



32D04NE2004 2.18032 MCVITTIE

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2.18032

1996 Technical Report

on the

1996 Exploration Program

on the

Lac McVittie Joint Venture



Submitted by:
Rodney Barber, B.Sc.
Project Geologist
Eastern Canada Exploration
Royal Oak Mines Inc.

October, 1996

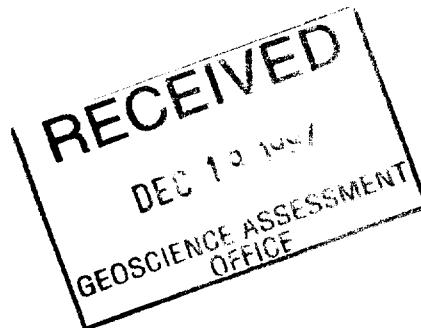


32D04NE2004 2.18032 MCVITTIE

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Introduction

The 1996 work program featured 1.9 km of new line cutting and 16.8 km of refurbishment of old lines. 19.7 km of Spectral IP were run and forms the basis of a separate report by JVX (1996). Geology on the new line cutting was mapped and 2 rock samples taken for 32 element ICP and gold analysis. As well, 38 samples of cut diamond drill core were taken for ICP and gold analysis.

Location and Access

The Lac McVittie property is located in west-central McVittie township and is roughly bounded on three sides by the Misema River, and the Beaverhouse-Spectacle Lake drainage system. The claim group lies 3 km west of Larder Lake, 6 km north of Highway 66, and is accessible along the west boundary by the Fork Lake Road (Figure 1). Numerous trails and drill roads, as well as Spectacle, Moosehead and Beaverhouse Lakes provide access to the north and east portions of the property.

Access can also be had by the Beaverhouse Road which begins at the village of Dobie, Ontario, and winds its way to the Upper Beaver Mine site and Beaverhouse Lake. There it joins up with the northern limit of the Fork Lake Road across a set of rapids on the Misema River.

Claim Status

The property consists of 58 contiguous, unpatented single-unit claims for a total of approximately 2320 acres. The Joint Venture hold the mineral rights to the claims. A number of surface rights only claims, held by others, overlap part of the property,

Previous Work

A brief summary of previous work is as follows:

- 1967: Upper Canada Mines, magnetometer and EM surveys, diamond drilling, 2 holes
- 1980: Queenston Gold Mines Inc., diamond drilling 4 holes
- 1985-88: Lac Minerals Ltd., airborne VLF surveys, magnetometer survey, diamond drilling, 8 holes total 4,644 ft, geological mapping.
- 1989-91: Pamorex Minerals Ltd., magnetic and HEM surveys, diamond drilling, 6 holes total 5,168 ft, stripping and trenching, 3 sites

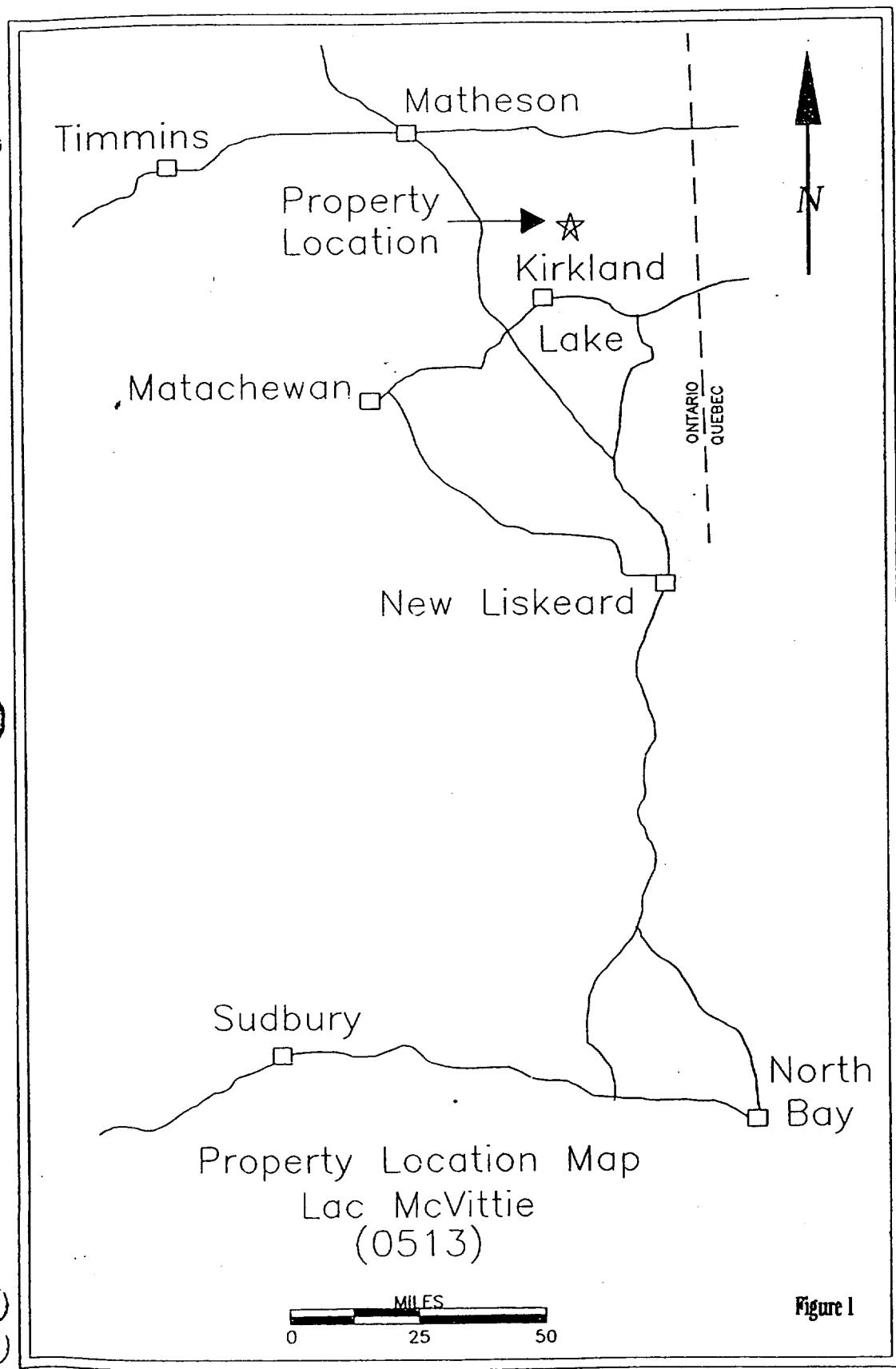
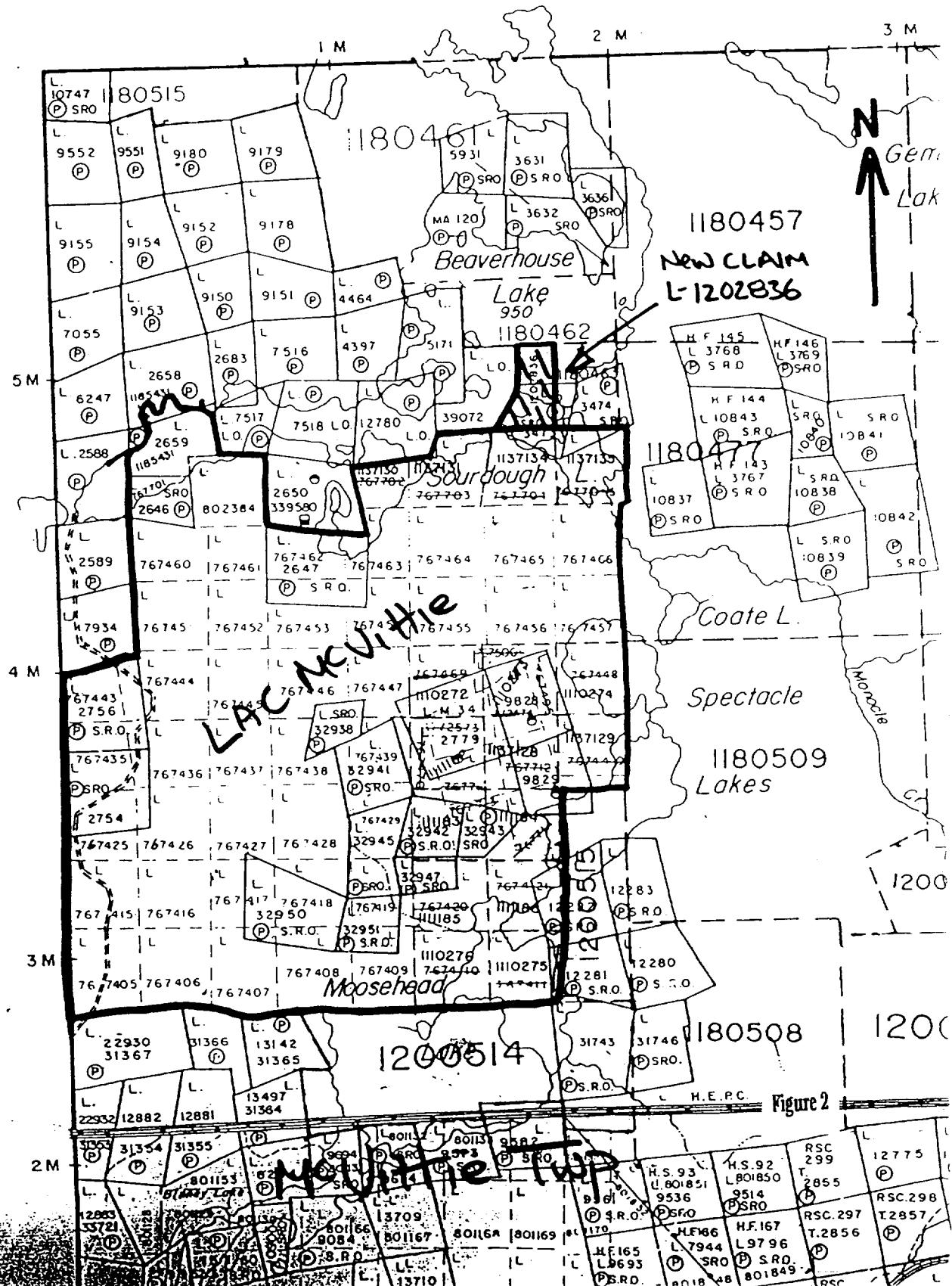


Figure 1

Katrine Tp.

MUNICIPALITY OF LARDER LAKE

Gauthier Tp.



- 1993-94: Sudbury Contact Mines Ltd., limited geological mapping, reverse circulation drilling (22 holes on the Upper Beaver and Lac McVittie properties), limited magnetic and Induced Polarization surveys, diamond drilling, 5 holes total 631.13m (2,070.6ft).
- 1994: Royal Oak Mines Ltd., limited IP survey, 5 diamond drill holes for 5354.4 feet.

Regional Geology

Pressacco (1994) describes the regional geology as follows:

"The stratigraphy in the eastern portion of the Abitibi Belt in Ontario has been subdivided into two supergroups by Jensen and Langford (1985) - see Figure 3 and Table 1. The two supergroups represent successive volcanic cycles from ultramafic komatiitic volcanism to acid calc-alkalic volcanism. Each cycle is topped by a dominantly sedimentary-tuffaceous sequence which reflects relative quiescence in volcanic activity.

The tectonic regime in which the majority of these rocks are located is one of regional subsidence. The formation of a broad, east-trending synclinal basin is attributed to this subsidence. The Destor-Porcupine Fault Complex forms the north boundary of this basin, and south side is marked by the Larder Lake Fault Complex forms the north boundary of this basin, and the south side is marked by the Larder Fault Complex.

Late intrusives locally dissect the volcanic/sedimentary stratigraphy. Compositonally, these intrusive rocks range from ultramafic, pyroxenite, diabase and lamprophyre to diorite, granite and syenite. The mafic and ultramafic varieties tend to be found as sills and/or dikes, whereas the intermediate and felsic varieties form as stocks or batholiths.

The Kirkland Lake gold mines are hosted by the Timiskaming Group which is the upper alkalic part of the second cycle. It is comprised of both volcanic, intrusive and sedimentary rocks. Gold mineralization is associated with a steeply dipping, easterly trending structural discontinuity known as the Larder Lake Break. In the Kirkland Lake area the Larder Lake Break is at or close to the south edge of the Timiskaming Group (Coad, 1992)."

