010

L.B.L. RICHGOLD MINES INC.

REPORT ON GEOLOGICAL SURVEY

ON THE MEADOW LAKE PROPERTY

DELORO TOWNSHIP, PROVINCE OF ONTARIO

VAL D'OR, QUEBEC August 20th, 1986 G.J. BOISVERT, Geol, B.A.Sc.





TABLE OF CONTENTS

<u>P</u> .	AGE
CERTIFICATE	
INTRODUCTION	1
LOCATION, DESCRIPTION AND ACCESS	2
PREVIOUS WORK	3
REGIONAL GEOLOGY	6
GEOLOGY OF THE PROPERTY	7
ECONOMIC GEOLOGY	1. 1
CONCLUSIONS AND RECOMMENDATIONS	1 3
FIGURES	16
SELECTED REFERENCES	19
APPENDIX I: CLAIM LIST APPENDIX II: LIST OF ASSAY RESULTS APPENDIX III: PROPOSED EXPLORATION PROGRAM	
GEOLOGICAL MAP OF THE PROPERTY SCALE = 1:5000 SAMPLE LOCATION MAP	
SCALE = 1:5000	
LIST OF FIGURES	
FIGURE 1: LOCATION MAP	•
FIGURE 2: MAP OF THE ABITIBI GREENSTONE BELT	
FIGURE 3: REGIONAL GEOLOGY MAP	
FIGURE 4: METALLOGENIC MAP	

CERTIFICATE OF QUALIFICATION

I, GILLES J. BOISVERT OF VAL D'OR, IN THE PROVINCE OF QUEBEC, CANADA, DO HEREBY CERTIFY THAT:

I reside at 778 lère Avenue, Val d'Or, Quebec.

I am a qualified geologist, having received my academic training at the University of Toronto. I graduated with a Bachelor of Applied Science (Geo-Eng) degree in May 1984.

I have been continuously engaged in my profession for the last 2 years. I have examined the assessment work files covering the subject property and the immediate area at the resident geologist offices of the Ontario Ministry of Natural Resources in Timmins, Ontario.

This report is based on the author's experience in exploration, on a comprehensive study of all the work records and on geological maps and reports published for the area of interest by the Ontario Ministry of Northern Development and Mines and by the Geological Survey of Canada.

I have disclosed in this report all relevant material which, to the best of my knowledge, might have a bearing on the viability of the project and the recommendations thereof.

I have not, directly or indirectly, received or expect to receive any interest, direct or indirect, in the properties of L.B.L. RICHGOLD MINES INC., nor do I beneficially own, directly or indirectly, any securities of that company. I am not an insider of a company having an interest in the subject properties nor in any other properties in the immediate area.

Gilles J. Boisvert, Geol. B.A.Sc.

INTRODUCTION

A preliminary geological survey and some limited diamond drilling were carried out on the Meadow Lake Property during the month of July 1986. The purpose of the program was to:

- a) Define the geology of the property;
- b) Seek out vein-type or other types of gold mineralization;
- c) Locate zones of hydrothermal alteration and/or structural deformation associated with gold mineralization;
- d) assess the economic potential of the property.

The geological survey was carried out by the author during the first two weeks of July 1986. The entire property was mapped along north-south traverses which were systematically set at 125 metre (400 feet) intervals.

The property is described in this report and a follow-up exploration program is proposed to properly evaluate its economic potential for gold mineralization.

LOCATION, DESCRIPTION AND ACCESS

The Meadow Lake Property is located in the west-central part of Deloro Township. It consists of 11 contiguous mining claims which lie approximately 7 kilometres south of the city of Timmins, Ontario (figures 1 and 5). The claims are listed in Appendix I.

The property is easily accessible by an all weather gravel road running south from Timmins along Pine Street to the western sector of the claim group.

The relief on the property is moderate. Outcrops are abundant in the northern part of the property while alder swamps dominate in the south. Much of the property is covered by well-matured sands and gravels. The overburden thickness varies between 0 to more than 23,5 metres. The vegetation consists of stands of spruce, fir and poplar near zones of outcrops and thick tangled tag alders in the swamps. Several small lakes, notably Reid, Meadow and Flynn Lakes cover approximately 25% of the property.

