GM 50663

REPORT ON THE 1990 (FALL) DIAMOND DRILLING PROGRA, FOURAX II PROPERTY

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REPORT ON THE

1990 (FALL) DIAMOND DRILL PROGRAM

ON THE

FOURAX II PROPERTY

MALARTIC, QUEBEC

FOR

MINROC MANAGEMENT LIMITED

ON BEHALF OF

BAY RESOURCES & SERVICES INC

TORONTO, ONTARIO

DECEMBER, 1990

N.O. WILLOUGHBY, BSc. (HONS.)

NR&J RESOURCE ASSOCIATES LIMITED

SUMMARY

Diamond drilling of the Malartic area, Quebec, Fourax II Proprerty of Bay Resources & Services Inc. in the fall of 1990 concentrated on in-filling of areas of subeconomic to economic gold intersections reported from the previous 1988-1990 program which tested the Fourax Shear Zone, an element of the regional gold-bearing Cadillac Tectonic Zone.

Significant intersections are returned from the three holes (9082, 9083, 9086) which tested the **Areas 2a and 2b** of gold in iron formation/laminated sediment. Holes 9084, 9085 and 9086 added dimension to the gold-bearing Feldspar Porphyry Horizon, **Area 1**. Few, low and erratic gold values are returned from sediment hosted gold **Areas 3 and 4**.

Two horizons of gold mineralization in **Areas 2a and 2b** are indicated and are interpreted as lithostructural units which comprise the limbs of a vertically dipping anticlinal/isoclinal fold structure. Previous hole 9079 apparently drilled through the area of the fold's closure. An assay of 0.379 opt gold over 6.1 feet is reported in this vicinity. Vertical extent of **Area 2b** mineralization is indicated to be 250 feet. At **Area 2a**, located 450 feet to the west, hole 9086 intersected 7.5 feet of 0.328 opt gold and correlates well with 0.444 opt gold over 8.6 feet in hole 8974 and 0.230 opt gold over 3.8 feet in hole 9081. The vertical height of mineralization is on the order of 1,000 feet.

As the 450-foot region between **Areas 2a and 2b** is poorly tested to date, this region is assigned high priority for further drilling.

The recent drilling in the region of **Area 1** continued to return subeconomic to economic gold intersections. For example hole 9084 returned 0.263 opt gold over 14.8 feet and hole 9085 intersected 0.217 opt gold over 11.5 feet. These results, combined with previous results, indicate a potentially economic gold zone in an area measuring 640 feet long by 2 to 17.5 feet wide with a vertical extent of some 200 feet.

A two-phase evaluation and exploration program is recommended to outline areas of economic mineralization by construction of detailed drill sections and level plans and by 20,000 feet of definition diamond drilling. Estimated cost for this work is $415,000.

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1.0 PREAMBLE

A program of 3,929 feet of diamond drilling (6 holes) was completed on the Fourax II Property of Bay Resources & Services Inc. during the fall of 1990 as a follow-up to the previous 1989-1990 drilling of the auriferous Fourax Shear Zone which adjoins, to the north, the trace of the Cadillac-Bouzan Break.

Specific targets, based on drill and assay results from the 1989-1990 exploratory program, included Areas 2a and 2b of gold-bearing altered, brecciated and veined pyritic sediments/iron formation in the region of grid location L10+00E to L16+50E as well as Area 1, the auriferous quartz-veined Feldspar Porphyry Horizon in the vicinity of grid location L6+00E to L11+00E (Map 1). These regions/horizons are demonstrated to contain some probable "ore-grade" gold intercepts and exhibit some relative on-strike continuity.

The drill program was directed by Minroc Management Limited of Toronto.

This report, which details diamond drill results of the fall program, serves as an appropriate appendium to the March 1990 report entitled "Report on the 1989-1990 (Winter) Diamond Drill Program on the Fourax II Property, Malartic, Quebec for Minroc Management Limited on behalf of Bay Resources & Services Inc." by N.O,.Willoughby. The reader is referred to this report for additional details and pertaining drill sections, in particular, updated Map 1, "Fourax Shear Zone Diamond Drill

Surface (Horizontal) Projection Map and Interpretation (1"=40)".

Regional geological setting and theoretical discussions are excerpted from the March 1990 report.

Recommendations as to the handling of all of the drill data and additional exploration of the property are forwarded.

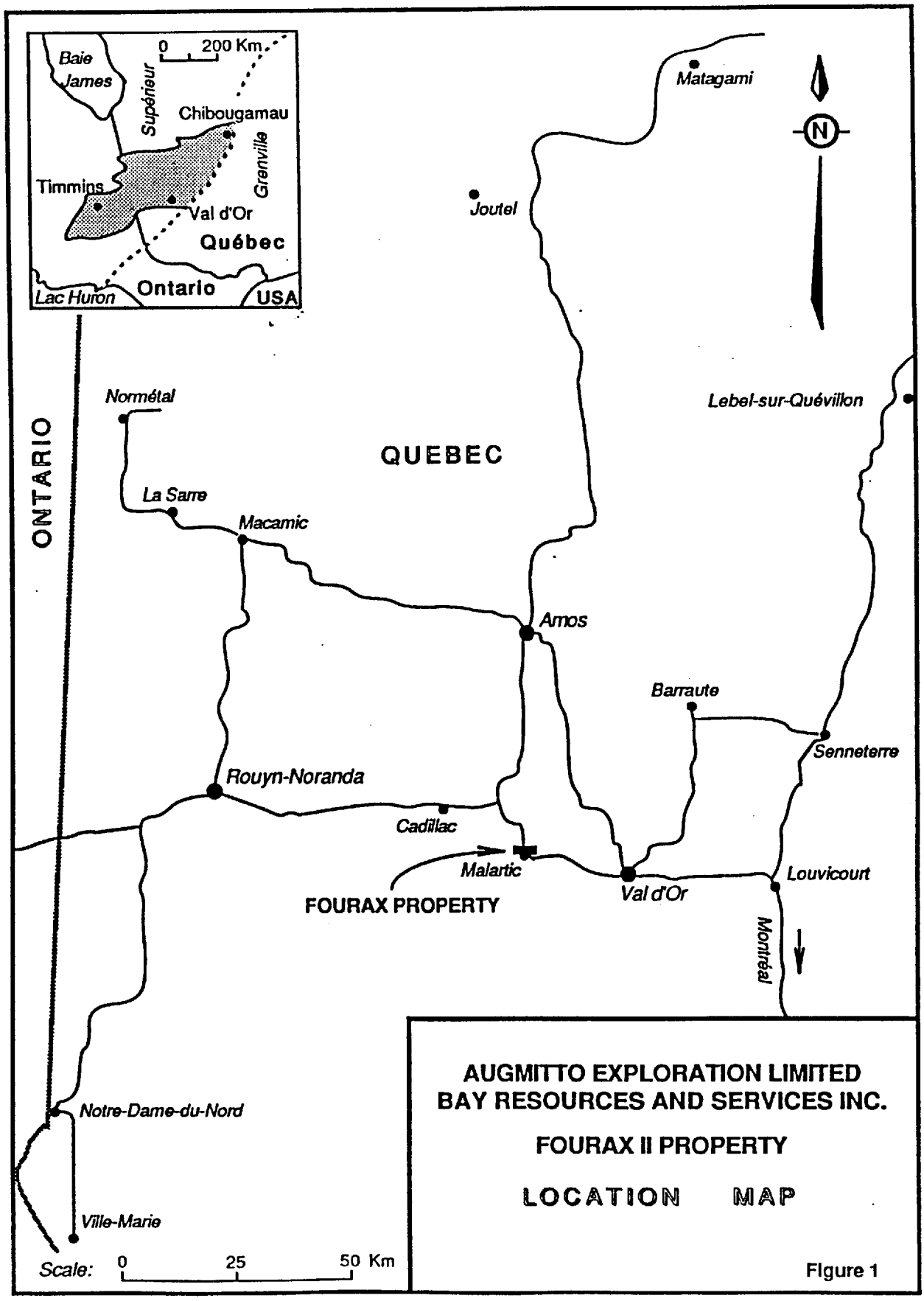
2.0 LOCATION, ACCESS, INFRASTRUCTURE

The twelve (12) claims which comprise the Fourax Property are situated at Malartic, Quebec and in fact encompass the northern half of the town. Highway # 117 passes through the center of the claim block and connects Malartic to the mining town of Val d'Or located approximately 25 Km to the east (figure 1).

The claims are situated at the north-central part of Fourniere Township adjoining Malartic Township to the north. Best access is provided by the east-west township line road which connects to Hwy # 117 at the north end of Malartic at the Filon d'Or Motel. The CNR railway crosses the southern portion of the property. A hydroelectric transmission line runs along the western town limit and north-south through the west part of the property.

Figure 2 shows the disposition of the claims relative to the aforementionned elements. The drill program was carried out on Block 26, Claims 335177-4 and 335178-4.

Malartic, with a population of approximately 6,000, provides manpower and some support services (hardware stores, garages, grocery stores, restaurant and motels) to the mining and exploration industry. Specialized services such as diamond drill companies, mine development companies and assorted exploration


0 200 Km
Baie James
Supérieur
Chibougamau
Grenville
Timmins
Val d'Or
Québec
Lac Huron
Ontario
USA
Matagami
N
Joutel
Normétal
Lebel-sur-Quévillon
QUEBEC
ONTARIO
La Sarre
Macamic
Amos
Barraute
Senneterre
Rouyn-Noranda
Cadillac
Malartic
Louvicourt
Val d'Or
FOURAX PROPERTY
Montréal
Notre-Dame-du-Nord
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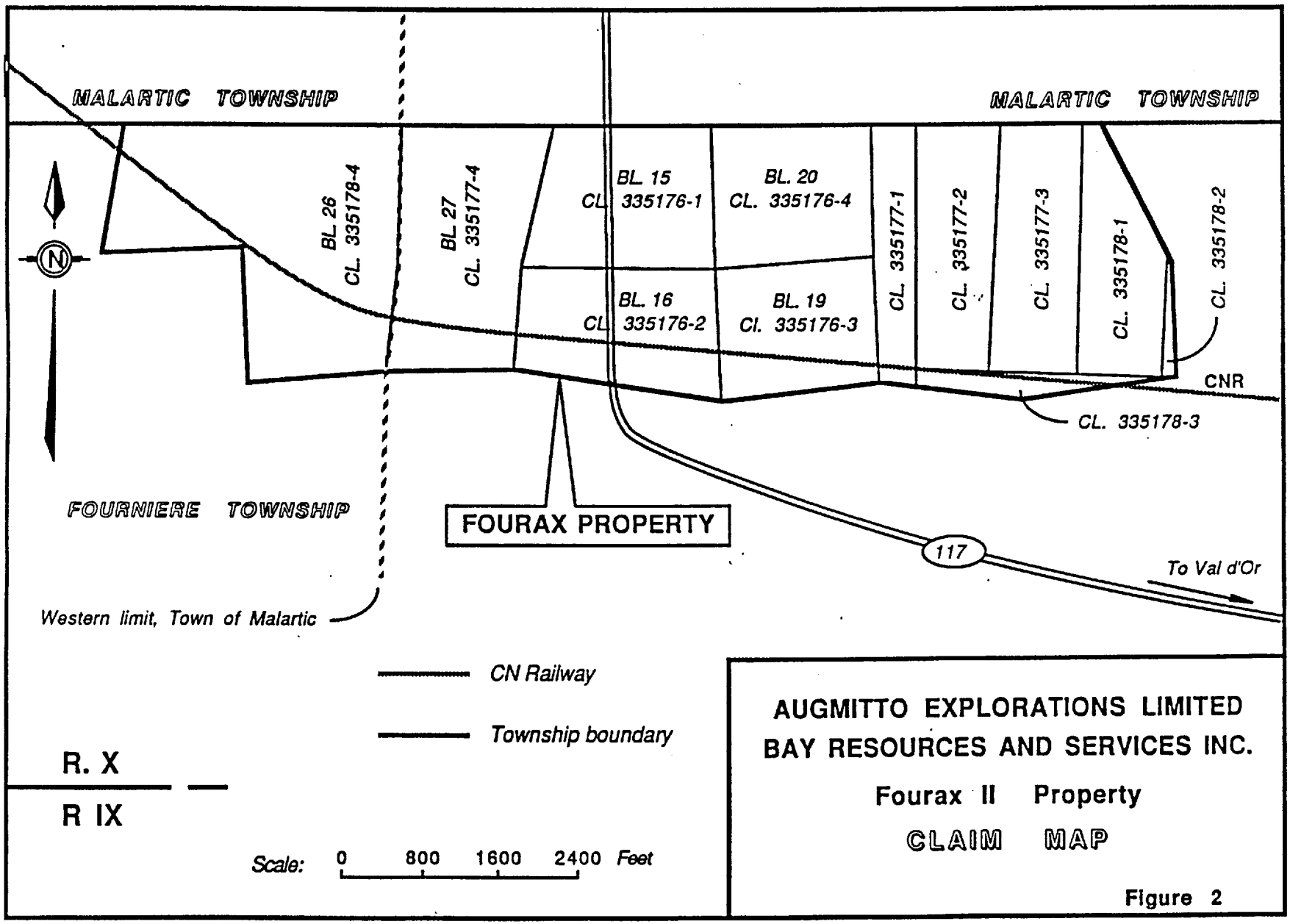
Scale: 0 25 50 Km
AUGMITTO EXPLORATION LIMITED
BAY RESOURCES AND SERVICES INC.
FOURAX II PROPERTY
LOCATION MAP
Figure 1


MALARTIC TOWNSHIP
MALARTIC TOWNSHIP
BL. 26
CL. 335178-4
BL. 27
CL. 335177-4
BL. 15
CL. 335176-1
BL. 20
CL. 335176-4
BL. 16
CL. 335176-2
BL. 19
Cl. 335176-3
CL. 335177-1
CL. 335177-2
CL. 335177-3
CL. 335178-1
CL. 335178-2
CNR
CL. 335178-3
FOURNIERE TOWNSHIP
FOURAX PROPERTY
117
To Val d'Or
Western limit, Town of Malartic
CN Railway
Township boundary
R. X
R IX
Scale: 0 800 1600 2400 Feet
AUGMITTO EXPLORATIONS LIMITED
BAY RESOURCES AND SERVICES INC.
Fourax II Property
CLAIM MAP
Figure 2

contract outfits are readily available at Val d'Or, a 20 minute drive from Malartic.

3.0 PREVIOUS WORK

The majority of the previous work carried out on the property was concentrated on the West Porphyry Zone located just to the south of the 1989-1990 program area and the Townsite Diorite Zone to the east. The reader is referred to the report of Newton, February 15, 1989, for details on the previous work history of the property. Results of the 1989-1990 winter program are discussed in the March, 1990 report of Willoughby.

4.0 REGIONAL GEOLOGY AND MINERALIZATION

The Fourax Property straddles a portion of the gold-bearing Cadillac-Bouzan Break and Tectonic Zone, southeastern Abitibi Belt of the Superior Structural Province, at Malartic , Quebec. The Break is traced eastwards at least 20 Km to Val d'Or and west some 100 Km to the Ontario-Quebec provincial border where it links with the Kirkland Lake-Larder Lake Fault.

The majority of the historical gold production from the Abitibi derives from gold deposits situated on, or in the vicinity of this regional structure. In the Cadillac-Malartic-Val d'Or area alone, some 26 million oz of gold are produced since 1931. A list of past and current production in the region is given in Table 1.

The property is mainly underlain by essentially east-west striking and north dipping intensely sheared tholeiitic mafic-ultramafic volcanics and intercalated tuff, argillite and minor iron formation correlative with the **Piche Group**.

The Piche Group is sandwiched between **Cadillac Group** sediments to the north and **Pontiac Group** sediments to the south. The trace of the ESE-trending regional **Cadillac Syncline** is situated approximately 1.5 Km north of the claims. Stratigraphic top indicators (pillows in Piche Group, gradded bedding in Pontiac Group) indicate younging northwards. Distribution of stratigraphic units in the area are shown, figure 3.

According to Valliant and Hutchinson (1982) the Piche is a distal facies of the **Blake River Group**. A wedge of Blake River Group is mapped at the northeastern part of the Fourax Property,

TABLE 1 : GOLD PRODUCTION CADILLAC-MALARTIC-VAL D'OR AREA

MINE	TOWNSHIP	STATUS	YEARS	TONNAGE	OZ GOLD	OZ SILVER	BASE METALS
Lamaque	Bourlamaque	PP	1935-1985	27,089,353	4,762,058		
Sigma	Bourlamaque	P*	1931-1988	21,129,068	3,648,490	---	
East Malartic	Fourniere	PP	1938-1981	19,938,303	2,852,250	560,000	
Malartic Goldfields	Dubuisson	PP	1939-1964	9,875,175	1,874,162		
Malartic Gold Fields	Fourniere	PP	1939-1965	9,853,637	1,702,453		
Camflo	Malartic	P*	1965-1988	8,174,196	1,683,582		
Sladen	Fourniere	PP	1948-1970, 1979-1982	9,849,745	1,244,083	some	
Canadian Mal	Fourniere	PP	1935-1965	10,941,950	1,196,601		
Sullivan	Dubuisson	PP	1934-1963	5,085,518	1,134,350		
Doyon	Bousquet	P*	1980-1988	6,667,524	992,760	some	
Siscoe	Dubuisson	PP	1929-1949	3,330,401	882,303		
Bousquet#2	Bousquet	P*	1980-1988	4,845,305	758,278	some	
O'Brien	Cadillac	PP	1930-1956, 1978-1981	1,399,475	593,856		
Kiena	Dubuisson	P*	1961-1965, 1980-1988	2,911,364	475,617	35,269('81-'84)	
Bevcon-Buffadison	Louvicourt	PP	1947-1965	3,493,243	406,409		
Marban	Dubuisson	PP	1961-1974	2,185,970	330,015		
Malartic Hygrade	Malartic	P*	1962-1963, 1981-1988	1,407,157	275,660		
Bras d'Or/Ferderber	Bourlamaque	P*	1982-1988	1,211,758	267,575		
Norlartic	Vassan	PP	1959-1966	1,187,072	145,610	15,189	
New Mic Mac	Bousquet	PP	1942-1947	797,558	117,390	1,764	Cu
Central Cadillac	Cadillac	PP	1939-1949	461,819	63,117		
Chimo	Vauquelin	PP	1966-1967	173,614	58,434		
Lapa Cadillac	Cadillac	PP	1938-1943	359,206	47,296	2,011	
Bras d'Or	Bourlamaque	P*	1938, 1980-1982	219,296	42,973		
Akasaba	Louvicourt	PP	1960-1963	289,428	39,744		
Courvan	Louvicourt	PP	1932-1942	309,374	36,939		
West Malartic	Cadillac	PP	1942-1946	314,168	36,621	2,575	
Louvicourt Goldfields	Louvicourt	PP	1947-1949	263,850	32,201		
Ferderber	Bourlamaque	P*	1979-1981	177,445	27,000		
Pandora(2-5)	Cadillac	PP	1938-1942	196,503	26,974		
Shawkey	Dubuisson	PP	1936-1938	137,978	25,414		
Thompson Cadillac	Cadillac	PP	1936-1939	175,816	16,466		
Greene Stabell	Dubuisson	PP	1933-1939	71,504	15,159	4,223	Cu
Little Long Lac	"	PP	1964-1969	27,201	5,299	some	
Dunraine#2	Bourlamaque	PP	1956-1958	280,768	1,496	28,702	Cu
Pan Canadian#2	Cadillac	PP	1938	5,841	1,164	106	
Kevagama	Cadillac	PP	1940	2,723	791		
Mining School	Dubuisson	PP	1938-1942	5,000	566		
East Sullivan	Bourlamaque	PP	1948-1966	16,508,187	minor	minor	Cu,Zn
Manitou-Barvue	"	PP	1942-1980	12,277,075	minor	?	Cu,Zn,Pb
Dunraine#1	Louvicourt	PP	1956-1958	280,768	?	?	Cu

TOTAL GOLD: 25,821,156

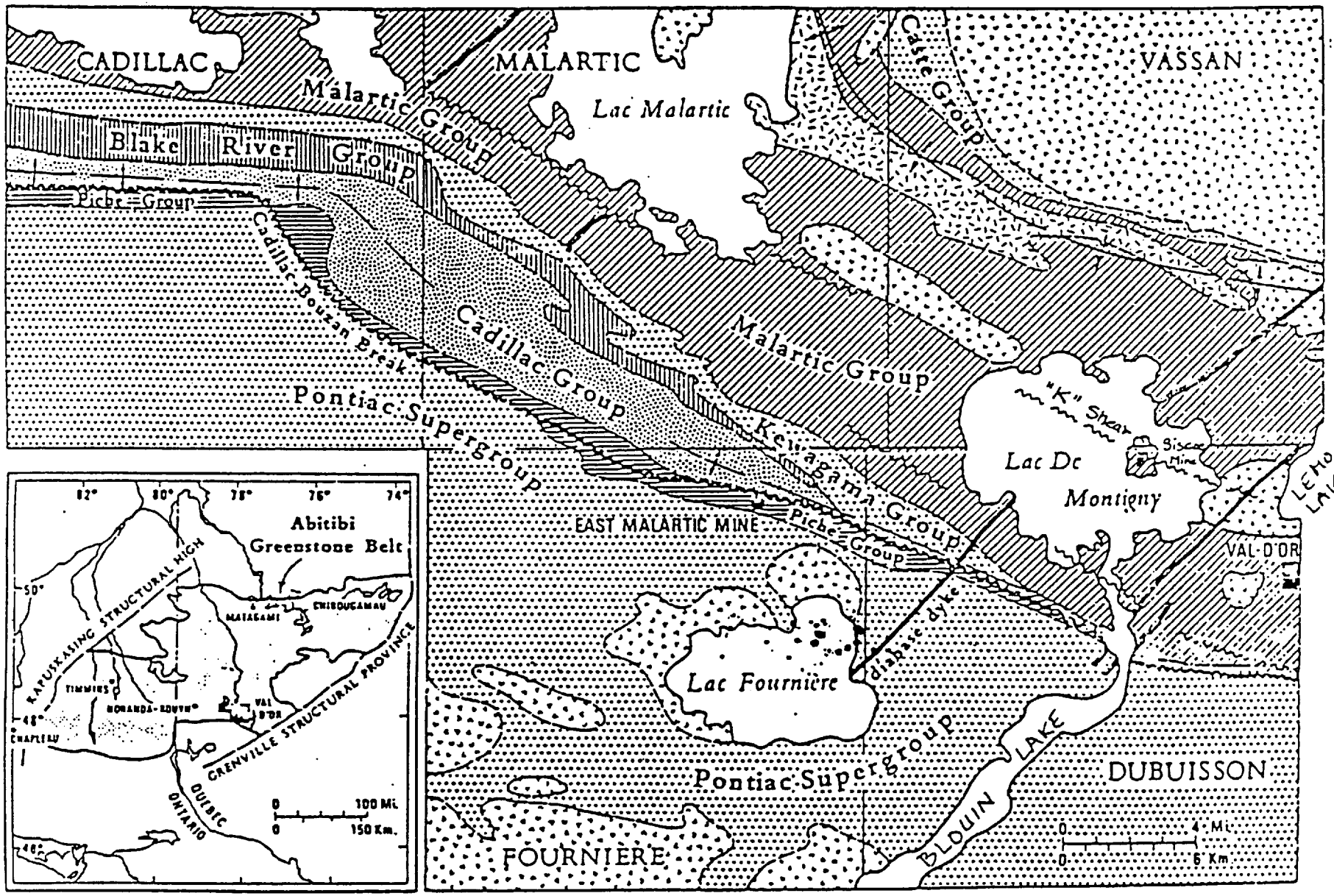


Figure 3: Stratigraphic subdivisions of the Malartic-Val d'Or area; from Kerrich, 1983 (after Hodgson, 1985).

north of the trace of the Cadillac-Bouzan Break and pinches out against the Break and Cadillac Group just southeast of the claim block. General geology of the claim block is given as figure 4.

Hodgson (1985) and Sansfacon (1988) suggest that major stratigraphic (Group) contacts in the region are unconformable, likely fault structures. Hodgson goes on to say that the Piche Group is conformably underlain by the Pontiac Group.

The **Cadillac-Bouzan Break** is described as an anastomosing shear system with numerous subsidiary low angle shears and fractures, for example the **Sladen Shear or Fault**, which is traced westwards from the East Malartic Mine Property to at least 1 Km south of the Fourax Property. East of Malartic the Break lies along the north side of the Piche Group and at Malartic swings to the south to follow the southern contact of the Piche Group on the East Malartic Mine Property (figures 5, 6). Interestingly the point of inflection at Malartic roughly separates Piche Group volcanics of principally mafic composition to the west from those of mainly ultramafic composition to the east (Hodgson, 1985).

The **Fournier Z-Fold** is located at the western part of the Fourax claims with NW trending axial trace passing in the vicinity of Fourax Property grid lines 4+00 to 10+00 east (figure 4). The structure, which is indicated to plunge 45-65 deg to the east, may indicate some dextral movement along the Cadillac-Bouzan Break.

