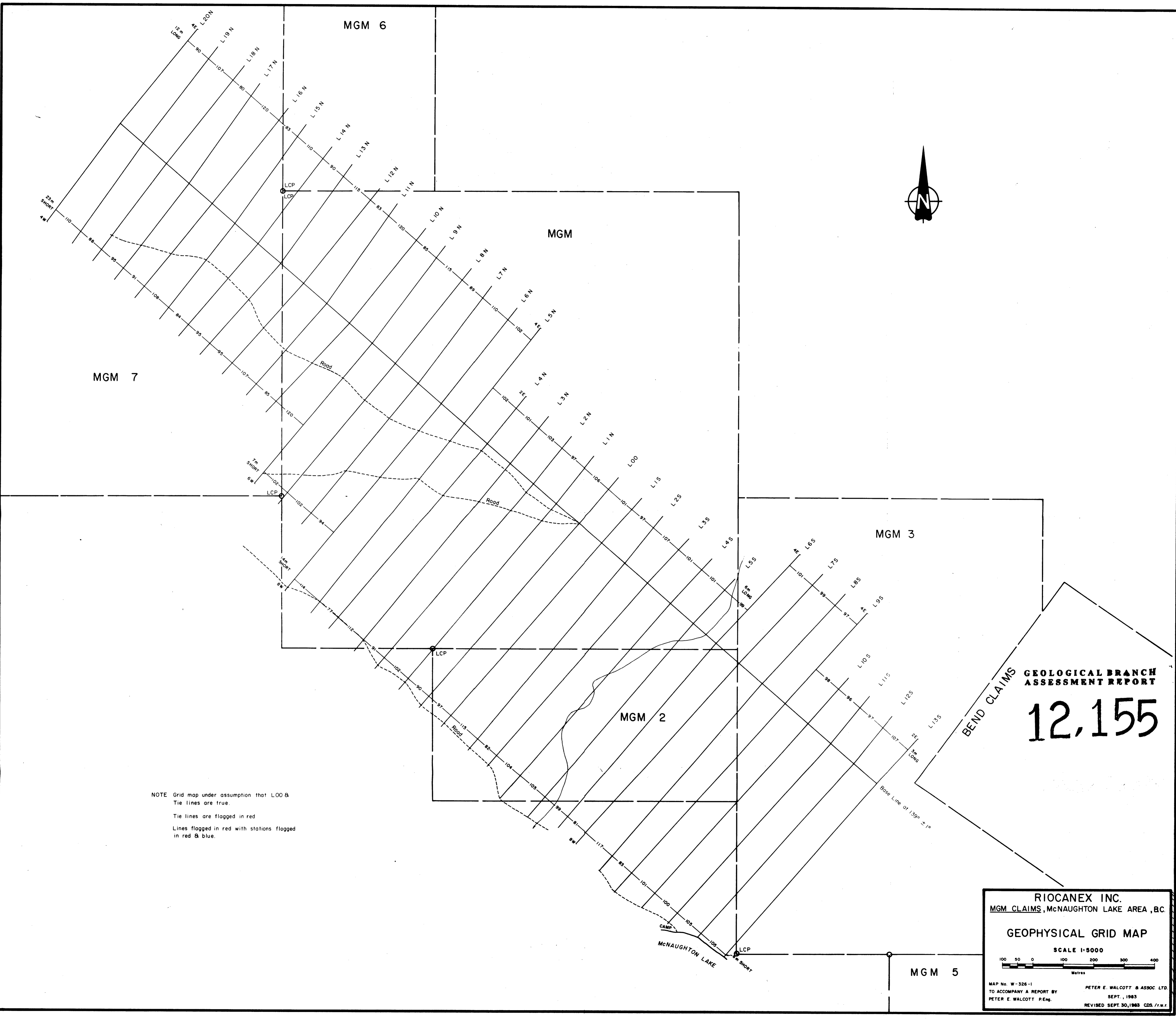
C.D. Spence

Vancouver
December, 1983

APPENDIX I

GEOLOGICAL PLAN

J.M. Leask



MGM 7

MGM 6

MGM

MGM 3

MGM 2

BEND CLAIMS

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,155

NOTE: Grid map under assumption that L00 & Tie lines are true.
Tie lines are flagged in red
Lines flagged in red with stations flagged in red & blue.

RIOCANEX INC.
 MGM CLAIMS, McNAUGHTON LAKE AREA, B.C.
GEOPHYSICAL GRID MAP
 SCALE 1:5000
 100 50 0 100 200 300 400
 Metres
 MAP No. W-326-1
 TO ACCOMPANY A REPORT BY PETER E. WALCOTT & ASSOC. LTD.
 PETER E. WALCOTT P.Eng. SEPT., 1983
 REVISED SEPT. 30, 1983 CDS./r.w.f.

MGM 5

APPENDIX II

PETER E. WALCOTT & ASSOC.

Maps W-326-1

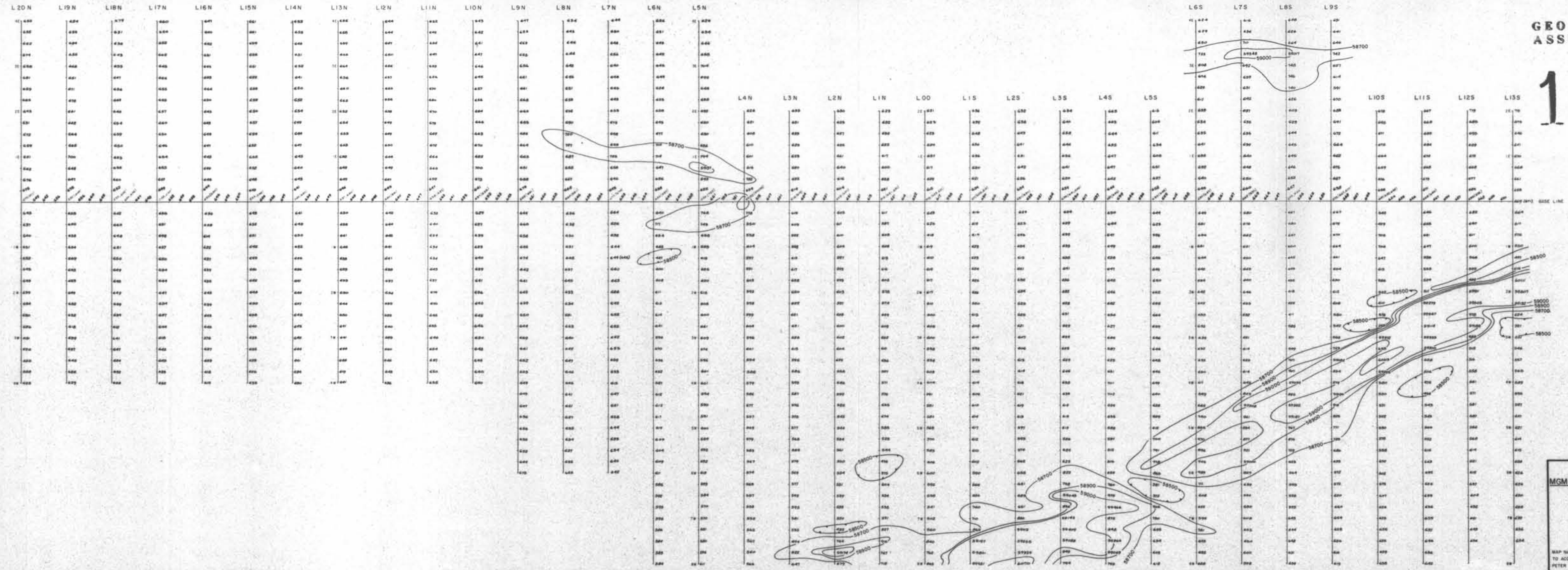
W-326-2

W-326-3

W-326-4

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

12.155



LEGEND
INSTRUMENT: GSM-8 MAGNETOMETER
NOTE: ALL THREE DIGIT GAMMA READINGS SHOULD BE PREFIXED WITH 58...