Local Geology

The property covers the folded contact between the Kinojevis and Gauthier Groups, forming the Spectacle Lake Anticline. The Kinojevis Group consists of iron and magnesium tholeiitic, massive and pillow mafic volcanics. The younger Gauthier

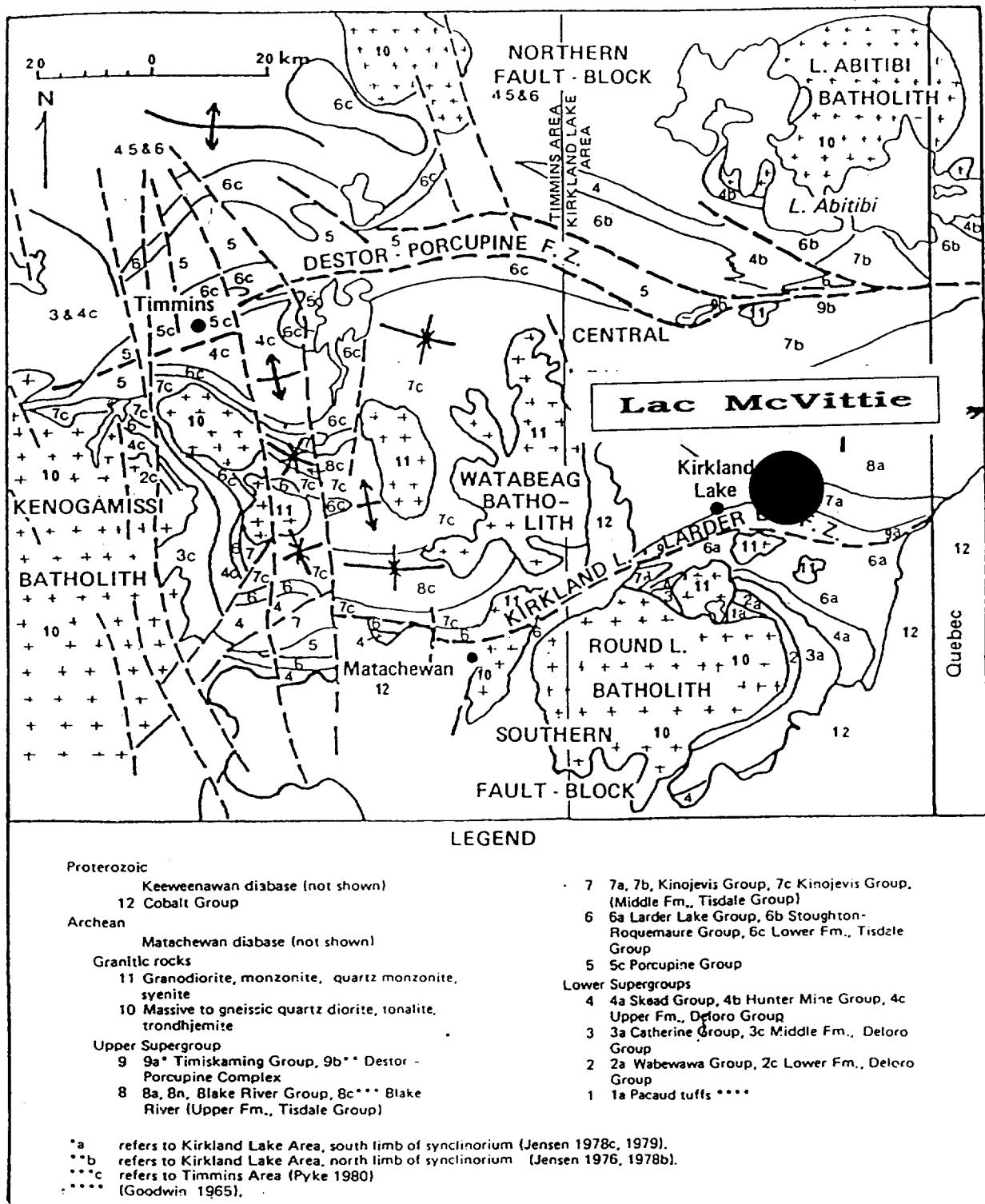


Figure 3 : Geological map of the Timmins - Kirkland Lake area.

TABLE 1

STRATIGRAPHY IN EASTERN ABITIBI BELT

UPPER SUPERGROUP	TIMISKAMING GROUP
	BLAKE RIVER GROUP
	KINOJEVIS GROUP
	STOUGHTON-ROCQUEMAURE GROUP
LOWER SUPERGROUP	PORCUPINE GROUP
	HUNTER MINE GROUP (SKEAD GROUP EQUIVALENT)
	CATHERINE GROUP
	WABEWAWA GROUP

* after Jensen and Langford, 1985

Group consists of intermediate to felsic, calc-alkaline pyroclastics, including ash tuffs to agglomerates, with some conglomerate sections.

Summary of 1996 Program

The bulk of the work performed in 1996 was taken up by the IP survey, reported separately (JVX, 1996). The geology of the new Linecutting was mapped and found to consist of Kinojevis Group mafic volcanics intruded by syenite and diabase. Two grab samples were taken and assayed 10 ppb and <5ppb Au, respectively. The ICP results are shown in Appendix 2.

Portions of holes LM 94-6, LM 94-7, and LM 91-3 were relogged and sampled at Royal Oak Mines Schumacher facility. This was to follow-up on anomalous gold values from "composite" samples and/or favourable geology. This resulted in an assay of 2020 ppb Au from 717 to 719.8 feet in hole LM 94-7. The same hole returned 316 ppm Cu and 31 ppb Au from 741.5 to 742.5, from a ½ inch-wide magnetite-chalcopyrite stringer. These results are encouraging considering that the recent I.P. survey has defined an anomaly which continues for another 1200 feet to the east of this drill hole. Also, this style of mineralization is similar to that found at the Upper Beaver Mine.

Conclusions and Recommendations

Resampling of previously drilled core has resulted in the discovery of a new gold occurrence on the property, 2020 ppb Au/2.8 feet in hole LM94-7. As well, the Spectral IP survey was successful in locating a number of interesting anomalies. The following steps are recommended to follow-up on these results:

1. Soil sampling over the IP anomalies to determine which parts of the anomalies are more likely to be caused by gold mineralization.
2. Diamond Drilling of the coincident IP and soil anomalies.

40 00 N

36 00 N

32 00 N

28 00 N

24 00 N

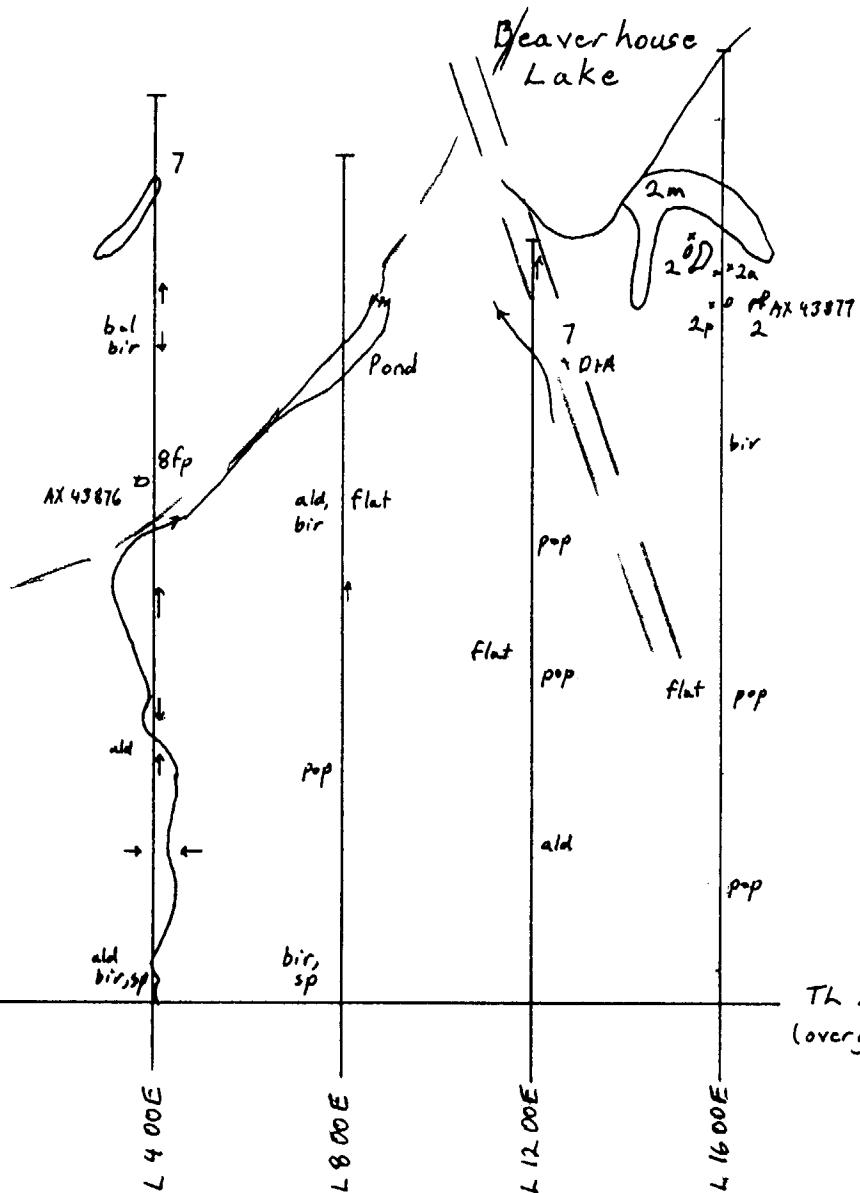
L 400E

L 800E

L 1200E

L 1600E

TL 2000N
(overgrown)



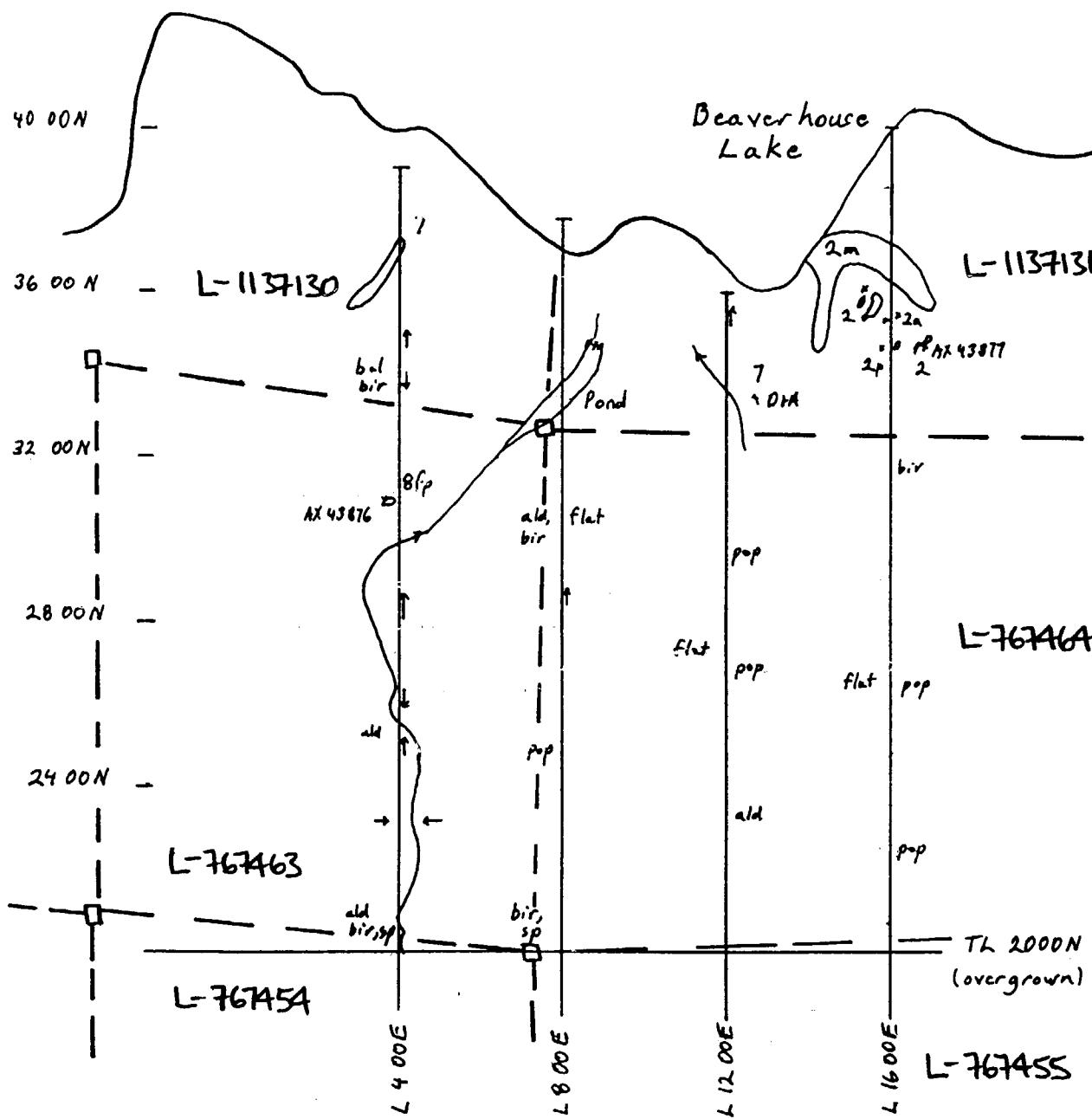
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LEGEND

- 2 Mafic Volcanics, unsubdivided
- 2a Amygdaloidal mafic volcanoes
- 2m Massive mafic volcanics
- 2p Pillowed mafic volcanics
- 7 Diabase
- 8fp Syenite, feldspar-phyric
- AX43876 X Rock sampler location
- Outcrop
- Stream
- Slope along grid line
- bal Balsam
- bir Birch
- sp Spruce
- pop Poplar
- flat Alder

Scale: 1 inch = 400 feet

0	500	1000 ft
Lac McVittie Joint Venture		
Lac McVittie Property		
New Linecutting and Geological Mapping		
Oct. 1996		R.B.



LEGEND

- 2 Mafic Volcanoes, unsubsidized
 2a Amygdaloidal mafic volcanoes
 2m Massive mafic volcanoes
 2p Pillowed mafic volcanoes
 7 Diabase
 8fp Syenite, feldspar-phyric
 AX43876X Rock sample location
 O x Outcrop
 → Stream
 → Slope along grid line

bal	Balsam
bir	Birch
sp	Spruce
pop	Poplar
ald	Alder

Scale: 1 inch = 400 feet

Lac McVittie Joint Venture

Lac McVittie Property

New Linecutting and Geological Mapping

Oct. 1996

R.B.

References

Coad, P.R., 1992, Royal Oak Mines Inc., Lac McVittie (1513) Year End Technical Report - 1991; internal document.

JVX Ltd., 1996, A Logistical and Interpretive Report on Spectral IP/Resistivity conducted on the Lac McVittie Joint Venture Property, McVittie Township, Ontario, internal document.

Jensen, L.S.,and Langford, F.F.,1985, Geology and Petrogenesis of the Archean Abitibi Belt in the Kirkland Lake Area, Ontario Geological Survey Misc. Paper 123

Pressacco, 1994, Technical Report on the 1994 Exploration Program on the Lac McVittie Joint Venture, internal documents.