PREVIOUS WORK

property has been worked intermittently for some time. Evidence of prospecting is indicated by the presence of numerous trenches which occur throughout the area. Gold mineralization was first reported in the southern extremity of the property in 1909 by Bill and John Mitchell. "A test pit was sunk on claim starting at the foot of the ridge on the north side next creek [Paradis Creek] and at a depth of 10 feet a chip the sample was taken across the bottom which assayed \$12.20 in gold. was when gold was valued at \$20.67....These values were found in the sulphides of which the ridge seems to be composed and where surface assays show from a trace to only."(Assessment File T-444).

During the period of 1923 to 1930, Ridegegold Mines Ltd. and Ridegegold Porcupine Mines Ltd. carried a considerable amount of work on four claims bordering the Meadow Lake Property to the west. This included stripping, trenching and the sinking of a shaft to a depth of 125 feet. Gold values were reported in the vein and porphyry formations while sinking the shaft (Assessment Files T-763 and T-1655). Values as high as 0.4 oz Au/ton are reported in the actual Ridgegold assay certificate, but the actual location of these values is difficult to ascertain.

In 1975, Goshawk Mines Ltd. completed a ground magnetic survey and one diamond drill hole immediately to the west of the subject property. The magnetic survey outlined 4 anomalies attributed to iron-formations; the east strike extentions of the iron formations could conceivably be found on the Meadow Lake Property. The drill hole, collared near the Ridgegold shaft, encountered dacites, chloritic tuffs, rhyolites and mafic porphyries. Intersections with sparsely disseminated pyrite and chalcopyrite, as well as silica, chloritic and serecitic alterations have been reported, although no gold values can be found in the drill logs (Assessment File T-1665).

Between 1979 and 1983, Joseph St. Gelais and Lilianne Letourneau carried some stripping, trenching and diamond drilling on the subject property. Several milky white quartz veins, some achieving considerable dimensions, were uncovered. Twelve short diamond drill holes were completed on the property. All holes were drilled onto outcrop and encountered mafic tuffs and lapilli-tuffs. No significant gold assays or visible economic mineralization were reported.

During 1980, Amax Mineral Exploration flew an airborne MAG and EM survey over Deloro and other surround townships. The following year, Amax carried out geological surveys on two claim groups bordering the Meadow Lake Property to the east and west. (Assessment File T-1978).

In 1984, Maurice Hibbard, Edward Karpovitch and Robert Rousseau carried out a VLF-EM survey immediately to the west of the Meadow Lake Property. The survey outlined five east-west trending conductors, three of which were attributed to bedrock souces.

In 1985, all interests in the Meadow Lake Property were transfered to L.B.L. Rich Gold Mines Inc. Subsequently, in August 1985, Lilianne Letourneau performed some stripping and sampling of several quartz veins occurring on the property. Two grab samples obtained from iron-formation hosted quartz veins each produced anomalous gold assays of 0.032 oz/ton.

In July 1986, Lilianne Letourneau completed three diamond drill holes (470.5 feet) on claim # P 516243 in order to test the geology of this part of the property which is devoid of outcrops. The holes encountered unmineralized mafic tuffs and lapilli-tuffs. The locations of these holes are indicated on

the geological map (1:5000) enclosed with this report. The diamond drill logs have recently been submitted to the Timmins Mining Recorder's office for assessment work credit.

REGIONAL GEOLOGY

The Meadow Lake Claim Group lies in the western extremity of the Abitibi Greenstone Belt which is famous for its gold and base-metal deposits (figure 2). All rocks found in the immediate area, except for Proterozofc diabase dykes, are of Archean Age.

The property is underlain by rocks of the Deloro Group. The mafic to intermediate volcanic rocks which dominate this area are characteristic of the Middle Metavolcanic Formation (Pyke, D.R., 1982). The claim groups is situated on the western limb of the Shaw Dome which forms the dominant structural feature of the area. The property lies approximately 1 kilometre to the south of the Destor-Porcupine Fault which is believed to control the distribution of major gold deposits in the Timming Mining District.