The **Cadillac Tectonic Zone** is also characterized by numerous irregular, lenticular dykes and sills of diorite and (younger) feldspar porphyry and syenite/granite (porphyry). These

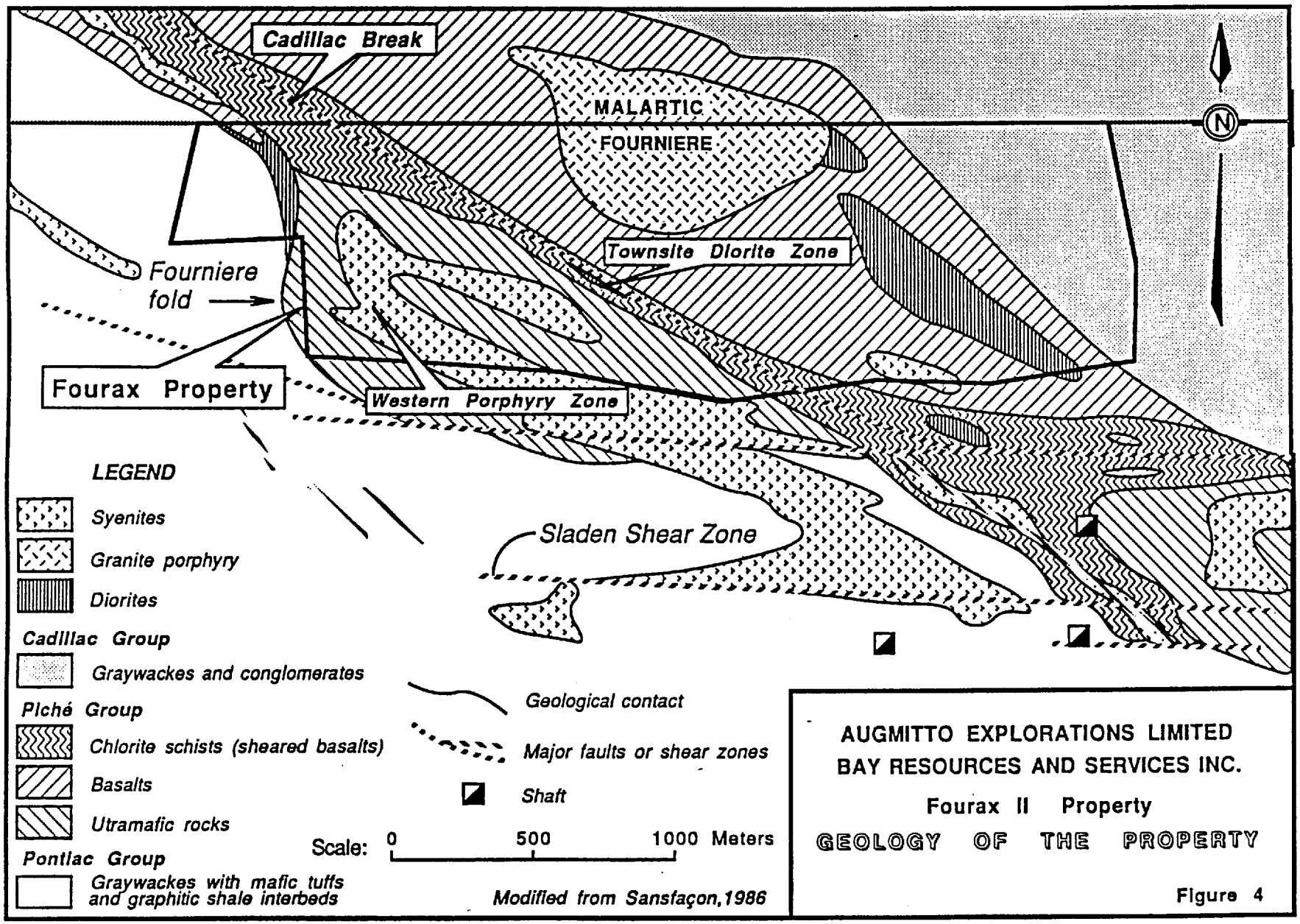


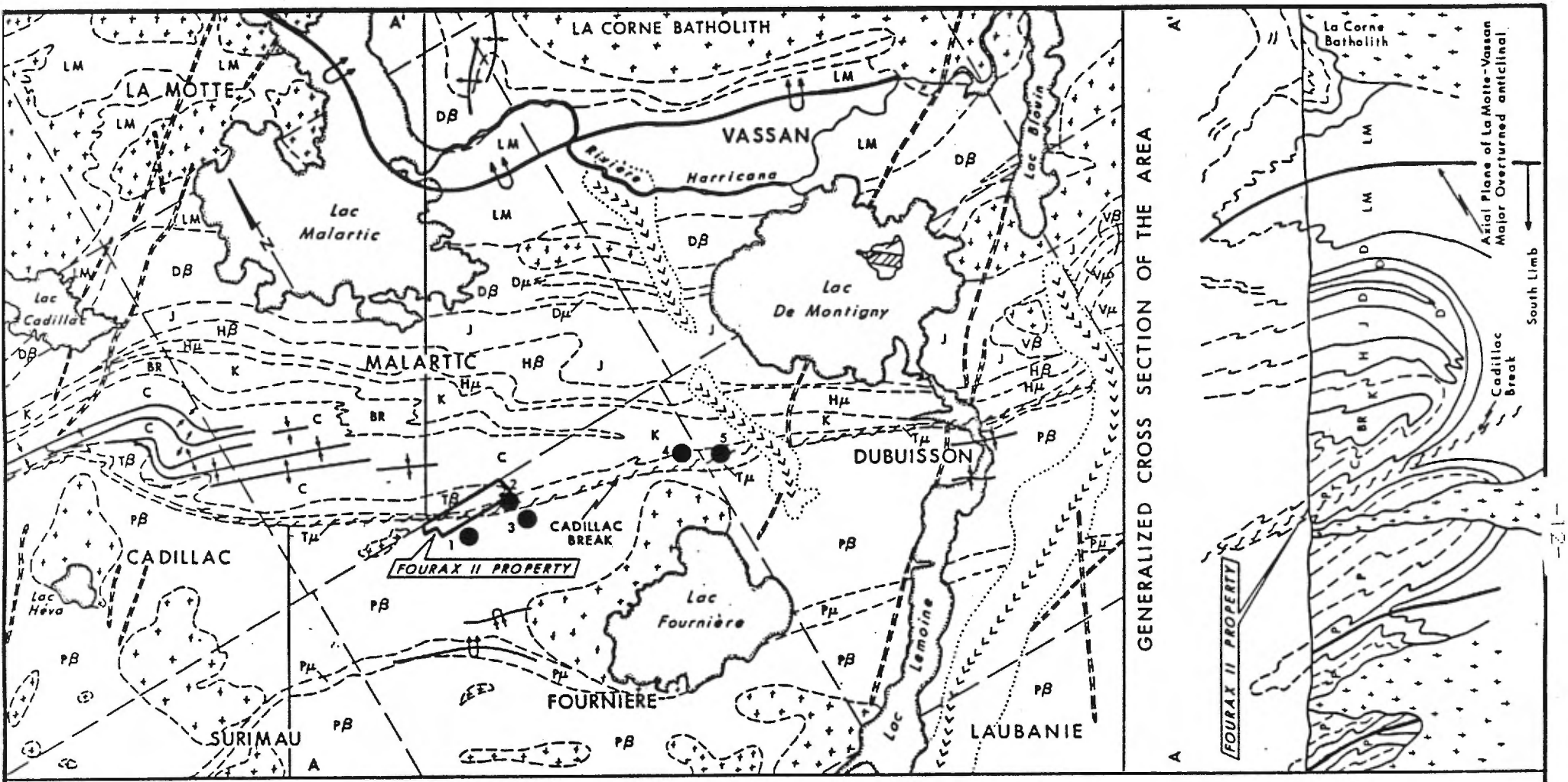
Figure 4: General property geology; modified from Sansfacon, 1986 (after Newton, 1989).

intrusive bodies are generally intruded or stretched parallel to the regional shear and schistosity. Sansfacon (1988) favours the designation felsic porphyry for all syenitic-granitic rocks. He contends that the syenitic appearance of these intrusives is due to potash metasomatism related to regional metamorphism or hydrothermal alteration accompanying gold mineralization.

Three past producing gold mines and one significant prospect are located within 3 Km of the Fourax Property (figures 5 and 6): **Canadian Malartic**, 1.5 Km south and southeast; **Sladen**, 2.7 Km ESE; **East Malartic**, 3 Km ESE; **East Amphi**, 0.5 Km NE. Both the Sladen and East Malartic are on strike with the Fourax Property. Approximately on strike 15 Km to the east is the past producing **Malartic Gold Fields** mine. Production statistics, current reserves and activity of these deposits are given as follows:

Mine	Ownership	Production oz Gold	Reported Reserves
East Malartic	Lac Minerals	2,852,250	1,490,470 T @ 0.10
Malartic Gold	Lac Minerals	1,702,453	100,000 T @ 0.13
Sladen	Lac Minerals	1,244,083	110,000 T @ 0.07
Canadian Mal	Lac Minerals	1,196,601	304,000 T @ 0.09
East Amphi	Breakwater Res	none	drilling in 1988 and March, 1990

Gold mineralization at **Sladen, Canadian Malartic and East Malartic** is apparently localized along the trace of the **Sladen Shear Zone**, a subsidiary structure which trends west from the Cadillac-Bouzan Break at East Malartic to at least as far west as and south of the Fourax Property. The geology and structure in the area is shown on figure 6. The outline of the **Fourax Property**, formerly part of the Sladen claims, is indicated (shaded).



LEGEND

- Diabase dyke
- Felsic intrusive
- Mafic intrusive

CADILLAC GROUP

- C — Sediments (greywacke, conglo.)

CADILLAC TECTONIC ZONE

- Tμ — Ultramafic flows
- Tβ — Basaltic flows

PONTIAC GROUP

- Pμ — Ultramafic flows
- Pβ — Sediments (greywacke)

BLAKE RIVER

- BR — Basalt (pillowed)

KEWAGAMA FORMATION

- K — Sediments + volcaniclastites

HEVA FORMATION

- Hμ — Felsic and mafic volcaniclastites with subordinate basalts
- Hβ — Basalts (massive)

VAL d'OR FORMATION

- Vμ — Andesitic and basaltic tuffs
- Vβ — Basaltic flows + flow breccia

JACOLA FORMATION

- J — Ultramafic and mafic flows

MALARTIC GROUP

- Dμ — Ultramafic flows
- Dβ — Basaltic flows (pillowed)
- LM — Ultramafic and mafic flows with rare sediments
- Fault
- Anticlinal axis
- Synclinal axis
- Overturned anticlinal axis

FORMER PRODUCERS

1. Canadian Malartic
2. Barnat
3. East Malartic
4,5. Malartic Gold Fields

0 2.5 5 10 Kilomètres

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Fourax II Property

Figure 5: General geology of the Malartic Area with locations of nearby past producers and Fourax Property indicated; from IMREH, 1984 (after Newton, 1989).

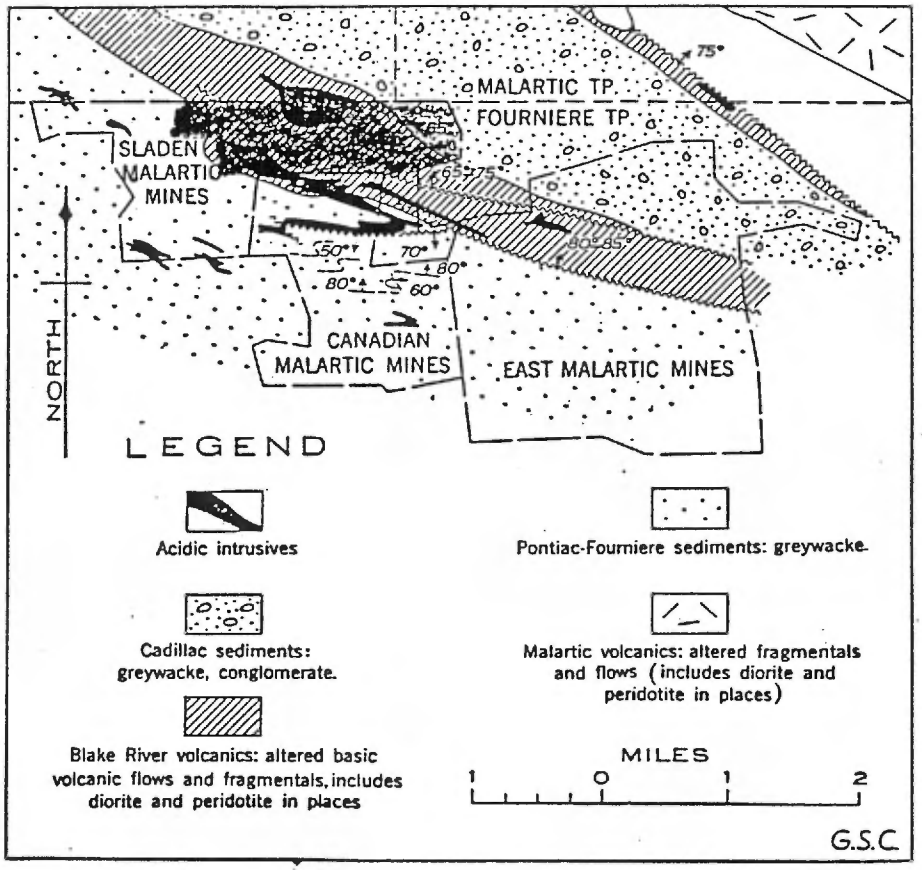


Figure 6: Geology of the Sladen Malartic, Canadian Malartic and East Malartic mine properties; Fourax Property indicated (after Byers and Gill, 1948).

Gold is associated with pyritic and silicified greywacke of the Pontiac Group along most of the trace of the Sladen Shear Zone and comprised the main ore bodies of all three mines (Derry and Herz, Byers and Gill, Cormie, 1948). At **East Malartic**, mineralization extends some 1,200 ft. west of the Sladen Shear-Cadillac-Bouzan Break intersection and is localized along the Break as indicated on figure 7.

Both Derry and Herz and Byers and Gill report gold concentrations in the area of **S-drag folds** at **Canadian Malartic and Sladen**, respectivelly. Hodgson (1985) interprets these structures as intersections of **conjugate fractures**. Figure 8 illustrates such an S-fold structure at Canadian Malartic. Apparently S-folds with axial traces trending ESE-WNW plunge 45-60 deg SE. A porpyhry intrusive body occupies the core of the S-fold at Canadian Malartic.

Concentrations of gold were also reported in **syenite intrusives** juxtaposed to the Sladen Shear and at the intersections of syenite with diorite and feldspar porphyry dykes and sills. Good gold grades were reported in chloritic seams of a porphyry body at **Canadian Malartic** and were considered to be manifestations of a late NW-SE fracture system which, incidently, runs parallel to the S-fold axial trace (Derry and Herz, 1948) and undoubtably represent a conjugate fracture to the east-west system as postulated by Hodgson (1985).

West of the Sladen Shear on the **East Malartic Property**, auriferous quartz veins and stockwork mineralization are hosted by

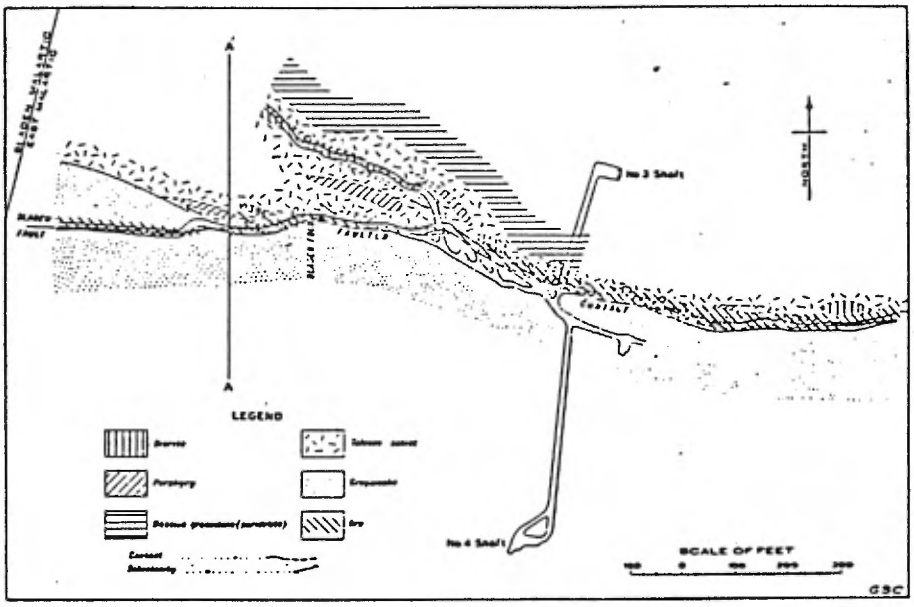


Figure 7a: Geological plan of the 1,270-foot Level, East Malartic Mine. Disposition of the Sladen Shear Zone (Fault) relative to the Cadillac-Bouzon Break (faulted contact) (after Cormie, 1948).

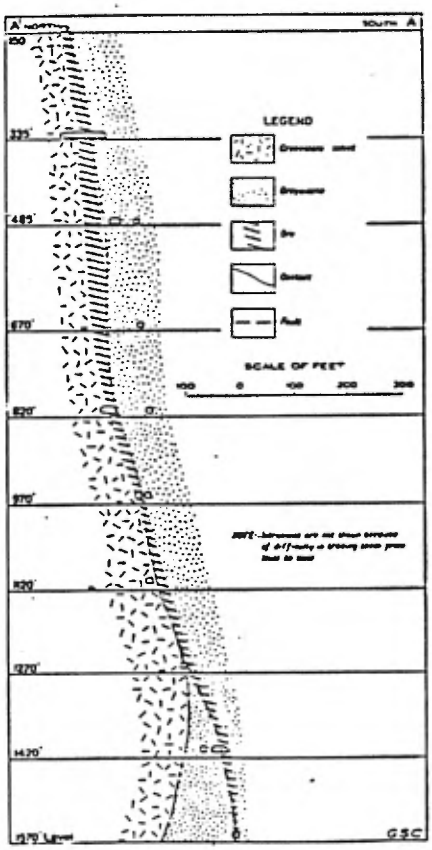


Figure 7b: Vertical cross section, East Malartic Mine (after Cormie, 1948).

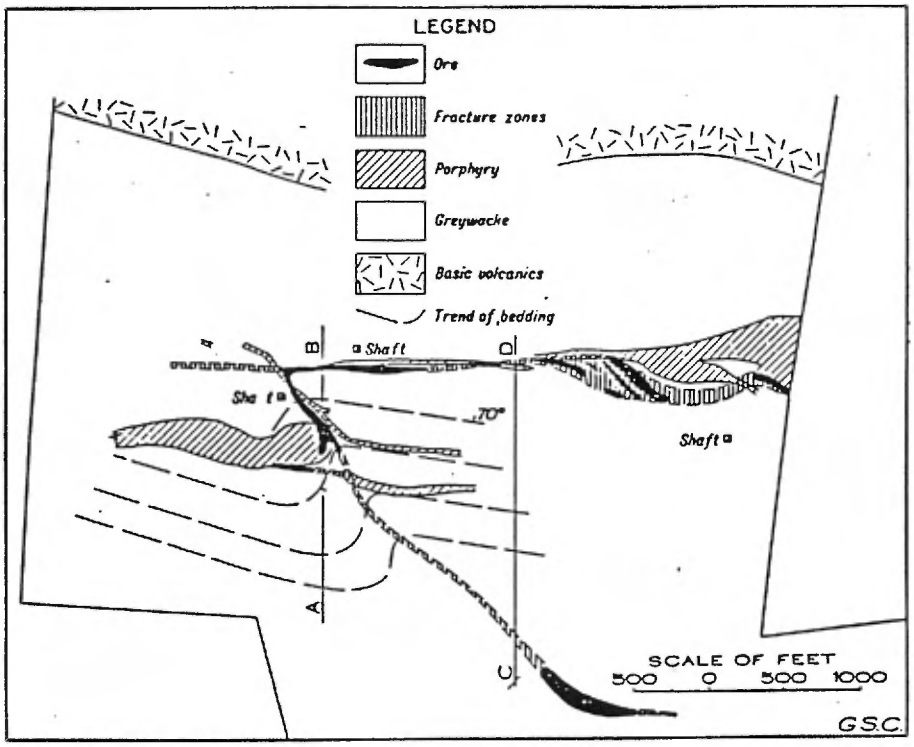


Figure 8: Geological surface plan of the Canadian Malartic Mine showing the s-drag fold (conjugate fracture) structure (after Derry and Herz, 1948).

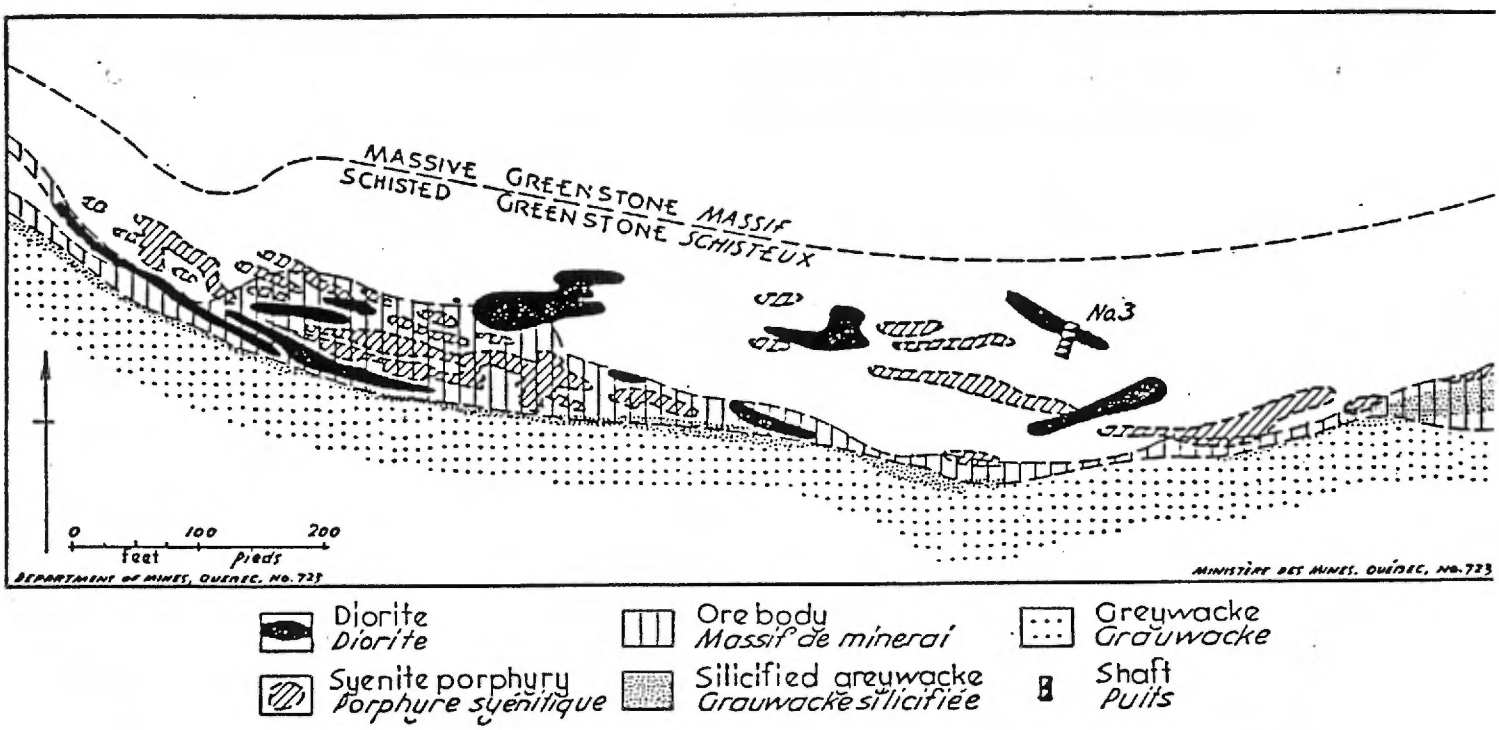


Figure 9: East Malartic Mine, 485-foot Level showing orebodies hosted by diorite and feldspar porphyry at the Piche Group - Pontiac Group contact (after MNRQ, undated).

diorite and feldapar porphyry dykes and sills within Piche Group lithologies. The ore is localized along the contact of Piche Group with underlying Pontiac Group sediments (figure 9) which is defined as the trace of the Cadillac-Bouzan Break at this point.

Gold mineralization at **Malartic Gold Fields** also consists of auriferous quartz veins in mainly diorite dykes and sills intruding Piche Group rocks. Concentrations of gold occur where feldspar porphyry dykes cross diorite which led Halet (1948) to conclude that the porphyries acted as channelways for mineralizing fluids. Sansfacon (1988) notes mineralized ladder veins in the competent diorites indicating regional extension. Mineralized veins seldom continue more than a few feet into the host schists.

Other gold deposits in the region hosted by Piche Group lithologies include **O'Brien, Cons Central Cadillac, Kewagama, Pandora, Thompson Cadillac, Lapa Cadillac and West Malartic.**

At **O'Brien** auriferous veins consist of quartz plus minor albite, ankeritic dolomite, calcite, tourmaline and sulphides, mainly arsenopyrite. Veins are found principally in volcanics. Low gold values are returned from pyritic cherts and argillites. "the greatest gold contents ... are from quartz veins which are adjacent to or crosscutting the auriferous pyritic cherts and carbonaceous argillites" (Valliant and Hutchinson, 1982).

Valliant and Hutchinson also report that sulphide ore consisting of lenses of pyrite and quartz occur at the contact of magnetite iron formation and tuff at the **Cons Central Cadillac Mine**. The two researchers also note that the stratiform pyritic

ores characteristic of the **Bousquet deposits** are closely associated with felsic volcanic rocks whereas Piche Group-hosted deposits generally occur in the vicinity of possibly equivalent felsic intrusive rocks.

The role of folding in concentrating ecomonic gold deposits is provided by the **Z-fold structure** related to the ore zones contained within the monzonite porphyry pipe at the **Camflo Mine** situated approximately 10 Km northeast of the Fourax Property and possibly the **Fournier Fold** on the property where significant gold mineralization is outlined as the **Western Porphyry Zone**.

5.0 EXPLORATION PHILOSOPHY

As a guide to exploration many workers agree that Archean lode gold deposits are exclusively found within "deformation zones", regions of excessive ductile deformation which apparently formed in the latest Archean (Colvine,1988). Characteristic features of a deformation zone are illustrated in figure 10.

The overall shape of orebodies tends to be tabular to rod-like with maximum dimension parallel to shearing. The frequently steeply plunging orebody may be parallel to the intersection lineation of the principal shear foliation with a secondary foliation or specific lithology such as iron formation (Colvine,1988). Many workers note that significant deposits occur within conjugate fracture/fault sets which develop at low angles to the major regional breaks.

Commonly, sites of gold deposition fall within zones of

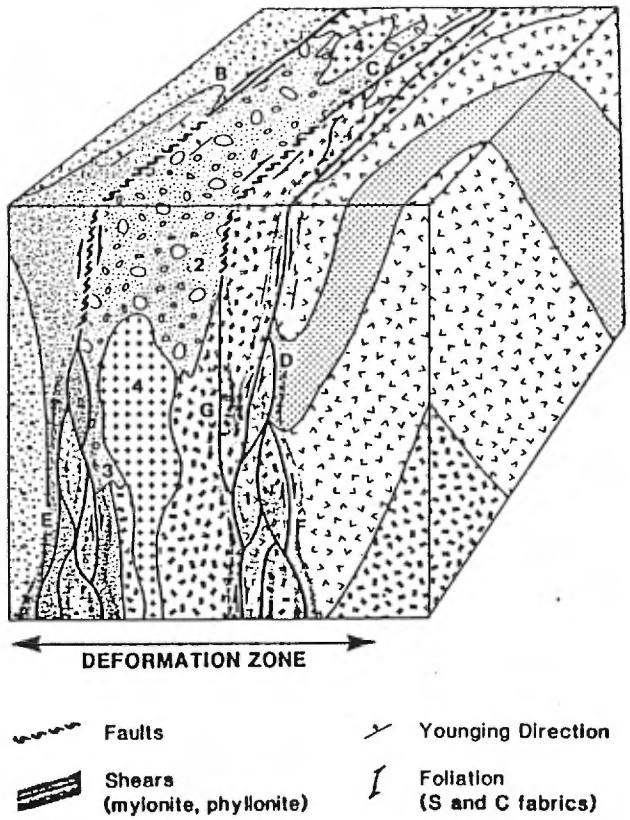


Figure 10: Schematic diagram of a deformation zone showing characteristic features. The effects of the deformation on individual rock units include: (A) rotation, (B) folding, (C) dislocation, (D) truncation, (E) thinning, (F) thickening, (G) repetition. Note that shearing can cause juxtaposition of opposing younging direction (after Colvine, 1988).

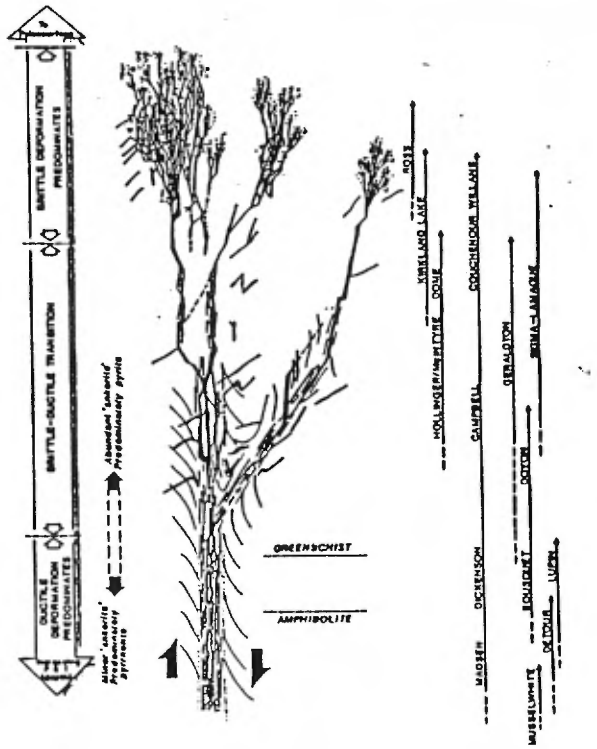


Figure 11: Schematic composition depositional model for Archean gold deposits showing the progressive change in style of mineralization with increasing depth; modified after Colvine et al (after Colvine,

dilation induced by shearing with maximum dilation achieved in highly competent rocks such as felsic intrusions, diorite and iron formation.

