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Mineral Deposit Series

Report No. 21

# **Mineral Deposits and Occurrences in the Buzz Lake Area, NTS 63J/12**

by K.J. Ferreira and M.A.F. Fedikow

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Energy and Mines

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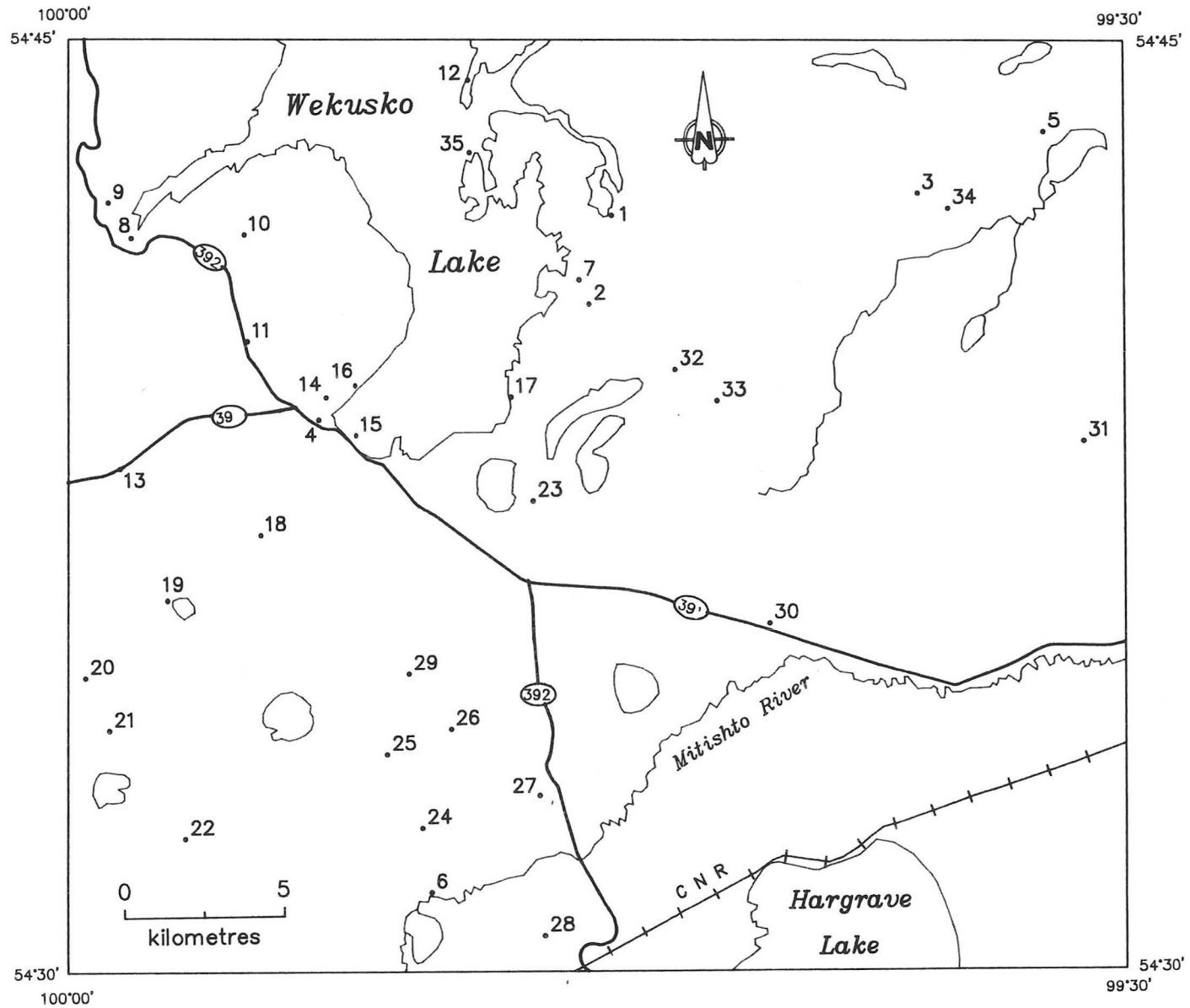


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**MAP**

MDS Map No. 21:	Mineral deposits and occurrences in the Buzz Lake (63J/12) area; Manitoba . . . . .	in pocket
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**Figure 1:** Location of mineral deposits and occurrences.

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 In addition, for each occurrence the geologists have attempted to synthesize available data from published and unpublished sources.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

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**TABLE 1: MINERAL DEPOSIT TYPES**

**STRATABOUND MASSIVE SULPHIDE TYPE DEPOSITS**

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

**CHEMICAL SEDIMENT TYPE DEPOSITS**

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

**VEIN TYPE DEPOSITS**

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

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

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

**DEPOSITS WITH PORPHYRY AFFINITIES**

**PEGMATITE TYPE DEPOSITS**

**CLASTIC SEDIMENT TYPE DEPOSITS**

**REPLACEMENT TYPE DEPOSIT**

**DISSEMINATED MINERALIZATION-NOT CLASSIFIED**

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**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 routinely collected from outcrops in the vicinity of the occurrences. Multi-element analyses are presented for 218 rock samples collected from mineral occurrences 1 through 4. Details of the sampling and analytical procedures are presented in Appendix I along with multi-element geochemical data.

**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
f.g.	fine grained
g/t	grams per tonne
HBED	Hudson Bay Exploration and Development Company Limited
HLEM	horizontal loop electromagnetic
km	kilometre
m	metre
m.g.	medium grained
NSS	near solid sulphide
oz/ton	ounces per ton
po	pyrrhotite
py	pyrite
sp	sphalerite
SS	solid sulphide
t	tonne
tr.	trace
v.f.g.	very fine grained
VLEM	vertical loop electromagnetic
VLF-EM	very low frequency electromagnetic

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During the course of mineral occurrence documentation in the Buzz Lake area seasonal students provided assistance with sampling, grid construction, outcrop preparation, outcrop map production, portions of the geological mapping, and compilation of cancelled as-

essment files. We would like to acknowledge the following for their contributions in the field and the office:

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 1989: Junior Geological Assistant (compilation)  
 - Kathleen Dahlin

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 Computing - G. Conley  
 Review - G.H. Gale, W.D. McRitchie  
 Editing - D.A. Baldwin

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.

## GENERAL GEOLOGY OF AREA 63J/12

The geological base for mineral deposit map sheet 63J/12 is based on the 1:63 360 map of Armstrong (1941), the 1:63 360 map of Frarey (1948) and the 1:126 720 map of Alcock (1920). A geological compilation of the Precambrian subsurface in the southern part of the map area is currently being undertaken by the Geological Survey of Canada and Manitoba Energy and Mines under the auspices of Project Cormorant; these results will be incorporated in future updates of the mineral deposit series.

The Buzz Lake map area includes Proterozoic supracrustal and intrusive rocks that are unconformably overlain by Ordovician dolomitic limestone in the south of the area. Supracrustal rocks comprise volcanic and volcanic-derived sedimentary rocks and volcanic-, sedimentary- and plutonic-derived epiclastic rocks that are assigned to the Amisk Group and the younger Missi Group of the Flin Flon-Snow Lake greenstone belt. The radiometric ages of supracrustal and intrusive rocks have not been determined in this map area.

The Amisk Group comprises mafic to felsic volcanic rocks with intercalated volcanic-derived sedimentary units that become dominant toward the top of the succession (Bailes, 1980). Total rock Rb/Sr and K/Ar determinations from the Flin Flon area (Josse, 1974; Josse *et al.*, 1974; Mukherjee *et al.*, 1971) and more recent U-Pb zircon ages (Gordon *et al.*, in press) favour an Aphebian age for the volcanic rocks; the earliest extrusive event occurred at approximately 1900 Ma. Chemically, rocks in the Flin Flon-Snow Lake greenstone belt exhibit tholeiitic affinities (Bailes, 1988). The prevalence of pillowed flows, mafic to felsic volcanism, submarine volcanoclastic and turbidite deposits and the tholeiitic chemical affinity displayed by the least altered mafic volcanic rocks suggest deposition in an island-arc environment (Bailes, 1988). The Amisk Group in the eastern, i.e., Snow Lake, part of the greenstone belt has abundant felsic volcanic rocks; some of these have been identified as synvolcanic tonalite plutons, large portions of which are hydrothermally altered (Walford and Franklin, 1982; Bailes *et al.*, 1988). A turbidite sequence up to 1000 m thick has been identified at the top of the Amisk Group in the File Lake area (Bailes, 1980).

In the Snow Lake area the Missi Group consists of a monotonous succession of lithic arenite. Although conglomerate is characteristic of the Missi Group in the Flin Flon area, it is a minor constituent in the Snow Lake area. East of Wekusko Lake, the Missi Group includes conglomerate as well as fluvial sandstone, greywacke, (Frarey, 1948; Froese and Moore, 1980) and subaerial mafic and felsic volcanic rocks (Shanks and Bailes, 1977; Gordon and Gall, 1982).

The oldest intrusions in the Flin Flon-Snow Lake greenstone belt are synvolcanic mafic to felsic sills and dykes, and granitoid, commonly porphyritic, plutons that are restricted to the Amisk Group and related to Amisk volcanism (Walford and Franklin, 1982).

Metamorphism probably commenced during the waning stages of Missi magmatism ( $1832 \pm 2$  Ma) and continued to approximately 1800 Ma (Gordon *et al.*, in press). Regional metamorphism in the greenstone belt exhibits a general increase in grade from south to north varying from middle greenschist in the western Reed Lake area (Rousell, 1970) to upper amphibolite in the File Lake area northwest of map area 63J/12 (Harrison, 1949; Froese and Moore, 1980).

Few major structures have been identified in the Buzz Lake map sheet because of the paucity of outcrop and the relative lack of detailed geological maps. A syncline-anticline pair is present near Puella Bay on the east shore of Wekusko Lake.

The Copper-Man Cu-Zn deposit (location 4) is the only recognized volcanogenic massive sulphide type deposit in area NTS 63J/12.

Most of the mineralization in area NTS 63J/12 is chemical sediment type, consisting mainly of graphite- and sulphide-bearing strata in felsic to intermediate rocks and, to a lesser extent, in mafic volcanic rocks and/or quartz-rich sedimentary rocks. In the Puella Bay area extensive iron-oxide stains on quartz- and quartz-feldspar phyric rocks and a fine grained rock referred to as biotite dacite (Armstrong, 1939; Frarey, 1950) accompany polymetallic sulphide mineralization in quartz-carbonate veins. Although only basic documentation of this occurrence has been completed, there is the possibility that at least one deformational event and mineralization phase in the area may be related to the intrusion of the Broad Bay granite southwest of the area. The Broad Bay intrusion is variably altered and apophyses of the intrusion have been intersected in drill holes in the area. Residual and/or mobilized base metal and silica-CO<sub>2</sub>-enriched fluids, associated with the intrusion or its mechanism of emplacement, deposited in fractured quartz- and quartz-feldspar-phyric felsic rocks may have generated the Puella Bay occurrence. Pyrite-carbonate-quartz laminae in sheared rocks suggest the north-trending shear zones postdate initial quartz-carbonate vein formation.

The area east of the south end of Wekusko Lake, centered on Watch Lake and Watts Creek, lacks a reliable geological data base. However, the presence of extensive multidirectional quartz veins containing visible gold in mafic intrusive rocks, and the extension of the host rocks to occurrence 1 (Puella Bay) into the area indicate potential for base and precious metal mineral deposits.



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## MINERAL DEPOSITS AND OCCURRENCES: BUZZ LAKE AREA (63J/12)

LOCATION: 1

NAME: PUELLA BAY

UTM: 6061749N/452263E

ACCESS: Via boat on Wekusko Lake.

AREA: Southern arm of Puella Bay, Wekusko Lake.

AIRPHOTO: A20124-98

### EXPLORATION SUMMARY:

The property, consisting of 33 claims, was originally promoted by the Puella Bay Mining and Development Company (Mineral Inventory Card 63J/12 Pyr1). A mineable deposit of gold, silver, copper, lead and zinc mineralization was apparently delineated in the area (Puella Bay Mining and Development Company Limited, Corporation File). Wright (1931) reports that 9 holes were drilled and numerous trenches blasted on the property; the location and specifications of the DDH are not documented in assessment files. Two drill holes were collared by Kerr Addison Mines Limited in 1966 (A.F. 91822). The area is covered (1990) by claim Kus 4903, staked by HBED in 1986.

### GEOLOGICAL SETTING:

The area is underlain by Missi Group sedimentary and felsic volcanic rocks, quartz-, quartz-feldspar and feldspar-quartz porphyry, and Amisk Group mafic to intermediate volcanic and associated sedimentary rocks (Fig. 1-1, 1-2). The sedimentary rocks form an east-facing sequence that includes subaerially deposited immature arkose with abundant lithic clasts, siltstone and sedimentary breccias (Fig. 1-2).

The sedimentary and quartz-feldspar-phyric rocks are crosscut by a 170°-trending zone of strongly foliated, variably altered and mineralized rocks (Fig. 1-2). In this zone strongly foliated, aphyric, fine grained, equigranular rocks can be traced laterally into undeformed quartz- and feldspar-phyric felsic rocks. Foliation in felsic rocks is defined by biotite in mafic rocks, and by quartz-carbonate-pyrite-biotite streaks. Diamond drill holes, collared to test long strike length ground EM conductors, intersected massive, sheared and altered peridotite, and chemical sedimentary rocks (A.F. 90573, 91822). Wright (1931) reports drill hole intersections of grey rhyolite and dacite, green and black schist and gneiss, and granite and pegmatite dykes.

### MINERALIZATION:

A multidirectional set of locally mineralized quartz and quartz-carbonate veins up to 2 m wide occurs within three strongly foliated zones that strike N15°W, dip 70°E and have lengths and widths up to 1829 m and 21 m, respectively. These shear zones occur in altered lithic arenite, quartz- and quartz-feldspar porphyry and mafic volcanic/intrusive rocks. Mineralized zones have been tested by 33 trenches and constitute widespread disseminated grains, veinlets and blebs of pyrite and

two sites of polymetallic sulphide mineralization. The widespread pyrite mineralization is commonly accompanied by sericite and/or fuchsite. Trenches 2 and 22 (Fig. 1-2) expose disseminated grains, blebs and near solid laminae of pyrite, sphalerite, and galena with minor chalcopyrite and arsenopyrite. This mineralization occurs in silicified quartz-feldspar porphyry, biotite dacite, and in crosscutting quartz- and quartz-carbonate veins within these lithologies. Sheared mafic volcanic/intrusive rocks contain pyrite-carbonate-biotite laminae in linear silicified zones. Descriptions written by Schofield (1929) and Wright (1931) of the mineralization and host rocks are similar to these observations, summarized by Fedikow *et al.* (1986) and Fedikow and Malis (1987, 1988). Diamond drill holes (Fig. 1-2; A.F. 90573) intersected a 5.8 m interval of massive graphite with quartz veins containing 1% pyrite, and a 3.3 m interval of fractured quartz containing 10% chlorite, reddish carbonate and 1% pyrite. Wright (1931) describes grey (silicified?) dacite and rhyolite containing disseminated pyrite and galena and near solid pyrite laminae adjacent to the quartz veins.

### GEOCHEMICAL DATA:

Continuous 1 or 2 m chip samples were collected from 31 of 33 trenches for geochemical analysis. The highest base and precious metal concentrations were from samples collected in trenches 2 and 22, sites of polymetallic sulphide mineralization. Table 1-1 summarizes the analytical results from these two trenches. Graphitic float (sample 861142) and a hematite boulder (sample 861146), which probably represents a glacially dropped exotic lithology, were also collected from the area. Both samples contained low base and precious metal values. Analytical results for all samples are presented in Appendix I; sample locations for samples collected from the trenches are presented in Appendix II.

Table 1-2 contains a silicate whole rock and trace element analysis of a carbonatized feldspar porphyry sample from the area.

### CLASSIFICATION:

Vein type deposit; multiple veins. Polymetallic Zn-Pb-Cu-Au-Ag-Fe mineralization occurs in sheared and silicified quartz- and quartz-feldspar porphyry, biotite dacite, and in quartz- and quartz-carbonate veins within these lithologies. Mineralization is restricted to rocks that occur within a north-south trending shear zone. The process of mineralization may be related to the intrusion of the Broad Bay granite, the felsic intrusion to the

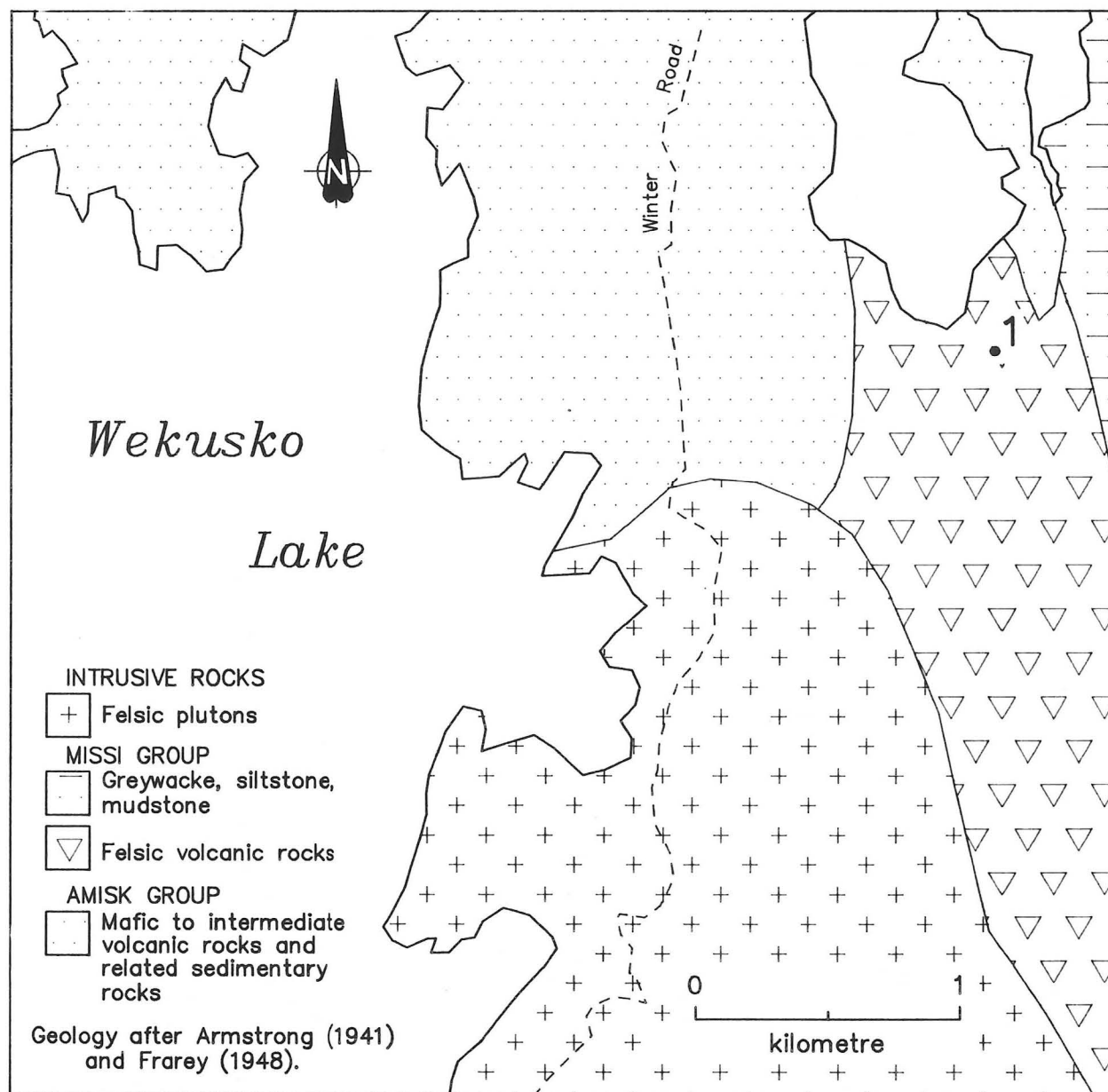


Figure 1-1: Geological setting of occurrence 1 (Puella Bay).

southwest. Later deformational events sheared the polymetallic veins. The polymetallic sulphide mineralization may represent mobilized material from stratabound massive sulphide type mineralization.

#### REFERENCES:

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

Assessment Files 90573, 91822

Manitoba Energy and Mines, Minerals Division.

Fedikow, M.A.F. and Malis, C.

1988: Mineral occurrence documentation - Herblet and Pulver gneiss domes and Wekusko Lake area; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1988, p. 84-94.

1987: Mineral occurrence documentation and geochemical surveys in the Snow Lake area; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1987, p. 91-93.

Fedikow, M.A.F., Roney, C.T., Schmidt, G.J. and Robbie, T.J.

1986: Mineral deposit studies in the Snow Lake area; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1986, p. 77-85.

Frarey, M.J.

1948: Crowduck Bay, Manitoba; Geological Survey of Canada, Map 987A, 1:63 360.

Mineral Inventory Card 63J/12 Pyr1

Manitoba Energy and Mines, Minerals Division.

Puella Bay Mining and Development Company Limited, Corporation File

Manitoba Energy and Mines, Minerals Division.

Schofield, S.J.

1929: Puella Bay; In Puella Bay Mining and Development Company Corporation File, Manitoba Energy and Mines, Minerals Division.

Wright, J.F.

1931: Geology and mineral deposits of a part of northwest Manitoba; Geological Survey of Canada, Summary Report, 1930, Part C, p. 106-107.

