GM 41628

GEOLOGICAL REPORT ON A MINING PROPERTY IN MONTAUBAN TOWNSHIP

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Énergie et Ressources naturelles
Québec

GEOLOGICAL REPORT
ON A
MINING PROPERTY
LOCATED IN
MONTAUBAN TOWNSHIP
PORTNEUF COUNTY,
QUEBEC

PERMIS ET B... MONTREAL
1984 OCT 2 ...
REQU

PREPARED FOR:
RULE RESOURCES LIMITED

Ministère de l'Énergie et des Ressources
Service de la Géoinformation
Date 1985 JAN. 31
No G.M. 11628

Prepared by:
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Consulting Geologist

Montreal,
May,1984.

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Certificate of qualifications

FIGURES:

Fig.1: PROPERTY LOCATION

FIg.2: CLAIMS MAP

Fig.3: REGIONAL GEOLOGY

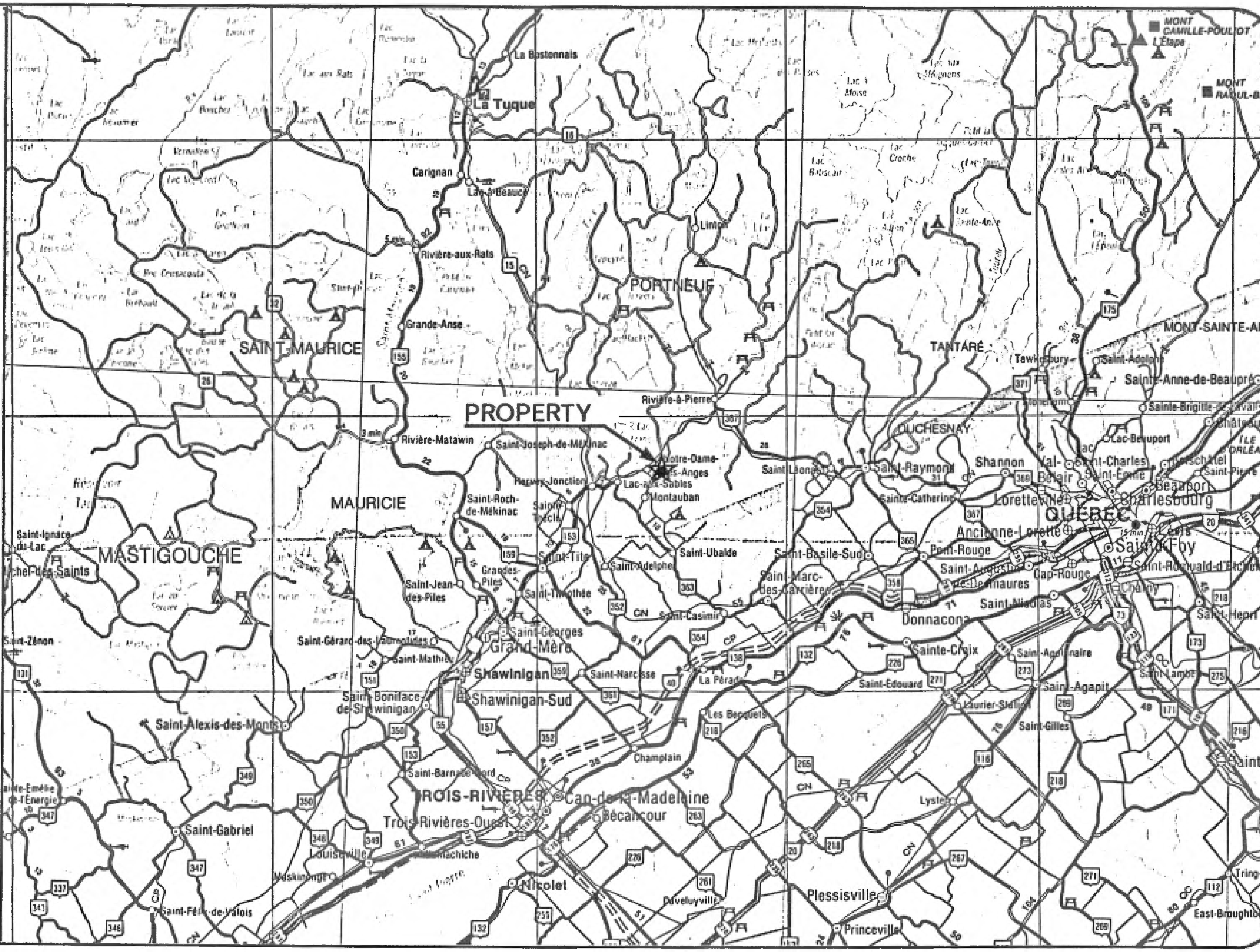
1.Ø. INTRODUCTION

RULE RESOURCES LTD. has acquired a 295 hectare property in Montauban Township, Quebec.

