



Mineral Deposit Series Report No. 9

Mineral Deposits and Occurrences in the Laurie Lake Area, NTS 64C/12

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Energy and Mines

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MAP

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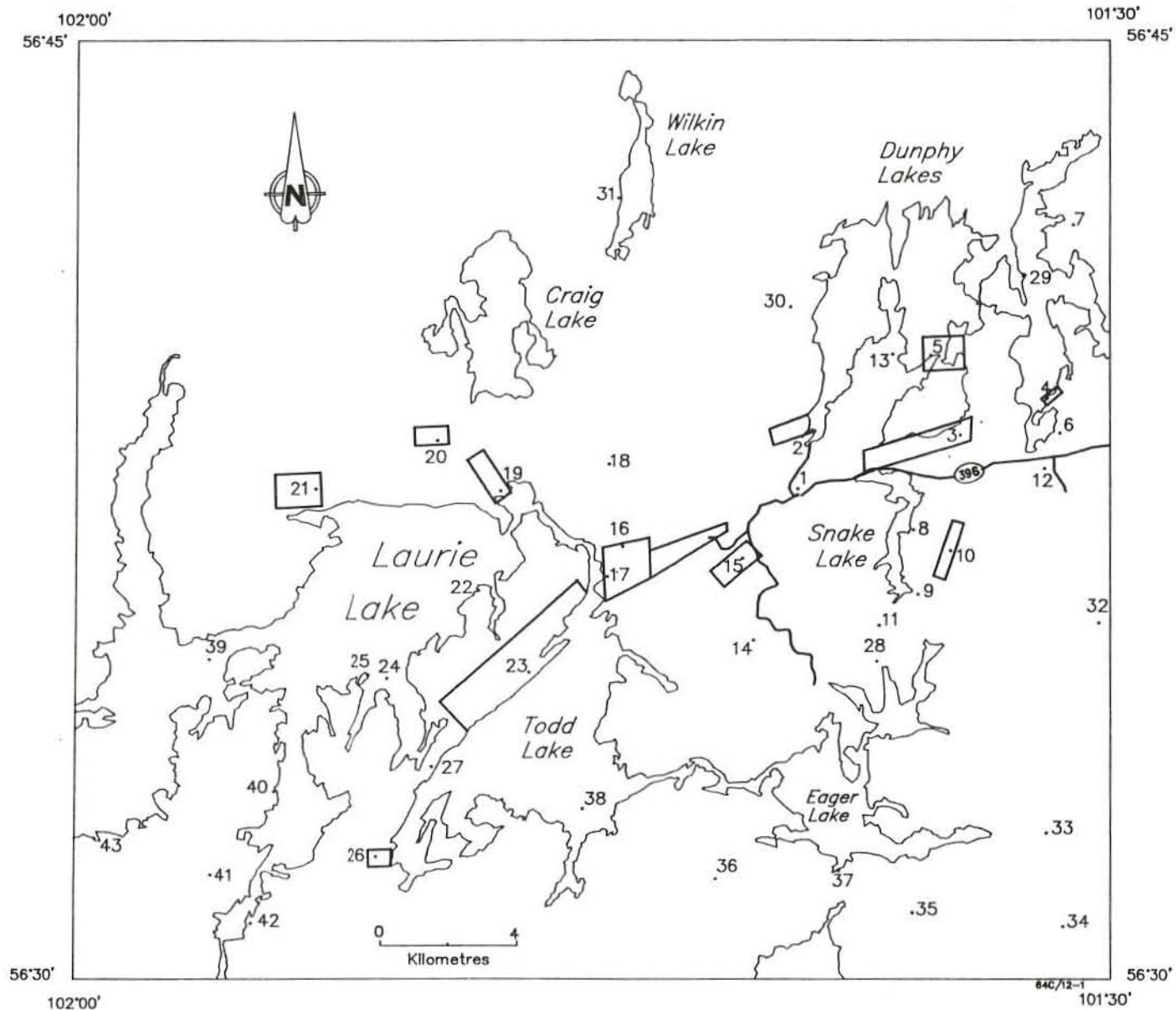


Figure 1: Location of mineral deposits and occurrences (NTS 64C/12).

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. 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 In addition, for each occurrence the geologists have attempted to synthesize available data from published and unpublished sources.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.

Information has been collated and maps prepared with the assistance of junior staff geologists and summer assistants. Senior mineral deposit geologists have provided the deposit classifications and text for the report.

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% to 100% and 'near solid sulphide' for 50% to 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 sheet (but not within portions of a map sheet such as Map MDS87-1).

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).

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

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.

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.

ABBREVIATIONS

The following abbreviations are used throughout the occurrence descriptions:

A.F.	assessment file
asp	arsenopyrite
CB	claim block
c.g.	coarse grained
cm	centimetre
cp	chalcopyrite
DDH	diamond drill hole(s)
diss.	disseminated
EM	electromagnetic
gn	galena
g/t	grams per tonne
HLEM	horizontal loop electromagnetic
km	kilometre
m	metre
oz/ton	ounces per ton
po	pyrrhotite
py	pyrite
SGM	Sherritt Gordon Mines Limited
t	tonne
tr.	trace
VLF-EM	very low frequency electromagnetic

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P. Athayde compiled the material presented in the sections entitled 'Exploration Summary'. K. Dahlin provided office assistance in data compilation. D. Bagwell drafted the figures using Autocad software. The map was drafted by Juan Morales. Technical review by G. Ostry, G.H. Gale and W.D. McRitchie, and editorial comment by D.A. Baldwin are greatly appreciated.

Sherritt Gordon Mines Limited graciously provided access to company files and permission to publish the data used herein. Cooperation with the staff of Sherritt Gordon Mines Limited, and later LynnGold Resources Incorporated, particularly P.J. Chornoby (Exploration Manager), is greatly appreciated.

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.

GEOLOGY OF AREA NTS 64C/12

The geological base for mineral deposit map sheet NTS 64C/12 is taken from the 1:50 000 map of Gilbert *et al.* (1980). Previous geological mapping in this area had been conducted by Stanton (1949) and Milligan (1952, 1960). The Laurie Lake area is underlain by rocks of the Proterozoic Lynn Lake greenstone belt, bounded to the south by the Burntwood River Metamorphic Suite, which forms the northern margin of the Kiseynew sedimentary gneiss domain, and abutted to the north by large granodioritic to tonalitic plutons. Supracrustal rocks of the Lynn Lake greenstone belt are subdivided into the volcanic and volcanic-derived sedimentary rocks of the Wasekwan Group (Bateman, 1945), and younger sedimentary rocks of the Sickie Group (Norman, 1934).

The Wasekwan Group consists mainly of basaltic to andesitic flows and volcanoclastic rocks, and lesser felsic volcanic rocks. The earliest volcanic episodes (1910 Ma, Baldwin *et al.*, 1987), are synchronous with early volcanism in the Flin Flon greenstone belt to the south (Gordon *et al.*, 1990). In the western part of the Lynn Lake greenstone belt, the Wasekwan Group is greater than 4000 m thick. In the Mukasew (Fox) Lake - Pyta Lake area, a 1500 m thick porphyritic basaltic platform (*Fox Lake basalt*) is overlain by up to 800 m of felsic volcanic rocks (*Snake Lake dacite*). The felsic rocks are overlain by, and interlayered with, the *Fox Mine Succession*, a 500 m thick sequence of aphyric and porphyritic basalt and andesite and fine grained sedimentary rocks. Locally, the Fox Mine Succession is overlain by, and grades along strike into, mudstone, greywacke, tuff and iron formation. East of the Fox mine site, near Provincial Road 396, the Snake Lake dacite is overlain by a 1500 m thick sequence of fine grained, quartz-poor volcanoclastic greywacke with well preserved sedimentary structures and a basal quartz-pebble conglomerate. This sequence (*Fox Road turbidite*) is interpreted as having been deposited by turbidity flows. In the Tod Lake area, up to 850 m of aphyric basalt with minor high-Mg basalt and ultramafic rocks (*Tod Lake basalt*) overlies interlayered tuff, greywacke and siltstone of the Wasekwan Group and Burntwood River Metamorphic Suite (Gilbert *et al.*, 1980).

The Burntwood River Metamorphic Suite comprises paragneiss and migmatite derived from greywacke and mudstone that are overlain by up to 50 m of layered amphibolite. These rocks are considered to be equivalent in age to Wasekwan Group rocks. The upper 600 m of this suite is exposed in the southern and western parts of the Laurie Lake area. Rocks from the upper 300 m are rich in quartz, cordierite, sillimanite and graphite, and are considered to have been derived from black mudstone; thin felsic tuff beds overlie this succession in places.

In most of the Lynn Lake greenstone belt, including the northeastern part of the Laurie Lake area, Sickie Group sandstone and conglomerate unconformably

overlie rocks of the Wasekwan Group. Sickie Group rocks or their gneissic equivalents conformably or disconformably overlie the Burntwood River Metamorphic Suite in the southern and western parts of the Laurie Lake area. A basal conglomerate up to 540 m thick with clasts derived from volcanic, intrusive and sedimentary rocks is overlain by an arkosic sequence dominated by medium grained sandstone and minor pebbly sandstone. The Sickie Group is at least 3900 m thick; an approximately 1000 m thick section is exposed in the Laurie Lake area (Gilbert *et al.*, 1980).

Mafic to felsic plutons were intruded during and after volcanism that produced the Wasekwan Group, and after deposition of the Sickie Group. The latest plutonism occurred at 1876 Ma, contemporaneous with early volcanism in the Rusty Lake greenstone belt to the east (Baldwin *et al.*, 1987).

The Lynn Lake greenstone belt has undergone medium- to high-grade regional metamorphism. Although middle amphibolite facies assemblages are dominant throughout most of the greenstone belt, upper amphibolite facies assemblages are prevalent in the Laurie Lake area. The Burntwood River Metamorphic Suite has been metamorphosed above the second sillimanite isograd (Gilbert *et al.*, 1980).

Five episodes of deformation have been identified in the Lynn Lake area (Gilbert *et al.*, 1980):

- D1: isoclinal folding of Wasekwan Group rocks on steeply dipping ENE-trending axial surfaces;
- D2: uplift, erosion, faulting and tilting, with subsequent deposition of Sickie Group rocks;
- D3: thrust faulting at the margins of the greenstone belt;
- D4: formation of domal complexes in Sickie Group rocks from north- and east-trending folds (e.g., at Conglomerate Lake); development of foliation and regional metamorphism; and
- D5: continued development of foliation and open cross folding.

Several deposits and occurrences with massive sulphide deposit type mineralization are present in the Laurie Lake area. These include the Fox (1) and Lar (21) deposits, as well as occurrences 5 (Phy), 8 (Bag), 15, 18 (New Fox) and 20 (Gran).

Unusual mineral assemblages that include combinations of cordierite, anthophyllite-gedrite, garnet, cummingtonite, sillimanite, staurolite, hornblende, plagioclase, magnetite, sulphide and quartz are recognized as metamorphic equivalents of Fe-Mg-Al enriched, Ca-Na-K depleted hydrothermal alteration zones (Lustig, 1979; Elliott, 1984; Barham, 1987; Jackson, 1988). These metamorphic mineral assemblages are spectacularly coarse grained and abundant at the Fox (1) and Lar (21) deposits and the New Fox (18) occurrence. Alteration zones have also been identified at occurrences

8 (Bag), 9 (Gal), 11, 14, 19 (Rye), 20 (Gran), 24, 33, 34 and 37 (Jackson, 1988).

Two vein-type gold occurrences have been recognized in the Laurie Lake area: occurrences 25 (Caimito) and 6 (Dunphy VG).

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MINERAL DEPOSITS AND OCCURRENCES: LAURIE LAKE AREA (64C/12)

LOCATION: 1

NAME: Fox

UTM: 6279231N/337470E

ACCESS: Provincial Road 396

AREA: 1 km west of Mukasew (formerly Fox) Lake

AIRPHOTO: A24298-14

EXPLORATION SUMMARY:

Stanton (1949, p. 34) noted the occurrence of "a sparse dissemination of fine pyrrhotite" in "recrystallized dark-grey very impure garnetiferous quartzite" that corresponds to a magnetic anomaly at this location.

The remainder of the exploration history for this location is summarized from Mineral Inventory Card 64C/12 Cu1. The area was first staked as the Fox group of claims in 1947. The claims lapsed in 1948.

Airborne EM and magnetometer surveys were done by Canadian Nickel Company Limited in 1954 and by Selco Exploration Company Limited in 1960 (A.F. 91615, 91626). SGM carried out airborne EM and magnetometer surveys in 1960, followed by ground EM and diamond drilling in 1961; the first diamond drill hole intersected 39.7 m of mineralization that contained an average of 0.45% copper.

A 41-hole, 8014 m diamond drill program outlined the deposit to a depth of 305 m in 1961. Surface drilling during the next four years outlined reserves to the 610 m level. In May 1965, the property was assigned to SGM and a large scale underground development program began. The deepest intersection of the ore zones was reported at 1219 m (Mineral Inventory Card 64C/12 Cu1).

A total of 11 958 182 tonnes of ore grading 1.82% Cu and 1.78% Zn were milled between 1970 and 1985 (Olson, 1987). Minor amounts of gold and silver were recovered from the copper concentrate, and minor cadmium from the zinc concentrate.

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. SGM acquired Production Leases 10 to 13 in 1975. Geological mapping (1:63 360) and rock geochemical sampling programs were conducted by Falconbridge Nickel Mines Limited in 1977 under a joint venture agreement with the Manitoba Government (A.F. 92217). A 3 km² area was mapped and sampled and ten exploration drill holes were re-logged, as part of a study of the Fox Mine area that was jointly funded by SGM, University of Manitoba and Manitoba Energy and Mines (Olson, 1984).

The property was transferred to Hayes Resources Inc. in June 1988.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic to felsic volcanic and sedimentary rocks, collectively termed the Fox Mine Succession (Gilbert *et al.*, 1980). The Succession is bordered by tonalite to the south and is in fault contact to the north with Sickle Group arkosic sandstone and Wasekwan Group mafic and intermediate volcanic rocks (Fig. 1-1, 1-2). This succession is 500 m thick at the deposit and consists of six main components: (1) aphyric basalt, pillow breccia and flows; (2) porphyritic basalt; (3) dacite and rhyolite; (4) intermediate volcanic rocks; (5) polymictic conglomerate; and (6) greywacke, mudstone and iron formation. Locally, the succession includes anthophyllite schist and mafic and felsic intrusive rocks. The succession was interpreted to have been deposited in a distal subaqueous environment (Gilbert *et al.*, 1980).

The deposit was located approximately 200 m south of the fault contact with the Sickle Group arkose. The sulphide lenses were laterally continuous with dacitic volcanic rocks (Fig. 1-2; Olson, 1987). Discontinuous banded oxide facies iron formation was intersected by drill holes east of the ore zone. Pyritic mudstones directly overlying a thin layer of alteration zone minerals were intersected in holes drilled west of the ore zone (Olson, 1987).

MINERALIZATION:

Descriptions of the Fox deposit have been presented by Coats *et al.* (1972), Obinna (1974), Lustig (1979) and Olson (1987). The following description of the mineralization is summarized from Coats *et al.* (1972), except where noted otherwise. The deposit was approximately 450 m wide, 30 m thick, and extended from surface to a depth of 855 m. Observations from underground drilling and mine workings indicate that at lower levels, the deposit comprised two stratiform and stratabound solid sulphide lenses: the east or main zone, and the west zone (Lustig, 1979). Contacts between solid sulphide lenses and the enclosing wall rocks were sharp. The deposit was oriented 065°/70°NW (The Western Miner, 1970).

Pyrite, chalcopyrite, sphalerite and pyrrhotite were the major sulphide minerals; arsenopyrite and quartz-feldspar inclusions were minor constituents. Copper and Zn distribution within the deposit was vertically, horizontally and laterally zoned (Coats *et al.*, 1972; Lustig, 1979; Olson, 1987). Table 1-1 summarizes the sulphide types and distribution among the upper, central and lower parts of the deposit.

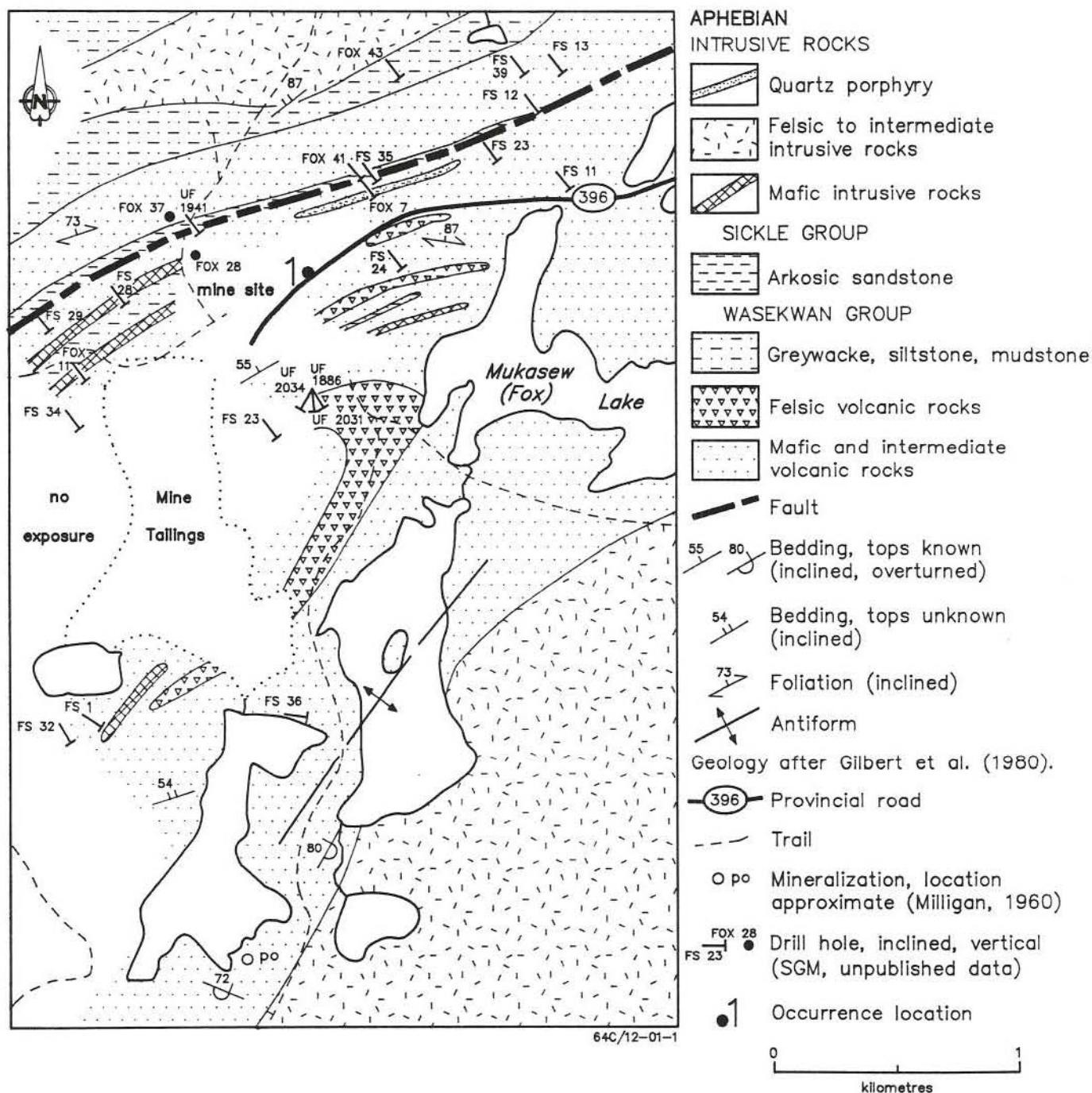
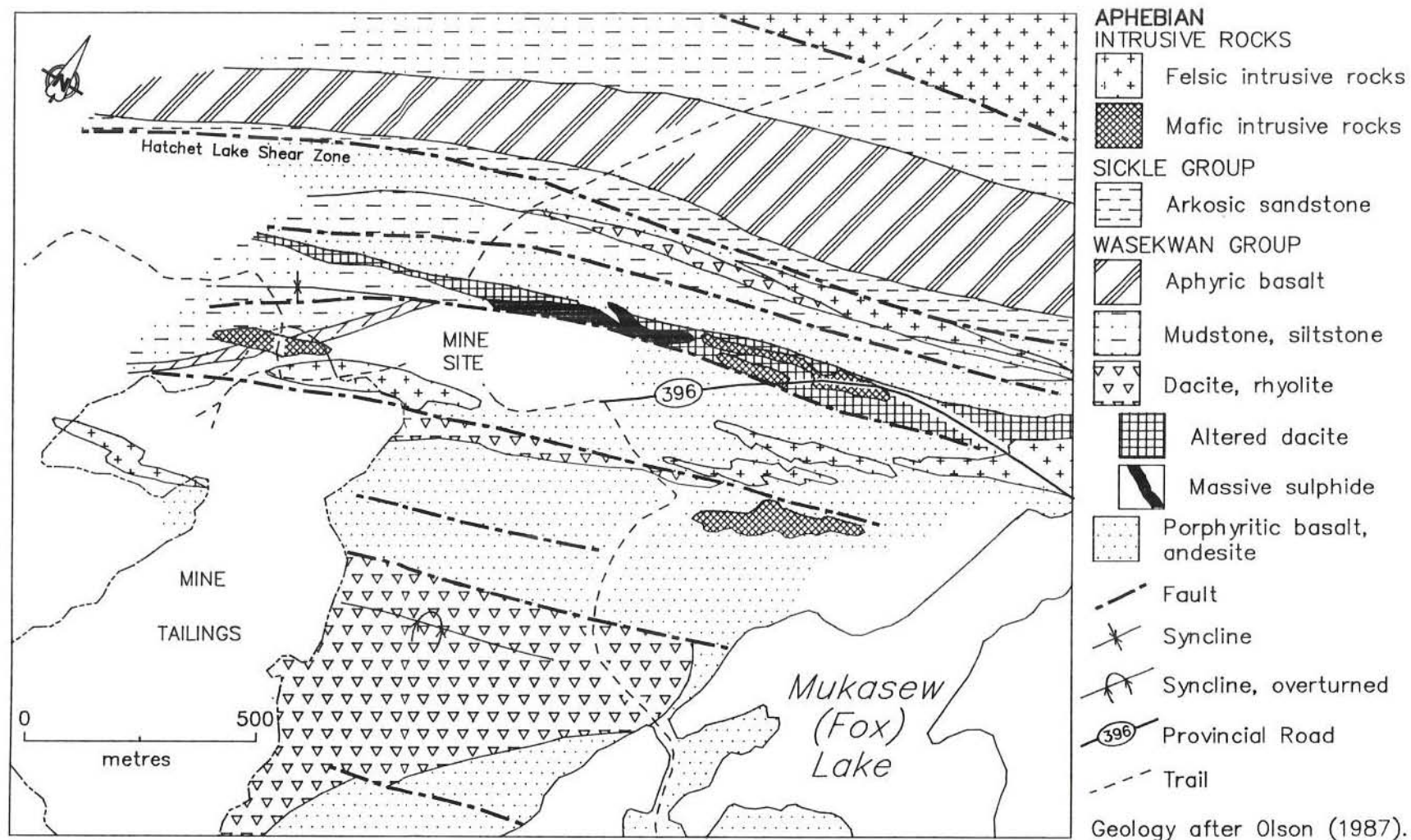


Figure 1-1: Geological setting of the Fox deposit.



64C/12-1-1

Figure 1-2: Detailed geology at the Fox deposit.

Table 1-1: Types and distribution of sulphide mineralization in the Fox deposit (after Olson, 1987)

	Principal Ore Type(s)	Principal Gangue Minerals or Host Rock	Accessory Minerals	Other Constituents
Upper Stopes	SS: m.g., banded, sph-rich	60% py, 30% qz	bt, mt, asp, hematite	pyritic chert; composes up to 30%(vol.) at east end of deposit; contains up to 10% cp
Central Stopes	SS: m.g., massive, granular, cp- and sph-bearing	55% py, 25% qz, 10-15% po	mt, asp, tetrahedrite, cubanite	minor pyritic chert with diss. cpy
Lower Stopes	SS: m.g., granular, rarely banded, sph with subordinate cp	py, qz		crosscut by mobilized stringers of cp and po
	NSS: m.g., granular, rarely banded, sph with subordinate cp	coarse mica schist		
	Stringer/Stockwork Sulphides: large blebs, veinlets, stringers, c.g. cpy, subordinate po	coarse mica schist		

A zone of alteration, with a strike length of 1500 m on surface and a downdip extension of at least 1500 m, surrounds the deposit (Lustig, 1979; Olson, 1987). The alteration mineral assemblages include: (1) quartz-sericite, (2) quartz-biotite, (3) cordierite-anthophyllite, and (4) biotite-phlogopite-talc-chlorite ('coarse mica schist') (Fig. 1-3). Locally these constitute irregular crosscutting lenses and anastomosing vein networks (Olson, 1987). Minor constituents of the alteration assemblages include quartz, cummingtonite, garnet, sillimanite, staurolite, and sulphide minerals. The alteration zone is considered to be the metamorphosed equivalent of a chloritic \pm sericitic alteration zone of the type commonly associated with volcanogenic massive sulphide deposits (Lustig, 1979).

The alteration minerals that occur on the north side of the solid sulphide lens on the 2800 Level, and in outcrop, represent an anastomosing and crosscutting vein system of alteration, whereas mineralogically similar alteration on the south side of the solid sulphide lens on the 2800 Level represents a thick accumulation of layered, dominantly chemical, sedimentary rocks (G.H. Gale, pers. comm., 1992). The style of alteration, the arrangement of alteration assemblages, and metal zonation within the solid sulphide lens indicate that the deposit tops toward the south (G.H. Gale, pers. comm., 1992; Olson, 1987). Lustig (1979) inferred the presence of an isoclinal fold at the deposit based on patterns of metal zonation. Olson (1987) defined a subhorizontal

plunging isoclinal fold that resulted from an early deformational event (D₁). However, G.H. Gale (pers. comm., 1992) contends that whereas a regional event with this style of fold may have affected the rocks in this area, there is no evidence in the deposit morphology, zoning or associated alteration zones to support the contention that the deposit defines an isoclinal fold.

Sedimentary rocks 60 to 120 m north of the deposit (Fig. 1-2) contain subeconomic amounts of pyrite, pyrrhotite, chalcopyrite and sphalerite.

GEOCHEMICAL DATA:

Production from the Fox Mine totalled 11 958 182 t grading 1.82% Cu and 1.78% Zn (Olson, 1987).

Gold and Ag occurred in "minor quantities", preferentially associated with high Cu contents and quartz-epidote veins. Davies *et al.* (1962) report that Cu concentrates (>25% Cu) from milling tests had 4.1 to 4.8 g/t Au and 102.9 to 120.0 g/t Ag.

Olson (1987) presents geochemical data for 160 rock samples from the Fox Mine Succession. Representative silicate whole rock analyses for some rock types in the area are presented by Gilbert *et al.* (1982).

CLASSIFICATION:

Stratabound massive sulphide deposit; volcanic rock associated.

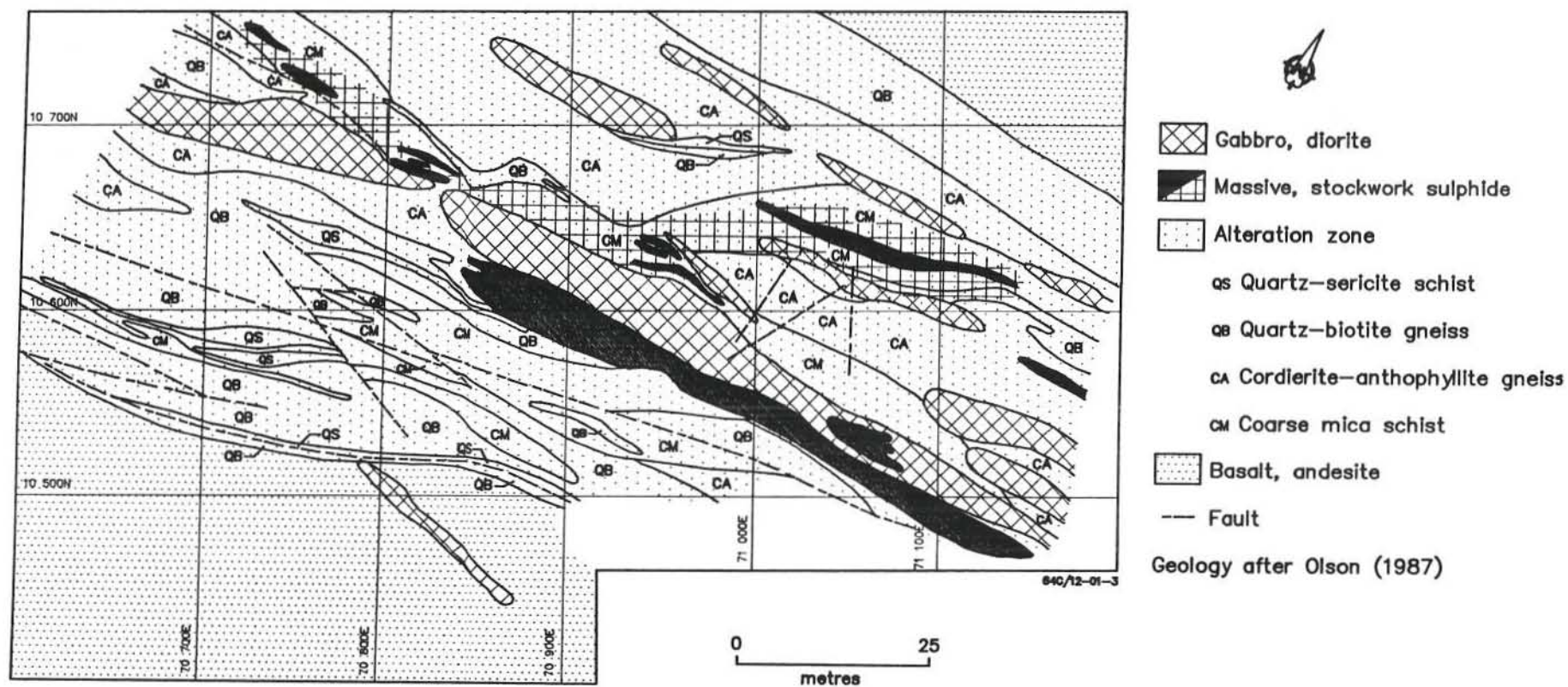


Figure 1-3: Geology of the 2800 level, Fox Mine.

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- Questor Surveys Ltd.
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- The Globe and Mail, December 15, 1989
- The Northern Miner, January 29, 1990
- The Western Miner
1970: The Fox Mine, v.43, no. 10, p. 94-100.
- Gilbert, H.P., Zwanzig, H.V., Chornoby, P.J. and Olson, P.E.
1982: Stratigraphy of the Lynn Lake greenstone belt and surface geology at Ruttan and Fox Mine; Geological Association of Canada-Mineralogical Association of Canada, Field Trip Guidebook 2, 60p.

LOCATION: 2

NAME: North Fox

UTM: 6280799N/337695E

ACCESS: Traverse from a trail leading to a former pumphouse north of the Fox mine site (occurrence 1).

EXPLORATION SUMMARY:

Selco Exploration Company Limited conducted an airborne EM survey over the area in 1960 (A.F. 91626). J.R. Laird staked claims Fox 39 to 41 in 1961, and assigned them to J.R. Muter later that year. Six drill holes totalling 342 m were drilled in the area in 1961 (SGM, unpublished data). The property was assigned to SGM in 1965. Production Lease 10 was issued for the area in 1975. Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. The property was transferred to Hayes Resources Inc. in 1988, and to LynnGold Resources Inc. shortly thereafter.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic and intermediate volcanic rocks, interlayered with sedimentary rocks and intruded by tonalitic plutons (Fig. 2-1; Gilbert *et al.*, 1980). Medium green to dark green/black volcanoclastic mudstone and siltstone, which are intruded by diorite to quartz diorite are present along the southwest shore of Dunphy Lakes (P. Stewart, field notes, 1984). Drill holes intersected quartz-feldspar-hornblende \pm biotite gneiss, quartzite, greywacke, siliceous garnetiferous tuff, and felsic to intermediate tuff (SGM, unpublished data).

MINERALIZATION:

Drill core contains up to 45% pyrite and pyrrhotite, with traces of chalcopyrite and arsenopyrite, in quartzite and siliceous slaty mudstone (SGM, unpublished data). Mineralized intersections range from 0.3 to at least 18.8 m in core length. Minor Fe-sulphide mineralization is also present in other rock types. Some rocks are epidotized and/or chloritized; sulphide mineralization is present in these rocks and in rocks that do not appear epidotized or chloritized. The rocks are nonmineralized and unal-

tered in outcrops near DDH N Fox 6 (P. Stewart, field notes, 1984).

AREA: Southwest shore of (west) Dunphy Lakes

AIRPHOTO: A24298-15

M.S. Stanton observed two sulphide occurrences to the southeast, labelled A and B in Figure 2-1:

- (A) "Dioritic, massive, with a little pyrrhotite locally"; and
- (B) "Greenstone containing some disseminated pyrite" (Milligan, 1960, p. 288).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Moderate amounts of Fe-sulphide mineralization are hosted by quartzite and fine grained sedimentary rocks.

REFERENCES:

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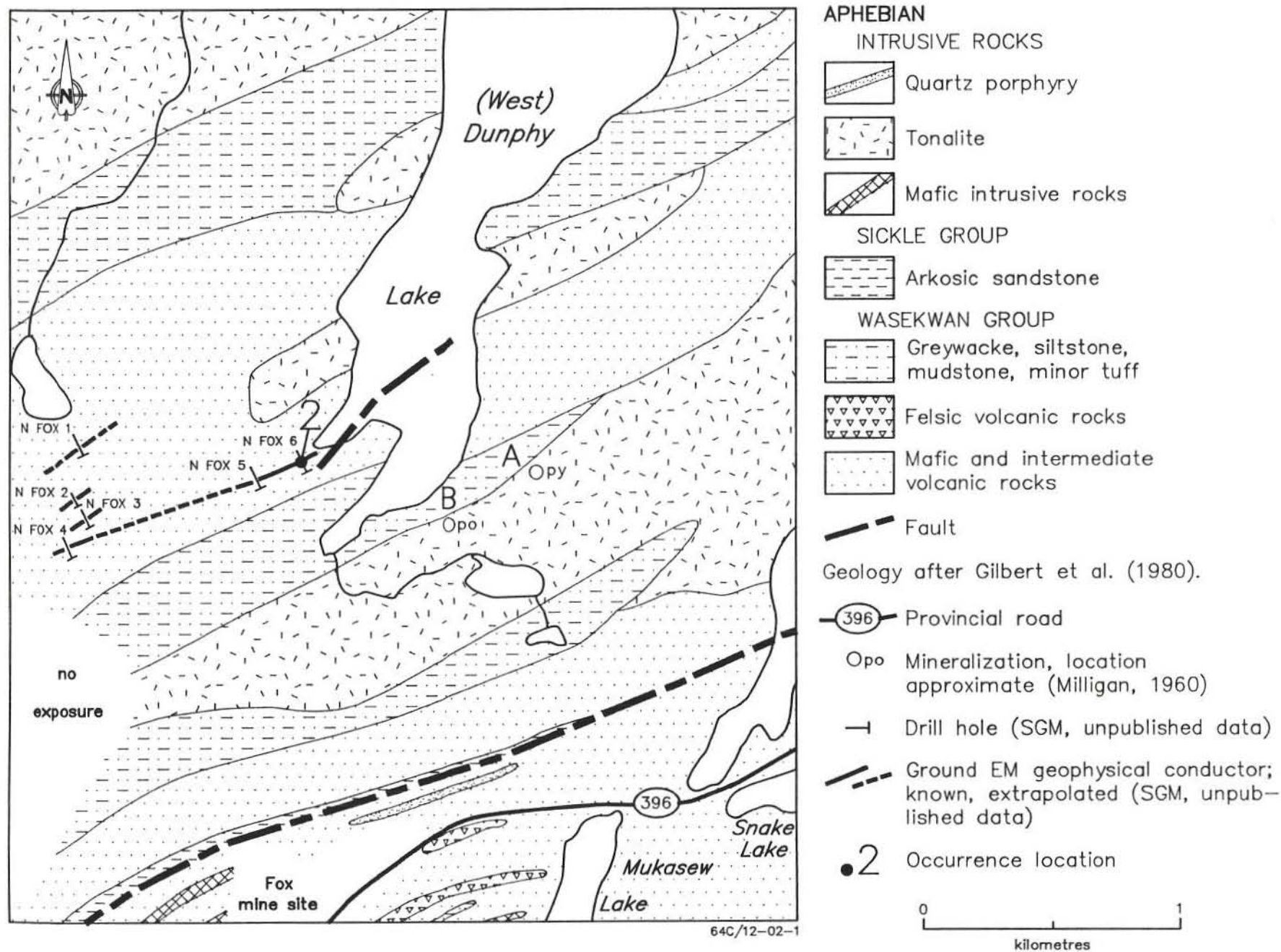


Figure 2-1: Geological setting of occurrence 2 (North Fox).

LOCATION: 3

NAME: Central Dunphy; T.K. Group

UTM: 6280634N/342369E

ACCESS: Traverse from Provincial Road 396.

EXPLORATION SUMMARY:

The area was first staked as the T.K., Fox, M.J. and A.T.H. groups of claims in 1947. The T.K. group of claims was mapped (1:2 400) for Noranda Mines Limited in 1947 (A.F. 91005). The claims lapsed in 1948-49.

Airborne EM and magnetometer surveys were done by Canadian Nickel Company Limited in 1954 (A.F. 91615) and by Selco Exploration Company Limited in 1960 (A.F. 91626).

The Phy group of claims, staked in 1961, was explored by SGM. DDH Phy 21 through Phy 28, totalling 420 m, and DDH Dun 1 and FS 28 (lengths unknown) were drilled in the area (SGM, unpublished data). Production Lease 12, which covers some of these claims, was issued in 1975. Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological mapping (1:63 360) and rock geochemical sampling program was carried out by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217). Several of the Phy claims were restaked as Phy 67 and 69 by SGM in 1986-87 and transferred to Hayes Resources Incorporated in 1988. LynnGold Resources Incorporated acquired the claims in 1988 and restaked Phy 67 as Phy 71; Phy 69 was cancelled in 1989.

The eastern part of the property (former A.T.H. 1 to 3 claims) was restaked as the Tim group of claims in 1961. An EM survey and a magnetometer survey was carried out by Sico Mining Corporation Limited in 1961-62 and two conductors were outlined (A.F. 91002). Drilling was reported to have confirmed sulphide mineralization in both conductors, but no further details are given (A.F. 91002). S.M.D. Mining Co. Ltd. (a subsidiary of Saskatchewan Mining Development Corporation) staked CB 8051 in 1977 and carried out a geological mapping, geophysical and diamond drilling program. The property was transferred to Cameco Corporation in 1990.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic volcanic rocks that are intruded by mafic plutons. The rocks are bordered to the north by a granodioritic to tonalitic intrusion (Fig. 3-1; Gilbert *et al.*, 1980). An ENE-trending fault, which can be traced to the area north of the Fox deposit (see occurrence 1) transects the area. Outcrops in the vicinity of the occurrence consist of fine- to medium-grained amphibolite, probably derived from mafic volcanic rocks, and minor fine grained layered sedimentary rocks (P. Stewart, field notes, 1984). Drill holes intersected felsic to mafic tuff and flows, and minor amounts of impure quartzite, mudstone, and greywacke. Some of the volcanoclastic and

AREA: South shore, (central) Dunphy Lakes

AIRPHOTO: A24298-60

sedimentary rocks have layers or stringers that contain biotite, chlorite or carbonate, graphite or garnet. The volcanic rocks contain abundant minor quartz \pm carbonate veinlets (SGM, unpublished data; S. Boden, field notes, 1985).