**Table 1-1: Summary of geochemical analyses for selected muck samples containing polymetallic sulphide mineralization, trenches 2 and 22. Analyses are obtained by aqua-regia/inductively coupled argon plasma atomic absorption spectrophotometry.**

	<b>Trench 2</b>	<b>Trench 22</b>
<b>Sample No.</b>	01149, 01150, 01151	04522
	<b>Range</b>	<b>Single Analysis</b>
Cu (ppm)	1132-1198	2141
Zn (ppm)	17372-29041	27920
Pb (ppm)	not detected	19142
Ag (ppm)	1.7-3.6	48.2
Au (ppb)	53-98	149
W (ppm)	204-331	3
Mo (ppm)	14-21	1

**Table 1-2. Silicate whole rock and trace element analysis of a carbonatized feldspar porphyry sample (sample 03148) from trench 9, occurrence 1.**

	<b>Analysis (wt. %)</b>
SiO <sub>2</sub>	47.6
Al <sub>2</sub> O <sub>3</sub>	11.8
FeO	4.42
Fe <sub>2</sub> O <sub>3</sub>	0.98
CaO	7.36
MgO	8.01
Na <sub>2</sub> O	0.18
K <sub>2</sub> O	6.30
TiO <sub>2</sub>	0.79
P <sub>2</sub> O <sub>5</sub>	0.19
MnO	0.09
H <sub>2</sub> O	1.83
S 0.01	
CO <sub>2</sub>	9.85
<b>TOTAL</b>	<b>99.42</b>
Ni	52 ppm
Cr	45 ppm
FeO <sub>T</sub>	5.30%

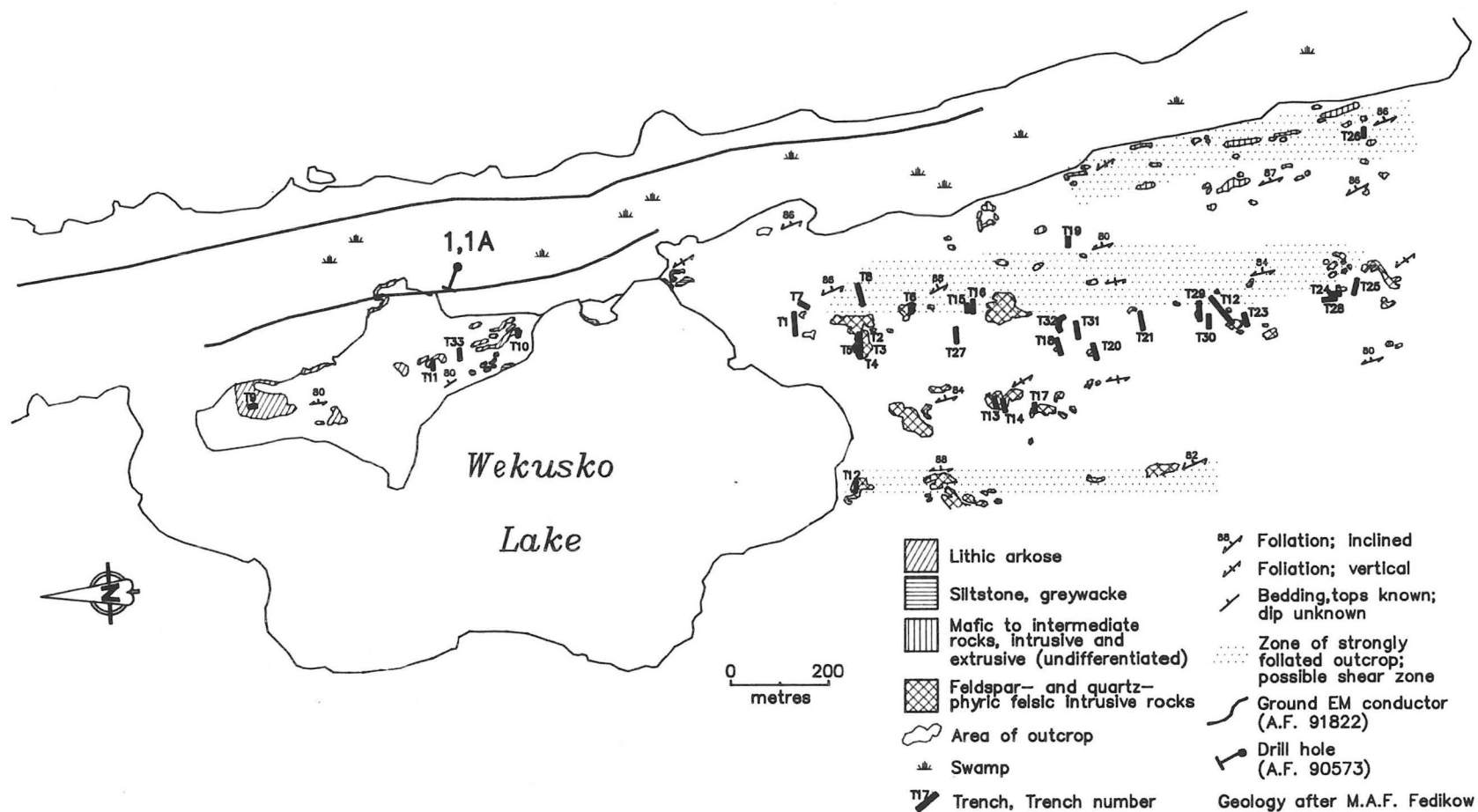


Figure 1-2: Local geology, ground EM conductors and diamond drill hole location, occurrence 1 (Puella Bay).

## LOCATION: 2

NAME: ZONA; Wekusko

UTM: 6059667N/451880E

ACCESS: Via boat on Wekusko Lake and traverse.

## EXPLORATION SUMMARY:

The Zona claim was staked by A.P. Ducharme in 1922, and assigned to J. Nutt and W. Bonter in 1923. Wekusko Mines Limited acquired the property later in 1923. A 21 m shaft was sunk in 1923-24 and trenching was undertaken in 1925-27. The claim was assigned to B.R. Masecar in 1927; the property was cancelled in 1949 (Mineral Inventory Card 63J/12 Au2). J.B. Barton staked CB 7674 in 1981, and optioned the property to Cangold Limited in 1982. Cangold Ltd. carried out a VLF-EM survey and geochemical sampling; the claim was cancelled in 1986 (A.F. 92658, 92659). J.B. Barton staked claim Ball 1 in 1989.

## GEOLOGICAL SETTING:

The occurrence is hosted by medium grained grey granodiorite, flanked to the northeast by altered quartz-mica gneiss, probably derived from felsic volcanic rocks (Fig. 2-1).

## MINERALIZATION:

Pyritic quartz veins, 0.5 to 3 cm wide, and oriented 320° to 360° with vertical dips are hosted by granodiorite (Fig. 2-2; Fedikow and Malis, 1988). The veins collectively form a zone 914 m long and 15 to 23 m wide (Mineral Inventory Card 63J/12 Au2). Wright (1931, p. 92-93) notes minor arsenopyrite and pyrite, and reports that free gold is also present in white quartz veins. The granodiorite within 5 to 6 cm of pyritic quartz veins is biotitic, silicified and contains disseminated pyrite and deformed pyrite veinlets. Locally, fragments of granodiorite are present within the quartz veins (Fedikow and Malis, 1988).

## GEOCHEMICAL DATA:

Assays of samples from the shaft taken by Wekusko Mines Ltd. averaged 75.25 g/t Au (Mineral Inventory Card 63J/12 Au2). Thirteen channel samples by Cangold Ltd. from old trenches and outcrops near the abandoned shaft contained a maximum of 48.69 g/t Au over 1.4 m. Cangold Ltd. reported "ore grade" intersections over a strike length of 130 m, but was uncertain if the strike was continuous or represented discontinuous or *en echelon* sets of veins (A.F. 92658). An additional fourteen samples were collected in the area of the shaft

AREA: 1.5 km southeast of Broad Bay (Fig. 1-1).

AIRPHOTO: A20124-46

and at the western claim boundary; these samples ranged from 12.4 g/t Au over 0.4 m to 49.7 g/t Au over 1.4 m near the shaft, but contained only minor amounts of gold at the other sampling locations (A.F. 92659).

The locations of samples collected from the Zona occurrence (Fedikow and Malis, 1988) are shown in Figure 2-2; geochemical analyses are given in Appendix I. Four samples collected at the Zona shaft contained 1480 to 10560 ppb Au, 186 to 2050 ppm Cu and 0.2 to 1.6 ppm Ag. Three samples from nearby outcrops contained 10 to 37800 ppb Au, 60 to 85 ppm Cu, and 0.1 to 0.8 ppm Ag.

## CLASSIFICATION:

Vein type deposit; multiple veins. Quartz veins in a granodiorite intrusion contain gold and minor base metals.

## REFERENCES:

- Armstrong, J.E.  
1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.  
Assessment Files 92658, 92659  
Manitoba Energy and Mines, Minerals Division.  
Fedikow, M.A.F. and Malis, C.  
1988: Mineral occurrence documentation - Herbert and Pulver gneiss domes and Wekusko Lake area; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1988, p. 84-94.  
Frarey, M.J.  
1948: Crowduck Bay, Manitoba; Geological Survey of Canada, Map 987A, 1:63 360.  
Mineral Inventory Card 63J/12 Au2  
Manitoba Energy and Mines, Minerals Division.  
Wright, J.F.  
1931: Geology and mineral deposits of a part of northwest Manitoba; Geological Survey of Canada, Summary Report, 1930, Part C, 124p.

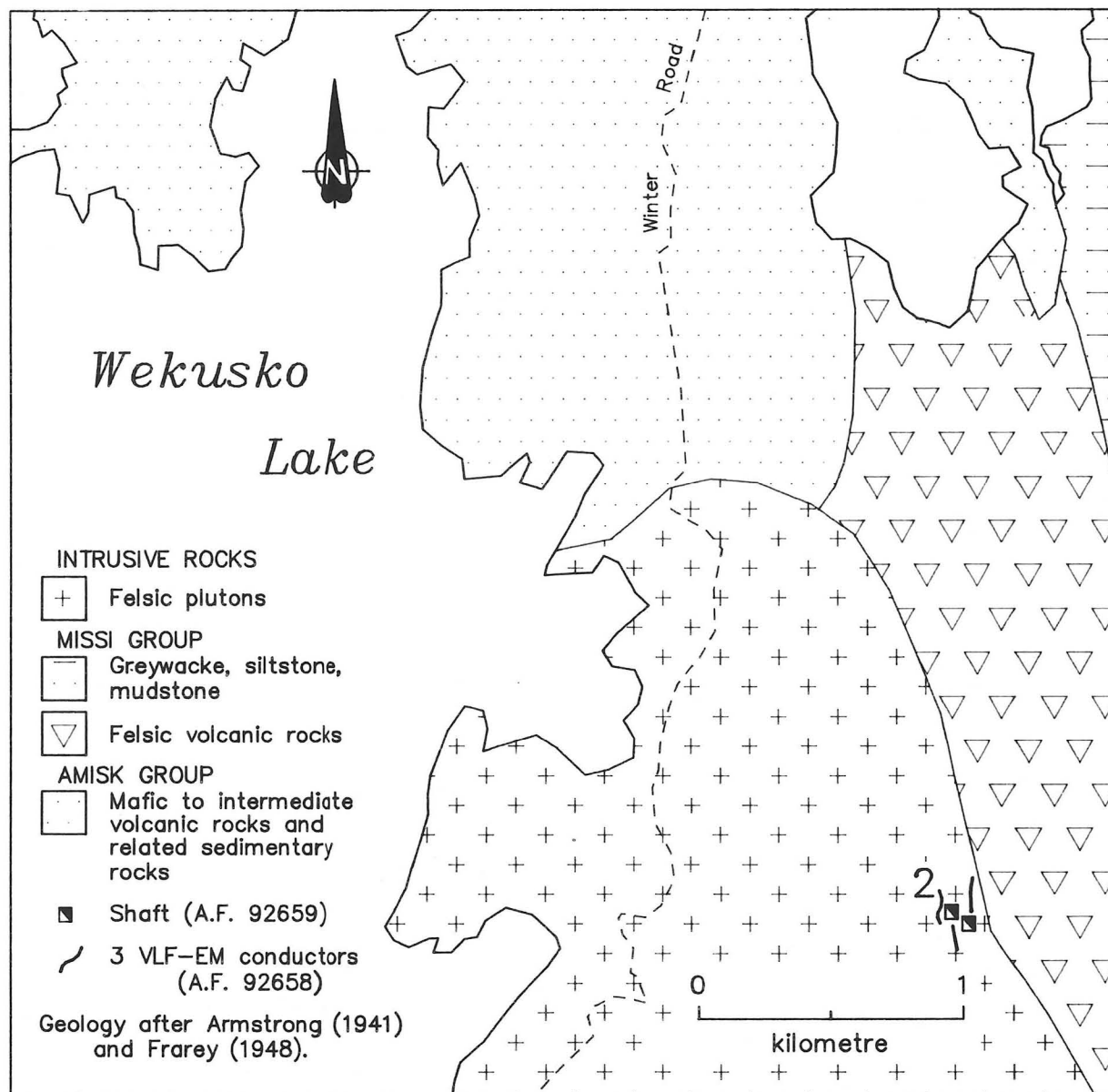


Figure 2-1: Geological setting of occurrence 2.

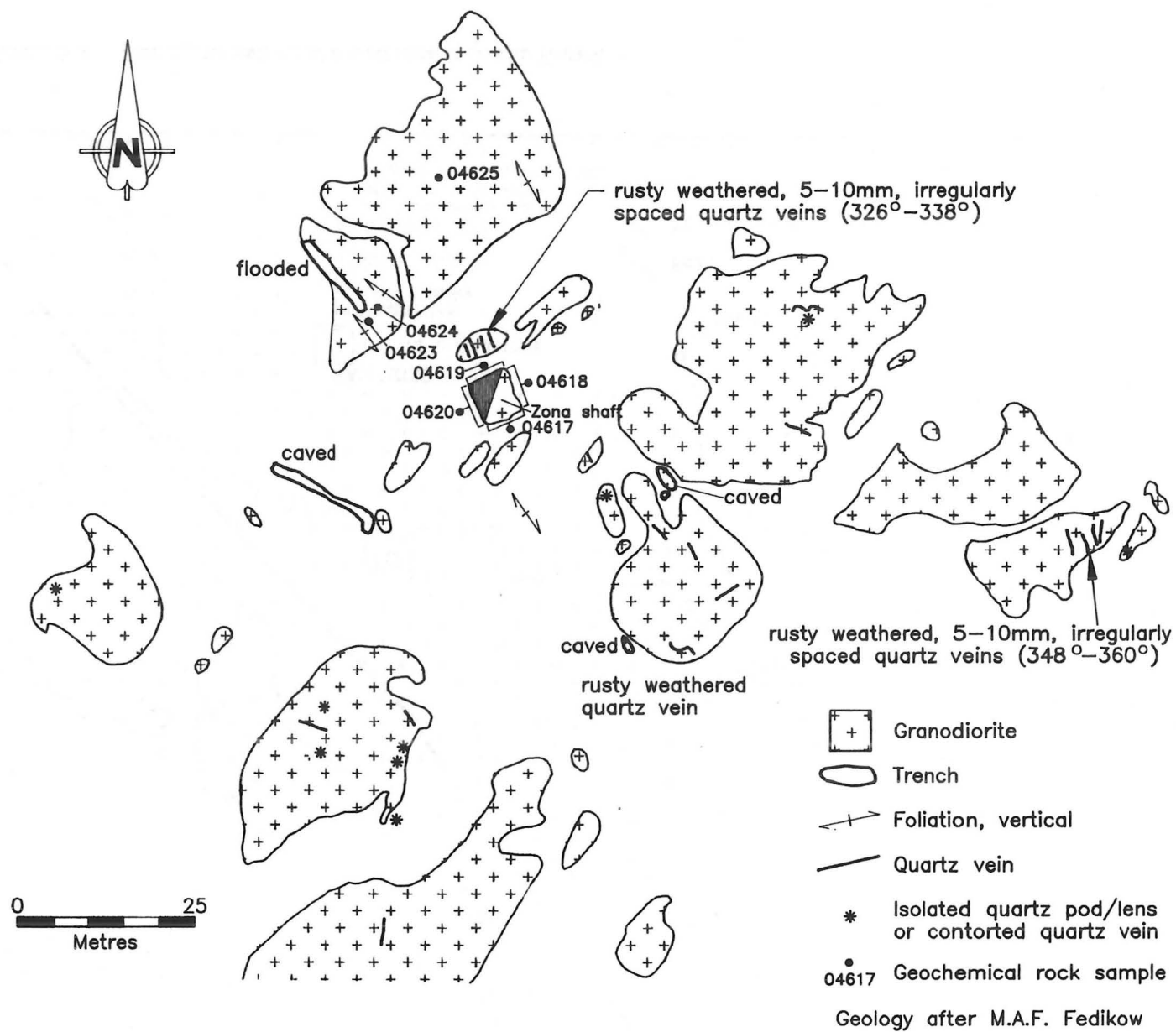


Figure 2-2: Detailed geology, shaft and trench locations at occurrence 2 (Zona).



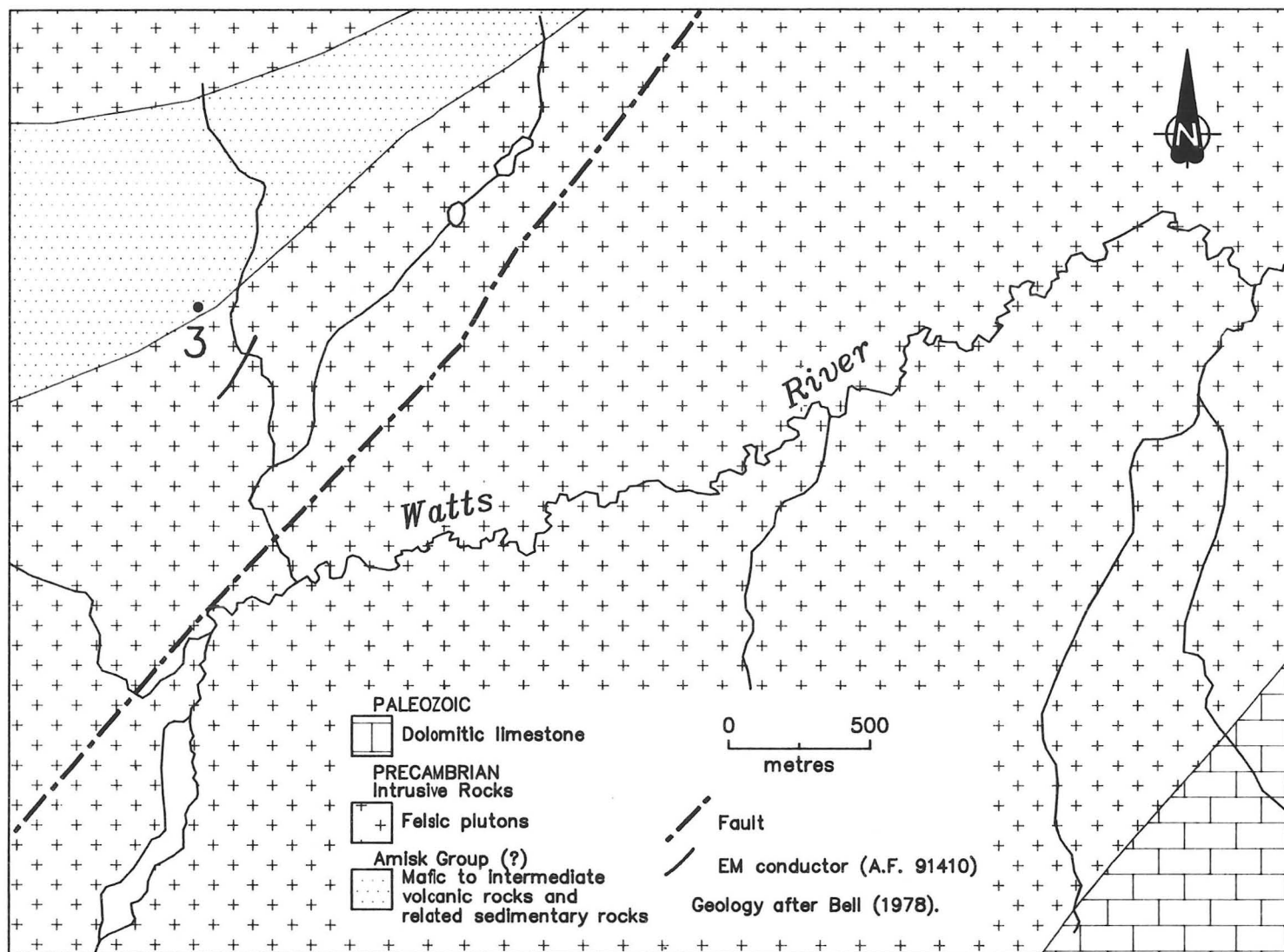


Figure 3-1: Geological setting of occurrence 3 (Watts River).



## LOCATION: 3

NAME: WATTS RIVER; Daisy 4

UTM: 6061705N/460985E

ACCESS: Helicopter and traverse; alternatively traverse from Highway 392 along winter/drill roads.

## EXPLORATION SUMMARY:

D. Ellis and W. Johnson reportedly staked the area before 1938 (details are unknown) and sank an 11 m shaft. C. Nelson staked claim Karma 3 in 1938 and optioned it to Fay Lake Mining Syndicate. The syndicate drilled 457 m of core by 1940; additional drilling may have been done in 1946. The claim was cancelled in 1949. Several parties subsequently held the ground (Mineral Inventory Card 63J/12 Au1). Testex Limited conducted an EM survey and geological mapping and sampling in 1960 (A.F. 91410). The area is covered by claims SKI W47389, staked by Snow Lake Exploration in 1984, and KUS 4244 (P4244E), staked by HBED in 1985.

Forty-four overgrown trenches and a flooded shaft were located on the property in 1988 (Fedikow and Malis, 1988). Unlabeled drill core is located in old cabins near the shaft.

## GEOLOGICAL SETTING:

The area is underlain by Amisk(?) Group mafic to intermediate volcanic rocks flanked to the north and south by felsic intrusive rocks (Fig. 3-1). At the occurrence, the fine- to medium-grained mafic rock is interpreted as gabbro, in contact with biotite-quartz-feldspar gneiss (Fig. 3-2).

## MINERALIZATION:

Disseminated pyrite with minor chalcopyrite and trace sphalerite occurs in two sets of mineralized quartz veins trending 015° and 060° with near vertical to steep easterly dips and a strike length of approximately 520 m. Visible gold (0.5 to 2.0 mm) occurs in the gabbroic wall rock adjacent to or within quartz veins near the shaft, and is most common in areas that have abundant sulphide minerals (Fedikow and Malis, 1988). A report for Testex Ltd. groups the veins into three lenses: (1) the south lens, (2) the shaft lens, and (3) the north lens (A.F. 91410). The south and shaft lenses are oriented N15°/70°E, and are 0.6 and 1.1 m wide, respectively. The north lens strikes 300° and is variable in width (max. 1.8 m).

The gabbro is bleached and silicified near quartz veins, particularly within 6 cm of the vein/wallrock con-

AREA: 4 km southwest of Watch Lake.

AIRPHOTO: A20780-25

tact, although alteration was observed up to 1 m away from the veins.