For additional information pertaining to the general geology of the Timmins area, the reader can refer to the OGS Report 219: Geology of the Timmings Area (Pyke, D.R., 1982).

GEOLOGY OF THE PROPERTY

A geological map of the property is attached to this report. Much of the property is underlain by fine-grained tuffs and lapilli-tuffs of basaltic to andesitic composition. Bedding measurements are uncommon and these roughly strike east and dip steeply to the north. On occasions, andesitic feldspar crystal tuffs, comprising 20% to 35% white plagioclase phenocrysts (1-2mm) occur as 0.3 to 1 metre thick interbeds.

A few outcrops of andesitic to dacitic tuffs are dispersed throughout the property; the dacites are intercalated with their more mafic counterparts and do not appear to form any laterally "persistent" horizons. It is for this reason that for mapping purposes, most mafic and intermediate volcanic rocks observed on the property have been mapped as "mafic to intermediate volcanoclastites".

A band of relatively massive, dark grey to black coloured, medium rock found in the northern sector of the property was tentatively identified as a melanocratic gabbro. It is possible that this unit could represent the hypabyssal equivalents to the mafic to intermediated volcanics found on the property.

Two banded iron formations (BIF) were identified on the property. One occurs on the east shore of Meadow Lake and the other, just beyond the southwestern extremity of the claim group. Both are similar in appearance, although the iron-formation found east of Meadow Lake has apparently been the subject of intense structural deformation.

The BIF strike roughly east and dip steeply to the north. They are well-banded and comprise of rhythmic alternations of aphenitic black magnetite-shale, white-pink-orange chert and pyrite-pyrrhotite-limonite-carbonate layers. The thickness of individual layers varies considerably, ranging from 1 cm to over 1 metre. Pyrite stringers, blebs and pseudo-nodules occur locally within chert and magnetite bands, especially in beds located adjacent to the sulfide ironstone; this observation suggest a remobilization of pyrite through epigenitic or diagenetic means.

Numerous fracture cleavages as well as white and cherty quartz veins cross-cut the local stratigraphy, especially in the iron-formation found east of Meadow Lake: this attests to the intense brittle structural deformation which may have occured locally. The occurence of convoluted banding, boudin structures and pseudo-fluidization structures in the magnetite-chert iron-formation is indicative of a soft-sediment mode of deformation. Locally, the BIF has been intensely folded, squeezed and mixed, thus loosing its "banded" appearance and taking on a rather "irregular" appearance. A breccia-type texture results, with rounded fragments of magnetite-shale being enclosed in a groundmass of chert and vice-versa.

The regional foliation (S1?) is generally consistent throughout the property: its strike ranges from 80° to 120° and the dip varies between 70° South to 90° .

At least a dozen of large quartz veins have been identified on the property. The veins consist of milky white quartz and often contain sericitized, silicified and/or chloritized wallrock xenoliths (1mm-30cm). All veins visited contained at best but a few specks of pyrite (ie. less than 1% sulfides). The vein thicknesses ranged from icm to over 1 metre and their outcrop exposure could be followed on strike for distances varying

between 1 metre and 10 metres. These have a variety of orientations, but veins striking north or east predominate. The veins dip from sub-horizontal to sub-vertical and often present irregular geometries.

The rocks hosting the larger veins exhibit pervasive silica, carbonate, sericite and/or chlorite alterations. Generally, the alteration halo is restricted to the veins' immediate surroundings (ie. within one metre or less of the veins). In

many cases, the outcrops which bear the veins exhibit minor kink bands and fracture cleavages (S2?) of various attitudes.

All major veins found in the northern sector of the property are apparently confined to a zone of siliceous (altered) sericitic and carbonatized volcanics. The alteration zone strikes 100° to 120° and cross-cuts the local stratigraphy (80° to 100°). The vein system, along with its alteration envelope can be followed from the southwest shore of Reid Lake to its southeast shore and possibly beyond. An outcrop displaying carbonatized and sheared volcanics in the northwestern part of the property could conceivably represent the western strike extention of this zone.