MINERALIZATION:

Sections of drill core, generally ≤ 1 m in core length, contain pyrite and pyrrhotite that occur as minor disseminations, stringers and near solid sulphide. The sulphide mineralization is hosted by quartzite, greywacke and intermediate to mafic mudstone. Traces of chalcopyrite, sphalerite and arsenopyrite may be associated with Fe-sulphide minerals. Sulphide mineralization is conformable with layering in the rocks and is commonly associated with carbonate-rich layers (S. Boden, field notes, 1985).

Milligan (1960, p. 193) located a small prospect pit approximately midway between Dunphy Lakes and a small unnamed lake to the south (Fig. 3-1). "Garnetiferous greenstone" hosts a rusty lens that is up to 1.2 m thick, extends approximately 7.6 m along strike, and is oriented 065°/80°S. The lens contains coarse amphibole crystals, but sulphide minerals were not observed within the lens or in "other small rusty sections in vicinity" (Milligan, 1960, p. 288).

Stanton (1949, p. 33-34) noted "one or two small rusty zones containing sparsely disseminated pyrite". Milligan (1960, p. 288-289) quotes Stanton's field notes for four mineralized sites, labelled A through D in Figure 3-1:

- (A) "Sparse pyrrhotite (coarse) in quartz veinlets cutting quartzitic sediments";
- (B) "A little pyrrhotite(?) in rhyolite(?);
- (C) "A little pyrrhotite and pyrite in dark green altered gabbro cut by buff fine grained felsite; and
- (D) "A little pyrrhotite, in greenstone cut by a few quartz stringers".

T.S. Smith noted that "some degree of alteration is evident in most of the greenstone and chloritic phases are common" (A.F. 91005). Sulphide mineralization and hydrothermal alteration products were not observed on outcrop by P. Stewart (field notes, 1984).

GEOCHEMICAL DATA:

Maximum assay values obtained from drill core were 0.09% Cu, 0.17% Zn, 0.9 g/t Au, and 19.9 g/t Ag (SGM, unpublished data).

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Minor to near solid Fe-sulphide mineralization is hosted by layered biotitic, chloritic, carbonate-bearing, immature sedimentary rocks.

REFERENCES:

Assessment Files 91002, 91005, 91615, 91626, 92217
Manitoba Energy and Mines, Minerals Division.

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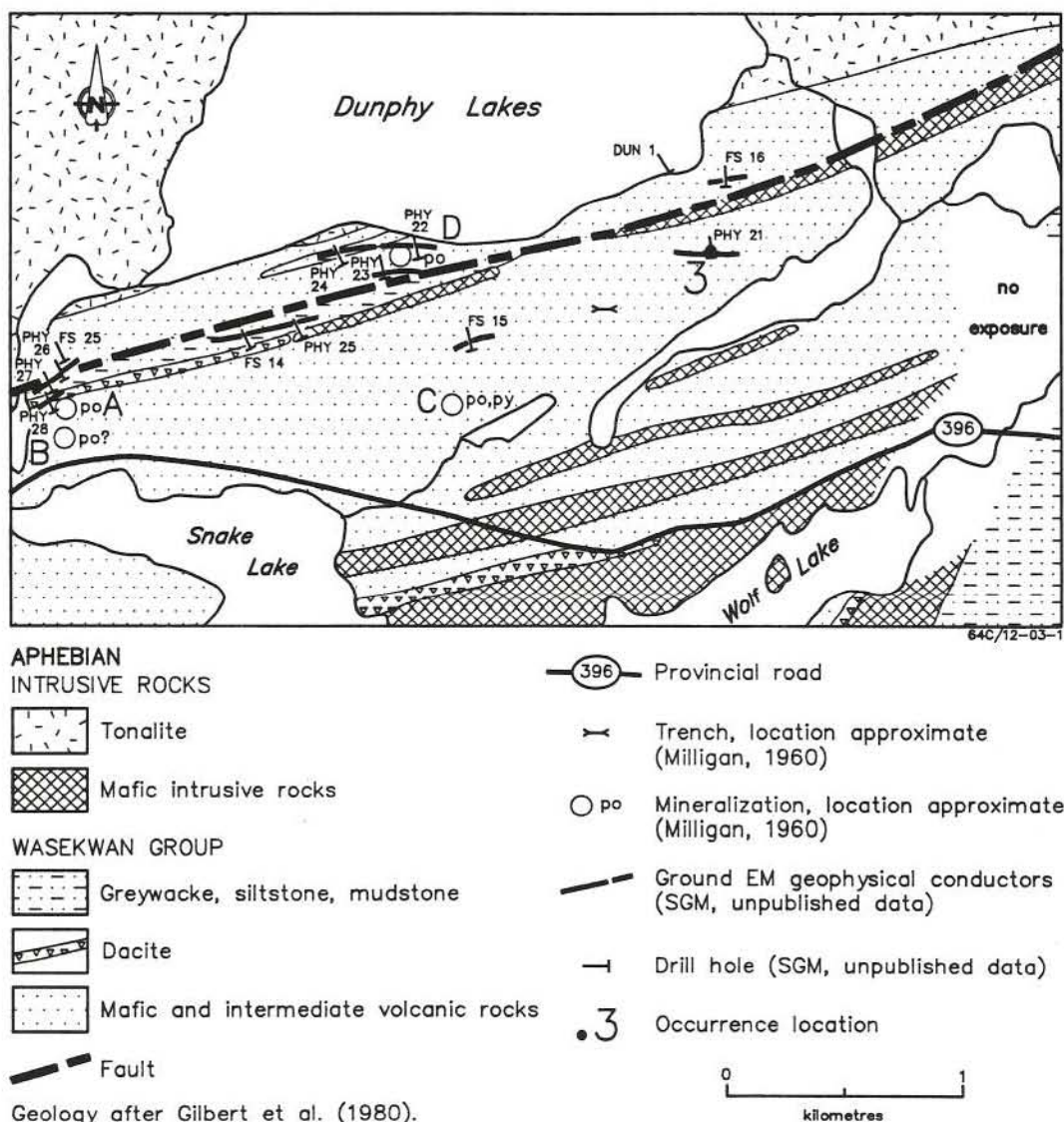


Figure 3-1: Geological setting of occurrence 3 (Central Dunphy).

LOCATION: 4

NAME: East Dunphy; LD Group

UTM: 6281619N/344929E

ACCESS: By vehicle on Provincial Road 396, then by boat on Dunphy Lake.

EXPLORATION SUMMARY:

Claims L.D. 14 and 15 were staked for M.D. Parres in 1947, but lapsed in 1948. The Dun group of claims was staked by D.D. Stoness in 1958 and an EM survey was done by SGM that year. Milligan (1960, p. 193-194, 288) reports that old trenches and pits were present in the area. In 1960 Selco Exploration Company Limited carried out an airborne geophysical survey (A.F. 91626). R.L. Vancoughnett staked additional claims (the Bill group) in 1961. Sico Mining Corporation Limited carried out horizontal loop EM and magnetometer surveys in 1961-62 (A.F. 91002).

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group sedimentary and felsic volcanic rocks intruded by minor mafic plutons. These rocks are bordered to the north by a granodioritic to tonalitic intrusion. The volcanic and sedimentary sequence is bordered to the south by mafic intrusive rocks (Fig. 4-1; Gilbert *et al.*, 1980).

An 80 m thick sequence of medium grey to dark grey to black, fine grained, mafic to intermediate volcanic-derived sedimentary rocks has been subdivided into five units. These comprise: (1) light- to medium-grey, siliceous, fine grained, interlayered chemical(?) and clastic sedimentary rocks; (2) massive intermediate mudstone; (3) biotitic greywacke; (4) mudstone and siltstone; and (5) mafic mudstone (or tuff?) and flows(?) (Fig. 4-2). The units are discontinuous along strike; stratigraphic tops are not known (P. Stewart, field notes, 1984).

Garnet porphyroblasts (1 to 5 mm) constitute up to 15% of some layers in units 4 and 5. Unit 5 is crosscut by quartz veinlets in multiple orientations. Discontinuous layers of siliceous oxide facies iron formation are present in units 1, 4 and 5. The sedimentary sequence is bounded to the southeast by felsic and intermediate volcanic and/or volcanoclastic rocks (unit 6, Fig. 4-2), characterized by psammitic feldspar and felsic volcanic fragments (P. Stewart, field notes, 1984).

AREA: Southeast shore of (east) Dunphy Lakes

AIRPHOTO: A24298-90

MINERALIZATION:

Fine grained arsenopyrite and pyrite, up to 10%, but generally only 1 to 5%, are disseminated in siliceous layers in parts of units 1, 3, 4 and 5 (Stewart and Brewer, 1984; P. Stewart, field notes, 1984). The sulphide-bearing layers weather light to dark brown-red with local limonitic stains. The amount of mineralization and intensity of oxidation stains are variable within each layer. Local sulphide veinlets and medium grained pyrite \pm arsenopyrite crystals have been mobilized into fractures that crosscut foliation (P. Stewart, field notes, 1984). The sedimentary sequence and the layers of rusty weathered, mineralized rocks compose a zone that has a strike length of at least 280 m and a maximum combined width of 60 m (Fig. 4-2; Milligan, 1960, p. 193-194). The rocks are magnetic, particularly in the rusty weathered area shown in the lower left segment of Figure 4-2 (P. Stewart, field notes, 1984).

Seven other occurrences of sulphide minerals and/or rusty weathered rock, labelled A through G in Figure 4-1, were observed in the general area by M.S. Stanton, and quoted by Milligan (1960, p. 286-288):

- (A) "Sulphide in hornblende rock cut by six inch [15 cm] feldspar-quartz vein";
- (B) "A little chalcopyrite and pyrite";
- (C) "Specks of sulphide in fine grained massive diorite or gabbro";
- (D) "Contains a little sulphide (pyrite) in recrystallized andesite or diorite";
- (E) "Again a little sulphide";
- (F) "Occasionally a little pyrite and pyrrhotite in grey quartzitic sediments (variable) between two bands of diorite. Diorite locally carries a little pyrite";
- (G) "Some pyrrhotite in green flows in interbedded volcanics and sediments".

GEOCHEMICAL DATA:

Twelve rock samples were collected from locations shown in Figure 4-2; geochemical analyses are given in Table 4-1. The samples contained 3 to 367 ppm Cu, 27 to 1120 ppm Zn, 0 to 60 ppm Pb, 0 to 222 ppm Ni, 0 to 130 ppm Cr, 0 to 1 ppm Ag, 2 to 162 ppm As and 23 to 141 ppb Au.

CLASSIFICATION:

Chemical sediment type deposit; oxide facies iron formation. Minor Fe-sulphide minerals are hosted by fine grained immature sedimentary and chemical sedimentary rocks.

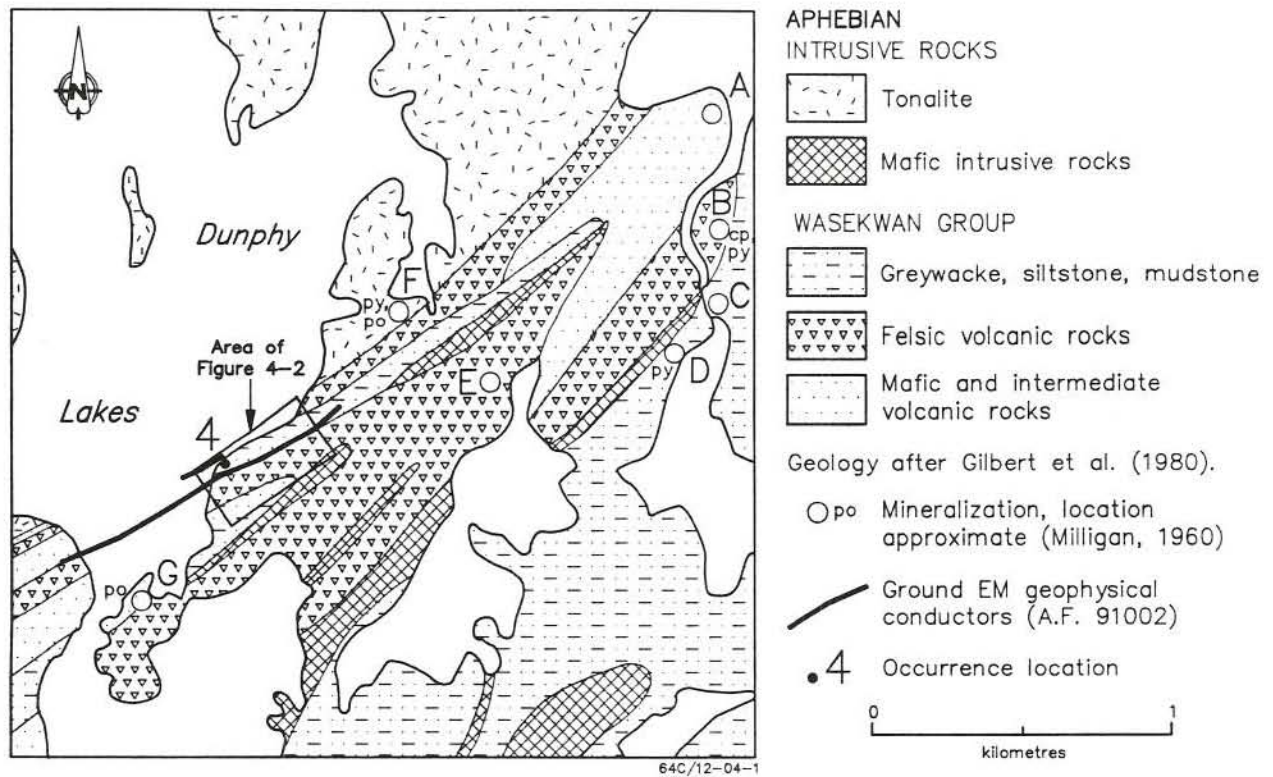


Figure 4-1: Geological setting of occurrence 4 (East Dunphy).

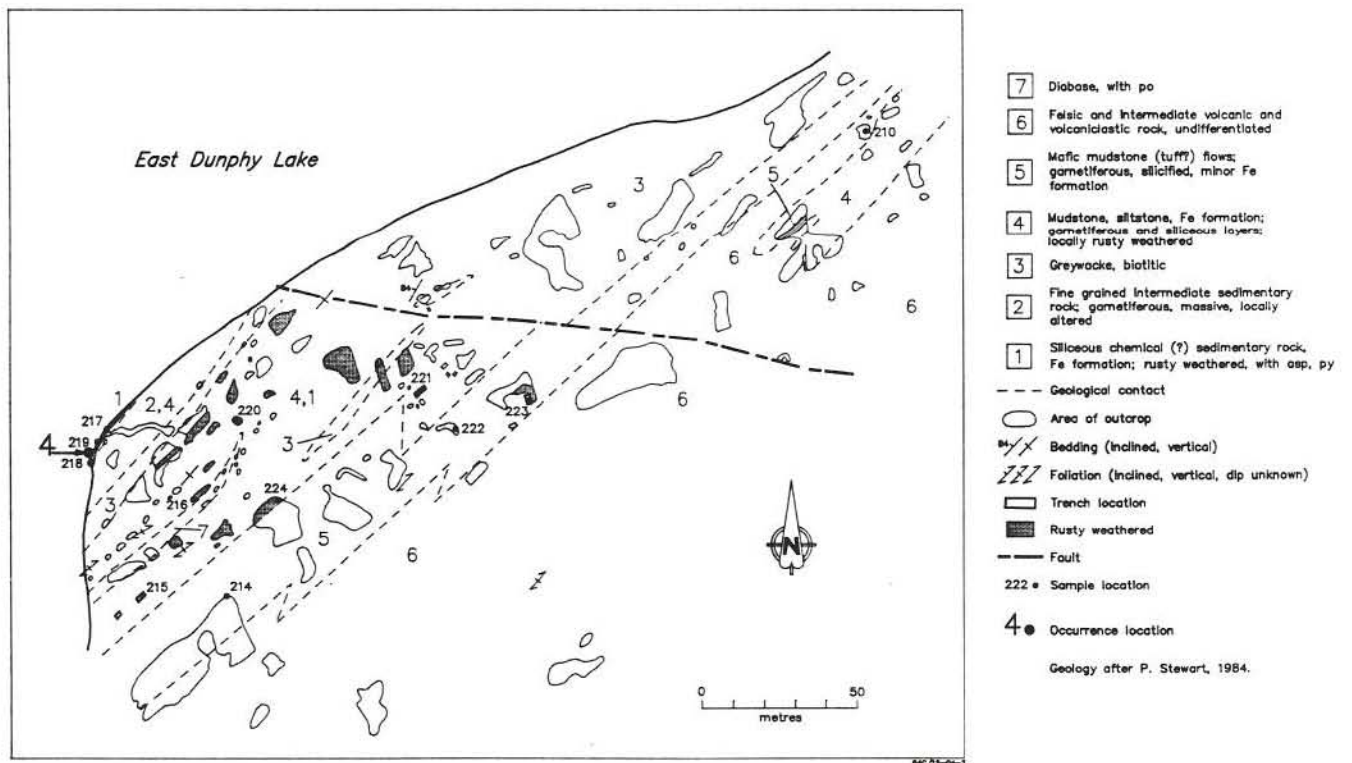


Figure 4-2: Detailed geology at occurrence 4 (East Dunphy).

Table 4-1: Geochemical analyses of grab samples from occurrence 4

Sample No.	Sample Type	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Cr ppm	Ag ppm	Au ppb	As ppm	Rock Type	Mineralization
210	grab	160	31	0	37	10	0	26	4	Felsic flow	minor py
214	grab	37	27	10	0	0	0	53	162	Siliceous iron formation	none
215	1.5 m chip	367	1120	33	128	42	1	42	13	Mudstone, siltstone	rusty
216	2 m chip	300	650	23	150	13	0	26	15	Mudstone, siltstone	minor asp, py, cp
217	2 m chip	142	272	3	71	35	0	31	67	Siliceous chemical(?) sedimentary rocks	minor asp., tr. cp, bornite
218	2 m chip	201	820	13	125	11	0	59	18	Siliceous chemical(?) sedimentary rocks	minor asp
219	grab	355	777	25	222	21	0	31	15	Siliceous chemical(?) sedimentary rocks	minor asp, py
220	grab	198	317	53	71	9	0	141	34	Mudstone, siltstone	minor py, asp
221	grab	254	731	60	99	12	1	31	22	Mudstone, siltstone	minor py
222	2 m chip	23	72	0	4	30	1	48	25	Mudstone, siltstone	none
223	grab	29	139	30	47	130	0	31	35	Mafic mudstone	none
224	1.5 m chip	555	790	23	145	62	1	42	56	Mudstone, siltstone	minor py

REFERENCES:

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1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

Stanton, M.S.

1949: Geology of the Dunphy Lakes area, Granville Lake Division, Manitoba; Manitoba Mines and Natural Resources, Mines Branch, Publication 48-4, 34p.

Stewart, P.W. and Brewer, K.

1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

LOCATION: 5

NAME: Phy

UTM: 6283005N/341548E

ACCESS: By vehicle on Provincial Road 396, then by boat on Dunphy Lakes.

EXPLORATION SUMMARY:

Selco Exploration Company Limited conducted an airborne geophysical survey in 1960 (A.F. 91626). The Phy group of claims was staked by L. Carlson and J.R. Muter in 1961. J.R. Muter held all the claims in 1961. Falconbridge Nickel Mines Limited conducted an airborne geophysical survey in 1962 (A.F. 91376). In 1965 SGM obtained the Phy claims and carried out a five-hole, 1277 m, diamond drill program on Phy 9 and 10 (A.F. 92805, 92806). DDH Phy 1 through Phy 5 (total length unknown) were drilled on the Phy claims in 1961-62 (SGM, unpublished data). Airborne EM and magnetometer surveys were conducted by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. DDH Nar-1, 324 m in length, was drilled in 1980 on claim Phy 8 (A.F. 92807).

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic volcanic and sedimentary rocks that are intruded by tonalitic to granodioritic plutons (Fig. 5-1; Gilbert *et al.*, 1980). Drill holes intersected mafic and minor felsic volcanic and volcanoclastic rocks, quartz-hornblende \pm biotite gneiss (probably derived from greywacke, mudstone and tuffaceous sedimentary rocks), greywacke, quartzite (possibly derived from rhyolite) and 'cherty quartzite'. The rocks are locally garnetiferous, siliceous, chloritic, or epidotized. Minor diorite and felsic dykes are present (SGM, unpublished data).

MINERALIZATION:

Minor to solid pyrite and pyrrhotite with trace to minor chalcopryrite and sphalerite are hosted by quartzite and greywacke. Near solid and solid sulphide sections are ≤ 1 m in core length. Other rock types also contain minor Fe-sulphide minerals (SGM, unpublished

AREA: (Central) Dunphy Lakes

AIRPHOTO: A24298-59

data). M.S. Stanton noted "small amount [of] disseminated pyrite in garnetiferous greenstone and cut by quartz" in outcrop to the southwest (Fig. 5-1; Milligan, 1960, p. 288).

GEOCHEMICAL DATA:

Maximum assay values are 0.60% Cu, 0.21% Zn, trace Au and 7.5 g/t Ag (SGM, unpublished data). Assays are available for only some of the drill core samples.

CLASSIFICATION:

Chemical sediment type deposit, sulphide facies iron formation. Minor to solid sulphide layers with traces of chalcopryrite and sphalerite are hosted by quartzite and greywacke.

REFERENCES:

- Assessment Files 91376, 91626, 91696, 92805, 92806, 92807
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

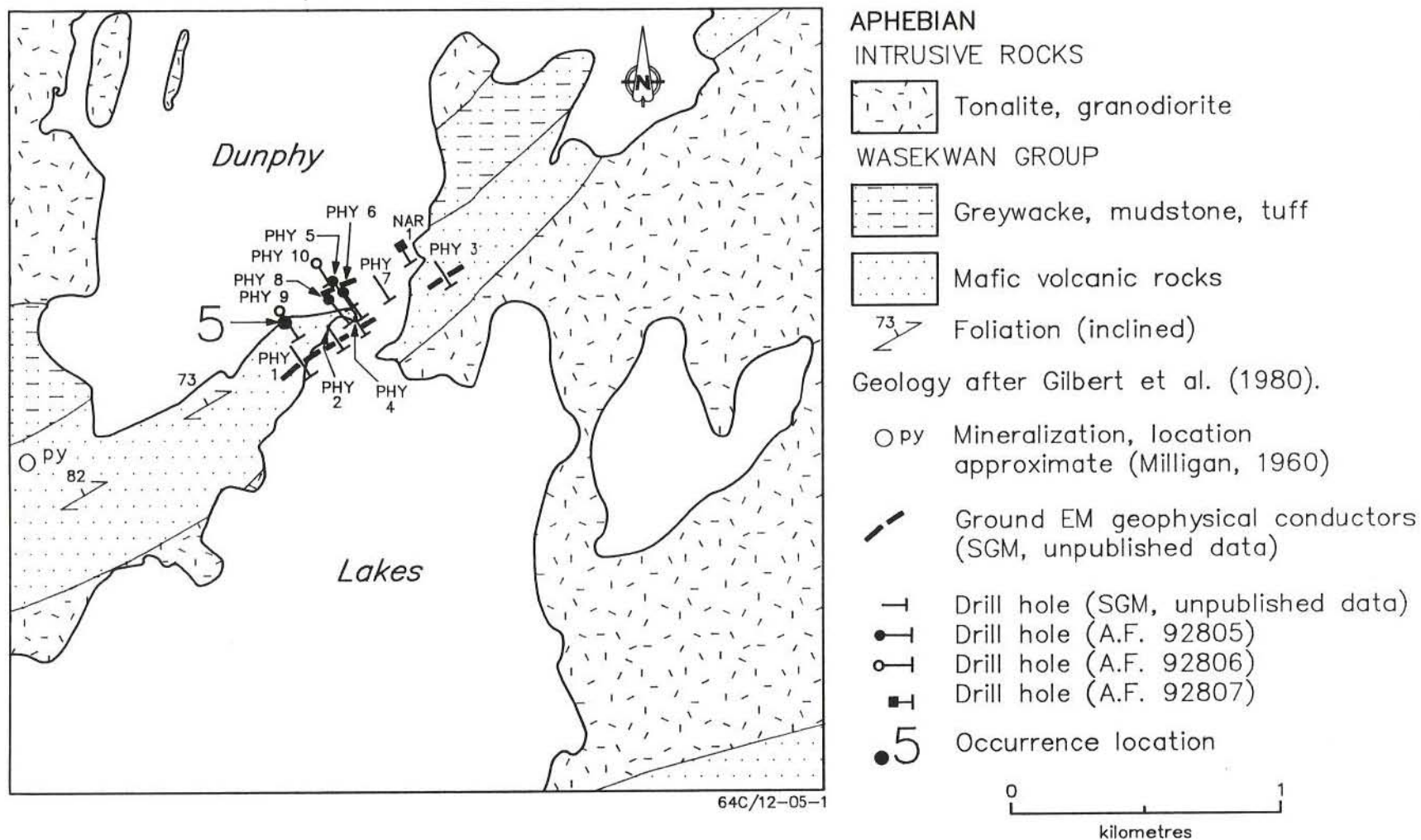


Figure 5-1: Geological setting of occurrence 5 (Phy).

LOCATION: 6**NAME:** Dunphy VG**UTM:** 6280580N/345259E**ACCESS:** By traverse from Provincial Road 396, or by boat on Dunphy Lakes.**AREA:** Southeast of (east) Dunphy Lakes**AIRPHOTO:** A24298-89**EXPLORATION SUMMARY:**

D.M. McMillan staked L.D. 2 in 1947, and cancelled it in 1948. In 1960 Selco Exploration Company Limited did an airborne geophysical survey (A.F. 91626). Sico Mining Corporation Limited carried out a horizontal loop EM survey and a magnetometer survey in 1961-62 (A.F. 91002). Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. In 1983, SGM staked Hop 2 and 3; the property was transferred to Hayes Resources Inc. in April 1988, and then to LynnGold Resources Inc. in July 1988.

Old trenches approximately 150 m east of the lakeshore were located and sampled in 1984 (K. Brewer, field notes).

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, siltstone and conglomerate that are intruded by mafic plutons. The rocks are bordered to the north by a thick sequence of felsic volcanic and volcanoclastic rocks (Fig. 6-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Pyrite, arsenopyrite and chalcopyrite(?) (amounts and habits not specified) occur within a quartz body that was located in a trench and has an unknown orientation. The quartz is hosted by brownish sandstone and siltstone. Siltstone outcrops adjacent to the trenches have local rusty weathered zones, garnet and/or pyrite (K. Brewer, field notes, 1984). M.S. Stanton observed

minor pyrite hosted by diorite to the east and southwest of this location (Fig. 6-1; Milligan, 1960, p. 288).

GEOCHEMICAL DATA:

Four rock samples were collected from trenches and nearby outcrop for geochemical analysis; results are given in Table 6-1. Two of the samples contained 2440 and 5280 ppb Au and >2000 ppm As.

CLASSIFICATION:

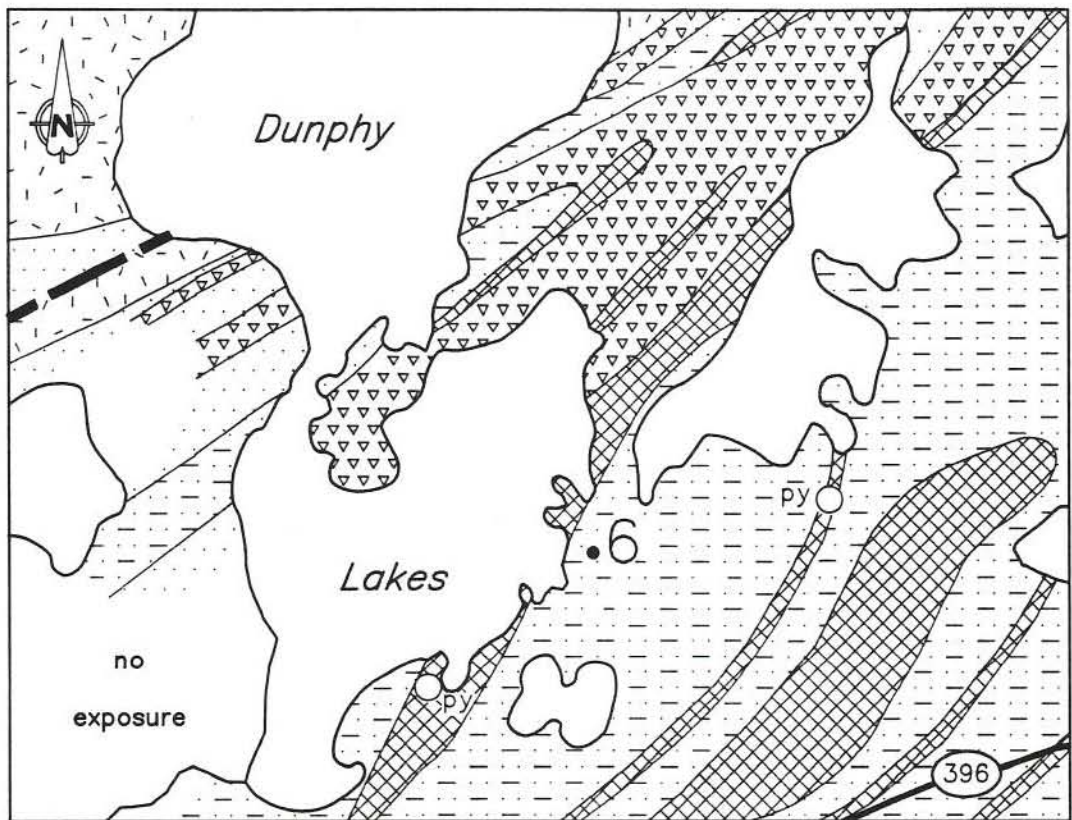
Vein type deposit; single vein. Gold and arsenopyrite are hosted by a quartz vein in siltstone.

REFERENCES:

- Assessment Files 91002, 91626, 91696
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

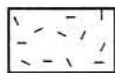
Table 6-1: Geochemical analysis of rock samples from occurrence 6.

Sample No.	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Cr ppm	Ag ppm	Au ppb	As ppm
VG-1	55	53	0	8	7	2	2440	>2000
VG-2	113	98	0	5	23	1	5280	>2000
VG-3	96	143	0	7	21	1	20	120
VG-4	137	177	11	41	9	2	23	15

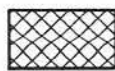


APHEBIAN

INTRUSIVE ROCKS

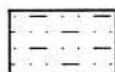


Granodiorite, tonalite

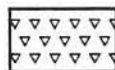


Mafic intrusive rocks

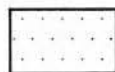
WASEKWAN GROUP



Greywacke, siltstone, conglomerate



Felsic volcanic rocks



Mafic volcanic rocks



Fault



Provincial road



Mineralization, location approximate (Milligan, 1960)



Occurrence location



Geology after Gilbert et al. (1980).

Figure 6-1: Geological setting of occurrence 6 (Dunphy VG).

LOCATION: 7

NAME: (A.F.-Mineralization intersected by diamond drilling)

UTM: 6286701N/345883E

ACCESS: By Provincial Road 396, then by boat on Dunphy Lakes and traverse.

EXPLORATION SUMMARY:

In 1960 Selco Exploration Company Limited carried out airborne geophysical surveys over the area (A.F. 91626). The Cat group of claims was staked by D.E. MacDonald in 1961. Selco Exploration Company Limited drilled DDH Cat 1, 102 m long, on claim Cat 3 in 1962 (A.F. 91003). Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. The ground was staked as Suttie 33 by Manitoba Mineral Resources Ltd. in 1983.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group sedimentary rocks bordered by mafic volcanic rocks to the south and tonalite to the north (Fig. 7-1; Gilbert *et al.*, 1980). DDH Cat 1 intersected amphibolite derived from mafic volcanic rocks, quartzite with 'impure' biotitic sections, and argillite, some of which is siliceous and/or graphitic. Minor banded white and grey siliceous sedimentary rock, tuff, biotite-quartz schist and felsic dykes are present (A.F. 91003).

MINERALIZATION:

Argillite in drill core contains pyrite and lesser pyrrhotite, average <5%, in fine grained elongate blebs, veinlets and "needles" parallel to laminae, preferentially associated with graphite. Some centimetre thick sections contain up to 20% pyrite. Minor pyrite \pm pyrrhotite are also disseminated in amphibolite and quartzite (A.F. 91003).

Five pyrite occurrences, labelled A through E in Figure 7-1, were observed by M.S. Stanton and reported by Milligan (1960, p. 287, 288):

(A) "A little pyrite in pink granite dyke cutting grey granodiorite";

AREA: Approximately 250 m east of (east) Dunphy Lakes

AIRPHOTO: A24298-92

(B) "Small showings of pyrite in hornblendite....A five foot [1.5 m] wide belt of gabbroic-looking rock. (Hornblendite).";

(C) "Some disseminated pyrite in hornblendic gneiss;

(D) "Some disseminated pyrite in hornblendic gneiss;

(E) "Heavy pyrite along contact of gneiss and interbedded quartz-mica schist."

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Minor Fe-sulphide minerals are hosted by graphitic argillite.

REFERENCES:

Assessment Files 91003, 91626, 91696

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

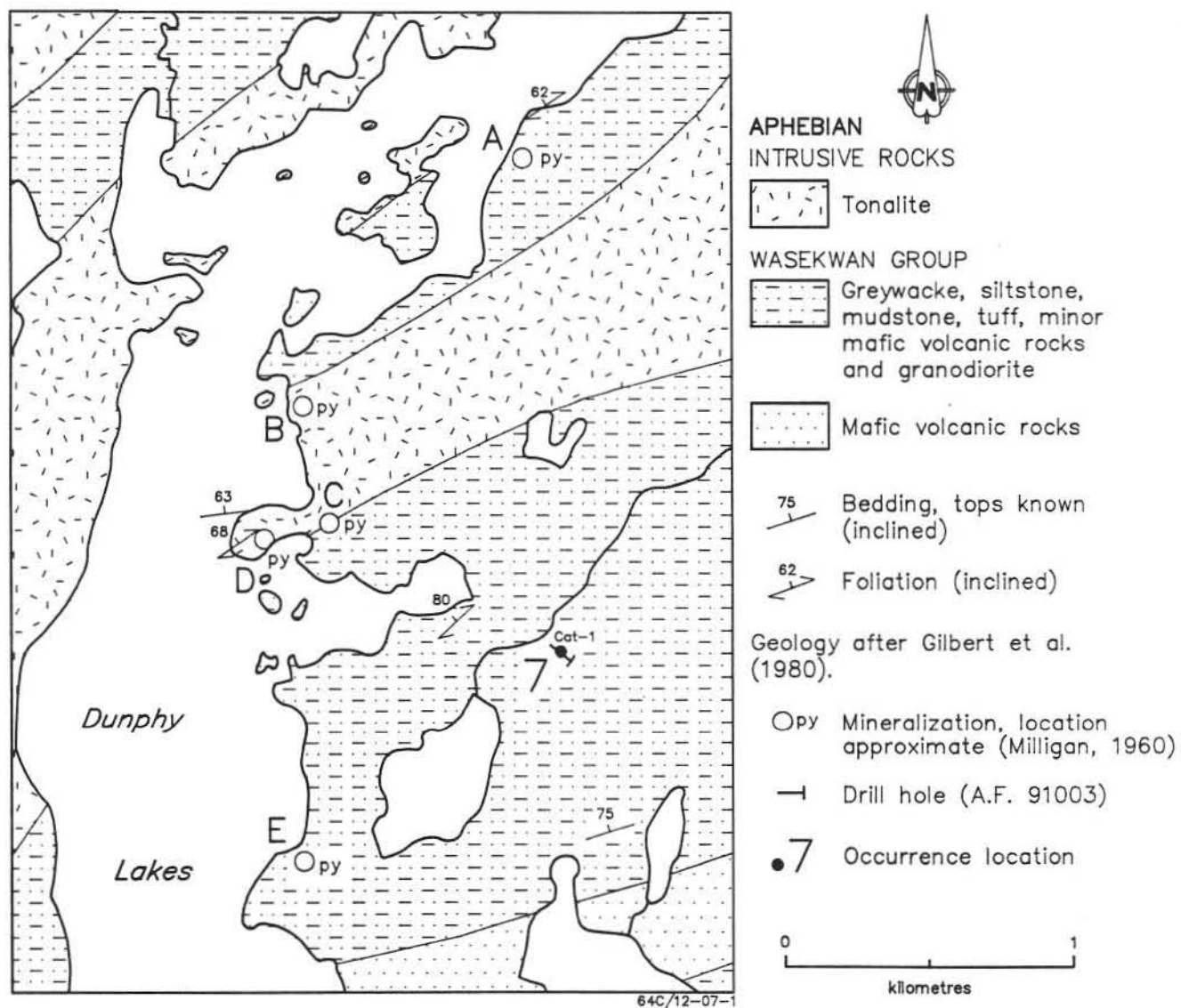


Figure 7-1: Geological setting of occurrence 7.

LOCATION: 8

NAME: Bag

UTM: 6277899N/340833E

ACCESS: By Provincial Road 396, then by boat on Snake Lake.

EXPLORATION SUMMARY:

Selco Exploration Company Limited conducted an airborne geophysical survey in 1960 (A.F. 91626). Lorne Anderson staked Show 1 in 1961. A horizontal loop EM survey and a magnetometer survey were done by J.P. Sheridan in 1961-62 (A.F. 91004).

Noranda Exploration Company, Limited carried out a horizontal loop EM survey and drilled DDH 3 to a depth of 65.5 m on claim Bag 1 in 1969 (A.F. 91006, 91013).

Airborne geophysical surveys were carried out by Roberts Mining Company in 1968 (A.F. 91441) and SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. SGM staked CB 11414 in 1981. The property was transferred to Hayes Resources Inc. and then to LynnGold Resources Inc. in 1988.

GEOLOGICAL SETTING:

The area is underlain by a small enclave of Snake Lake dacite, including "altered" dacite and schist, that is surrounded by mafic intrusive rocks (Fig. 8-1; Gilbert *et al.*, 1980). Three rock units were recognized:

1. hornblende-feldspar \pm quartz \pm garnet gneiss, probably derived from mafic sedimentary rocks;
2. alteration assemblages of (a) staurolite-sillimanite-biotite \pm garnet \pm chlorite and (b) anthophyllite-biotite \pm garnet \pm cordierite \pm sillimanite, both in "quartz-feldspathic" matrices; and
3. massive to weakly foliated, fine- to medium-grained, equigranular hornblende gabbro (Fig. 8-2; K. Brewer, field notes, 1984).

The first two units form a xenolith, <300 by 300 m, within a gabbro pluton (Stewart and Brewer, 1984). DDH 3 intersected sericite-biotite-garnet gneiss interbanded with biotitic calc-silicate gneiss, and quartz-feldspar-garnet augen gneiss (A.F. 91013).