## GEOCHEMICAL DATA:

"Good Au values" from outcrop samples from the south lens were obtained by Testex Ltd. A sample taken near the prospect shaft assayed 12.7 g/t Au over 1.1 m, and a sulphide-rich muck sample contained 21.6 g/t Au. "Negative" Au assays were obtained from the north lens, but visible gold has been reported (A.F. 91410).

Nineteen samples of vein material, wall rock and muck were collected from the area for geochemical analysis (Fedikow and Malis, 1988); sample locations are shown in Figure 3-2, and results are listed in Appendix I. Gold contents range from 4 to 10200 ppb, with eight of the analysis containing >100 ppb Au. Other metal contents are low.

## CLASSIFICATION:

Vein type deposit; multiple veins. Auriferous quartz veins with minor pyrite, chalcopyrite and sphalerite occur in fracture zones hosted by mafic intrusive rocks.

## REFERENCES:

- Assessment File 91410  
Manitoba Energy and Mines, Minerals Division.
- Fedikow, M.A.F. and Malis, C.  
1988: Mineral occurrence documentation - Herbert and Pulver gneiss domes and Wekusko Lake area; In Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1988, p. 84-94.
- Frarey, M.J.  
1948: Crowduck Bay, Manitoba; Geological Survey of Canada, Map 987A, 1:63 360.
- Mineral Inventory Card 63J/12 Au1  
Manitoba Energy and Mines, Minerals Division.



#### LOCATION: 4

NAME: COPPER-MAN; Manitoba Basin  
UTM: 6055821N/443189E  
ACCESS: Via Provincial Roads 39, 392.

#### EXPLORATION SUMMARY:

The following summary is condensed from Mineral Inventory Card 63J/12 Cu1. The Cub, Bear, Amaranth and Alonsa claims were staked in 1926, and the Link and Oak claims were staked in 1928 by various parties; all claims were assigned to Jack Nutt in 1928, who assigned them to Manitoba Basin Mining Company Limited. Trenching, a Radiore survey, and a 2904 m diamond drilling program were carried out between 1927 and 1929. Leases M-265 through M-270 were issued for the claims in 1933. The assets of Manitoba Basin Mining Co. Ltd. were transferred to Manitoba Basin Consolidated Mines Limited in 1946. The leases were optioned to Sherritt Gordon Mines Limited in 1948. In 1952 the claims were assigned to Consolidated Lebel Oro Mines Limited, which later changed its name to Copper-Man Mines Limited. Copper-Man Mines Ltd. carried out a 41 hole diamond drilling program totalling approximately 3650 m in 1952, that delineated three zones of significant mineralization. Newmont Mining Corporation of Canada Limited optioned the claims in 1961 and drilled seven holes totalling 1500 m. The area was covered by an airborne EM survey, flown by HBED in 1965. Copper-Man Mines Ltd. drilled an additional thirty-three holes totalling 3414 m in 1966-67 to further test the "A" and "B" zones located in its earlier drilling program. Western Nuclear Mines Limited optioned the property in 1967, carried out VLEM, magnetometer and Turam surveys, and drilled 30 holes totalling approximately 8420 m. The assets of Copper-Man Mines Ltd. were sold to Hartland Mines Limited in 1974. Explored Area Lease 6 was issued to Hartland Mines Ltd. in 1975 to cover the area of the previous six leases. Golden Bounty Mining Company Limited acquired the lease (ca. 1980) and optioned a partial working interest to Falconbridge Nickel Mines Limited.

#### GEOLOGICAL SETTING:

The area is underlain by Amisk Group mafic volcanic rocks, flanked to the northwest by mafic intrusive rocks, and unconformably overlain to the south by Ordovician dolomitic limestone (Fig. 4-1). The mafic rocks constitute basalt flows and local flow breccias, and monolithologic to heterolithologic breccias interpreted as debris flows (Fig. 4-2; Trembath and Fedikow, 1990).

#### MINERALIZATION:

Fedikow *et al.* (1986) located near solid to solid sphalerite, chalcopyrite, arsenopyrite and pyrite in muck piled around four trenches; the mineralization is hosted by rusty weathered, sheared, silicified and Mg-altered

AREA: Southwestern end of Wekusko Lake.  
AIRPHOTO: A20127-151

felsic volcanic(?) rock (Fig. 4-2). Wright (1931, p. 107-109) describes a mineralized outcrop, 160 m x 30 m, of greyish-green, quartz-chlorite-sericite schist cut by quartz veinlets with sulphide minerals occurring in both the veins and the host rocks. Trembath and Fedikow (1990) distinguished chlorite alteration, quartz-chlorite-biotite alteration, and silicification, which locally grades into areas with diffuse quartz veins (Fig. 4-3). The alteration assemblages include trace to 5% disseminated pyrite  $\pm$  chalcopyrite  $\pm$  sphalerite and local sulphide mobilizate (stringers and fracture fillings).

#### GEOCHEMICAL DATA:

Drilling by Copper-Man Mines Ltd. in 1952 delineated three zones containing an estimated 126 630 t grading 3.1% Cu and 5.1% Zn. Further drilling on two of these zones in 1966-67 outlined 154 207 t grading 3.13% Cu and 4.71% Zn to a vertical depth of 244 m in the "A" zone, and 67 307 t grading 1.49% Cu and 3.92% Zn to a vertical depth of 170 m in the "B" zone (Mineral Inventory Card 63J/12 Cu1). Revised figures based on drilling by Western Nuclear Mines Ltd. in 1967 indicate that the "A" zone contains 149 672 t grading 3.08% Cu and 3.08% Zn open at depth, and the "B" zone, also open at depth, contains 45 355 t with "slightly lower grade". Esposito (1986) lists combined reserves of 221 308 t grading 2.63% Cu and 4.46% Zn.

Four channel samples, 1.8 to 12 m long, contained 2.78 to 4.24% Zn, 1.07 to 2.73% Cu, 0.7 to 6.8 g/t Au and 1.7 to 10.3 g/t Ag (reproduced in Wright, 1931).

Samples were collected from four trenches (Fig. 4-2) for geochemical analysis (Fedikow *et al.*, 1986); results are listed in Appendix I. Samples contained 94 to 121832 ppm Zn, 175 to 22971 ppm Cu, 3 to 53 ppm Pb, 1 to 875 ppb Au, 0.2 to 9.0 ppm Ag and 6 to 1487 ppm As.

#### CLASSIFICATION:

Stratabound massive sulphide type deposit; volcanic rock associated. Near solid to solid Cu-Zn-Fe sulphide mineralization is hosted by chlorite-sericite schist, probably originally mafic volcanic rocks.

#### REFERENCES:

- Assessment File 90600  
Manitoba Energy and Mines, Minerals Division.  
Armstrong, J.E.  
1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

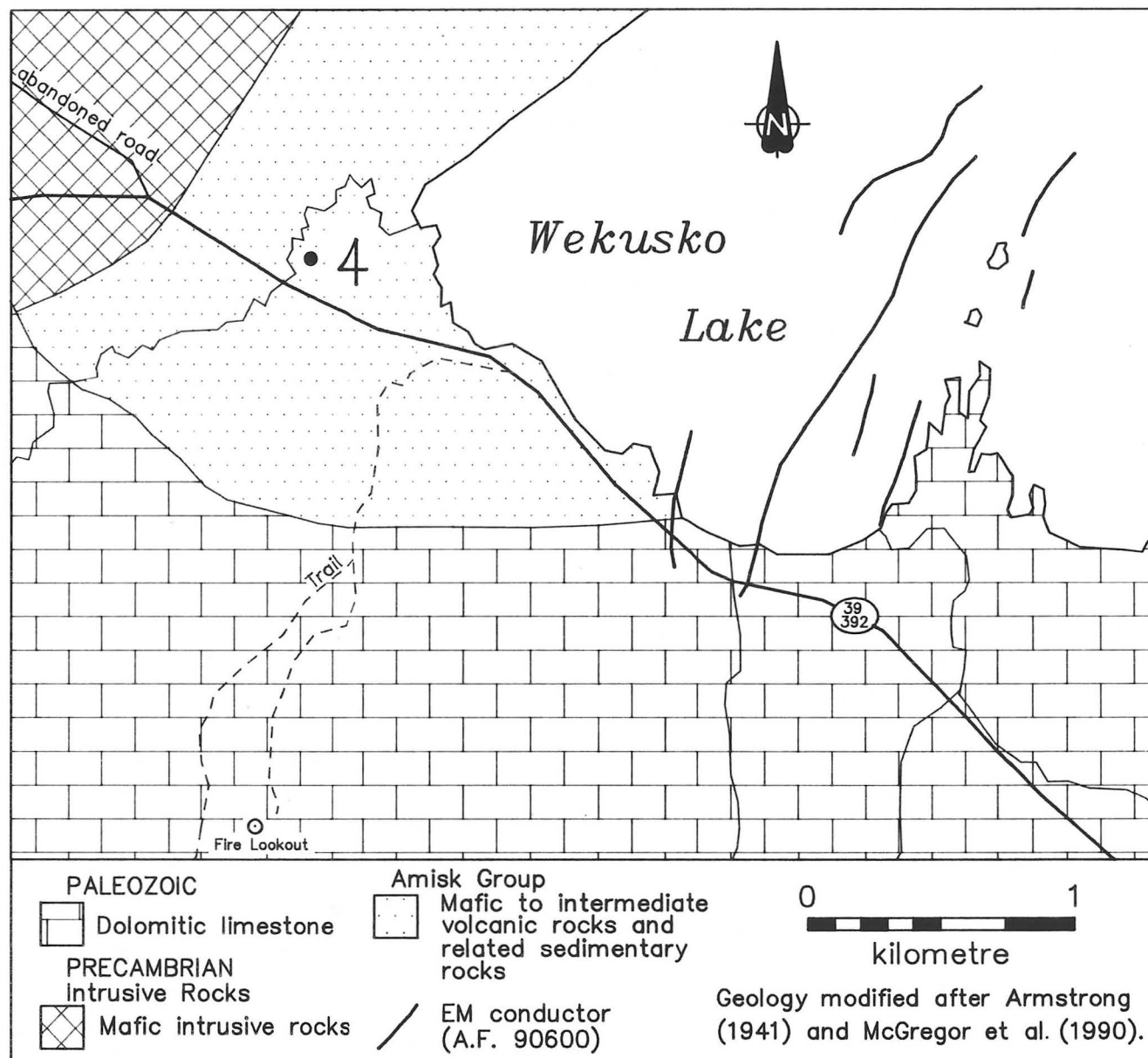


Figure 4-1: Geological setting of the Copper-Man deposit (4).

Esposito, B.

- 1986: Copper and zinc in Manitoba; Manitoba Energy and Mines, Mineral Education Series, 24 p.

Fedikow, M.A.F., Roney, C.T., Schmidt, G.J. and Robbie, T.J.

- 1986: Mineral deposit studies in the Snow Lake area; in Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1986, p. 77-85.

Mineral Inventory Card 63J/12 Cu1

Manitoba Energy and Mines, Minerals Division.

Trembath, G.D. and Fedikow, M.A.F.

- 1990: Geological setting of the Copper-Man base metal deposit (63J/12); in Manitoba Energy and Mines, Minerals Division, Report of Activities 1990, p. 84-86.

Wright, J.F.

- 1931: Geology and mineral resources of a part of northwest Manitoba; Geological Survey of Canada, Summary Report, 1930, Part C, 124p.

- 2** Fragmental Basalt, minor massive flows
- a tuff
  - b lapilli tuff
  - c heterolithic
  - d with lt. grey silicic fragments
  - e altered: epidote + Fe-oxide +/- Fe-carbonate
  - f altered: quartz + biotite + chlorite + Fe-carbonate

- 1** Basalt Flows
- a massive
  - b pillowed
  - c amygdaloidal
  - d feldspar-porphyrific
  - e altered: quartz + epidote +/- garnet + Fe-carbonate

- Area of outcrop
- - - Geological contact, assumed
- Drill hole collar
- Trench
- ↗ Schistosity
- ↘ Cleavage
- ↗ Lineation (crenulation)
- ▬ Fe-carbonate +/- quartz vein

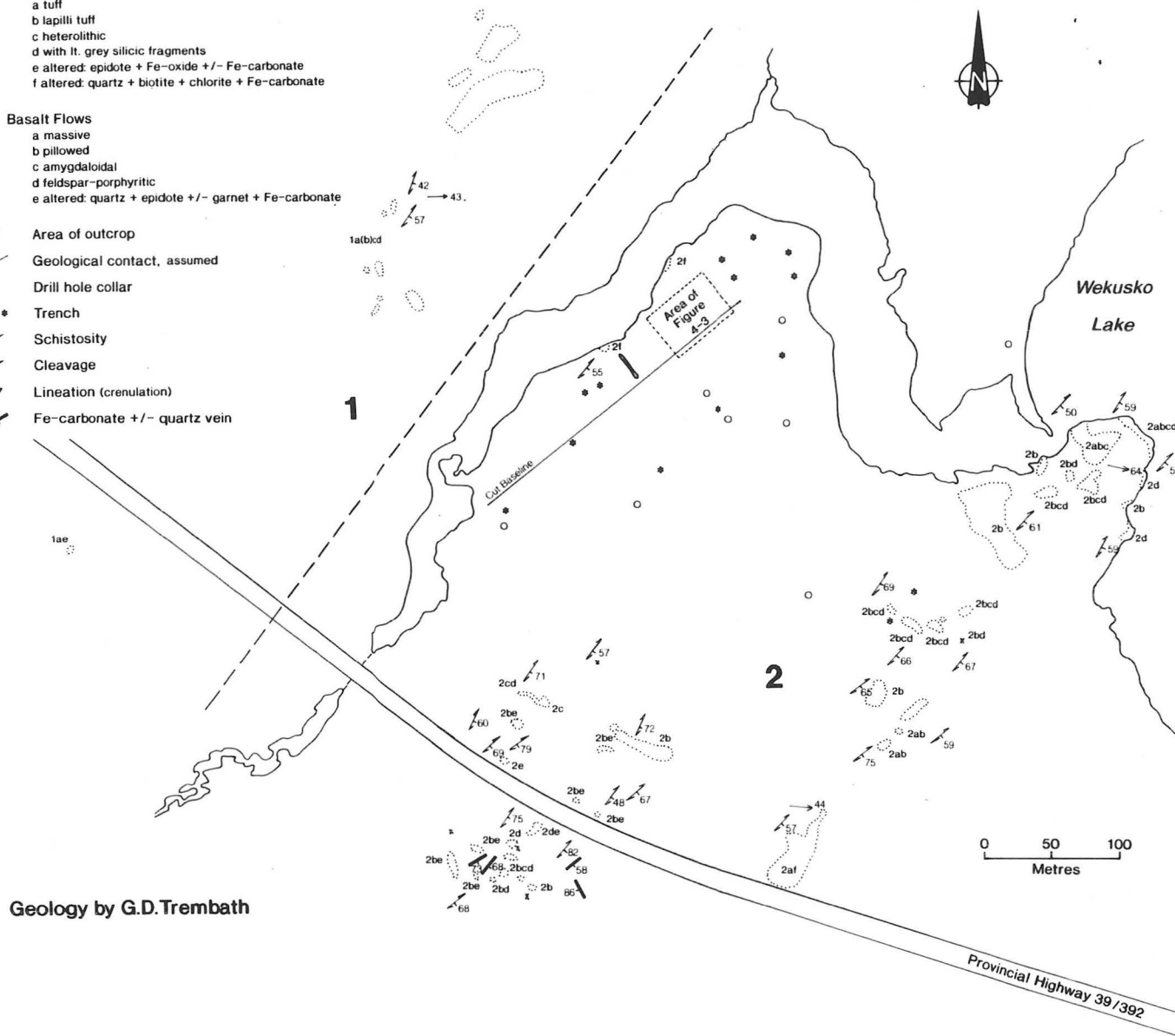


Figure 4-2: Detailed geology at the Copper-Man deposit (4).

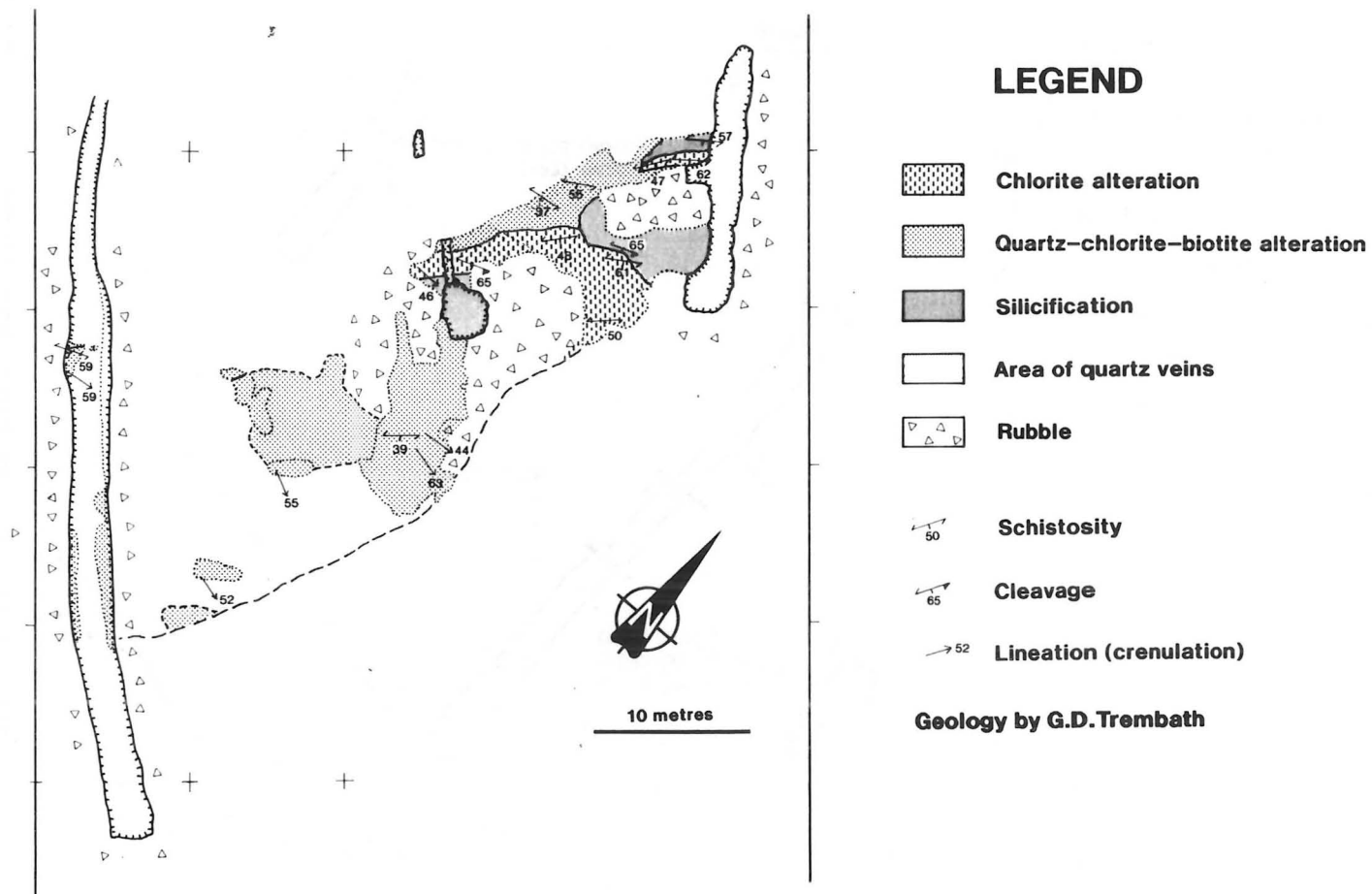


Figure 4-3: Detailed geology of outcrops of the main mineralized zone at the Copper-Man deposit (4).

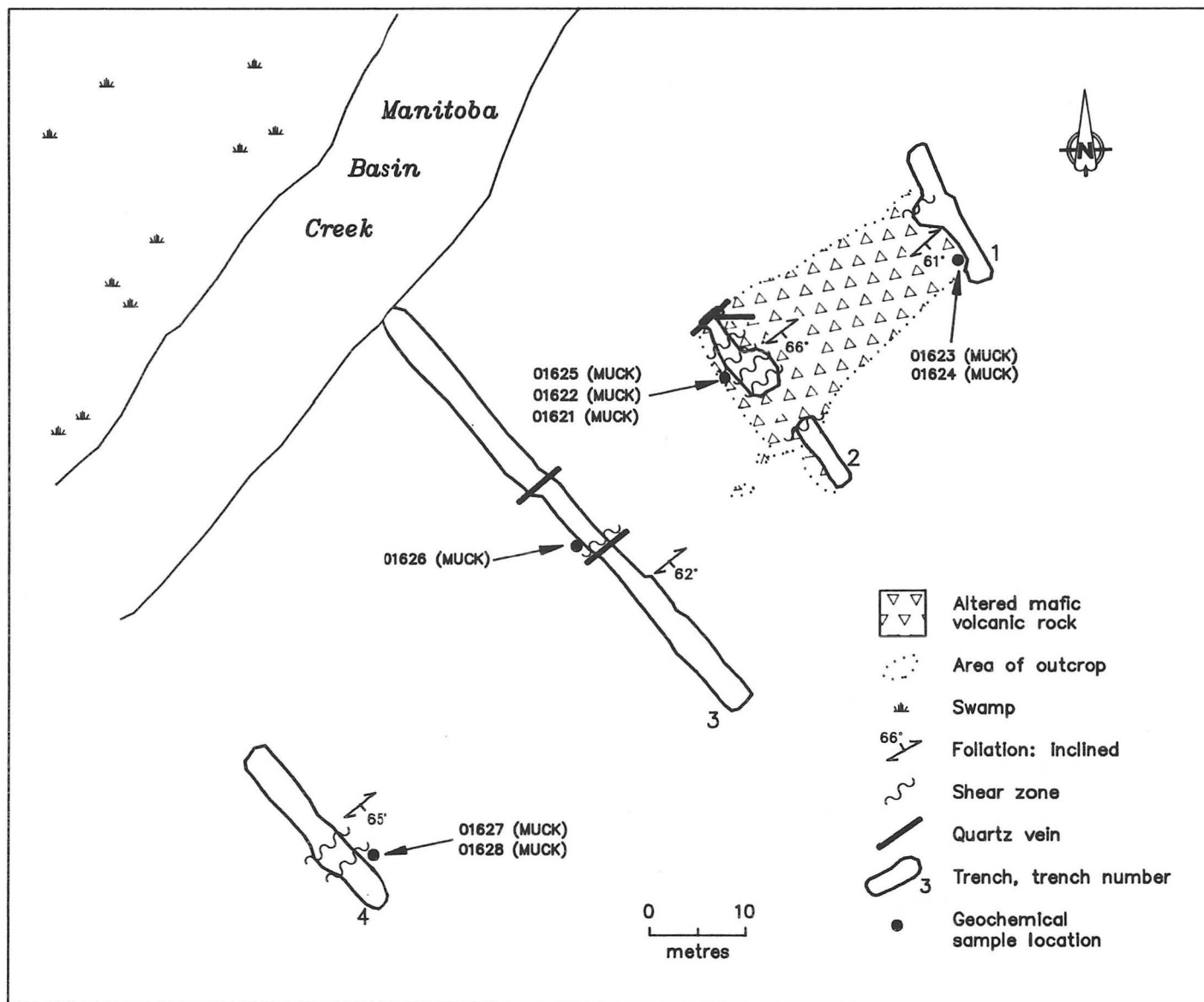


Figure 4-4: Sample locations at the Copper-Man deposit (4).