Certificate of Qualifications

I, Rodney Alan Barber, residing at 119 Lois Crescent, Timmins, Ontario, do hereby certify that:

1. I hold the degree of Bachelor of Science (Honours) in geology, obtained from Laurentian University, Sudbury, Ontario in 1988.
2. I have practiced my profession since 1988.
3. I personally supervised or conducted the work forming the subject of the preceding report.
4. The information contained in this report is true accurate to the best of my knowledge.
5. I hold no interest, either direct or indirect in the Lac McVittie Joint Venture, nor do I expect to receive any compensation, other than salaries, for the work performed here.



Rod Barber
Project Geologist
Eastern Canada Exploration

Appendix 1

Assay Data



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
 5175 Timberlea Blvd., Mississauga
 Ontario, Canada L4W 2S3
 PHONE: 905-624-2806 FAX: 905-624-6163

To: ROYAL OAK MINES INC.
 TIMMINS DIVISION
 P.O. BOX 2010
 TIMMINS, ON
 P4N 7X7

A9635613

Comments: ATTN: ROD BARBER

CERTIFICATE

A9635613

(JWW) - ROYAL OAK MINES INC.

Project:
 P.O. #:

Samples submitted to our lab in Mississauga, ON.
 This report was printed on 19-OCT-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
299	2	Pulp; prepped on other workorder
229	2	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
2118	2	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
2119	2	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	2	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	2	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	2	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	2	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
2124	2	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00
2125	2	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2126	2	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	2	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	2	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
2150	2	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00
2130	2	Ga ppm: 32 element, soil & rock	ICP-AES	10	10000
2131	2	Hg ppm: 32 element, soil & rock	ICP-AES	1	10000
2132	2	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	2	La ppm: 32 element, soil & rock	ICP-AES	10	10000
2134	2	Mg %: 32 element, soil & rock	ICP-AES	0.01	15.00
2135	2	Mn ppm: 32 element, soil & rock	ICP-AES	5	10000
2136	2	Mo ppm: 32 element, soil & rock	ICP-AES	1	10000
2137	2	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	2	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
2139	2	P ppm: 32 element, soil & rock	ICP-AES	10	10000
2140	2	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	2	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	2	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	2	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	2	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	2	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	2	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	2	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	2	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	2	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000



Chemex Labs Ltd.

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 TIMMINS DIVISION
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 Account : JWW

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CERTIFICATE OF ANALYSIS A9635613

SAMPLE	PREP CODE	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %	Mn ppm	Mo ppm
AX43876	299 229	< 0.2	0.34	< 2	1730	< 0.5	< 2	1.87	< 0.5	15	307	12	1.83	< 10	< 1	0.21	10	0.66	500	< 1
AX43877	299 229	0.2	2.80	18	50	< 0.5	2	0.99	< 0.5	31	189	95	5.52	< 10	< 1	0.01	< 10	2.03	620	< 1

CERTIFICATION: Hart Bichler



Chemex Labs Ltd.

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A9635613

SAMPLE	PREP CODE		Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
AX43876	299	229	0.05	12	700	8	< 2	4	654	< 0.01	< 10	< 10	18	< 10	38
AX43877	299	229	< 0.01	51	880	< 2	< 2	4	11	0.42	< 10	< 10	140	< 10	60

CERTIFICATION:



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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 PHONE: 905-624-2806 FAX: 905-624-6163

To: ROYAL OAK MINES INC.
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 TIMMINS, ON
 P4N 7X7

A9636212

Comments: ATTN: ROD BARBER

CERTIFICATE

A9636212

(JWW) - ROYAL OAK MINES INC.

Project:
 P.O. #:

Samples submitted to our lab in Mississauga, ON.
 This report was printed on 24-OCT-96.

SAMPLE PREPARATION

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION
205	38	Geochem ring to approx 150 mesh
226	38	0-3 Kg crush and split
3202	38	Rock - save entire reject
229	38	ICP - AQ Digestion charge

* NOTE 1:

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.

ANALYTICAL PROCEDURES

CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT
3993	38	Au ppb: Fuse 30 gram-EXT-AA fin.	FA-EXT-AA	1	1000
983	1	Au ppb: Fuse 30 g sample	FA-AAS	5	10000
2118	38	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0
2119	38	Al %: 32 element, soil & rock	ICP-AES	0.01	15.00
2120	38	As ppm: 32 element, soil & rock	ICP-AES	2	10000
2121	38	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000
2122	38	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0
2123	38	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000
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2126	38	Co ppm: 32 element, soil & rock	ICP-AES	1	10000
2127	38	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000
2128	38	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000
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2132	38	K %: 32 element, soil & rock	ICP-AES	0.01	10.00
2151	38	La ppm: 32 element, soil & rock	ICP-AES	10	10000
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2137	38	Na %: 32 element, soil & rock	ICP-AES	0.01	5.00
2138	38	Ni ppm: 32 element, soil & rock	ICP-AES	1	10000
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2140	38	Pb ppm: 32 element, soil & rock	ICP-AES	2	10000
2141	38	Sb ppm: 32 element, soil & rock	ICP-AES	2	10000
2142	38	Sc ppm: 32 elements, soil & rock	ICP-AES	1	10000
2143	38	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000
2144	38	Ti %: 32 element, soil & rock	ICP-AES	0.01	5.00
2145	38	Tl ppm: 32 element, soil & rock	ICP-AES	10	10000
2146	38	U ppm: 32 element, soil & rock	ICP-AES	10	10000
2147	38	V ppm: 32 element, soil & rock	ICP-AES	1	10000
2148	38	W ppm: 32 element, soil & rock	ICP-AES	10	10000
2149	38	Zn ppm: 32 element, soil & rock	ICP-AES	2	10000



Chemex Labs Ltd.

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SAMPLE	PREP CODE	Au ppb EXT-AA	Au ppb FA+AA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	Hg ppm	K %	La ppm	Mg %
AX43878	205 226	5 -----	< 0.2	0.95	< 2	40	< 0.5	< 2	3.22	< 0.5	11	50	23	2.06	< 10	< 1	0.31	10	0.57	
AX43879	205 226	10 -----	< 0.2	1.21	2	30	< 0.5	< 2	4.29	< 0.5	14	45	38	2.98	< 10	< 1	0.24	10	0.82	
AX43880	205 226	5 -----	< 0.2	1.61	4	30	< 0.5	< 2	2.99	< 0.5	10	57	6	3.83	< 10	< 1	0.25	10	1.14	
AX43881	205 226	3 -----	< 0.2	1.68	< 2	20	< 0.5	< 2	3.08	< 0.5	12	56	6	4.26	< 10	< 1	0.17	10	1.27	
AX43882	205 226	1 -----	< 0.2	1.51	2	10	< 0.5	< 2	4.16	< 0.5	10	48	8	3.63	< 10	< 1	0.20	10	1.06	
AX43883	205 226	1 -----	< 0.2	1.71	< 2	10	< 0.5	< 2	2.43	< 0.5	12	57	10	3.89	< 10	< 1	0.14	< 10	1.18	
AX43884	205 226	4 -----	< 0.2	1.61	< 2	10	< 0.5	< 2	2.79	< 0.5	17	67	124	3.45	< 10	< 1	0.16	< 10	1.02	
AX43885	205 226	6 -----	< 0.2	2.23	< 2	10	< 0.5	< 2	2.12	< 0.5	15	25	11	3.28	< 10	< 1	0.15	< 10	1.53	
AX43886	205 226	1 -----	< 0.2	1.93	< 2	30	< 0.5	< 2	3.80	< 0.5	14	29	18	2.57	< 10	< 1	0.29	< 10	1.18	
AX43887	205 226	< 1 -----	< 0.2	2.37	2	10	< 0.5	< 2	1.61	< 0.5	18	24	75	3.68	< 10	< 1	0.16	< 10	1.45	
AX43888	205 226	300 -----	< 0.2	1.79	2	30	< 0.5	< 2	2.75	< 0.5	12	16	46	2.93	< 10	< 1	0.23	10	1.00	
AX43889	205 226	>1000 2020	0.2	1.95	< 2	10	< 0.5	10	4.48	< 0.5	14	41	23	3.50	< 10	< 1	0.12	< 10	1.36	
AX43890	205 226	7 -----	< 0.2	1.67	< 2	30	< 0.5	< 2	2.40	< 0.5	7	16	1	2.62	< 10	< 1	0.22	10	1.00	
AX43891	205 226	4 -----	< 0.2	1.05	< 2	10	< 0.5	< 2	8.89	< 0.5	5	24	8	1.77	< 10	< 1	0.16	10	1.02	
AX43892	205 226	4 -----	< 0.2	1.53	< 2	20	< 0.5	< 2	2.01	< 0.5	9	24	6	2.21	< 10	< 1	0.16	< 10	0.90	
AX43893	205 226	31 -----	< 0.2	2.05	6	10	< 0.5	< 2	1.81	< 0.5	26	30	138	3.48	< 10	< 1	0.11	< 10	1.27	
AX43894	205 226	110 -----	< 0.2	2.14	4	30	< 0.5	< 2	1.60	< 0.5	22	39	123	3.54	< 10	< 1	0.14	< 10	1.27	
AX43895	205 226	53 -----	< 0.2	2.50	6	10	< 0.5	< 2	1.86	< 0.5	41	39	270	4.80	< 10	< 1	0.05	< 10	1.55	
AX43896	205 226	57 -----	< 0.2	2.17	< 2	40	< 0.5	< 2	4.57	< 0.5	18	21	117	3.78	< 10	< 1	0.22	10	1.26	
AX43897	205 226	39 -----	< 0.2	1.77	2	30	< 0.5	< 2	1.84	< 0.5	21	26	118	2.90	< 10	< 1	0.17	10	0.94	
AX43898	205 226	31 -----	< 0.2	1.97	2	50	< 0.5	< 2	1.43	< 0.5	19	38	316	3.86	< 10	< 1	0.20	< 10	1.21	
AX43899	205 226	46 -----	< 0.2	1.53	< 2	30	< 0.5	< 2	1.38	< 0.5	10	34	66	2.16	< 10	< 1	0.16	< 10	0.85	
AX43900	205 226	34 -----	< 0.2	1.91	6	30	< 0.5	< 2	1.21	< 0.5	21	25	168	3.72	< 10	< 1	0.17	< 10	1.10	
AX43901	205 226	170 -----	< 0.2	1.93	6	30	< 0.5	< 2	2.57	< 0.5	16	19	209	3.99	< 10	< 1	0.18	< 10	1.19	
AX43902	205 226	41 -----	< 0.2	1.62	6	30	< 0.5	< 2	1.60	< 0.5	14	32	126	2.72	< 10	< 1	0.13	< 10	1.14	
AX43903	205 226	8 -----	< 0.2	1.83	< 2	30	< 0.5	< 2	1.94	< 0.5	15	92	37	2.53	< 10	< 1	0.07	10	1.72	
AX43904	205 226	150 -----	< 0.2	2.76	6	10	< 0.5	< 2	1.83	< 0.5	25	53	244	5.52	< 10	< 1	0.09	< 10	2.01	
AX43905	205 226	< 1 -----	< 0.2	1.32	22	10	< 0.5	< 2	5.18	< 0.5	16	13	42	5.10	< 10	< 1	0.07	< 10	1.74	
AX43906	205 226	< 1 -----	< 0.2	0.91	10	10	< 0.5	< 2	5.26	< 0.5	9	15	23	3.90	< 10	< 1	0.07	< 10	1.91	
AX43907	205 226	1 -----	< 0.2	1.43	12	10	< 0.5	< 2	4.85	< 0.5	14	15	25	5.07	< 10	< 1	0.05	< 10	1.23	
AX43908	205 226	< 1 -----	< 0.2	1.42	12	10	< 0.5	< 2	4.41	< 0.5	11	15	22	4.79	< 10	< 1	0.06	< 10	1.57	
AX43909	205 226	< 1 -----	< 0.2	1.37	10	10	< 0.5	< 2	4.20	< 0.5	12	17	23	4.50	< 10	< 1	0.07	< 10	1.47	
AX43910	205 226	< 1 -----	< 0.2	0.91	< 2	10	< 0.5	< 2	3.73	< 0.5	7	29	11	3.85	< 10	< 1	0.07	< 10	0.98	
AX43911	205 226	15 -----	0.2	0.81	18	10	< 0.5	< 2	7.66	< 0.5	20	43	52	5.72	< 10	< 1	0.06	< 10	2.74	
AX43912	205 226	< 1 -----	< 0.2	2.41	10	10	< 0.5	< 2	4.77	< 0.5	19	17	11	7.23	< 10	< 1	0.06	< 10	1.77	
AX43913	205 226	< 1 -----	< 0.2	1.53	6	10	< 0.5	< 2	3.53	< 0.5	12	26	27	4.35	< 10	< 1	0.09	< 10	1.29	
AX43914	205 226	< 1 -----	< 0.2	1.08	6	30	< 0.5	< 2	3.40	< 0.5	9	20	24	2.80	< 10	< 1	0.11	< 10	0.97	
AX43915	205 226	1 -----	< 0.2	2.07	< 2	10	< 0.5	< 2	3.10	< 0.5	22	25	8	6.04	< 10	< 1	0.05	< 10	1.13	

CERTIFICATION: _____



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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 Ontario, Canada L4W 2S3
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 TIMMINS DIVISION
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Project:
 Comments: ATTN: ROD BARBER