Colvine (1988) recently proposed a depositional model for Archean gold deposits which is diagramed in figure 11.

Card, Poulson and Robert (1988) provide succinct descriptions of current genetic models for gold deposition:

1) Magmatic-hydrothermal model - "(Emmons, 1937; Burrows et al, 1986: Wood et al, 1986) proposes derivation of the hydrothermal fluid from ascending magmas generated during late Archean tectonism and metamorphism. The gold could be derived from the magma or from the country rocks by their interaction with the magma and related hydrothermal fluids. Source magmas ..... include those of late felsic porphyries associated with gold deposits or domal tonalite gneiss-granodiorite quartz monzonite bodies intruding the lower part the greenstone belts."

2) Metamorphogenic model - "(Boyle, 1961; Kerrich, 1983; Groves and Phillips, 1987) proposes that the gold is dissolved in an H2O-CO2 fluid released during prograde metamorphism and devolitilization of greenstone belts at depth and focused into major faults and shear zones. In this model, the greenstone belts are the source of all the constituents of the hydrothermal fluids."

3) Granulitization of the lower crust -"(Cameron, 1988; Colvine et al, 1988) as a result of the streaming of CO2 from the mantle (this) causes the release of H2O and the onset of partial melting. These reactions in turn will lead to the leaching of gold and light intermediate lithophile elements from the lower crust. The resulting flow of gold-bearing H2O-CO2 fluidsis focused along major, crustal-scale fault zones."

4) Volcanogenic model - "(Valliant and Hutchinson, 1982; Valliant and Bradbrook, 1986)... the deposits are thought to have formed by exhalative hydrothermal processes active during the waning phases of volcanism, the convection of seawater fluids through the volcanic pile being promoted by high-level intrusions or volcanic centres."

6.0 DIAMOND DRILL PROGRAM

A total of 3,929 feet of diamond drilling in 6 holes was completed across the Fourax Shear Zone at the northwestern part of the Fourax II Property during the period October 10, 1990 to November 7, 1990.

The program was designed to test continuity of several gold-bearing structures/horizons outlined during the previous 1989-1990 drilling.

A list of drill hole locations, orientations and footages is given, following. A general location map is provided, figure 12.

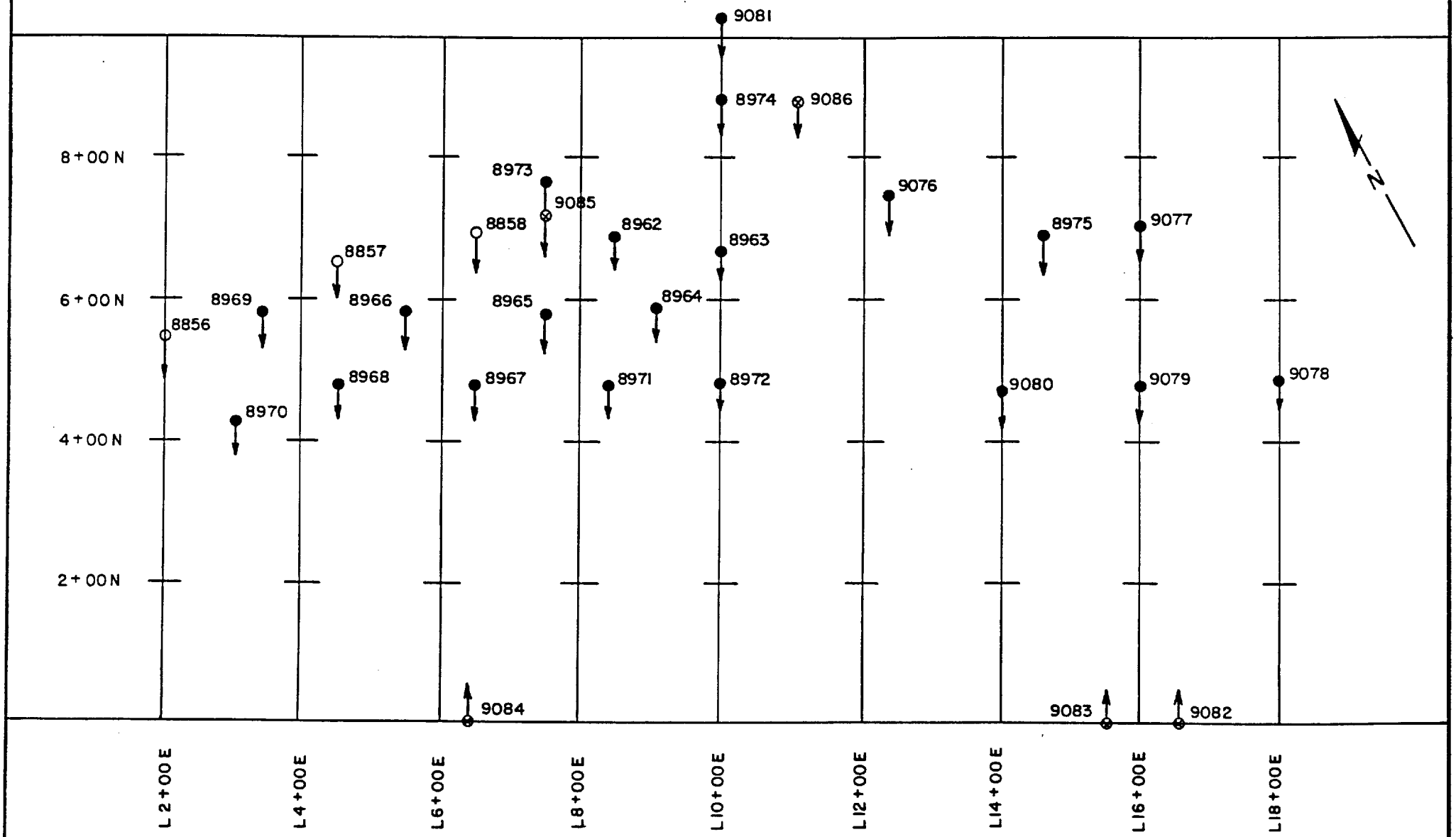
Hole No.	Grid Location	Azimuth	Dip	Length (ft)
FX-9082	L16+50E, BL0+00	025	-50°	659.5
FX-9083	L15+50E, BL0+00	025	-50°	656
FX-9084	L6+50E, BL0+00	025	-50°	680
FX-9085	L7+50E, 7+00N	205	-50°	769.5
FX-9086	L11+00E, 8+75N	205	-50°	1,164
			Total	3,929 feet

Holes FX-9085 and FX-9086 were originally planned for grid locations L8+00E, 7+00N and L11+00E, 8+00N. Swampy terrian necessitated spotting of these holes as listed above. Proposed hole FX-9087 (L9+50E, 7+50N) was not drilled at this time for the same reason.

BQ-sized core was drilled and all casings into bedrock were left in place at all drill sites. Drill core was logged, sampled and stored at the Minroc Management field office facility at Malartic.

The drilling was ablely performed by Les Forages Groleau

FIGURE 12 1989-90 DIAMOND DRILL LOCATION MAP, NORTHWESTERN PART
FOURAX II PROPERTY



Ltee of Rouyn-Noranda, Quebec.

A total of 298 split-core samples were sent to X-Ray Assay Laboratories of Don Mills, Ontario for gold fire assaying. Sample treatment procedures are as those reported by Newton, 1989.

The following on-site contract personnel, representing Minroc Management Limited, were involved with the project:

N.O.Willoughby, BSc (Hons), President, NR&J Resource Associates Limited, Toronto,Ontario.

P.Lytwynec, Technician, Core Sampler, Security Officer, Malartic, Quebec.

M.Lytwnec, Draftsperson, Malartic, Quebec.

Overall project direction and management was provided by G.A.Tremblay, P.Eng., President of Minroc Management Limited.

7.0 RESULTS OF DIAMOND DRILLING

7.1 Introduction

The fall 1990 drilling concentrated on areas of previously encountered subeconomic and possibly economic gold intercepts from gold-bearing **Areas 2a, 2b**: gold hosted by veined, brecciated and pyritic laminated sediments/iron formation; and **Area 1**: gold mineralization contained within quartz-veined and silicified feldspar porphyry of the Feldspar Porphyry Horizon. Additionally, three of the five holes cut designated **Areas 3 and 4** sediments and iron formation which previously returned scattered gold intersections.

A list of all significant previous drill intersections is given as Table 2. A list of drill intersections from the Feldspar Porphyry Horizon are listed Table 3. A review of the geology, lithostructural units and gold mineralization encountered during the 1989-1990 program is provided in Appendix 1, Geology and Mineralization (after Willoughby, March, 1990).

Diamond drill logs including assay results are provided in Appendix 2. Assay certificates are also appended (Appendix 3).

Diamond drill sections 6+50E and 7+50E (1"=40ft) have been updated with the new drill holes (FX-9084, 9085 respectively) added. New sections 11+00E, 15+50E and 16+50E are drafted.

TABLE 2 : SIGNIFICANT DIAMOND DRILL HOLE INTERSECTIONS FOURAX SHEAR ZONE
FOURAX II PROPERTY, 1988-1990

Hole No.	Location	Depth (feet)	Assay (opt Au)	Width (feet)	Footage	Host Rocks
FX-8856	L2+00E, 5+31N	667	0.090*	7.5	253.5-261.0	pyritic iron formation
			-w 0.110	2.5	258.5-261.0	
			0.110	2.0	302.0-304.0	bx iron formation
FX-8857	L4+00E, 6+26N	567	0.110	2.0	441.0-443.0	iron formation
			0.340*	10.5	500.0-510.5	felsic intrusive
			-w 1.390*	2.0	504.0-506.0	
			0.052	2.0	513.0-515.0	" "
			0.055	1.5	534.0-535.5	" "
			0.100*	6.5	535.5-542.0	" "
			0.060	5.0	542.0-549.0	" "
			0.045	2.0	554.0-556.0	" "
			0.070	2.5	558.5-561.0	" "
FX-8858	L6+00E, 6+81N	787	0.230*	17.5	642.0-659.5	felsic intrusive
			-w 0.250	2.5	642.0-644.5	
			-w 1.380*	2.0	649.0-651.0	
			0.150	4.0	662.0-666.0	" "
			0.048	4.5	673.0-677.5	" "
			0.130	2.5	742.0-744.5	" "
FX-8962	L8+50E, 6+75N	826	0.045	1.9	479.1-481.0	laminated sediment/IF
			0.044	2.5	483.2-485.7	" "
			0.037*	15.8	661.0-676.8	feldspar porphyry/sediment
			-w 0.068	2.7	663.5-666.2	
			-w 0.061	2.3	672.0-674.3	
			0.055*	22.7	711.2-733.9	fel por/qtz vein/IF
			-w 0.111	2.3	716.1-718.4	
			-w 0.132*	5.0	728.9-733.9	
			0.075	1.5	741.6-743.1	talc schist/IF
FX-8963	L10+00E, 6+50N	758	0.030	4.4	457.6-462.0	mafic volcanic/qtz veining
			-w 0.054	1.0	459.6-460.6	
			0.044	2.7	478.3-481.0	quartz-carbonate vein,bx
			0.076	2.5	507.2-509.7	" "
			0.030	2.5	527.0-529.5	iron formation/qtz vein
FX-8964	L9+00E, 5+75N	640	0.032	3.1	294.0-297.1	iron formation/qtx veining
			0.040	1.8	312.3-314.1	sericite schist/qtz vein
			0.033	2.0	331.1-333.1	mafic volcanic
			0.110*	4.2	344.7-348.9	feldspar porphyry
			0.050	1.6	354.0-355.6	quartz vein in ser schist
			0.060*	6.7	446.3-453.0	feldspar porphyry/IF
			-w 0.100	0.9	446.3-447.2	
			0.110	1.3	501.0-502.3	feldspar porphyry
FX-8965	L7+50E, 5+75N	640	0.078	2.6	343.4-346.0	sediment/qtz veining
			0.038*	35.9	432.0-467.8	qtz vein-bx, feldspar por
			-w 0.100	1.5	438.2-439.7	
			-w 0.050	2.7	439.7-442.0	
			-w 0.071	2.1	450.2-452.3	
			-w 0.058	2.0	455.7-457.7	
			-w 0.103	2.0	465.8-467.8	
			0.037	1.5	467.8-469.3	" "
FX-8966	L5+50E, 5+75N	660	0.038	8.7	300.8-309.1	qtz-ank vein, bx zone
			-w 0.051	1.8	305.7-307.5	
			0.039	1.5	339.2-340.7	mafic volcanic/fel por
			0.041	2.5	344.0-346.5	feldspar porphyry
FX-8967	L6+50E, 4+76N	577	0.052	0.8	196.2-197.0	sediment/IF
			0.053	2.6	205.5-208.1	iron formation
			0.113*	3.7	211.3-215.0	chl sz/IF/fel por
			-w 0.090	1.9	211.3-213.2	
			-w 0.286	0.8	213.2-214.0	
			0.268*	5.3	228.5-233.8	feldspar porphyry/IF
			-w 0.934*	1.3	228.5-229.8	
			-w 0.070	2.1	231.7-233.8	
FX-8968	L4+50E, 4+75N	561	0.044	1.0	155.7-156.7	iron formation/qtx vein
FX-8969	L3+50E, 5+75N	600	0.055	2.0	350.0-352.0	iron formation/qtz veining
FX-8970	L3+50E, 4+05N	600	0.087	1.5	127.0-128.5	iron formation

TABLE 2 (cont)

FX-8971	L8+50E, 4+75N	650		0.092*	13.8	211.7-225.5	IF/qtz veining/fel por
			-w	0.520*	1.8	211.7-213.5	
			-w	0.096	1.3	221.2-222.5	
			-w	0.077	1.7	222.5-224.0	
				0.051	1.6	309.1-310.7	feldspar porphyry
				0.075*	15.7	317.0-332.7	feldspar porphyry/IF
			-w	0.139*	5.0	317.0-322.0	
				0.078*	6.0	594.0-602.0	mafic volcanic
			-w	0.180	2.0	598.0-600.0	
				0.032	4.0	606.0-610.0	ultramafic volcanic
FX-8972	L10+00E, 4+75N	522		0.650*	1.7	178.1-179.8	iron formation, bx
				0.042	2.4	217.5-219.9	sericite schist
				0.095	0.9	288.9-289.8	iron formation
FX-8973	L7+50E, 7+75N	965		0.140	2.0	617.0-619.0	sediment/IF
				0.133*	6.9	621.9-628.8	sediment
			-w	0.200	2.0	621.9-623.9	
			-w	0.190	1.1	627.7-628.8	
				0.227*	4.6	690.2-694.8	iron formation
			-w	0.646*	1.5	693.7-694.8	
				0.032	3.3	819.2-822.5	sericite schist/qtz vein
				0.082	1.0	862.0-863.0	feldspar porphyry/qtz vein
				0.063	1.4	880.6-882.0	" "
FX-8974	L10+00E, 8+75N	1,181		0.031	3.7	355.7-359.4	quartz vein in mass vol
				0.061	2.3	712.0-714.3	sediment/IF
				0.094*	5.3	767.6-772.9	volcanic/IF
			-w	0.240	1.3	767.6-768.9	
				0.064*	12.1	774.9-787.0	iron formation
			-w	0.110*	4.0	779.0-783.0	
				0.145*	4.8	877.0-883.8	sediment/IF
			-w	0.310*	2.0	879.8-881.8	
				0.141*	12.7	909.0-921.7	quartz vein/sediment
			-w	0.209*	7.2	914.5-921.7	
				0.049	1.3	970.7-972.0	feldspar porphyry
				0.120*	3.0	1016.0-1019.0	iron formation
				0.040	1.6	1036.0-1037.6	" "
				0.444*	8.6	1050.0-1058.6	" "
			-w	0.300	2.0	1052.0-1054.0	
			-w	0.695*	2.0	1054.0-1056.0	
			-w	0.870*	1.5	1056.0-1057.5	
				0.031	2.0	1102.0-1104.0	feldspar porphyry
				0.140	2.5	1138.0-1140.5	felsic intrusive
FX-8975	L14+00E, 6+75N	699		0.037	4.9	525.9-530.8	iron formation
				0.041	5.8	573.6-579.4	feldspar porphyry
				0.047	2.0	588.9-590.9	sediment/IF
FX-9076	L12+00E, 7+30N	1,070		0.044	1.5	497.4-498.9	qtz-ank vein, bx
				0.034	5.3	540.7-546.0	" "
				0.044	2.1	551.4-553.5	qtz vein/fel por
				0.129*	4.1	568.3-572.4	feldspar porphyry
			-w	0.230*	1.7	570.7-572.4	
				0.032	14.9	581.0-595.9	fel por/qtz vein
			-w	0.064	2.3	593.6-595.9	
				0.060	2.2	620.0-622.2	" "
				0.060	2.8	655.6-658.4	iron formation
				0.130	2.7	741.2-743.9	feldspar porpyhyry
				0.035*	44.0	831.8-875.8	felsic intrusive
			-w	0.055*	17.8	856.9-875.8	
			-w	0.110	2.7	856.9-859.6	
			-w	0.130	3.8	869.5-872.0	
				0.063*	31.5	890.9-922.4	" "
			-w	0.277*	6.2	896.0-902.2	
			-w	0.470*	3.1	899.1-902.2	
				0.044*	41.1	966.9-1008.0	" "
			-w	0.096*	10.6	973.4-984.0	
			-w	0.180	3.4	980.6-984.0	
				0.034	7.2	1015.4-1022.6	" "
			-w	0.053	2.4	1015.4-1017.8	
				0.077	2.4	1042.5-1044.9	felsic intrusive/qtz vein
FX-9077	L16+00E, 6+75N	974		0.193*	9.3	548.0-557.3	iron formation/qtz vein
			-w	0.140	1.0	548.0-549.0	
			-w	0.350*	2.5	549.0-551.5	
			-w	0.180	2.0	551.5-553.5	
			-w	0.190	1.8	555.5-557.3	
				0.127*	11.1	582.4-593.5	" "
			-w	0.100	3.4	585.6-589.0	
			-w	0.280*	2.0	589.0-591.0	
			-w	0.120	2.5	591.0-593.5	

TABLE 2 (cont)

FX-9078	L18+00E, 4+75N	591		0.049	3.5	237.0-240.5	quartz vein in vol
			-w	0.077	1.0	237.0-238.0	
			-w	0.061	1.0	238.0-239.0	
FX-9079	L16+00E, 4+75N	472		0.379*	6.1	300.9-307.0	iron formation
			-w	0.641*	2.7	300.9-303.6	
			-w	0.170	3.4	303.6-307.0	
FX-9080	L14+00E, 4+75N	423		0.046	3.0	296.0-299.0	feldspar porphyry
FX-9081	L10+00E,	1,929		0.150*	2.4	76.4-78.8	qv in mafic vol
				0.660*	2.0	319.4-321.4	qv in mafic vol
				0.093	2.5	1,627.5-1,630.0	iron formation
				0.248*	3.8	1,680.0-1,683.8	iron formation
				0.097	4.7	1,689.0-1,693.7	talc schist

TABLE 3 : LIST OF INTERSECTIONS OF THE AURIFEROUS FELDSPAR PORPHYRY HORIZON (SILL?) AND ASSOCIATED QUARTZ FLOODING, QUARTZ-ALBITE, QUARTZ-ANKERITE VEINING, BRECCIATION (refer to map 1)

Hole No.	Map Section		Footage	Width	Description	Gold Assay (opt)	Intercept	Width
70	3+50E		136.0-255.0	119.0	fel por			
		-w	143.4-150.0	6.6	ser sch, qv			
		-w	166.5-217.0	50.5	sed, vol			
69	3+50E		386.0-465.5	79.5	fel por, sed	0.013	400.0-401.5	1.5
		-w	386.0-399.0	13.0	ser sch, qv			
		-w	404.5-447.0	42.5	ser sch, fel por, q-ank v			
		-w	447.0-462.9	15.9	vol, carb, ser			
68	4+50E		187.7-218.9	31.2	fel por			
57	4+50E		491.0-563.0	72.0	fel por/intru	0.340	500.0-510.5	10.5
					minor vol	0.052	513.0-515.0	2.0
						0.055	534.0-535.5	1.5
						0.100	535.5-542.0	6.5
						0.060	542.0-549.0	5.0
						0.045	554.0-556.0	2.0
						0.070	558.5-561.0	2.5
66	5+50E		339.2-363.0	23.8	fel por	0.021	339.2-356.5	17.3
		-w	339.2-339.8	0.6	vol, sil			
67	6+50		228.5-260.8	62.3	fel por, qv	0.268	228.5-233.8	5.3
		-w	228.5-229.8	1.3	IF	0.934	228.5-229.8	
58	6+50E		586.0-751.0	165.0	fel por/intru	0.230	642.0-659.5	17.5
					minor vol	0.150	662.0-666.0	4.0
						0.048	673.0-677.5	4.5
						0.130	742.0-744.5	2.5
65	7+50E		432.0-492.4	60.4	fel por, qv	0.038	432.0-467.8	35.8
					minor vol	0.100	438.2-439.7	1.5
						0.103	465.8-467.8	2.0
73	7+50E		812.2-914.3	102.1	fel por, qv	0.021	817.0-825.5	8.5
		-w	900.6-904.7	4.1	ser sch	0.016	846.0-882.0	36.0
						0.082	862.0-863.0	1.0
						0.063	880.6-882.0	1.4
71	8+50E		309.1-335.0	25.9	fel por, sed	0.051	309.1-310.7	1.6
		-w	315.1-335.0	19.9	sed/IF, fel por	0.026	313.2-315.1	1.9
						0.139	317.0-322.0	5.0
62	8+50E		661.0-750.9	89.9	fel por, qv	0.037	661.0-676.8	15.8
		-w	674.3-689.0	14.7	sed, vol	0.068	663.5-666.2	2.7
						0.061	672.0-674.3	2.3
						0.055	711.2-733.9	22.7
						0.111	716.1-718.4	2.3
						0.132	728.9-733.9	5.0
64	9+00E		323.5-414.0	90.5	fel por/qv, sed	0.033	331.1-333.1	2.0
		-w	323.5-333.1	9.6	vol	0.110	344.7-348.9	4.2
						0.050	354.0-355.6	1.6
72	10+00E		190.2-259.5	69.3	sed/qv,fel por	0.042	217.5-219.9	2.4
		-w	190.2-245.7	55.5	sed, qv	0.017	241.3-244.6	3.3
63	10+00E		457.6-512.2	54.6	qv, bx. vol	0.030	457.6-462.0	4.4
						0.044	478.3-481.0	2.7
						0.076	507.2-509.7	2.5
74	10+00E		896.0-957.5	61.5	qv, sed, vol,	0.141	909.0-921.7	12.7
					fel por	0.260	918.5-920.5	2.0
						0.340	920.5-921.7	1.2
76	12+00E		568.3-626.0	57.7	fel por, qv	0.129	568.3-572.4	4.1
		-w	572.4-580.9	8.5	talc sch	0.032	581.0-595.9	14.9
						0.022	613.5-627.1	13.6
80	14+00E		281.7-334.0	52.3	sed/qv, fel por	0.046	296.0-299.0	3.0
75	14+00E		554.6-578.8	24.2	fel por/qv, sed	0.041	573.6-579.4	5.8
79	16+00E		?					
77	16+00E		?					
78	18+00E		237.0-246.0	9.0	qv, vol	0.049	237.0-240.5	3.5

7.2 Drill Program Results and Interpretation

Significant gold intersections are returned from the lowermost (ie, stratigraphically below the Feldspar Porphyry Horizon) laminated sediment/iron formation gold anomalous Area 2 in holes FX-9082, 9083 (**Area 2b**) and FX-9086 (**Area 2a**) as listed following:

Hole No.	Assay (opt Au)	Width (ft)	Intersection (ft)
FX-9082	.120	1.6	369.0 - 370.6 (2b?)
	.170	2.0	436.0 - 438.0
	.190	2.8	445.9 - 448.7
	.031	4.3	494.7 - 499.0
FX-9083	.164*	14.7	412.7 - 427.4
-containing	.190	2.9	412.7 - 415.6
	.013	3.4	415.6 - 419.0
	--- (.004)	4.2	419.0 - 423.2
	.430*	4.2	423.2 - 427.4
	.140	1.1	435.4 - 436.5
	.108*	12.0	444.0 - 456.0
-containing	.046	2.0	444.0 - 446.0
	--- (.005)	4.0	446.0 - 450.0
	.420*	2.0	450.0 - 452.0
	.092	4.0	452.0 - 456.0
FX-9086	.175	8.1	1002.1-1010.2 (2a?)
-containing	.270*	4.0	1002.1-1006.1
	.328*	7.5	1081.0-1088.5
-containing	.023	2.6	1081.0-1083.6
	.850*	2.8	1083.6-1086.4
	.010	2.1	1086.4-1088.5

Combined with results from holes 9077 and 9079, at least two possible gold-bearing horizons or structures are indicated in **Area 2b**, covering a strike length of 100 feet. With reference to drill section 16+00E , the two gold intercepts of hole 9077 apparently are correlative with the single value in hole 9079,

and together with geological interpretation suggests possible fold/structural repetition with closure or apex intersected in hole 9079 at 300.9-307.0 feet ie the structure is open downwards with axial trace subvertical (Willoughby, March, 1990). A vertical height to mineralization of some 250 feet from the 200-foot level is indicated with widths ranging from 2.0 to 14.7 feet. As noted above, the wider sections contain some higher grade intercepts over narrower widths.

The following hole-to-hole correlation of gold values is proposed and if not supportive of the fold structure hypothesis at least show two significant gold-bearing horizons in this area as indicated on Map 1:

FX-9083	FX-9079	FX-9077	FX-9082
.108/12.0'	.379/6.1'	.193/9.3'	.190/2.8'
.164/14.7'	"	.127/11.1'	.170/2.0'

Apparently width of gold mineralization is decreasing eastwards. Additionally, hole 9078, located 150 feet east of 9082, failed to intersect gold mineralized iron formation/laminated sediment. Consequently, future drilling should be confined to the area west of L18+00E.

Hole FX-9086 intersected 0.328 opt gold over 7.5 feet within laminated chloritic tuff and iron formation at 1081-1088.5 feet and correlates well with gold intercepts from holes 8974 (0.444 opt gold over 8.6 feet at 1050-1058.6 feet) and 9081 (0.230 opt gold over 3.8 feet at 1680-1683.8 feet). The latter two holes are situated 100 feet west of 9086 implying some

eastward continuation to **Area 2a**. As noted in March, 1990, the intersections in holes 8974 and 9081 indicate a possible 1,000 feet of vertical depth of mineralization from the 600-foot level.

A lithostructural relationship to gold mineralization is implicated in **Area 2a**, somewhat reminiscent of **Area 2b** mineralization. A look at drill section 10+00E suggests that hole 8974 gold intercepts 0.444 opt Au over 8.6 ft. at 1050-1058.6 ft. and 0.110 opt Au over 4 ft. at 779-783 ft. plus other low values nearby hosted by similar lithology may occupy the same limb of a fold structure with approximate vertical axial trace.

Of particular interest the axial trace is seemingly intruded by quartz veining and feldspar porphyry of the Feldspar Porphyry Horizon.

Additionally, the hole 9086 intercept of 0.175 opt Au over 8.1 ft. at 1002.1-1010.2 ft., hosted by silicified, pyritic iron formation may represent fold repetition of of the 0.328 opt Au over 7.5 ft. at 1081-1088.5 ft. further down the hole.