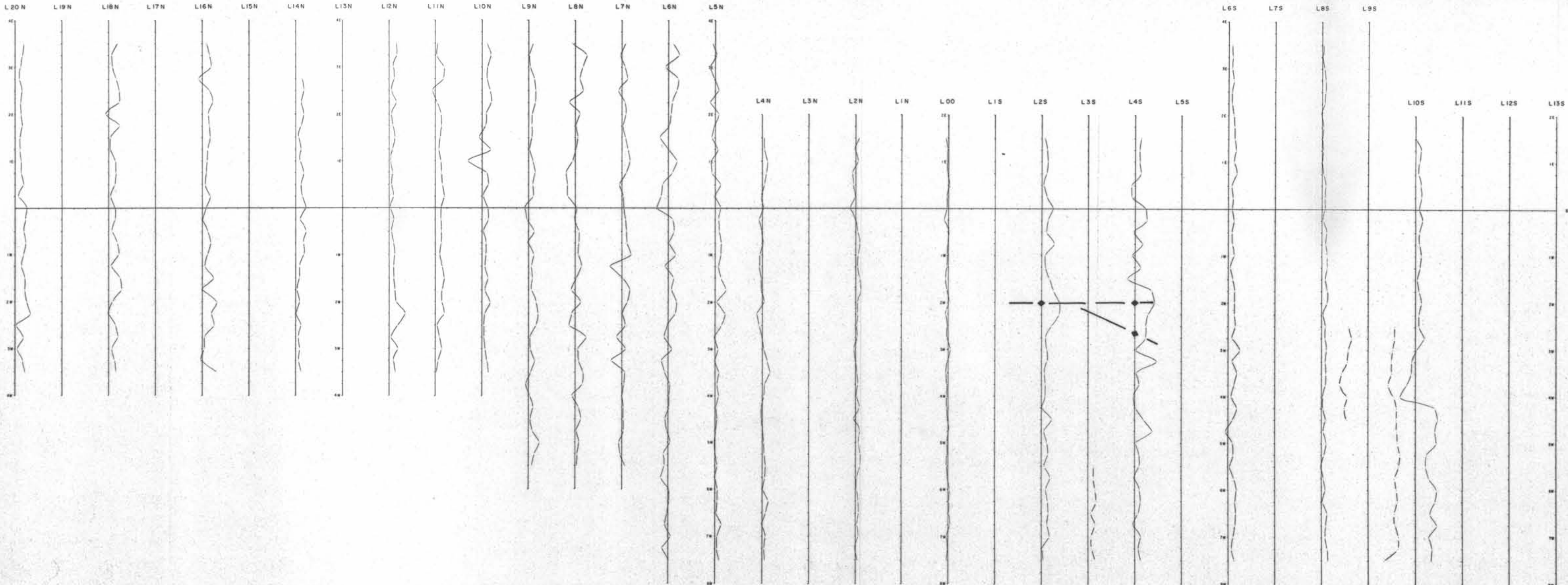
RIOCANEX INC.
MGM CLAIMS, McNAUGHTON LAKE AREA-BC

MAGNETOMETER CONTOURS

SCALE 1:5000

MAP No. W-325-2
TO ACCOMPANY A REPORT BY
PETER E. WALCOTT, P. ENG.

PETER E. WALCOTT & ASSOC. LTD.



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

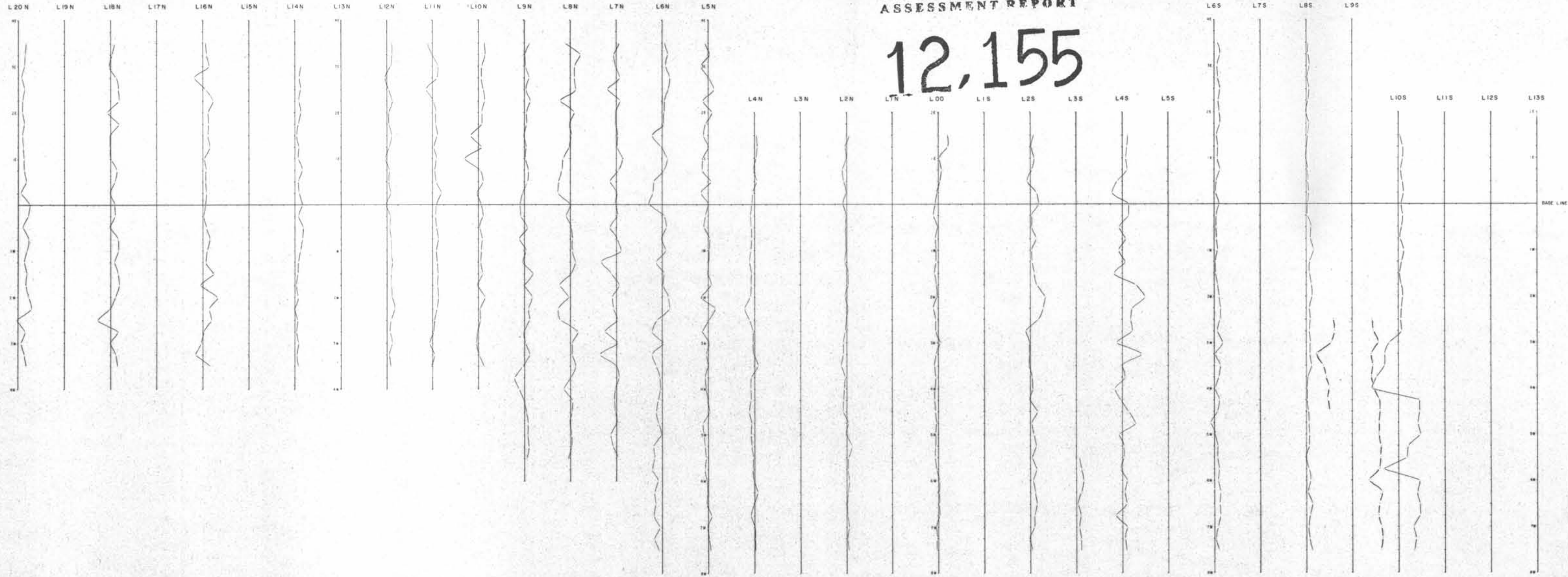
12,155

LEGEND
 + 10% 0 -10%
 INSTRUMENT: SE-68 GENIE SYSTEM
 ◆ — ◆ CONDUCTOR AXIS

RIOCANEX INC.
 MGM CLAIMS; McNAUGHTON LAKE AREA-BC
ELECTROMAGNETIC PROFILES
 FREQUENCY RATIO 1012.5/112.5
 1:1000
 SCALE 1:5000
 MAP No. W-525-3
 TO ACCOMPANY A REPORT BY PETER E. WALCOTT, P.Eng.
 PETER E. WALCOTT & ASSOC. LTD.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