CERTIFICATE OF ANALYSIS

A9636212

SAMPLE	PREP CODE		Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
AX43878	205	226	645	4	0.01	23	830	< 2	< 2	1	82	0.07	< 10	< 10	12	30	18
AX43879	205	226	855	9	0.01	25	880	< 2	< 2	1	88	0.08	< 10	< 10	17	30	26
AX43880	205	226	830	6	0.01	29	860	< 2	< 2	1	54	0.11	< 10	< 10	19	< 10	36
AX43881	205	226	895	4	0.01	28	820	< 2	< 2	1	51	0.10	< 10	< 10	23	< 10	42
AX43882	205	226	980	4	0.02	23	770	< 2	< 2	3	133	0.10	< 10	< 10	22	< 10	34
AX43883	205	226	875	5	0.02	27	820	< 2	< 2	2	56	0.12	< 10	< 10	26	< 10	38
AX43884	205	226	790	5	0.03	26	770	< 2	< 2	2	69	0.13	< 10	< 10	25	< 10	34
AX43885	205	226	840	3	0.01	21	920	< 2	< 2	3	87	0.13	< 10	< 10	26	< 10	44
AX43886	205	226	770	3	0.02	16	820	< 2	< 2	2	95	0.15	< 10	< 10	23	< 10	32
AX43887	205	226	810	4	0.01	20	880	< 2	< 2	3	112	0.17	< 10	< 10	32	< 10	42
AX43888	205	226	340	5	0.01	9	940	< 2	< 2	2	60	0.14	< 10	< 10	20	< 10	16
AX43889	205	226	515	28	< 0.01	9	660	< 2	< 2	1	82	0.01	< 10	< 10	19	< 10	22
AX43890	205	226	370	5	< 0.01	10	970	< 2	< 2	1	41	0.12	< 10	< 10	17	< 10	16
AX43891	205	226	720	1	0.01	7	760	< 2	< 2	2	61	0.05	< 10	< 10	10	< 10	10
AX43892	205	226	305	4	0.01	11	970	< 2	< 2	1	59	0.13	< 10	< 10	23	< 10	14
AX43893	205	226	420	5	0.01	23	900	< 2	< 2	2	82	0.15	< 10	< 10	28	< 10	20
AX43894	205	226	440	6	0.01	15	870	< 2	< 2	3	108	0.17	< 10	< 10	36	< 10	22
AX43895	205	226	570	12	< 0.01	28	790	< 2	< 2	3	139	0.17	< 10	< 10	37	< 10	26
AX43896	205	226	690	6	< 0.01	16	920	< 2	< 2	3	107	0.16	< 10	< 10	32	< 10	24
AX43897	205	226	385	7	0.01	20	900	< 2	< 2	3	117	0.15	< 10	< 10	30	< 10	16
AX43898	205	226	455	5	< 0.01	12	920	< 2	< 2	3	96	0.13	< 10	< 10	31	< 10	20
AX43899	205	226	315	4	0.02	14	1010	< 2	< 2	3	105	0.14	< 10	< 10	27	< 10	14
AX43900	205	226	460	5	0.01	20	980	< 2	< 2	2	97	0.16	< 10	< 10	27	< 10	22
AX43901	205	226	600	7	0.01	17	900	< 2	< 2	2	70	0.13	< 10	< 10	29	< 10	24
AX43902	205	226	435	7	0.02	17	910	< 2	< 2	1	119	0.12	< 10	< 10	23	< 10	22
AX43903	205	226	460	3	0.05	23	1780	< 2	< 2	4	171	0.11	< 10	< 10	62	< 10	30
AX43904	205	226	770	7	< 0.01	28	1010	< 2	< 2	4	85	0.18	< 10	< 10	66	< 10	36
AX43905	205	226	1485	1	0.07	8	840	< 2	< 2	5	71	< 0.01	< 10	< 10	22	< 10	82
AX43906	205	226	1390	< 1	0.06	5	810	< 2	< 2	4	63	< 0.01	< 10	< 10	15	< 10	54
AX43907	205	226	1400	< 1	0.05	6	850	< 2	< 2	5	65	< 0.01	< 10	< 10	22	< 10	92
AX43908	205	226	1305	< 1	0.06	7	790	< 2	2	4	57	< 0.01	< 10	< 10	21	< 10	88
AX43909	205	226	1245	1	0.06	7	860	< 2	< 2	4	57	< 0.01	< 10	< 10	18	< 10	82
AX43910	205	226	1340	1	0.07	5	630	< 2	< 2	3	61	< 0.01	< 10	< 10	11	< 10	56
AX43911	205	226	2220	< 1	0.05	9	610	< 2	< 2	4	80	< 0.01	< 10	< 10	11	< 10	62
AX43912	205	226	1735	2	0.06	11	770	< 2	2	6	70	< 0.01	< 10	< 10	34	< 10	152
AX43913	205	226	1150	1	0.08	8	900	< 2	< 2	4	56	< 0.01	< 10	< 10	21	< 10	84
AX43914	205	226	970	< 1	0.09	5	1000	< 2	< 2	2	59	< 0.01	< 10	< 10	13	< 10	46
AX43915	205	226	1230	1	0.04	7	700	< 2	< 2	4	46	< 0.01	< 10	< 10	24	< 10	124

CERTIFICATION: Hans Buehler

Appendix 2

Updated Diamond Drill Logs



PROJECT : LAC MCVITIE COS(3) ----- Logged By : PRAK

STAR Dec. 8, 1991
FINISH Dec 11, 1991

CAT

Date 12/08/1991
Page 1 of 2

DRILLED BY: COREX EXPLORATION INC., ST. EUSTACHE, PQ.
CORE STORED: UPPER BEAVER CORE SHACK

CORE STORED: UPPER BEAVER CORE STACK

DIST	Id	ROCK DESCRIPTION							B/S	J/F
		Com	Grs	Text	Co	Alt	Nam			
24.0								OV		
28.0		S	FMS	FRAG	GY	SEN	DF		BJS	
61.5		SC	FMS	FRAG	GY	SEN	DF		F90	
68.0		v	n	n	n	u	DF			
73.0		-	-	-	n	-	n			
75.0		n	-	Por	v	v	DF			

MINERALS

GANGUE			METALLIC		
A%	B%	C%	D%	E%	F%
0.12	1.50	CC 2.0	Py 1.5		
0.12	0.3	CC 0.5	Py 1.5		
0.12	0.5	Al ₂ S 1.0	Py 1.0		
0.12	0.5	Al ₂ S 1.5	Py 1.5		
			Py 0.2		

PURPOSE: To TEST NORTHEAST TRENDING HIGH CONDUCTOR
RESULTS: Intersected Graphite and Semi-massive Pyrite
SIZE: B

Spl #	Wdth	T	COMMENTS 1	COMMENTS 2
97.113	4.0	S	CASING; 24.0 feet (BW) left in.	
96.560	33.5	G	DEBRIS FLOW - ALTERED Grey-yellow, due to met. change, alt. lithment ses. Gassy grey to yellow frag. 9" QTZ-CALCITE w/ s. on Q.C. & pu. and trace greenish metallic. Possibly altered lamp.	
97.114	6.5	S	DEBRIS FLOW - ALTERED or ALT. LAMP. Grey-yellow, f.mg. & local AE; 1-5% varnally sized yell. frag. & delicate cuspate outlines; local green mica wisps In dissemin. f.g. in a Mls local rusty limonitic brown (0-10") In cl. str. shear (3S); unit separated by mauve leuox....	
97.115	5.0	S	DEBRIS FLOW - ALT. LAMP Green mica 2%	
97.116	2.0	S	Debris flow or ALT. LAMP (compacted), well-green, sericeous, wisps / frag (1-5%), Specchio with mauve leuox.	

PAMOREX

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
78.0		SSS	E6	FRM& NL sen			QSS
83.0		SSS			YL	SEN	QSS
88.0		S	FG		YL	SEN	CSS
93.0		SS	FG		YL	SEN	LAMP
98.0		S	FG		YL	SIL	LAMP
108.0		S	FG		YL	SIL	RMS
119.0		S	FG	TUE	YL	SIL	FTE

STRUCT.
B/S J/F

MINE
GANGUE

METALLIC
D%
E%
F%

Spl #	Wdth	T
1	1	1

QUARTZ - SERICITE - SCENIT
Folded ORT-ME VERN with streaks
shell-yellow ser. lamellae.
Yr. - 3" mud / gauge scans (65°)
Protolith - silic & silicified lamp?

17118 S.Q.S

QTR - SPENCER - SCHIST (SILICIFIED)
DRAG FOLDING with partings (yellow)
in QTR. Folgent mud/gauge seams (G)

97119 S.O. S

(GTZ - SCALICITE - SULFIST
MOT. AS INTENSELY STRUCTURED - we see
protoolith = SILIC/SULF, alt. lamp (aphen)
Alt 86, 4° mylonitic zone (60°)
LAMPKROPHYRE - SILIC FUSED + SCALARICED,
aphen matrix with 1-3% f.g. - to euc.
yellow-green tapers (wedges); locally folded
end - thin dk. patches (brownish), local
patch of albite porphyry (0.87 (50°))

12130 E.W.S.

aphan matrix with 1-3% f.g. - to c.c.
yellow-green tafoni (wicks); locally bold
and thin dol. partings (ferruginous); local
patch of dolite porphyry (P. 87 (50)).

97121 S.O S

LAMP - Sulfurized + sensitized
Organ - level sets / including
12" of mud / some rubble (96")

AL-EL 1 17-2

BASALT - MEGAFI. & CAMP ALT
Yellow carbon will local
charcoal box and very char. tray
(alluvial) - due to fire char. by or
towards local coal/green zts. Local ae.

16.56	10.0	5
17.12	1.0	5

Tectonized WRF
Felsic Tuff - Puritic or A.T. Lenticular
E vfg. py. following foliation

DIST	ROCK QUALITY					ASSAY DATA								
	Recl	Pc	PcsL	Rq	Re%	Spl #	Wdth	T	Au	Au	Ag	Cu	Zn	As
									ppk	ppk	ppm	ppm	ppm	ppm
76.0						97117	3.0	<001	<35	1.6	25	22	6000	
83.0						97118	5.0	<.001	<35	1.8	12	28	6000	
88.0						97119	5.0	<.001	<35	1.6	12	17	6400	
93.0						97120	5.0	<.001	<35	1.6	25	17	5800	
98.0						97121	5.0	<.001	<35	1.5	18	26	6000	
103.0						96561	10.0	<.001	<35	1.0	20	20	4400	
109.0						97122	1.0	<.001	<35	2.5	65	107	6800	

PAMOREX

PAGE 2

DRILL HOLE CM91-03
Page 3 of 7

DIST	Id	ROCK DESCRIPTION						STRUCT.			MINERALS						COMMENTS 1		
		B/S		J/F		Gangue		Metallic			Spl	Wdth	T						
		Com	Grs	Text	Co	Alt	Nam	B%	C%	D%									
114.5		SS	FG	Y	SIL	FTC		QFL 2.5	M6 2S	Py 3.0	97123	5.5	S	"Felsic Tuff" or ALT. Lmp. Yell. agran, relatively hard to scratch, local banded due to calc. seruite. Diss & zkt (fg.) + py - above bands finely annulated & Fe/Fp. Local thin streaks of alb/silice (py) Local Fe-py (ZK) w/ py request.					
121.5		SS	FG	Y	SIL	FTC		QFL 1.5	M6 2.0	Py 3.0	97124	7.0	S	"Felsic Tuff" or ALT. Lmp. Yell. agran. w/ delicate banding (ref. felsite). Annulated. Local - twisted yell/green zks/hgs progressively harder to scratch WRA request					
146.0		S	FG	Y	SIL	FTC		QFL 1.5	CHL 1.5	CC 3.5	Py 1.0	96562	24.5	G	"Felsic Tuff" or ALT. Lmp. Buff-yell colour - often relatively hard to scratch. Local delicate banding Fe and chalcocite-text. Local brown pink staining (ZK?) follows banding ref. QFL chlor veins Py in delicate c. silice/albite. Local green zks WRA X. QFL not in sample; X-ray of brown mineral = muscovite				
148.0		S	FG	-	-	-	FSS	QFL 2.5		Py 4.0	97125	2.0	S	"Felsic Tuff" Fai-mg; py alter to SQT/Albe/ank veins 1-2% brown staining					

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
187.0		S	Aph	Band	Yl	Sil	FTF
214.5		SSS	Fg	Band	Yl	Ser	& SSS
226.0		SS	"	-	Nk	Ser	QSSS
229.5		SS	FG		Lk		GRAN
231.0		S	FG				EMAS

STRUCT.			
B/S	J/F	A1	A2
P	10		
F	60		
F	15		
B	50		
S	55		

Spi #	Wdth	T
96563	19.0	G
96564	29.0	G
96565	12.0	G
96566	3.5	G
97126	1.5	G

COMMENTS 1	COMMENTS 2
<p>1. Silic Tuff - or Tilley Lstt. banding (tectonic)</p> <p>2. Chal. Landens marked by brown spiral or hex (?) Photo C 175' area</p> <p>At 175' easily see Fz or Fz foliation</p> <p>Fz rolling (S) cut by local V (g) py (green c. wmp)</p>	<p>At. wmp!</p> <p>banding cut by</p> <p>SO-60° Fz dusting.</p>
<p>QUARTZ-SERICITE-TOURMALINE SCHIST</p> <p>Highly schistified (40-75°) and foliated - ext. tourmaline veins (crack-seal) with local drag-folding east - cts of quartz + tourmaline are more schistified local gauge.</p>	
<p>Quartz-sericite Schist</p> <p>V. sky green, drabbed - local green veins etc.</p>	
<p>GRAPHITIC SEDIMENT</p> <p>blk, fg. v conductive py sulf c. silver piece R. shiny white G.P. Un</p>	<p>- RUGBY dirty & stains</p>
<p>Sands-also sulphides py msv c. local coll concent. areas. Also vfg py with Fe. Kels in area, local red hem. staining.</p>	<p>Balls - calice grained / bedded py - also caliche matrix - pgs</p>

DIST	Id	ROCK DESCRIPTION						STRUCT.	MINERALS						COMMENTS 1	COMMENTS 2			
		B/S J/F			GANGUE				METALLIC			Spi #	Wdt	T					
		Com	Grs	Text	Co	Alt	Nam		C%	B%	C%	D%	E%	F%					
268.0	-	S	"FHL"	"AGL"	GY	SEN	"DF"	B40	072	1.5	SEN	2.0	Py	1.5	96567	37.0 G	Debris Flow. Pred. "lump" clcts / frags in carbonaceous matrix - widely scattered Py as clcts + local banding next to QZ C 244 ("S"). Near in-clt patches of AF-rich sed. w/ green matrix - or broken angular calc frags (micro) GRADING - facing up slope toward S		
278.0	-	S	"	"AGL"	GY	SEN	"DF"	F35	072	1.0	SEN	10.0	Py	0.5	96568	10.0 G	Amp. AF in micro clcts NB - In-clt angular frags grading - facing up slope toward S		
280	-	SS	"	"YL"	SEN	GY	"	N30	072	3.0	"	CC 5.0	Py	1.5	97128	2.0 S	grading - facing up slope toward S Sediment - very dark grey-green Py - angular frags dissoc with all xhds - reddish/pink Int. near min py clcts. This section WRA. (≈ 96568-2) Y 97127		
318.0	-	S	"AGL"	"YL"	SEN	"DF"	"	B40	072	0.5	SEN	4.0	Py	1.0	96569	38.0 G	072 - CHL - CARBON - TOUR. MIN Str. sen. alt halo - local green micro zts		
343.0	-	S	"AGL"	GY	SEN	"DF"	"	B40	072	1.25	SEN	3.0	CC 1.5	Py	2.5	16570	25.0 G	"Debris Flow" - ALTERED LUMP Mat. Str semi-cryst, very - very porphy in places + well/green zts. Local brecciated with fit - back - together Frags (avg. > 3") - local this texture is variably scattered & inc pseudo clcts	
343.0	-	S	"AGL"	GY	SEN	"DF"	"	B40	072	1.25	SEN	3.0	CC 1.5	Py	2.5	16570	25.0 G	"Debris Flow" - wk-mod alt lmp 1-10% dk dol frags in grey matrix. Local AF or "swat" Py as zts / frags?	