Holes 9076 (100 feet east of 9086) and 8963, 8972 (50 feet west of 8974 and 9081) did not encounter significant gold in iron formation/laminated sediment. These shallower holes apparently did not penetrate the same mineralized horizon(s). Hence **Area 2a** is considered to be open both east and west. Similarily holes 8975 and 9080 on L14+00E did not encounter mineralized iron formation/laminated sediment.

Lithological, structural and mineralogical similarities suggest possible correlation between both **Areas 2a** and **2b**. This

proposed mineralized horizon/structure has an indicated strike-length of 450 feet with plunge westward and is considered to be a significant gold target.

Hole 9086 was also drilled to test **Area 3**, iron formation and **Area 1** feldspar porphyry. No significant assays are returned from Area 3. An intersection of 0.380 opt gold over 3.0 feet at 957.4-960.4 feet is returned from quartz-veined feldspar porphyry and correlates well with other, although higher grade intersections of Area 1 west of this hole. Only low gold values are returned from holes intersecting the Feldspar Porphyry Horizon to the east, hence 9086 may provide a reasonable eastern limit to economic to subeconomic gold mineralization within Area 1.

Hole 9086 failed to intersect syenitic porphyry of **Area 7**.

Holes FX-9084, 9085 successfully tested the mineralized Feldspar Porphyry Horizon, **Area 1**. Significant intersections are listed as follows:

Hole No.	Assay (opt Au)	Width (ft)	Intersection (ft)
FX-9084	.263*	14.8	474.5 - 491.8
-containing	.120	1.6	474.5 - 476.1
	.260*	6.9	476.1 - 483.0
	.300*	6.3	483.0 - 489.3
	.029	2.5	489.3 - 491.8
FX-9085	.060	4.0	675.0 - 679.0
	.217*	11.5	679.0 - 690.5
-containing	.095	3.9	679.0 - 682.9
	.450*	4.0	682.9 - 686.9
	.090	3.6	686.9 - 690.5
	.450*	4.0	703.5 - 707.5

As is apparent from the drill sections and Map 1, these values correlate well with other drill hole intersections from this horizon. Subeconomic to potentially economic gold concentrations cover a strike length of approximately 640 feet in the region L4+50E to L11+00E with widths ranging 2 to 17.5 feet. A vertical height of mineralization according to drill section 7+50E is on the order of 200 feet.

A list of all intersections in the feldspar porphyry from the 1989-1990 program are given, Table 3.

Holes 9084 and 9085 intersected only low gold values from the iron formation/laminated sediment of Area 4. No significant cohesive zones or horizons are identified to date in this area.

7.3 General Comments

A case was previously made with respect to gold mineralization associated with low (to core axis) angle quartz-carbonate veins ie crosscutting local schistosity (March, 1990). Similar veins containing appreciable gold concentrations were not found in the fall program. Some narrow sharp veins at roughly 40° TCA and containing pyrite +/- chalcopyrite from holes drilled at azimuth 025° (9082, 9083, 9084) may be the same structure(s). This indicates a fracture system dipping approximately 45° to the south. Correlation of these structures is difficult at this time and other additional drill holes will be required to definitively trace these out.

The intersection of these structures with the pervasive

schistosity planes may provide excellent traps for gold deposition (intersection lineations), particularily within the competent rock units such as iron formation. The gold intersection of 0.444 opt Au over 8.6 ft. in hole 8974 provides an example.

The possiblity of a correlation of auriferous veined +/- brecciated pyritic iron formation and associated laminated sediments about a fold structure at **Areas 2a and 2b** may suggest a stratiform genesis to the gold mineralization. Although this may be one interpretation the writer cites the degree of deformation and brecciation of the unit in particular and the host rocks in general plus preponderance of later quartz-carbonate veining in the unit as more significant factors for gold deposition. The iron formation horizons provided zones of dilation during regional compression within which gold-bearing siliceous fluids, manifest by the contained numerous inherent veins, were deposited. Perhaps the vein structures follow the traces of axial planar cleavage previously generated by the interpreted isoclinal fold structure(s).

8.0 CONCLUSIONS AND RECOMMENDATIONS

The 1990 fall drill program successfully tested and confirmed the main areas of subeconomic and possibly economic gold mineralization indicated from the previous 1988-1990 drilling.

At least two gold-bearing horizons/structures hosted by brecciated and quartz-carbonate veined pyritic iron formation and associated laminated sediments comprise **Areas 2a and 2b** are situated stratigraphically below the Feldspar Porphyry Horizon (sill). Lithological, mineralogical and structural similarities of the gold horizons within each hole and in relation to adjacent holes suggest fold repetition about an essentially vertically dipping anticlinal axial trace. It is concluded that hole 9079 drilled through the fold closure.

Gold intersections from holes 9082 (L16+50E) and 9083 (L15+00E) of **Area 2b** show good correlation with results from previously drilled holes 9077 and 9079 (L16+00E). For example the following gold intercepts from the upper iron formation/laminated sediment horizon are considered correlative (west to east): 0.164 opt/14.7 ft. (9083), 0.379 opt/6.1 ft. (9079), 0.127 opt/1.1 ft. (9077) and 0.170 opt/2.0 ft. (9082). The mineralized horizons cover a 100-foot strike length. A vertical height of some 250 feet is indicated (based on holes 9077, 9079).

Hole 9086 (L11+00E) returned 0.328 opt gold/7.5 ft. at 1050-1058.6 ft. and apparently aligns with hole 8974 value 0.444 opt gold/8.6 ft. and hole 9081 value 0.230 opt gold/3.8 ft.. The latter holes are located 100 feet west of 9086, on L10+00E. The vertical depth of mineralization on L10+00E (holes 8974 and 9081) is indicated to be 1,000 feet. Intercept 0.175 opt gold/8.1 ft. at 1002.1-1010.2 ft. in 9086 may occupy the same limb of the fold structure as that of the intersection furthur down the hole.

The 450-foot of strike length between **Areas 2a and 2b** is concluded to be untested. Mineralization apparently decreases eastwards and no gold was encountered east of L18+00E. It is open to the west. This gold bearing zone is considered a significant target to host economic gold concentrations and consequently assigned a high priority.

Drilling of **Area 1**, the Feldspar Porphyry Horizon (holes 9084, 9085, 9086), returned several significant gold values and correlate very well with previous results. Subeconomic to potentially economic gold concentrations cover a strike length of approximately 640 feet in the region of L4+50E to L11+00E with widths ranging 2 to 17.5 feet. Vertical height to mineralization is indicated to be of the order of 200 feet. This area also has excellent economic gold potential.

CERTIFICATE OF QUALIFICATIONS

I, Neil O. Willoughby, residing at 651 Cosburn Avenue, Toronto, Ontario, do certify that:

1) I am a geologist, a graduate of Carleton University, Ottawa, Ontario, with a BSc. (Hons.) degree in 1974 and that I have been practising my profession since graduation.

2) I am the President of NR&J Resource Associates Limited, a consulting firm incorporated under the Business Corporation Act, 1982, in the Province of Ontario, since August, 1989 and which is authorized by the Association of Professional Engineers of Ontario to engage in the business of providing services that are within the practice of professional engineering under the Professional Engineers Act, 1984.

3) I have no interest in, nor do I expect to receive any interest, direct or indirect, in Bay Resources & Services Inc.

4) The statements contained in this report and conclusions and recommendations are based on my observations while so engaged in conducting and supervising field operations during the periods October 10, 1990 to November 7, 1990.

Toronto, Ontario

Dated: December 31,1990

N.O. Willoughby

Neil O. Willoughby,
BSc. (Hons.)

REFERENCES

Burrows, D.R., Spooner, E.T.C., 1989: Relationships between Archean gold quartz vein-shear zone mineralization and igneous intrusions in the Val d'Or and Timmins Areas, Abitibi Subprovince, Canada; in EG Mono 6, The Geology of Gold Deposits; the Perspective in 1988, p 424-444.

Bursnall, J.T., editor, 1989: Mineralization and Shear Zones; Geological Association of Canada, Short Course Notes Volume 6, 299 pgs.

Byers, A.R., Gill, J.E., 1948: Sladen Malartic Mine; in CIMM, Structural Geology of Canadian Ore Deposits, p 858-864.

Card, K.D., Poulsen, K.H., Robert, F., 1989: The Archean Superior Province of the Canadian Shield and its lode gold deposits; in EG Mono 6, The Geology of Gold Deposits: the Perspective in 1988, p 19-36.

Clark, R.J.McH., Bonnar, R., 1987: Gold mineralization associated with Archean stratabound sulphides in the Cheminis Deposit near Larder Lake, Ontario; CIM BULL VOL 80, NO. 902, p 45-50.

Colvine, A.C., Andrews, A.J., and others, 1984: An integrated model for the origin of Archean Lode Gold Deposits; Ontario Geological Survey Open File Report 5524, 98 pgs.

_____, 1989: An empirical model for the formation of Archean Gold Deposits: products of final cratonization of the Superior Province, Canada; in EG Mono 6, The Geology of Gold Deposits: the Perspective in 1988, p 37-53.

Cormie, J.M., 1948: East Malartic Mine; in CIMM, Structural Geology of Canadian Ore Deposits, p 865-867.

Derry, D.R., Herz, H.C., 1948: Canadian Malartic Mine; in CIMM, Structural Geology of Canadian Ore Deposits, p 853-857.

Halet, R.A., 1948: Malartic Gold Fields Mine; in CIMM, Structural Geology of Canadian Ore Deposits, p 868-875.

Hodgson, C.J., 1985: Precambrian Lode Gold Deposits, unpub paper Dept. of Geological Sciences, Queen's University, 316 pgs. with particular reference to section Val d'Or-Malartic, p 184-211.

_____, Hamilton, J.V., 1989: Gold mineralization in the Abitibi Greenstone Belt: end-stage result of Archean collisional tectonics?; in EG Mono 6, THe Geology of Gold Deposits: the Perspective in 1988, p 86-100.

Karvinen, W.O., 1982: Geology and evolution of gold deposits, Timmins Area, Ontario; in CIM SP VOL 24, Geology of Canadian Gold Deposits, p 101-112.

MacDonald, A.J., 1984: Gold mineralization in Ontario, I: the role of banded iron formation; in CIM SP VOL 34, Chibougamau - Stratigraphy and Mineralization, p 412-430.

Meikle, B.K., 1970: Camflo Mines Limited - geology and mining; CIM BULL VOL 63 NO 704 p 1406-1410.

Newton, B.H., 1989: Geotechnical report on the Fourax Property for Bay Resources and Services Inc., Augmitto Explorations Ltd., 23 pgs + appendices.

Suave, P., Makila, A., 1987: Geology of the Camflo Mine, Malartic, Quebec; Mineral Exploration Research Institute, Ecole Polytechnique de Montreal, 57 pgs.

Sansfacon, R., Trudel, P., 1988: Geologie de la mine Malartic Gold Fields, Region de Malartic, Minerai Lac Limitee - IREM-MERI, MB 88-24, 72 pgs.

Valliant, R.I., Hutchinson, R.W., 1982: Stratigraphic distribution and genesis of gold deposits, Bousquet Region, Northwestern Quebec; in CIM SP VOL 24, Geology of Canadian Gold Deposits, p 27-40.

_____, Mongeau, C., Doucet, R., 1982: The Bousquet Pyritic Gold Deposit, Bousquet Region, Quebec: descriptive geology and preliminary interpretations on genesis; in CIM SP VOL 24, Geology of Canadian Gold Deposits, p 41-49.

Willoughby, N.O., 1990: Report on the 1989-1990 (Winter) Diamond Drill Program on the Fourax II Property, Malartic Quebec for Minroc Management Limited on behalf of Bay Resources & Services Inc., March, 1990, 53 pgs with pertinent maps, drill sections.

_____, 1990: A Proposal for 5,000 feet of Diamond Drilling on the Fourax II Property for Bay Resources & Services Inc., September 5, 1990, 7 pgs.

No significant or at least consistent and/or continuous gold mineralization is as yet demonstrated for **Areas 3 and 4** at this time.

A two-phase exploration and evaluation program is recommended to follow-up previous diamond drill results;

1) construction of detailed drill sections and level plans at a scale of 1"=20' in order to outline or block out mineralized areas for the purposes of a cursory reserve estimate and to effectively spot additional drill sites. Cost estimate: $15,000.

2) 20,000 feet of delineation/definition diamond drilling to outline definitive "ore" zones. Cost estimate: $400,000.

Respectfully Submitted, Date: December 31, 1990

N.O. Willoughby,
BSc, (Hons.)

APPENDIX 1: Geology and Mineralization

A.0 GEOLOGY AND MINERALIZATION

A.1 Geology

The majority of holes were collared into massive mafic volcanics or basalt north of the trace of the Cadillac-Bouzan Break and are probably correlative with the regional Blake River Group.

Holes 75 and 81, at the north and northeastern part of the program area, collared into granite porphyry of the Malartic Stock. This intrusive body, also located north of the Break, underlies the northern part of the town of Malartic. Both holes drilled through the granite to mafic volcanic (Blake River Group).

The mafic volcanics become appreciably sheared within 10 to 30 feet of the Break.

South and beneath the Cadillac-Bouzan Break the holes encountered a 200 to 400-foot section of north dipping, intensely sheared mafic-ultramafic tholeiitic volcanics and intercalated finely laminated sediments and magnetite iron formation, probably representative of the regionally designated Piche Group.

Sericite-chlorite schist is common and although frequently associated with laminated sediments and magnetite iron formation may also represent extreme deformation of volcanics. One may also argue that apparent bedding/lamination in "sediments" is shear-induced. Shearing and extension of carbonate-veined and magnetite-rich volcanics possibly impart the carbonate and magnetite-bearing bands frequently observed.

This entire zone of intense shearing which lies south of

and beneath the Cadillac-Bouzan Break is herein designated the Fourax Shear Zone.

A number of feldspar porphyry dykes and quartz vein/breccia zones are also found within the Fourax Shear Zone.

Most holes were terminated in rather non-descript talc-chlorite schist. Deeper holes (58,72,74,76) ended in granite/syenite (porphyry),possibly the northern leading edge of of the Western Porphyry Zone previuosly investigated by drilling in 1986-1988.

A general litho-structural (stratigraphic) column across the Cadillac-Bouzan Break and Fourax Shear Zone on the property is illustrated in figure 13.

A.2 Litho-Structural Rock Units

A.2.1 V7: Massive, Pillowed Mafic Volcanic, Basalt

- aphanitic to fine grained, green to dark green.
- generally massive.
- scattered prominent pillow selvadges frequently altered to carbonate +/- epidote, quartz, biotite, chlorite.
- narrow pillow and/or flow breccia beds common, however no effort was made to map individual flows.
- moderately sheared within 10-30 feet of the Break.

A.2.2 3G,2D: Gabbro, Diorite

- several gabbroic/dioritic sections within V7 are distinguished and apparently represent coarse mafic flow; no intrusive contacts noted.
- generally magnetite-rich.

A.2.3 Cadillac-Bouzan Break

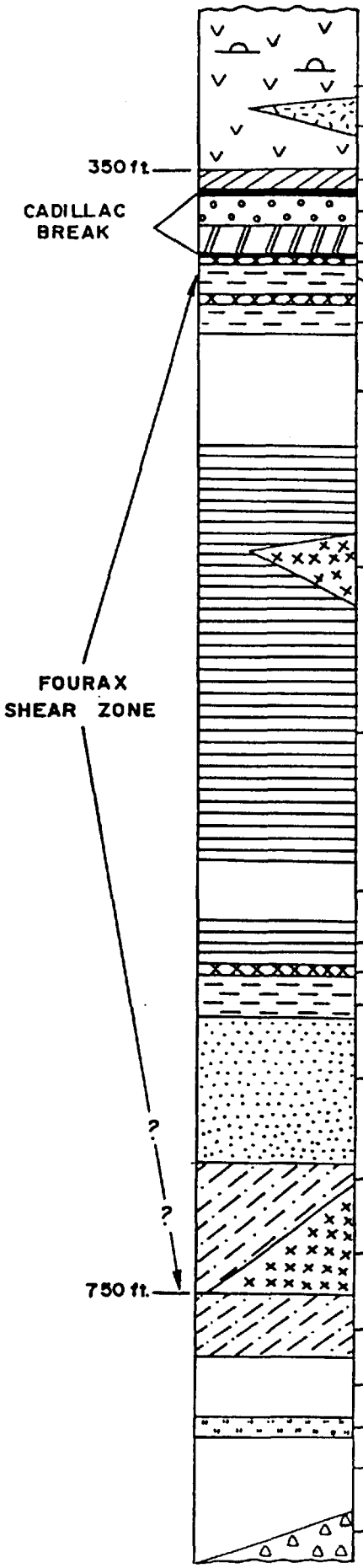
The probable trace of the Cadillac-Bouzan Break is defined as the contact of massive mafic volcanic (including the 10 to 30-foot thick sheared volcanic) with the more intensely sheared and deformed underlying volcanics and sediments of the Fourax Shear Zone.

All holes intersected a 5 to 10-foot section of massive

Figure 13

TYPICAL LITHOSTRUCTURAL (STRATIGRAPHIC) SECTION THROUGH THE FOURAX SHEAR ZONE, FOURAX II PROPERTY

(BASED ON DRILL HOLES FX-8962, 8973)



V7	Massive to pillowed mafic volcanic, basalt; some pillow breccia and flow top breccia.
3G,2D	Gabbro to diorite, coarse mafic volcanic.
V7	Zone of shearing.
F1 or V7	Massive and vuggy extremely magnetic iron formation (ironstone) or volcanic.
F1 or V9	Laminated iron formation and/or mafic tuff.
IR	
IR	
S1,F1	Interbedded fine grained laminated sediments and siliceous magnetite iron formation.
V7,V13	Sheared mafic-ultramafic volcanic.
IR, Q.V.	Intrusive feldspar porphyry, brecciation with silica flooding, quartz veining; ankerite-quartz ± fuchsite veining, breccia.
M2,F1	Interbedded sericite-chlorite schist, magnetite iron formation; minor talc-chlorite schist and laminated sediments, probably some volcanic; possible carbonate-facies iron formation.
V7,V13	
M2	Sericite-chlorite schist.
IR	
F1,M2	
V13,M1±M2	Ultramafic volcanic, talc-chlorite schist; some sericite-chlorite schist; occassional narrow siliceous iron formation.
M1	Talc-chlorite schist.
IR	Intrusive feldspar porphyry.
M1	Talc-chlorite schist.
V13,V7,4P	Ultramafic-mafic volcanic, peridotite.
2D	Diorite
V13,V7, 4P	Ultramafic-mafic volcanic, peridotite.
1S,1G	Syenite, monzonite

Approximate scale: 1" = 60 ft.

Drawn by: M. Lytwynec

dark green to black, vuggy and extremely magnetic and hard, silicified rock (iron formation?/fault breccia?). This is underlain by 5 to 10 feet of green to dark green iron formation (F1) and laminated tuff (V9). These units underlie the sheared mafic volcanics (V7) and commence the series of interbedded volcanics and sediments of the Fourax Shear Zone.
V9 is variously described in the drill logs as mafic volcanic sediment, mafic tuff and tuffaceous sediment.

A.2.4 Fourax Shear Zone

a) S,F1: Laminated Sediments, Magnetite Iron Formation

- these two units commonly interbedded.
- green to grey green, fine to very fine grained and finely laminated.
- laminated sediment generally consists of alternating sericite-chlorite-carbonate and occasionally quartz laminae; possibly an argillite; some workers in the region call the unit mafic tuff.
- magnetite iron formation consists mainly of chlorite+/-sericite-magnetite - rich laminae with alternating and usually thinner carbonate+/-quartz laminae; some laminae relatively silicious and pyritic.
- frequently laminations are discontinuous, boudined and crenulated due to shearing, deformation (folding?); resulting fragmentation may induce a tuff-like aspect to the rock.
- frequently injected by carbonate-ankerite+/-quartz-albite veins.
- some dark green, poorly laminated to massive iron formation may be sheared mafic volcanic or diorite; consists of elliptical to elongate streaks of carbonate which possibly represents sheared/fragmented altered (feldspathic) groundmass.
- laminated sediment may shear to sericite-chlorite schist (M2); suggests that some laminae may be the final stage of intense shearing with vein material as the probable source of carbonate-quartz-rich compositional layers.

b) M2: Sericite-Chlorite Schist

- grey green to light grey green, fine grained.
- extremely fissile.
- possibly intensely sheared laminated sediment (S) or mafic volcanic (V7).
- frequently veined by carbonate-ankerite+/-quartz as irregular patches or fragments (defomed) generally lineated parallel to schistosity.
- occurs as interbeds with laminated sediment and

magnetite iron formation, less frequently as narrow sections within mafic-ultramafic volcanic (V7, V13).

c) V7: Mafic Volcanic

- similar to sheared volcanic described at the base of mafic volcanic above the Cadillac-Bouzan Break.

d) V13, M1, 4P: Ultramafic Volcanic, Talc-Chlorite Schist, Peridotite

- fine to medium grained, light grey green to bluish grey green.
- moderately to strongly magnetic.
- ultramafic volcanic (V13) is variably carbonatized, serpentinized and talcose; frequently veined by carbonate-ankerite +/- quartz; although relatively massive, shows good cleavage parallel to local schistosity/foliation.
- talc-chlorite schist (M1) is similar to V13 however extremely sheared; contains numerous angular to rounded/elliptical carbonate-ankerite +/- quartz vein fragments stretched parallel to schistosity; in places stretching is sufficiently extreme to impart a pseudo-lamination to the rock; laminae frequently exhibits folding/slumping features, micro-faulting and variable schistosity orientation over short widths.
- peridotite (4P) or ultramafic flow is medium grained and similar in aspect to V13; contains up to 20% serpentinized subhedra of olivine/pyroxene phenocrysts; greater tendancy to serpentine veining and alteration; also shows good parting parallel local schistosity.
- some of the more massive-appearing ultramafic volcanics at the base of a number of drill holes may fall outside and below the Fourax Shear Zone.

A.2.5 Intrusive Rocks

a) 1R: Feldspar Porphyry

- generally pale brownish grey to pinkish-brown grey.
- massive to moderately foliated.
- contains < 5% to 55% white feldspar phenocrysts, averaging 25%.
- commonly as intrusive dykes and sills into the rocks of the Fourax Shear Zone and underlying ultramafics.
- compositionally the majorirty of porphyries are intermediate to felsic; darker coloured, more mafic-looking, silicified porphyry is noted in drill holes east of L12+00E.
- many porphyries contain 3-10% finely disseminated pyrite.

- numerous white to grey quartz-albite veins and breccia/alteration zones may be related to the porphyry intrusive event; commonly show vague ghost-like relic feldspar phenocrysts.

b) 1G,1S: Granite-Monzonite, Syenite (Porphyry)

- pinkish grey to brownish and orange-red, massive.
- medium grained, equigranular; occasional feldspar phenocrysts; generally minor to nil quartz.
- both white and reddish orange (potassic) feldspars as the main constituent; 10-15% amphibole/chlorite.
- usually intersected towards the base of several holes and consequently possibly related to the Western Porphyry situated just south of the program area.

c) 1G: Granite Porphyry

- grey to dark grey and pinkish grey.
- massive and coarse grained.
- contains 5% large (1cm) pink and zoned potassium feldspar phenocrysts, within a coarse matrix of potassium feldspar (35%), plagioclase (30%0, quartz (20%) and amphibole/biotite (10%).
- also a porphyritic bimodel variety containing 1% 1cm feldspar and 45% 2-3 mm feldspar within a 40% grey aphanitic matrix.
- part of the Malartic Stock which intrudes massive mafic volcanic north of the Break.

d) Q.V.: Quartz Veining

The majority of quartz veins are apparently shear veins, ie parallel to sub-parallel to schistosity. Quartz usually is accompanied by one or more of albite, ankerite, carbonate and tourmaline.

The most common veins are ribbon veins which contain numerous slivers and elongate inclusions of wall rock for example at 488.3-512.2 ft. in hole 63. Grey quartz veining alternates with slivers of pyritic sediment/volcanic in the vicinity of the quartz vein-host rock contact.

White bull quartz veining is found occassionally, generally in the vicinity of a feldspar porphyry dyke. At 689-722.2 ft. in hole 62, white bull quartz is hosted by talc-chlorite schist. Aside from host rock inclusions, the contact areas show some brecciation and contain scattered tourmaline.

Layered veining consisting of greyish quartz with narrow albite and tourmaline borders at the host rock contact occur as relatively thin veins in mainly sediments and sericite-chlorite

schist, for example hole 64 at 342.8-344.7 ft..

Quartz-ankerite stockwork is described in all rock types but usually not as large sections and often associated with typical veining such as at 410.9-421.6 ft., hole 63.

Apparently most of the veins bear a spatial relationship to feldspar porphyry as at 442-462 ft., hole 65 where numerous thin porphyry dykelets comprise a large portion of this quartz vein zone. Veining and quartz flooding also pervade the dykelets.

Brittle fracture-filled veins are mapped in the massive mafic volcanic north of the Break. Many are mineralized with galena and chalcopyrite.

e) QAF: Quartz-Ankerite-Fuchsite Vein, Breccia and Alteration

These white, somewhat irregular veins and breccia zones are intersected in several drill holes. They contain a low proportion of thin lineated slivers of fuchsite and bring to mind the carbonate-facies exhalites reported at gold deposits at Timmins and the Kerr Addison and Cheminis deposits at Virginia Town and Larder Lake.

Examples include holes 66 (298.4-307.5 ft.), 73 (489.6-507 ft.), and 76 (825.5-846 ft.).

A.3 Gold Mineralization

A review of all significant gold intersections ie > 0.03 opt Au, as listed in Table 2, indicate that the majority of gold intercepts are returned from magnetite iron formation and associated laminated sediments or sericite-chlorite schist (36 of a total of 90). Gold values hosted by feldspar porphyry account for 18 intercepts with some additional 6 values contained within iron formation in contact with porphyry. A total of 17 gold values are returned from granite/syenite (felsic) intrusive.

Brief descriptions of these styles of gold mineralization is presented following.

A.3.1 Iron Formation/Sediment-Hosted Gold

Three variations are noted:

1) quartz-carbonate-veined (layered shear veins), usually schistosity/lamination parallel (50-80 deg TCA), with attendant silicification, some carbonatization and 5-30% pyrite, mainly as laminae (sulphidization of magnetite?). Rarely pyrite within veins. Occassional slightly oblique pyrite veinlets. Tourmaline a sometimes constituent of veins.

2) brecciated laminated sediment +/- iron formation with some quartz-carbonate veining, breccia-filling with silicification and minor carbonatization. Up to 30% pyrite as masses, stingers and veinlets, infrequently as bands.

3) usually narrow, crosscutting quartz-carbonate veins at 0-20 deg TCA commonly occur within both 1) and 2). Contain scattered splashes of pyrite and chalcopyrite. Some of the highest gold values in iron formation/sediment are returned from sections containing these low angle veins.

Examples:

Hole 72 - Type (2) 178.1-179.8 ft. ... 0.650 opt Au/1.7 ft.
- silicified, carbonatized and brecciated iron formation with 15-20% disseminations, masses of py plus some stringers trending slightly oblique to schistosity.
- some late quartz veinlets crosscutting at 70 deg TCA.
- some foliation parallal quartz veins to base.

Hole 73 - Type (1) 690.2-694.8 ft. ... 0.227 opt Au/4.6 ft.
- silicified magnetite iron formation and sericite-chlorite schist with 3% quartz-ankerite+/-carbonate veinlets, bands.
- 20% py as disseminations within bands.

Hole 74 - Type (2), (3) 877-883.8 ft. .. 0.145 opt Au/4.8 ft.
- silicified and carbonatizated sericite-chlorite schist and iron formation; somewhat brecciated with no continuous laminations.
- 15% disseminations, blebs and irregular masses py; several narrow crosscutting massive py veinlets at 88 deg TCA.
- a few quartz veinlets at 15-20 deg TCA with traces py, cp.