MINERALIZATION:

Less than 2% pyrite and chalcopyrite are disseminated in siliceous anthophyllite + cordierite + biotite \pm garnet porphyroblastic schist (unit 2b) (Stewart and Brewer, 1984). Drill core contained traces of pyrite and pyrrhotite in a 3.7 m long section of biotitic calc-silicate gneiss (A.F. 91013).

Milligan (1960, p. 288) notes that M.S. Stanton observed four rusty weathered and/or mineralized zones, labelled A through D in Figure 8-1:

AREA: East shore of Snake Lake

AIRPHOTO: A24298-61

- (A) "some rust";
- (B) "small rusty zone due to oxidation of disseminated pyrrhotite";
- (C) "some rust but no sulphide in glassy white gash veinlets of quartz; and
- (D) "considerable disseminated pyrrhotite and pyrite in gabbro(?)".

GEOCHEMICAL DATA:

Results of geochemical analyses of three rock samples from outcrops and pits are given in Table 8-1. These samples have up to 3080 ppm Cu, 6180 ppm Zn, 175 ppm Pb, 56 ppm Ni, 95 ppm Cr, 7 ppm Ag, 31 ppb Au and 3 ppm As.

CLASSIFICATION:

Stratabound massive sulphide deposit; alteration zone associated with volcanic rocks. Fe \pm Cu \pm Zn sulphide minerals are disseminated in anthophyllite-cordierite-biotite rocks, which probably represent metamorphosed equivalents of hydrothermally altered dacitic volcanic rocks.

REFERENCES:

- Assessment Files 91004, 91006, 91013, 91441, 91626, 91696
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.
- Stewart, P.W. and Brewer, K.
1984: Mineral deposit studies in the western Lynn Lake greenstone belt; in Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

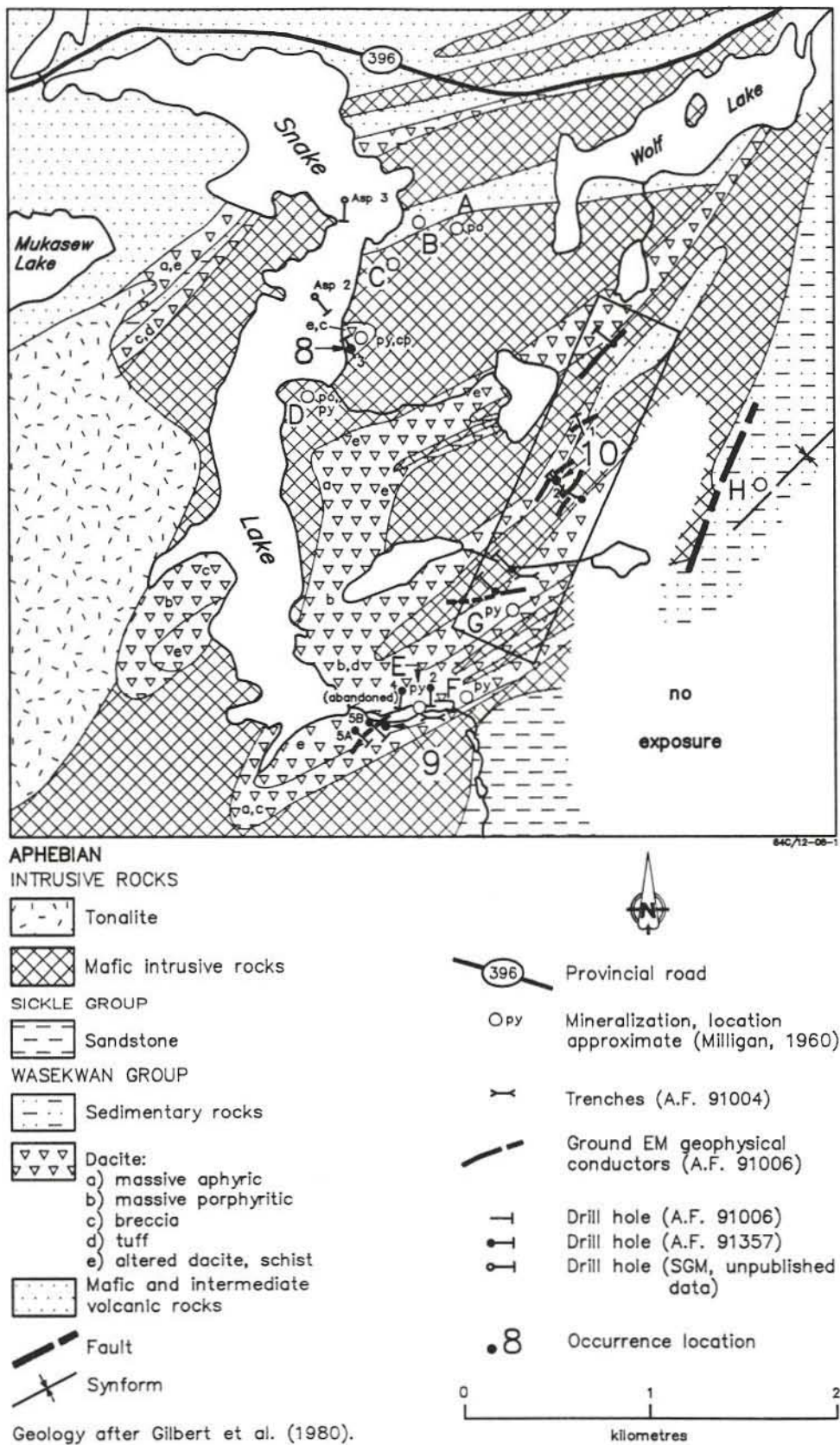


Figure 8-1: Geological setting of occurrences 8 (Bag) and 9 (Gal), and the It deposit (10).

Table 8-1: Geochemical analyses of grab samples from occurrence 8 (Bag).

Sample No.	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Cr ppm	Ag ppm	Au ppb	As ppm
255	140	130	0	3	23	1	20	3
256	226	259	0	3	64	2	20	2
257	3090	6180	175	56	87	8	31	4

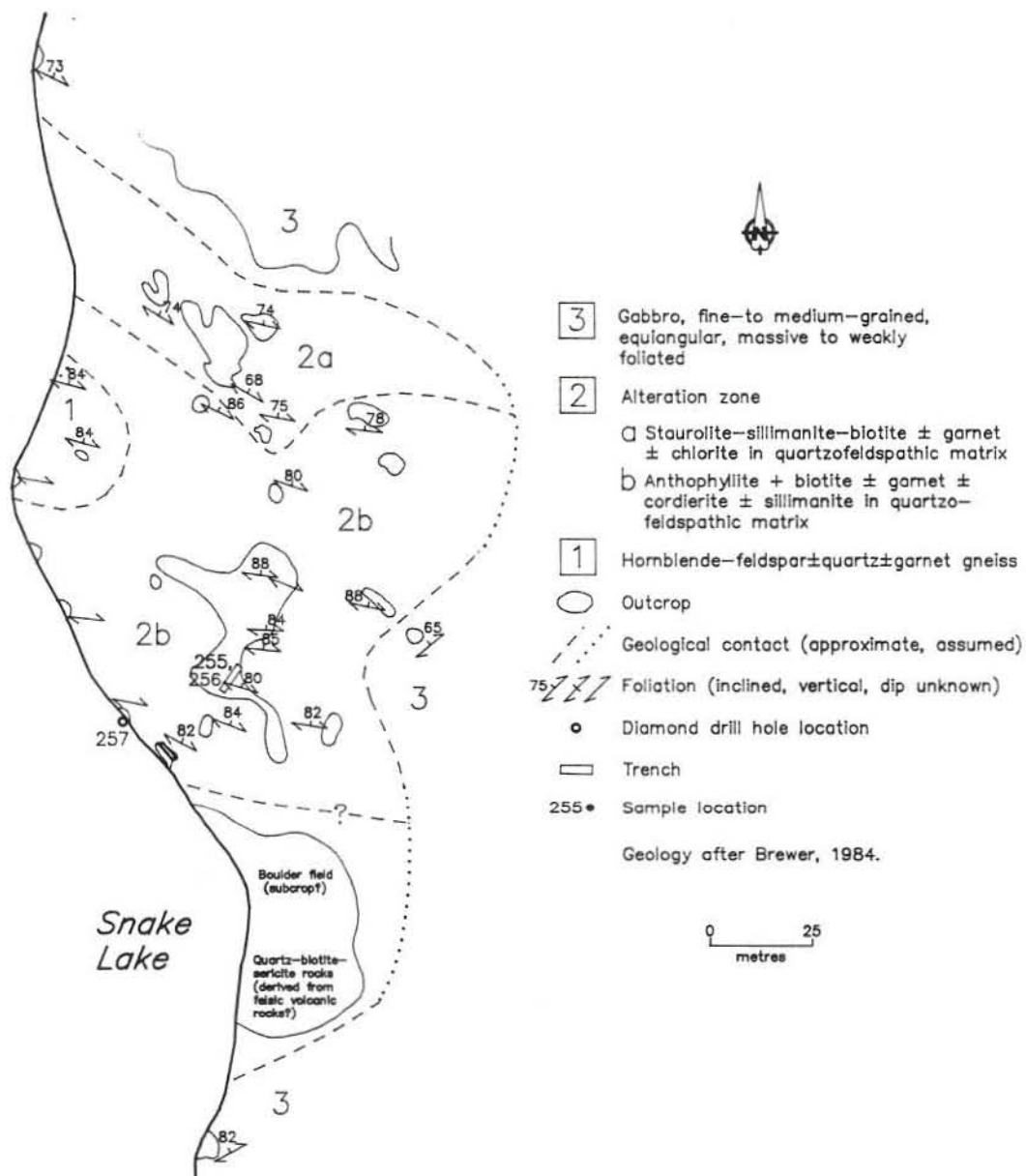
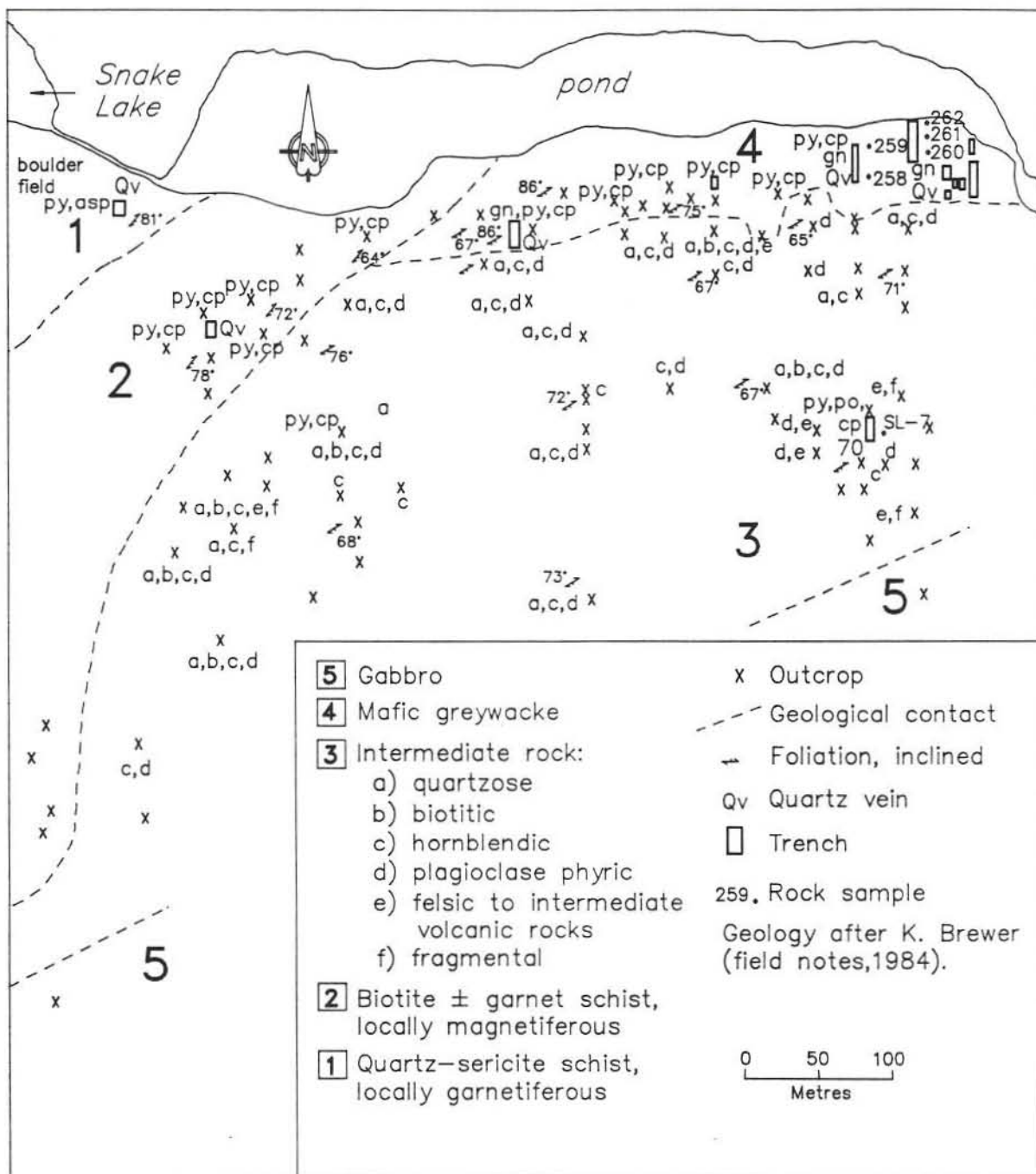


Figure 8-2: Detailed geology at occurrence 8 (Bag).



64C/12-9-1

Figure 9-1: Detailed geology at occurrence 9 (Gal).

LOCATION: 9**NAME: Gal****UTM: 6275979N/340901E****ACCESS: By Provincial Road 396, then by boat on Snake Lake.****EXPLORATION SUMMARY:**

The exploration history for the Gal occurrence is detailed in Mineral Inventory Card 64C/12 Pb1. The K.Z. group of claims were staked by A. Galladi and partly by H. Hackenstad in 1947. A geological map (1:2400) was prepared by Noranda Mines Limited that year (A.F. 91014). Part of the area was staked as Wolf 13 by N. Leslie in 1947.

A ground EM survey was done by Cyprus Exploration Corporation Ltd. and four holes totalling 205 m were drilled on Gal 4 and 5 in 1955 (A.F. 91357). A horizontal loop EM survey and a magnetometer survey were done by J.P. Sheridan on the Show claims in 1961-62 (A.F. 91004). Trenching was reported to have been done on the Bacon claims in 1964 by Roberts Mining Company, followed by a horizontal loop EM survey by Noranda Exploration Company, Limited in 1969 (A.F. 91006). Roberts Mining Company conducted ground EM and soil sampling surveys in 1967 (SGM, unpublished data). Airborne geophysical surveys were done by Canadian Nickel Company Limited in 1954 (A.F. 91615), Selco Exploration Company Limited in 1960 (A.F. 91626), Roberts Mining Company in 1968 (A.F. 91441), Dome Exploration (Canada) Limited in 1969 (A.F. 91674) and SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

SGM staked CB 10423 in 1980 and later carried out a diamond drill program (results unavailable). The property was transferred to Hayes Resources Inc. in April 1988, and then to LynnGold Resources Inc. in July 1988.

GEOLOGICAL SETTING:

The area is underlain by the Wasekwan Group Snake Lake dacite, which is intruded by mafic plutons (Fig. 8-1; Gilbert *et al.*, 1980). Five units were identified in the immediate area of mineralization (Fig. 9-1):

1. locally garnetiferous quartz-sericite schist;
2. locally magnetiferous biotite \pm garnet schist;
3. a massive, intermediate hornblende- and/or plagioclase-phyric rock. This unit has a highly variable hornblende/plagioclase ratio that possibly reflects a heterogeneous fragmental precursor. At the eastern margin of the area shown in Figure 9-1, this unit comprises felsic to intermediate volcanic rocks.
4. mafic greywacke (or altered dacite?);
5. green to black, medium grained gabbro and hornblende gabbro (K. Brewer, field notes, 1984).

AREA: Southeast shore of Snake Lake (Fig. 8-1)**AIRPHOTO: A24298-62**

Drill holes intersected gabbro, quartz-muscovite-sericite gneiss, biotite gneiss, and locally garnetiferous "sedimentary gneiss" (A.F. 91357).

MINERALIZATION:

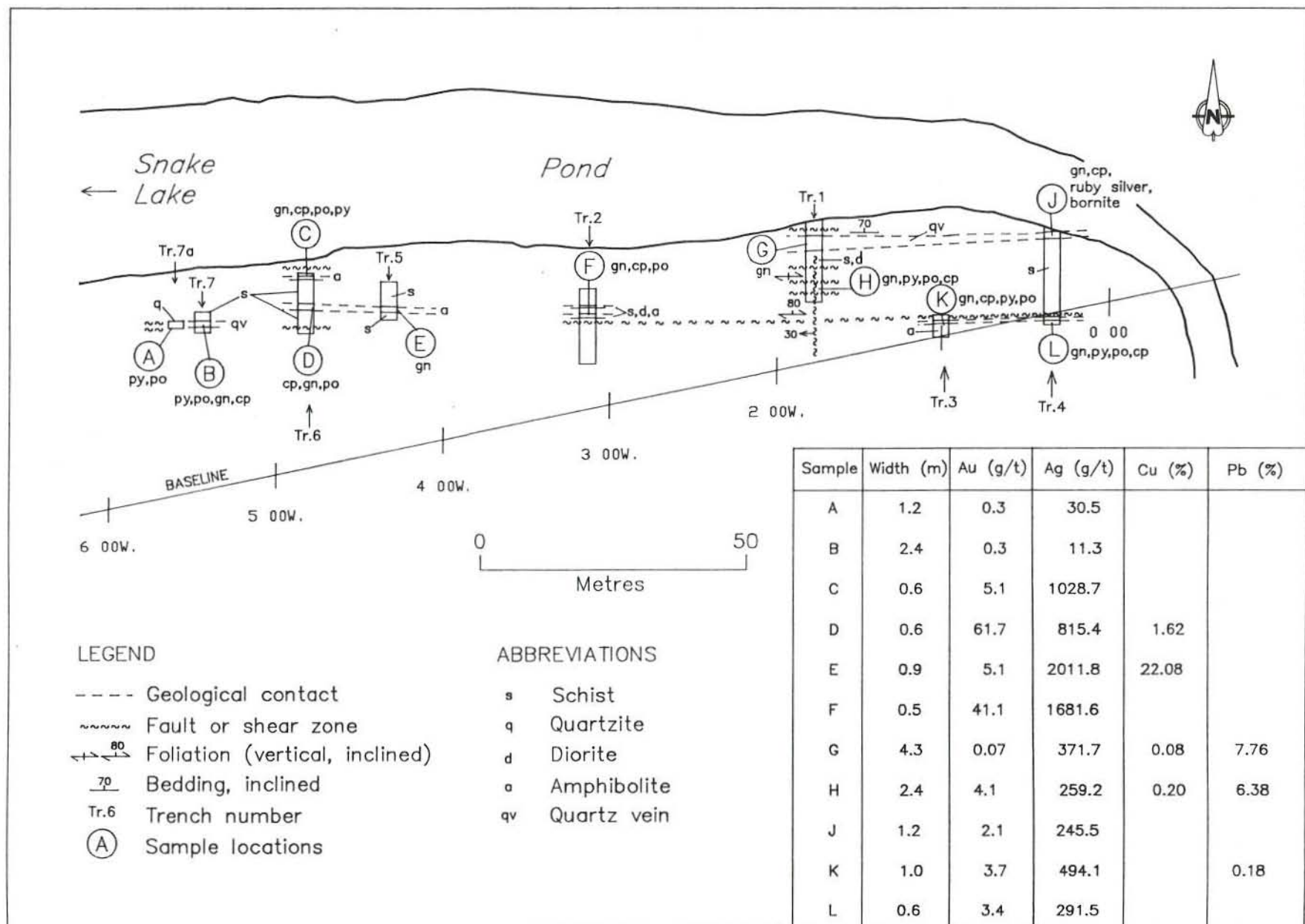
According to a report by SGM (Third-quarter Report to Shareholders, 1985): "Drilling at Snake Lake, three miles (4.8 km) from the Fox Mine, has outlined low grade lead/zinc/silver mineralization over significant widths. The zone has a minimum strike length of 1,200 feet (366 m), and is open at depth and to the east."

Drill core from holes drilled by Cyprus Exploration Corporation Limited contained minor to solid sulphide in "sedimentary gneiss". Sulphides occurred as disseminations and bands of pyrite with lesser pyrrhotite and chalcopryite. Centimetre thick quartz stringers contained disseminated galena (A.F. 91357).

Trenches near the south shore of the pond, shown in Figures 9-1 and 9-2, expose discontinuous quartz veins up to 1 m thick with solid galena veins <5 cm thick. The veins postdate, and are slightly oblique to, foliation. Stringers of pyrite, pyrrhotite and chalcopryite are parallel to foliation. The host rock to the veins has been described as mafic greywacke(?) (Stewart and Brewer, 1984; Fig. 9-1), but as schist and diorite with amphibolite by Roberts Mining Company (Fig. 9-2; SGM, unpublished data). Quartz-sericite schist and biotite \pm garnet schist contain <2% disseminated pyrite, pyrrhotite and chalcopryite (Stewart and Brewer, 1984). Roberts Mining Company noted that the veins form saddle-shaped and antiformal folds (SGM, unpublished data; Fig. 9-3).

A trench approximately 200 m south of the creek bank exposes mafic greywacke(?) with several shear zones up to 20 cm wide, which contain 10 to 20 cm thick barren quartz veins (Fig. 9-1, 9-4). The host rock contains minor disseminated pyrite, pyrrhotite, and chalcopryite(?). A trench near the outlet of Snake Lake exposes locally garnetiferous quartz-biotite-sericite schist with <2% disseminated pyrite and arsenopyrite (Fig. 9-1; Stewart and Brewer, 1984). Milligan (1960, p. 195-196) reports spodumene in blasted rock in this area. Smith notes a few scattered rusty weathered zones with "thinly disseminated" pyrite and pyrrhotite in quartz-mica schist (A.F. 91014).

Milligan (1960, p. 288) quotes M.S. Stanton's observations of two areas of mineralization, labelled E and F in Figure 8-1:



64C/12-9-2

Figure 9-2: Detailed geology of trenches near the south shore of the pond at the Gal occurrence (SGM, unpublished data). Although eight trenches were located in the northeasternmost part of the area during these field investigations in 1984, their relative positions are shown differently than here (cf. Fig. 9-1).

- (E) "small outcrops...could be sediment (Dacite porphyry 150' (46 m) south). A little pyrite mineralization"; and
- (F) "pyrite associated with small quartz stringers and lenses. In creek bed quartz veins up to 14 inches (36 cm) wide".

GEOCHEMICAL DATA:

Assay results from chip samples collected from trenches by Roberts Mining Company are presented in Figure 9-2 (SGM, unpublished data). The samples contained up to 61.7 g/t Au, 2011.8 g/t Ag, 22.08% Cu and 7.76% Pb.

Geochemical analyses of six rock samples, whose locations are shown in Figure 9-1, are presented in Table 9-1. These samples contained up to 274 ppm Cu, 144 ppm Zn, 2.7% Pb, 10 ppm Ni, 54 ppm Cr, 200 ppm Ag, 1080 ppb Au and 2000 ppm As.

Milligan (1960, p. 195-196) reports that a sample from the trenches assayed 3.06% Pb, 0.73% Cu, 4.1 g/t Au and 1066.3 g/t Ag.

CLASSIFICATION:

Vein type deposit; multiple veins. Galena-bearing quartz veins are hosted by mafic greywacke(?).

REFERENCES:

- Assessment Files 91004, 91006, 91014, 91357, 91441, 91615, 91626, 91674, 91696
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcaniclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Mineral Inventory Card 64C/12 Pb1
Manitoba Energy and Mines, Geological Services Branch.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.
- Stewart, P.W. and Brewer, K.
1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

Table 9-1: Geochemical analyses of rock samples from trenches at occurrence 9 (Gal)

Sample No.	Sample Type	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Cr ppm	Ag ppm	Au ppb	As ppm
258	2.4 m chip	84	106	24	5	23	4	195	18
259	4.6 m chip	263	101	114	2	30	8	48	21
260	3.8 m chip	250	96	2620	10	25	19	228	28
261	1.5 m chip	274	144	27000	3	54	200	1080	4
262	3.0 m chip	59	97	59	3	45	2	31	22
SL-7	grab	262	67	0	4	48	0	64	2000

258 - mafic greywacke(?) with minor py, cp, crosscut by galena-bearing quartz veins; trench

259 - mafic greywacke(?) with minor py, cp, crosscut by galena-bearing quartz veins; trench

260 - mafic greywacke(?); trench

261 - quartz vein with galena; trench

262 - mafic greywacke(?); trench

SL-7 - feldspar phyrlic dacite(?) or wacke(?), small shears with py and cp; trench approximately 200 m south of occurrence 9

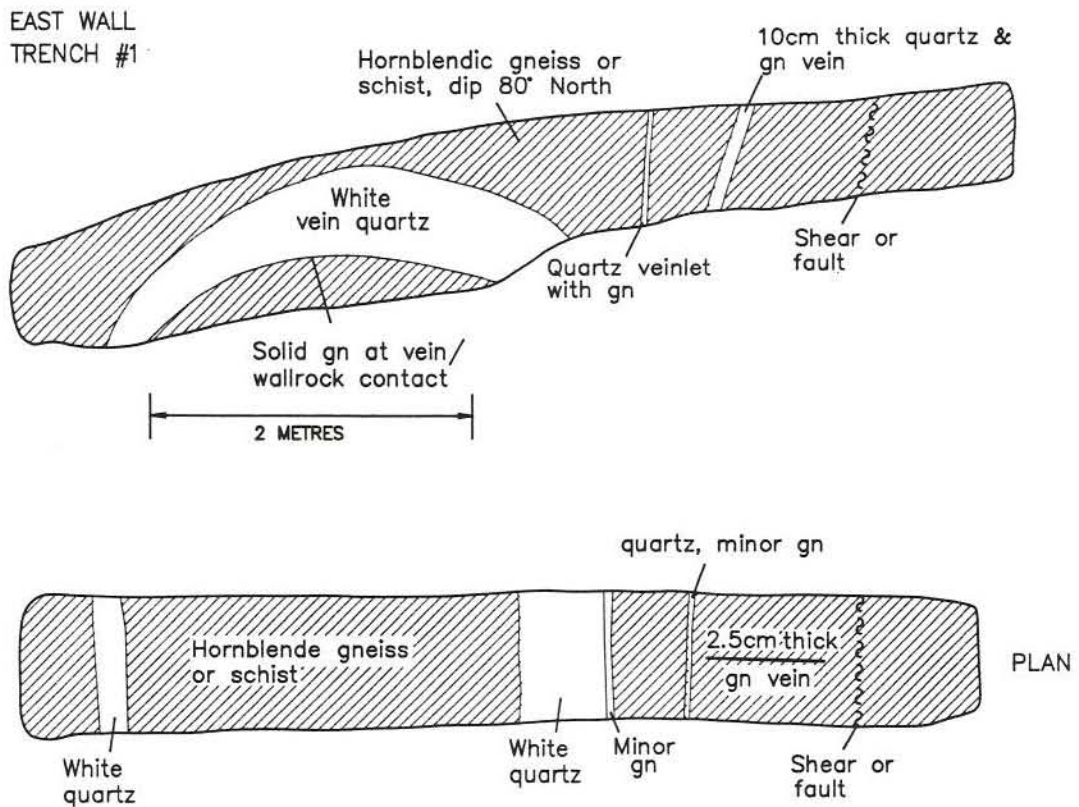


Figure 9-3: Sketch of trench 1 at occurrence 9 (Gal) (SGM, unpublished data). See Figure 9-2 for location of trench 1.

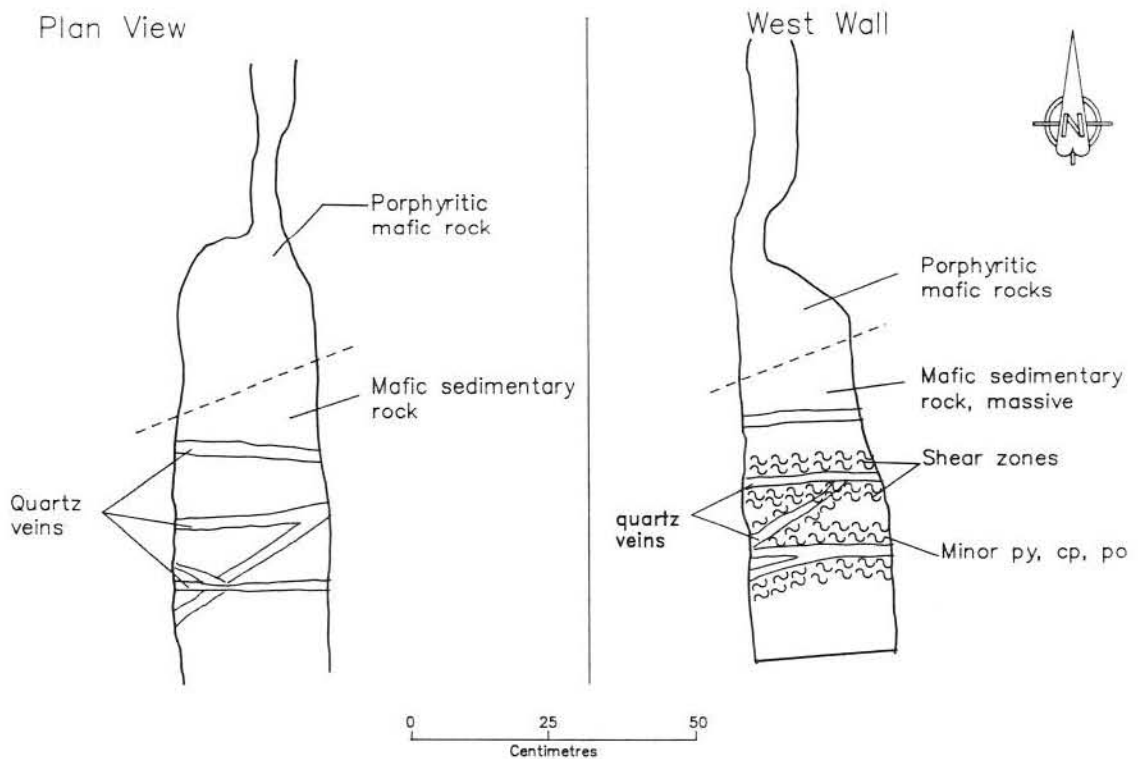


Figure 9-4: Sketch of trench shown approximately 200 m south of the pond in Figure 9-1 (occurrence 9).

LOCATION: 10

NAME: It; Wolf Group

UTM: 6277244N/341917E

ACCESS: By Provincial Road 396, then by boat on Snake Lake and traverse.

EXPLORATION SUMMARY:

The exploration history for the It deposit is detailed in Mineral Inventory Card 64C/12 Zn1. The Wolf claims were staked in 1947 by Roy Leslie and Norman Leslie. Seven trenches in the northeast corner of Wolf 1 were reported as assessment work during 1948 (Milligan, 1960, p. 196). The group was cancelled in 1949.

A horizontal loop EM survey and a magnetometer survey were done by J.P. Sheridan on the Show claims in 1961-62 (A.F. 91004). Rock trenching was reported on the It claims in 1967 and 1968 (Mineral Inventory Card 64C/12 Zn1). Noranda Exploration Company Limited carried out a horizontal loop EM survey (A.F. 91006) and drilled two holes totalling 108.8 m on It 2 and 3 in 1969 (A.F. 91013); a map in A.F. 91006 indicates that five additional holes had been drilled in this area prior to Noranda's drill program.

Airborne geophysical surveys were done by Canadian Nickel Company Limited in 1954 (A.F. 91615), Selco Exploration Company Limited in 1960 (A.F. 91626), Roberts Mining Company in 1968 (A.F. 91441) and SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

SGM staked CB 12518 and CB 11411 in 1981, and CB 12548 in 1983. The property was transferred to Hayes Resources Inc. in April 1988, and then to LynnGold Resources Inc. in July 1988. Black Hawk Mining Incorporated acquired an option in 1988, and drilled seven holes to test geophysical conductors (Black Hawk Mining Inc., 1988 Annual Report).

GEOLOGICAL SETTING:

The area is underlain by the Snake Lake dacite and minor mafic volcanic rocks, which are intruded by mafic plutons (Fig. 8-1; Gilbert *et al.*, 1980). DDH 1 and 2 intersected fine- to medium-grained gabbro, calc-silicate gneiss, and quartz-biotite-hornblende gneiss (A.F. 91013).

MINERALIZATION:

A sphalerite-rich (1 to 5% Zn) zone over 275 long and up to 45 m wide was intersected to a depth of 335 m (Black Hawk Mining Incorporated, 1988 Annual Report).

In DDH 2 two intersections of calc-silicate gneiss, 1.5 and 1.4 m in core length, are "mineralized to well mineralized" with pyrrhotite and minor graphite and pyrite. The remainder of the calc-silicate gneiss contains

AREA: 1.5 km east of Snake Lake (Fig. 8-1)

AIRPHOTO: A24298-61

minor to "mineralized" (moderate amounts?) disseminated pyrrhotite and/or graphite. Trace to minor pyrite is present locally (A.F. 91013).

Milligan (1960, p. 287, 288) noted observations by M.S. Stanton of two sulphide occurrences in the general area, labelled G and H in Figure 8-1:

(G) "brown sugary rock cut by 4 inch (10 cm) quartz veins filling fractures. Locally rusty and occasional fine pyrite"; and

(H) "fine grained sulphides, not determined. In greenstone".

GEOCHEMICAL DATA:

The It deposit contains reserves of 907 000 tonnes grading 0.04% Cu, 0.81% Zn and 26.1 g/t Ag (Bamburak, 1990).

In DDH 2, a 1.5 m intersection of calc-silicate gneiss with "mineralized to well mineralized" pyrrhotite assayed 0.31% Zn and 0.03% Ni. In DDH 1, a 2.0 m intersection of calc-silicate gneiss with "very slight to well mineralized pyrrhotite" and "visible pyrite" assayed 0.24% Zn and 0.3% Ni (A.F. 91013).

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Moderate(?) amounts of pyrrhotite and graphite are hosted by calc-silicate gneiss.

REFERENCES:

Assessment Files 91004, 91006, 91013, 91441, 91615, 91626, 91696

Manitoba Energy and Mines, Minerals Division.

Bamburak, J.D.

1990: Metallic mines and mineral deposits of Manitoba; Manitoba Energy and Mines, Open File Report OF90-2, 105p.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Mineral Inventory Card 64C/12 Zn1

Manitoba Energy and Mines, Geological
Services Branch.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area
(Phase II); Manitoba Energy and Mines,
Mineral Resources Division, Miscellaneous
Publication.

LOCATION: 11

NAME: (A.F.-Mineralization intersected by diamond drilling)

UTM: 6275101N/339725E

ACCESS: By vehicle on trail leading from the Fox mine site (Location 1) to Pyta Lake.

EXPLORATION SUMMARY:

Lloyd White staked HF 16 and HF 17 in 1947, and assigned the claims to Falconbridge Nickel Mines Limited. Falconbridge carried out a geological mapping program (1:4800) and a magnetometer survey in 1947, but allowed the claims to lapse in 1949-50 (A.F. 91008). A horizontal loop EM survey was conducted by Cyprus Exploration Corporation Ltd. (A.F. 91357). Selco Exploration Company Limited carried out an airborne geophysical survey in 1960 (A.F. 91626).

Noranda Exploration Company Limited conducted a horizontal loop EM survey and drilled DDH 4 (58.5 m) to test an EM conductor on claim Win 4 in 1969 (A.F. 91006, 91016).

Airborne geophysical surveys were carried out by Roberts Mining Company in 1968 (A.F. 91441) and SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217).

SGM staked CB 12539 in 1983. The property was transferred to Hayes Resources Inc. in 1988, and then to LynnGold Resources Inc. soon after.

GEOLOGICAL SETTING:

A small area of Wasekwan Group felsic volcanic rocks is surrounded by mafic intrusions, which are bordered to the northwest by a tonalite intrusion (Fig. 11-1; Gilbert *et al.*, 1980). DDH 4 intersected banded hornblende \pm biotite gneiss, calc-silicate gneiss and gabbro (A.F. 91016).

MINERALIZATION:

A 1.6 m drill core intersection of calc-silicate gneiss contained minor to "well mineralized" disseminated and stringer pyrrhotite. Other intersections of hornblende \pm biotite gneiss and calc-silicate gneiss contained trace to minor disseminated and stringer pyrrhotite and trace pyrite (A.F. 91016).

Jackson (1988) defines two zones of alteration in this area (Zone 1, 2; Fig. 11-1). Zone 1 was originally mapped by Stanton (1949) as "tremolite, garnet, sillimanite, and staurolite gneisses". Zone 2 represents several "small zones of cummingtonite-rich amphibolite" (Jackson, 1988).

AREA: East side of Cremeens (formerly Jeanne) Lake

AIRPHOTO: A24298-62

Two other pyrite occurrences observed by M.S. Stanton, labelled A and B in Figure 11-1, are noted by Milligan (1960, p. 287, 288):

- (A) "some pyrite in gabbro"; and
- (B) "occasionally a little pyrite in aplitic hornblende-biotite granite or quartz diorite cut by a little quartz".

GEOCHEMICAL DATA:

The 1.6 m drill core intersection with minor to "well mineralized" pyrrhotite assayed nil Au, and trace Zn and Ni (A.F. 91016).

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

- Assessment Files 91006, 91008, 91016, 91357, 91441, 91626, 91696, 92217
- Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Jackson, S.L.
1988: Alteration zones, structure and metamorphism of the Laurie Lake area; in Manitoba Energy and Mines, Report of Field Activities, 1988, p. 178-182.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.
- Stanton, M.S.
1949: Geology of the Dunphy Lakes area, Granville Lake Division, Manitoba; Manitoba Mines and Natural Resources, Mines Branch, Publication 48-4, 34p.