DIST	ROCK QUALITY					ASSAY DATA							BLOCKS			
	Recl	Pc	PcsL	Rq	Re%	Spf #	Wdth	T	Au	Au	Ag	Cu	Zn	As	Au	Ag
									opt.	ppb	ppm	ppm	ppm	ppm	ppb	ppm
263.0						96567	37.0	<.001	<35	1.6	31	31	5800	N.L.	0.1	
275.0						96568	10.0	<.001	<35	1.4	23	30	5600			
280.0						97128	2.0	<.001	<35	1.7	26	46	800			
315.0						96569	38.0	<.001	<35	1.6	42	35	4800			
343						96570	25.0	<.001	<35	1.6	36	126	5200			

(Swanson)

Cu Zn

ppm ppm

36 35

PAMOREX

PAGE 2

DRILL HOLE LNGI-03
Page 6 of 7

DIST	ID	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
408.0		S	FG	FMS	YG	Sen	DF
451.0	SS						"DF"
451.5	SSS						F2
461.0							DF
464.0	SS	FG		GY	Sen	F2	
496.0	S	FHL		GY	Sen	MT	
504.0	SSS	FG		GY	Sen	MT	

STRUCT.

B/S J/F

B Al J A2

B40

MINERALS

GANGUE

C% B% C%

00 00 00

METALLIC

D% E% F%

00 00 00

Spf # Wdth T

16572 3.0 G

COMMENTS 1

Circle of 0.5 cm thick veins - not older than
100 m. DECK ROCK - see SILLS / very limited
greenish pink mica - minor, some py zts
relatively thin, thin schistose zones
angular dark cuprite - sulfide fragments.
local pheno.
local fit-together frags. float in
dr carbon matrix near upper part area
(top)

COMMENTS 2

16573 3.0 G
16574 3.0 G
16575 3.0 G
16576 3.0 G

16577 3.0 G
16578 3.0 G
16579 3.0 G
16580 3.0 G

16581 3.0 G
16582 3.0 G
16583 3.0 G
16584 3.0 G

16585 3.0 G
16586 3.0 G
16587 3.0 G
16588 3.0 G

16589 3.0 G
16590 3.0 G
16591 3.0 G
16592 3.0 G

16593 3.0 G
16594 3.0 G
16595 3.0 G
16596 3.0 G

PAMOREX

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
SS2.S							
SS3.5		SS	FMK		Y6	Sen	MT
SS8.0		SSS	F6		YL	Sen	F2
FOLK		SSS	FM6	Pwp	16		MT

STRUCT.

B/S	J/F		
B	A1	J	A2

S2.9

ROCK DESCRIPTION

Com	Grs	Text	Co	Alt	Nam
-----	-----	------	----	-----	-----

529.

CCS FG YL SR F2

Table 1. Summary of the results of the study of the effect of the addition of organic acids on the properties of the polyacrylate polymer.

558

SSS FMS Pwp 16 MT

A horizontal scale bar consisting of a thin black line with small vertical tick marks at each end, used for measuring distances.

Foot

MINE

GANGUE

Figure 1. A typical example of a 100 ms segment of the speech signal.

AB 15 MA 00 552

卷之三

METALLIC

D% E%

Pg 3,0

100

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PAGE 2

DRILL HOLE CM91-03

Page 3 of 7

DRILL HOLE NO: LM91-3

PAGE / OF /

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

PROJECT: Lac McVittie
core size: RC

Logged By: R. Pressucco

Start Oct 18, 1999

PAGE 1 Ends: Oct 24, 1999

CAT

Date: 10/24/99
Page 1 of 24

DRILL HOLE	NORTHING	EASTING	ELEVATION	LENGTH	OBI	OBE	INC	LEASE CLAIM
LM94-06	29750N	32100W	Surface	1416 ft				767461 + 767452
DIST	AZIM	DIP	DIST	AZIM	DIP	DIST	AZIM	DIP
0 ft	180°	-45°	800	202	-45°			
206	185°	-46°	1000	201	-46°			
400	180°	-46°	1200	—	—			
600	193°	-47°	1400	209	-46°			

DIST	Id	ROCK DESCRIPTION				
		Com	Gra	Text	Co	Alt
30						CAS
50						
70						
80						
100						
120						
140						
160						
180						
200						
220						
240						
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**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
36.0		m	vt	FLAS	Y	HEM	4.1
41.0							
46.0							
47.5							
48.1							
52.6							
56.0		m	vt	MSL	BB	HEM	8.5

STRUCT.
B/S J/F
B A1 J A2

PAGE 2

COMMENTS 1

glauberite cement to fragments of host rock. Overall
glauberite abundance estimated at 1-3% vol. Pyrite
is present, occurring as very fine grained dissests
weakly developed patches of angular pyrite. weak
incipient karst-like efflorescences especially within

COMMENTS 2

at one time there was a very rare disease. It's a fairly rare, genetically related to the disease.

475-6016

W. H. Nicklason

Wesch, R. C. and G. M. Ladd. 1964.

HC-NATITIC SYENITE DIKE (52.6-68.2 fl.)
 Colour red-brown to reddish, moderately soft
 non-magnetic, non-calcareous. Massive very
 fine-grained texture. 1-3 mm. Very fine veinlets
 of green, cassiterite, py., and at all contacts Cu. Fine
 intergrowths of cassiterite and py.

about 10° off tall angles

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

STRUCT.

MINERALS

PAGE 2

DRILL HOLE 1196
Page 3 of 24

COMMENTS 1

COMMENTS 2

ULTRAMAFIC (TALC - SERPENTINE) (68.2 - 96.8 FT).

Color variable from black to apple green, depending
on altitude, while soft rive requires
more water to produce fruit quickly.
Fruit usually 10 cm long with 10-12
greenish-yellow stripes. It is sweet but set
black if underripe. True

except for the altered or obscure below:

Syenite dikes are bimetallic. F.S. = +0.047 ft. (+0.047 m).
e.g. (menzibar) ad. B200. 93.6 ft. (11-3 m) agt. 0.047 m.

Cave Atal: 50° to C at.	96.1 ft. Elevation
Cave Atal: 65° to C at.	96.8 ft. Elevation

~~ZONE OF QUARTZ-TOURMALINE UGNING AND~~

The soft α form $60.2 - 60.4$ consists of a very

well developed fragmental texture. Fragments are

In the order of size of atoms
in composition, the short and weak is. Some times

of micro-concretes. The alternative some
people have is below glass and consists having

at a slowly developed stage stockmen and men

systems comprising a highly-sensitive assembly of detector elements.

4-7-55 - H. S. - Precipitated as a mass
in present in the fine

Pl. 47 sectn. Overall g.b. abundance 13

estimated at a size 70-30 lbs. Many of the

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

PAGE 2

DRILL HOLE 2039 G
Page 4 of 24

COMMENTS 1	COMMENTS 2
Wells have less than 3% silts, may reach 5-7% present, but only in very shallow. If occurs, it is parallel to grain.	Wells have less than 3% silts, may reach 5-7% present, but only in very shallow. If occurs, it is parallel to grain.
Five micro-environments	
10 cm - gravelly contains fine silt bent. Pp.	
Shallow, back-side of slope	Wind drifts with sand
Shallow, left bank of stream	Stream
Wells - Mafic, 100-140 ft	
wk foliated ultramafic	
100-140 ft, sample	
WLC, foliated, yellowish	
15 cm - 100 ft, siliceous, py. 67 g/t, verdigris	
WLC, Altered ultramafic	
MAFIC FRAGMENTAL (96.8-117.5 ft.)	
Color varies green, brownish-green, grey, and tan to brown, calcareous, well developed fragments, light colored, several frequent coarse-grained, light-colored, sand-sized fragments, small, heavily dominated by fragments of mafic rocks, alkali-calcite bearing is especially high, 107% in abundance except for the 104.4-106.2 ft section described below.	

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

PAGE 2

DRILL HOLE 11-26-1
Page 1 of 24

COMMENTS 1	COMMENTS 2
ANHYDITE (CONT'D) - 10 ft. thin, irregular, white masses, occurring as lenses in pyritic chalcocite.	ANHYDITE, occurring as lenses in pyritic chalcocite.
orientated at roughly 15° T.E., occurs as amounts of acicular & fibrous material, incl 1-3% COPPER PATCHY CHALCOPIRITE.	orientated at roughly 15° T.E., occurs as amounts of acicular & fibrous material, incl 1-3% COPPER PATCHY CHALCOPIRITE.
Narrow, syenite, dike (150 ft. A.D.) located at 26.2- 28.3 ft.	Narrow, syenite, dike (150 ft. A.D.) located at 26.2- 28.3 ft.
coarse, patchy, grey in 50% white veins. has sparse veinlets.	coarse, patchy, grey in 50% white veins. has sparse veinlets.
fine disseminated texture	fragments
SUSPENDED in rocks	horizontal. Pyritic segregate
Trace which seems	
SERICITIZED MAGIC (117.5-234.0 ft.)	FIBROUS (?)
Colour variable, from light green to yellowish brown, rarely colourless, extremely silvery in appearance, often thin at 132.5 ft. massive in all other parts, thin lithologic cont. to variable, but, for the	extreme, silvery bright can be observed that has various forms in discrete Technique are not worked

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
170.7		M	Vtg	MSU Y	ser	20sp	
126.0		M			ser	20sp	
121		M			ser	20sp	
119.0		F ₂			ser	20sp	
141.0	B				?		
146.0	B ₃				ser	20sp	

STRUCT.

B/S	J/F		
B	A ₁	J	A ₂

MINERALS

GANGUE			METALLIC		
c%	B%	c%	D%	E%	Mn F%

MIT

METALLIC

PAGE 2

DRILL HOLE 1002
Page 1 of 24

COMMENTS 1	COMMENTS 2
<p>massive bed. Are graded. Local sections can become very silicified. Bivalve abundance is not great, but in the relatively clean water, but for each 1-3-5% is more abundant. Thick sections are very rare present, but most 1-2 m. out. are 1-2 m. thick. The section at 137 ft - 127 ft. long, etc. Stony sections are quite common and many containing 1-3 bivalves, etc. Anterior point, non- resistant to trawl, etc., present in the sections. A little, but distinctly developed system of chilostatic patches look sharp in the weathering of the sensitive sections, and the trawl removes almost a lot complete to these chilostatic areas. Below roughly 137 ft. No intensity of sections, although, necessary, see that the pavement fragments which can be seen. Overall P.D. is constant, + 5% or less in the 137 ft. region.</p>	
<p>Massive sections, a lot? unrooted from alt = rod sea alt = rock from alt = 137 ft. 5-7% cal / rock shingle, class 1A shingle + 5% chl.</p>	
<p>rod sea alt = rock from alt = 137 ft. 5-7% cal / rock 10 cm. ribbon, class 1B rock from alt = 131.5 ft. 1-3% from 137 ft. rock from alt = 131.5 ft. Gravel, rock, Tegat + 5% chl.</p>	
<p>rod sea alt = decreasing in thickness, have 1-3% cal / rock rock - rock sea alt =</p>	

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

STRUCT.

STRUCT.

MINERALS

PAGE 2

DRILL HOLE 100-14-5
Page 7 of 24

COMMENTS 1

COMMENTS 2

weak, patchy, see alt = very blocky
weak, patchy, see alt = blocky
White Rock Sample
weak, patchy, see alt =
weak, see alt =
base of rock = chalcocite + chalcopyrite + pyrite + galena + sphalerite + quartz
and some pyrrhotite
weak, patchy, see alt =
pyrrhotite + chalcocite + chalcopyrite + quartz
131.0 - 198.4 ft section of shaly massive ore, with
sericite alteration with
weak pervasive
tenor if alt = Moderate i.e. strongly calcareous.
Tessellate (2-3 ft) - thin walls at all angles 3 ft -
1-3% pyrrhotite + sphalerite chal. alt = contains
tessile (1-2 ft) chalcocite and pyrite. Gradually
over contact into "Mash" with the pyrrhotite
rocks 2-2400 ft thick & massive, with sericite-
calcite altered sections 3-5% chalcocite-filled fractures
form a "stinkpot" (breccia)-like texture at all walls.
Tessellate with minor low hills of 11% chal.
chalcocite lenses about 3-5 m in width. The
central portions become filled with quartz &
chalcopyrite, but fringes remain free from
quartz. Low contact of the chalcocite + calcite
residual wall 20-30 cm and is classified as
the last stage of the pyrrhotite + chalcocite + sericite
alteration. Pyrite always have overall 3-4-3.6%
but locally can achieve 7-10% (e.g. 208 ft).
The pyrite occurs both with chalcocite + sphalerite

ROYAL OAK MINES INC

ROCK DESCRIPTION

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
191.9							
196.0							
191.0							
196.0							
191.0							
196.0							
198.4							
200.2							
201.6							
206.0							
211.0							
216.0							
221.6							
224.0							

STRUCT.