12,155



LEGEND



INSTRUMENT DE-BE SERIE SYSTEM

RIOCANEX INC.
MGM CLAIMS; McNAUGHTON LAKE AREA-BC

ELECTROMAGNETIC PROFILES
FREQUENCY RATIO 3037.5 / 1125
s = 100m

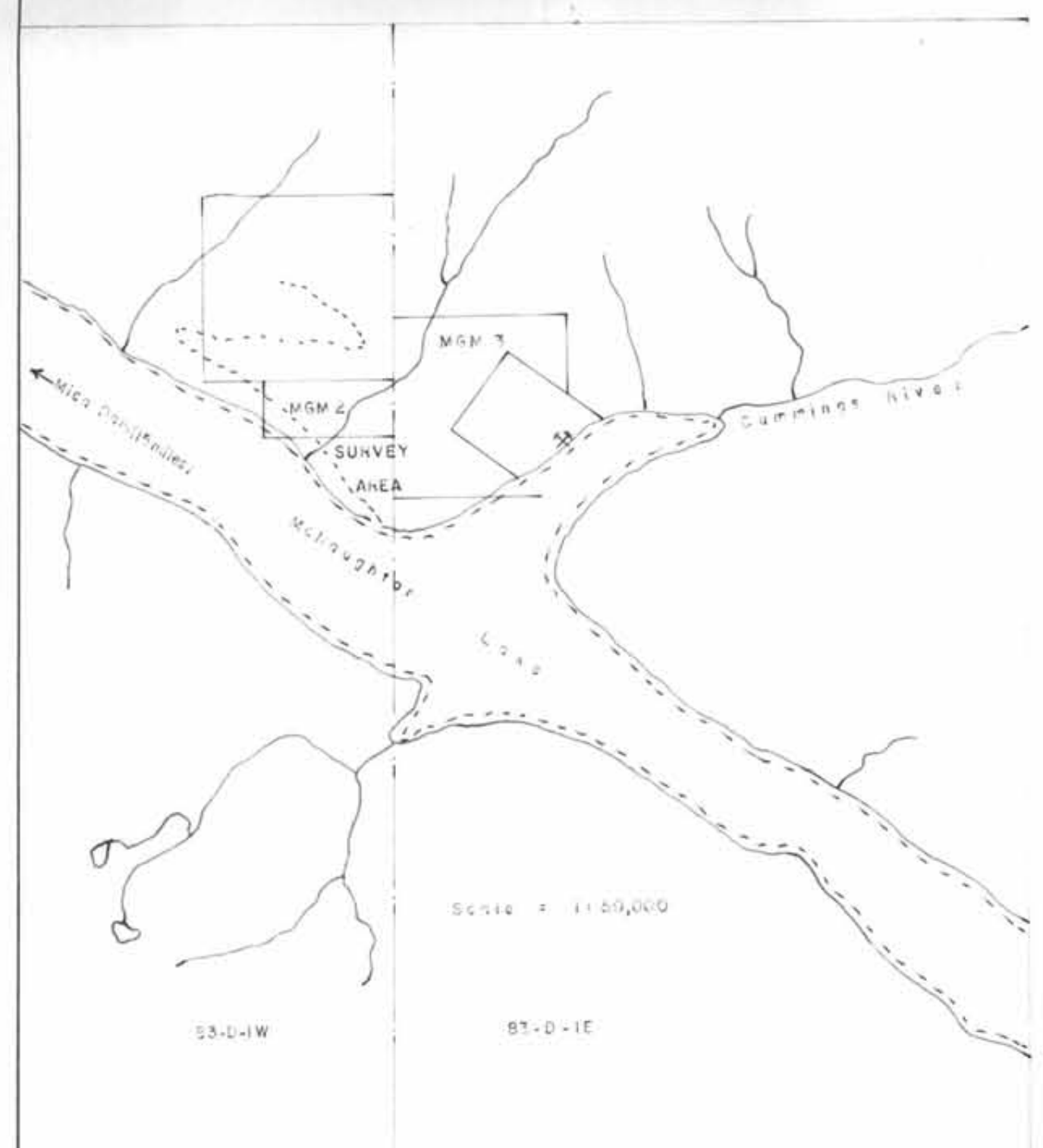
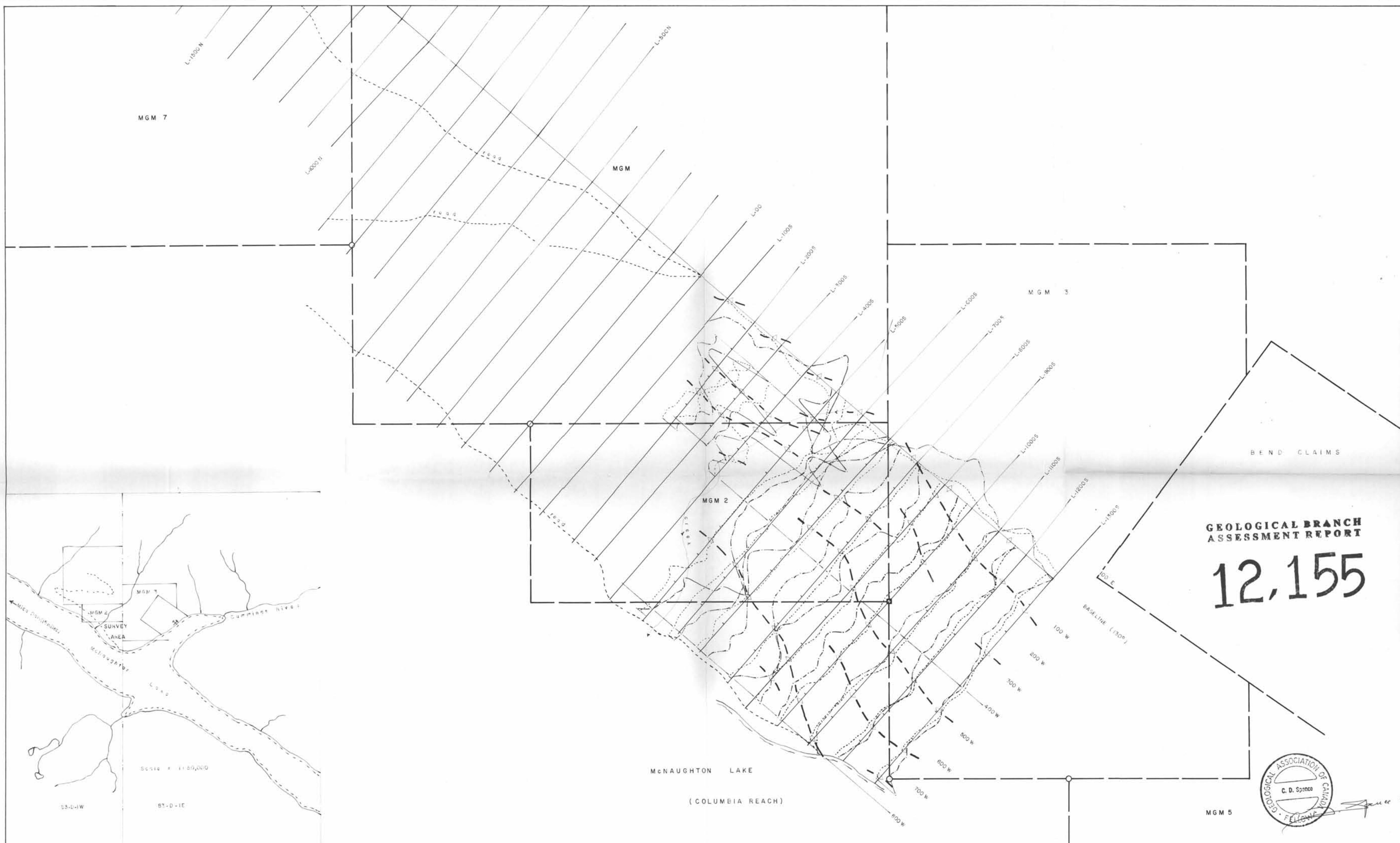
SCALE 1:5000

MAP No. M-206-4
TO ACCOMPANY A REPORT BY
PETER E. WALCOTT, P.Eng.

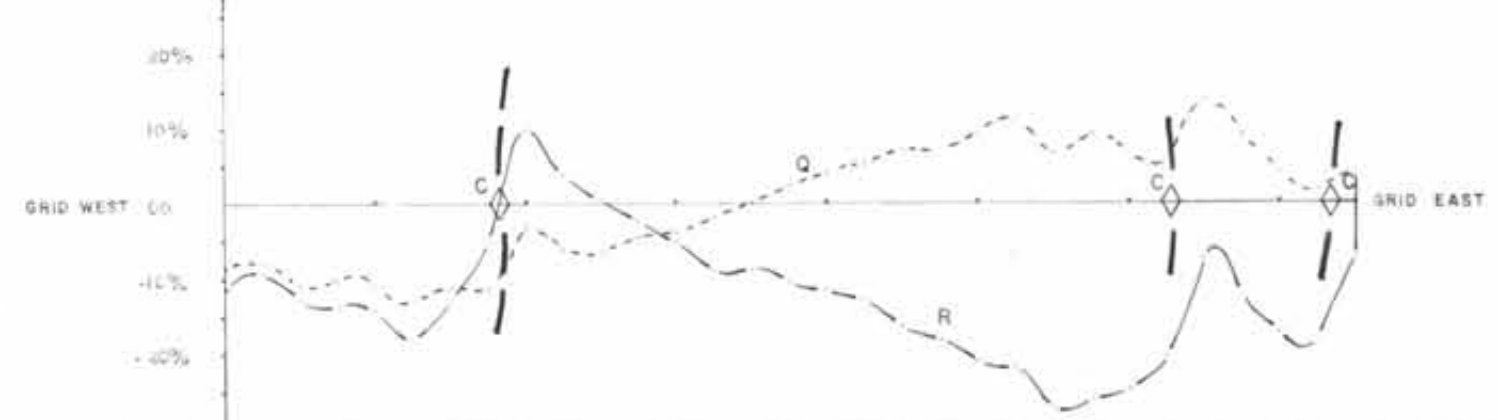
PETER E. WALCOTT & ASSOC. LTD.