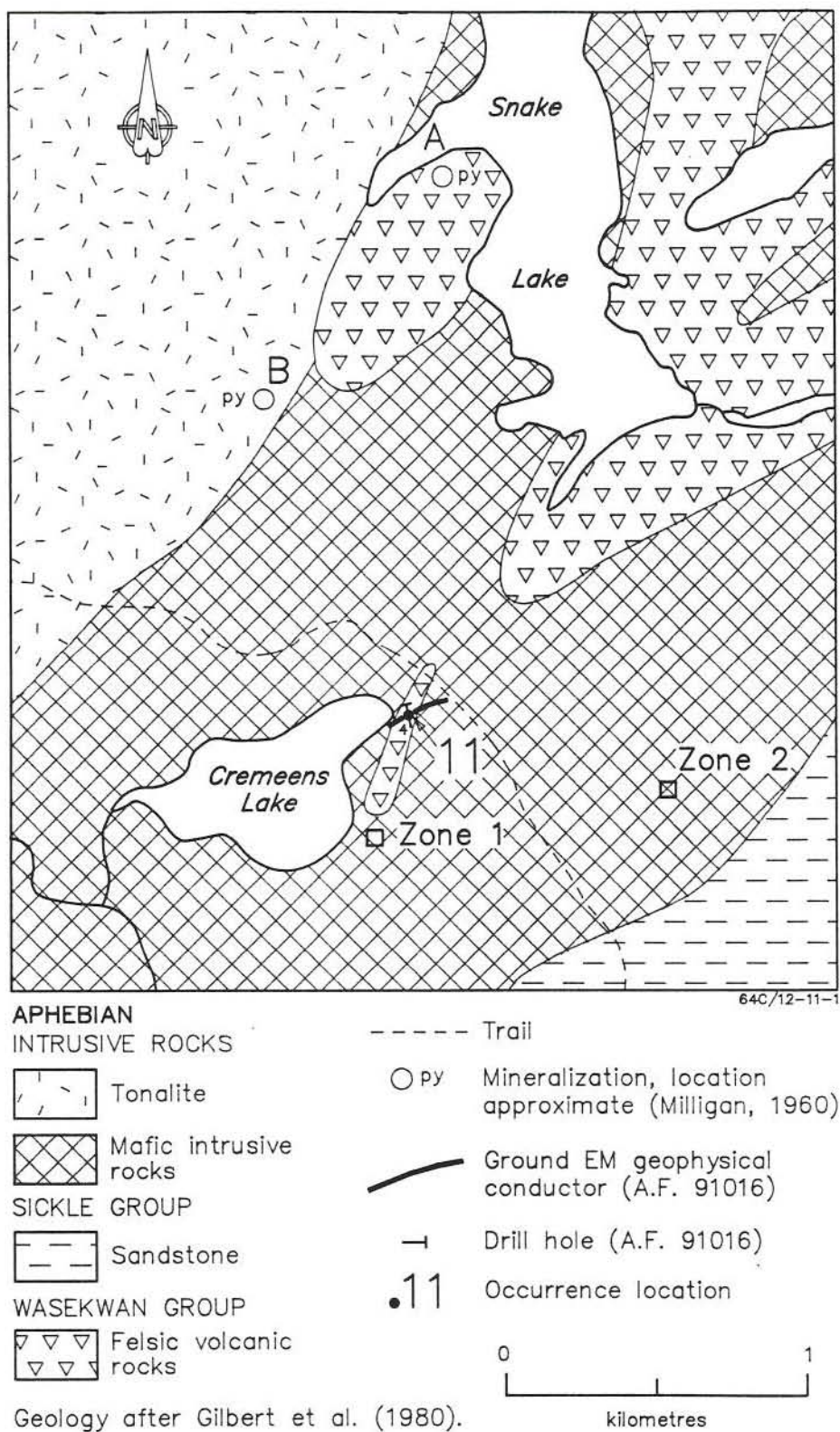


Figure 11-1: Geological setting of occurrence 11.

LOCATION: 12

NAME: Ace Group

UTM: 6279539N/344771E

ACCESS: Provincial Road 396 and traverse.

EXPLORATION SUMMARY:

The area was first staked as Ace 6 and Ace 15 by W.E. Brydges and F.W. Constable, respectively, in 1947. Stanton (1949) notes that stripping had exposed a mineralized zone over 6 m in length. Milligan (1960) located a shallow trench about 3 m long. The claims lapsed in 1949.

In 1960 Selco Exploration Company Limited conducted an airborne geophysical survey (A.F. 91626). Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group grey-wacke, siltstone, mudstone and conglomerate, intruded by mafic plutons (Fig. 12-1; Gilbert *et al.*, 1980). Stanton (1949, p. 34) describes dark grey quartzite at this location.

MINERALIZATION:

"Disseminated grains and narrow seams of pyrite and chalcopyrite within dark grey quartzite" occur in a zone oriented 050°/85°S, which is concordant with bedding (Stanton, 1949, p. 34). Milligan (1960, p. 194) located a shallow trench, but did not observe sulphide mineralization.

GEOCHEMICAL DATA:

None.

AREA: Small unnamed lake approximately 450 m south of (east) Dunphy Lakes

AIRPHOTO: A24298-89

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 91626, 91696

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

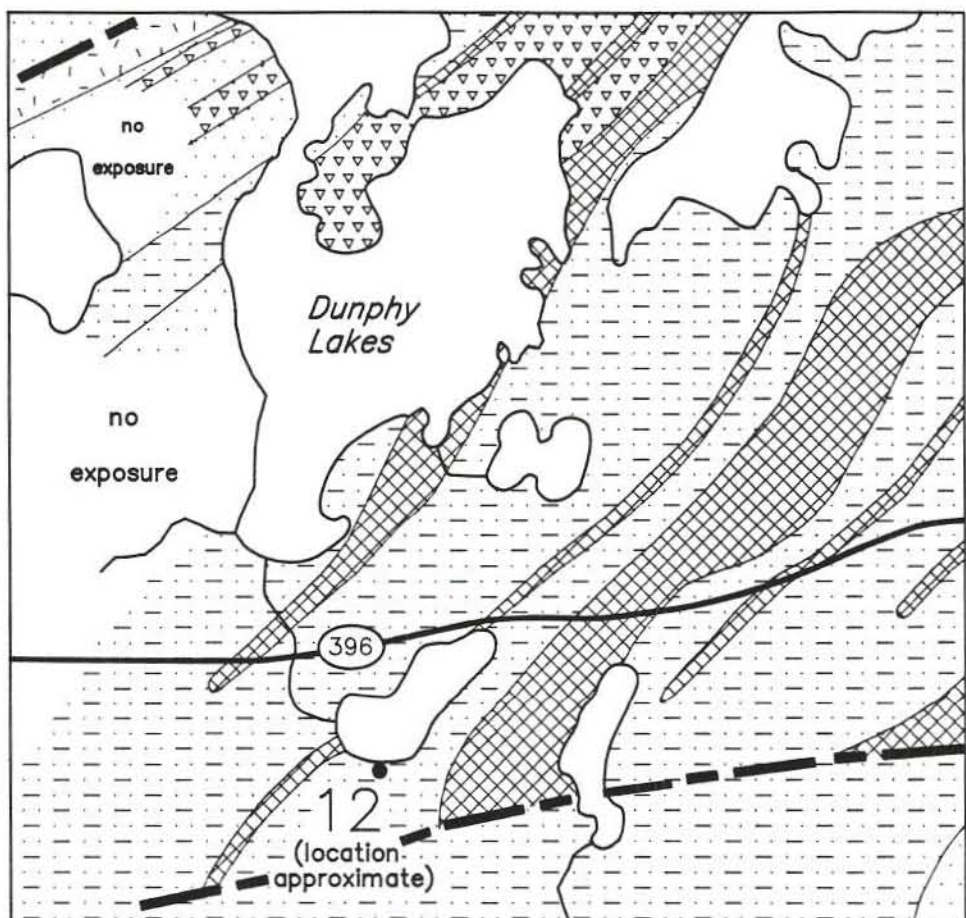
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

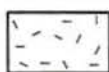
Stanton, M.S.

1949: Geology of the Dunphy Lakes area, Granville Lake Division, Manitoba; Manitoba Mines and Natural Resources, Mines Branch, Publication 48-4, 34p.



APHEBIAN

INTRUSIVE ROCKS



Tonalite

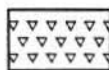


Mafic intrusive rocks

WASEKWAN GROUP



Greywacke, siltstone,
mudstone, conglomerate



Felsic volcanic rocks



Mafic volcanic rocks



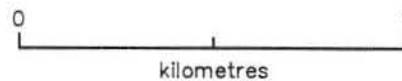
Fault



Provincial road



Occurrence location



Geology after Gilbert et al. (1980).

Figure 12-1: Geological setting of occurrence 12 (Ace).

LOCATION: 13

NAME: (A.F. - Mineralization intersected by diamond drilling)

UTM: 6283092N/340431E

ACCESS: By Provincial Road 396, then by boat on Dunphy Lakes and traverse.

EXPLORATION SUMMARY:

Selco Exploration Company Limited did an airborne geophysical survey in 1960 (A.F. 91626). J.R. Muter staked Phy 1 in 1961 and assigned it to SGM in 1965. Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

Manitoba Mineral Resources Limited staked Dunphy 1 in 1983 and transferred the property to SGM in 1984. SGM drilled one 66 m long hole on claim Dunphy 1 in 1984 (A.F. 92712). SGM restaked the area as Dunphy 2 in 1987. The property was transferred to Hayes Resources Inc. in 1988, and then to LynnGold Resources Inc. The claim lapsed in July 1989.

GEOLOGICAL SETTING:

The area is underlain by granodioritic to tonalitic rocks, which are bordered to the south by Wasekwan Group sedimentary and mafic volcanic rocks (Fig. 13-1; Gilbert *et al.*, 1980). The drill holes intersected granodiorite and granite, greywacke, intermediate tuff, amphibolite, a minor nonmineralized "chlorite shear" and a 0.3 m barren quartz vein. The tuff (quartz-plagioclase-biotite-chlorite gneiss) has well developed compositional layers and local laminated zones (A.F. 92712).

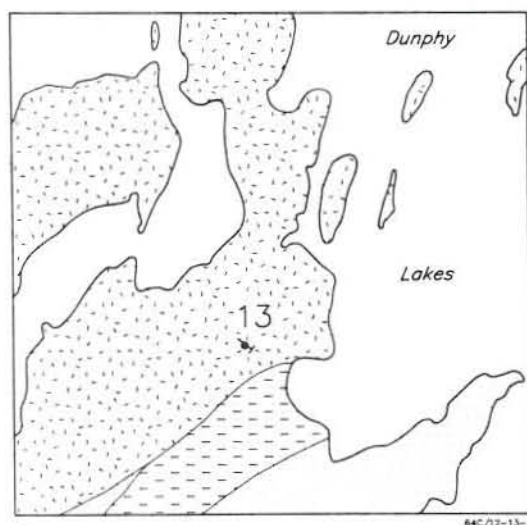


Figure 13-1: Geological setting of occurrence 13.

AREA: Between western and central Dunphy Lakes

AIRPHOTO: A24298-59

MINERALIZATION:

A 3.2 m intersection of tuff contains minor disseminated to near solid pyrite and pyrrhotite with minor blebs and veinlets of chalcopryrite. Minor pyrite is present throughout most of the greywacke (A.F. 92712).

GEOCHEMICAL DATA:

Drill core samples contain up to 0.11% Cu, 0.04% Zn, trace Au and 2.1 g/t Ag (A.F. 92712).

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Minor to near solid Fe-sulphides with minor chalcopryrite are hosted by intermediate tuff.

REFERENCES:

Assessment Files 91626, 91696, 92712

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

LOCATION: 14**NAME: Jut****UTM: 6274812N/335988E****ACCESS:** By trail leading from the road at the Fox mine site (Location 1) to Pyta Lake.**AREA:** Northeast shore of McWhirter Lake**AIRPHOTO:** A24298-13**EXPLORATION SUMMARY:**

The exploration history of this occurrence is detailed in Mineral Inventory Card 64C/12 Cu4. J.F. 2, 5, 9 and 10 were staked by John W. Moore and by Joseph McDonald in 1947, and were cancelled in 1948-49.

Airborne geophysical surveys were carried out by Canadian Nickel Company Limited in 1954 and by Selco Exploration Company Limited in 1960 (A.F. 91615, 91626). A ground EM survey conducted by Prospectors Airways Company Limited in 1962 defined a 335 m long conductor (A.F. 91009). Three holes totalling 397 m were completed on the Jut claims in 1962-64 (A.F. 91011, 91012).

Airborne geophysical surveys were carried out by Dome Exploration (Canada) Limited in 1969 (A.F. 91674) and SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

SGM staked CB 8961 in 1978 and carried out a magnetometer survey and a horizontal loop EM survey in 1979 (A.F. 92344). The claim block was cancelled in 1981.

McWhir 1, 3 and 4 were staked by Manitoba Mineral Resources Ltd. in 1984.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group sedimentary and mafic volcanic rocks that are overlain unconformably to the south by Sickle Group sedimentary rocks (Fig. 14-1; Gilbert *et al.*, 1980). Drill holes intersected mafic volcanic rocks and hornblende-mica-garnet gneiss (A.F. 91012). DDH 2 and 3 intersected banded (volcanic-derived?) biotite \pm garnet gneiss and banded chloritic tuff (A.F. 91011). Most of the mafic volcanic rocks are silicified or contain abundant quartz \pm carbonate veinlets and/or "mica alteration" (A.F. 91011, 91012).

MINERALIZATION:

A 1.0 m intersection of hornblende-mica-garnet gneiss from DDH 1 contained 40% pyrrhotite and pyrite and 2% chalcopryite; a 1.3 cm solid galena section was also present in this interval. A 5.5 m intersection of hornblende-mica-garnet gneiss, also from DDH 1, contained 10% pyrrhotite, "minor" chalcopryite, and trace to 5% pyrite. These mineralized intersections also contained up to 30% magnetite (A.F. 91012). DDH 2 intersected 0.6 m of 70% pyrrhotite and minor chalcopryite,

and DDH 3 intersected 1.5 m with 25 to 50% pyrrhotite and 1 to 2% chalcopryite; in both drillholes, the mineralization is hosted by biotite-garnet gneiss (A.F. 91011).

Stanton (1949) mapped an outcrop of "tremolite, garnet, sillimanite, and staurolite gneisses" east of McWhirter Lake. Jackson (1988) observed a gedrite-garnet-cordierite assemblage associated with amphibolite, garnet-hornblende siltstone and quartzofeldspathic sedimentary rocks at Zone 1 (Fig. 14-1).

GEOCHEMICAL DATA:

Assayed drill core samples from DDH 1, 2 and 3 contained tr. to 1.7% Cu, tr. to 0.56% Zn, tr. Ni, tr. to 21.3 g/t Ag and tr. to 0.3 g/t Au. The 1.0 m intersection of near solid sulphide in DDH 1 assayed 1.7% Cu and 0.56% Zn (A.F. 91012). The 0.6 m intersection of solid sulphide in DDH 2 assayed 0.18% Cu and 0.5% Zn; the 1.5 m intersection of near solid sulphide in DDH 3 assayed 0.70% Cu, 0.20% Zn, 21.3 g/t Ag, and traces of Ni and Au (A.F. 91011).

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Minor to near solid pyrrhotite, pyrite and chalcopryite are hosted by hornblende-mica-garnet gneiss.

REFERENCES:

Assessment Files 91009, 91011, 91012, 91615, 91626, 91674, 91696, 92344

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Jackson, S.L.

1988: Alteration zones, structure and metamorphism of the Laurie Lake area; In Manitoba Energy and Mines, Report of Field Activities, 1988, p. 178-182.

Mineral Inventory Card 64C/12 Cu4

Manitoba Energy and Mines, Geological Services Branch.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

1949: Geology of the Dunphy Lakes area, Granville Lake Division, Manitoba; Manitoba Mines and Natural Resources, Mines Branch, Publication 48-4, 34p.

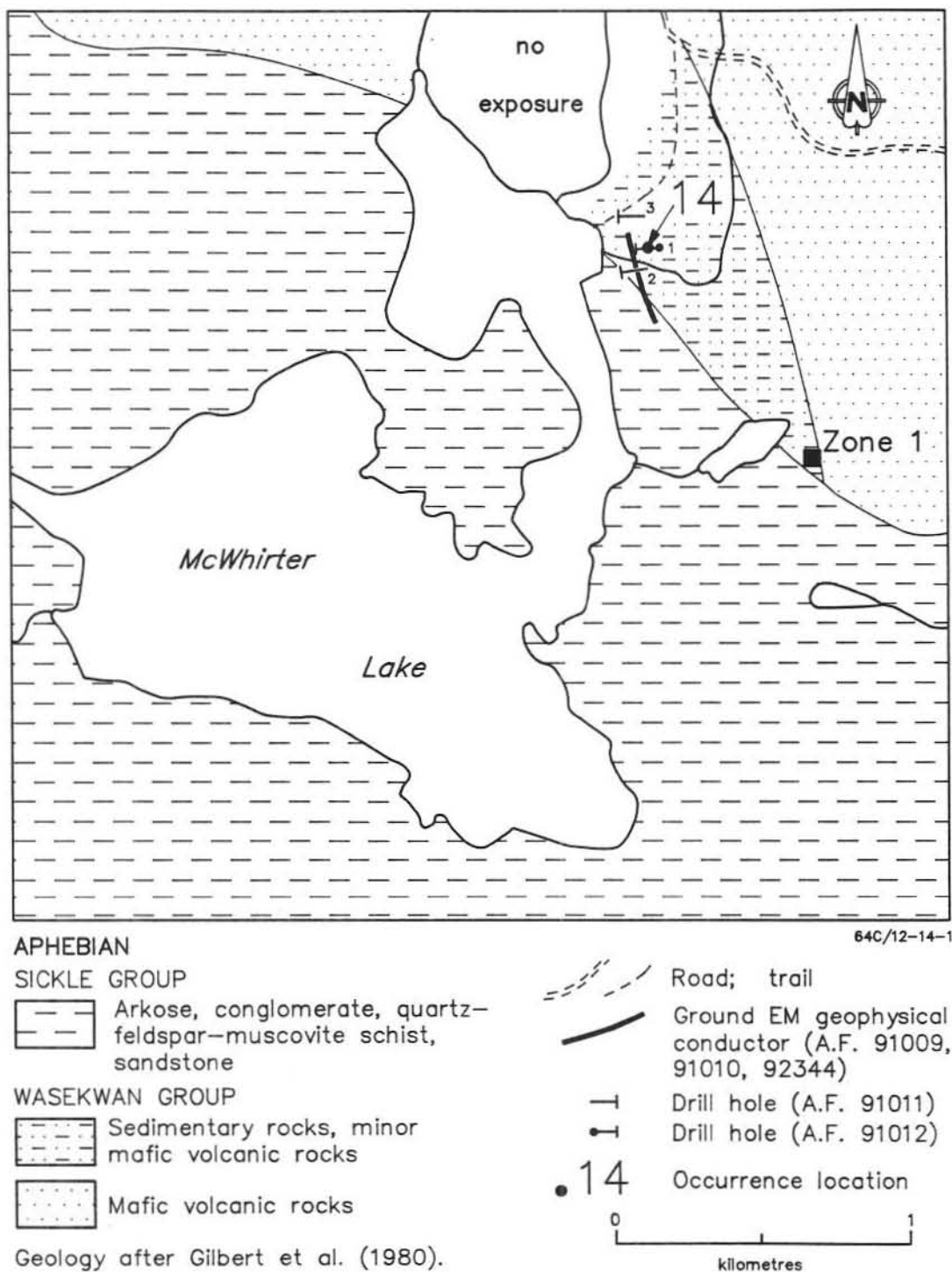


Figure 14-1: Geological setting of occurrence 14 (Jut).


64C/12-15-1


SICKLE GROUP

 Conglomerate

WASEKWAN GROUP

— · · Greywacke, siltstone,
· · — mudstone, tuff

 Porphyroblastic schist

 Mafic to intermediate volcanic rocks

Geology after Gilbert et al. (1980).

Fault

Bedding, tops unknown
(dip unknown)

Foliation (inclined)

Pillows, tops known (inclined)

Road; trail

○py Mineralization (Milligan, 1960; Gilbert et al., 1980)

Ground EM geophysical
conductor (A.F. 91015)

→ Drill hole (A.F. 91011)

● Drill hole (A.F. 92590)

● Drill hole (A.F. 92703)

- Drill hole (SGM, unpublished data)

15 Occurrence location

Figure 15-1: Geological setting of occurrences 15, 16 (Hat) and 17 (North Tod).

LOCATION: 15

NAME: (A.F. - Mineralization intersected by diamond drilling)

UTM: 6277271N/335766E

ACCESS: By road from the Fox mine site (Location 1).

AREA: Hatchet Lake

AIRPHOTO: A24298-13

EXPLORATION SUMMARY:

Selco Exploration Company Limited conducted an airborne geophysical survey in 1960 (A.F. 91626). The Key claims were staked by Mrs. R.L. Vancoughnett in 1961, and assigned to William Thornhill Knox in 1962. Magnetometer and EM surveys were conducted in 1962 (A.F. 91015). Kerr Addison Mines Limited drilled three holes totalling 367 m on Jul 80, and one 122 m deep hole on Jul 75 (A.F. 91011).

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217). DDH FS-30 (423 m) was drilled on claim Ken 9 by SGM in 1979 (A.F. 92703). Locations of other drill holes for which the logs are not available are also shown in Figure 15-1 (SGM, unpublished data). The Ross group of claims was staked in 1987 by Granges Exploration Ltd. (later renamed Granges Inc.).

GEOLOGICAL SETTING:

The area southeast of Hatchet Lake is underlain by Wasekwan Group mafic to intermediate volcanic rocks that are bordered by Wasekwan Group greywacke, siltstone, mudstone and tuff to the north. Sickie Group sedimentary rocks are in fault contact with mafic

volcanic rocks to the west of Hatchet Lake (Fig. 15-1; Gilbert *et al.*, 1980).

DDH 4 through 7 intersected garnetiferous, biotitic, gneissic, intermediate volcanic rocks; DDH 5 also intersected diorite (A.F. 91011). DDH FS-30 intersected garnetiferous biotitic feldspathic siltstone, quartzite (or rhyolite?), felsic tuff, banded intermediate tuff(?), quartz-hornblende gneiss, amphibolite, mafic dykes(?), and feldspar porphyry (A.F. 92703).

MINERALIZATION:

Drill core intersections with moderate to solid sulphide mineralization are summarized in Table 15-1. Minor pyrite and pyrrhotite are common throughout other rock types in DDH 4 through 7. DDH FS-30 intersected 0.6 m of very fine grained, mauve, foliated, siliceous chert or rhyolite with fine grained disseminated sulphide minerals (amount, species not given); trace chalcopryrite was noted in felsic tuff further down the hole (A.F. 92703).

GEOCHEMICAL DATA:

Assays for some of the drill core samples from DDH 5 through 7 are reported in the assessment file: tr. Cu, tr. Zn, tr. Au and 6.2 to 7.2 g/t Ag (A.F. 91011). Assays were not included with the drill logs for DDH FS-30 (A.F. 92703).

Table 15-1: Summary of drill core intersections with 10% Fe-sulphide minerals at occurrence 15

DDH	Core length (m)	Mineralization	Host Rock	Other	Source
4	0.3	solid po	altered intermediate volcanic rocks		A.F. 91011
5	11.3	solid py	altered intermediate volcanic rocks		A.F. 91011
5	≤1	10 to 20% py and/or po	altered intermediate volcanic rocks	numerous intersections	A.F. 91011
6	0.3 to 4.0	40 to 80% py+po	altered intermediate volcanic rocks	graphitic; six intersections	A.F. 91011
7	10.7	50 to 60% po	altered intermediate volcanic rocks		A.F. 91011

CLASSIFICATION:

Stratabound massive sulphide type deposit; volcanic rock associated. Garnetiferous biotitic intermediate volcanic rocks host moderate to solid Fe-sulphide mineralization. The mineralization intersected in DDH 6 probably represents earthy pyrite.

REFERENCES:

Assessment Files 91011, 91015, 91626, 91696, 92217, 92703
Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

LOCATION: 16**NAME: Hat****UTM: 6277762N/332201E****ACCESS:** By trail from the Fox mine site (Location 1) and then by boat on Hatchet Lake.**AREA:** Between Hatchet Lake and the Laurie River (Fig. 15-1)**AIRPHOTO:** A24298-13, A24297-179**EXPLORATION SUMMARY:**

Selco Exploration Company Limited conducted an airborne geophysical survey over the area in 1960 (A.F. 91626). In 1961, the Hat claims were staked for SGM. DDH Hat 1 through Hat 9 (total 465 m) and Hat 12 (abandoned at 13 m) were drilled by SGM in 1961 (SGM, unpublished data). Locations of other drill holes for which the logs are not available are also shown in Figure 15-1 (SGM, unpublished data). The property was assigned to SGM in 1965. Production Lease 13 was issued in 1975. Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217). SGM drilled DDH Hatt 1 and Hatt 2, each 107 m in length, on claims Hat 17 and Hat 19 in 1981 (A.F. 92590). The property was transferred to Hayes Resources Inc. and then to LynnGold Resources Inc. in 1988.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, siltstone, mudstone and tuff, and mafic to intermediate volcanic rocks (Fig. 15-1; Gilbert *et al.*, 1980). The 'Hat' drill holes intersected tuff, greywacke, slaty sedimentary rocks and quartzite. Lesser quartzofeldspathic sedimentary rocks, mafic volcanic rocks, quartz-biotite gneiss, amphibolite and diorite are present in some drill

holes (SGM, unpublished data). Carbonate veinlets and laminae are common; garnets are present locally.

DDH Hatt 1 intersected interlayered slaty and tuffaceous pelitic sedimentary rocks (quartz-plagioclase-biotite-sericite \pm chlorite \pm garnet gneiss) and impure quartzite (A.F. 92590).

MINERALIZATION:

The two main areas of drilling are informally referred to as Sites A and B in Figure 15-1. The general area of Site A has traditionally been considered the "Hat" occurrence, although notable mineralization has also been intersected in the area of Site B.

Mineralized intersections, 1.2 to 11.9 m in core length from DDH Hat 2 through Hat 6, Hat 8 and Hat 9, contained 10 to 40% pyrite and pyrrhotite, hosted by graphitic slaty sedimentary rocks. Drill core from DDH Hat 1 contained two <1 m intersections with 30% to near solid pyrrhotite hosted by greywacke and slaty sedimentary rocks. Trace sphalerite was noted within the near solid pyrrhotite intersection. Drill core intersections with moderate to solid sulphide mineralization are summarized in Table 16-1. Minor pyrite and pyrrhotite are common throughout other rock types in the drill holes. DDH Hat 7 intersected only trace to minor pyrrhotite and arsenopyrite in amphibolite (SGM, unpublished data). Slaty

Table 16-1: Summary of drill core intersections with 10% Fe-sulphide minerals at occurrence 16 (SGM, unpublished data)

DDH	Core length (m)	Mineralization	Host Rock	Other
Hat 1	10.7	12-40% po, tr. sph	slaty sedimentary rocks, greywacke, tuff	
Hat 2	3.0	20% po	slaty sedimentary rocks	graphitic; minor quartz veins
Hat 3	11.0	10-25% po, py	slaty sedimentary rocks	graphitic
Hat 4	11.9	25-40% po, py	slaty sedimentary rocks	minor carbonate veinlets
Hat 5	6.1	5% py, 5% po	slaty sedimentary rocks	graphitic
Hat 6	3.0 to 4.6	7-25% py, po	slaty sedimentary rocks	three intersections

sedimentary rocks in DDH Hatt 1 contained <10% pyrite, minor pyrrhotite and graphite. Minor pyrite and graphite are present locally throughout DDH Hatt 1 and Hatt 2 (A.F. 92590).

GEOCHEMICAL DATA:

The 'Hat' drill core samples that were assayed contained nil to 0.06% Ni, nil to 0.11% Cu, 0.10 to 0.20% Zn, nil to tr. Au and nil to 50.1 g/t Ag (SGM, unpublished data). Samples from DDH Hatt 1 and Hatt 2 contained nil to 0.03% Cu, nil to 0.07% Zn, nil to tr. Au and 1.3 to 2.7 g/t Ag (A.F. 92590).

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

REFERENCES:

- Assessment Files 91626, 92217, 92590
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcaniclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

LOCATION: 17**NAME:** North Tod**UTM:** 6276875N/331703E**ACCESS:** By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to the Laurie River.**EXPLORATION SUMMARY:**

C.J. Cameron staked the TeePee 1 claim in 1947. Stripping of overburden was reported that year (Milligan, 1960, p. 197). The claim was cancelled in 1949.

Selco Exploration Company Limited conducted an airborne geophysical survey in 1960 (A.F. 91626). SGM carried out a Ronka horizontal loop EM survey in 1961 (A.F. 92599). The property was transferred to SGM in 1965. In 1969 an airborne radiometric survey was flown by Dome Exploration (Canada) Limited under Airborne Permit 79 (A.F. 91674).

SGM carried out a magnetometer survey and an EM-17 horizontal loop EM survey in 1972-73 (A.F. 92599). Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217). Induced polarization and magnetometer surveys were conducted in 1979 (A.F. 92599). SGM staked CB 10441 over the property in 1985 and restaked it as Boot 1 in 1987. The property was transferred to Hayes Resources Inc. and then to LynnGold Resources Inc. in 1988.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic to intermediate volcanic rocks, bordered by greywacke, siltstone, mudstone and tuff to the north. Sickle Group sedimentary rocks are in fault contact with mafic volcanic rocks approximately 150 m to the south (Fig. 15-1; Gilbert *et al.*, 1980). Rock types at the occurrence comprise massive aphyric basalt, mafic volcanic breccia and laminated mafic tuffaceous rocks with less abundant siliceous layers and/or lenses (Fig. 17-1; K. Brewer, field notes, 1984).

MINERALIZATION:

Pyrrhotite and pyrite, 1 to 5%, are disseminated within laminated tuffaceous rocks along the shoreline of the Laurie River (Fig. 15-1). Mineralization is most abundant within siliceous layers/lenses. The massive

basalt and mafic volcanic breccia are not sulphide bearing (K. Brewer, field notes, 1984). Milligan (1960, p. 287) quotes M.S. Stanton's field notes: "locally a little mineralization (chalcopyrite, pyrite) in fractures in greenstone" at this location and "some interbedded chert on northwest edge of hill".

AIRPHOTO: A24297-179

Gilbert *et al.* (1980) note additional exposures of pyrite and pyrrhotite mineralization (Fig. 15-1); these occurrences could not be located during field investigations in 1984 (P. Stewart, field notes).

GEOCHEMICAL DATA:

A grab sample of laminated mafic and siliceous tuff(?) with minor pyrrhotite and pyrite contained 91 ppm Cu, 60 ppm Zn, 0 ppm Pb, 59 ppm Ni, 94 ppm Cr, 0 ppm Ag, 31 ppb Au and 156 ppm As (K. Brewer, field notes, 1984).

CLASSIFICATION:

Disseminated mineralization - not classified. Minor Fe-sulphide minerals are hosted by silicified mafic tuff.

REFERENCES:

- Assessment Files 91626, 91674, 91696, 92217, 92599
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

LOCATION: 18

NAME: New Fox

UTM: 6280191N/331881E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat and traverse; or, by drill roads from the Fox mine site.

EXPLORATION SUMMARY:

Selco Exploration Company Limited carried out an airborne geophysical survey over part of the area in 1960 (A.F. 91626). The Sol Group of claims was staked by Bruce E. Spencer and M.W. McFayden in 1961, and immediately assigned to The Consolidated Mining and Smelting Company of Canada, Limited. Geological maps (1:4800, 1:15 000) were prepared before the claims were dropped in 1962-63 (A.F. 91018).

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217).

Induced polarization and magnetometer surveys were done in 1977 and 1979 (A.F. 92888, 92889). SGM drilled three holes totalling 318 m on the Fox claims in 1981 (A.F. 92890).

The property was transferred to Hayes Resources Inc. in April 1988, and then to LynnGold Resources Inc. in July 1988. The Fox claims in this area, with the exception of Fox 137, lapsed in July 1989.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, siltstone, mudstone and lesser mafic volcanic rocks, bordered to the north by a tonalite intrusion (Fig. 18-1). Gilbert *et al.* (1980) mapped a thin unit of porphyroblastic schist at the occurrence. Barham (1987) and Stewart and Brewer (1984) describe this unit as an alteration zone of the type commonly associated with massive sulphide type deposits within mafic volcanic and felsic to intermediate sedimentary and volcanoclastic rocks. Figure 18-2 is a detailed map of the New Fox occurrence, and Figure 18-3 is a detailed map of the Easter area approximately 100 m to the west.

Drill holes NF-1, NF-2 and NF-3 intersected granite, siliceous granitized sedimentary rocks, hornblende-bearing mafic volcanic flows and tuff, and biotite-hornblende-bearing greywacke (A.F. 92890).

MINERALIZATION:

Alteration assemblages of anthophyllite + gedrite ± garnet ± cordierite ± sillimanite ± staurolite in a variably siliceous matrix characterize this occurrence (Barham and Froese, 1986; Barham, 1987). The alteration zone

AREA: 1.75 km south of Vaughan Lake

AIRPHOTO: A24297-178

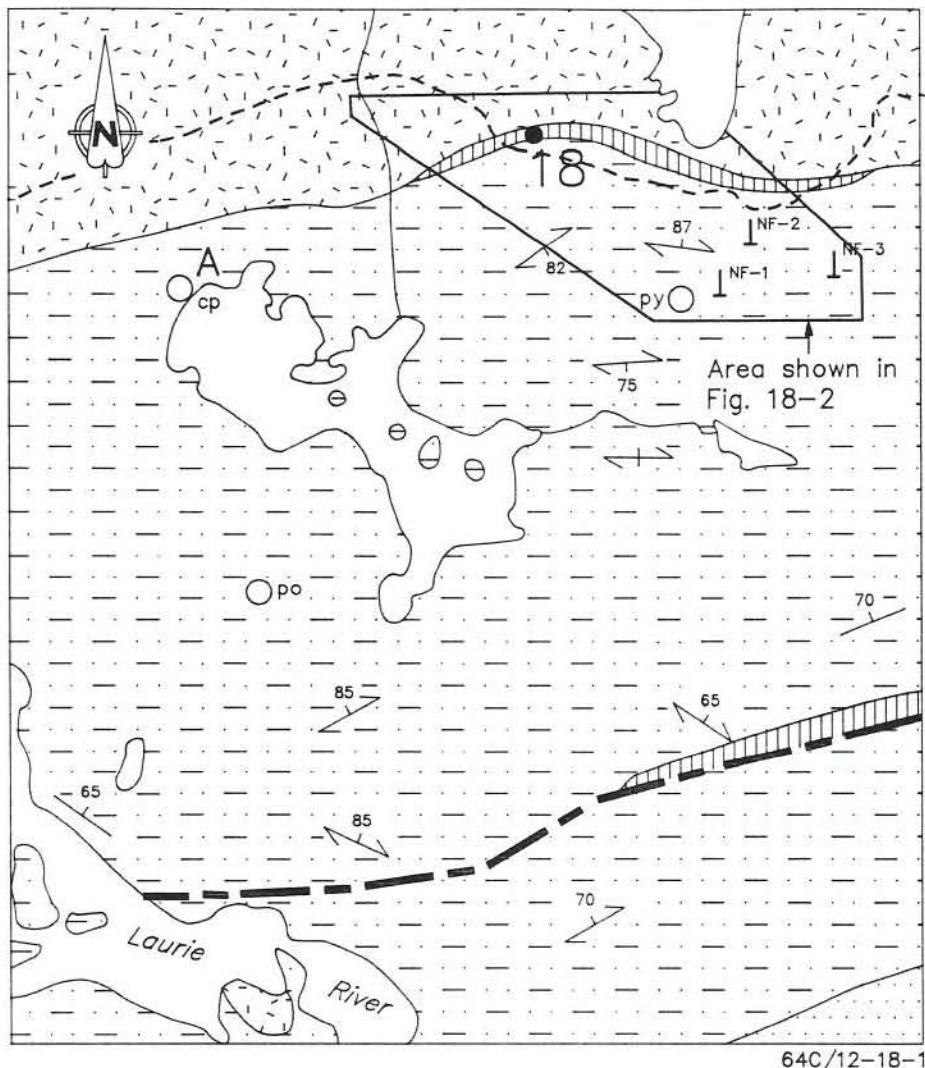
can be traced in outcrop for 1 km, and has a maximum width of 50 m (Stewart and Brewer, 1984). It is preferentially developed within a unit of mafic to intermediate volcanic flows and volcanoclastic rocks (Fig. 18-2, unit 2). Alteration assemblages reflect progressive Ca-Na depletion and obliteration of primary features. In places, garnet and/or anthophyllite crystals up to 3 cm long compose ≥50% of the rock. Silica-enriched areas, including irregular areas with gedrite and cummingtonite, and Ca-enriched areas (not demarcated in Fig. 18-2) are developed at the margins of the main alteration zone. These stratiform alteration assemblages represent chloritic hydrothermal alteration assemblages that have been metamorphosed to amphibolite facies, and are similar to alteration assemblages at the Fox stratabound massive sulphide type deposit (Location 1) (Barham and Froese, 1986; Barham, 1987).

Fine grained pyrite and/or pyrrhotite with chalcopyrite(?) occur locally within altered rocks and associated volcanoclastic rocks (P. Stewart, field notes, 1984). DDH NF-2 intersected 0.3 m of mafic volcanic rocks with 5% chalcopyrite and pyrrhotite as veins and fracture filling. Locally, drill core contains up to 5% pyrrhotite and pyrite, primarily as veins and on fractures in mafic volcanic rocks. Magnetite blebs, locally 1 to 3%, are disseminated in greywacke (A.F. 92890).

DDH NF-3 intersected a sequence of 4.8 m of biotite-chlorite-sericite-amphibole schist; 8.1 m of sericitic chert or felsic flow with local weak anthophyllite alteration; 2.7 m of weak to moderate quartz-mica-anthophyllite alteration; and 2.1 m of highly altered coarse grained anthophyllite with chlorite, biotite, cordierite ± garnet. Further down the hole, a separate 4.9 m intersection of highly altered quartz-mica-anthophyllite rock locally contains up to 50% garnets. Drill logs note that the chert/felsic flow resembles the quartz-sericite schist at the Fox deposit (Location 1). DDH NF-1 and NF-2 intersected only minor alteration products: local epidotized areas or concentrations of small quartz veinlets in mafic volcanic rocks and "some areas of green amphibole" were present (A.F. 92890).

In the Easter area (Fig. 18-2, 18-3), Stewart and Brewer (1984) divided an alteration zone (Fig. 18-3, unit 3) that occurs within mafic to intermediate tuffaceous, volcanoclastic or sedimentary rocks into three units:


- (a) *partial zone or vein zone*, with anthophyllite-rich veins, 1-20 cm thick, and rare garnets hosted by siltstone, shale and tuff(?);





APHEBIAN
INTRUSIVE ROCKS

 Tonalite

WASEKWAN GROUP

 Greywacke siltstone,
mudstone, minor
mafic volcanic rocks

 Porphyroblastic schist


 Mafic volcanic rocks


 Bedding, tops known
(inclined)


 Foliation (inclined,
vertical)

 Mineralization

 Fault

 Drill road

 Drill hole (A.F. 92890)

 Occurrence location

0 1
kilometres

Geology after Gilbert et al. (1980).

Figure 18-1: Geological setting of occurrence 18 (New Fox).