ECONOMIC GEOLOGY

The Meadow Lake Property lies in the midst of the Timming Mining District which is famous for its major vein-type gold deposits. The subject claim group lies approximately 1 kilometre to the south of the Destor-Porcupine Fault, along which are distributed numerous past and present gold and silver producers (figure 4). A past asbestos producer and several asbestos and magnesite occurences can be found nearby.

All major veins encountered in the course of the present survey have been sampled for their gold content. The vein samples were forwarded to the Bourlamaque Assay Laboratories Ltd. facilities in Val d'Or for fire-assay gold analysis. The locations of the sampled veins are indicated on the Sample Location Map which is attached to this report and the results thereof are listed in APPENDIX 2.

Quartz veins occuring in the "Meadow Lake" BIF (the BIF lying on the east shore of Meadow Lake) have anomalous gold contents with respect to all other veins sampled on the property. Seven samples obtained from the BIF veins (#1235 to 1241) have revealed assays ranging from 0.01 oz/ton to 0.03 oz/ton Au, while all other samples have produced consistent "trace" gold

assays. The best assay, 0.03 oz/ton Au was that of bulk grab sample of vein trench rubble. The vein blocks originated from a N-S trending trench; the trench had a width of approximately 1 metre, a length of 3 metres and a depth of 1 metre. The sample consisted of BIF fragments containing white quartz veins, veinlets and stringers, pyrite blebs and streaks, and red hematitic-pyritic vein selvages. It is notable that a grab sample of magnetite-chert-pyrite-iron carbonate BIF devoid of quartz veins was assayed at 0.02 oz/ton Au.

The Mitchell Brothers "gold occurence" lies on the south shore Paradis Creek, on claim P 516244. It comprises a shaft or a pit filled with rubble and water. The vein itself could not be visited its inaccessibility, but an old report due to (Assessment File T-444) states that the vein mineralization lies at the bottom of the shaft, at a depth of 10 feet. One chipchannel sample collected in 1909 was assayed at \$12.20 which would correspont to a grade of 0.59 oz/ton Au. remarkable that all other gold assays reported in this report ranged from trace to \$1.40 (0.064 oz/ton). Details pertaining to the type of mineralization encountered and the vein dimensions are unfortunately not available. Two grab samples consisting of white quartz-calcite vein fragments were collected

by the author from a rock pile lying next to the pit. The two samples (#1220 and 1221) produced "trace" assays.

The subject claim group lies due east and within 400 metres of the Ridgegold gold occurence (Assessment File T-1665). Trenches and a shaft with a depth of 125 feet can be found on this site. Values as high as 0.4 oz/ton Au are reported in the actual Ridgegold assay certificate, but the actual location of these values is difficult to ascertain.

CONCLUSIONS AND RECOMMENDATIONS

The Meadow Lake Property lies in the midst of the Timmins Mining Camp. Due to its strategic location with respect to the Destor-Porcupine Fault, the has good prospects for vein-type gold mineralization. The proximity of the Ridgegold gold occurence, the presence of possible gold mineralization on claim P 516244 (ie. the Mitchell Brothers showing), and the anomalous gold assays obtained from the Meadow Lake BIF all warrant further exploration of the property.

From an explorationist's point of view, the property is almost virgin as it has not yet been investigated through conventional ground geophysics and geochemistry. Hence, this author recommends the implementation of a systematic exploration program on this property in order to properly evaluate its potential for precious and base-metal mineralization.