APPENDIX III

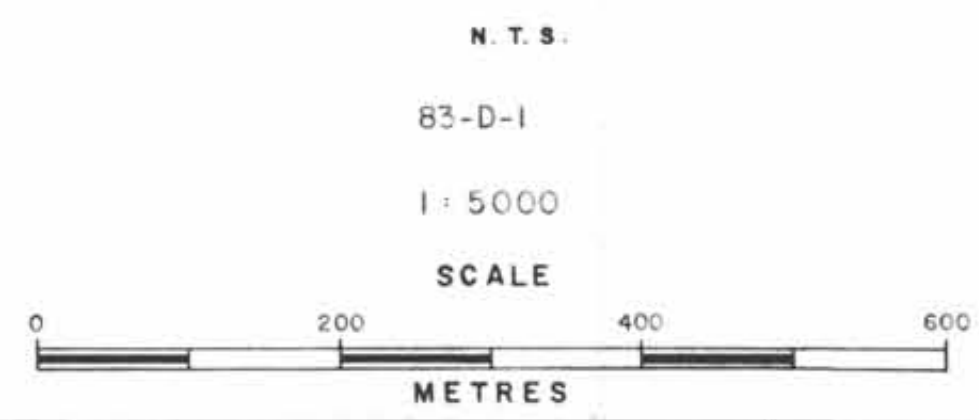
RIOCANEX REPORT -
D. SEXSMITH
VLF-EM Survey incl.
Dwg. GP-7634



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**
12,155



- Rx = EM-16
- Rx Orientation: Grid North
- Tx = Seattle
- R = Inphase Component
- Q = Quadrature Component
- C = Interpreted Conductor Axis



Riocanex Inc.		
MGM OPTION REVELSTOKE AREA B.C.		
VLF-EM PROFILES		
SEPT 83	DNS / dns	DWG. GP 7634

┌ N.T.S. 83-D-1 ┐

MGM OPTION

VLf-EM SURVEY

└ December, 1983

By: D.N. Sexsmith

N.T.S. 83-D-1

MGM OPTION

VLF-EM SURVEY

TABLE OF CONTENTS

Page No.

1.	Introduction	1
2.	Property, Location & Access	1
3.	Geology & Previous Work	2
4.	Grid & Work Performed	2
5.	Equipment & Field Procedures	2
6.	Data Presentation	3
7.	Discussion of Results	3
8.	Conclusion & Recommendations	4

1. Introduction

Between the 24th. and 30th. of September 1983 Riocanex executed a VLF-EM survey covering a portion of the MGM property in the Golden Mining District of British Columbia. Early in October this coverage was extended to the north by 3 lines.

The objectives of the combined coverage were:

- (a) To validate the results of a SE-88 (Genie) electromagnetic survey which had been carried out by Peter Walcott & Associates Ltd. 5 weeks previously.
- (b) To provide electromagnetic coverage over certain intermediate lines which had been deleted from the SE-88 program due to unforeseen over-runs caused by operational and technical problems.
- (c) To determine if the magnetic anomaly, delineated by the magnetometer survey conducted by Peter Walcott & Associates during the SE-88 program, was associated with any conductivity.

The combined VLF-EM survey results are the subject of the following report.

2. Property, Location and Access

The MGM Option consists of 5 contiguous claim blocks - MGM, MGM 1-7 - located in the Golden Mining District of British Columbia centred in the south half of NTS sector 83-D-1. The property is situated on the northeast shore of McNaughton Lake, approximately 1 mile northwest of Cummins River and 10 miles southeast of the Mica Dam.

The property is accessible from the town of Revelstoke, B.C. via paved road up the Columbia River valley for 100 miles to the Mica Dam site. A rented or chartered boat is then required to reach the property via McNaughton Lake, although the latter is subject to sudden squalls and is littered with logging debris which require some precaution. As an alternative, charter helicopter service is sometimes available out of the village of Mica Creek.

3. Geology & Previous Work

The reader is referred to reports held by Riocanex and to Peter Walcott Associates' 1983 report covering the SE-88 electromagnetic survey for the property's history and pertinent geological, geochemical and geophysical data.

4. Grid & Work Performed

To provide the ground control for their SE-88 electromagnetic survey, Peter Walcott & Associates cut and chained a 3.3 km baseline on an azimuth of 140°T centered over the claim groups approximately 800 metres inland from McNaughton Lake. From this baseline compassed, flagged and hip-chained traverse lines were turned of at right angles every 100 metres from Line 2000N to Line 1300S. The VLF survey covered the following portion of this grid:

Line	From	To	Km	Obsv	Line	From	To	Km	Obsv
200S	100W	350W	0.25	11	900S	00	800W	0.80	33
300S	100W	300W	0.20	9	1000S	00	800W	0.80	33
400S	100W	400W	0.30	13	1100S	00	800W	0.80	33
500S	00	825W	0.83	34	1200S	00	762W	0.76	32
600S	00	825W	0.82	34	1300S	00	750W	0.75	31
700S	00	800W	0.80	33	BL-00	100S	1300S	1.20	49
800S	00	800W	0.80	33					
Totals:			4.00	167				5.11	211
								+ 4.00	+167
								9.11km	378 obsv

5. Equipment & Field Procedures

A Geonics EM-16 VLF receiver equipped with crystals for both the Seattle and Cutler transmitter frequencies was used for the MGM survey. The reader is referred to Appendix #1 for the manufacturer's technical specifications for this instrument and a brief summary of VLF theory and standard field procedures.

The primary field for neither Cutler nor Seattle couple particularly well with the assumed local geological strike and the latter was selected as the source of the energizing primary field because it produced sharper audio nulls.

Observations of the inphase and quadrature components of the VLF secondary field were recorded at 25 metre station intervals along each traverse with the receiver oriented to approximately 300°T (at right angles to the apparent direction to the Seattle transmitter).

6. Data Presentation

The VLF data is presented in profile format at a scale of 1:5000 in drawing GP-7634 which also contains the grid plan, claim boundaries and some topographical features. The profiles are plotted at a scale of 10% per cm for both the inphase and quadrature components with positive values plotted on the grid north side of datum. VLF "conductor" axii intercepted by each traverse are indicated by the "diamond" symbols. The interpreted line-to-line conductor continuity is suggested by the heavy broken lines between crossovers on adjacent lines.

7. Discussion of Results

Most of the VLF trends are quite weak and appear to cross cut the magnetic linear, a complex multiple source system which extends from L100S-800W to L1300S-200W. Within the survey area a moderately terraced terrain averages approximately +15% grade to the northeast. The VLF trends subparallel the terracing and suggest, in conjunction with the anticorrelating magnetics, that the source is probably topographical on surficial and not in bedrock.

The strong VLF anomalies centered near L500S-125W and BL-575S are considered to be topographical responses from the deep, steep-sided creek gorge which happens to couple well with the primary field at those locations.

The moderately strong VLF conductor extending from L500S-550W to L1100S-800W is thought to be a possible bedrock source north of L800S because of the anti-correlation between the inphase and quadrature components. While the VLF definitely cross cuts the magnetic trend, some

of the better conduction along this horizon does fall within the magnetically active zone on lines 500, 600 and 700 south. The SE-88 data for L600S, however, is not very encouraging across this section.

Two relatively strong VLF conductors are indicated near 150W and 250W extending from L200S to L400S. These axii flank a possible SE-88 anomaly centered near 200W. The VLF operator, however, reported that the audio nulls in this area were severely masked by noise from a large volume of water cascading down the creek gorge. The rather erratic station-to-station variation in the VLF data relative to data elsewhere tends to reflect this problem. Coupled with a certain lack of confidence in the SE-88 data expressed in the Walcott report, this data is a rather fragile foundation on which to base a qualitative assessment. It is clear, however, that there would be no magnetic correlation with a conductor in this area and that its potential as a base metal carrier, barring geochemical correlation, would be relatively small.

The SE-88 response on L1000S at 450W correlates with a weak superficial VLF response. While it is conceivable that the Genie system is responding either to a source below the depth penetration capability of the EM-16 or to a source which couples poorly with the VLF primary field; the isolated nature of the Genie anomaly, the lack of repeatability and the documented operational difficulties with the SE-88 survey make this a rather remote possibility.

8. Conclusion & Recommendations

Although VLF crossovers are located within the magnetic linear on lines 500S, 600S, 700S and 900S; the locations appear to be circumstantial since the conductors with which the crossovers are associated probably crosscut the magnetics. Essentially the magnetic anomaly, which is on strike with the Cummins Creek showing, is non-conductive.

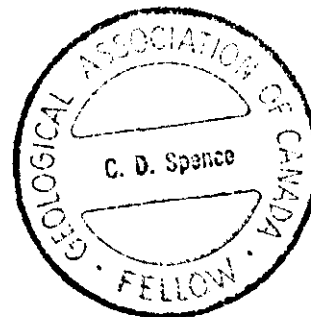
Qualified by the limitations imposed by the method, the VLF data does not confirm bedrock sources for any of the postulated SE-88 anomalies although the noise level on the data for lines 200S to 400S inclusive leaves the possibility open to a certain extent.

If the geological or geochemical evidence available provides no further encouragement, no follow-up on the VLF data is recommended. If any of the conductors warrant follow-up, it is recommended that 1 or 2 traverses with Maxmin type equipment be run in a multi-frequency, multi-coil separation mode along cut and chained lines. This work should provide data for conductor discrimination for which the SE-88 survey was originally proposed.