A.3.2 Feldspar Porphyry-Hosted Gold

Sections of feldspar porphyry which return significant gold values are generally characterized by extensive local pervasive quartz flooding and/or foliation-parallel to low angle (0-25 deg TCA) quartz veins. Pyrite content ranges 2-15%, mainly in the host porphyry with low concentrations in flooded and veined areas. Albite and tourmaline are occassional vein and flooding constituents.

As is the case with iron formation/sediment, some of the best gold values in porphyry are associated with the low angle TCA quartz veins which may contain some pyrite. For example, hole 62 at 730.8-732.6 ft. assayed 0.196 opt Au/1.8 ft.

In general, gold values in feldspar porphyry are lower than those in iron formation.

Table 3 lists a number of significant gold values associated with feldspar porphyry.

Significant gold intersections related to low angle quartz veins in both iron formation and feldspar porphyry are listed following:

Hole	Assay (opt Au)	Width	Footage	Host Rock
62	0.196	1.8	730.8-732.6	porphyry
65	0.100	1.5	438.2-439.7	porphyry
67	0.148	2.7	211.3-214.0	iron formation
	0.934	1.3	228.5-229.8	iron formation
70	0.087	1.5	127.0-128.5	iron formation
71	0.520	1.8	211.7-213.5	iron formation
73	0.133	6.9	621.9-628.8	iron formation
74	0.160	4.0	879.8-883.8	iron formation
	0.444	8.6	1050-1058.6	iron formation

A.3.3 Iron Formation-Hosted Gold Adjacent to Feldspar Porphyry

At least 6 significant gold intersections in iron formation/sediment occur adjacent to or in the vicinity of both mineralized and unmineralized feldspar porphyry (dykes). Although the tendancy is to suppose feldspar porphyry injection had some role in gold deposition in iron formation, clearly gold is related to quartz veining with associated alteration and sulphidization in both iron formation/sediment and to quartz veining and flooding in feldspar porphyry. The following examlpes are sited:

Hole 62: at 661.0-676.8 ft. assayed 0.037 opt Au/15.8 ft.
- with mineralized porphyry at 661.0-676.8 ft. containing numerous quartz veinlets both parallel foliation and at low angles TCA; some tourmaline; 10-15% diss py.
- at 674.3-676.8 ft., sericite-chlorite schist assayed 0.027 opt Au/2.5.

Hole 62: at 711.2-733.9 ft. assayed 0.055 opt Au/22.7 ft.
- with mineralized porphyry at 728.9-732.5 ft. assaying 0.139 opt Au/3.7 ft.; with quartz flooding and a few low angle quartz-py-filled fractures.
- sheared, silicified laminated sediment and iron formation at 732.6-733.9 ft.; 5-10% diss py plus some narrow porphyry dyklets; assayed 0.111 opt Au/1.3 ft.

Hole 67: at 211.3-215.0 ft. assayed 0.113 opt Au/3.7 ft.
- with silicified, pyritic iron formation at 211.3-213.6 ft. and several low angle quartz veins containing some py; assayed 0.090 opt Au/1.9 ft.
- at 213.6-214.0 ft., chloritic shear zone with 20% quartz-carbonate shear veins; 3 of the veins are pyritic; assayed 0.268 opt Au/0.8 ft.
- fractured feldspar porphyry with 5% py at 214-215 assayed 0.017 opt Au/1 ft.

Hole 67: at 228.5-233.8 ft. assayed 0.268 opt Au/5.3 ft.
- silicified and quartz+/-carbonate veined (15%) iron formation with 15% py blebs, diss and stringers, mainly within silica-rich bands and quartz veins assayed 0.934 opt Au/1.3 ft. at 228.5-229.8 ft.
- remainder of interval is quartz-veined feldspar porphyry containing 5% diss py and assayed 0.052 opt Au/4 ft.

Hole 71: at 211.7-225.5 ft. assayed 0.092 opt Au/13.8 ft.
- preceded by barren feldspar porphyry at 209.2-211.7 ft.
- at 211.7-213.5 ft. iron formation/sediment with 50% quartz-carbonate veining and silicified, quartz flooded, containing 25% py masses at 212.4-212.6 ft.; entire section assays 0.520 opt Au/1.8 ft.
- to 224 ft., brecciated, carbonatized and silicified iron formation with 10-15% py masses and diss; some py veinlets oblique to laminae; assays 0.086 opt Au/2.8 ft.

Hole 71: at 317-322 ft. assayed 0.139 opt Au/5 ft.
- the section consists of carbonatized sericite-chlorite schist plus minor iron formation with 1-5% py; a narrow porphyry at base.
- overlain by weakly gold anomalous quartz flooded feldspar porphyry at 309.1-315.1 ft.

A.3.4 Gold in (Felsic) Syenite/Granite Intrusives

Significant gold values are returned from fractured and bleached, potash metasomatized syenitic/granitic intrusive rocks at the base of holes 74, 76 and 58 (feldspar porphyry?). These rocks may be part of the Western Porphyry Zone.

Gold values are returned from pyrite-filled fractures as at 899.1-902.2 ft. (0.470 opt Au/3.1 ft.) in hole 76 and from quartz-albite veins as at 980.6-984.0 ft. (0.180 opt Au/3.4 ft.) also in hole 76.

Other gold values are listed Table 2.

A.3.5 Other Gold Intersections

1) Mineralized Quartz Vein and Breccia Zones

Possibly related to feldspar porphyry are relatively wide sections of blue-grey to white quartz veins in holes 63, 65 and 74.

A quartz vein, breccia and flood zone containing narrow porphyry and pyritic laminated sediments at 442-462 ft. in hole 65 is sandwiched between two mineralized porphyries at 432-442 ft.

and 462- 469.3 ft. The entire interval assays 0.038 opt Au/35.9 ft. Anomalous gold values are returned in the quartz vein zone.

Additionally quartz vein zones of similar aspect in holes 63 (at 459.6-512.2 ft.) and 74 (at 896-929 ft.) contain sporadic anomalous gold values (hole 63) to significant intersections (hole 74 ; 0.141 opt Au/12.7 ft. at 909-921.7 ft.).

2) Quartz-Ankerite-Fuchsite Vein, Breccia and Alteration Zones

Anomalous gold concentrations from this style of vein mineralization is noted in holes 66 (at 300.8-309.1; assays 0.038 opt Au) and 76 (at 497.4-498.9 ft. assays 0.044 opt Au and at 540.7-546 ft. assays 0.034 opt Au).

3) Quartz-Veined and Altered Mafic-Ultramafic Volcanics in the Fourax Shear Zone

Numerous anomalous values from various holes with a notable intersection in hole 71. A biotitized alteration zone at 596-602 ft. and containing ankerite+/-quartz veining, patchy alteration and brecciation plus 15% diss, masses of py assays 0.078 opt Au/6 ft. The section contains a 2-foot section grading 0.180 opt Au.

4) Quartz Veins in Massive Volcanics (Blake River Group)

Numerous grey to white quartz veins are contained in mafic volcanics of the Blake River Group. Many are mineralized with minor galena and chalcopyrite and returned low gold assays.

Several grains of visible gold are noted in a 2-foot wide quartz vein in hole 81 at 319.4-321.4. The core was split such that the majority of the VG was left in the core box. The more

barren sample assayed 0.660 opt Au.

A quartz vein in gabbro, also in hole 81, assayed 0.150 opt Au over 2.4 ft. at 76.4-78.8. The host rock contains 10% dissemminated pyrite.

APPENDIX 2: Diamond Drill Logs

MINROC MANAGEMENT LIMITED

DRILL LOG - FOURAX II PROPERTY

HOLE NO.: FX-9082	TOWNSHIP: FOURNIERE, QUE.	CORE SIZE: BQ
COORDINATES: L16+50E BLO+00	RANGE: X	DRILLED BY: LES FORAGES GROLEAU LTEE
COLLAR ANGLE: -50 DEG.	LOT NO.:	DATE STARTED: 10/10/90
LOCATED FROM: BL	CLAIM NO.: 335177-4	DATE COMPLETED: 17/10/90
AZIMUTH: 025 DEG.		LOGGED BY: N.O. WILLOUGHBY
LENGTH: 659.5 FT.		PAGE: 1 OF 13

DEPTH	AZIMUTH	ANGLE READ	ANGLE ACTUAL
82 FT.	205		-53 DEG.
200 FT.	205		-51 DEG.
400 FT.	205		-52 DEG.
600 FT.	205		-52 DEG.
660 FT.	205		-49 DEG.

REMARKS:

Drill break-down for three days

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
0.0	82.0	CASING					
82.0	223.5	ULTRAMAFIC-MAFIC VOLCANIC Fine grained, green to dark green and bluish grey green Generally massive, soft Variably talcose, serpentinized Scattered narrow carbonate veinlets with variable orientation More mafic sections at 98.5 - 119.0, 128.5 - 138.0, 147.5 - 157.0, 166.3 - 273.5 Pillow selvedges Minor diss. py From 192.0 Several sericitic shears with ankerite veining, mainly 80 deg. TCA At 193.0, 199.5, 209.8 - with py blebs Veining and shearing (sericite-chlorite) particularly abundant over last 10 ft.					
223.5	262.5	SHEARED ULTRAMAFIC-MAFIC VOLCANIC Similar to preceeding unit, however moderately to strongly sheared/schistose at 20 - 70 deg. TCA Scattered diss. py as large cubic (1 mm) crystals Some brecciation, carbonatization from 252.0					
262.0	281.6	DIORITE, MAFIC VOLCANIC Medium to fine grained, massive to moderately foliated Green to light green With 2-5% diss. magnetite Becoming finer grained to base A few scattered irregular carbonate-ankerite veinlets Minor diss. py 278.3 - 278.7 Chloritic-sericitic shear at 30 deg. TCA Strongly sheared at 45 deg. TCA over last foot					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
281.6	284.1	SERICITE-CHLORITE +/- TALC SCHIST, MYLONITE Intensely sheared zone with schistosity at 10 - 60 deg. TCA Bluish grey green, very fine grained with 2% diss. py blebs					
284.1	287.5	BRECCIATED AND VEINED MAFIC VOLCANIC Dark green, fine grained Brecciated with random fractures and quartz-carbonate veining approx. 15% Some carbonatization With 1-3% diss., masses py mainly in host, but some also in veinlets Tour. ? here and there	14579	284.1	287.5	3.4	.001
287.5	309.5	TALC-CHLORITE +/- SERICITE SCHIST Fine grained, greyish to bluish grey green with schistosity at 40 deg. TCA on average; considerable contortion 10-20% carbonate-ankerite veinlets parallel schistosity and irregular patches; in part may be serpentine 1% diss. py					
309.5	318.3	BRECCIATED, ALTERED MAFIC VOLCANIC Grey green to light grey green, very fine grained Strongly fractured with 20% large angular carbonate-ankerite patches/breccia fragment (matrix) and carbonate-ankerite veinlets, mainly at low angles TCA With up to 3% diss., blebs py both in vein material and host rock Upper contact 40 deg. TCA and a 0.3 ft. chloritic-biotitic shear with 3% py blebs	14580 14581	309.5 314.0	314.0 318.3	4.5 4.3	NIL NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
318.3	331.0	MAFIC VOLCANIC Grey green to light grey green, fine to medium grained Massive to weakly foliated 319.0 - 325.0 1-2% carbonate-ankerite patches, similar to 309.5 - 318.3 1% diss., blebs py throughout 329.3 - 329.6 Pink-white carbonate vein at 50 deg. TCA Last 6" sheared chloritic zone at 30 deg. TCA with some py					
331.0	336.4	TALC-CHLORITE SCHIST Fine grained, bluish grey green Schistosity at 60 deg. TCA Numerous sericitic/chloritic seams Scattered white carbonate veins, patches					
336.4	345.3	MAFIC-ULTRAMAFIC VOLCANIC Green to grey green, medium grained; in part dioritic Shear foliated at 60 deg. TCA Moderately carbonatized Minor diss. py A few chloritic-sericitic laminae(?) Upper contact at 50 deg. TCA defined by 3" chlorite zone; lower contact 35 deg. TCA, similar					
345.3	369.0	TALC-CHLORITE SCHIST, ULTRAMAFIC VOLCANIC Typical with some less schistose sections Schistosity orientations variable Scattered carbonate +/- serpentine patches, veinlets Diss. py, magnetite Particularly talcose at 359.9 - 363.9					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
369.0	370.6	CARBONATIZED MAGNETITE IRON FORMATION Light grey to grey green Laminated with a few sericitic-chloritic laminae; at 40 deg. TCA 5% diss. py Several quartz-ankerite veins notably 369.0 - 369.1 (irregular), 369.5 - 369.7 at 90 deg. TCA, 370.3 at 20 deg. TCA All contain py, especially 370.3 - approx. 20% Also narrow pyritic crosscutting veinlets (50 deg. TCA) at 370.0, 370.5 Lower contact chloritic, pyritic at 40 deg. TCA	14582	369.0	370.6	1.6	.120
370.6	425.3	TALC-CHLORITE +/- SERICITE SCHIST Typical with 30% lineated carbonate-ankerite patches, veinlets; shear-induced pseudo-laminations, frequently contorted Some large py crystals Schistosity averages 40 deg. TCA Silicified to base					
425.3	436.0	QUARTZ VEINED SERICITE-CHLORITE +/- TALC SCHIST, LAMINATED SEDIMENT AND IRON FORMATION Fine grained, light grey green (Shear) laminated/schistosity at 40 deg. TCA avg., however contorted					
		425.3 - 429.1 Mainly greyish-white quartz vein with 15-20% host rock inclusions, fragments of various dimensions; frags are carbonatized, chloritized containing minor diss. py Some crossfractures at 80 deg., 15 deg. TCA notably TCA; notably pyritic seam (15 deg. TCA) in quartz at 428.1	14583	425.3	429.1	3.8	TR

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
425.3	436.0	QUARTZ VEINED SERICITE-CHLORITE +/- TALC SCHIST, LAMINATED SEDIMENT AND IRON FORMATION (Cont'd)					
		429.1 - 430.7 Laminated sediment/iron formation; some truncation of laminae, i.e. fragments within; up to 5% blebs, streaks, diss py over first 0.5 ft.	14584	429.1	432.3	3.2	.015
		429.7 Quartz-ankerite vein (1.5") at 60 deg. TCA; py at contact					
		430.7 - 432.3 Similar to 425.3 - 429.1 with upper/lower contacts at 30 deg. TCA					
		432.3 - 436.0 Laminated sediment as 429.1 - 430.7; More contorted and with 3-5% py diss., blebs Some talcose sections	14585	432.3	436.0	3.7	.008
436.0	441.3	QUARTZ-ANKERITE VEINED CHLORITIC SEDIMENT Green to grey green, poorly laminated/brecciated, foliated to schistose; some sericite sections					
		436.0 - 438.0 Strongly sheared with 20% irregular ankerite +/- quartz patches and veins (1") Veining both crosscutting (50 deg. TCA) and schistosity parallel (15 deg. TCA) With 3% blebs, diss. py mainly in host rock	14586	436.0	438.0	2.0	.170
		438.0 - 440.5 Mainly quartz-ankerite vein material with 20-25% host rock plus ankerite veins and frags from 439.0	14587	438.0	441.3	3.3	.005
		440.5 - 441.3 As 436.0 - 438.0					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
441.3	445.9	TALC-CHLORITE +/- SERICITE SCHIST Particularly sericitic over first 2 ft.	14588	441.3	445.9	4.6	.006
		442.6 - 443.0 Pyritic carbonate-quartz alteration and vein zone at 50 deg. TCA 5% blebs, diss py Scattered ankerite-carbonate veinlets, patches throughout					
445.9	448.7	PYRITIC LAMINATED SEDIMENT, IRON FORMATION Grey green, fine grained Finely laminated and silicified with 5-10% diss. py +/- blebs, stringers Mainly chloritic vs carbonaceous and magnetite rich laminae at 80 deg. TCA Numerous, less than 1" quartz-ankerite veins parallel laminations					
		445.9 - 446.2 Irregular quartz-ankerite veining at 70 deg. TCA, crosscutting with 10% diss. py in host	14589	445.9	448.7	2.8	.190
		446.2 - 448.0 Narrow carbonate-chlorite fracture at 0 deg. TCA					
		Over last 4", ankerite vein at 70 deg. TCA with 20% py in vein and host					
448.7	454.5	SERICITE-CHLORITE SCHIST Green to grey green, fine grained Schistosity at 70 deg. TCA; in part mylonitic 20-30% carbonate-ankerite irregular patches, fragments generally stretched/lineated 1% diss. py	14590 14591	448.7 451.5	451.5 454.5	2.8 3.0	.001 NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
448.7	454.5	SERICITE-CHLORITE SCHIST (Cont'd) 448.7 - 449.4 Irregular carbonate vein, breccia with 5% finely diss. py 449.6 - 450.4 Intermediate dyke with 3% py blebs, stringers associated with ankerite patches; schistosity parallel 450.7 - 451.2 Considerable ankerite veining and breccia; 1% py cubes					
454.5	459.0	SHEARED, SILICIFIED TUFF/SEDIMENT Fine to medium grained, grey green to brownish grey With 35% lineated, angular white fragments (feldspar? carbonate?) within biotitic-chloritic groundmass; silicified Also some grey rounded quartz "eyes" Scattered magnetite Strongly foliated at 10 deg. to 60 deg. TCA Moderately carbonatized with 5% diss. py Numerous quartz-ankerite veins, also pyritic, especially 454.8 (py bleb), 455.3 - 455.6 (20 deg. TCA), 456.3 - 456.6 (30 deg. TCA), serveral veins at 457.3 - 4576.6 (parallel foliation at 60 deg. TCA) Possibly diorite	14592	454.5	459.0	4.5	.007
459.0	466.8	TALC-CHLORITE +/- SERICITE SCHIST Grey green to light grey green and bluish green, fine grained Strongly sheared to mylonitic at 40 deg. TCA; 45% white talc/carbonate blebs, streaks; in places laminated 1-2% finely diss. py	14593 14594	459.0 462.8	462.8 466.8	3.8 4.0	TR TR

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
459.0	466.8	TALC-CHLORITE +/- SERICITE SCHIST (Cont'd)					
		466.1 - 466.2 Ankerite-carbonate veining parallel schistosity					
466.8	467.6	VEINED AND PYRITIC SEDIMENT Similar to 454.5 - 459.0 Silicified With 10% diss., blebs py An irregular quartz-ankerite vein at 467.2 at 30 deg. TCA, crosscutting Py blebs at vein contacts Silicified	14595	466.7	467.7	1.0	.006
467.6	489.3	SERICITE-CHLORITE +/- TALC SCHIST Fairly typical; similar to 459.0 - 466.8 Scattered finely diss. py	14596 14597 14598 14599	467.7 470.5 473.7 474.7	470.5 473.7 474.7 476.6	2.8 3.2 1.0 1.9	NIL TR .027 TR
		474.1 - 474.4 Greyish quartz vein parallel schistosity (50 deg. TCA) with 3% diss. py in host approx. 1/4"	14600	476.6	477.7	1.1	NIL
		469.7 Some pyritic-carbonate bands					
		476.6 - 477.4 Laminated sediment with 5% diss., streaks py					
489.3	492.0	MAGNETITE IRON FORMATION Light grey green to light grey, rather massive to poorly laminated; chloritic vs carbonaceous bands Carbonatized A few carbonate veinlets at low angle TCA, crosscutting	14601	489.3	492.0	2.7	.001
		489.6 Splashes of cp in a carbonate veinlet (50 deg. TCA parallel foliation)					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
492.0	494.7	SERICITE-CHLORITE SCHIST Light grey green, fine-medium grained Strongly sheared at 0 - 20 deg. TCA Some quartz-ankerite (porphyry?) veining at 493.6 - 494.0; irregular Scattered ankerite +/- quartz angular fragments Minor diss. py	14602	492.0	494.7	2.7	.003
494.7	514.6	SILICIFIED, VEINED AND MINERALIZED LAMINATED IRON FORMATION Dark grey green, fine grained Moderately well laminated at 60 deg. TCA Silicified with up to 15% quartz-ankerite veining and silica flooding Particularly strongly veined/flooded with 20% diss., bands, masses py at 497.8 - 499.5, 507.5 - 514.3 Splashes of cp in carbonate-quartz veins at 504.8, 508.3 Upper and lower contacts characterized by 3" pyritic-chlorite zones at 50 deg. TCA	14603 14604 14605 14606 14607	494.7 499.0 503.9 507.7 511.6	499.0 503.9 507.7 511.6 514.6	4.3 4.9 3.8 3.9 3.0	.031 .010 .012 .011 .014
514.6	536.0	SERICITE-CHLORITE SCHIST Fine to medium grained Schistosity averages 60 deg. TCA With up to 55% white angular carbonate fragments?; lineated Minor diss. py Possibly mafic tuff/volcanic	14608	514.6	518.0	3.4	.001
536.0	541.1	INTERBEDDED PYRITIC LAMINATED SEDIMENT AND SERICITE-CHLORITE SCHIST 536.0 - 537.0 Dark green laminated sediment, argillite with 3% diss. py	14609 14610	536.0 538.5	538.5 540.6	2.5 2.1	.007 .005

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
536.0	541.1	INTERBEDDED PYRITIC LAMINATED SEDIMENT AND SERICITE-CHLORITE SCHIST (Cont'd) 536.4 - 536.6 A quartz-carbonate vein at 20 deg. TCA, parallel foliation 537.0 Laminations at 60 deg. TCA 537.0 - 539.0 Sericite-chlorite schist; similar to 514.6 - 536.0 539.0 - 540.6 Laminated sediment as at 536.0 - 537.0 540.6 - 541.1 Silicified magnetite iron formation with 10% py					
541.1	542.3	QUARTZ-CARBONATE VEIN Greyish white with 20% randomly distributed ankerite grains, patches plus some 2 mm angular quartz fragments Numerous host rock sliver inclusions Minor diss. py	14611	540.6	542.7	2.1	.009
542.3	547.5	LAMINATED SEDIMENT Similar to 536.0 - 541.1 To 543.8, 10% diss. py Laminations average 60 deg. TCA 543.8 - 545.5 20% quartz-ankerite veining and breccia	14612 15613	542.7 545.0	545.0 547.5	2.3 2.5	.008 .001
547.5	552.6	MAFIC VOLCANIC, DIORITE Fine to medium grained, green to grey green Strongly foliated to sheared at 40 deg. TCA Upper contact gradational A few scattered carbonate stringers Scattered py, magnetite					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
552.6	566.0	AMPHIBOLE PORPHYRITIC INTERMEDIATE INTRUSIVE Dark grey to grey green, fine grained with 35% prismatic and equant amphibole phenocrysts in grey siliceous matrix Some magnetite inclusions in amphibole Occasional white feldspar phenocrysts Sheared at 15 deg. TCA over first 1.5 feet					
566.0	586.7	LAMINATED MAFIC TUFF Finely laminated, very fine grained; light dusty green Lamination/schistosity orientation variable					
		568.6 - 571.0 Massive, dark green and silicified mafic volcanic with scattered carbonate patches and 3% diss. py	14614	568.6	571.0	2.4	TR
		571.0 - 572.2 Quartz vein at 5 deg. TCA in chloritic tuff; A mass of py at 571.5	14615	571.0	572.2	1.2	NIL
		572.2 - 575.0 Massive volcanic as at 568.6 - 571.0	14616	572.2	575.0	2.8	NIL
		576.3 - 577.5 Grey quartz vein with some chlorite tuff, py inclusions Upper contact 20 deg. TCA, lower contact irregular	14617	576.3	579.4	3.1	NIL
		579.2 - 579.4 580.1 - 580.3 Grey quartz veins with irregular contacts					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
586.7	617.7	DIORITE, GABBRO					
		Medium grained, dark green to dark grey green					
		With 30% feldspar, 10% magnetite	14618	602.0	607.4	5.4	TR
		Equigranular and massive, however first 8 feet sheared	14619	607.4	610.4	3.0	TR
		at 60 deg. TCA	14620	610.4	612.0	1.6	TR
		5% carbonate and syenitic porphyry stringers, veinlets,	14621	612.0	614.6	2.6	TR
		patches often with py; as fracture fillings					
		614.6 Large mass of cp in a vuggy carbonate vein					
		Occasional quartz veining, notably 607.0 - 607.4					
		Broken up core					
617.7	659.5	MAFIC VOLCANIC, DIORITE					
		Similar to preceding unit, but with numerous fine					
		grained sections					
		Generally massive					
		617.7 - 622.5 Shear foliated at 70 deg. TCA					
		Scattered pyritic carbonate/porphyry					
		veinlets					
	659.5	END OF HOLE					

MINROC MANAGEMENT LIMITED

DRILL LOG - FOURAX II PROPERTY

HOLE NO.: FX-9083	TOWNSHIP: FOURNIERE, QUE.	CORE SIZE: BQ
COORDINATES: L15+50E BLO+00	RANGE: X	DRILLED BY: LES FORAGES GROLEAU LTEE
COLLAR ANGLE: -50 DEG.	LOT NO.:	DATE STARTED: 17/10/90
LOCATED FROM: BL	CLAIM NO.: 335178-4	DATE COMPLETED: 20/10/90
AZIMUTH: 025 DEG.		LOGGED BY: N.O. WILLOUGHBY
LENGTH: 656 FT.		PAGE: 1 OF 12

DEPTH	AZIMUTH	ANGLE READ	ANGLE ACTUAL
200 FT.	205		-52 DEG.
400 FT.	205		-54 DEG.
600 FT.	205		-53 DEG.