LOCATION: 5

NAME: WATCH LAKE

UTM: 6064471N/465550E

ACCESS: Helicopter to Watch Lake and traverse; alternatively winter/drill roads from highway 392.

**EXPLORATION SUMMARY:**

W. Achtemichuk staked claim Yellow 2 in 1952; the claim was cancelled in 1952. The claim was restaked by W. Achtemichuk in 1967, and optioned to Oro Mines Limited in 1968. Oro Mines Ltd. cut trenches, undertook a geological survey and possibly an airborne geophysical survey (Mineral Inventory Card 63J/12 U1). Scurry-Rainbow Oil Limited optioned the ground in 1968, and did "some packsack drilling"; the claim was cancelled in 1971 (*ibid.*). Peter Dunlop staked CB 7190 in 1975; Mid-North Uranium Limited acquired the property in 1976. HBED staked claim Kus 4167 in 1985, and remains (1990) the registered holder.

**GEOLOGICAL SETTING:**

The area is underlain by felsic intrusive rocks and Missi Group greywacke, siltstone and mudstone (Fig. 5-1).

**MINERALIZATION:**

Uranium mineralization (details not known) is hosted by a pegmatite that is at least 550 m long and 60 to 75 m wide (Mineral Inventory Card 63J/12 U1).

AREA: 1 km north of western Watch Lake; 15.5 km north of Provincial Road 39.

AIRPHOTO: A20808-181

**GEOCHEMICAL DATA:**

Samples taken by Oro Mines Ltd. averaged >0.05%  $U_3O_8$ ; some leached outcrop samples contained up to 0.2%  $U_3O_8$  (Mineral Inventory Card 63J/12 U1).

**CLASSIFICATION:**

Pegmatite type deposit.

**REFERENCES:**

Frarey, M.J.

1948: Crowduck Bay, Manitoba; Geological Survey of Canada, Map 987A, 1:63 360.

Mineral Inventory Card 63J/12 U1

Manitoba Energy and Mines, Minerals Division.

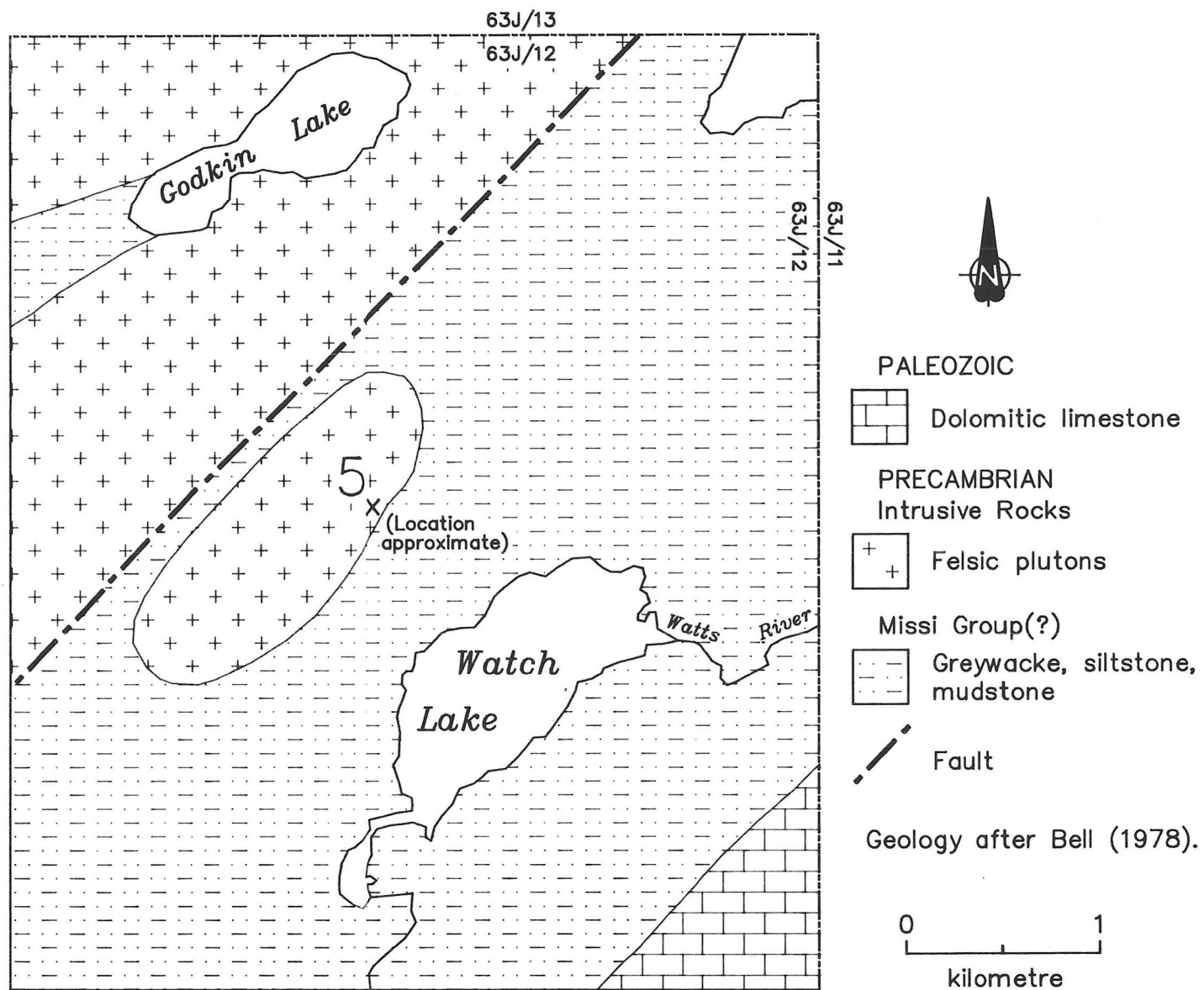


Figure 5-1: Geological setting of occurrence 5 (Watch Lake).

LOCATION: 6

NAME: KORSKI LAKE

UTM: 6041607N/446735E

ACCESS: Via bush aircraft.

#### EXPLORATION SUMMARY:

Falconbridge Nickel Mines Limited registered Airborne Permit 24 in 1959 and conducted a magnetometer survey over the area. Later in 1959, Geophysical Reservation 11 was granted to R. Campbell (Mineral Inventory Card 63J/12 Cu2). Falconbridge Nickel Mines Ltd. undertook a ground magnetometer survey and drilled three holes totalling 438 m to test high magnetic anomalies in 1960 (A.F. 91729). The reservation was removed in 1962. The area is open for staking (1990).

#### GEOLOGICAL SETTING:

The area is underlain by Paleozoic dolomitic limestone and sandstone. Drill holes intersected fine grained amphibole- and/or chlorite-rich "greenstone" with quartz stringers and chloritized, serpentized and talcose ultramafic rocks (Fig. 6-1)(A.F. 91729).

#### MINERALIZATION:

DDH 104A and 104B each intersected three sections up to 1.2 m long that contain 40 to 80% fine- to coarse-grained pyrite  $\pm$  pyrrhotite in intensely foliated chloritic "greenstone". Serpentinite and light grey-green altered peridotite with abundant narrow veinlets of quartz and/or carbonate overlie and are mixed with the greenstone. Garnets occur downhole from the sulphide-bearing intersections from DDH 104A and 104B. DDH 104C did not intersect sulphide mineralization (A.F. 91729).

AREA: 500 m northeast of the outlet of Korski Lake.

AIRPHOTO: A20170-70

#### GEOCHEMICAL DATA:

Drill core from DDH 104A and 104B assayed nil to 0.15% Ni, 0.06 to 0.24% Cu and nil to trace Au (A.F. 91729).

#### CLASSIFICATION:

Stratabound massive sulphide type deposit; volcanic rock associated. Moderate to near solid Fe-sulphide sections with minor Cu-Ni mineralization are hosted by chloritized mafic volcanic and altered ultramafic rocks. The garnetiferous greenstone that underlies the near solid sulphide mineralization may represent footwall alteration. The altered and mineralized ultramafic rocks may have potential for platinum group elements.

#### REFERENCES:

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment File 91729

Manitoba Energy and Mines, Minerals Division.

Mineral Inventory Card 63J/12 Cu2

Manitoba Energy and Mines, Minerals Division.

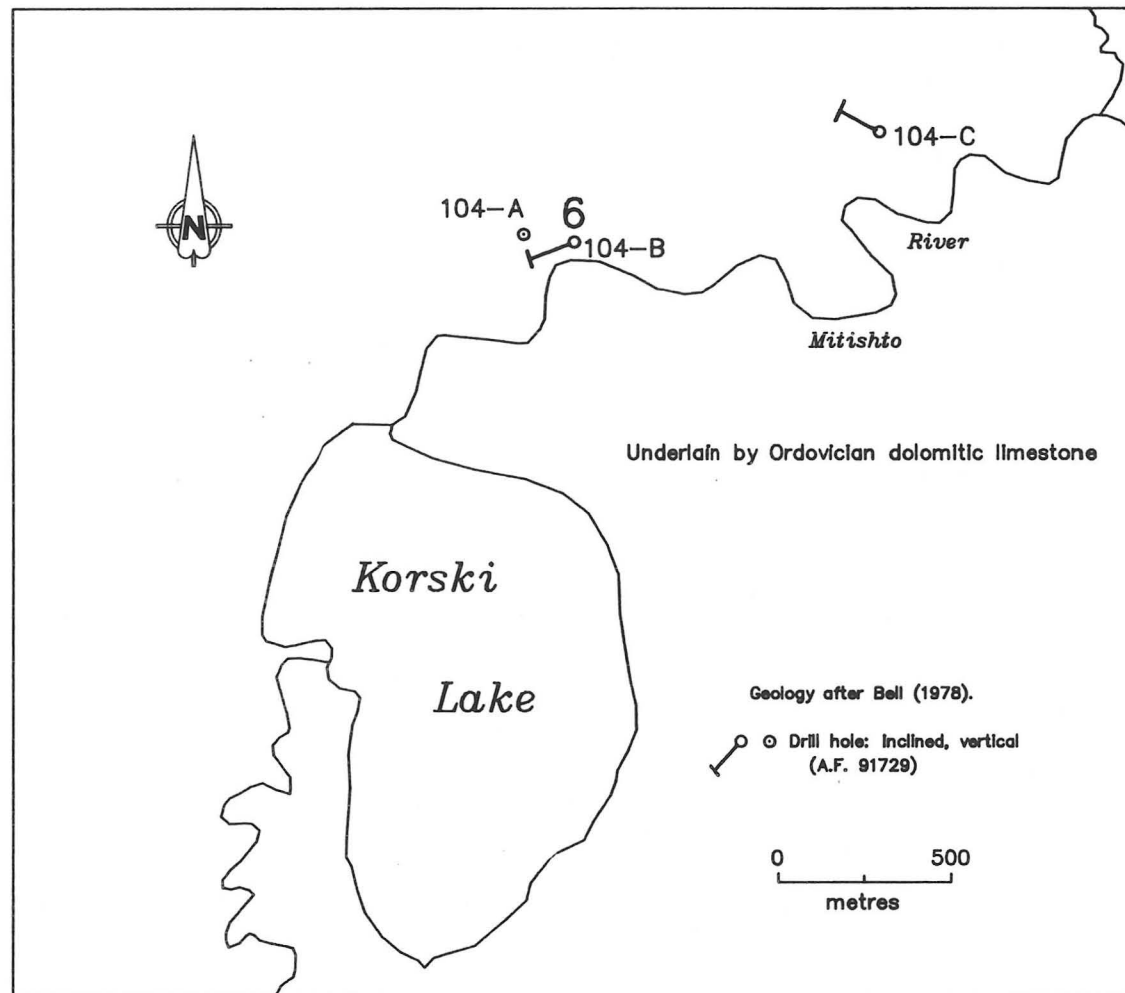


Figure 6-1: Geological setting and drill hole locations at occurrence 6 (Korski Lake).

LOCATION: 7

NAME: LUCKY JACK

UTM: 6060229N/451265E

ACCESS: Via boat on Wekusko Lake and traverse.

AREA: 4.3 km north of Buzz Lake.

AIRPHOTO: A20124-99

#### EXPLORATION SUMMARY:

The Lucky Jack claim was staked by J.C. Snoway in 1922; two-thirds interest was assigned to L.M. Swartout in 1923 and one-third interest was assigned to J. Nutt and H.D. Elliot in 1924. In 1923 pits and trenches were dug, and from 1924 to 1926 a 20 m shaft was sunk. The claim was assigned to Broad Bay Mining Company Limited in 1925, and to Lucky Jack Mines Limited in 1928. The shaft may have been deepened to 23 m in 1928. Lucky Jack Mines Limited became Sask-Mani Precious Metals Mining Company Limited in 1929. The claim was cancelled in 1934. Several parties have subsequently staked the property. The area is covered (1990) by the Tom claim, staked by T.P. Kobar in 1979, transferred in 1988 to John B. Kobar, and transferred later in 1988 to Koban Resources Incorporated.

#### GEOLOGICAL SETTING:

The area is underlain by granodiorite, flanked to the north and west by Amisk Group mafic volcanic rocks and to the east by Missi Group felsic volcanic rocks (Fig. 7-1). In the general area of the occurrence medium grained pink granodiorite is crosscut by a band of black chlorite schist that may represent assimilated volcanic rock. The schist band, approximately 0.6 m wide, trends 140° and is exposed for approximately 30 m along strike (Wright, 1931, p. 93).

#### MINERALIZATION:

Fedikow *et al.* (1986) describe a rusty weathered quartz vein with minor disseminated pyrite and malachite stains hosted by granite. A stockwork of pyrite and arsenopyrite-bearing quartz veins up to 23 m wide, including one vein up to 7.6 m wide, hosted by granodiorite, is described in Mineral Inventory Card 63J/12

Au3. Gold is associated with sulphide minerals in this vein system. Some of the quartz veins are pegmatitic and contain accessory muscovite and biotite (Wright, 1931, p. 93).

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Vein type deposit; multiple veins. Quartz veins contain gold and base metal mineralization.

#### REFERENCES:

- Armstrong, J.E.  
1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.
- Fedikow, M.A.F., Roney, C.T., Schmidt, G.J. and Robbie, T.J.  
1986: Mineral deposit studies in the Snow Lake area; in Manitoba Energy and Mines, Minerals Division, Report of Field Activities, 1986, p. 77-85.
- Frarey, M.J.  
1948: Crowduck Bay, Manitoba; Geological Survey of Canada, Map 987A, 1:63 360.
- Mineral Inventory Card 63J/12 Au3  
Manitoba Energy and Mines, Minerals Division.
- Wright, J.F.  
1931: Geology and mineral deposits of a part of northwest Manitoba; Geological Survey of Canada, Summary Report, 1930, Part C, 124p.

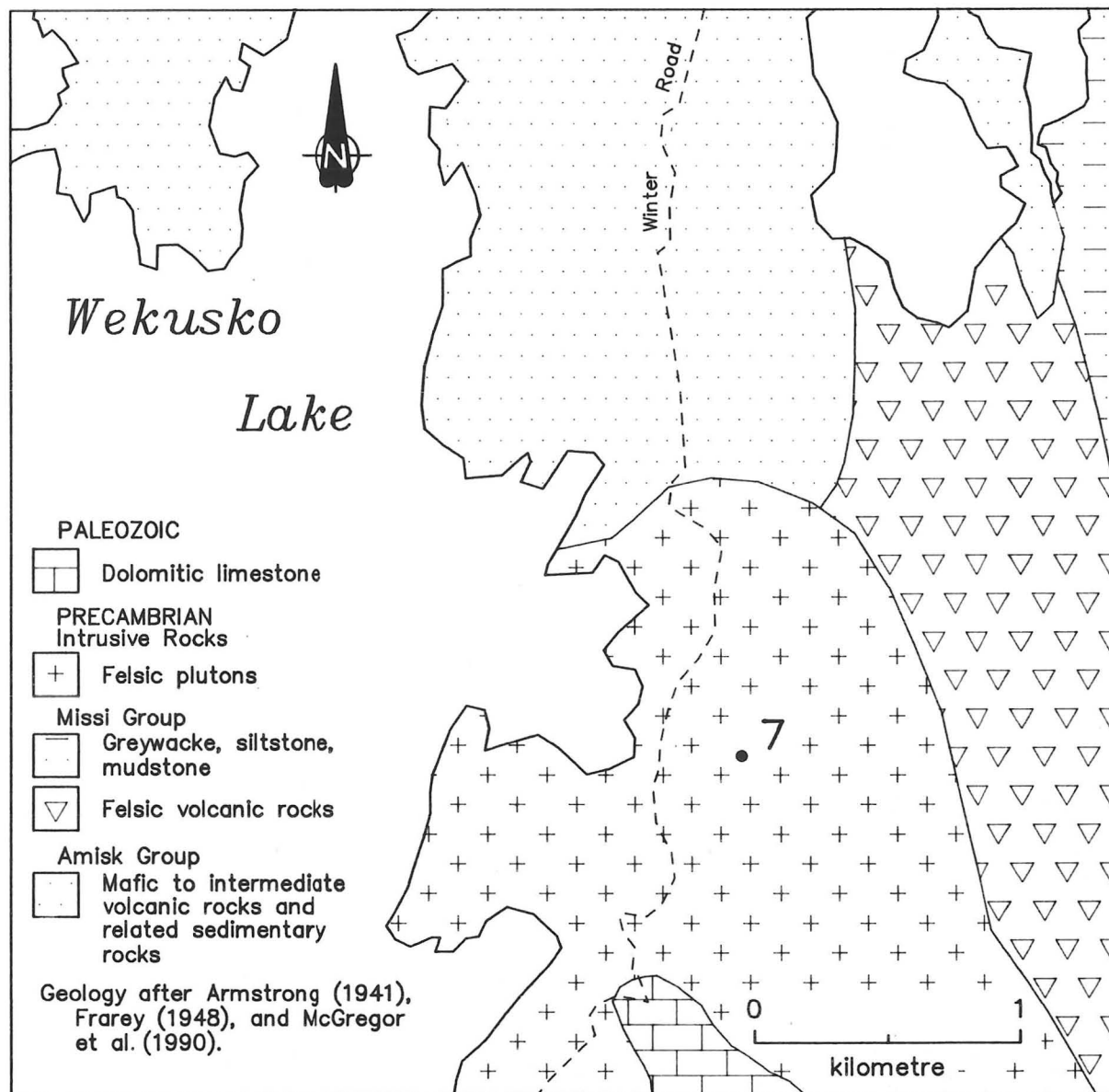


Figure 7-1: Geological setting of occurrence 7 (Lucky Jack).

**LOCATION: 8**

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

**UTM:** 6060608N/437611E

**ACCESS:** Via Provincial Road 392.

**EXPLORATION SUMMARY:**

Crowpat Minerals Limited drilled five holes totalling 492 m on the Jug claims in 1957 (A.F. 90590). Two holes totalling 21.5 m were drilled on the Oak claims by Adam Sedor in 1957 (A.F. 90592). Jay Kay Exploration Syndicate drilled fourteen holes totalling 1003 m on the Bridge claims from 1952 to 1960 (A.F. 90580). Canadian Nickel Company Limited drilled five holes totalling 607 m to test EM conductors on claim Pat 10 and the Hay claims in 1966 (A.F. 90593). HBED undertook an HLEM survey on CB 3007 in 1974 (A.F. 91455). Portions of the area are covered by claims Aura 2 and Aura 3, staked by Robert Williams in 1988.

**GEOLOGICAL SETTING:**

The area is underlain by mafic and felsic intrusive rocks that are in fault contact with Amisk Group mafic volcanic rocks and argillaceous sedimentary rocks to the east (Fig. 8-1). Drilling by Crowpat Minerals Ltd. intersected mafic volcanic rocks, mafic intrusive rocks ranging from quartz diorite to diorite, and minor felsic fragmental rocks, greywacke, argillite and intermediate to mafic tuff (A.F. 90590). DDH 4 and 5 also intersected porphyritic granite, greywacke, mafic volcanic rocks, and narrow intermediate dykes (A.F. 90590). Drill logs from A.F. 90593 note volcanic rocks, including minor rhyolite from DDH 30819, quartz-rich sedimentary rocks and minor gabbro. Drilling by Jay Kay Exploration Syndicate intersected gabbro, peridotite, diorite, chlorite  $\pm$  graphite schist, argillaceous sedimentary rocks and graphitic "slate schist" (A.F. 90580). Drilling by A. Sedor intersected norite beneath a thin (3 m) limestone cover (A.F. 90592).

**MINERALIZATION:**

A 52.1 m core length of black graphitic argillite with minor pyrite and trace chalcopyrite was intersected in core from DDH 1A, and a 44 m long interval of solid graphite with pyrite occurred at the contact between sedimentary and mafic volcanic rocks in drill core from one of the drill holes numbered DDH 1 by Jay Kay Exploration (A.F. 90580).

"Specks" of chalcopyrite were noted in diorite from DDH 2. Norite contains trace to minor pyrite, pyrrhotite

**AREA:** West end of Goose Bay (Wekusko Lake).

**AIRPHOTO:** A20170-3

and chalcopyrite (A.F. 90592). Minor sections of gabbro, diorite and chlorite-graphite schist contain pyrrhotite and/or pyrite (amount not specified) and minor quartz stringers (A.F. 90580). Massive (and pillowed?) volcanic rocks, greywacke, mafic tuff, argillite and felsic fragmental rocks contain trace fine grained disseminated pyrrhotite.