MINERALS

METALLIC			
D%	E%	Am%	F%
1	1	0.001	
1	2	0.002	
1	3	0.003	
1	4	0.004	
1	5	0.005	
1	6	0.006	
1	7	0.007	
1	8	0.008	
1	9	0.009	
1	10	0.010	
1	11	0.011	
1	12	0.012	
1	13	0.013	
1	14	0.014	
1	15	0.015	
1	16	0.016	
1	17	0.017	
1	18	0.018	
1	19	0.019	
1	20	0.020	
1	21	0.021	
1	22	0.022	
1	23	0.023	
1	24	0.024	
1	25	0.025	
1	26	0.026	
1	27	0.027	
1	28	0.028	
1	29	0.029	
1	30	0.030	
1	31	0.031	
1	32	0.032	
1	33	0.033	
1	34	0.034	
1	35	0.035	
1	36	0.036	
1	37	0.037	
1	38	0.038	
1	39	0.039	
1	40	0.040	
1	41	0.041	
1	42	0.042	
1	43	0.043	
1	44	0.044	
1	45	0.045	
1	46	0.046	
1	47	0.047	
1	48	0.048	
1	49	0.049	
1	50	0.050	
1	51	0.051	
1	52	0.052	
1	53	0.053	
1	54	0.054	
1	55	0.055	
1	56	0.056	
1	57	0.057	
1	58	0.058	
1	59	0.059	
1	60	0.060	
1	61	0.061	
1	62	0.062	
1	63	0.063	
1	64	0.064	
1	65	0.065	
1	66	0.066	
1	67	0.067	
1	68	0.068	
1	69	0.069	
1	70	0.070	
1	71	0.071	
1	72	0.072	
1	73	0.073	
1	74	0.074	
1	75	0.075	
1	76	0.076	
1	77	0.077	
1	78	0.078	
1	79	0.079	
1	80	0.080	
1	81	0.081	
1	82	0.082	
1	83	0.083	
1	84	0.084	
1	85	0.085	
1	86	0.086	
1	87	0.087	
1	88	0.088	
1	89	0.089	
1	90	0.090	
1	91	0.091	
1	92	0.092	
1	93	0.093	
1	94	0.094	
1	95	0.095	
1	96	0.096	
1	97	0.097	
1	98	0.098	
1	99	0.099	
1	100	0.100	

Spl	Wdth
5170	—
5171	4.1
5172	5.0
5173	4.0
5174	4.9
5175	1.8
5176	1.4
5177	4.4
5178	5.0
5179	5.0
5180	5.6
5181	2.4

PAGE 2

DRILL HOLE 114
Page 2 of 24

COMMENTS 1	COMMENTS 2
thin bedded dolomitic limestone with some dolomitic shales interbedded. A thin dolomitic bed was observed at 2045 ft.	segregation of dolomite site is es... section of sample observed at 2045 ft.
thin-seal... ERROR SFT to all depths below 1986 ft.	IN DEPTH TADS - ADD
diss. ut, sp. in sea-be + 17°	
des. dol. + dol. + dol. + dol. + dol. 1355 ft. + dol. + dol. + dol. + dol. presently in dol. + dol. + dol.	1355 ft. + dol. + dol. + dol. + dol. Lia + 145°
"fresh" marine fragments	shattered
Slag chl-py strings in massive site	
massive dolomitic limestone up to 5 m., loc. use horizontal shale bands py	loc.
Ag. dolomitic dol. or py. chl. dol. up to 3 m.	
3.5% loss when cut this (1-m) slab strings	
massive dol. + 17°, occasional ribbed grykes visible 2 cm.	ribbed grykes visible 2 cm.
weak bedded dolomitic limestone	limestone

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

ROCK DESCRIPTION

STRUCT.

B/S J/F
B A1 J A2

MINERALS

GANGUE		
C%	B%	C%
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

METACUR

	D%	E%	Air	F

YABEKA

Spl #	Wdth

PAGE 2

DRILL HOLE 44-6
Page 2 of 24

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

ROCK DESCRIPTION

STRUCT.

MINERALS

METALLIC

COMMENTS - 1

to stockworked texture. The stockworked texture is provided by thin (1-3 mm) fractures and veinlets filled by a siliceous stock cleatite. These cleatite fractures may occur abundantly up to 20% and are frequently crosscut by secondary

ED 374 162
COMMENTS 240

decrease to fresh veinlets frequent at the upper and lower contacts. Pyrite (?) & galena common in abundance being 1-3% in overall abundance but local sections can contain 5-6% pyrite. The pyrite occurs both with

Frequently, stretched out in the altitudes. These veins contain variable amounts of calcite - ankerite - fluorite - chlorite and are ribboned or rare occurrences:

Cue, Angle is 50° to CA at 3'28 ft. Elevation.

وَالْمُؤْمِنُونَ الْمُؤْمِنَاتُ وَالْمُؤْمِنُونَ الْمُؤْمِنَاتُ

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

ROCK DESCRIPTION

**STRUCT.
B/S : E**

STRUCT.			
B/S J/F			
B	A1	J	A2
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
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27	27	27	27
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30	30	30	30
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32	32	32	32
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36	36	36	36
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52	52	52	52
53	53	53	53
54	54	54	54
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56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
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61	61	61	61
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63	63	63	63
64	64	64	64
65	65	65	65
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86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

MINERALS

METALLURGICAL

PAGE 2

DRILL HOLE CMY4-6
Page 12 of 24

Page 12 of 24

COMMENTS 1	COMMENTS 2
T1 R10W 1/4 sec 102	378.9 - 391 ft
Massive massive S2-a	massive
MASSIVE MASSIVE FLOW	(378.9 - 660.9) ft.
Colour: medium b. light iron-magnetic, indistinct, calcitic	grey-green, hard,
416 - 436 ft section contains 3-5 cm gray jewels to ammonium at 5 m. in width.	378.9 - 436 ft
The 378.9 - 418 ft. section is weakly to moderately sensitized mostly by fracture-controlle	weakly to moderately sensitized
sensitization, but where fractures coalesce, or	fractures coalesce, or
Stockbrugs are also present in H3 378.9-418	Stockbrugs are also present in H3 378.9-418
ft. interval. Below roughly 436 ft. epidote	ft. interval. Below roughly 436 ft. epidote
becomes white; common occurring as dis-	becomes white; common occurring as dis-
tiny ground grains, then fractures, and larger	tiny ground grains, then fractures, and larger
particles to 3-4 cm in size. The appearance of	particles to 3-4 cm in size. The appearance of
epidote is often obscured by	epidote is often obscured by
ammonium	ammonium

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

ROCK DESCRIPTION

STRUCT.

MINERALS

GANGUE			METALLIC		
C%	B%	C%	D%	E%	Au F
0.1			0.1		0.003
1			1		0.004
2			2		0.005
3			3		0.006
4			4		0.007
5			5		0.008
6			6		0.009
7			7		0.010
8			8		0.011
9			9		0.012
10			10		0.013
11			11		0.014
12			12		0.015
13			13		0.016
14			14		0.017
15			15		0.018
16			16		0.019
17			17		0.020
18			18		0.021
19			19		0.022
20			20		0.023
21			21		0.024
22			22		0.025
23			23		0.026
24			24		0.027
25			25		0.028
26			26		0.029
27			27		0.030
28			28		0.031
29			29		0.032
30			30		0.033
31			31		0.034
32			32		0.035
33			33		0.036
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36			36		0.039
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39			39		0.042
40			40		0.043
41			41		0.044
42			42		0.045
43			43		0.046
44			44		0.047
45			45		0.048
46			46		0.049
47			47		0.050
48			48		0.051
49			49		0.052
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66			66		0.069
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90			90		0.093
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92			92		0.095
93			93		0.096
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97			97		0.100
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103			103		0.106
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108			108		0.111
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118			118		0.121
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164			164		0.167
165			165		0.168
166			166		0.169
167			167		0.170
168			168		0.171
169			169		0.172
170			170		0.173
171			171		0.174
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173			173		0.176
174			174		0.177
175			175		0.178
176			176		0.179
177			177		0.180
178			178		0.181
179			179		0.182
180			180		0.183
181			181		0.184
182			182		0.185
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187			187		0.190
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189			189		0.192
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192			192		0.195
193			193		0.196
194			194		0.197
195			195		0.198
196			196		0.199
197			197		0.200
198			198		0.201
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200			200		0.203
201			201		0.204
202			202		0.205
203			203		0.206
204			204		0.207
205			205		0.208
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207			207		0.210
208			208		0.211
209			209		0.212
210			210		0.213
211			211		0.214
212			212		0.215
213			213		0.216
214			214		0.217
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216			216		0.219
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219			219		0.222
220			220		0.223
221			221		0.224
222			222		0.225
223			223		0.226
224			224		0.227
225			225		0.228
226			226		0.229
227			227		0.230
228			228		0.231
229			229		0.232
230			230		0.233
231			231		0.234
232			232		0.235
233			233		0.236
234			234		0.237
235			235		0.238
236			236		0.239
237			237		0.240
238			238		0.241
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242			242		0.245
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244			244		0.247
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253			253		0.256
254			254		0.257
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261			261		0.264
262			262		0.265
263			263		0.266
264			264		0.267
265			265		0.268
266			266		0.269
267			267		0.270
268			268		0.271
269			269		0.272
270			270		0.273
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272			272		0.275
273			273		0.276
274			274		0.277
275			275		0.278
276			276		0.279
277			277		0.280
278			278		0.281
279			279		0.282
280			280		0.283
281			281		0.284
282			282		0.285
283			283		0.286
284			284		0.287
285			285		0.288
286			286		0.289
287			287		0.290
288			288		0.291
289			289		0.292
290			290	</td	

PAGE 2

Y622

Spl #	Wdth
5208	5.0
5209	5.0
5212	5.0
5213	5.0
5214	5.0
5217	5.0
5218	5.0
5219	5.0

—COMMENT

S-1

COMMENTS T2310

HOLE 194-6
Page 13 of 24

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

DIST	ID	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
B	S	J	F	B	A1	A2	
496.0							
526.0							
546.0							
566.0							
586.0							
606.0							
626.0							
646.0							
666.0							
686.0							
706.0							
726.0							
746.0							
766.0							
786.0							
806.0							
826.0							
846.0							
866.0							
886.0							
906.0							
926.0							
946.0							
966.0							
986.0							
1006.0							
1026.0							
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1066.0							
1086.0							
1106.0							
1126.0							
1146.0							
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1186.0							
1206.0							
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1946.0							
1966.0							
1986.0							
2006.0							
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2086.0							
2106.0							
2126.0							
2146.0							
2166.0							
2186.0							
2206.0							
2226.0							
2246.0							
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2286.0							
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3906.0							
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4506.0							
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4606.0							
4626.0							
4646.0							
4666.0							
4686.0							
4706.0							
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4786.0							
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4826.0							
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4906.0							
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5326.0							
5346.0							
5366.0							
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5406.0							
5426.0							
5446.0							
5466.0							
5486.0							
5506.0							
5526.0							

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

ROCK DESCRIPTION

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
666.0							
670.0							
674.0							
678.0							
681.2							
683.1							
684.0							
691.0							
696.0							
721.0							
726.0							

STRUCT.

MINE
GANGUE

METALLIC

7482

COMMENTS

COMMENTS 1 **COMMENTS 2**

COMMENTS 1	COMMENTS 2
100-102 ft: section of shing. sericitic arenite with 3-5% chl shingers and spots.	105-108 ft: section of shing. sericitic arenite with 3-5% chl shingers and spots.
732.0-744.2 ft: sericitized section containing common shingers and bands of chl.	
weak sk. alt ² with 6-3% chl. fractures (stink), gt-cl. venules at all angles TCA.	
5-7 cm stink-cl. var. @ 693.1 ft contains a large amount of fine-grained, angular, light-colored fragments of chl. This is probably a tectonic zone.	
3-4 cm stink-cl. var. var. seen, shing ser alt ² , have diss by an lateral px + fq no. laminated gt-cl. var. @ 688 ft.	
mixd sc-chl-lgr & lt ² . This is a cl. deposit but not as well developed as above.	
5-7 cm stink-cl. var. seen, shing ser alt ² , have diss by an lateral px + fq no. laminated gt-cl. var. @ 688 ft.	

DRILL HOLE LMIQ4-6

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ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

PAGE 2

DRILL HOLE C194-6
Page 16 of 29

DIST	ID	ROCK DESCRIPTION						STRUCT.				MINERALS						COMMENTS - 1			COMMENTS - 2			
		Com		Grs	Text	Co	Alt	Nam	B/S	J/F	B	A1	J	A2	C%	B%	C%	D%	E%	Fw	F%	Spl #	Wdth	T
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
711.0																								
716.0																								
721.0																								
726.0																								
732.0																								
736.0																								
741.0																								
746.0																								
751.0																								
796.0																								
845.0																								
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**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

ROCK DESCRIPTION

STRUCT

STRUCT.

MINERALS

MINE
GANGUE

METALLIC

ALS
METALLIC

PAGE 2

DRILL HOLE CW94-6
Page 17 of 24

COMMENTS—

COMMENTS 210

as dark grains & patches & (shingles) while the
scr-cll is more or less pervasive. 1-3% stronger
bracket-like is observed. 2750 ft - 881 ft. Normal
crustose dike 2740 ft - 2750 ft. Lichen contact
is quite sharp and easily discernible. 13

(-3) strong magnetite, 17a d3s wt% Al, mixed Fe-Al-Fe₃O₄ with a little Ca.