Little work has been done on this property, the only work that has been recorded was that of "New Montauban Zinc, and Copper Company Limited" which, in 1928 held the southern part of the property. Some prospecting may have been done on the present claims group. Interest in this area stems from recent regional work which indicates that the present property is crossed by formations related to those of the Muscocho Mine zone. Mineralisation has been found on strike on adjoining properties to the south and on Cous Creek's Lac Canard propety to the north.

In April of 1984, Mr. C. Mitchell of Rule Resources retained the services of Stuart Lee,Consulting Geologist, and gave authorization for a preliminary evaluation of the property's exploration potential.

This report is based on a one day visit to the property area, the writer's experience in the Grenville Province in general and the metasedimentary basins of that province in particular. Relevant data has been obtained from the Ministere de L'Energie et des Ressources of Quebec (MERQ), and discussions with government and private sector geologists involved in the area.



RULE RESOURCES LTD.

PROPERTY LOCATION

FIG. 1

STUART LEE, CONSULTING GEOLOGIST

2.0. PROPERTY, LOCATION AND ACCESS.

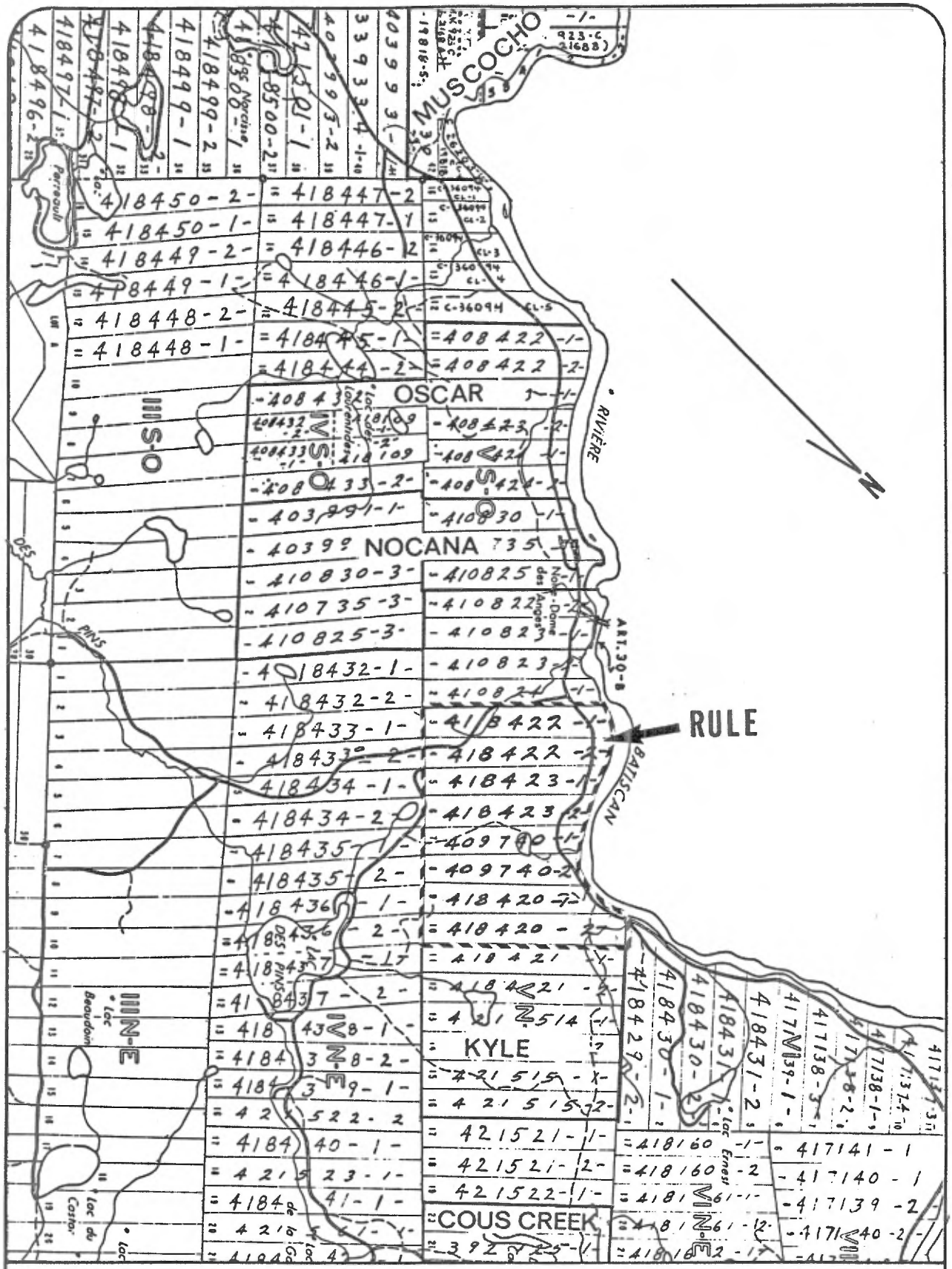
The RULE RESOURCES LTD. property consists of an eight claim group of 295 hectares (728 acres) in Montauban Township, Quebec. All of the claims are in Range V-N.E., to the northeast of the village of Notre Dame des Anges.

