

## Mineral Deposits and Occurrences in the Cranberry Portage Area, NTS 63K/11

by G.H. Gale and L.I. Norquay

Manitoba  
Energy and Mines  
Geological Services





Mineral Deposit Series Report No. 16

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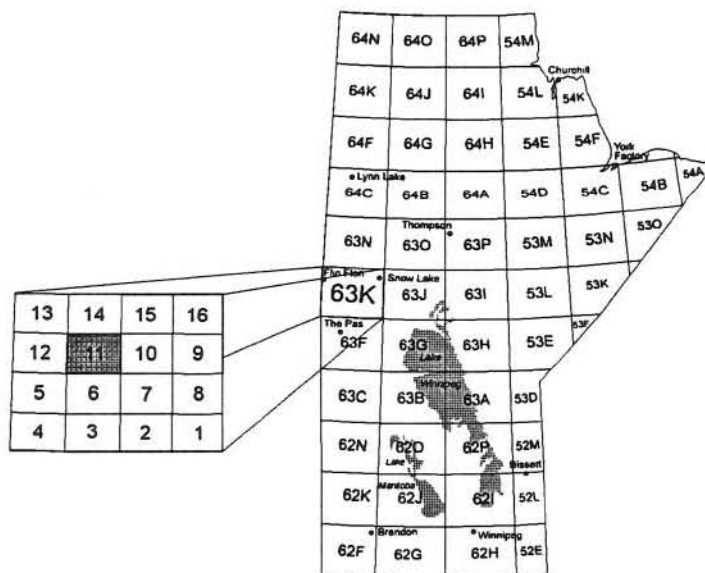
By G.H. Gale and L.I. Norquay  
Winnipeg, 1996

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## MAPS

MDS Map No. 16: Mineral Deposits and occurrences in the Cranberry Lake Area (NTS 63K/11), Manitoba .....	in pocket
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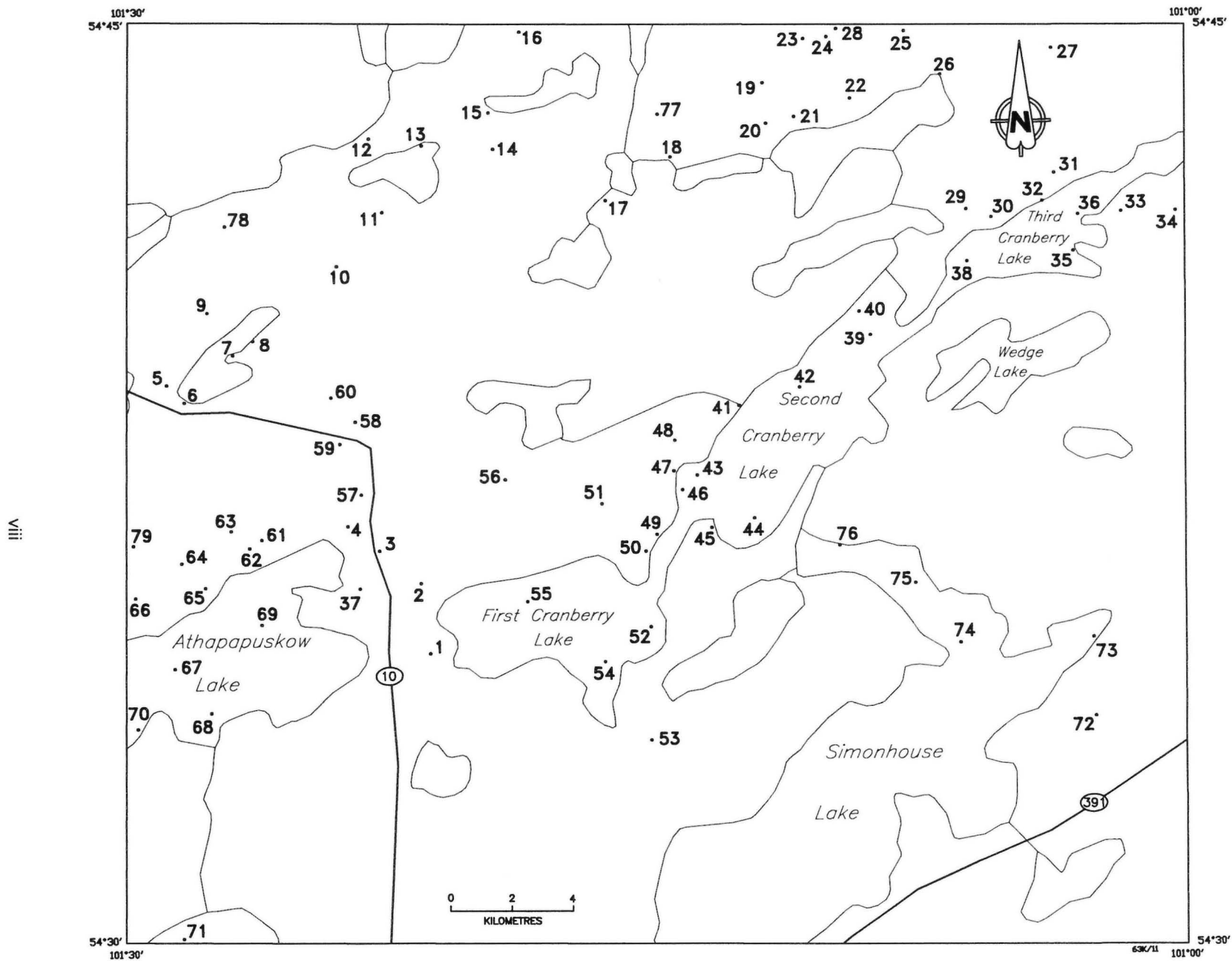


Figure 1: Location of deposits and occurrences in the Cranberry Portage area, NTS 63K/11.

## INTRODUCTION

This report and accompanying map are part of a Mineral Deposit Series presenting a uniformly organized and up-to-date collation and analysis of information on mineral occurrences in the Province of Manitoba. The series is intended: (1) to provide explorationists with a geoscientific data base that can be used in mineral exploration; and (2) to provide a technical data base for other government users in resource evaluations, formulation of mineral and land use policies and the initiation of regional development programs.

### METHODOLOGY

The documentation program was initiated in the main mining districts of the province under the 1984-1989 Canada-Manitoba Mineral Development Agreement. Compilation of the manuscripts has continued with funding provided through the Canada-Manitoba Partnership Agreement on Mineral Development. Under this project mineral deposit geologists of the Geological Services Branch have attempted to inspect and evaluate each known mineral occurrence. These site visits ranged from a preliminary half day or less search of an area for old workings, to extensive geological mapping of selected occurrences for a week or more. In addition, for each occurrence the geologists have attempted to synthesize available data from published and unpublished sources. The Manitoba Mineral Inventory Card Index and the cancelled Assessment Files have been used extensively in the preparation of the report. Mineral occurrence documentations representing only cancelled assessment file compilations are identified as such under the heading 'Name'. Information for all other occurrences was acquired primarily by field examination and are commonly supplemented by cancelled assessment file compilations.

The locations of all mineral deposits and occurrences are presented in Figure 1.

### Deposit versus Occurrence

Throughout this report mineralization is referred to as a deposit if tonnage and grade figures are known; all other mineralization is referred to as an occurrence.

### Massive Sulphide versus Solid Sulphide

The use of 'massive sulphide' in the geological literature is confusing in that it is not always clear whether the authors are referring to a 'massive sulphide deposit' (*cf.* Sangster, 1972) or a section of sulphide-rich rock. In this publication 'massive sulphide' will be used in reference to a deposit type, *i.e.*, a volcanogenic massive sulphide deposit type, rather than the nature of the mineralization. A volcanogenic or sedimentogenic massive sulphide deposit can contain a sulphide lens that locally contains as little as 10% sulphide minerals by volume. The alteration zones that are an integral part of many massive sulphide deposits rarely contain more than 50% sulphide minerals. Consequently, the use of 'solid sulphide' for 75%-100% and 'near solid sulphide' for 50%-75% sulphide minerals is adopted in place of the commonly used term 'massive' to describe the textural aspects of a sulphide mineralization.

## FORMAT OF MINERAL DEPOSIT MAPS

### Location:

One of the incentives spurring the mineral deposit documentation was the absence of accurate location maps for known mineral occurrences. Inaccurate land bases have previously resulted in failure to find old workings, surveys carried out in wrong areas, and even cancellation of intended surveys by explorationists. Consequently, considerable field time has been spent in establishing occurrence locations and attempts have been made to display exact locations both on the map and in the accompanying report.

The location number on the map is a unique reference number that will be used both in the report and the geologists' unpublished data base. These numbers are consecutive within each 1:50 000 NTS map area (but not within portions of a map sheet such as Map MDS87-1). Where the density of data warrants the publication of a 1:100 000 map sheet (*e.g.*, this volume), location numbers are consecutive within each 1:50 000 area.

### Deposit Types:

In order to maintain a mineral deposit classification, which will be useful to both explorationists and metallogeneticists, a simplified descriptive classification was selected. This classification is based on the use of common deposit types for the classification of both deposits and occurrences. The classification of mineralization is based on the premise that the mineral explorationist requires information on metals and types of mineralization in an area as well as on the economic deposits (past, present and future producers).

All deposits and occurrences are classified according to the Deposit Type classification in Table 1.

The deposit type displayed on the map represents mineralization with the greatest economic potential, for example a disseminated narrow chalcopyrite layer is emphasized rather than a much thicker solid pyrite-graphite layer.

### Mineralization:

A symbol is used to denote the percentage and/or type of mineralization present. At some localities more than one type of mineralization is present. The type of mineralization displayed in the symbol represents the mineralization with the greatest economic potential as indicated by the deposit type symbol. It should be noted that in the context of this report a 'sulphide facies iron formation' is equivalent to a 'sulphide stratum'. For a discussion of sulphide stratum the reader is referred to Gale *et al.* (1980).

### Host Rocks:

In general, this description refers to the immediately underlying and overlying rock types. When a number of rock types are present in an extensive zone of mineralization, the most common rock types are indicated.

---

**TABLE 1: MINERAL DEPOSIT TYPES**

**STRATABOUND MASSIVE SULPHIDE TYPE DEPOSITS**

- a) Volcanic rock associated
- b) Sedimentary rock associated
- c) Alteration zone associated with a or b

**CHEMICAL SEDIMENT TYPE DEPOSITS**

- a) Sulphide facies iron formation
- b) Oxide facies iron formation
- c) Carbonate facies iron formation
- d) Silicate facies iron formation
- e) Other chemical sediments

**VEIN TYPE DEPOSITS**

- a) Single vein
- b) Multiple veins or lenses
- c) Stockwork

**MAGMATOGENIC TYPE DEPOSITS ASSOCIATED WITH  
MAFIC/ULTRAMAFIC ROCKS**

- a) Disseminated
- b) Layered
- c) Net textured
- d) Podiform

**DEPOSITS WITH PORPHYRY AFFINITIES**

**PEGMATITE TYPE DEPOSITS**

**CLASTIC SEDIMENT TYPE DEPOSITS**

**REPLACEMENT TYPE DEPOSIT**

**DISSEMINATED MINERALIZATION - NOT CLASSIFIED**

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**Elements:**

This description allows for a maximum of three metals present in increasing order of abundance by volume. The precious and base metals are indicated in preference to elements such as iron and carbon.

In some instances it has been more efficient on the map and in the report to make reference to an area of mineralization rather than individual deposits or occurrences. All mineralization in the area delineated by a dotted line on the map is referenced in the report under the location number within that area.

**FORMAT OF MINERAL DEPOSIT REPORTS**

**Location:**

Each deposit or occurrence description will contain the unique deposit reference number, deposit or claim name where applicable, UTM coordinates, general area description, the reference number of the airphoto on which the deposit can be located and a brief description of method(s) of access.

**Exploration Summary:**

This section provides a summary of the extent of exploration. Information for this section was compiled from Mineral Inventory Cards, cancelled Assessment Files, and maps and files from the Mining Recording Office.

**Geological Setting:**

In this section the general geology of a deposit or occurrence is described. The information levels of the descriptions vary considerably and depend largely upon the extent of geological mapping during the documentation project. For further details the reader should consult the references cited.

**Mineralization:**

A detailed description of the mineralization provides the reader with the opportunity to make his own evaluation of the significance of a mineral occurrence or deposit.

**Geochemical Data:**

In addition to detailed geological mapping around individual mineral occurrences, rock samples were collected from trenches and outcrops in the vicinity of the occurrences. The assay and geochemical data are included in this section. Extensive geochemical data bases are referenced but not reproduced here.

**Classification:**

In this section the geologist may indicate the reasons for the classification appearing on the Mineral Deposit Map. For those localities containing more than one deposit type, the deposit types not shown on the map are documented here.

**References:**

These include both published and unpublished sources. For published and assessment report information the reader should obtain desired material directly from the source. The mineral deposit geologists will endeavour to supply copies of unpublished material on a deposit by deposit basis. References listed at the end of each occurrence description may also include sources of additional information not directly cited in the text.

**NOTE:**

This mineral deposit report and the accompanying map are intended to be active documents that can be updated as new information becomes available. Although revisions of the publication are anticipated, any additional unpublished information may be obtained by contacting the authors or the Director, Geological Services Branch.

**ABBREVIATIONS**

The following abbreviations are used throughout the deposit and occurrence descriptions:

AEM	airborne electromagnetic
A.F.	assessment file
AMAG	aeromagnetic
bt	biotite
CB	claim block
c.g.	coarse-grained
cp	chalcopyrite
EM	electromagnetic
f.g.	fine grained
g/t	grams per tonne
gr	garnet
HBED	Hudson Bay Exploration and Development Company Limited



HLEM	horizontal loop electromagnetic
m.g.	medium grained
M.I. Card	Mineral Inventory Card
po	pyrrhotite
py	pyrite
m.g.	medium grained
NSS	near solid sulphide
qz	quartz
sc	sericite
t	tonne
tr	trace
VLEM	vertical loop electromagnetic
VLF-EM	very low frequency electromagnetic

## ACKNOWLEDGMENTS

A number of summer assistants conducted various facets of the field work for this report. Mark Cooper, Tony Butt and Rita Wadien were especially helpful during the hunt for old trenches. David Parbery assisted in the documentation of mineral deposits during the 1984 and 1986 field seasons. A.L. Parres, P. Bachnik and Brian Murray provided valuable information on the locations of old trenches. The manuscript was typed by Kelly Proutt and Anne Schiltroth, desktopped by Shirley Henrie, and reviewed by Mark Fedikow and Peter Theyer. David Baldwin edited the manuscript. The base map accompanying this report was prepared in part by Len Chackowsky using PAMAP. Bonnie Lenton, Mark Timcoe and Malcolm Cameron constructed the figures from the authors notes using Autocad software.

## GENERAL GEOLOGY OF THE CRANBERRY PORTAGE AREA (NTS 63K/11)

The geology base for the Cranberry Portage area (NTS 63K/11) mineral deposit map (MDS Map No. 16, in pocket) is derived mainly from the 1:40 000 scale map of Podolsky (1951) and the 1:63 360 scale map of Podolsky (1958). The map area is underlain by rocks of the Flin Flon greenstone belt, which have been intruded by large mafic and felsic plutons and overlain by Paleozoic sandstone and dolomitic limestones. The volcanic rocks are predominantly mafic and occur mainly as narrow wedges between plutons except in the area north and west of Cranberry Portage.

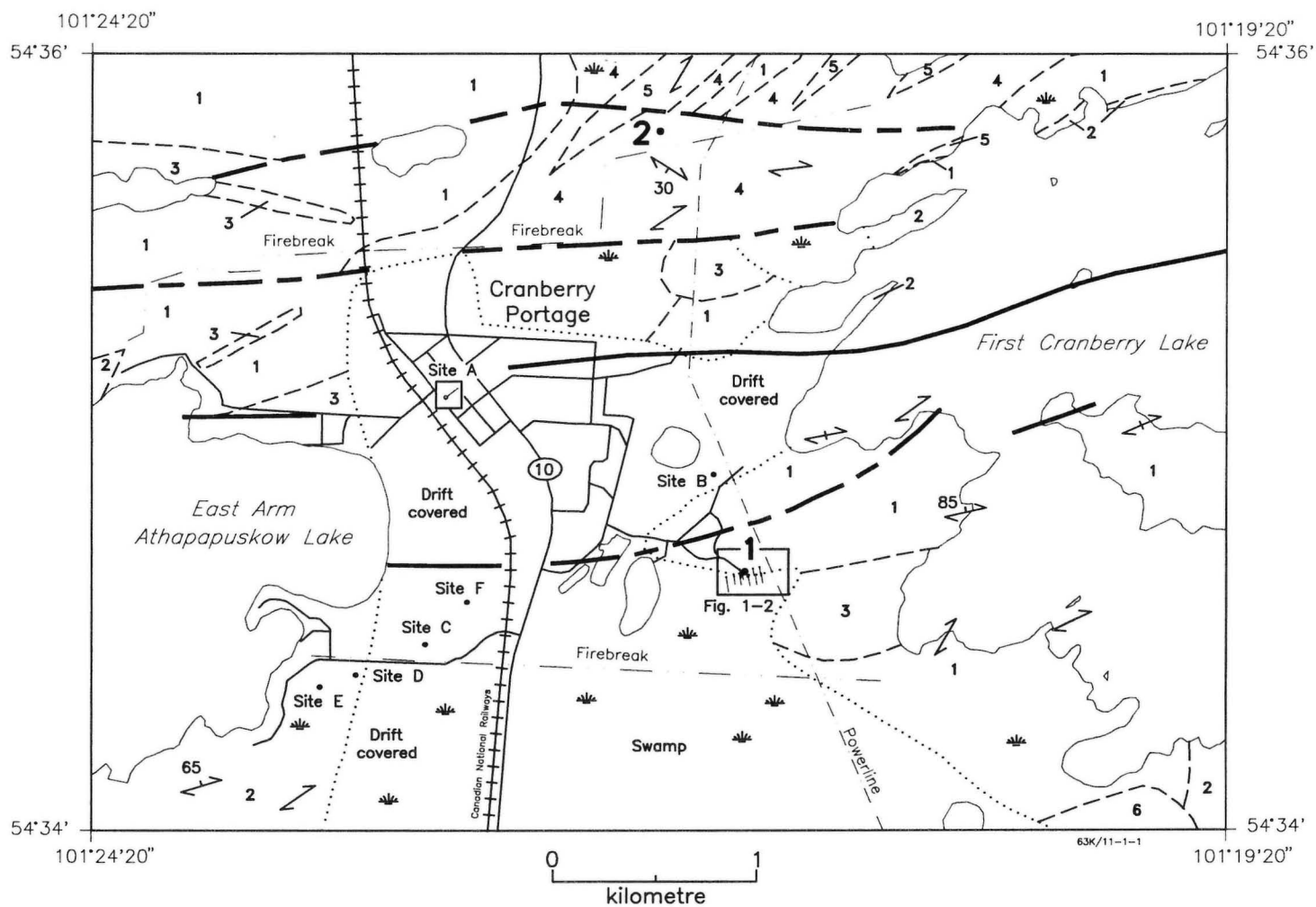
Quartz vein gold occurrences have been explored throughout the map area. Gold was produced from the Gur-

ney Mine (Location 19) and underground work was undertaken on an occurrence at Cranberry Portage (Location 1). Disseminations and veins of chalcopyrite occur together with pyrite and pyrrhotite in basaltic rocks and intermediate intrusions in the Nisto Lake and Lucile Lake areas and northeast of Sherritt Junction. This mineralization has some of the features of porphyry type deposits. Molybdenite occurs in association with a quartz porphyritic felsic intrusion on the south shore of Athapapuskow Lake. Layers of solid sulphide are associated with basaltic lavas in the Copper Lake area; this area has the potential to contain copper-bearing massive sulphide type deposit.

## SELECTED REFERENCES

Podolsky, T.

- 1951: Cranberry Portage (east half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.
- 1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 29-1957, 1:63 360 scale.



#### Paleozoic

- 6 Ordovician dolomite and dolomitic limestone

#### Precambrian

##### Intrusive Rocks

- 5 Gneissic feldspar porphyry and porphyritic gabbro
- 4 Hornblende-biotite-quartz diorite and biotite granodiorite
- 3 Quartz-eye granite, quartz porphyry and feldspar porphyry
- 2 Diorite and gabbro

#### Amisk Group

- 1 Greenstone derived from andesite and basalt

--- Geological boundary (approximate)

— Fault

66 Foliation (inclined, vertical, dip unknown)

Geology after Podolsky (1958).

#### Drill holes

— 11 drill holes (A.F. 61460)

— 1 drill hole (A.F. 92345)

— EM conductors (A.F. 92020)

..... Limit of drift

Swamp

1. Occurrence location

Figure 1-1: Geological setting and location of drill holes at occurrences 1 and 2.

## MINERAL DEPOSITS AND OCCURRENCES: CRANBERRY PORTAGE AREA (63K/11)

LOCATION: 1

NAME: Gold Hill

UTM: 6050242N/347677E

ACCESS: Via road from Cranberry Portage

AREA: 1.3 km southeast of Cranberry Portage

AIRPHOTO: A26331-173, A26362-114

### EXPLORATION SUMMARY:

The property was staked in 1934 by J. A. Smith and assigned to Gold Hill Development Syndicate Limited. It was optioned in 1935 to A. J. Bone, who drilled five holes totalling 305 m and blasted at least nine trenches. The option was dropped in 1936 and the property assigned to Myrtle Gold Mines Limited, who drilled two holes totalling 153 m and blasted one trench. In 1937 Bergold Development Company Limited sank a two compartment, inclined shaft to at least 38 m depth. Approximately 29 m of drifting was done on the 20 m level with some crosscutting on the 37 m level. The shaft was 40 m deep when it was abandoned. The property was reassigned to Gold Hill Development Syndicate in 1943 and the shaft, mine levels, stopes, and muck pile were sampled. Over 183 m of drilling was done in 1946 (M.I. Card 63K/11 Au3).

John Murray restaked the property in 1950. Ricban Mines Limited drilled 11 holes totalling 345 m in 1958 (A.F. 91490) and reported a total of 854 m of drilling by 1959. Cranberry Mines Limited optioned the property in 1962 and sampled the stope after the shaft had been pumped out to the 23 m level.

The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

In 1975 the shaft was pumped out and sampled by Richard Murray (M.I. Card 63K/11 Au3)

At Site A (Fig. 1-1), within the town of Cranberry Portage, G. F. Thompson drilled one hole in 1975 under an abandoned well that had exposed a rock containing 130 g/t (4.33 oz) Au near the base of the overburden (A.F. 92345). Trenches were blasted at Sites B, C, D, E and F on shear zones (Cranberry Gold Mines Syndicate Ltd., Corp. File).

### GEOLOGICAL SETTING:

The area is drift covered and there are few rock exposures. The geological map by Podolsky (1958) indicates that the area is underlain by andesitic to basaltic volcanic rocks that have been intruded by various granitic, gabbroic and dioritic rocks. A major fault occurs close to the Gold Hill mineralized zone (Podolsky, 1958). The drill holes (Fig. 1-1) intersected diorite, granite and medium grained granitized diorite that was also logged as porphyry (A.F. 91490); 1-3 m long core intersections of chloritic schist and breccia zones were noted in several drill cores.

### MINERALIZATION:

The mineralized zone is approximately 3 m thick at the surface.

Trace to minor amounts of pyrite occur in quartz and quartz-carbonate veins, in silicified shears and in the porphyry. The chloritic schist zones contained only trace

amounts of pyrite, but the breccia zones contained minor to moderate amounts of pyrite. Trace amounts of chalcopyrite were noted in DDH No. 5 core. In DDH No. 2 (Fig. 1-2) the quartz-bearing shear zone section was 5 m long. The highest gold concentrations values occurred in a 2.3 m long section of a silicified shear zone (A.F. 91490). The log for DDH No. 6 (Fig. 1-1) indicates that there may be more than one mineralized zone on this property. Minor amounts of scheelite (0.1%  $WO_3$  and 0.012%  $WO_3$ ) were reported by T.L. Tanton (M.I. Card 63K/11 Au3). The gold-bearing sample reportedly collected from the water well at Site A (Fig 1-1) appears to have been derived from the till. At Site B gold was found in a shear zone that was traceable for over 3 km. There is no information available on the mineralization found at Sites C, D, E and F, but the shear investigated at Sites C, D and E was considered to be the extension of the Gold Hill shear (Cranberry Gold Mines Syndicate Ltd., Corporation File).

### GEOCHEMICAL DATA:

The drill logs contain a number of assays that range from 0.69 to 1.37 g/t Au. The highest concentrations obtained in DDH No. 2 were 6.17 g/t Au over 18 cm and 4.11 g/t Au over 15 cm (Fig. 1-2; A.F. 91490). Eighteen tonnes of ore shipped to Flin Flon in 1936 contained 54.86 g/t Au and 78.86 g/t Ag. A second shipment of 27 t contained 23.18 g/t Au and 41.14 g/t Ag. During 1937, a 40 t shipment of ore averaged 27.09 g/t Au and 92.23 g/t Ag. Assays of up to 77.83 g/t Au over 50 cm were obtained in 1935 and channel samples of sulphide-rich material from the shaft taken in 1937 contained 102.86 to 246.35 g/t Au. 35 t of ore shipped to Flin Flon in 1963 contained 11.26 g/t Au (M.I. Card 63K/11 Au3).

### CLASSIFICATION:

Vein-type deposit; multiple veins. This mineralization occurs in or adjacent to a regional shear zone.

### REFERENCES:

Assessment Files 91490, 92020, 92345

Manitoba Energy and Mines, Mines Branch.

Cranberry Gold Mines Syndicate Ltd.

Corporation File; Manitoba Energy and Mines, Geological Services, unpublished.

Mineral Inventory Card NTS 63K/11 Au3

Manitoba Energy and Mines, Geological Services Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957 1:63 360 scale.

No.6	No.2	No.1
1) $\frac{0.66 \text{ g/tonne}}{0.43m}$	1) $\frac{tr}{0.34m}$	1) $\frac{0.66 \text{ g/tonne}}{0.66m}$
2) $\frac{0.34 \text{ g/tonne}}{0.92m}$	2) $\frac{5.48 \text{ g/tonne}}{0.18m}$	2) $\frac{0.66 \text{ g/tonne}}{0.46m}$
3) $\frac{tr}{0.55m}$	3) $\frac{4.11 \text{ g/tonne}}{0.15m}$	3) $\frac{1.37 \text{ g/tonne}}{0.45m}$
4) $\frac{0.46 \text{ g/tonne}}{2.20m}$	4) $\frac{0.66 \text{ g/tonne}}{0.27m}$	4) $\frac{tr}{0.78m}$
5) $\frac{0.66 \text{ g/tonne}}{1.13m}$	5) $\frac{0.34 \text{ g/tonne}}{0.88m}$	5) $\frac{tr}{2.29m}$
	6) $\frac{0.34 \text{ g/tonne}}{0.84m}$	
	7) $\frac{0.66 \text{ g/tonne}}{0.70m}$	
	8) $\frac{0.66 \text{ g/tonne}}{0.52m}$	
	9) $\frac{0.66 \text{ g/tonne}}{1.34m}$	
	10) $\frac{0.34 \text{ g/tonne}}{1.28m}$	
	11) $\frac{tr}{0.94m}$	

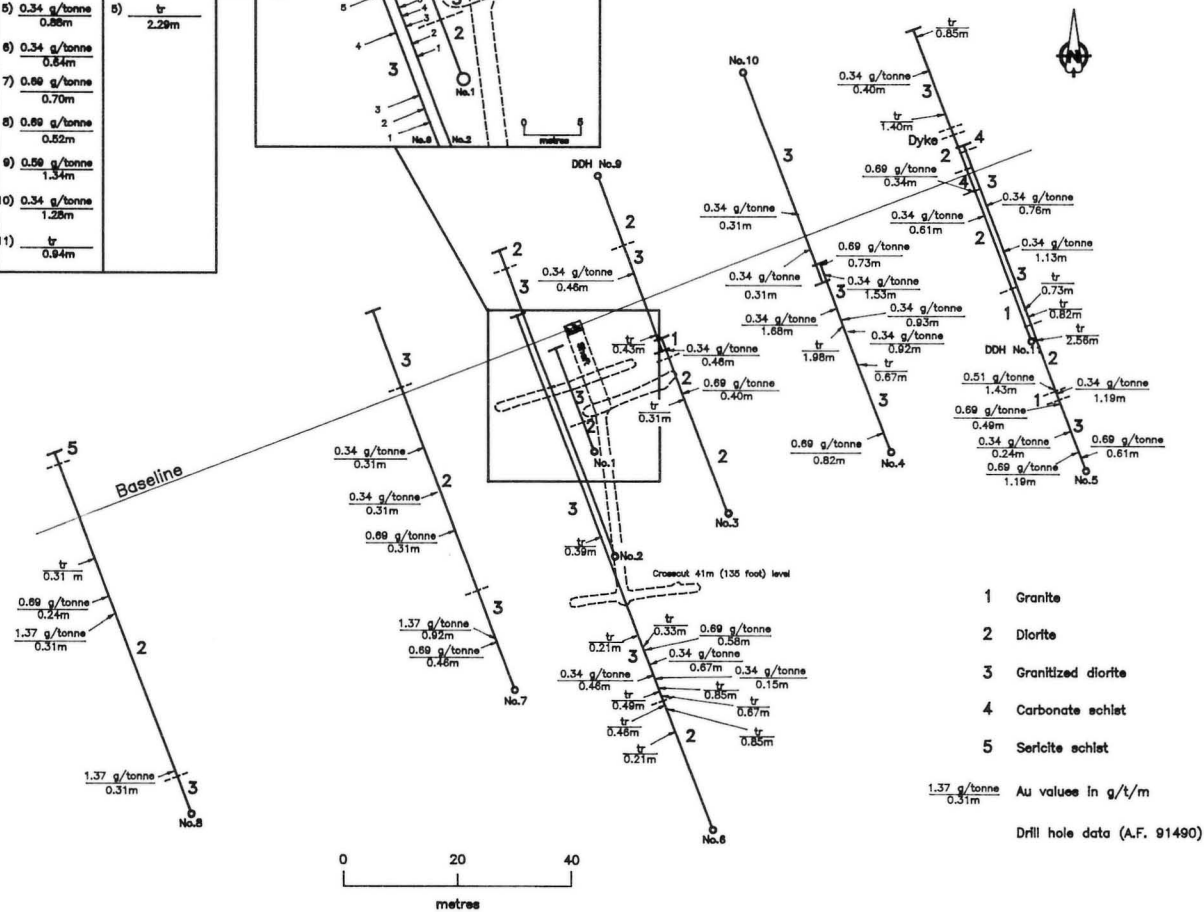


Figure 1-2: Plan view of drill holes and shaft at occurrence 1.



**LOCATION: 2**

**NAME:** Thompson

**UTM:** 6052380N/347461E

**ACCESS:** Via Provincial Highway 10 and traverse

**AREA:** 3 km northeast of Cranberry Portage (Fig. 1-1)

**AIRPHOTO:** A26331-175, A26050-222

**EXPLORATION SUMMARY:**

The mineralized area was staked by A.L. Stewart in 1918 who explored the area with several pits and trenches. The property was staked in 1923 by H.L. Thompson who blasted several pits and trenches. In 1923 the property, along with several other claims, were optioned to Dixon Mines Ltd. and a Radiore survey was conducted. Three holes totalling 156 m were drilled and some trenching was reported, but the claim was cancelled in 1930 (M.I. Card 63K/11 Cu5). The property was staked in 1952 and optioned in 1954 to HBED who conducted a HLEM survey (A.F. 91869). The option was abandoned in 1955 and the claim cancelled in 1963. The property was included in AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-74 (A.F. 92020).

**GEOLOGICAL SETTING:**

The area (Fig. 1-1) is underlain by a narrow lense of mafic volcanic rocks that has been intruded by hornblende-biotite-quartz diorite, biotite-granodiorite, coarse gneissic feldspar porphyry and porphyritic gabbro (Podolsky, 1958). The mafic rock is aphanitic to fine grained and featureless. A 5 cm thick quartz-epidote vein, which occurs north of the pits, intrudes the mafic rock. Epidote veinlets (from several millimeters to several centimetres wide) occur in both the mafic rock and the granodiorite. Cross cutting granitic veinlets (0.1-4 cm) also intrude the mafic rock.

**MINERALIZATION:**

Trench 1 (Fig. 2-1) exposes a 45 cm thick siliceous, pink-grey vein that contains up to 5% disseminated pyrite, chalcopyrite and malachite. The vein strikes at 347°/52°E (Fig. 2-1), but is not exposed in outcrop to the northwest. The host is an aphanitic to fine grained, massive, magnetic mafic rock with siliceous sections.

Approximately 30 m to the east, 3 trenches expose a rusty weathered aphanitic to fine grained mafic rock that contains 3-5% disseminated pyrite and chalcopyrite. The rubble pile between trenches 2 and 3 contains disseminated to near solid pyrite and chalcopyrite in a siliceous dark grey to black rock.

Trench 2 exposes a 0.3 m thick, fractured, rusty weathered vein-like structure that strikes 073°/80°E (Fig. 2-1). If the trace of the structure were extended westward it would pass approximately 10 m to the south of trench 1. Although 'massive' chalcopyrite was reported from the Thompson claim, (Dixon Mines Ltd., Corp. File) none was observed during the site investigation.

**GEOCHEMICAL DATA:**

Dixon Mines Ltd. reported channel samples that assayed 7.5% Cu with trace Au and Ag.

**CLASSIFICATION:**

Vein-type deposit; multiple veins.

**REFERENCES**

Assessment Files 91869, 92020

Manitoba Energy and Mines, Mines Branch.

Mineral Inventory Card 63K/11 Cu5

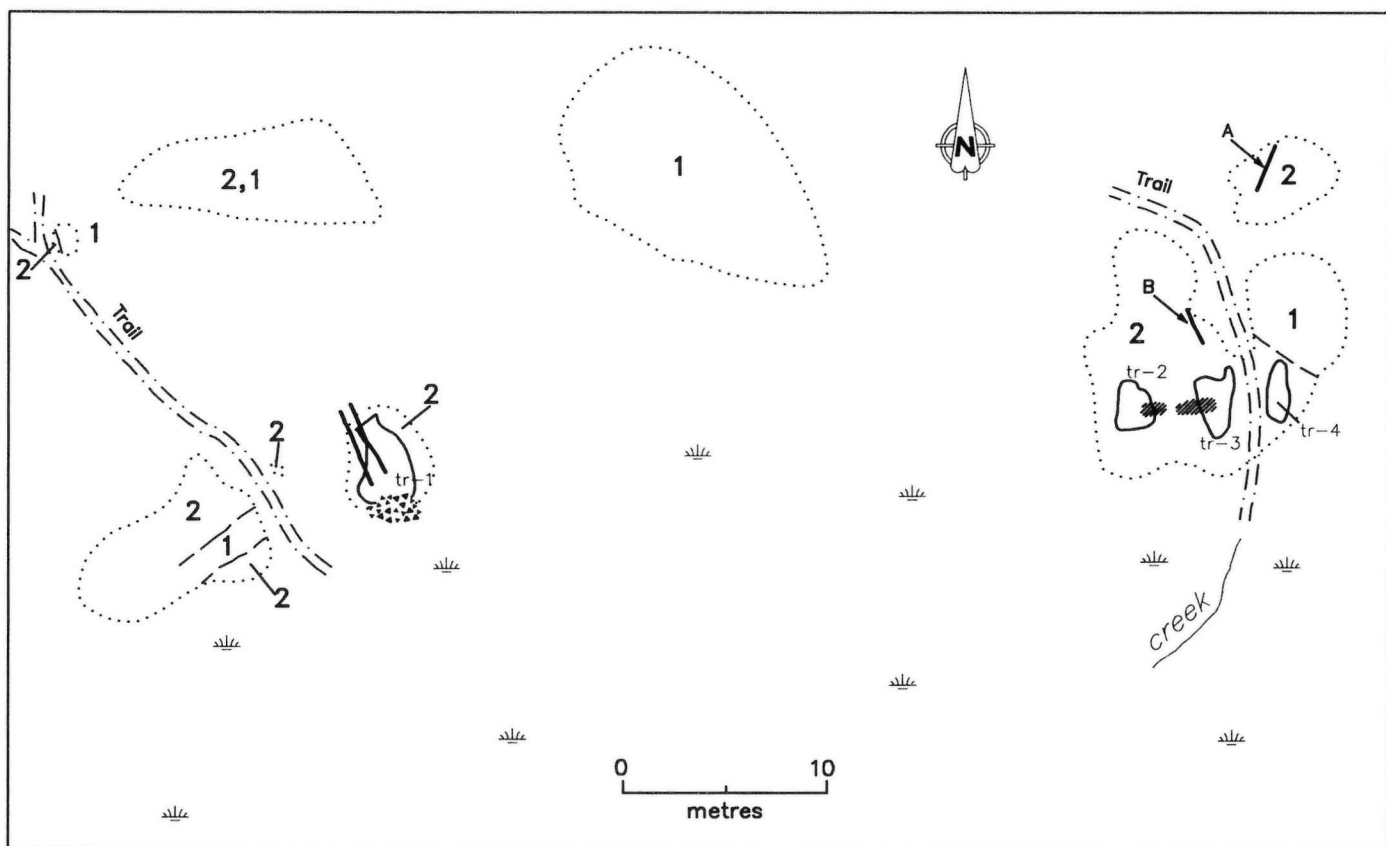
Manitoba Energy and Mines, Geological services Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

Dixon Mines Ltd.

1923: Corporation file; Manitoba Energy and Mines, Geological Services Branch.



63K11/2-1





- |   |   |   |  |
|---|---|---|--|
| 1   | Granodiorite                              | ---   | Geological contact                             |
| 2   | F.g. massive mafic volcanic rock          |   | Geology after D. Parbery, 1990 (written comm.) |
| A   | Quartz-feldspar-epidote vein              | tr  | Trench   |
| B   | Granitic vein                             | ⋯   | Outcrop  |
|  | Rusty weathered siliceous rock            |  | Swamp  |
|  | Trend of siliceous vein with <5% sulphide |  | Rubble   |

Figure 2-1: Detailed geology and trench locations at occurrence 2.

LOCATION: 3

NAME:

UTM: 6053421N/346225E

ACCESS: Via Provincial Highway 10

AREA: 3 km north of Cranberry Portage

AIRPHOTO: A26050-222

#### EXPLORATION SUMMARY:

HBED conducted a HLEM survey in the area in 1954 (A.F. 91869). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). Road building in 1984 exposed chalcopyrite mineralization in rock cuts.

#### GEOLOGICAL SETTING:

The area is underlain by mafic to intermediate volcanic rocks that have been intruded by mafic and felsic sills and dykes that were probably derived from the large intrusions that are exposed to the east of the occurrence (Fig. 3-1; Podolsky, 1958).

#### MINERALIZATION:

Chalcopyrite and pyrite occur as anastomosing veins and disseminations in a medium grained gabbro. The veins are generally less than several centimeters thick, but vary up to 20 cm thick, in an approximately 1 m thick zone. Locally, the disseminations of chalcopyrite and pyrite appear to be contained in rafts of mineralized mafic volcanic(?) rock within fine- to medium-grained mafic intrusions (Fig. 3-2). Minor pyrite is present in several small felsic intrusions.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; multiple veins. These veins and disseminations may represent mobilization of sulphides during metamorphism or porphyry type mineralization.

#### REFERENCES:

Assessment Files 91869, 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (West Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

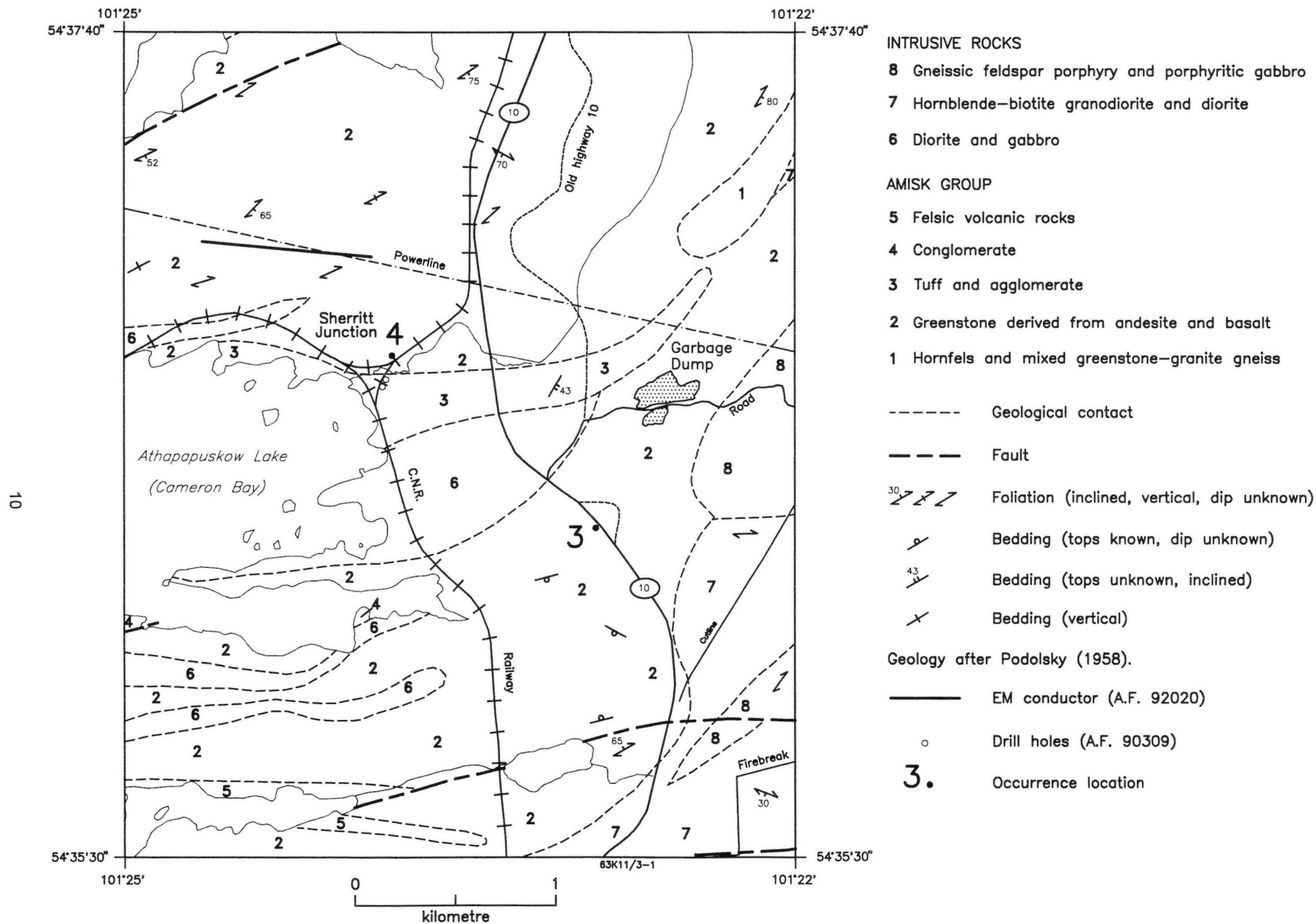


Figure 3-1: Geological setting of occurrences 3 and 4.



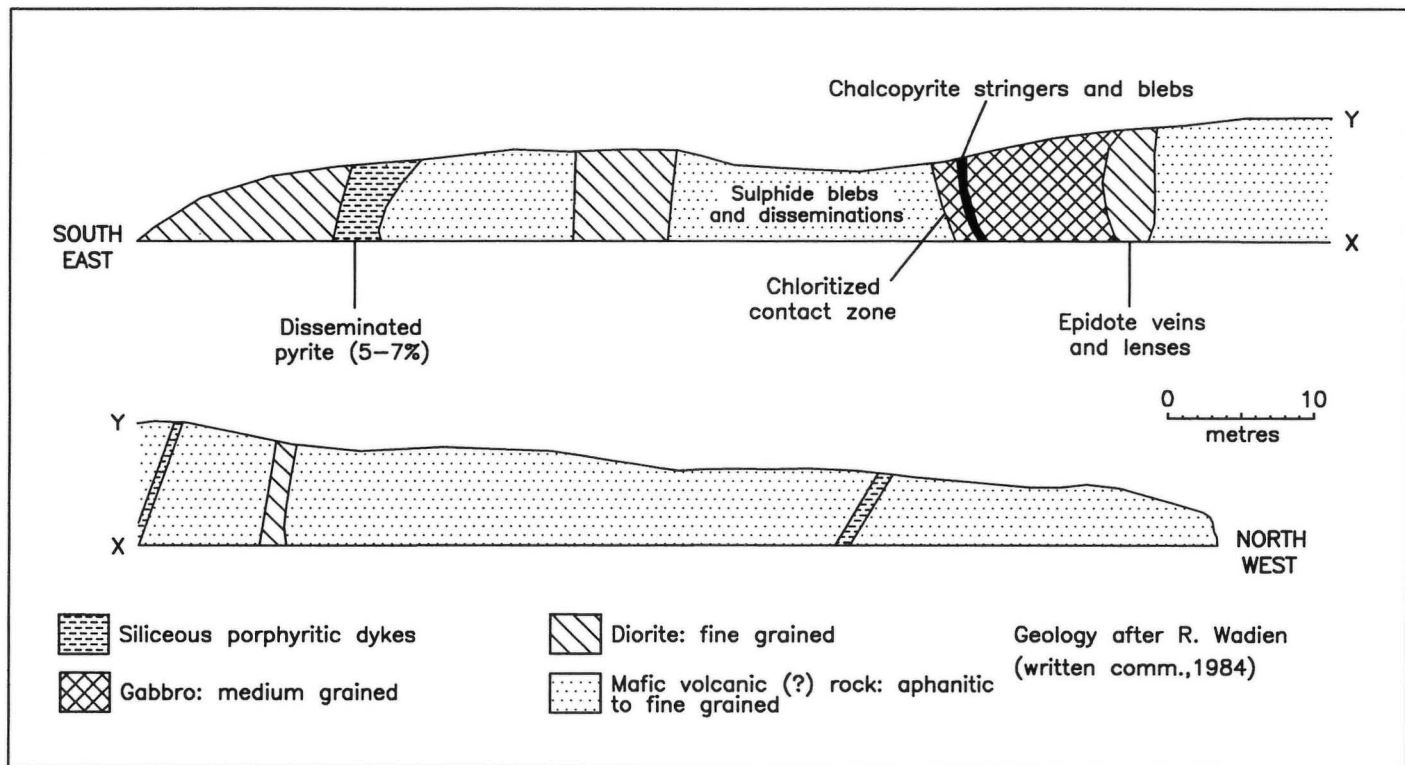


Figure 3-2: Detailed geology of an outcrop on the southwest side of Provincial Highway 10.

LOCATION: 4  
NAME:  
UTM: 6054195N/345282E  
ACCESS: Via Provincial Highway 10 and traverse

AREA: Sherritt Junction, approximately 3 km northwest of  
Cranberry Portage (Fig. 3-1)  
AIRPHOTO: A26331-177, A26050-222

#### EXPLORATION SUMMARY:

The area was staked in the 1920's as part of the Gold Pan group of claims. It was staked in 1951 as the Web 5 and 6 claims. HBED optioned the property and conducted a HLEM survey in 1954 (A.F. 91869) and two holes totaling 85 m were drilled by S. Patroski (A.F. 90309). The claim was cancelled in 1957. Small pits are visible in rock cuts adjacent to the railway line. The area was included in AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). The area was also included in regional AMAG and AEM surveys conducted by Canadian Nickel Company Ltd. in 1980 (A.F. 92473).

#### GEOLOGICAL SETTING:

The area is underlain predominantly by mafic volcanic rocks (Podolsky, 1958). These mafic volcanic rocks, appear on the basis of their magnetic signature, to be a continuation of the Athapapuskow basalt (Syme, 1988). The volcanic rocks have been intruded by sills and dykes of diabase.

#### MINERALIZATION:

Veinlets and disseminations of chalcopyrite and pyrite are scattered throughout both the volcanic rocks and the diabase; locally, bornite is present in the volcanic rocks. The sulphide-bearing sections intersected in the drill holes were approximately 30 cm in length (A.F. 90309).

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; multiple veins.

#### REFERENCES:

- Assessment Files 90309, 91869, 92020, 92473  
Manitoba Energy and Mines, Mines Branch.
- Podolsky, T.  
1958: Cranberry Portage (West half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.
- Syme, E.C.  
1988: Athapapuskow Lake Project; in Manitoba Energy and Mines, Report of Field Activities 1988, p. 21.

LOCATION: 5

NAME: Nemo

UTM: 6058596N/339920E

ACCESS: Via Provincial Highway 10

EXPLORATION SUMMARY:

Exploration was conducted in the area in 1917-19 by three Americans who discovered gold in the Twin Lake area (Wallace, 1920, S. Bachnick, written comm., 1975). The claims were allowed to lapse in the 1920's and the Nemo claim was staked and explored by E. Arbow and F.J. Van Jaelan in the late 1920's (Wright and Stockwell, 1934). The area was staked by Consolidated Mining & Smelting prior to 1947 (Payuka Gold Mines Ltd., Corporation File). Two holes with a total length of 62.5 m were drilled on the H.B.J. claim in 1954 (A.F. 90333). G. W. Smith staked the area in 1958 and Ken-Rio Exploration Limited drilled five holes for a total length of 352 m (A.F. 92467). A HLEM survey was conducted over the area in 1980 by HBED.

Since 1981 prospecting was undertaken by Nor-Acme Mines Ltd., Noranda Ltd., Homestake Exploration Co. and Varna Gold Inc. (A.L. Parres, pers. comm., 1988). One drill hole was drilled on the property in 1986 (A.L. Parres, pers. comm., 1986).

The area was included in regional AMAG and AEM surveys conducted by Canadian Nickel Co. Ltd. in 1980 (A.F. 92473).

GEOLOGICAL SETTING:

The area is underlain predominantly by pillowed mafic volcanic rocks (Podolsky, 1958; Parbery, 1986). The Twin Lake area (Fig. 5-1) consists of pillowed basalts that overlie massive basalt, monolithic and heterolithic mafic breccia and mafic tuff that are intercalated with minor argillite. These basalts appear on the basis of their magnetic signature to be a continuation of the Athapapuskow basalt of Syme (1988). Fine grained quartz phyrlic felsic rocks, with minor felsic to intermediate tuff and felsic fragmental rocks occur in the northern part of the area (Fig. 5-2).

The mafic volcanic rocks are cut by numerous dykes of quartz-feldspar porphyry and felsite that strike between 173° and 275° and by small fine- to medium-grained dioritic to gabbroic intrusions. A large quartz monzonitic to granodioritic intrusion is exposed west of the mineralized zone. The volcanic rocks have been intruded by sills and dykes of diabase.

MINERALIZATION:

A zone of alteration (Fig. 5-2,) varies in intensity from a weakly altered carbonatized mafic rock with a pale green colour, to an intensely altered rock with a straw yellow colour and locally abundant (greater than 25%) quartz and iron-carbonate veins, veinlets and lenses. Locally, disseminated pyrite constitutes approximately 1% of the rock and fuchsite is abundant in centimeter to tens of cm thick zones that have a pale green colour.

AREA: Twin Lake

AIRPHOTO: A26398-134, 135, A26369-262

Pink-brown aphanitic felsite dykes, with 1-3% disseminated pyrite and chalcopyrite intrude the mafic volcanic rocks (Fig. 5-2). Wright and Stockwell (1934) report the presence of free gold in late granitic veins exposed in trenches approximately 600 m westward of the outcrop at the south end of Twin Lake.

GEOCHEMICAL DATA:

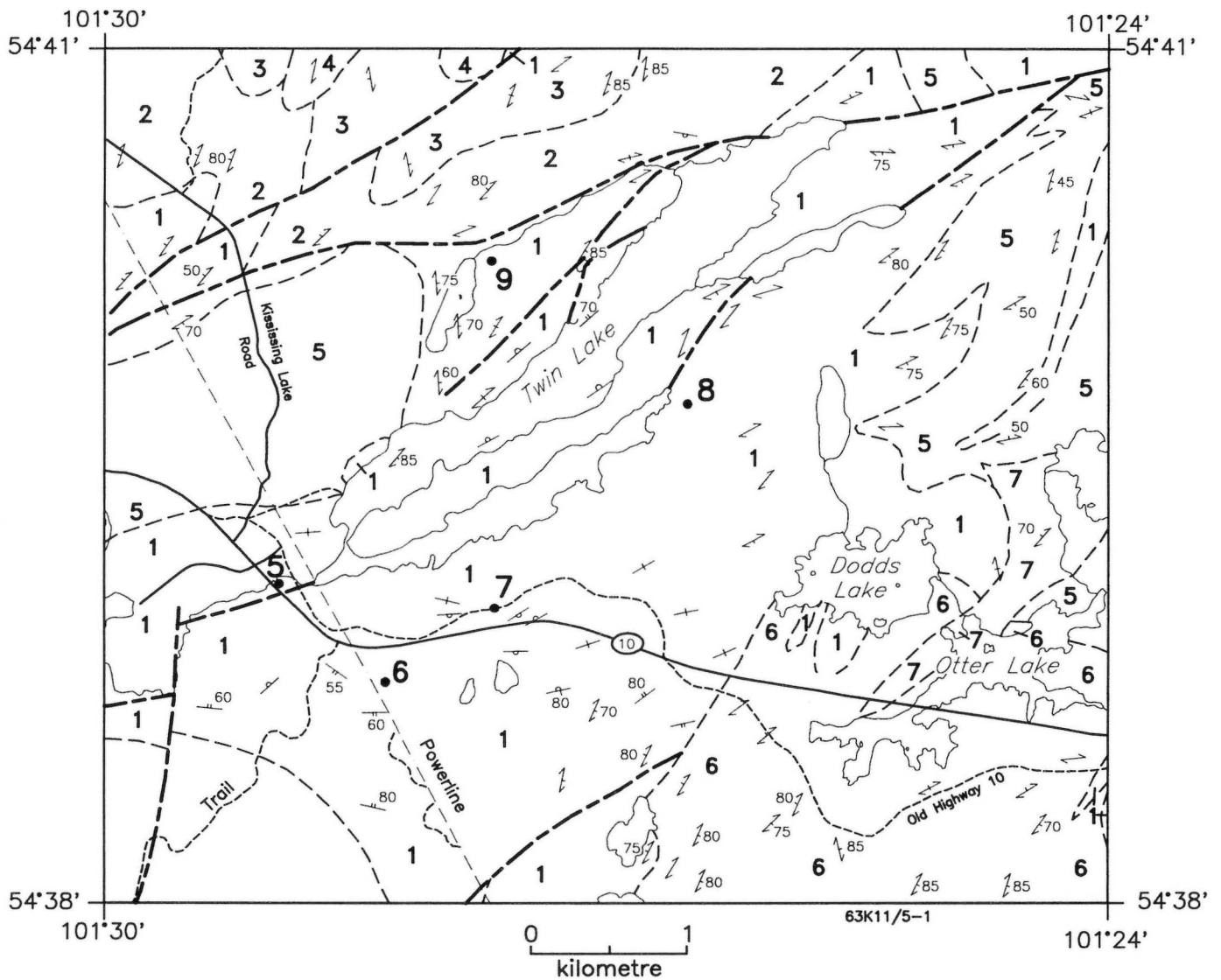
None

CLASSIFICATION:

Vein type deposit; multiple veins in a shear zone.

REFERENCES:

- Assessment Files 90333, 92467, 92473  
Manitoba Energy and Mines, Mines Branch.
- Podolsky, T.  
1958: Cranberry Portage (West half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.
- Parbery, D.  
1986: Mineral Occurrence Studies-Flin Flon Area; in Manitoba Energy and Mines, Report of Field Activities 1986, p. 51-54.
- Payuka Gold Mines Ltd.  
1947: Corporation File; Manitoba Energy and Mines, Geological Services Branch.
- Syme, E.C.  
1988: Athapapuskow Lake Project; in Manitoba Energy and Mines, Report of Field Activities 1988, p. 21,
- Wallace, R.C.  
1920: Mines and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.
- Wright, J. F., and Stockwell, C. H.  
1934: Gold Occurrences of Flin Flon District, Manitoba and Saskatchewan; in Geological Survey of Canada, Summary Report 1933, Part C, p. 6c-7c.



#### INTRUSIVE ROCKS

- 7 Syenodiorite, syenite
- 6 Granite
- 5 Granodiorite, quartz diorite, diorite
- 4 Gabbro and norite
- 3 Felsic hypabyssal intrusive rocks

#### AMISK GROUP

- 2 Felsic volcanic rocks
- 1 Mafic to intermediate volcanic rocks

----- Geological contact

----- Fault

70° Foliation (inclined, vertical, dip unknown)

Bedding (tops known, dip unknown)

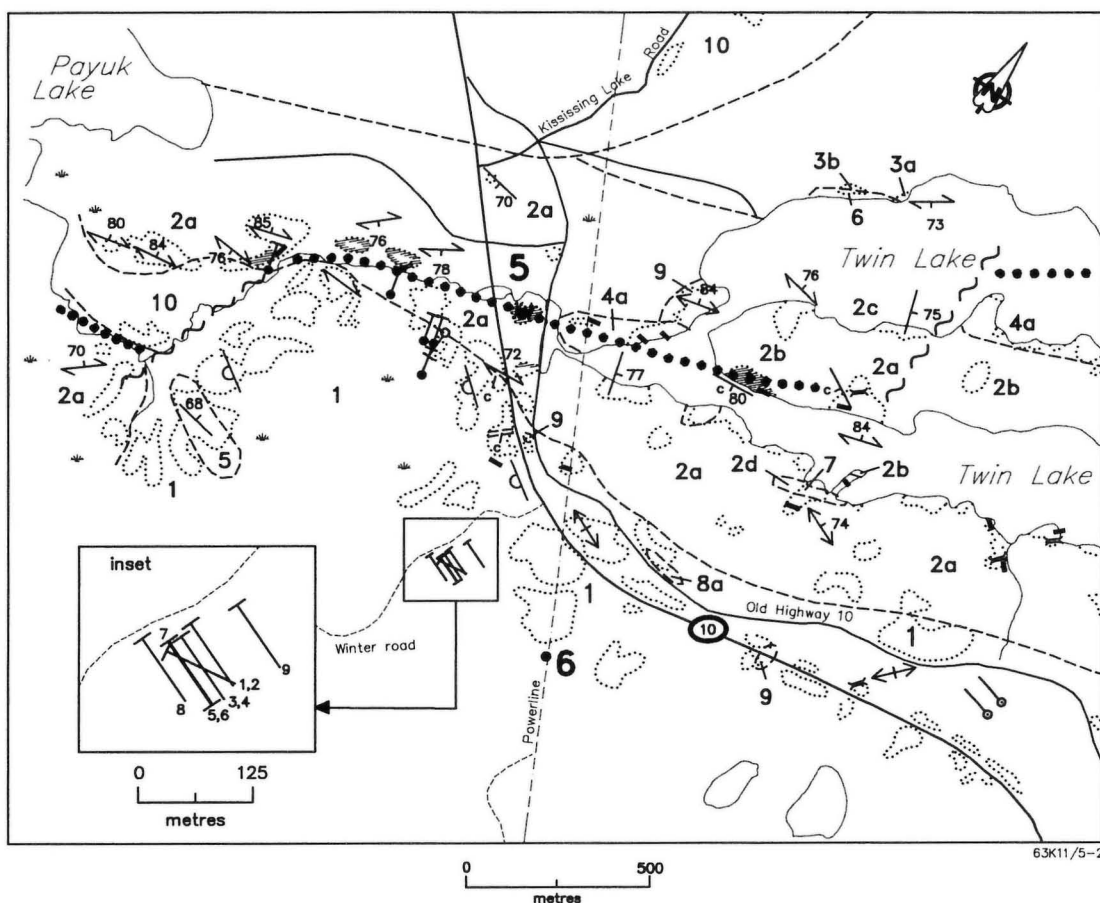
80° Bedding (tops unknown, inclined)

80° Bedding (vertical, overturned)

Geology after Podolsky (1958).

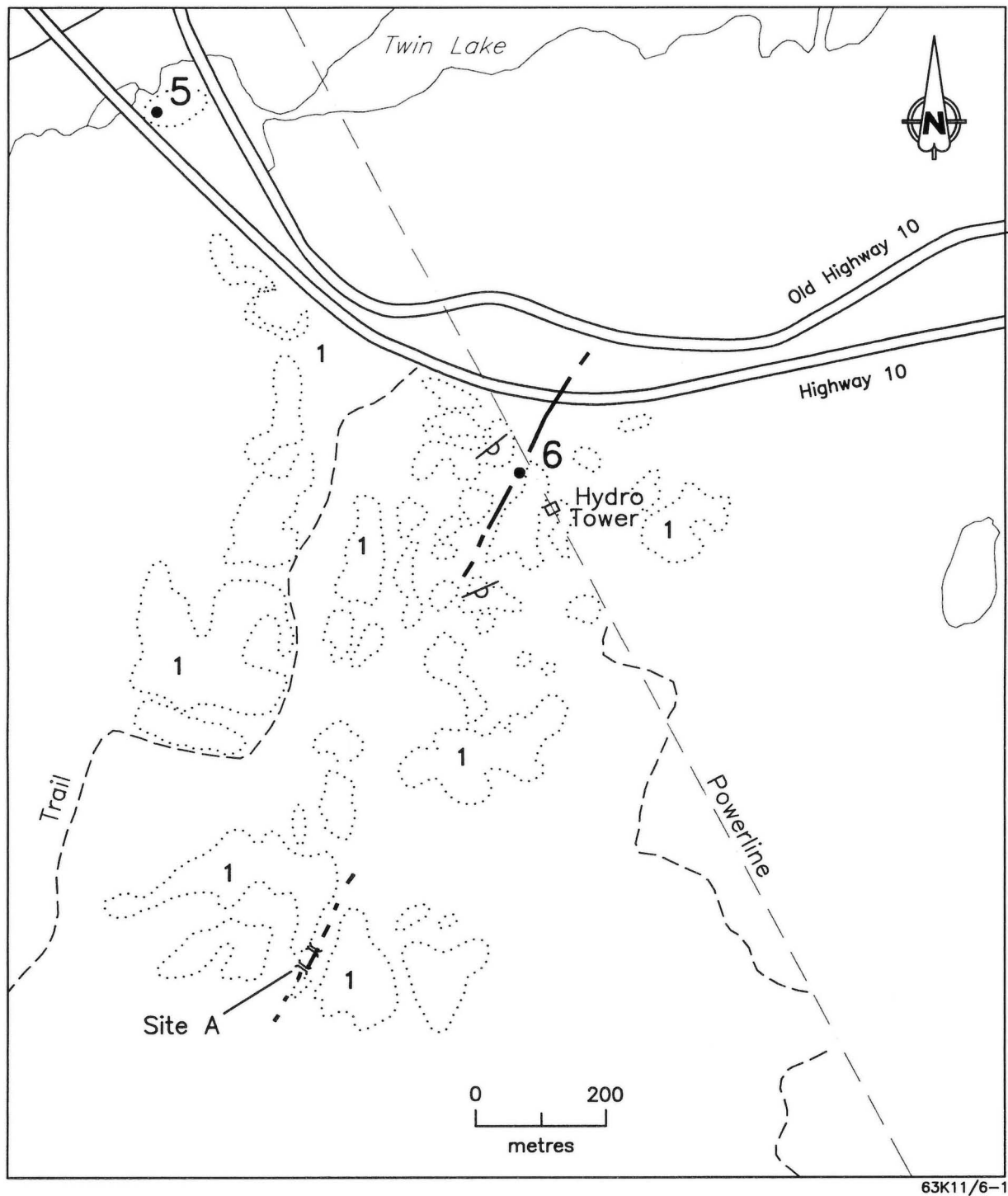
5. Occurrence location

Figure 5-1: Geological setting of occurrences 5, 6, 7, 8 and 9.



10	Granodiorite	2d	Quartz amygdaloidal mafic volcanic rock	~ ~ ~	Fault (assumed)
9	Diorite-gabbro	1	Pillowed basalt		Geological contact
8a	Argillite		Carbonate-silica-fuchsite alteration		Alteration zone trend
7	Felsic heterolithic breccia		Felsite dyke		Trench
6	Intermediate lapilli tuff		Layering (Inclined)	c	Carbonate-silica vein
5	Mafic tuff		Foliation (inclined)	Drill holes:	
4a	Intermediate fragmental volcanic rock		Shear (inclined, vertical)		5 (A.F.92467)
3a	Feldspar-phyric felsic volcanic rock		Pillowed unit		1 (A.F.90333)
3b	Quartz-phyric felsic volcanic rock	Geology after Parbery (1986).			9 (A.F. 92467)
2a	Fine grained mafic volcanic rock				2 (A.F. 90312)
2b	Feldspar-phyric mafic volcanic rock				Swamp
2c	Hornblende-phyric mafic volcanic rock				6.
					Occurrence location

Figure 5-2: Detailed geology and drill hole locations at occurrences 5 and 6.



- |   |                 |  |         |           |                     |
|---|-----------------|--|---------|-----------|---------------------|
| 1 | Pillowed basalt |  | Pillows |           | Trench              |
|   | Quartz vein     |  | Outcrop | <b>6•</b> | Occurrence location |

Outcrop map provided by A. L. Parres (written comm.)

Figure 6-1: Detailed geology at occurrence 6 and locations of trenches at Site A.



LOCATION: 6

NAME: Goldome

UTM: 6058050N/340439E

ACCESS: Via Provincial Highway 10

AREA: Twin Lake

AIRPHOTO: A26398-135

#### EXPLORATION SUMMARY:

Goldome 4 was staked in 1945 by R.G. Thompson. A prospectus filed in 1947 indicated that Consolidated Mining and Smelting Company excavated 14 trenches 'some years ago' (Payuka Gold Mines Ltd., Corporation File). Ken-Rio Explorations Limited drilled 9 holes totalling 411 m on a quartz vein in 1958 (A.F. 92467). The claim was cancelled in 1963 and staked in 1964, 1971, and 1979.

A HLEM survey was conducted by HBED in 1980 (A.F. 99909). The property was staked for A.L. Parres Ltd. in 1982. Although drilling was done on other properties in the general area, it is not certain if any other holes were drilled on this property.

The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during 1973-1974 (A.F. 92020). The area was also included in regional AMAG and AEM surveys conducted by Canadian Nickel Co. Ltd. in 1980 (A.F. 92473).

#### GEOLOGICAL SETTING:

The area is underlain predominantly by pillowed and massive basaltic lavas (Podolsky, 1958; Parbery, 1986; see Fig. 5-2, and Fig. 6-1, this volume). A sketch map indicates that a 12 m thick quartz porphyry dyke occurs immediately west of the quartz vein (Fig. 6-1); Payuka Gold Mines, Corporation File). The drill holes (Fig. 6-2) also intersected thin dykes of aplite and medium- to coarse-grained diorite. Two trenches were excavated on a quartz vein at Site A (Fig. 6-1).

#### MINERALIZATION:

The quartz vein (Fig. 6-1) strikes northeast, dips 85°E and has a thickness of 1 m. It was exposed in trenches for a distance of 145 m. One of the drill holes intersected two sections of 'andesitic lava' separated by a 1.4 m section of aplite. The 'andesitic lava' sections were 'weakly schistose', but contained 1.1 m, and 0.5 m of gold-bearing quartz and pyrite and a 0.4 m gold-bearing section with 'considerable quartz and minor pyrite' (Payuka Gold Mines, Corporation File). The gold-bearing interval in the other drill holes contained approximately 50% quartz with minor pyrite.

#### GEOCHEMICAL DATA:

Channel sample assays obtained by the Consolidated Mining and Smelting Co. are given in Table 6-1. A 2.1 m thick vein exposed on the west side of the swamp north of trench 1 contained 23.6 g/t Au (Payuka Gold Mines, Corp. File). DDH 1 intersected 1.2 m of 4.11 g/t Au, 0.5 m of 25.37 g/t Au and 0.4 m of 10.97 g/t Au over a total core length of 8 m. Assays of more than 3.43 g/t Au were also obtained from DDH 3, 6, 7 and 8 cores (A.F. 92467).

**Table 6-1**  
**Assay results for channel samples analyzed by Consolidated Mining and Smelting Co.**

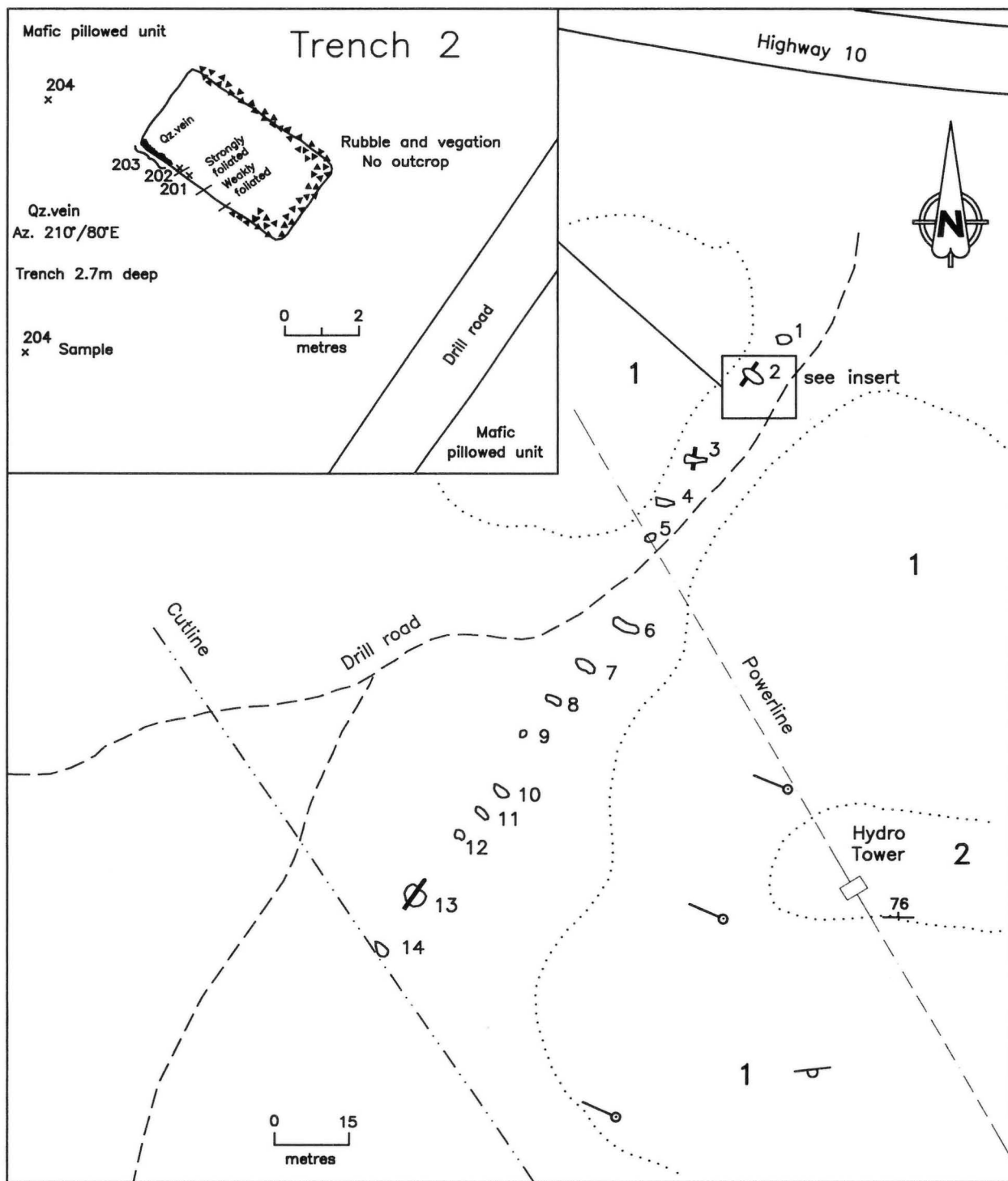
Trench	Length/m	g/t Au
1	0.45	232.5
2	0.6	21.7
3	1.0	5.58
4	1.5	14.9
5	1.3	3.9
6	1.2	6.2
7	1.2	5.6
8	1.2	5.0
9	0.5	14.4
10	1.0	5.0
11	1.2	3.7
12	1.76	5.7
13	0.58	11.3
14	0.91	3.4

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

- Assessment File 92020, 92467, 92473 99909  
Manitoba Energy and Mines, Mines Branch.
- Parbery, D.  
1986: Mineral Occurrence Studies-Flin Flon Area; in Manitoba Energy and Mines, Report of Field Activities, 1986, p. 51-54.
- Payuka Gold Mines Ltd.  
1947: Corporation File; Manitoba Energy and Mines, Geological Services Branch.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



63K11/6-2

- |                           |                 |                         |
|---------------------------|-----------------|-------------------------|
| 1 Pillowed basalt         | Area of outcrop | Drill hole (A.F. 92467) |
| 2 M.g. massive mafic rock | Layering        | Trench                  |
| Quartz vein               | Pillows         | Rubble                  |

Figure 6-2: Location of trenches and detail of trench No. 2 at occurrence 6.