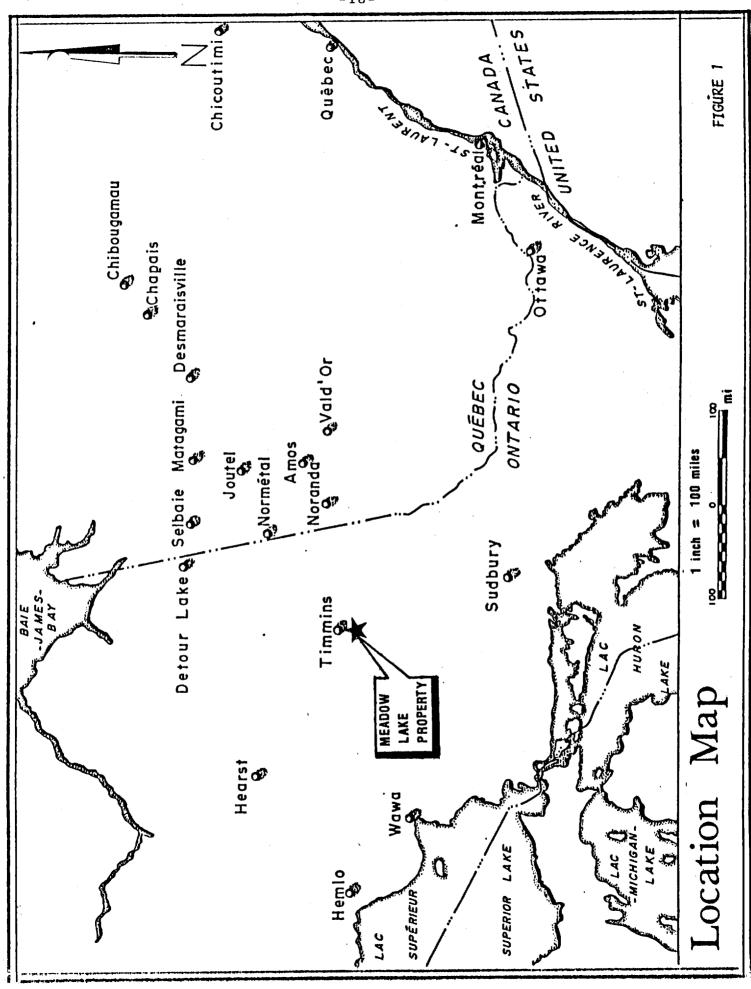
In a first phase of exploration, line-cutting, ground MAG and HEM (Max-Min II) surveys and gold-arsenic humus geochemical surveys should be carried out over the entire property (APPENDIX 3). surveys would outline the subcrop The geophysical expressions of banded iron-formations and perhaps help locate yet undiscovered volcano-sedimentary horizons (ie. felsic or ultramafic units). Idealy, the MAG and HEM survey could define structural lineaments, some of which could be associated with gold mineralization. The humus geochemical survey may outline possible gold dispersion haloes, which might ultimately constitute as diamond drilling targets.

Pending on the results of the first phase, a second phase of exploration would involve outcrop stripping, trenching and diamond drilling of the best combined geological-geophysical-geochemical targets.

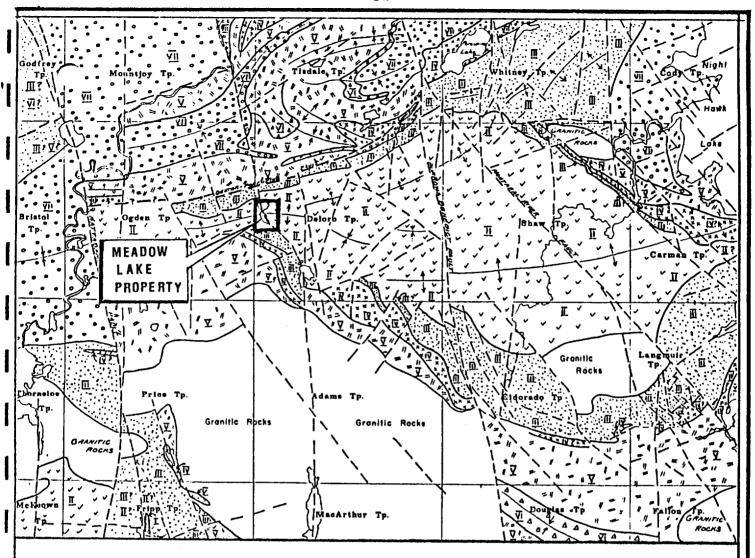
Respectually submitted,

Gilles J. Boisvert

Geologist, B.A.Sc.