All of the claims are in good standing with the Ministere de l'Energie et des Ressources of Quebec. They are recorded under the following prospector's licences:

LICENCE No.	CLAIM	LOT	RANGE	AREA	EXPIRY DATE
418422	1	3	V-NE	39 ha	13 Oct.1984
418422	2	4	V-NE	37 ha	13 Oct.1984
418423	1	5	V-NE	37 ha	13 Oct.1984
418423	2	6	V-NE	34 ha	13 Oct.1984
409740	1	7	V-NE	34 ha	13 Oct.1984
409740	2	8	V-NE	35 ha	13 Oct.1984
418420	1	9	V-NE	36 ha	13 Oct.1984
418420	2	10	V-NE	43 ha	13 Oct.1984
TOTALS:	8 CLAIMS			295 hectares	

The location of the claims area is indicated in Fig. 1 (Property Location Map), an outline of the claims group and their relationship to other claims in the area is given in Fig. 2 (Claims Map).

The RULE RESOURCES LTD> claims group is located about 100 km to the northwest of Quebec City. The property is about 1 km north of the Village of Notre Dame des Anges and is



RULE RESOURCES LTD.

FIG. 2: CLAIMS MAP

SCALE 1:50 000

STUART LEE, CONSULTING GEOLOGIST

accessible by the paved road leading from Notre Dame des Anges to Riviere a Pierre. Another road leading to Lac des Pins crosses the southernmost part of the property.

The property is bounded to the northwest by the Batiscan River. The presence of the latter, as well as power lines on the property, assure the ready availability of water and hydroelectric power. The CNR Trans- Canada rail line leading from Montreal and Quebec City to the Abitibi and westwards passes just west of the property area. Montauban station is located approximately 3 km from the property.

The physiography of the property is characterized by Quaternary sediment cover over about one third of the property. This consists mostly of alluvial sand and clay. The southeastern two thirds of the property is relatively hilly. The highest elevation obtained is about 175 metres above the Batiscan river. Outcrops occur along the river and in the hillyer part of the property. No detailed geological map of the property area has ever been published.

3.Ø. HISTORY AND ECONOMIC GEOLOGY.