**LOCATION: 7****NAME:** Joplin**UTM:** 6059443N/341959E**ACCESS:** Via Provincial Highway 10**AREA:** Twin Lake (Fig. 5-1)**AIRPHOTO:** A26369-263**EXPLORATION SUMMARY:**

The Joplin occurrence was described by Wright (1931) and Wright and Stockwell (1934). The area was reportedly prospected in 1917-19 by 'three Americans' who excavated three adits in the vicinity of Twin Lake. The area was also prospected by others following the 1919 fire that destroyed camps in the area (S. Bachnick, written communication, 1975). Two holes, totalling 70 m, were drilled in 1954 by John Murray on the Fool 5 claim (A.F. 90312) at the approximate location of the north vein (Fig. 7-1). The property was staked for A.L. Parres Ltd. in 1982; trenches were excavated at several locations and four holes were drilled on the North vein (Site C, Figs. 7-1, 7-3) and hole Dod-2 was drilled on the Mud vein (Site B Figs. 7-1, 7-3) (A.L. Parres, written communication, 1986).

Falconbridge Nickel Mines Ltd. conducted an AFMag and ground magnetometer survey of the area east and south of the Twin Lake area in 1971 (A.F. 91899). The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during 1973-1974 (A.F. 92020). The area was also included in regional AMAG and AEM surveys conducted by Canadian Nickel Co. Ltd. in 1980 (A.F. 92473).

Ray-Dor Resources Ltd. excavated a 220 m<sup>3</sup> trench on CB 10497 in 1981 (A.F. 92468 Site M, Fig. 7-1).

**GEOLOGICAL SETTING:**

The area is underlain predominantly by pillowed and massive basaltic lavas (Podolsky, 1958; Parbery, 1986; see Figs. 7-1, 5-1). The basaltic lavas are cut by a number of white weathering, pink coloured felsite dykes. The drill holes also intersected thin dykes of aplite and medium- to coarse-grained diorite.

**MINERALIZATION:**

Wright and Stockwell, (1934) describe the occurrence as two chlorite schist zones, 1.2 m and 1.8 m thick, containing veins and stringers of quartz; the largest vein was 45 cm thick. Pyrite was present in the chlorite schist. Pyrite, chalcopyrite, galena, sphalerite and gold were present in the quartz. This zone was traced with pits and trenches for 152 m along strike. The felsite dyke at Site L, which was investigated with an adit, contains irregular 1-2 cm quartz veins, disseminations and veinlets (1 mm thick) of iron carbonate as well as 1-3% anhedral (?) pyrite and chalcopyrite in fractures and as disseminations (Parbery, 1986). Felsites are also exposed in trenches at Sites E, F, G, J and K (cf. Fig. 7-2 and Parbery, 1986, p. 52). White to grey gold-bearing quartz veins with less than 5% sulphides (pyrite, chalcopyrite, sphalerite (?), galena) are exposed in trenches at Site A, B, C, D, and K (Figs. 7-1 and 7-2). The quartz veins at Site C (Fig. 7-1) and A, B, and D are separate, but parallel vein structures.

**GEOCHEMICAL DATA:**

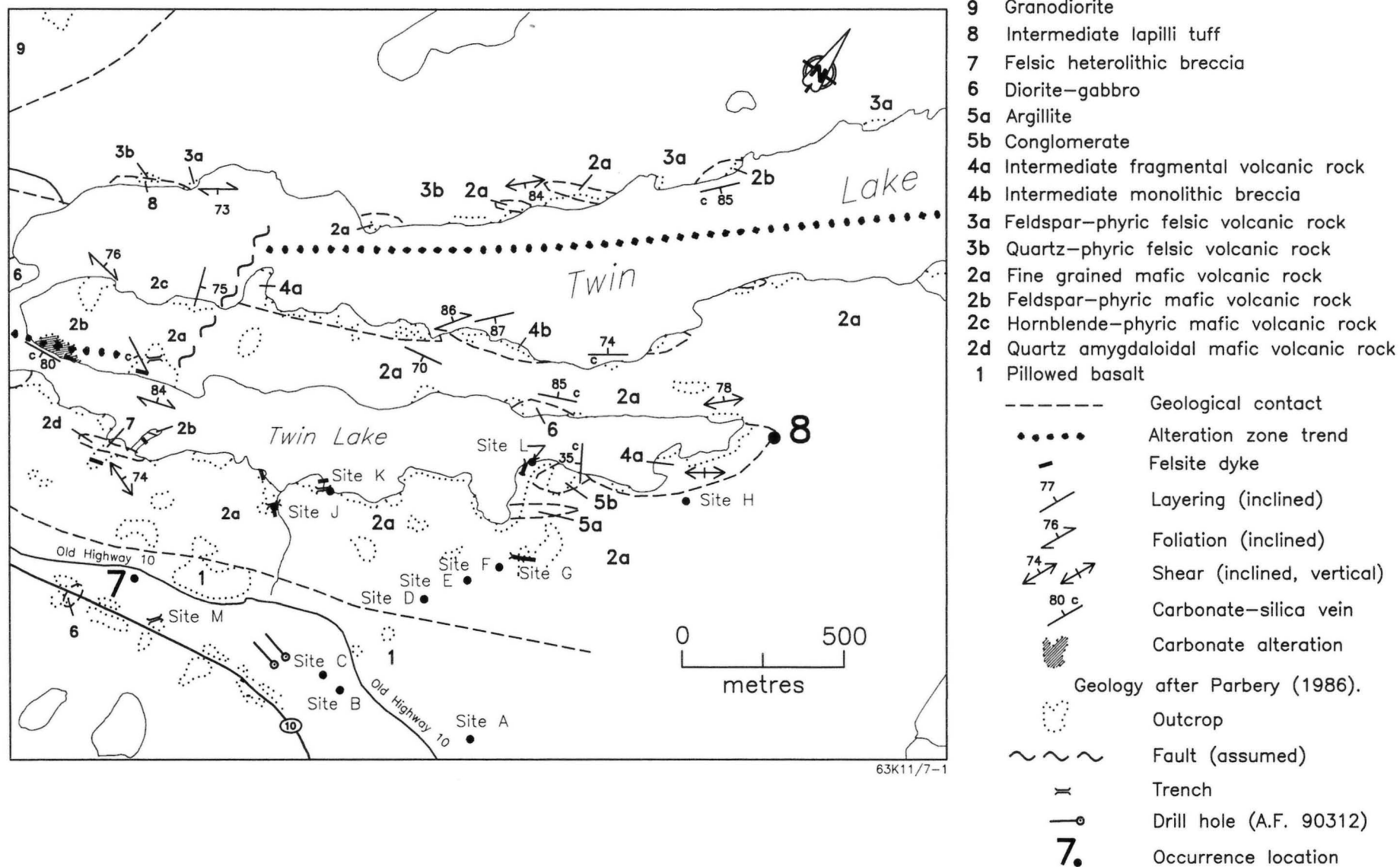
Free gold has been found in several of the quartz veins. Samples with the highest galena content generally contain the highest gold values; assay results of 10-50 g/t Au have been reported for grab samples (P. Bachnick, pers. comm., 1986). Grab samples of galena-rich quartz from site C contained 140 g/t Au, 0.24% Cu and 1.99% Pb (sample 42-4-704) and 124 g/t Au, 0.11% Cu and 3.00% Pb (sample 42-4-705). A grab sample (42-4-721) of quartz with pyrite cubes collected at site D contained 164 ppb Au and 18 ppm Cu. Sample 42-4-730, collected at Site D, contained 50 ppb Au, 23 ppm Cu and 28 ppm Pb.

**CLASSIFICATION:**

Vein type deposit; multiple veins.

**REFERENCES:**

- Assessment Files 90312, 91899, 92020, 92468, 92473  
Manitoba Energy and Mines, Mines Branch.
- Parbery, D.  
1986: Mineral Occurrence Studies-Flin Flon Area; in Manitoba Energy and Mines, Report of Field Activities 1986, p. 51-54.
- Payuka Gold Mines Ltd.  
1947: Corporation File; Manitoba Energy and Mines, Geological Services Branch.
- Podolsky, T.  
1958: Cranberry Portage (west Half); Manitoba Geological Survey of Canada, Map 26-1957, 1:63 360 scale.
- Wallace, R. C.  
1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.
- Wright, J.F.  
1931: Geology and Mineral Deposits of a Part of Northwest Manitoba; in Geological Survey of Canada, Summary Report 1930, Part C, p. 54c.
- Wright, J. F. and Stockwell, C. H.  
1934: Gold Occurrences of Flin Flon District, Manitoba and Saskatchewan; in Geological Survey of Canada, Summary Report 1933, Part C, p. 6c-7c.



63K11/7-1

Figure 7-1: Detailed geology and drill hole locations at occurrences 7 and 8.

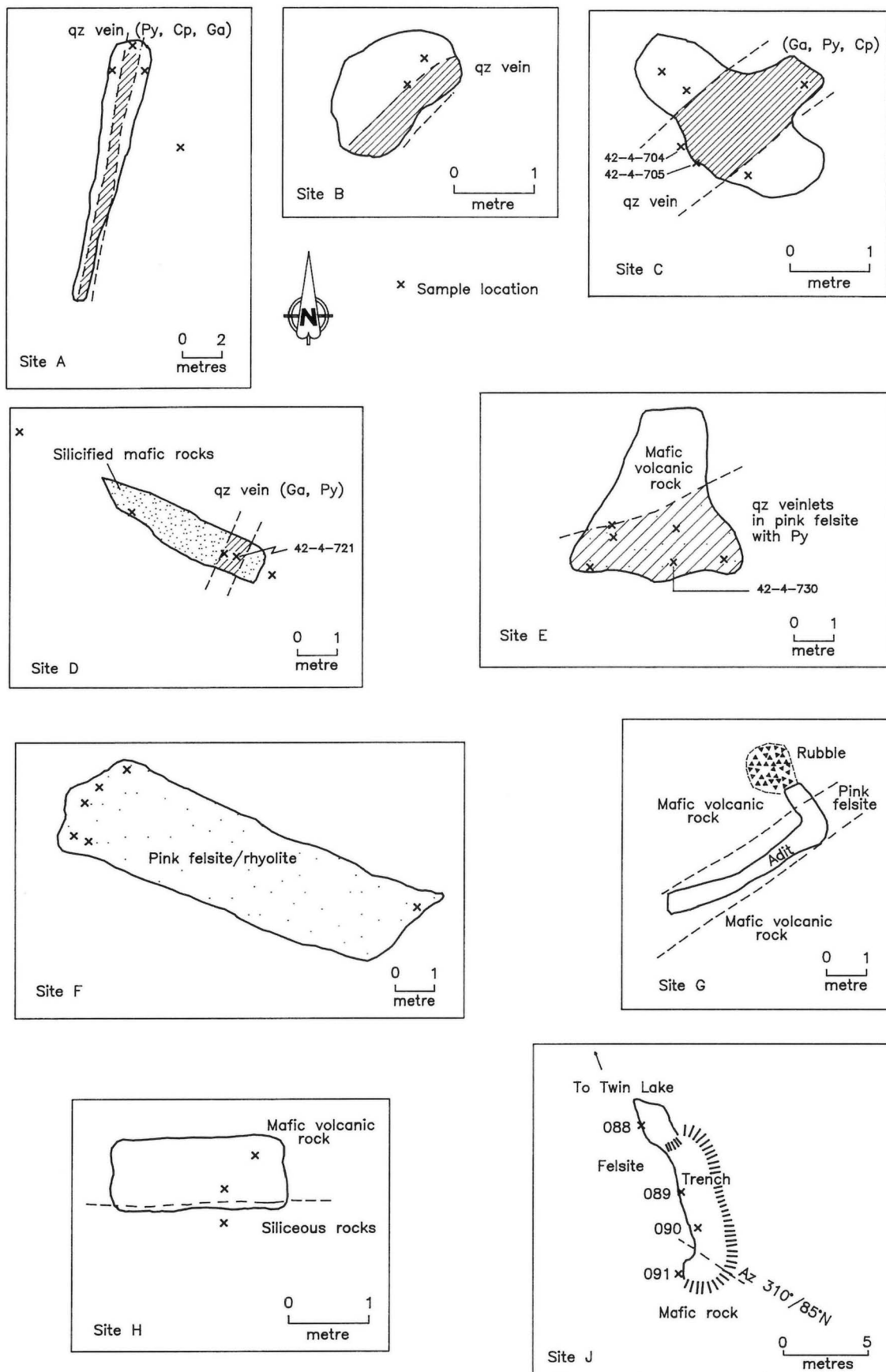
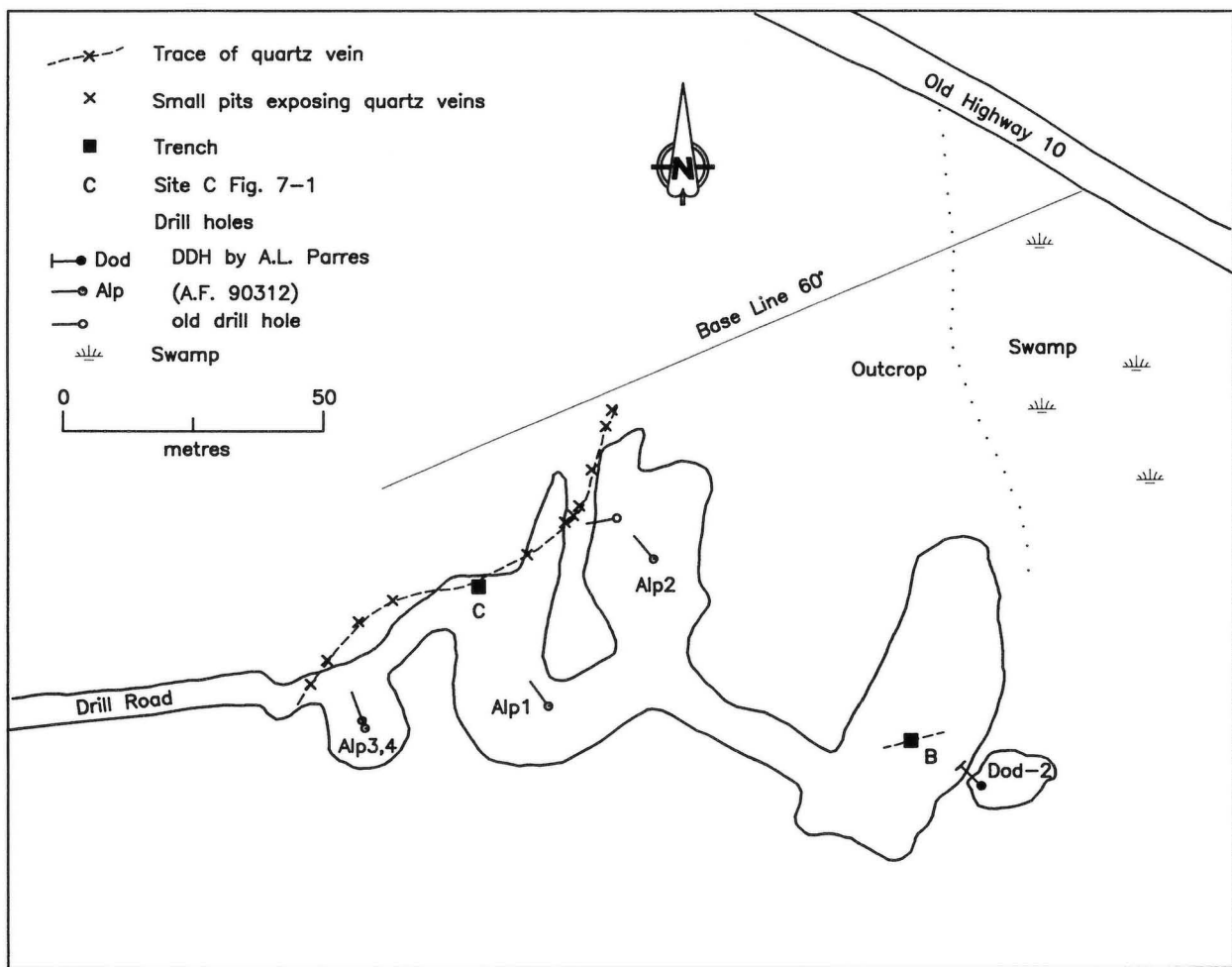


Figure 7-2: Details of trenches at Sites A - J, occurrence 7.

63K/11-7-2



63K11/7-3

Figure 7-3: Trench and drill hole locations at sites B and C, occurrence 7.



LOCATION: 8

NAME:

UTM: 6059860N/342588E

ACCESS: Via boat on Twin Lake or traverse

AREA: Northeast of Twin Lake (Fig. 5-1)

AIRPHOTO: A26369-262

#### EXPLORATION SUMMARY:

Old pits in the area may have been blasted during exploration of the Twin Lake area prior to 1920 (see Locations 5 and 7). CB 10632 was staked for A.L. Parres Ltd. in 1982 and a geological map was prepared for Nor-Acme Gold Mines Ltd. in 1983. A DDH platform and casing indicate that a hole was drilled at 090/-45 in 1989.

#### GEOLOGICAL SETTING:

The area is underlain by fine- to medium-grained dark green weakly foliated massive basalt. Fine- to medium-grained quartz feldspar porphyritic felsic dykes and fine grained dioritic rocks intrude the basaltic rocks (Fig. 8-1).

#### MINERALIZATION:

A fine grained aplite dyke at the largest trench contains minor fine grained pyrite. Quartz veinlets, less than 1 cm thick, cut across the foliation in the rocks; up to 1% fine grained disseminated pyrite occurs in the basalt adjacent to some of these veins. The 10-50 cm thick quartz vein exposed in the eastern trenches (Fig. 8-2) is a white quartz vein with several small blocks of chloritized basalt and up to 10% pyrite and pyrrhotite. There is up to 7% disseminated pyrite in the adjacent basalt host. Calcite (less than 1%) is also present in the quartz vein.

#### GEOCHEMICAL DATA:

None.

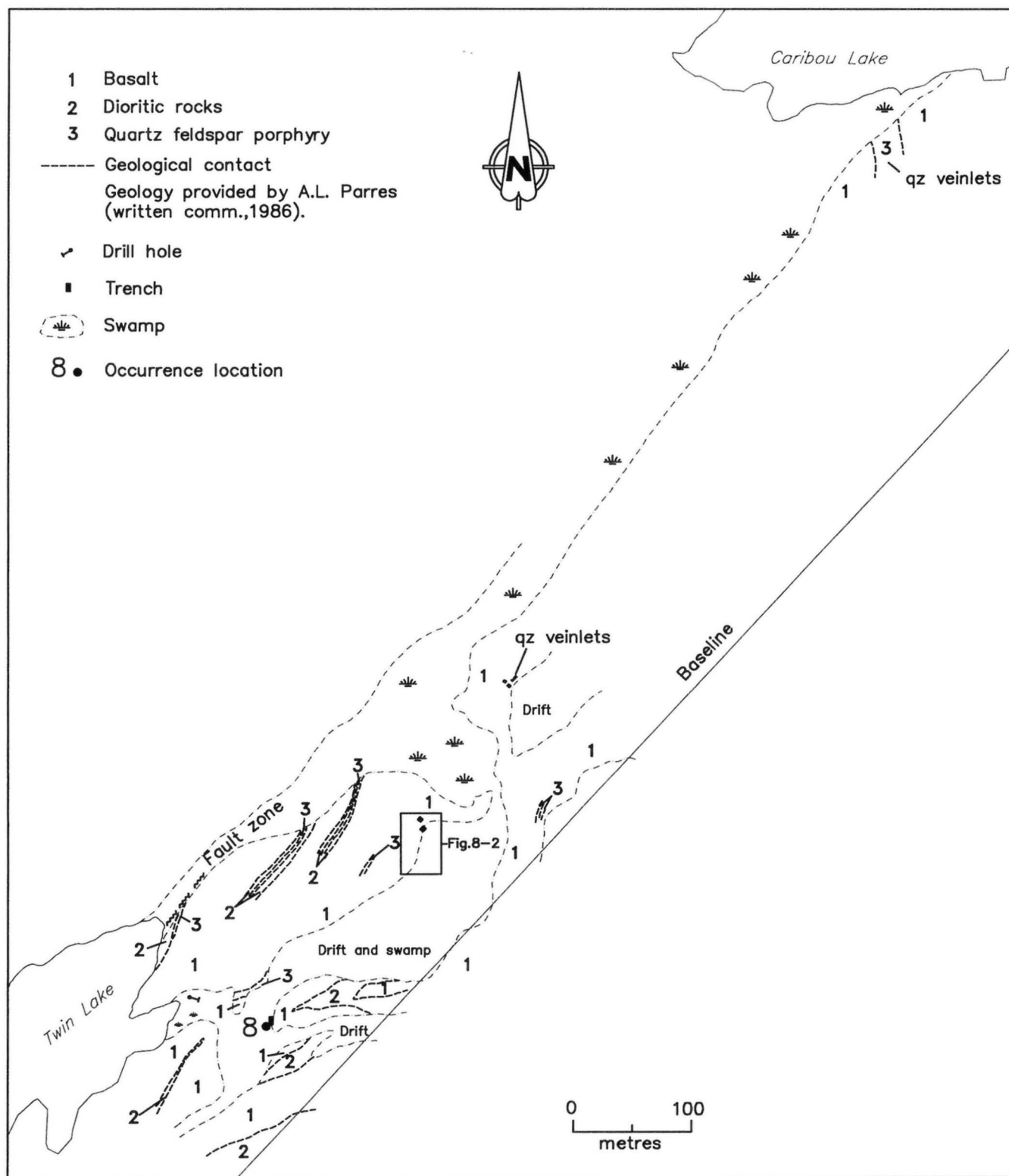
#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

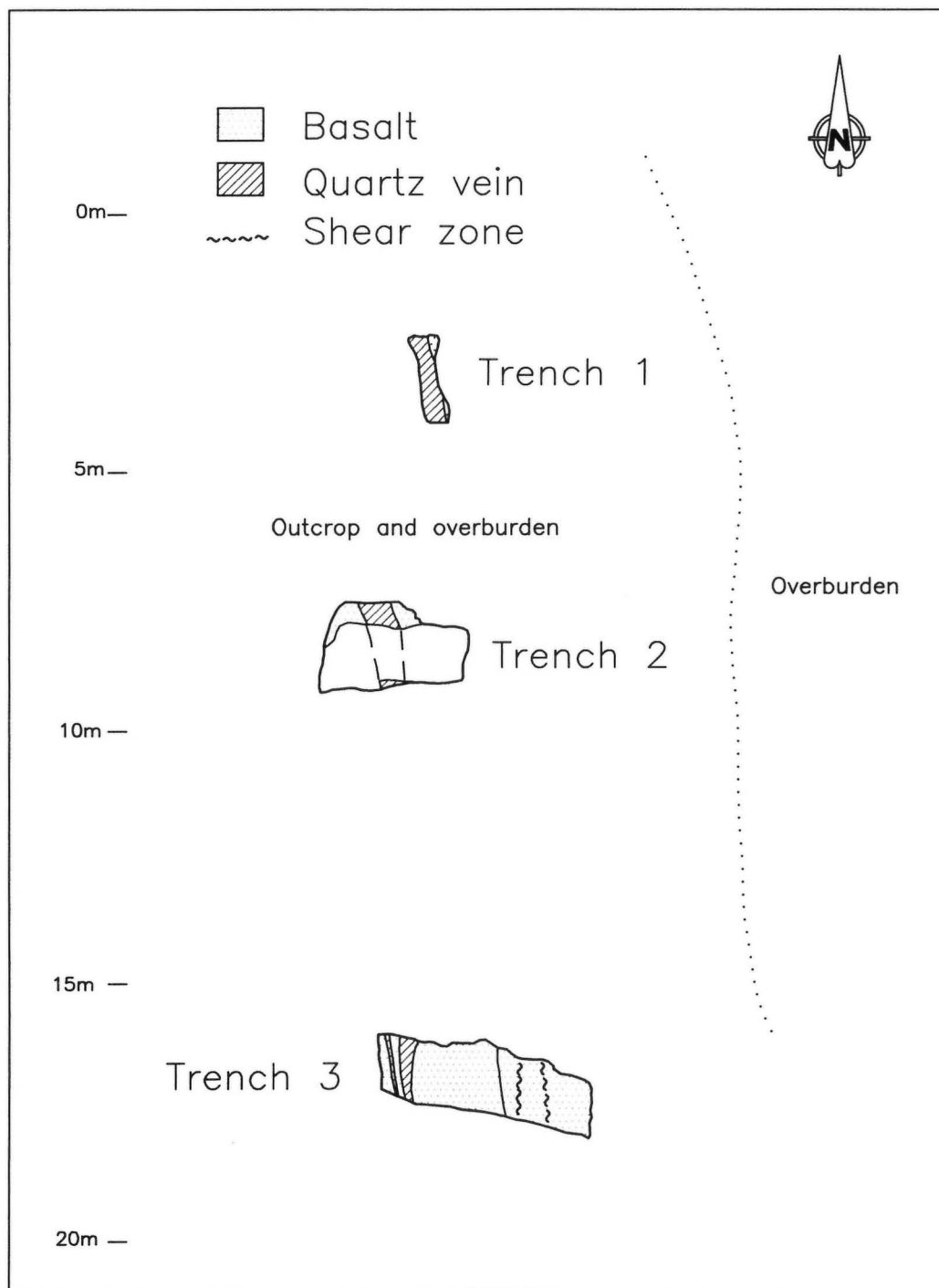
Podolsky, T.

- 1958: Cranberry Portage (West Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



63K11/8-1

Figure 8-1: Detailed geology and trench locations at occurrence 8.



63K11/8-2

Figure 8-2: Trench map at occurrence 8.

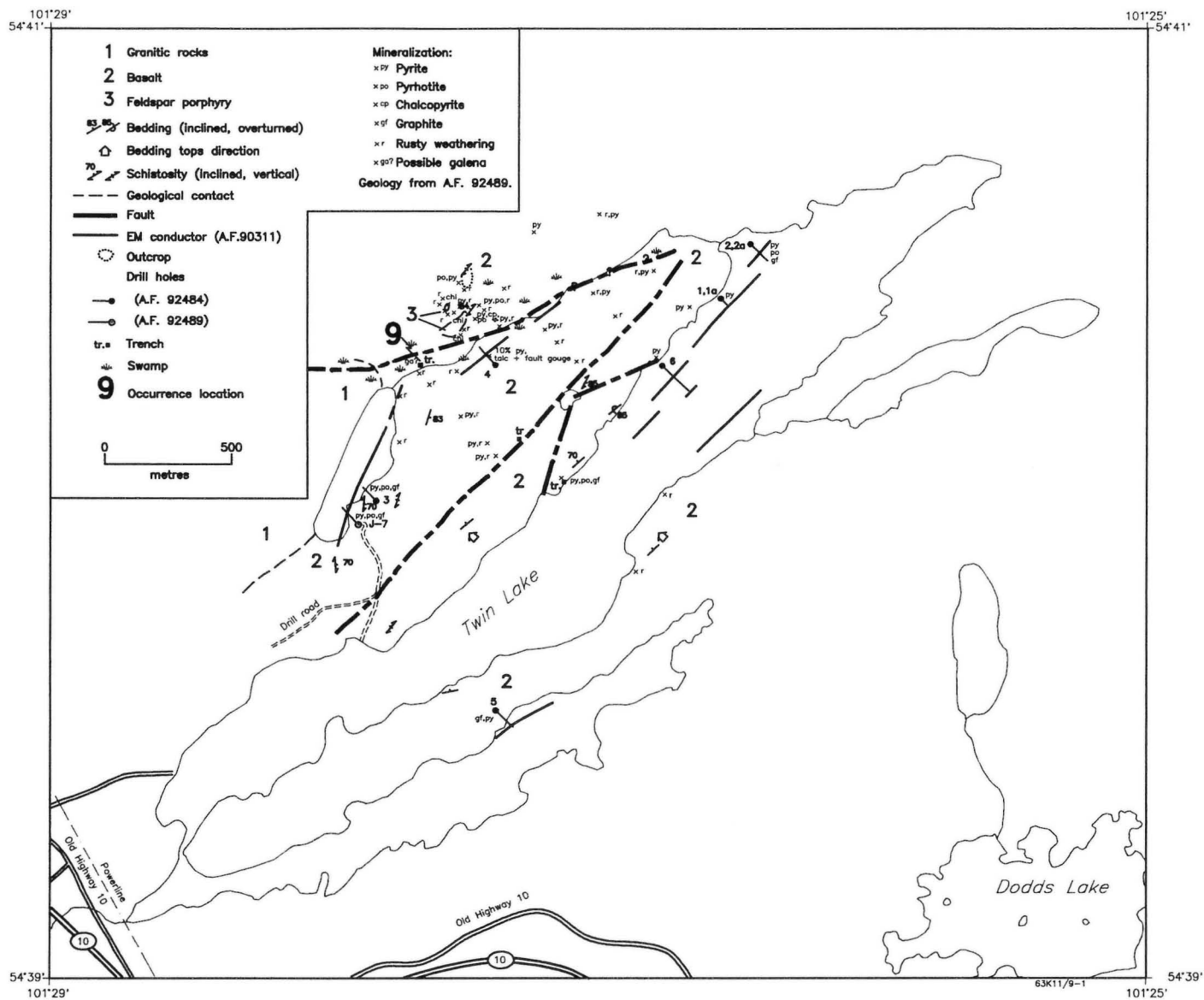


Figure 9-1: Detailed geology, and location of trench, drill hole and geophysical conductors at occurrence 9.

LOCATION: 9

NAME:

UTM: 6060766N/341230E

ACCESS: Via boat on Twin Lake and traverse

AREA: Twin Lake (Fig. 5-1)

AIRPHOTO: A26369-262

#### EXPLORATION SUMMARY:

A trench (1x2x1 m), was noted at the edge of a swamp at the north end of a small lake by Podolsky (1958). The area was staked by W. Jamen in 1970. Strauss Exploration conducted Turam HLEM surveys during the winter of 1971-1972 (A.F. 90311, 92484) and drilled 6 holes totalling 811 m (A.F. 92484). Falconbridge Nickel Mines Limited conducted a regional AMAG and AEM survey in the area in 1973 (A.F. 91564). In 1978 Falconbridge conducted HLEM and magnetic surveys, a geological survey that included the collection of samples for whole rock geochemistry and drilled hole J-7 (A.F. 92488, 92489). The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area is underlain predominantly by mafic to intermediate flows with minor related intrusive and fragmental volcanic rocks. The occurrence is in the vicinity of a series of northeast to east-northeast trending faults (Podolsky, 1958). Drill core logs indicate predominantly intermediate rocks, but the analytical data (Table 9-1) indicate that these rocks are probably basalt. Felsic volcanic rocks and shallow intrusions are also present (A.F. 92484, 92489).

Table 9-1  
DDH J-7 Whole Rock Geochemistry

	J4025	J4026	J4027	J4028	J4029
SiO <sub>2</sub>	46.42	56.33	50.10	46.05	42.71
Al <sub>2</sub> O <sub>3</sub>	14.00	14.30	14.41	11.46	8.19
CaO	10.51	3.58	7.97	6.46	7.72
MgO	7.35	3.61	5.51	10.00	19.27
Na <sub>2</sub> O	2.44	2.45	3.53	2.09	0.57
K <sub>2</sub> O	0.60	1.95	0.46	0.52	1.01
FeO	12.65	11.54	12.02	13.78	12.50
MnO	0.22	0.12	0.22	0.18	0.19
TiO <sub>2</sub>	1.15	0.90	0.91	1.49	1.35
P <sub>2</sub> O <sub>5</sub>	0.08	0.12	0.10	0.20	0.10
L.O.I.	1.71	2.54	2.50	6.15	4.02
SUM	98.55	98.73	99.07	99.92	98.99
BA	460	660	470	710	530
SR	200	270	150	130	120
RB	30	50	10	30	50
ZN	72	130	82	100	60
CU	140	140	240	110	240

\*Analytical data from A.F. 92488

#### MINERALIZATION:

A pyrrhotite-pyrite-graphite layer of near solid sulphide is exposed in the old trench at the north end of the small lake (Fig. 9-1).

DDH 3 intersected a 4 m section with moderate amounts of pyrrhotite-pyrite-graphite that includes a 60 cm section of near solid pyrrhotite. DDH 4 intersected several 30 m sections with veinlets of pyrite and one 30 cm section with 10% disseminated pyrite.

DDH 6 core contained two to three metre long intervals of near solid pyrite and graphite in three conductive zones that also contained 10-40% iron sulphides +/- graphite (A.F. 92484). DDH J-7 intersected 45 cm with 35% pyrrhotite and pyrite, a 60 cm section with near solid pyrite and pyrrhotite and several zones with graphite (A.F. 92489).

#### GEOCHEMICAL DATA:

Five whole rock analyses of core samples from DDH J-7 have TiO<sub>2</sub> contents that range from 0.90% to 1.49% (Table 9-1). Analyses 5 has undergone magnesium enrichment and sodium depletion. 74 partial analyses (Na<sub>2</sub>O, K<sub>2</sub>O, FeO, MgO, Cu and Zn) of surface samples were reported by Falconbridge Ltd. for an area north of DDH 4 (A.F. 92488). Two samples taken from rocks mapped as chloritic alteration were depleted in Na and enriched in Mg (0.49% Na<sub>2</sub>O, 16.47% MgO; 0.55% Na, 14.81% MgO; A.F. 92488).

Typical assays from mineralized sections of drill core were nil to trace Au and Ag, and nil to <0.05% Cu and Zn. However, DDH 6 cores contained 0.19% Cu over 1.2 m, and 0.29% Zn over 1.5 m and DDH J-7 assays returned 0.37% Cu over 0.4 m (A.F. 92484, 92489).

#### CLASSIFICATION:

Chemical sediment type deposit; graphite-bearing sulphide facies iron formation.

#### REFERENCES:

Assessment Files 90311, 92484, 92488, 92489, 91564, 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

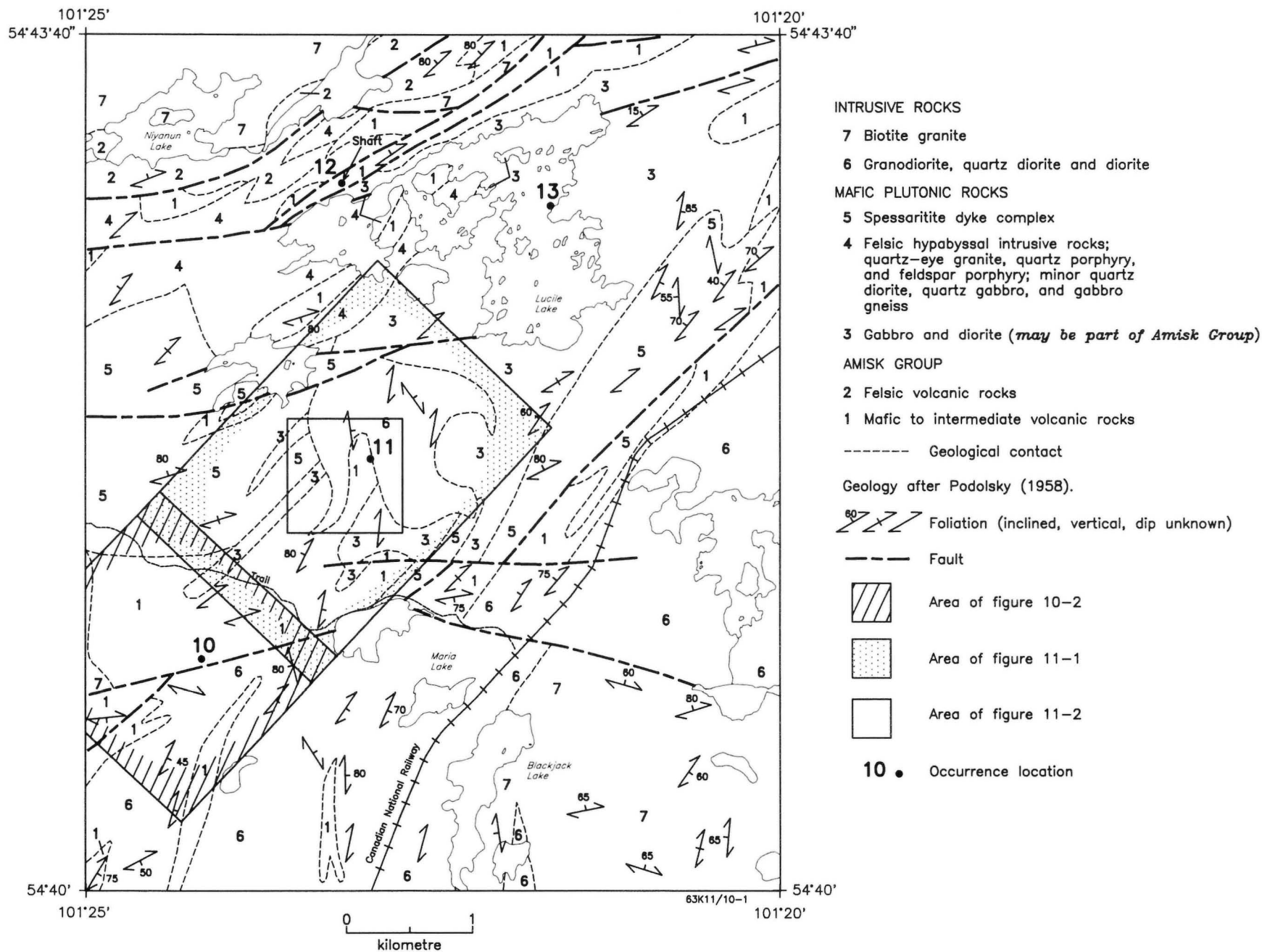


Figure 10-1: Geological setting of occurrences 10, 11, 12 and 13.



**LOCATION: 10**

**NAME:** (Drill indicated mineralization)

**UTM:** 6061966N/345223E

**ACCESS:** Via traverse from north end of Twin Lake

**AREA:** East of Twin Lake

**AIRPHOTO:** A26369-277

**EXPLORATION SUMMARY:**

The property was staked as part of the Kit group of claims in 1953 and assigned to HBED. A HLEM survey was conducted in 1953-1954 (A.F. 90314). HBED drilled one 79 m hole in 1954 (A.F. 90314). The property was staked in 1964 by P. Bachnick and H. Howell. A geological survey was conducted in 1964 and 1965 (A.F. 92276). Hanson Mines Ltd. drilled 3 holes totalling 248 m in 1969 (A.F. 92277). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mine Ltd. in 1973-1974 (A.F. 92020).

**GEOLOGICAL SETTING:**

The area is underlain by mafic to intermediate volcanic rocks that are separated by a fault from quartz diorite and porphyritic quartz diorite (Fig. 10-1) with enclaves of mafic volcanic rocks (Podolsky, 1958). The DDH (Fig. 10-2) intersected diorite, feldspar porphyry, andesitic rocks, granitic dykes, pegmatite, graphitic schist and quartz veins (A.F. 92277); rhyolite was intersected in DDH 4 (A.F. 90314).

**MINERALIZATION:**

Several 2-10 cm pyrite and pyrrhotite sections with trace amounts of chalcopyrite were intersected in DDH H-10. Minor amounts of pyrite and pyrrhotite were intersected in DDH H-9. A 10 m section of DDH H-8 contained three white quartz veins with trace amounts of pyrite, graphitic schist with minor pyrite and andesitic rocks with veinlets and blebs of quartz (A.F. 92277).

DDH 4 (HBED) intersected 3 m of quartz and rhyolite with trace amounts of pyrite and graphite and 5 m of graphitic schist with trace amounts of pyrite.

**GEOCHEMICAL DATA:**

Four core samples of quartz vein material assayed did not contain any gold.

**CLASSIFICATION:**

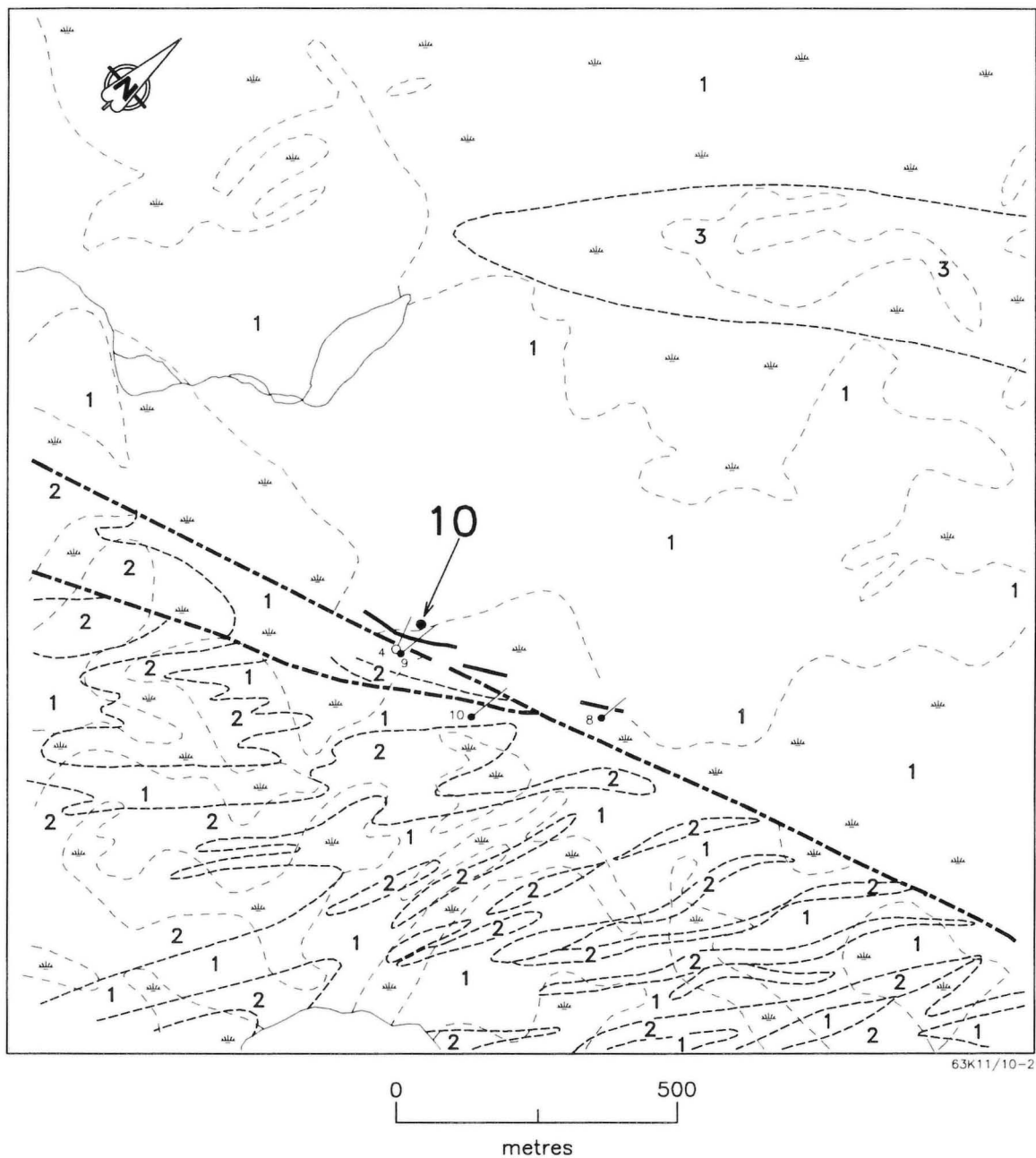
Vein-type deposit; multiple veins.

**REFERENCES:**

Assessment Files 90314, 92020, 92276 and 92277  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



3 Migmatite

2 Quartz diorite

1 Andesite

----- Geological contact

Geology from A.F. 92276.

———— EM conductor (A.F. 90314)

——— Fault

Drill holes

○ ( A.F. 90314, A.F. 92276)

● (A.F. 92277)

⬭ Swamp

10. Occurrence location

Figure 10-2: Detailed geology and drill hole locations at occurrence 10.

LOCATION: 11

NAME: May

UTM: 6063635N/346650E

ACCESS: Via bush aircraft

AREA: Lucile Lake (Fig. 10-1)

AIRPHOTO: A26331-168, A26331-183

#### EXPLORATION SUMMARY:

The property was staked as part of the Kit claims for HBED in 1954 and a HLEM survey was conducted (A.F. 90314). The property was staked in 1964 by P. Bachnick and H. Howell and optioned to Maverick Mines and Oils Ltd. who conducted ground magnetic and self potential surveys. Two trenches were blasted in 1964 and geological surveys were conducted in 1964 and 1965 (M.I. Card 63K/11 Cu1). Maverick Mines and Oils Ltd. drilled 28 holes totalling 2163 m in 1965 (A.F. 92276). Bachnick and Howell drilled 14 holes totalling 382 m in 1969 (A.F. 92277, 92278). Later that year Hanson Mines Limited drilled 8 holes totalling 442 m (A.F. 92277; c.f. Fig. 11-1, -2, -3a and -3b). The property was included in regional AMAG and AEM surveys conducted by Falconbridge Nickel Mines Ltd. in 1973 (A.F. 91564) and Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

Mafic to intermediate volcanic flows with minor related volcanic fragmental rocks are intruded by consanguineous dioritic and gabbroic sills, dykes and stocks. In the immediate area of the mineralization, the supracrustal rocks have been intruded by younger quartz diorite and granodiorite (Fig. 10-1). Mafic to intermediate volcanic rocks, fine- to coarse-grained diorite, and dioritic dykes, crosscutting volcanic rocks or xenoliths of volcanic rock in the diorite, were the main rock types intersected in the drill cores; several feldspar porphyry dykes were also intersected (A.F. 92276, 92277, 92278).

#### MINERALIZATION:

Chalcopyrite and pyrite occur as dissemination's, veinlets and veins (Fig. 11-3). The sulphides occur predominantly in the mafic volcanic rock xenoliths(?), but also occur in the intrusive rocks (see Table 11-1). One trench in a dioritic body (Fig. 11-4) exposes a solid sulphide (chalcopyrite-pyrite) vein with a thickness of approximately 1 m (Wadien and Gale, 1984).

#### GEOCHEMICAL DATA:

(See Table 11-1).

#### CLASSIFICATION:

Vein type deposit; multiple veins. Locally the occurrence has some attributes of porphyry type deposits.

#### REFERENCES:

Assessment Files 90314, 91564, 92020, 92276, 92277 and 92278

Manitoba Energy and Mines, Mines Branch.

Mineral Inventory Card NTS 63K/11 Cu1

Manitoba Energy and Mines, Geological Services Branch.

Podolsky, T.

1958: Cranberry Portage (West Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

Wadien, R. and Gale, G.H.

1984: Geochemistry of felsic intrusive and extrusive rocks in the Nisto-Lucile Lake areas, Flin Flon, Manitoba; in Manitoba Energy and Mines, Minerals Resources, Report of Field Activities 1984, p. 67-68.

**Table 11-1: Distribution of mineralization, copper contents and alteration from drill cores at occurrence 11. Drill hole locations are shown on Figures 11-1, 11-2 and 11-3.**

DDH	Interval	Rock Type	Mineralization	% Metal/Sample Length	Alteration
M-1	0.0-14.3 m	Greenstone-number of small diorite dykes	"Mineralized Greenstone Breccia" "Heavy irregular chalcopyrite for the first 25 feet, petering out to minor chalcopyrite by 40 feet in the hole" 0-13.1 m estimated 0.5-12% cp and tr-4% py		Minor qz veinlets
	14.3-17.4 m	Greenstone complex or "Altered Greenstone Breccia"	15.2-15.5 m Estimated 3% cp, 1% py	0-5.5 m 3.06% Cu/5.5 m 0-13.1 m 1.40% Cu/13.1 m	Epidotization?
M-2	0.0-8.2 m	Greenstone breccia - number of small diorite dykes	"Mineralized Greenstone Breccia", 0-8.2 m estimated 0.5-15% cp, tr-2% py	0-8.2 m 1.83% Cu/8.2 m	Similar to hole M-1
	13.4-21.6 m	Greenstone complex	14.2-15.5 m Estimated 2% cp, tr. py	0.32% Cu/1.4 m	
M-3	0.0-3.3 m	Pink diorite	"weak cp mineralization" 1.5-3.0 m estimated 2% cp, py	0.50% Cu/1.5 m	
	3.3-7.5 m	Greenstone	"Mineralized Greenstone" 5.8-7.5 m estimated 8% cp, 1% py, 1% mt	1.58% Cu/1.7 m	
	7.5-18.0 m	Diorite with greenstone xenoliths	8.4-8.7 m, 15% mt		
M-4	0.76-9.9 m	Greenstone	"Mineralized Greenstone"-a few quartz veins (2.5 to 15 cm in width) with minor cp, .8-9.9 m estimated 1-5% cp, tr-4% py	2.3-6.8 m 2.14% Cu/4.5 m 0.8-9.9 m 1.40% Cu/9.1 m	
M-5	9.1-10.97 m	Greenstone	"Weakly mineralized greenstone", estimated 1% cp, 2% py	tr. Cu/1.8 m	
	18.9-20.7 m	Greenstone	estimated 1% cp, 1% py	0.19% Cu/1.8 m	
M-6	0.5-14.5 m	Diorite with sections of greenstone (xenoliths?)	1.4 m-15 cm of 0.5% cp in greenstone. 2.7-3.0 m 3% cp, 1% py in greenstone. 5.2-5.6 m 2% py in greenstone.		
	14.5-17.2 m	Greenstone	"Mineralized greenstone" 14.5-17.2 m estimated 0.5-1% cp, 2% py.	tr. Cu/1.5 m tr. Cu/1.2 m	
M-7	0.0-7.0 m	Greenstone	"Weakly mineralized"-contains sections 60 cm in width with estimated tr.-0.5% cp, 0.5-1% py.		
	10.4-21.6 m	Greenstone breccia	"A few 1" to 6" sections of 1-2% pyrite"		
M-8	10.0-13.7 m	Greenstone	0.5% py and diss. cp.		
M-9	0-5.9 m	Diorite with greenstone xenoliths	2.7-4.0 m 3% py 5.8-5.9 m 6% py.		

	5.9 -29.3 m	Greenstone and diorite dykes	9.1-12.1 m estimated tr. cp, 2-3% py. 17.7-18.3 m estimated 2% cp, 1% py. 22.5-28.0 m estimated 0.5-3% cp, 1-2% py. 12.2-17.8, 17.8-22.5 m, no visible mineralization.	0.50% Cu/6 m 24.1-27.1 m 1.04% Cu/3.0 m 22.5-28.0 m 0.80% Cu/5.5 m	
M-11	105.6-133.5m	Greenstone	"112.2-118.3 ; 1% py and few grains of cp.		
	144.1-150.9 m	Greenstone breccia or agglomerate	Up to 1% py and few grains of cp.		
M-12	0.12-76.5 m	Greenstone	37.5m- 2.5 cm solid py. 51.5-58.2 m; 0.25% py and few grains of cp. 52.7-53.0 m 0.25% cp and 2% py.		
M-14	98.1-107.1 m	Basalt	"Stockwork of greenish quartz veinlets with a few grains of cp."		
M-19	4.6-80.2 m	Fine grained, massive greenstone	27.4-32.3 m diss. 0.5% py, tr. cp. 64.9-65.8 m; 1% py. 78.0 m; 0.6 cm solid py veinlets.		Greenstone unit shows sections of strong fracturing. Variable concentrations of quartz veinlets. Rare sections with quartz-carbonate 54.2-57.9 m, 63.1-64.9 m; bleached.
M-20	1.8-20.4 m	Greenstone	tr. diss. py.		Epidote veinlets.
	26.2-68.9 m	Fine grained massive Greenstone	tr. py in quartz veinlets, fractures, and diss.		Localized sections with quartz veinlets or epidotization.
	72.5-73.9 m	Greenstone	tr. py associated with qz veinlets.		Silification, qz veinlets.
M-20	73.9-94.1 m	Fine grained massive Greenstone	tr. py throughout. up to 1% py veinlets.		
	120.6-152.4 m	Greenstone	tr. py in veinlets and tr. py in veinlets and diss.		
M-22	2.0-2.3 m	Altered greenstone breccia	0.5% diss. cp.		
	7.6-18.6 m	Greenstone?	7.6-8.2 m qz vein with 1% cp and 1% py. 8.2-14.9 m tr. 2% cp, tr. to 0.5% py.		
M-23	1.2-9.4 m	Diorite	Less than 2% py.		Occasional epidote veinlets. Breccia zone with qz vein at 70.7 m.
M-24	54.1-55.8 m	Greenstone (Diorite dykes)	tr. py grading to minor dissemination's and veinlets of cp and py (<2% sulphide)	0.63% Cu/1.7"	Sections throughout drill hole with epidote.

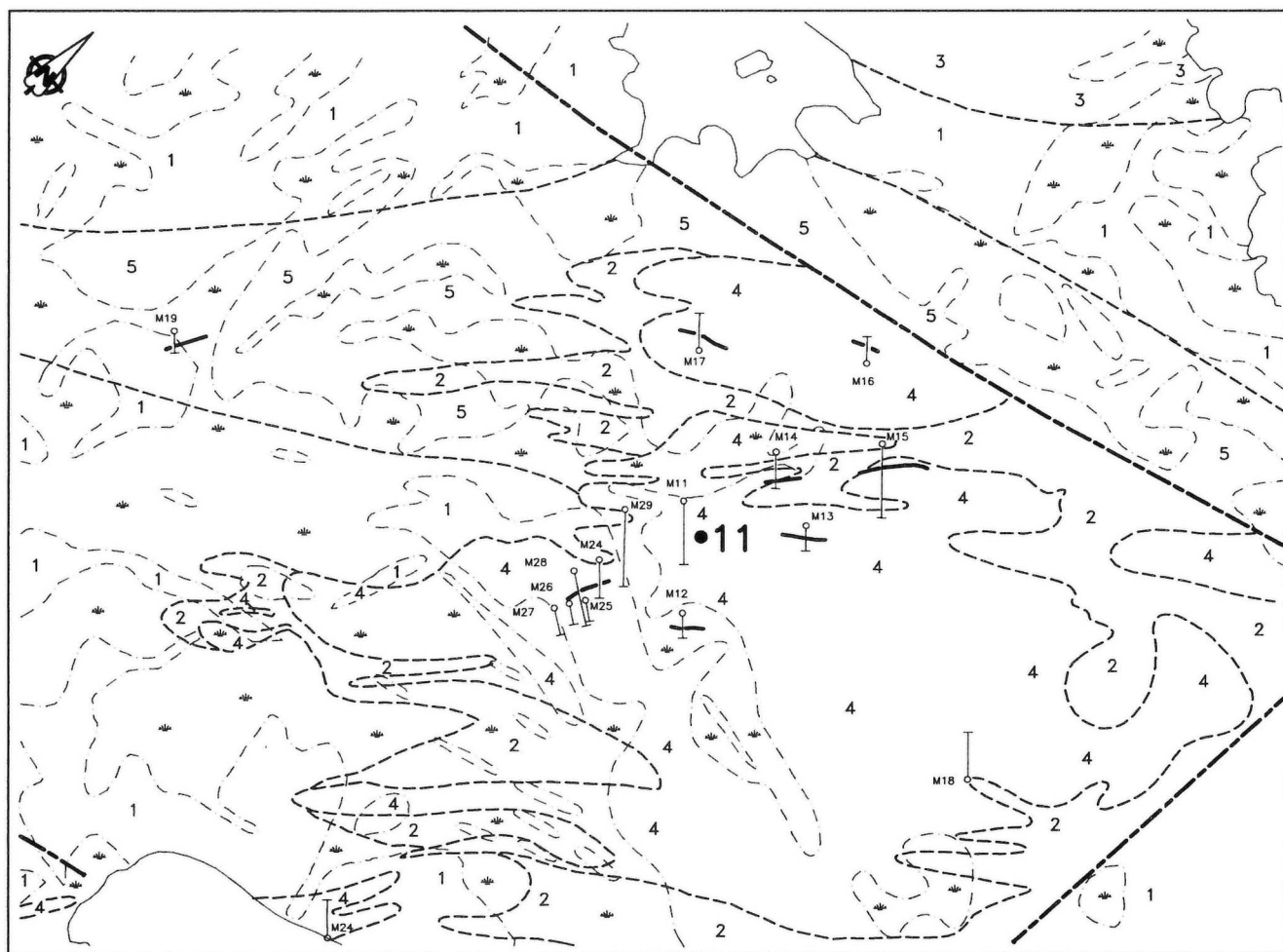
**Table 11-1: Distribution of mineralization, copper contents and alteration from drill cores at occurrence 11. Drill hole locations are shown on Figures 11-1, 11-2 and 11-3.**  
**cont'd**

DDH	Interval	Rock Type	Mineralization	% Metal/Sample Length	Alteration
M-25	0.0-57. m	Greenstone	Diss. sulphide, tr.- 3% py, tr. cp.	0.19% Cu/.3 m 0.13% Cu/.8 m	
	59.3-59.7 m	Greenstone with	Diss. and veinlets of sulphides 10-15% py and cp.	1.65% Cu/.4 m	
	59.7 -60.1 m	diorite	Minor diss. py and cp.	0.13% Cu/.4 m	
M-26			Diss. py		Variable epidotization and silicification throughout.
M-27	42.0-42.4 m	Greenstone	"Weakly mineralized with pyrite and rare chalcopyrite".	0.69% Cu/.4 m	Epidotization.
	43.3-43.6 m	Brecciated diorite	"Rare stringers of sulphide, pyrite, minor chalcopyrite".	0.38% Cu/.3 m	
	73.3-73.8 m	Altered breccia	2% diss. py and cp.	0.25% Cu/.6 m	
M-28			0-2% py		Variable alteration (epidotization, rare silicification).
H-1	18.6-21.3 m	Greenstone ("lightly sheared and altered")	Up to 5% diss. sulphides in veinlets.	0.01 oz Au, 0.16 oz Au, 0.75% Cu/1.6". 0.03 oz Au, 0.20 oz Ag, 2.35% Cu/.7 m. 0.10% Cu/.6 m 0.15 oz Ag, 0.44% Cu/7.6 m	Variable epidotization and localized silicification throughout drill core.
H-2	22.5-39.6 m	Greenstone	Mineralized section (27.4-28.1 m) with up to 10% sulphide as diss. and veinlets.	0.52% Cu/.3 m 1.00% Cu/.3	"Partially silicified section". Minor epidote and qz veining.
H-6	22.5-22.7 m	Greenstone ("blackish coloured")	"diss. py with sparse cp".		"Partially silicified".
H-7	31.8-32.0 m	Greenstone("dark greenish in colour")	Py and tr. cp as small blebs.		"Partially silicified".
B-1	15.5-20.4 m	Mafic int. flow?	"Few grains of cp".		"Epidote with qz stringers".
B-2	14.6-26.2 m	Andesite	"Some pyrite and cp".		"Epidote and hornblende mixed".
	26.2-28.9 m	Mafic int. flow?	"py-cp".		
B-3	10.97-22.9 m	Andesite	"Py, little cp".		"Epidote, qz stringers".
	22.9-26.2 m	Mafic int flow?	"Some cp".		
B-4	13.1-28.9	Andesite	"Py minute cp".		
B-5	11.6-28.6 m	Andesite	"Some cp".		



B-6	11.3-23.8 m	Andesite	"Cp py".	
B-7	13.1-29.3 m 29.6-35.0 m	Andesite Mafic int. Flow	"Little cp and py". "Cp".	"Epidote with qz stringers".
B-8	14.0-27.4 m 27.4-29.3 m 29.3-30.5 m	Andesite Mafic int. Flow? "Quartz" (vein?)	"Py, little cp". "Cp". "Cp py".	Epidote.
B-9	27.1-27.4 m 27.4-28.9 m	"Quartz" (vein?) ?	"Little cp and py". "Sparse cp".	"Epidote, some feldspar".
B-10	16.8-28.6 m 28.6-31.1 m	Andesite ?	"Little cp and py". "Py, minute cp".	"Epidote, hornblende".
B-12	17.7-18.3 m	?	"Some cp and py".	"Epidote".
B-13	10.4-19.8 m 19.8-21.3 m	Andesite ?	"cp and py". "Minute cp".	"Epidote".

\* all quotations are from drill logs in A.F. 92276.



63K11/11-1

- 5 Migmatite
- 4 Quartz diorite
- 3 Granite
- 2 Gabbro
- 1 Andesite

----- Geological contact

Geology from A.F. 92276.

----- Fault

○ M16 Drill hole (A.F. 92276)

— EM conductor (A.F. 92276)

Swamp

11. Occurrence location

Figure 11-1: Detailed geology, and location of drill holes and geophysical conductors at occurrence 11.

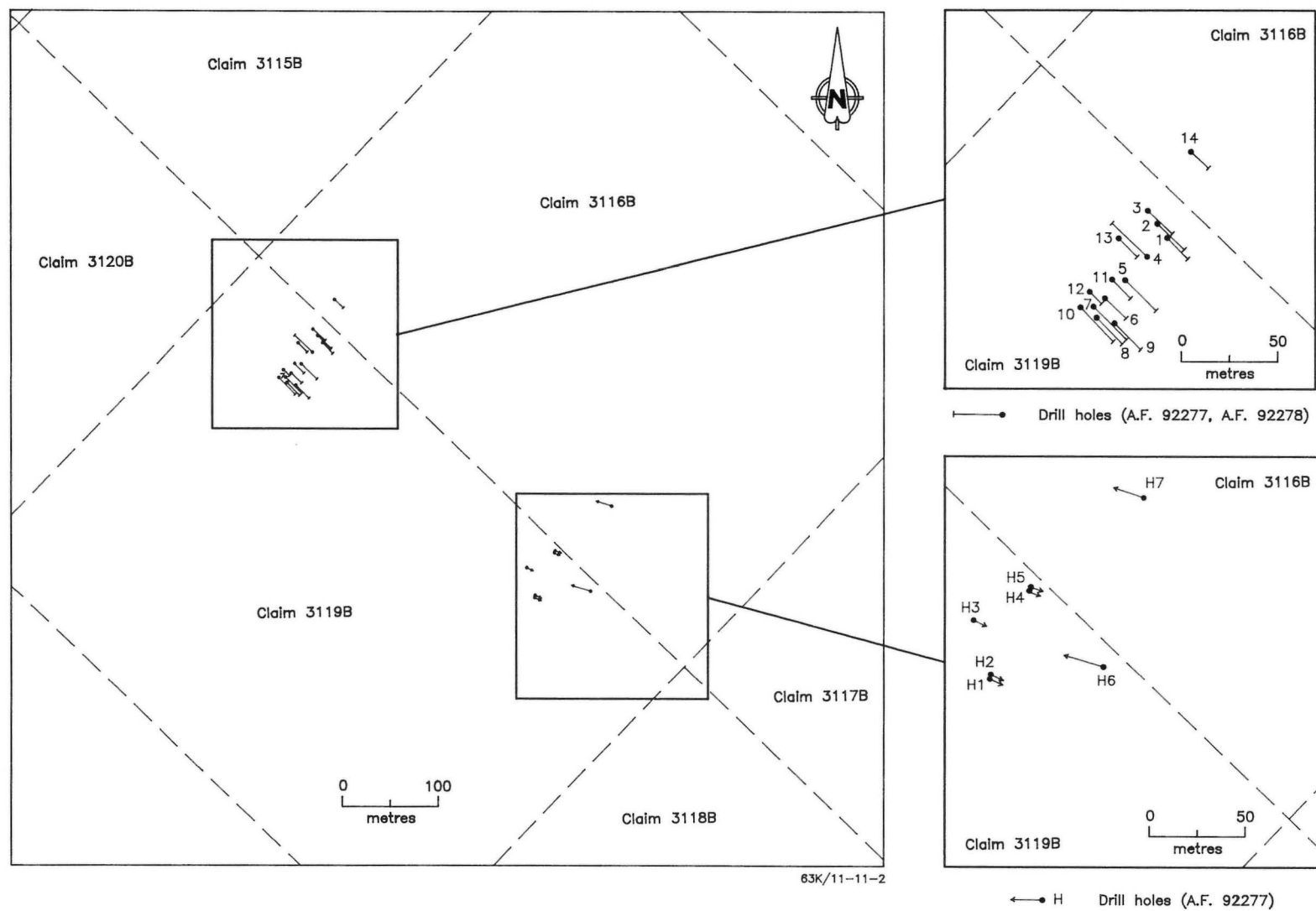
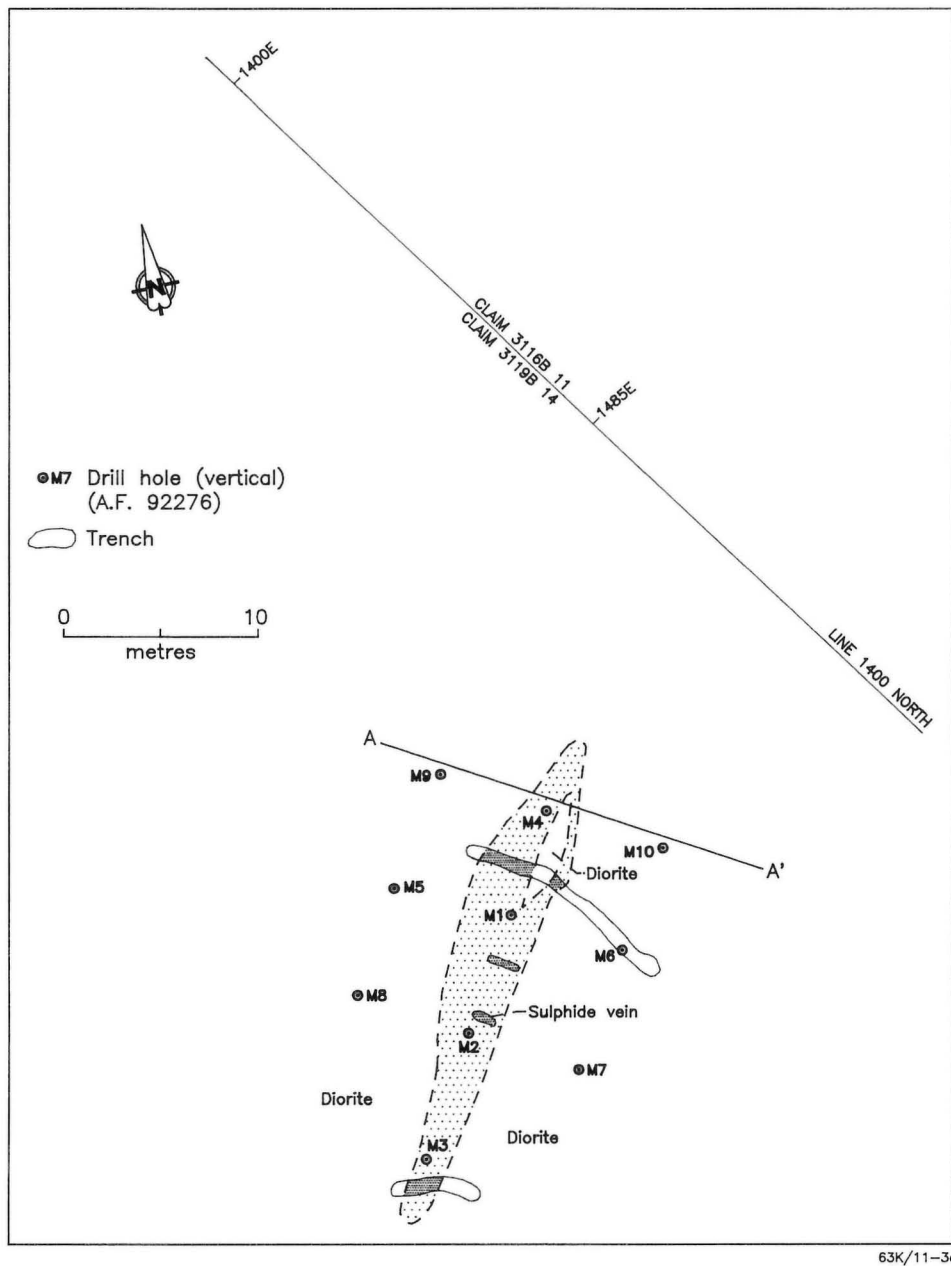


Figure 11-2: Location of drill holes at occurrence 11.



63K/11-3a

Figure 11-3a: Plan of trenches and drill holes at occurrence 11.