Quartz diorite is altered to an assemblage of sericite, chlorite, carbonate, and locally, talc. Mafic volcanic rocks are commonly chloritized and locally sericitized. Greywacke may be micaceous (chlorite  $\pm$  muscovite/sericite  $\pm$  phlogopite); greywacke in core from DDH 4 and 5 is also garnetiferous. Mineralization is not described in drill logs from A.F. 90593.

DDH 1 (claim Oak 3) intersected a 7.3 m interval of norite that contains disseminated pyrite and chalcopyrite. DDH 1 (claim Oak 4) intersected 2.1 m of disseminated pyrite, as well as 7.6 cm and 22.9 cm wide quartz veins with disseminated pyrite, pyrrhotite and chalcopyrite, in norite (A.F. 90592).

**GEOCHEMICAL DATA:**

Drill core samples of gabbro and black argillite from DDH 1A contained nil to trace Cu, nil Ni, trace Ag and trace Au (A.F. 90580).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Minor pyrite and trace chalcopyrite occur in graphitic argillaceous sedimentary rocks. In addition, disseminated mineralization - not classified. Disseminated pyrrhotite and rare chalcopyrite occur in many lithologies. The altered and mineralized ultramafic rocks should be assessed for platinum group elements.

**REFERENCES:**

Assessment Files 90580, 90590, 90592, 90593, 91455  
Manitoba Energy and Mines, Minerals Division.

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

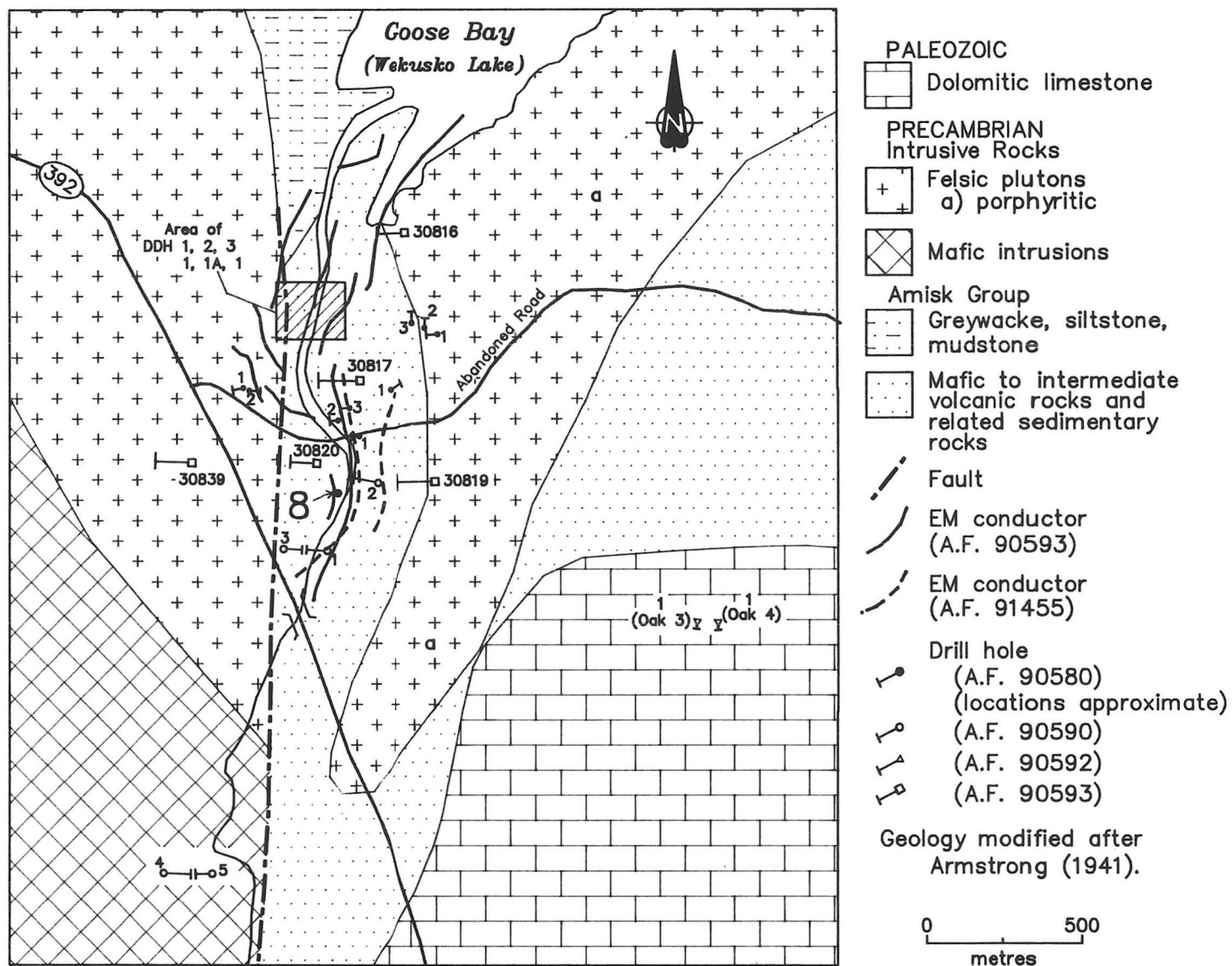


Figure 8-1: Geological setting and drill hole locations at occurrence 8.



#### LOCATION: 9

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

UTM: 6062317N/437203E

ACCESS: Via Provincial Road 392 and traverse, or by boat on Wekusko Lake.

#### EXPLORATION SUMMARY:

R.G. Crosby conducted ground magnetometer and VLEM surveys and drilled three holes totalling 535 m on the Hay claims in 1954-55 (A.F. 90597). Falconbridge Nickel Mines Limited drilled four holes totalling 591 m on the Goose claims in 1969 (A.F. 90595). HBED undertook an HLEM survey and drilled five holes totalling 475 m on CB 5767 in 1977 (A.F. 92656). HBED drilled DDH KUS-166 (106 m) to test an EM conductor in 1983 (A.F. 92660) and DDH KUS-167 (127 m) in 1984 (A.F. 92662) on CB 5768. The area is partly covered by claims Kus 3904 and Kus 3858, staked by HBED in 1986 and 1985, respectively.

#### GEOLOGICAL SETTING:

The area is underlain by Amisk Group argillite and greywacke, flanked to the north and south by felsic intrusive rocks (Fig. 9-1). The KUS drill holes intersected siltstone to mudstone intermixed with argillite and graphitic argillite. DDH 1, 2 and 3 intersected graphitic tuff and argillaceous sedimentary rocks (A.F. 90597). DDH G1 through G4 intersected quartz porphyry, argillite, graphite schist and minor granite (A.F. 90595). Sedimentary rocks intersected in DDH KUS-158 have been intruded by diorite, granodiorite, quartz diorite and aplite (A.F. 92656). DDH KUS-166 also intersected feldspar- and quartz-porphyrific aplite dykes (A.F. 92660, 92662).

#### MINERALIZATION:

Drill core from DDH KUS-158 contained several intersections up to 10.8 m long with a maximum of 50% pyrite and traces of sphalerite and chalcopyrite interbedded with graphitic argillite and chert (A.F. 92656). Pyrite occurs as near solid to solid sections, fine layers and stringers, and framboidal aggregates. Graphitic argillite and graphitic tuff intersected in the KUS drill holes and DDH 1, 2 and 3 contain minor pyrite, pyrrhotite and quartz disseminated inhomogeneously through-

AREA: Goose Bay (Wekusko Lake).

AIRPHOTO: A20170-4; A20125-98, -99

out the core. Pyritic, graphitic argillite from DDH KUS-166 and KUS-167 contains mm- to cm-size quartz  $\pm$  carbonate  $\pm$  feldspar veinlets and blebs (A.F. 92660). Part of the graphitic argillaceous rock from DDH 3 is altered to a dark and medium green talc-chlorite rock (A.F. 90597).

The aplite dykes intersected by DDH KUS-166 are epidotized and contain traces of fine grained disseminated pyrite and pyritic quartz stringers (A.F. 92660). Mineralization is not described in drill logs for DDH G1 through G4 (A.F. 90595).

#### GEOCHEMICAL DATA:

Drill core assays from DDH KUS-158 and KUS-160 are low, except for one 0.5 m sample from DDH KUS-158 with 1.2% Zn and one 0.5 m sample from DDH KUS-160 with 0.5% Zn (A.F. 92656). Drill core assays from DDH KUS-166 have ranges of 51 to 283 ppm Cu, 54 to 279 ppm Zn, nil to 8.9 g/t Ag, and nil Au (A.F. 92660). Drill core assays from DDH KUS-167 have ranges of 0.02 to 0.09% Cu, 0.01 to 0.09% Zn, nil to 8.2 g/t Ag and nil to 0.7 g/t Au (A.F. 92662). Drill core assays from DDH KUS-157, -159, and -161 are low.

#### CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation.

#### REFERENCES:

- Assessment Files 90595, 90597, 92656, 92660, 92662  
Manitoba Energy and Mines, Minerals Division.  
Armstrong, J.E.  
1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

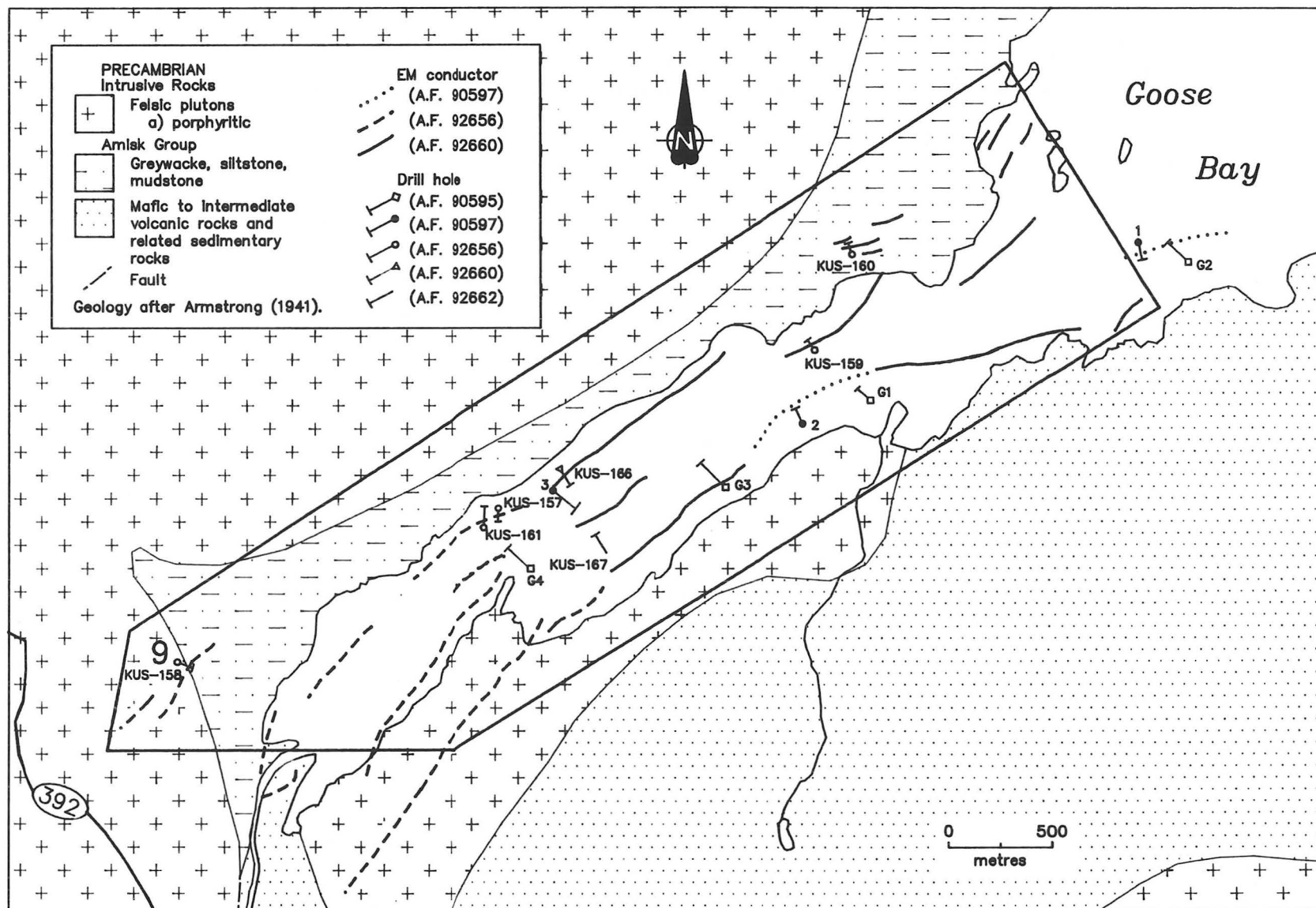


Figure 9-1: Geological setting and drill hole locations at occurrence 9.

#### LOCATION: 10

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

UTM: 6060890N/440421E

ACCESS: Via an abandoned road leading from Provincial Road 392.

#### EXPLORATION SUMMARY:

R.G. Crosby drilled six holes totalling 103 m on the Mona claims in 1953, and conducted magnetometer and VLEM surveys in 1957 (A.F. 90589). Frobisher Limited undertook magnetometer and ground EM surveys and drilled at least four holes totalling 663 m (drill logs are not available) on the Bull claims from 1956 to 1959 (A.F. 90581, 90582). Cerro Mining Corporation of Canada drilled three holes totalling 243 m on the Cuzn claims in 1968 (A.F. 90584). Roy Leslie drilled two holes totalling 53 m on claim Cop 1 in 1970 (A.F. 90583). Portions of the area are included in claims Nonie and Nonie 1, staked by Harry E. Roberts in 1988 and 1989, respectively.

#### GEOLOGICAL SETTING:

The area is underlain by felsic intrusive and Amisk Group mafic volcanic rocks, unconformably overlain in the south by Ordovician dolomitic limestone (Fig. 10-1). Drill holes intersected dolomitic limestone, gabbro, quartz gabbro and granite (A.F. 90581, 90583). Drilling by R.G. Crosby intersected serpentinized mafic rocks and diorite (A.F. 90589). Drilling by Cerro Mining Corporation intersected mafic volcanic rocks, porphyritic granite, and minor (<1 m) nonmineralized shear zones (A.F. 90584).

#### MINERALIZATION:

DDH 3 (Cerro Mining Corp.) intersected "accessory amounts" of pyrite and chalcopyrite in 47.2 m of gabbro, and traces of pyrite and chalcopyrite disseminated throughout two diorite units, 5.5 m and 10.4 m long

AREA: South of Goose Bay (Wekusko Lake).

AIRPHOTO: A20125-95, -96

(A.F. 90584). Minor pyrite and chalcopyrite were intersected in 4.6 m of diorite from DDH 2 and in 7.6 m of mafic volcanic rocks from DDH 5 (A.F. 90589). Minor (<1 m) intersections of gabbro and granite from DDH 1 (Frobisher Ltd.) contain <2% pyrrhotite blebs and traces of pyrite and chalcopyrite; traces of pyrrhotite, pyrite and chalcopyrite are disseminated throughout the intrusive rocks. A 2.9 m intersection of diorite from DDH 1 (R. Leslie) contained "much" disseminated fine grained pyrite (A.F. 90583). Gabbro is variably silicified, chloritized and carbonatized (A.F. 90581).

#### GEOCHEMICAL DATA:

None.

#### CLASSIFICATION:

Disseminated mineralization - not classified. Minor Fe-sulphide minerals and trace chalcopyrite are disseminated in mafic intrusive rocks, and to a lesser degree, in mafic volcanic rocks. The altered and mineralized mafic intrusive rocks should be assessed for platinum group elements.

#### REFERENCES:

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

Assessment Files 90581, 90582, 90583, 90584, 90589  
Manitoba Energy and Mines, Minerals Division.

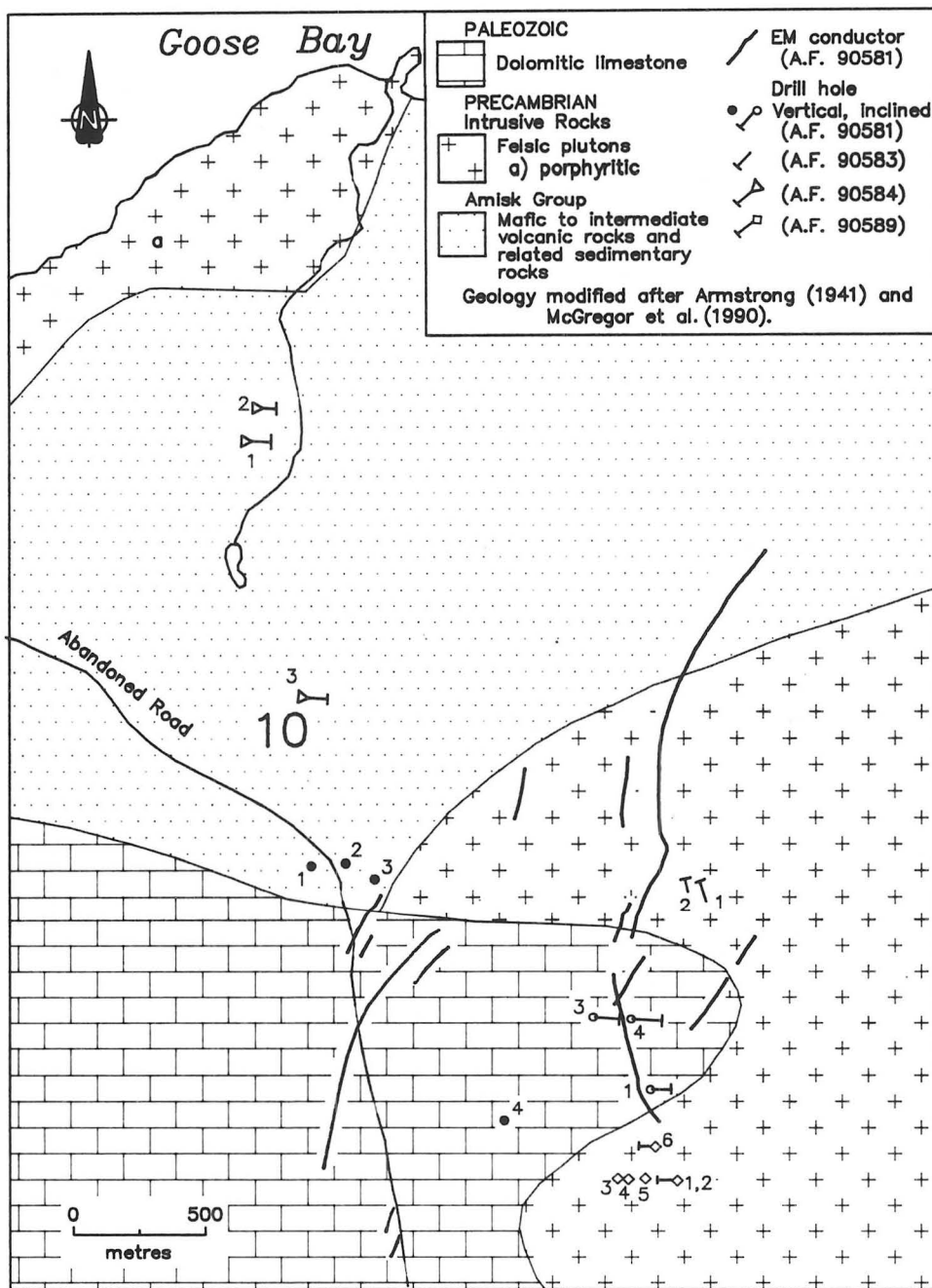


Figure 10-1: Geological setting and drill hole locations at occurrence 10.

**LOCATION: 11**

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

**UTM:** 6057842N/438013E

**ACCESS:** Via Provincial Road 392.

**EXPLORATION SUMMARY:**

D.R. MacDougall drilled eleven holes totalling 168 m on claim Hawk 9, one hole on claim Oak 3, and one hole on claim Oak 4 in 1957 (A.F. 90592). The area is covered (1990) by claim Aura 1, staked by Robert Williams in 1988.

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone. Amisk Group mafic volcanic rocks, in fault contact to the west with gabbro, occur to the northwest (Fig. 11-1). Drill holes intersected limestone, "greenstone" and "sheared greenstone" with minor quartz stringers, and minor granite (A.F. 90592).

**MINERALIZATION:**

The eleven drill holes on claim Hawk 9 intersected disseminated pyrite and chalcopryrite in sheared and foliated "greenstone" over core intervals of 0.9 to 5.2 m (DDH 1 through 9, and 11) and 6.1 m of disseminated pyrite in granite gneiss (DDH 10). Minor pyrite  $\pm$  chalcopryrite

**AREA:** South of Goose Bay (Wekusko Lake).

**AIRPHOTO:** A20170-1

pyrite  $\pm$  sphalerite are associated with quartz veins up to 0.5 m wide (DDH 2,3, and 7).

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Vein type deposit; multiple quartz veins containing iron and base metal sulphide mineralization in ultramafic rocks. The ultramafic rocks may represent a potential target for platinum group element exploration. Disseminated mineralization-not classified occurs in sheared and massive basalt.

**REFERENCES:**

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

Assessment File 90592

Manitoba Energy and Mines, Minerals Division.