REMARKS:

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
0.0	72.0	CASING					
72.0	245.0	PILLOWED MAFIC VOLCANIC Fine to medium grained, generally massive Green to grey green Occasionally feldspar porphyritic In part pillowed and with some pillow breccia; clear selvedges Scattered carbonate veining/patches (selvedges?) Selvedges frequently contain py, cp 230.3 - 231.3 A talcose shear at 0 deg. TCA with 5% large py cubes					
245.0	300.0	MAFIC-ULTRAMAFIC VOLCANIC Similar to preceding unit, however some talcose/ serpentinized sections Also pillowed with good selvedges; chloritic, serpentinized Scattered diss. py					
300.0	407.6	ULTRAMAFIC VOLCANIC, TALC-CHLORITE SCHIST Grey green to light bluish grey green; fine grained Massive to schistose at 70 deg. TCA avg. Some carbonate-ankerite patches Minor diss. py; a pyritic section at 336.7 - 337.8 384.2 - 384.3 Pinkish grey feldspar porphyry at 90 deg. TCA 384.4 - 385.6 Schistosity at 0 deg. TCA A cross-shear or fold closure? 389.6 - 390.1 399.0 - 399.5 Crenulation with schistosity bending to 0 deg. TCA					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
300.0	407.6	ULTRAMAFIC VOLCANIC, TALC-CHLORITE SCHIST (Cont'd)					
		385.2 Narrow irregular ankerite vein with 2% py blebs					
407.6	415.6	SERICITE-CHLORITE +/- TALC SCHIST Fine grained, grey green to light grey green Shear laminated (?); contorted, crenulated fine bands of alternating sericite-chlorite-carbonate particularly from 413.0 Banding/schistosity averages 30 deg. TCA, frequently 0 deg. TCA from 413.0 Closely spaced chlorite-filled crenulation cleavage at 45 deg. TCA, causes both dextral and sinstral offset of laminae Up to 3% diss. py especially from 414.0	14622	412.7	415.6	2.9	.190
		415.0 - 415.6 Brecciated, silicifed with scattered diss. py, magnetite					
		Minor ankerite veining					
415.6	416.3	QUARTZ VEIN/FLOODING Greyish to milky white quartz vein with 20% slivers of host rock Upper contact 40 deg., lower contact 80 deg. TCA					
416.3	423.8	ALTERED, MINERALIZED AND BRECCIATED CHLORITE-SERICITE SCHIST (MAFIC VOLCANIC?) Grey green, fine grained with 20-30% irregular ankerite patches, veining mainly subparallel schistosity which averages 60 deg. TCA Up to 2% diss. py	14623	415.6	419.0	3.4	.013
		416.3 - 419.0 Weakly silicified plus several dark green chloritic alteration patches (fault gouge?) with 5-10% diss., stringers py					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
416.3	423.8	ALTERED, MINERALIZED AND BRECCIATED CHLORITE-SERICITE SCHIST (MAFIC VOLCANIC?) (Cont'd)					
		419.0 - 423.2 Brecciated with scattered irregular ankerite veins/patches +/- chlorite with 1-2% diss. py	14624	419.0	423.2	4.2	.004
		From 421.8 Schistosity at 0 deg. TCA					
		423.2 - 423.8 Silicified, chloritized with 25% diss., masses and stringers py					
423.8	427.4	QUARTZ VEINED, SILICIFED AND MINERALIZED ZONE Mixture of late bluish grey silica flooding, white quartz-ankerite vein material over-printing chloritized and ankerite-veined sericite-chlorite schist With 20% diss., masses py	14625	423.2	427.4	4.2	.430
		423.8 - 424.5 Bluish grey quartz vein/flooding with diffuse upper contact; lower contact 40 deg. TCA					
		424.5 - 425.4 Ankerite-veined, chloritized sericite-chlorite schist					
		425.4 - 427.4 Grey to greyish white silicified, carbonatized sediment (iron formation?) at 20 deg. TCA; a narrow sliver of ankerite-veined sericite-chlorite schist at 426.4 - 426.8					
		426.0 - 426.5 Some narrow crosscutting pyritic carbonate veinlets (15 deg. TCA) at 426.0 - 426.5					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
427.4	435.4	SERICITE-CHLORITE +/- TALC SCHIST Similar to 407.6 - 415.6 however lighter in colour, more siliceous Numerous chlorite-filled crenulation cleavage at 40 deg. TCA, disrupting (shear) laminations Schistosity at 30 - 0 deg. TCA 1-2% diss. py; minor ankerite/carbonate veining	14626 14627	427.4 431.4	431.4 435.4	4.0 4.0	.003 TR
435.4	436.5	MAGNETITE IRON FORMATION Fine grained finely laminated at 40 deg. TCA Light grey green; moderately silicified, carbonatized 5% stringers, disseminations py Several narrow carbonate veinlets at 0 - 5 deg. TCA	14628	435.4	436.5	1.1	.140
436.5	446.0	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT Fine grained; grey green to light grey green Schistose to poorly laminated, mainly at 20-60 deg. TCA					
		438.5 - 440.0 Somewhat brecciated, talcose; minor diss. py	14629 14630	436.5 440.5	440.5 442.5	4.0 2.0	.004 .005
		441.1 - 441.7 Ankerite +/- quartz veining at 90 deg. TCA					
		441.7 - 442.3 Chloritic with 5% py					
		442.5 - 444.0 Lamination/schistosity at 0 deg. TCA	14631	442.5	444.0	1.5	.011
		443.5 Quartz (porphyry?) vein parallel schistosity with 3% diss. py in vein and host (4" wide)					
		444.0 - 445.3 25% schistosity parallel (30 deg. TCA) quartz-ankerite veining with chloritized host rock, 1% diss. py	14632	444.0	446.0	2.0	.046

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
446.0	456.0	MAGNETITE IRON FORMATION AND LAMINATED SEDIMENT Dark green to green and grey green Moderately well laminated to schistose at 20 - 30 deg. TCA					
		446.0 - 449.7 Chloritic, magnetic with 2-3% diss., stringers py; variably carbonatized	14633	446.0	450.0	4.0	.005
		449.7 - 450.5					
		451.0 - 451.3 Silicified, pyritic (10 - 15%) iron formation with 2" wide ankerite/ porphyry veins parallel laminae	14634	450.0	452.0	2.0	.420
			14635	452.0	456.0	4.0	.092
		450.5 - 454.4 Laminated sediment with 2-5% diss., stringers py; some IF					
		454.4 - 455.2 Carbonate-veined sericite-chlorite +/- talc schist					
		455.2 - 456.0 Carbonatized, silicified magnetite iron formation with 2-3% py					
456.0	482.6	SERICITE-CHLORITE-TALC SCHIST Grey green to light grey green In part (shear induced?) laminated at 50 - 60 deg. TCA with ankerite-carbonate-veined (25%) and brecciated sections at 456.0 - 456.9, 461.5 - 471.0, 472.5 - 482.0; characterized by chlorite alteration, scattered diss. py	14636	456.0	458.0	2.0	.004
			14637	465.2	471.0	5.8	TR
		472.5 - 472.7 White quartz-ankerite vein at 70 deg. TCA	14638	471.0	475.0	4.0	TR

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
482.6	509.0	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT AND IRON FORMATION Fairly typical with schistosity at 40 deg. TCA; in part may be laminations With 2-3% diss. py A few scattered quartz-ankerite veins with some py	14639	483.0	486.0	3.0	.001
		486.8 - 487.3 Silicified chlorite-carbonate banded iron formation with 5% py bands, diss.	14640	486.0	488.5	2.5	.002
		499.0 - 507.0 Strongly schistose at 0 deg. TCA; in part, talcose					
509.0	511.5	TALC-CHLORITE SCHIST Typical with 10-15% ankerite/carbonate bands/veins parallel schistosity at 30 deg. TCA					
511.6	533.0	SERICITE-CHLORITE SCHIST, MAFIC VOLCANIC (TUFF) Grey green to dark grey green, fine grained; both schistose to massive, foliated at 60 - 70 deg. TCA Variably carbonatized, minor diss. py Talcose in places Some carbonate-ankerite veinlet fragments					
533.0	543.3	BRECCIATED AND VEINED SERICITE-CHLORITE +/- TALC SCHIST, MAFIC VOLCANIC/TUFF Grey green to light grey green With 35 - 40% irregular stretched white carbonate +/- talc, serpentine angular-surrounded fragments within chlorite-sericite matrix Schistosity mainly at low angle TCA, 0 - 20 deg. TCA; some local contortion A few schistosity parallel ankerite (porphyry?) veins; scattered diss. py in the vicinity; especially from 538.0	14641	538.3	543.3	5.0	.006

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
533.0	543.3	BRECCIATED AND VEINED SERICITE-CHLORITE +/- TALC SCHIST, MAFIC VOLCANIC/TUFF (Cont'd)					
		541.3 - 541.8 Ankerite vein with chlorite border at 10 deg. TCA - pillow selvedge?					
		542.2 - 542.7 Chaotic breccia zone with 25% angular frags in chloritic matrix and 3% diss. py					
		542.7 - 543.3 Laminated iron formation with several porphyry or ankerite bands at 30 deg. TCA					
543.3	551.5	FELDSPAR PORPHYRY Pale pink to pinkish grey and white aphanitic with 20% small carbonatized feldspar phenocrysts With 2-3% finely diss. py Numerous fractures, especially over first 2.5 ft., mainly at 30 deg. TCA, carbonate filled Also carbonate fractures at 20 deg. TCA, crosscutting Minor quartz-carbonate veins at 50 deg. TCA Irregular chlorite-filled fractures - 15% (breccia matrix?) Upper contact 20 deg., lower contact 60 deg. TCA	14642 14643	543.3 547.0	547.0 551.5	3.7 4.5	.010 .023
551.5	553.9	TALC-CHLORITE +/- SERICITE SCHIST Bluish grey green, fine grained With 15% carbonate-ankerite patches, vein fragments 1% finely diss. py Schistosity at 60 deg. TCA					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
553.9	572.6	LAMINATED SEDIMENT, MAFIC TUFF Green to grey green Laminated to shear foliated and schistose at 30 deg. TCA	14644	551.5	555.3	3.8	TR
			14645	555.3	557.9	2.6	.002
			14646	557.9	559.4	1.5	.004
			14647	559.4	564.1	4.7	.015
			14648	564.1	566.5	2.4	.073
			14649	566.5	570.6	4.1	.006
			14650	570.6	572.6	2.0	.002
		554.5 - 555.3 60% fragment-like lineated patches of carbonate in chloritic groundmass, 1-2% diss. py					
		555.3 - 557.9 Finely laminated, in part may be IF with 15-20% diss. py; some narrow sections as at 554.5 - 555.3 Core broken up					
		557.9 - 558.4 Vuggy, with 50% carbonate bands					
		558.4 - 559.4 Shear banded chloritic tuff with white carbonate bands; discontinuous					
		559.4 - 566.5 Similar to 554.5 - 555.3 with 3-5% finely diss. py +/- blebs Scattered ankerite-carbonate veins parallel schistosity, contain py blebs					
		566.5 - 572.6 Finely laminated chloritic tuff or sediment with 5% diss. py over last 2 feet					
		569.2 - 569.5 Irregular quartz-ankerite vein					
572.6	585.0	MAFIC TUFF/VOLCANIC Fine grained, green Strongly sheared at 60 deg. TCA Some laminations, possibly shear induced Variably carbonatized; some talcose sections Minor diss. py					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
572.6	585.0	MAFIC TUFF/VOLCANIC (Cont'd) 583.4 - 565.0 Laminated and brecciated with magnetite IF at 583.6 - 583.8; numerous angular ankerite-carbonate frags of various dimensions					
585.0	606.4	MAFIC VOLCANIC Fine to medium grained, green Strongly shear foliated at 40 deg. TCA Variably carbonatized Brecciated at 585.0 - 587.7 Several narrow chloritic tuff bands 595.0 - 595.1 White to grey intermediate intrusive parallel foliation Minor scattered diss. py					
606.4	620.5	STRONGLY SHEARED MAFIC VOLCANIC/TUFF Fine grained, green to dark green Similar to preceding unit, however strongly developed schistosity at 60 deg. TCA May in part be diorite A few narrow porphyry veinlets with diss. py 608.5 - 609.5 A vuggy-pyritic section (10%)					
620.5	627.6	ALTERED, PYRITIC MAFIC VOLCANIC Green to dark green, fine grained Variably sheared, carbonatized and silicified With 5 - 10% finely diss. py throughout A few irregular carbonate veins	14651 14652	620.5 624.0	624.0 627.6	3.5 3.6	TR NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
627.6	638.6	ALTERED, PORPHYRY INTRUDED MAFIC VOLCANIC Similar to 620.5 - 627.6 with numerous porphyry/quartz dykelets, stringers and associated alteration					
		627.6 - 628.7 Pinkish to pale grey green quartz vein and silica flood zone Upper contact at 30 deg. TCA, lower contact at 20 deg. TCA	14653 14654 14655	627.6 628.7 635.2	628.7 635.2 638.6	1.1 6.5 3.4	.006 .002 .001
		628.7 - 635.2 Soft, chloritic and washed core; some core lost; only 3.5 ft. in interval					
		635.2 - 638.6 Several narrow quartz vein and pink to dark grey porphyry dykelets with some diss. py					
638.6	647.0	SERICITIZED, CHLORITIZED MAFIC VOLCANIC Light grey green to dark green Fine grained, moderately foliated at 60 deg. TCA					
		638.6 - 642.0 Sericitized	14656 14657	638.6 642.0	642.0 644.5	3.4 2.5	.003 TR
		641.7 - 643.1 Silicified with 5% diss. py					
		644.0 - 644.5 Sericitized					
		644.5 - 647.0 Mainly silicified, pyritic with 1-2% py, some porphyry veinlets	14658	644.5	647.0	2.5	NIL
		645.1 Splash of cp in porphyry					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
647.0	656.0	FELDSPAR PORPHYRITIC MONZONITE/GRANITE Grey and pinkish grey, medium grained Biomodal porphyritic with 5-10% 5 mm pink potash feldspar, 30-40%, 1 mm white plagioclase? phenocrysts Some narrow quartz veining at 40 deg. TCA containing py, notably at 651.5 Diffuse silica flooded contact zone over first foot; contact at 60 deg. TCA	14659	647.0	651.5	4.5	.006
			14660	651.5	656.0	4.5	.002
	656.0	END OF HOLE					

MINROC MANAGEMENT LIMITED

DRILL LOG - FOURAX II PROPERTY

HOLE NO.: FX-9084
TOWNSHIP: FOURNIERE, QUE.
CORE SIZE: BQ

COORDINATES: L6+50E
BLO+00
RANGE: X
DRILLED BY: LES FORAGES GROLEAU LTEE

COLLAR ANGLE: -50 DEG.
LOT NO.:
DATE STARTED: 21/10/90

LOCATED FROM: BL
CLAIM NO.: 335177-4
DATE COMPLETED: 23/10/90

AZIMUTH: 025 DEG.
LOGGED BY: N.O. WILLOUGHBY

LENGTH: 680 FT.
PAGE: 1 OF 12

DEPTH	AZIMUTH	ANGLE READ	ANGLE ACTUAL
112 FT.	205		-52 DEG.
200 FT.	205		-53 DEG.
400 FT.	205		-55 DEG.
680 FT.	205		-55 DEG.

REMARKS:

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
0.0	112.0	CASING					
112.0	129.5	ULTRAMAFIC TO MAFIC VOLCANIC Fine to medium grained, grey green to bluish grey green Massive to weakly schistose Moderate talc, serpentine alteration A few carbonate-ankerite patches, irregular veining					
129.5	189.0	ULTRAMAFIC VOLCANIC, TALC-CHLORITE SCHIST Similar to preceding unit, much more schistose, talcose With 15% patchy to vein-like talc, serpentine and carbonate Up to 15% scattered actinolite 1% finely diss. py, plus some large crystals to 1 mm Schistosity orientation avg. 60 deg. TCA 171.5 - 181.0 Extremely talcose					
189.0	191.0	BIOTITIC DIORITE Medium grained, intergranular, dark green With 45% altered feldspar, 55% biotite +/- chlorite Some carbonate alteration patches containing minor diss. py Upper and lower contacts, 45 deg. TCA					
191.0	197.7	MAFIC-ULTRAMAFIC VOLCANIC Similar to 112.0 - 129.5 Scattered actinolite; may in part be diorite					
197.7	445.2	TALC-CHLORITE SCHIST Similar to 129.5 - 189.0 Generally more schistose, up to 3% diss. py 200.0 Narrow white ankerite-quartz vein at 60 deg. TCA					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
197.7	445.2	TALC-CHLORITE SCHIST (Cont'd) Numerous scattered irregular talc, serpentine +/- carbonate patches, veinlets throughout 259.6 - 262.2 Schistosity at 0 deg. TCA Some occasional brecciation From 434.5 5% diss. py mainly as 1 mm cubes in both schist and vein material	14661 14662	434.5 439.0	439.0 445.2	4.5 6.2	NIL TR
		Over last foot, white ankerite/carbonate vein at 10 deg. TCA					
445.2	447.5	QUARTZ VEINED FELDSPAR PORPHYRY White and grey to pinkish grey and salmon; generally aphanitic, silicified, feldspathized With 15% irregular chloritic volcanic inclusions; 10% white and grey vein quartz With 2-3% diss. py in all phases Upper contact 10 deg. TCA, lower contact irregular, approx. 5 deg. TCA	14663	445.2	447.5	2.3	.003
447.5	451.1	SERICITE-CHLORITE SCHIST Light green to light grey green Schistosity at 15 - 60 deg. TCA Minor carbonate veining, pyrite	14664	447.5	451.1	3.6	.001

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
451.1	483.0	QUARTZ VEINED FELDSPAR PORPHYRY Similar to 445.2 - 447.5 with scattered masses of py					
		451.6 - 452.8 453.5 - 455.5 Quartz veining at 0 - 60 deg. TCA with 10% py masses, diss. +/- galena	14665	451.1	455.5	4.4	.008
			14666	455.5	458.0	2.5	.003
		458.0 - 459.0 460.0 - 463.7 Less altered, grey feldspar porphyry with some narrow quartz veins at 70 deg. TCA	14667	458.0	463.7	5.7	.003
			14668	463.7	466.5	2.8	.027
		From 466.5 Scattered schist inclusions	14669	466.5	470.5	4.0	.030
		472.0 - 472.6 Pyritic (approx. 10-15%) schistose rock (volcanic?)	14670	470.5	474.5	4.0	.040
		474.6 - 475.1 Fault breccia with 35% angular porphyry fragments in chloritic matrix	14671	474.5	476.1	1.6	.120
		476.1 - 483.0 Mainly white to pinkish quartz vein with minor diss. py	14672	476.1	483.0	6.9	.260
483.0	489.3	TALC-CHLORITE +/- SERICITE SCHIST Light green to light grey green, fine grained Schistosity avgs. 50 deg. TCA Scattered carbonate-ankerite veinlets 2% diss. py	14673	483.0	489.3	6.3	.300
		484.0 - 484.4 487.3 - 488.0 White to grey quartz +/- ankerite veins containing numerous host rock fragments					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
489.3	491.8	MAGNETITE IRON FORMATION Green to grey green, fine grained Finely laminated With 2-5% finely diss. py 2% quartz-ankerite veinlets parallel laminae and contain occasional py blebs Variably carbonatized, brecciated 489.3 - 490.0 A carbonate vein at 15 deg. TCA with trace py	14674	489.3	491.8	2.5	.029
491.8	514.5	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT Green to grey green, fine grained Schistose to moderately well laminated at 50 deg. TCA 1-2% diss. py Variably brecciated and silicified with scattered irregular ankerite-quartz veining 496.3 - 497.9 Porphyry at 45 deg. TCA with 10% diss., blebs py 498.0 Irregular grey quartz vein 511.8 - 512.5 Silicified, feldspathized rock or porphyry at 45 deg. TCA	14675 14676 14677 14678 14679 14680	491.8 494.5 498.0 503.0 509.0 512.5	494.5 498.0 503.0 509.0 512.5 514.5	2.7 3.5 5.0 6.0 3.5 2.0	.003 .017 TR .001 .003 .002
514.5	516.5	FELDSPAR PORPHYRY AND ALTERED SEDIMENT Grey to reddish brown and green 514.5 - 514.6 Grey silicified/quartz veined feldspar porphyry 514.6 - 515.1 Feldspathized laminated sediment with minor diss. py	14681	514.5	516.5	2.0	NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
514.5	516.5	FELDSPAR PORPHYRY AND ALTERED SEDIMENT (Cont'd)					
		515.1 - 515.5 Mixed porphyry and sediment with 1% diss. py					
		515.5 - 516.5 Breccia/shear zone at 20 deg. TCA with 20% white-grey fragments in chloritic/ tuffaceous groundmass; 1% diss. py Also some orange syenitic fragments					
516.5	524.3	MAGNETITE IRON FORMATION OR VOLCANIC					
		Dark green, fine grained and massive	14682	516.5	520.5	4.0	NIL
		Moderately to strongly magnetic	14683	520.5	524.3	3.8	NIL
		Fractured and vuggy with 15% irregular grey to pink porphyry vug filling (calcite?)					
		Some shearing parallel TCA					
		Brecciated, carbonatized over last foot					
		Entire section may be indurated fault gouge					
524.3	527.5	SILICIFIED, PORPHYRY INJECTED SEDIMENT					
		Opalescent, light maroon - brownish grey	14684	524.3	527.5	3.2	.002
		A somewhat banded aspect at 30 deg. TCA with some narrow parallel quartz veins					
		2-3% finely diss. py					
		Over last foot, vuggy and brecciated with quartz-carbonate veinlets at 0 - 15 deg. TCA					
		Upper and lower contacts at 45 deg. TCA					
527.5	537.5	INTERBEDDED SERICITE-CHLORITE +/- TALC SCHIST AND LAMINATED SEDIMENT	14685	527.5	529.0	1.5	.002
		Similar to 491.8 - 514.5 with significant pyritic (10%) laminated IF/sediment at 527.7 - 529.0, 534.0 - 534.5	14686	529.0	531.5	2.5	NIL
			14687	531.5	533.5	2.0	.008
			14688	533.5	537.5	4.0	NIL
		532.2 - 532.5 A pyritic-chloritic shear zone at 60 deg. TCA with 20% py diss., blebs					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
537.5	540.2	SILICIFIED, PORPHYRY INJECTED SEDIMENT Grey green to pale grey green and pinkish grey, opalescent A few white quartz veins at 80 deg. TCA Also fractured/veined at 30 deg. TCA, crosscutting remnant laminations (70 - 80 deg. TCA) 5% finely diss. py throughout Upper and lower contacts at 50 deg. TCA	14689	537.5	540.2	2.7	.003
540.2	551.0	SERICITE-CHLORITE +/- TALC SCHIST Grey green to light grey green Fine grained Minor quartz and ankerite veining 1% diss. py Schistosity at 40 deg. TCA	14690	540.2	545.2	5.0	TR
			14691	545.2	550.2	5.0	.002
		550.2 - 551.0 Brecciated and quartz-carbonate veined with 10% py masses					
551.0	552.5	MAGNETITE IRON FORMATION Green to grey green; fine grained, massive to foliated at 60 deg. TCA Upper contact at 40 deg. TCA, characterized by 2" pyritic-chloritic-quartz vein zone Lower contact 45 deg. TCA	14692	550.2	552.5	2.3	.007
552.5	558.7	SERICITE-CHLORITE +/- TALC SCHIST Similar to 540.2 - 551.0 With 5% irregular ankerite-quartz veining Scattered diss. py Schistosity at 60 deg. TCA	14693	552.5	555.5	3.0	TR
			14694	555.5	558.7	3.2	NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
558.7	591.0	TALC-CHLORITE SCHIST Light greyish green, fine grained Schistosity at 50 deg. TCA Some mylonitic sections					
		580.7 - 580.9 589.1 - 589.2 Carbonate ankerite veins with diss. py at 40, 80 deg. TCA respectively					
591.0	596.7	SERICITE-CHLORITE +/- TALC SCHIST Very fine grained, light grey green Schistosity at 40 deg. TCA A few scattered carbonate-ankerite veins, schistosity parallel mainly Minor diss. py Some shear induced lamination					
596.7	637.0	MAGNETITE IRON FORMATION, LAMINATED SEDIMENT/TUFF Fine grained, grey green to light grey green; foliated to laminated at 40 - 60 deg. TCA Upper contact at 40 deg. TCA					
		596.7 - 602.2 Foliated to weakly laminated magnetite iron formation Variably carbonatized with 1-2% diss., streaks py Some narrow slightly crosscutting carbonate +/- quartz veins approx. 3%; infrequently contain py	14695 14696	596.7 600.2	600.2 602.2	3.5 2.0	NIL .036
		601.2 - 602.2 10% py blebs, diss. associated with chloritic alteration, ankerite-quartz veining					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
596.7	637.0	MAGNETITE IRON FORMATION, LAMINATED SEDIMENT/TUFF (Cont'd)					
		602.2 - 605.6 Sericite-chlorite schist with 20% ankerite-carbonate veining at 602.2 - 603.2 1% diss. py Lower contact at 35 deg. TCA, chloritic, pyritic	14697	602.2	605.6	3.4	NIL
		605.6 - 615.9 Magnetite iron formation, foliated to finely laminated Variably carbonatized; in part may be mafic volcanic 1-3% finely diss. py Scattered crosscutting carbonate veinlets containing py	14698	605.6	609.0	3.4	.013
		605.6 - 605.9 3% py blebs					
		607.0 - 607.9 Several low angle TCA carbonate veins containing py blebs approx. 5%					
		607.9 - 609.0 Chloritic with 5% irregular quartz-ankerite veins and 5% stringers, blebs py mainly in host					
		610.5 - 610.8 20% finely diss. py with some quartz-ankerite veinlets	14699 14700	609.0 612.5	612.5 615.9	3.5 3.4	.086 .052
		615.4 - 615.9 Chloritic contact zone with 15% diss. py					
		615.9 - 621.8 Sericite-chlorite +/- talc schist with up to 15% carbonate-ankerite veining, alteration patches Minor diss. py	14701	615.9	621.8	5.9	NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
596.7	637.0	MAGNETITE IRON FORMATION, LAMINATED SEDIMENT/TUFF (Cont'd)					
		621.8 - 628.0 Finely laminated magnetite iron formation with 1% diss. py; strongly sheared	14702 14703	621.8 625.0	625.0 628.0	3.2 3.0	TR NIL
		628.0 - 637.0 Magnetite iron formation, similar to 596.7 - 602.2; less py	14704 14705	628.0 632.0	632.0 637.0	4.0 5.0	NIL .037
637.0	643.4	SHEARED MAFIC VOLCANIC, LAMINATED TUFF Fine grained, green to grey green Shear foliated to laminated at 50 deg. TCA In part may be sediment	14706	637.0	639.5	2.5	TR
		From 639.5 Several foliation parallel quartz-ankerite veins with diss. py in adjacent host rock	14707	639.5	643.4	3.9	.029
		642.5 - 642.9 Quartz vein at 90 deg. TCA					
643.4	658.9	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT AND IRON FORMATION Fine grained, green light green to grey green Mylonitic, sheared at 50 deg. TCA with some laminated sections Variably carbonatized and pyritic	14708	643.4	646.3	2.9	.002
		644.4 - 646.5 Brecciated with 35% lineated white to grey carbonate fragments; pseudo-laminated	14709	646.3	648.0	1.7	.003
		648.0 - 652.8 Somewhat brecciated iron formation with 30% foliation parallel carbonate-ankerite veins, 20% diss. py	14710	648.0	652.8	4.8	.028
		652.8 - 658.9 Sericite-chlorite schist with schistosity at 0 - 20 deg. TCA	14711	652.8	658.9	6.1	NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
658.9	660.3	ANKERITE-QUARTZ BRECCIA AND VEINING					
		658.9 - 659.9 Ankerite-quartz breccia and veining with chloritic host rock inclusions; rather chaotic and irregular Minor py	14712	658.9	660.3	1.4	NIL
		659.9 - 660.3 Quartz vein at 30 deg. TCA with 0.5 - 2 inch wide massive chlorite at the contacts; somewhat vuggy					
660.3	666.5	SERICITE-CHLORITE SCHIST Similar to 652.8 - 658.9					
666.5	668.3	MAGNETITE IRON FORMATION/MAFIC VOLCANIC Green to dark green, massive to foliated Fine grained Variably magnetic, carbonatized Some vugs; may be fault gouge					
668.3	675.0	MAFIC TUFF/VOLCANIC Green and dark green, fine grained Foliated at 30 deg. TCA; some laminations Scattered, patchy carbonate alteration Some diss. py Quartz-ankerite veins with py blebs, patches at 670.4, 670.8, 672.6 - 672.7	14713	670.0	673.0	3.0	.002
675.0	679.0	MAFIC VOLCANIC Green to dark green, fine grained Massive to foliated at 50 deg. TCA Scattered carbonate patches, veining and py					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
679.0	680.0	DIORITE Medium grained, massive to weakly foliated Green Scattered magnetite, py Moderately carbonatized					
	680.0	END OF HOLE					

MINROC MANAGEMENT LIMITED

DRILL LOG - FOURAX II PROPERTY

HOLE NO.: FX-9085
TOWNSHIP: FOURNIERE, QUE.
CORE SIZE: BQ

COORDINATES: L7+50E
7+00N
RANGE: X
DRILLED BY: LES FORAGES GROLEAU LTEE

COLLAR ANGLE: -50 DEG.
LOT NO.:
DATE STARTED: 14/10/90

LOCATED FROM: FX-8973
CLAIM NO.: 335178-4
DATE COMPLETED: 29/10/90

AZIMUTH: 205 DEG.
LOGGED BY: N.O. WILLOUGHBY

LENGTH: 769.5 FT.
PAGE: 1 OF 15

DEPTH	AZIMUTH	ANGLE READ	ANGLE ACTUAL
200 FT.	205		-51 DEG.
400 FT.	205		-52 DEG.
600 FT.	205		-50 DEG.
769.5 FT.	205		-49 DEG.