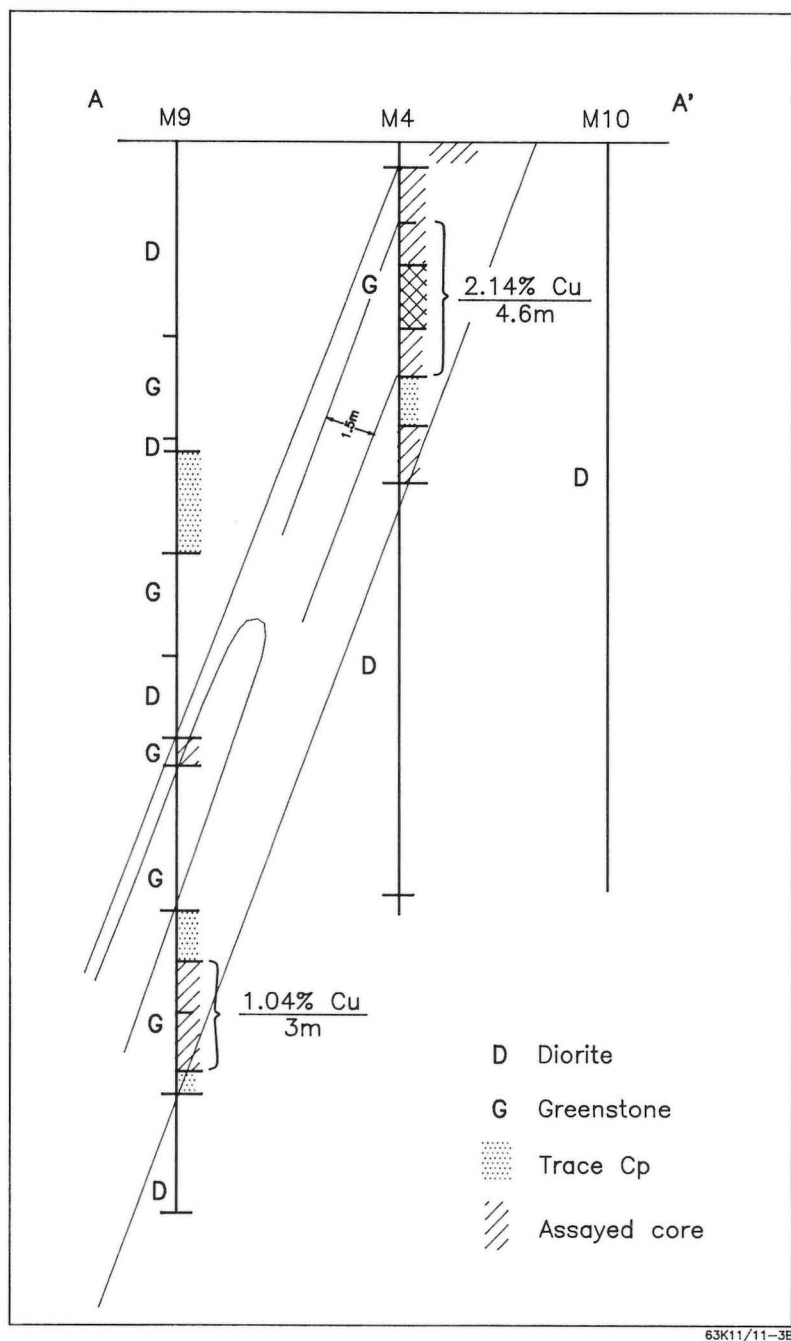


Figure 11-3b: Cross section constructed from drill holes along line A-A' in Figure 11-3a.

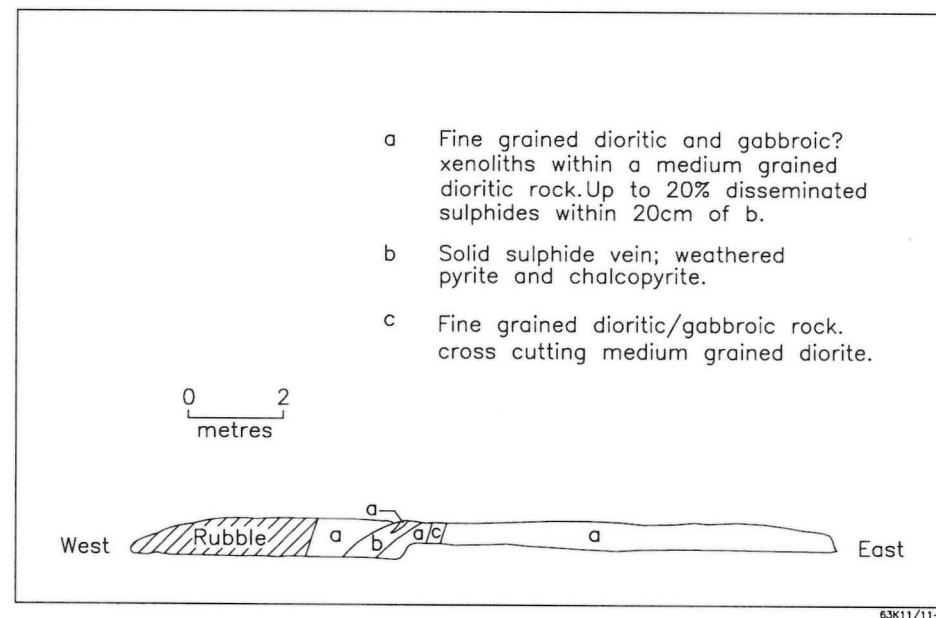


Figure 11-4: Geological cross section of trench at occurrence 11.

LOCATION: 12

NAME: Lucille Lake.

UTM: 6065876N/346315E

ACCESS: Via bush aircraft

AREA: Lucille Lake (Fig. 10-1)

AIRPHOTO: A26331-184

#### EXPLORATION SUMMARY:

The property was staked by J.A. Anderson in 1922 and assigned to United States Copper Company in 1923. A 5 m adit was driven and a shaft was sunk 50 m west of the adit to a depth of 15.25 m before the property was abandoned in 1926 or 1927 (M.I. Card 63K/11 Cu7). The property was staked in 1950 by J. Johnson and optioned to HBED who conducted a HLEM survey in 1953 (A.F. 90314). The property was assigned to Falconbridge Nickel Mines Ltd. in 1973 who conducted airborne EM and magnetic surveys (A.F. 91564). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-74 (A.F. 92020).

#### GEOLOGICAL SETTING:

Mafic volcanic rocks were intruded by various mafic to felsic plutons. A regional fault system was mapped in the vicinity of the mineralization (Fig. 10-1; Podolsky, 1958).

#### MINERALIZATION:

Both the shaft and the adit tested a 1 m thick schistose zone. The sulphide mineralization consists of veinlets and veins, up to 5 cm thick, of chalcopyrite-pyrite.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; multiple veins.

#### REFERENCES:

Assessment Files 90314, 91564 and 92020

Manitoba Energy and Mines, Mines Branch.

Mineral Inventory Card NTS 63K/11 Cu7

Manitoba Energy and Mines, Geological Services Branch.

Podolsky, T.

1958: Cranberry Portage (west Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

LOCATION: 13

NAME: (Drill indicated mineralization)

UTM: 6065614N/347922E

ACCESS: Via bush aircraft

AREA: Lucile Lake (Fig. 10-1)

AIRPHOTO: A26362-104

#### EXPLORATION SUMMARY:

The area was staked in 1953 as part of the Kit group of claims. HBED conducted a HLEM survey in 1953-54 (A.F. 90314). Three holes totalling 316 m were drilled in 1954 (A.F. 90314). Falconbridge Nickel Mines Ltd. conducted a regional AMAG and AEM survey in 1973 (A.F. 91564). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area (Fig. 10-1) is underlain by altered gabbro and pseudo-gabbro, minor pyroxenite and hornblendite (Podolsky, 1958).

#### MINERALIZATION:

A 15 cm intersection of altered gabbro in DDH 1 contained trace amounts of chalcopyrite.

DDH 2 and 3 did not intersect any sulphides.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified.

#### REFERENCES:

Assessment Files 90314, 91564 and 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

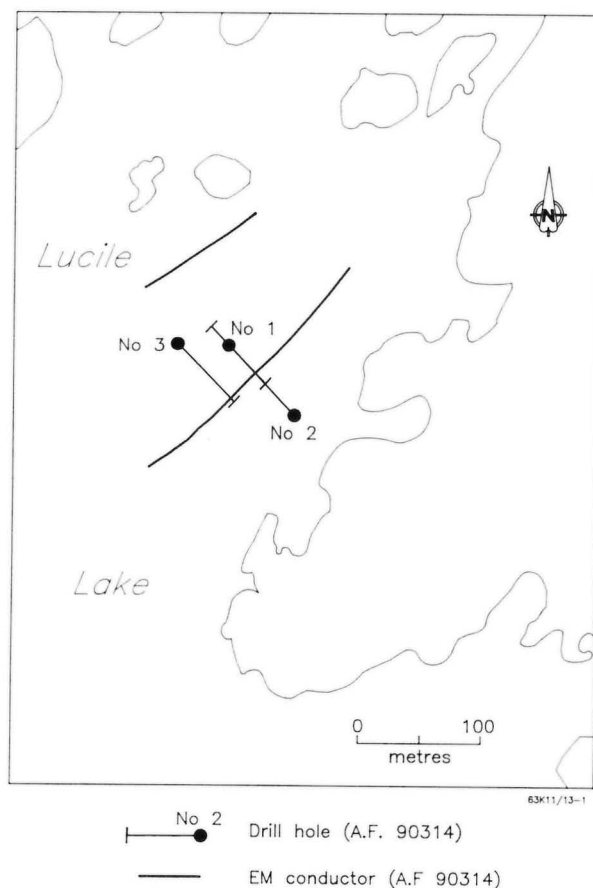


Figure 13-1: Location of drill holes and geophysical conductors at occurrence 13.

LOCATION: 14

NAME:

UTM: 6065441N/350104E

ACCESS: Via bush aircraft.

AREA: 2 km south of Kinghorn Lake (Fig. 14-1).

AIRPHOTO: A26362-104

#### EXPLORATION SUMMARY:

A mineral occurrence was indicated by Podolsky (1958). The area has been included in surveys undertaken by HBED (A.F. 90314). Falconbridge Nickel Mines Ltd. and Sherritt Gordon Mines Ltd. conducted regional AMAG and AEM surveys (A.F. 91654, 92020). No indication of surface workings were found in a one day examination of the area in 1990.

#### GEOLOGICAL SETTING:

The area is underlain by mafic volcanic rocks that have been intruded by several large plutons of mafic to intermediate rocks (Fig. 14-1). The mafic rocks consist of fine grained, black, hornblende-phyric massive basaltic flows and feldspar-phyric andesitic to basaltic massive flows with few hornblende phenocrysts. Dacitic and rhyolitic rocks, striking 020° are exposed at several places. The rhyolitic rocks contain 1-3% quartz phenocrysts and locally 5-10% biotite.

#### MINERALIZATION:

Trace very fine grained pyrite and/or pyrrhotite occur as dissemination's and in hairline fractures in the rhyolitic rocks.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified.

#### REFERENCES:

Assessment Files 90314, 91654, 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west Half) Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360.

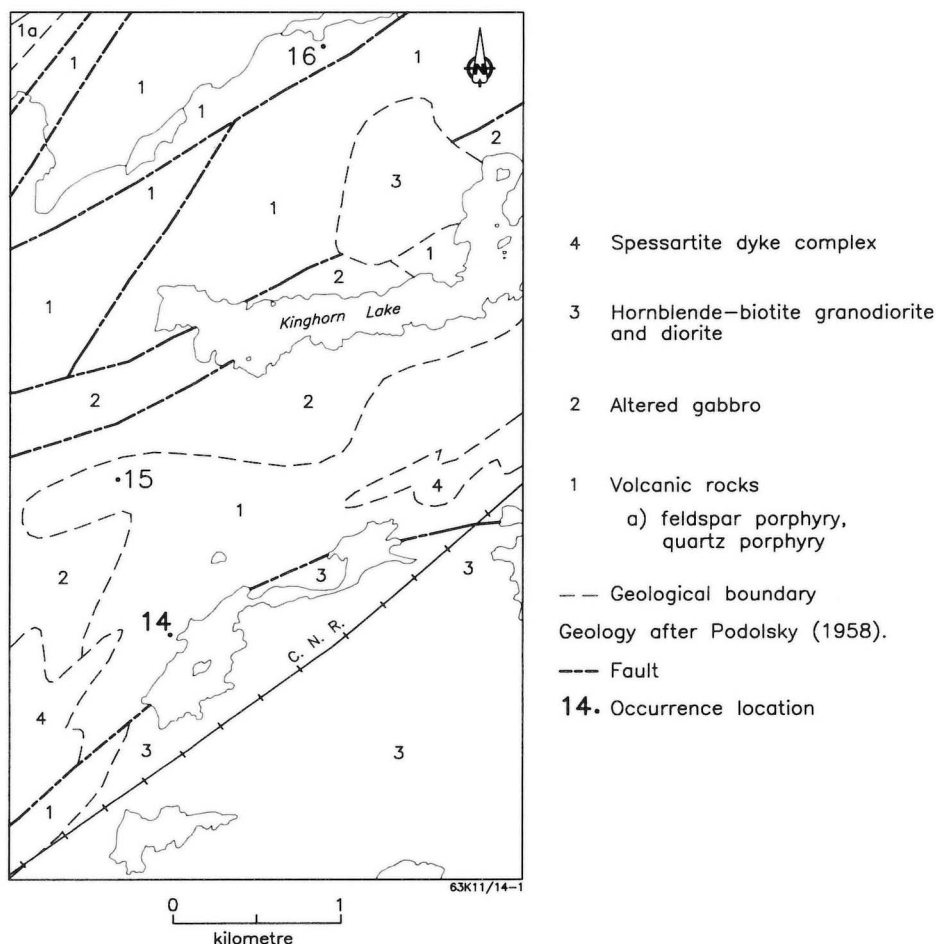


Figure 14-1: Geological setting of occurrences 14, 15 and 16.



LOCATION: 15

NAME:

UTM: 6066545N/350005E

ACCESS: Via bush aircraft

AREA: East of Lucile Lake (Fig. 14-1)

AIRPHOTO: A26362-104

#### EXPLORATION SUMMARY:

The property was staked in 1953. HBED conducted a HLEM survey during 1953-1954 and drilled one 77 m hole in 1954 (A.F. 90314). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area (Fig. 15-1) is underlain predominantly by mafic to intermediate flows, fragmental mafic volcanic rocks and minor related intrusive rocks (Podolsky, 1958). Drill core records note andesite, diorite, siliceous andesite and 'bands of rhyolite' (A.F. 90314).

#### MINERALIZATION:

'Very slight chalcopyrite' mineralization occurs over a core length of 0.3 m in a 'slightly sheared andesite' (A.F. 90314).

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified.

#### REFERENCES:

Assessment Files 90314, 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

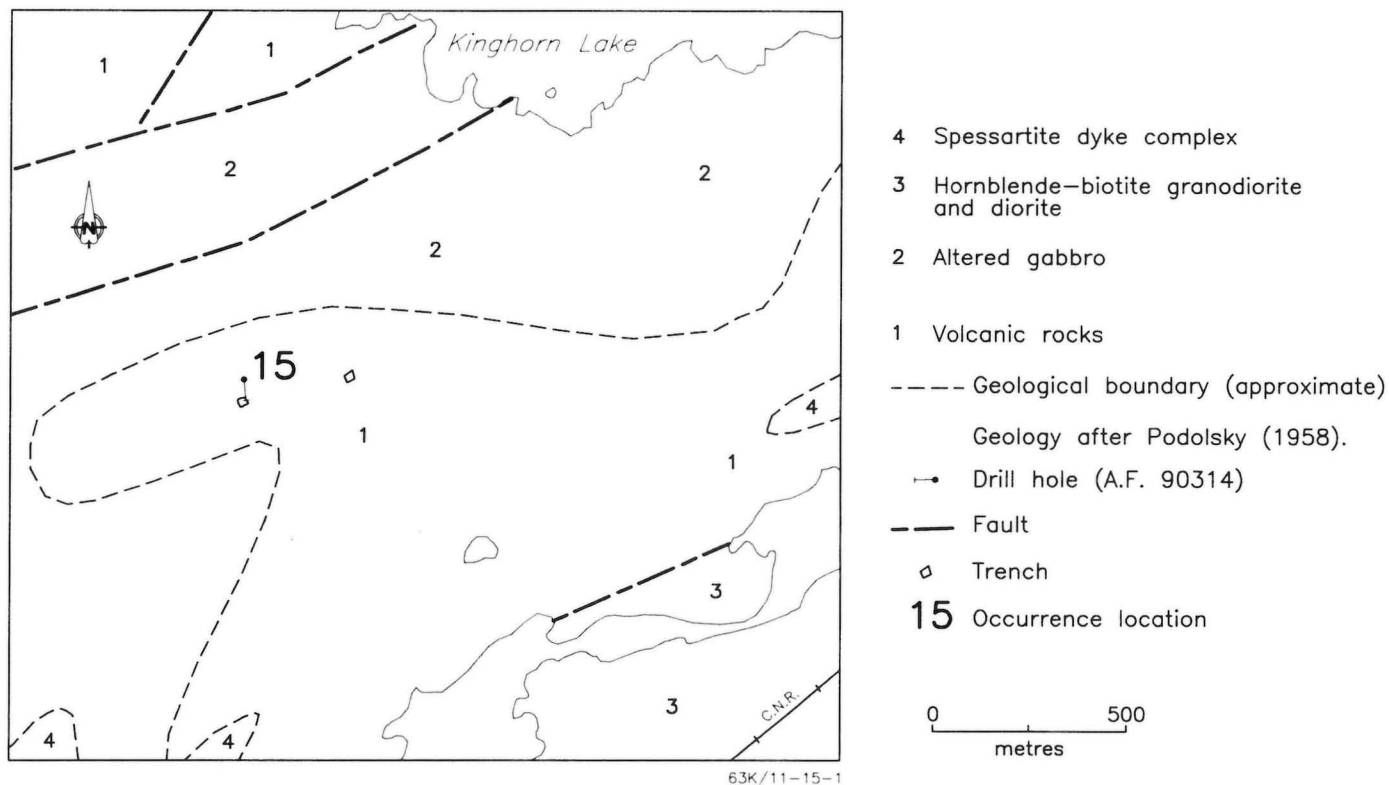
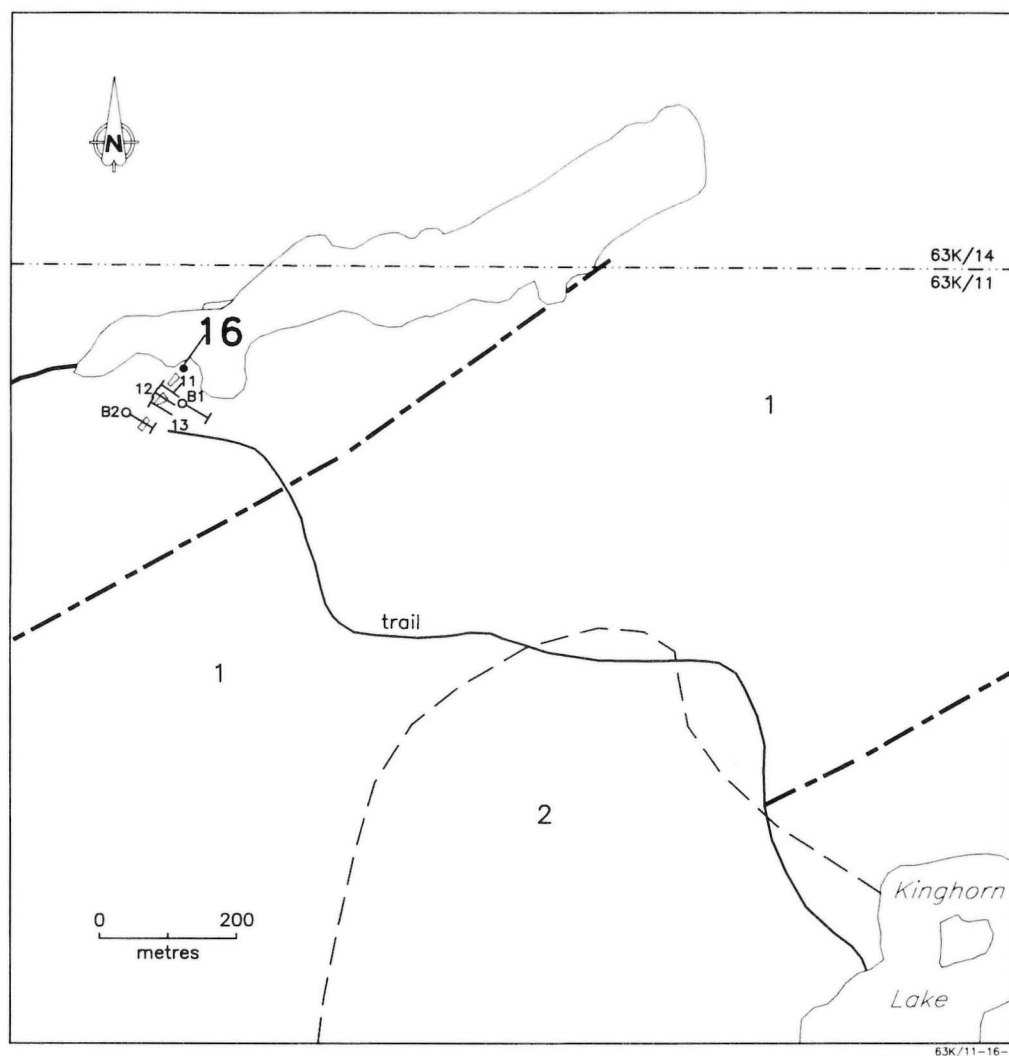


Figure 15-1: Location of drill hole and trenches at occurrence 15.



2 Hornblende-biotite granodiorite and diorite

1 Volcanic rocks

— — Geological boundary (approximate)

Geology after Podolsky (1958).

⊕ Drill hole (A.F. 92338, A.F. 92340)

⊖ Drill hole (A.F. 90313)

◇ Trench

- - Fault

**16.** Occurrence location

Figure 16-1: Location of drill holes and trenches at occurrence 16.

LOCATION: 16

NAME: Gold Button  
UTM: 6068972N/351025E  
ACCESS: Via bush aircraft

#### EXPLORATION SUMMARY:

The area was staked in 1947 by P. Hassett. Three holes, totalling 140 m, were drilled in 1950 (A.F. 90313). The claim was transferred to Gold Button Mines in 1951, but was cancelled in 1962 (M.I. Card 63K/11 Au1). The property was staked in 1972 by Louis Boudes who drilled a 45 m hole in 1975 (A.F. 92338), and a 42 m hole in 1976 (A.F. 92340). Four trenches are identified on a claim sketch map by L. Boudes (A.F. 92338). The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area is underlain predominantly by basaltic to andesitic pillowed flows with minor fragmental mafic volcanic rocks (Podolsky, 1958). In addition, sericite, chlorite and hornblende schist were intersected in the drill cores (A.F. 90313, 92338 and 92340). Narrow quartz and quartz carbonate veins are exposed in the trenches and were intersected by the drill holes (Figs. 16-1, 16-2). A northeast-trending fault has been mapped in the vicinity of the occurrence (Fig. 14-1).

AREA: North of Kinghorn Lake (Fig. 14-1)  
AIRPHOTO: A26362-128

#### MINERALIZATION:

Gold and chalcopyrite are present in the quartz and quartz-carbonate veins (Fig. 16-2). Pyrite and chalcopyrite occur in the chloritic schist (A.F. 90313).

#### GEOCHEMICAL DATA:

A 10 cm core section contained 198.86 g/t Au (DDH 11), a 25 cm core section contained 516.09 g/t Au (DDH 12) and a 28 cm section contained 143.90 g/t Au (DDH 13; A.F. 90313).

#### CLASSIFICATION:

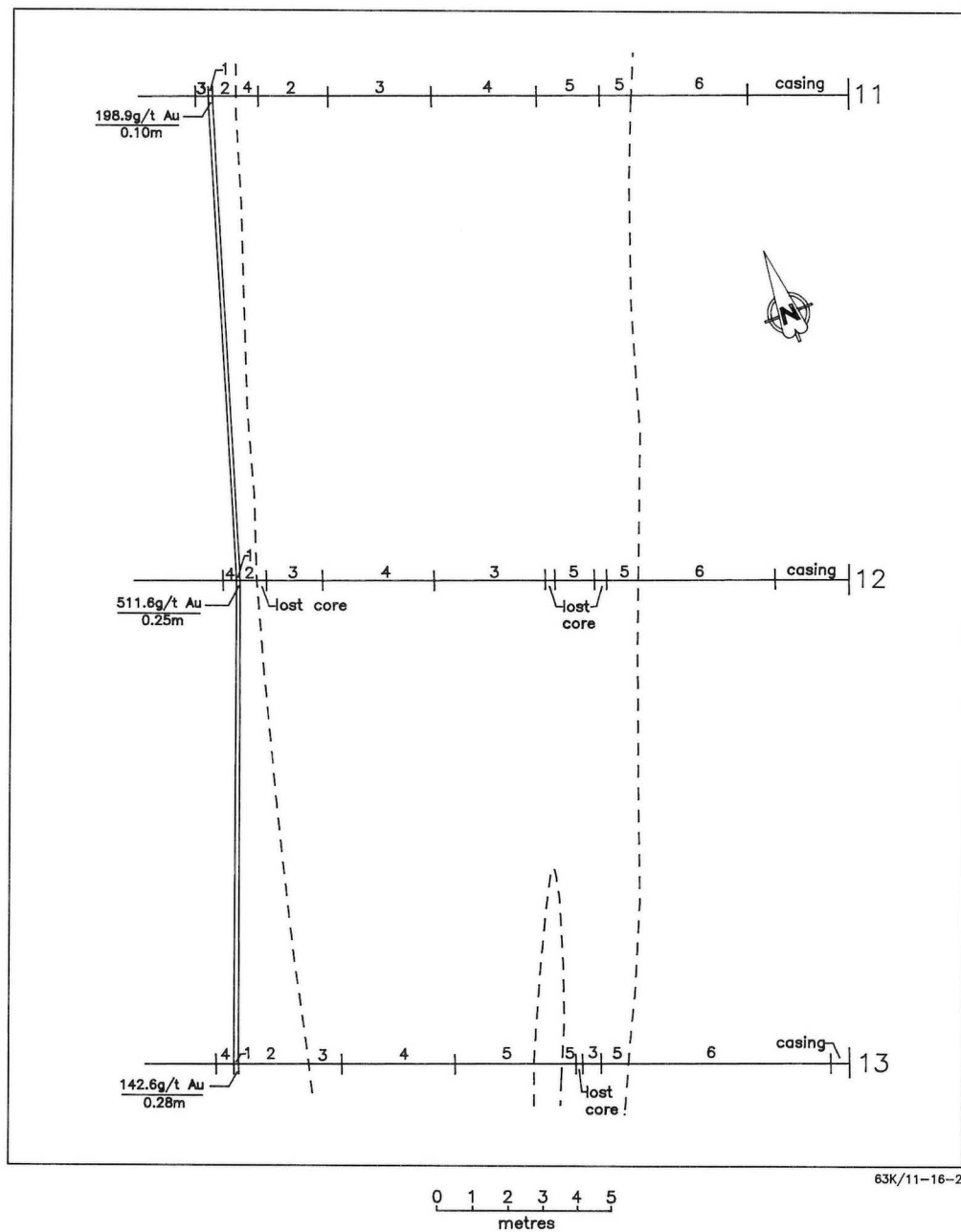
Vein type deposit; multiple veins.

#### REFERENCES:

Assessment Files 90313, 92338, 92340 and 92020  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



- 6 Diorite
  - 5 Hornblende schist
  - 4 "Green" schist, chlorite schist
  - 3 Greenstone
  - 2 Sericite schist
  - 1 Quartz with visible gold  $\pm$  chalcopyrite
- $\frac{198.9\text{g/t Au}}{0.10\text{m}}$  Gold assay over core length  
Geology from A.F. 90313

Figure 16-2: Detailed geological plan of the Gold Button occurrence. Geological contacts and drill outlines are projected vertically to the surface.

LOCATION: 17

NAME: (Drill indicated mineralization)  
UTM: 6063775N/353477E  
ACCESS: Via bush aircraft

AREA: South end of Horseshoe Lake  
AIRPHOTO: A26363-12

#### EXPLORATION SUMMARY:

A mineral occurrence was indicated by Podolsky (1958). HBED conducted an EM survey and drilled two holes (93.9 m and 69.2 m in length) in 1982 (A.F. 92975, 92976). The area was included in regional AMAG and AEM surveys by Sherritt Gordon Mines Ltd., during the winter of 1973-74 (A.F. 92020). Two old trenches, each 1.8x1.8x1.5 m, were observed at this site during a 1 day investigation of the area in 1990.

#### GEOLOGICAL SETTING:

The area (Fig. 17-1) is underlain by a variety of intrusions that contain small enclaves of mafic volcanic rocks. These intrusive rocks include diorite, granodiorite, syenodiorite, syenite and alaskite (Podolsky, 1958). Outcrops in the vicinity of the occurrence are predominantly of dioritic composition. DDH Yap-6 intersected dacite, hornblende +/- biotite granodiorite, graphitic argillaceous dacite tuff and dacite tuff (A.F. 92976), whereas DDH Yap-5 intersected granite and an intrusive breccia consisting of fragments (xenoliths?) of several compositions in a dioritic to gabbroic intrusion (A.F. 92975).

#### MINERALIZATION:

A trench 40 m from the shoreline of a small lake west of Horseshoe Lake at (Site B) contains up to 5% disseminated pyrrhotite, 1% pyrite and less than 1% chalcopyrite in biotitic (5-25%), grey, aphanitic silicic zones.

The trench at the shoreline (Site A) exposed a 20 cm shear zone in dioritic rocks and a fine grained chloritic and biotitic basaltic rock with up to 10% fine grained pyrite and up

to 4% pyrrhotite in veinlets and as disseminated grains. DDH Yap-6 intersected a 6 m section of pyrrhotitic and graphitic argillaceous dacitic tuff with up to 55% sulphides; one 50 cm section contained 45-55% pyrrhotite, 5-14% graphite, trace chalcopyrite and trace to 2% pyrite. Locally, chalcopyrite and sphalerite concentrations of up to 1% and 2-3%, respectively, were noted in the drill logs (A.F. 92976). In DDH Yap-5 core a 70.1 m section of intrusive breccia contained variable amounts of sulphides that ranged from trace to 45% pyrrhotite, trace to 10% pyrite and trace to 3% chalcopyrite.

#### GEOCHEMICAL DATA:

The highest assay value obtained from DDH Yap-6 was 0.2% Zn/12 cm. Seventy two samples from DDH Yap-5 core were analyzed for Au, Ag, Cu, Zn and Ni; the highest concentrations obtained were: 0.6 g/t Au, 10.8 g/t Ag, 2.48% Cu, 0.2% Zn, and 1.2% Ni (A.F. 92975, 92976).

#### CLASSIFICATION:

Chemical sediment type deposit; graphite-bearing sulphide facies iron formation.

#### REFERENCES:

Assessment Files 92975, 92976, 92020  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.  
1958: Cranberry Portage, (west Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

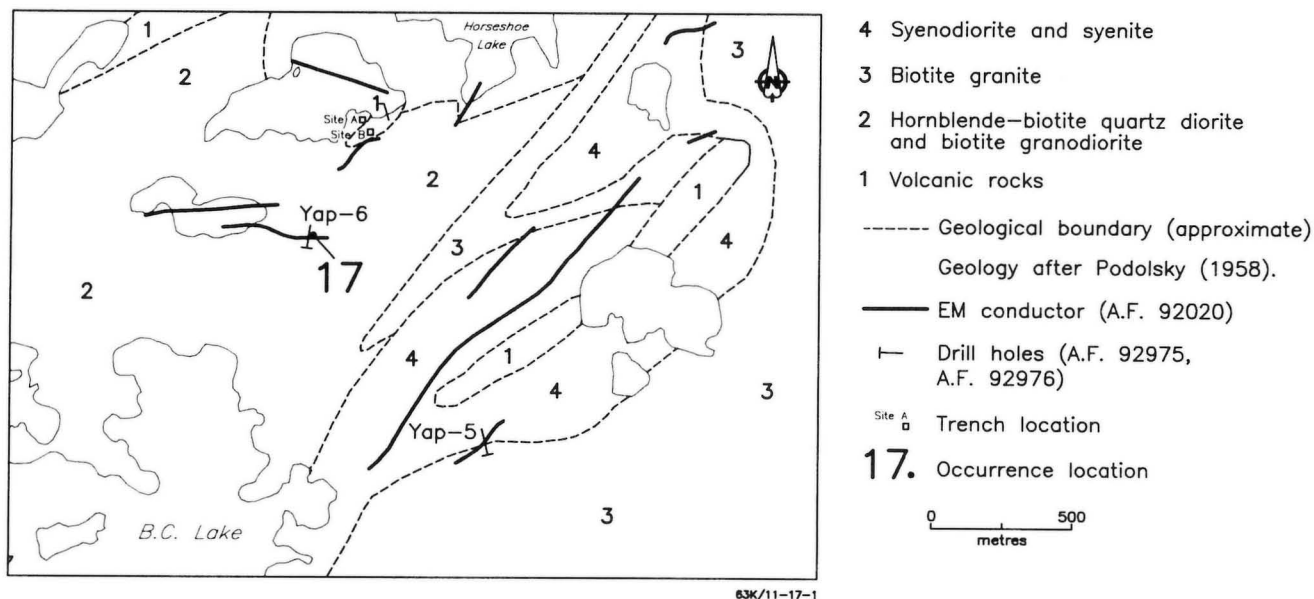


Figure 17-1: Geological setting, and location of drill hole, trench and geophysical conductors in the vicinity of occurrence 17.

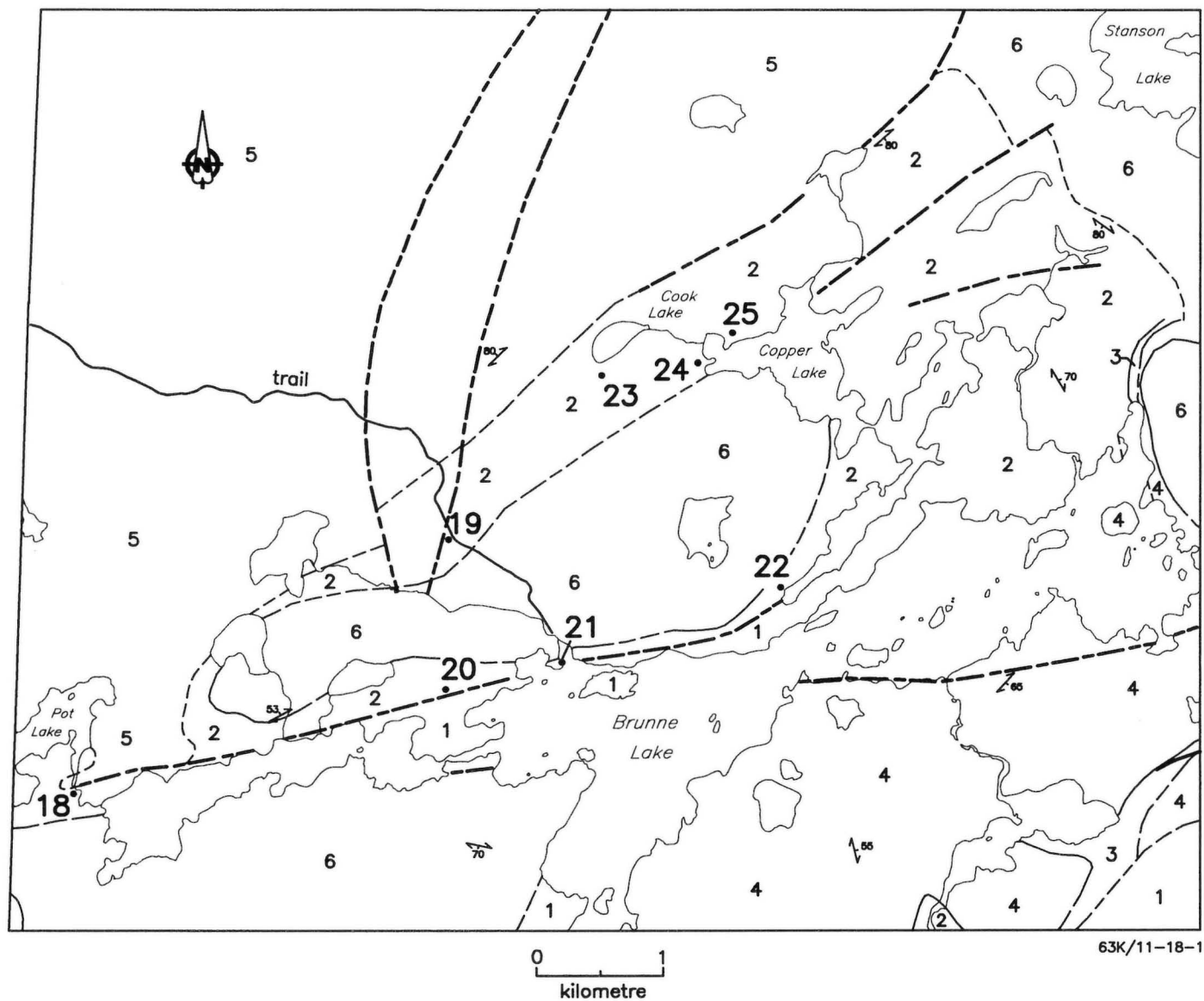


Figure 18-1: Geological setting of occurrence 18, the Gurney deposit (19) and occurrences 20-25.

LOCATION: 18

NAME:

UTM: 6065032N/355512E

ACCESS: Via bush aircraft

#### EXPLORATION SUMMARY:

This area was under claim to Gurney Gold Mine Ltd. in 1938 as the Colville claim (Hage, 1944). Trenches and pits with dimensions of 1.2x1.2x0.6 m, 1.2x1.2x0.9 m and 0.6x1.2x1.2 m were noted by A.C.A. Howe during mapping of the Ansil Mines Ltd. Kay claims group in 1964 (A.F. 90292). In addition, a large trench was identified along a claim boundary at Site A during a ground magnetometer survey of the area (A.F. 90293). The area was included in regional AMAG and AEM surveys by Sherritt Gordon Mines Ltd. during the winter of 1973-74 (A.F. 92020).

#### GEOLOGICAL SETTING:

The mafic volcanic rocks in the area are surrounded by coarse grained porphyritic, pink to grey syenite-gneiss and gneissic syenodiorite and a medium grained, pink faintly gneissic biotite granite (Fig. 18-1; Podolsky, 1951).

#### MINERALIZATION:

At occurrence 18 (Fig. 18-2) a trench along the length of a shear zone (040°/85°E) exposed pyrrhotite, minor pyrite and trace chalcopyrite in siliceous syenite breccia that contains segregation's of silica.

The only information available on these mineralized sites is that noted by A.C.A. Howe (A.F. 90292, Fig 18-2). Trench 1 contained minor amounts of disseminated to near solid pyrrhotite and other sulphide minerals. Trench 2 contained dissemination's and segregation's of pyrite and pyrrhotite. Trench 3 exposed a siliceous syenite breccia zone with moderate pyrrhotite, minor pyrite and trace chalcopyrite. There is no information available on the mineralization exposed in the trench at Site A.

AREA: West end of Brunne Lake

AIRPHOTO:

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; multiple veins. Sulphide veins in a fault zone. The other mineralized sites at this Location are probably of similar origin.

#### REFERENCES:

Assessment Files 90292, 90293, and 92020.

Manitoba Energy and Mines, Mines Branch.

Hage, C.O.

1944: Geology of the Gurney gold Mine Area, Manitoba; Precambrian, V. 17, no. 4, pp. 5-7, 25.

McGlynn, J.C.

1959: Heming Lake, Manitoba; Geological Survey of Canada, Map 1071A, 1:63 360 scale.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

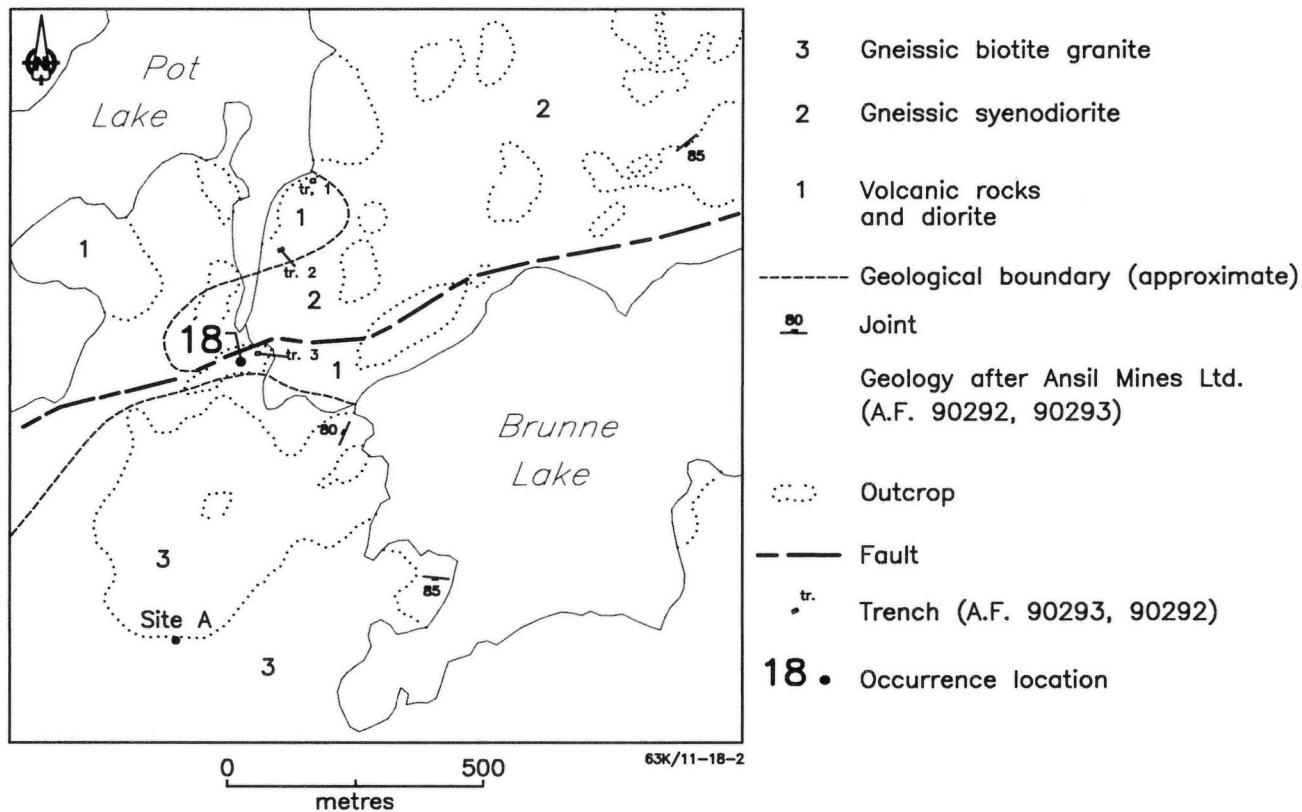


Figure 18-2: Detailed geology and location of trenches at occurrence 18.



**LOCATION: 19**

NAME: Gurney Mine  
UTM: 6067188N/358410E  
ACCESS: Via bush aircraft

AREA: Brunne Lake (Fig. 18-1)  
AIRPHOTO: A26363-204

**EXPLORATION SUMMARY:**

The Dominion group of 7 claims were staked over the property in 1919 by A.L. Stewart, W.J. Goodwin and R. Hassett. Extensive trenching was undertaken by these prospectors over a strike length of 3 200 m; six of these trenches had lengths of approximately 10 m, widths of 1-3 m and depths of 0.6-2 m. In 1934 Wylie-Dominion Gold Mines Ltd. undertook underground development that included sinking a shaft to a depth of 50 m and drifting 244 m on the 38 m level (125 foot; Wylie-Dominion Gold Mines Ltd., Corporation File). Gurney Gold Mines Ltd., who took over the property in 1935, completed the shaft to 199 m and established drifts on the 76 m (250 foot), 114 m (375 foot), 152.4 m (500 foot) and 190.5 m (625 foot) levels. Diamond drilling programs (3 586 m) had been completed from both the surface and underground workings by the end of 1937. Production began on Oct. 15, 1937 and ceased on Nov. 15, 1939 after 90,500 tonnes of ore were processed.

Surface drill holes were used to explore the deposit for 366 m south of the shaft at about the 38 m (125 foot) mine level. Exploration was done on mineralized zones 488 m and 610 m north of the shaft. Exploration drifts were cut on the 38 m (125 foot) and 114 m (375 foot) levels, but there does not appear to have been any exploration below the 190 m (625 foot) level (Gurney Gold Mines Ltd., Corporation File).

The claim leases were cancelled in 1947. A ten year lease on the claims was sold to God's Lake Gold Mines Limited, but there are no records of exploration activity during this period. In 1957 the property was transferred to R.J. Jowsey Mining Company Ltd. who obtained a 21 year lease. The area was included in regional AMAG and AEM surveys by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). The leases on the property were cancelled in 1975 and the property was staked for W. Bruce Dunlop. Kerr Addison Mines Ltd. optioned the property during 1979-82 and conducted geophysical, geological and geochemical surveys and a drill program (B. Dunlop, pers. comm., 1984). In 1987, the property was optioned to Granges Exploration Ltd. who conducted exploration programs on the property.

**GEOLOGICAL SETTING:**

The Gurney deposit occurs within a narrow belt of predominantly mafic volcanic rocks that are intruded by mafic to felsic plutonic rocks (Figs. 18-1; 19-1). The volcanic rocks consist mostly of basalt, interbanded tuff and schist, but also include andesitic, dacitic and rhyolitic rocks; locally, the basalt is pillowed (Hage, 1944). A belt of sedimentary rocks consisting of quartzite, arkose, greywacke, chlorite-tremolite schist, siliceous hornblende schist, garnet-hornblende schist and interbanded rhyolitic and dacitic volcanic rocks (Hage, 1944) was interpreted as volcanic rocks by Podolsky (1951). The intrusive rocks consist predominantly of red and pink granite and a coarse pink to grey syenite gneiss and gneissic

syenodiorite (Podolsky, 1951). Dykes and sill-like bodies of amphibolite, diorite and diabase intrude the volcanic rocks. Feldspar porphyry dykes, which cut the volcanic rocks, may be related to the grey granite. Quartz porphyry, quartz-feldspar porphyry and lamprophyre dykes are also common (Hage, 1944).

A number of shear zones are present in both the plutonic and volcanic rocks. The Gurney deposit is considered to have been located in a drag fold within a shear zone (Hage, 1944). Faults are common in the area (Hage, 1944; Podolsky, 1951).

A 1.5 to 10.7 m wide 'tuff bed', which has been altered and silicified, hosts the gold-bearing quartz veins. A coarse grained diorite dyke cuts the ore, but parallels the strike of the volcanic rocks. Felsite and granophyre dykes cut the quartz veins (Gurney Gold Mines Ltd., Corporation File).

**MINERALIZATION:**

The vein system (Fig. 19-1) follows a zone of fracturing in the tuff layer/shear zone. The veins strike N42°E and dip 79°W to vertical. The veins consist of closely spaced lenses of quartz that locally merge to form a solid quartz mass 1.5-3.7 m wide and 26 m long. The quartz mass branches both vertically and horizontally. Ore zone widths were erratic and varied from an average of 1.5 m to over 9.1 m. The quartz is white to grey, medium grained and extensively fractured. Locally, there are concentrations of pyrite-chalcopyrite-galena-pyrrhotite and sphalerite; generally pyrite constitutes 80% of the sulphides. Ruby silver, telluride and molybdenite were also reported. Locally, a grey cherty quartz occurs along shear planes in the tuff/shear zone (Gurney Gold Mines Ltd., Corp. File).

The orebody consisted of branching veins that locally have thickness of several metres and up to 171.43 g/t gold. The tuff/shear zone between the veins commonly contained up to several ounces of gold even where there was little or no quartz present (C.B. Dawson, 1938; report in Gurney Gold Mines Ltd., Corporation File).

A spatial relationship between gold ore and felsic dykes was noted by several engineers and geologists at the mine (F.D. Shepherd, C.B. Dawson, Gurney Gold Mines Ltd., Corporation File). The gold occurred predominantly within the sulphide minerals and rarely as visible gold. Gold contents were generally proportional to the sulphide contents; high grade gold was generally accompanied by chalcopyrite and galena (Hage, 1944). Alteration products included biotite, epidote, chlorite, carbonate, quartz, plagioclase, tourmaline and sericite.

**GEOCHEMICAL DATA:**

Production from this deposit during 1937-39 totalled 92 000 tonnes containing 8.5 g/t Au and 24.2 g/t Ag.

# CLASSIFICATION:

Vein type deposit; multiple veins. Large blocks of mineralized rock at the mine site contain many features that are typical of a deformed chemical sediment type deposit; this deposit model should be considered during evaluation of this area.

# REFERENCES:

Assessment File 92020

Manitoba Energy and Mines, Mines Branch.

Gurney Gold Mines Ltd. Corporation File

Manitoba Energy and Mines, unpublished.

Hage, C.O.

1944: Geology of the Gurney Gold Mine area, Manitoba; Precambrian, v. 17, no. 4, pp. 5-7, 25.

McGlynn, J.C.

1959: Heming Lake, Manitoba; Geological Survey of Canada, Map 1071A.

Podolsky, T.

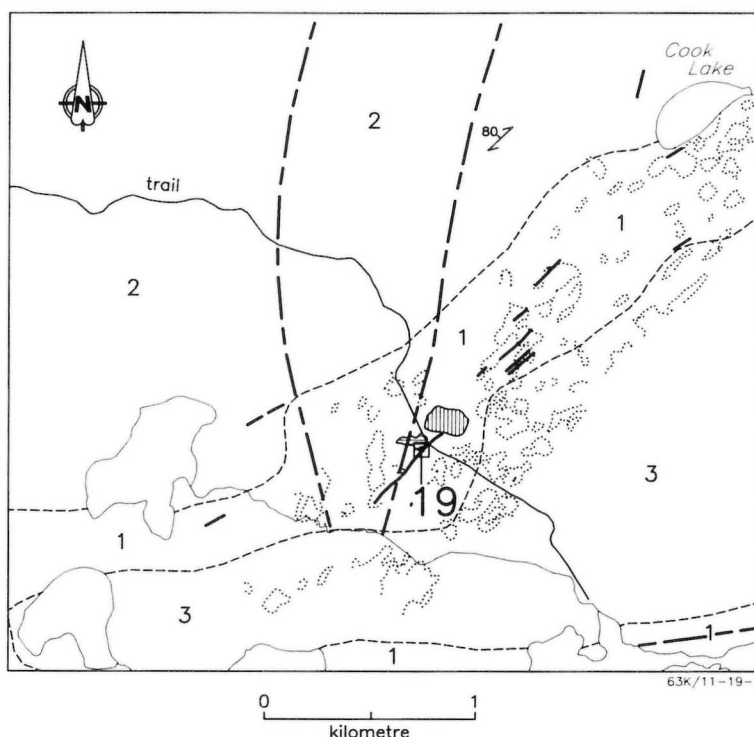
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

Wallace, R. C.

1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.

Wylie-Dominion Gold Mines Ltd.

Corporation File; Manitoba Energy and Mines, Geological Services Branch.



- |       |                                   |           |                     |
|-------|-----------------------------------|-----------|---------------------|
| 3     | Gneissic biotite granite          |           | Outcrop             |
| 2     | Gneissic syenodiorite             |           | Tailings            |
| 1     | Volcanic rocks and diorite        |           | Waste pile          |
| ----- | Geological boundary (approximate) |           | Shaft               |
|       | Foliation (inclined)              |           | Trenches            |
| —     | Quartz vein                       | <b>19</b> | Occurrence location |
| - - - | Fault                             |           |                     |

Geology after Kerr Addison Mines Ltd.  
(Geology base provided by W.B. Dunlop, 1986)

Figure 19-1: Geology of the Gurney mine area and location of quartz veins.

## LOCATION: 20

NAME: Ansil Zone  
UTM: 6065953N/358472E  
ACCESS: Via bush aircraft

## EXPLORATION SUMMARY:

Old trenches noted by Podolsky (1951) probably were excavated at the same time as exploration activity at the Gurney Mine, *i.e.*, 1919-1939 (see Location 19, this volume). A portion of the Ansil Zone was owned by Gurney Gold Mines Ltd. in 1938 (Hage, 1944). The area was staked in 1953 by W. Johannesson who recorded several trenches. The claims were cancelled in 1955 (M.I. Card 63K/11 Cu2). The area was staked in 1964 and later that year Ansil Mines Ltd. conducted magnetometer and geological surveys (A.F. 90292, 90293). During the winter of 1964-65 Ansil Mines Ltd. drilled 11 holes totalling 1127 m (A.F. 90293). The area was included in regional AMAG and AEM surveys by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). The property was staked in 1979 by Kerr Addison Mines Ltd. as CB 11515. The property was optioned to Granges Exploration Ltd. in 1987.

## GEOLOGICAL SETTING:

The Brunne Lake area (Fig. 18-1) is underlain by mafic to intermediate volcanic rocks that have been intruded by plutons of: 1. medium grained, pink, faintly gneissic biotite granite; 2. gneissic syenodiorite and associated biotite syenite; and, 3. medium- to coarse-grained quartz diorite and biotite-hornblende diorite (Podolsky, 1951). A regional fault occurs south of the occurrence (Podolsky, 1951).

Hage (1944) interprets the rocks containing the Ansil Zone as a sequence of arkose, greywacke, chlorite-tremolite schist, siliceous hornblende schist, garnet-hornblende schist, interbanded rhyolite and dacite flows and quartzite.

An outcrop map prepared by A.C.A. Howe for Ansil Mines Ltd. subdivides the volcanic rocks into two units of mafic to intermediate schistose volcanic rocks enclosing a sheared pyrrhotite-bearing silicified zone (A.F. 90292).

## MINERALIZATION:

Sulphide mineralization occurs along a strike length of approximately 6.5 km and has a thickness of up to 60 m (Hage, 1944). Within this sulphide-bearing unit a sulphide zone approximately 1200 m long and 30 m thick, is exposed in trenches south and east of 'Swamp Lake' (Fig. 20-1). It contains near solid to solid pyrrhotite with minor chalcopyrite, pyrite, sphalerite, galena and bornite (A.F. 92092). This sulphide zone produces a magnetic high (A.F. 90293). Quartz veins with pyrite, chalcopyrite, +/- gold and silver occur along strike from this zone south of Swamp Lake at Pot Lake (Location 18) and at Copper Lake (Location 22).

Dissemination's of sulphides, mostly pyrrhotite, also occur throughout unit 1 (Figs. 20-1, 21-1). Lenses of silica segregation and, locally, blue-black quartz veins are common in Unit 1 (A.F. 90292).

DDH 1, 2, 3, 4, 5, 7, 8, 9 and 11 intersected near solid to solid pyrrhotite (Fig. 20-1). The near solid to solid sulphide section varies from 6.1 m in length (DDH 5), 13.4 m (DDH 8),

AREA: Brunne Lake (Fig. 18-1)  
AIRPHOTO: A26363-204

24.4 m (DDH 1), 30.5 m (DDH 2), 29.6 m (DDH 3), 12.2 m (DDH 4), to 50 and 90 cm sections in DDH 7. DDH 6 intersected mostly disseminated and some solid pyrrhotite. 'Graphitic tuff' was intersected below the solid sulphide zone in DDH 1 and above the solid sulphide zone in DDH 4.

Wallace (1920) indicated that the mineralization on the Caribou claims, *i.e.* this Location, was probably 23 m wide and consisted of near solid pyrite and pyrrhotite (p. 31).

## GEOCHEMICAL DATA:

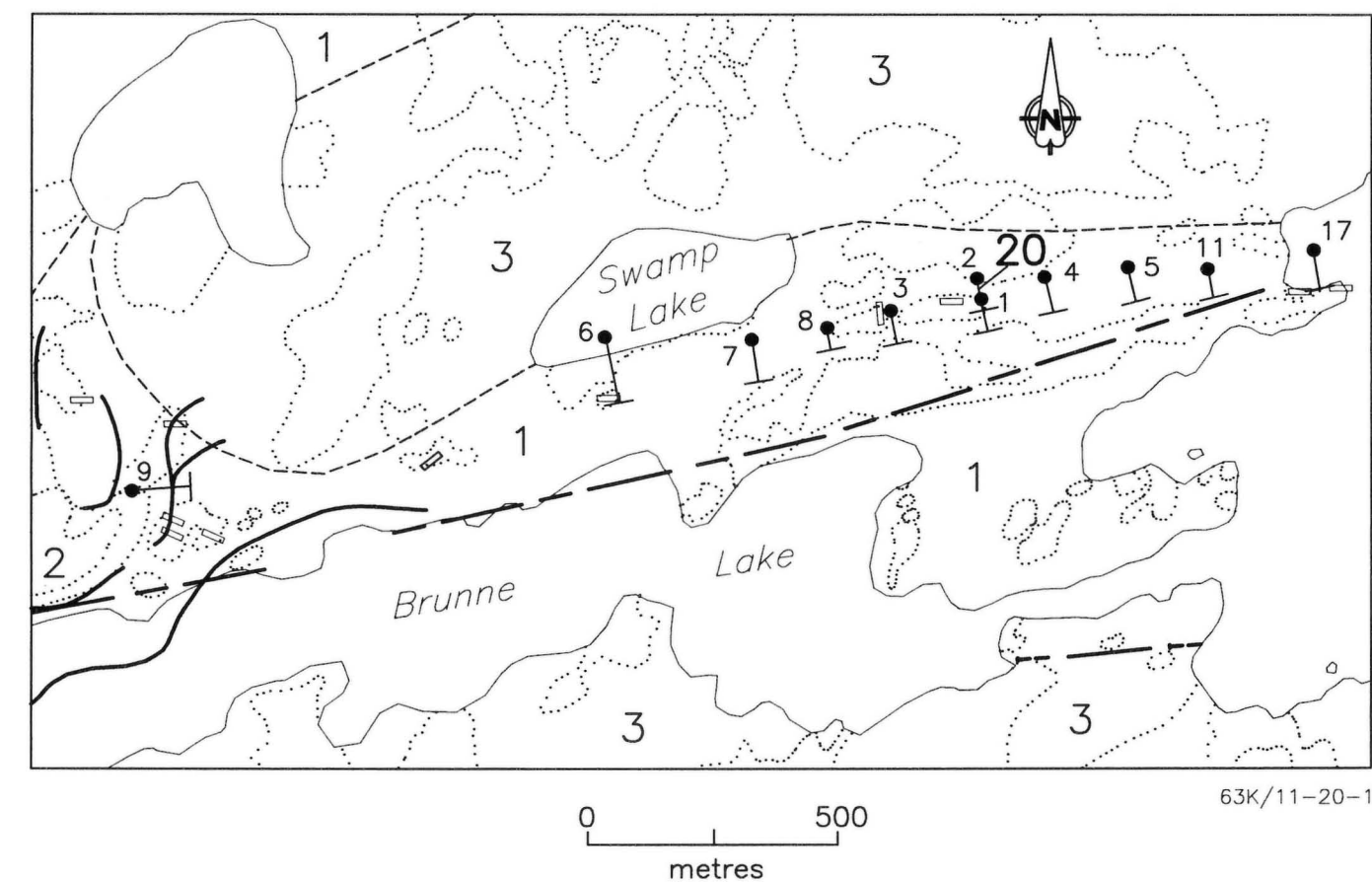
Assays of the drill core ranged from nil to 0.13% Cu, nil to 0.12% Ni, nil to 0.1% Zn, nil to 9.60 g/t Ag, nil to 0.34 g/t Au (A.F. 90293).

## CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. The presence of this near-solid pyrrhotite lens in a pyrrhotite-bearing rock unit of several kilometer strike length may also represent mobilization of pyrrhotite from either a sulphide facies iron formation or a massive sulphide type deposit. The presence of volcanogenic massive sulphide type deposits in this area cannot be ruled out at this time.

## REFERENCES:

- Assessment Files 90292, 90293, 92020  
Manitoba Energy and Mines, Mines Branch.
- Hage, C.O.  
1944: Geology of the Gurney Gold Mine area, Manitoba; Precambrian, v. 17, no. 4, pp. 5-7, 25.
- McGlynn, J.C.  
1959: Heming Lake, Manitoba; Geological Survey of Canada, Map 1071A, 1:63 360 scale.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.
- Wallace, R. C.  
1920: Mining and Mineral prospects in Northern Manitoba; Northern Manitoba Bull. 1919.



- |                                    |                                   |           |                         |
|------------------------------------|-----------------------------------|-----------|-------------------------|
| 3                                  | Gneissic biotite granite          | — — — — — | Fault                   |
| 2                                  | Gneissic syenodiorite             | ○         | Outcrop                 |
| 1                                  | Volcanic rocks and diorite        | —●—       | Drill hole (A.F. 90293) |
| -----                              | Geological boundary (approximate) | □         | Trench                  |
| Geology after (A.F. 90292, 90293). |                                   | <b>20</b> | Occurrence location     |
| —                                  | EM conductor (A.F. 92975)         |           |                         |

Figure 20-1: Location of drill hole and geophysical conductors in the vicinity of occurrence 20.

LOCATION: 21

NAME:

UTM: 6066129N/359334E

ACCESS:

AREA: Brunne Lake (Fig. 18-1).

AIRPHOTO: A26363-204

#### EXPLORATION SUMMARY:

Old trenches were present at the mineralized zone in 1950 (Podolsky, 1951) and probably were excavated during the same time as the exploration activity at the Gurney Mine, i.e., 1919-1939 (see Location 19, this volume).

The area was staked in 1953 by W. Johannesson who excavated several trenches. The area was staked in 1964 and later that year Ansil Mines Ltd. conducted magnetometer and geological surveys (A.F. 90292, 90293). During the winter of 1964-65 Ansil Mines Ltd. drilled 6 holes totalling 623 m (A.F. 90293). The area was included in regional AMAG and AEM surveys by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

The property was staked in 1979 by Kerr Addison Mines Ltd. as CB 11515 and was optioned to Granges Exploration Ltd. in 1987.

#### GEOLOGICAL SETTING:

The Brunne Lake area (Fig. 18-1) is underlain by mafic to intermediate volcanic rocks that have been intruded by plutons of: 1. medium grained, pink, faintly gneissic biotite granite; 2. coarse grained porphyritic, pink to grey syenite-gneiss, gneissic syenodiorite and associated biotitic syenite; and, 3. medium- to coarse-grained quartz diorite and biotite-hornblende diorite (Podolsky, 1951). A regional fault occurs south of the occurrence (Podolsky, 1951).

Hage (1944) interprets the rocks that contain the mineralization as a sequence of arkose, greywacke, chlorite-tremolite schist, siliceous hornblende schist, garnet-hornblende schist, interbanded rhyolite and dacite flows and quartzite.

An outcrop map prepared by A.C.A. Howe for Ansil Mines Ltd. subdivides the volcanic rocks into two units of mafic to intermediate schistose volcanic rocks enclosing a sheared pyrrhotite-bearing silicified zone (A.F. 90293).

#### MINERALIZATION:

The mineralization intersected in DDH 13 to 16 (Fig. 21-1) was similar to that intersected in the western extremity of the sulphide zone at Location 20. The host rocks to the 'banded iron formation' contain up to 3 m long sections with 5 to 30% pyrrhotite and pyrite and lenses/layers of near solid pyrrhotite with pyrite in 'breccia sulphide zones' (A.F. 90292). Trench 2 (Fig. 21-1) with dimensions of 6.1x1.5x1.2 m exposed moderate amounts of disseminated pyrrhotite and trace chalcopryite in a siliceous rock (A.F. 90292).

#### GEOCHEMICAL DATA:

Assays reported in A.F. 90292 for samples from DDH 13-16 range from trace to 0.13% Cu, nil Zn, nil to 0.34 g/t Au and nil to 6 g/t Ag.

#### CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. The 'breccia sulphide zones' are interpreted as the products of deformation and local mobilization of pre-existing sulphide layers. It is possible that some of these sulphides have been mobilized to form 'veins' *sensu strictu*.

#### REFERENCES:

- Assessment Files 90292, 90293 and 92020  
Manitoba Energy and Mines, Mines Branch.
- Hage, C.O.  
1944: Geology of the Gurney Gold Mine area, Manitoba Precambrian, v. 17, no. 4, pp. 5-7, 25.
- McGlynn, J.C.  
1959: Heming Lake, Manitoba; Geological Survey of Canada, Map 1071A, 1:63 360 scale.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.
- Wallace, R. C.  
1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.

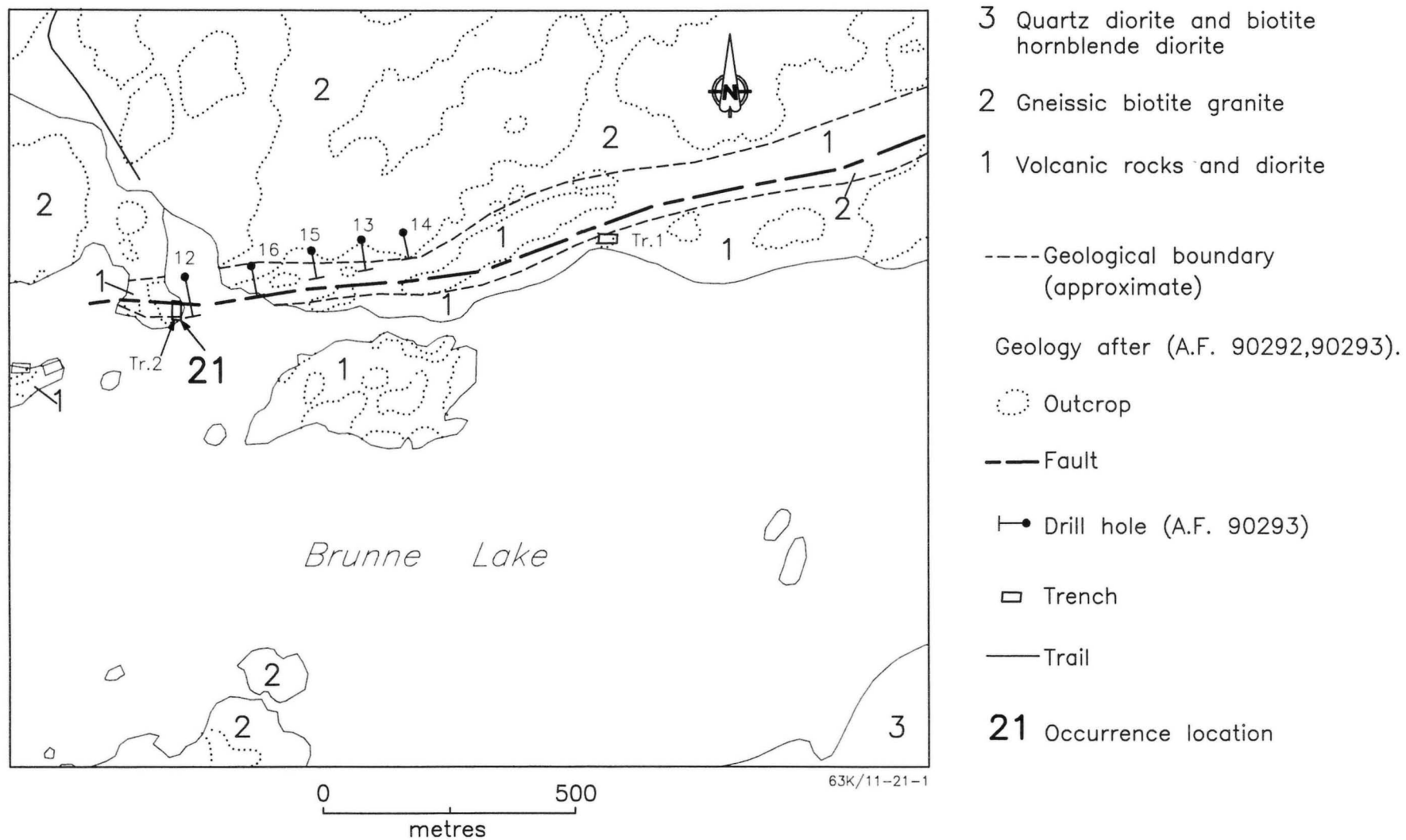


Figure 21-1: Location of drill holes in the vicinity of occurrence 21.



**LOCATION: 22**

**NAME:** Depth Charge  
**UTM:** 6066639N/361057E  
**ACCESS:** Via bush aircraft

**AREA:** Copper Lake (Fig. 18-1)  
**AIRPHOTO:** A26363-227

**EXPLORATION SUMMARY:**

Wallace (1920) indicated that a 10 m trench had been excavated at this site. The area was staked in 1964 and later that year Ansil Mines Ltd. conducted magnetometer and geological surveys (A.F. 90292, 90293). During the winter of 1964-65 Ansil Mines Ltd. drilled 6 holes totalling 623 m (A.F. 90293). The area was included in regional AMAG and AEM surveys by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

**GEOLOGICAL SETTING:**

The Brunne Lake area (Fig. 18-1) is underlain by mafic to intermediate volcanic rocks that have been intruded by plutons of: 1. medium grained, pink, faintly gneissic biotite granite; 2. coarse grained porphyritic, pink to grey syenite gneiss, gneissic syenodiorite and associated biotitic syenite; and, 3. medium- to coarse-grained quartz diorite and biotite-hornblende diorite (Podolsky, 1951). A regional fault was identified south of the occurrence (Podolsky, 1951).

Hage (1944) interprets the rocks that contain the mineralization as a sequence of arkose, greywacke, chlorite-tremolite schist, siliceous hornblende schist, garnet-hornblende schist, interbanded rhyolite and dacite flows and quartzite.

An outcrop map prepared by A.C.A. Howe for Ansil Mines Ltd. subdivides the volcanic rocks into two units of mafic to intermediate schistose volcanic rocks enclosing a sheared pyrrhotite-bearing silicified zone.

**MINERALIZATION:**

Wallace (1920) reported that quartz bands alternate with 'pyritized schist' on the Depth Charge claim.

The trenches (Fig. 22-1), which were excavated in a pyrrhotite-bearing volcanic rock, expose minor amounts of pyrrhotite, pyrite and chalcopyrite concentrated in shears (A.F. 90292). Very fine grained silicic rocks exposed on a ridge south of the trenches contain 0.5% pyrrhotite  $\pm$  pyrite.

**GEOCHEMICAL DATA:**

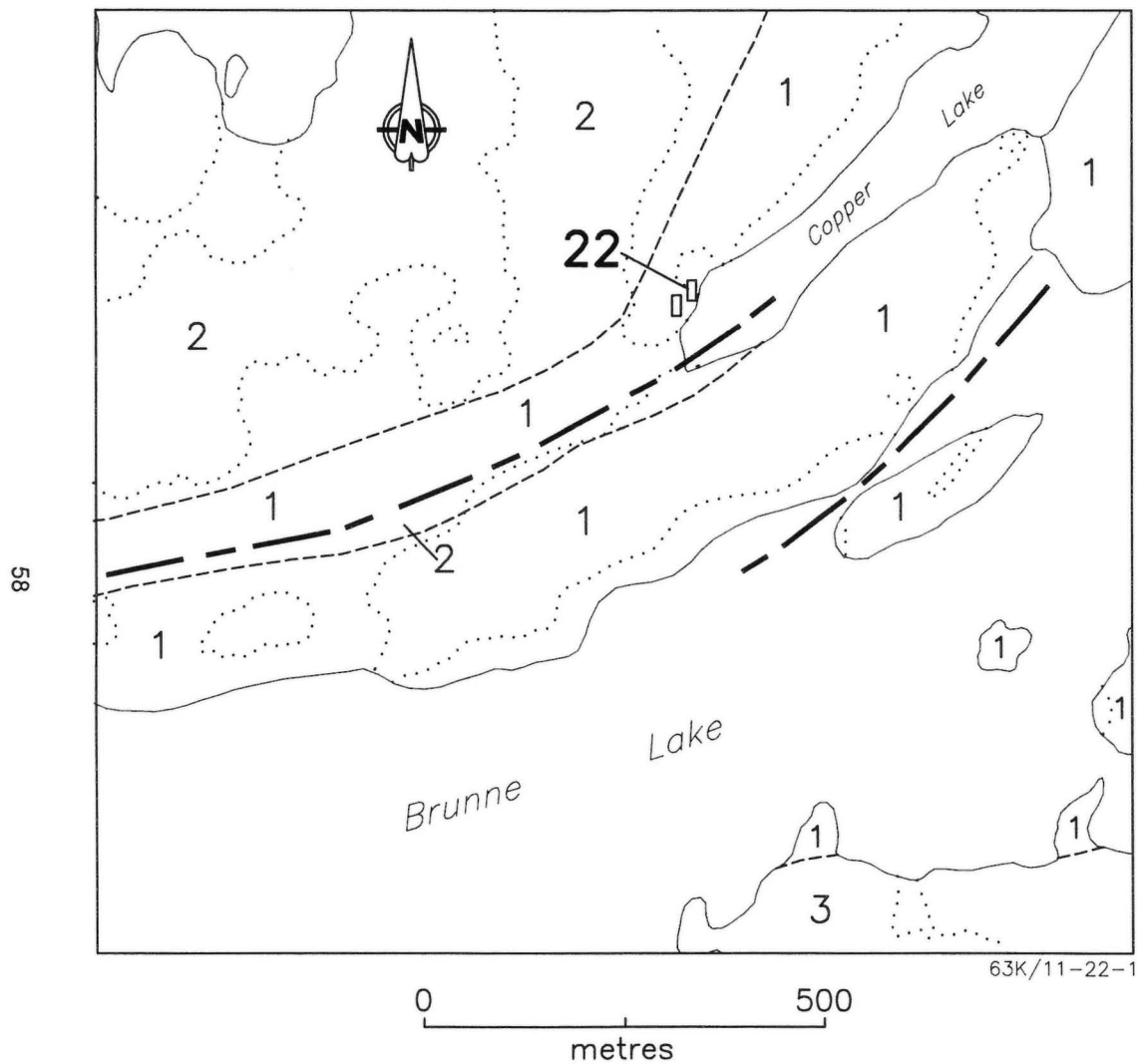
Ventures Ltd. obtained up to 0.4% Zn and 0.1% Cu from this Location (M.I. Card 63K/11 Zn1).