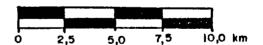
• FIGURE 2



Source: ODM Map P941

Regional geology

Scale 1: 200 000





VII Upper MetasedImentary Group

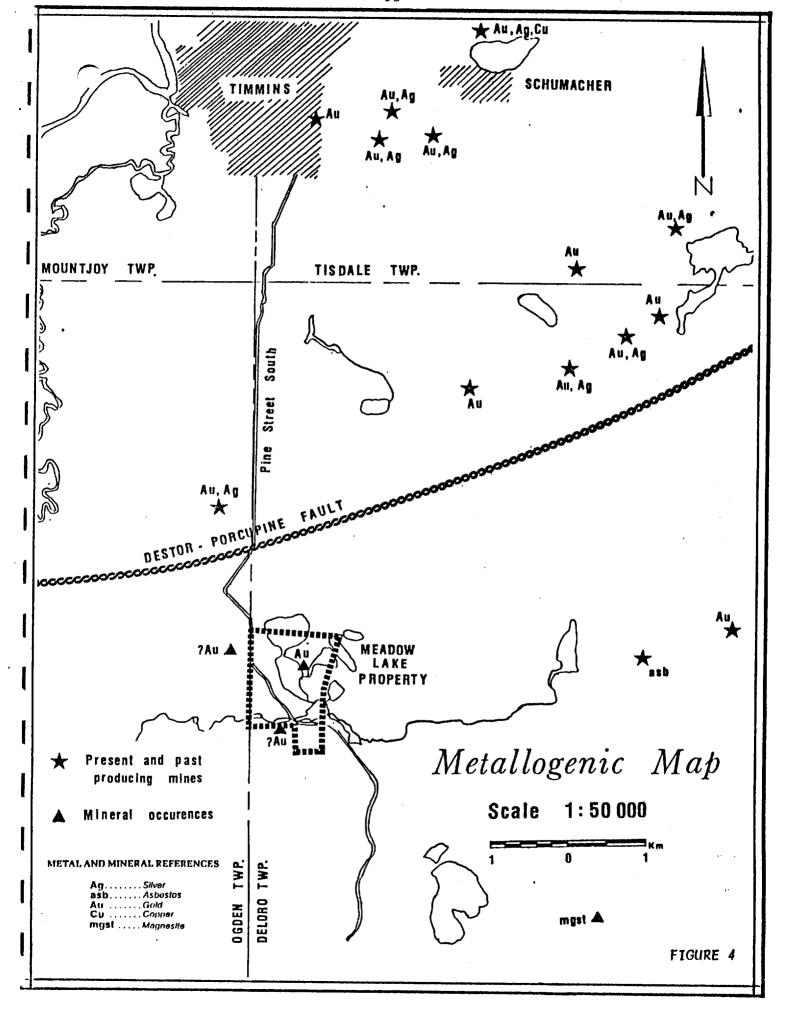
Tisdale Group

VI Upper Metavolcanic Formation (Felsic)
V Hiddle Metavolcanic Formation (Mafic)
1V Lower Metavolcanic Formation (Ultramafic)

Deloro Group

Upper Metavolcanic Formation (Intermediate to Felsic) Middle Metavolcanic Formation (Mafic) Lower Matavolcanic Formation (Ultramafic)

FIGURE 3



SELECTED REFERENCES

- Burrows, A.C., 1924-The Porcupine Gold Area: Ontario Dept. Mines, Vol.33, Pt.2, p.1-112 (published 1925). Accompanied by Map 33a, scale 1 inch to 2,000 feet.
- Carlson, H.D., 1967-The Geology of Ogden, Deloro and Shaw Townships, District of Cochrane, Ontario; Ontario Dept. Mines, OFR5012, 117 pl Accompanied by Maps P.341, P.342, P.343, scale 1 inch to 1/4 mile.
- Pyke, D.R., Ayres, L.D., and Innes, D.G., 1973-Timmins-Kirkland Lake Sheet, Cochrane, Sudbury and Timiskaming Districts; Ontario Div. Mines, Geol. Comp. Ser., Map 2205, scale 1 inch to 4 miles. Compilation 1971, 1972.
- Pyke, D.R., 1974-Timmins Area, Districts of Cochrane and Timiskaming; Ontario Div. Mines, Prelim. Map P.941, Geol. Ser., scale 1 inch to 1 mile. Geology and compilation, 1973.
- 1982-Timmins Area, Ontario Geological Survey Map 2455, Synoptic Series scale 1:50 000. Geology and compilation, 1973.
- 1982-Geology of the Timmins Area, District of Cochrane; Ontario Geological Survey Report 219.
- Sangater, P.J. and Maharaj Deosaran, 1981-Deloro Township, Cocharane District; Ontario Geological Survey Preliminary Map P.2079, Timmins Data Series. Scale 1:15840 or 1 inch to 1/4 mile. Data compiled 1980.