However, to insure that data observation errors, caused by deviations from nominal coil orientation and separation, can be corrected, a reasonably rigorous control of the stations along each traverse is essential.

TORONTO
10 JANUARY 1984

DONALD N. SEXSMITH



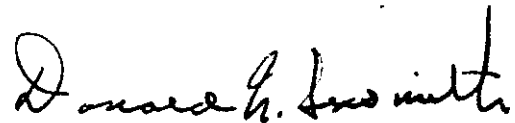
C E R T I F I C A T E

I, Donald N. Sexsmith, certify that

1. I am resident at 318 Keewatin Avenue, Toronto, Ontario
2. I am graduate of the Radio College of Canada.
3. I am employed by Rio Algom Exploration Ltd., of Toronto.
4. I am a geophysical technician with 18 years of experience as a party chief in the planning, execution, and supervision of ground geophysical surveys and in the interpretation and preparation of reports on their results.

Dated at Toronto

This 2nd day of February, 1984



Donald N. Sexsmith

EM 16 SPECIFICATIONS

MEASURED QUANTITY	In-phase and quad-phase components of vertical magnetic field as a percentage of horizontal primary field (i.e. tangent of the tilt angle and ellipticity).
SENSITIVITY	In-phase : <u>+</u> 150% Quad-phase : <u>+</u> 40%
RESOLUTION	<u>+</u> 1%
OUTPUT	Nulling by audio tone. In-phase indication from mechanical inclinometer and quad-phase from a graduated dial.
OPERATING FREQUENCY	15-25 kHz VLF Radio Band. Station selection done by means of plug-in units.
OPERATOR CONTROLS	On/Off switch, battery test push button, station selector switch, audio volume control, quadrature dial, inclinometer.
POWER SUPPLY	6 disposable 'AA' cells
DIMENSIONS	42 x 14 x 9cm
WEIGHT	Instrument: 1.6 kg Shipping: 4.5 kg

PRINCIPLES OF OPERATION

The VLF-transmitting stations operating for communications with submarines have a vertical antenna. The Antenna current is thus vertical, creating a concentric horizontal magnetic field around them. When these magnetic field meet conductive bodies in the ground, there will be secondary fields radiating from these bodies. (See Figures 3 & 4) This equipment measures the vertical components of these secondary fields.

The EM16 is simply a sensitive receiver covering the frequency band of the VLF-transmitting stations with means of measuring the vertical field components.

The receiver has two inputs, with two receiving coils built into the instrument. One coil has normally vertical axis and the other is horizontal.

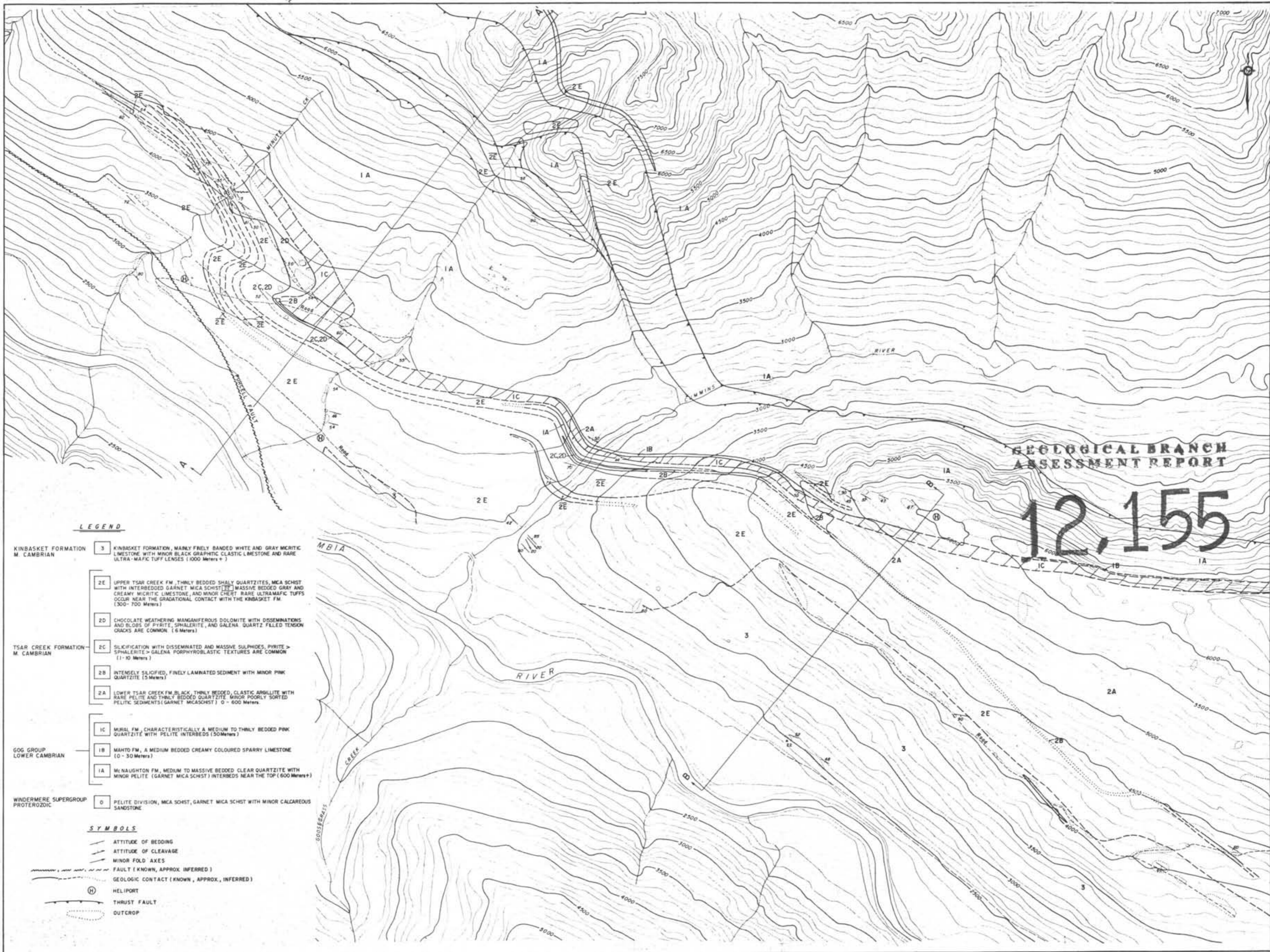
The signal from one of the coils (vertical axis) is first minimized by tilting the instrument. The tilt-angle is calibrated in percentage. The remaining signal in this coil is finally balanced out by a measured percentage of a signal from the other coil, after being shifted by 90°.

This coil is normally parallel to the primary field (See instrument Block Diagram-Figure 2).

Thus, if the secondary signals are small compared to the primary horizontal field, the mechanical tilt-angle is an accurate measure of the vertical real-component, and the compensation $\pi/2$ -signal from the horizontal coil is a measure of the quadrature vertical signal.