**CLASSIFICATION:**

Vein type deposit; multiple veins. This mineralization was probably formed by mobilization and concentrations of pyrrhotite, pyrite and chalcopyrite in veins or lenses during deformation and metamorphism of a sulphide facies iron formation.

**REFERENCES:**

- Assessment Files 92020, 90292 and 90293  
Manitoba Energy and Mines, Mines Branch.
- Hage, C.O.  
1944: Geology of the Gurney Gold Mine area, Manitoba Precambrian, v. 17, no. 4, pp. 5-7, 25.
- McGlynn, J.C.  
1959: Heming Lake, Manitoba; Geological Survey of Canada, Map 1071A, 1:63 360 scale.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.
- Wallace, R. C.  
1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.



- 3 Quartz diorite and biotite hornblende diorite
- 2 Gneissic biotite granite
- 1 Volcanic rocks and diorite

----- Geological boundary (approximate)

Geology after (A.F. 90292, 90293).

○ Outcrop

— Fault

□ Trench

**22** Occurrence location

Figure 22-1: Trench locations in the vicinity of occurrence 22.



LOCATION: 23

NAME: Big Dyke

UTM: 6068486N/359689E

ACCESS: Via bush aircraft

#### EXPLORATION SUMMARY:

Five claims were staked along the strike length of a quartz vein system by J.P. Gordon (Wallace, 1919; Wright, 1931). The northernmost portion of this vein/system is reported as the Contact and Bluebird occurrences (Gale and Norquay, 1996). A number of trenches were excavated south of Cook Lake (Figs. 23-1, 23-2). In 1971 HBED conducted an EM survey in the area, and drilled one 66 m hole (A.F. 92242). The area was included in a regional AMAG and AEM survey conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-74 (A.F. 92020). Geochemical and geophysical surveys were undertaken by Kerr Addison Mines Ltd. in 1979-82.

#### GEOLOGICAL SETTING:

The area is underlain by mafic volcanic rocks, in part pillowed, that have been intruded by a large pluton of granite, syenodiorite and diorite (Fig. 18-1, 23-1; Podolsky, 1951; McGlynn, 1959). DDH Bog-3 (Fig. 23-2) intersected dioritic and andesitic rocks (A.F. 92242).

#### MINERALIZATION:

Wallace (1920) describes the 'Big Dyke' as a quartz lode occurring immediately east of the granite contact. The northern extension of this quartz vein is a gold-bearing quartz vein, 5-10 m thick, with fine grained galena (Gale and Norquay, 1996). DDH Bog-3 intersected five zones with sulphide, namely:

- 1) 16.8 m - 25.1 m - up to 3% pyrite, quartz - carbonate veins;
- 2) 35.6 m - 39.0 m - pyrite-graphite layers with up to 90% combined pyrite and graphite and trace chalcopyrite;
- 3) 39.0 m - 43.8 m - a dioritic rock, generally with less than 5% pyrite and trace chalcopyrite. One 50 cm section contained 25-30% pyrite;
- 4) 43.8 m - 44.2 m - up to 80% pyrite and graphite combined.
- 5) 44.2 m - 46.8 m - well bedded dacitic rock contains less than 10% pyrite and a 30 cm pyrite-graphite layer.

The trenches located at the south end of Cook Lake (Fig. 23-2) are considered by the authors to be the location of the Big Dyke described by Wallace as "on the west side of Copper Lake, near the north end of the lake and immediately south of a beaver-dam pond, a line of five claims has been

AREA: North of Copper Lake (Fig. 18-1)

AIRPHOTO: A26363-202, A26363-228

staked on a quartz lode which strikes 22° immediately east of a granite contact ..." (Wallace, 1920, p. 28). This vein contains gold, pyrite, chalcopyrite and galena. A quartz vein shown on the Jamieson claim (claim 10, Fig. 23-1; Hage, 1944) is the probable extension of the "Big Dyke" described by Wallace (1920)..

Hage (1944) indicates that a quartz vein occurs within the intrusion at Site A (Fig. 23-1); details of this vein are not known.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; single vein. The pyrite graphite layers are graphite-bearing sulphide facies iron formations.

#### REFERENCES:

- Assessment Files 92020, 92242  
Manitoba Energy and Mines, Mines Branch.
- Gale, G.H., Norquay, L.I.  
1996: Mineral Deposits and Occurrences in the Naosap Lake area, NTS 63K/14; Manitoba Energy and Mines, Geological Services, Mineral Deposit Series Report No. 20.
- Hage, C. O.  
1944: Geology of the Gurney Gold Mine Area, Manitoba; Precambrian, Vol. 17, No. 4, pp. 5-7, 25.
- McGlynn, J.C.  
1959: Heming Lake, Manitoba, Geological Survey of Canada Map 1071A, 1: 63 360 scale.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.
- Wallace, R. C.  
1919: The gold discovery at Copper Lake, Manitoba; Canadian Mining Journal, v. 40, p. 731-733.

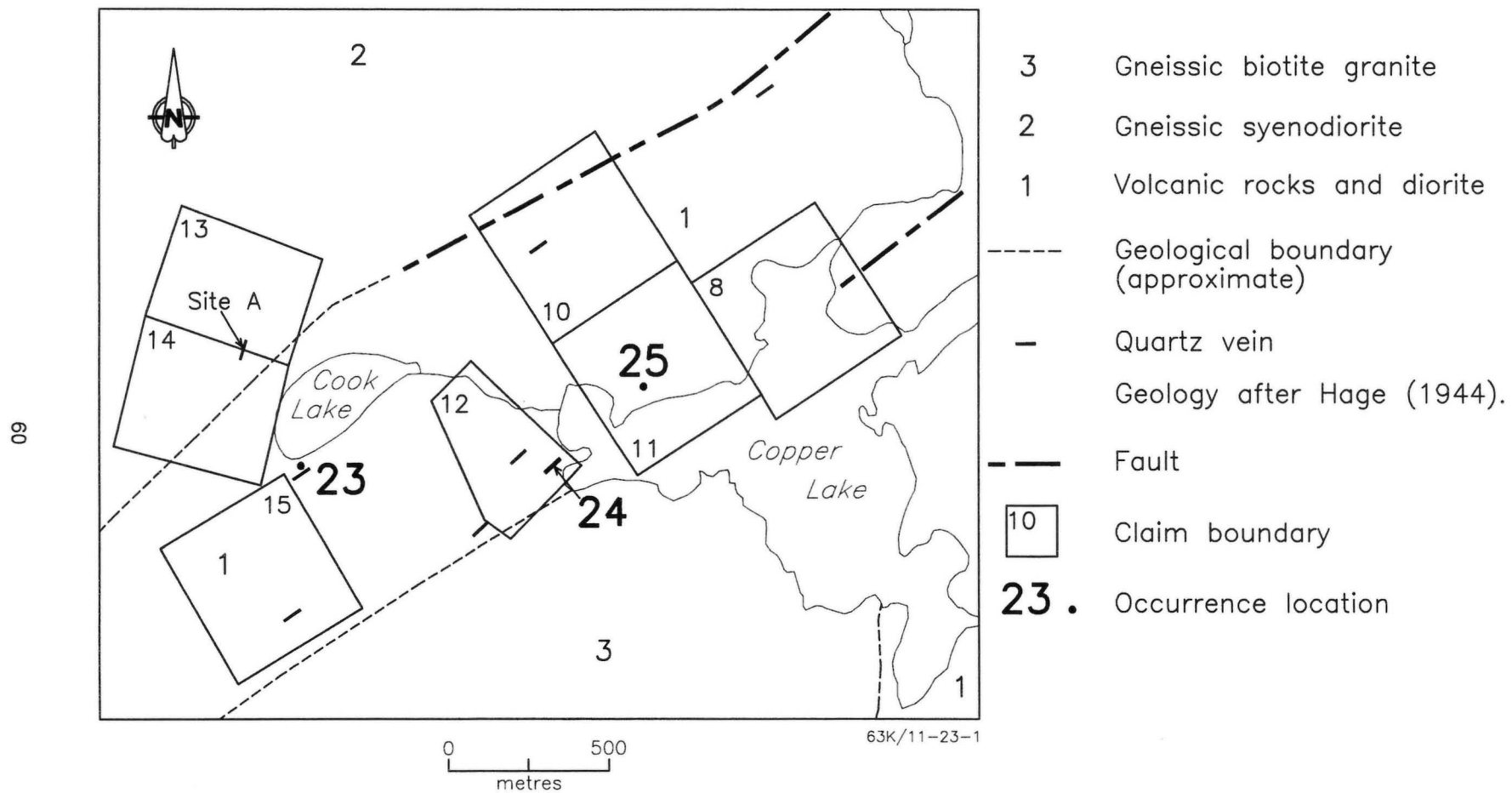
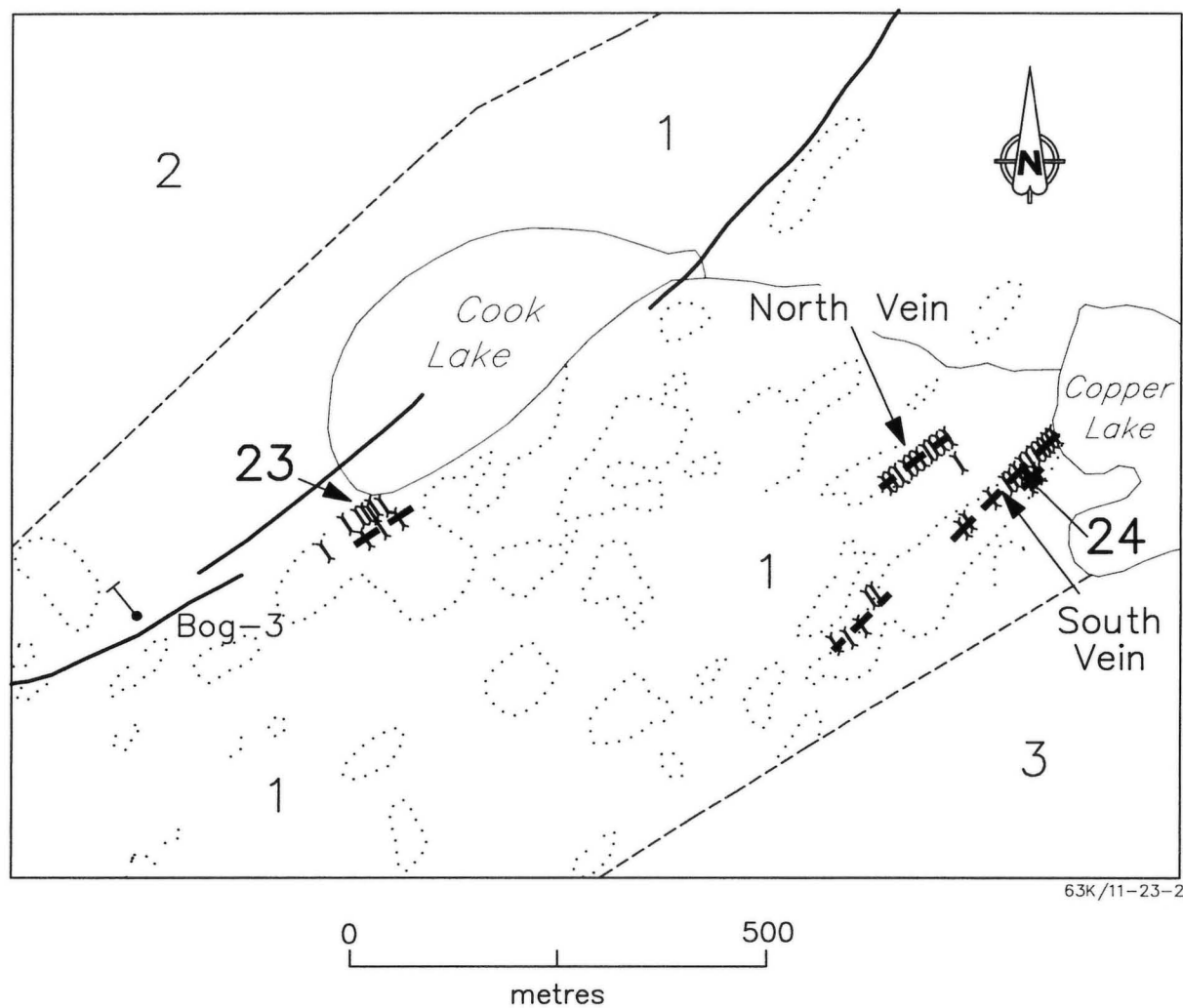


Figure 23-1: Geological setting of occurrences 23, 24 and 25.



63K/11-23-2

- |                                       |                            |       |                            |
|---------------------------------------|----------------------------|-------|----------------------------|
| 3                                     | Gneissic biotite granite   | —     | EM conductor               |
| 2                                     | Gneissic syenodiorite      | - - - | Quartz vein                |
| 1                                     | Volcanic rocks and diorite | └•    | Drill hole<br>(A.F. 92242) |
| - - - - -                             | Geological boundary        | ○     | Outcrop                    |
| Geology after Kerr Addison Mines Ltd. |                            | ⌵     | Trench                     |

Figure 23-2: Geology and location of drill hole and trenches at the Big Dyke (23) and Amer (24) occurrences.

LOCATION: 24

NAME: Amer  
UTM: 6068526N/360397E  
ACCESS:

AREA: Copper Lake (Fig. 23-1, 23-2)  
AIRPHOTO: A26363-228

#### EXPLORATION SUMMARY:

Exploration was conducted in this area prior to 1920 (Wallace, 1920). The Amer claim was recorded by G.V. Amer in 1924 who excavated a number of trenches. Optic Lake Gold Mines Ltd. controlled the property in 1937. The lease on the claim was cancelled in 1958 and the area was staked by T.J. Murray who reported a number of trenches for assessment credits. The property was optioned to HBED in 1970 and a HLEM survey was conducted (M.I. Card 63K/11 Au10). The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). Geochemical surveys and a drill program were carried out by Kerr Addison Mines Ltd. during 1979-82 (W. B. Dunlop, pers. comm. 1984). The property was under exploration by Granges Ltd. in 1990.

#### GEOLOGICAL SETTING:

A narrow unit of mafic volcanic rocks that are host to the Gurney Gold Mine (Location 19) are bounded on both sides by large intrusions (Figs. 18-1, 23-1). Trenches have been excavated on two parallel quartz veins about 60 m apart (Fig. 23-2). The veins strike 225°, dip steeply north, and are generally less than 1 m thick.

#### MINERALIZATION:

The 'south vein' (Fig. 23-2), is exposed in a number of trenches that are located on a ridge of outcrop. The quartz vein is approximately 1 m thick and there is an approximately 1 m thick zone of silicified volcanic rocks adjacent to the quartz vein. Pyrite and pyrrhotite occur mainly in the silicified zone as 1-2 cm veins, stringers and veinlets less than 0.5 cm thick and as dissemination's; the combined sulphide content rarely exceeds 10% by volume. Outside the silicified zone the sulphide content of the host rocks is generally less than 1%. The host rock is chloritic adjacent to veinlets of epidote and feldspar.

The 'north vein' (Fig. 23-2) occurs in a topographically low area and most of the trenches are filled. This quartz vein has a thickness of 80 cm and consists of white quartz. A silicified zone adjacent to the quartz vein has a thickness of 75 cm and contains 10-15% pyrite.

Free gold, pyrite, chalcopyrite and galena were found in both veins.

#### GEOCHEMICAL DATA:

Grab samples taken from the trenches in 1936 contained over 50 g/t Au. One of these veins contained 12.34 g/t over a 1.5 m width (M.I. Card 63K/11 Au10). A grab sample from a 25 cm thick portion of the south vein with 5 to 10% pyrite contained 10 g/t Au and 0.18% Cu; three other grab samples contained <12, 30 and 964 ppb Au and 66, 109 and 300 ppm Cu respectively. Two grab samples of rusty weathered quartz from a 70 cm wide portion of the north vein contained 30 ppb Au and 32 ppm Cu and <12 ppb Au and 106 ppm Cu.

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

- Assessment File 92020  
Manitoba Energy and Mines, Mines Branch.
- Mineral Inventory Card NTS 63K/11 Au10.  
Manitoba Energy and Mines, Geological Services Branch.
- Hage, C. O.  
1944: Geology of the Gurney Gold Mine Area, Manitoba; Precambrian, Vol. 17, No. 4, pp. 5-7, 25
- McGlynn, J.C.  
1959: Heming Lake, Manitoba; Geological Survey of Canada Map 1071A, 1:63 360 scale.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.
- Wallace, R. C.  
1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.

LOCATION: 25

NAME: Moose

UTM: 6068758N/360701E

ACCESS: Via bush aircraft

EXPLORATION SUMMARY:

Wallace (1920) indicates that exploration was done on the Moose claim, which was considered to be an extension of the quartz vein on the Red Rose claim (Gale and Norquay, 1996; Location 29). Hage (1944) shows the location of a quartz vein on the Moose claim, but does not indicate a vein on the Red Rose claim (Fig. 23-1).

GEOLOGICAL SETTING:

The area is underlain by mafic volcanic rocks, in part pillowed, that have been intruded by a large pluton of granite, syenodiorite and diorite (Podolsky, 1951; McGlynn, 1959).

MINERALIZATION:

Wallace (1920) indicates that the gold-bearing vein (Fig. 25-1) on the Moose claim was 45-60 cm thick. Along strike on the Red Rose claim the possible extension of this vein was described as 'a very rich gold shoot occupies a width of three inches on the east side of a vein' (Wallace, 1920, p. 28).

GEOCHEMICAL DATA:

None.

AREA: Copper Lake (Fig. 23-1)

AIRPHOTO: A26363-228

CLASSIFICATION:

Vein type deposit; single vein.

REFERENCES:

Gale, G.H., Norquay, L.I.

1996: Mineral Deposits and Occurrences in the Naosap Lake area, NTS 63K/14; Manitoba Energy and Mines, Geological Services, Mineral Deposit Series Report No. 20.

Hage, C.O.

1944: Geology of the Gurney Gold Mine Area, Manitoba; Precambrian, Vol. 17, No. 4, pp. 5-7, 25

McGlynn, J.C.

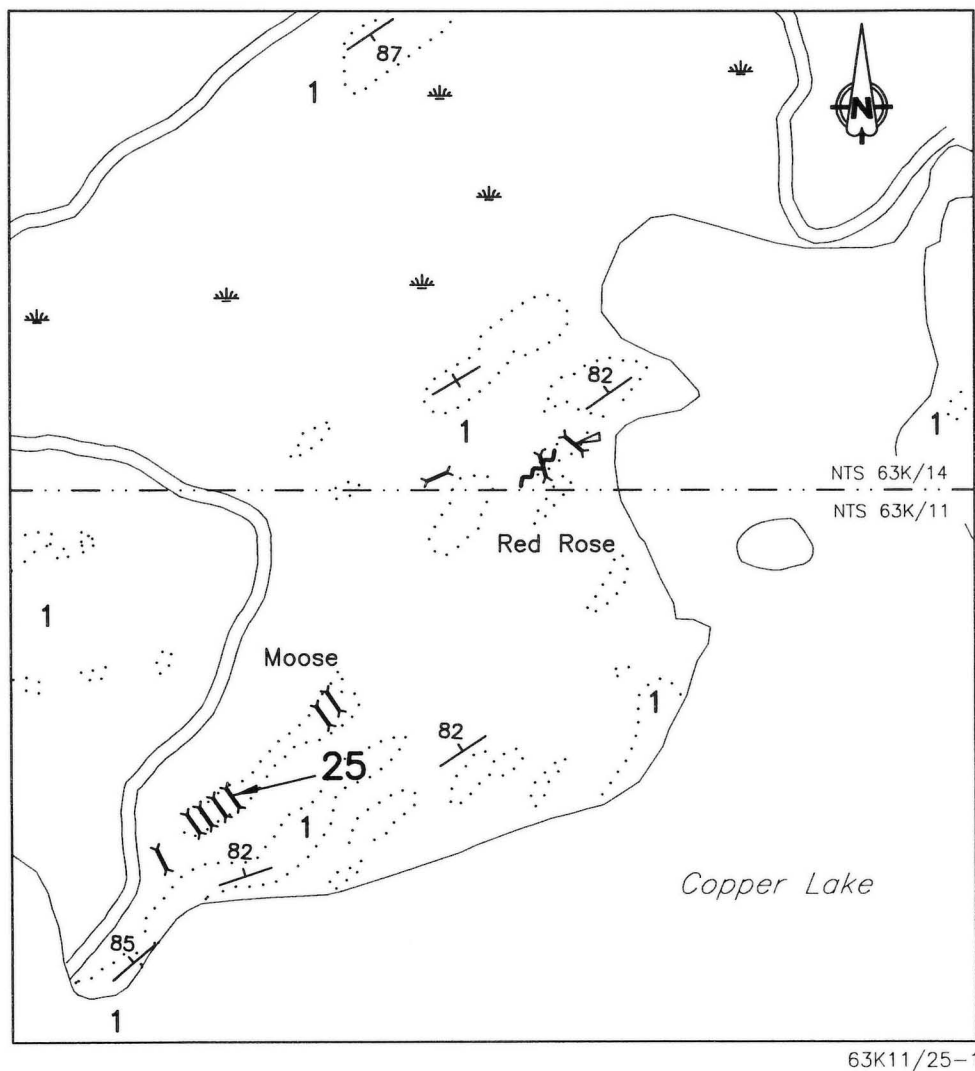
1959: Heming Lake, Manitoba; Geological Survey of Canada Map 1071A, 1:63 360 scale.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

Wallace, R.C.

1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.



- 1 Undifferentiated andesite and tuff
- 85 / Bedding: inclined, vertical
- Shear zone
- Trench
- Area of outcrop
- Swamp
- Road
- 25 Mineral occurrence location

0 200  
metres

Figure 25-1: Geology and location of trenches at the Red Rose occurrence.

LOCATION: 26

NAME:

UTM: 6067285N/363835E

ACCESS: Via bush aircraft

AREA: East end of Brunne Lake

AIRPHOTO: A26363-272

#### EXPLORATION SUMMARY:

Hage (1944) indicates the presence of quartz veins on two islands. Podolsky (1951) indicates a mineral occurrence at this Location. The area was staked as part of the Pet claim group for HBED in 1964. A HLEM survey was conducted in 1964-65 (A.F. 90476). Regional AMAG and AEM surveys were conducted by Sherritt Gordon Mines Ltd. in 1973-74 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area (Fig. 26-1) is underlain predominantly by mafic volcanic rocks that are intruded by a medium- to coarse-grained diorite and granodiorite plutons (Podolsky, 1951). The mineralization occurs adjacent to the intrusive contact.

#### MINERALIZATION:

Hage (1944) indicates the presence of quartz veins at Location 26 and on an adjacent island to the west (Fig. 26-1). Trace pyrite occurs in the quartz vein at occurrence 26.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; single vein

#### REFERENCES:

A.F. 92020, 90476

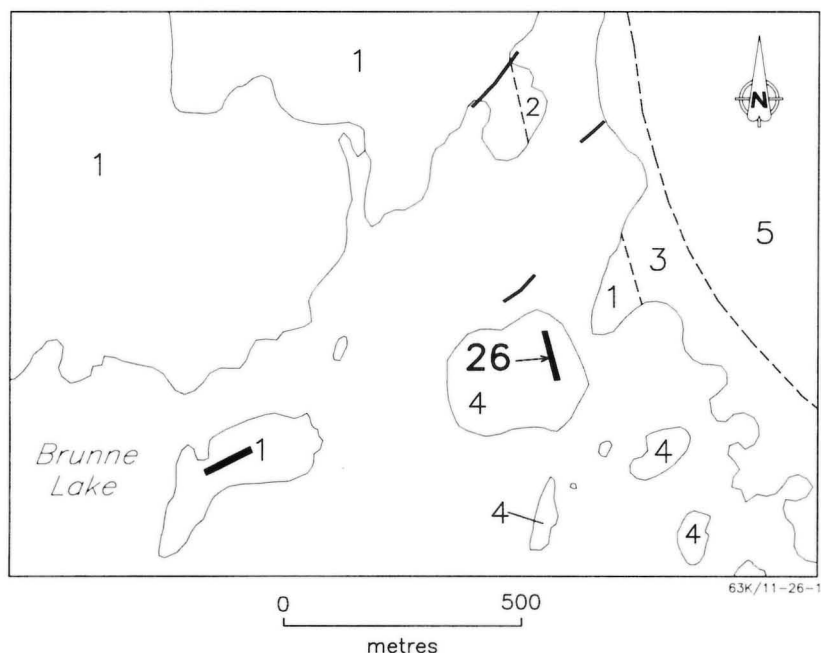
Manitoba Energy and Mines, Mines Branch.

Hage, C. O.

1944: Geology of the Gurney Gold Mine Area, Manitoba; Precambrian, Vol. 17, No. 4, pp. 5-7, 25

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



5 Gneissic biotite granite

4 Quartz diorite and biotite hornblende diorite

3 Porphyritic diorite and granodiorite

2 Hornblende and hornblende gneiss

1 Volcanic rocks and diorite

----- Geological boundary (approximate)

Geology after Podolsky (1951).

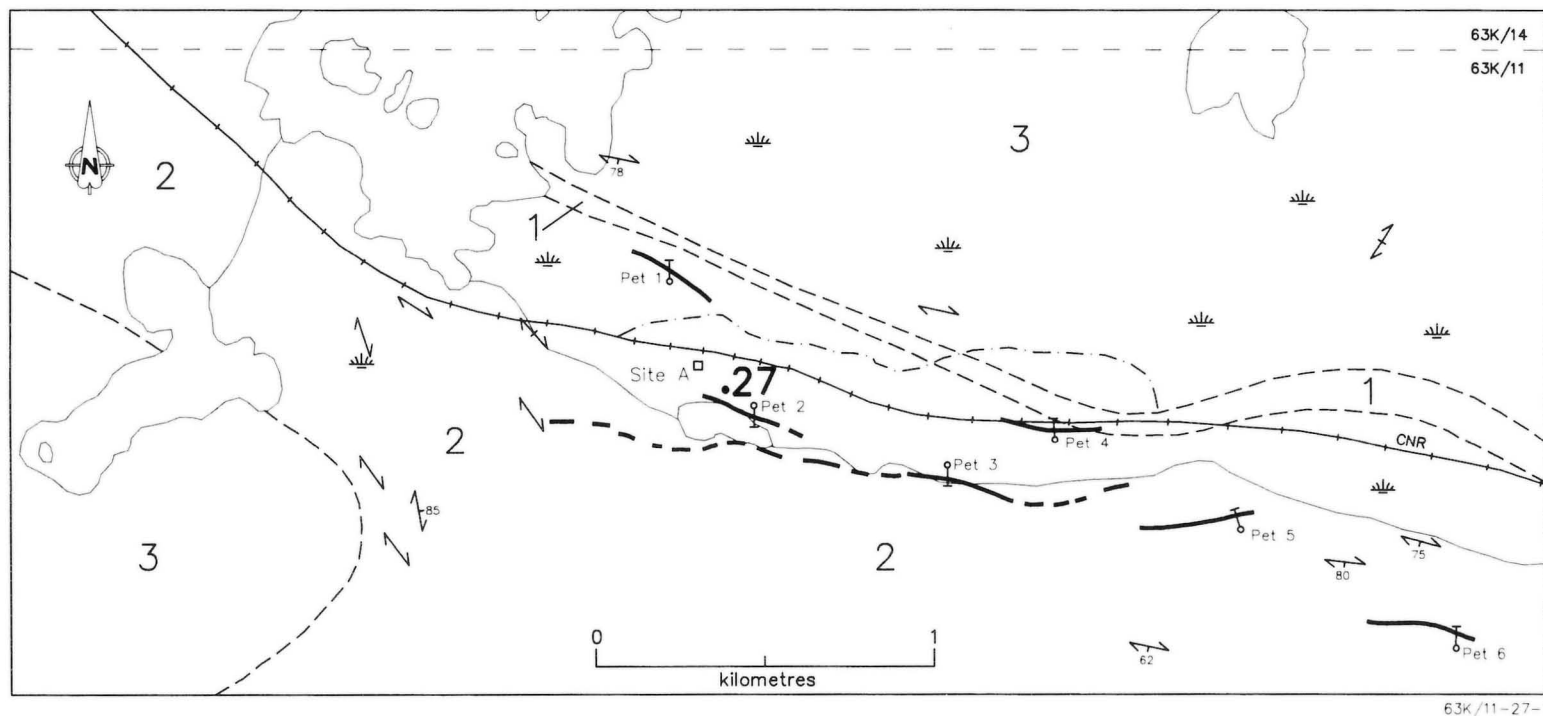
———— EM conductor (A.F. 90476)

———— Quartz vein

26

Occurrence location

Figure 26-1: Geological setting and geophysical conductors in the vicinity of occurrence 26.



3 Medium grained, pink, faintly gneissic biotite granite

2 Medium grained, porphyritic diorite, granodiorite

Amisk Group

1 Greenstone and diorite

----- Geological boundary (approximate)

Geology after Podolsky (1951).

80 75 62 Foliation (inclined, vertical, dip unknown)

--- EM conductors (A.F. 90476)

○ Pet Drill holes (A.F. 90294)

- - - - - Trail

Swamp

**27.** Occurrence location

Figure 27-1: Geological setting and location of drill holes and geophysical conductors in the vicinity of occurrence 27.



**LOCATION: 27**

**NAME:** (Drill indicated mineralization)

**UTM:** 6067983N/367233E

**ACCESS:** Via bush aircraft or ATV along abandoned railway line

**AREA:** East of Copper Lake

**AIRPHOTO:** A26364-14, A26327-260

**EXPLORATION SUMMARY:**

The property was staked in 1964 by J. Michalchuk as part of the Pet group of claims. HBED conducted a HLEM survey during the winter of 1964-65 (A.F. 90476). Six holes were drilled on the property (A.F. 90294). A trench was noted at Site A (A.F. 90294).

**GEOLOGICAL SETTING:**

The area is underlain by medium grained porphyritic diorite and granodiorite (Podolsky, 1951). The drill cores consist mainly of quartz-hornblende  $\pm$  plagioclase  $\pm$  mica gneisses and hornblende-mica (biotite) schist, and tonalite; drill logs are available for DDH Pet 1, -2, -3 (A.F. 90294).

**MINERALIZATION:**

DDH Pet 1 (Fig. 27-1) intersected 3.7 m of 5-10% pyrite and 2-5% pyrrhotite. DDH Pet 2 intersected a 1.1 m section of 10% pyrrhotite and a 30 cm section of 10% pyrite. A 30 cm section in DDH 3 contained 30% pyrrhotite. Minor pyrite and pyrrhotite are exposed at Site A.

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Disseminated mineralization - not classified.

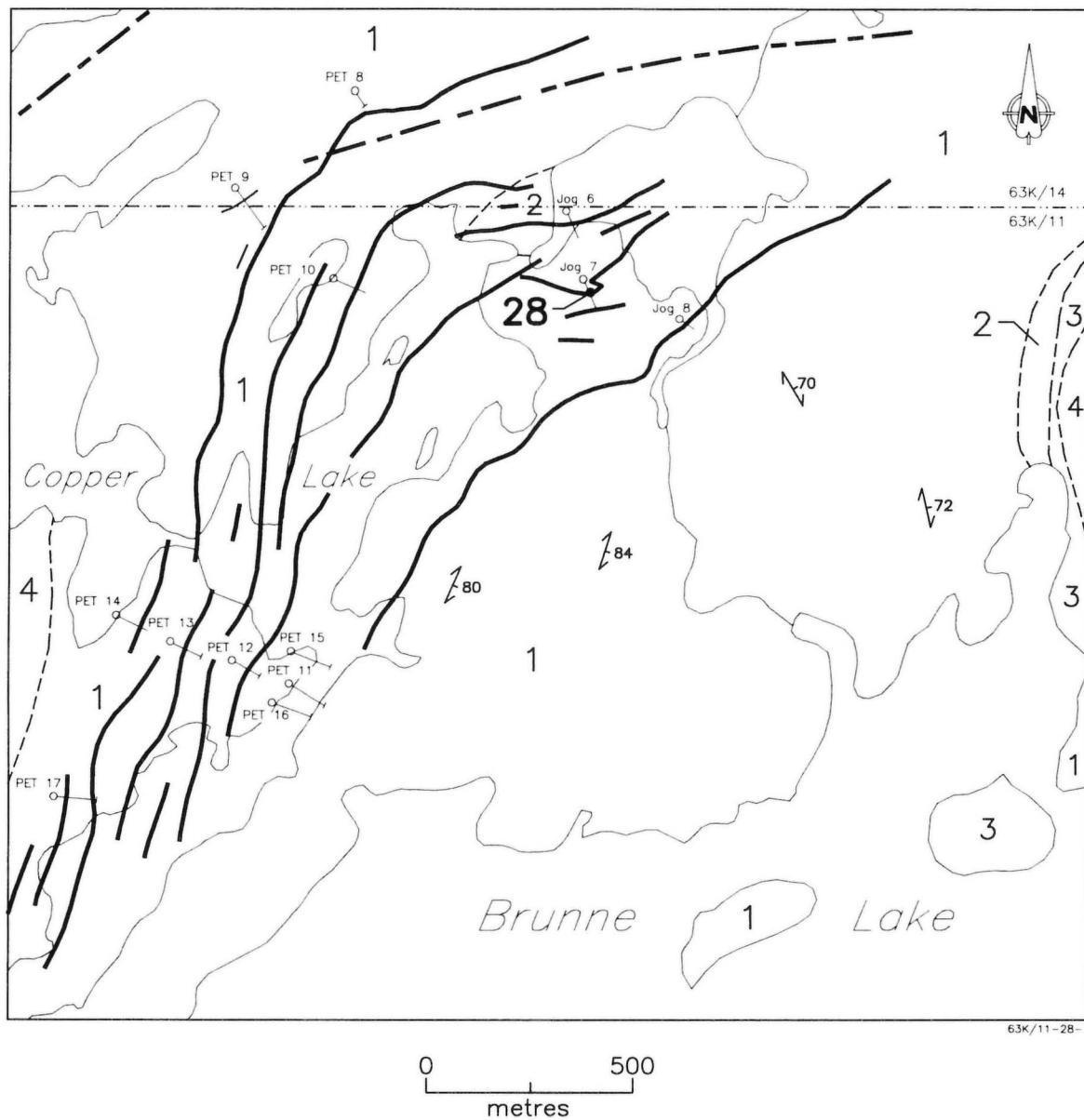
**REFERENCES:**

Assessment Files 90294, and 90476

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



- 4 Gneissic biotite granite
- 3 Porphyritic diorite and granodiorite
- 2 Hornblendite and hornblende gneiss
- 1 Volcanic rocks and diorite

---- Geological boundary  
(approximate)

↘<sup>70</sup> Foliation (inclined)

Geology after Podolsky (1951).

— EM conductor  
(A.F. 90476)

- - - Fault

Drill holes  
Jog (A.F. 90289)

Pet (A.F. 90294)

**28** . Occurrence location

Figure 28-1: Geology and location of drill holes and geophysical conductors at occurrence 28.

LOCATION: 28

NAME: (Drill indicated mineralization)  
UTM: 6068631N/362762E  
ACCESS: Via bush aircraft

EXPLORATION SUMMARY:

In 1955 Nu Cop Mines Ltd. conducted an EM survey and drilled three holes totalling 257 m (A.F. 90289). In 1965 HBED conducted a HLEM survey (A.F. 90476) and drilled a number of holes (A.F. 90294). The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-74 (A.F. 92020).

GEOLOGICAL SETTING:

The area (Fig. 28-1) is shown as underlain by both volcanic and sedimentary rocks by Hage (1944), but only volcanic rocks were noted by Podolsky (1951) and McGlynn (1959). The drill logs for DDH Jog 6, Jog 7 and Jog 8 note the rock types as greenstone, tuff and porphyry.

MINERALIZATION:

DDH Jog 7 intersected four layers of near solid to solid pyrite and pyrrhotite in core intervals of 2.4 m, 11.6 m, 15.8 m and 9.1 m. DDH Jog 6 and Jog 8 intersected minor to moderate pyrite and pyrrhotite and trace chalcopyrite (DDH Jog 6). A 3.3 m interval of quartz with trace pyrite was intersected in DDH Jog 6 (A.F. 90294). The 11.6 m intersection in DDH Jog 7 was zoned with an upper 2.4 m interval of pyrite overlain by a mixture of pyrite and pyrrhotite. DDH Pet17 intersected several pyritic and graphitic layers (A.F. 90294). Wallace (1920) reports:

*'on the east side of the lake a series of iron bands has been prospected, and is found to extend southwestwards along the west side of Brunne Lake. Pyrite and pyrrhotite in varying proportions have replaced the greenstone schist and felsite in bands not uncommonly over a hundred feet in width.*

AREA: Copper Lake  
AIRPHOTO: A26363-228, A26363-271

*As a rule, the pyrite is considerably in excess of the pyrrhotite. On the Wandigo property an open quarry exposes an iron band on one side, the total width of the band being at least a hundred feet. Further east on the Bendigo and Hassett properties, bands of quartz are found in the iron dykes, the quartz carrying somewhat abundant pyrite. The leaching has been extensive and in low ground ochre has accumulated at the bottom of the shallow ponds.' p. 31.*

The location of the Wandigo, Bendigo and Hassett properties is not known, but probably occur in the general area of Occurrence 28).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

Assessment Files 90289, 90294, 90476 and 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

Wallace, R. C.

1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.

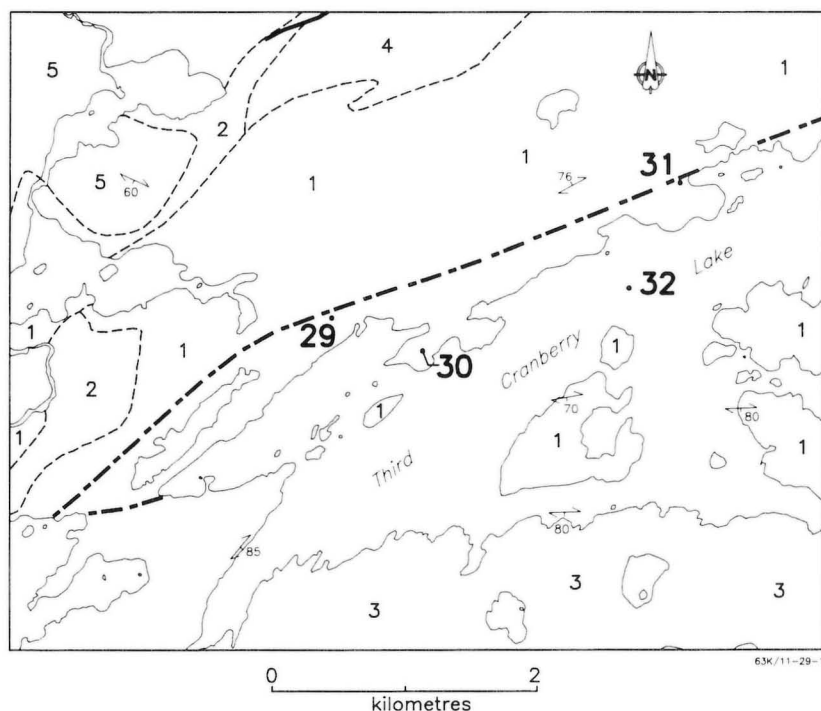


Figure 29-1: Geological setting of occurrences 29, 30, 31 and 32.

- 5 Quartz diorite and biotite hornblende diorite
- 4 Porphyritic diorite and granodiorite
- 3 Epidote biotite-hornblende granite-gneiss and epidote-biotite granite-gneiss, granitized gneisses derived from greenstones
- 2 Hornblende and hornblende gabbro
- 1 Volcanic rocks and diorite
- Geological boundary (approximate)
- Geology after Podolsky (1951).
- Fault
- 70° Foliation (inclined)
- 29.** Occurrence location

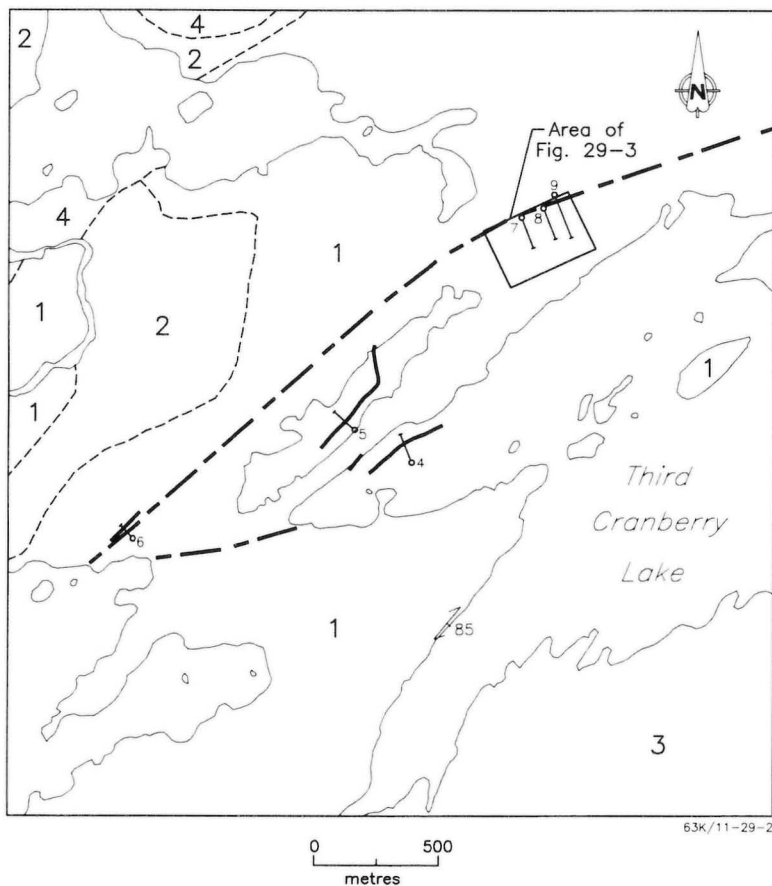


Figure 29-2: Location of drill holes in the vicinity of the Jupiter occurrence.

- 4 Quartz diorite and biotite hornblende diorite
- 3 Epidote biotite-hornblende granite-gneiss and epidote-biotite granite-gneiss, granitized gneisses derived from greenstones
- 2 Hornblende and hornblende gabbro
- 1 Volcanic rocks and diorite
- Geological boundary (approximate)
- 70° Foliation (inclined)
- Geology after Podolsky (1951).
- EM conductor (A.F. 92020)
- Fault
- Drill hole (A.F. 90286)

LOCATION: 29

NAME:

UTM: 6063166N/364496E

ACCESS: Via boat from Cranberry Portage

AREA: West end of Third Cranberry Lake

AIRPHOTO: A26363-275

#### EXPLORATION SUMMARY:

The Copper Mine claim was recorded in 1918 by Jacob Cook. In 1922 the claim was transferred to Copper Lake Mining Company Ltd. Lease 745 was recorded in 1926 and cancelled in 1951 (M.I. Card 63K11 Cu4).

The Jupiter claims were staked over the property in 1951 by T.R. Webb who drilled 8 holes, totalling 427 m, during 1951 to 1953 (A.F. 90286, 90287). The property was optioned to HBED who drilled 3 holes, totalling 594 m, in 1955 (A.F. 90287). HBED also conducted a HLEM survey over the adjacent Bow claims in 1954-55 (A.F. 90286). The area was staked in 1970, and nine holes, totalling 208 m, were drilled and 11 trenches were blasted (A.F. 91491).

The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-74 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area is underlain predominantly by mafic volcanic rocks (Fig. 29-1). A regional fault has been identified in the vicinity of the mineralization (Podolsky, 1951). The drill cores (Fig. 29-2) contained mostly andesitic rocks, but intersections of rhyolitic and dacitic rocks are also noted in the core logs (A.F. 91491).

#### MINERALIZATION:

Malachite stained sulphide veins have been exposed in several trenches (Fig 29-3) cut into dioritic and fine grained mafic volcanic rocks. Dissemination's of chalcopyrite, bornite and pyrite are also exposed in several trenches (A.F. 91491). DDH OT-6 intersected 73 cm of fine- to medium-grained andesite with trace to 1% chalcopyrite and trace to 1% pyrite. DDH OT-7 and T2-1 intersected similar mineralization and up to 1% magnetite over several core intervals of 15-150 cm (Fig. 29-3).

DDH 7, 8 and 9 intersected a number of narrow sections with trace chalcopyrite and pyrite and several cm thick veins of solid chalcopyrite. DDH 5 intersected 1.7 m of black chloritic schist with minor pyrite, pyrrhotite, chalcopyrite and graphite. DDH 6 intersected 2.2 m of graphitic schist with minor pyrite (A.F. 90287).

#### GEOCHEMICAL DATA:

Grab samples from the trenches contained up to 16% Cu. One 30 cm section contained 16.02% Cu (Fig. 29-3; A.F. 91491).

#### CLASSIFICATION:

Vein type deposit; multiple veins. This mineralization is probably the result of sulphide mobilization adjacent to a fault zone.

#### REFERENCES:

Assessment Files 91491, 92020, 90286 and 90287

Manitoba Energy and Mines, Mines Branch.

Mineral Inventory Card 63K/11 Cu4

Manitoba Energy and Mines, Geological Services Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

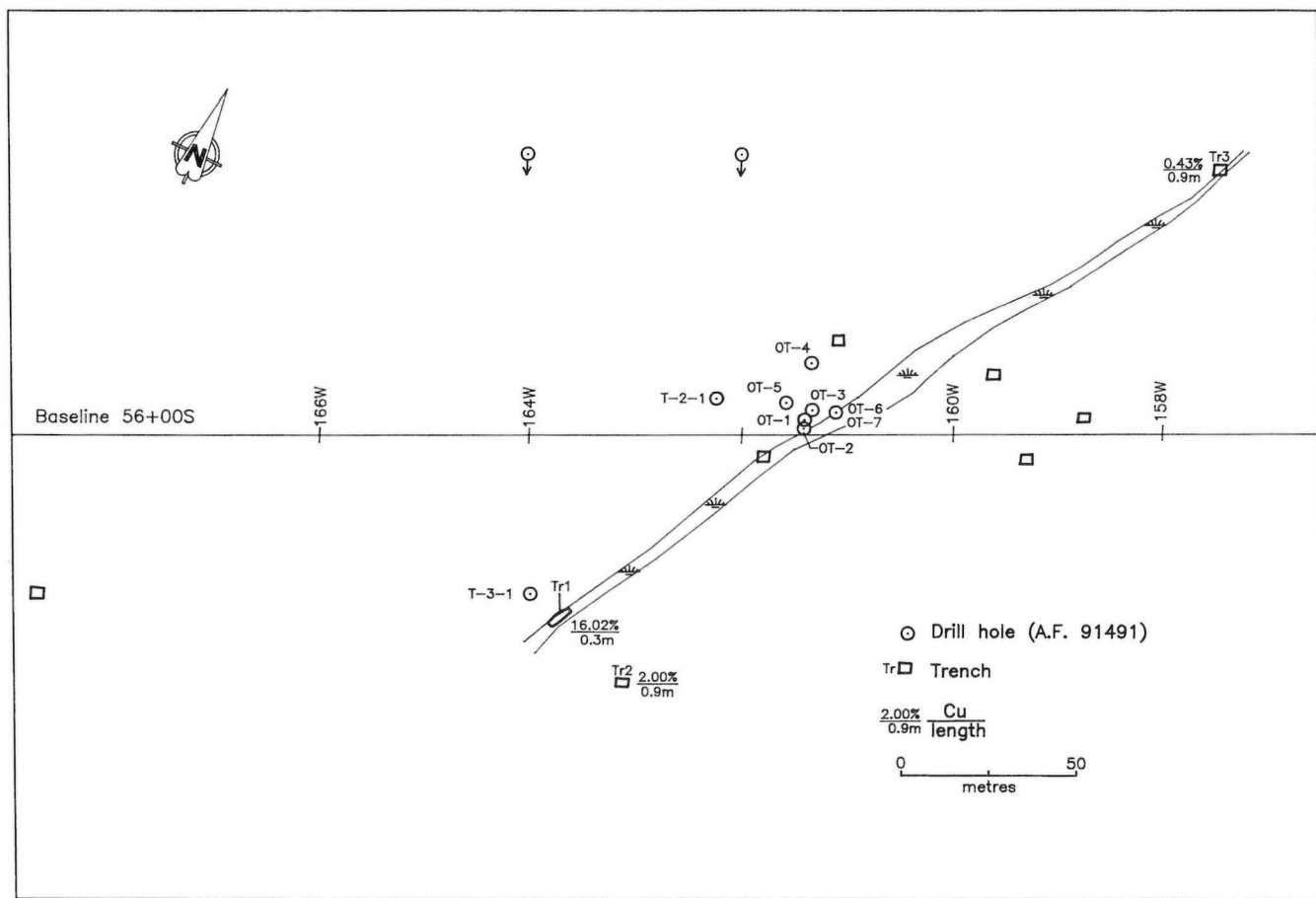


Figure 29-3: Location of trenches and drill holes at the Jupiter occurrence.

LOCATION: 30

NAME: Oneida

UTM: 6062901N/365245E

ACCESS: Via boat from Cranberry Portage

AREA: Third Cranberry Lake (Fig. 29-1)

AIRPHOTO: A26364-11

#### EXPLORATION SUMMARY:

The Big Vane claim was staked in this area by S. Simpson in 1924. T.R. Webb staked the King claims in 1943 and transferred the claims to Oneida Prospecting Syndicate in 1944. Surface work included trenching and sampling of three veins. A drill program was planned (Oneida Prospecting Syndicate, Corporation File), but ownership of the claims was passed to Sooneyaw Gold Mines Ltd. in 1945 and no further work was undertaken (M.I. Card 63K/11 Au8). The area was staked as the Coweca claims in 1949 by T.R. Webb who drilled one 61 m hole in 1953 (A.F. 90287). HBED optioned the property in 1954, conducted a HLEM survey (A.F. 90286) and drilled 3 holes (A.F. 90287). A regional AMAG and AEM survey was conducted over the property by Sherritt Gordon Mines Ltd. in 1973-74 (A.F. 92020). The area was under claim to Granges Exploration Aktiebolag during 1978-83 and a HLEM survey was conducted in 1979 (A.F. 92405). Twelve trenches were located on 'Vein 1'; these range from 1 to 16 m in length and expose the zone for a distance of 130 m.

#### GEOLOGICAL SETTING:

Massive to pillowed mafic volcanic rocks in this area (Fig. 29-1) have been intruded by mafic to felsic plutons (Podolsky, 1951). A 10-30 m thick schistose zone in the volcanic rocks strikes 246°/80°NW along the south face of a prominent ridge. The rocks in the schistose zone are banded due to alternating discontinuous quartz and rusty weathered layers that are less than 1 cm thick; they appear to be tectonically derived. DDH 3 (Fig. 30-1) intersected chloritic schist, graphitic schist and mafic volcanic rocks. The drill log for DDH 1 is not available (A.F. 90285). Chloritic volcanic rocks and three quartz veins were exposed in trenches (Oneida Prospecting Syndicate, Corporation File; A.F. 90287).

#### MINERALIZATION:

Surface work revealed three veins (Oneida Prospecting Syndicate, Corporation File). The hole drilled by T.R. Webb in 1953 intersected only minor amounts of sulphide in a porphyry (A.F. 90287). DDH 3 (Fig. 30-1) intersected chloritic

and graphitic schist with moderate amounts of pyrite and a 1 m thick quartz vein with trace pyrite. In most of the trenches along vein 1 the quartz occurs as 0.5 to 1.0 cm slivers within chlorite schist that locally may constitute up to 50% of the rock. Locally, up to 50% of the vein material is pink-brown weathered carbonate. Up to 4% of the rock consists of pyrite+/-magnetite as very fine grained dissemination's. Fine grained pyrite crystals occur within, or at the margins, of quartz slivers and medium grained pyrite crystals are disseminated throughout the rock.

DDH 2 intersected minor amounts of pyrite and trace amounts of chalcopyrite in chloritic and graphitic schist. Quartz and carbonate veinlets occur throughout the sheared and schistose volcanic rocks (A.F. 90287).

#### GEOCHEMICAL DATA:

Grab samples from surface exposures of the three veins contained up to 46 g/t Au. A channel sample from vein 1 contained 6.17 g/t Au (Oneida Prospecting Syndicate, Corporation File).

#### CLASSIFICATION:

Vein type deposit; multiple veins. This mineralization is associated with a zone of regional deformation.

#### REFERENCES:

Assessment Files 92020, 90286, 90287 and 92405

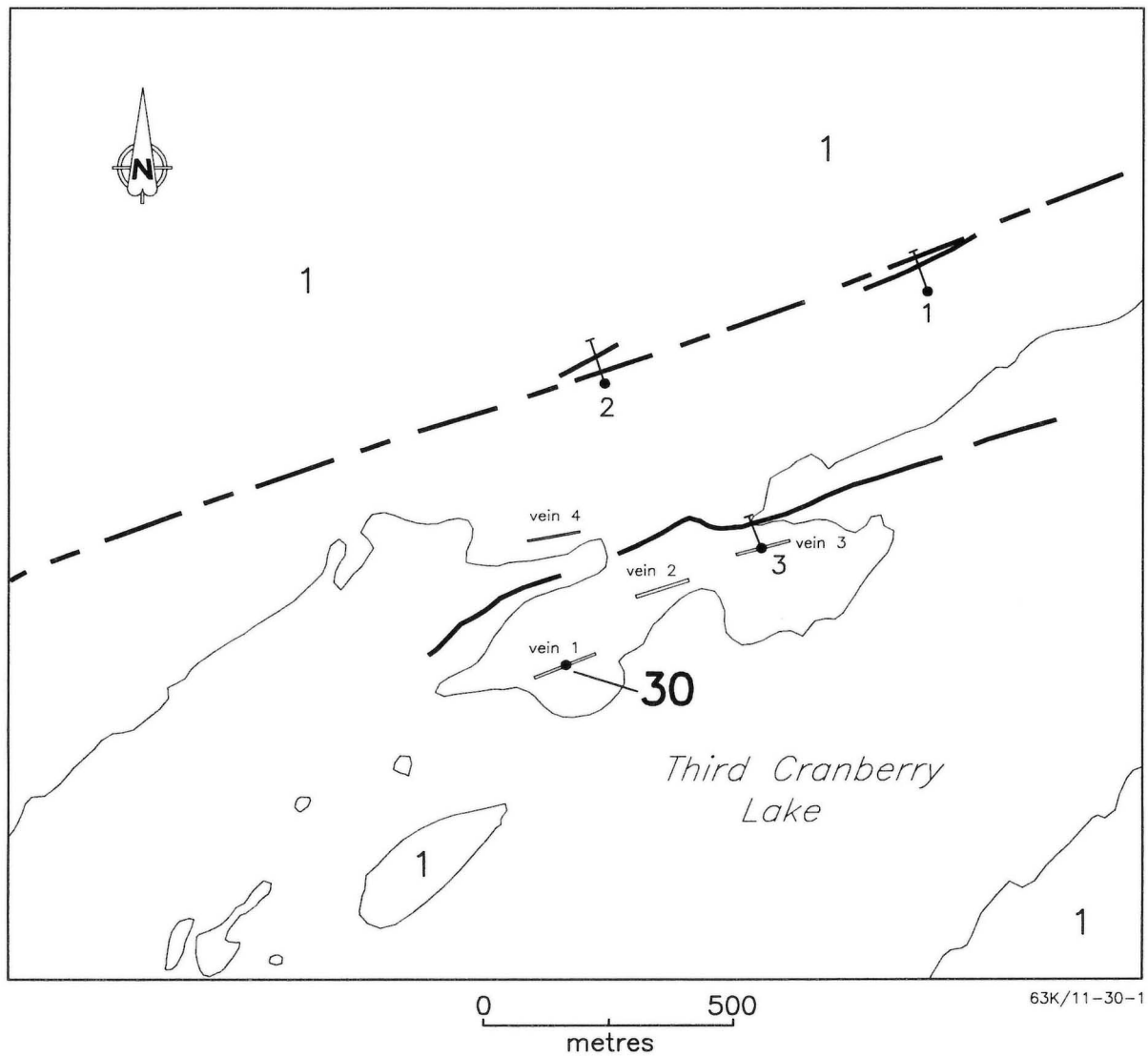
Manitoba Energy and Mines, Mines Branch.

Mineral Inventory Card 63K/11 Au8


Manitoba Energy and Mines, Geological Services Branch.


Podolsky, T.

1951: Cranberry Portage (east half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



1 Volcanic rocks and diorite  
Geology after Podolsky (1951).

 Quartz vein

 EM conductor  
(A.F. 92405)

 Fault

 Drill hole (A.F. 90286)

**30 .** Occurrence location

Figure 30-1: Location of drill holes and geophysical conductors at the Oneida occurrence.



LOCATION: 31

NAME:

UTM: 6064184N/367203E

ACCESS: Via boat

AREA: North shore, Third Cranberry Lake (Fig. 29-1)

AIRPHOTO: A26327-262

#### EXPLORATION SUMMARY:

The western part of the area was staked as the Coweca 6 claim by T. R. Webb in 1949 who drilled a 61 m hole in 1953 (A.F. 90287). The eastern part was staked as the Juno group of claims in 1951 and 1953 by T.R. Webb. In 1955 HBED conducted a HLEM survey (A.F. 90286) and drilled four holes totalling 489 m (A.F. 90291). During the period 1957-1963 T.R. Webb drilled 13 holes totalling 656 m (A.F. 90290, 90296). The area was included in a regional AMAG and AEM survey conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area is underlain by mafic to intermediate volcanic flows with related fragmental volcanic and intrusive rocks. A regional east-northeast trending fault (Fig. 29-1) has been delineated in the proximity of the occurrence (Podolsky, 1951). The drill log for DDH 12 (Fig. 31-1), which appears to intersect this fault from the north, records an abrupt change downwards from epidotized, predominantly amygdaloidal, intermediate flows to chloritic intermediate flows (A.F. 90291). The drill log for DDH 11, which was collared south of the fault and drilled towards the south, records a zone of graphitic schist and minor chloritic schist that are overlain by rhyolite with carbonate veins and subordinate coarse grained andesite, which are underlain by chloritic and carbonatized schist (A.F. 90291).

#### MINERALIZATION:

DDH 11 intersected 7.9 m of graphitic schist with minor amounts of pyrite. The logs for DDH 10 and 12 record only trace amounts of chalcopryrite, pyrite and pyrrhotite in several short core sections (A.F. 90291). The drill logs for the holes drilled for T.R. Webb note 'mineralized andesite' and 'greenstone with stringers of quartz' (A.F. 90290, 90296).

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified.

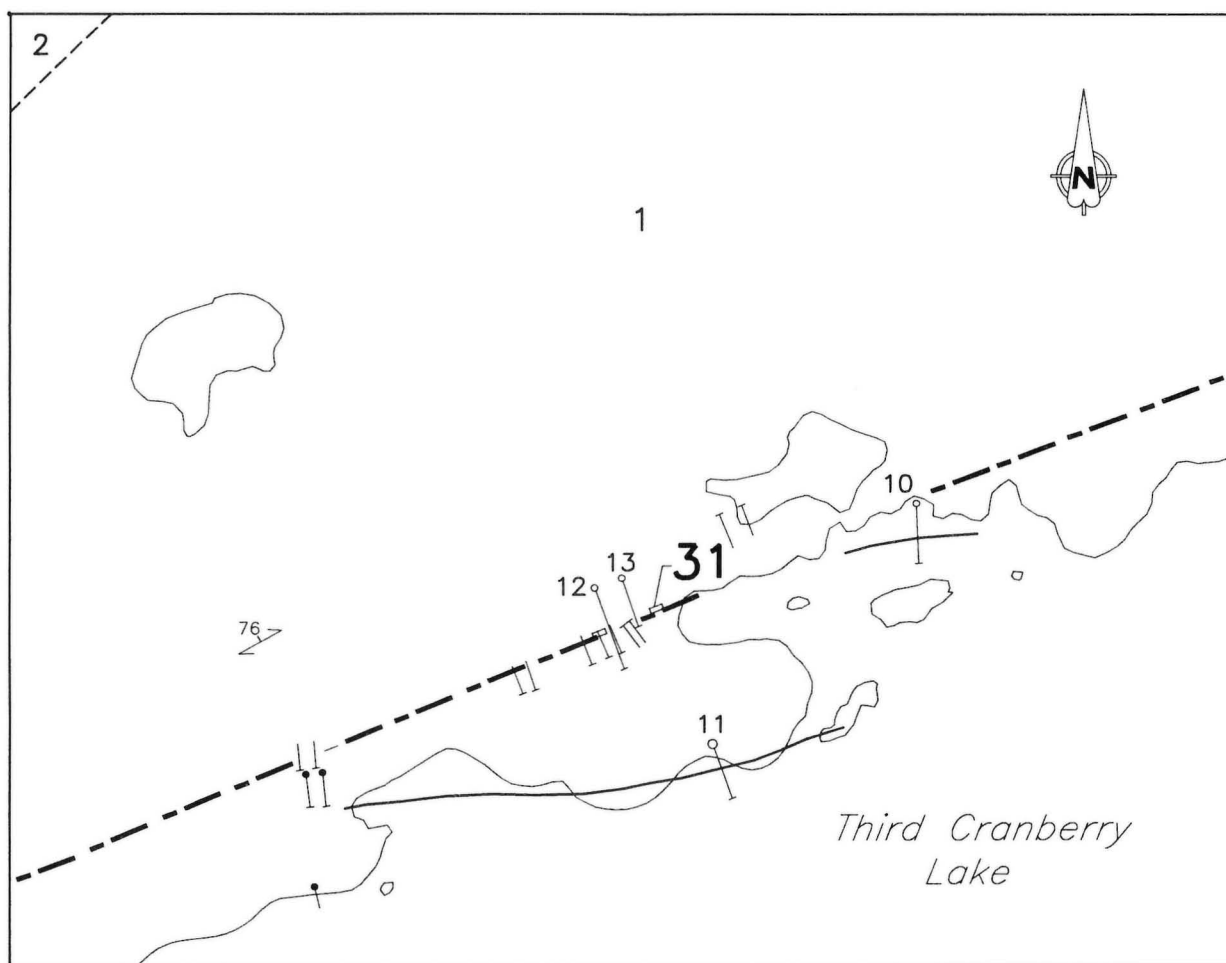
#### REFERENCES:

Assessment Files 90286, 90287, 90290, 90291, 90296, 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale (Half), Manitoba; Geo-



63K/11-31-1

0 500  
metres

2 Porphyritic diorite and  
granodiorite

1 Volcanic rocks and diorite

----- Geological boundary  
(approximate)

70° Foliation (inclined)

Geology after Podolsky (1951).

—— EM conductor  
(A.F. 92020)

--- Fault

Drill holes

• (A.F. 90287)

— (A.F. 90290)

○ (A.F. 90291)

—• (A.F. 90296)

□ Trench

**31** Occurrence location

Figure 31-1: Location of drill holes at occurrence 31.

**LOCATION: 32**

**NAME:** (Drill indicated mineralization)  
**UTM:** 6063347N/366812E  
**ACCESS:** Via boat from Cranberry Portage

**EXPLORATION SUMMARY:**

HBED conducted a HLEM survey of the Auric claims in 1955 and 1956 (A.F. 90285). Two holes were drilled; one was stopped in overburden and the other was drilled to 101 m (A.F. 90285). The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-74 (A.F. 92020). The area was staked in 1978 for Granges Exploration Ltd.; one hole was drilled to 152 m depth (A.F. 92046).

**GEOLOGICAL SETTING:**

The area (Fig. 29-1) is underlain by mafic volcanic rocks that locally consist of pillowed flows (Podolsky, 1951). DDH 14 (Fig. 32-1) intersected mostly graphitic schist (A.F. 90285). Andesitic rocks, quartz-feldspar porphyry, aplite and a dacitic tuff were also noted in the drill log for DDH 81 (A.F. 92046).

**MINERALIZATION:**

DDH 14 intersected approximately 80 m of graphitic schist with minor pyrite and 52 cm and 60 cm sections of near solid pyrite near the end of the drill hole (A.F. 90285). DDH 81 intersected graphitic schist with minor pyrite (A.F. 92046).

**AREA:** Third Cranberry Lake (Fig. 29-1)  
**AIRPHOTO:** A26364-10

**GEOCHEMICAL DATA:**

Six core samples from DDH 14 contained trace Cu, Zn, Ag and Au (A.F. 92046).

**CLASSIFICATION:**

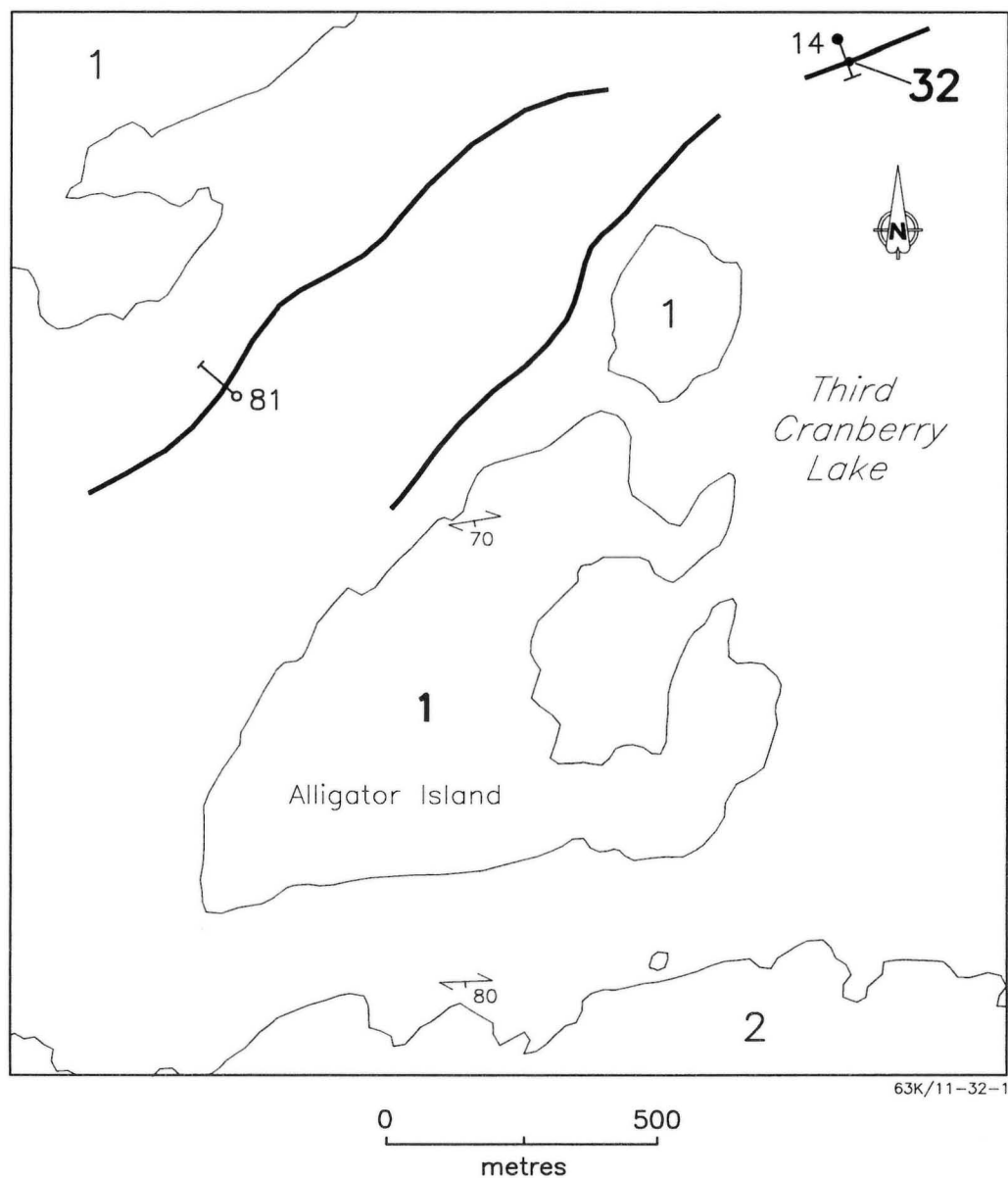
Chemical sediment type deposit; sulphide facies iron formation.

**REFERENCES:**

Assessment Files 90246, 90285, 92020  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



2 Epidote biotite-hornblende  
granite-gneiss and  
epidote-biotite granite gneiss,  
granitized gneisses derived from  
greenstones

1 Volcanic rocks and diorite

$70^\circ$  Foliation (inclined)

Geology after Podolsky (1951).

— EM conductor  
(A.F. 92020)

Drill holes

⊥• (A.F. 90285)

⊥○ (A.F. 92046)

**32.** Occurrence  
location

Figure 32-1: Location of drill holes at occurrence 32.

LOCATION: 33

NAME: Simpson Bay  
UTM: 6062959N/369188E  
ACCESS: Via boat

AREA: Third Cranberry Lake  
AIRPHOTO: A26327-263

#### EXPLORATION SUMMARY:

The property was staked by S. Simpson in 1932 and again in 1936. In 1936 the property was optioned to Simpson Bay Mining Syndicate Ltd. who conducted surface work. By the end of 1937 ten trenches had been excavated and channel sampled. Drillers and Explorers Ltd. optioned the property in 1938 and in 1939 drilled 4 holes (M.I. Card 63K/11 Au5). The occurrence was described by Holloway (1939) who indicated that some drilling had been performed.

The property was staked in 1952 and optioned in 1953 to HBED who conducted a HLEM survey during 1955-56 (A.F. 90285). Red Earth Energy Ltd. optioned the property and conducted a search for old gold workings in 1983, but found only one pit (A.F. 92598).