Mixed. alt² pop-tan-ser-ortho-chl.

mixed chl-sier alt

MAFIC FRAGMENTAL (900.4 - 975.0 FT).
Colour medium green-green, weakly vesicular,
moderately to non-calcareous, quite hard.

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

STRUCT.

A. E. S. A.

COMMENTS

white sample.
White Rock Sample
white sample.

amoy, abundant (20-75%) patches of
segregated grains of yellow-green plagioclase
varyst set in a massive, extremely
fine-grained base. Some short sections show
elephantic fragments. Native (eg 99 ft).

griddle with iron 1 less than 5m - 1m or
1. ENIDITE alteratio. is common, occurring
mostly discrete than complete on the
edges of zones in which more felsic-rich
lts. There may also be some dis. for
example, coarse K-feldspar
and/or quartz.

DRILL HOLE 44-6

Page 18 of 24

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

176.6
1025.6
106.6

STRUCT.
B/S J/F

MINERALS

METALLURGICAL

PAGE 2

DRILL HOLE CM 94-6
Page 19 of 24

Page 19 of 24

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

1703.5
1152.9
56.6

PAGE 2

DRILL HOLE CM94-6
Page 20 of 24

		ROCK DESCRIPTION					
DIST	ID	Com	Gra	Text	Co	Alt	Nam
1126.0		1	2	3	4	5	6
1126.1							
1126.2							
1126.3							
1126.4							
1126.5							
1126.6							
1126.7							
1126.8							
1126.9							
1127.0							
1127.1							
1127.2							
1127.3							
1127.4							
1127.5							
1127.6							
1127.7							
1127.8							
1127.9							
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1129.3							
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1129.7							
1129.8							
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1133.9							
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1134.1							
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1138.1							
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1142.0							
1142.1							
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1142.7							
1142.8							
1142.9							
1143.0							
1143.1							
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1145.9							
1146.0							
1146.1							
1146.2							
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1146.8							
1146.9							
1147.0							
1147.1							
1147.2							
1147.3							
1147.4							
1147.5							
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1147.8							
1147.9							
1148.0							
1148.1							
1148.2							
1148.3							
1148.4							
1148.5							
1148.6							
1148.7							
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1148.9							
1149.0							
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1149.3							
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1149.7							
1149.8							
1149.9							
1150.0							
1150.1							
1150.2							
1150.3							
1150.4							
1150.5							
1150.6							
1150.7							
1150.8							
1150.9							
1151.0							

ROYAL OAK MINES LTD
EXPLORATION DEPARTMENT

STRUCT.

GAN

MINERALS

PAGE 2

DRILL HOLE 1024-6
Page 21 of 29

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

STRUCT.

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
1770.8		B	M	FIMG	60	60	244
1723.0		M					245
1726.0		M					245
1731.0		M				CPI	245
1736.0		M				CPI	245
1741.0		M				CPI	245
1741.0		M				CPI	245
1757.0							
1757.8						CPI	245
1754.8						(P)	245
1758.8						CPI	245
1763.8						(P)	245
1766.0						CPI	245
1771.3							245
1777.3						CPI	245

MINERALS

METALLIKO

0.004 / 10

PAGE 2

DRILL HOLE Can't do

Page 22 of 24

COMMENTS.

COMMENTS 2210

26

DRILL HOLE 1014-6
Page 23 of 24

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ROYAL OAK MINES, INC.
EXPLORATION DEPARTMENT

PAGE 2

DRILL HOLE NO: LM 94-6
Resampling
PAGE / OF /

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

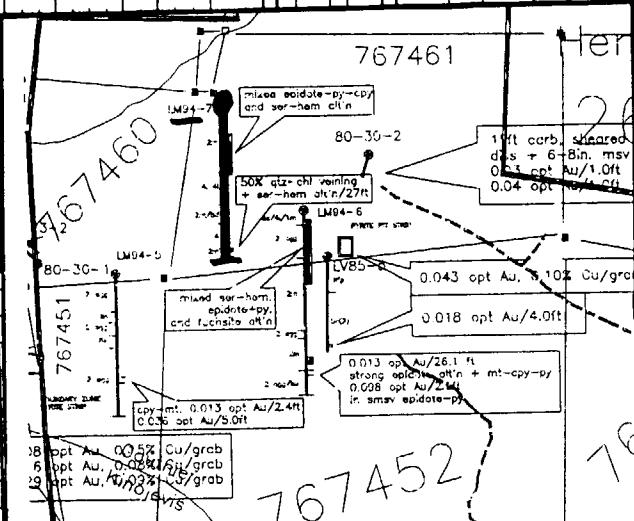
PROJECT : Lac Mc V. 414 — — Logged By : R. Pressacco
core size: B8 — —

Start: Oct 24, 1994
PAGE 1 End: Oct 29, 1994

Date : ____ / ____ / 19 ____
Page 1 of 4

DRILL HOLE	NORTHING	EASTING	ELEVATION	LENGTH	OBI	OBE	INC	LEASE CLAIM
LM94-7	34100N	36100W	Surface	636 FT				767461

Cave storage, Blawithouse Caves



COMMENTS 1	COMMENTS 2
NW corner to 130 ft., NW corner to 212 ft.	
MASSIVE, MASSIC FLOW (212 - 396 ft.). Color, variable brown, grey to black. grey-green, very hard, moderately vesicular, non-calcareous, massive, worn fine-grained texture. Tree stumps visible in top few in. and by local sections of up to 3-4 ft. display mixed, porphyritic and fragrant textures. Elsewhere medium grained, planar-line-porphyritic, intermediate, dikes are visible at 291.4 257.7 ft. and 286.3 - 393.7 ft. Intrusive contacts are as follows: 55° TIA (291.4 ft.) (55° TIA (257. ft.), 50° (286.3 ft.), and 30° TIA (303.7 ft.).	
212 - 220 ft.: Zone of epidote alteration containing variable amounts of associated pyroxene. The overall abundance of epidote is estimated at 5-7%, with local sections of up to 1 ft. being almost massive epidote - (several) alteration zones at the epidote occurs as thin, variable, stringers and irregular, elongated patches, on the wider, at 5mm - 1cm. in size. Pyroxene is commonly associated with these, epidote stringers and patches, occurring mostly as tiny, sharp, and pointed, granular fibers directly, associating with the pyroxene or in the glass, partially associated.	

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

ROCK DESCRIPTION

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
216.0		M	Uf ₃	msg.	6Y	GP1	2m
221.0						GP1	2m
226.0						GP1	2m
231.0						GP1	2m
236.0						GP1	2m
241.4						GP1	2m
246.0						—	8d
251.0						—	8d
257.0						—	8d
267.9						GP1	8d
268.0						GP1	2m
266.0						GP1	2m

STRUCT.

STRUCT.

MINE

MINE

METALLIC

ALS

Spl # Wdth

COMMENTS

The overall porphyry texture is indicated at 263.5-264.5 ft. by 1% or less feldspar intertwinement to form a fine-grained intergrowths of plagioclase and K-feldspar. The feldspar intergrowths are clear and thin (≤ 1 mm). The intergrowths are associated with 1% sectoral quartz. Rare amounts of massive, glassy quartz can be observed with some plagioclase intergrowths, but these quartz concentrations rarely exceed 1-2 cm in size. Rare chalcopyrite is observed in a few veins at 273.0 ft.

COMMENTS 2

1966-07-23 10:00 AM
Saw many white-tailed kites.

strong permissive t. stronger epistatic. Transcrip in gen
pathway. If strong, less t. of epistatic alt =:
weak stage facilit. Verifiable features?

Change patch at 6x after 10 days. May get new W.
Reassess patch after 1 week. If OK, close.

Intermediate click
intermediate click
weak partly epidemic alternation

Actual	Predicted	Actual	Predicted
heat transfer	heat transfer	lift off	lift off

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

ROCK DESCRIPTION

STRUCT.

MINERALS

PAGE 2

DRILL HOLE 60-24
Page 2 of 14

Spl #	Wdth
5353	510
5354	510
5355	510
5356	510
5357	510
5358	510
5359	510
5360	510
5371	2.3
5372	510
5373	514
5374	510
5385	510
5366	34.2

COMMENTS 1

COMMENTS 2

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

PAGE 2

DRILL HOLE can 94-7
Page 4 of 14

DIST	Id	ROCK DESCRIPTION							
		STRUCT.							
		B/S	J/F	Com	Grs	Text	Co	Alt	Nam
		B	A1	J	A2				
364.5		M	Uf	MSU	RS	HEM	ALT		
368.2									
373.2		M	Uf	MSU	BY	GAL	ZM		
377.9									
381.3					C4	ZM			
386.0					-	8d			
					CAL	ZM			

STRUCT.

B/S J/F

B A1 J A2

MINERALS

GANGUE

C% B% C%

METALLIC

D% E% Au F%

Spl # Wdth T

COMMENTS 1			COMMENTS 2		
Selected by hand pick			selected by hand pick		
translucence assembly			translucence assembly		
(+1C3) 100% quartz			(+1C3) 100% quartz		
of previous hole			of previous hole		
not 100% quartz			not 100% quartz		
+1.3% abradite and cassiterite			+1.3% abradite and cassiterite		
mineral veins and			mineral veins and		
veins. Minor ribbons			veins. Minor ribbons		
are observed with			min. vein size being 1-2cm. Possible abundance		
min. vein size being			of cassiterite occurring with as very fine granular		
1-2cm			disseminations and as occasional coarse pitch		
SL 1/4" CRYSTALS			SL 1/4" CRYSTALS		
Core break 100% quartz			Core break 100% quartz		
Core break 100% quartz			Core break 100% quartz		
368.3 - 326.0 ft; TRANSITIONAL ZONE OF			368.3 - 326.0 ft; TRANSITIONAL ZONE OF		
ABUNDANT QUARTZ			ABUNDANT QUARTZ		
Overall, veinlet abundance is estimated at a			Overall, veinlet abundance is estimated at a		
grain to 10% accuracy &			grain to 10% accuracy &		
with few small particles, up to 1 cm. to 1.4. Some			with few small particles, up to 1 cm. to 1.4. Some		
of the veinlets take on a pinkish coloration			of the veinlets take on a pinkish coloration		
suggestive of hematite. It is			suggestive of hematite. It is		
predominantly magnetite			predominantly magnetite		
Hematite + 1% U, 1.3% pitchblende			Hematite + 1% U, 1.3% pitchblende		
1.5% vermiculite ribbon veins to 2cm.			1.5% vermiculite ribbon veins to 2cm.		
0.5-1.0% pyrophyllite to 2-3mm.			0.5-1.0% pyrophyllite to 2-3mm.		
Chalcocite + pyrite			Chalcocite + pyrite		
pyrite + pyrrhotite			pyrite + pyrrhotite		
Chalcocite + pyrite, 6-3mm.			Chalcocite + pyrite, 6-3mm.		

PAGE 2

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

STRUCT.

MINE

METALLIC

ALS METALLIC			
D%	E%	An	F%
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
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43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
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52	52	52	52
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54	54	54	54
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56	56	56	56
57	57	57	57
58	58	58	58
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90	90	90	90
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92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

PAGE 2

DRILL HOLE 1147
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**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

ROCK DESCRIPTION

STRUCT.

MINERALS

METALLIC

PAGE 2

DRILL HOLE 1004-A
Page 6 of 14

MAFIC PURPHIRITIC MAFIC FLOW (?) (475.6 - 510.6 ft.). Possible intermediate stage.
Color: variable from medium to dark grey-green to red brown, depending on a ferrous non-magnetic iron-sulfide, very hard massive pyroxene-granular pyroxite texture, interbedded with sulfide veins. Moderate thickness. Thickness varies with lithology. Moderate thickness. Thickness varies with lithology. Isolated in the 475.6 - 495.6 ft. interval but strong pyroxite alternation (green/brown) is noted in the 494 - 510.6 ft. interval. The intervening band may be more or less fresh, but contains typical thin pyroxite stringers. Gänge often abundant in the order of 3-5 plan occurring, mostly as larger veins but few oriented at an angle of 35° to 45°. Width of a few mm to 1 cm - colorless hard silicate veins (CHALCINITE?) similar to that noted in the 475.6 ft. interval throughout Mafic Mafic. These do not occur later than the 475.6 ft. level (223m) but occur

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

ROCK DESCRIPTION

STRUCT.

0.005 / 280

DRILL HOLE 1-194
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ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

PAGE 2

DRILL HOLE 10194-2

Page 3 of 14

Spl #	Wdth
5592	4.4
5593	4.4
5594	4.4
5595	4.4
5596	5.9
5597	4.1
5598	5.0
5599	3.5
5600	2.1

See Supplemental Sample
at end of log

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

DIST	Id	ROCK DESCRIPTION					
Com	Grs	Text	Co	Alt	Nam		

STRUCT.