APPENDIX IV

SOIL AND ROCK SAMPLE
LOCATIONS
Dwg. L-6778



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

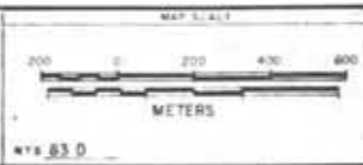
12,155

LEGEND

- KINBASKET FORMATION
M. CAMBRIAN**
- 3** KINBASKET FORMATION, MAINLY FINELY BEDDED WHITE AND GRAY MICRITIC LIMESTONE WITH MINOR BLACK GRAPHIC CLASTIC LIMESTONE AND RARE ULTRA-MAFIC TUFF LENSES (1000 Meters +)
- 2E** UPPER TSAR CREEK FM, THINLY BEDDED SHALY QUARTZITES, MICA SCHIST WITH INTERBEDDED GARNET MICA SCHIST (??) MASSIVE BEDDED GRAY AND CREAMY MICRITIC LIMESTONE, AND MINOR CHERT. RARE ULTRAMAFIC TUFFS OCCUR NEAR THE GRADATIONAL CONTACT WITH THE KINBASKET FM. (300-700 Meters)
- 2D** CHOCOLATE WEATHERING MANGANIFEROUS DOLOMITE WITH DISSEMINATIONS AND BLOBS OF PYRITE, SPHALERITE, AND GALENA. QUARTZ FIELDED TENSION CRACKS ARE COMMON (6 Meters)
- 2C** SILICIFICATION WITH DISSEMINATED AND MASSIVE SULPHIDES, PYRITE > SPHALERITE > GALENA PORPHYROBLASTIC TEXTURES ARE COMMON (1-10 Meters)
- 2B** INTENSELY SILICIFIED, FINELY LAMINATED SEDIMENT WITH MINOR PINK QUARTZITE (5 Meters)
- 2A** LOWER TSAR CREEK FM, BLACK THINLY BEDDED, CLASTIC ARGILLITE WITH RARE PELITE AND THINLY BEDDED QUARTZITE. MINOR POORLY SORTED PELITIC SEDIMENTS (GARNET MICA SCHIST) 0 - 600 Meters.
- IC** MURAL FM, CHARACTERISTICALLY A MEDIUM TO THINLY BEDDED PINK QUARTZITE WITH PELITE INTERBEDS (50 Meters)
- IB** MAINTO FM, A MEDIUM BEDDED CREAMY COLOURED SPARRY LIMESTONE (0 - 30 Meters)
- IA** McNAUGHTON FM, MEDIUM TO MASSIVE BEDDED CLEAR QUARTZITE WITH MINOR PELITE (GARNET MICA SCHIST) INTERBEDS NEAR THE TOP (600 Meters+)
- WINDERMERE SUPERGROUP
PROTEROZOIC**
- 0** PELITE DIVISION, MICA SCHIST, GARNET MICA SCHIST WITH MINOR CALCAREOUS SANDSTONE

SYMBOLS

- ATTITUDE OF BEDDING
- ATTITUDE OF CLEAVAGE
- MINOR FOLD AXES
- FAULT (KNOWN, APPROX, INFERRED)
- GEOLOGIC CONTACT (KNOWN, APPROX, INFERRED)
- ⊕ HELIPOINT
- THRUST FAULT
- OUTCROP



NO.	DATE	BY	REVISION
1	APRIL 1991	J+V	

E & B Explorations Inc.

DATE: APRIL 1991
 DRAWN BY: J+V
 CHECKED: []
 APPROVED: []

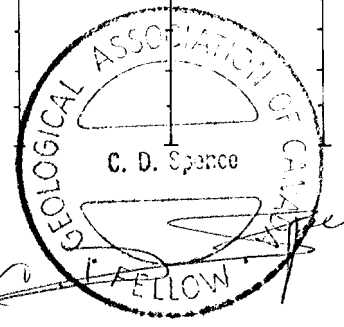
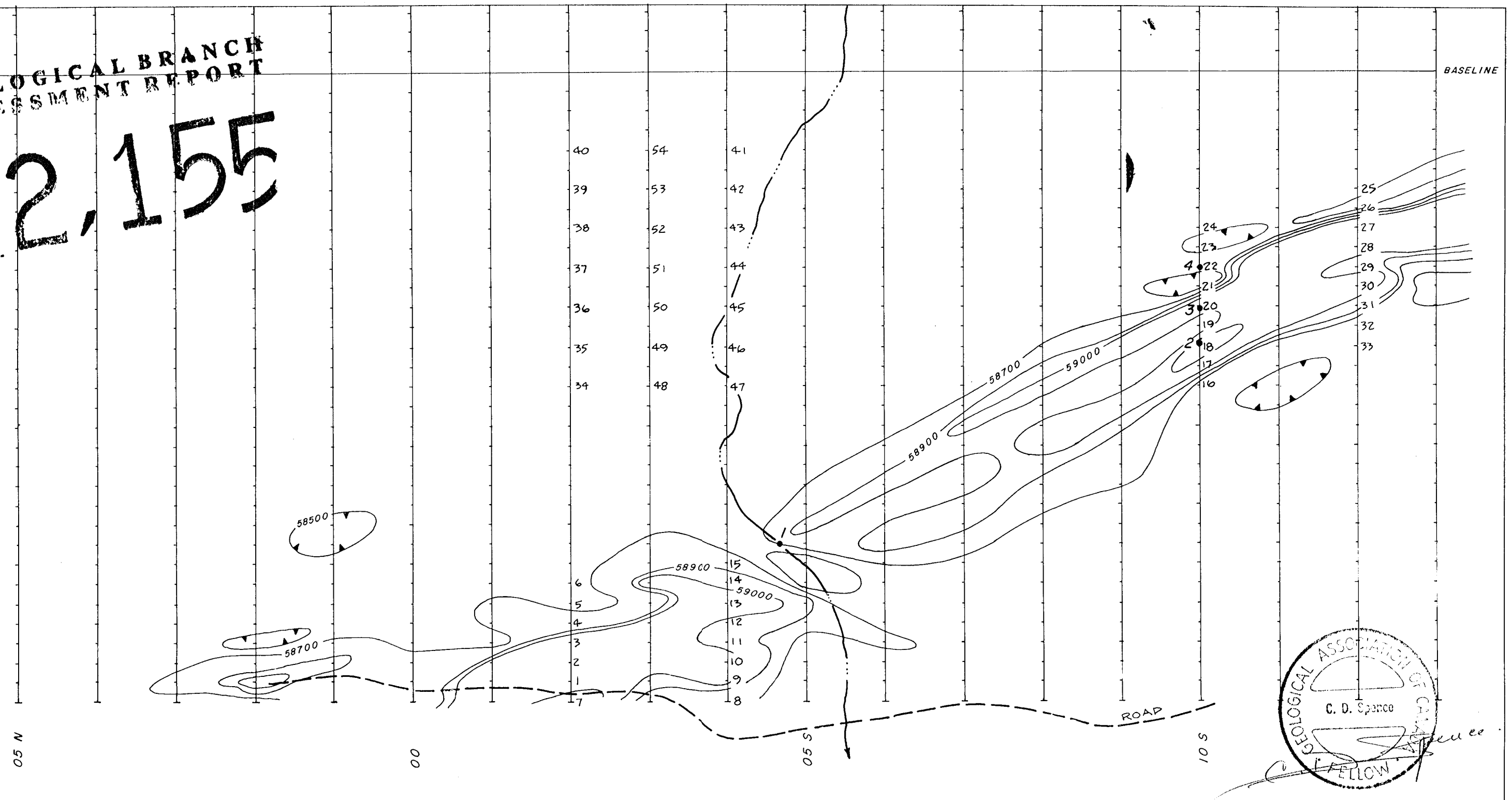
**WOOD RIVER PROJECT
GEOLOGICAL PLAN**

MAP NO. NUMBER: []
 SCALE: 1:20,000
 DRAWING NUMBER: []

GEOLOGICAL BRANCH
ASSESSMENT REPORT

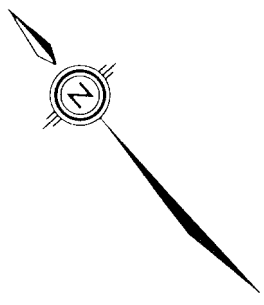
12,155

BASELINE



LEGEND

- 45 • Soil Sample
- 3 • Rock Sample



NTS 83 D/1
SCALE 1:5000



Riocanex Inc.

MGM CLAIMS

MAGNETIC ANOMALY AND
SAMPLE LOCATIONS

DATE NOV. 1983	DRAWN BY A W / dag	DWG. L 6778
-------------------	-----------------------	----------------

APPENDIX V

ACME ANALYTICAL LABORATORIES
ICP Geochemical Analysis

ICP GEOCHEMICAL ANALYSIS

A .500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 90 DEG.C. FOR 1 HOUR. THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.
 THIS LEACH IS PARTIAL FOR: Ca,P,Mg,Al,Ti,La,Na,K,M,Ba,Sr,Cr AND B. Au DETECTION 3 ppm.
 SAMPLE TYPE - SOIL