APPENDIX I - CLAIM LIST

Claim Numbers

P-516238

P-516239

P-516240

P-516241

P-516242

P-515243

P-516244

P-516245

P-516435

P-516436

P-849586

The 11 contiguous claims are located in Deloro Township, District of Cochrane, Ontario.

APPENDIX II LIST OF ASSAY RESULTS





LABORATOIRE D'ANALYSE BOURLAMAQUE LTÉE BOURLAMAQUE ASSAY LABORATORIES LTD.

Liliane Letourneau R.R. #3 Tilsonburg, Ont. N4G 4G8		CERT	TIFICATE OF ANALYS No. 46040	_
ÉCHANTILLUNS SAMPLES	rock	VAL D'OR. QUÉ	July 18	1986
RECU DE RECEIVED FROM	Gilles Boisvert	ANALYSES ASSAYS	41 Au	

Sample No.	Au oz/ton	Sample No. Au oz/ton	
1201	Trace	1231 Trace	
1202	Trace	1232 Trace	
1203	Trace	1233 Tra co	
1204	Trace	1234 Trace	
1205	Trace	1235 0.01	
1206	Trace	1236 0.01	
1207	Trace	1237 0.01	
1208	Trace	1238 0.01	
1209	Trace	1239 0.02	
1210	Trace	1240 0.03	
1211	Trace	1241 0.02	
1212	Trace		
1213	Trace		
1214	Trace		
1215	Trace		
1216	Trace		
1217	Trace		
1218	Trace		
1219	Trace		
1220	Trace		
1221	Trace		
1222	Trace		
1223	Trace		
1224	Trace		
1225	Trace		
1226	Trace		
1227	Trace		
1228	Trace		
1229	Trace		
1230	Trace		

DICCCCIACIO

APPENDIX III PROPOSED EXPLORATION PROGRAM

PHASE 1: SURFACE EXPLORATION		•
-Line Cutting: grid lines trending north-south at 100 metre intervals, a total of 16.5 km, inclusing base-line		
and tie-line, at \$150.00/line-km\$	2	475.00
-Ground Gradient Magnetic Survey: 16.5 km at \$150.00/line-km\$	2	475.00
-HEM Max-Min II Survey: 14.5 km at \$170.00/line-km\$	2	465.00
-Humus (Ao horizon) geochemical survey: Samples collected at 100 metre intervals on each grid line; a total of 145 samples analysed for their gold (ppb) and arsenic contents. \$22.00 per sample includes collection, sample preparation and		
analysis\$	3	190.00
-Planning, supervision and report\$	1	568.00
-Contingencies (15%)\$	1	826.00
TOTAL PHASE I: \$	14	000.00
PHASE II-A: STRIPPING AND TRENCHING		
-Backhoe-bulldozer, water pumps, dyna- mite, plugger, machine operators and others. 5 days at \$1500.00 per		
day\$	7	500.00
-Geologist to map stripped outcrops, 2 days at \$250.00 per day\$		500.00
-Planning, supervision and report\$	1	130.00
-Contingencies (15%)\$	1	370.00
TOTAL PHASE II-A: \$	10	500.00

APPENDIX III PROPOSED EXPLORATION PROGRAM (CONT)

PHASE II-B: DIAMOND DRILLING

-Diamond drilling shall be carried out on the best targets pending the results of Phases I and II-A.