Records of the MERQ would indicate that most of the work performed in the immediate property area would have been accomplished prior to 193Ø. In 1928, surface exploration was carried out on lots 1 and 2, Range V-N.E. by New Montauban Zinc and Copper Co. Ltd. This work was followed up by the driving of an approximately 2ØØ foot long adit into a sheared biotite gneiss formation to the east of the Batiscan River on Lot 1. Grab samples of vein material taken from the dump (P. Lacombe, 1971) gave the following results:

Sample No.	71-7Ø9	Sample No. 71-71Ø
Au	Ø.Ø5	Ø.11 oz/t
Cu	Ø.95	Ø.1Ø %
Ag	6.35	14.1Ø oz/t
Pb	Ø.77	Ø.45 %
Zn	2.75	Ø.35 %

The presence of such mineralisation is significant in that it strongly resembles mineralisation encountered on properties located further to the southeast, indeed, it could indicate that a mineralized horizon which occurs between Lac des Laurentides and the old Adanac Mines property extends further northward towards the present property area. All of these mineralized zones occur in the same rock type and along the same lineament as indicated on aerial photographs. This lineament extends from below the falls on the Batiscan River southwards to

Lac des Laurentides (See Fig.3). Because this lineament parallels regional geological and structural trends, it is believed to be a stratabound feature which can ultimately be tied into those structures which host the Muscocho deposit. Supporting this hypothesis is the fact that the mineral associations encountered at the Adanac and Lac des Laurentides locations are the same as those encountered in the Tetreault-Zone of the Muscocho deposit. This consists of lead-zinc mineralisation associated with a tremolite-diopside metamorphic mineral assemblage.

The Muscocho property itself has a long history of production dating back to 1911. Intermittent operations from then to 1955 yielded a total of 2.7 million tons of ore grading an average of 4.5% Zn, 1.4% Pb, Ø.56 g/t Au and 7Ø.g/t Ag. In 1979, the Muscocho reserves were quoted as being approximately 5ØØ ØØØ t grading 6.8 g/t (Ø.2 oz/t) Au and 68.5 g/t (2.Ø oz/t) Ag. These reserves form the basis for ongoing production at that location.

Further exploration work is being performed on a property located two kilometres to the north of the Rule property. Cous Creek Resources of Vancouver began an extensive exploration program following the definition of several gold-anomalous zones in the Lac Canard area. Results of this program are expected shortly. Cous Creek Resources have also commissioned an airborne electromagnatic as well as high resolution magnetic surveys . These surveys are reported to cover the whole area located between the Muscocho deposit and Lac au Canard. Officers of Cous Creek Resources intend to make the results of this survey available to all property

owners whose claims are covered by the surveys. Such results could be of great value in the present case because the survey can be calibrated against, and compared to a known deposit (Muscocho), located in the same depositional environment.

4.Ø. REGIONAL AND LOCAL GEOLOGY

A number of reports have dealt with regional and local geological aspects of the Montauban area. At least two theses were immediately concerned with the genetic aspects of the Muscocho ore zones. The present area has, unfortunately never been mapped on a detailed scale, however an excellent synthesis of most of the geological data on the general area is given in J. Rondot's report on the St-Maurice region, published in 1978. A further report dealing with the metallogeny of the Montauban area (Morin,G., 1984) has just been released by the MERQ. Again this report does not directly refer to mineralisation on the present property but gives some insight into the genesis of mineral occurences located on the same horizon.

The Montauban area is located in the Grenville geologic Province, an area generally representative of strongly metamorphosed rocks. The present area, along with one or two others in the Grenville Province , is exceptional in that the rock formations have retained much of their original depositional features and have been subjected to relatively low grade metamorphism (Amphibole Facies). The rocks of the Montauban Group are characterized by relict primary structures such as stratified tuffs and recognizable pillow lava formations in the form of metabasalts.

The Montauban Group extends from the St. Lawrence Lowlands northward for approximately 5Ø km to Lac Hackett.



RULE RESOURCES LTD. REGIONAL GEOLOGY FIG.3.

V: MONTAUBAN GROUP

V_{1-4}: MAFIC TO FELSIC GNEISS

CARBONATE ROCK

E: LA BOSTONNAIS COMPLEX

E_{1-4}: GNEISSES & INTRUSIVES

QUARTZITE

METABASALTS

SCALE: 1: 100 000

STUART LEE, CONSULTING GEOLOGIST

The stratigraphy of the Montauban Group is described in detail in J.Rondot's report. The sequence of formations is described as follows, from top to bottom:

////////////// DISCORDANCE //////////////////////////
-Fine grained gneiss, nodular gneiss.
-Fine grained gneiss, carbonates (+ Pb,Zn & Au)
-Fine grained gneiss with muscovite, biotite,pyrite, sometimmes carbonates.
-Metabasalts
-Fine grained gneiss with muscovite, biotite, pyrite.
-Quartzite
-Fine grained gneiss with muscovite, biotite, blue hornblende, garnet and pyrite.
-Intermediate gneiss with biotite, hornblende and garnet, some pegmatite.
////////////// DISCORDANCE //////////////////////////

The above described stratigraphic sequence is consistent with the thesis that the mineralisation encountered in the Muscocho zone is exhalative in origin, and, according to Rondot, represents the waning phase of volcanic activity such as would be encountered in a continental rift system. Morin also considers the lead-zinc mineralisation associated with the tremolite-diopside zone to be syngenetic. The same author also stresses the importance of aluminous mineral assemblages as indicators of mineralisation, noting the presence of sillimanite - rich rocks associated with the Muscocho deposit as well as another similar occurence in Chavigny Township. He also notes the slight enrichment in garnet in the biotite

gneisses associated with most mineralised zones in the area.

Assuming that the above described depositional environment was present during the genesis of the known mineralised occurences, then it would follow that such mineralisation as is encountered in the Muscocho zone could be repeated elsewhere along the main axes of the Montauban "trough".

Recent studies (J. Rondot, G. Morin, J.L. Robert) indicate good potential for such continuity right up to the northern tip of the trough. This continuity is best expressed by a sinuous band of quartzite which follows the outer margins of this regional structure.

A further expression of this continuity is indicated by the presence of the relatively well defined shear lineament mentioned in section 3.Ø. This same shear, or offsets of it, may be present on the present property and should represent one of the main targets of geological survey work on the property.

Based on the general geological interpretation of the area (Fig.3) and the foregoing considerations, it is reasonable to expect that the present property area contains most of the lithological sequences found associated with the Muscocho deposit, with the exception perhaps of the genetically important calc-silicate horizon which acts as the main host for gold mineralisation at that location. Again, detailed

geological survey work remains to be done to obtain a full picture of these relationships.

Structurally, the Montauban area is dominated by a strong north- south axial trend with which most of the fault and fold lineaments correlate. Three main phases of tectonic activity are recognized within the Montauban Group: the first and most important is the N-S axial trend which parallels the original depositional axis of the trough. This trend is characterized by long isoclinal folding associated with more or less co-axial faulting. A second phase of folding has resulted in the overprint of a N-E - SW trend characterized by the segments of the synclines found at Lac St.Anne and st the Village of St. Ubalde. The third and final deformation is related to the emplacement of the granitic and dioritic plutonic rocks which encase the whole of the trough. This has resulted in a realignment of most of the lithological units so that they now conform with the outline of these intrusives.

The main fold axes of the trough are almost horizontal, plunging slightly northward. In this context, it is interesting to note that the Muscocho deposit is located in the trough of a major syncline, the ore zone plunges about 2 or 3 degrees northwards over a distance of about 2 km. Assuming the maintenance of relatively constant bedding, one would expect to find a repetition of much the same lithologies in the adjoining,complementary structures. As can be seen in Fig.3, a broad band of

metabasalts and metatuffs is shown to extend from Lac Narcisse, north of Montauban, northwards to the village of Notre Dame des Anges. This metabasalt band may well represent the saddle of an anticline parallel to the Muscocho syncline. If such is the case, then the stratigraphic equivalent of those formations which host the Muscocho ore zones would be expected to outcrop somewhere north of Notre Dame des Anges. The actual emplacement of eventual mineralisation would depend on structural traps significant enough in size to allow for accumulation and enrichment. Such structures may be indicated on Rondot's map (Fig.3) by the convergence of lithological units in the property area as well as the presence of a marked embayment in the quartzite in the southeastern part of the property.

The above described structural interpretation remains conjectural at this time, again because of the lack of detailed data on the property area and it's immediate surroundings. It is nevertheless useful, if only to stress the importance which structural factors will play in the delineation of eventual mineralized zones in the property area.

5.Ø. CONCLUSIONS AND RECOMMENDATIONS.