DATE RECEIVED SEPT 12 1983 DATE REPORTS MAILED Sept 20/83 ASSAYER D. Toye DEAN TOYE, CERTIFIED B.C. ASSAYER

RIOCANEX FILE # 83-2107 PROJECT # 8806

PAGE # 1

SAMPLE #	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	M
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm
MSH-1	1	6	12	85	.1	12	5	122	2.21	6	2	ND	3	8	1	2	2	25	.11	.03	5	15	.31	45	.06	2	1.44	.01	.05	2
MSH-2	1	17	43	253	.1	34	12	733	4.11	8	2	ND	5	49	1	2	2	35	.55	.19	2	40	.99	108	.08	4	4.20	.04	.14	2
MSH-3	1	7	48	308	.2	22	8	320	2.99	11	2	ND	4	13	1	2	2	29	.15	.09	5	23	.44	89	.10	2	3.85	.01	.08	2
MSH-4	1	7	16	152	.1	16	6	146	2.30	6	2	ND	2	8	1	2	2	25	.13	.05	5	15	.29	99	.08	2	3.11	.01	.06	2
MSH-5	1	13	30	307	.3	31	13	208	3.66	18	2	ND	3	100	1	2	2	38	.86	.08	3	51	1.38	82	.15	2	6.81	.10	.06	2
MSH-6	1	11	32	187	.1	25	8	149	3.04	11	2	ND	3	16	1	2	2	32	.18	.05	5	25	.46	93	.08	3	3.69	.01	.07	2
MSH-7	1	9	22	162	.1	21	8	233	2.50	10	2	ND	3	12	1	2	2	28	.12	.03	5	20	.40	122	.07	3	2.54	.01	.11	2
MSH-8	1	2	7	32	.1	4	2	155	1.21	3	2	ND	2	3	1	2	2	24	.02	.05	2	5	.05	34	.06	2	1.15	.02	.02	2
MSH-9	1	5	15	75	.1	12	5	643	2.48	11	2	ND	2	11	1	2	2	24	.23	.23	3	13	.29	60	.10	2	3.30	.01	.04	2
MSH-10	1	8	13	70	.1	19	7	162	2.50	9	2	ND	3	7	1	2	2	26	.10	.07	6	18	.34	82	.08	2	2.19	.01	.06	2
MSH-11	1	7	11	53	.1	19	7	107	2.34	6	3	ND	3	6	1	2	2	29	.07	.03	6	20	.30	82	.06	2	1.90	.01	.05	2
MSH-12	1	8	15	78	.1	21	8	118	2.85	8	5	ND	4	7	1	2	2	27	.07	.05	6	20	.34	101	.09	2	3.39	.01	.06	2
MSH-13	1	5	14	74	.1	13	6	394	2.17	5	2	ND	5	7	1	2	2	26	.07	.09	5	16	.24	80	.07	2	2.04	.01	.05	2
MSH-14	1	7	17	76	.1	19	7	282	2.70	7	2	ND	3	10	1	2	2	29	.11	.09	5	21	.38	82	.09	2	2.58	.01	.06	2
MSH-15	1	6	10	57	.1	13	5	440	2.05	6	2	ND	2	14	1	2	2	27	.18	.06	5	15	.25	84	.08	2	2.69	.01	.05	2
MSH-16	1	35	24	116	.2	52	13	300	4.86	12	2	ND	7	41	1	2	2	37	.18	.08	10	34	.64	418	.10	2	6.57	.02	.36	2
MSH-17	1	13	16	86	.1	22	7	463	2.37	2	2	ND	3	24	1	2	2	26	.30	.05	15	18	.29	138	.05	2	2.21	.02	.17	2
MSH-18	1	12	9	49	.1	19	5	809	1.88	5	2	ND	2	20	1	2	2	25	.23	.05	9	15	.20	134	.04	2	1.76	.01	.14	2
MSH-19	1	5	13	60	.1	8	4	143	2.19	10	2	ND	2	9	1	2	2	24	.09	.25	4	11	.13	88	.12	2	3.00	.01	.04	2
MSH-20	1	10	18	106	.1	23	10	1160	3.11	8	2	ND	3	15	1	2	2	29	.21	.14	6	21	.47	128	.10	2	2.56	.01	.14	2
MSH-21	1	8	12	85	.1	14	8	500	2.38	4	2	ND	2	6	1	2	2	27	.06	.21	4	14	.25	112	.11	2	2.14	.01	.11	2
MSH-22	1	21	22	130	.4	40	12	1084	3.76	13	2	ND	6	24	1	2	2	30	.29	.14	18	26	.48	209	.11	3	4.26	.02	.24	2
MSH-23	1	12	11	82	.2	26	9	398	2.80	5	2	ND	4	17	1	2	2	25	.19	.06	12	21	.40	143	.05	2	2.39	.01	.16	2
MSH-24	1	13	18	96	.1	30	9	367	3.05	3	2	ND	4	13	1	2	2	31	.09	.07	7	19	.32	194	.07	2	3.21	.02	.16	2
MSH-25	1	7	16	72	.2	15	6	421	2.09	6	2	ND	3	16	1	2	2	21	.29	.14	6	11	.22	76	.08	2	2.65	.01	.06	2
MSH-26	1	9	7	40	.1	21	7	201	1.96	2	2	ND	3	7	1	2	2	20	.09	.05	8	15	.29	65	.04	2	1.01	.01	.05	2
MSH-27	1	4	13	39	.1	6	3	487	1.80	4	2	ND	2	6	1	2	2	25	.10	.10	3	9	.09	61	.07	2	1.95	.01	.05	2
MSH-28	1	6	15	65	.2	12	6	242	2.66	4	2	ND	3	5	1	2	2	29	.04	.14	5	13	.18	56	.10	2	2.82	.01	.04	2
MSH-29	1	7	18	74	.2	17	7	245	2.63	12	3	ND	4	6	1	2	2	24	.07	.09	5	16	.23	70	.09	2	3.22	.01	.06	2
MSH-31	1	5	9	115	.1	11	5	973	1.94	7	2	ND	2	7	1	2	2	24	.09	.15	4	12	.18	76	.09	2	2.47	.01	.04	2
MSH-32	1	7	20	102	.2	12	5	910	2.42	12	2	ND	2	13	1	2	2	32	.15	.11	7	16	.28	79	.12	2	3.42	.02	.04	2
MSH-33	1	5	8	60	.2	9	4	298	1.78	4	2	ND	2	9	1	3	2	22	.12	.10	5	9	.15	76	.08	2	2.75	.01	.04	2
STD A-1	1	31	38	180	.3	35	12	1061	2.84	10	2	ND	2	38	1	2	2	57	.59	.09	7	75	.75	276	.08	8	2.07	.02	.20	2

RIOCANEX INC PROJECT # 8301 FILE # 83-2282

SAMPLE #	Mo	Cu	Pb	Zn	Hg	Ni	Co	Mn	Fe	As	U	Au	Tl	Sr	Cd	Sb	Bi	V	Cr	Ca	F	La	Cr	Mg	Ba	Si	B	Al	Na	K
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	ppm	%	%	%	%
500-43	1	50	15	49	.2	7	6	260	4.34	2	2	2	2	15	1	2	2	81	.09	2	12	.62	75	.13	1	2.61	.03	.06		
500-44	1	50	7	38	.2	8	4	185	4.57	2	2	2	2	11	1	2	2	91	.07	2	11	.38	46	.11	4	2.01	.01	.03		
500-45	1	28	8	59	.2	7	6	269	3.44	8	2	2	2	15	1	2	2	75	.10	2	12	.62	66	.13	3	2.41	.01	.06		
500-46	1	20	11	51	.2	7	5	226	3.51	2	2	2	2	23	1	2	2	82	.11	2	13	.56	94	.12	3	1.72	.04	.05		
500-47	1	49	7	56	.4	7	18	1319	2.50	4	2	2	2	64	1	2	2	50	.34	2	10	.67	114	.02	4	2.08	.02	.10		
500-48	1	17	16	51	.1	7	4	224	3.36	3	2	2	2	13	1	2	2	76	.10	2	15	.47	48	.14	2	1.71	.02	.05		
500-49	2	23	14	38	.1	6	4	184	3.30	2	2	2	2	23	1	2	2	76	.15	2	18	.36	83	.12	3	1.41	.01	.06		
500-50	1	44	5	42	.1	8	9	473	2.32	7	2	2	2	42	1	2	2	55	.30	2	13	.76	193	.07	2	1.67	.03	.28		
500-50	1	7	13	52	.1	13	5	139	1.80	2	2	2	2	6	1	2	2	26	.07	2	16	.26	35	.05	3	.95	.01	.06		
510 A-1	1	31	39	183	.3	36	13	1034	2.84	11	2	2	2	37	1	2	2	59	.60	2	21	.72	275	.08	8	2.07	.02	.21		

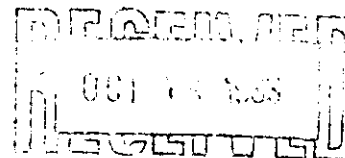
MEM-30 ←

ICP GEOCHEMICAL ANALYSIS

A .500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 90 DEG.C. FOR 1 HOUR. THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.
 THIS LEACH IS PARTIAL FOR: Ca, P, Mg, Al, Ti, La, Na, K, W, Ba, Si, Sr, Cr AND B. Au DETECTION 3 ppa.
 SAMPLE TYPE - SOIL