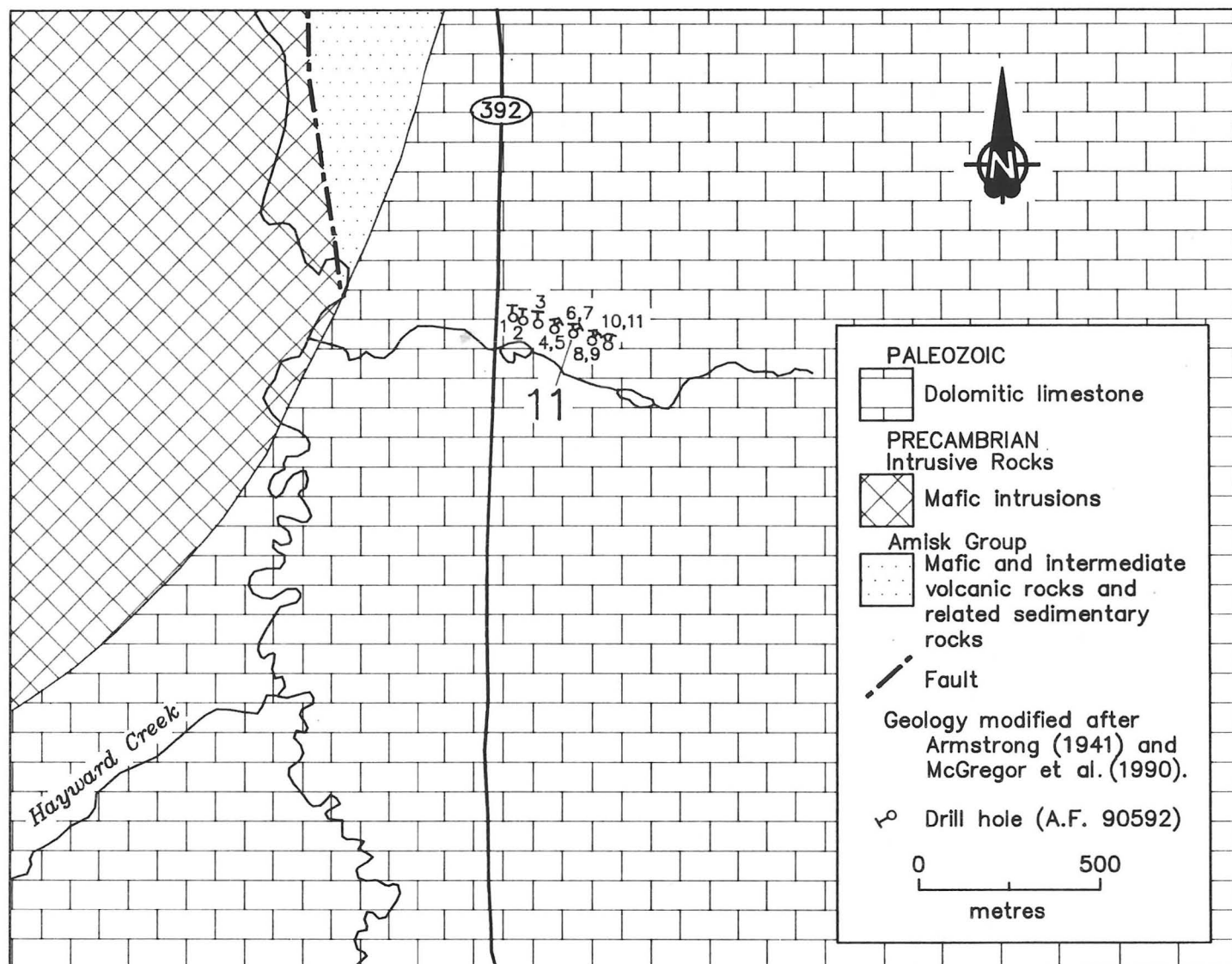


Figure 11-1: Geological setting and drill hole locations at occurrence 11.

**LOCATION: 12**

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

**UTM:** 6066128N/448022E

**ACCESS:** Via boat on Wekusko Lake.

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted an HLEM survey on CB 8166 in 1977 (A.F. 92429) and drilled two holes totalling 158 m in 1978 (A.F. 92430). The area is partly covered by claim Noc 4, staked by Strider Resources Limited in 1988, and claim Hemi 11, staked by Clair D. Pilgrim in 1989.

**GEOLOGICAL SETTING:**

The area is underlain by Amisk Group mafic and felsic volcanic rocks (Fig. 12-1). Drill holes intersected felsic to intermediate and intermediate to mafic tuff (A.F. 92430).

**MINERALIZATION:**

DDH 138-31A intersected 2.1 m of near solid to solid graphite with up to 40% pyrite blebs, disseminations and stringers hosted by felsic to intermediate tuff. The remainder of the core contains narrow stringers of solid graphite and minor disseminated pyrite. Minor pyrite is disseminated throughout felsic to intermediate tuff in core from DDH 138-30. Felsic to intermediate volca-

**AREA:** Puella Bay (Wekusko Lake).

**AIRPHOTO:** A20170-53

nic tuff is weakly chloritized and sericitized; intermediate to mafic tuff is chloritic. Both types of tuff contain abundant narrow quartz stringers (A.F. 92430).

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Near solid to solid graphite and moderate pyrite are hosted by felsic to intermediate tuff.

**REFERENCES:**

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

Assessment Files 92429, 92430

Manitoba Energy and Mines, Minerals Division.

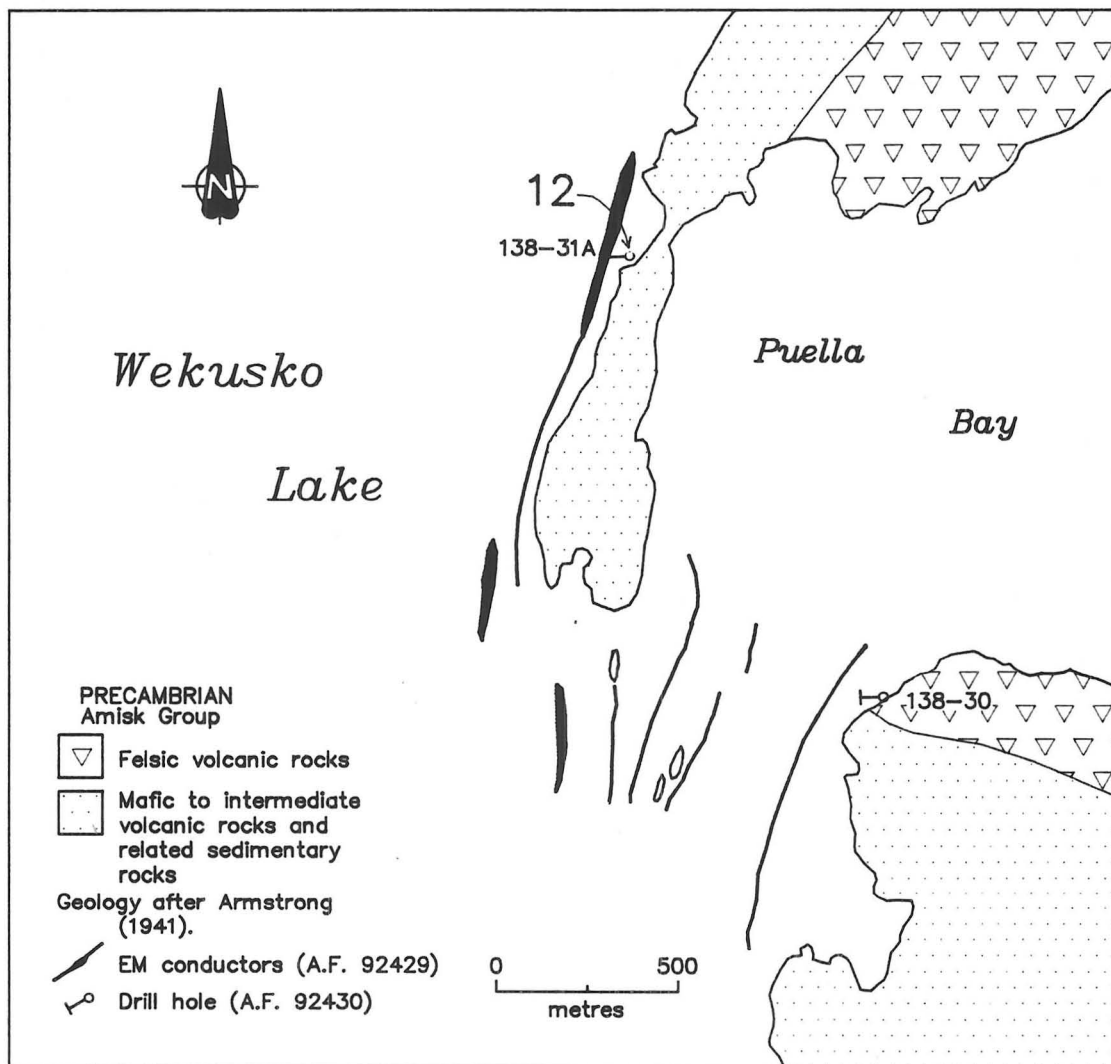


Figure 12-1: Geological setting and drill hole locations at occurrence 12.



## LOCATION: 13

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

UTM: 6054670N/437541E

ACCESS: Via traverse from Provincial Road 39.

## EXPLORATION SUMMARY:

Manitoba Mineral Resources Limited conducted airborne EM and magnetometer surveys and drilled six holes totalling 582 m on Reservation of Mineral Rights 145 from 1974 to 1976 (A.F. 92426). MMR also conducted an HLEM survey and drilled five holes totalling 351 m on CB 6680, CB 6681 and CB 6588 in 1977 (A.F. 92428). The area is open for staking (1990).

## GEOLOGICAL SETTING:

The area is underlain by Ordovician dolomitic limestone (Fig. 13-1). DDH 1 through 5 and 12 intersected coarse grained quartzite and quartzite intermixed with siltstone, greywacke, and massive grey and green granular undifferentiated sedimentary rocks (A.F. 92426). DDH 15 through 19 intersected limestone, sandstone, dacite to rhyolite flows and tuff, and lesser mafic tuff and flows (A.F. 92428).

## MINERALIZATION:

DDH 138-15 intersected 6.6 m of rhyolite containing layers with up to 40% pyrrhotite, 15% pyrite, and 2% graphite. DDH 138-16 intersected 5.1 m of rhyolite flows with up to 10% pyrite and 6% graphite in narrow bands. Felsic to intermediate tuffs and flows in core from DDH 138-18 contained 2.7 m and other narrower intersections with up to 40% pyrite, 5% graphite and 10% pyrrhotite as disseminations and in narrow bands. Felsic to intermediate tuffs and flows intersected in core from DDH 138-19 contained a 4.6 m intersection and two narrow (<1 m) intersections with up to 20% pyrite and 8% graphite in narrow bands (A.F. 92428).

DDH 138-1 intersected 2.1 m and 0.4 m of quartzite with up to 50% near solid, stringer and bleb pyrrhotite, 10% pyrite and local trace chalcopyrite. DDH 138-2 intersected five zones up to 2.7 m long of graphitic siltstone or graphitic schist with 10 to 20% pyrite and pyrrhotite stringers and blebs and trace chalcopyrite. DDH 138-3 intersected 1.4 m and 0.5 m of graphitic shale, interbedded with fine quartzite beds that locally contain 5 to 15% pyrite blebs and stringers. Drill core from DDH 138-4 contained two intersections of metasedimentary

AREA: Near the junctions of Provincial Roads 39 and 392.

AIRPHOTO: A19770-9, -10

rock, 0.15 and 0.3 m long, with 20% graphite and up to 20% coarse grained pyrite blebs and 10% fine grained pyrrhotite. DDH 138-5 intersected 3.0 m of garnetiferous, partially quartzitic (silicified?), sedimentary rocks with 20% pyrite and pyrrhotite stringers and blebs. The presence of garnetiferous and quartzitic zones is suggestive of mineralization-related alteration. DDH 138-12 intersected only minor pyrrhotite or pyrite stringers in quartzite (A.F. 92426).

Mafic volcanic rocks intersected by DDH 138-17 are chloritized and contain minor sections of altered rhyolitic rock, but are nonmineralized (A.F. 92428).

## GEOCHEMICAL DATA:

One 1.4 m core sample of rhyolite with 10 to 40% pyrrhotite, 5 to 15% pyrite and trace to 2% graphite from DDH 138-15 assayed 1.02% Zn, nil Au and nil Ag; however, the presence of sphalerite is not noted in the drill log (A.F. 92428). Other drill core samples contained up to 0.08% Cu, 0.18% Zn and trace Au. Geochemical analyses of drill core from DDH 138-1 included <0.11 g/t Au, 9 to 83 ppm As, <1 to 1 ppm Sb, <10 ppm Mo and <2 ppm W (A.F. 92426).

## CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Altered felsic volcanic and lesser quartzitic sedimentary rocks (silicified felsic volcanic rocks?) host minor to moderate Fe-sulphide, graphite and Zn mineralization.

## REFERENCES:

- Alcock, F.J.  
1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.
- Armstrong, J.E.  
1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.
- Assessment Files 92426, 92428  
Manitoba Energy and Mines, Minerals Division.

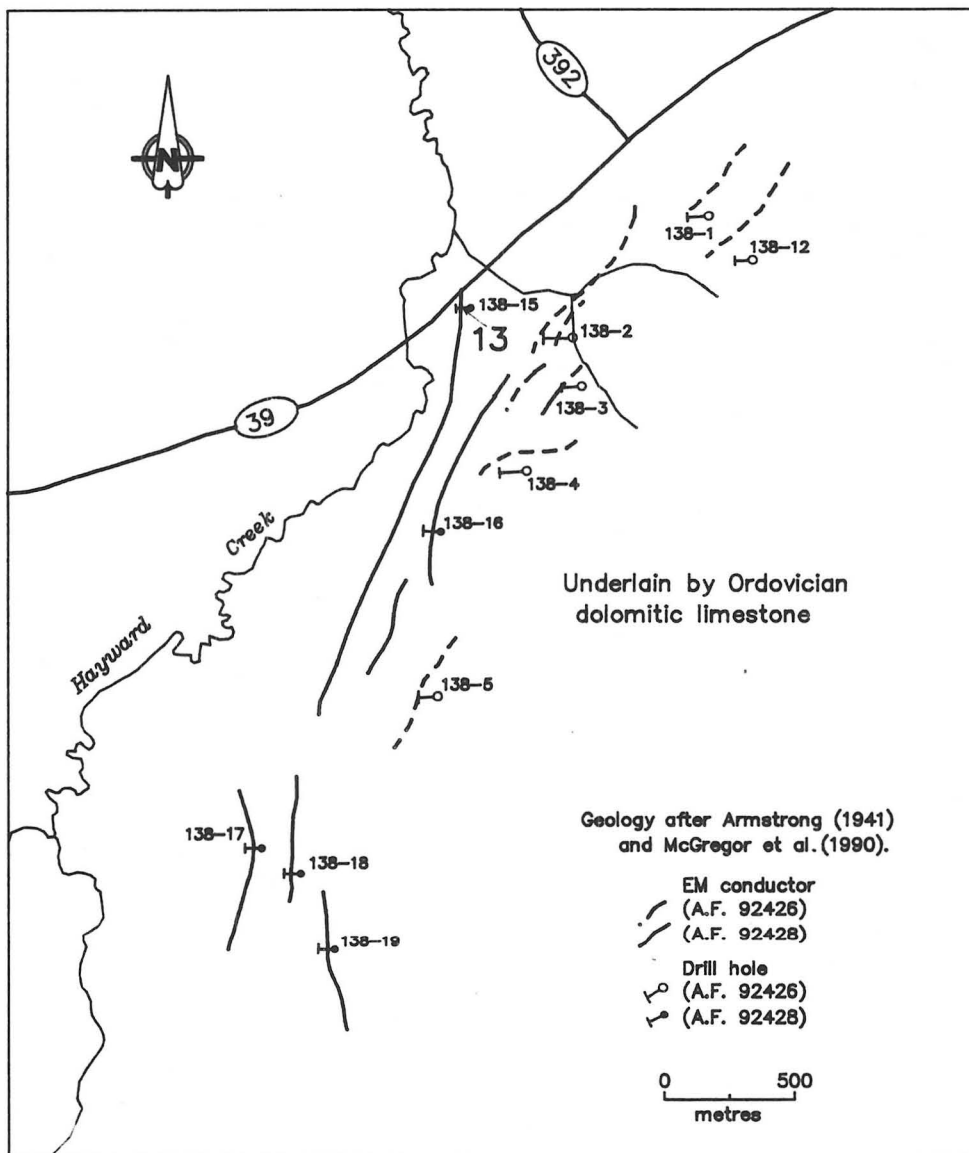


Figure 13-1: Geological setting and drill hole locations at occurrence 13.

**LOCATION: 14**

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

**UTM:** 6056698N/442346E

**ACCESS:** Via Provincial Road 39 and traverse.

**EXPLORATION SUMMARY:**

Kay Lake Mines Limited conducted magnetometer and VLEM surveys and drilled five holes totalling 442 m on the GB claims in 1953-57 (A.F. 90588). Granges Exploration Aktiebolag drilled DDH HL-8 (51 m) to test an EM conductor on CB 11206 in 1983 (A.F. 92503). The area is open for staking (1990).

**GEOLOGICAL SETTING:**

The area is underlain by Amisk Group mafic and felsic intrusive and mafic volcanic rocks, unconformably overlain to the west and south by Ordovician dolomitic limestone (Fig. 14-1). DDH 1 through 5 intersected gabbro, peridotite, quartz diorite, mafic volcanic rocks, and felsic dykes. In addition, DDH 5 intersected sericite schist and greywacke (A.F. 90588). DDH HL-8 intersected dolomitic limestone, serpentinite, dacite and quartz diorite (A.F. 92503).

**MINERALIZATION:**

In DDH 1, intersections of gabbro up to 7.3 m long contain chalcopyrite, pyrrhotite and pyrite (amount not specified). Drill core from DDH 3 contained pyrite, pyrrhotite and "sparse" chalcopyrite intersections up to 1.5 m long within gabbro. DDH 5 intersected minor pyrite and trace chalcopyrite in sericite schist and greywacke. Drill core from DDH 4 contained arsenopyrite (amount not

**AREA:** Southwest end of Wekusko Lake.

**AIRPHOTO:** A20125-151

specified) in a 0.3 m intersection within diorite (A.F. 90588). DDH HL-8 intersected only minor disseminated pyrrhotite and pyrite in thin (<1 m) dacite layers (A.F. 92503). Sulphide mineralization was not intersected in DDH 2.

**GEOCHEMICAL DATA:**

Drill core assays from DDH 1 through 5 are low, with only nil or trace Au, Ag, Cu and Zn, and a maximum of 0.04% Ni (A.F. 90588). Drill core from DDH HL-8 assayed nil or trace Au and Ag, up to 0.04% Cu and nil Ni (A.F. 92503).

**CLASSIFICATION:**

Disseminated mineralization - not classified. Minor Fe ± Cu sulphide minerals are disseminated in mafic intrusive rocks. The altered and mineralized mafic intrusions should be assessed for platinum group elements.

**REFERENCES:**

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

Assessment Files 90588, 92503

Manitoba Energy and Mines, Minerals Division.

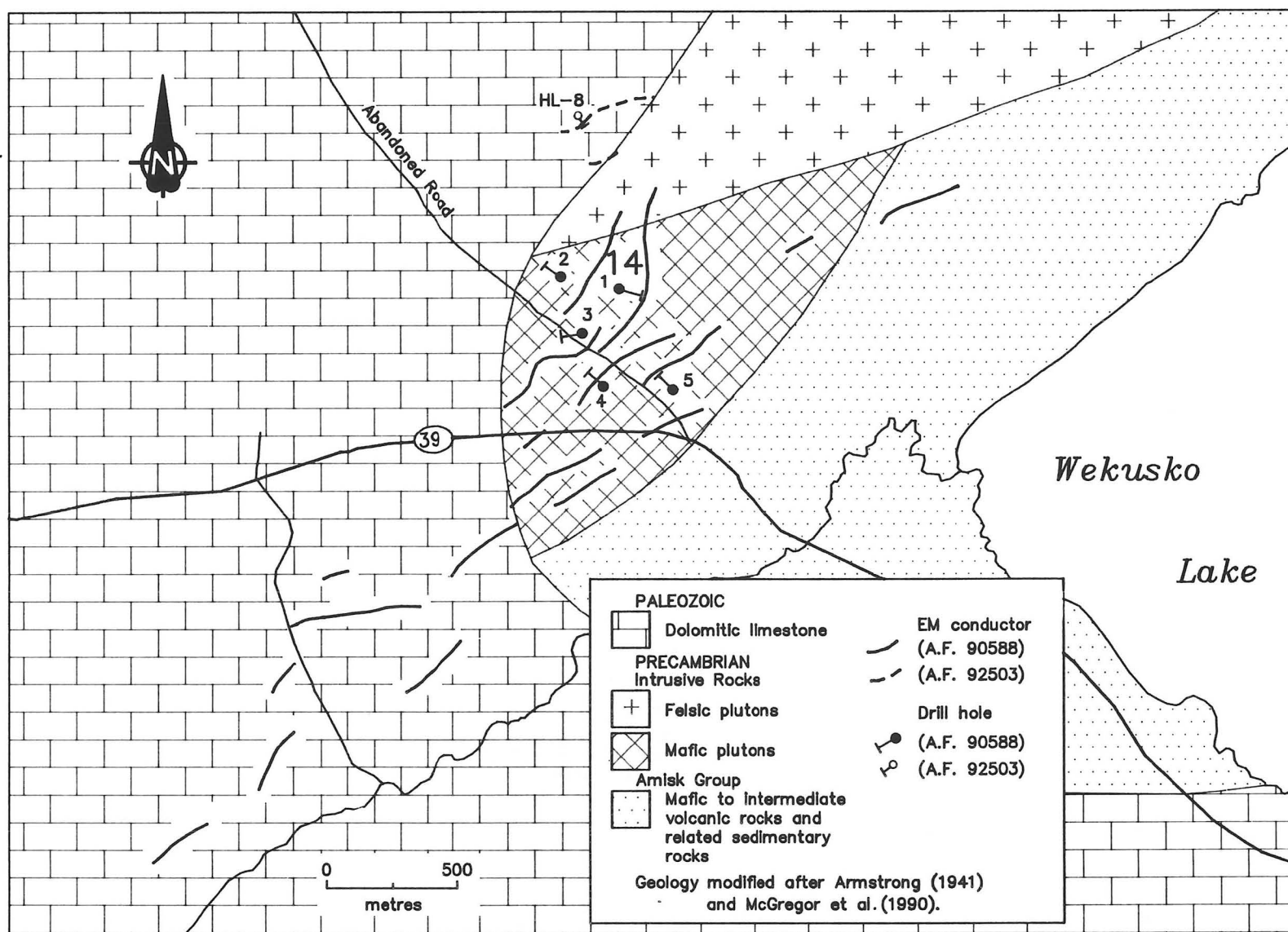


Figure 14-1: Geological setting and drill hole locations at occurrence 14.

**LOCATION: 15**

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

**UTM:** 6055370N/444691E

**ACCESS:** Via boat on Wekusko Lake.

**AREA:** Southern Wekusko Lake.

**AIRPHOTO:** A20781-56

**EXPLORATION SUMMARY:**

Sherritt Gordon Mines Limited carried out an EM survey and completed ten drill holes totalling 898 m on the Dorth claims in 1948 (A.F. 90587). Jay Kay Exploration Syndicate drilled DDH 1 (52 m) on claim Soc 13 in 1960 (A.F. 90599). A.L. Parres carried out a VLEM survey in 1966 (A.F. 90600) and drilled DDH 1 through 3 totalling 422 m in 1968 (A.F. 90602) on the Tee claims. The area is partly covered (1990) by claims Carman 1, -2, -8 and -9, staked by Falconbridge Nickel Mines Limited in 1980-81, and by Explored Area Lease 6, issued to Hartland Mines Limited in 1975. This lease was subsequently optioned to Falconbridge Nickel Mines Limited.