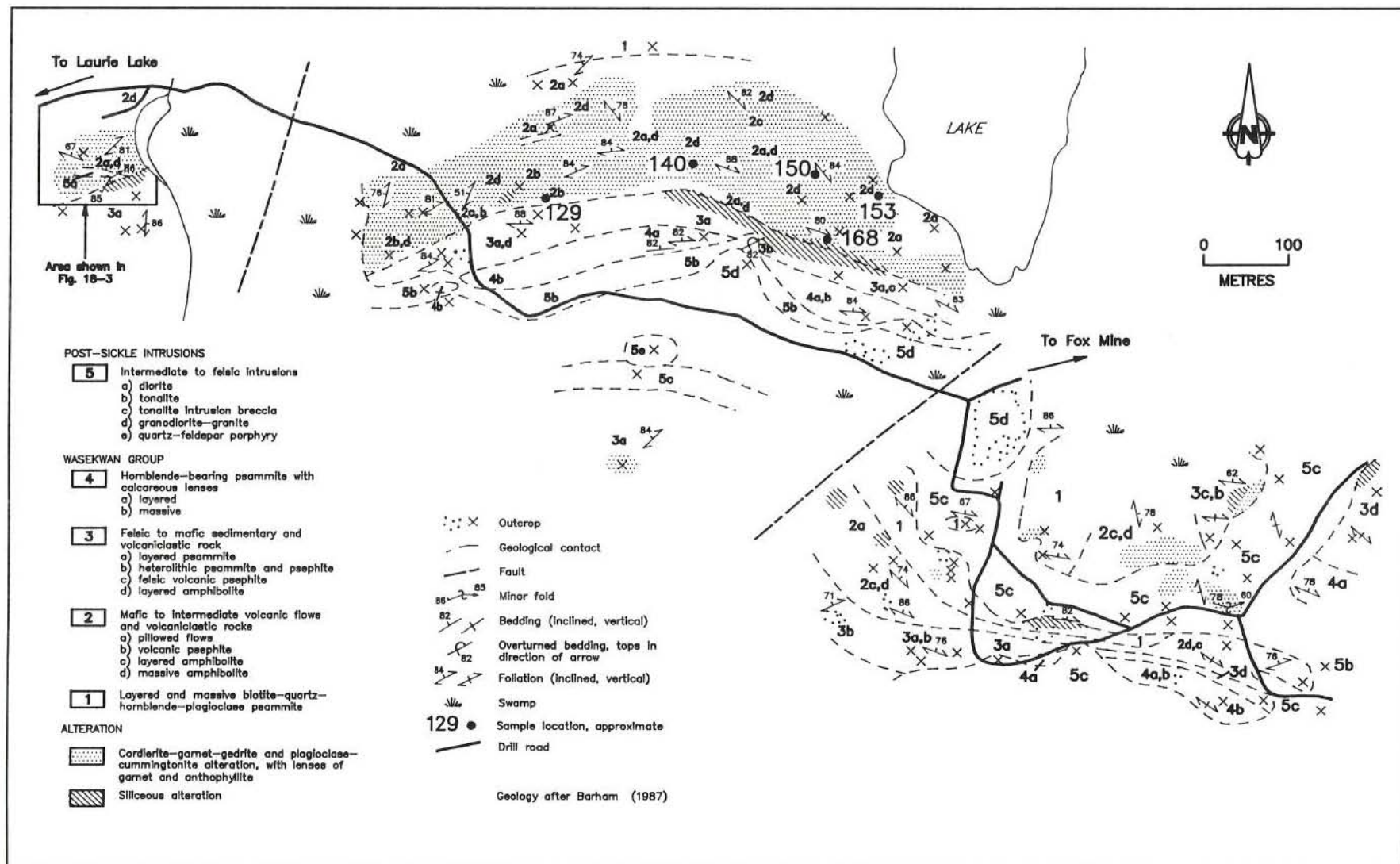
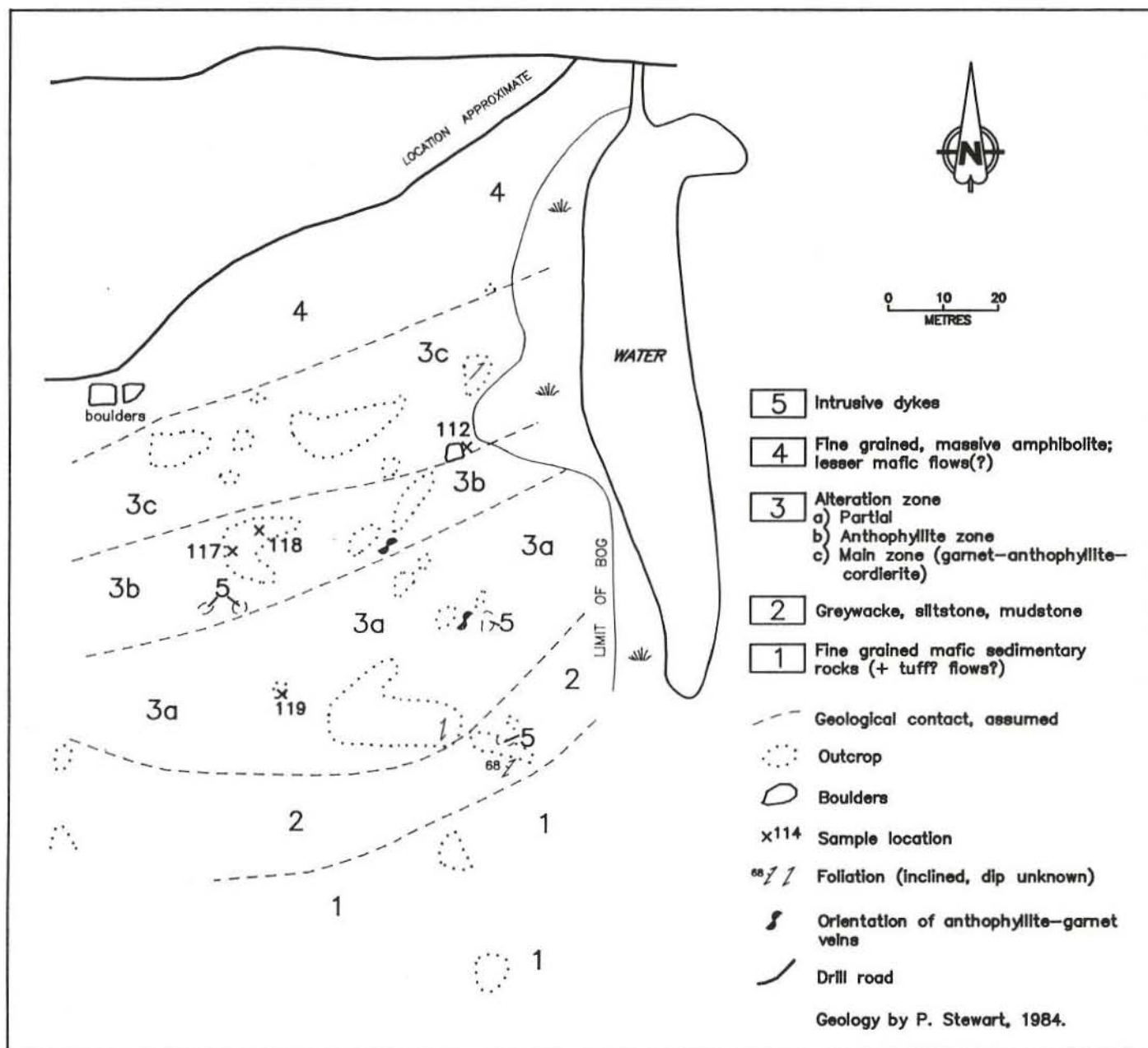


Figure 18-2: Detailed geology at the New Fox occurrence (18).



84/C12-18-3

Figure 18-3: Detailed geology at the New Fox occurrence (18), Easter area. See Figure 18-2 for location of this area.

- (b) *anthophyllite zone*, consisting dominantly of anthophyllite with minor pyrrhotite, pyrite and chalcopyrite(?) and little or no garnet, grading northwards into (c); and,
- (c) *main zone*, consisting of a coarse grained assemblage of garnet-anthophyllite-cordierite in a siliceous matrix. Garnet crystals, up to 40%, are up to 2 cm in diameter, and anthophyllite, up to 40%, occurs in rosettes up to 6 cm across.

At site A (Fig. 18-1), M.S. Stanton observed "occasional speck of chalcopyrite in impure buff granite with black hornblende and pinkish feldspar" (Milligan, 1960, p. 287). Pyrite and pyrrhotite occurrences identified to the southwest of the New Fox occurrence by Gilbert *et al.* (1980; Fig. 18-1) were not examined during the course of field work for this report (P. Stewart, field notes, 1984).

GEOCHEMICAL DATA:

Geochemical analyses of nine rock samples, four from the Easter area and five from the New Fox, are given in Table 18-1. Sample locations are shown in Figures 18-2 and 18-3; sample locations in Figure 18-2 are approximate. Copper is moderately enriched with up to 3789 ppm Cu; other element contents are low.

A 0.3 m drill core sample of a mafic volcanic flow with 5% chalcopyrite and pyrrhotite in veins from DDH NF-2 assayed 1.14% Cu, 0.02% Zn, 0.3 g/t Au and 4.1 g/t Ag. Eight other drill core samples from DDH NF-1, NF-2 and NF-3 contained: 0.01 to 0.10% Cu, nil to 0.03% Zn, tr. to 0.3 g/t Au and 1.1 to 2.1 g/t Ag (A.F. 92890).

CLASSIFICATION:

Stratabound massive sulphide type deposit; alteration zone associated with sedimentary and volcanic rocks.

REFERENCES:

- Assessment Files 91018, 91626, 91696, 92217, 92888, 92889, 92890
- Manitoba Energy and Mines, Minerals Division.
- Barham, B.A.
1987: Geology of the New Fox alteration zone, Laurie Lake, Manitoba; Carleton University, M.Sc. Thesis (unpublished), 110p.
- Barham, B.A. and Froese, E.
1986: Geology of the New Fox alteration zone, Laurie Lake, Manitoba; In Current Research, 1986, Part B, Geological Survey of Canada, Paper 86-1B, p. 827-835.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.
- Stewart, P.W. and Brewer, K.
1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

Table 18-1: Geochemical analyses of rock samples from occurrence 18 (New Fox)

Sample No.	Area	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Cr ppm	Ag ppm	Au ppb	As ppm	Rock Type	Mineralization
112	Easter	362	21	2	7	6	0	45	2	garnet-anthophyllite in siliceous matrix	diss. py, tr. cp
117	Easter	165	66	2	13	17	1	96	2	anthophyllite in siliceous matrix	diss. py, po(?); tr. cp
118	Easter	86	35	0	16	40	0	32	2	garnet-anthophyllite in siliceous matrix	
119	Easter	3789	45	4	43	34	0	15	2	siliceous rock, 5% anthophyllite	diss. py
129	New Fox	9	39	4	27	32	0	21	2	garnet-anthophyllite rock	
140	New Fox	9	28	0	27	93	0	60	2	anthophyllite-garnet rock	
150	New Fox	4	52	0	31	80	0	18	2	garnet-anthophyllite-quartz-biotite(?) rock	
153	New Fox	2	34	0	33	156	0	26	2	siliceous host rock(?) with garnet-anthophyllite veins	
168	New Fox	21	56	0	22	15	0	37	2	garnetiferous mafic volcanic rock	

LOCATION: 19

NAME: Rye

UTM: 6279527N/328675E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat and traverse; or, by bush aircraft to Laurie Lake and traverse.

EXPLORATION SUMMARY:

The exploration history for this occurrence is detailed in Mineral Inventory Card 64C/12 Pyr2. Rye 8, 11 and 14 were staked by Ronald L. Simpson in 1961. SGM carried out a 6-hole, 285 m, diamond drill program during 1961 to test a folded conductor that had been outlined by a ground EM survey (A.F. 91020, 92573). The claims lapsed in 1963.

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

Ground geophysics confirmed earlier targets and DDH LE-1, -2, and -3 (total 374 m) were drilled that year by SGM (A.F. 92573, 92274). In 1981 SGM carried out a geological survey and examined relict drill core (A.F. 92573).

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, siltstone, mudstone, and lesser interlayered mafic volcanic rocks; felsic plutons occur to the north and west (Fig. 19-1; Gilbert *et al.*, 1980). Drill holes intersected banded fine- to medium-grained quartz-biotite \pm chlorite gneiss that is locally interlayered with impure quartzite. Drill core from DDH Rye 2, Rye 3, Rye 4 and Rye 5 is locally garnetiferous; core from DDH Rye 6 contains some talcose chloritic sections. Quartz veinlets are present locally in all drill holes. Minor chloritic \pm biotitic shear zones, 1.5 m in core length, are present in core from DDH Rye 1 and Rye 4. DDH Rye 4 also intersected minor quartzofeldspathic pegmatite, and DDH Rye 2 intersected minor aplite (A.F. 91020).

DDH LE-1, LE-2 and LE-3 intersected hornblende \pm biotite-bearing arenaceous sedimentary rocks (quartz-hornblende gneiss), mafic volcanic-derived sedimentary rocks and minor mafic volcanic flows and granitic dykes. Minor tuffaceous agglomerate was noted in DDH LE-3 (A.F. 92274).

MINERALIZATION:

DDH Rye 6 intersected a 12.5 m sequence of sulphide mineralization: (1) 3.6 m of impure quartzite with 25 to 55% pyrrhotite, chalcopyrite and sphalerite (proportions of each were not reported); (2) 2.9 m of quartz-biotite-chlorite gneiss with 20 to 50% pyrrhotite, pyrite, chalcopyrite and sphalerite; and (3) 6.0 m of quartzite

AREA: Northeast shore of Laurie Lake

AIRPHOTO: A24297-136

with 8 to 15% pyrrhotite, pyrite, chalcopyrite and sphalerite. Core from DDH Rye 1 through Rye 5 contained intersections, 3.7 to 9.4 m in core length, of impure quartzite and/or locally garnetiferous quartz \pm biotite \pm chlorite gneiss with 3 to 20% finely disseminated pyrrhotite, pyrite, chalcopyrite and sphalerite. The mineralized intersection in DDH Rye 3 includes "local massive sulphides". Shear zones contained 3 to 4% pyrrhotite \pm pyrite \pm chalcopyrite. Arsenopyrite was identified locally in core from DDH Rye 2 (A.F. 91020).

DDH LE-2 intersected 0.5 m of arenaceous sedimentary rocks with 30% pyrrhotite and trace pyrite, and a separate 0.1 m intersection with 60% crystalline vuggy pyrite. Minor pyrite and/or pyrrhotite stringers, blebs and disseminations and local trace chalcopyrite are common in other parts of drill core from DDH LE-2, as well as from DDH LE-1 and LE-3. Graphite was noted in one 0.6 m intersection of arenaceous sedimentary rocks with 2% pyrite in DDH LE-2; locally, parts of DDH LE-3 are silicified.

Stewart and Brewer (1984) found very little outcrop, and "no evidence of mineralization or effects of alteration were detected" on surface.

GEOCHEMICAL DATA:

Assays are included with drill logs in A.F. 92274; values are low and vary from nil to 0.06% Cu, nil to 0.24% Zn, and 0.02 to 0.10% Ni.

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. It is possible that this mineralization represents the distal portions of a stratabound massive sulphide type deposit.

REFERENCES:

- Assessment Files 91020, 91696, 92274, 92573
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

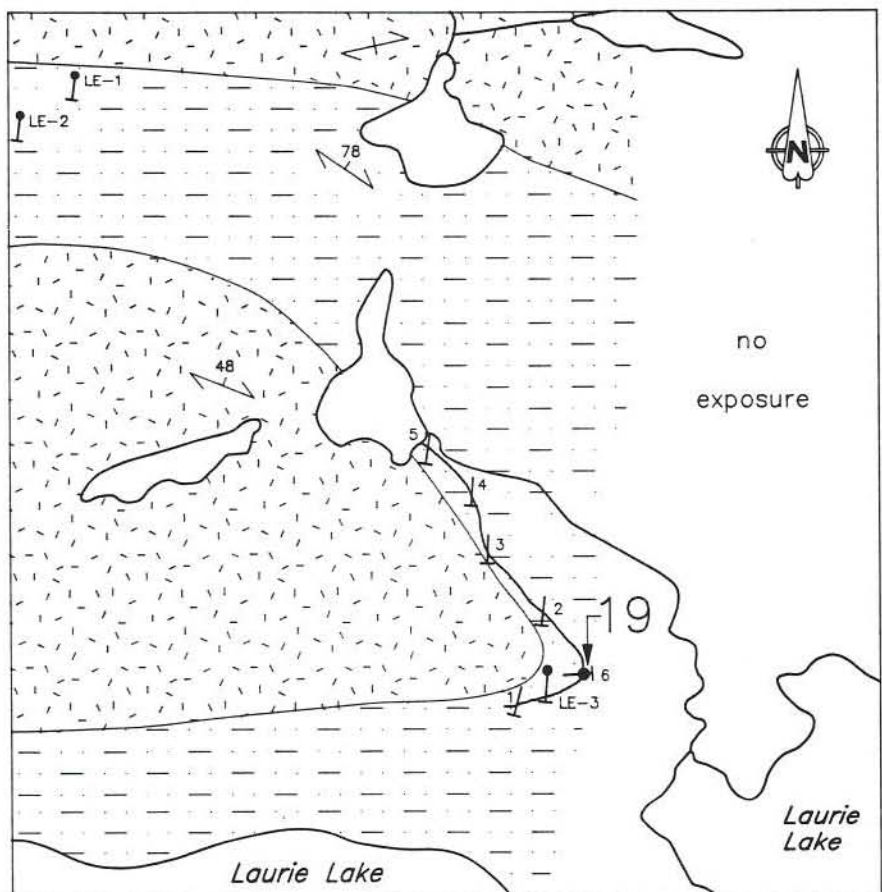
Stewart, P.W. and Brewer, K.

1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy

and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

Mineral Inventory Card 64C/12 Pyr2

Manitoba Energy and Mines, Geological Services Branch.



64C/12-19-1

APHEBIAN

INTRUSIVE ROCKS



Felsic intrusive rocks

WASEKWAN GROUP



Greywacke, siltstone, mudstone, lesser mafic volcanic rocks



Foliation (inclined, vertical)



Drill hole (A.F. 91020)



Drill hole (A.F. 92274)



EM conductor (SGM, unpublished data)

.19

Occurrence location



kilometres

Geology after Gilbert et al. (1980).

Figure 19-1: Geological setting of occurrence 19 (Rye).

LOCATION: 20

NAME: Gran

UTM: 6281107N/326905E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat, and then by traverse along old drill road; or, by bush aircraft to Laurie Lake and traverse.

EXPLORATION SUMMARY:

The exploration history of the Gran occurrence is detailed in Mineral Inventory Card 64C/12 Cu3. The property was first staked in 1961 as part of the Tar and Rye claim groups. J.E. Martel staked the Tar claims and assigned them to Hudson Bay Exploration and Development Company Limited that year. Rye 1 and 19 were staked by Ronald L. Simpson and D. Countryman, respectively. The claims lapsed in 1962-63.

SGM drilled three holes (total 189 m; A.F. 91019) to test EM conductors in 1965 (A.F. 92573). Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217).

Exploration work (done mainly on the former Gran 8 claim) by SGM included ground geophysical surveys and a two-hole, 158 m, diamond drill program in 1977, followed by a geological mapping program (1:12 000) and another two-hole, 40 m, diamond drill program in 1981 (A.F. 92573, 92274). Drill core from the 1981 drill holes was relogged in 1984 (A.F. 92573).

GEOLOGICAL SETTING:

The area is underlain by interlayered Wasekwan Group mafic volcanic and sedimentary rocks that are bordered to the north and south by felsic plutons (Fig. 20-1; Gilbert *et al.*, 1980). Detailed geological mapping delineated four units and two subunits (Fig. 20-2):

Unit 1 comprises mafic volcanic and volcanoclastic rocks consisting of hornblende + feldspar ± quartz ± biotite in alternating light- (siliceous) and dark-coloured layers.

Unit 2 consists of white to buff-grey, fine- to medium-grained feldspar + biotite ± quartz schist/gneiss derived from felsic to intermediate volcanic(?) rocks. Quartz veins up to 2 cm thick cut the schistosity. *Unit 2a*, a subunit of unit 2, consists of intensely rusty weathered quartzite, altered tuff and chert(?).

Unit 3 is similar to unit 1, but also commonly contains layers with garnets, 0.5-6.0 mm, that locally compose up to 20% of the rock. *Unit 3a* consists of garnet + anthophyllite ± cordierite ± chlorite + biotite in a quartzofeldspathic matrix. Two phases of unit 3a, not differentiated in Fig. 20-2, are present: (1) a coarse grained garnet-

AREA: Between Laurie and Craig lakes

AIRPHOTO: A24297-136

anthophyllite-biotite schist with garnets from 4 to 8 mm and radiating anthophyllite sheaves up to 3 cm long; and (2) a finer grained garnet + anthophyllite ± cordierite + chlorite + biotite schist with 1-4 mm garnets, radiating chlorite aggregates up to 1 cm, and more biotite and quartz than the coarser grained phase.

Unit 4 consists of weakly foliated, medium- to coarse-grained biotite granodiorite (K. Brewer, field notes, 1984).

Drill holes intersected fine- to medium-grained quartz-biotite gneiss that is locally siliceous and/or garnetiferous. Minor impure quartzite is interlayered with the gneiss; minor tuff is also present in core from DDH Gran 2 (A.F. 91019).

MINERALIZATION:

A zone of rusty weathered, very fine grained, sericitized siliceous rock with up to 10% pyrite and pyrrhotite occurs in quartz-biotite-garnet gneiss and mafic tuffaceous or volcanoclastic rocks. Garnet and garnet + anthophyllite ± cordierite ± chlorite + biotite-porphyroblastic schists (unit 3a, described above) occur approximately 300 m southeast of the mineralized area (Stewart and Brewer, 1984). These schists tentatively are considered stratabound within mafic volcanic and volcanoclastic rocks (unit 3; K. Brewer, field notes, 1984).

DDH Gran 1 intersected 12.8 m of quartz-biotite gneiss with 4 to 70% pyrrhotite, up to 7% pyrite, and, in places, trace to 1% chalcopryrite and sphalerite. Most of this intersection contains minor to moderate pyrrhotite ± pyrite ± chalcopryrite and sphalerite; however, one 0.3 m intersection contains 70% pyrrhotite and <1% chalcopryrite, and a 0.2 m intersection contains 50% pyrrhotite and 0.5% sphalerite. DDH Gran 2 intersected 1.5 m of quartz-biotite gneiss with 5 to 8% pyrite and pyrrhotite, <1% sphalerite and <1% galena fracture fillings, and a 1.9 m section of quartz-biotite ± chlorite gneiss and an "acid vein" with 6 to 20% pyrrhotite and 10 to 15% pyrite. DDH Gran 3 intersected 6.5 m of quartz-biotite gneiss with 2 to 20% pyrite and pyrrhotite, and further down the hole, 0.9 m of siliceous quartz-biotite gneiss with 35% pyrrhotite, 2% pyrite and 1% chalcopryrite. Pyrrhotite and pyrite, ≤2%, and rare chalcopryrite occur locally as disseminations and fracture fillings, and less commonly, in association with greenish quartz ± feldspar veins throughout the drill core (A.F. 91019).

GEOCHEMICAL DATA:

Geochemical analyses of three grab samples, locations of which are shown in Figure 20-2, are presented in Table 20-1; these samples contained only low concentrations of base and precious metals.

CLASSIFICATION:

Stratabound massive sulphide type deposit; volcanic rock associated.

REFERENCES:

Assessment Files 91019, 91696, 92217, 92274, 92573
Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the

Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

Stewart, P.W. and Brewer, K.

1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

Mineral Inventory Card 64C/12 Cu3

Manitoba Energy and Mines, Geological Services Branch.

Table 20-1: Geochemical analyses of grab samples from occurrence 20 (Gran)

Sample Number	Cu ppm	Zn ppm	Pb ppm	Au ppb	Ag ppm	As ppm	Ni ppm	Cr ppm
3	116	94	0	31	0	13	1	13
4	142	116	126	20	2	9	8	5
59	18	43	0	124	0	3	0	0

3 rusty weathered, limonitic, siliceous rock; 10% py, po

4 rusty weathered, siliceous, sericitic rock; 10% py, po

59 fine grained felsic dyke (aplite?); 1 to 5% disseminated py

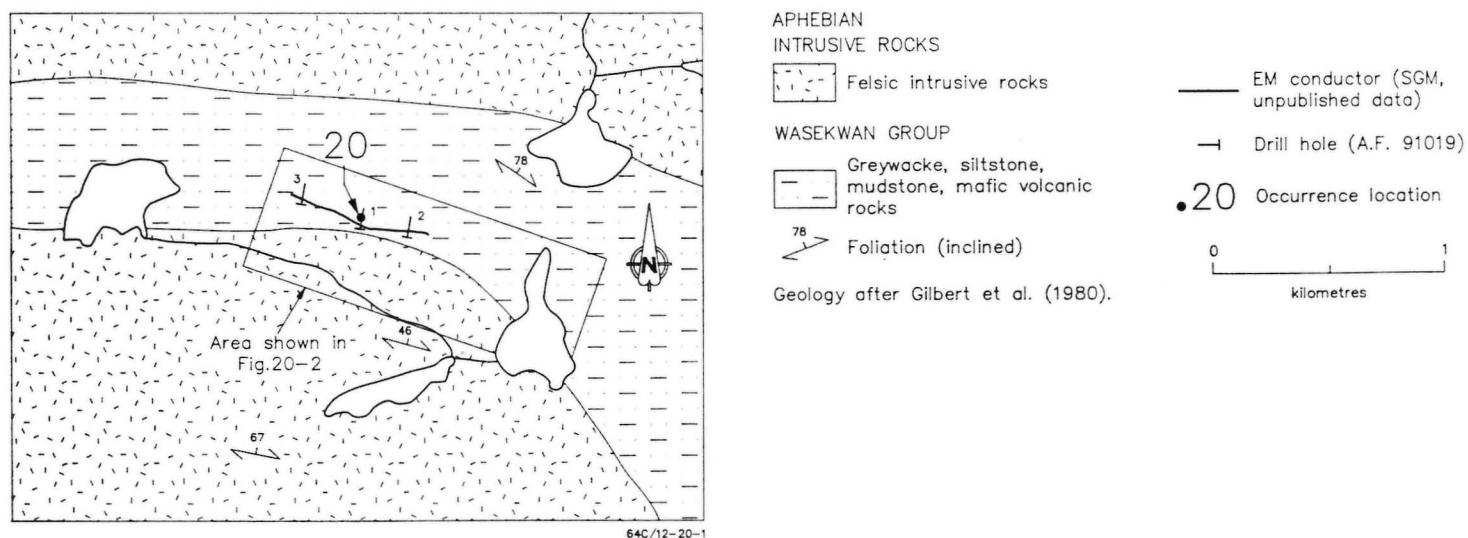
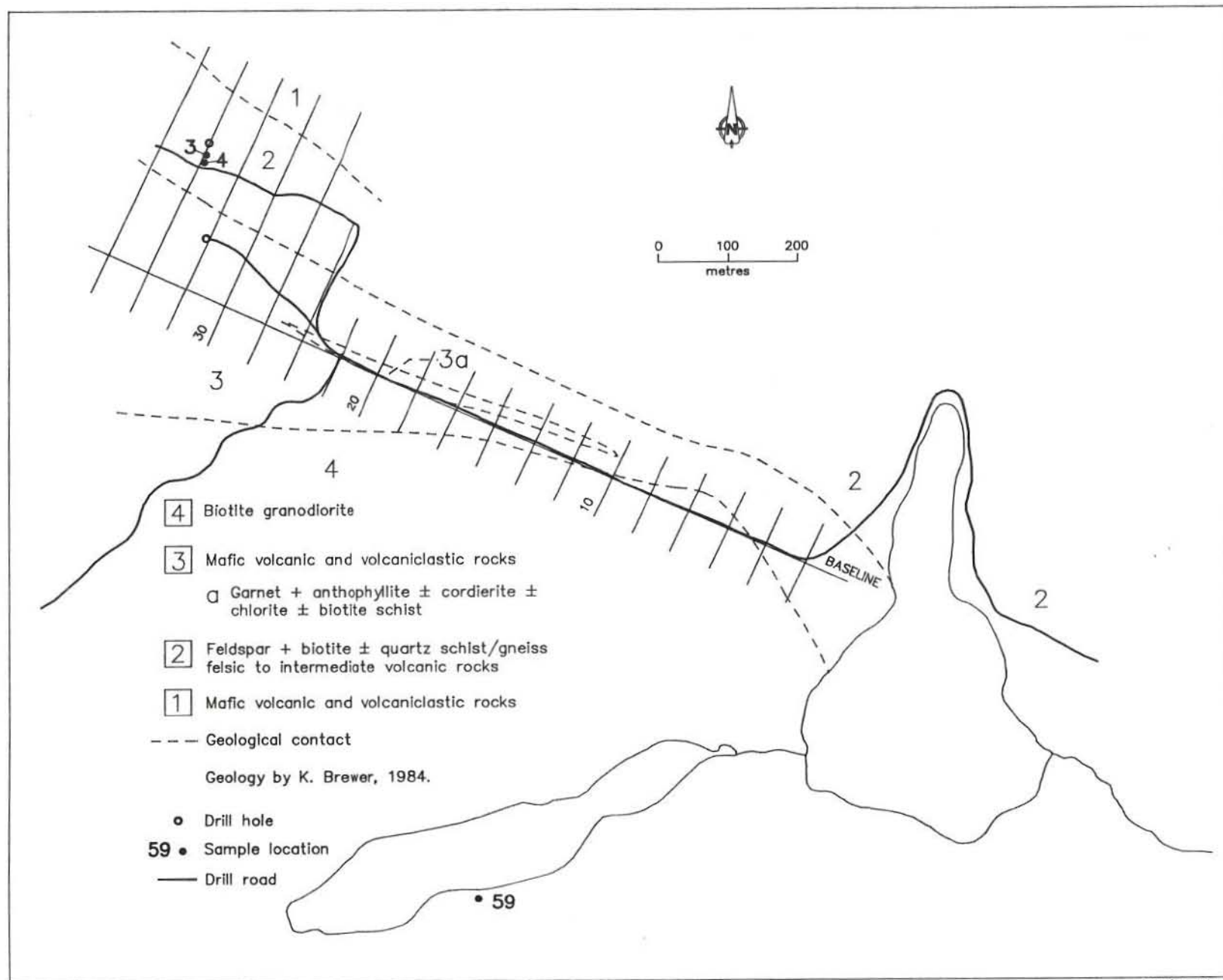
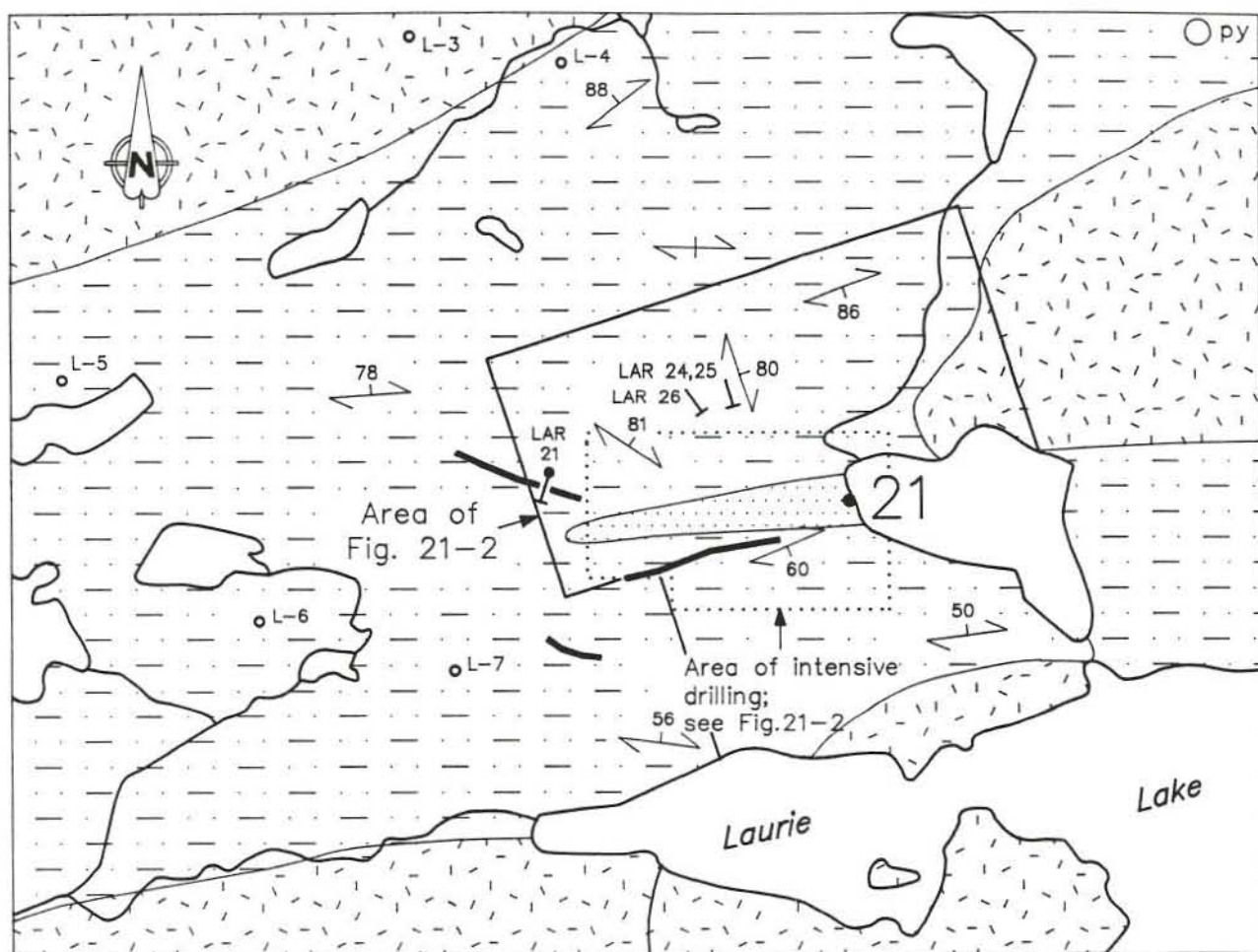


Figure 20-1: Geological setting of occurrence 20 (Gran).



64C/12-20-2

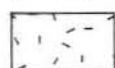
Figure 20-2: Detailed geology at occurrence 20 (Gran).



64C/12-21-1

APHEBIAN

INTRUSIVE ROCKS



Granodiorite, tonalite

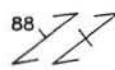
WASEKWAN GROUP



Greywacke, siltstone,
mudstone, lesser mafic
tuff



Mafic volcanic rocks



Foliation (inclined,
vertical)

○ PY Mineralization

— Ground EM geophysical conductors
(A.F. 92157)

— Drill hole (A.F. 91503, 91504)

— Drill hole (A.F. 92157)

○ Vertical drill hole (A.F. 92371)

21 Occurrence location



kilometres

Geology after Gilbert et al. (1980).

Figure 21-1: Geological setting of the Lar deposit (21).

LOCATION: 21**NAME: Lar****UTM: 6279802N/323118E****ACCESS:** By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat and then traverse along old drill road; or, by bush aircraft to Laurie Lake and traverse.**EXPLORATION SUMMARY:**

The exploration history of the Lar deposit is detailed in Mineral Inventory Card 64C/12 Cu2. The property was first staked in 1961 by G.D. Ruttan and D. Countryman for SGM as part of the Lar Group of 66 claims. SGM drilled ten holes (total 845 m) on the Lar claims to test EM conductors in 1962, including three holes totalling 405 m that were drilled on Lar 17 (A.F. 91713, 92371). Another thirteen holes totalling 2052 m were drilled on Lar 17 in 1965 (A.F. 92157, 92158), followed by three holes totalling 1353 m on Lar 14 in 1969 (A.F. 91503, 91504).

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological mapping (1:63 360) and rock geochemical sampling program was done by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217). The claims were assigned to SGM in 1977. Additional ground was staked as CB 10025, CB 10420 and CB 10024 by SGM in 1979-80.

Ground surveys were carried out by Manitoba Mineral Resources Ltd. in 1982-83 as part of a joint venture exploration agreement with SGM (Manitoba Mineral Resources Limited, Annual Report 1982-1983).

The property was transferred to Hayes Resources Inc. in April 1988, and then to LynnGold Resources Inc. in July 1988.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, siltstone, mudstone and mafic volcanic rocks, bordered to the north and south by granodioritic to tonalitic plutons (Fig. 21-1; Gilbert *et al.*, 1980). A sequence of mafic fragmental and flow rocks, felsic volcanic rocks, greywacke, and an alteration zone were mapped at the occurrence (Elliott, 1986). The rocks strike approximately east, are north dipping and overturned, with tops to the south.

Rocks at the deposit were subdivided by Elliott (1986):

Unit 1: mafic fragmental rocks with minor pillowed basalt and a debris flow. Fragments are matrix supported and are up to 30 cm.

Unit 2: andesitic to rhyodacitic, massive to fragmental volcanic rocks that occur stratigraphically be-

AREA: Northwest shore of Laurie Lake**AIRPHOTO:** A23828-44

neath the alteration zone and solid sulphide lenses. Fragments, where present, are <2 cm and ovoid.

Unit 3: an alteration assemblage;

Unit 4: solid sulphide lenses;

Unit 5: basaltic massive and pillowed flows, with minor basaltic tuff and a heterolithic debris flow. This unit is stratigraphically above the alteration zone and solid sulphide lenses.

Unit 6: felsic tuff with associated siliceous and chemical (cherty) sedimentary rocks. This unit occurs at the top of the volcanic sequence, directly beneath the greywacke. In drill core, this unit commonly appears as quartz-mica schist or impure quartzite (A.F. 92157, 92158).

Unit 7: greywacke;

Unit 8: quartz + feldspar \pm biotite \pm hornblende gneiss, derived from intrusive rocks; and

Unit 9: hornblende tonalite (Fig. 21-2, 21-3).

Pegmatite, hornblende, and areas of quartz veins are also present within the area, but are not differentiated in Figures 21-2 and 21-3.

MINERALIZATION:

Two stacked stratiform lenses of near solid to solid sulphide consist of pyrrhotite + pyrite \pm sphalerite \pm chalcopyrite \pm magnetite \pm tetrahedrite (Elliott, 1986). Pyrite and pyrrhotite range from 1 to 77%; pyrite or pyrrhotite may be dominant within a given solid sulphide intersection. Chalcopyrite, sphalerite and galena constitute up to 30%, 15% and 2.5% of the rock, respectively (A.F. 91713, 92157, 92158, 92371). Zonation of sulphide minerals was not recognized (Elliott, 1986).

The structurally upper (but stratigraphically lower) lens is approximately 3 to 9 m thick, and the lower (stratigraphically higher) lens is approximately 4 m thick (A.F. 91713, 92157, 92158; Fig. 21-3). The lenses appear to be enclosed in predominantly rhyodacitic rocks, to stratigraphically overlie Mg-enriched mafic and less abundant felsic volcanic rocks, and are separated by altered mafic volcanic rocks (Elliott, 1986).

Alteration assemblages consist of coarse grained cordierite-anthophyllite or anthophyllite-garnet-cordierite (Elliott, 1986). Biotite, quartz, magnetite, kyanite, and chlorite are also present in variable quantities. The rocks represent the metamorphosed equivalent of a chloritic hydrothermal alteration zone underlying the

massive sulphide lenses (Mustard, 1974; Gale, 1983; Elliott, 1986).

Milligan (1960, p. 289) noted "trace of pyrite in greenstone" at a site northeast of the Lar deposit (Fig. 21-1).

GEOCHEMICAL DATA:

Reserves at the Lar deposit were calculated as 1 361 000 tonnes grading 0.80% Cu and 2.15% Zn (Canadian Mines Handbook, 1989-90, p. 274; Bamburak, 1990).