DATE RECEIVED OCT 11 1983 DATE REPORTS MAILED Oct 13/83 ASSAYER A. Toye DEAN TOYE, CERTIFIED B.C. ASSAYER

SAMPLE #	RIOCANEX PROJECT # 8806 FILE # 83-2515																												PAGE # 1	
	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na		K
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm
MGM-34	1	14	18	83	.2	28	12	266	2.55	4	2	ND	7	11	1	2	2	17	.17	.05	12	21	.49	113	.03	5	2.13	.01	.12	2
MGM-35	1	8	25	173	.2	17	8	283	2.64	10	2	ND	4	23	1	2	2	25	.45	.17	8	17	.26	133	.12	7	5.64	.02	.06	2
MGM-36	1	5	12	98	.2	13	6	376	1.82	2	2	ND	4	12	1	2	2	17	.16	.09	7	12	.23	78	.05	4	1.98	.01	.07	2
MGM-37	1	9	9	59	.1	18	7	312	1.95	2	2	ND	5	7	1	2	2	12	.09	.04	13	14	.40	65	.02	4	1.35	.01	.09	2
MGM-38	1	8	9	64	.1	18	7	172	1.96	2	2	ND	4	5	1	2	2	13	.07	.05	11	15	.44	58	.02	4	1.49	.01	.12	2
MGM-39	1	12	16	115	.3	25	8	182	2.34	4	2	ND	6	15	1	2	2	18	.11	.10	18	21	.46	144	.04	5	2.58	.01	.14	2
MGM-40	1	9	9	67	.2	15	6	202	2.33	2	2	ND	5	7	1	2	2	15	.07	.14	10	14	.34	83	.02	4	1.60	.01	.08	2
MGM-41	1	9	17	67	.2	17	7	219	2.08	3	4	ND	4	8	1	2	2	17	.06	.16	11	16	.32	105	.06	4	2.70	.01	.10	2
MGM-42	1	19	12	43	.2	28	10	268	2.58	3	2	ND	7	21	1	2	2	15	.20	.06	24	21	.58	57	.03	5	1.74	.02	.28	2
MGM-43	1	8	7	41	.1	17	7	164	1.91	2	3	ND	5	5	1	2	2	12	.06	.04	12	15	.39	59	.01	3	1.29	.01	.08	2
MGM-44	1	8	7	50	.1	16	6	311	1.89	2	2	ND	4	9	1	2	2	15	.11	.08	12	12	.30	87	.02	5	1.56	.02	.10	2
MGM-45	1	18	18	60	.2	24	10	343	2.28	5	3	ND	6	77	1	2	2	16	2.94	.06	13	20	.69	57	.03	4	1.89	.04	.20	2
MGM-46	1	20	26	66	.2	36	12	167	2.86	10	2	ND	7	59	1	2	2	23	.60	.07	11	28	.71	127	.04	6	3.06	.04	.18	2
MGM-47	1	23	30	116	.2	35	13	228	3.22	7	2	ND	9	31	1	2	2	24	.22	.06	15	31	.79	97	.05	6	3.16	.02	.19	2
MGM-48	1	11	22	75	.2	25	9	288	2.63	6	2	ND	6	37	1	2	2	18	.55	.04	12	21	.42	96	.06	6	3.21	.03	.12	2
MGM-49	1	10	13	34	.1	18	7	236	2.23	6	2	ND	3	28	1	2	2	17	.70	.07	12	16	.28	77	.06	3	3.74	.01	.09	2
MGM-50	1	9	9	67	.1	21	9	145	2.22	3	2	ND	3	18	1	2	2	17	.22	.07	9	21	.55	53	.03	3	1.86	.02	.11	2
MGM-51	1	10	8	34	.1	18	8	280	2.09	3	2	ND	5	10	1	2	2	12	.17	.05	14	15	.46	37	.01	4	1.25	.01	.12	2
MGM-52	1	8	6	39	.1	18	8	221	2.09	5	3	ND	6	6	1	2	2	12	.08	.05	14	14	.39	45	.01	3	1.22	.01	.09	2
MGM-53	1	7	8	46	.1	13	6	236	1.66	2	4	ND	4	4	1	2	2	13	.04	.05	10	11	.24	59	.02	4	.95	.01	.06	2
MGM-54	1	11	13	69	.2	26	9	314	2.27	2	4	ND	5	9	1	2	2	17	.10	.13	12	18	.45	88	.04	6	2.16	.02	.11	2
STD A-1	1	30	39	182	.3	36	13	1029	2.81	9	2	ND	2	37	1	2	2	57	.61	.10	8	74	.72	277	.08	8	2.06	.02	.20	2



ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS, VANCOUVER B.C. PH:253-3158 TELEX:04-53124

ICP GEOCHEMICAL ANALYSIS

A .500 GRAM SAMPLE IS DIGESTED WITH 3 ML OF 3:1:3 HCL TO HNO3 TO H2O AT 90 DEG.C. FOR 1 HOUR. THE SAMPLE IS DILUTED TO 10 MLS WITH WATER.
 THIS LEACH IS PARTIAL FOR: Ca, P, Mg, Al, Ti, La, Na, K, W, Ba, Si, Sr, Cr AND B. Au DETECTION 3 ppm.
 SAMPLE TYPE - ROCK CHIPS

DATE RECEIVED SEPT 28 1983 DATE REPORTS MAILED Oct 1/83 ASSAYER Al. Toye DEAN TOYE, CERTIFIED B.C. ASSAYER

RIOCANEX INC PROJECT # 8806 FILE # 2360

PAGE # 1

SAMPLE #	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm
MGM-1	1	5	13	12	.1	8	5	205	5.57	6	6	ND	2	28	1	3	2	15	.31	.12	11	15	.28	48	.06	2	.77	.01	.38	2
MGM-2	1	13	9	54	.1	17	9	247	4.55	5	5	ND	7	10	1	2	2	35	.33	.14	13	27	.79	148	.16	2	2.01	.02	1.43	2
MGM-3	1	2	6	40	.1	15	7	285	4.28	3	3	ND	2	5	1	2	2	30	.15	.06	4	21	.67	87	.08	2	1.58	.02	1.07	2
MGM-4	1	3	7	23	.3	9	5	497	4.28	7	2	ND	2	28	1	2	2	18	.90	.08	6	15	.66	60	.04	2	1.20	.01	.60	2
STD A-1	1	30	38	185	.3	36	12	1009	2.81	10	2	ND	2	37	1	2	2	59	.60	.08	7	73	.74	282	.07	7	2.05	.02	.21	2

ROCKS

APPENDIX VI

COST STATEMENT

COST STATEMENT

MGM Claims

Geophysical SurveysSalaries - September 24 - 30

D. Sexsmith	7 days @ \$66.67	\$ 466.69	
A. Winkler	6 days @ \$75.55	<u>460.00</u>	\$ 926.69

Salaries - October 9

A. Winkler	1 day @ \$75.55	\$ 75.55	
R. Ney	1 day @ \$70.00	<u>70.00</u>	
			\$ 145.55
<u>Benefits</u>	25% of salaries		\$ 286.06

Food & Accomodation

15 Man/days		\$ 486.78
-------------	--	-----------

Travel

Boat & Trailer rental	\$ 561.04	
Charter Aircraft Southern Interior Flight Centre	\$ 600.00	
Fuel	<u>32.05</u>	
		\$ 1,193.09

Geochemical Survey

Acme Laboratories

54 soil samples	\$ 324.00	
4 rock samples	<u>32.00</u>	
		\$ 356.00

Report Preparation

C.D. Spence and D. Sexsmith		<u>\$ 280.00</u>
-----------------------------	--	------------------

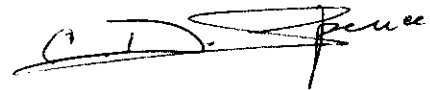
TOTAL		\$ 3,674.17
-------	--	-------------

APPENDIX VII

STATEMENT OF QUALIFICATIONS
C.D. Spence

STATEMENT OF QUALIFICATIONS

1. I am a geologist residing at 675 Burley Drive, West Vancouver, B.C. and am employed by Riocanex Inc. of Suite 520, 800 West Pender Street, Vancouver, B.C.
2. I graduated from the Royal School of Mines, London, England in 1955 with a B.Sc. Honours (Special) in Mining Geology and have practised my profession since then.
3. I have worked for Riocanex and associated companies since July 1955 in several provinces in Canada and in B.C. since 1974 as Manager, Western Canada of Riocanex.
4. I am a Fellow of the Geological Association of Canada and a Member of the Canadian Institute of Mining and Metallurgy.
5. I supervised the programme of work on VLF surveys, prospecting and soil sampling done by Riocanex personnel in September and October, 1983, on the MGM claims.



C.D. Spence

Vancouver
December 1983