MINE R

METALL

PAGE 2

DRILL HOLE 194-7
Page 9 of 14

COMMENTS 1	COMMENTS 2
Abundant feldspar intergrowths, rock size 1 ft, distinct intergrowths at least 1 ft	
patchy, strong hem. alter.	
patchy-banded texture Sa-ala	(graphitic?) garnet
concentric bands, Domes W. N. Rock sample	chalcocite
Composite sample containing bands of strongly magnetized patchy pink. Low magnetite dist.	
PORPHYRYTIC MAGMATIC FLOW (767.3 - 845.7 ft)	
Color dark green or brownish very bare thin caliche massive for a very fine porphyritic texture. The plagioclase are eliminated by 5-7% fine gravel matrix not 1-3% rounded plagioclase plagioclase are also present 1-3% opalite strings, thin beds locally bimetallic from bimetallic. Possible Intermediate dike	
corrosion sample	
Composite sample	

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

ROCK DESCRIPTION

STRUCT

B/S J/F
B A1 J A2

MINE
GANGUE

WES METALLI

PAGE 2

DRILL HOLE 10194-7

Page 5 of 14

Spl #	Wdth	T	COMMENTS 1	COMMENTS 2
			MAFIC FRAGILE TAC 745-1058.0 FT Color: brownish tan, mottled with reddish brown, black, and white. Contains 30% pyroxene, 20% olivine, 10% plagioclase, 10% clinopyroxene, 10% orthopyroxene, 5% spinel, 5% magnetite, and 5% ilmenite. Contains 10% spherulitic glass. Trace: Mn, glass vesicles, Fe-titanite, ilmenite at 857.0-857.5 ft and 857.5-858.3 ft. Lower and upper contact is indistinct.	
5611	13.1		Composite sample	
			INTERMEDIATE DIA 858.0-860.0 FT Color: light grayish tan, mottled with reddish brown, black, and white. Contains 30% pyroxene, 20% olivine, 10% plagioclase, 10% clinopyroxene, 10% orthopyroxene, 5% spinel, 5% magnetite, and 5% ilmenite. Very fine-grained to very weakly porphyritic texture. 1-3% humic siliceous veins, occasionally reach 5 mm. in size and are at all angles. Minor pyroxene phenocrysts less frequent. Length of clasts up to 10 cm. at upper contact.	
5612	31.6		composite sample	
			FELSIC Flow / Plut. BRC 647 (860.4-1061.0 FT) Color: medium yellow-green, weathered, non-magnetic non-calcareous. Massive and subhorizontal, no porphyritic structure. Olivine, clinopyroxene, orthopyroxene, and spinel. Some sections contain distinct, irregularly shaped, elongate, and angular olivine phenocrysts. Some sections contain greater than 10% olivine phenocrysts and still other sections contain abundant fine plagioclase phenocrysts in an spherulitic glassy matrix. Trace: Mn, glass vesicles, black	

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

ROCK DESCRIPTION

DIST	Id	ROCK DESCRIPTION					
		Com	Grs	Text	Co	Alt	Nam
945.3		M	Uf	Mixed	Y6	SGR	4
946.0							4
946.0							4
1046.0							4
10451.4							4
10452.0						SGR	4
10461.0						SGR	4

STRUCT.

STRUCT.

**MINE
GANGUE**

GANGUE

METALLIS

METRAZOL

PAGE 2

DRILL HOLE 10194-7

Page 11 of 14

SPL #	Wdth	T	COMMENTS	
			1	2
SG13	5.0		greenish gray fine-grained very fine sand with some silt - with some calcareous lenses - Pleistocene - 232 ft / sec	
			composite sample	
SG14	0.7		white dark gray	
SG15	5.0		composite sample	
SG16	5.0		greenish gray fine-grained silty sand	
SG17	5.0		light gray	
SG18	5.0		yellowish brown to light brown mostly desity pyrite, some silt + pyrite, weak pervasive sericitic alteration	
SG19	5.0		3-5% silt-clay mineral stages in sequence per Hen & (1971), Desf f, pyrite moderate pervasive, slight increasing in strength bands from bottom	
			Zone of quartz veins (10610 - 10880 ft)	
			Color variable from white to pink to light yellow-green, hardness variable, fine - soft (sericitic-rich sections) to very hard (quartz veins), angular to subangular, non-sorted in small to medium. Textures are quite variable, from porphyroblastic to massive to well-foliated. The angular blocks are always very big (several feet). The angular blocks consist of a mix of hematite - sericitic where fabric relationships observed at 1082 ft suggests the hematite is primary and is later than the	

ROYAL OAK MINES INC
EXPLORATION DEPARTMENT

ROCK DESCRIPTION

STRUCT.

MINERALS

METALLIC

PAGE 2

DRILL HOLE 6-1947
Page 12 of 14

COMMENTS 1	COMMENTS 2
thin bedded dolomite interbedded with calcareous dolomite thin bedded dolomite thin bedded dolomite at all angles TIA and width. Quartz very abundant at 50% area, occurring as a series of short sections/lens of quartz separated by alternating sections of dolomite. Quartz lenses are 1-2 cm thick and longer lenses up to 1 m long. These lenses are oriented roughly parallel to TIA.	thin bedded dolomite B. on the order of 1-2 cm thick and 1-2 m long. These lenses are parallel to TIA.
longer lenses of quartz, 1-2 m wide, occur at 20-30° to TIA.	longer lenses occur at 20-30° to TIA.
almost parallel TIA. Indeed we see at 1086 ft. can be seen to be almost parallel to CA. These quartz lenses contain a mixture of aragonite/calcite (Park '77 cal.) or no. carbonate species and common dark grey dolomite. It occurs as tiny platlets, thin streaks, or larger patches 1-5-7 cm in length (CA) (GEOST 1061 ft) at 1086 ft. However, it is observed in some of the ribbed veins. Rare calcite veins at the general lens of quartz, red brown to pinkish material showing (like calcite) is present at 1082 ft (GEOST 76?).	large patches 1-5-7 cm in length (CA) (GEOST 1061 ft) Rare calcite veins at the general lens of quartz, red brown to pinkish material showing (like calcite) is present at 1082 ft (GEOST 76?).
Cave Angle: 10° to CA at Cave Angle: 90° to CA at Cave Angle: 20° to CA at Cave Angle: 30° to CA at	1061.0 ft. VEIN 1071.0 ft. FOLIATION 1085.0 ft. VEIN
limestone with several massive qm with coarse, finely crystalline dolomites	

**ROYAL OAK MINES INC
EXPLORATION DEPARTMENT**

PAGE 2

DRILL HOLE 1014-3
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ROYAL OAK MINES INC

PAGE 2

DRILL HOLE 10139
Page 14 of 14

DIST	Id	ROCK DESCRIPTION					
		Com	Gra	Text	Co	Alt	Nam
1101.0					SER	7M	
1106.4						—	7-1
1135.5							7-1
1136.0							7-1
1136.0							7-1
510.6							
516.0						SER	4
521.4						SER	4
526.0						SER	4
531.4						SER	4
536.0						CTR	4
541.0						CTR	4
571.0						SER	4

Spl #	Wdth	T
5630	5.0.	
5631	5.0.	
5632	29.5	
5633	0.5	
5634		
5635	5.4.	
5636	5.4.	
5637	5.4	
5638	5.0	
5639	5.0	
5640	5.0	
5641	5.0.	

DRILL HOLE NO: LM94-7

PAGE 1 OF 1

DIST	ID	ROCK DESCRIPTION							STRUCTURE B/S	GANGUE	METALLIC	SAMPLE #	WIDTH	T	ppb AU soil grams	COMMENTS		
		Com	Grs	Text	Co	Alt	Name 1	Name 2										
714																		
717	M.	F.	PIL	GY	—	3p.						46	AX43888	3.0	c	300		
719.8	I.	FM	SHD	I.	BLD				F. 50	10	1.	23	889	2.8	1	2020	717-719.8 strongly variolitic approx 750'.	
722.4		PIL										1	890	2.6		7	w. dk chl matrix.	
723.4		VAR	OR	FSP			V. 65		10	20		8	891	1.0		4	717-719.8 strongly fold'd in 2 directions	
725.1		"	GY	—								6	892	1.7		4	(folded shear?)	
726.5					MC												722.4-723.4 strongly K-spar alt'd	
730.2	M.	FM	VAR	GG	—	3p.				2		138	893	3.7	c	31	halo around 4" cal-gt brx vein	
731.2					BLD							5.5	123	894	1.0	1	110	730.2-730.4 patch of semi-msv mag
734.												2.1	120	895	2.8		53	w. 5% f-mg discs cpx minor py
738												2.1	117	896	4.0		57	
741.5				GY								5.1	118	897	3.5		39	741.9 ½" mag stgr v. 5% p-cg py
742.5					BLD							1.1	316	898	1.0		31	min po, cpy. Stgr at 60°
745.					BLD							66	899	2.5		46		
756														NS			760-767.3 wk gt-calsgr zone at	
760	N.	F.	PIL	GG	EPID	3p.						1	168	900	4.0	c	34	40-45° 1% fgt diss py, min fract
764.7							V. 4.0		1.2	2.1		29	901	4.7	1	170	filling cpy. Mod epid'd.	
767.3												1	5.1	126	902	2.6	41	
770.3		FM	PUR	GY	—	2m						37	903	3.0		.8		
752.5																		
756	M.	FM	PIL	GG	EPID.	7p.				3	244	AX439.04	3.5	c	150			726.5-767.3 136 ppb Cu/40.8'

Declaration of Assessment Work
Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use)
W9780.01193
Assessment Files Research Imaging

Personal information collected on this form under the Mining Act, the information is a public record. Questions about this collection should be directed to the Ministry of Northern Development and Mines, 933 Ramsey Lake Road, Sudbury, Ontario P3E 2C6.



32D04NE2004 2 18032 MCVITIE

Act. Under section 8 of the
Mining Act, the information is a public record.
Questions about this collection should be directed to the Ministry of Northern Development and Mines, 933 Ramsey Lake Road, Sudbury, Ontario P3E 2C6.

900

Instructions: - For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

2.18032

1. Recorded holder(s) (Attach a list if necessary)

Name	Client Number
Royal Oak Mines Inc.	136226
Address	Telephone Number
P.O. Box 2010	(705) 360-1141
Timmins, Ontario P4N 7X7	Fax Number
Name	Client Number
Address	Telephone Number
	Fax Number

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

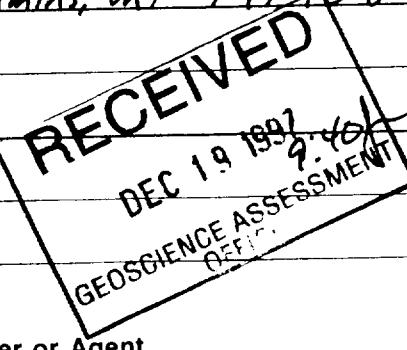
Geotechnical: prospecting, surveys, assays and work under section 18 (regs) Physical: drilling, stripping, trenching and associated assays Rehabilitation

Work Type	Office Use
Geology survey Assays	Commodity
Dates Work Performed From 01 09 96 To 30 09 96 ✓	Total \$ Value of Work Claimed 3,339
Global Positioning System Data (if available)	NTS Reference
Township/Area McVittie Twp LL.	Mining Division Karder Lake
M or G-Plan Number G-3163	Resident Geologist District Kirkland Lake

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name Rodney Barber	Telephone Number (705) 268-4283
Address 119 Lois Crescent, Timmins, Ont P4P 1G6	Fax Number
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number



4. Certification by Recorded Holder or Agent

I, Rodney Barber, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent

R. Barber

Date

Dec 1/97

Agent's Address

119 Lois Crescent Timmins Ont

Telephone Number

(705) 265-4283

Fax Number

Deemed March 19 1998

5. **Work to be recorded and distributed.** Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date.
eg TB 7827	16 ha	\$26,825	N/A	\$24,000	\$2,825
eg 1234567	12	0	\$24,000	0	0
eg 1234568	2	\$ 8,892	\$ 4,000	0	\$4,892
1 L 1137131	1	\$ 1557 ✓	0	0	\$ 1557
2 L 767439	1	\$ 594 ✓	0	0	\$ 594
3 L 767460	1	\$ 594 ✓	0	0	\$ 594
4 L 767452	1	\$ 594 ✓	0	0	\$ 594
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Column Totals		\$ 3339			\$ 3339

I, Rodney Barber (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing

R Barber

Date

Dec 1 / 97

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp

Deemed Approved Date	Date Notification Sent
Date Approved	Total Value of Credit Approved
Approved for Recording by Mining Recorder (Signature)	



Ministry of
Northern Development
and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use)

W9980. D1193

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of Work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilo-metres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Assays	40 samples	\$18/sample	\$705
Salaries (Geology)	5 days	\$332/day	\$1658

Associated Costs (e.g. supplies, mobilization and demobilization).

Office supplies/photocopying		\$ 343
Computer services		\$ 493

Transportation Costs

RECEIVED

DEC 19 1987
7-4

GEOSCIENCE ASSESSMENT
OFFICE

Food and Lodging Costs

Meals

Hotel

Total Value of Assessment Work

\$3339

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
 2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK \times 0.50 = Total \$ value of worked claimed.

Note:

- Note:**

 - Work older than 5 years is not eligible for credit.
 - A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

- I, Rodney Barber, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Project Geologist. I am authorized (recorded holder, agent, or state company position with signing authority) to make this certification.

Signature	Date
	Dec 1/97

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines



March 30, 1998

ROYAL OAK MINES INC.
PO Bag 2010
Timmins, Ontario
P4N 7X7 Canada.

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (705) 670-5881

Dear Sir or Madam:

Submission Number: 2.18032

Status

Subject: Transaction Number(s): W9780.01193 Approval After Notice

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. **WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.**

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Lucille Jerome by e-mail at jerome12@epo.gov.on.ca or by telephone at (705) 670-5858.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Blair Kite".

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Work Report Assessment Results

Submission Number: 2.18032

Date Correspondence Sent: March 30, 1998

Assessor: Lucille Jerome

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9780.01193	1137131	MCVITTIE	Approval After Notice	March 30, 1998

Section:

17 Assays ASSAY

12 Geological GEOL

The revisions outlined in the Notice dated March 12, 1998, have been corrected.

Assessment work credit has been redistributed, as outlined on the attached Distribution of Assessment Work Credit sheet, to better reflect the location of the work.

Correspondence to:

Resident Geologist
Kirkland Lake, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

Rodney Barber
TIMMINS, ONTARIO, CANADA

ROYAL OAK MINES INC.
Timmins, Ontario

Distribution of Assessment Work Credit

The following credit distribution reflects the value of assessment work performed on the mining land(s).

Date: March 30, 1998

Submission Number: 2.18032

Transaction Number: W9780.01193

<u>Claim Number</u>	<u>Value Of Work Performed</u>
1137131	390.00
1137130	130.00
767464	777.00
767463	260.00
767439	594.00
767460	594.00
767452	594.00
<hr/> Total: \$	<hr/> 3,339.00