The property was staked in 1985 by Ray-Dor Resources Ltd. and optioned to HBED in 1987. Trenches and pits occur along a strike length of approximately 100 m. Three holes were drilled on this zone by HBED in 1988-89 (B. Burbidge, written comm., 1990); a number of other holes were drilled in the vicinity (Fig. 33-1, A.F. 90285).

#### GEOLOGICAL SETTING:

The area (Fig. 33-1) is underlain predominantly by mafic volcanic rocks that are in part pillowed flows (Podolsky, 1951). A northwest-striking shear zone follows and post dates the quartz lenses, which strike 035° and dip 70° east.

#### MINERALIZATION:

Discontinuous lenses of grey-white quartz up to 1 m thick are exposed in the trenches. The quartz veins and the enclosing pillow lava have a well developed cleavage. The largest vein is generally less than 1 m thick, but locally composite veins give an overall zone of quartz vein and sheared material that is up to 5 m thick; in contrast, where the quartz

vein is absent the 'shear zone' is about 20 cm thick. Minor pyrite and free gold occur in the quartz lenses. Holloway (1939) noted that the property had been drilled and that another quartz vein approximately 360 m to the east had been drilled and exposed in pits for 130 m. This easternmost vein is 30 cm thick, occurs in a 2.5 m shear zone that is orientated at 045°/90° and is adjacent to a 6 m thick porphyritic mafic flow (Holloway, 1939).

#### GEOCHEMICAL DATA:

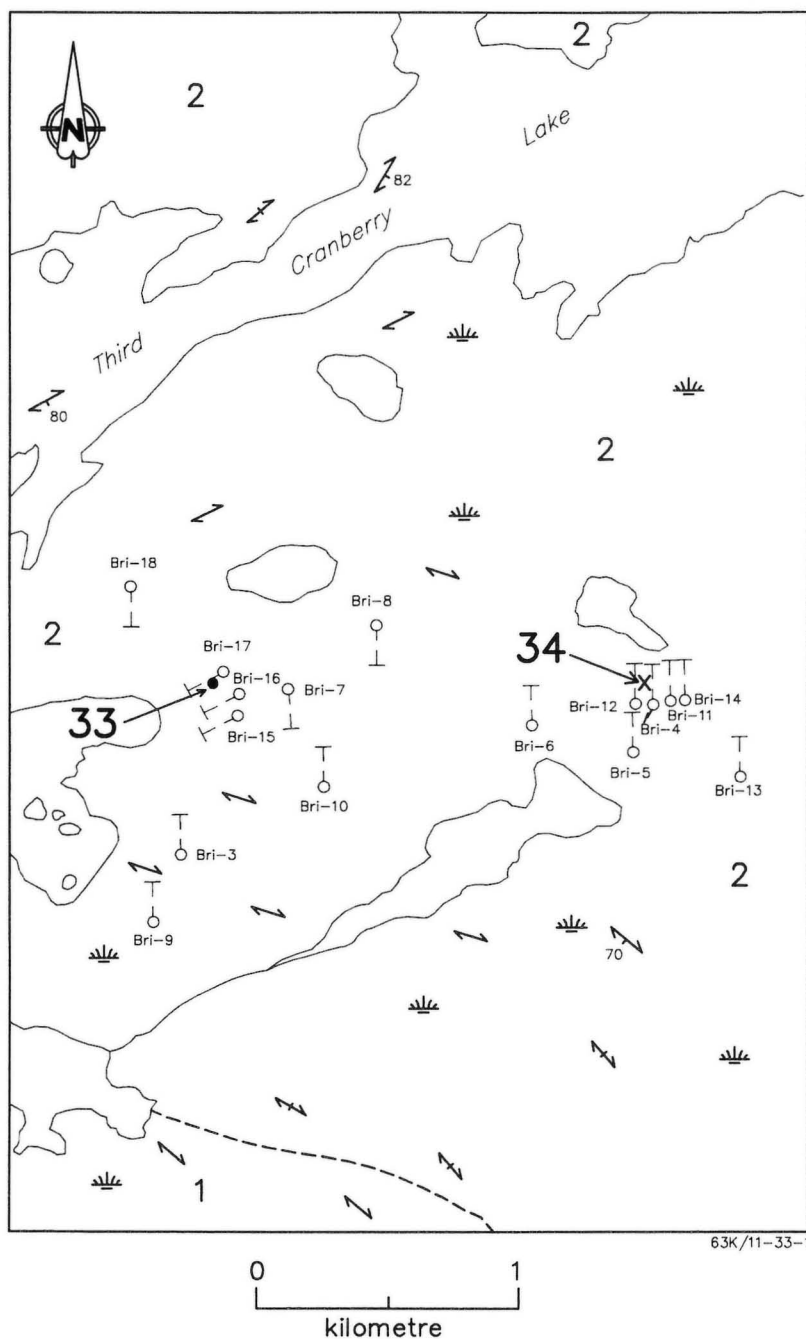
'High grade' gold assays have been obtained from the Simpson Bay occurrence (B. Murray, pers. comm. 1990).

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

- Assessment File 90285 and 92598  
Manitoba Energy and Mines, Mines Branch.
- Mineral Inventory Card 63K/11 Au5  
Manitoba Energy and Mines, Geological Services Branch.
- Holloway, J. M.  
1939: Sulgrave and Stutchfield M.C.'s, report 2p. Manitoba Energy and Mines, Geological Services, unpublished files.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



Amisk Group

2 Greenstone and diorite

Archaean or Proterozoic

1 Medium grained epidote-biotite  
granite-gneiss, in places  
garnetiferous

----- Geological boundary  
(approximate)

Geology after Podolsky (1951).

82 Foliation (inclined, vertical,  
dip unknown)

—○ Bri Drill holes (A.F. 90285)

Swamp

**33.** Occurrence location

Figure 33-1: Location of the Simpson Bay (33) and Sulgrave (34) occurrences.

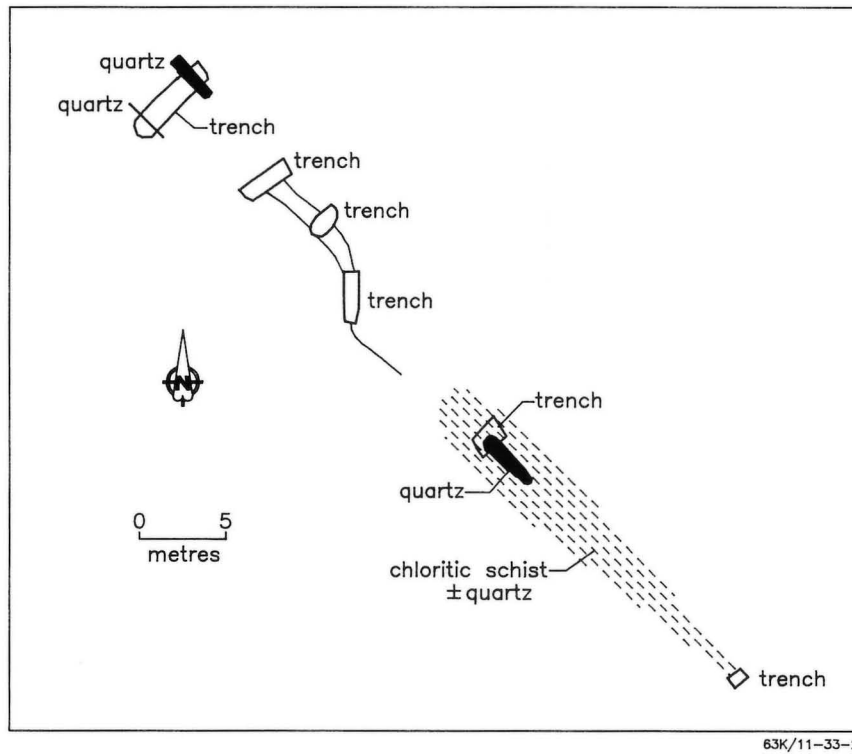


Figure 33-2: Sketch map of trenches at the Simpson Bay occurrence.

LOCATION: 34

NAME: Sulgrave  
UTM: 6062942N/370840E  
ACCESS: Via boat

AREA: Third Cranberry Lake (Fig. 33-1)  
AIRPHOTO: A26327-210

#### EXPLORATION SUMMARY:

The Roger claim was staked in 1924 by R.M. Stitt and restaked as the Sulgrave and Stutchfield claims in 1932 by W.H. Wilson who conducted trenching in the area until 1938. One of these trenches measured 3x3x5 m (Holloway, 1939; M.I. Card 63K/11 Au9). The Auric claims were staked over the area by G.W. Jones and assigned to D. Banks in 1953. The property was optioned to HBED in 1955 and a HLEM survey was conducted in 1955-56; a number of holes were drilled in the vicinity of the occurrence (A.F. 90285). A claim block was staked for Canadian Nickel Co. Ltd. in 1969, the Bear I claim was staked for Nor-Acme Gold Mines Ltd. in 1983 and the BRI 5 was staked for Ray-Dor Resources Ltd. in 1985 (M.I. Card 63K/11 Au9). The old trenches were not found during a search of the area, but probably occur in the vicinity of the Location shown on Figure 33-1.

#### GEOLOGICAL SETTING:

The area (Fig. 33-1) is underlain predominantly by mafic volcanic rocks that locally are pillowed flows (Podolsky, 1951). According to Holloway (1939) four quartz veins exposed on the property occur at the contact between mafic volcanic rocks and a granitic intrusion; the veins strike between 030°-040° and dip 70° NW.

#### MINERALIZATION:

Holloway (1939) described the main quartz vein as 1.5 to 1.8 m thick with pyrite, chalcopyrite, molybdenite and gold. Vein 3 was 1.5 m thick with coarse grained pyrite and gold; vein 4 was 0.6 m thick, had a strike of 012° and was similar to the other three veins (Holloway, 1939). Holloway's notes on the property are reproduced here:

*'The prospect on the Stutchfield, Sulgrave claims is located on the west shore of a small unmapped pot hole lake. Reported assay values were \$6.50 - 17.00 gold (old value) and 10 ounces silver. The average width of the quartz is 5 feet to 6 feet and 5 pits follow the vein for approximately 300 feet. The vein strikes N.30°-40°E and dips N70°. The quartz is white and vitreous and contains some pink felsite. The south wall of the vein is composed of an intimate mixture of greenstone and porphyritic lava. The north wall is a fine grained granite- part of a small granite boss approximately 200 feet by 300 feet that lies immediately north of the vein.'*

*The quartz contains abundant pyrite, some chalcopyrite and some molybdenite. Small quartz stringers occur in the granite and gold is reported to have been panned from them.*

*Another vein was uncovered along the south edge of the outcrop parallel to the main break. The main vein turns at its east end and assumes a strike of N.10°E before disappearing in overburden.*

*At a point 400 feet S.65°W. from the east end of this vein a pit 12 feet by 12 feet by 16 feet exposes a quartz vein striking N.10°E and dipping N.80°, which carries coarse pyrite. The vein is 5 feet wide occurs in a fine grained porphyritic lava. The north wall of the vein is slightly pyritized. An assay of \$17.00 is reported from this pit.*

*S.55.W from this point at a distance of 270 feet a small pit exposes a 2 foot quartz vein striking N.12°E similar in character and mineralization to the other two. This vein could not be traced for any distance.' (Holloway, 1939, p. 1)*

#### GEOCHEMICAL DATA:

Grab samples from these veins contained up to 28 g/t Au and 280 g/t Ag. A pyrite sample contained 4280 ppb Au (Holloway, 1939).

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

- Assessment File 90285  
Manitoba Energy and Mines, Mines Branch.
- Holloway, J.M.  
1939: Sulgrave and Stutchfield Mining Claims, NE 11/63K; Manitoba Energy and Mines, Unpublished Information File 63K/11NE.
- Mineral Inventory Card NTS 63K/11 Au9  
Manitoba Energy and Mines, Geological Services Branch.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



**LOCATION: 35**

**NAME:** (Drill indicated mineralization)  
**UTM:** 6061811N/367703E  
**ACCESS:** Via boat from Cranberry Portage

**AREA:** Third Cranberry Lake  
**AIRPHOTO:** A26327-263

**EXPLORATION SUMMARY:**

HBED conducted an HLEM survey over the Auric claims in 1955-56 (A.F. 90285). The area was staked for Granges Exploration AB in 1977-78, an HLEM survey was conducted in 1979 (A.F. 92409) and five holes, totalling 519 m were drilled in 1981 (A.F. 92406).

**GEOLOGICAL SETTING:**

The area (Fig. 35-1) is underlain predominantly by pillowed mafic lavas that have been intruded by a large mass of medium grained epidote-biotite granite gneiss (Podolsky, 1951). Graphitic schist was intersected in most of the drill holes and dacitic volcanic rocks were intersected in several drill holes (A.F. 92406).

**MINERALIZATION:**

DDH BE-83 intersected 2 m of near solid to solid pyrite in a cherty rock and near solid sulphide and graphitic schist that were interlayered with dacitic rocks. DDH BE-87 intersected 3.5 m of near solid pyrite within a dacitic rock with trace amounts of graphite. 'Earthy pyrite' layers were intersected in DDH BE-82 and BE-87 (A.F. 92406). White quartz veins with core lengths of 1.2 m and 0.6 m were intersected in DDH BE-85 (A.F. 92406).

**GEOCHEMICAL DATA:**

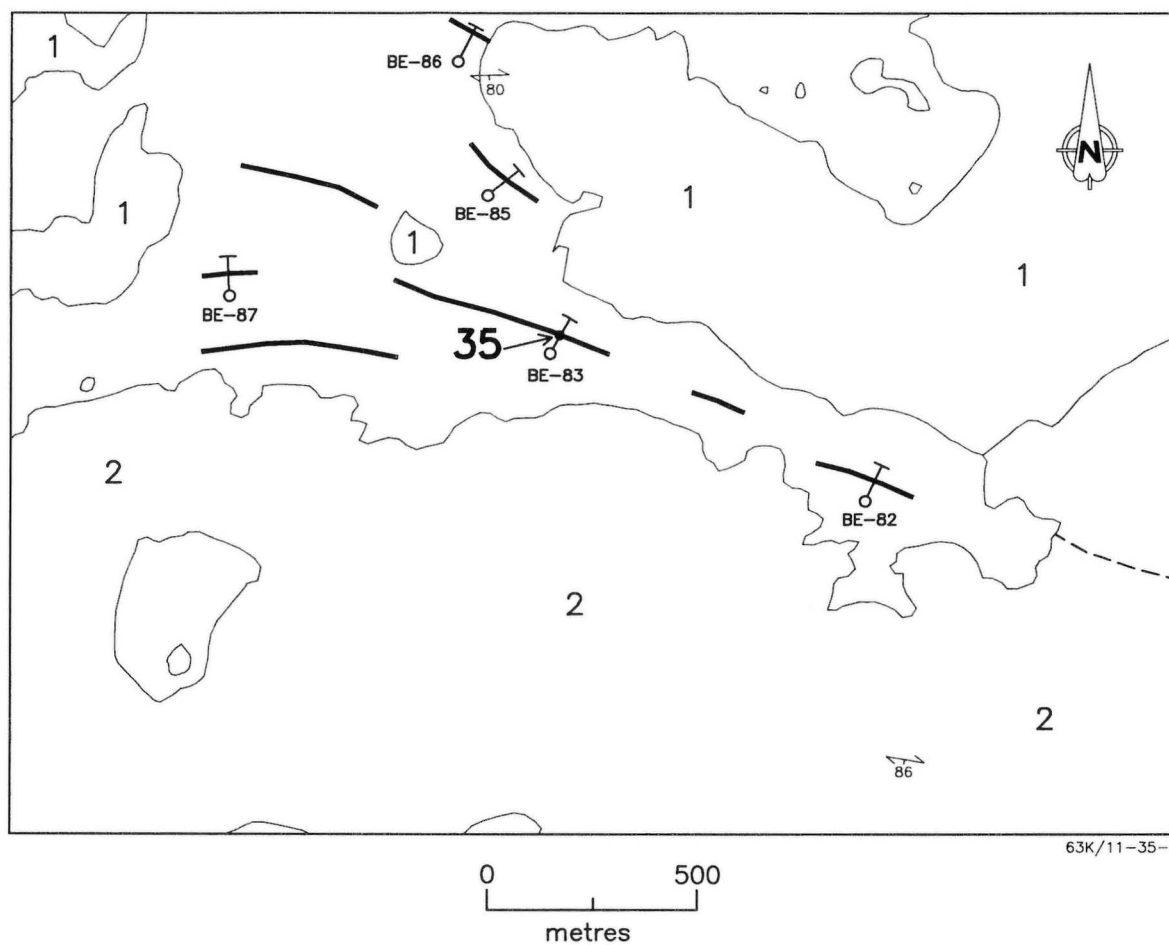
Trace Cu, Zn, Ag and Au were found in 60 drill core samples assayed (A.F. 92406).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation (DDH BE-83, -87) and graphite-bearing sulphide facies iron formation (DDH BE-82, -87).

**REFERENCES:**

Assessment Files 90285, 92406 and 92409  
Manitoba Energy and Mines, Mines Branch.  
Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



- 2 Epidote biotite-hornblende granite-gneiss and epidote-biotite granite-gneiss, granitized gneisses derived from greenstones
- 1 Volcanic rocks and diorite
- Geological boundary (approximate)
- 80  
Foliation (inclined)

Geology after Podolsky (1951).

— EM conductor (A.F. 92409)

BE — Drill hole (A.F. 92406)

**35.** Occurrence location

Figure 35-1: Location of drill holes at occurrence 35.

LOCATION: 36

NAME:

AREA: Third Cranberry Lake

UTM: 6062912N/367880E

#### EXPLORATION SUMMARY:

An shallow irregular shaped trench was blasted in a 4 m high hillside outcrop. Along the strike of a shear zone there are three small trenches. In 1988-89 HBED drilled a hole under the hillside outcrop (B. Murray, pers. comm., 1990).

#### GEOLOGICAL SETTING:

The area (Fig. 36-1) is underlain by mafic volcanic rocks (Podolsky, 1951). A 7 m thick zone of sheared, sericitized and carbonatized mafic rocks with several quartz-iron carbonate veins, up to 75 cm thick, can be traced across an outcrop for 50 m. The quartz vein exposed in a trench at Site A is probably the eastward extension of this shear zone (Fig. 36-1).

AIRPHOTO: A26327-263

ACCESS: Via boat

#### MINERALIZATION:

Approximately 1-2% pyrite is disseminated throughout the carbonatized rocks. The quartz vein at Site A contains minor pyrite.

#### GEOCHEMICAL DATA:

A 7 m chip sample of the carbonatized zone contained 3 g/t Au (B. Murray, pers. comm., 1990).

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

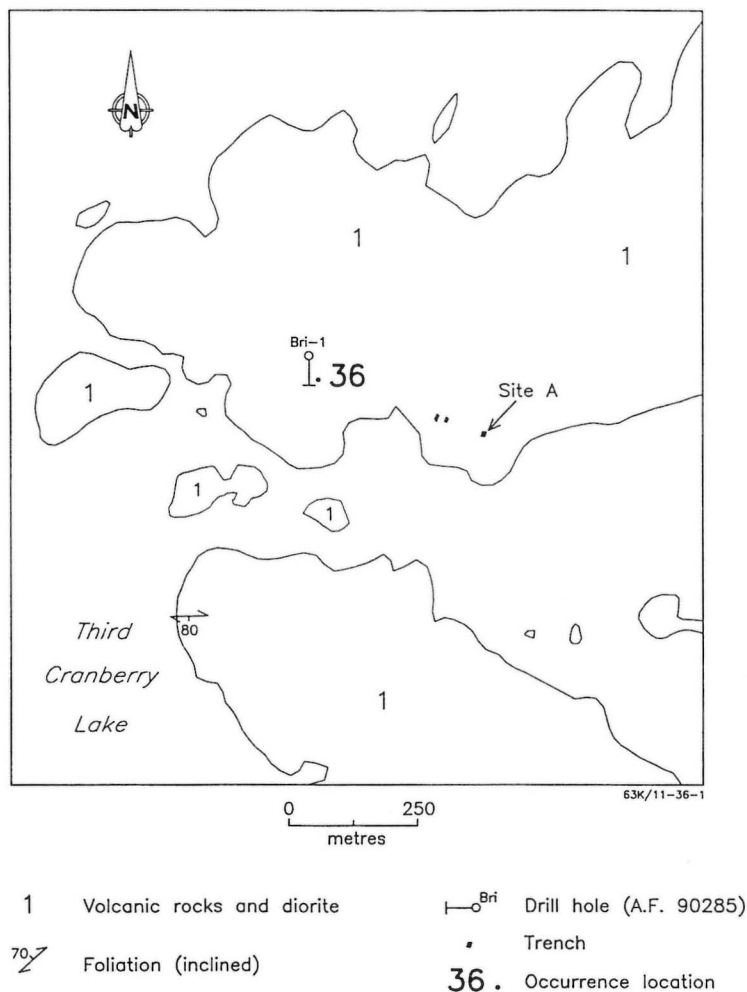
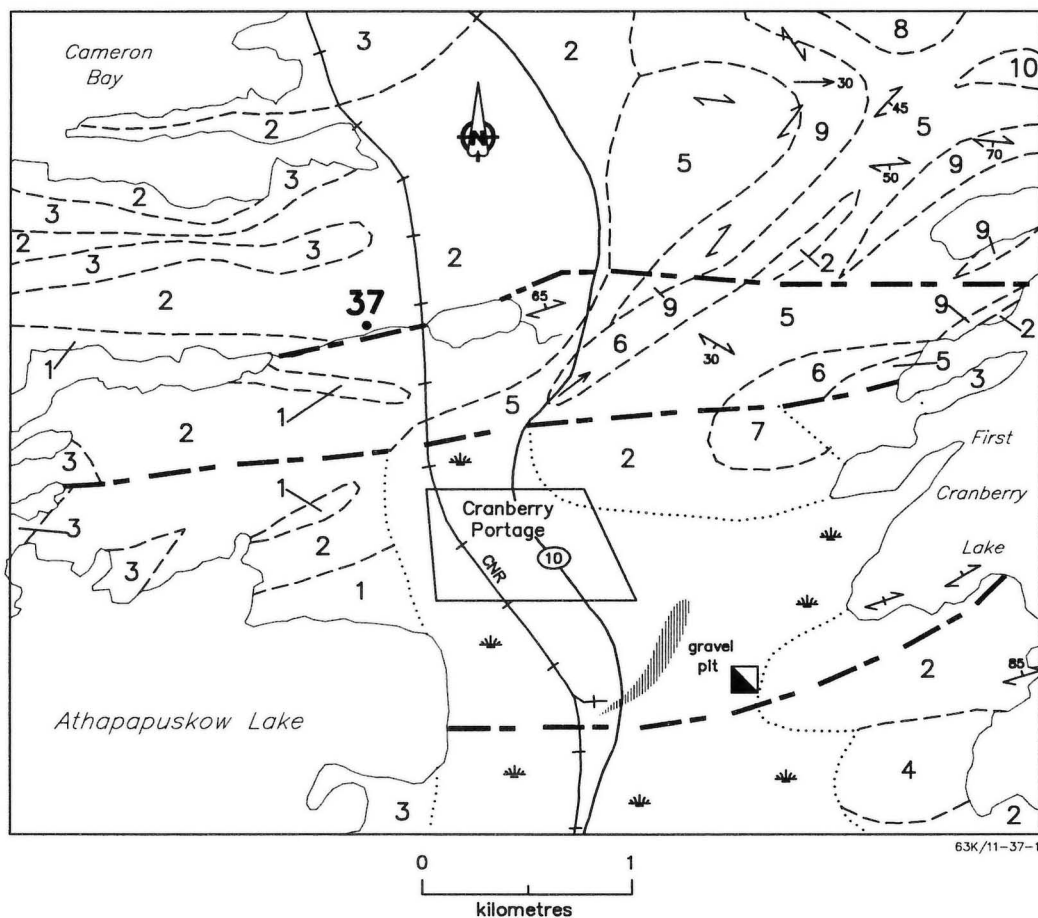


Figure 36-1: Location of trenches at occurrence 36.



10 Syenodiorite, porphyritic syenodiorite and syenite

9 Coarse gneissic feldspar porphyry and porphyritic gabbro

8 Swarms of syenite and syenodiorite dykes

7 Biotite granite

6 Hornblende-biotite quartz diorite and biotite granodiorite; minor porphyritic granodiorite, quartz diorite and syenite

5 Granodiorite, quartz diorite and diorite

4 Felsic hypabyssal intrusive rocks

Amisk Group

3 Diorite and gabbro

2 Mafic to intermediate volcanic rocks

1 Felsic volcanic rocks

----- Geological boundary (approximate)

..... Limit of outcrop

Geology after Podolsky (1951).

85 30 45 70 85  
Foliation (inclined, vertical, dip unknown)

30  
Lineation (plunge known)

--- Fault

Swamp

**37.** Occurrence location

Figure 37-1: Geological setting of occurrence 37

LOCATION: 37

NAME: Cameron Bay

UTM: 6052275N/345588E

ACCESS: Via Provincial Highway 10 and traverse 1 km or by boat and traverse approximately 500 m

#### EXPLORATION SUMMARY:

Wallace (1920) indicates that a 15 m long by 2 m deep trench had been excavated on the Cameron property. Davies, *et al.*, (1962) indicate that a shaft existed at the site shown. M.I. card 63K/11 Au3 indicates that the shaft was 6 m deep. Claims in the area are currently (1990) owned by J. Donald.

#### GEOLOGICAL SETTING:

The area is underlain predominantly by mafic volcanic rocks (Fig. 37-1), but also includes small bodies of quartz porphyry and feldspar porphyry. A major fault occurs in the proximity of the shaft (Podolsky, 1958).

#### MINERALIZATION:

The mineralization in this area was described by Wallace (1920) as:

*'Several claims have been staked and a considerable amount of surface work has been done on scattered chalcopryite and bornite showings along the north shore of the east arm of the lake. The softer schistose bands in the greenstone have been changed into an epidote rock and the bands have been mineralized with chalcopryite and in places with stringers of epidote. Three parallel bands of this type have been prospected, striking in a northeasterly direction. On the most westerly are staked the Ross group, on the next the Robertson group and the Vedo claims, and on the most easterly the Cameron and Stewart groups. Several shallow pits have been sunk on the Robertson claims, and cross-trenching done on the Cameron and Stewart properties. The widest trench is the most northerly trench on the Cameron property, which is fifty feet wide and seven feet deep. The chalcopryite and bornite are closely associated with veinlets*

AREA: 2 km northwest of Cranberry Portage

AIRPHOTO: A26331-175

*of quartz and calcite which crisscross the epidotized greenstone; but the bornite is subordinate in amount to the chalcopryite. There is no indication of defined walls to the mineralized zone on any property though on the Stewart the mineralization is more definitely restricted than elsewhere.'*

It is assumed that the Cameron property is the shaft identified here (Fig. 37-2).

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; multiple veins. This occurrence and others in the vicinity have some of the characteristics of the porphyry deposit type.

#### REFERENCES:

- Davies, J.F., Bannatyne, B.B., Barry, G.S., and McCabe, H.R.  
1962: Geology and Mineral Resources of Manitoba; Department of Mines and Natural Resources, Mines Branch, 190p.
- Mineral Inventory Card 63K/11 Au3  
Manitoba Energy and Mines, Geological Services Branch.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.
- Wallace, R. C.  
1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.

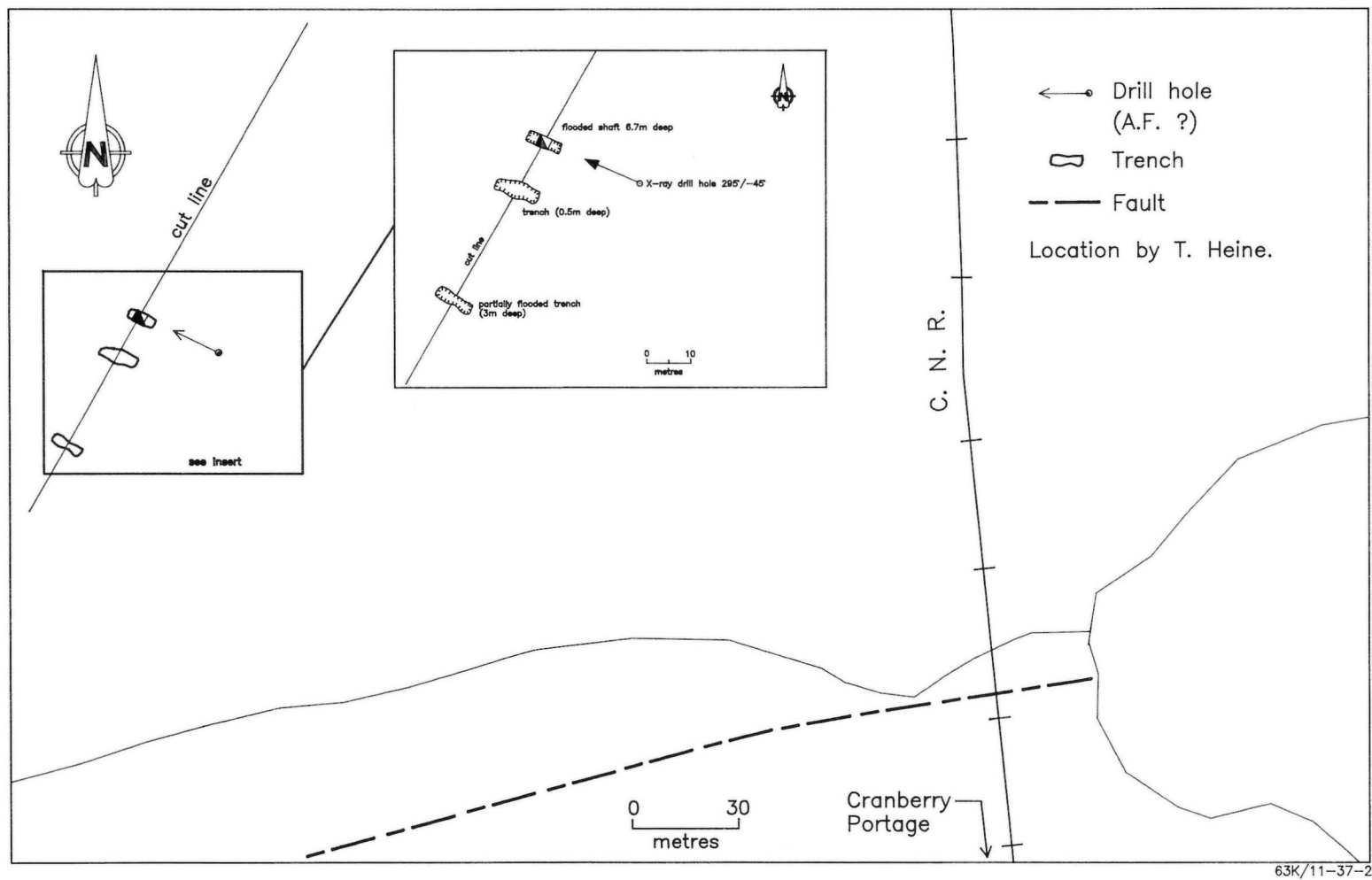


Figure 37-2: Location of trenches and drill hole at occurrence 37.

LOCATION: 38

NAME: Drill indicated mineralization  
UTM: 6061593N/364477E  
ACCESS: Via boat from Cranberry Portage

#### EXPLORATION SUMMARY:

The property was staked in 1978 for Granges Exploration Aktiebolag who drilled three holes totalling 245 m (A.F. 92405). The claim was cancelled in 1983. The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area (Fig. 38-1) is underlain by mafic to intermediate flows with related fragmental, sedimentary and intrusive rocks. The mineralization occurs near the contact of an epidote-biotite-granite gneiss derived from volcanic rocks and volcanic rocks and diorite (Podolsky, 1951).

#### MINERALIZATION:

DDH BE-50 intersected 85 cm of pyrite (25%) and graphite (15%) within a 18.3 m section of pyritic (<10%) argillite and a 85 cm section with 10-15% pyrite in a felsic dyke. DDH BE-51 intersected 1.6 m of 'graphite with 5-10% pyrite' (A.F. 92405). 'Graphite' intersections in this region have been found to comprise graphite-rich 'earthy pyrite', *i.e.* graphite-bearing sulphide facies iron formations (Gale *et al.*, 1980).

#### GEOCHEMICAL DATA:

Five drill core samples assayed from DDH BE-50 and BE-51 contained only trace amounts of Ag, Au, Cu and Zn (A.F. 92405).

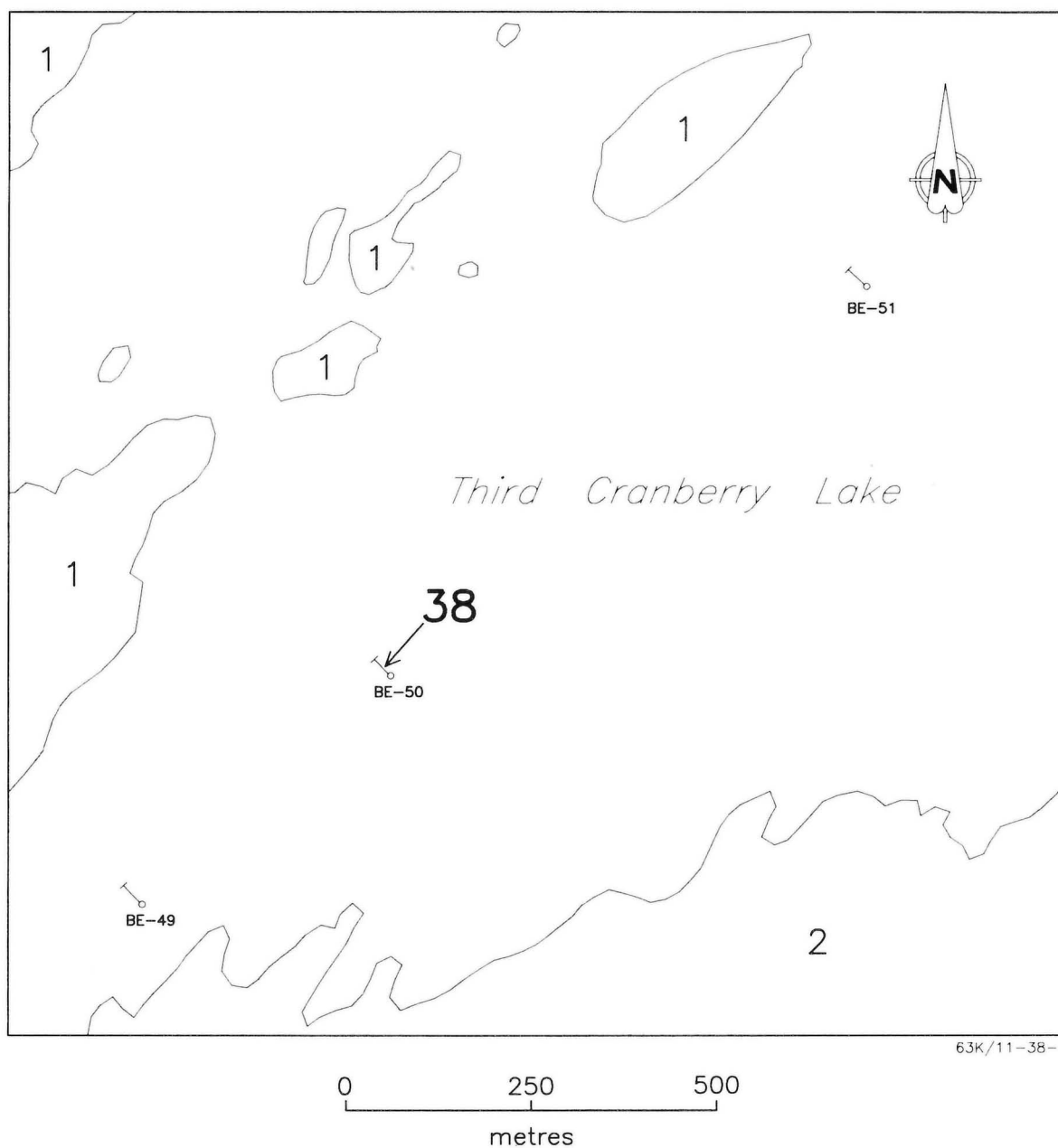
AREA: Third Cranberry Lake  
AIRPHOTO: A26363-276

#### CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

#### REFERENCES:

- Assessment Files 92020, and 92405  
Manitoba Energy and Mines, Mines Branch.
- Gale, G.H., Baldwin, D.A., and Koo, J.  
1980: A Geological Evaluation of Precambrian Massive Sulphide Deposit Potential in Manitoba; Manitoba Department of Energy and Mines, Mineral Resources Division, Economic Geology Report ER79-1, 137p.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



2 Epidote biotite-hornblende granite-gneiss and  
epidote-biotite granite-gneiss, granitized gneisses  
derived from greenstones

1 Volcanic rocks and diorite

Geology after Podolsky (1951).

 BE-50 Drill hole (A.F. 92405)

**38** Occurrence location

Figure 38-1: Location of drill holes at occurrence 38.



LOCATION: 39

NAME: Copper Mountain  
UTM: 6059465N/361452E  
ACCESS:

AREA: Second Cranberry Lake (Fig. 39-1)  
AIRPHOTO: A26363-222

#### EXPLORATION SUMMARY:

The property was staked in 1919 as the Rock claim by S. Olafson. In 1928 control of the claim was transferred to S.E. Johnston and G. Westman. Trenches and pits were reported during the period of 1919 through 1932. The Copper Mountain claim was staked over the Rock claim in 1927 by H.L. Thompson. Grab and chip samples were taken from eight different pits or trenches (Fig. 39-2) during the summer of 1928. The results from the assays prompted the formation of Copper Mountain Mining Syndicate Ltd. and a Radiore survey was conducted (M.I. Card 63K/11 Cu6). Cold Lake Mines Ltd. optioned the property, but returned it in the autumn of 1928 (Melstad, 1928; Tribble, 1928). Surface work continued intermittently in 1950 to 1951. The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). The area was also included in regional AMAG and AEM surveys conducted by Canadian Nickel Co. Ltd. in 1980 (A.F. 92472).

#### GEOLOGICAL SETTING:

The area (Fig. 39-1) is underlain predominantly by mafic volcanic rocks (Podolsky, 1951). A 0.6-1.8 m thick by 120-150 m long pegmatite dyke cuts fine grained basalt and coarse grained gabbro.

#### MINERALIZATION:

Chalcopyrite, pyrite and pyrrhotite occur as irregular lenses in a feldspar-hornblende pegmatite dyke and in the adjacent volcanic rocks (Wright, 1931).

#### GEOCHEMICAL DATA:

Grab samples contained from 0.13% to 10.12% Cu and 0.6 to 8.6 g/t Au. One 1.4 m chip sample contained 6.50% Cu and 1.3 g/t Au (Morgan, 1940).

#### CLASSIFICATION:

Pegmatite deposit type. Both silicates and sulphides are considered to have been concentrated as a result of mobilization.

#### REFERENCES:

- Assessment Files 92020, 92472  
Manitoba Energy and Mines, Mines Branch.
- Mineral Inventory Card NTS 63K/11 Cu6  
Manitoba Energy and Mines, Geological Services Branch.
- Melstad, V.J.  
1928: Consultants report to Milton Hersey and Company; Manitoba Energy and Mines, Corporation File, unpublished.
- Morgan, J.H.  
1940: Copper Mountain Group; Manitoba Energy and Mines, Corporation File, unpublished report, 2 p.
- Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.
- Tribble, M.E.  
1928: Report to Cold Lake Mines Ltd. on the Copper Mountain Group; Manitoba Energy and Mines, Corporation Files, unpublished report, 1p.
- Wright, J.F.  
1931: Geology and Mineral Deposits of a Part of Northwest Manitoba; in Geological Survey of Canada, Summary Report 1930, Part C, p. 54c.

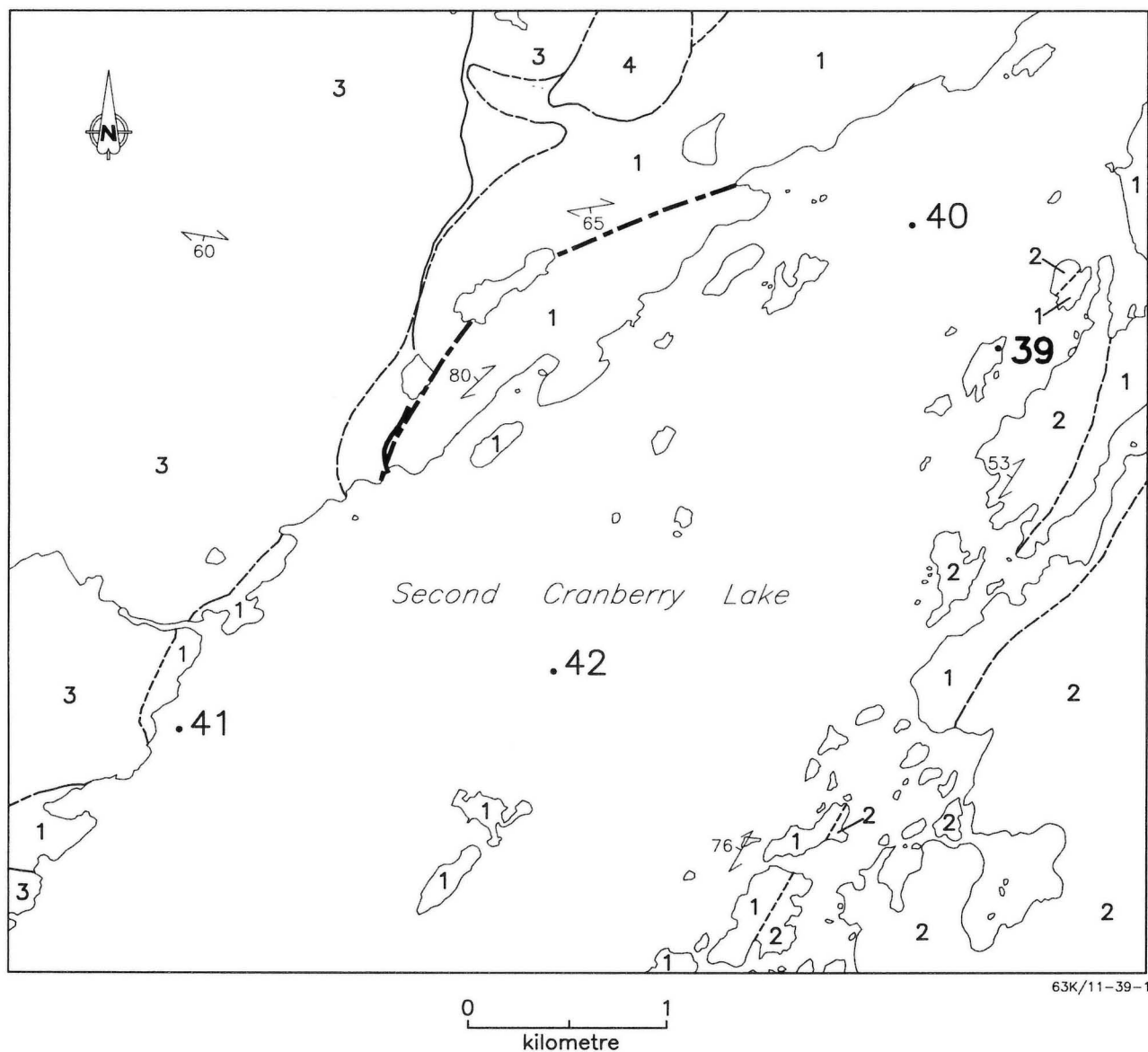
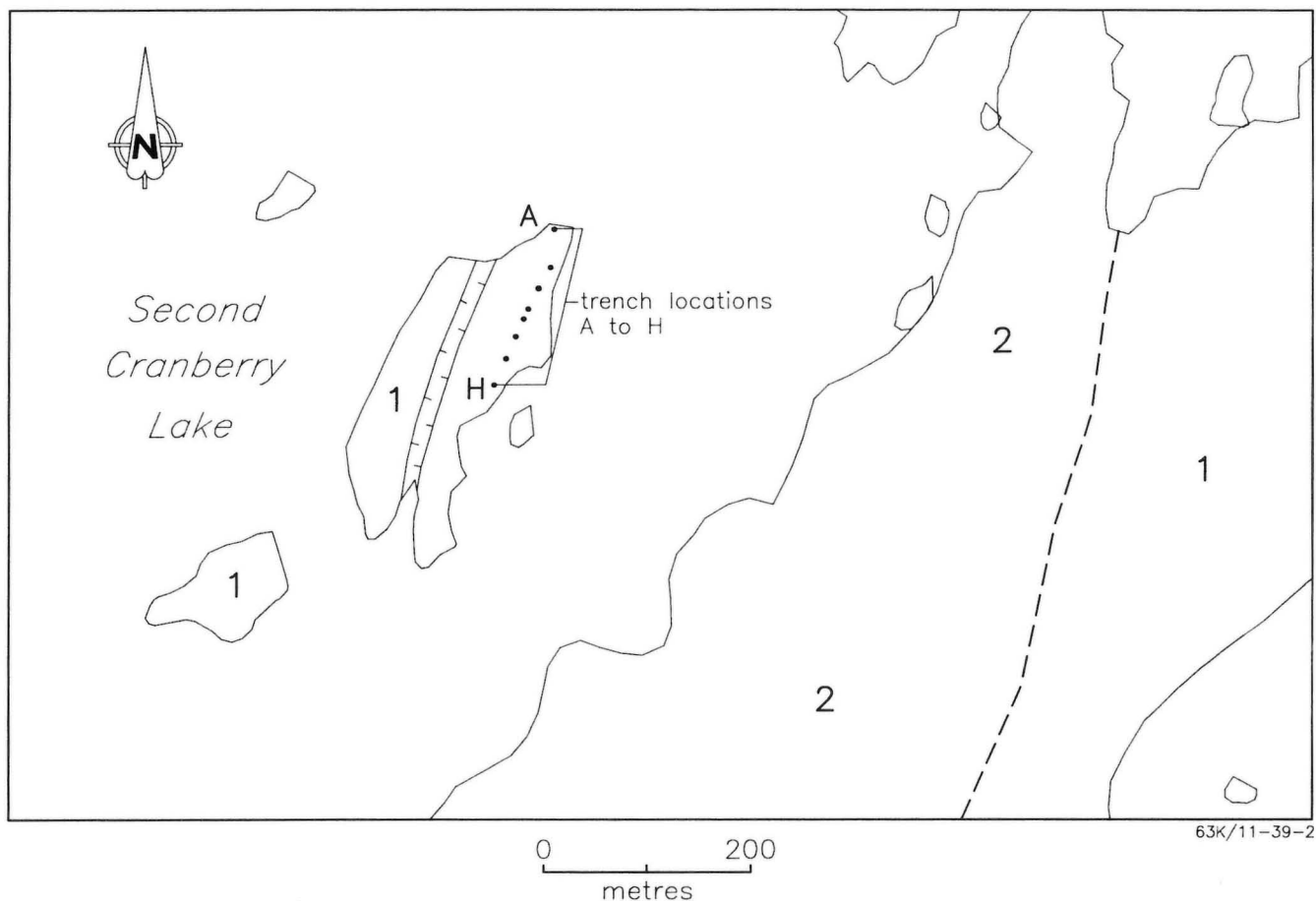


Figure 39-1: Geological setting at occurrences 39, 40, 41 and 42.



2 Epidote biotite-hornblende granite-gneiss  
and epidote-biotite granite gneiss,  
granitized gneisses derived from greenstones

1 Volcanic rocks and diorite

----- Geological boundary (approximate)

Geology after Podolsky (1951).

• Trench location

 Depression

Figure 39-2: Location of trenches at the Copper Mountain occurrence.

LOCATION: 40

NAME: (Drill indicated mineralization)

UTM: 6060185N/361135E

ACCESS: Via boat from Cranberry Portage

AREA: Second Cranberry Lake

AIRPHOTO: A26363-222

#### EXPLORATION SUMMARY:

The property was included in a regional AMAG and AEM survey conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020). This area was included in a large portion of Second Cranberry Lake staked for Granges Exploration Aktiebolag in 1978. A HLEM survey of the area was conducted in 1979 (A.F. 92407, 92408) and a number of the conductors were drilled in 1980 (Fig. 40-1).

#### GEOLOGICAL SETTING:

The area is underlain by mafic volcanic rocks that have been intruded by mafic to felsic plutons (Podolsky, 1951). The drill hole records note the presence of abundant intermediate tuff with minor felsic tuff. Argillite and argillaceous tuff that are often sulphide- and graphite-bearing are intercalated with the intermediate rocks (A.F. 92407).

#### MINERALIZATION:

DDH BE-47 core contained 8 sections of near solid pyrite with core lengths of 3.3 m, 17.4 m, 3.3 m, 8.5 m, 7.9 m, 7.0 m, 6.7 m and 0.9 m. Minor graphite is associated with the sulphides in the upper portion of the drill core and with tuff rocks below the 0.9 m solid pyrite section.

DDH BE-40 intersected a 91 cm section of near solid 'earthy pyrite' below an argillitic rock unit and above a 60 cm pyritic brecciated chert at the end of the drill hole. DDH BE-42 intersected a 46 cm section of solid 'earthy pyrite' in pyritic

argillite. DDH BE-44 intersected a 21.6 m section of graphitic schist with 'earthy pyrite' and a 51.2 m section of sericitic schist with 5-20% pyrite. DDH BE-45 did not intersect any sulphide mineralization.

DDH BE-48 intersected only minor pyrite and graphite in a tuff (A.F. 92407).

#### GEOCHEMICAL DATA:

54 drill core samples contained trace Au, Ag, Cu, and Zn.

#### CLASSIFICATION:

Chemical sediment deposit type; sulphide facies iron formation (DDH BE-47) and sulphide facies iron formation that is graphite-bearing (DDH BE-40, BE-42, BE-44).

#### REFERENCES:

Assessment Files 92020, 92407 and 92408

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

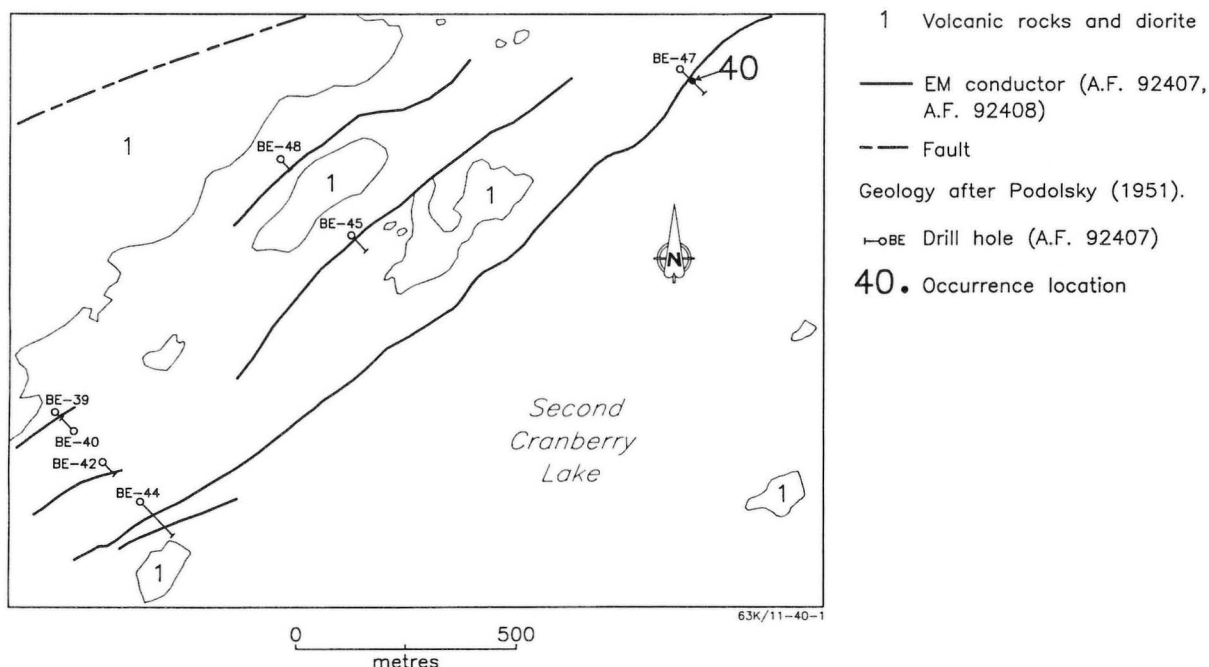


Figure 40-1: Location of drill holes and geophysical conductors in the vicinity of occurrence 40.

**LOCATION: 41**

**NAME:** (Drill indicated mineralization)

**UTM:** 6057432N/357376E

**ACCESS:** Via boat from Cranberry Portage

**AREA:** Second Cranberry Lake

**AIRPHOTO:** A26363-28

**EXPLORATION SUMMARY:**

The Cox and Webb claims were staked by T.R. Webb in 1949 and 3 holes totalling 122 m were drilled in 1951-52 (A.F. 90288). A regional AMAG and AEM survey was conducted by Sherritt Gordon Mines Ltd. in 1973-74 (A.F. 92020). This property was included in the large area staked for Granges Exploration Aktiebolag in 1978. A HLEM survey was conducted in 1979 and a number of conductors (Fig. 41-1) were drilled in 1980 (A.F. 92407, 92408).

**GEOLOGICAL SETTING:**

The area (Fig. 41-1) is underlain by mafic volcanic rocks that have been intruded by a large dioritic pluton (Podolsky, 1951). The drill holes intersected primarily intermediate tuff and subordinate felsic tuff. Argillites and argillaceous tuff are intercalated with tuff; the argillaceous rocks commonly contain sulphide and graphite. (A.F. 92407).

**MINERALIZATION:**

Near solid to solid 'earthy pyrite' layers are intercalated with graphitic schist (DDH BE-43) and argillite (DDH BE-31, BE-33). In DDH BE-32 core a 3.7 m section of chert overlies a 2.1 m section of pyritic siliceous argillite, which is underlain by a 2.7 m section of pyrrhotite-bearing tuff. A 1.2 m section of the argillite contains 20-40% pyrite in a felsic breccia. The pyrrhotite-bearing tuff layer contains 5-60% pyrrhotite and minor felsic breccia in a chloritic matrix.

DDH BE-30 intersected a 2 m section of near solid to solid pyrrhotite adjacent to a 17 m section of 2-10% pyrrhotite in siliceous tuff (A.F. 92408, 92407).

The drill holes intersected zones of near solid to solid pyrite, with core lengths of up to 11 m, that are usually intercalated with graphitic argillite. The near solid sulphide layers recorded in the drill log for DDH BE-43 are associated with dacitic tuff containing minor graphite. In addition, pyrite is common throughout the core, ranges in concentration from trace to 50% and occurs in 0.5-20 m long sections.

The drill logs indicate zones of pyrrhotite mineralization in two of the holes (DDH BE-32, BE-33) that are downhole from the pyrite mineralization. These pyrrhotite zones are up to 17 m in core length and range in concentration from 2% to solid sulphide; these zones are associated with layered siliceous tuff or siliceous bands in chloritic or argillic rock.

**GEOCHEMICAL DATA:**

88 core samples were assayed. These samples contained trace Au, Ag, Cu and Zn. The highest values- 0.1 g/t Au, 2.5 g/t Ag, 0.05% Cu and 0.09% Zn- were obtained in a sample of 'earthy pyrite' from DDH BE-43 (A.F. 92408, 92407).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation (DDH BE-30, BE-32). The sulphide facies iron formation intersected in DDH BE-43, BE-31 and BE-33 are graphite-bearing. The mineralization intersected in DDH BE-32 may represent the distal portions of a massive sulphide type deposit.

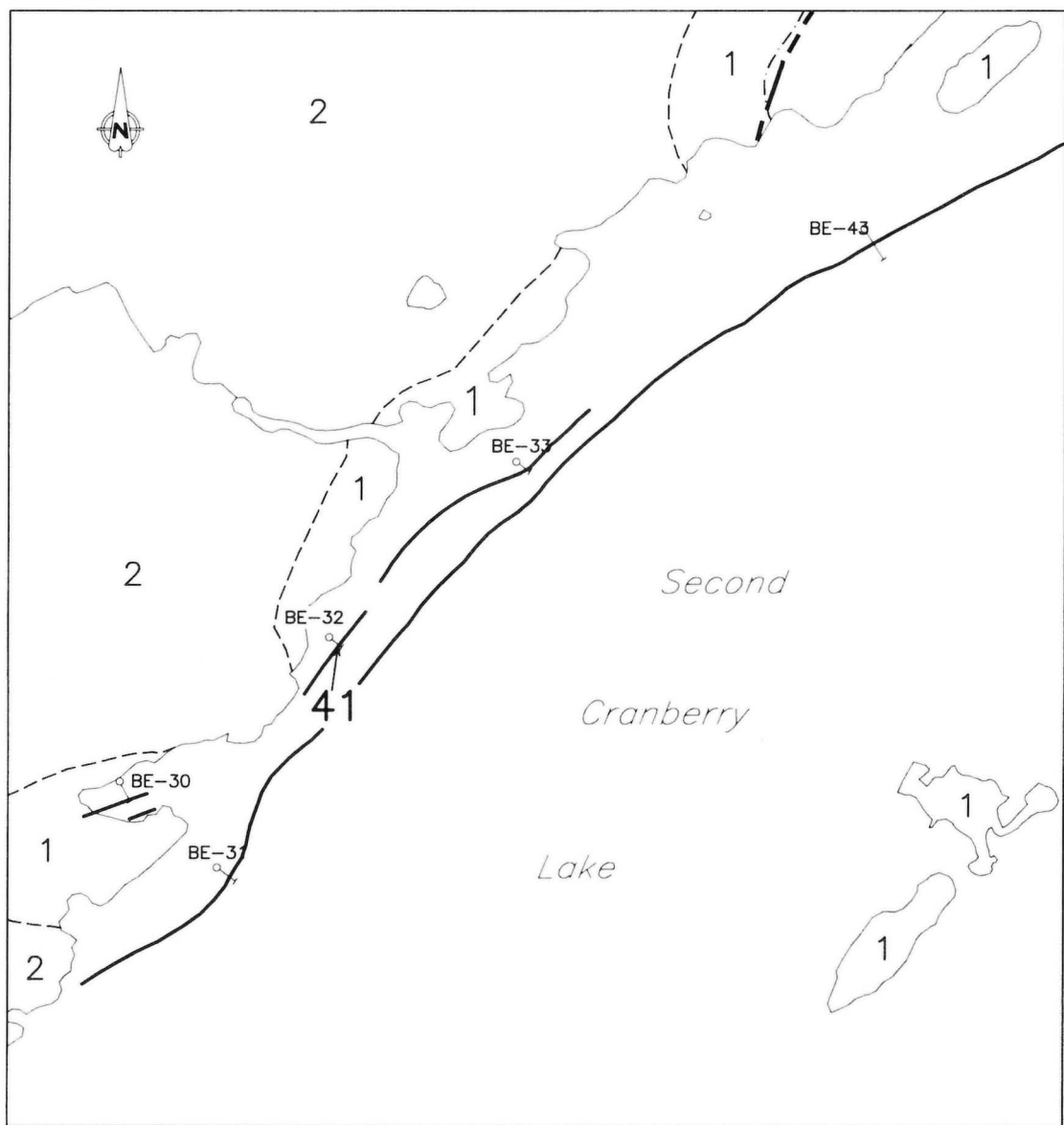
**REFERENCES:**

Assessment Files 90288, 92020, 92407 and 92408

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



63K/11-41-1

0 500  
metres

- |                                |  |           |  |
|--------------------------------|--|-----------|--|
| 2                              | Quartz diorite and biotite<br>hornblende diorite | —         | EM conductor<br>(A.F. 92407, A.F. 92408) |
| 1                              | Volcanic rocks and diorite                       | - - -     | Fault                                    |
| - - - - -                      | Geological boundary<br>(approximate)             | BE        | Drill hole (A.F. 92408)                  |
|                                |  | - - - - - | Trail                                    |
| Geology after Podolsky (1951). |  |           |  |
|                                |  | <b>41</b> | Occurrence location                      |

Figure 41-1: Location of drill holes and geophysical conductors in the vicinity of occurrence 41.

**LOCATION: 42**

**NAME:** (Drill indicated mineralization)  
**UTM:** 6057934N/359243E  
**ACCESS:** Via boat from Cranberry Portage.

**EXPLORATION SUMMARY:**

The area was staked in 1978 by Granges who conducted a HLEM survey in 1979 and drilled two holes totalling 136 m in 1980 (A.F. 92407). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020) and Canadian Nickel Company Ltd. in 1980 (A.F. 92472).

**GEOLOGICAL SETTING:**

The area (Fig. 40-1) is underlain by mafic volcanic rocks that have been intruded by medium- to coarse-grained quartz diorite and medium grained epidote-biotite granite gneiss (Podolsky, 1951). DDH BE-41 intersected argillite, chert and dacitic tuff and DDH BE-46 intersected mostly rhyolite and minor argillite (A.F. 92407).

**MINERALIZATION:**

DDH BE-46 intersected a 2.2 m section containing 50% pyrite within a 6.4 m section of graphitic schist that is underlain by rhyolite with veins, veinlets and dissemination's of pyrite. The 30 m long argillite section intersected in DDH BE-41 contained five layers of 'earthy pyrite' with core lengths of 15-75 cm (A.F. 92407).

**AREA:** Second Cranberry Lake (Fig. 39-1).  
**AIRPHOTO:** A26363-222

The pyritic rhyolite intersected by DDH BE-46 should be subjected to silicate analyses to determine if there has been alteration typical of that associated with massive sulphide type deposits.

**GEOCHEMICAL DATA:**

The 14 core samples from DDH BE-46 and the one core sample from DDH BE-41 that were assayed contained only trace Au, Cu and Zn (A.F. 92407).

**CLASSIFICATION:**

Chemical sediment deposit type; sulphide facies iron formation.

**REFERENCES:**

Assessment Files 92020, 92407 and 92472  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.  
1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

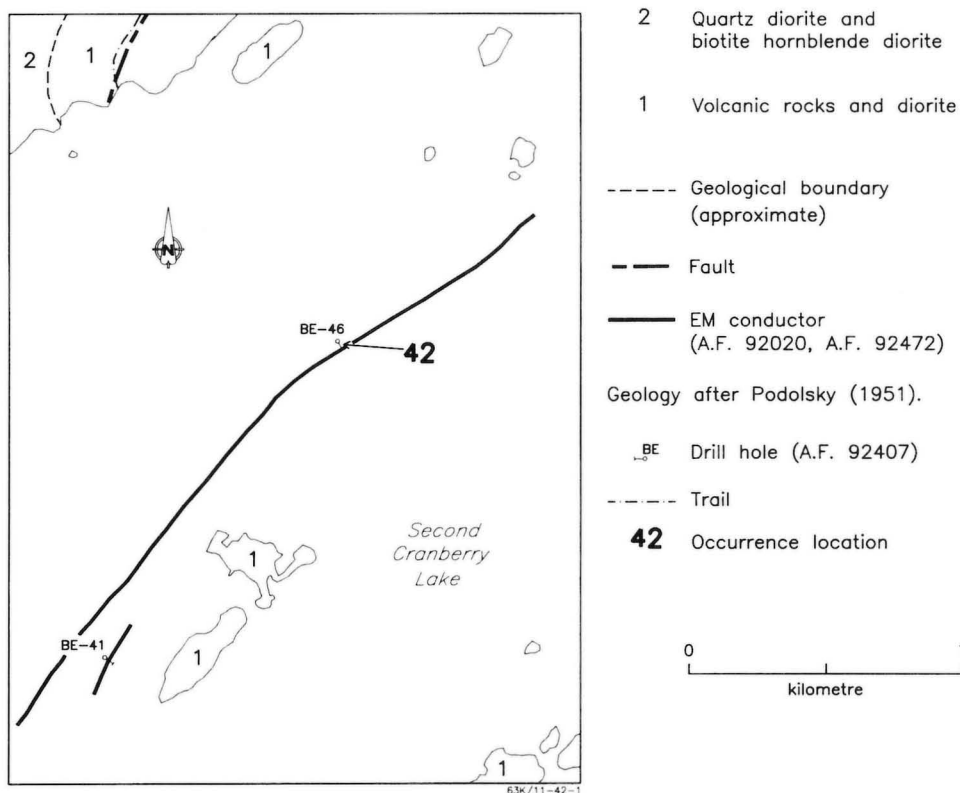
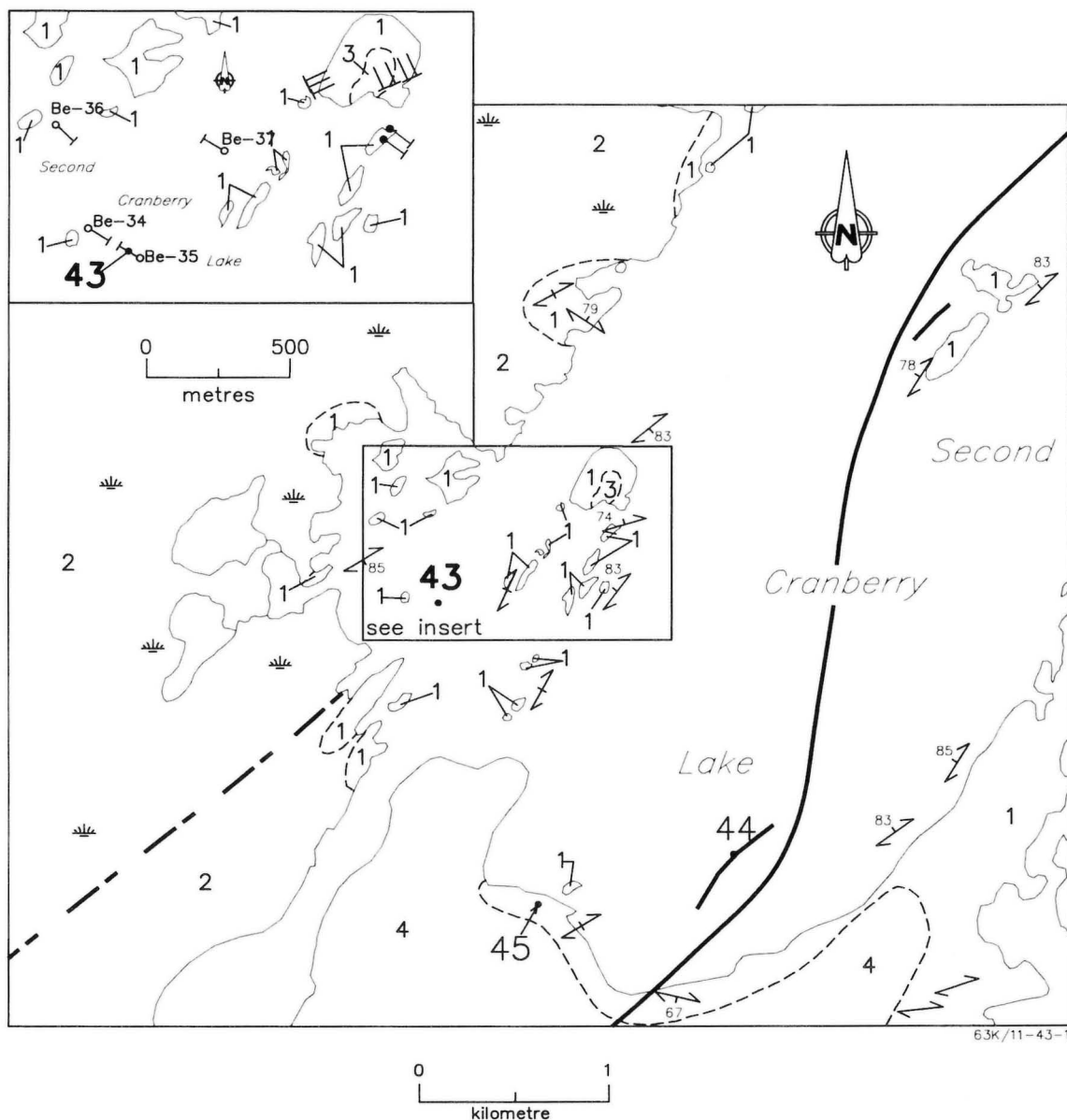


Figure 42-1: Location of drill holes and geophysical conductors in the vicinity of occurrence 42.



- |  |                                 |
|--|---------------------------------|
| 4 Dolomite, dolomitic limestone  | — — Fault                       |
| 3 Medium grained, pink, faintly gneissic biotite granite                                   | — EM conductors (A.F. 92020)    |
| 2 Medium- to coarse-grained quartz diorite; biotite-hornblende diorite; minor granodiorite | Drill holes:                    |
| Amisk Group  | — (A.F. 90300)                  |
| 1 Greenstone and diorite   | • (A.F. 90295)                  |
| ----- Geological boundary (approximate)  | ○ (A.F. 92408)                  |
| 83 Foliation (inclined, vertical, dip unknown)   | Swamp                           |
| Geology after Podolsky (1951).   | <b>43</b> • Occurrence location |

Figure 43-1: Geological setting of occurrences 43, 44 and 45.



**LOCATION: 43**

**NAME:** (Drill indicated mineralization)  
**UTM:** 6055397N/356025E  
**ACCESS:** Via boat from Cranberry Portage

**AREA:** Second Cranberry Lake  
**AIRPHOTO:** A26363-27

**EXPLORATION SUMMARY:**

The property was staked in 1948 by T.R. Webb who drilled 2 holes (A.F. 90295). The property was restaked in 1954 by T.R. Webb who drilled 7 holes (A.F. 90300). The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). The property was staked in 1978 for Granges who conducted an HLEM survey (A.F. 92407) and drilled 4 holes (A.F. 92408).

**GEOLOGICAL SETTING:**

The area (Fig. 43-1) is underlain by mafic volcanic rocks that have been intruded by a pluton of medium- to coarse-grained quartz diorite and biotite-hornblende diorite (Podolsky, 1951). DDH BE-34, BE-35 and BE-37 intersected dacitic tuff, rhyolite and argillite. DDH BE-36 intersected diorite, andesite, quartz-biotite +/- chlorite schist and pyritic chert (A.F. 92407, 92408).

**MINERALIZATION:**

The holes drilled by T.R. Webb in 1955 intersected 'mineralized shearing' (A.F. 90300). DDH 1 to 4 drilled in the same area in 1954 intersected approximately 30 m of 'well mineralized shearing' (A.F. 90295).

DDH BE-35 intersected 3 m of pyritic argillite with 'earthy pyrite' layers. DDH BE-36 intersected 4 m of pyritic chert with 20% disseminated pyrite.

DDH BE-37 intersected 30 m of rhyolitic rocks that contained several sections of chloritic alteration with trace amounts of pyrite and a 10 cm section with 40% pyrite (A.F. 92407, 92408).

**GEOCHEMICAL DATA:**

Six core samples assayed contained trace amounts of Cu, Zn, Pb, Ag and Au.