REMARKS:

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
0.0	66.0	CASING					
66.0	104.0	MAFIC VOLCANIC Very fine to fine grained, massive From 95.0, medium grained A few carbonate-quartz-pyrite replaced pillow selvedges Also some narrow pyrite-filled fractures Scattered diss. py					
104.0	178.0	DIORITE, GABBRO Medium grained, massive Green Gradational contact with both overlying and underlying units 106.5 - 109.0 133.0 - 137.5 Narrow quartz-carbonate veins with diss. py, tr cp at 0 deg. TCA 153.0 - 153.7 Irregular mass of quartz-carbonate; pillow selvedge?					
178.0	317.0	MAFIC VOLCANIC Similar to 66.0 - 104.0 with considerable pillow breccia, scattered selvedges Fine to medium grained to 200.0; fine to very fine at 200.0 - 313.5 with some feldspar phenocrysts; final 3.5 ft. medium grained 210.0 - 210.2 Irregular syenitic material with py, epidote masses 218.9 - 219.1 Ankerite-k-spar-py filled selvedge at 30 deg. TCA 274.2 - 274.6 Pyritic-chlorite-carbonate filled selvedge at 20 deg. TCA					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
317.0	373.3	DIORITE, GABBRO Similar to 104.0 - 178.0; very massive with 35% carbonatized/saussuritized feldspar Finer grained to base, gradational contact with underlying unit					
373.3	401.0	MAFIC VOLCANIC Fine to very fine grained, green to light dusty green and grey green Massive to weakly foliated Scattered py filled fractures at various orientations					
401.0	414.6	ALTERED DIORITE Fine to medium grained, green Variably carbonatized with 15% carbonate-py +/- cp filled fractures mainly at 70 deg., 45 deg. TCA					
		403.8 - 404.0 Quartz vein at 30 deg. TCA with a bleb of py	14714	403.2	407.9	4.7	TR
		408.0 - 409.5 5% py diss., stringers	14715	407.9	409.5	1.6	.006
		413.1 - 414.6 2% pyritic fractures	14716	409.5	414.6	5.1	NIL
414.6	461.8	MAFIC VOLCANIC OR TUFF Similar to 373.3 - 401.0 Shear foliated at 50 deg. TCA from 418.0 Some laminations or pillow selvedges	14717	414.6	416.2	1.6	.001
		414.6 - 416.2 Quartz-carbonate veined and silicified with 10% py blebs, masses and some splashes of cp					
		457.2 - 457.6 Banded quartz-ankerite vein at 80 deg. TCA with some py					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
461.8	467.5	MAGNETITE IRON FORMATION OR DIORITE Medium grained, dark green Massive, vuggy; possibly silicified fault gouge Strongly magnetic with 2% diss. py Variably carbonatized with 1% wedge-like ankerite/ porphyry patches, irregular veinlets Numerous py stringers, blebs					
467.5	474.0	MAFIC TUFF Dusty green, very fine grained; somewhat laminated to shear foliated at 50 deg. TCA Minor carbonate alteration					
474.0	475.9	MAGNETITE IRON FORMATION Fine grained, finely laminated at 60 deg. TCA; alternating chloritic-magnetite-carbonate laminae 2% py bands, diss. A few narrow lamination parallel quartz veins with traces py	14718	474.0	477.2	3.2	.001
475.9	477.2	MAFIC TUFF Similar to 467.5 - 474.0					
477.2	481.5	FELDSPAR PORPHYRITIC MONZONITE Medium grained, pinkish grey Massive to foliated at 80 deg. TCA Variably silicified With up to 20% 1 mm reddish orange to pink and white subhedral feldspar phenocrysts 15% amphibole 1% diss. py Several narrow quartz veins parallel to foliation	14719	477.2	481.5	4.3	.004

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
481.5	486.5	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT AND IRON FORMATION Green to grey green, fine grained Schistosity, laminations at 70 - 80 deg. TCA	14720	481.5	484.0	2.5	.007
		481.5 - 482.2 Black chloritic +/- sericitic shear with 1% diss. py					
		482.2 - 484.0 Sericite-chlorite schist and laminated sediment with ankerite-quartz irregular veining, 1-2% diss. py					
		484.0 - 485.1 Laminated iron formation with 3-5% diss., bands py	14721	484.0	486.5	2.5	.062
		485.1 - 485.5 Sericite-chlorite schist, laminated sediment as 482.2 - 484.0					
		485.5 - 486.5 Laminated iron formation, sediment with 5-10% diss. py; some brecciation					
486.5	489.3	SILICIFIED, PORPHYRY INJECTED LAMINATED SEDIMENT Fine grained, light grey green to light grey and buff With 35% irregular to vein-like feldspar porphyry +/- quartz veining, all foliation parallel at 60 deg. TCA With 1-2% diss. py; first 0.5 ft., 5% diss. py Last foot with 5-10% py with 5% quartz; relatively chloritic	14722	486.5	489.3	2.8	.035
489.3	504.7	SERICITE-CHLORITE +/- TALC SCHIST Fine grained, grey green to bluish green Schistosity at 70 deg. TCA	14723	489.3	494.0	4.7	.003
		491.5 - 494.0 Ankerite-quartz +/- tourmaline veining					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
504.7	505.3	PYRITIC, CHLORITIC LAMINATED SEDIMENT Similar to 481.5 - 482.2 with 5% diss. py Alteration zone?	14724	503.5	505.5	2.0	TR
505.3	528.2	QUARTZ VEINED, PORPHYRY INJECTED SEDIMENT Grey to grey green, fine grained Strongly silicified, with 10% white to grey quartz veining usually parallel foliation at 60-80 deg. TCA 2-5% finely diss. py frequently contained within veins and siliceous/flooded host rock	14725	505.3	507.0	1.7	.008
		506.0 - 506.6 Irregular quartz-ankerite veining, alteration with diss. tourmaline needles and large masses of py; Also some tourmaline veinlets at 45 deg. TCA	14726	507.0	512.0	5.0	.008
		512.0 - 515.0 Strong silica flooding with 5% diss. py, some stringers	14727	512.0	515.0	3.0	.015
		515.0 - 516.5 1% py stringers	14728	515.0	517.0	2.0	.025
		516.6 - 516.9 Quartz veining with 3% py blebs					
		516.9 - 528.2 4% diss. py with a few masses, stringers from 524.5 associated with sericite and chlorite	14729 14730 14731	517.0 521.0 525.0	521.0 525.0 528.2	4.0 4.0 3.2	.022 .013 .012
		Over last 3", quartz vein at 50 deg. TCA containing a 1" chlorite-pyrite shear					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
528.2	530.0	QUARTZ VEINED SERICITE-CHLORITE SCHIST Grey green to light grey green Fine grained with schistosity at 70 deg. TCA In part may be laminated With 15% white to grey irregular quartz veining, flooding Numerous carbonate-ankerite veinlets 528.9 - 530.3 10% py blebs, diss.	14732	528.2	530.0	1.8	.014
530.0	562.3	SERICITE-CHLORITE +/- TALC SCHIST, LAMINATED SEDIMENT Green to grey green and light grey green to bluish green Fine grained Schistosity variable due to deformation, but avgs. 70 deg. TCA In places, may be laminated; possibly shear induced 533.0 - 536.6 Talc-chlorite schist with 30% irregular carbonate-ankerite patches, veinlets 544.4 - 544.6 quartz-ankerite vein 30 deg. TCA, crosscutting schistosity 545.5 - 546.3 Irregular ankerite veining with traces tourmaline 553.3 - 553.7 Strongly contorted carbonate veinlets with ankerite masses, veins containing 2% py blebs	14733	553.0	556.0	3.0	.006
		555.2 - 555.5 Thin iron formation band containing a carbonate veinlet, slightly oblique laminae with 5% diss., blebs py	14734	556.0	562.3	6.3	.005

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
562.3	578.0	FELDSPAR PORPHYRY Light grey to light pinkish buff to pinkish grey Up to 30% white feldspar phenocrysts 2-3% finely diss. py					
		562.3 - 562.9 Numerous host rock inclusions					
		562.9 - 570.0 Several white quartz veins at 70-80 deg. TCA, parallel foliation Also, narrow quartz veinlets at 45 deg. TCA, crosscutting	14735	562.3	565.0	2.7	.006
			14736	565.0	570.0	5.0	.005
		570.0 - 574.0 Pinkish grey to light grey bleached zone, possibly altered host rock; 2-3% diss. py	14737	570.0	574.0	4.0	.003
		574.0 - 576.6 Quartz-ankerite veined sericite-chlorite schist with 3% diss. py Upper contact 70 deg. TCA, lower contact 30 deg. TCA	14738	574.0	576.6	2.6	.003
		576.6 - 578.0 Silicified, bleached porphyry with several chlorite-filled fractures, 2-3% diss. py Lower contact 60 deg. TCA	14739	576.6	578.0	1.4	.005
578.0	589.5	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT AND IRON FORMATION Fine grained, grey green to light grey green					
		578.0 - 580.8 Sericite-chlorite +/- talc schist; schistosity at 30 deg. TCA; numerous carbonate-ankerite patches, veinlets mainly schistosity parallel Minor diss. py	14740	578.0	580.8	2.8	.005

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
578.0	589.5	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT AND IRON FORMATION (Cont'd)					
		580.8 - 583.9 Interbedded laminated sediment and iron formation with laminae at 40 deg. TCA Somewhat brecciated with scattered but lineated/foliated carbonate(?) frags IF mainly from 581.8; 1% diss. py	14741	580.8	583.9	3.1	.001
		583.9 - 585.8 Sericite-chlorite +/- talc schist - similar to 578.0 - 580.8	14742	583.9	585.8	1.9	.003
		585.8 - 589.5 Interbedded laminated sediment and iron formation with sediment at 585.8 - 587.0, sericite-chlorite schist at 587.0 - 588.1, IF at 588.1 - 589.5 with 5-10% diss. py	14743	585.8	589.5	3.7	.004
589.5	594.8	SERICITE-CHLORITE-TALC SCHIST Grey green to light grey green and bluish grey Schistosity at 30 deg. TCA Scattered carbonate-ankerite patches, fragments Minor diss. py	14744	589.5	594.8	5.3	.016
594.8	600.5	INTERBEDDED LAMINATED SEDIMENT AND IRON FORMATION Similar to 578.0 - 589.5					
		594.8 - 595.8 Laminated sediment	14745	594.8	598.0	3.2	.003
		595.8 - 596.5 Mixed sediment, magnetite iron formation; somewhat brecciated with scattered diss. py					
		596.5 - 598.0 Mixed IF, talc-chlorite schist; strongly deformed with 3% diss. py					
		598.0 - 600.5 Mainly IF, silicified and injected by quartz/porphyry; 3% diss. py	14746	598.0	600.5	2.5	.011

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
600.5	608.0	SERICITE-CHLORITE +/- TALC SCHIST Similar to 589.5 - 594.8 with veined and pyritic (5-10%) IF bands at 601.4 - 601.6, 603.1 - 603.3, 605.7 - 606.0 (also quartz veined)	14747 14748	600.5 605.0	605.0 608.0	4.5 3.0	.003 .008
		603.8 - 604.1 Quartz vein at 90 deg. TCA					
608.0	613.0	MAGNETITE IRON FORMATION Finely laminated, siliceous and carbonatized Laminae at 15-30 deg. TCA; up to 5% diss. py Numerous quartz-ankerite +/- porphyry veinlets at 60 deg. TCA; many contain cp blebs as at 609.1, 609.2, 609.8, 609.9, 610.2 Upper contact at 20 deg. TCA characterized by feldspar porphyry to 608.5	14749	608.0	610.5	2.5	TR
		608.5 - 609.0 10% blebs, diss. py					
		610.5 - 613.0 Several quartz-ankerite veins parallel laminae with 10% py blebs in the vicinity	14750	610.5	613.0	2.5	.008
613.0	623.3	LAMINATED SEDIMENT, SERICITE-CHLORITE SCHIST AND IRON FORMATION Fairly typical with up to 3% finely diss. py Scattered narrow contorted vein-like pyritic iron formation and/or ankerite veins at 614.2 - 615.2, 616.1 - 616.5, 617.4 - 618.0, 619.0 - 620.0	14751 14752	613.0 617.0	617.0 621.0	4.0 4.0	.002 .003
		621.6 - 622.5 Silicified, porphyry injected iron formation with 5% py stringers, some of which crosscut at 15 deg. TCA; at 622.0, low angle carbonate vein with trace cp	14753	621.0	623.3	2.3	.001
		Some talcose sections					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
623.3	639.5	QUARTZ-VEINED TALC-CHLORITE SCHIST					
		623.3 - 625.3 10% irregular greyish to white quartz +/- ankerite veining in schist Schistosity at 80 deg. TCA Scattered diss. py in schist, occasionally in vein material	14754	623.3	625.3	2.0	.015
		625.3 - 633.1 White to grey massive quartz with 45% irregular schist frags Minor diss. py	14755	625.3	633.1	7.8	.036
		633.1 - 639.5 Mainly white quartz veining with occasional small schist frags, minor diss. py Numerous fractures at 30 deg, 70 deg. TCA	14756	633.1	639.5	6.4	.030
639.5	660.5	TALC-CHLORITE SCHIST Fine grained, bluish grey green Schistosity orientation extremely variable A few quartz-ankerite veins, frags 1-2% diss. py					
660.5	661.5	MAGNETITE IRON FORMATION Weakly laminated; brecciated, silicified, carbonatized Some irregular quartz (porphyry?) veining containing py blebs 5-10% py stringers, diss. Contacts irregular	14757	660.5	661.5	1.0	.025
661.5	667.6	QUARTZ-VEINED TALC-CHLORITE SCHIST Similar to 623.3 - 633.1	14758	661.5	667.6	6.1	.004

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
667.6	682.9	QUARTZ VEIN					
		White to greyish white, massive	14759	667.6	675.0	7.4	.007
		With a few scattered talc-chlorite schist inclusions	14760	675.0	679.0	4.0	.060
		A few late quartz-carbonate veinlets at 60-90 deg. TCA	14761	679.0	682.9	3.9	.095
		Some ankerite patches					
		Sparse sulphide					
682.9	686.9	QUARTZ-VEINED AND SILICA FLOODED FELDSPAR PORPHYRY	14762	682.9	686.9	4.0	.450
		Consists mainly of white to grey quartz cutting and flooding pale pinkish brown feldspar porphyry					
		Porphyry contains 1-3% finely diss. py					
		Late narrow quartz veinlets at 60 deg., 30 deg. TCA					
		Upper contact irregular, lower contact at 45 deg. TCA					
686.9	697.3	QUARTZ-VEINED TALC-CHLORITE SCHIST					
		Similar to 623.3 - 639.5					
		686.9 - 688.1 Fault gouge or ground core of talc-chlorite schist	14763	686.9	690.5	3.6	.090
		688.1 - 689.1 White to grey massive quartz vein at 90 deg. TCA; some narrow crosscutting veinlets at 60 deg. TCA					
		689.1 - 690.5 15% quartz veining in talc chlorite schist					
		690.5 - 697.3 Mainly vein quartz with 10% talc-chlorite schist inclusions; 1% diss. py	14764	690.5	694.0	3.5	.015
			14765	694.0	697.3	3.3	.007
697.3	727.4	QUARTZ-VEINED AND SILICA FLOODED FELDSPAR PORPHYRY +/- SEDIMENT					
		10% white to greyish irregular quartz veining within pale grey green feldspar porphyry and/or foliated/ sheared sediment	14766	697.3	700.0	2.7	.011

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
697.3	727.4	QUARTZ-VEINED AND SILICA FLOODED FELDSPAR PORPHYRY +/- SEDIMENT (Cont'd)					
		697.3 - 700.0 15% quartz veining, flooding in strongly foliated (sediment?) rock at 40 deg. TCA; 3-5% finely diss. py in host, vein material barren	14767	700.0	703.5	3.5	.017
		700.0 - 703.5 5% quartz veining in silicified greyish green feldspar porphyry; porphyry contains 5% diss., blebs py, and 10% over last 0.5 ft.	14768	703.5	707.5	4.0	.450
		703.5 - 712.0 Veined and silicified sediment; in part may be porphyry; with up to 5% finely diss. py					
		703.5 - 704.4 705.0 - 706.0 White quartz vein					
		706.1 - 706.4 Carbonate-tourmaline vein at 20 deg. TCA					
			14769	707.5	712.0	4.5	.004
		712.0 - 727.4 Veined and silicified porphyry; in part may be sediment Similar to preceding sections with up to 10% diss. py in places, strongly foliated at 60 deg. TCA	14770	712.0	717.5	5.5	.014
		716.1 - 717.5 White quartz vein at 60 deg. TCA	14771	717.5	722.5	5.0	.018
		From 722.5 Pinkish brown colour with up to 7% diss. py; 15% quartz veining	14772	722.5	727.4	4.9	.016

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
727.4	740.1	QUARTZ-VEINED, PORPHYRY INJECTED SERICITE-CHLORITE +/- TALC SCHIST, LAMINATED SEDIMENT Typical laminated sediment, schist with schistosity at 30 - 40 deg. TCA with 1-5% diss., blebs py 15% quartz +/- ankerite veining	14773	727.4	729.4	2.0	.001
			14774	729.4	733.5	4.1	.012
		732.3 - 733.5	14775	733.5	736.9	3.4	.014
		736.9 - 738.4 Silicified and veined feldspar porphyry with 5% diss., blebs py	14776	736.9	740.1	3.2	.005
740.1	747.7	SILICIFIED AND QUARTZ VEINED FELDSPAR PORPHYRY Pale grey green to light pinkish brown Strongly foliated at 70 deg. TCA With 5% finely diss. py, a few blebs A few chlorite-filled fractures also contain py					
		740.1 - 740.6 Mainly greyish quartz with talc-chlorite schist inclusions	14777	740.1	743.9	3.8	.013
		742.2 - 743.0 Talc-chlorite schist	14778	743.9	747.7	3.8	.011
747.7	764.7	TALC-CHLORITE +/- SERICITE SCHIST Typical with variable schistosity 1% diss. py					
		762.2 - 762.7 Pyritic laminated sediment	14779	762.2	764.7	2.5	.001
764.7	768.3	INTERBEDDED SERICITE-CHLORITE +/- TALC SCHIST, PYRITIC SEDIMENT AND IRON FORMATION	14780	764.7	768.3	3.6	.003
		764.7 - 765.9 767.0 - 768.3 Carbonatized iron formation with 10% py blebs, diss.					
		Schistosity, laminations at 70 deg. TCA, but variable					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
768.3	769.5	TALC-CHLORITE +/- SERICITE SCHIST Similar to 747.7 - 764.7					
	769.5	END OF HOLE					

MINROC MANAGEMENT LIMITED

DRILL LOG - FOURAX II PROPERTY

HOLE NO.: FX-9086
TOWNSHIP: FOURNIERE, QUE.
CORE SIZE: BQ

COORDINATES: L11+00E
8+75N
RANGE: X
DRILLED BY: LES FORAGES GROLEAU LTEE

COLLAR ANGLE: -50 DEG.
LOT NO.:
DATE STARTED: 30/10/90

LOCATED FROM: FX-8974
CLAIM NO.: 335178-4
DATE COMPLETED: 7/11/90

AZIMUTH: 205 DEG.
LOGGED BY: N.O. WILLOUGHBY

LENGTH: 1,164 FT.
PAGE: 1 OF 20

DEPTH	AZIMUTH	ANGLE READ	ANGLE ACTUAL
200 FT.	205		-51 DEG.
400 FT.	205		-51 DEG.
600 FT.	205		-53 DEG.
800 FT.	205		-53 DEG.
1,114 FT.	205		-51 DEG.

REMARKS:

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
0.0	62.0	CASING					
62.0	147.0	MAFIC VOLCANIC Fine grained to very fine grained Massive Green to dark green With scattered chlorite-carbonate +/- quartz replaced pillow selvedges; occasionally pyritic 86.9 - 87.8 Brecciated with irregular quartz veining/patches, 1% py blebs From 136.1 5% feldspar phenocrysts; carbonatized					
147.0	166.0	SHEARED MAFIC VOLCANIC, TUFF Green to dark green, fine to medium grained Shear foliation at 45 deg. TCA With 15 - 25% amphibole needles Variably carbonatized, mainly as shear parallel streaks, discontinuous bands					
		150.0 - 151.0 Quartz +/- tourmaline veined and brecciated with 10% diss., blebs py	14781	150.0	152.0	2.0	.099
		From 151.0 Numerous quartz veins which trend parallel to shearing					
		154.0 - 160.0 3% diss. py and 2% quartz +/- carbonate veins, veinlets	14782	154.0	160.0	6.0	.039
		From 160.0 Scattered amphibole needles					
166.0	170.0	MAFIC VOLCANIC, DIORITE Fine grained massive, dark green Extremely magnetic (iron formation?) Fractured with 2% py-carbonate fillings	14783	167.0	170.0	3.0	.009

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
166.0	170.0	MAFIC VOLCANIC, DIORITE (Cont'd)					
		168.7 - 169.4 Quartz-carbonate vein at 30 deg. TCA with 1% large py blebs					
170.0	175.5	MAFIC VOLCANIC Similar to 62.0 - 147.0 In part, may be tuff					
175.5	191.4	BRECCIATED, FRACTURED MAFIC VOLCANIC Dark green, very fine grained, massive Cut by 15% irregular pyritic-carbonate +/- quartz veinlets, pyritic stringers Strongly magnetic	14784	175.5	178.0	2.5	.001
		178.8 - 180.5 Quartz-ankerite veining, brecciation with 3% py blebs, diss.	14785 14786	178.0 181.0	181.0 186.0	3.0 5.0	.001 TR
191.4	214.5	MAFIC VOLCANIC, DIORITE Fine to medium grained, intergranular Dark green, massive Strongly magnetic					
214.5	361.6	DIORITE, MAFIC VOLCANIC Fine to medium grained, intergranular Green to grey green, massive Variably carbonatized Scattered carbonate +/- quartz veinlets; irregular chlorite seams; pillow selvedges? Up to 3% diss. py in places					
		299.5 Numerous amphibole needles					
		A few narrow shear foliated sections at 40 deg. TCA					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
361.6	380.3	SHEARED AND QUARTZ-VEINED DIORITE, MAFIC VOLCANIC Extensive quartz veining and flooding of green to dark green, fine to medium grained, diorite/volcanic Moderately sheared at 20 - 50 deg. TCA	14786A	361.6	363.4	1.8	
		361.6 - 363.4 Quartz +/- carbonate veining at 0 - 10 deg. TCA with associated host rock silicification; contains 5% diss., masses py; host rock 3 - 5% diss. py					
		363.4 - 369.8 Variably veined, silicified and carbonatized mafic volcanic/diorite with 3-5% diss., blebs py; some py-quartz stringers	14787 14788	363.4 366.6	366.6 369.8	3.2 3.2	.016 .007
		369.8 - 374.7 50-60% foliation parallel quartz-ankerite veining with up to 5% py mainly in host/xenolith; veining exhibits ribboned form	14789	369.8	374.7	4.9	.003
		374.7 - 380.3 Moderately carbonatized with 20% thin carbonate veinlets, bands; minor diss. py					
380.3	425.6	MAFIC VOLCANIC, DIORITE Similar to 361.6 - 380.3 with variable shearing/ foliation plus massive sections Scattered carbonate, quartz veinlets Variably carbonatized A few narrow pyritic sections					
		401.0 - 407.0 Silicified and pyritic with irregular quartz veining at 402.0 - 402.8 (with 5% py blebs), 405.4 - 407.0 (with 10% py, trace cp masses)	14790 14791 14792	401.0 404.0 407.0	404.0 407.0 412.5	3.0 3.0 5.5	.004 .004 .001

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
425.6	438.8	QUARTZ-VEINED MAFIC VOLCANIC, DIORITE Similar to 361.6 - 380.3, however generally less sheared					
		425.6 - 429.1 70% irregular white to grey quartz veining in brecciated host Scattered diss. py in host; 5% py masses over last foot in quartz	14793	425.6	429.1	3.5	.003
		430.2 - 430.6 Quartz vein parallel TCA with up to 10% stringers, diss. py in host	14794	429.1	432.5	3.4	.003
		433.5 - 438.8 Variably veined and silicified with 5% diss., blebs py	14795 14796	432.5 435.7	435.7 438.8	3.2 3.1	.007 .005
438.8	620.5	MAFIC VOLCANIC Fine to very fine grained, generally massive Green to dark green In part, may be flow top breccia A few scattered narrow shears, quartz veins; pillow selvedges? A few narrow pyritic sections					
		461.5 - 462.6 Irregular quartz vein with minor diss. py, tr cp; diss py at contact with host rock	14797	461.5	463.2	1.7	NIL
		At 463.2 5% py blebs					
		496.0 - 499.0 Quartz vein/breccia zone with up to 5% py stringers, diss. in host and some diss. in quartz	14798	496.0	499.0	3.0	.001
		612.0 - 620.5 2% irregular porphyry dikelets					
		612.7 - 613.1 Quartz/porphyry vein at 90 deg. TCA with 50% pyrite	14799	612.5	616.5	4.0	.004

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
438.8	620.5	MAFIC VOLCANIC (Cont'd)					
		616.0 - 616.5 Porphyry/quartz intrusive material at 90 deg. TCA with 2% diss. py					
620.5	634.0	DIORITE Dark green, fine to medium grained, massive Finely magnetic With 2% quartz-epidote +/- py stringers					
634.0	715.7	MAFIC VOLCANIC Green to greyish green, fine to very fine grained Generally massive with numerous thin shears or pillow selvedges Some (pillow) breccia Minor narrow quartz veins which may contain diss. py Aphanitic to base					
715.7	738.7	DIORITE Medium grained, massive; dark grey green Extremely magnetic Vuggy and fractured with 3% carbonate-pyrite +/- quartz fillings; fractures at random orientations	14800 14801	715.7 719.5	719.5 722.0	3.8 2.5	.001 NIL
		722.0 - 723.0 Quartz veined and flooded; 5% diss., stringers py	14802	722.0	725.0	3.0	.001
		725.0 - 727.0 2% quartz-ankerite veining with associated silicification plus 3% py masses, diss.	14803	725.0	728.0	3.0	TR
			14804	728.0	734.0	6.0	TR
		730.5 - 734.0 Brecciated section with 3-5% diss. stringers, masses py, traces cp	14805	734.0	738.7	4.7	TR