LITHOLOGIES

- MAFIC TO INTERMEDIATE VOLCANIC ROCKS: BASALTS & ANDESITES
 - a fine-grained tuff
 - o lapilli-tuff
 - c lapilli-tuff breccia
 - d feldepar porphyry dyke (hypabyssal)
 - m feldepar crystal-tuff (plagfoclase)
- 2 INTERMEDIATE TO FELSIC VOLCANIC ROCKS: ANDESITES & DACITES
 - m fine-grained tuff
 - b lapilli-tuff
 - c lephili-tuff breccia
- 3 MAFIC INTRUSIVE ROCKS
 - a melano-gabbro
- 4 IRONSTONE
 - a oxyde facies ironstone
 - b sulfide facies ironstone

ALTERATION SYMBOLS

- alteration zone

BE \ - sericite

SiO. - milicification

CC - calcite

CB - carbonate

CL - chlorite

GEOLOGICAL AND MINING SYMBOLS

_ ___ - saker

y y - bedding: inclined, vertical

- small outcrop

"y" - 81 Poliation

... - area of outcrop

82 schistosity; kink bands, guartz veins, fracture

- observed geological contact

1/- drag told with plunge and

--- - in/erred geological contact 75

50 dip of axial plane

ዓለ - quartz vein

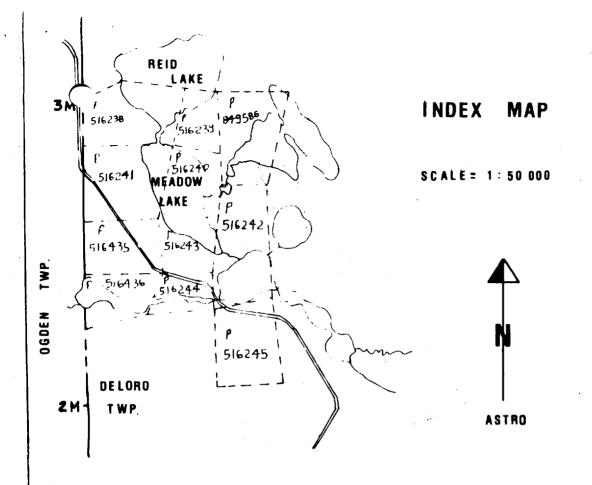
ナ - trench

#1 - pit

- diamond drill hose with vertical depth of overburden in matres

LEGEND

- Sample location (with sample #)
- Possible gold occurence
- Confirmed gold occurence



L.B.L. RICHGOLD MINES INC. MEADOW LAKE PROPERTY GEOLOGY MAP

Geology: G. J. Boisvert, B.A.Sc.

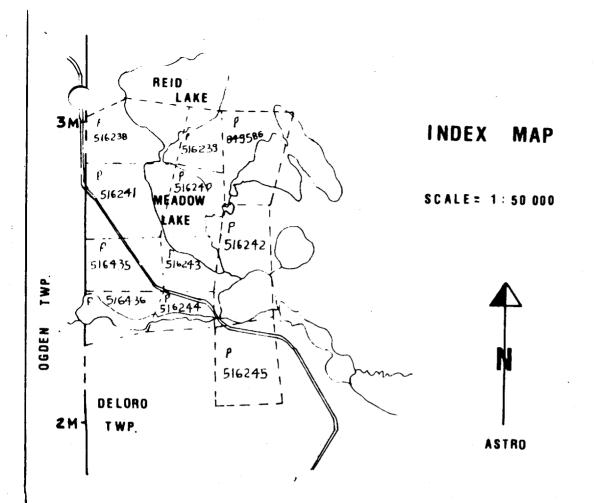
Dates of survey: July 5-20, 1986

Township: Deloro, Ont.

SCALE: 1:5000

100 0 50 100 200 300 400 metres

DBorsind



L.B.L. RICHGOLD MINES INC. MEADOW LAKE PROPERTY SAMPLE LOCATION MAP

Geology: G. J. Boisvert, B.A.Sc.

Dates of survey: July 5-20, 1986

Township: Deloro, Ont.

SCALE: 1:5000

b & Borswert

100 0 50 100 200 300 400 metres