Several assays with >1% Cu and/or Zn were obtained from core from DDH Lar 9 and Lar 10, including 5.9 m averaging 1.62% Cu and 2.01% Zn. Copper assays ranged up to 12.73% over 0.3 m in DDH Lar 9, and Zn assays ranged up to 4.74% over 0.8 m in DDH Lar 9 (A.F. 91713). Only partial assays are given in drill logs in A.F. 91503, 91504, 92157, 92158 and 92371. The highest assays of those given are from DDH Lar 13: one 0.2 m sample averaged 2.34% Zn and 0.07% Cu, and another intersection averaged 3.16% Zn and 3.38% Cu over 1.52 m.

Elliott (1986) presents trace and silicate whole rock analyses for drill core and outcrop samples from the area. Basal till sampling was done by Nielsen and Graham (1984).

CLASSIFICATION:

Stratabound massive sulphide type deposit; volcanic rock associated.

REFERENCES:

Assessment Files 91503, 91504, 91696, 91713, 92157, 92158, 92217, 92371

Manitoba Energy and Mines, Minerals Division.

Bamburak, J.D.

1990: Metallic mines and mineral deposits of Manitoba; Manitoba Energy and Mines, Open File Report OF90-2, 105p.

Canadian Mines Handbook, 1989-90

Northern Miner Press Limited

Elliott, S.R.

1986: Petrology, lithogeochemistry and metasomatic flux of the alteration zone associated with the Lar deposit, Lynn Lake area, Manitoba; University of Waterloo, M.Sc. thesis (unpublished), 278p.

Gale, G.H.

1983: Mineral deposit investigations in the Lynn Lake area; In Manitoba Energy and Mines, Mineral Resources Division, Report of Field Activities, 1983, p. 84-87.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Mineral Inventory Card 64C/12 Cu2

Manitoba Energy and Mines, Geological Services Branch.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Mustard, J.W.

1974: Geology, metamorphism and structure of the north Laurie Lake area, northern Manitoba; Queen's University, B.Sc. thesis (unpublished), 37p.

Nielsen, E. and Graham, D.

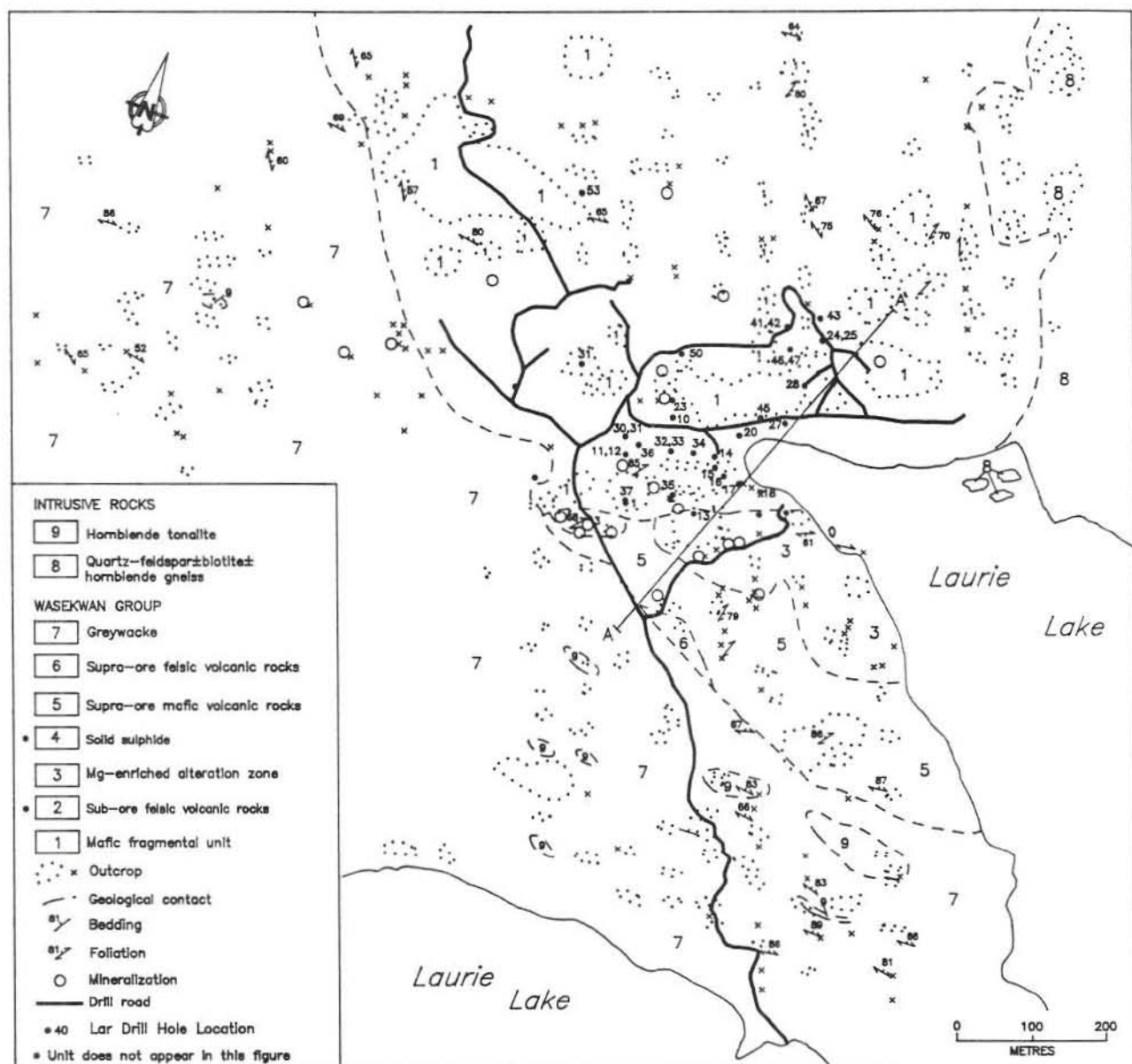
1984: Till geochemical investigations in the Lynn Lake and Flin Flon areas; In Manitoba Energy and Mines, Mineral Resources, Report of Field Activities, 1984, p. 32-33, 35.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

Stewart, P.W. and Brewer, K.

1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.



64C/12-21-2

Figure 21-2: Detailed geology at the Lar deposit (21). Geology after Elliott (1986). Drill hole locations from Sherritt Gordon Mines Ltd.

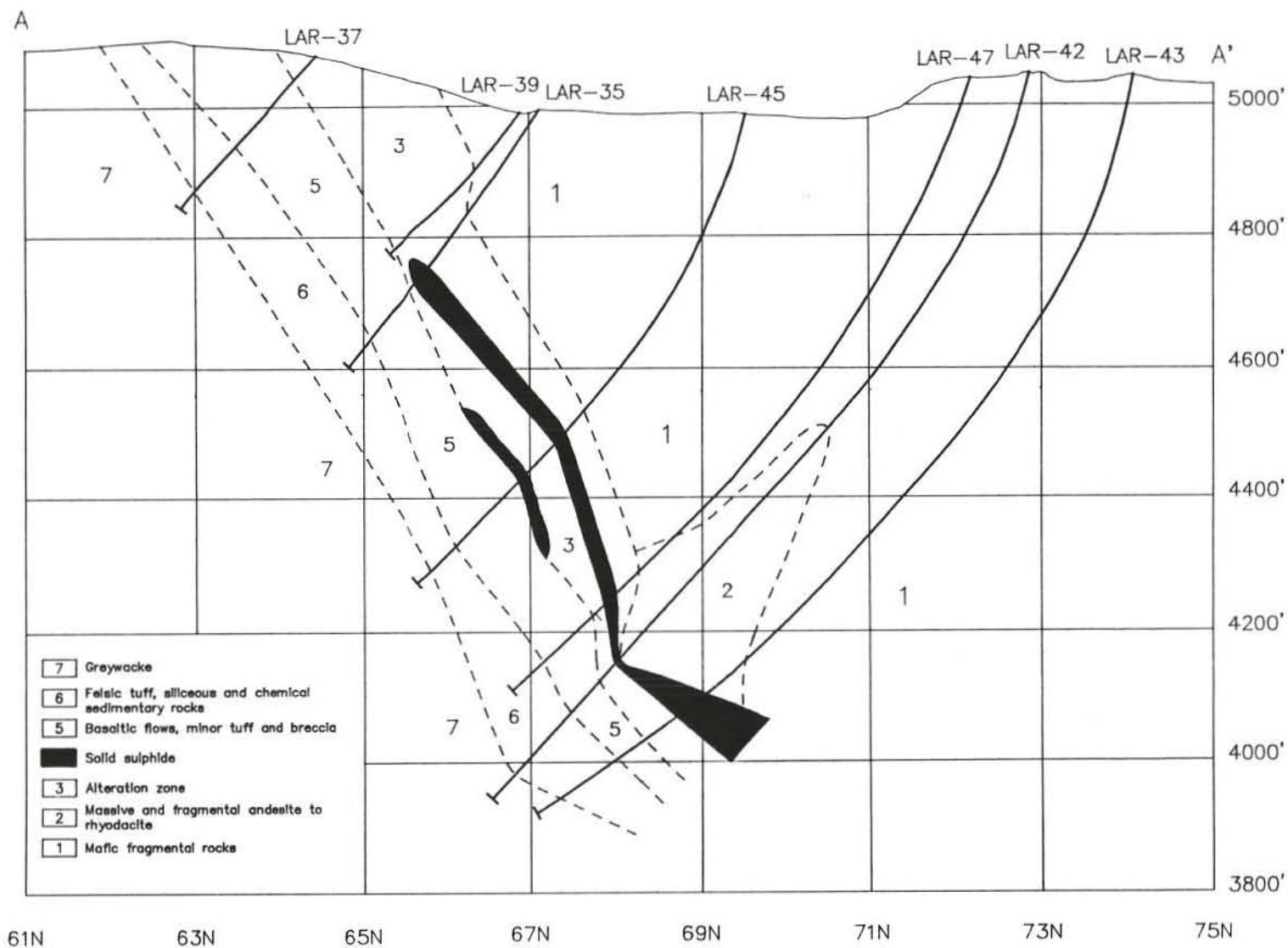


Figure 21-3: Vertical section through the Lar deposit (21) looking northwest (after Elliott, 1986). The surface projection of line AA' is shown in Figure 21-2.

LOCATION: 22**NAME:** East Laurie**UTM:** 6276615N/327911E**ACCESS:** By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Laurie Lake.**AREA:** East shore of Laurie Lake**AIRPHOTO:** A24297-134**EXPLORATION SUMMARY:**

In 1960 Selco Exploration Company Limited carried out airborne geophysical surveys over the area (A.F. 91626). The Dat group of claims was staked by F. Maluta and P. Mandro in 1961 and cancelled in 1962.

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

Hudson Bay Exploration and Development Company Limited staked CB 6022 in 1977 and carried out a ground geophysical survey and a diamond drill program; however, results have not been published. A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217). The property was transferred to Manitoba Mineral Resources Ltd. in 1985. CB 6022 was cancelled in 1989.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, siltstone, mudstone and minor mafic volcanic rocks, bordered to the east and south by felsic and mafic plutons; a fault transects the area of the occurrence (Fig. 22-1; Gilbert *et al.*, 1980). Rock types at the occurrence include interlayered mafic mudstone and siltstone, chloritic mafic volcanic rocks (including mafic tuff?), garnetiferous heterolithic volcanic breccia, and sheared(?) chloritic rock (K. Brewer, field notes, 1984).

MINERALIZATION:

Rusty weathered zones in mafic volcanic rocks contain up to 10% pyrite and pyrrhotite; chalcopryite(?) and bornite were also noted at one location (K. Brewer, field notes, 1984). These zones are probably related to the northeast-striking fault (Stewart and Brewer, 1984).

Three other sites of mineralization are labelled N, P and Q in Figure 22-1:

- (N) "Very sparse sulphide in quartz-biotite-hornblende rock";
- (P) "Sparse disseminated pyrrhotite in greenstone";
- (Q) "Quartz and disseminated fine grained pyrite" (Milligan, 1960, p. 289).

GEOCHEMICAL DATA:

Geochemical analyses of four rock samples from this location are given in Table 22-1; base and precious metal contents are low.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

- Assessment Files 91626, 91696, 92217
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.
- Stewart, P.W. and Brewer, K.
1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

Table 22-1: Geochemical analyses of rock samples from occurrence 22

Sample Number	Sample Type	Cu ppm	Zn ppm	Pb ppm	Ni ppm	Cr ppm	Ag ppm	Au ppb	As ppm	Mineralization
6	3 m chip	78	100	5	22	87	0	26	2	none
7	3.5 m chip	126	138	0	52	78	0	26	4	py, po, bornite(?), cp
8	3 m chip	129	124	0	54	79	0	20	2	10% py, po
9	grab	123	104	0	41	58	0	20	3	10% py, po

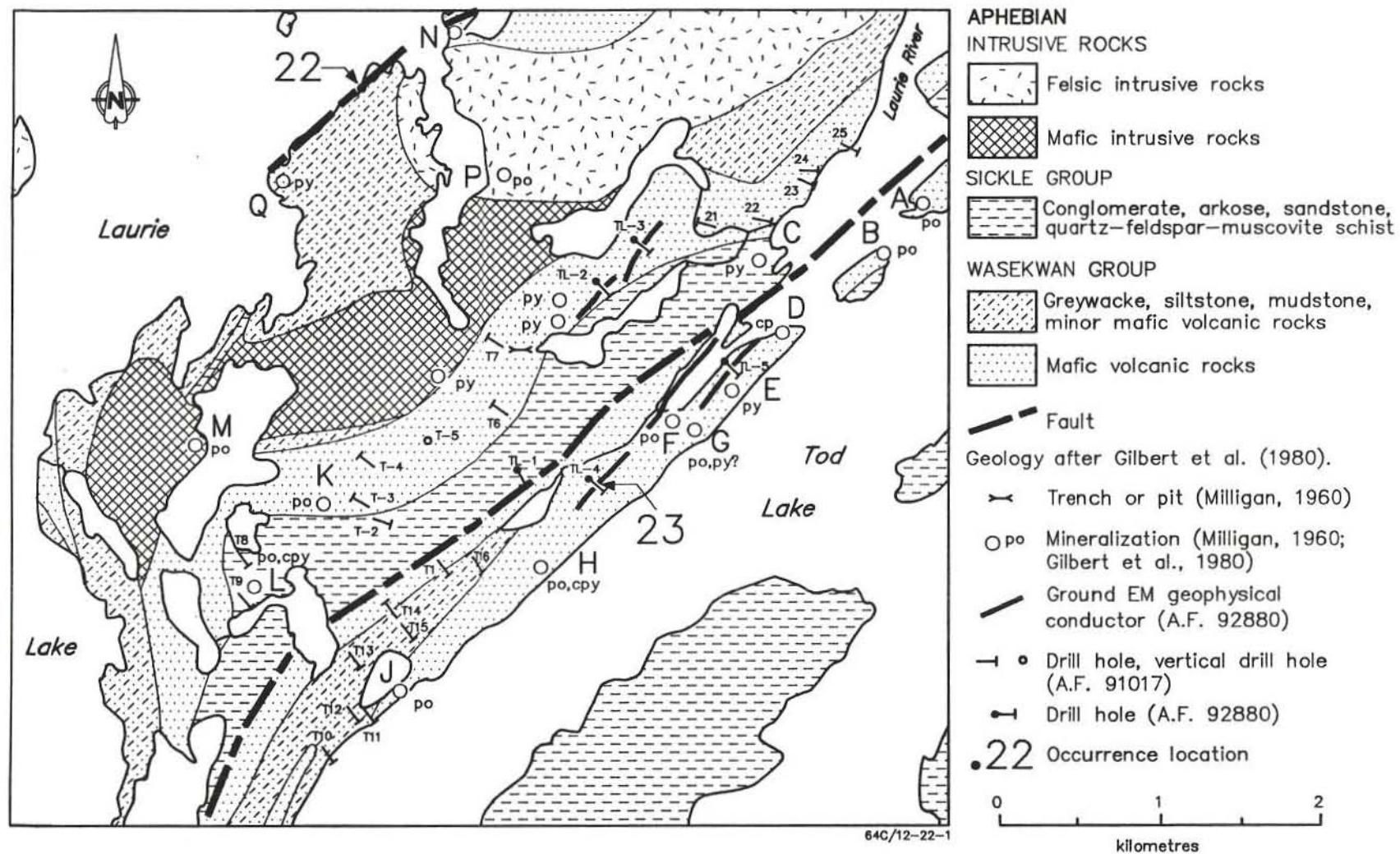


Figure 22-1: Geological setting of occurrences 22 and 23.

LOCATION: 23

NAME: Tod/Laurie Peninsula

UTM: 6274128N/329317E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or by bush aircraft to Tod Lake.

EXPLORATION SUMMARY:

The exploration history is detailed in Mineral Inventory Card 64C/12 Pyr1. The Dixie group of claims was staked partly by D.R. Russell and by C.J. Cameron in 1947. D.R. Russell held all the claims in 1948. Five trenches were reported as assessment work in 1948, but only a small prospect pit was found by Milligan (1960, p. 197). The claims lapsed in 1949.

Airborne EM and magnetometer surveys were carried out by Selco Exploration Company Limited in 1960 (A.F. 91626). The Fox group of claims was staked by Murray MacDonald in 1961 and may have been explored by Selco Exploration Company Limited (A.F. 91017). The claims lapsed in 1962.

A ground horizontal loop EM survey (A.F. 92228) and a 21-hole, 1048 m, diamond drill program were carried out by SGM in 1961 (A.F. 91017). Airborne geophysical surveys were carried out by Dome Exploration (Canada) Limited in 1969 (A.F. 91674) and SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological mapping (1:63 360) and rock geochemical sampling program was done by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217).

Falconbridge Nickel Mines Limited staked CB 6197 and CB 6199 in 1978 and Tod 2 to 5 in 1983. Five holes totalling 621 m were drilled in 1983 (A.F. 92880). The area was reopened for staking in 1989.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic volcanic and sedimentary rocks and Sickle Group sedimentary rocks (Fig. 22-1; Gilbert *et al.*, 1980). Wasekwan Group rocks include greywacke, siltstone and mudstone, massive and pillowed aphyric basalt, and tuffaceous basalt. Sickle Group rocks include muscovite-bearing arkose and pebbly greywacke, and conglomerate with quartz-feldspar porphyry, sedimentary, volcanic and granitoid clasts in a greywacke matrix (K. Brewer, field notes, 1984).

Drill holes TL-1 through TL-5 intersected mafic volcanic flow and fragmental rocks, dacitic fragmental rocks, "mineralized exhalite" (cherty rock), and graphitic argillite (A.F. 92880). Drill holes T1 through T16 and DDH 21 through 25 intersected greywacke and "slaty greywacke", graphitic schist, "impure quartzite", quartz-biotite gneiss, mafic tuff and locally garnetiferous massive mafic volcanic rocks (A.F. 91017).

AREA: Between Tod and Laurie lakes (Fig. 22-1)

AIRPHOTO: A24297-133, A24297-180

MINERALIZATION:

DDH TL-4 intersected 3.3 m of near solid to solid pyrite and pyrrhotite in graphitic mafic to intermediate volcanic rocks. DDH TL-2 contained several "narrow" intersections of near solid to solid pyrrhotite and pyrite in rhyolite tuff. Other intersections from these and other "TL-" drill holes contained up to 15% pyrite and pyrrhotite in dacitic volcanic rocks and graphitic "exhalite" (A.F. 92880).

"Slaty sediments" or greywacke in DDH T1 through T16 and DDH 21 through 25 commonly contain minor pyrite, pyrrhotite and trace chalcopryite; locally, graphite or magnetite is present. Near solid to solid sulphide intersections in DDH T3 through T7, 0.7 to 7.7 m in core length, contain 20 to 65% pyrrhotite, 10 to 20% pyrite, and locally, graphite and/or traces of chalcopryite or sphalerite (A.F. 91017).

Stewart and Brewer (1984) report <1 to 12% pyrite and/or pyrrhotite disseminated in basalt flows and laminated tuffaceous (volcaniclastic?) outcrops. In places, mineralization occurs in lenses, <20 cm thick and up to 5 m long, with up to 20% disseminated sulphide minerals and trace chalcopryite. A small prospect pit at the southwestern end of an unnamed lake west of the Laurie River (Fig. 22-1) contains rusty weathered schistose silicified "greenstone" with minor pyrite parallel to schistosity (Milligan, 1960, p. 197).

Pyrite, pyrrhotite and chalcopryite occurrences are labelled A through M in Figure 22-1:

- (A) "Locally, disseminated pyrrhotite mineralization in fine grained hornblende gneiss. Some minor faulting (cutting one-and-a-half foot quartz vein?)" (observed by M.S. Stanton in 1948, reported in Milligan, 1960, p. 287);
- (B) "Pyrrhotite in greenstone" (Milligan, 1960, p. 286);
- (C) "Sparse pyrite in fine grained greenstone(?) with some interbedded quartzites" (Milligan, 1960, p. 289);
- (D) "Rare chalcopryite" (Milligan, 1960, p. 289);
- (E) "Small amount of pyrite" (Milligan, 1960, p. 289);
- (F) "Minor amount (<1%) sulphide (pyrrhotite)" (Milligan, 1960, p. 289);
- (G) "Gossan and sulphide. Tr. Au, Nil Ni" (Milligan, 1960, p. 289);
- (H) pyrrhotite and chalcopryite occurrence noted by Gilbert *et al.* (1980) - no details;

- (J) "Considerable sulphide: pyrite, pyrrhotite, arsenopyrite(?)" (Milligan, 1960, p. 289); corresponds with a pyrrhotite occurrence noted by Gilbert *et al.* (1980);
- (K) pyrrhotite occurrence noted by Gilbert *et al.* (1980) - no details;
- (L) pyrrhotite and chalcopyrite occurrence noted by Gilbert *et al.* (1980) - no details;
- (M) pyrrhotite occurrence noted by Gilbert *et al.* (1980) - no details.

GEOCHEMICAL DATA:

Assays of 0.01 to 0.04% Cu, 0.01 to 0.05% Zn, tr. to 2.7 g/t Ag and nil to tr. Au are reported in drill logs for DDH TL-1 through TL-5. Some major and trace element analyses are presented in logs for these holes as well; these analyses range from 7 to 173 ppm Cu, 8 to 262 ppm Zn and <10 to 40 ppb Au (A.F. 92880).

CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Most of the drill holes in this area intersected Fe-sulphide mineralization associated with graphitic sedimentary and dacitic to mafic volcanic rocks.

REFERENCES:

- Assessment Files 91017, 91626, 91674, 91696, 92217, 92228, 92880
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Mineral Inventory Card 64C/12 Pyr1
Manitoba Energy and Mines, Geological Services Branch.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.
- Stewart, P.W. and Brewer, K.
1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

LOCATION: 24

NAME: South Laurie

UTM: 6274113N/325145E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Laurie Lake.

EXPLORATION SUMMARY:

Caimito 5 was staked by W.J. Christie and assigned to J.D. Christie in 1938. In 1939, 152.4 m of diamond drilling was done on the Caimito 2, 3, 5, 6 and 8 claims (Manitoba Mines Branch, 12th Annual Report, p. 42). Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217). Jackson (1988) notes that evidence of old drilling, trenching and linecutting programs is present in the area. For a summary of other exploration activity in this area, see Location 25.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic and felsic volcanic rocks, greywacke, siltstone, mudstone, conglomerate, and Sickie Group psammitic gneiss and calcareous sandstone (Fig. 24-1; Gilbert *et al.*, 1980). Fine grained, thinly layered, mafic tuffaceous(?) rocks, deformed mafic pillowed flows and a mafic breccia (brecciated flow?) occur to the north of the mineralized area (Fig. 24-2). Garnetiferous sections, 2 to 10 cm thick and subparallel to foliation, are present on the north shore of the peninsula. Late felsic dykes crosscut this unit (P. Stewart, field notes, 1984). Sickie Group greywacke, siltstone and calcareous sandstone occur to the south (Stewart and Brewer, 1984).

Jackson (1988) reports patchy cummingtonite and/or garnet-rich areas in amphibolite, areas of cummingtonite-garnet-sulphide and gedrite-garnet-sulphide in pillowed flows, and sillimanite-rich areas that crosscut bedding in nearby sedimentary rocks. To the southeast (Zone 1, Fig. 24-1), a 25 m thick alteration zone is hosted by amphibolite. Garnet-gedrite-cordierite-, gedrite-garnet-tourmaline-, and cummingtonite-plagioclase-quartz-rich rocks are present in this zone. These zones are recognized as Fe-Mg-Al enriched, Ca-Na-K depleted alteration zones in mafic to intermediate volcanic rocks and aluminous K-poor sedimentary rocks (Jackson, 1988).

MINERALIZATION:

A 1.1 by 4.7 m lens of pyrite-chalcopryrite mineralization (amounts not specified) is hosted by a rusty weathered garnet-anthophyllite-porphyroblastic rock (Stewart and Brewer, 1984). The mineralized area appears to

AREA: Southern Laurie Lake

AIRPHOTO: A24297-133

occur in the hinge of a small westward-plunging fold and is truncated to the west by a diabase dyke (Fig. 24-2). No evidence of alteration or mineralization is present along strike to the east, and it is postulated that the mineralization is fault bounded (P. Stewart, field notes, 1984). Field notes indicate that the sulphide zone crops out in a low-lying area along the lakeshore, and is underwater during periods of high water levels.

Two areas with minor disseminated pyrite, labelled A and B in Figure 24-1, were observed by Milligan (1960, p. 289).

GEOCHEMICAL DATA:

Geochemical analyses of three rock samples from this occurrence are presented in Table 24-1; sample locations are shown in Figure 24-2. Up to 2840 ppm Cu, 169 ppm Zn and 219 ppb Au were present in the samples.

CLASSIFICATION:

Stratabound massive sulphide type deposit; alteration zone associated with volcanic rocks. The association of pyrite and chalcopryrite with garnet-anthophyllite rocks represents a metamorphosed alteration zone of the type commonly associated with stratabound massive sulphide type deposits.

REFERENCES:

- Assessment File 92217
Manitoba Energy and Mines, Minerals Division.
- Annual Report on Mines and Minerals, 12th
Manitoba Energy and Mines, Mines Branch,
p. 42, 102.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and
volcaniclastic metasedimentary rocks in the
Lynn Lake area; Manitoba Energy and
Mines, Geological Paper GP80-1, 118p.
- Jackson, S.L.
1988: Alteration zones, structure and metamorphism of the Laurie Lake area; In Manitoba
Energy and Mines, Report of Field Activities, 1988, p. 178-182.

Milligan, G.C.

1952: Geology of the Laurie Lake area; Manitoba Department of Mines and Natural Resources, Mines Branch, Publication 50-7, 31p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

Stewart, P.W. and Brewer, K.

1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.

Unpublished Information File, 64C/12

Manitoba Energy and Mines, Minerals Division.

Table 24-1: Geochemical analyses of rock samples from occurrence 24

Sample Number	Sample Type	Cu ppm	Zn ppm	Pb ppm	Au ppb	Ag ppm	As ppm	Ni ppm	Cr ppm	Rock Type
097	1.1 m chip	2730	148	0	219	2	2	5	77	sulphide zone
098	4.7 m chip	2840	169	0	59	0	2	9	7	sulphide zone
101	grab	84	39	0	23	0	2	62	0	quartz boulder, rusty weathered

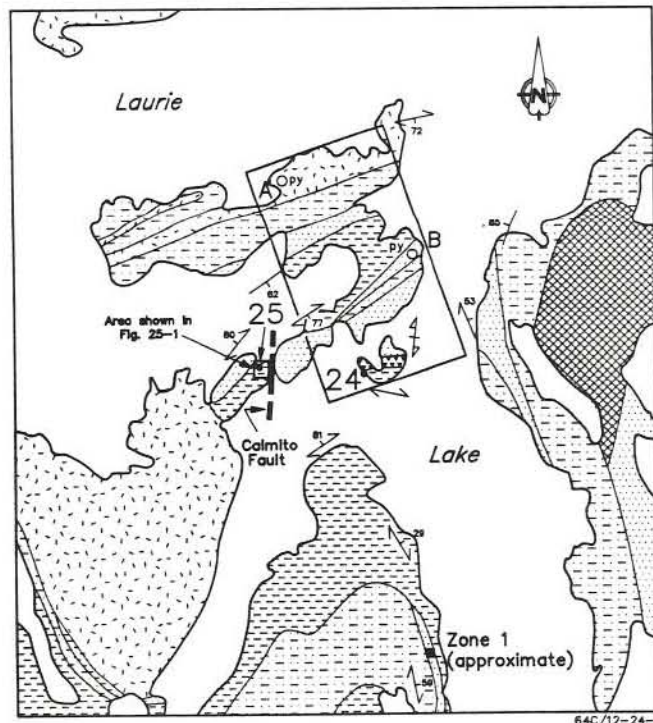
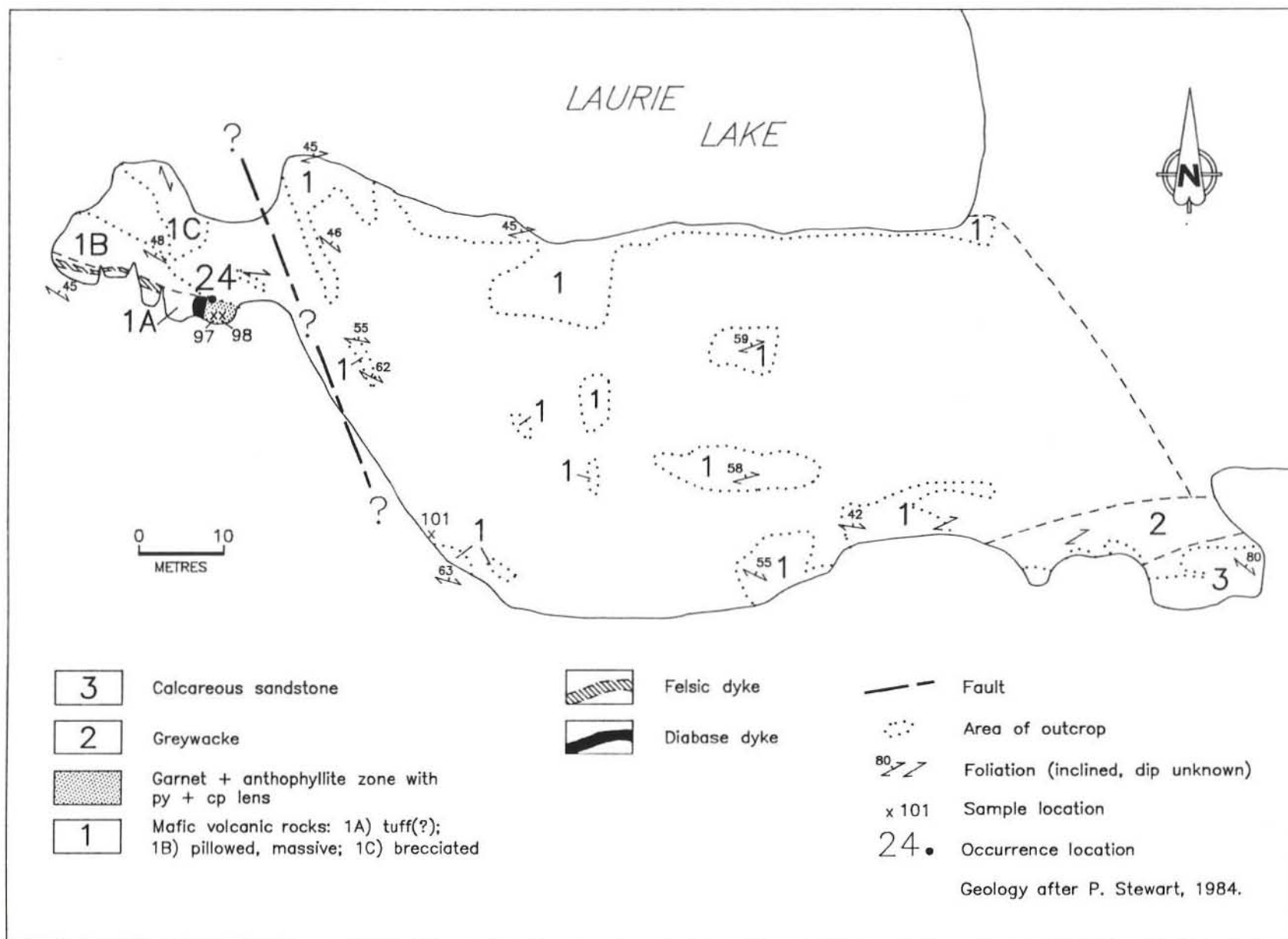


Figure 24-1: Geological setting of occurrences 24 and 25.



64C/12-24-2

Figure 24-2: Detailed geology at occurrence 24.

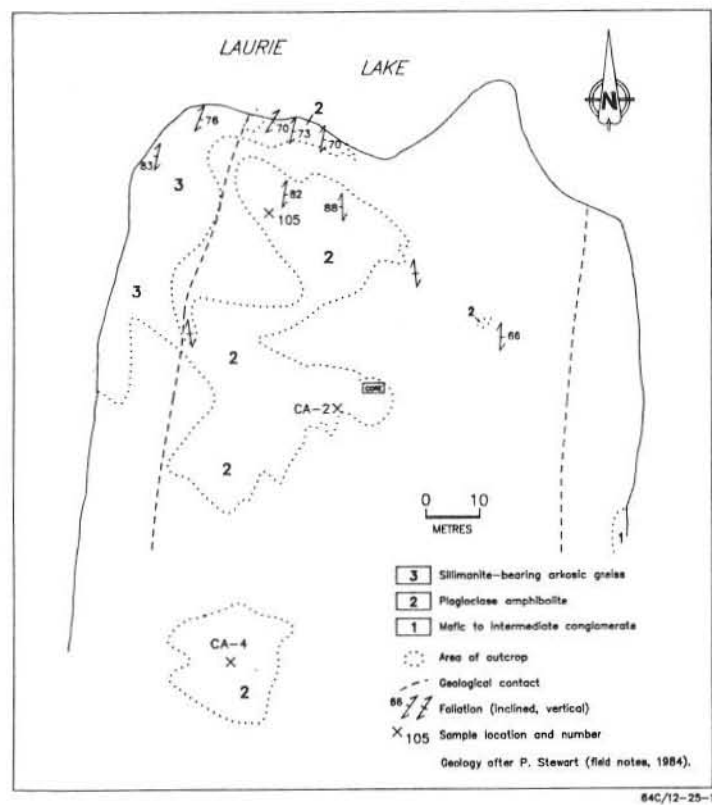


Figure 25-1: Detailed geology (post-flooding) of the island at occurrence 25 (Caimito).

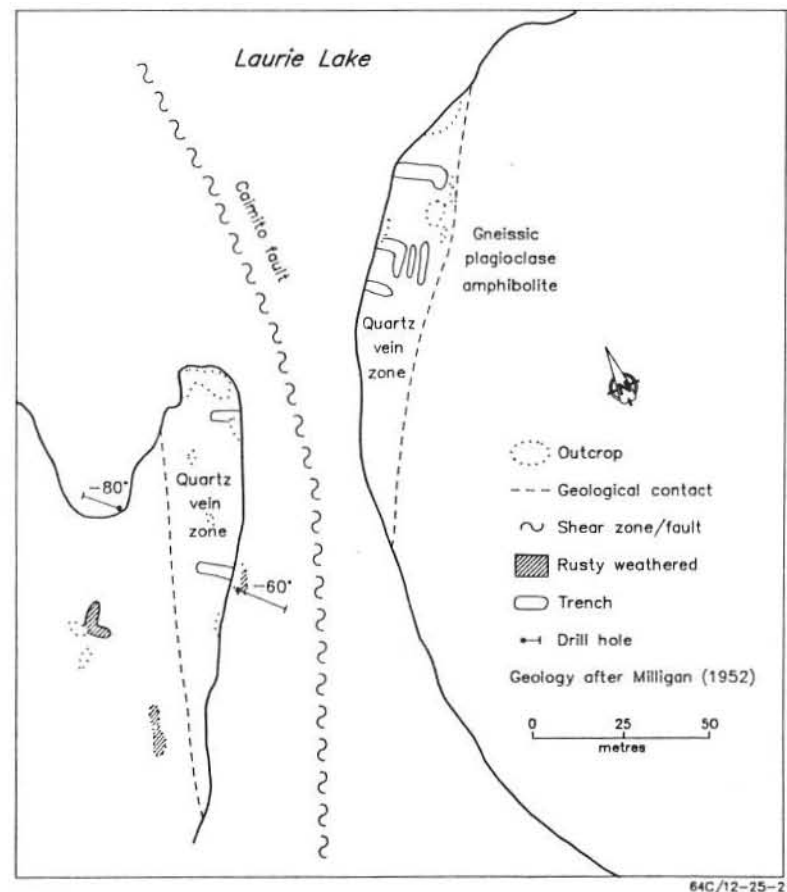


Figure 25-2: Location of trenches and drill holes (pre-flooding) at occurrence 25 (Caimito).

LOCATION: 25**NAME: Caimito****UTM: 6274222N/324581E****ACCESS:** By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Laurie Lake.**EXPLORATION SUMMARY:**

The exploration history of the Caimito occurrence is detailed in Mineral Inventory Card 64C/12 Au1. Caimito M.C. was staked by J.D. Christie in 1937. Rock trenching and diamond drilling were reported in 1938-40, followed by geological mapping (1:6000) by W.J. Farley in 1940 (Milligan, 1952, p. 28; Milligan, 1960, p. 197). Three holes totalling 129 m were drilled near the southern end of the channel between the peninsula and the large island to the east (Fig. 24-1; exact locations of drill holes unknown) and several pit samples were assayed for copper and gold (The Northern Miner, August 15, 1940; Manitoba Energy and Mines, Unpublished Information File, 64C/12).

Caimito Gold Mines Limited acquired the property in October 1940. Lease M 1158 was granted in 1941 and renewed in 1961. In 1953, most of the area was flooded when the Eager Lake dam was erected (Milligan, 1960). In 1951 prior to the flooding, SGM drilled several holes on behalf of Caimito Gold Mines Limited. One of the holes was drilled to a depth of 140 m from the north end of the channel on the east side in a northwesterly direction under the lake (Milligan, 1952).

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. The area was reopened for staking in 1977. A geological map (1:63 360) of the area was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217).

SGM staked CB 11409 in August 1981. The property was transferred to Hayes Resources Inc. in 1988, and then to Lynngold Resources Inc. in 1988.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic volcanic rocks and Sickle Group psammitic gneiss and calcareous sandstone (Fig. 24-1). At the occurrence, fine- to medium-grained plagioclase amphibolite contains discontinuous 5 mm thick bands that have different grain sizes and compositions. Sillimanite-porphyroblastic arkosic sandstone occurs to the west, and mafic to intermediate hornblende-bearing conglomerate occurs to the east (Fig. 25-1; P. Stewart, field notes, 1984). Milligan (1952) and Gilbert *et al.* (1980) interpreted the plagioclase amphibolite to have been derived from Wasekwan Group mafic volcanic rocks, and that quartz-

AREA: Southern Laurie Lake (Fig. 24-1)**AIRPHOTO: A24297-133**

rich bands represent interbedded sediments. However, Stewart (field notes, 1984) considers that the compositionally banded and medium grained nature of these rocks is evidence that they are derived from Sickle Group hornblende-plagioclase-rich greywacke. Milligan (1952; 1960, p. 197) describes the Caimito Fault as a shear zone with "small" displacement, along which quartz replaces the sheared amphibolite. One of the drill holes reported in The Northern Miner (August 15, 1940) intersected "chlorite schist, biotite schist, hornblende schist, ankerite, calcite and pyroxene; (and locally) small amounts of graphite and actinolite".