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
738.7	744.8	MAFIC VOLCANIC, TUFF Fine grained, green to dusty green Laminated (sheared?) in part at 80 deg. TCA Somewhat vuggy with some scattered diss. py, a few carbonate streaks					
744.8	749.1	MAFIC TO ULTRAMAFIC VOLCANIC Fine grained, grey green to bluish grey Massive; somewhat talcose Some carbonate-serpentine veinlets at 70 deg., 30 deg. TCA Minor py					
749.1	753.1	DIORITE OR MAGNETITE IRON FORMATION Black to dark green; fine to medium grained In part with dioritic texture; extremely hard and magnetic Vuggy with numerous carbonate-albite (?) veinlets, 3% diss., stringers py Silicified and pyritic (5%) over last foot	14806	749.1	753.1	4.0	TR
753.1	755.7	MAFIC VOLCANIC, TUFF Similar to 738.7 - 744.8 with some diss. py	14807	753.1	755.7	2.6	NIL
755.7	757.7	MAGNETITE IRON FORMATION, CHLORITIC TUFF Fine grained, green to dusty green Somewhat laminated at 60 deg. TCA A few py-carbonate veinlets at 70 deg. TCA Silicified, epidotized with 3% diss. py	14808	755.7	757.7	2.0	NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
757.7	759.3	QUARTZ VEIN White to greyish white with 1% slivers, inclusions of laminated sediment Upper and lower contacts sharp at 50 deg. TCA (parallel schistosity/laminations)	14809	757.7	759.3	1.6	NIL
759.3	763.3	SHEARED MAFIC VOLCANIC, SERICITE-CHLORITE SCHIST, CHLORITIC TUFF Fine grained, green to dusty green Shear foliation/schistosity at 50 - 60 deg. In part may be laminated Some narrow vuggy sections Variably carbonatized 762.1 2% diss. py within discrete bands	14810	759.3	763.3	4.0	NIL
763.3	764.5	MAGNETITE IRON FORMATION Fine grained, green to dark green Poorly laminated at 60 deg. TCA With 1-2% finely diss. py from 763.8, 5% over last 2 inches	14811	763.3	764.5	1.2	.013
764.5	786.4	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT/TUFF Fine grained, green to dark green Schistosity at 50 deg. TCA 769.0 - 771.7 May be sheared mafic volcanic 764.5 - 765.2 Pyritic-chloritic shears 768.0 - 768.5 772.3 - 773.0 Iron formation Talcose from 781.0	14812 14813 14814	764.5 768.5 771.5	768.5 771.5 774.5	4.0 3.0 3.0	.001 NIL NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
786.4	791.0	MAGNETITE IRON FORMATION Fine grained, dark grey green to black Shear foliated at 50 deg. TCA; weakly laminated in part With 3-5% finely diss. py Silicified with numerous quartz-aplite (porphyry) veinlets from 788.4 In part may be mafic volcanic	14815	786.4	791.0	4.6	TR
791.0	798.0	MAFIC VOLCANIC Fine grained, green to grey green Moderately sheared at 30 - 50 deg. TCA A few thin carbonate veins parallel shearing Minor diss. py					
798.0	811.1	ULTRAMAFIC VOLCANIC, TALC-CHLORITE +/- SERICITE SCHIST Fine grained, grey green to bluish grey Schistosity at 45 - 60 deg. TCA, however some massive sections Scattered carbonate/ankerite veinlets parallel schistosity					
811.1	832.7	SERICITE-CHLORITE SCHIST Green to grey green, very fine grained Schistosity at 60 deg. TCA A few schistosity parallel carbonate veinlets Minor diss. py Some talcose sections					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
832.7	841.0	LAMINATED SEDIMENT, SERICITE-CHLORITE +/- TALC SCHIST					
		832.7 - 833.7 Chloritic sediment/tuff with 10% carbonate bands, 15% py mainly as thin discrete bands/stringers	14816	832.7	835.8	3.1	.001
		833.7 - 834.4 Sericite-chlorite +/- talc schist with 15% randomly oriented actinolite needles; 1% py-carbonate veinlets at 30 deg. TCA, parallel schistosity					
		834.4 - 834.8 Chlorite section with 2% py blebs, masses					
		834.8 - 835.4 Sericite-chlorite schist as 833.7 - 834.4					
		835.4 - 835.8 Chlorite section as at 834.4 - 834.8					
		835.8 - 839.3 Sericite-chlorite schist as at 833.7 - 834.4 with some narrow laminated sediments	14817	835.8	839.3	3.5	NIL
		839.3 - 841.0 Quartz-ankerite veined laminated sediments with 5% finely diss. py and carbonate-rich bands	14818	839.3	841.0	1.7	.003
841.0	859.5	QUARTZ-VEINED AND SILICIFIED PYRITIC LAMINATED SEDIMENT, SERICITE-CHLORITE SCHIST Green to grey green and light grey green; silicified With 10-15% quartz +/- ankerite veining both parallel laminae/schistosity (50 deg. TCA) and crosscutting 90 deg., 10 deg. TCA Up to 10% diss. py in places	14819	841.0	843.6	2.6	.017
		841.0 - 842.9 Banded, silicified chloritic sediment with 20% quartz-ankerite veining, 10-15% diss., blebs, stringers/bands py					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
841.0	859.5	QUARTZ-VEINED AND SILICIFIED PYRITIC LAMINATED SEDIMENT, SERICITE-CHLORITE SCHIST (Cont'd)					
		842.9 - 846.2 Silicified, brecciated and contorted sericite-chlorite +/- talc schist with 20% irregular quartz-ankerite-carbonate veins, fragments plus 1% diss, stringers py	14820	843.6	846.2	2.6	NIL
		846.2 - 847.2 Silicified quartz-albite injected breccia zone with 1% py	14821	846.2	849.5	3.3	.003
		847.2 - 849.5 Sericite-chlorite schist as at 842.9 - 846.2 with 5% diss. py					
		849.5 - 854.9 Silicified pyritic laminated sediment with 5-10% finely diss. py Some irregular quartz-carbonate veining plus 10% laminae parallel carbonate veinlets/bands (50 deg. TCA) Some brecciation Main py concentration to 852.2	14822 14823	849.5 852.2	852.2 854.9	2.7 2.7	.036 .028
		854.9 - 855.7 Foliated (60 deg. TCA) feldspar porphyry, lamination parallel with 1% finely diss. py	14824	854.9	859.5	4.6	.050
		855.7 - 859.5 Quartz veined laminated sediment and sericite-chlorite schist with 15% quartz, 2-3% diss. py					
		859.0 - 859.8 White quartz vein					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
859.5	867.2	INTERMEDIATE INTRUSIVE, FELDSPAR PORPHYRY Grey, fine to medium grained Foliated at 60 deg. TCA With 5-10% diss. py +/- masses	14825 14826	859.5 862.9	862.9 867.2	3.4 4.3	.016 .027
		864.6 - 866.0 Silicified, quartz veined with 3% py masses					
		In part may be silicified sediment Over last foot, brecciated with irregular feldspar porphyry injection, 1% py Upper contact 80 deg. TCA, lower contact 30 deg. TCA					
867.2	901.3	TALC-CHLORITE +/- SERICITE SCHIST Fine grained, grey green to light grey green and bluish grey Schistosity at 50 - 60 deg. TCA 25% thin carbonate +/- ankerite-quartz bands/veins parallel schistosity, a few crosscutting; occasionally as fragments Minor diss. py					
		867.2 - 869.0 2% diss, blebs py with a quartz-ankerite vein at 867.5 - 867.7, ankerite vein at 868.4 - 868.6	14827	867.2	869.2	2.0	TR
901.3	915.9	QUARTZ-VEINED TALC-CHLORITE +/- SERICITE SCHIST Similar to 867.2 - 901.3 with 25% quartz +/- ankerite/albite veining in brecciated schist Extensive veining at 901.8 - 902.2, 902.6 - 902.9, 904.4 - 904.7, 906.5 - 908.2	14828 14829 14830	901.3 904.7 908.2	904.7 908.2 912.2	3.4 3.5 4.0	.030 .006 .022
		912.2 - 913.4 Silicified and quartz veined zone with scattered diss. py; possibly porphyry related	14831	912.2	915.9	3.7	.016

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
901.3	915.9	QUARTZ-VEINED TALC-CHLORITE +/- SERICITE SCHIST (Cont'd) All veining trends more or less parallel schistosity (60 deg. TCA) Last 3" a quartz vein					
915.9	939.9	SILICIFIED, QUARTZ-VEINED AND PORPHYRY INJECTED SERICITIC SEDIMENT A mixed zone of white to greyish quartz +/- ankerite (1%), pinkish grey to salmon feldspar porphyry/ syenite and variably flooded/silicified pale yellowish green to pale greyish green sericitic laminated sediment or schist With up to 5% finely diss. py in sediment and porphyry Some later grey quartz veins crosscutting at 60 deg. TCA At 915.9 - 917.8, 919.0 - 920.4, 920.8 - 923.0, 926.5 - 928.7, 930.6 - 931.1, 937.6 - 939.6 mainly sericitic sediment Extensive quartz +/- ankerite veining at 924.5 - 925.2, 931.1 - 931.8	14832 14833 14834 14835 14836 14837	915.9 919.0 923.0 926.5 931.1 935.0	919.0 923.0 926.5 931.1 935.0 939.9	3.1 4.0 3.5 4.6 3.9 4.9	.006 .015 .006 .007 .004 .005
939.9	954.4	QUARTZ VEIN Massive white bull quartz at 90 deg. TCA Some fracturing at 30 deg., 50 deg. TCA Traces of py	 14838 14839 14840	 939.9 945.0 950.0	 945.0 950.0 954.4	 5.1 5.0 4.4	 NIL .003 .015
954.4	960.4	QUARTZ VEINED AND PORPHYRY INJECTED SEDIMENT, TALC-CHLORITE SCHIST Similar to 915.9 - 939.9, however host rock mainly talc-chlorite schist 954.4 - 959.0 Extensive porphyry/quartz injection 1-3% diss., blebs py mainly in porphyry	14841 14842	954.4 957.4	957.4 960.4	3.0 3.0	.011 .380

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
960.4	969.0	TALC-CHLORITE SCHIST Typical, with schistosity at 70 deg. TCA	14843 14844	960.4 966.1	966.1 969.0	5.7 2.9	.006 .003
		963.5 - 963.8 964.0 - 964.3 Schistosity parallel quartz veins					
		964.2 - 964.7 Feldspar porphyry at 60 deg. (upper contact), 30 deg. TCA (lower contact), 1% finely diss. py					
969.0	971.7	QUARTZ-ANKERITE VEINED FELDSPAR PORPHYRY Fine grained, greyish brown to greyish green and reddish grey					
		969.0 - 970.2 Siliceous and quartz veined; shear foliated at 25 deg. TCA; crosscut by a tourmaline veinlet at 60 deg. TCA at 969.2; 1% diss. py	14845	969.0	971.7	2.7	.005
		970.2 - 970.6 Sheared, fine grained siliceous porphyry or laminated sediment at 25 deg. TCA with 5-10% diss., streaks py					
		970.6 - 971.7 Reddish (albitized?) porphyry or laminated sediment with 5-10% py; some crosscutting carbonate veins at 40 deg. TCA					
		970.9 - 971.0 White foliation parallel quartz vein					
		The entire unit is schistosity parallel					
971.7	973.2	TALC-CHLORITE SCHIST Similar to 960.4 - 969.0	14846	971.7	973.2	1.5	.001

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
973.2	985.6	SHEARED AND SILICIFIED FELDSPAR PORPHYRY Fine to medium grained, light grey green to light salmon grey Strongly sheared at 50 - 60 deg. TCA In part, may be laminated sediment With up to 5% finely diss. py plus scattered streaks, narrow bands Crosscutting sericite/carbonate-filled fractures at 70 deg. TCA, approx. 1% 1% narrow foliation parallel quartz/ankerite veins	14847 14848 14849	973.2 977.2 981.6	977.2 981.6 985.6	4.0 4.4 4.0	.003 .009 .012
985.6	989.4	TALC-CHLORITE SCHIST Similar to 960.4 - 969.0					
989.4	992.3	SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT Grey green, finely laminated and schistose at 70 deg. TCA Minor diss. py, carbonate veining Talcose to base					
992.3	1002.1	TALC-CHLORITE +/- SERICITE SCHIST Fine grained, grey green to bluish grey green Schistosity at 70 deg. TCA With 3% foliation parallel carbonate veinlets					
1002.1	1010.2	MAGNETITE, IRON FORMATION, LAMINATED SEDIMENT Fine grained, green to grey green, finely laminated at 50 deg. TCA Silicified, variably carbonatized With 10-20% diss. py, scattered quartz-carbonate veining, mainly parallel laminae	14850 14851	1002.1 1006.1	1006.1 1010.2	4.0 4.1	.270 .081

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
1010.2	1016.0	MASSIVE IRON FORMATION OR MAFIC VOLCANIC Brecciated with 3-5% irregular, variably oriented carbonate-ankerite veinlets, 2% diss. py	14852 14853	1010.2 1013.5	1013.5 1016.0	3.3 2.5	TR .002
1016.0	1025.0	INTERBEDDED IRON FORMATION, SERICITE-CHLORITE +/- TALC SCHIST					
		1016.0 - 1016.7 Laminated IF	14854	1016.0	1019.0	3.0	.006
		1016.7 - 1018.7 Talc-chlorite +/- sericite schist					
		1018.1 - 1018.7 IF, laminated sediment with quartz-ankerite veining, 15% diss, blebs py in silicified IF at 1018.1 - 1018.3, plus trace cp in veining (0 deg. TCA)					
		1018.7 - 1024.2 Sericite-chlorite +/- talc schist	14855	1019.0	1024.0	5.0	.001
		1024.2 - 1025.0 Laminated iron formation with 10-15% diss, streaks py	14856	1024.0	1025.0	1.0	.009
1025.0	1045.5	INTERBEDDED SERICITE-CHLORITE SCHIST, LAMINATED SEDIMENT AND TALC-CHLORITE SCHIST Typical with schistosity/laminations at 40-60 deg. TCA Weakly pyritic with scattered carbonate-ankerite veins, fragments					
1045.5	1049.3	MAGNETITE IRON FORMATION, LAMINATED SEDIMENT Finely laminated at 10-70 deg. TCA					
		1045.5 - 1046.5 Pyritic (5-10%) iron formation laminations at 10 deg. TCA	14857	1045.5	1049.3	3.8	.019
		1046.5 - 1047.5 Talc-chlorite schist with 3% diss. py					

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
1045.5	1049.3	MAGNETITE IRON FORMATION, LAMINATED SEDIMENT (Cont'd)					
		1047.5 - 1048.6 Weakly laminated (70 deg. TCA) iron formation with 3% diss. py					
		1048.6 - 1049.3 Carbonatized sericite-chlorite schist, Laminated sediment with 3% diss. py					
1049.3	1056.6	SERICITE-CHLORITE +/- TALC SCHIST Fine grained, grey green to bluish grey green	14858	1049.3	1056.6	7.3	TR
		From 1055.0 Schistosity at 0 - 10 deg. TCA					
		Up to 3% finely diss. py plus a few 1 mm cubes					
		1055.0 - 1055.3 Narrow quartz-ankerite veining parallel schistosity					
1056.6	1058.6	SHEARED MAGNETITE IRON FORMATION OR MAFIC VOLCANIC Fine - medium grained, green Silicified with 2% diss. py Sheared at 45 deg. TCA Narrow crosscutting carbonate veins at 45 deg. TCA contain trace cp at 1058.0, 1058.4	14859	1056.6	1058.6	2.0	NIL

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
1058.6	1074.5	MINERALIZED FELDSPAR PORPHYRY Generally two variations: 1)					
		1058.6 - 1067.0 Strongly sheared at 20-10 deg. TCA, fine grained, silicified Grey green to brownish grey green 5-10% finely diss. py Scattered narrow quartz-ankerite veinlets at various orientations	14860 14861	1058.6 1062.7	1062.7 1067.0	4.1 4.3	.036 .017
		1065.0 A quartz vein with large py cubes					
		2)					
		1067.0 - 1071.0 Pale grey to pale brownish grey, considerable silica flooding With up to 15% finely diss. py; also blebs with numerous quartz-ankerite veins, veinlets at 45 deg. TCA, cross-cutting slightly oblique to 30 deg. TCA foliation	14862	1067.0	1071.0	4.0	.069
		1071.0 - 1072.2 1072.6 - 1073.0 1073.2 - 1074.5 Ankerite veined talc-chlorite schist	14863	1071.0	1074.5	3.5	.002
		1072.2 - 1072.6 1073.0 - 1073.2 Brecciated and quartz-ankerite-veined porphyry with minor diss. py					
1074.5	1078.0	MAGNETITE IRON FORMATION, LAMINATED SEDIMENT Moderately to well laminated at 50 deg. TCA Strongly carbonatized with 25% lineated, elliptical carbonate patches 1-2% finely diss. py Main IF sections at 1075.0 - 1076.8, 1077.4 - 1078.0	14864	1074.5	1078.0	3.5	.003

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
1078.0	1083.6	CARBONATE-VEINED, BRECCIATED SERICITE-CHLORITE SCHIST OR MAFIC VOLCANIC Green to light green, fine grained Schistosity at 20 deg. TCA With 2% diss. py 25-45% irregular carbonate-ankerite alteration patches, veinlets, fragments 1081.7 - 1082.4 Massive chlorite zone with 15% finely diss. py	14865 14866	1078.0 1081.0	1081.0 1083.6	3.0 2.6	.006 .023
1083.6	1095.5	SHEARED, CHLORITIC MAFIC VOLCANIC OR TUFF PLUS SOME IRON FORMATION Green to dusty green and greyish green; fine to very fine grained 1083.6 - 1084.8 1085.4 - 1086.4 Strongly chloritic with 15% diss. py	14867	1083.6	1086.4	2.8	.850
		1086.4 - 1088.5 Laminated sediment, iron formation with carbonate-veined, fragmented mafic volcanic at 1086.9 - 1087.5	14868	1086.4	1088.5	2.1	.010
		From 1088.5 Shear foliated volcanic or tuff with 2-5% diss. py, 1% scattered foliation parallel quartz-ankerite veins	14869 14870	1088.5 1092.0	1092.0 1095.5	3.5 3.5	.003 .002
1095.5	1100.1	MAGNETITE IRON FORMATION Fine to medium grained, dark green Moderately foliated at 70 deg. TCA Scattered carbonate alteration 1% diss. py	14871	1095.5	1100.1	4.6	.004

FROM FT.	TO FT.	DESCRIPTION	SAMPLE NUMBER	FROM FT.	TO FT.	CORE LENGTH	ASSAY AU OZ/T
1100.1	1104.3	MAFIC VOLCANIC, TUFF Fine grained, green to dusty green, somewhat laminated to schistose at 60-70 deg. TCA Minor diss. py, quartz-ankerite veining	14872	1100.1	1104.3	4.2	NIL
1104.3	1111.3	DIORITE Medium grained, intergranular Dark green; foliated at 70 deg. TCA Variably carbonatized with 2-3% scattered carbonate +/- epidote veining at various orientations 3% diss. py	14873 14874	1104.3 1107.8	1107.8 1111.3	3.5 3.5	.003 TR
1111.3	1127.2	MAFIC TUFF, VOLCANIC Fine to very fine grained Green to dusty green Shear foliated at 70 deg. TCA A few carbonate veinlets parallel foliation Scattered diss. py					
1127.2	1135.4	FELDSPAR PORPHYRY Grey to reddish grey With 40% rounded white feldspar phenocrysts Up to 2% diss. py 1131.1 - 1132.1 Quartz veining/flooding 1128.5 - 1129.0 A band of mafic tuff Upper contact 70 deg. TCA, lower contact 45 deg. TCA	14875 14876	1127.2 1131.3	1131.3 1135.4	4.1 4.1	NIL NIL
1135.4	1164.0	MAFIC VOLCANIC Green to dark green, very fine grained to aphanitic Massive Minor py, quartz-carbonate veining					
	1164.0	END OF HOLE					

APPENDIX 3: Certificates of Analysis

XRAL

X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.

1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA

TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 13833

TO: MINROC MANAGEMENT LIMITED
ATTN: CAROL DIRRADO
2103 - 45 WYNFORD HEIGHTS CRESCENT
DON MILLS, ONTARIO
M3C 1L3

CUSTOMER No. 637

DATE SUBMITTED
29-Oct-90

REF. FILE 8735-A1

Total Pages 2

82 W.CORES

	METHOD	DETECTION LIMIT
AU-1AT OZ/TON	FA	0.001

DATE 21-NOV-90

CERTIFIED BY .....

Philip Boctor, Laboratory Manager

XRAL

NOTE: OUR DATA INDICATES THE PRESENCE OF ERRATIC AU IN SAMPLES 14622, 14632 AND 14648.

X-RAY ASSAY LABORATORIES 1885 Leslie Street Don Mills Ontario M3B 3J4 (416)445-5755 Fax (416)445-4152 Tlx 06-986947
Member of the SGS Group (Société Générale de Surveillance)

SAMPLE	AU-1AT OZ/T
14579	0.001
14580	NIL
14581	NIL
14582	0.120
14583	TRACE
14584	0.015
14585	0.008
14586	0.170
14587	0.005
14588	0.006
14589	0.190
14590	0.001
14591	NIL
14592	0.007
14593	TRACE
14594	TRACE
14595	0.006
14596	NIL
14597	TRACE
14598	0.027
14599	TRACE
14600	NIL
14601	0.001
14602	0.003
14603	0.031
14604	0.010
14605	0.012
14606	0.011
14607	0.014
14608	0.001
14609	0.007
14610	0.005
14611	0.009
14612	0.008
14613	0.001
14614	TRACE
14615	NIL
14616	NIL
14617	NIL
14618	TRACE
14619	TRACE
14620	TRACE
14621	TRACE
14622	0.190
14623	0.013
14624	0.004
14625	0.430
14626	0.003
14627	TRACE
14628	0.140

AU-1AT OZ/T- ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	AU-1AT OZ/T
14629	0.004
14630	0.005
14631	0.011
14632	0.046
14633	0.005
14634	0.420
14635	0.092
14636	0.004
14637	TRACE
14638	TRACE
14639	0.001
14640	0.002
14641	0.006
14642	0.010
14643	0.023
14644	TRACE
14645	0.002
14646	0.004
14647	0.015
14648	0.073
14649	0.006
14650	0.002
14651	TRACE
14652	NIL
14653	0.006
14654	0.002
14655	0.001
14656	0.003
14657	TRACE
14658	NIL
14659	0.006
14660	0.002

AU-1AT OZ/T- ASSAY PERFORMED ON 30 GRAM ALIQUOT

XRAL

X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

DISTRIBUTION

TO: MINROC MANAGEMENT
ATTN: GILLES TREMBLAY
491 1ST AVENUE
MALARTIC, QUEBEC
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CUSTOMER No. 637

REPORT 13902

REF. FILE 8797-V2

XRAL

X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 13902

TO: MINROC MANAGEMENT LIMITED
ATTN: CAROL DIRRADO
2103 - 45 WYNFORD HEIGHTS CRESCENT
DON MILLS, ONTARIO
M3C 1L3

CUSTOMER No. 637

DATE SUBMITTED
6-Nov-90

REF. FILE 8797-V2

Total Pages 2

53 W.CORES

	METHOD	DETECTION LIMIT
AU-1AT OZ/TON	FA	0.001

DATE 26-NOV-90

CERTIFIED BY .....

Philip Boctor, Laboratory Manager

XRAL

NOTE: OUR DATA INDICATES THE PRESENCE OF ERRATIC GOLD IN SAMPLES 14668 AND 14696.

X-RAY ASSAY LABORATORIES 1885 Leslie Street Don Mills Ontario M3B 3J4 (416)445-5755 Fax (416)445-4152 Tlx 06-986947
Member of the SGS Group (Société Générale de Surveillance)

SAMPLE	AU-1AT OZ/T
14661	NIL
14662	TRACE
14663	0.003
14664	0.001
14665	0.008
14666	0.003
14667	0.003
14668	0.027
14669	0.030
14670	0.040
14671	0.120
14672	0.260
14673	0.300
14674	0.029
14675	0.003
14676	0.017
14677	TRACE
14678	0.001
14679	0.003
14680	0.002
14681	NIL
14682	NIL
14683	NIL
14684	0.002
14685	0.002
14686	NIL
14687	0.008
14688	NIL
14689	0.003
14690	TRACE
14691	0.002
14692	0.007
14693	0.003
14694	TRACE
14695	NIL
14696	0.036
14697	NIL
14698	0.013
14699	0.086
14700	0.052
14701	NIL
14702	TRACE
14703	NIL
14704	NIL
14705	0.037
14706	TRACE
14707	0.029
14708	0.002
14709	0.003
14710	0.028

AU-1AT OZ/T- ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	AU-1AT OZ/T
14711	NIL
14712	NIL
14713	0.002

AU-1AT OZ/T- ASSAY PERFORMED ON 30 GRAM ALIQUOT

XRAL

X-RAY ASSAY LABORATORIES

A DIVISION OF SGS SUPERVISION SERVICES INC.
1885 LESLIE STREET • DON MILLS, ONTARIO M3B 3J4 • CANADA
TEL: (416)445-5755 TELEX: 06-986947 FAX: (416)445-4152

CERTIFICATE OF ANALYSIS

REPORT 13981

TO: MINROC MANAGEMENT LIMITED
ATTN: CAROL DIRRADO
2103 - 45 WYNFORD HEIGHTS CRESCENT
DON MILLS, ONTARIO
M3C 1L3

CUSTOMER No. 637

DATE SUBMITTED
13-Nov-90

REF. FILE 8916-FL

Total Pages 4

163 W.CORES

	METHOD	DETECTION LIMIT
AU-1AT OZ/TON	FA	0.001

DATE 03-DEC-90

CERTIFIED BY .....

Philip Boctor, Laboratory Manager

SAMPLE	AU-1AT OZ/T
14714	TRACE
14715	0.006
14716	NIL
14717	0.001
14718	0.001
14719	0.004
14720	0.007
14721	0.062
14722	0.035
14723	0.003
14724	TRACE
14725	0.008
14726	0.008
14727	0.015
14728	0.025
14729	0.022
14730	0.013
14731	0.012
14732	0.014
14733	0.006
14734	0.005
14735	0.006
14736	0.005
14737	0.003
14738	0.003
14739	0.005
14740	0.005
14741	0.001
14742	0.003
14743	0.004
14744	0.016
14745	0.003
14746	0.011
14747	0.003
14748	0.008
14749	TRACE
14750	0.008
14751	0.002
14752	0.003
14753	0.001
14754	0.015
14755	0.036
14756	0.030
14757	0.025
14758	0.004
14759	0.007
14760	0.060
14761	0.095
14762	0.450
14763	0.090

AU-1AT OZ/T- ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	AU-1AT OZ/T
14764	0.015
14765	0.007
14766	0.011
14767	0.017
14768	0.450
14769	0.004
14770	0.014
14771	0.018
14772	0.016
14773	0.001
14774	0.012
14775	0.014
14776	0.005
14777	0.013
14778	0.011
14779	0.001
14780	0.003
14781	0.099
14782	0.039
14783	0.009
14784	0.001
14785	0.001
14786	TRACE
14787	0.016
14788	0.007
14789	0.003
14790	0.004
14791	0.004
14792	0.001
14793	0.003
14794	0.003
14795	0.007
14796	0.005
14797	NIL
14798	0.001
14799	0.004
14800	0.001
14801	NIL
14802	0.001
14803	TRACE
14804	TRACE
14805	TRACE
14806	TRACE
14807	NIL
14808	NIL
14809	NIL
14810	NIL
14811	0.013
14812	0.001
14813	NIL

AU-1AT OZ/T- ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	AU-1AT OZ/T
14814	NIL
14815	TRACE
14816	0.001
14817	NIL
14818	0.003
14819	0.017
14820	NIL
14821	0.003
14822	0.036
14823	0.028
14824	0.050
14825	0.016
14826	0.027
14827	TRACE
14828	0.030
14829	0.006
14830	0.022
14831	0.016
14832	0.006
14833	0.015
14834	0.006
14835	0.007
14836	0.004
14837	0.005
14838	NIL
14839	0.003
14840	0.015
14841	0.011
14842	0.380
14843	0.006
14844	0.003
14845	0.005
14846	0.001
14847	0.003
14848	0.009
14849	0.012
14850	0.270
14851	0.081
14852	TRACE
14853	0.002
14854	0.006
14855	0.001
14856	0.009
14857	0.019
14858	TRACE
14859	NIL
14860	0.036
14861	0.017
14862	0.069
14863	0.002

AU-1AT OZ/T- ASSAY PERFORMED ON 30 GRAM ALIQUOT

SAMPLE	AU-1AT OZ/T
14864	0.003
14865	0.006
14866	0.023
14867	0.850
14868	0.010
14869	0.003
14870	0.002
14871	0.004
14872	NIL
14873	0.003
14874	TRACE
14875	NIL
14876	NIL

AU-1AT OZ/T- ASSAY PERFORMED ON 30 GRAM ALIQUOT