Very little exploration work has been done on the Rule Resources property to-date. Recent geological reports published by the Ministry of Energy and Resources of Quebec show that this property is located along a stratigraphic horizon which is favourable to mineral deposition. This same horizon is interpreted as being a continuation of those formations which host the Muscocho deposit. Regional and local structural considerations indicate that chances of discovering mineralisation on the present property are good. The delineation of specific targets can only be done after completion of the first phase of a proposed two-phase program.

Based on the foregoing, the two-phase program would consist of an initial geological, geophysical and geochemical exploration program designed to detect mineralized targets. Follow up to this first phase would be by exploratory diamond drilling to test the targets delineated as a result of phase I work.

A detailed geological survey of the property is recommended, the main objective being the delineation of Cu,Zn,Pb + Au & Ag mineralized horizons such as occur on properties to the southeast. Special attention should be paid to those formations exhibiting metamorphic mineral reaction pairs such as those found associated with the Muscocho deposit. These are: Cordierite-Anthophyllite, Tremolite-Diopside and Garnet-Sillimanite.

Geophysical surveys should be performed over the whole property area. Because of the association of gold and silver with massive sulphides in this area, it is felt that a two frequency Max-Min survey followed by a proton magnetometer survey would provide the best results at the least cost.

A geochemical suvey should also be conducted across formations on at least three parallel sections. The spacing between samples should not exceed 50 metres. Samples should be taken of the "A" horizon and analyzed for gold as it is it's own best trace element.

Based on the results of the foregoing program and the successful delineation of viable drilling targets, a total of 750 meters should be allowed to test these targets.

The cost of the above program is estimated as follows:

PHASE I		
Geology, mapping and assaying:		6000.00
Geophysics and line cutting (30.km):		14000.00
Geochem program (90 samples):		3000.00
Travel and field expenses:		3000.00
PHASE II	26000.00	
Diamond drilling and supervision, assaying:		24000.00
Program evaluation and report:		5000.00
Subtotal:		55000.00
Contingencies 15%:		8000.00
Total:	63000.00	

The foregoing budget is considered essential to implement the recommendations contained in this report and represents the minimum expenditure required to adequately test the economic potential of Rule Resources Ltd.'s Montauban Township property.

Dated in Montreal
This 28th day of May, 1984

Stuart Lee M.Sc.

BIBLIOGRAPHY

Beaumier, M.,1983. Leve Pedogeochimique de la Region de Montauban. D.P. 83-22. Min. En. Res., Quebec.

Lacombe, P.G. Report on Mutual Resources Corp. Montauban Twp. Property. G.M. 28124 Min. En. Res., Quebec.

Morin, G.,1982. Metallogenie de la Region de Montauban. D.P. 82-12, Mi.. En. Res. Quebec.

Prabhu, M.K., 1967. Geology, Geochemistry and Genesis of the Montauban Lead-Zinc Deposits. Ph.D Thesis, McGill University, Montreal.

Pyke, D.R. 1967. Geology of the Montauban Area. Ph.D. Thesis McGill University, Montreal.

Rondot.J., 1978. Region du St. Maurice. DPV 594 Min. En. Res. Quebec.

Smith, J.R. 1956. Region de Montauban, Comte de Portneuf, Min. En. Res. Quebec. R.G.65.

CERTIFICATE OF QUALIFICATION

I, Stuart LEE, of the City of Outremont, Province of Québec, do hereby certify:

1. That I am a geologist, self-employed, whose business address is 336 Côte Ste-Catherine Road, Outremont, Québec, Canada H2V 24.

2. That I am a Canadian citizen residing at the same address as above.

3. That I have graduated and obtained a B.Sc. in Geology and an M.Sc. in Mineralogy at the University of Munich, West Germany, in 1975 and have practiced my profession since that time.

4. That I am a member of the Canadian Institute of Mining and Metallurgy, the Prospectors and Developers Association of Canada and the "Association des Géologues du Québec".

5. That I have no direct or indirect interest in the mining claims described in this report, nor do I have, or expect to receive any securities of the companies for whom this report could be utilized for public underwritings.

6. That the present report is based on my personal knowledge of the general area, a review of all available previous data pertaining to the property and discussions with people who have worked on the property or adjoining properties.

I hereby consent to the use of my report dated for the purpose of filing a prospectus with any Securities Commission or related regulatory body in Canada.

Outremont, this th day of

Stuart Lee, M.Sc.
Consulting Geologist