**GEOLOGICAL SETTING:**

The area is underlain by Amisk Group mafic volcanic rocks, unconformably overlain to the south by Ordovician dolomitic limestone (Fig. 15-1). Drilling on the Dorth claims intersected graphitic sedimentary rocks with minor diorite, quartz gabbro, "graphitic breccia", chlorite schist, talc-serpentine schist, garnet-biotite gneiss, and felsic dykes (A.F. 90587).

DDH 1 through 3 (A.L. Parres) intersected light green to grey, schistose, partly tuffaceous, felsic to intermediate volcanic rocks (A.F. 90602). DDH 1 (Jay Kay Exploration Syndicate) intersected mafic volcanic rocks, chlorite schist, altered peridotite, gneiss (composition not specified) and a nonmineralized quartz vein (A.F. 90599).

**MINERALIZATION:**

Drill holes on the Dorth claims intersected graphitic sedimentary rocks with minor disseminated and

stringer pyrite and pyrrhotite. The sulphide mineralization is concentrated in a fault zone with quartz stringers. Traces of Fe-sulphide minerals and carbonatization are present in virtually all rock types (A.F. 90587).

DDH 1 (A.L. Parres) intersected 23 m of solid graphite with narrow pyrite stringers. The graphitic rocks are hosted by light brown to light grey tuff. Minor pyrite or pyrrhotite are disseminated in the lithologies intersected by DDH 1 through 3. Additionally, the drill core is silicified and contains abundant narrow quartz  $\pm$  carbonate stringers (A.F. 90602). A 2.4 m unit of chlorite schist from DDH 1 (Jay Kay Exploration Syndicate) contains minor pyrite (A.F. 90599).

**GEOCHEMICAL DATA:**

Drill core and sludge samples from holes drilled by Sherritt Gordon Mines Ltd. assayed nil to trace Au, Ag, Ni, Cu and Zn (A.F. 90587).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Sedimentary and altered felsic to intermediate volcanic rocks contain solid graphite and minor Fe-sulphide minerals.

**REFERENCES:**

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

Assessment Files 90587, 90599, 90600, 90602

Manitoba Energy and Mines, Minerals Division.

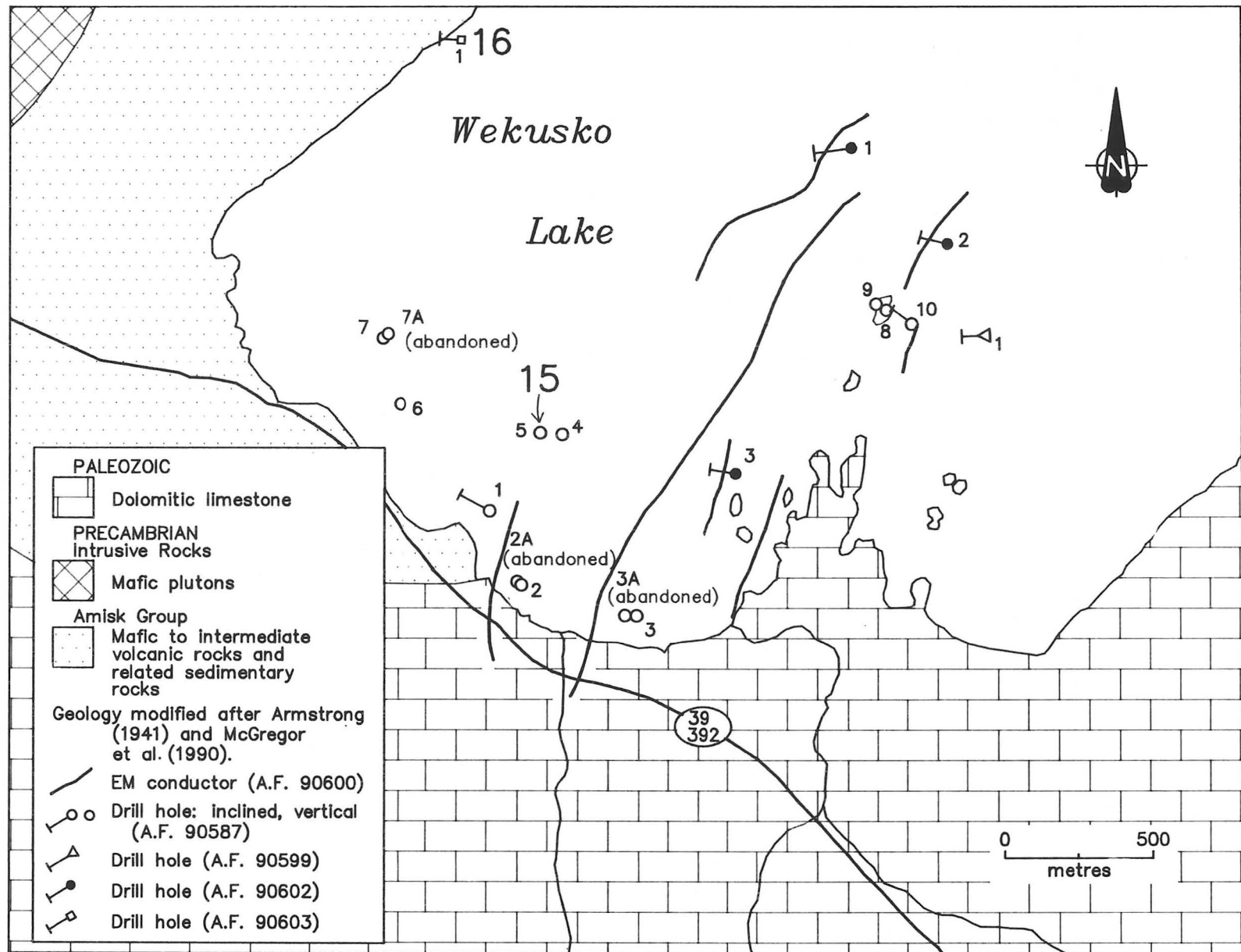


Figure 15-1: Geological setting and drill hole locations at occurrences 15 and 16.

**LOCATION: 16**

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

**UTM:** 6056627N/444412E

**ACCESS:** Via boat on Wekusko Lake, or by Provincial Road 39 and traverse.

**EXPLORATION SUMMARY:**

Peter Kobar drilled DDH 1 (64 m) on claim X 3 in 1949 (A.F. 90603). The area is covered (1990) by claim Carman 1, staked by Falconbridge Nickel Mines Limited in 1980.

**GEOLOGICAL SETTING:**

The area is underlain by Amisk Group mafic volcanic rocks, unconformably overlain to the south by Ordovician dolomitic limestone (Fig. 15-1). DDH 1 intersected rhyolite and granite (A.F. 90603).

**MINERALIZATION:**

An unspecified amount of pyrite and minor arsenopyrite are hosted by rhyolite, 51.2 m in core length, from DDH 1 (A.F. 90603).

**AREA:** Southwestern Wekusko Lake (Fig. 15-1).

**AIRPHOTO:** A20781-55

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Disseminated mineralization - not classified. Minor pyrite and arsenopyrite are hosted by felsic volcanic rocks.

**REFERENCES:**

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

Assessment File 90603

Manitoba Energy and Mines, Minerals Division.

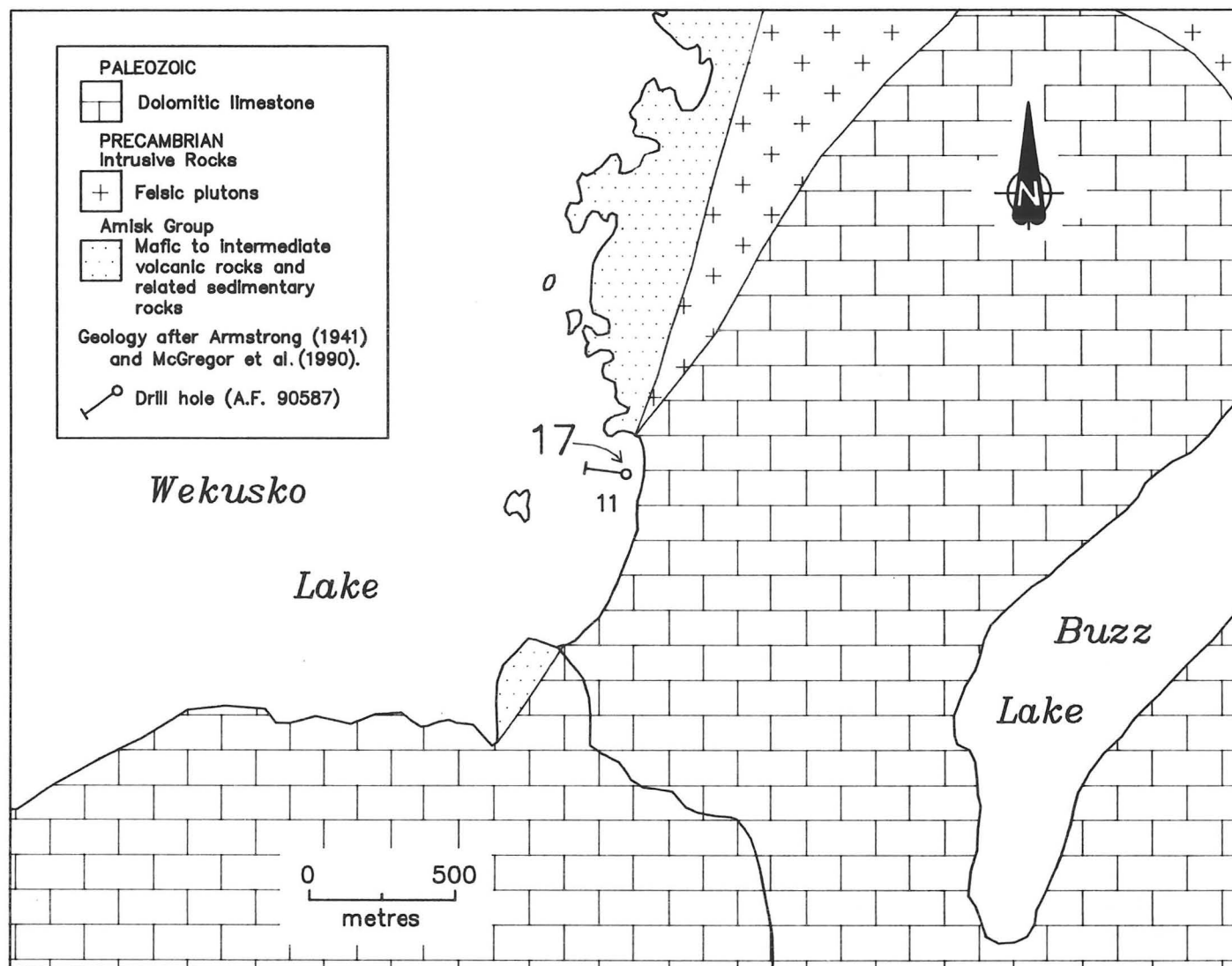


Figure 17-1: Geological setting and drill hole location at occurrence 17.



**LOCATION: 17**

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

**UTM:** 6056271N/449038E

**ACCESS:** Via boat on Wekusko Lake.

**EXPLORATION SUMMARY:**

Sherritt Gordon Mines Limited drilled DDH 11 (175 m) on the Dorth claims in 1949 (A.F. 90587). The area is open for staking (1990).

**GEOLOGICAL SETTING:**

The area is underlain by felsic intrusive and Amisk Group mafic volcanic rocks, unconformably overlain by Ordovician dolomitic limestone (Fig. 17-1). DDH 11 intersected mafic volcanic rocks, diorite and minor felsic dykes (A.F. 90587).

**MINERALIZATION:**

Minor pyrite and trace chalcopyrite occur within diorite and minor pyrite is hosted by mafic volcanic rocks (DDH 11). Mafic volcanic rocks are partly serpentinized and contain minor quartz-carbonate veinlets (A.F. 90587).

**AREA:** Southeastern Wekusko Lake.

**AIRPHOTO:** A20124-45

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Disseminated mineralization - not classified. Minor pyrite and trace chalcopyrite occur in diorite and altered mafic volcanic rocks.

**REFERENCES:**

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

Assessment File 90587

Manitoba Energy and Mines, Minerals Division.

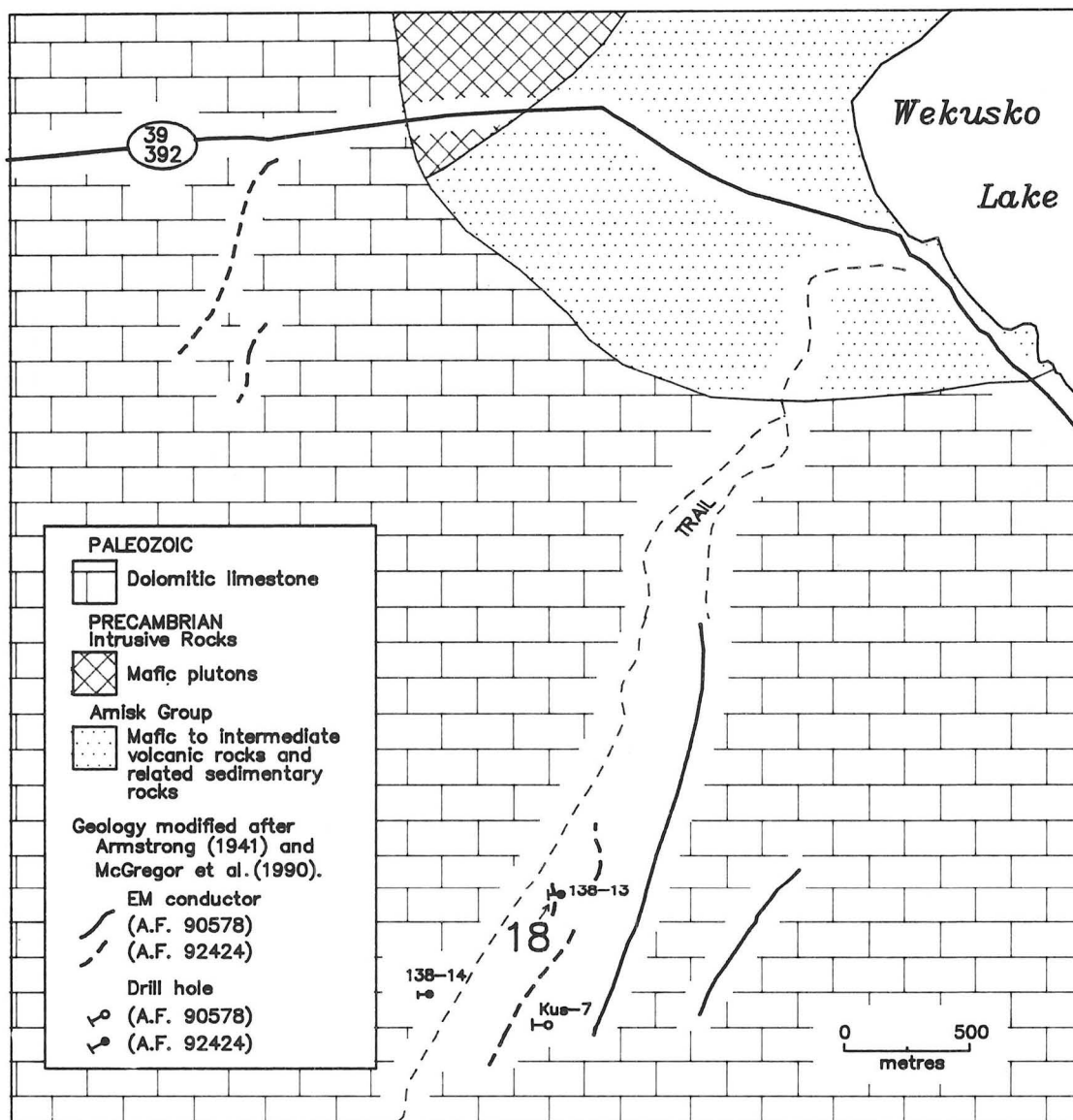


Figure 18-1: Geological setting and drill hole locations at occurrence 18.

## LOCATION: 18

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

UTM: 6052514N/442214E

ACCESS: Via trail from Provincial Road 39.

AREA: 3.5 km southwest of Wekusko Lake.

AIRPHOTO: A20127-153

## EXPLORATION SUMMARY:

HBED drilled DDH Kus-7 (98 m) on claim Kus 83 in 1967 (A.F. 90578). Manitoba Mineral Resources Limited conducted Turam and HLEM surveys, and drilled DDH 138-13 and 138-14 totalling 160 m on CB 5570 in 1976 (A.F. 92424). The area is covered by claim Tag 26, staked by W.S. Ferreira Limited in 1989.

## GEOLOGICAL SETTING:

The area is underlain by Ordovician dolomitic limestone (Fig. 18-1). DDH 138-13 and 138-14 intersected limestone and sandstone, sericitic rhyolite and rhyolite tuff, siliceous andesite and quartzite (A.F. 92424). DDH Kus-7 intersected limestone and sandstone, and graphitic to cherty slate with soft clay-rich bands, carbonate stringers, and talcose and sericitic sections (A.F. 90578).

## MINERALIZATION:

Drill core from DDH 138-13 contained two zones, 5.2 and 8.5 m in core length, of solid graphite with up to 20% disseminated and stringer pyrite within a sequence of sericitic rhyolite and rhyolite tuff. The interval between the two zones consists of siliceous banded andesite with minor graphite and pyrite. DDH 138-14 also intersected two zones, 0.9 and 1.5 m, of 60 to 70% graphite with trace to 15% pyrite and bands and frag-

ments of "siliceous material" within a sequence of rhyolite and rhyolite tuff. The rhyolitic rocks are sericitic, partly chloritic, and contain abundant quartz veins, vugs and siliceous fragments (A.F. 92424). Drill core from DDH Kus-7 contained four intersections, up to 1.6 m, with 20 to 50% graphite and trace to 50% pyrite (A.F. 90578).

## GEOCHEMICAL DATA:

One drill core sample from DDH 138-13 contained trace Au. Five drill core samples from DDH 138-14 contained <0.1 g/t Au, <5 to 59 ppm As, <1 to 9 ppm Sb, <10 to 82 ppm Mo and <2 to 10 ppm W (A.F. 92424).

## CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Solid graphite and moderate pyrite are hosted by altered felsic volcanic rocks.

## REFERENCES:

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 90578 and 92424

Manitoba Energy and Mines, Minerals Division.

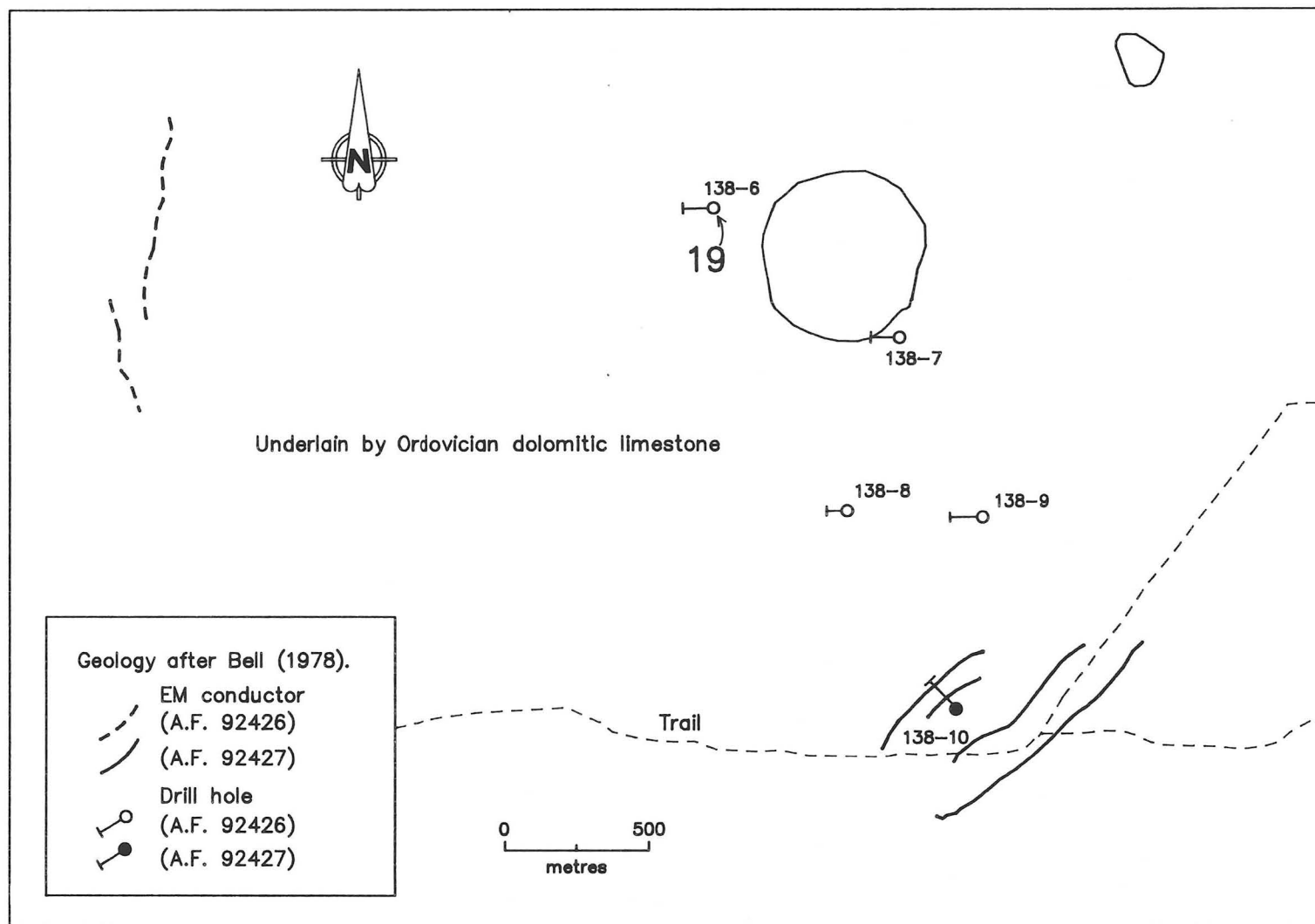


Figure 19-1: Geological setting and drill hole locations at occurrence 19.

#### LOCATION: 19

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

UTM: 6050393N/438478E

ACCESS: Via trail from Provincial Road 39, and traverse.