MINERALIZATION:

Milligan (1952; 1960, p. 197) describes an approximately 60 m wide zone of silicified amphibolite that contains greyish glassy ribbon-like quartz veins with chloritized inclusions of wall rock (Fig. 25-2). Mineralization in the quartz comprises trace to minor disseminated pyrite, pyrrhotite and chalcopryrite and rare galena; it is concentrated along fractures in the quartz, adjacent to wall rocks and to chloritized wall rock inclusions. Milligan (1952) mentions the presence of "some massive sulphides" in a small pit. A later generation of white glassy quartz was recognized by W.J. Farley in 1940 (Milligan, 1952).

Laurie Lake was flooded as a consequence of hydroelectric development in 1953: Stewart and Brewer (1984) did not locate sulphide or gold mineralization in outcrop, and it is presumed that the occurrence was underwater at the time of their examination.

GEOCHEMICAL DATA:

Milligan (1952) describes the following assay results:

1. grab samples from the small pit with solid sulphide minerals: up to 19.2 g/t Au; The Northern Miner (August 15, 1940) reports an additional grab sample from the pit assaying 24.7 g/t Au. (The location of the pit is unavailable.)
2. grab sample, unknown location: 2.1 g/t Au;
3. 1.4 m chip sample from a pit on the east side of the channel: 1.0 g/t Au;
4. drill core samples from the westernmost drill hole (Fig. 25-2): tr. to 2.7 g/t Au over 1.5 to 2.4 m sample lengths (originally reported in The Northern Miner, August 15, 1940);

5. drill core samples from a hole drilled along the northeast end of the channel: 1.21 to 2.18% Cu and tr. to 2.7 g/t Au over sample lengths of 0.3 to 0.7 m (reported by Caimito Gold Mines, Ltd.).

Geochemical analyses for three rock samples taken by P. Stewart, located on Figure 25-1, are given in Table 25-1.

CLASSIFICATION:

Vein type deposit; multiple veins. Discontinuous quartz veins contain gold, pyrite, pyrrhotite, chalcopyrite and galena.

REFERENCES:

- Assessment Files 91696, 92217
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1952: Geology of the Laurie Lake area, Granville Lake Mining Division, northern Manitoba; Manitoba Mines and Natural Resources, Mines Branch, Publication 50-7, 31p.

- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Mineral Inventory Card 64C/12 Au1
Manitoba Energy and Mines, Geological Services Branch.
- The Northern Miner
August 15, 1940.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.
- Stewart, P.W. and Brewer, K.
1984: Mineral deposit studies in the western Lynn Lake greenstone belt; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1984, p. 17-19.
- Unpublished Information File, 64C/12
Manitoba Energy and Mines, Minerals Division.

Table 25-1: Geochemical analyses of rock samples from occurrence 25

Sample Number	Sample Type	Cu ppm	Zn ppm	Pb ppm	Au ppb	Ag ppm	As ppm	Ni ppm	Cr ppm	Rock Type
105	grab	102	64	2	57	0	2	20	1095	plagioclase amphibolite, tr. py
CA-2	chip (length?)	61	58	11	42	1	2	21	20	quartz vein, amphibolite
CA-4	grab	51	71	5	31	1	2	48	156	plagioclase amphibolite

LOCATION: 26

NAME: Southwestern Tod

UTM: 6268832N/324617E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Tod Lake.

EXPLORATION SUMMARY:

In 1961, claims Tar 60 to 65 were staked by Alan Lindsay and assigned to Hudson Bay Exploration and Development Company Limited soon after. The claims were cancelled in 1962. In 1969 an airborne radiometric survey was flown by Dome Exploration (Canada) Limited under Airborne Permit 79 (A.F. 91674). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A geological mapping (1:63 360) and rock geochemical sampling program was conducted by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217).

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group basalt, greywacke, siltstone, mudstone and migmatite, and by Sickle Group conglomerate and sandstone, and derived schist and gneiss (Fig. 26-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Gilbert *et al.* (1980) note occurrences of pyrite and pyrrhotite. The pyrite occurrence, labelled site A in Figure 26-1, consists of <2% fine grained disseminated pyrite in garnetiferous biotitic greywacke or conglomerate; the pyrrhotite occurrence, labelled site B in Figure 26-1, consists of a rusty weathered zone, 5 to 7 cm wide and 2 m long, with disseminated pyrite (amount not specified) in black to green amphibolite (P. Stewart, field notes, 1984).

Milligan (1960, p. 289) noted pyrite at this location and on several nearby outcrops that are labelled C through E in Figure 26-1:

AREA: Southwestern Tod Lake

AIRPHOTO: A24197-132

- (C) "Very sparse pyrite in greenstone";
- (D) "Rare and highly disseminated pyrite"; and
- (E) "Sparse pyrite in hornblende schist (greenstone)".

GEOCHEMICAL DATA:

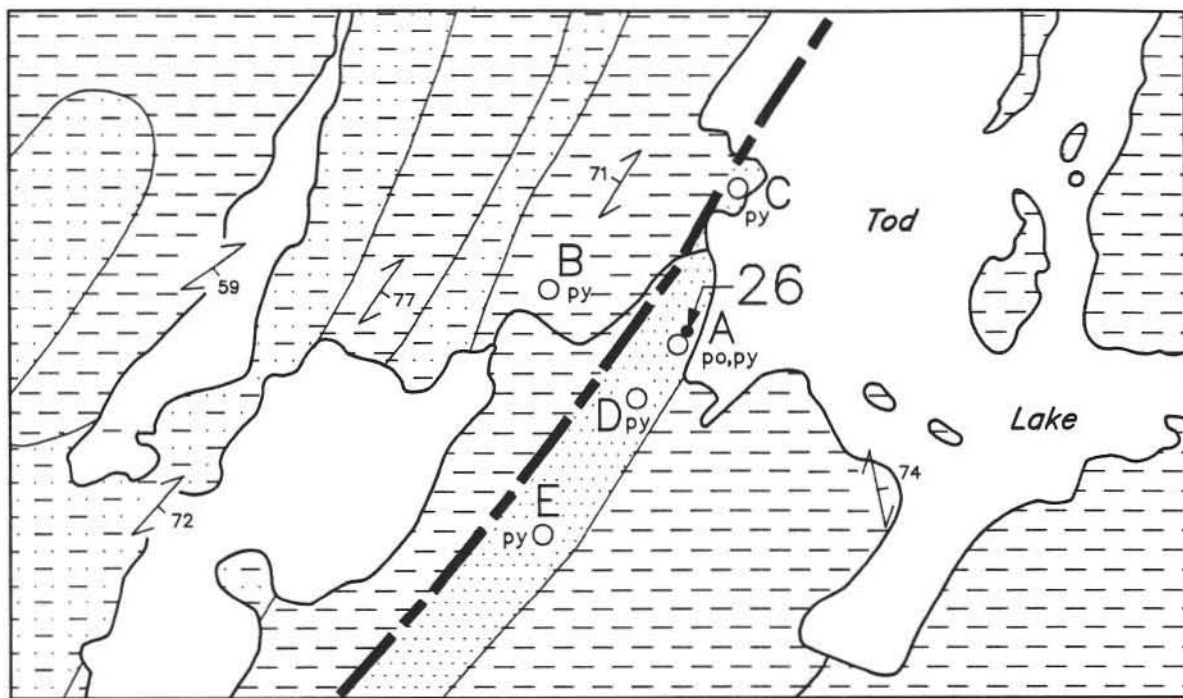
None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

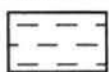
- Assessment Files 91674, 92217
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.



84C/12-26-1

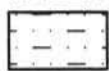
APHEBIAN

SICKLE GROUP



Conglomerate, sandstone, derived schists and gneisses

WASEKWAN GROUP



Greywacke, siltstone, mudstone, migmatite



Basalt



Fault



Foliation (inclined)



Mineralization (Gilbert et al., 1980; Milligan, 1960)

• 26

Occurrence location



kilometres

Geology after Gilbert et al. (1980).

Figure 26-1: Geological setting of occurrence 26.

LOCATION: 27

NAME:

UTM: 6271433N/326378E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Tod Lake.

EXPLORATION SUMMARY:

Tod 78 was staked by D. Countryman in April 1961. SGM conducted a horizontal loop EM survey (date unknown) (A.F. 92228). A drill hole (No. 10) was plotted on the map in A.F. 92228, but it is not clear if this hole was drilled or merely proposed. The claim lapsed in 1963.

An airborne radiometric survey was done by Dome Exploration (Canada) Limited in 1969 (A.F. 91674), followed by airborne EM and magnetometer surveys by SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. Falconbridge Nickel Mines Limited carried out a reconnaissance geological mapping (1:63 360) and rock geochemical sampling program in 1977 (A.F. 92217).

Falconbridge Limited staked Tod 1 (W 47416) in 1983. The claim lapsed in April 1989.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic volcanic rocks, greywacke, siltstone and mudstone, and Sickle Group conglomerate, psammitic gneiss and calcareous sandstone (Fig. 27-1; Gilbert *et al.*, 1980). A north-northeast trending fault transects the area.

MINERALIZATION:

Mineralization was noted in five areas, labelled A through E in Figure 27-1:

- (A) "Disseminated pyrite and quartz veins in greenstone";
- (B) "Rusty zone 15 to 20 feet (4.6 to 6.1 m) along water's edge. Pyrite and possibly pyrrhotite";

AREA: Between Laurie and Tod lakes

AIRPHOTO: A24297-132

- (C) "Disseminated pyrrhotite in greenstone";
- (D) "Disseminated pyrrhotite in greenstone";
- (E) "Disseminated pyrite in greenstone" (Milligan, 1960; p. 289).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

- Assessment Files 91674, 91696, 92217, 92228
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

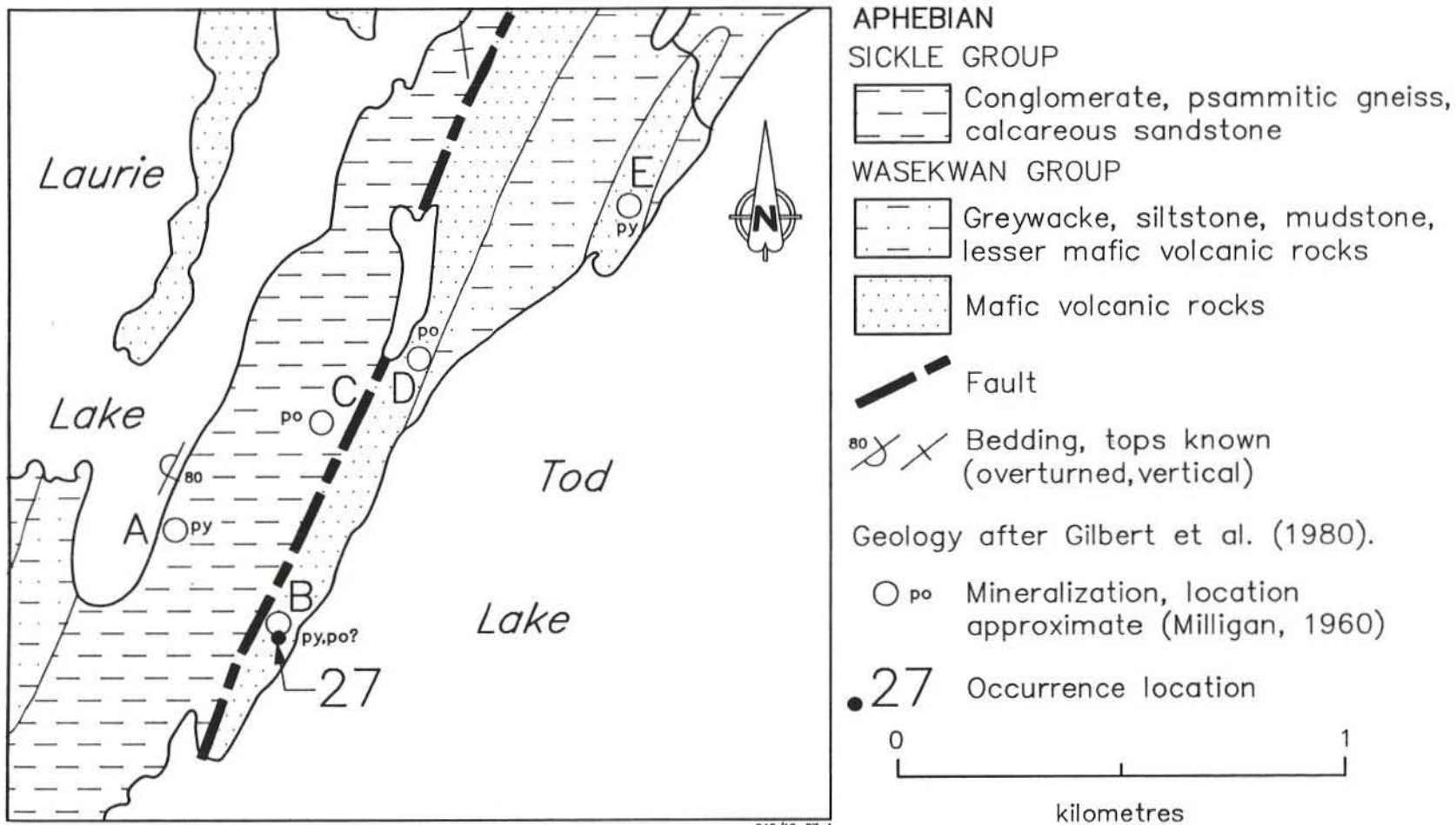


Figure 27-1: Geological setting of occurrence 27.

LOCATION: 28

NAME:

UTM: 6274042N/339646E

ACCESS: By vehicle along trails from the Fox mine site (Location 1).

EXPLORATION SUMMARY:

The area was first staked as D.C. 11 and 14 by Frank Needham in 1947. The claims were transferred to James A. Syme and optioned to Falconbridge Nickel Mines, Limited for a period of two years. Falconbridge carried out a geological mapping program (1:4800) and a magnetometer survey in 1947 (A.F. 91008; Unpublished Information File, 64C/12).

Airborne EM and magnetometer surveys were done by Canadian Nickel Company Limited in 1954 (A.F. 91615), Selco Exploration Company Limited in 1960 (A.F. 91626), Roberts Mining Co. in 1968 (A.F. 91441) and SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. An airborne radiometric survey was done by Dome Exploration (Canada) Limited in 1969 (A.F. 91674).

GEOLOGICAL SETTING:

The area is underlain by gabbro, which is bordered to the south by Sickle Group sandstone, derived schist and gneiss, and lesser conglomerate, and to the north by tonalite (Fig. 28-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Milligan (1960, p. 288) quotes field notes by M.S. Stanton: "locally a little pyrite and pyrrhotite in dioritic gabbro along east edge of high hill".

AREA: Approximately 200 m north of Pyta Lake
AIRPHOTO: A24297-63

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 91008, 91441, 91615, 91626, 91674, 91696
Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcaniclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

Unpublished Information Files, 64C/12

Manitoba Energy and Mines, Minerals Division.

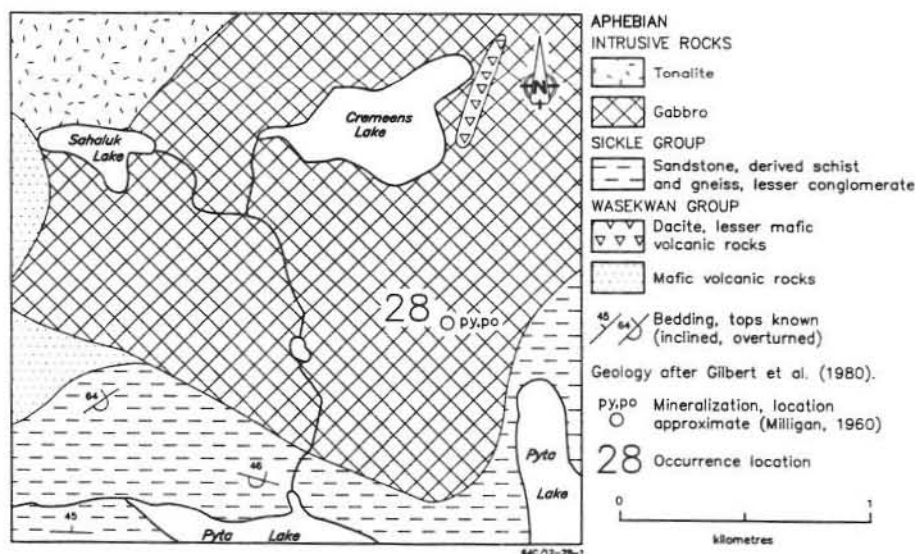


Figure 28-1: Geological setting of occurrence 28.

LOCATION: 29

NAME:

UTM: 6285258N/344365E

ACCESS: By Provincial Road 396, then by boat on Dunphy Lakes.

EXPLORATION SUMMARY:

Airborne EM and magnetometer surveys were done by Canadian Nickel Company Limited in 1954 (A.F. 91615), and by Selco Exploration Company Limited in 1960 (A.F. 91626).

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, siltstone, mudstone, and mafic volcanic rocks. These rocks are bordered to the north and south by tonalitic plutons (Fig. 29-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Sites of Fe-sulphide mineralization, labelled A through C in Figure 29-1, are quoted from M.S. Stanton's field notes by Milligan (1960, p. 287, 288):

- (A) "A little pyrite and pyrrhotite in siliceous fine grained green rock cutting gabbro";
- (B) "A little sulphide associated with carbonate filled fractures in greenstone (and glassy quartz)";
- (C) "Small amount disseminated pyrite in garnetiferous greenstone and cut by quartz".

AREA: (Central) Dunphy Lakes

AIRPHOTO: A24298-91

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 91615, 91626, 91696

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

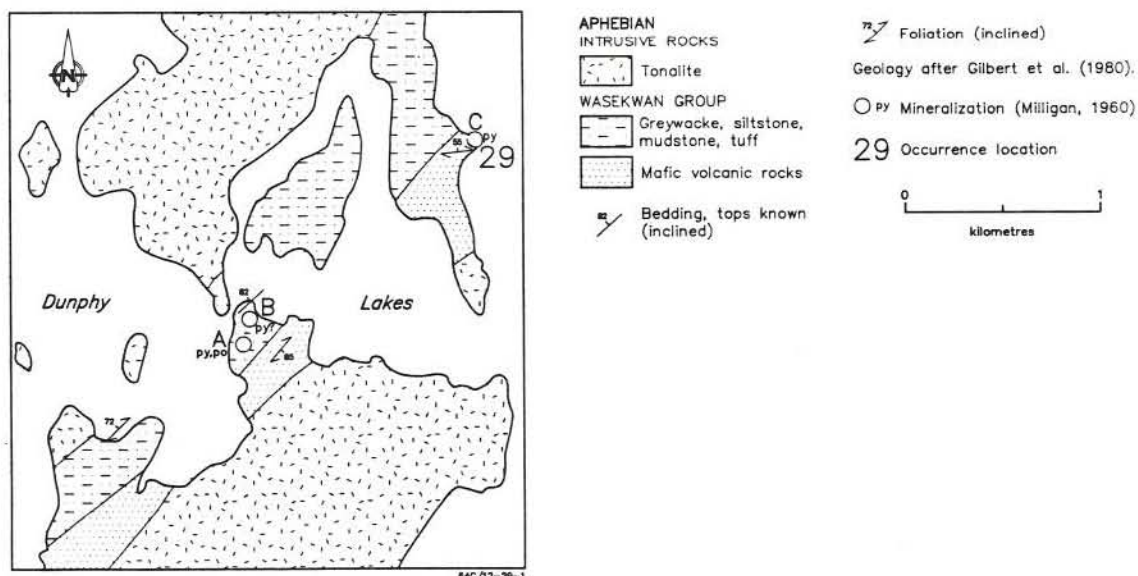


Figure 29-1: Geological setting of occurrence 29.

LOCATION: 30

NAME:

UTM: 6284624N/337454E

ACCESS: By Provincial Road 396, then by boat on Dunphy Lakes and traverse.

AREA: Approximately 800 m west of Dunphy Lakes

AIRPHOTO: A24298-16

EXPLORATION SUMMARY:

Airborne EM and magnetometer surveys were done by Canadian Nickel Company Limited in 1954 (A.F. 91615) and SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

GEOLOGICAL SETTING:

The area is underlain by tonalite (Fig. 30-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Milligan (1960, p. 287) quotes field notes by M.S. Stanton: "a few small flecks of pyrite visible with lens in grey hornblende-quartz diorite, massive".

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 91615, 91696

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

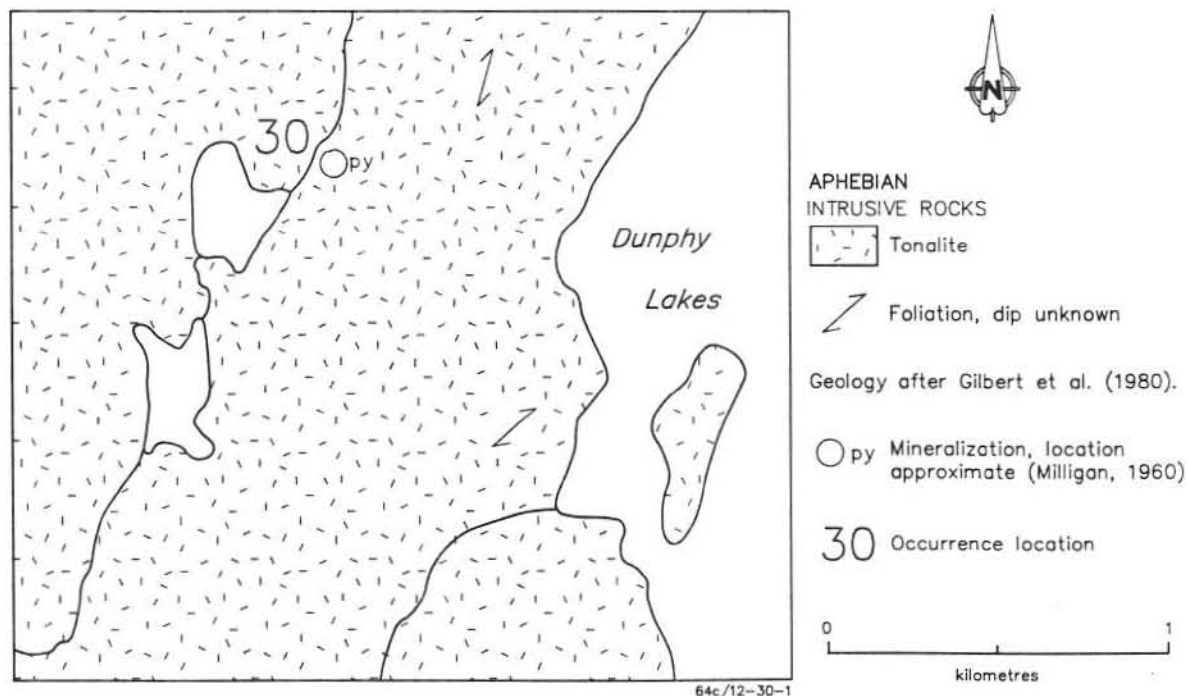


Figure 30-1: Geological setting of occurrence 30.

LOCATION: 31

NAME:

UTM: 6288029N/332467E

ACCESS: By bush aircraft to Wilkin Lake.

AREA: West shore of Wilkin Lake

AIRPHOTO: A24297-175

EXPLORATION SUMMARY:

Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

GEOLOGICAL SETTING:

The east side of Wilkin Lake is underlain by tonalite (Fig. 31-1). The west side of Wilkin Lake is part of an area denoted as drift covered by Gilbert *et al.* (1980).

MINERALIZATION:

Milligan (1960, p. 286) quotes M.S. Stanton's field notes: "Sulphides (pyrite) in coarse grained diorite, scattered throughout."

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 91696

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

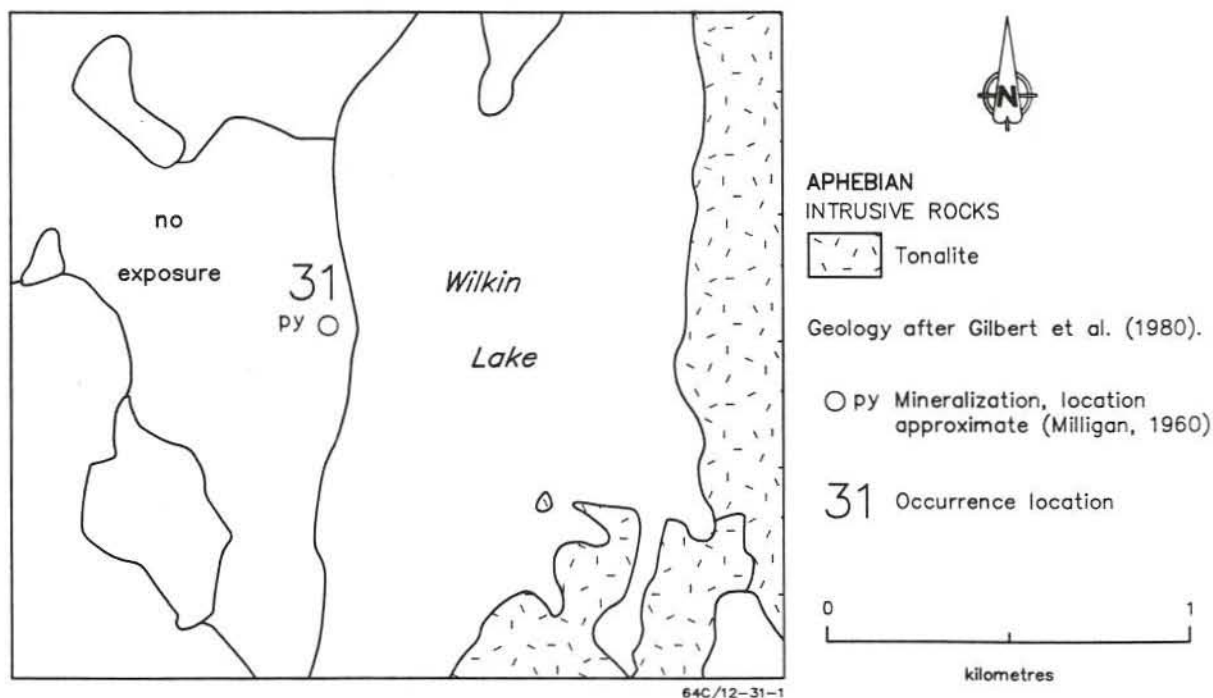


Figure 31-1: Geological setting of occurrence 31.

LOCATION: 32

NAME:

UTM: 6274927N/346206E

ACCESS: By bush aircraft.

EXPLORATION SUMMARY:

An airborne radiometric survey was done by Dome Exploration (Canada) Limited in 1969 (A.F. 91674), followed by airborne EM and magnetometer surveys by SGM in 1972 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

GEOLOGICAL SETTING:

The area is underlain by Sickle Group psammitic gneiss and calcareous sandstone; conglomerate and arkose occur to the west (Fig. 32-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Milligan (1960, p. 286) quotes T.A. Oliver's field notes: "some chalcopryite in groundmass of conglomerate".

GEOCHEMICAL DATA:

None.

AREA: North shore of Conglomerate Lake

AIRPHOTO: A24298-87

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 91674, 91696

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

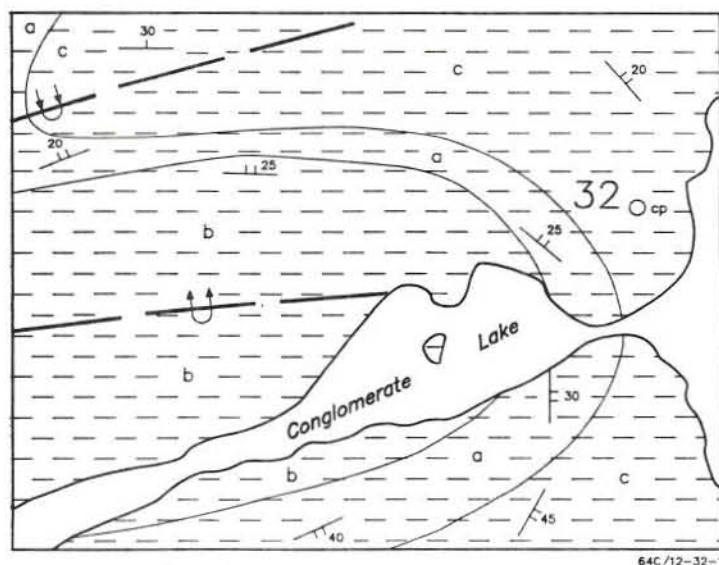
1980: Geology of the metavolcanic and volcaniclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.


Questor Surveys Ltd.





1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.



APHEBIAN

SICKLE GROUP

-  Sedimentary rocks
 - a) conglomerate, greywacke matrix \pm hornblende
 - b) muscovite-bearing arkose, pebbly arkose
 - c) hornblende-bearing psammitic gneiss, calcareous sandstone

-  Antiform (overturned)
-  Synform (overturned)
-  Bedding, tops known (inclined)
-  Bedding, tops unknown (inclined)

Geology after Gilbert *et al.* (1980).

 Mineralization, location approximate (Milligan, 1960)

32 Occurrence location

0 1
kilometres

Figure 32-1: Geological setting of occurrence 32.

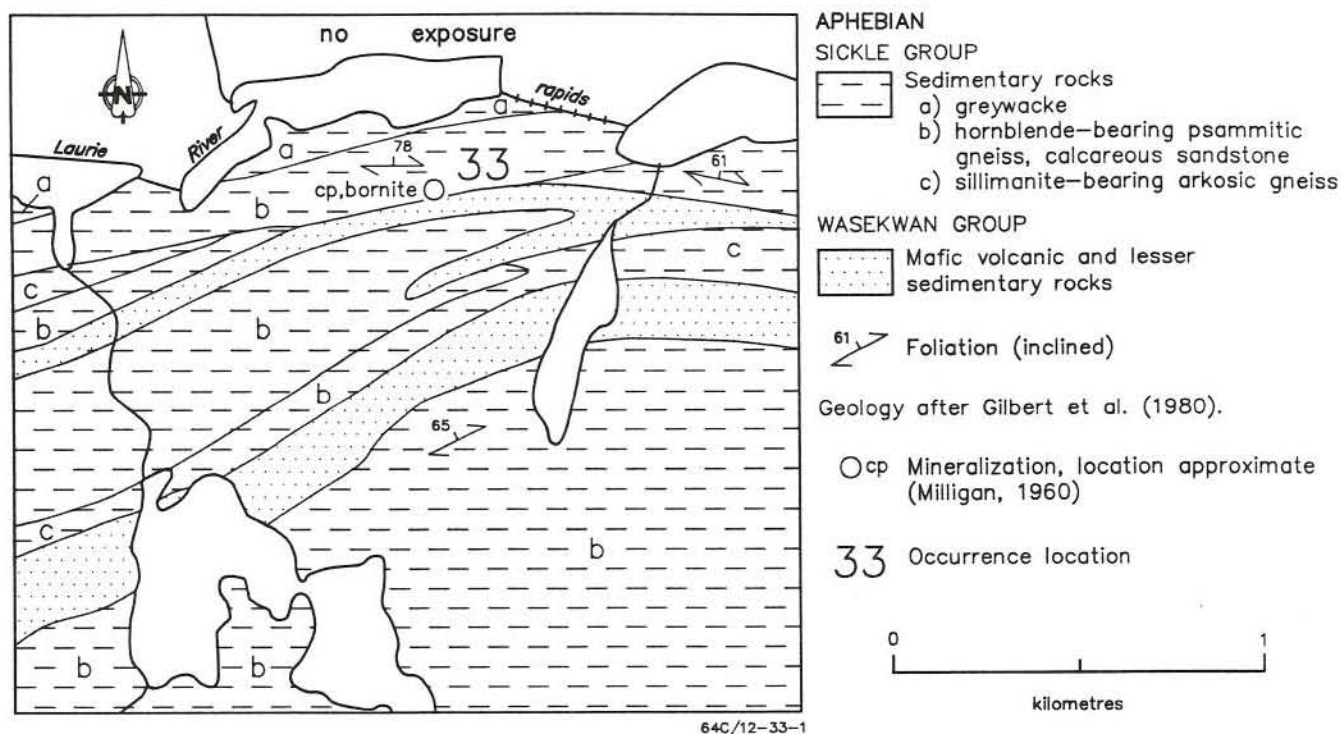


Figure 33-1: Geological setting of occurrence 33.

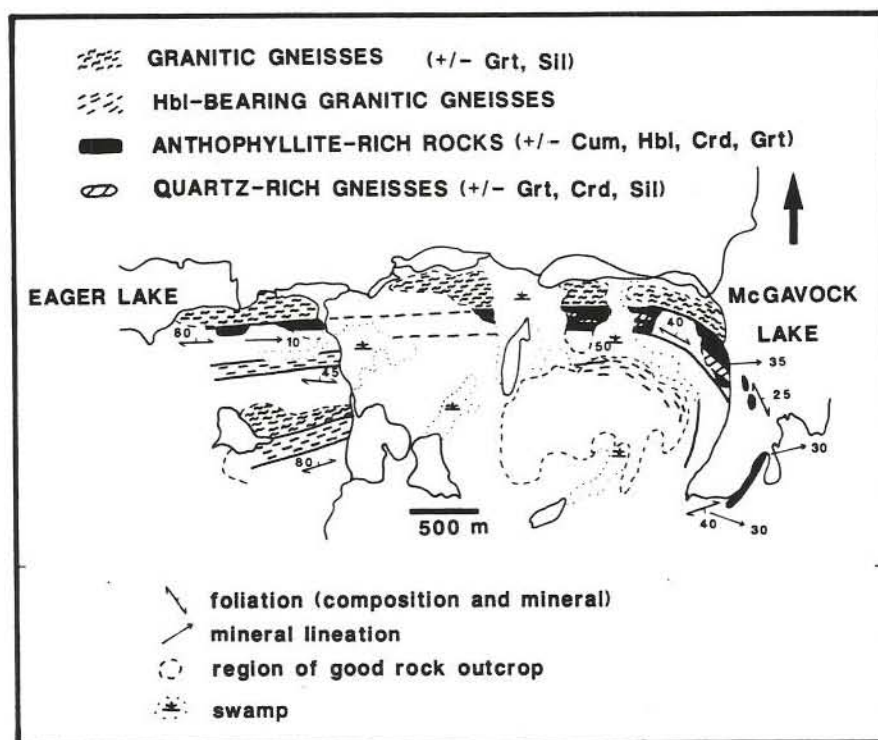


Figure 33-2: The Eager-McGavock Lake alteration zone (from Jackson, 1988).

LOCATION: 33

NAME:

UTM: 6268738N/344430E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat and traverse; or, by bush aircraft to the Laurie River and traverse.

EXPLORATION SUMMARY:

An airborne radiometric survey was done by Dome Exploration (Canada) Limited in 1969 (A.F. 91674), followed by an airborne EM and magnetometer survey by SGM in 1972 (A.F. 91696).

GEOLOGICAL SETTING:

The area is underlain by Sickle Group greywacke, psammitic gneiss, calcareous sandstone and arkosic gneiss, and Wasekwan Group mafic volcanic and lesser sedimentary rocks (Fig. 33-1; Gilbert *et al.*, 1980).

MINERALIZATION:

This occurrence may be associated with the Eager-McGavock Lake alteration zone, which is indicated to be the largest in the Lynn Lake region (Jackson, 1988; Fig. 33-2). Stanton (1949) mapped garnet-actinolite-cordierite-quartz-plagioclase gneiss in this area, and Oliver (1952) mapped garnet-cordierite-biotite-hornblende-quartz-plagioclase rocks west of McGavock Lake (NTS 64C/11). Two types of alteration assemblages are present: (1) anthophyllite-gedrite-rich rocks with cummingtonite, hornblende, cordierite and garnet, and (2) quartz-rich gneiss with garnet, cordierite and sillimanite (Fig. 33-2). This zone is interpreted as a metamorphosed chlorite-quartz \pm clay layer that either was deposited in water as volcanic ash and then altered, or was deposited as a layer of previously altered, reworked material (Jackson, 1988).

Milligan (1960, p. 287) quotes M.S. Stanton's field notes: "bornite and chalcopyrite in 'igneous gneiss'".

GEOCHEMICAL DATA:

None.

AREA: South of the Laurie River near McGavock Lake

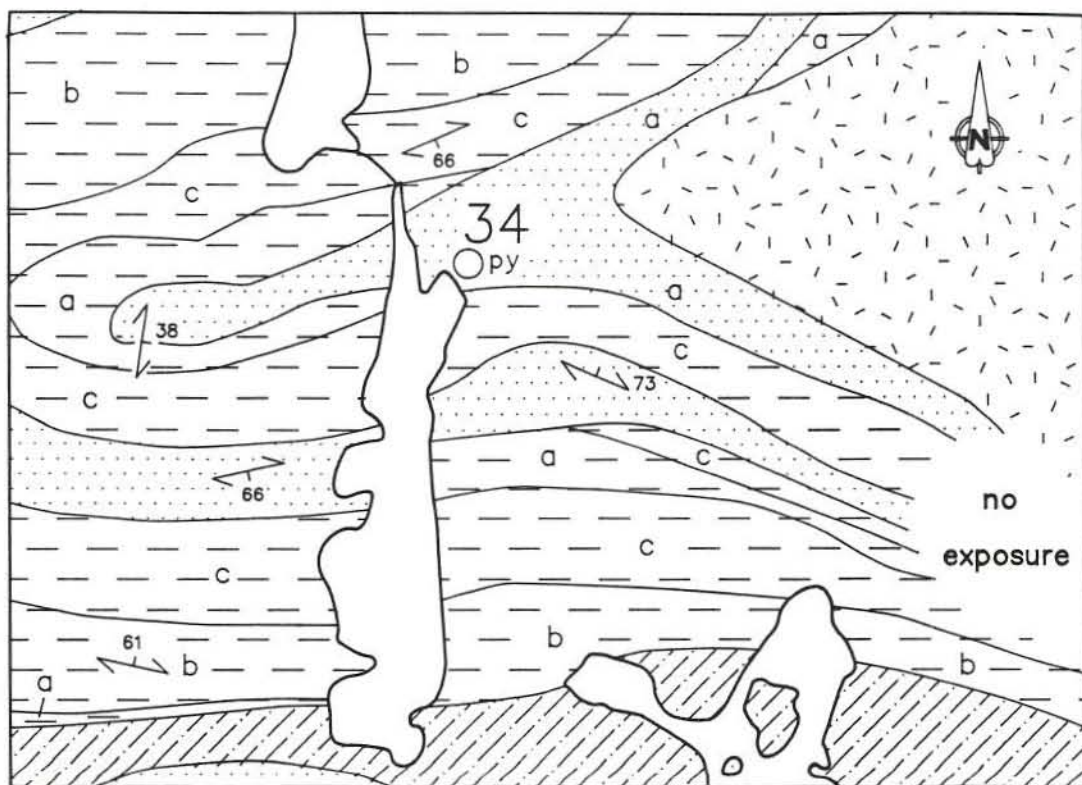
AIRPHOTO: A24298-85

CLASSIFICATION:

Disseminated mineralization - not classified. The laterally extensive zone of Fe-Mg-Al enriched, Ca-K-Na depleted rocks may represent material that was deposited distal to an exhalative vent. Jackson (1988) did not record the presence of sulphides associated with this alteration zone.