**CLASSIFICATION:**

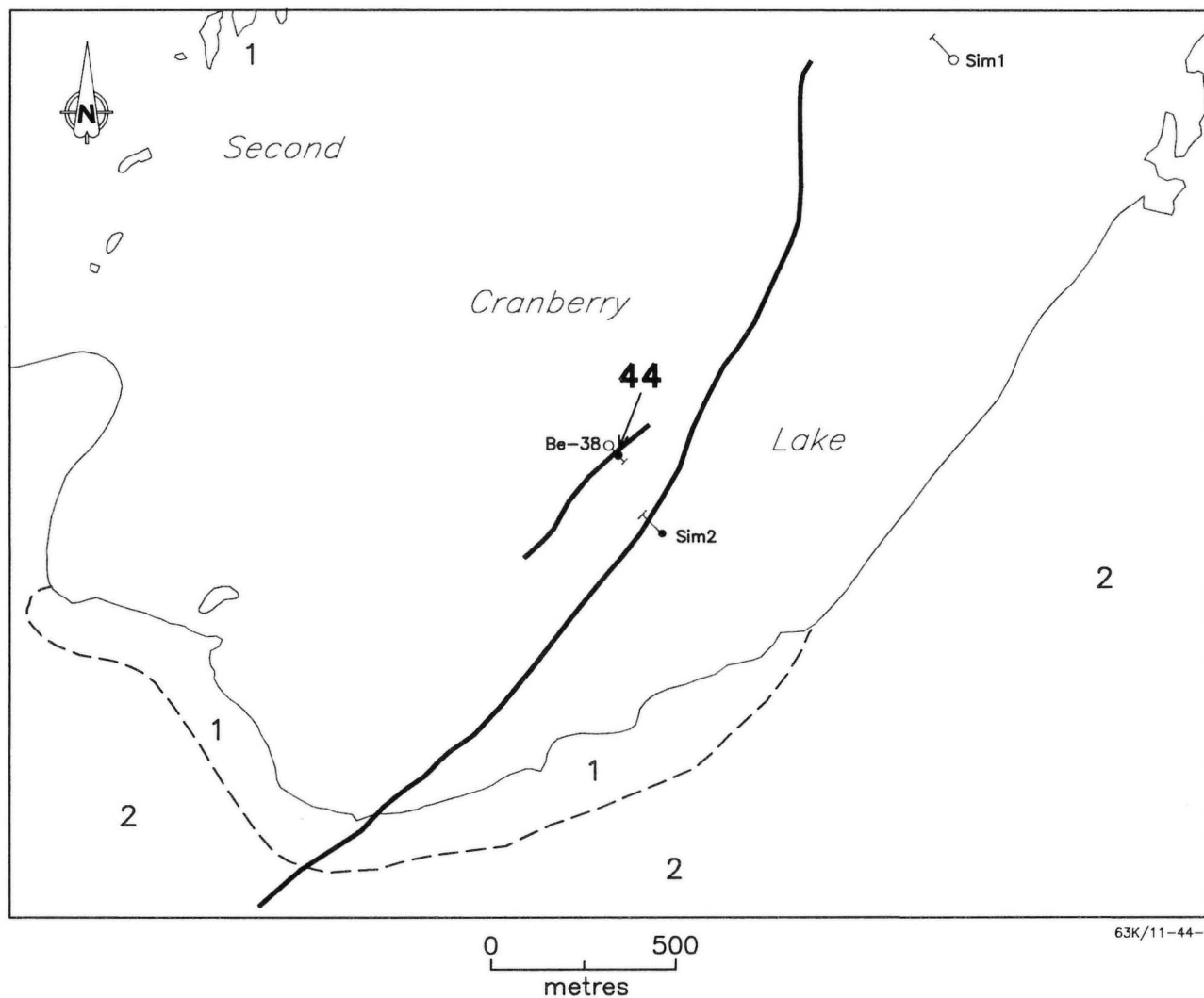
Chemical sediment type deposit; sulphide facies iron formation.

**REFERENCES:**

Assessment Files 92407, 92408, 90300, 92020, 90295  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



- 2 Dolomitic limestone
- Amisk Group
- 1 Volcanic rocks and diorite
- Geological boundary (approximate)
- Geology after Podolsky (1951).
- EM conductor (A.F. 92407)
- Drill holes
- Be-38 (A.F. 92407)
- sim2 (A.F. 90297)
- 44** . Occurrence location

Figure 44-1: Drill hole locations and geophysical conductors in the vicinity of occurrence 44.

**LOCATION: 44**

**NAME:** (Drill indicated mineralization)

**UTM:** 6054059N/357728E

**ACCESS:** Via boat from Cranberry Portage

**AREA:** Second Cranberry Lake (Fig 43-1)

**AIRPHOTO:** A26363-27

**EXPLORATION SUMMARY:**

The area was staked in 1965 as part of the Sim group of claims. Western Nuclear optioned the property in 1966, and in 1968 drilled two holes totalling 273 m (A.F. 90297). The area was staked in 1978 by Granges Exploration Actiebolaget who conducted a HLEM survey in 1979 and drilled one hole of 109 m in 1980 (A.F. 92407). The property was included in regional AMAG and AEM surveys by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020).

**GEOLOGICAL SETTING:**

Mafic volcanic rocks are exposed on the islands and along the shoreline of Second Cranberry Lake (Fig. 43-1). These volcanic rocks have been intruded by mafic and felsic intrusions (Podolsky, 1951). DDH Sim1 (Fig. 44-1) intersected andesite, chloritic tuff and dacite; DDH Sim2 intersected only diorite and andesite (A.F. 90297). DDH BE-38 intersected andesitic tuff, graphitic schist and siliceous argillite and greywacke (A.F. 92407).

**MINERALIZATION:**

DDH Sim1 intersected a 30 cm quartz vein and several carbonate veinlets. DDH Sim2 intersected trace to minor amounts of pyrite, pyrrhotite and chalcopyrite. DDH BE-38 intersected a 27.1 m section of 'graphite and pyrite' that probably consists mostly of 'earthy pyrite' layers (A.F. 92407).

**GEOCHEMICAL DATA:**

15 core samples from DDH BE-38 contained trace Ag, Au, Cu and Zn (A.F. 92407).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation.

**REFERENCES:**

Assessment Files 92020, 90297, 92407

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

LOCATION: 45

NAME: Webb Shaft

UTM: 6053809N/356417E

ACCESS: Via boat from Cranberry Portage

AREA: Second Cranberry Lake (Fig. 43-1)

AIRPHOTO: A26363-26

#### EXPLORATION SUMMARY:

Mineral occurrence indicated by Podolsky (1951). A shaft on the property has dimensions of 2 x 2.5 m and is approximately 15 m deep. The area was included in a regional AMAG and AEM survey conducted by Sherritt Gordon Mines Ltd. in 1973 - 1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area is underlain by mafic volcanic rocks that are overlain by Phanerozoic dolomitic limestone (Fig. 45-1; Podolsky, 1951). Rubble around the shaft is friable quartz-chloritic schist with 20-80% chlorite and 1-10 mm spaced schistosity planes. Locally, the rock is a sericitic and chloritic schist.

#### MINERALIZATION:

Rusty weathered rubble from the vicinity of the shaft (Fig. 45-1) contains approximately 1% disseminated pyrite and veinlets of quartz +/- calcite within the planes of schistosity.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified

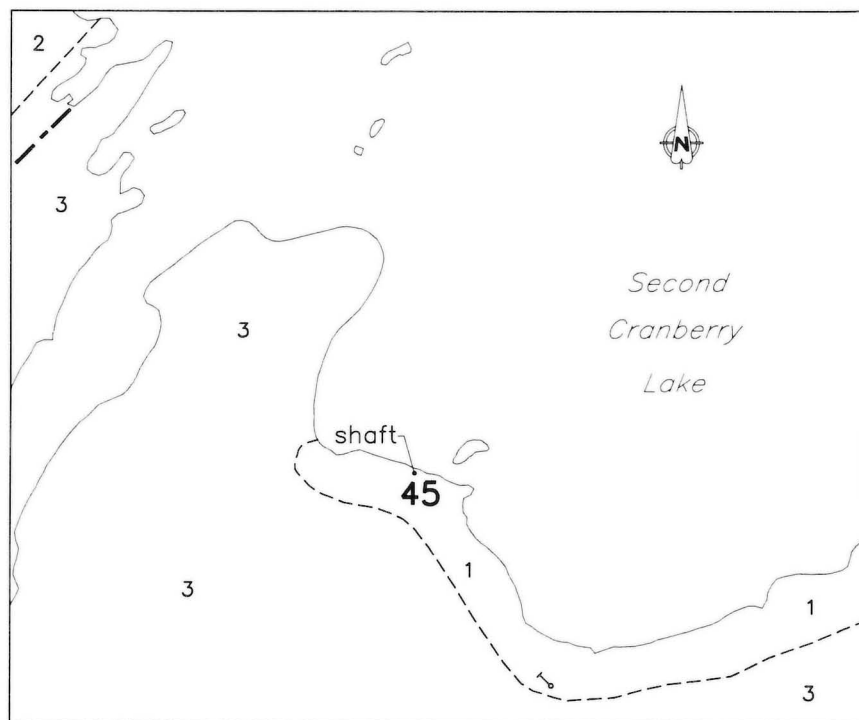
#### REFERENCES:

Assessment File 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



63K/11-45-1

Figure 45-1: Location of drill hole and the Webb shaft.

LOCATION: 46

NAME:

UTM: 6054976N/355559E

ACCESS: Via boat from Cranberry Portage

AREA: Second Cranberry Lake

AIRPHOTO: A26363-27

#### EXPLORATION SUMMARY:

T.R. Webb and K.A. Cox staked the property in 1948 and drilled 3 holes totalling 229 m in 1949 (A.F. 90288). The area was included in a regional AMAG and AEM survey conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020). A 1.2x1.2x4 m adit (Fig. 46-1) has been excavated at the shoreline.

#### GEOLOGICAL SETTING:

The area is underlain predominantly by mafic volcanic rocks (Podolsky, 1951). The drill logs note the presence of andesite and rhyolite in the drill cores (A.F. 90288). Interlayered silicic and chloritic rocks exposed along the lake shore attest to local silicification and shears.

#### MINERALIZATION:

The drill record indicates that only minor amounts of pyrite and quartz veinlets were intersected (A.F. 90288). Quartz  $\pm$  carbonate veinlets are common throughout the rocks on the peninsula. Locally, the rocks on the peninsula are rusty weathered.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified.

#### REFERENCES:

Assessment Files 90288, 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

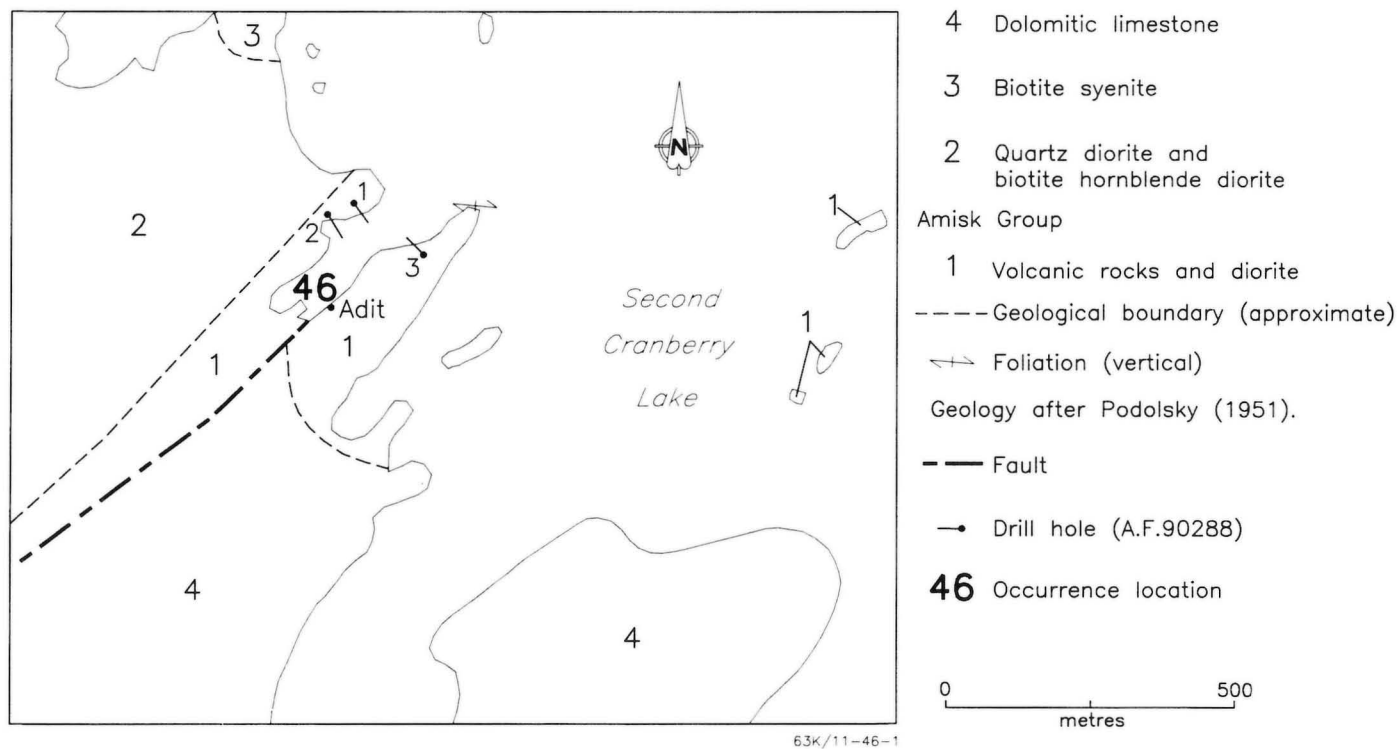


Figure 46-1: Location of drill holes and adit at occurrence 46.

LOCATION: 47

NAME:

UTM: 6055545N/355310E

ACCESS: Via boat from Cranberry portage

AREA: Second Cranberry Lake

AIRPHOTO: A26363-27

#### EXPLORATION SUMMARY:

W.P. Pieper and G.W. Braid owned 9 survey claims in the area in 1939 (Holloway, 1939). The area was included in a regional AMAG and AEM survey conducted by Sherritt Gordon Mines Ltd. in 1973-74 (A.F. 92020). Holloway (1939) reports a trench about 33 m from the shore on a 1.2 m thick quartz vein on the north side of the channel that leads into Myrtle Bay. Two trenches were located during a brief reconnaissance of the area in 1990. The trench at the occurrence is 2.5 x 1.2 x 1 m; the southernmost trench is approximately 1 m square.

#### GEOLOGICAL SETTING:

The mafic volcanic rocks in this area (Fig. 43-1) have been intruded by a large pluton of medium- to coarse-grained quartz diorite (Podolsky, 1951). The quartz vein occurs in diorite and is cut off by a granitic dyke about 3 m from the shoreline.

#### MINERALIZATION:

A quartz vein, less than 60 cm thick, is exposed at the edge of the lake (Fig. 47-1). The quartz vein consists of coarse grained, clear to white quartz with inclusions of the basaltic host rock. Veinlets of quartz-carbonate-chlorite and

their adjacent host rocks contain 1-2% pyrrhotite. Trace amounts of pyrite, pyrrhotite and chalcopyrite occur as lenses in the quartz vein.

At trench 1 (Fig. 47-1), there is a medium grained, black rock with up to 1% pyrrhotite and up to 2% pyrite.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein deposit type; single vein.

#### REFERENCES:

Assessment File 92020

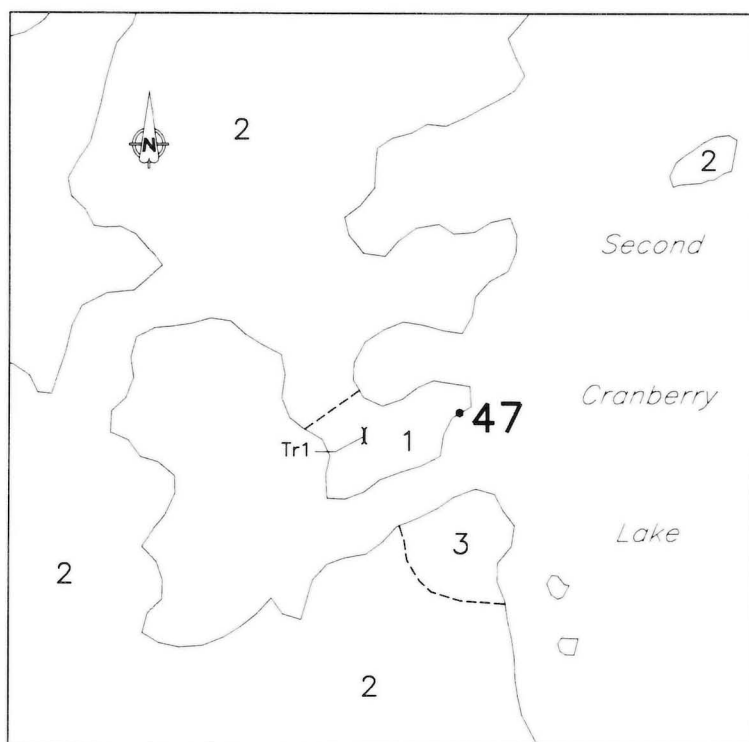
Manitoba Energy and Mines, Mines Branch.

Holloway, J. M.

1939: Nine surveyed claims, Second Cranberry Lake; Manitoba Energy and Mines, Mines Branch, unpublished report, 2 p.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



3 Biotite syenite

2 Quartz diorite and  
biotite hornblende diorite

Amisk Group

1 Volcanic rocks and diorite

----- Geological boundary (approximate)

Geology after Podolsky (1951).

Tr1 — Trench

**47.** Occurrence location

0 200  
metres

Figure 47-1: Geology and trench location in the vicinity of occurrence 47.

LOCATION: 48

NAME: Myrtle Bay  
UTM: 6056453N/355372E  
ACCESS: Via boat

#### EXPLORATION SUMMARY:

W.P. Pieper and G.W. Braid owned 9 surveyed claims in the area in 1939, and had excavated 6 trenches on these claims (Holloway, 1939). Holloway (1939) indicates that there were also two pits 2.5 m deep.

The area was included in a regional AMAG and AEM survey conducted by Sherritt Gordon Mines Ltd. in 1973-74 (A.f. 92020). Three of the four small trenches (0.3- 0.6 m by 1-1.5 m) identified were overgrown in 1990.

#### GEOLOGICAL SETTING:

The area (Fig. 48-1) is underlain by a small body of greenstone enclosed within medium grained granitic rocks (Podolsky, 1951). Although altered, silicified fine grained rocks host the mineralization, identifiable volcanic textures were not observed. The mineralized zone trends 290° for approximately 20 m.

#### MINERALIZATION:

Holloway (1939) reports that the trenches exposed 'a fine grained, hard, black, massive rock carrying a high percentage of sulphide minerals over a width of 15 m. Four small surface trenches trace the sulphide body south for about 18 m at which point it is cut off by granite.'

Samples from the rubble around the trenches are solid sulphide that consists of banded, very fine grained pyrite and pyrrhotite with trace amounts of chalcopyrite. The host rock is a very fine grained, mottled green silicic rock with 2-10% pyrite and pyrrhotite, trace amounts of chalcopyrite; it becomes more mafic towards the sulphide vein.

AREA: Second Cranberry Lake  
AIRPHOTO: A26363-27

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; single vein. These veins were probably formed by mobilization of sulphides during intrusion of the nearby pluton.

#### REFERENCES:

Assessment File 92020

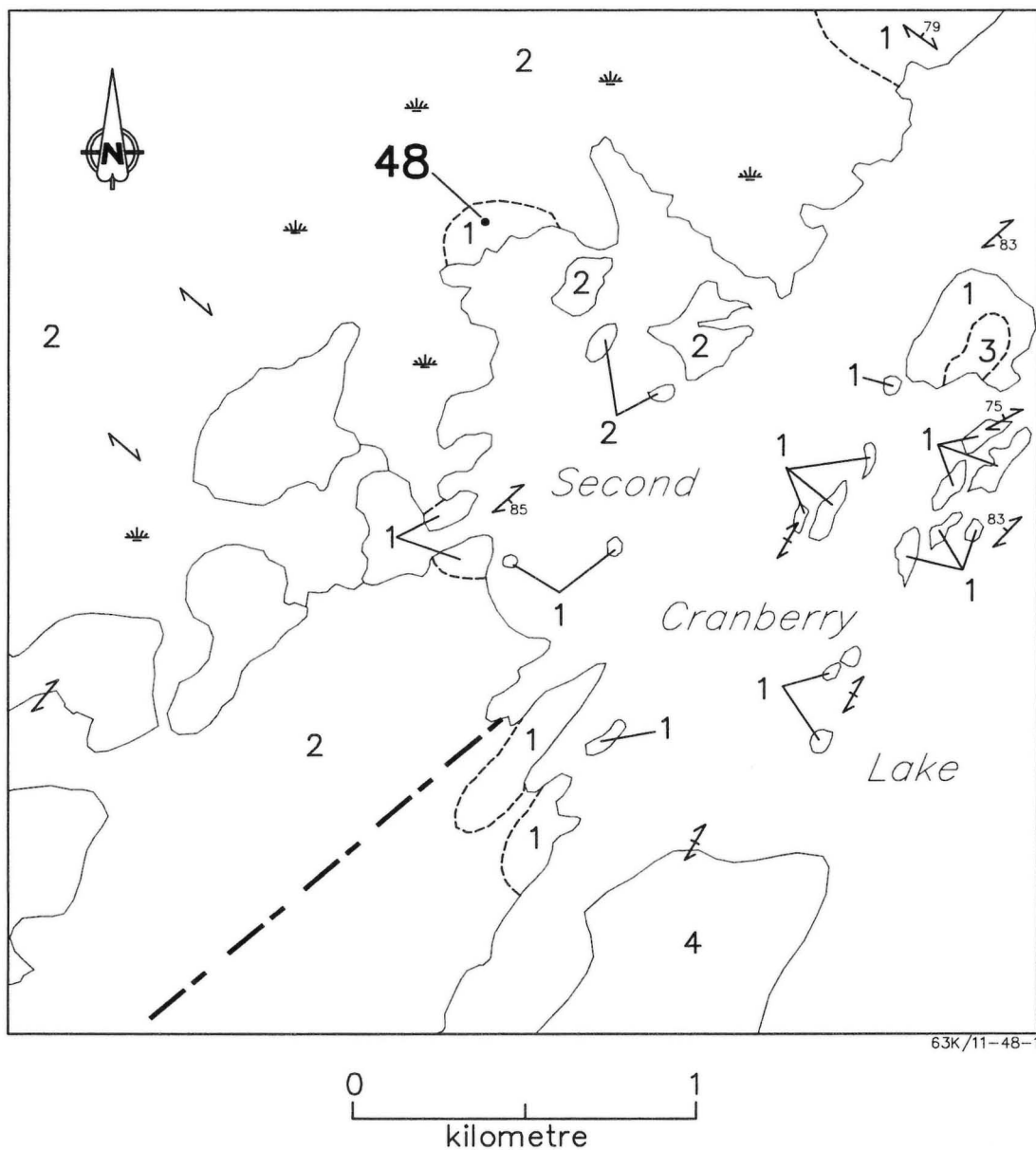
Manitoba Energy and Mines, Mines Branch.

Holloway, J. M.

1939: Nine surveyed claims, Second Cranberry Lake; Manitoba Energy and Mines, Mines Branch, unpublished report, 2 p.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



4 Dolomite, dolomitic limestone

3 Medium grained, pink, faintly gneissic biotite granite

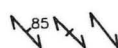
2 Medium- to coarse-grained quartz diorite; biotite-hornblende diorite; minor granodiorite

Amisk Group

1 Greenstone and diorite

----- Geological boundary (approximate)

Geology after Podolsky (1951).

 Foliation (inclined, vertical, dip unknown)

--- Fault

 Swamp

**48.** Occurrence location

Figure 48-1: Geological setting of occurrence 48



LOCATION: 49

NAME: (Drill indicated mineralization)

UTM: 6053656N/354723E

ACCESS: Via boat from Cranberry Portage

AREA: First Cranberry Lake Narrows

AIRPHOTO: A26363-26

#### EXPLORATION SUMMARY:

The area was staked in 1948 by T.R. Webb who drilled one 45 m hole in 1950 (A.F. 90288). The property was staked by T.R. Webb in 1954 who drilled 5 holes totalling 375 m (A.F. 90290, 90300).

The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

The area (Fig. 49-1) is underlain by mafic volcanic rocks that have been intruded by a pluton of medium- to coarse-grained quartz diorite and biotite-hornblende diorite (Podolsky, 1951).

#### MINERALIZATION:

DDH 1 intersected fine grained pyrite in sheared rhyolite. DDH 3 and 4 intersected 16 m of 'mineralized sheared rhyolite' (A.F. 90290).

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified.

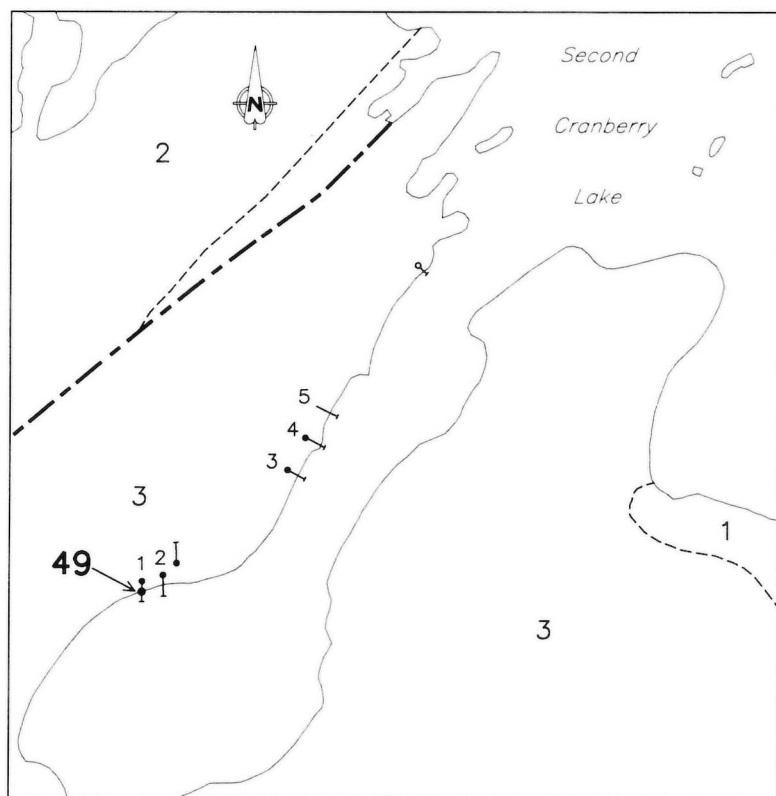
#### REFERENCES:

Assessment Files 90288, 90290, 90300 and 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



63K/11-49-1

Figure 49-1: Drill hole locations in the vicinity of occurrence 49.

LOCATION: 50

NAME: (Drill indicated mineralization)  
UTM: 6053158N/354364E  
ACCESS:

AREA: First Cranberry Lake Narrows  
AIRPHOTO: A26013-174

#### EXPLORATION SUMMARY:

The property was staked in 1954 by T.R. Webb who, during the period 1955-63 drilled 7 holes totalling 516 m (A.F. 90290; 90296). The area was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). At Site A (Fig. 50-1), there is a 2x2 m shaft of unknown depth.

#### GEOLOGICAL SETTING:

The area is extensively covered by glacial deposits. The bedrock in the area consists predominantly of mafic volcanic rocks and Phanerozoic dolomite and dolomitic limestone (Podolsky, 1951; 1958). At Site A (Fig. 50-1) there are outcrops of fine grained, dark green foliated basaltic rocks.

#### MINERALIZATION:

The drill holes intersected 'mineralized sheared andesite' and 'greenstone slightly mineralized with fine grained pyrite' (A.F. 90290). At Site A rubble from the Fox Bay shaft (2 x 2 x ? m) contains chloritic material and up to 15% magnetite in quartz veins and chloritic rocks..

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; multiple veins.

#### REFERENCES:

Assessment Files 90290, 90202 and 90296  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

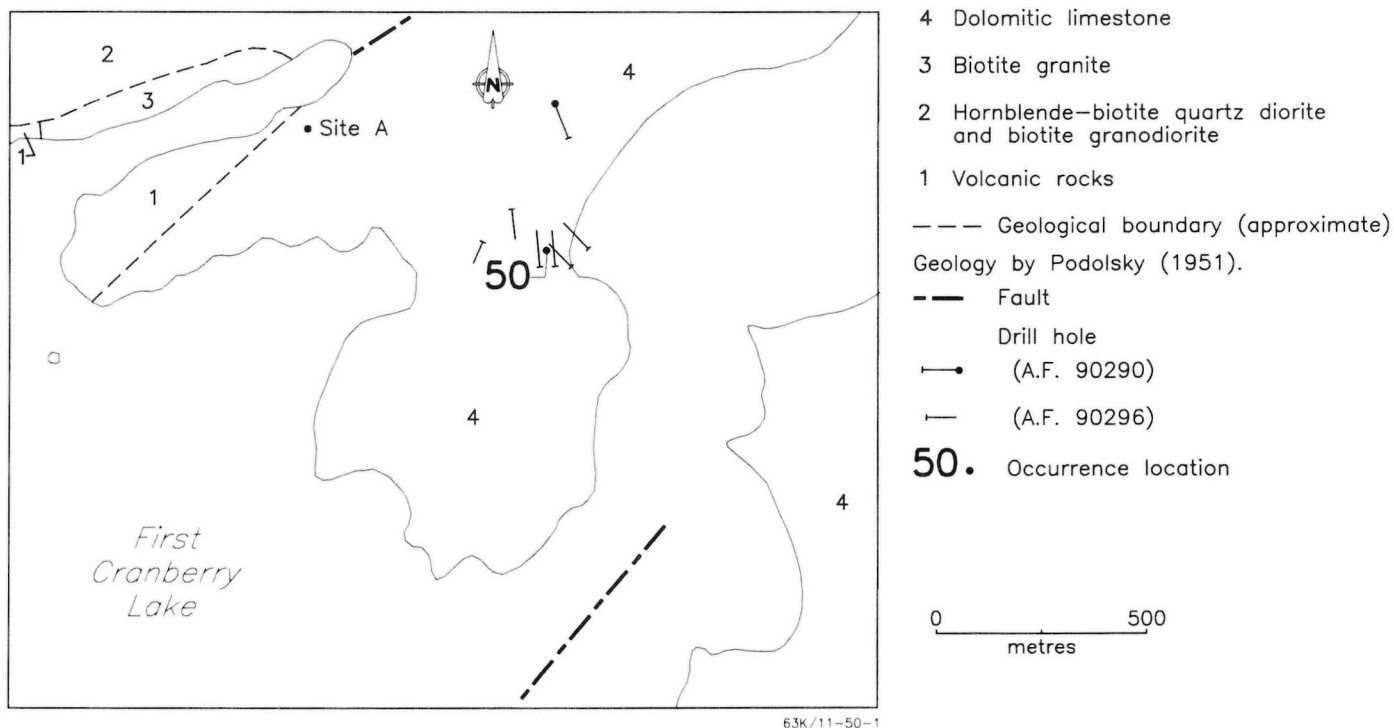


Figure 50-1: Drill hole locations in the vicinity of occurrence 50.

**LOCATION: 51**

**NAME:** (Drill indicated mineralization)

**UTM:** 6054638N/353063E

**ACCESS:** Via bush aircraft or boat and traverse

**AREA:** First Cranberry Lake

**AIRPHOTO:** A26363-18

**EXPLORATION SUMMARY:**

The property was staked in 1978 for Granges. A HLEM survey was conducted in 1980 (A.F. 92435). Three holes totalling 250 m were drilled in 1982 (A.F. 92434). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020).

**GEOLOGICAL SETTING:**

A pluton of hornblende-biotite-quartz diorite intrudes mafic volcanic rocks that occur as remnants throughout this area of dominantly intrusive rocks (Podolsky, 1958). The drill holes intersected hornblende diorite, granite gneiss, dacitic rocks, granitic and granodioritic rocks and andesite (A.F. 92434).

**MINERALIZATION:**

DDH BE-91 (Fig. 51-1) intersected a 2.4 m section of chloritic schist with 10-60% pyrrhotite and 20% magnetite, which included a 1.5 m core length of 30% pyrrhotite and 20% magnetite. Trace amounts of graphite and pyrite were present in this chloritic schist. A dacitic tuff interval in this drill core contained a 1.9 m section with 30-40% pyrrhotite, 10% magnetite and trace amounts of sphalerite.

DDH BE-93 and BE-92 both intersected graphitic schist with pyrrhotite and pyrite. The DDH BE-93 core included a 4.6 m section with 10-30% pyrrhotite, minor pyrite and

graphite adjacent to a 0.8 m section of graphite and pyrrhotite with minor pyrite. In DDH BE-92 core a 13.4 m graphitic interval included short sections of near solid pyrrhotite; in addition, a 16.3 m interval of sulphide-bearing dacite with 5-30% pyrrhotite that included near solid pyrrhotite sections (A.F. 92434).

**GEOCHEMICAL DATA:**

36 core samples from the three drill cores contained trace Au, Ag, Cu and Zn (A.F. 92434).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. The genesis of the sulphide-bearing dacitic rocks intersected in DDH BE-92 is uncertain.

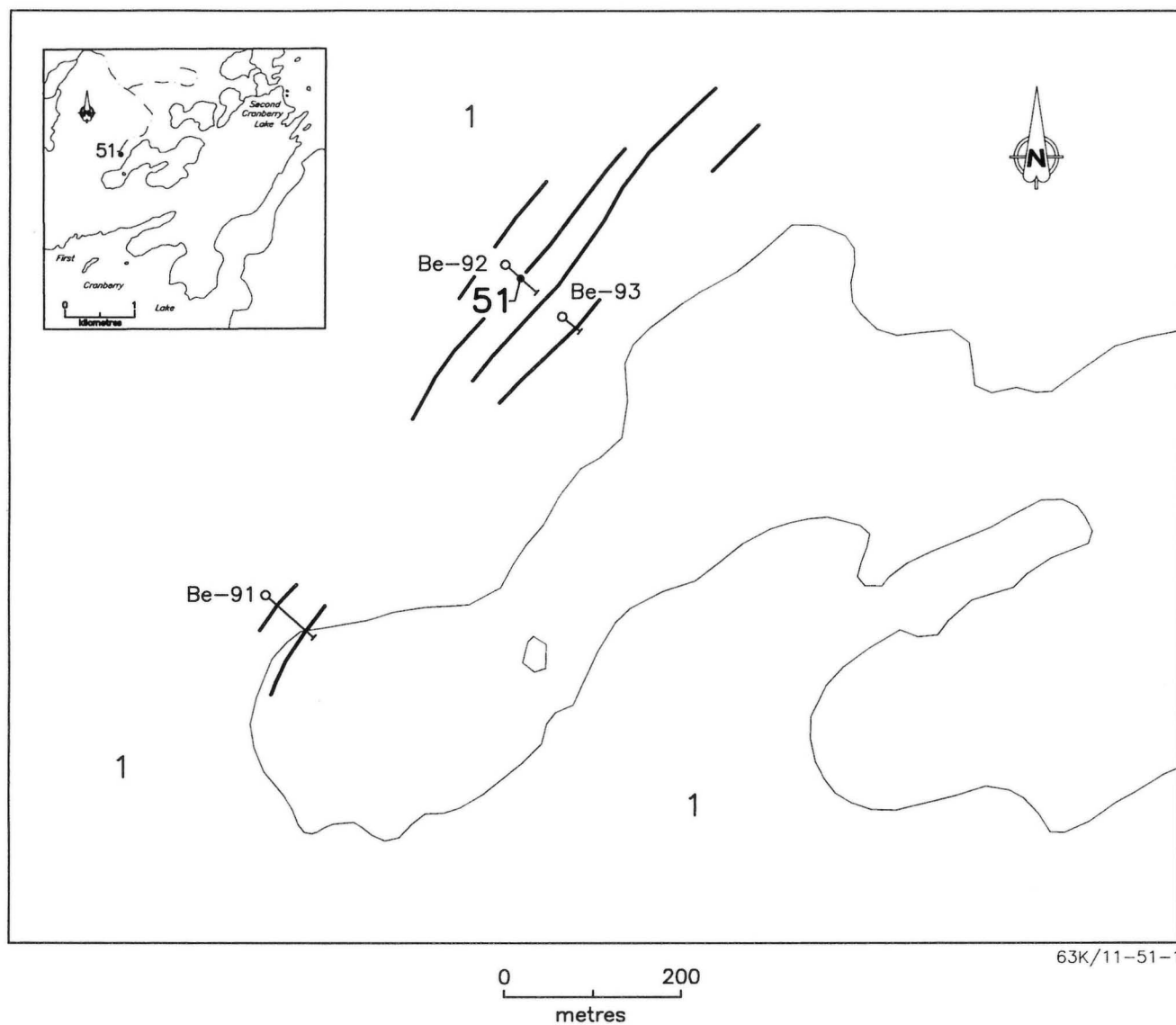
**REFERENCES:**

Assessment Files 92020, 92434 and 92435

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



63K/11-51-1

1 Hornblende-biotite quartz diorite  
and biotite granodiorite

Geology by Podolsky (1958).

— EM conductor (A.F. 92020)

Be  
—○— Drill hole (A.F. 92434)

--- Trail

**51.** Occurrence location

Figure 51-1: Location of drill holes and geophysical conductors in the vicinity of occurrence 51.

LOCATION: 52

NAME: (Drill indicated mineralization)

UTM: 6050832N/354439E

ACCESS: Via boat

AREA: First Cranberry Lake

AIRPHOTO: A26013-175

#### EXPLORATION SUMMARY:

The property was staked in 1978 for Granges Exploration Actiebolaget. A HLEM survey was conducted in 1980 (A.F. 92435). Three holes totalling 250 m were drilled in 1982 (A.F. 92434). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020).

#### GEOLOGICAL SETTING:

A pluton of hornblende-biotite granodiorite and diorite intrudes mafic volcanic rocks (Fig. 52-1). These rocks are unconformably overlain by Ordovician dolomitic limestone (Podolsky, 1951, 1958). The DDH (Fig. 52-2) intersected andesite, dacite, graphitic schist, biotite-quartz  $\pm$  garnet gneiss, Ordovician limestone and sandstone (A.F. 92434).

#### MINERALIZATION:

A 3.8 m section of DDH BE-90 core contained 10-20% pyrite and abundant graphite. 10-15% pyrite and 10% graphite were present in a 1.7 m section of DDH BE-94 core. A 8.4 m interval of graphitic schist and dacite from DDH BE-95 contained up to 10% pyrite as well as some graphite.

#### GEOCHEMICAL DATA:

Fifteen drill core samples from DDH BE-90, BE-94 and BE-95 contained trace Au, Ag, Cu, and Zn.

#### CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

#### REFERENCES:

Assessment Files 92434 and 92435

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

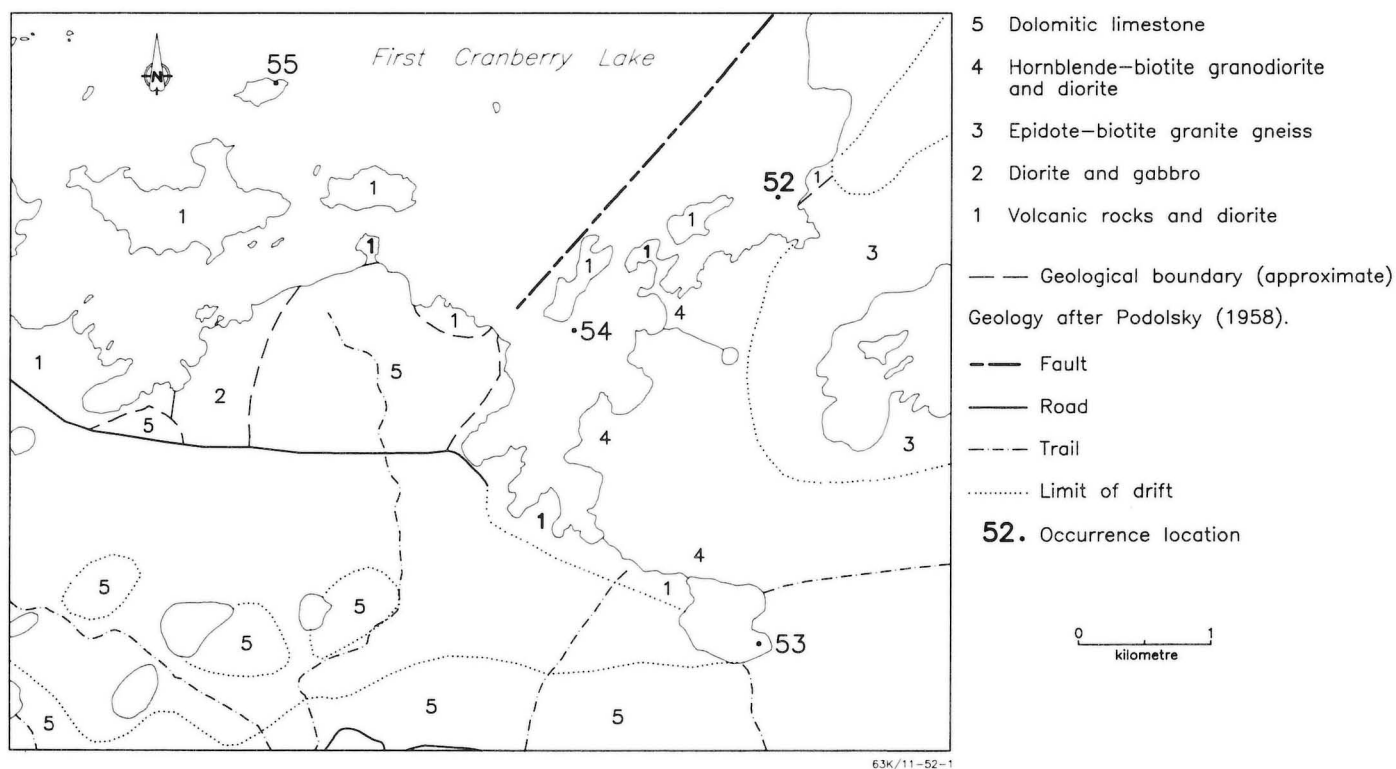


Figure 52-1: Geological setting of occurrences 52, 53, 54 and 55.

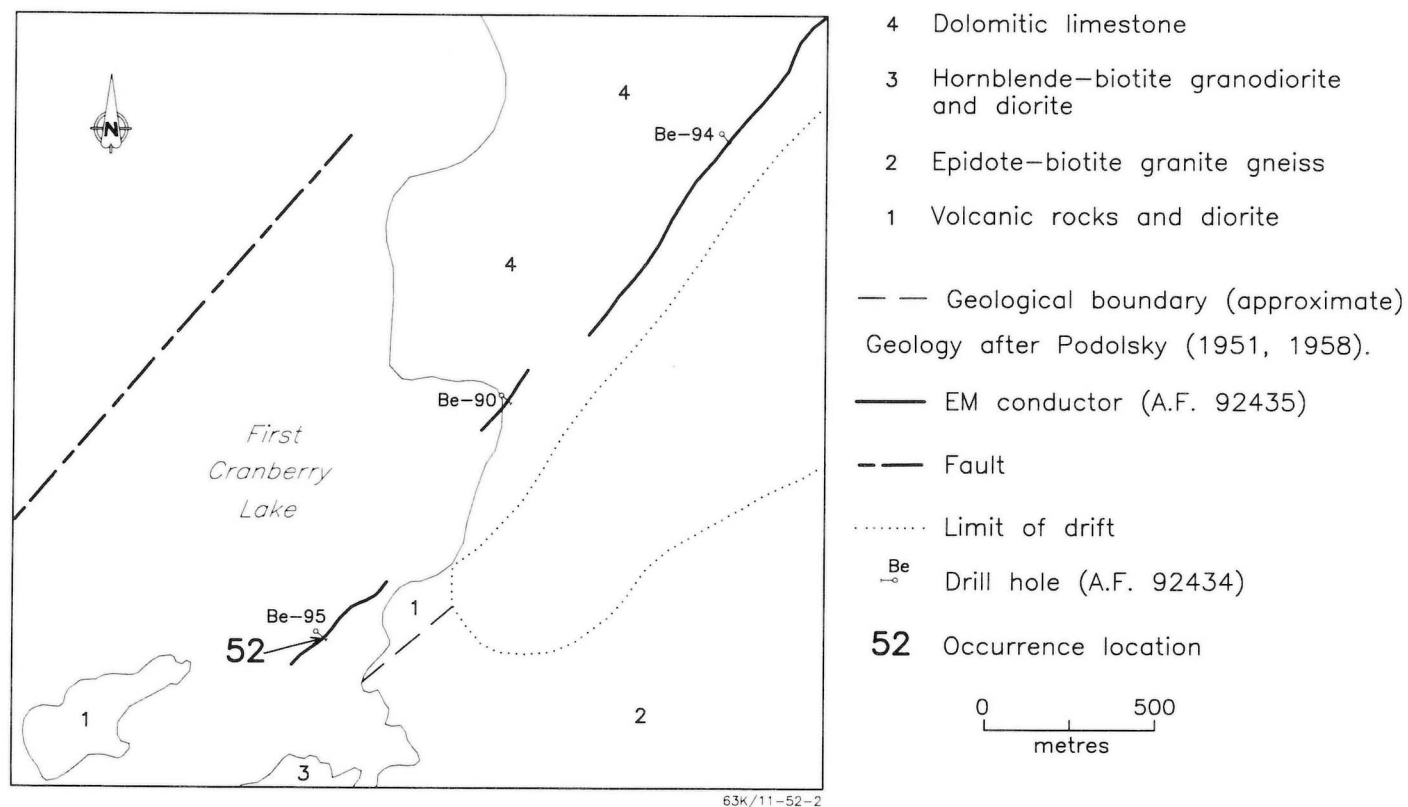


Figure 52-2: Location of drill holes and geophysical conductors in the vicinity of occurrence 52.

**LOCATION: 53**

**NAME:** (Drill indicated mineralization)  
**UTM:** 6047423N/354333E  
**ACCESS:** Via boat and traverse

**AREA:** South of First Cranberry Lake (Fig. 52-1)  
**AIRPHOTO:** A24478-72

**EXPLORATION SUMMARY:**

Regional AMAG and AEM surveys were conducted over this area by Parmlee Manitoba Mining Company Ltd. in 1957 (A.F. 91707).

The property was staked in 1978 by Granges. A HLEM survey was conducted in 1980 (A.F. 92435) and a 81 m hole was drilled in 1982 (A.F. 92434).

**GEOLOGICAL SETTING:**

The area is underlain by mafic volcanic rocks that have been intruded by granodiorite and diorite (Podolsky, 1958). Diorite and biotite-quartz  $\pm$  chlorite  $\pm$  graphite  $\pm$  hornblende gneiss were intersected in the drill hole (A.F. 92434).

**MINERALIZATION:**

A 1.1 m section of DDH BE-89 (Fig. 53-1) core contained 50-60% pyrrhotite in a biotite-graphite-quartz-chlorite gneiss. A 3.3 m section adjacent to the above contains graphite, 5-50% pyrrhotite and minor pyrite (A.F. 92434).

**GEOCHEMICAL DATA:**

Nine core samples from DDH BE-89 contained trace Au, Ag, Cu and Zn (A.F. 92434).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation.

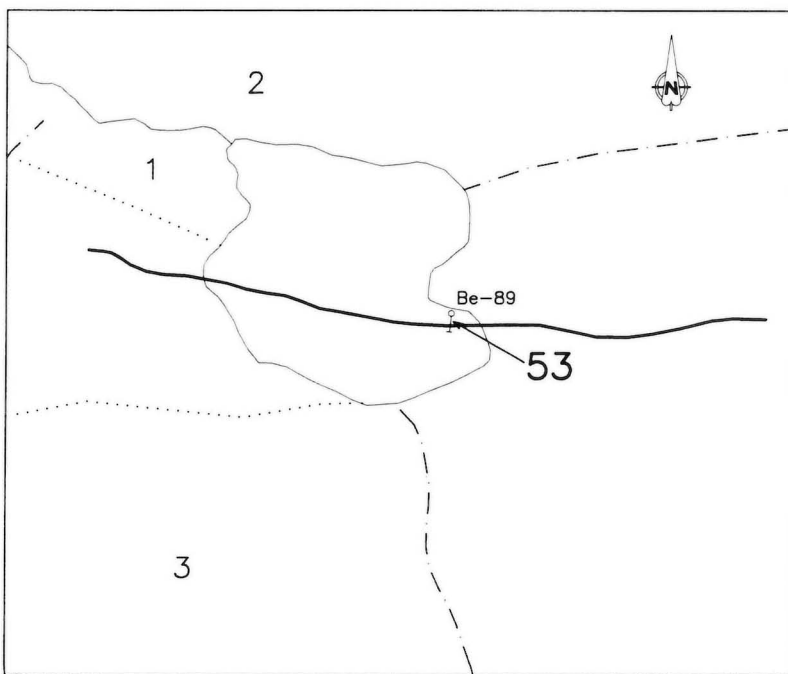
**REFERENCES:**

Assessment Files 91707, 92435, 92434

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



3 Dolomitic limestone

2 Hornblende-biotite granodiorite and diorite

1 Volcanic rocks and diorite

Geology after Podolsky (1958).

— EM conductor (A.F. 92435)

..... Limit of drift

Be  
○ Drill hole (A.F. 92434)

— Trail

**53** Occurrence location

0 500  
metres

Figure 53-1: Location of drill hole and geophysical conductors in the vicinity of occurrence 53.

LOCATION: 54

NAME: (Drill indicated mineralization)

UTM: 6049829N/352994E

ACCESS: Via boat

AREA: First Cranberry Lake (Fig. 52-1)

AIRPHOTO: A24478-73

#### EXPLORATION SUMMARY:

The property was staked in 1978 by Granges. A HLEM survey was conducted in 1980 (A.F. 92435) and a 60 m hole was drilled in 1982 (A.F. 92434).

#### GEOLOGICAL SETTING:

The area is underlain by mafic volcanic rocks that have been intruded by granodiorite and diorite (Fig. 54-1; Podolsky, 1957). Diorite and biotite-quartz  $\pm$  chlorite  $\pm$  graphite  $\pm$  hornblende gneiss were intersected in the drill hole (A.F. 92434). DDH BE-88 also intersected 15.2 m of quartz-chlorite-garnet gneiss (A.F. 92434).

#### MINERALIZATION:

A 15 m section of 15% disseminated pyrite, a 30 cm section of 2% pyrite in veinlets and a 45 cm section of 3% disseminated pyrite were intersected in DDH BE-88 (A.F. 92434).

#### GEOCHEMICAL DATA:

Six samples of drill core assayed contained trace Au, Ag, Cu and Zn (A.F. 92434).

#### CLASSIFICATION:

Disseminated mineralization - not classified.

#### REFERENCES:

Assessment Files 92434 and 92435

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

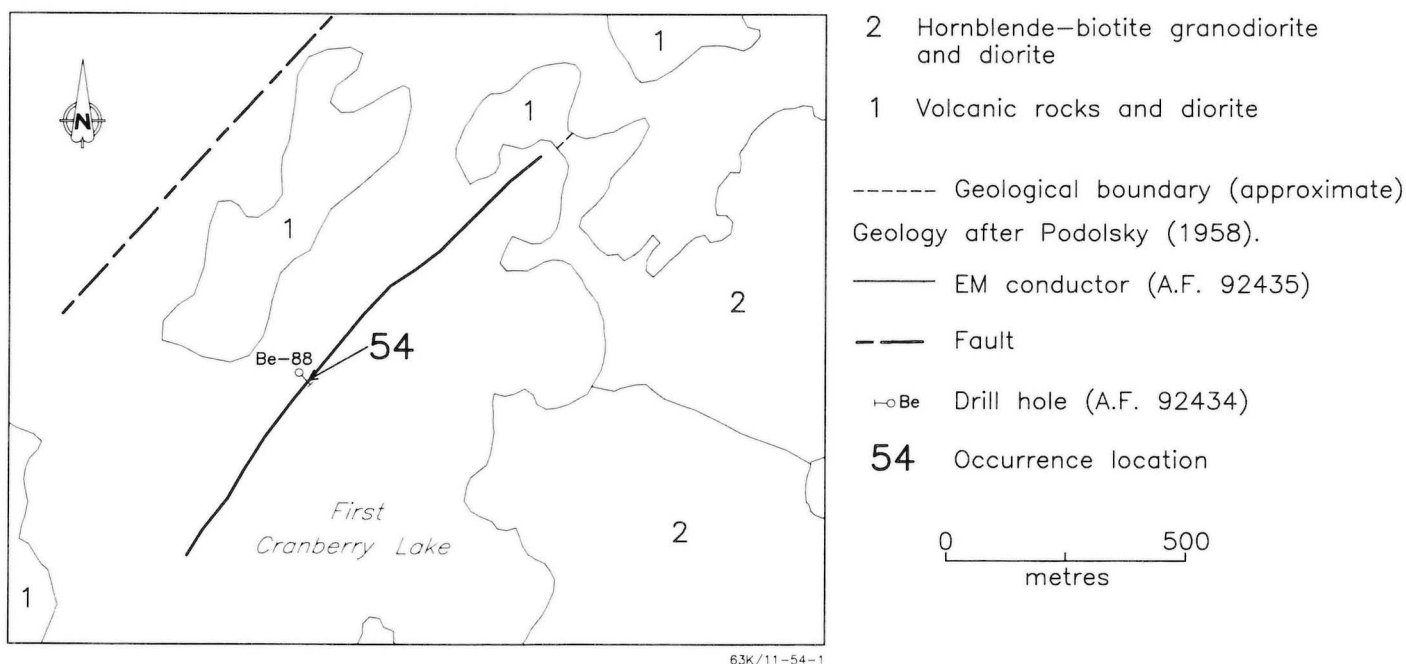


Figure 54-1: Location of drill hole and geophysical conductor in the vicinity of occurrence 54.



LOCATION: 55

NAME: Nabob  
UTM: 6051719N/350699E  
ACCESS: Via boat

#### EXPLORATION SUMMARY:

The property was staked by F.H. Low in 1935 and assigned to Cranberry Gold Mine Syndicate in 1937. Several trenches were blasted and channel samples were collected. Two large trenches were excavated (Fig. 55-1). The property was staked by F.H. Low in 1938 and several pits and trenches were made. The claim was cancelled in 1947 (M.I. Card 63K/11 Au7). The property was staked in 1948 by J. Murray who drilled one 48 m hole (A.F. 90304). The property was explored by Gold Button Mines Ltd. during 1951 through 1958. The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020). Two trenches, 4.5x2.5x3 m and 16x2x1 m, were examined in 1984.

#### GEOLOGICAL SETTING:

The area (Fig. 55-1) is underlain predominantly by mafic volcanic rocks (Podolsky, 1958). A 8 m thick quartz vein with a 040°-050° strike and 53°-73°N dip occurs in chlorite schist (Fig. 55-2) on the southeast corner of the island. The chlorite schist zone (020°/80°W) and large quartz vein are in turn cut by a number of smaller quartz veins that are also cut by 1-3 cm thick carbonate veins. This schist zone (Fig. 55-2) is probably part of a regional shear that extends through the Gold Hill area (Location 1, this volume) and continues along the East Arm of Athapapuskow Lake to the southeast (Syme, 1988).

#### MINERALIZATION:

The chlorite schist contain 2-5%, maximum 10%, disseminated pyrite and trace amounts of chalcopyrite. Sulphides are commonly concentrated along the quartz vein-schist contacts. Gold assays of up to 30.86 g/t were reported, but the nature of the material analyzed was not recorded (Cranberry Gold Mine Syndicate Ltd., Corporation File). The DDH core included a 14 m zone of sericite and chlorite schist with 'small amounts' of pyrite, 6.1 m of 'quartz stringers, andesite schist, pyrite', 5.2 m of quartz with small amounts of pyrite, and >4 m of sericite schist with pyrite, chalcopyrite and quartz stringers (A.F. 90304).

AREA: First Cranberry Lake (Fig. 52-1)  
AIRPHOTO: A26362-116

#### GEOCHEMICAL DATA:

Grab (?) samples from the trenches assayed Au values of 15.09 g/t, 15.77 g/t, 12.34 g/t, 17.14 g/t, 4.80 g/t, 14.40 g/t, 30.86 g/t, and 3.43 g/t Au (Cranberry Gold Mine Syndicate Ltd., Corporation File).

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

- Assessment Files 90304, 92020  
Manitoba Energy and Mines, Mines Branch.
- Mineral Inventory Card 63K/11 Au7  
Manitoba Energy and Mines, Geological Services Branch.
- Cranberry Gold Mine Syndicate Ltd.  
Corporation File; Manitoba Energy and Mines, Geological Services Branch.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.
- Syme, E.C.  
1988: Athapapuskow Lake Project; Manitoba Energy and Mines, Minerals Division, Report of Field Activities 1988, p. 20-34.

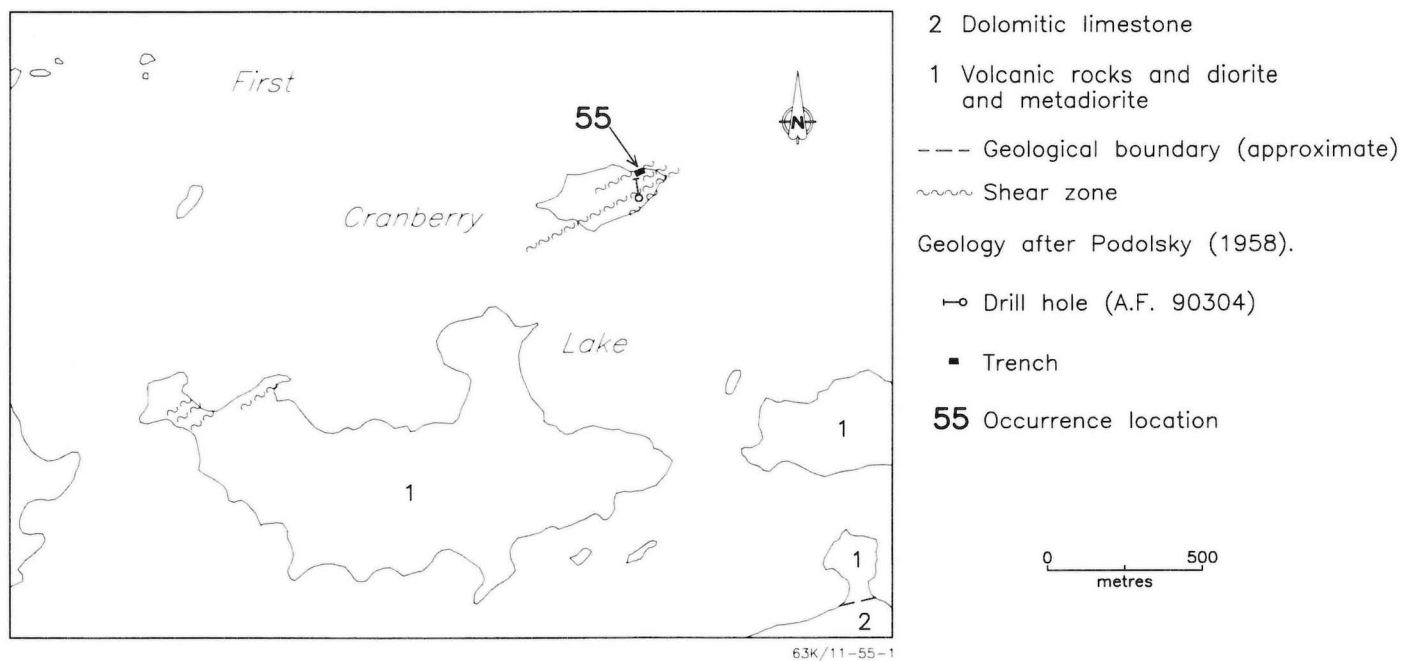


Figure 55-1: Location of drill hole and trench in the vicinity of occurrence 55.

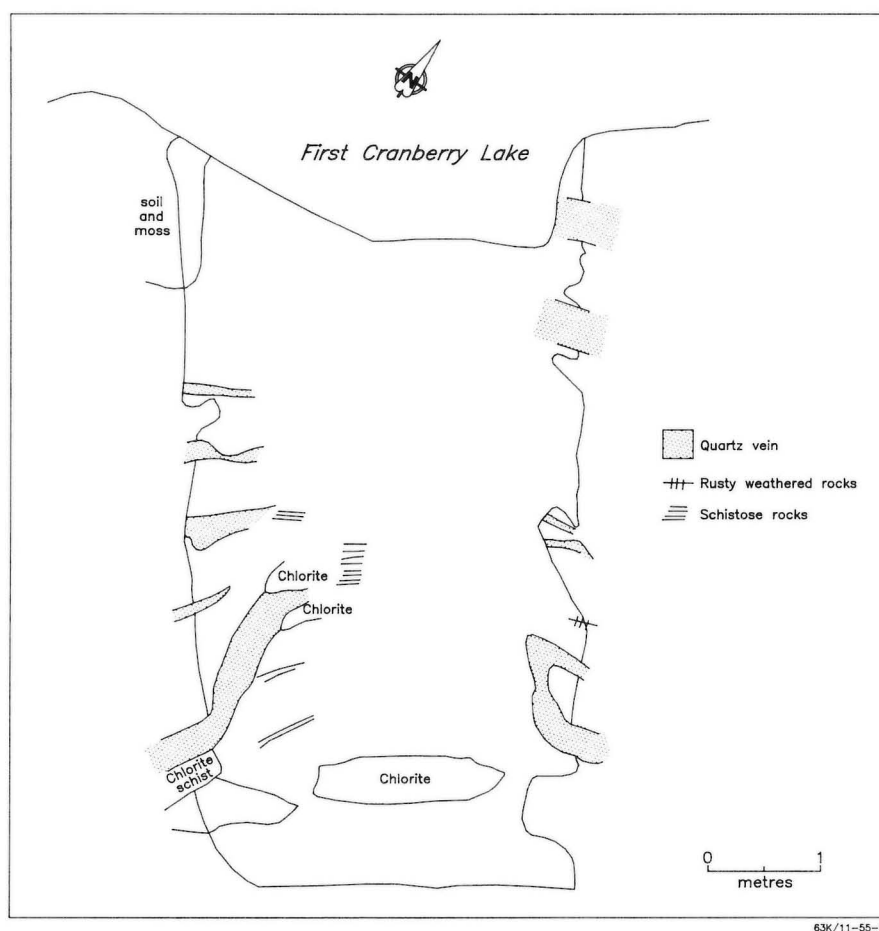


Figure 55-2: Distribution of quartz veins in trench at occurrence 55.

LOCATION: 56

NAME:

UTM: 6055445N/350146E

ACCESS: Via logging trail from highway 10

AREA: South of Anvil Lake

EXPLORATION SUMMARY:

Podolsky (1958) indicates the presence of a mineral occurrence at this Location. The area was searched, but no evidence of old trenches were found. The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

GEOLOGICAL SETTING:

Mafic volcanic rocks (Fig. 56-1) have been intruded by large plutons of diorite to granodiorite (Podolsky, 1958).

MINERALIZATION:

Trace amounts of pyrite and chalcopyrite occurs in both the volcanic and plutonic rocks.

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization-not classified.

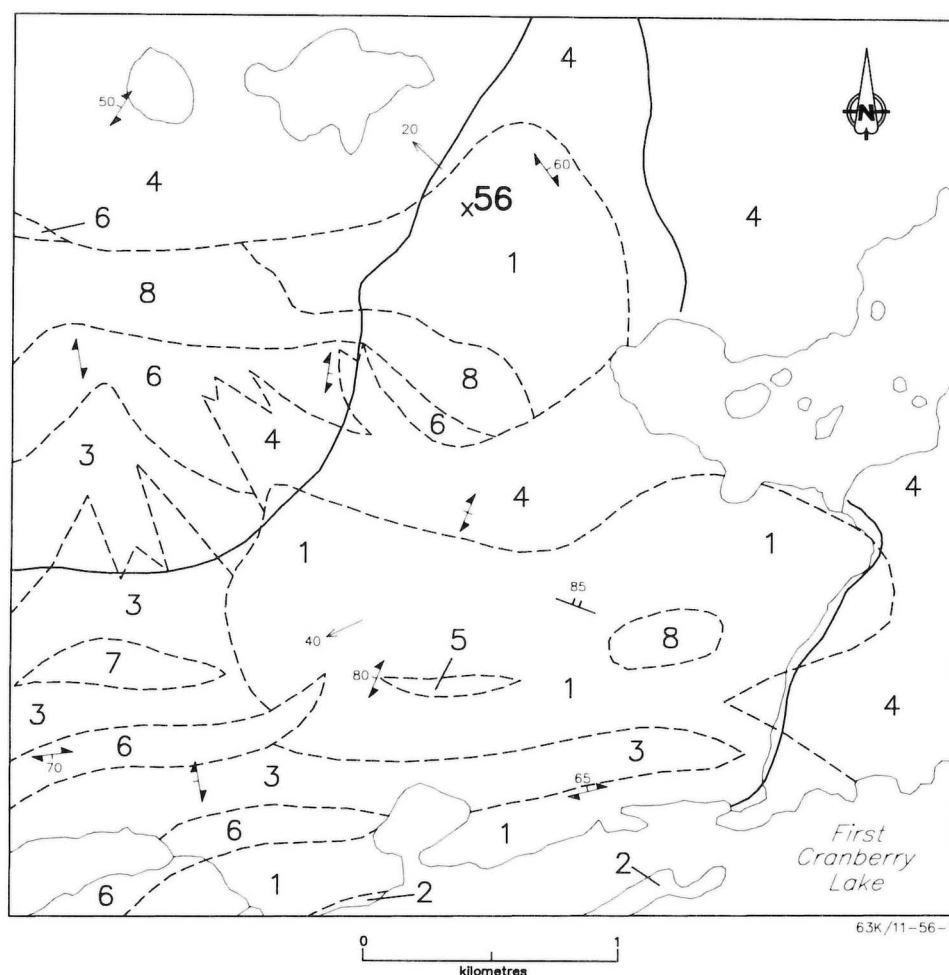
REFERENCES:

Assessment File 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



#### Intrusions

- 8 Syenodiorite and syenite
- 7 Gneissic feldspar porphyry and porphyritic gabbro
- 6 Syenite and syenodiorite dykes
- 5 Biotite granite
- 4 Hornblende-biotite quartz diorite and biotite granodiorite
- 3 Hornblende-biotite granodiorite and diorite

#### Amisk Group

- 2 Diorite and gabbro
- 1 Volcanic rocks; amphibolite, tuff, and agglomerate

----- Geological boundary (approximate)

Geology after Podolsky (1958).

Bedding (dip known, top of bed unknown)

Gneissosity (inclined, vertical, dip unknown)

Lineation (inclined, plunge known)

Winter road

x56 Occurrence (location approximate)

Figure 56-1: Geological setting of occurrence 56

LOCATION: 57

NAME:

UTM: 6055136N/345722E

ACCESS: Via Provincial Highway 10

EXPLORATION SUMMARY:

The property was staked in the 1920's as part of the Gold Pan group of claims. It was staked in 1951 as the Web 2 claim. HBED optioned the property and conducted a HLEM survey in 1954 (A.F. 91869). The property was included in a regional AMAG and AEM survey conducted by Sherritt Gordon Mines Ltd. during 1973-1974 (A.F. 92020).

GEOLOGICAL SETTING:

The area (Fig. 57-1) is underlain predominantly by mafic to intermediate flows with minor related intrusive and fragmental volcanic rocks (Podolsky, 1958). The host to the mineralization is an aphanitic mafic volcanic rock.

MINERALIZATION:

Up to 25% pyrite occurs in a 7 m thick zone as dissemination's, blebs, and lenses. Abundant epidote and quartz veinlets occur in the altered and mineralized rock (Wadien and Gale, 1984).

AREA: Northeast of Sherritt Junction

AIRPHOTO: 26331-177

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 91869 and 92020

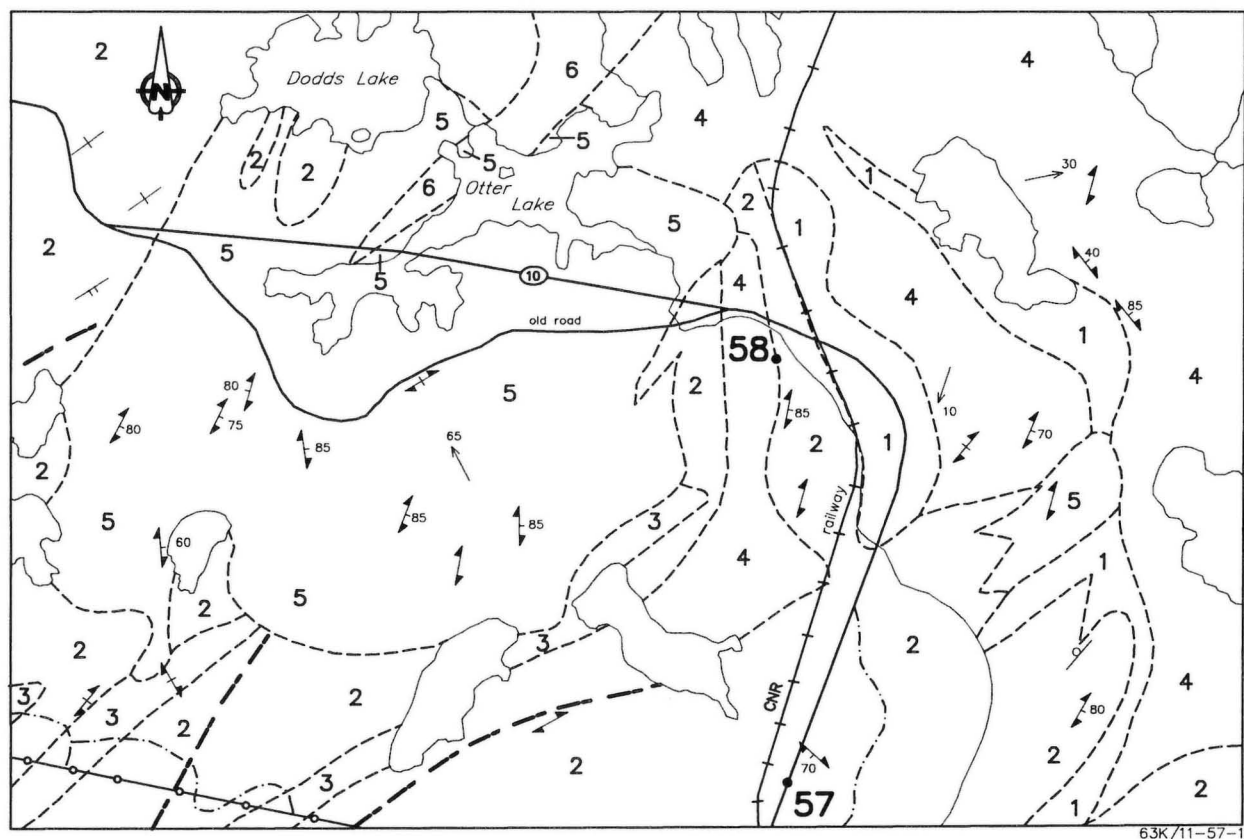
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west Half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

Wadien, R. and Gale, G.H.

1984: Geochemistry of felsic intrusive and extrusive rocks in the Nisto Lake-Lucille Lake areas, Flin Flon, Manitoba; in Manitoba Energy and Mines, Mineral Resources Division, Report of Field Activities 1984, p. 66-67.