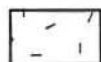
REFERENCES:

- Assessment Files 91674, 91696
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Jackson, S.L.
1988: Alteration zones, structure and metamorphism of the Laurie Lake area; In Manitoba Energy and Mines, Report of Field Activities, 1988, p. 178-182.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Oliver, T.A.
1952: Geology of the Counsell Lake and Wilmot Lake area; Manitoba Mines Branch, Publication 50-9.
- Stanton, M.S.
1949: Geology of the Dunphy Lakes area, Granville Lake Division, Manitoba; Manitoba Mines and Natural Resources, Mines Branch, Publication 48-4, 34p.



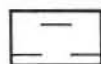
APHEBIAN

INTRUSIVE ROCKS



Granite, granodiorite, tonalite

SICKLE GROUP



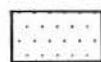
Sedimentary rocks

a) greywacke

b) hornblende-bearing psammitic gneiss, calcareous sandstone

c) sillimanite-bearing arkosic gneiss

WASEKWAN GROUP



Mafic volcanic and lesser sedimentary rocks

a) garnet-actinolite-cordierite-quartz-plagioclase gneiss

WASEKWAN (?) GROUP



Greywacke, migmatite (*Burntwood River Metamorphic Suite*)



Foliation (inclined)

Geology after Gilbert et al. (1980) and Stanton (1949).

○ py Mineralization, location approximate (Milligan, 1960)

34 Occurrence location

Figure 34-1: Geological setting of occurrence 34.

LOCATION: 34

NAME:

UTM: 6265921N/344808E

ACCESS: By bush aircraft and traverse from McGavock Lake.

EXPLORATION SUMMARY:

An airborne EM and magnetometer survey was done by SGM in 1972 (A.F. 91696).

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic volcanic and sedimentary rocks and Sickle Group sedimentary rocks (Fig. 34-1). Felsic intrusive rocks occur to the east, and greywacke of the Burntwood River Metamorphic Suite occurs to the south (Gilbert *et al.*, 1980).

MINERALIZATION:

Location 34 consists of "a little pyrite in hornblende-oligoclase gneiss" (Milligan, 1960, p. 287). Garnet-actinolite-cordierite-quartz-plagioclase gneiss, which occurs to the northeast (Fig. 34-1; Stanton, 1949), may represent a metamorphosed Fe-Mg-Al-enriched, Ca-Na-K-depleted alteration zone (Jackson, 1988; see also Location 33).

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified. The laterally extensive zone of Fe-Mg-Al enriched, Ca-K-Na depleted rocks may represent material that was depos-

ited distal to an exhalative vent. Jackson (1988) did not record the presence of sulphides associated with this alteration zone.

AIRPHOTO: A24298-84

REFERENCES:

Assessment File 91696

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Jackson, S.L.

1988: Alteration zones, structure and metamorphism of the Laurie Lake area; In Manitoba Energy and Mines, Report of Field Activities, 1988, p. 178-182.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Stanton, M.S.

1949: Geology of the Dunphy Lakes area, Granville Lake Division, Manitoba; Manitoba Mines and Natural Resources, Mines Branch, Publication 48-4, 34p.

LOCATION: 35

NAME:

UTM: 6266511N/340400E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat and traverse from Eager Lake; or, by bush aircraft to Eager Lake and traverse.

EXPLORATION SUMMARY:

An airborne EM and magnetometer survey was done by SGM in 1972 (A.F. 91696).

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic volcanic and lesser sedimentary rocks, and Sickie Group conglomerate, greywacke, psammitic and arkosic gneisses, and calcareous sandstone (Fig. 35-1; Gilbert *et al.*, 1980).

MINERALIZATION:

According to Milligan (1960, p. 287), M.S. Stanton observed three sites of mineralization, labelled A through C in Figure 35-1:

- (A) "Pyrite (sparse??) in hornblende-quartz-oligoclase gneiss cut by pegmatites 2 feet (0.6 m) wide";
- (B) "Hornblende-(biotite)-oligoclase gneiss (=greenstone?) dark grey. Locally carries a little disseminated pyrrhotite";
- (C) "Sulphides (pyrite) in quartz-muscovite-oligoclase gneiss".

AREA: 1.5 km south of Eager Lake

AIRPHOTO: A24298-66

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Stratabound massive sulphide type deposit; alteration zone associated with volcanic rocks.

REFERENCES:

Assessment File 91696

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

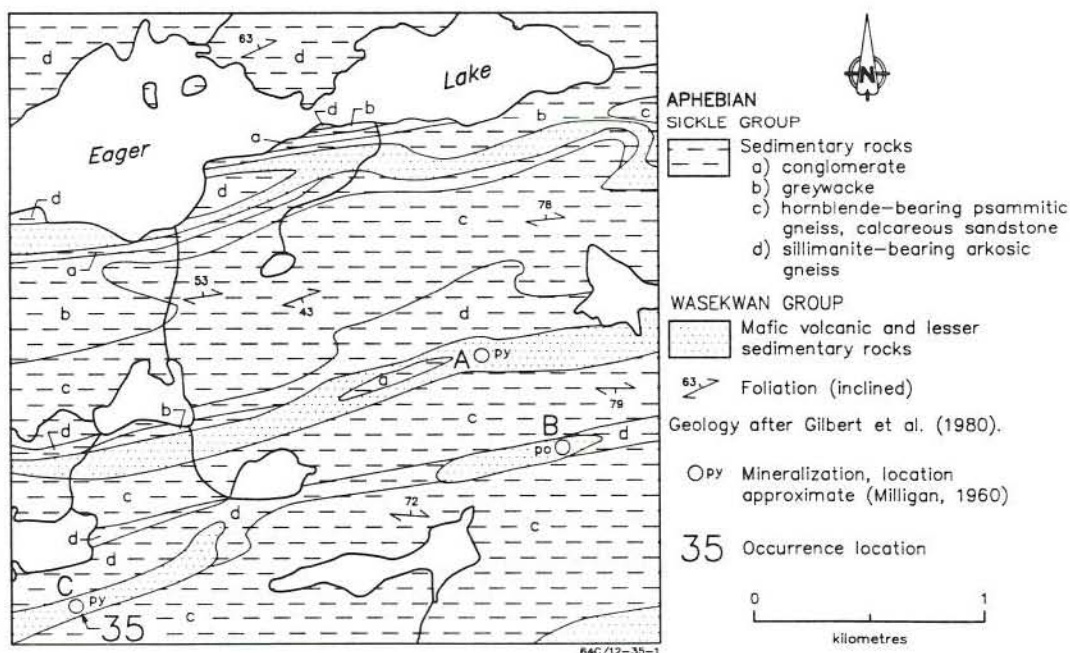


Figure 35-1: Geological setting of occurrence 35.

LOCATION: 36

NAME:

UTM: 6267767N/334623E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat and traverse from Eager Lake; or, by bush aircraft to Talon Lake and traverse.

EXPLORATION SUMMARY:

An airborne radiometric survey was done by Dome Exploration (Canada) Limited in 1969 (A.F. 91674), followed by an airborne EM and magnetometer survey by SGM in 1972 (A.F. 91696).

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group mafic volcanic and lesser sedimentary rocks, and Sickie Group sedimentary rocks, including conglomerate, greywacke, psammitic and arkosic gneisses and calcareous sandstone (Fig. 36-1; Gilbert *et al.*, 1980).

MINERALIZATION:

According to Milligan (1960, p. 287), M.S. Stanton made the following observations at this location: "Strongly rusted zone in rather coarse hornblende-plagioclase gneiss with considerable garnets. Seems to have been some silicification with introduction of fine disseminated sulphide (pyrite and pyrrhotite). Rust zones as bands and irregular areas over ca. 10-15' (3.0 to 4.6 m), but does not appear to be continuous and could not be followed far along strike. A little quartz introduction zone appears to be at or near contact of garnet hornblende-oligoclase gneiss with (sedimentary rocks)."

AREA: Northeast shore of Talon Lake

AIRPHOTO: A24298-10

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified. The presence of garnets, silicification and sulphidization in coarse grained rocks is suggestive of metamorphosed hydrothermally altered rocks in this area. Consequently, this occurrence might be interpreted as the distal part of a massive sulphide type deposit.

REFERENCES:

Assessment Files 91674, 91696

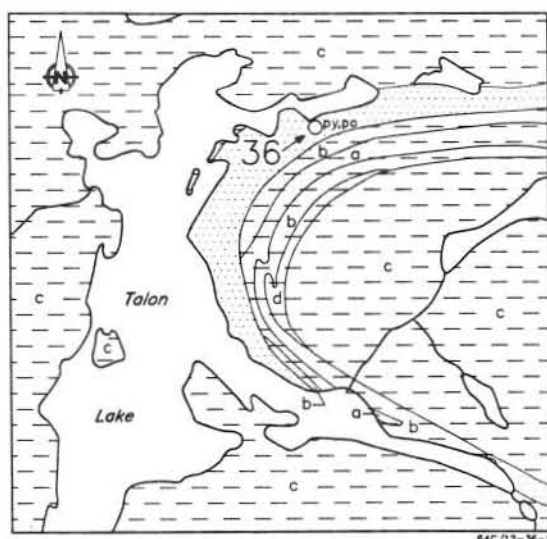
Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.



APHEBIAN

SICKLE GROUP

Sedimentary rocks

a) conglomerate

b) greywacke

c) hornblende-bearing psammitic gneiss,

calcareous sandstone

d) sillimanite-bearing arkosic gneiss

WASEKWAN GROUP

e) mafic volcanic and lesser sedimentary rocks

Geology after Gilbert *et al.* (1980).

○ Pyta Mineralization, location approximate (Milligan, 1960)

36 Occurrence location

0 1
kilometres

Figure 36-1: Geological setting of occurrence 36.

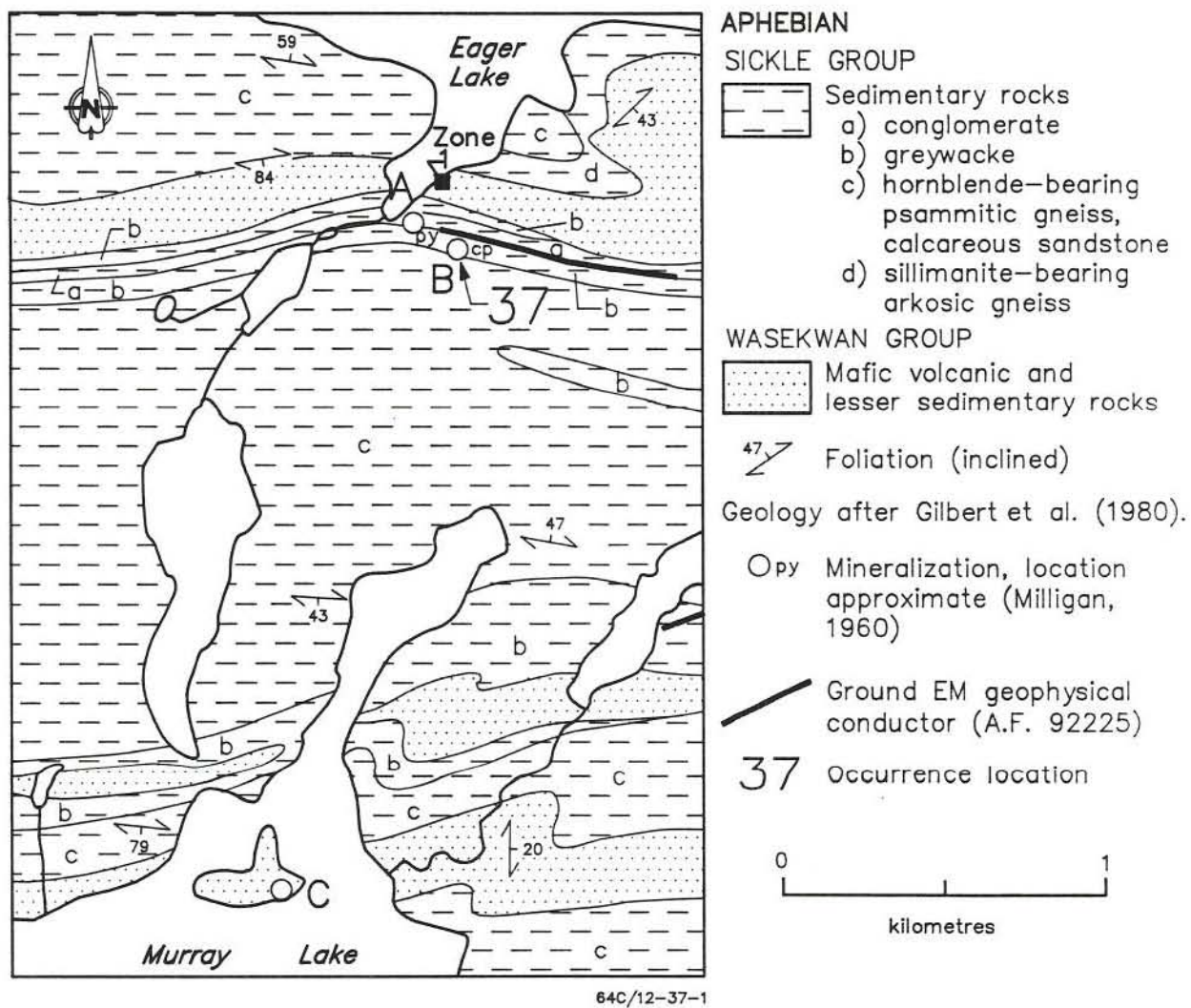


Figure 37-1: Geological setting of occurrence 37.

LOCATION: 37

NAME:

UTM: 6267870N/338265E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Eager Lake.

EXPLORATION SUMMARY:

An airborne EM and magnetometer survey was done by SGM in 1972 (A.F. 91696). SGM carried out ground HLEM and magnetometer surveys in 1973 (A.F. 92225).

GEOLOGICAL SETTING:

The area is underlain predominantly by Sickle Group conglomerate, greywacke, psammitic and arkosic gneisses and calcareous sandstone; Wasekwan Group mafic volcanic and lesser sedimentary rocks occur in narrow bands (Fig. 37-1; Gilbert *et al.*, 1980).

MINERALIZATION:

At the south shore of Eager Lake, Jackson (1988) identified an approximately 20 m wide alteration zone comprising plagioclase-cummingtonite \pm garnet-, hornblende-garnet-cummingtonite-, and gedrite-rich rocks (Zone 1, Fig. 37-1). The zone includes minor(?) Fe(?) sulphides enclosed in large garnet crystals and a small rusty weathered area. Jackson (1988) interpreted the zone as a metamorphosed chlorite-quartz \pm clay zone, and noted that it could have resulted from *in situ* hydrothermal alteration, or by deposition of reworked, previously altered sediments, or by subaqueous deposition of volcanic ash and subsequent alteration by seawater. The zone is bound to the north by mylonitized granitic gneisses and to the south by potassic-calcareous sedimentary rocks.

According to Milligan (1960, p. 286, 287), M.S. Stanton observed three sites of mineralization, labelled A through C in Figure 37-1:

- (A) "Slightly garnetiferous hornblende-plagioclase gneiss, cut by occasional small pegmatites. In places pyrite mineralization";
- (B) "'Locally contains odd grain of chalcopryite' in lighter grey biotite-hornblende-quartz-oligoclase gneiss";

AREA: Eager Lake

AIRPHOTO: A24298-9

- (C) "Basic rock strike 080° dip 70°S (greenstone?). Sulphide zone at south end 20 feet (6.1 m) wide (indefinite). Garnets associated in many places".

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified. Minor sulphides are hosted by Sickle Group sedimentary rocks. A zone of Fe-Mg-Al enriched, Ca-Na-K depleted rocks at the south shore of Eager Lake are considered to be a metamorphosed chlorite-quartz \pm clay zone (Jackson, 1988).

REFERENCES:

Assessment File 91696, 92225

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Jackson, S.L.

1988: Alteration zones, structure and metamorphism of the Laurie Lake area; in Manitoba Energy and Mines, Report of Field Activities, 1988, p. 178-182.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

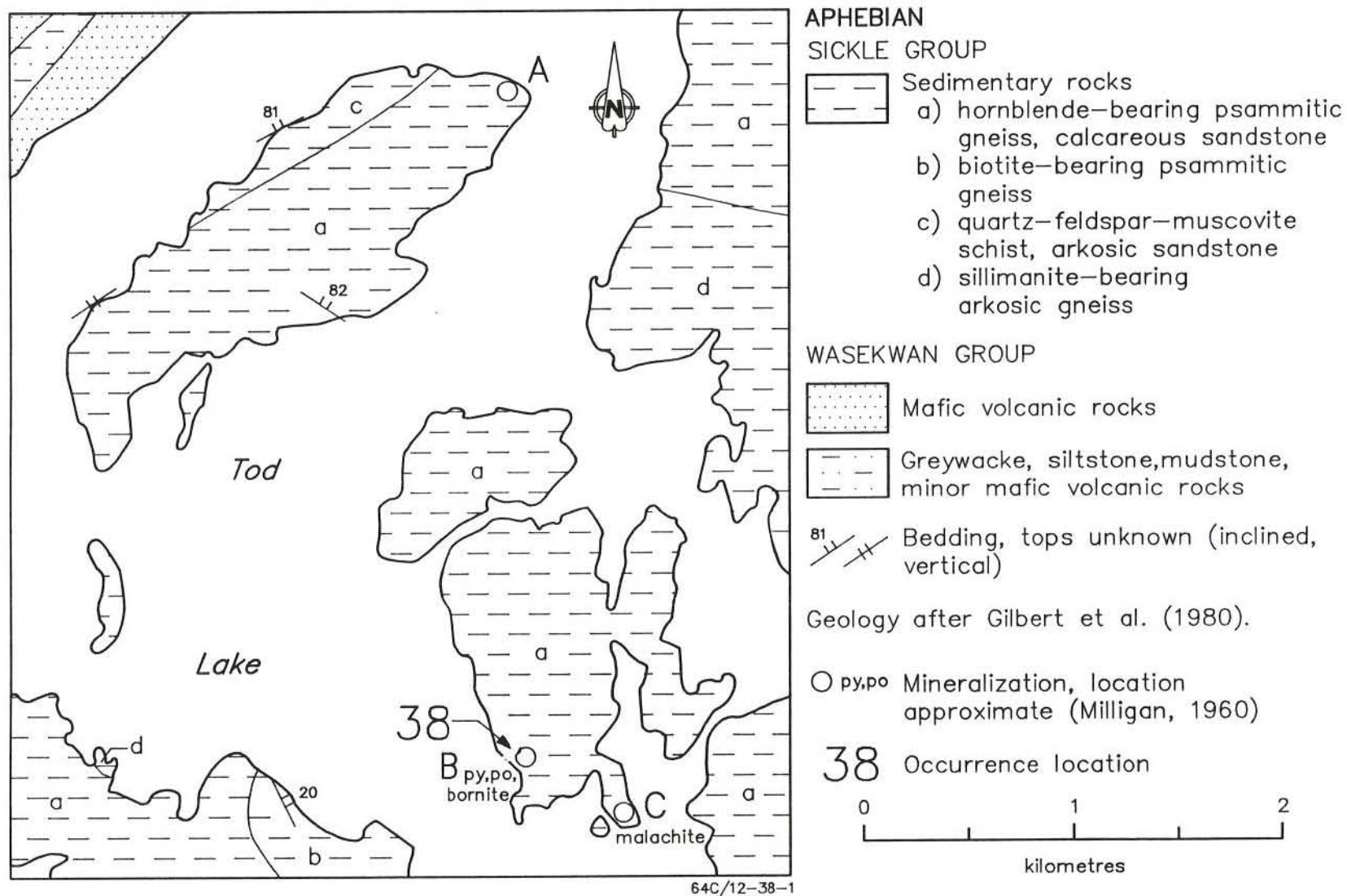


Figure 38-1: Geological setting of occurrence 38.

LOCATION: 38

NAME:

UTM: 6270004N/330719E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Tod Lake.

EXPLORATION SUMMARY:

An airborne radiometric survey was done by Dome Exploration (Canada) Limited in 1969 (A.F. 91674). Cat 1 was staked by Charles W. Myles in 1970 and assigned to Dome Exploration (Canada) Limited later that year. The claim lapsed in 1973. Airborne EM and magnetometer surveys were carried out by SGM in 1972 under Airborne Permit 105 (A.F. 91696). Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

GEOLOGICAL SETTING:

The area is underlain by Sickle Group sedimentary rocks, including hornblende- or biotite-bearing psammitic gneisses, calcareous sandstone and sillimanite-bearing arkosic gneiss (Fig. 38-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Milligan (1960, p. 287, 289) describes three sites of mineralization, labelled A through C in Figure 38-1:

- (A) "Sparse disseminated fine grained sulphide in Sickle";
- (B) "Disseminated pyrite, pyrrhotite and bornite(???). Much transported limonite";
- (C) "On southeast bay of Tod Lake reports malachite, in Sickle. Stanton was apparently not sufficiently impressed to save the sample, for no number was assigned."

AREA: Island in southeastern Tod Lake

AIRPHOTO: A24297-182

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

- Assessment Files 91674, 91696
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcaniclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

LOCATION: 39

NAME:

UTM: 6274891N/319738E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Laurie Lake.

EXPLORATION SUMMARY:

Ted 34, 35, 38 and 39 were staked by M.W. McFadyen and F.M. McFadyen in August 1961 but were cancelled one year later. Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. A regional geological map (1:63 360) was prepared by Falconbridge Nickel Mines Limited in 1977 (A.F. 92217).

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, siltstone, mudstone, and mafic volcanic rocks, and by Sickle Group sandstone, derived schist and gneiss (Fig. 39-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Milligan (1960, p. 289) notes "minor amounts of sulphide present".

GEOCHEMICAL DATA:

None.

AREA: Island in central Laurie Lake

AIRPHOTO: A23828-42

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 92217

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

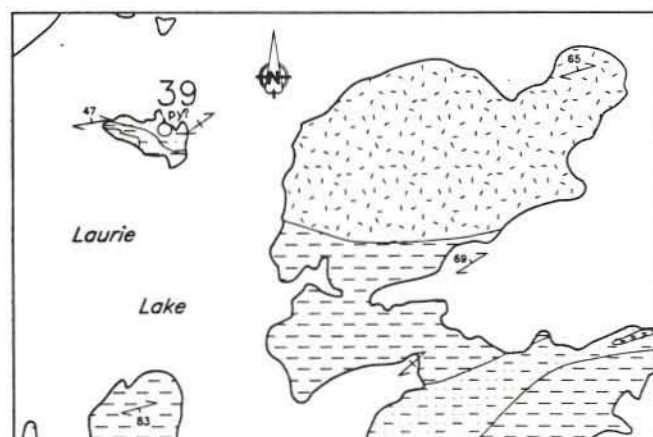
1980: Geology of the metavolcanic and volcaniclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.



APHEBIAN

INTRUSIVE ROCKS

Granodiorite

SICKLE GROUP

Sandstone, derived schist and gneiss

WASEKWAN GROUP

Greywacke, siltstone, mudstone, minor mafic volcanic rock

Felsic volcanic rocks

Mafic volcanic rocks

Foliation (inclined, vertical)

Geology after Gilbert *et al.* (1980).

Op? Mineralization, location approximate (Milligan, 1960)

39 Occurrence location

0 1
kilometres

Figure 64C/12-39-1: Geological setting of occurrence 39.

Figure 39-1: Geological setting of occurrence 39.

LOCATION: 40

NAME:

UTM: 6270886N/321527E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Laurie Lake.

EXPLORATION SUMMARY:

Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. Falconbridge Nickel Mines Limited carried out a reconnaissance geological mapping (1:63 360) and rock geochemical sampling program in 1977 (A.F. 92217).

GEOLOGICAL SETTING:

The area is underlain by greywacke, mudstone and migmatite of the Burntwood River Metamorphic Suite, and Sickle Group sandstone and derived schist and gneiss (Fig. 40-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Milligan (1960, p. 289) notes "sulphides reported in gneiss".

GEOCHEMICAL DATA:

None.

AREA: West shore of South Bay (Laurie Lake)

AIRPHOTO: A23828-41

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 92217

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

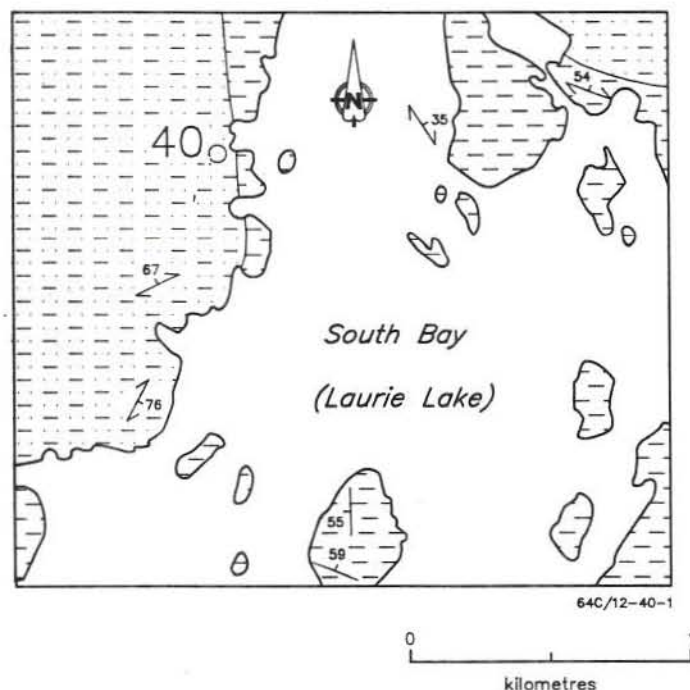
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.



APHEBIAN

SICKLE GROUP

— Sandstone, derived schist and gneiss

WASEKWAN GROUP

— Greywacke, mudstone, migmatite (Burntwood River Metamorphic Suite)

59 Bedding, tops known (inclined)

67 Foliation (inclined)

Geology after Gilbert *et al.* (1980).

○ Mineralization, location approximate (Milligan, 1960)

40 Occurrence location

Figure 40-1: Geological setting of occurrence 40.

LOCATION: 41

NAME:

UTM: 6268480N/319531E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat and traverse; or, by bush aircraft to Laurie Lake and traverse.

EXPLORATION SUMMARY:

Tar 210 was staked by W.J. East in 1961 and was assigned to Hudson Bay Exploration and Development Company Limited later that year. The claim was cancelled in 1962. Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. Falconbridge Nickel Mines Limited carried out a reconnaissance geological mapping (1:63 360) and rock geochemical sampling program in 1977 (A.F. 92217).

GEOLOGICAL SETTING:

The area is underlain by greywacke, mudstone and migmatite of the Burntwood River Metamorphic Suite, Wasekwan Group mafic volcanic rocks, and Sickle Group sandstone and derived schist and gneiss (Fig. 41-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Milligan (1960, p. 289) noted two sites of mineralization, labelled A and B in Figure 41-1:

- (A) "Disseminated pyrite, in coarser hornblende of greenstone";
- (B) "Scattered pyrrhotite in 'hornblende gabbro'".

AREA: Western shore of unnamed lake approximately 1.3 km west of South Bay (Laurie Lake)

AIRPHOTO: A23828-40

GEOCHEMICAL DATA:

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Assessment Files 92217

Manitoba Energy and Mines, Minerals Division.

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

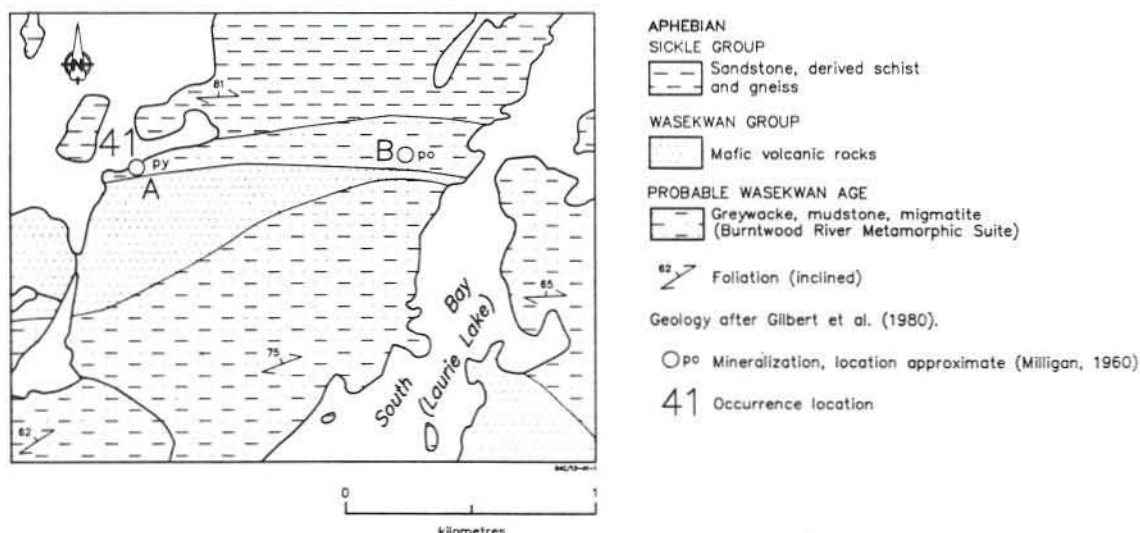


Figure 41-1: Geological setting of occurrence 41.

LOCATION: 42

NAME:

UTM: 6266985N/320677E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat and traverse; or, by bush aircraft to Laurie Lake and traverse.

EXPLORATION SUMMARY:

Tar 106 was staked by Douglas F. Whalley in 1961 and was assigned to Hudson Bay Exploration and Development Company Limited later that year. The claim lapsed in July 1962. Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government. Falconbridge Nickel Mines Limited carried out a reconnaissance mapping (1:63 360) and rock geochemical sampling program in 1977 (A.F. 92217).

SGM staked James 6 and 2 (CB 12526, 12532) in 1982, and carried out geological mapping (1:4800) and rock geochemical surveys (A.F. 92638). James 2 and 6 were cancelled in 1985.

GEOLOGICAL SETTING:

The area is underlain by Wasekwan Group greywacke, mudstone, migmatite, mafic volcanic rocks, Sickle Group sandstone and derived schist and gneiss, and lesser granodiorite (Fig. 42-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Ten sites of mineralization in the area are labelled A through K in Figure 42-1:

- (A) "Disseminated pyrrhotite and chalcopryrite in greenstone" (Milligan, 1960, p. 289);
- (B) "Pyrrhotite, pyrite and chalcopryrite in small amounts of tuff(?) interbands in quartz-biotite-feldspar gneiss" (Milligan, 1960, p. 289);
- (C) "Sulphide stain and gossan in greenstone. Grab sample = 0.03 oz Au (1.0 g/t Au)" (Milligan, 1960, p. 289);
- (D) "Some visible sulphide and gossan" (Milligan, 1960, p. 289);
- (E) "Extremely rare disseminated sulphides in greenstone" (Milligan, 1960, p. 289);

AREA: Southeast shore of South Bay (Laurie Lake)
AIRPHOTO: A23828-39

- (F) "Minor pyrite in greenstone" (Milligan, 1960, p. 289);
- (G) pyrrhotite - (no details; Gilbert *et al.*, 1980);
- (H) "Disseminated pyrite in basic tuff" (Milligan, 1960, p. 289);
- (J) bornite - (no details; Gilbert *et al.*, 1980);
- (K) pyrrhotite - (no details; Gilbert *et al.*, 1980).

GEOCHEMICAL DATA:

The grab sample taken at site C with 1.0 g/t Au (Milligan, 1960; p. 289) is the only geochemical data available for these sites.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

- Assessment Files 92217, 92638
Manitoba Energy and Mines, Minerals Division.
- Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.
1980: Geology of the metavolcanic and volcanoclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.
- Milligan, G.C.
1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.
- Questor Surveys Ltd.
1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

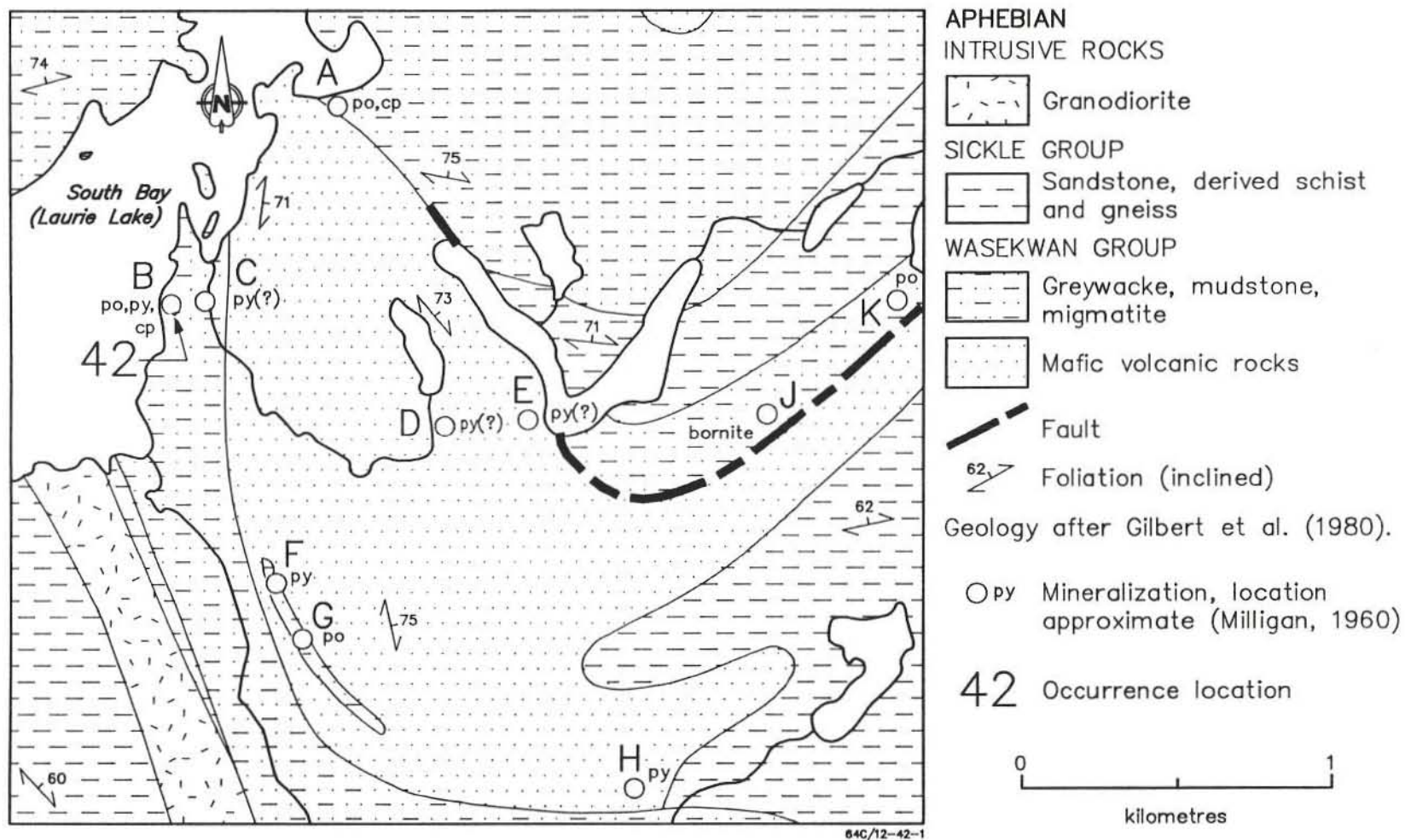


Figure 42-1: Geological setting of occurrence 42.

LOCATION: 43

NAME:

UTM: 6269714N/316137E

ACCESS: By vehicle along a trail from the Fox mine site (Location 1) to Pyta Lake, then by boat; or, by bush aircraft to Laurie Lake.

EXPLORATION SUMMARY:

Questor Surveys Ltd. (1977) carried out airborne INPUT and magnetometer surveys on behalf of the Manitoba Government.

GEOLOGICAL SETTING:

The area is underlain by greywacke, mudstone and migmatite (assigned to the Burntwood River Metamorphic Suite), Sickle Group sandstone, derived schist and gneiss, and minor granodiorite (Fig. 43-1; Gilbert *et al.*, 1980).

MINERALIZATION:

Milligan (1960, p. 289, 290) reports observations by M.S. Stanton of two sites of mineralization, labelled A and B in Figure 43-1:

- (A) "Chlorite schist, some rust and disseminated pyrite mineralization";
- (B) "A little pyrrhotite, in greenstone cut by a few quartz stringers".

GEOCHEMICAL DATA:

AREA: Southwestern Laurie Lake

AIRPHOTO: A23828-25

None.

CLASSIFICATION:

Disseminated mineralization - not classified.

REFERENCES:

Gilbert, H.P., Syme, E.C. and Zwanzig, H.V.

1980: Geology of the metavolcanic and volcaniclastic metasedimentary rocks in the Lynn Lake area; Manitoba Energy and Mines, Geological Paper GP80-1, 118p.

Milligan, G.C.

1960: Geology of the Lynn Lake district; Manitoba Mines and Natural Resources, Mines Branch, Publication 57-1, 317p.

Questor Surveys Ltd.

1977: Airborne INPUT survey, Lynn Lake area (Phase II); Manitoba Energy and Mines, Mineral Resources Division, Miscellaneous Publication.

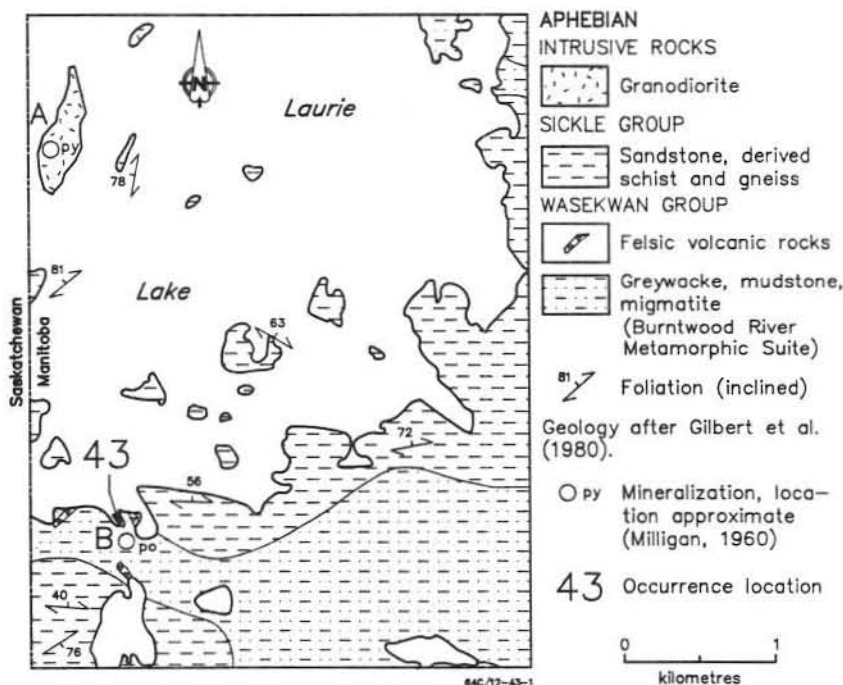


Figure 43-1: Geological setting of occurrence 43.