63K/11-57-1

0 1  
kilometres

#### Intrusions

- 6 Syenodiorite and syenite
- 5 Biotite granite
- 4 Hornblende-biotite quartz diorite and biotite granodiorite
- 3 Diorite and gabbro

#### Amisk Group

- 2 Volcanic rocks
- 1 Hornfels and mixed granite gneiss

----- Geological boundary (approximate)

Geology after Podolosky (1958).

Bedding (vertical)

Bedding (dip known, top of bed unknown)

Bedding (top of bed known, dip unknown)

Gneissosity (inclined, vertical, dip unknown)

Lineation (inclined, plunge known)

Fault (approximate)

Winter road

Powerline

57. Occurrence location

Figure 57-1: Geological setting of occurrences 57 and 58

LOCATION: 58

NAME:

UTM: 6057308N/345611E

ACCESS: Via Provincial Highway 10 and traverse

AREA: Northeast of Sherritt Junction (Fig. 57-1)

AIRPHOTO: A26369-274

#### EXPLORATION SUMMARY:

The area was staked by L. Bunn in 1964. In 1989 the property was held by F. Bunn. The property was included in regional airborne magnetic and EM surveys conducted by Sherritt Gordon Mines Ltd. during the winter of 1973-1974 (A.F. 92020).

At Site A (Fig. 58-1) there is a 3 x 2 x 0.75 m trench and an old drill stem approximately 5 m east of the trench.

#### GEOLOGICAL SETTING:

The area (Fig. 57-1) is underlain by mafic volcanic rocks that have been intruded by granodiorite and diorite dykes related to the surrounding plutons (Podolsky, 1958). The mineralized outcrop consists of fine grained diorite that has been intruded by dykes of granodiorite and aplite (Fig. 58-1).

#### MINERALIZATION:

The rusty weathered zones (Fig. 58-1) contain disseminated to near solid pyrite +/- chalcopyrite in a siliceous matrix. Locally, e.g. west of Zone 2, the diorite is silicified, chloritized and epidotized and contains dissemination's and veinlets of pyrite and chalcopyrite. The trench at Site A was excavated on a rusty weathered zone with abundant veinlets of pyrite that constitute 25% of the rock.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified.

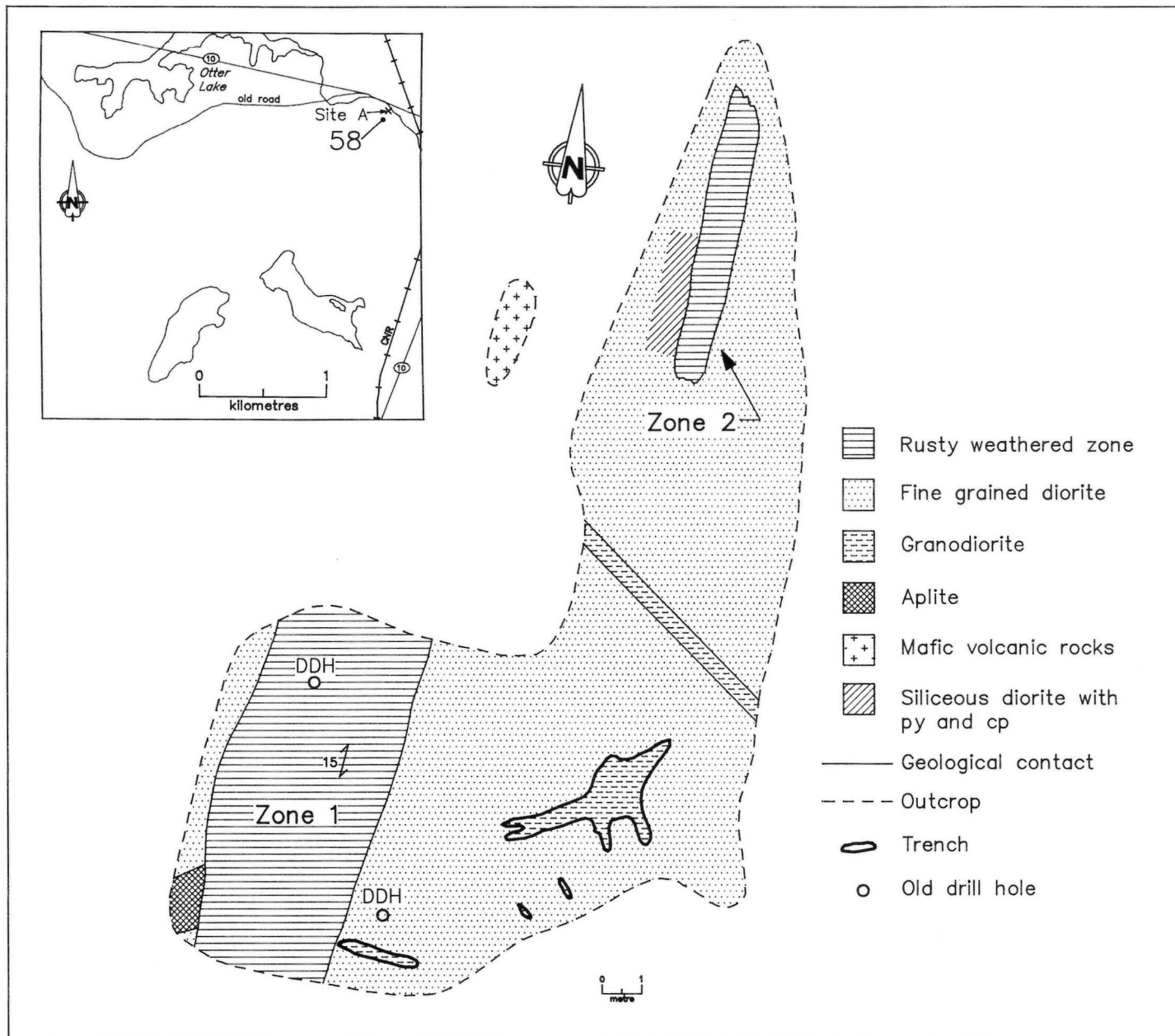
#### REFERENCES:

Assessment File 92020

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



63K/11-58-1

Figure 58-1: Detailed geology and location of trenches and drill hole at occurrence 58.



LOCATION: 59

NAME:

UTM: 6056658N/345122E

ACCESS: Via Provincial Highway 10 and traverse

AREA: South of Otter Lake

AIRPHOTO: A26369-275

EXPLORATION SUMMARY:

The property was staked in 1954 as the Ace claim. The area was staked in 1970 by L. Bunn who drilled two holes totalling 275 m (A.F. 92258) before the claim was cancelled in 1979. The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020).

GEOLOGICAL SETTING:

The area (Fig. 59-1) is underlain by mafic to intermediate volcanic rocks and by mafic to intermediate intrusive rocks that have been intruded by biotite granite, hornblende-biotite quartz diorite and biotite granodiorite (Podolsky, 1958).

MINERALIZATION:

Molybdenite occurs with pyrite and quartz in a vein that cuts fine grained mafic intrusive rocks (A.F. 92258).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Vein type mineralization; single vein.

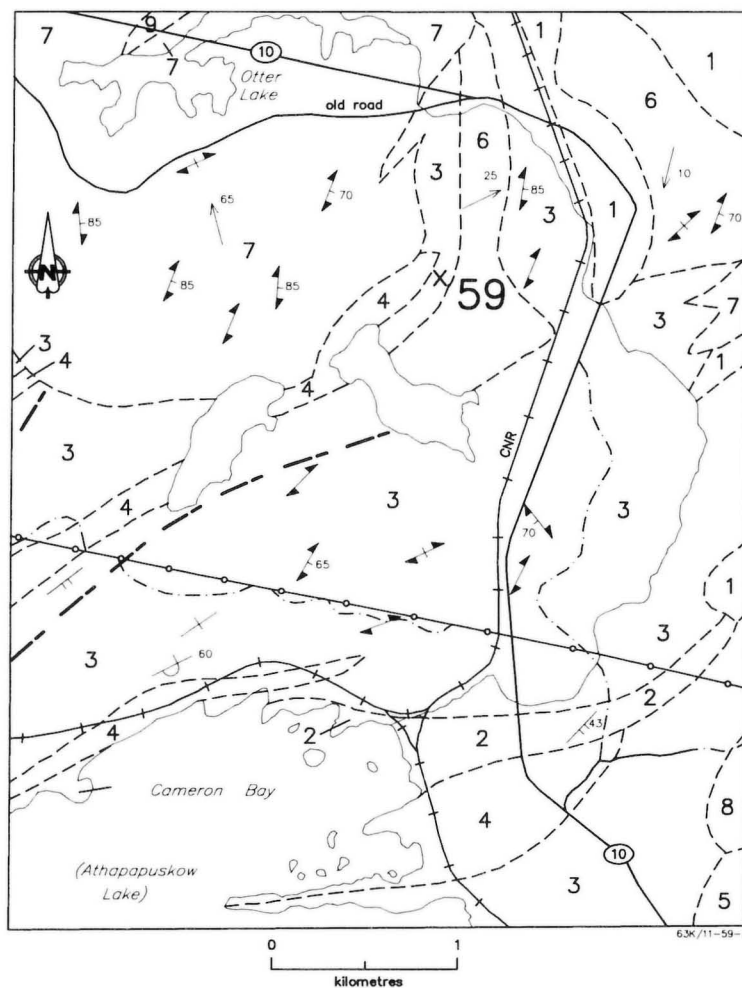
REFERENCES:

Assessment Files 92020 and 92258

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



- |  |   |
|--|---|
| Intrusions   | —+— Bedding (vertical)                      |
| 9 Syenodiorite and syenite                                   | —+— Bedding (dip known, top of bed unknown) |
| 8 Gneissic feldspar porphyry and porphyritic gabbro          | 60 — Bedding top of bed known, dip known)   |
| 7 Biotite granite  | ↖↗ 85 Gneissosity (vertical, dip unknown)   |
| 6 Hornblende-biotite quartz diorite and biotite granodiorite | 65 ← Lineation (inclined, plunge known)     |
| 5 Hornblende-biotite granodiorite and diorite                | — Fault (approximate)                       |
| Amisk Group  | — Winter road                               |
| 4 Diorite and gabbro   | —(10)— Road                                 |
| 3 Volcanic rocks; amphibolite, tuff, agglomerate             | —○— Powerline                               |
| 2 Tuff and agglomerate                                       | X Approximate location 2 DDH (A.F. 92258)   |
| 1 Hornfels and mixed volcanic rocks/granite gneiss           | 59 Occurrence location                      |
| ----- Geological boundary (approximate)                      |   |

Geology after Podolosky (1958).

Figure 59-1: Geological setting of occurrence 59

LOCATION: 60

NAME:

UTM: 6058067N/344902E

ACCESS: Via Provincial Highway 10 and boat

#### EXPLORATION SUMMARY:

The area was staked in 1971 for Falconbridge Nickel Mines Ltd., who conducted magnetometer and AFMAG surveys (A.F. 91899). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020) and Canadian Nickel Company Ltd. in 1980 (A.F. 92473). Mineralization was exposed in a roadcut in 1984. The Chuck claims were staked by Stanley Obsniuk in 1984 and four trenches were dug east and south of Otter Lake (A.F. 92782).

#### GEOLOGICAL SETTING:

This mineralization occurs within a biotite granite (Fig. 60-1; Podolsky, 1958).

#### MINERALIZATION:

Minor amounts of pyrite, molybdenite, chalcopyrite and sphalerite occur in a 50 m thick dyke that cuts the granitic rocks (A.F. 92782).

Trace chalcopyrite and molybdenite occur in veinlets and on fracture planes in mafic volcanic rocks at Site A (Wadien and Gale, 1984). Trace molybdenite occurs in granite at Site B (Fig. 60-1).

AREA: Otter Lake (Fig. 57-1).

AIRPHOTO: A26369-263, A26369-275

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; multiple veins.

#### REFERENCES:

Assessment Files 91899, 92020, 92473, 92782.

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

Wadien, R. and Gale, G.H.

1984: Geochemistry of felsic intrusive and extrusive rocks in the Nisto Lake-Lucille Lake areas, Flin Flon, Manitoba; in Manitoba Energy and Mines, Mineral Resources Division, Report of Field Activities 1984, p. 66-67.

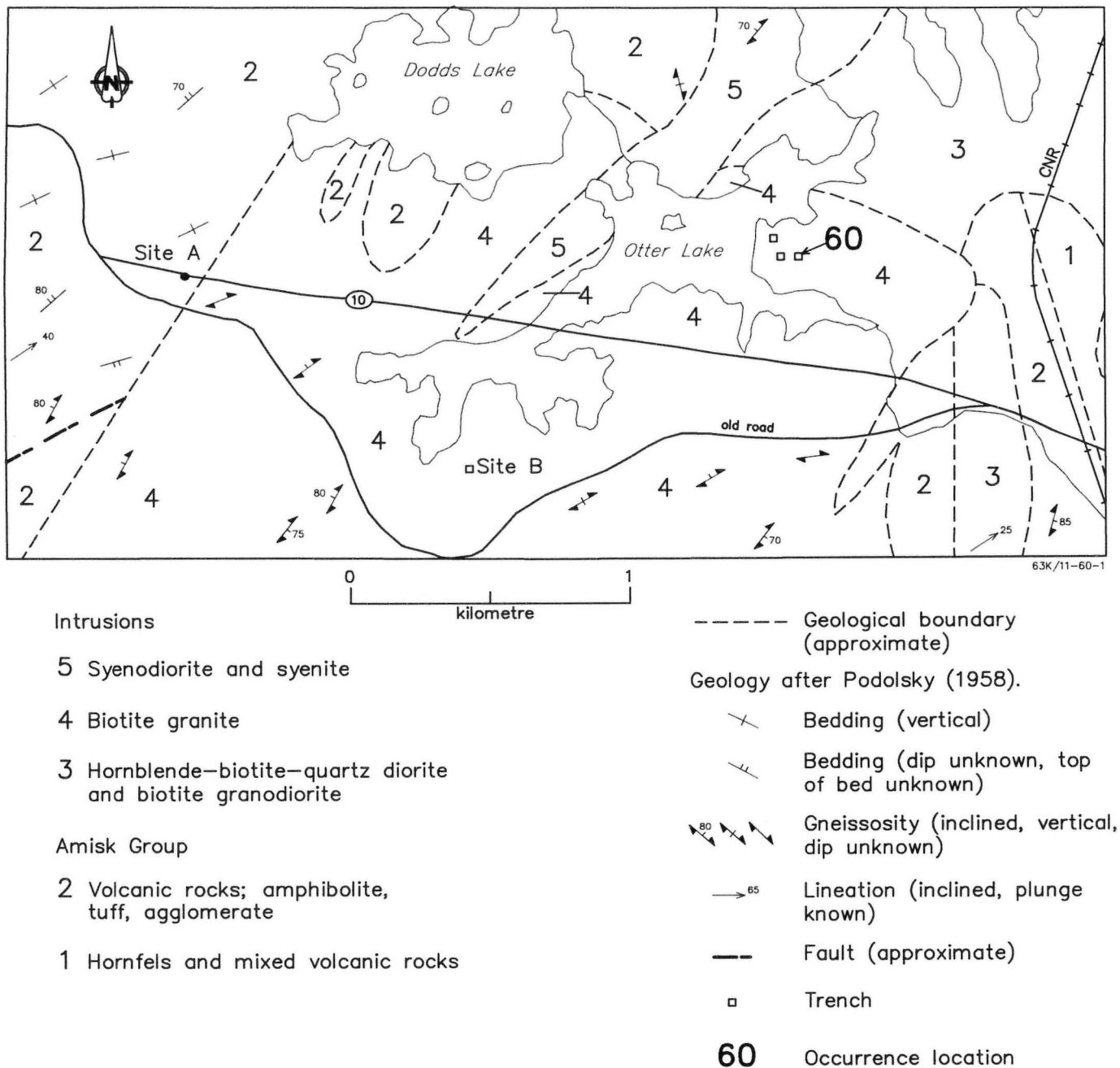


Figure 60-1: Geological setting and location of trenches at occurrence 60

**LOCATION: 61**

**NAME:** Laura (Zone 1)  
**UTM:** 6053866N/342653E  
**ACCESS:** Via boat

**AREA:** East Arm, Athapapuskow Lake  
**AIRPHOTO:** A26369-266, A26369-267

**EXPLORATION SUMMARY:**

The property was staked in 1936 as part of the Laura group of claims by M.G. Pocklington who excavated several pits and trenches. Canadian Prospecting Syndicate optioned the property in 1938. Laura Gold Mines Ltd. was formed to develop the property; surface work included the collection of bulk, chip and grab samples. P. Stewart may have drilled 153 m on Laura zone 1 and the nearby zone 2 in 1939 and 1940. The property was staked in 1943 by J. Dunajaki. Additional pits and trenches were made between 1943 and 1957. The claims were cancelled in 1959 (M.I. Card 63K/11 Au4).

The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020) and in regional AMAG and AEM surveys conducted by Canadian Nickel Company Ltd. in 1980 (A.F. 92473). An extensive geochemical, geophysical and geological survey program was conducted in the area by Varna Resources Inc. (A. F. 93404). The area was under claim to P. Dunlop in 1989.

**GEOLOGICAL SETTING:**

The area (Fig. 61-1) is underlain predominantly by mafic volcanic rocks that include pillowed and massive flows and diorite dykes (Podolsky, 1957). A 0.2 to 1.0 m thick quartz vein strikes 330°-350° and dips 85°SW to vertical (Fig. 61-2). A parallel vein occurs approximately 15 m south of the main vein. Younger quartz veinlets, 1-3 cm thick, cut the host rocks at various angles (Fig. 61-3).

**MINERALIZATION:**

The quartz veins consist of massive white quartz with carbonate veinlets and 1-20 mm blebs of sulphides that constitute up to 5% of the vein. Crenulated tourmaline crystals, <1 mm in diameter, parallel the length of the vein. Locally, a zone of quartz-carbonate alteration occurs at the margin of the quartz vein. The sulphide minerals include chalcopyrite, pyrite and galena; free gold is present in the quartz.

**GEOCHEMICAL DATA:**

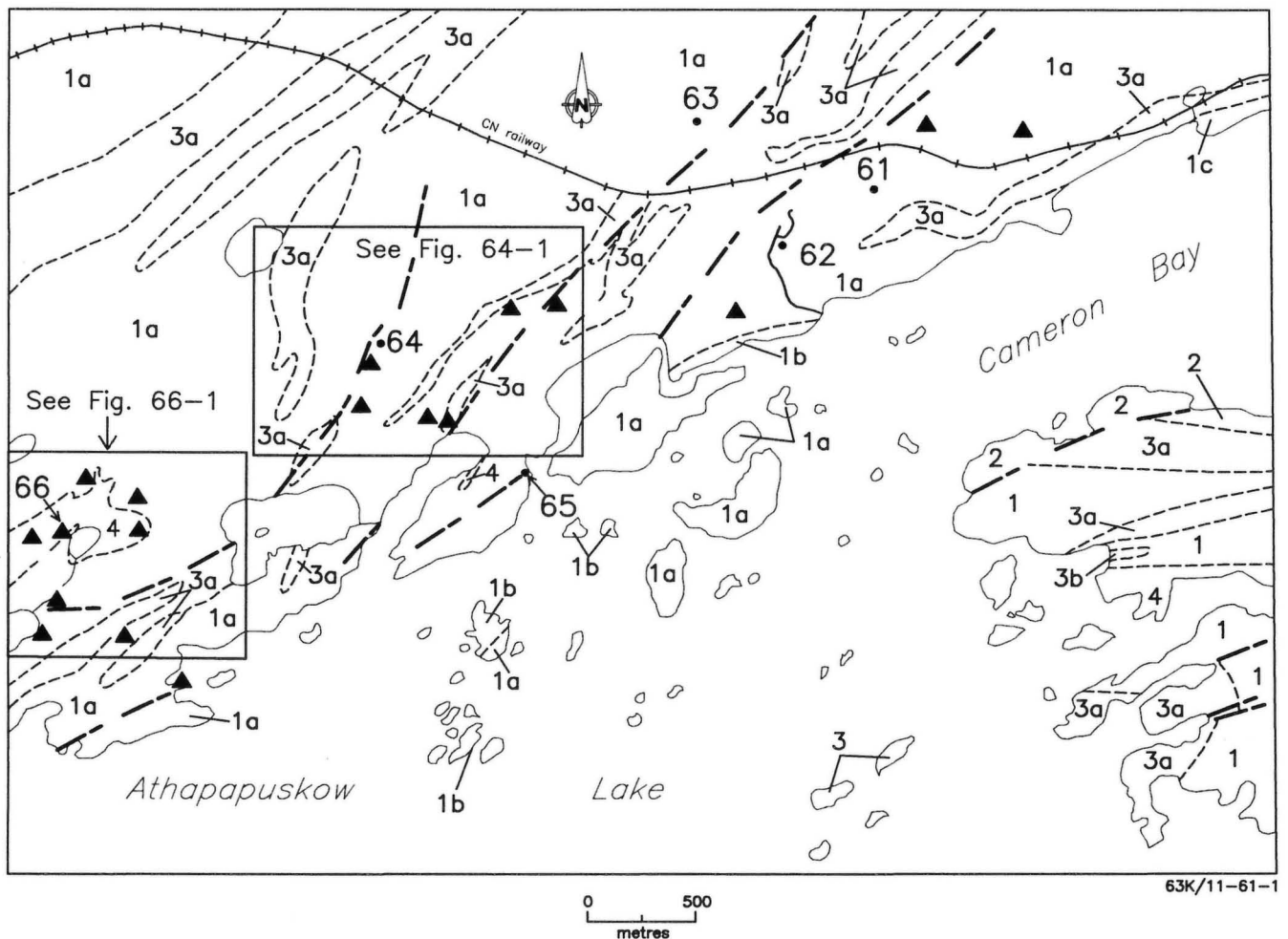
Grab samples assayed up to 222 g/t Au. Two bulk samples contained 16.5 and 18.5 g/t Au (Canadian Prospecting Syndicate, Corporation File). In 1939 two 20 tonne samples sent to Flin Flon contained 14.5 g/t Au and 12.5 g/t Au (Laura Gold Mines, Corporation File).

**CLASSIFICATION:**

Vein type deposit; single vein.

**REFERENCES:**

- Assessment Files 92020, 92473, 93401, 93404  
Manitoba Energy and Mines, Mines Branch.
- Canadian Prospecting Syndicate  
Corporation File; Manitoba Energy and Mines, Minerals Division, unpublished.
- Laura Gold Mines  
Corporation File; Manitoba Energy and Mines, Minerals Division, unpublished.
- Mineral Inventory Card NTS 63K/11 Au4  
Manitoba Energy and Mines, Geological Services Branch.
- Morgan, J.H.  
1940: Laura Gold Mines Ltd.; Manitoba Energy and Mines, Corporation File, unpublished.
- Parbery, D. and Gale, G. H.  
1984: Mineral Deposit Investigations in the Flin Flon area; in Manitoba Energy and Mines, Mineral Resources Division, Report of Field Activities 1984, p. 60-66.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



- 4 Granite
- 3 Mafic intrusive rocks
  - (a) dense, fine grained diorite
  - (b) massive coarse grained gabbro
- 2 Argillite – greywacke
- 1 Mafic volcanic rocks
  - (a) massive basalt (minor andesite flows)
  - (b) pillow lavas
  - (c) tuff and agglomerate

----- Geological boundary (approximate)

▲ Auriferous quartz vein

Geology after Varna Resources Inc. (1986) (A.F. 93401, A.F. 93404).

--- Faults

— Drill road

61. Occurrence location

Figure 61-1: Geological setting of occurrences 61, 62, 63, 64, 65 and 66.

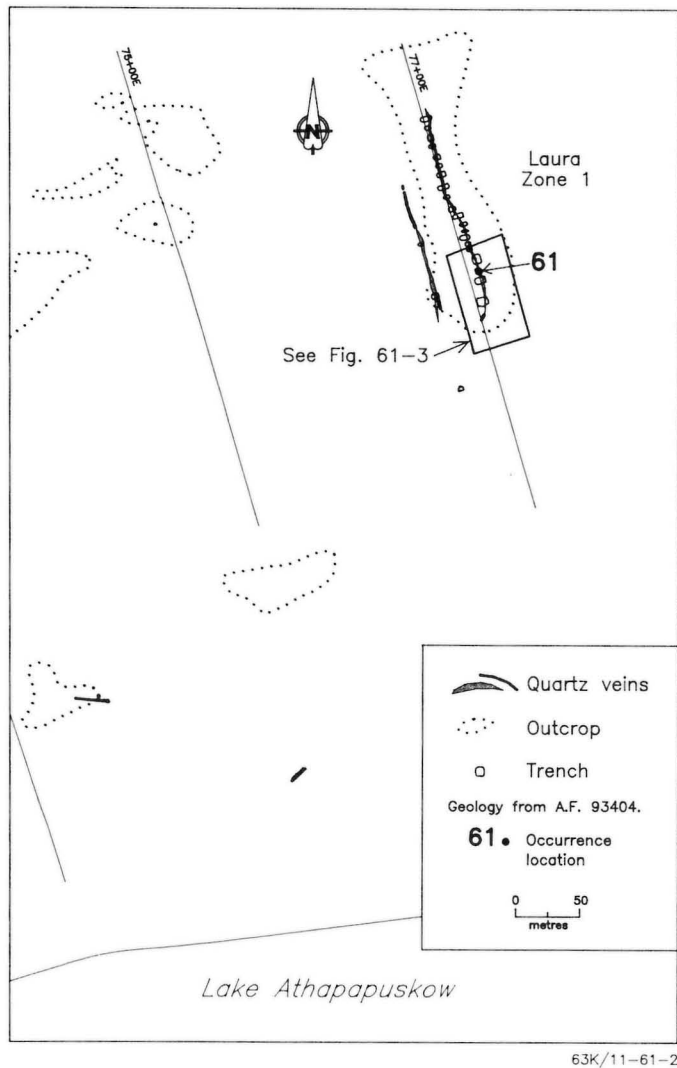


Figure 61-2: Location of trenches at the Laura Zone 1.

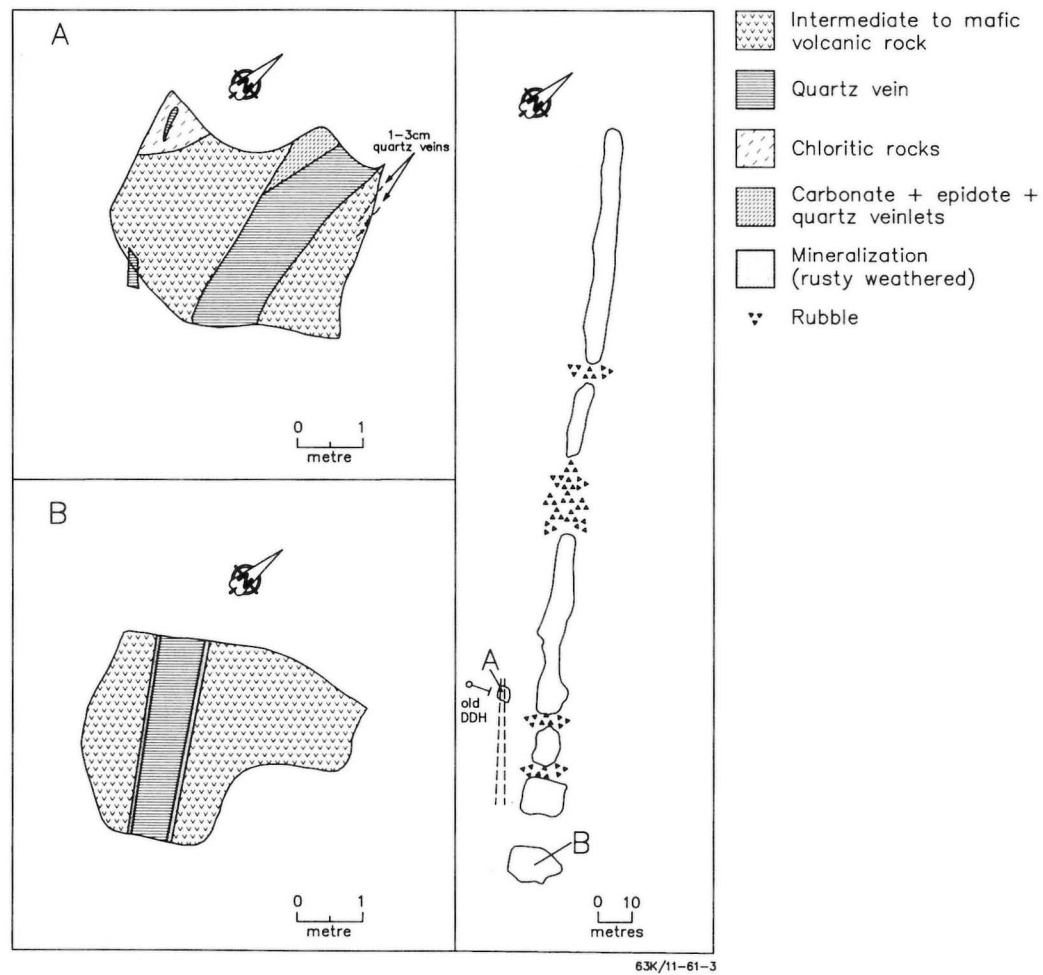
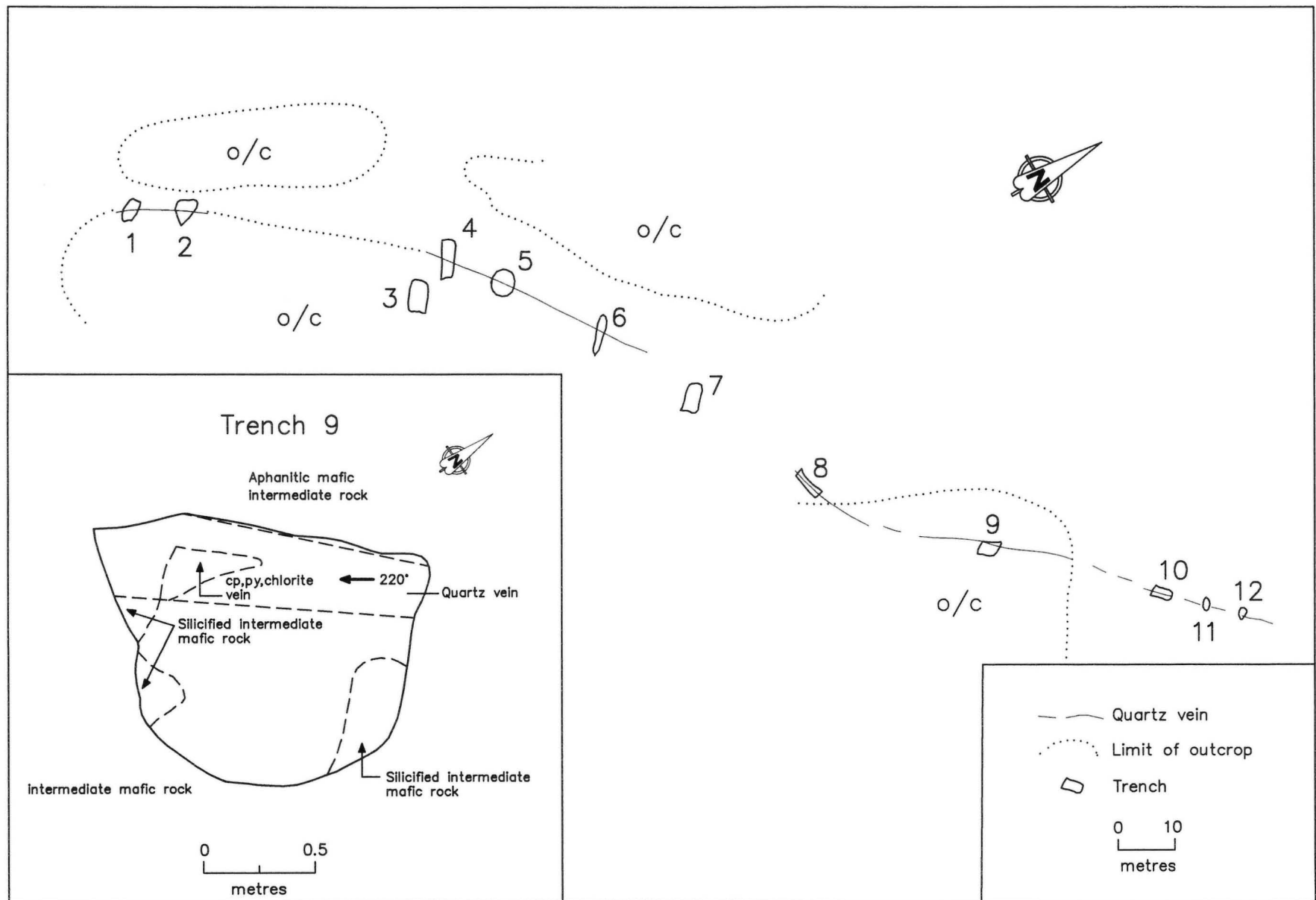


Figure 61-3: Detailed geology of a portion of the Laura Zone 1.



63K/11-62-1

Figure 62-1: Location of trenches at the Laura Zone 2.



LOCATION: 62

NAME: Laura (Zone 2)  
UTM: 6053620N/342272E  
ACCESS:

AREA: East Arm, Athapapuskow Lake  
AIRPHOTO: A26369-266, A26369-267

#### EXPLORATION SUMMARY:

The property was staked in 1936 as part of the Laura group of claims by M.G. Pocklington and a number of pits and trenches were excavated. Canadian Prospecting Syndicate optioned the property in 1938 and continued surface work. In 1939, the claims were assigned to Laura Gold Mines. Later in 1939 Prospectors Airways Company Ltd. optioned the property and conducted a 300 m diamond drill program. The option was dropped shortly thereafter and Laura Gold Mines continued surface work. P. Stewart may have drilled 153 m on Laura Zone 2 and the nearby zone 1 (Location 61, this volume) in 1939 and 1940 (M.I. Card 63K/11 Au4). The approximate location of the trenches are shown on a sketch map by Holloway (1939). The claims were staked in 1943 by J. Dunajski. Additional pits and trenches were made between 1943 and 1957. Several drill holes were drilled along the strike length of the vein (Morgan, 1940). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020) and Canadian Nickel Company Ltd. in 1980 (A.F. 92473). An extensive geochemical, geophysical and geological survey program was conducted in the area by Varna Resources Inc. who drilled three holes in 1985 (A.F. 93404).

#### GEOLOGICAL SETTING:

The area (Fig. 61-1) is underlain by mafic volcanic rocks that have been intruded by quartz and feldspar porphyry dykes (Podolsky, 1957; Morgan, 1940). A vertical quartz vein, generally 10-50 cm, but up to 1.2 m, thick strikes from 030° to 070° and has been traced along strike for at least 200 m (Fig. 62-1). Schistosity adjacent to the quartz veins are 220°-330°/80°.

#### MINERALIZATION:

The vein consists of white, massive quartz that is cut by 1-2 mm chlorite veinlets, that are subparallel to the quartz vein. Chalcopyrite, pyrite, galena and carbonate occur as dissemination's and lenses up to 5 cm in diameter; free gold is commonly present in the quartz vein. Some quartz veinlets are present in the host rocks, which contain 1% disseminated pyrite and chalcopyrite.

#### GEOCHEMICAL DATA:

17 assays reported by Morgan (1940) range from 0.34 g/t to 51.43 g/t Au. Assays of the core drilled by Varna Resources Inc. indicated gold values that range from 1.9 g/t over 1.6 m to 5.5 g/t over 0.6 m (A.F. 93404).

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

- Assessment Files 92020, 92473, 93401, 93404  
Manitoba Energy and Mines, Mines Branch.
- Mineral Inventory Card NTS 63K/11 Au4  
Manitoba Energy and Mines, Geological Services Branch.
- Holloway, J.M.  
1939: Sketch map of trenches on the Laura claims; Manitoba Energy and Mines, Minerals Division, unpublished.
- Morgan, J.H.  
1940: Laura Gold Mines Ltd.; Manitoba Energy and Mines, Minerals Division, Corporation File, 2p.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

LOCATION: 63

NAME: Laura (north)

UTM: 6054159N/341727E

ACCESS: Via boat and traverse

AREA: East Arm, Athapapuskow Lake (Fig. 61-1)

AIRPHOTO: A26369-267, A26369-266

#### EXPLORATION SUMMARY:

A number of old trenches, which probably date from the time of work on the Laura claims (Locations 61 and 62, this volume) are still open, but the pits along strike are filled. The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.f. 92020), and Canadian Nickel Company Ltd. in 1980 (A.F. 92473). The area was examined by Varna Gold Inc. in 1986 (A.F. 93404).

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

Assessment Files 92020, 92473, 93404

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

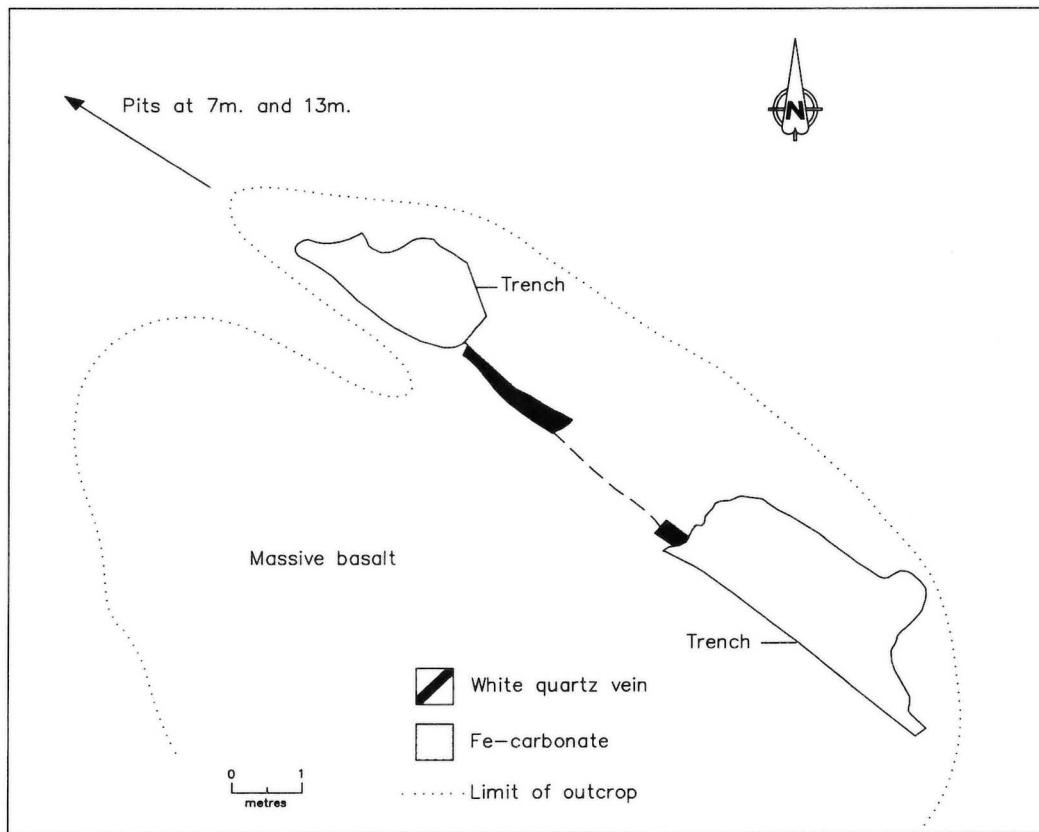
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

#### GEOLOGICAL SETTING:

The area (Fig. 61-1) is underlain predominantly by mafic volcanic rocks that include pillowed and massive flows and dioritic dykes (Podolsky, 1958). A 15-20 cm thick quartz vein (Fig. 63-1) strikes 120° and dips 85°SW to vertical.

#### MINERALIZATION:

The quartz vein consists of white massive quartz with trace to minor amounts of pyrite, chalcopyrite, galena and free gold. Sulphides also occur adjacent to the vein in wall-rocks that contain minor amounts of iron carbonate.



63K/11-6.3-1

Figure 63-1: Location of quartz vein and trenches at occurrence 63.

**LOCATION: 64**

**NAME:** Kelsey.

**UTM:** 6053222N/340189E

**ACCESS:** Via boat and trail from Cameron Bay,  
Athapapuskow Lake

**EXPLORATION SUMMARY:**

The property was staked in 1918 as claim Big Did by J.E. McAuley and assigned to G.H. Watson. The property was assigned to H.L. Weber in 1923 who dug a number of pits and trenches. In 1937 the property was assigned to Kelsey Gold Mines Ltd. who drilled 9 or 10 holes totalling 637 m and collected chip and bulk samples of 1.1 t, 27 t and 36 t. The property was assigned to Corona Gold Mines Ltd. in 1945. Four holes totalling 103 m were drilled on the adjacent Beam claims group (A.F. 90303). In 1947, an inclined shaft was sunk by Partner Mines Ltd. (M.I. Card 63K/11 Au6). The area was staked by Falconbridge Nickel Mines Ltd. in 1970 who conducted airborne magnetometer surveys (A.F. 91899). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020) and by Canadian Nickel Company Ltd. in 1980 (A.F. 92473). Extensive exploration for gold mineralization was undertaken in the area north of Cameron Bay by Varna Gold Inc. during 1984-88.

Exploration records indicate that a number of trenches were excavated in the area along strike parallel to, and south of, the Kelsey shaft. This shaft is situated in the centre of an old trench, which has dimensions of 0.6-3 m in width, 50 m in length and 0.15-1.7 m in depth, and follows one of two quartz veins. Only a few trenches were examined during field investigations, but a number of trenches and mineralized zones were identified by Varna Gold Inc. during exploration of the area (Figs. 61-1, 64-1; A.F. 93404).

**GEOLOGICAL SETTING:**

The area (Fig. 61-1) is underlain by mafic volcanic rocks that are intruded by dykes and sills of diorite and gabbro (Podolsky, 1958). The mafic flows are amygdaloidal and commonly contain hornblende phenocrysts and/or chlorite pseudomorphs.

The vein strikes 235° to 240° and dips 80°W (Fig. 64-2). The vein consisted of two parts, the No. 1 and No. 2 veins, that are separated along strike by 60 m of muskeg. The No. 2 is offset 6 m to the north relative to No. 1. The quartz vein pinches and swells along strike and varies from 15 cm to 75 cm in thickness. 100 m northeast of the No. 1 vein a number of lenses of quartz were exposed in trenches (Morgan, 1940; Holloway, 1939).

**MINERALIZATION:**

Pyrite and chalcopyrite veinlets and dissemination's in the volcanic host rocks constitute 1% of the rock. Sulphide veinlets (chalcopyrite, pyrite and molybdenite) constitute 5% of the quartz vein. Fe-carbonate occurs as veins surrounding quartz 'breccia' in the quartz vein. Native gold is present in the quartz.

**AREA:** East Arm, Athapapuskow Lake (Fig. 61-1)

**AIRPHOTO:** A26398-138 and -139

A brown weathering carbonatized zone with irregular veinlets of quartz and carbonate and disseminated pyrite (2%) occurs in a northerly-trending zone of alteration in the vicinity of the No. 2 vein (Fig. 64-3). Most of the veins observed outside the immediate vicinity of the Kelsey shaft are irregular quartz filled fractures without extensive carbonate alteration.

**GEOCHEMICAL DATA:**

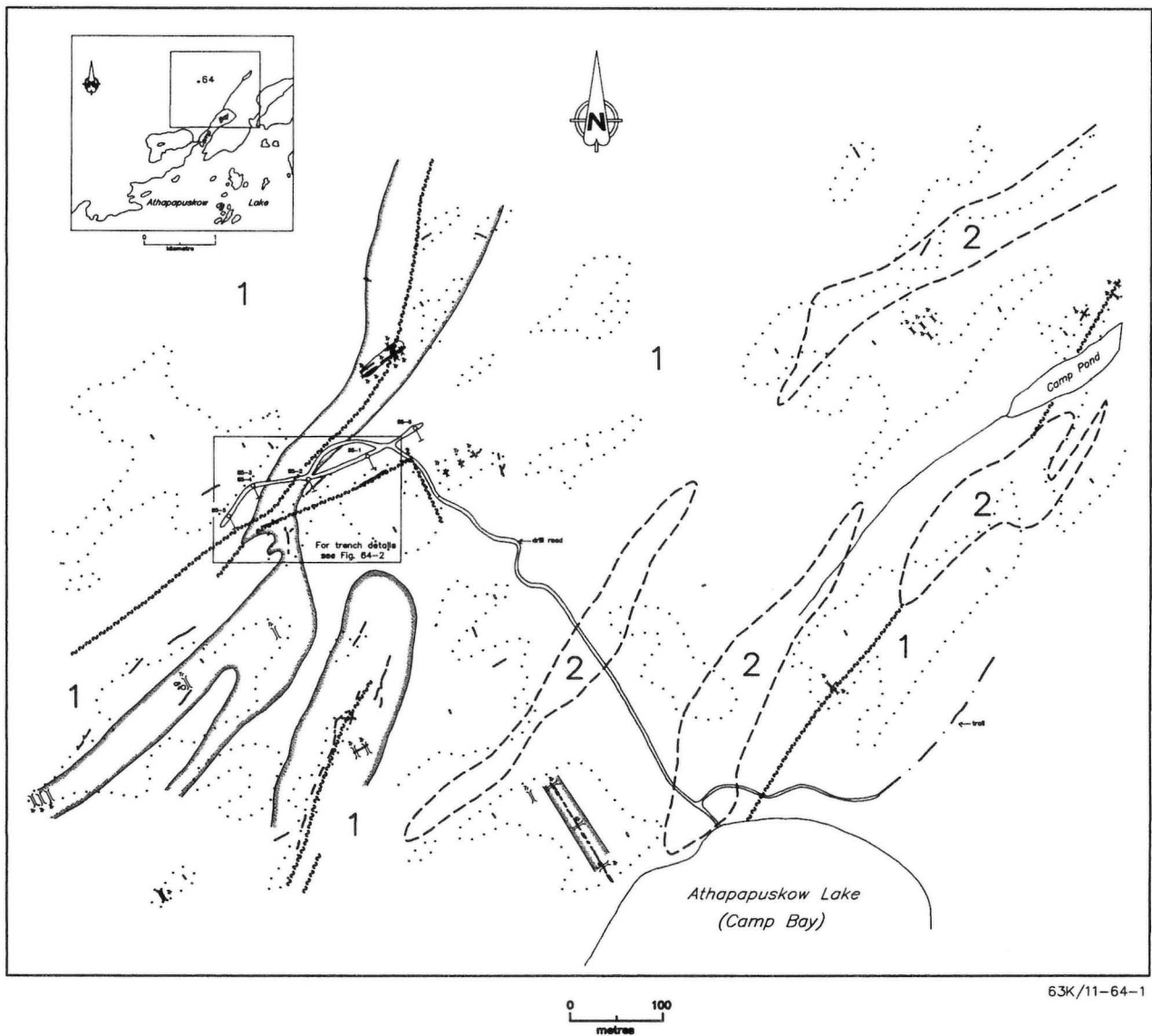
No. 1 vein contained an average of 26.06 g/t Au across 33 cm over a vein length of 58 m. No. 2 vein contained 22.97 g/t Au across 73 cm along a vein length of 38 m. A 36 t sample from vein 1 shipped to the Flin Flon smelter in 1940 contained 24.5 g/t Au. A 27 t sample sent to HBM&S prior to 1949 contained 8 g/t Au (Corona Gold Mines, Corp. file) and a 1.1 t sample contained 23.6 g/t Au (M.I. Card 63K/11, Au6). Partner Mines Ltd. also shipped ore to the Newcor Mine in Saskatchewan as a flux; grade and tonnage are not known.

**CLASSIFICATION:**

Vein type deposit; single vein.

**REFERENCES:**

- Assessment Files 90303, 92020, 92473, 93404  
Manitoba Energy and Mines, Mines Branch.
- Mineral Inventory Card 63K/11 Au6  
Manitoba Energy and Mines, Geological Services Branch.
- Holloway, J.M.  
1939: Sketch map of trenches on the Laura claims; Manitoba Energy and Mines, Minerals Division, unpublished.
- Morgan, J.H.  
1940: Laura Gold Mines Ltd.; Manitoba Energy and Mines, Minerals Division, Corporation File, 2p.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.
- Corona Gold Mines Ltd.  
Corporation File; Manitoba Energy and Mines, Minerals Division,
- Partner Mines Ltd.  
Mining Engineering File; Manitoba Energy and Mines, Minerals Division, Mines Branch, unpublished.



**Mafic Intrusives**

2 Dense, fine grained diorite

**Mafic volcanics**

1 Massive basaltic (minor andesite) flows

----- Geological boundary (approximate)

—— Quartz vein

Carbonate alteration

Geology by Varna Resources Inc. (1986).

Fault / shear zone

Outcrop

Drill hole (A.F. 93404)

Trench

Mineral occurrence

Figure 64-1: Geological setting of the Kelsey deposit.

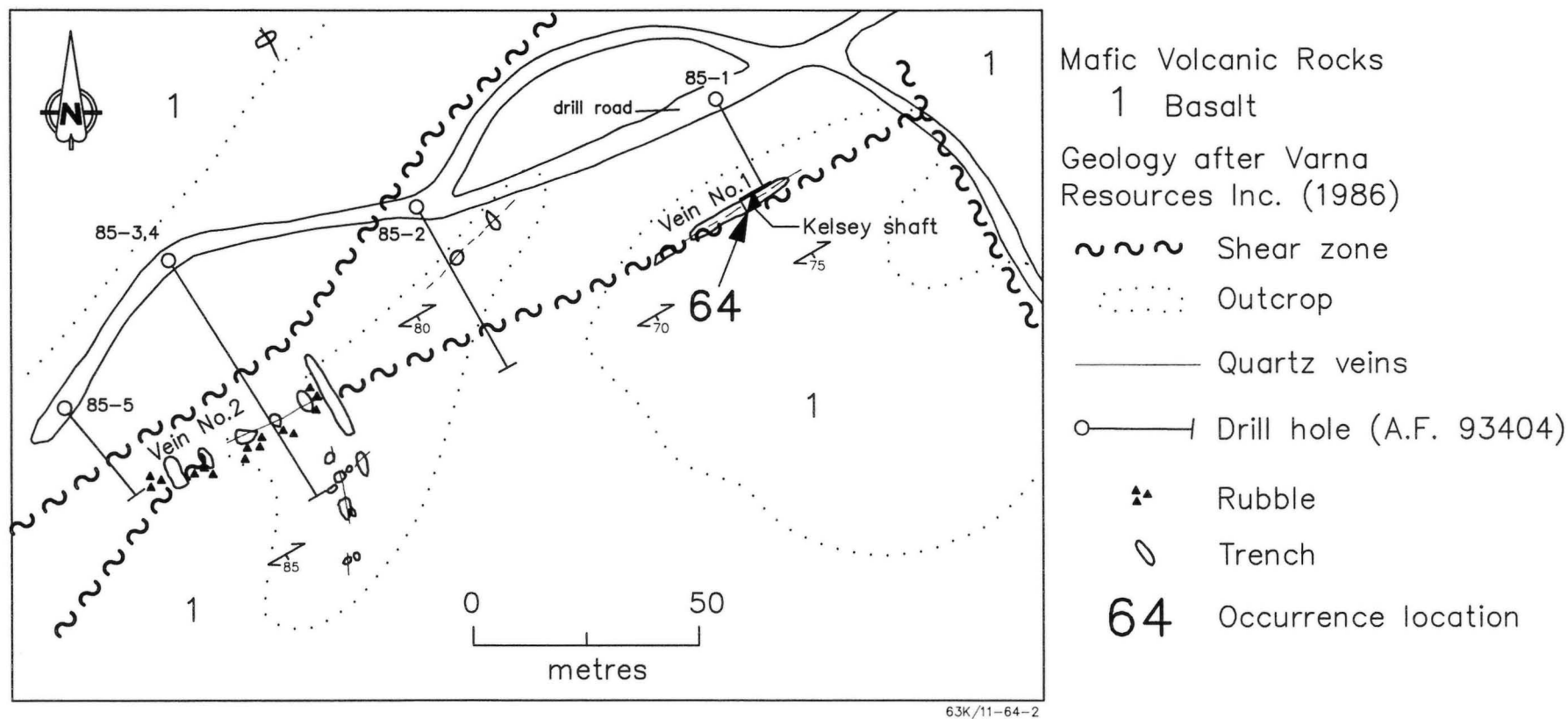


Figure 64-2: Geology, drill holes and trenches at the Kelsey deposit.

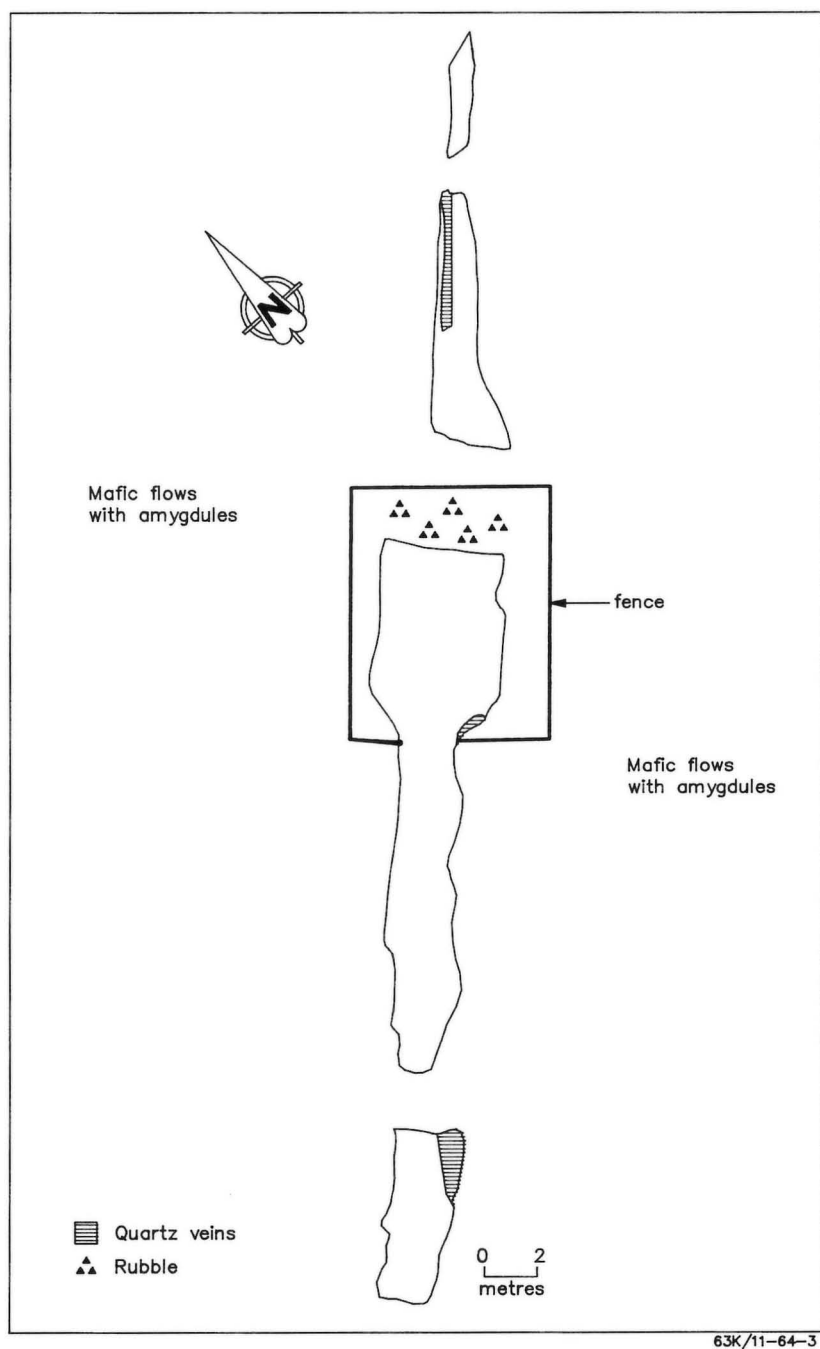


Figure 64-3: Detailed geology of trenches at the Kelsey shaft.

LOCATION: 65

NAME: Audrey  
UTM: 6052442N/340889E  
ACCESS: Via boat

AREA: East Arm, Athapapuskow Lake (Fig. 61-1)  
AIRPHOTO: A26398-139

#### EXPLORATION SUMMARY:

Exploration was conducted on the Audrey claims prior to 1939 when the trenches were mapped by J.M. Holloway (Fig. 65-1). Three additional trenches were located at the southern end of a depression along strike from the trenches mapped by Holloway (1939). Kelsey Gold Mines drilled 8 holes on the Audrey claim group in 1939 (M.I. Card 63K/11 Au6). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020), and Canadian Nickel Company Ltd. in 1980 (A.F. 92473). An extensive geochemical, geophysical and geological survey program was conducted in the area by Varna Resources Inc. (A. F. 93404).

#### GEOLOGICAL SETTING:

The area (Fig. 61-1) is underlain by mafic volcanic rocks that are intruded by dykes and sills of diorite and gabbro (Podolsky, 1958). The mafic flows are commonly amygdaloidal and contain hornblende phenocrysts and/or chlorite pseudomorphs. The margins and central portion of the main quartz vein, which strikes  $240^{\circ}$ , have been sheared after quartz emplacement.

#### MINERALIZATION:

The steeply to vertical-dipping quartz vein at the north-eastern end of the peninsula (Fig. 65-1) is approximately 1 m thick, but pinches and swells along strike. Although generally a single quartz vein, in one trench it bifurcates with thickness' of 1.5 and 2 m and the intervening area contains anastomosing quartz veins that cut obliquely across the strike of the

lightly carbonatized rocks. The southwards extension of this zone is a 30-70 cm thick pyritic (10%) quartz vein that dips  $5^{\circ}$ - $30^{\circ}$  towards the northwest. Blocks of iron-rich carbonate in the rubble indicate that lenses or veins of carbonate-rich material exceeded 20 cm in thickness.

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; single vein.

#### REFERENCES:

- Assessment File 92020, 92473, 93404  
Manitoba Energy and Mines, Mines Branch.
- Mineral Inventory Card NTS 63K/11 Au6  
Manitoba Energy and Mines, Geological Services Branch.
- Holloway, J.M.  
1939: Sketch map of trenches on the Laura claims; Manitoba Energy and Mines, Minerals Division, unpublished.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

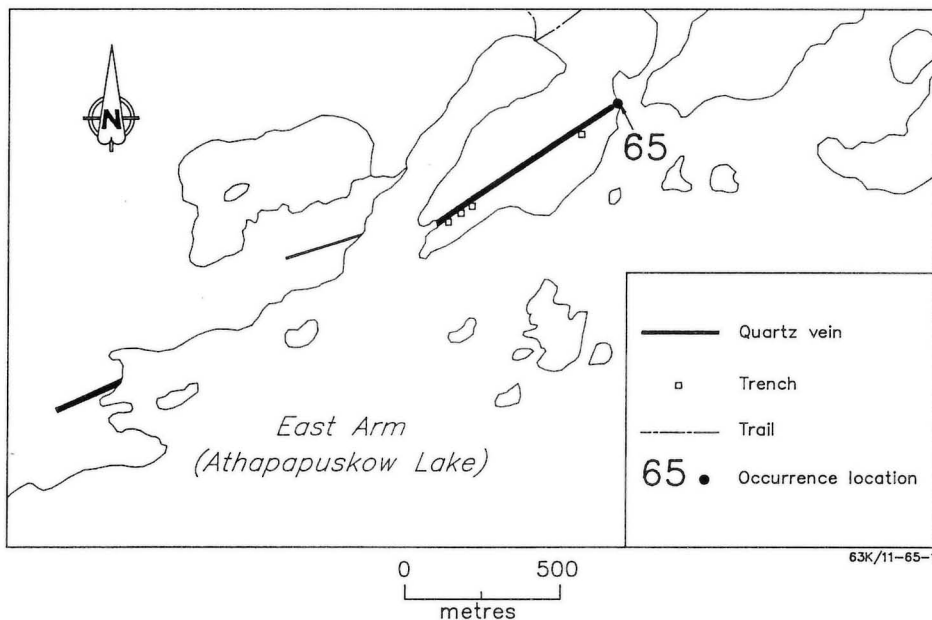


Figure 65-1: Location of quartz vein and trenches at occurrence 65.

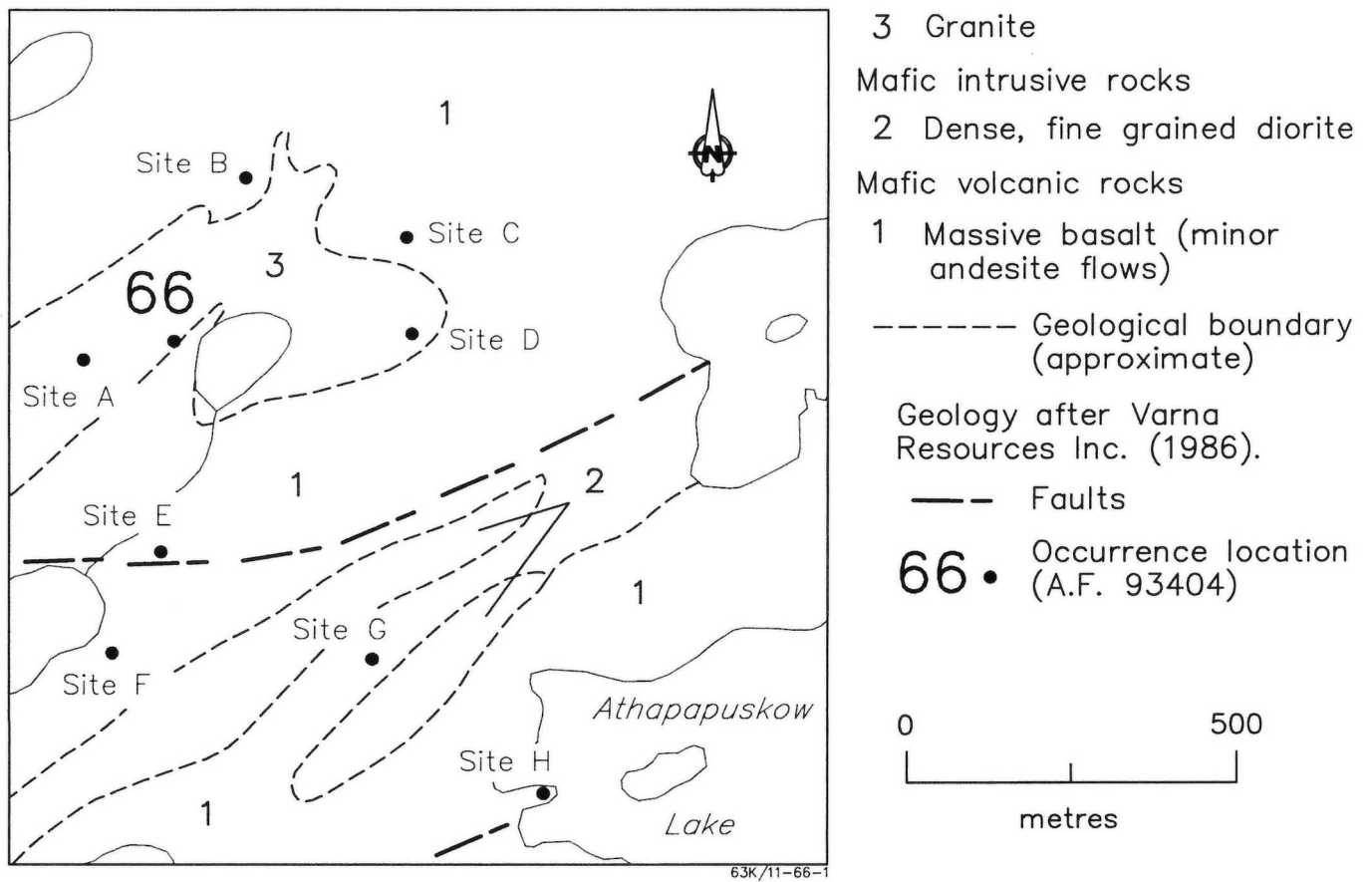


Figure 66-1: Location of mineralization and trenches in the vicinity of occurrence 66.



LOCATION: 66

NAME:

UTM: 6052196N/338742E

ACCESS: Via boat

#### EXPLORATION SUMMARY:

The area had undergone exploration prior to 1918 (Wallace, 1920) and was prospected intensely during the exploration work on the Kelsey and Audrey claims (Locations 64 and 65, this volume). A number of old trenches were noted during recent exploration by Varna Resources Inc. A number of different types of mineralization were discovered by Varna Resources Inc. (A.F. 93404).

#### GEOLOGICAL SETTING:

The area (Fig. 61-1) is underlain predominantly by mafic volcanic rocks that have been intruded by granitic to granodioritic rocks (Podolsky, 1957). Several small bodies of a quartz porphyritic felsic rock with 2-3 mm quartz crystals intrude the other rocks. Dykes of reddish weathering albitite (An<sub>6</sub>-An<sub>5</sub>) appear to cut medium grained gabbroic dykes.

#### MINERALIZATION:

A 0.5 to 2.5 m thick quartz vein with a strike length of about 150 m cuts a granitic stock. The vein contains dissemination's of pyrite, chalcopyrite and tetrahedrite (A.F. 93404). Locally the granitic rock is silicified and has trace molybdenite and chalcopyrite at a number of sites.

At Site A a small body of albitite contains 2-3% fine grained pyrite and molybdenite and trace amounts of chalcopyrite. Several quartz veins 2-20 cm thick that cut the intrusion appear to be barren of sulphides.

At Site B a number of quartz veinlets, up to 5 cm thick, occur adjacent to the contact between basalt and the intrusion contact. The basalt, which has been extensively silicified and carbonatized, contains 1 to 5% disseminated pyrite. Anomalous gold has been found within the altered rocks and in the quartz veins.

At Site C there are a number of quartz veins that range from 3 to 120 cm in width. The veins contain abundant tourmaline and up to 10% dissemination's and veinlets of pyrite, as well as trace gold and silver.

At Site D there are easterly-striking veinlets with disseminated pyrite in a felsic intrusion.

At Site E there is a 3 m thick northeasterly-striking shear zone, silicification and carbonatization. Quartz and carbonate veins range from 0.1 to 1.0 m in thickness both within and adjacent to the shear. Up to 10% disseminated pyrite and minor amounts of chalcopyrite and molybdenum occur in the zone of shear and in the silicified and carbonatized basaltic rocks. This zone is anomalous in gold and may be the along strike extension of the Kelsey occurrence (Location 64 this volume; A.F. 93404).

At Site F anastomosing veinlets contain up to 15% (combined) pyrite, pyrrhotite, chalcopyrite and bornite. Similar mineralization occurs intermittently towards the East of this site (A.F. 93404).

AREA: Cameron Bay, Athapapuskow Lake (Fig. 61-1)

AIRPHOTO: A26398-139

At Site G there is a zone of shear containing two 8 cm thick veinlets with up to 20% pyrite. The shear, which cuts silicified and carbonatized basaltic rocks, may be the extension of the structure that occurs near the Kelsey occurrence (Location 64; A.F. 93404).

#### GEOCHEMICAL DATA:

Samples collected by Varna Resources Inc. contained up to 577 ppb Au and 17 ppm Ag. In addition samples of the altered rocks contained up to 512 ppb Au (A.F. 93404).

A grab sample of the albitite at Site A collected by the authors contained 32 ppb Au, 1 ppm Ag, 1190 ppm Cu and 610 ppm Mo. Grab samples taken by Varna Resources Inc. from this mineralization contained up to 105 ppb Au and up to 1100 ppb Ag (A.F. 93404).

The altered rocks at Site B contained 50-156 ppb Au and the quartz veins contained up to 1400 ppb Au. Quartz veinlets several metres south of this site contained anomalous gold and silver values (A.F. 93404).

Samples collected across the zone at Site C contained up to 145 ppb Au, but a grab sample contained 20 g/t Au and 65 g/t Ag (A.F. 93404).

Only trace amounts of gold were found in samples from Site D (A.F. 93404).

At Site E over 100 ppb Au occurs in both the quartz veins and the altered rocks. Chip samples across the zone of shear contained 12 to 336 ppb Au across sample lengths of 0.2 to over 1.0 m; grab samples contained up to 10 g/t Au (A.F. 93404).

Grab and chip samples from Site F contained up to 68 ppb Au (A.F. 93404).

Grab samples from Site G contained 402 to 680 ppb Au (A.F. 93404).

#### CLASSIFICATION:

Vein type deposit; single vein. The mineralization at Site F may be related to an alteration zone of the type commonly associated with massive sulphide type deposits.

#### REFERENCES:

- Assessment Files 93401, 93404  
Manitoba Energy and Mines, Mines Branch.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.
- Wallace, R. C.  
1920: Mining and Mineral Prospects in Northern Manitoba; Northern Manitoba Bull. 1919.

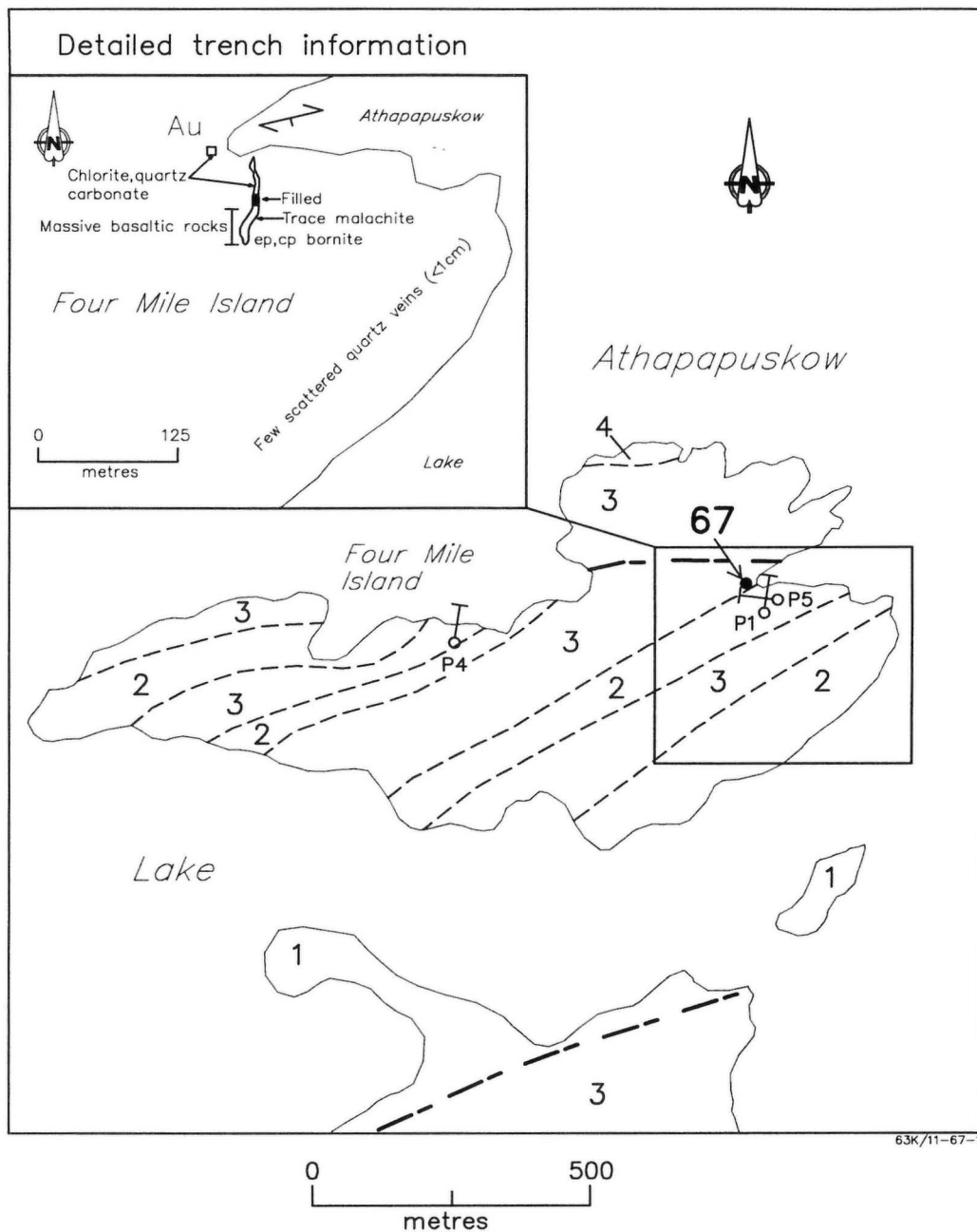


Figure 67-1: Geological setting, drill holes and trenches at occurrence 67.

LOCATION: 67

NAME: Four Mile Island  
UTM: 6050024N/339870E  
ACCESS: Via boat

AREA: East Arm of Lake Athapapuskow  
AIRPHOTO: A26013-171

#### EXPLORATION SUMMARY:

A portion of the area was staked as the Brandt 1 claim by Brandt Wallenhaupt in 1949. This claim, as well as adjacent claims, were optioned to A.L. Parres in 1950 and six holes totalling 561 m were drilled (A.F. 90305). Claims were staked in 1971 for Pronto Exploration Ltd. who conducted a reconnaissance geological survey of Athapapuskow Lake (A.F. 92574). HLEM and magnetic surveys were conducted during the winter of 1971-1972 (A.F. 92016). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020) and Canadian Nickel Company Ltd. in 1980 (A.F. 92473). A 30 x 1 x 2 m trench has been blasted at the occurrence.

#### GEOLOGICAL SETTING:

The area (Fig 67-1) is underlain predominantly by mafic volcanic flows, tuff and fragmental rocks (Podolsky, 1958). A fault zone is indicated at the site of the mineralization by Podolsky (1958). Felsic fragmental rocks were intersected in the drill holes (A.F. 90305) and are present in the rubble around the trench..

#### MINERALIZATION:

Trace to minor amounts of pyrite, chalcopyrite and magnetite occurring as blebs, dissemination's and veinlets were intersected at a number of places in each of the drill holes. Veinlets and lenses of quartz and carbonate commonly occur in an irregular 1 m thick chlorite-epidote vein with up to 20% pyrite and bornite.

#### GEOCHEMICAL DATA:

Copper contents in DDH P5 ranged from nil to 0.18% and gold contents ranged from nil to 0.3 g/t Au (A.F. 90305). A grab sample contained 0.80% Cu (A.F. 92016). A grab sample from the sulphide-rich part of the vein contained 118 ppb Au, 2.8% Cu, 2 ppm Ag and 8 ppm Mo.

#### CLASSIFICATION:

Vein type deposit; multiple veins.

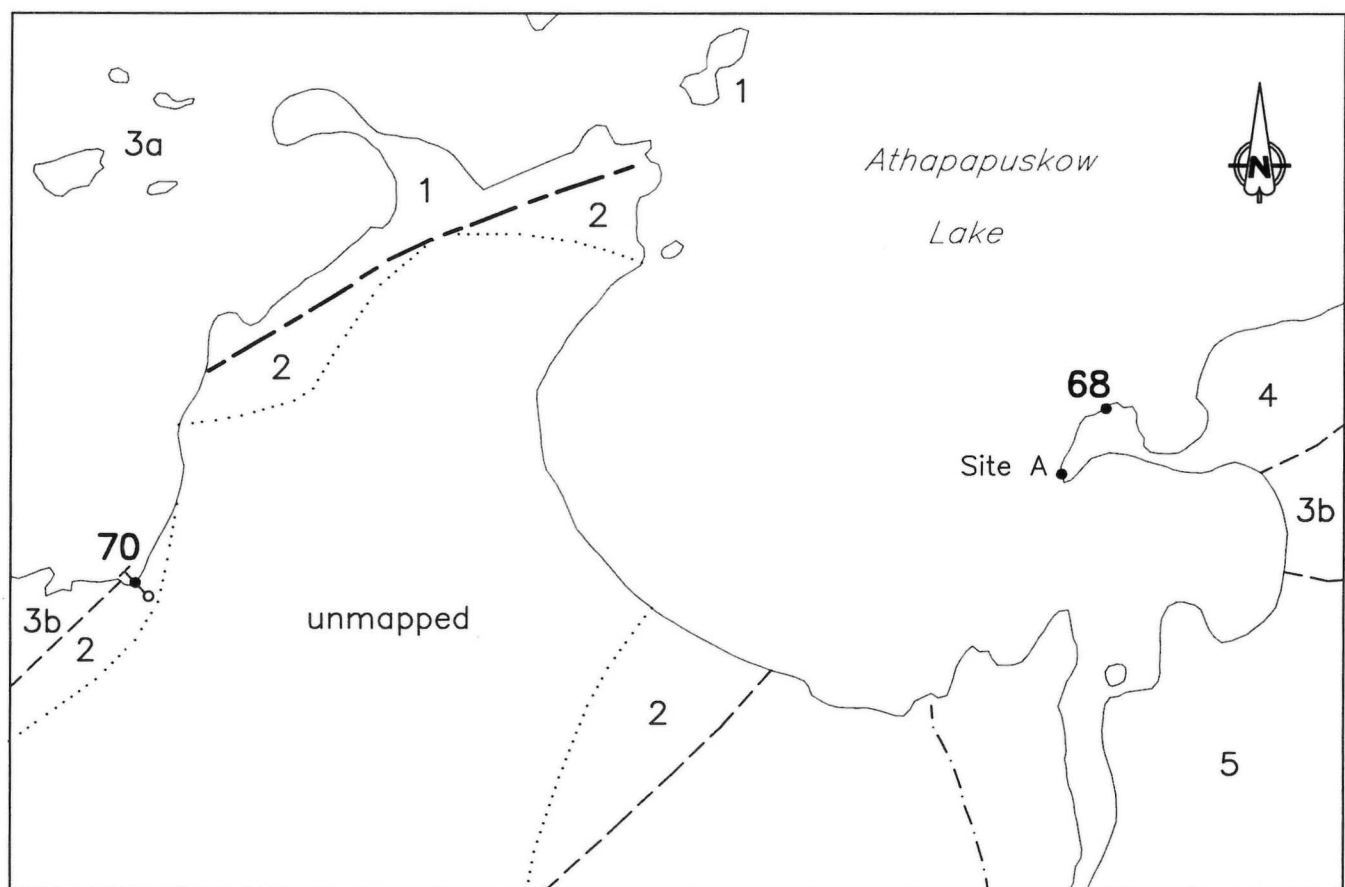
#### REFERENCES:

Assessment Files 90305, 92016, 92020, 92473, 92574, 93404

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



63K/11-68-1

- 5 Hornblende-biotite-quartz and biotite granodiorite
- 4 Quartz-eye granite, quartz porphyry and feldspar porphyry
- 3 Amisk Group
  - a) Diorite and gabbro
  - b) Altered gabbro
- 2 Volcanic rocks
- 1 Hornfels and mixed volcanic rock-granite gneiss

--- Geological boundary (approximate)

Geology after Podolsky (1958).

— Fault

—○ Drill hole (A.F. 90306)

— Limit of mapping

— Trail

**68 •** Occurrence location

Figure 68-1: Geological setting and location of drill hole in the vicinity of occurrences 68 and 70.

LOCATION: 68

NAME:

UTM: 6048656N/340939E

ACCESS: Via boat

AREA: Goose River

AIRPHOTO: A26398-141

#### EXPLORATION SUMMARY:

The mineralization was discovered about 1940 by P. Stewart and J. Murray (M.I. Card 63K/11 Mo1). The area was covered by airborne magnetic and EM surveys in 1957 (A.F. 92707) and in 1980 (A.F. 92473).

A 3 x 1 x 1 m trench is situated at the shoreline and a 5 x 1 x 0.75 m trench has been dug approximately 20 m from the shoreline.

#### GEOLOGICAL SETTING:

Small bodies of fine grained to aphanitic felsic rocks (intrusion?, Podolsky, 1958) with local sericitic shear zones are exposed between the shoreline and the largest trench. The largest trench exposes approximately 0.5 m of quartz porphyry, which is similar to loose blocks of quartz porphyry that occur at the southwest tip of the peninsula at site A (Fig. 68-1).

#### MINERALIZATION:

Approximately 1% disseminated pyrite is present in the aphanitic felsic rock. The quartz porphyry contains 2-3% pyrite as dissemination's. At Site A the quartz porphyry blocks contain up to 5% pyrite as 2-5 mm blebs and dissemination's. Trace molybdenite occurs in the pyritic rocks at both the trenches and Site A.

#### GEOCHEMICAL DATA:

Newspaper clippings report up to 2.83% MoS<sub>2</sub> over 3.6 m (M.I. Card 63K/11 Mo1).

#### CLASSIFICATION:

Disseminated mineralization - not classified. This mineralization may be related to a porphyry type deposit.

#### REFERENCES:

Assessment Files 92707, 92473

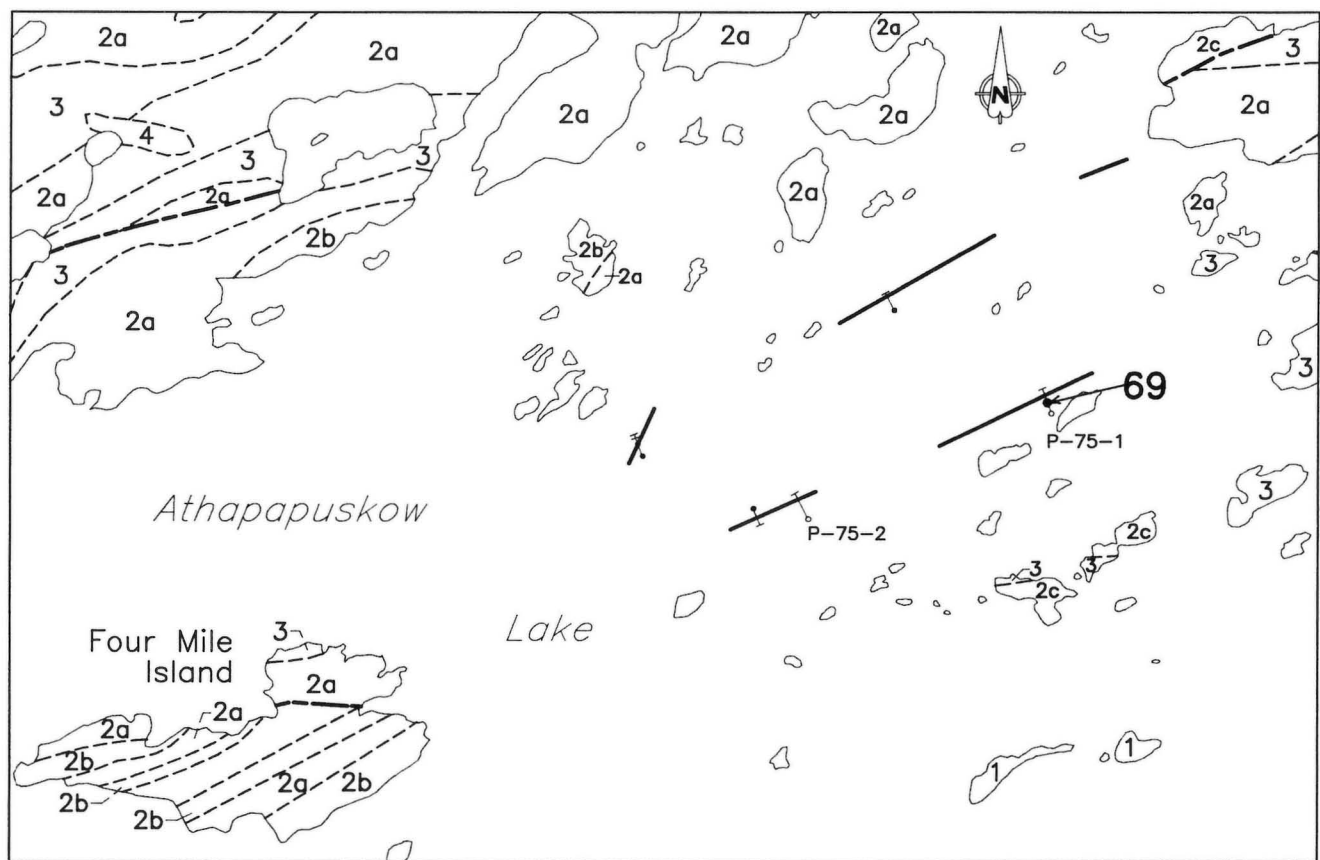
Manitoba Energy and Mines, Mines Branch.

Mineral Inventory Card NTS 63K/11 Mo1

Manitoba Energy and Mines, Geological Services Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



63K/11-69-1

0 1  
kilometre

4 Biotite granite

Amisk Group

3 Diorite and gabbro

2 a) Volcanic rocks

b) Tuff and agglomerate

c) Conglomerate

d) Feldspar porphyry and quartz porphyry

1 Hornfels and mixed volcanic  
rock-granite gneiss

----- Geological boundary  
(approximate)

Geology after Podolsky (1958).

—— Fault

----- Geophysical conductor (EM)  
(A.F. 92574)

Drill holes

⊢ (A.F. 92576)

⊢ (A.F. 92574)

**69.** Occurrence location

Figure 69-1: Location of diamond drill holes and geophysical conductors in the vicinity of occurrence 69.

LOCATION: 69

NAME: (Drill indicated mineralization)

UTM: 6051287N/342529E

ACCESS: Via boat

AREA: East Arm, Lake Athapapuskow

AIRPHOTO: A26363-268

#### EXPLORATION SUMMARY:

The area was staked in 1971 for Pronto Exploration Ltd. During the summer of 1971, a reconnaissance geological survey of Athapapuskow Lake was carried out (A.F. 92574). During the winter of 1971-1972 HLEM and magnetic surveys were conducted (A.F. 92016). Four holes were drilled in the vicinity during the winter of 1972-1973 (A.F. 92016, 92574). In 1975 additional HLEM and magnetometer surveys were conducted and two holes totalling 308 m were drilled (A.F. 92574, 92576). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020) and Canadian Nickel Company Ltd. in 1980 (A.F. 92473).

#### GEOLOGICAL SETTING:

Mafic to felsic volcanic flows, volcanic fragmental rocks and related intrusive rocks are exposed along the shoreline and on the islands of the east arm of Athapapuskow Lake (Fig. 69-1; Podolsky, 1958; A.F. 92016).

DDH P-75-1 intersected dominantly rhyodacitic rocks whereas DDH P-75-2 intersected mostly andesitic rocks, but did intersect 15 m of rhyodacitic rocks.

#### MINERALIZATION:

DDH P-75-2 intersected one 5 cm section of pyrite. DDH P-75-1 intersected minor amounts of fine grained chalcopyrite and pyrite disseminated in a 5.2 m section of 'dacitic flow' (A.F. 92574).

#### GEOCHEMICAL DATA:

Copper contents of 0.14% and 0.05% were obtained from two core samples from DDH P-75-1.

#### CLASSIFICATION:

Disseminated mineralization - not classified.

#### REFERENCES:

Assessment Files 92016, 92020, 92473, 92574 and 92576  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

LOCATION: 70

NAME: (Drill indicated mineralization)

UTM: 6048246N/338678E

ACCESS: Via boat

AREA: South Shore of Athapapuskow Lake (Fig. 68-1)

AIRPHOTO: A26398-141

EXPLORATION SUMMARY:

The area was staked in 1959 for Parmlee Mining Co. Ltd. and one hole of 113 m length was drilled (A.F. 90306). The area was staked in 1971 for Pronto Exploration Ltd. A shoreline reconnaissance geological survey of Athapapuskow Lake was carried out during the summer of 1971 (A.F. 92016, 92574). The property was included in regional AMAG and AEM surveys conducted by Parmlee Manitoba Mining Co. Ltd. in 1957 (A.F. 91707) and Canadian Nickel Company Ltd. in 1980 (A.F. 92473).

GEOLOGICAL SETTING:

The area is underlain by mafic volcanic rocks that have been intruded by altered gabbro and hornblende-biotite-quartz diorite (Fig. 68-1; Podolsky, 1958).

MINERALIZATION:

Disseminated pyrite, pyrrhotite and chalcopyrite were intersected in a 22.5 m interval of quartz diorite that occurs within a coarse grained gabbro (A.F. 90306).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 90306, 91797, 92016, 92473, 92574  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



**LOCATION: 71**

**NAME:** (Drill indicated mineralization)  
**UTM:** 6041863N/339854E  
**ACCESS:** Via boat

**AREA:** Goose Lake  
**AIRPHOTO:**

**EXPLORATION SUMMARY:**

The area was staked in 1965 by A.L. Parres. VLEM (A.F. 90639) and magnetometer surveys (A.F. 90640) were conducted in 1967. In 1969 a HLEM survey was conducted (A.F. 90641). The area was staked in 1972 by Pronto Exploration Ltd. Magnetometer and HLEM surveys were carried out during the winter of 1972-1973 (A.F. 92574). Reconnaissance geological mapping of shoreline and islands was carried out during the autumn of 1976. Additional magnetometer and HLEM surveys were conducted and one hole totalling 93 m was drilled in 1977 (A.F. 92574). The property was included in regional AMAG and AEM surveys conducted by Parmlee Manitoba Mining Company Ltd. in 1957 (A.F. 91707) and by Canadian Nickel Company Ltd. in 1980 (A.F. 92473).

**MINERALIZATION:**

DDH 77-3, drilled to test an EM anomaly, intersected 82 cm of glassy, barren quartz and trace amounts of pyrrhotite and chalcopryite in a massive andesitic rock.

**GEOCHEMICAL DATA:**  
None.

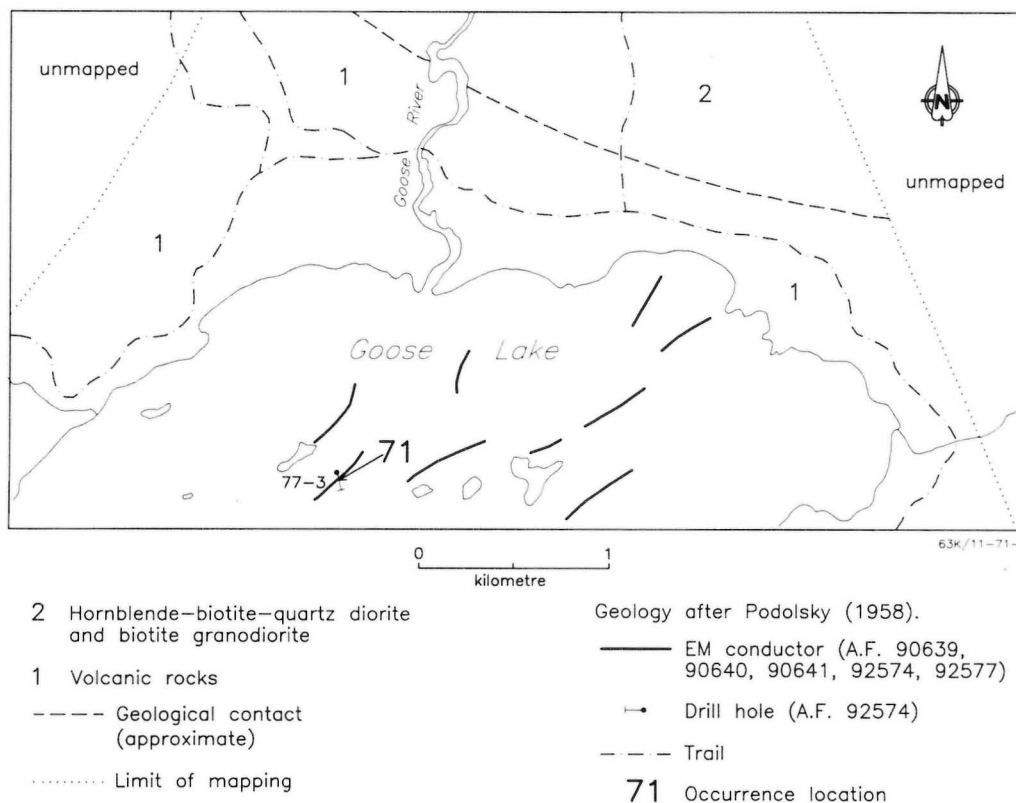
**CLASSIFICATION:**  
Disseminated mineralization - not classified.

**REFERENCES:**  
Assessment Files 90639, 90640, 90641, 91707, 92574, 92473 and 92577  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.

**GEOLOGICAL SETTING:**

The area is underlain by mafic volcanic rocks that have been intruded by hornblende-biotite-quartz diorite (Fig. 71-1; Podolsky, 1957). Mafic to intermediate tuff, andesite, felsic to intermediate tuff and a lamprophyre dyke were intersected in drill hole 77-3. Some sections of tuff and andesite contained up to 10% garnet.



**Figure 71-1: Geological setting and location of drill hole and geophysical conductors in the vicinity of occurrence 71.**

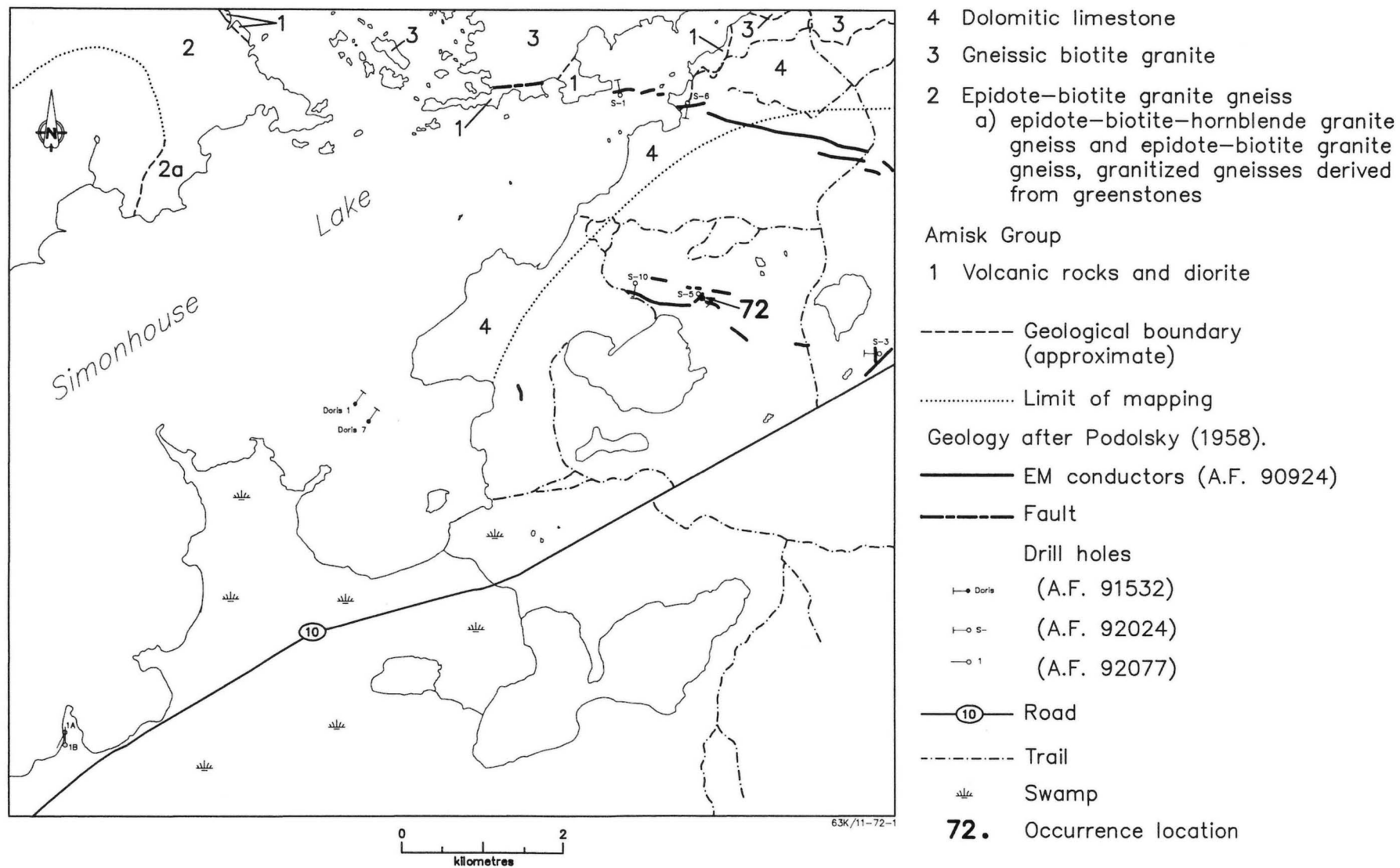


Figure 72-1: Geological setting and location of drill holes and geophysical conductors in the vicinity of occurrence 72.

LOCATION: 72

NAME: (Drill indicated mineralization)

UTM: 6047744N/367922E

ACCESS: Via traverse from Provincial Highway

AREA: East of Simonhouse Lake

AIRPHOTO: A26049-223

#### EXPLORATION SUMMARY:

The property was staked in 1964 by Murray Little. Two vertical holes were drilled on the Doris 1 claim in 1965 (A.F. 91532). Two holes were drilled on C.B. 4778 for Murray Little in 1972 (A.F. 92077).

Airborne EM surveys were conducted by Manitoba Mineral Resources Ltd. in 1972 and a number of holes were drilled to test conductors (A.F. 92024). The property was included in regional AMAG and AEM surveys conducted by Parmlee Manitoba Mining Company Ltd. in 1957 (A.F. 91707) and Canadian Nickel Company Ltd. in 1980 (A.F. 92472).

#### GEOLOGICAL SETTING:

The dominantly mafic volcanic rocks have been intruded by a large pluton of medium grained, pink granite. Ordovician dolomitic limestone unconformably overlies the volcanic and plutonic rocks (Podolsky, 1951). Biotite  $\pm$  quartz  $\pm$  hornblende gneisses and chloritic hornblende-calc-silicate gneiss were intersected in DDH S-3 (Fig. 72-1). Hornblende-biotite gneiss, quartz-biotite-feldspar gneiss and granite were intersected in DDH S-5. DDH 1B intersected dolomitic limestone, quartz-biotite gneiss, pegmatite, granite and a 15 cm quartz vein (A.F. 92077).

#### MINERALIZATION:

Trace to minor amounts of pyrite and graphite were intersected in both DDH S-3 and S-5 (A.F. 92024). The holes drilled for Murray Little did not intersect sulphide mineralization (A.F. 92077).

#### GEOCHEMICAL DATA:

One core sample from DDH S-3 contained trace amounts of Cu, Zn and Ni.

#### CLASSIFICATION:

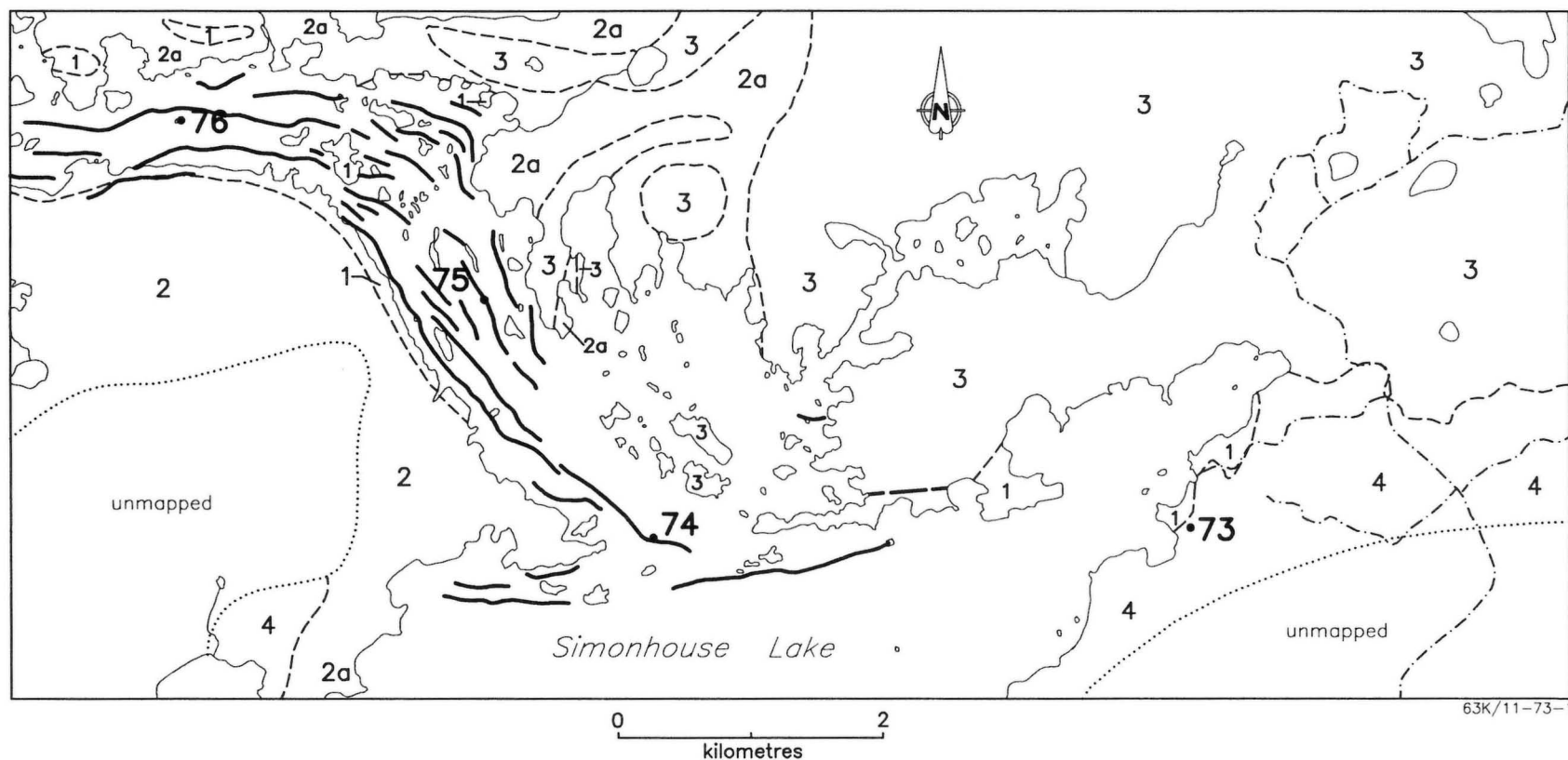
Disseminated mineralization - not classified.

#### REFERENCES:

Assessment Files 91532, 91707, 92024, 92077, 92472  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



- 4 Dolomitic limestone
- 3 Gneissic biotite granite
- 2 Epidote-biotite granite gneiss
- a) epidote-biotite-hornblende granite gneiss  
        and epidote-biotite granite gneiss, granitized  
            gneisses derived from greenstones
- Amisk Group
- 1 Volcanic rocks and diorite

- Geological boundary (approximate)
- ..... Limit of mapping
- Geology after Podolsky (1951).
- EM conductor (A.F. 90298)
- Fault
- .-.-.- Trail

**73.** Occurrence location

Figure 73-1: Geological setting and location of geophysical conductors in the vicinity of occurrences 73, 74, 75 and 76.

LOCATION: 73

NAME: (Drill indicated mineralization)  
UTM: 6050120N/367933E  
ACCESS: Via boat on Simonhouse Lake

AREA: East of Simonhouse Lake  
AIRPHOTO: A26049-224

#### EXPLORATION SUMMARY:

The property was staked in 1972 for Manitoba Mineral Resources Ltd.. Airborne EM surveys were conducted and four holes were drilled along the trend of a regional conductor (A.F. 92024).

The property was included in regional AMAG and AEM surveys conducted by Parmlee Manitoba Mining Company Ltd. in 1957 (A.F. 91707) and Canadian Nickel Company Ltd. in 1980 (A.F. 92472).

#### GEOLOGICAL SETTING:

The area is underlain by mafic volcanic rocks, gneisses derived from mafic volcanic rocks, granitic gneiss and gneissic granite. Ordovician dolomitic limestone unconformably overlies the volcanic and plutonic rocks (Fig. 73-1; Podolsky, 1951). DDH S-6 (Fig. 73-2) intersected hornblende gabbro, hornblende  $\pm$  biotite gneiss and hornblende calc-silicate gneiss. DDH S-9 intersected a layered, massive and coarse grained rhyolitic rocks, minor mafic rocks and several sections of ultramafic rocks; this hole was stopped in rhyolitic tuff (A.F. 93404).

#### MINERALIZATION:

DDH S-6 intersected trace to minor amounts of pyrrhotite and pyrite in a graphitic chlorite-biotite-hornblende gneiss (A.F. 92024). DDH S-9 intersected a 30 cm section of black massive ultramafic rock with 40% pyrite, a 2 m section of layered, black ultramafic rock with 10% pyrite, a 13.7 m section of rhyolitic tuff with 20% pyrite and a 2.1 m section of 'mafic zone with 20% pyrite'. DDH S-8 intersected trace to minor amounts of pyrite and trace amounts of chalcopyrite in biotite-hornblende gneiss with sections of calc-silicate gneiss (A.F. 92024).

#### GEOCHEMICAL DATA:

Three samples assayed from drill core contained 0.03% Cu and up to 0.1% Zn.

#### CLASSIFICATION:

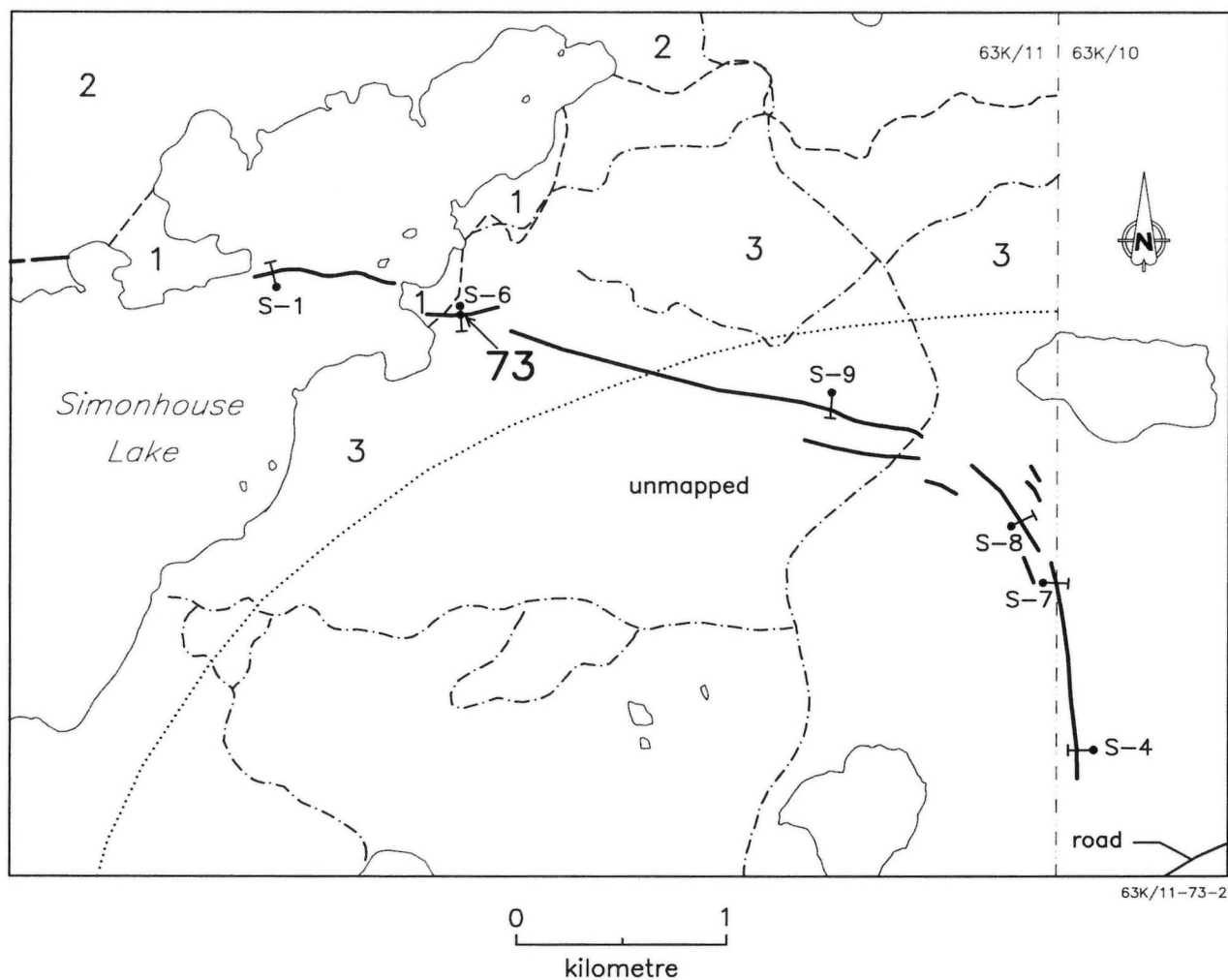
Disseminated mineralization - not classified.

#### REFERENCES:

Assessment Files 91707, 92024 and 92472  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



- 3 Dolomitic limestone
- 2 Gneissic biotite granite
- Amisk Group
- 1 Volcanic rocks and diorite
- Geological boundary (approximate)
- ..... Limit of mapping

- Geology after Podolsky (1951).
- Fault
- EM conductor (A.F. 92024)
- ⊥ Drill hole (A.F. 92024)
- Trail
- 73** • Occurrence location

Figure 73-2: Location of drill holes and geophysical conductors in the vicinity of occurrence 73.

LOCATION: 74

NAME: (Drill indicated mineralization)  
UTM: 6050074N/363886E  
ACCESS: Via boat

AREA: Simonhouse Lake (Fig. 73-1)  
AIRPHOTO: A26049-227

EXPLORATION SUMMARY:

Regional AMAG and AEM surveys were conducted by Parmlee Mining Ltd. in 1957 who drilled at least one hole in the area (A.F. 90299, 91907) and by Canadian Nickel Co. Ltd. in 1980 (A.F. 92472). HBED conducted an HLEM survey (A.F. 90298) and drilled three holes with a total length of 219 m in 1968 (A.F. 90299).

GEOLOGICAL SETTING:

A narrow belt of mafic volcanic rocks is exposed between a large mass of medium grained epidote-biotite granite gneiss and epidote-biotite-hornblende granite gneiss (Fig. 73-1; Podolsky, 1951). DDH Min 3 intersected diorite and quartz-hornblende-biotite gneiss (A.F. 90299).

MINERALIZATION:

DDH Min 3 (Fig. 74-1) intersected 60 cm of 30% pyrrhotite, 10% graphite and 5% pyrite in quartz-hornblende-biotite gneiss (A.F. 90299). The Parmlee DDH No. 65 reportedly intersected graphite and pyrite (A.F. 90299).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

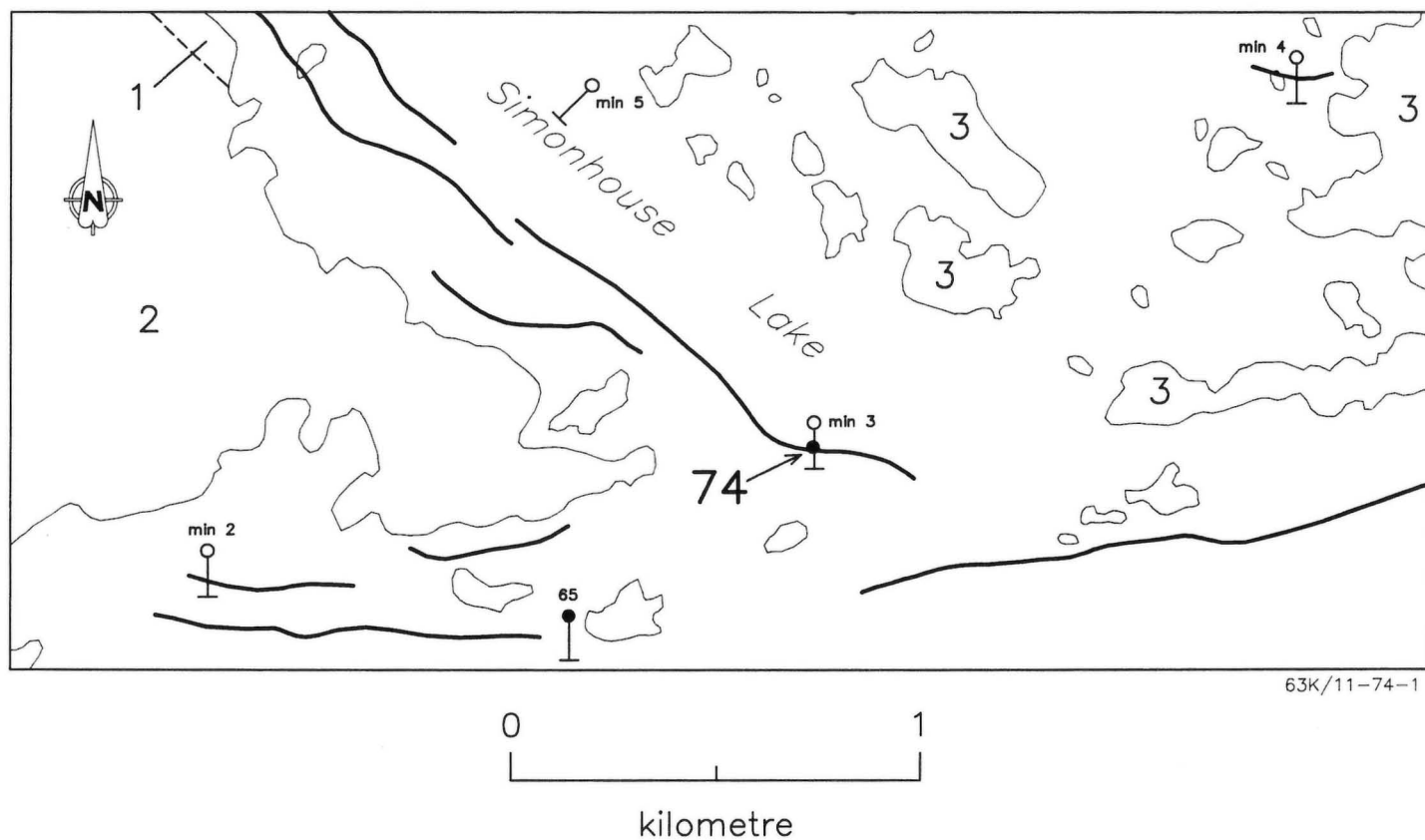
Chemical sediment type deposit; graphite-bearing sulphide facies iron formation.

REFERENCES:

Assessment Files 90298, 90299, 91907 and 92472  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



- 3 Gneissic biotite granite  
 2 Epidote-biotite granite gneiss  
 Amisk Group  
 1 Volcanic rocks and diorite

----- Geological boundary  
 (approximate)

Geology after Podolsky (1951).

—— EM conductor  
 (A.F. 90298)

Drill holes

—○ min (A.F. 90299)

—● (A.F. 90298)

74● Occurrence location

Figure 74-1: Location of geophysical conductors and drill holes in the vicinity of occurrence 74.



**LOCATION: 75**

**NAME:** (Drill indicated mineralization)  
**UTM:** 6051927N/362572E  
**ACCESS:** Via boat

**AREA:** Simonhouse Lake (Fig. 73-1)  
**AIRPHOTO:** A26049-227

**EXPLORATION SUMMARY:**

Regional AMAG and AEM surveys were conducted by Parmlee Mining Ltd. in 1957 (A.F. 91907) and by Canadian Nickel Co. Ltd. in 1980 (A.F. 92472). The area was staked for HBED in 1967 who conducted an HLEM survey (A.F. 90298) and drilled six holes (A.F. 90299) in 1968.

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation.

**GEOLOGICAL SETTING:**

A narrow belt of mafic volcanic rocks is exposed between a large mass of medium grained epidote-biotite granite gneiss and epidote-biotite-hornblende granite gneiss (Podolsky, 1951). DDH Min 9 intersected altered fragmental andesitic rocks with carbonate veinlets and hornblende-quartz gneiss with graphite and sulphides.

**REFERENCES:**

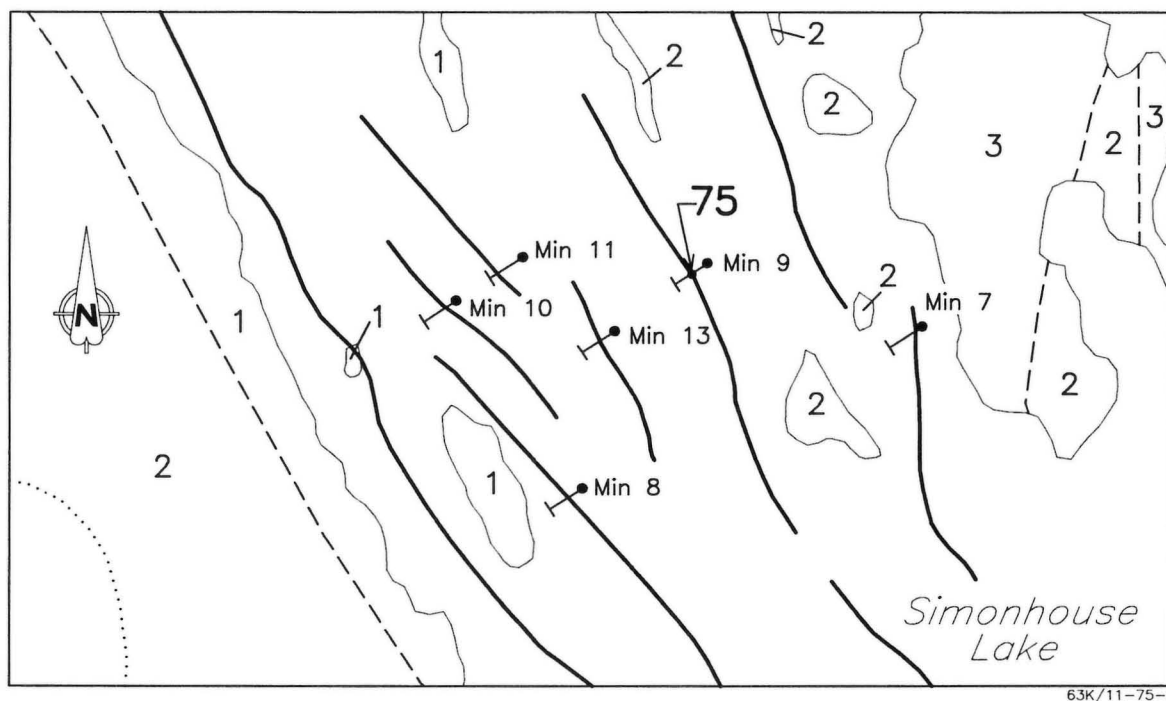
Assessment Files 90298, 90299, 91907 and 92472  
Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

**MINERALIZATION:**

The drill core for DDH Min 9 (Fig. 75-1) contained a 2 m section with '50% graphite, 10% pyrrhotite and 5% pyrite', a 40 cm section with 50% pyrrhotite and 15% graphite, as well as several other sections with 5-20% graphite, 10-30% pyrrhotite and pyrite (A.F. 90299).



63K/11-75-1

0 500  
metres

- |   |   |
|---|---|
| 3 Gneissic biotite granite  | ----- Geological boundary (approximate) |
| 2 Epidote-biotite granite gneiss  | ..... Limit of mapping                  |
| a) epidote-biotite-hornblende granite gneiss and epidote-biotite granite gneiss, granitized gneisses derived from greenstones | Geology after Podolsky (1951).          |
| Amisk Group   | ———— EM conductor (A.F. 90298)          |
| 1 Volcanic rocks and diorite  | —•— Drill holes (A.F. 90299)            |
|   | <b>75 •</b> Occurrence location         |

Figure 75-1: Location of geophysical conductors and drill holes in the vicinity of occurrence 75.

LOCATION: 76

NAME: (Drill indicated mineralization)

UTM: 6053162N/360311E

ACCESS: Via boat

AREA: North Simonhouse Lake (Fig. 73-1)

AIRPHOTO: A26363-218, 219

#### EXPLORATION SUMMARY:

The property was staked in 1967 for HBED who conducted a HLEM survey (A.F. 90298) and drilled seven holes (A.F. 90299) in early 1968. The area was staked in 1972 for Potential Ore Exploration who drilled two holes for a total length of 200 m in 1973 (A.F. 92626). The area was included in regional AMAG and AEM surveys conducted by Canadian Nickel Co. Ltd. in 1980 (A.F. 92472).

#### GEOLOGICAL SETTING:

A narrow belt of mafic volcanic rocks is exposed between a large mass of medium grained epidote-biotite granite gneiss and epidote-biotite-hornblende granite gneiss (Fig. 76-1; Podolsky, 1951).

#### MINERALIZATION:

Both DDH No. 1 and No. 2 intersected approximately 100 m of quartz-biotite-hornblende gneiss with minor disseminated pyrrhotite and pyrite and trace chalcopyrite (A.F. 92626). DDH Min 18 intersected a 35 cm section with 50% pyrrhotite, 15% graphite and trace amounts of pyrite and a 82 cm section with 20% pyrrhotite, <1% pyrite and <1% graphite (A.F. 90299).

#### GEOCHEMICAL DATA:

Core samples analyzed from DDH No. 1 and No. 2 contained trace amounts of Cu, Zn, Ni, Ag and Au.

#### CLASSIFICATION:

Chemical sediment type deposit; graphite-bearing sulphide facies iron formation.

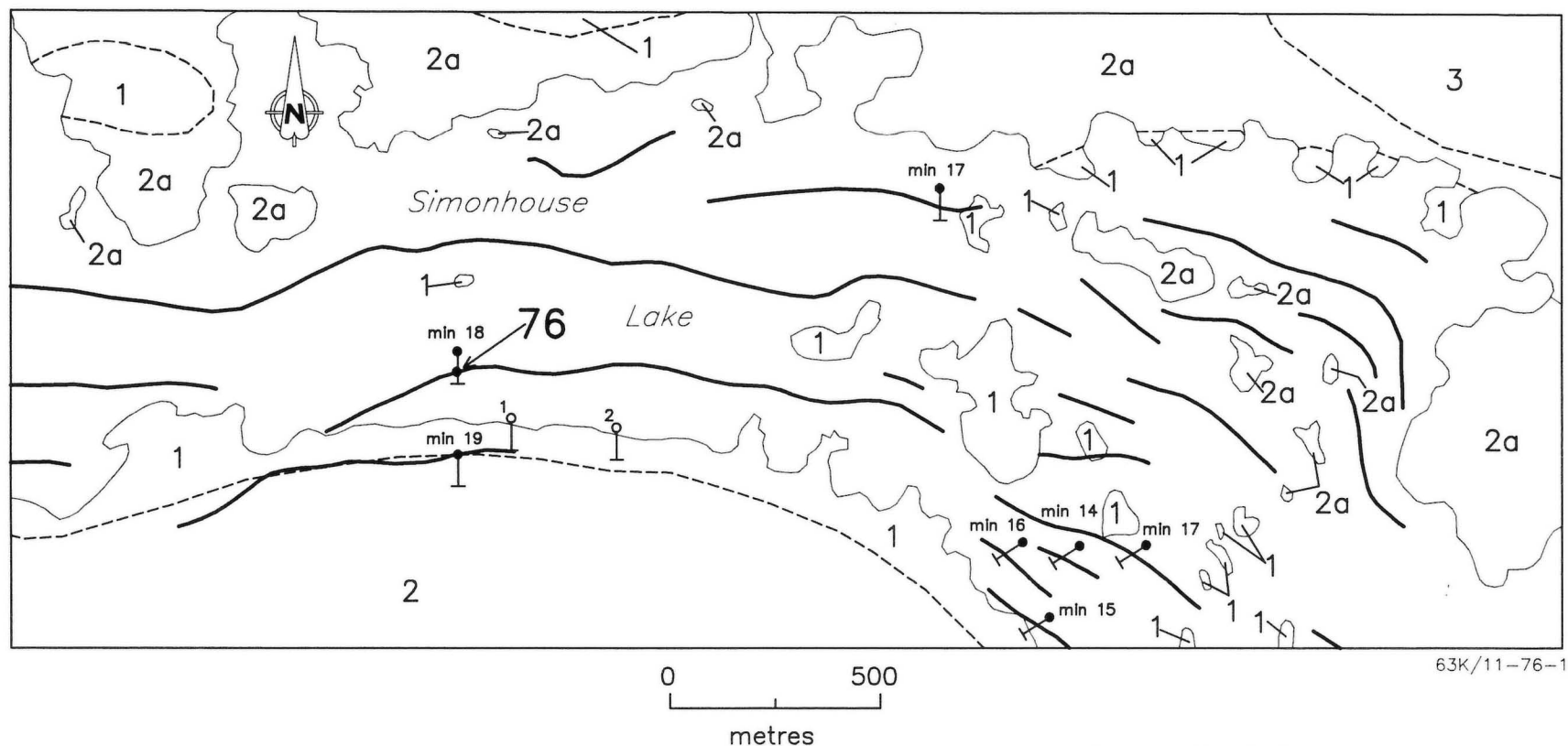
#### REFERENCES:

Assessment Files 90298, 90299, 92472, 92626

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.



3 Gneissic biotite granite

2 Epidote-biotite granite gneiss

a) epidote-biotite-hornblende granite gneiss and epidote-biotite granite gneiss, granitized gneisses derived from greenstones

Amisk Group

1 Volcanic rocks and diorite

----- Geological boundary (approximate)

Geology after Podolsky (1951).

———— EM conductor (A.F. 90298)

Drill holes

—• min (A.F. 90299)

—○ 1 (A.F. 92626)

**76 •** Occurrence location

Figure 76-1: Location of geophysical conductors and drillholes in the vicinity of occurrence 76.

**LOCATION: 77**

**NAME:** (Drill indicated mineralization)

**UTM:** 6066340N/355160E

**ACCESS:** Via bush aircraft and traverse

**AREA:** NW of Brunne Lake

**AIRPHOTO:** A26363-34

**EXPLORATION SUMMARY:**

HBED conducted an EM survey and drilled a 120 m hole to test a conductor in 1982 (A.F. 92975, 92976).

**GEOLOGICAL SETTING:**

The area was mapped as medium grained, pink, gneissic syenodiorite (Podolsky, 1951). DDH Yap-4 intersected diorite, hornblendite, granite, dacite (?), dacite tuff, argillaceous dacite tuff and feldspar porphyry (A.F. 92975).

**MINERALIZATION:**

DDH Yap-4 intersected four main sections of sulphide mineralization 5.5 m, 22.9 m, 18.3 m, and 16.1 m in core length. In general, the total sulphide content was less than 10%, but 15 to 30 cm sections of 30-70% sulphides are common. Pyrrhotite is the most abundant sulphide, but locally pyrite is more abundant than pyrrhotite. Chalcopyrite (trace-2%), sphalerite (trace-2%) and trace galena are also present. Dacite tuff fragments are suspended in a pyrrhotite matrix in one section of unknown length. Black and green chlorites are commonly associated with the sulphides (A.F. 92975).

**GEOCHEMICAL DATA:**

Sixty-nine core samples were analyzed for Au, Ag, Cu, Zn and Pb; the concentrations obtained were nil to trace Au, nil to 0.14 g/t Ag, nil to 0.33% Cu, nil to 0.8% Zn and 0.1% Pb (A.F. 92975).

**CLASSIFICATION:**

Vein type deposit; multiple veins. It is possible that this mineralization is part of an alteration zone associated with a massive sulphide type deposit.

**REFERENCES:**

Assessment Files 92975, 92976

Manitoba Energy and Mines, Mines Branch.

Podolsky, T.

1951: Cranberry Portage (east Half), Manitoba; Geological Survey of Canada, Preliminary Map 51-17, 1:40 000 scale.

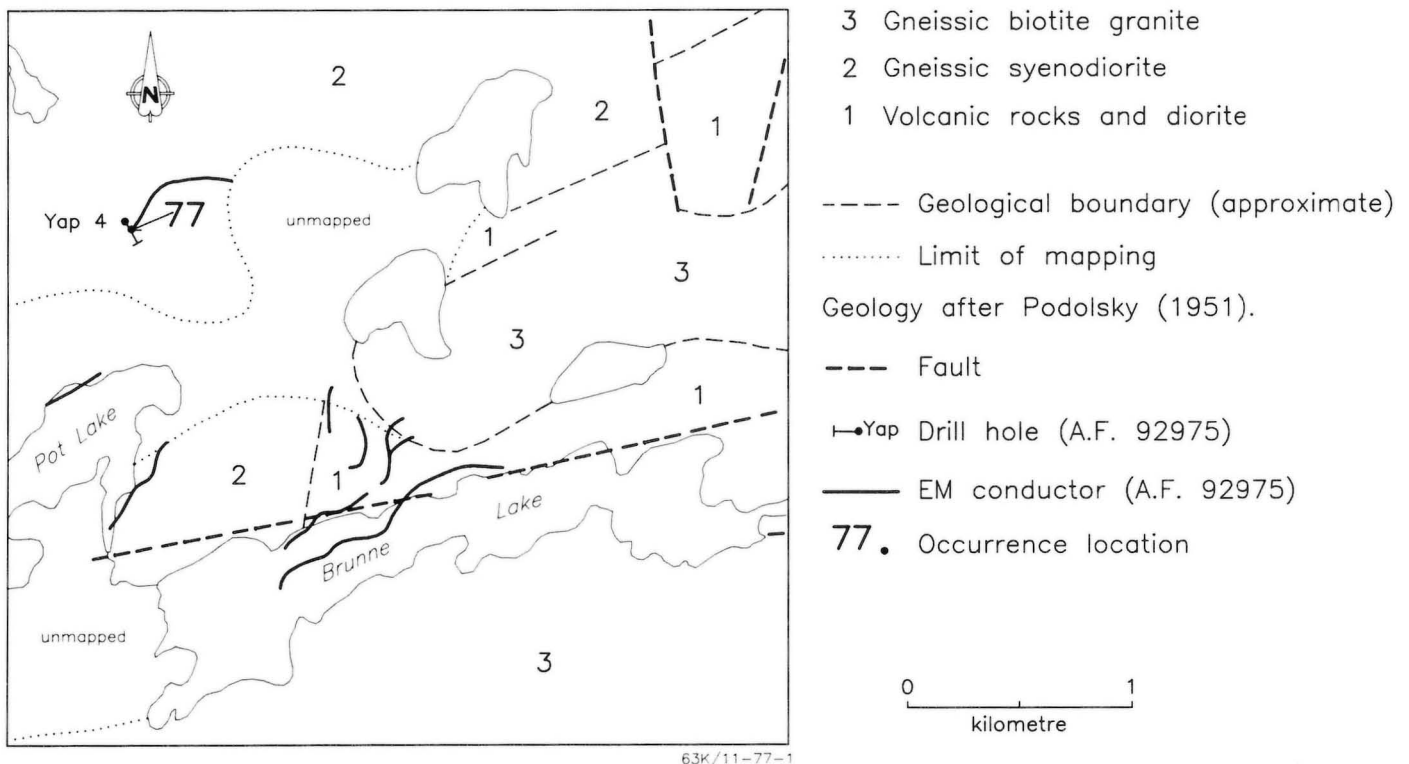


Figure 77-1: Location of drill hole and geophysical conductors in the vicinity of occurrence 77.

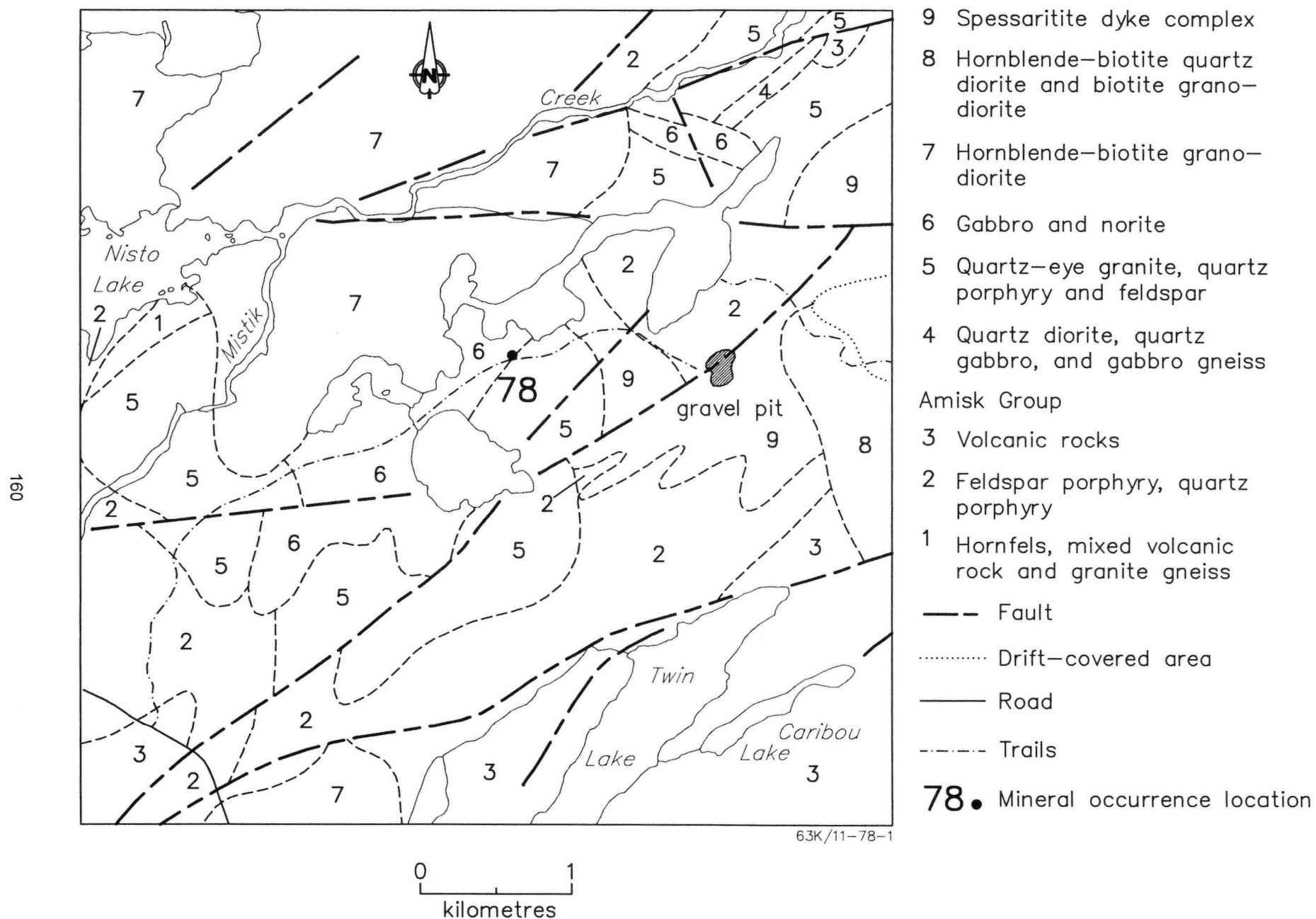


Figure 78-1: Geological setting of occurrence 78.

LOCATION: 78

NAME: Laur

UTM: 6063350N/341850E

ACCESS: Via gravel road from provincial road to Sherridon

AREA: North of Twin Lake

AIRPHOTO: 13879-99, -54

EXPLORATION SUMMARY:

Mineralization was discovered by P. Bachnik and A.L. Parres in 1984 during construction of an access road to exploit a gravel deposit. Several small trenches and pits were excavated adjacent to the access road and a magnetometer survey was conducted (A.L. Parres, Pers. Comm. 1989).

GEOLOGICAL SETTING:

The area (Fig. 78-1) is underlain by mafic volcanic rocks that have been intruded by granodiorite, diorite, gabbro and norite (Podolsky, 1958).

MINERALIZATION:

Dissemination's and veinlets of pyrrhotite, pyrite and chalcopyrite are randomly scattered throughout the volcanic and intrusive rocks.

GEOCHEMISTRY:

none

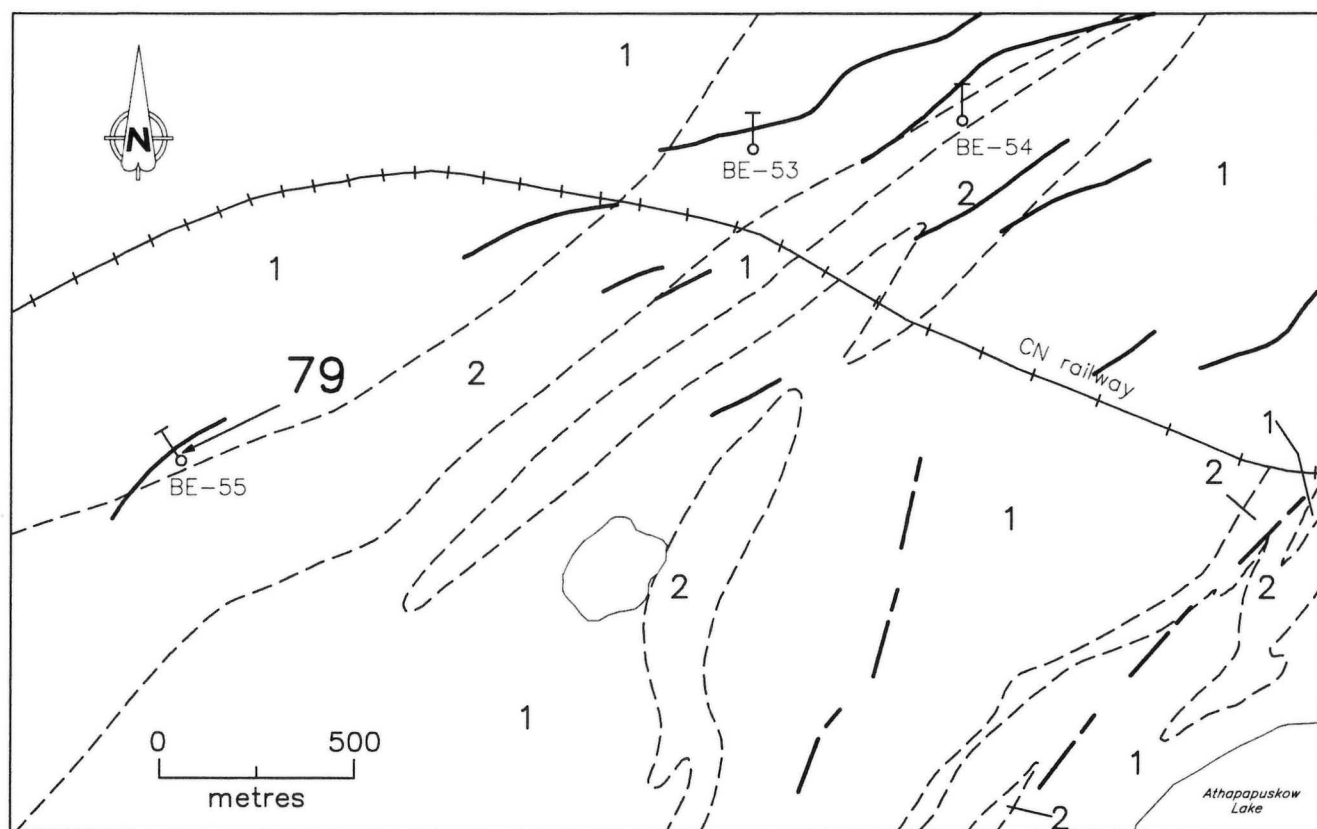
CLASSIFICATION:

Disseminated mineralization; not classified

REFERENCES:

Podolsky, T.

1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.



63K/11-79-1

Mafic intrusive rocks

2 Dense, fine grained diorite

Mafic volcanic rocks

1 Massive basalt (minor andesite flows)

----- Geological boundary (approximate)

Geology after Varna Resources Inc. (1986).

—— EM conductors (A.F. 93401, 93404)

○— Drill hole (A.F. 92357)

—— Faults

**79** Occurrence location

Figure 79-1: Geological setting, geophysical conductors and drill holes in the vicinity of occurrence 79.



**LOCATION: 79**

**NAME:** (Drill indicated mineralization)  
**UTM:** 6052300N/338700E  
**ACCESS:** Via boat and traverse

**AREA:** East Arm, Athapapuskow Lake  
**AIRPHOTO:** A26369-138,-139

**EXPLORATION SUMMARY:**

EM and magnetometer surveys were conducted by Falconbridge Nickel Mines Ltd. in 1971 (A.F. 91899, 93525). The property was included in regional AMAG and AEM surveys conducted by Sherritt Gordon Mines Ltd. in 1973-1974 (A.F. 92020) and in regional AMAG and AEM surveys conducted by Canadian Nickel Company Ltd. in 1980 (A.F. 92473). A HLEM survey was undertaken by Granges Exploration Ltd. in 1980 who drilled three holes with an aggregate length of 138 m (A.F. 92357). An extensive geochemical, geophysical and geological survey program was conducted in the area by Varna Resources Inc. in 1985-86 (A. F. 93404).

**GEOLOGICAL SETTING:**

The area (Fig. 79-1) is underlain predominantly by mafic volcanic rocks that include pillowed and massive flows, gabbro and diorite (Podolsky, 1957; A.F. 93404). The DDH intersected andesite, dacite, quartz porphyry and fine- to medium-grained biotite granite.

**MINERALIZATION:**

DDH BE-55 intersected 3 m and 0.6 m sections of near solid sulphides. The 3 m section consisted of pyrrhotite with 10% pyrite and minor chalcopyrite and sphalerite adjacent to a 1.6 m section of 20% pyrrhotite, minor pyrite and magnetite (?). The 0.6 m near solid sulphide section contained pyrrhotite and minor amounts of chalcopyrite and sphalerite. DDH BE-53 core contained approximately 5 m of near solid fine grained pyrite with 10% coarse grained pyrite and minor

graphite adjacent to an approximately 15 m section with an estimated 70% magnetite and 'siliceous bands'. DDH BE-54 intersected 1.6 and 3.5 m sections of near solid pyrite and graphite within a 18 m thick section that contains 10 to 25% pyrite and/or pyrrhotite in association with siliceous or dacitic rocks (A.F. 92357).

**GEOCHEMICAL DATA:**

Maximum concentrations obtained from the drill core assays were 0.05 g/t Au, 1.5 g/t Ag, 0.06% Cu and 0.08% Zn (A.F. 92357).

**CLASSIFICATION:**

Chemical sediment type deposit; graphite-bearing sulphide facies iron formation. The magnetite-bearing silicic rocks intersected by DDH BE-53 probably represents an oxide facies iron formation. This occurrence and its stratigraphic equivalents along strike warrants further investigation because anomalous gold values were found in an iron formation southeast of this Location on the adjoining map sheet by Varna Resources Inc. (A.F. 93404).

**REFERENCES:**

- Assessment Files 91899, 92020, 92357, 93404, 93525  
Manitoba Energy and Mines, Mines Branch.
- Podolsky, T.  
1958: Cranberry Portage (west half), Manitoba; Geological Survey of Canada, Map 26-1957, 1:63 360 scale.