AREA: 4 km northwest of Langton Lake.

AIRPHOTO: A19770-12

#### EXPLORATION SUMMARY:

Western Nuclear Mines Limited conducted a Turam survey in the area in 1970 (A.F. 90576). Manitoba Mineral Resources Limited conducted an airborne EM survey and a HLEM survey, and drilled DDH 138-10 (155 m) on Reservation of Mineral Rights 145 during 1974-1976 (A.F. 92427). Additionally, MMR undertook INPUT, Turam, HLEM and airborne magnetometer surveys and drilled four holes totalling 393 m on CB 6593 and CB 6594 (A.F. 92426). The area is covered by claims Tag 22 and Tag 23, staked by W.S. Ferreira Limited in 1989.

#### GEOLOGICAL SETTING:

The area is underlain by Ordovician dolomitic limestone (Fig. 19-1). DDH 138-6, 138-7 and 138-10 intersected limestone and sandstone, massive and tuffaceous felsic and mafic volcanic rocks, graphitic schist, quartzite and minor gabbro and syenite. In addition, DDH 138-6 intersected quartz-sericite schist and "quartzite", and DDH 138-7, 138-8 and 138-9 intersected talc-chlorite schist interlayered with graphitic schist (A.F. 92427).

#### MINERALIZATION:

DDH 138-6 intersected a 2.3 m unit of brecciated, folded, black graphitic schist with 40% graphite, 30% quartzose fragments and layers, 15% narrow pyrite stringers, 10% magnetite bands, and 5% pyrrhotite. Minor pyrite and chalcopyrite are finely disseminated throughout the enveloping sequence of "quartzite" and rhyolite tuff (A.F. 92426). A 15.8 m (core length) unit of banded graphitic schist from DDH 138-10 contains 5%

pyrite stringers and blebs, and traces of chalcopyrite and galena. The graphitic schist is chloritic, vuggy and contains 5% calcite concentrated along foliation planes (A.F. 92427). DDH 138-8 intersected 1.4 m of graphitic schist with 80% graphitic layers, 15% quartz inclusions and 5% pyrite stringers hosted by partly graphitic andesite and andesite tuff. DDH 138-9 intersected a sequence of graphitic schist and talc-chlorite schist, locally with up to 5% pyrite stringers. DDH 138-7 intersected trace to minor pyrite disseminated in a sequence of graphitic schist, quartzite, and mafic volcanic rocks (A.F. 92426).

#### GEOCHEMICAL DATA:

Five drill core samples from DDH 138-6, 138-7, 138-8 and 138-10 assayed nil to trace Au, 0.02 to 0.06% Cu and 0.02% Pb (A.F. 92427).

#### CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Near solid graphite and moderate Fe-sulphide minerals are hosted by felsic volcanic rocks and quartzite.

#### REFERENCES:

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 90576, 92426, 92427

Manitoba Energy and Mines, Minerals Division.

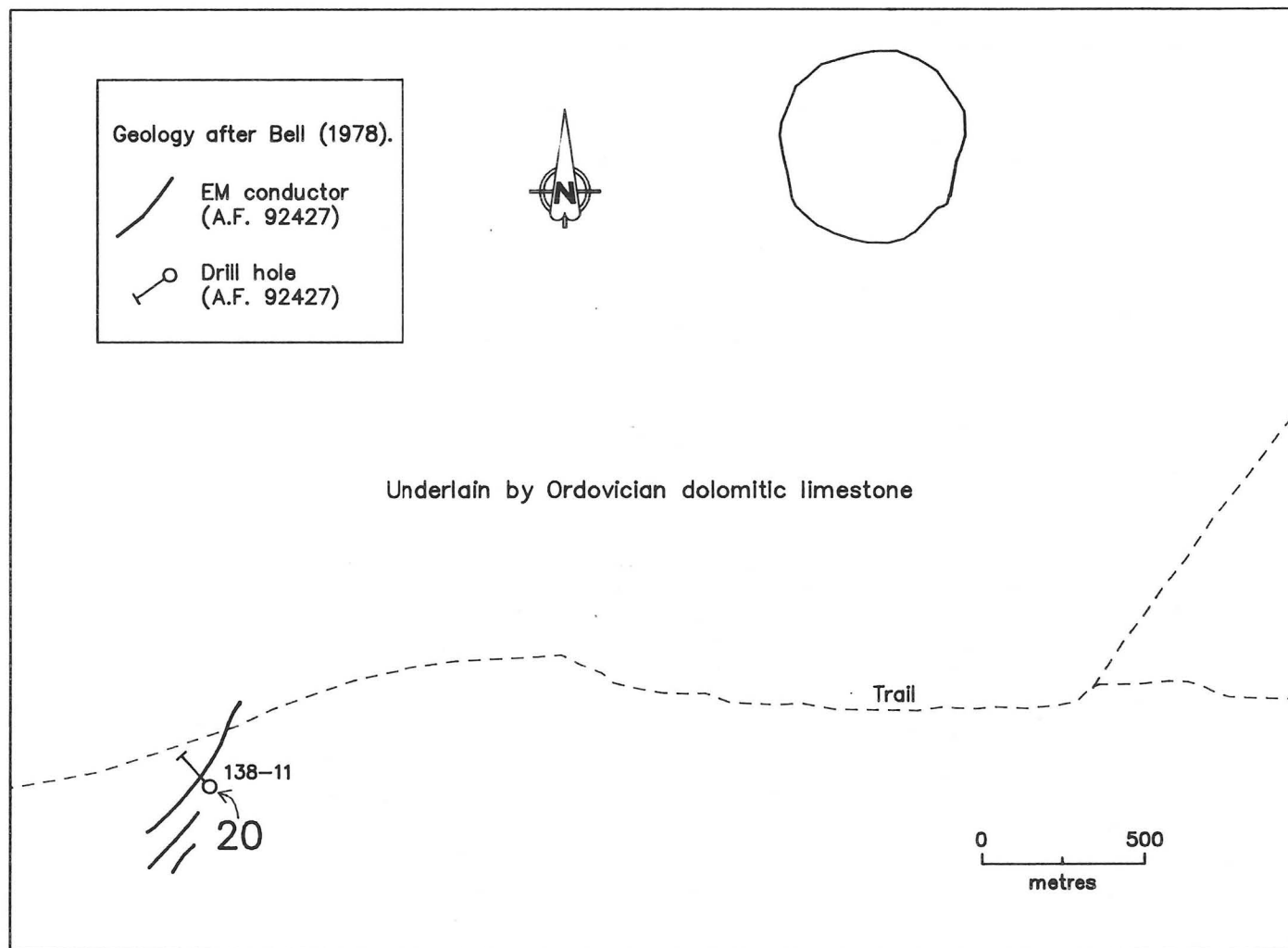


Figure 20-1: Geological setting and drill hole location at occurrence 20.

**LOCATION: 20**

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

**UTM:** 6048321N/436830E

**ACCESS:** Via trails from Provincial Road 39.

**AREA:** 5 km west-northwest of Langton Lake.

**AIRPHOTO:** A19770-13

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted an airborne EM and a HLEM survey, and drilled DDH 138-11 (154 m) on Reservation of Mineral Rights 145 in 1974-1976 (A.F. 92427). The area is open for staking (1990).

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 20-1). DDH 138-11 intersected limestone and sandstone, massive aphyric and porphyritic rhyolite to andesite, rhyolite tuff, graphitic schist and minor gabbro (A.F. 92427).

**MINERALIZATION:**

A 0.7 m intersection of graphitic schist contains 40% pyrrhotite and trace chalcopyrite. This graphitic schist layer is overlain by nonmineralized rhyolite tuff, and is underlain by 17.3 m of rhyolite tuff and flows, locally with graphitic schist layers, up to 20% pyrite and pyrrhotite, and trace chalcopyrite (A.F. 92427).

**GEOCHEMICAL DATA:**

One drill core sample from DDH 138-11 assayed trace Au and 0.06% Cu (A.F. 92427).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. A sequence of felsic to intermediate volcanic rocks contains interlayered graphitic schist with minor to moderate Fe-sulphide minerals.

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment File 92427

Manitoba Energy and Mines, Minerals Division.

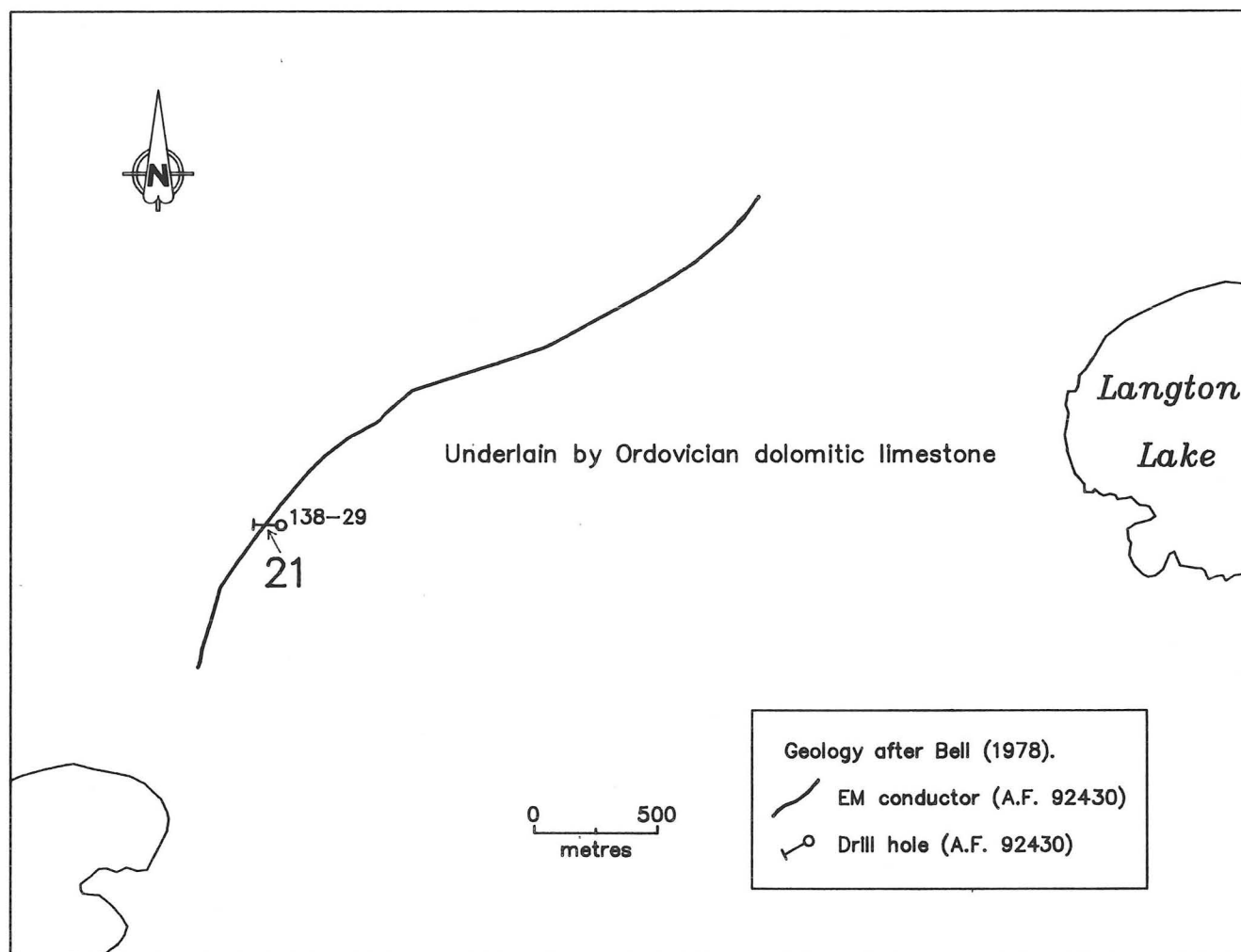


Figure 21-1: Geological setting and drill hole location at occurrence 21.



**LOCATION: 21**

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

**UTM:** 6046467N/437663E

**ACCESS:** Via trails from Provincial Road 39 and traverse.

**AREA:** 4 km west of Langton Lake.

**AIRPHOTO:** A19770-16

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted a HLEM survey on CB 4141 in 1974 (A.F. 92165), and undertook a HLEM survey and drilled DDH 138-29 (137 m) on CB 8162 in 1978-1979 (A.F. 92430). The area is covered by claim Tag 19, staked by W.S. Ferreira Limited in 1989.

schist contains 10 to 25% graphite and trace pyrite throughout the remainder of the drill hole (A.F. 92430).

**GEOCHEMICAL DATA:**

None.

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 21-1). Drilling intersected limestone and sandstone, and graphitic chlorite schist possibly derived from sedimentary rocks (A.F. 92430).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Moderate pyrite and near solid to solid graphite are hosted by chlorite schist.

**MINERALIZATION:**

A 33.5 m long intersection of chlorite schist contains 10 to 25% pyrite as narrow stringers and blebs along cleavage planes and 40 to 60% graphite. Chlorite

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 92165 and 92430

Manitoba Energy and Mines, Minerals Division.

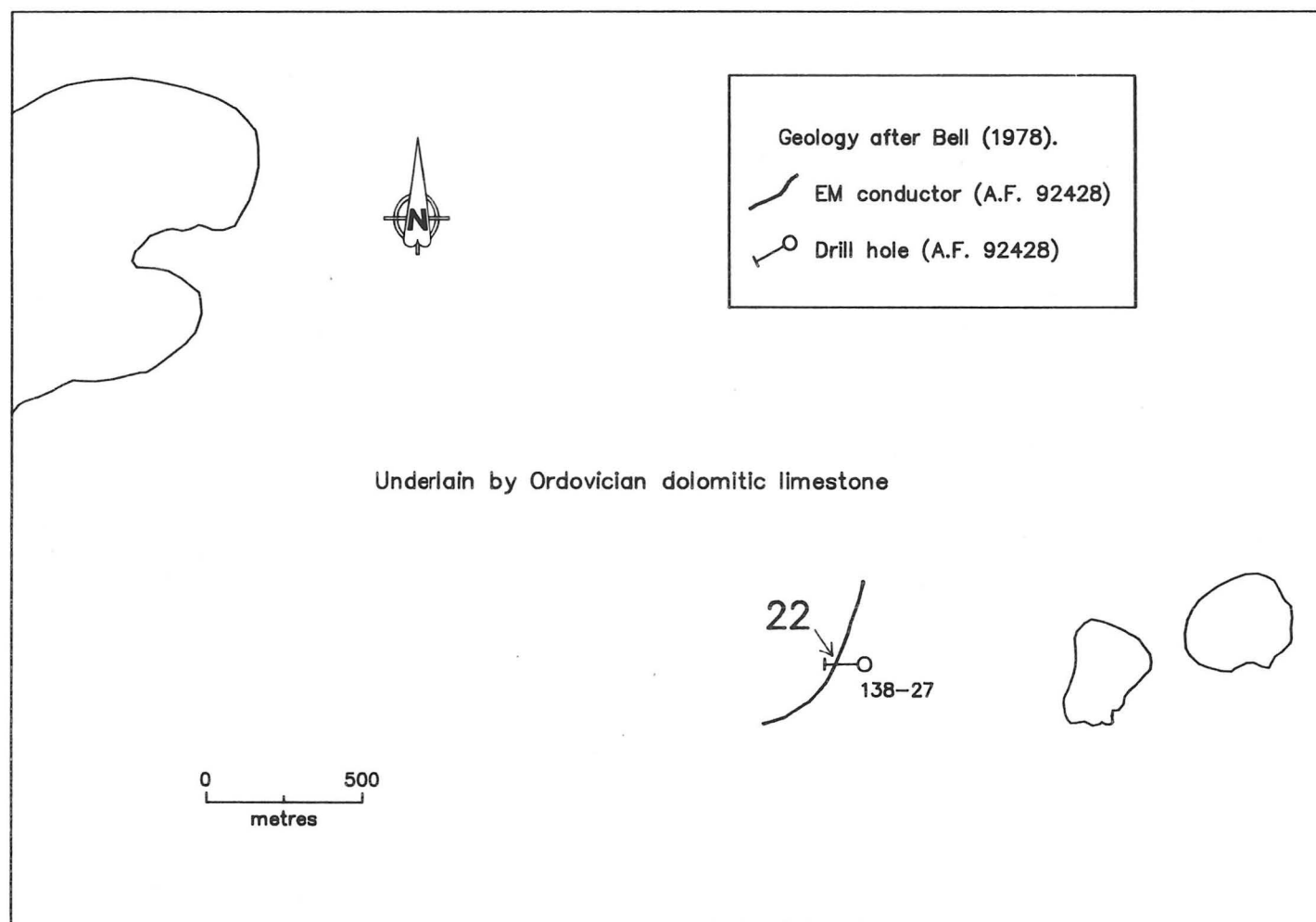


Figure 22-1: Geological setting and drill hole location at occurrence 22.

**LOCATION: 22**

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

**UTM:** 6043435N/439011E

**ACCESS:** Via bush plane to Langton Lake and traverse.

**AREA:** 4 km southwest of Langton Lake.

**AIRPHOTO:** A19770-17

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted Turam and HLEM surveys in 1976 (A.F. 92424), and conducted a HLEM survey and drilled DDH 138-27 (151 m) on CB 6863 in 1977 (A.F. 92428). The area is open for staking (1990).

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Disseminated mineralization - not classified. Trace pyrite is hosted by siltstone.

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 22-1). Drilling intersected limestone and sandstone, mudstone, siltstone and diorite (A.F. 92428).

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 92424 and 92428

Manitoba Energy and Mines, Minerals Division.

**MINERALIZATION:**

Traces of pyrite blebs occur in siltstone from DDH 138-27. A 7.9 m shear zone between the mudstone and siltstone units probably represents the conductor.

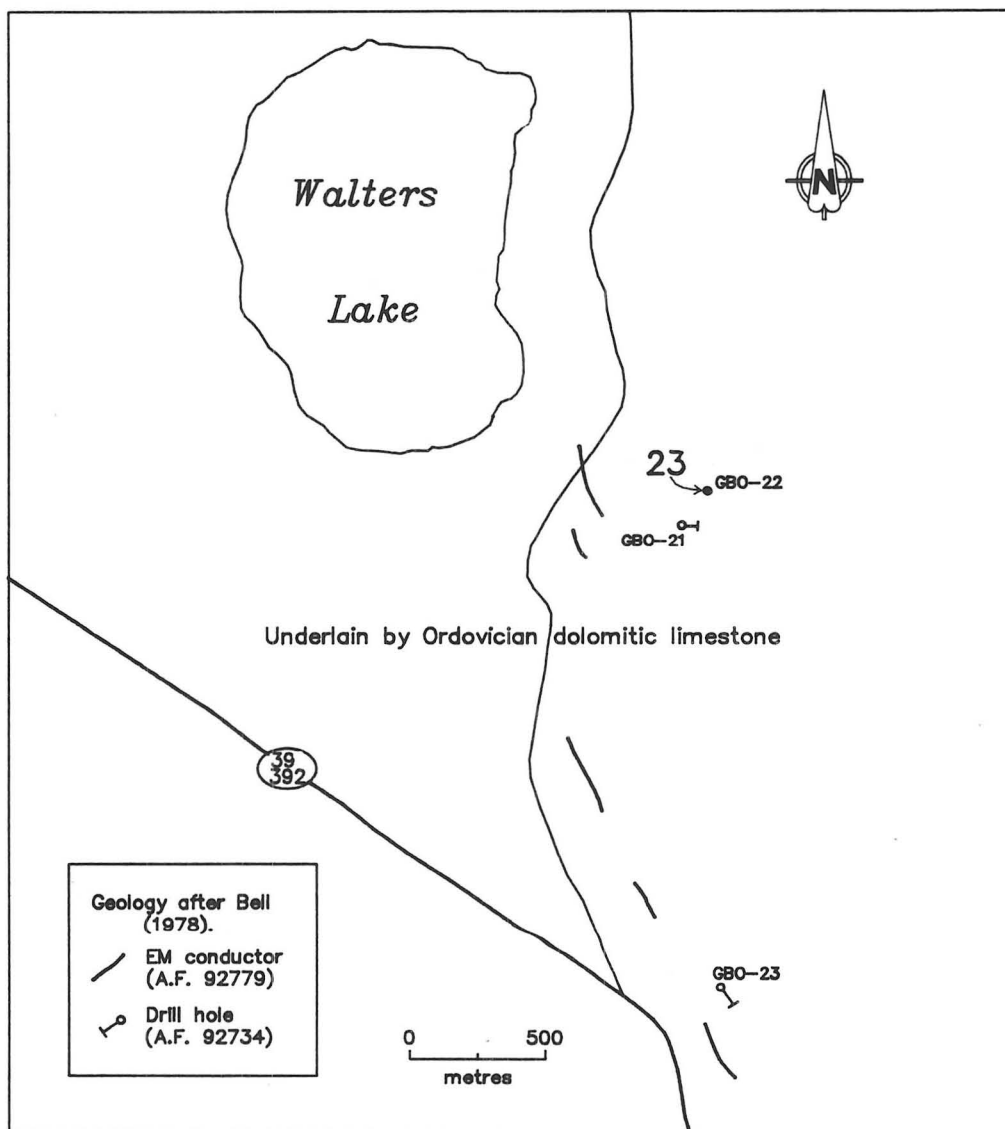


Figure 23-1: Geological setting and drill hole locations at occurrence 23.

**LOCATION: 23**

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

**UTM:** 6052804N/449675E

**ACCESS:** Via road leading to Hales Landing (Wekusko Lake) from Provincial Road 39, and traverse.

**AREA:** 0.75 km southeast of Walters Lake.

**AIRPHOTO:** A20124-42

**EXPLORATION SUMMARY:**

Falconbridge Limited conducted ground magnetometer and VLF-EM surveys (A.F. 92779) and drilled three holes totalling 261 m (A.F. 92734) on CB 13140 in 1986. The area is open for staking (1990).

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 23-1). Drill holes intersected dolomite, granodiorite, amphibolite and a banded sedimentary(?) rock (A.F. 92734).

**MINERALIZATION:**

Three narrow (<1 m) intersections from DDH GBO-22 contain 2 to 7% pyrite disseminations and streaks hosted by amphibolite. Minor quartz  $\pm$  carbonate veinlets occur throughout the amphibolite unit. Drill core from DDH GBO-21 and GBO-23 is not mineralized (A.F. 92734).

**GEOCHEMICAL DATA:**

The three sulphidic intersections of amphibolite from DDH GBO-22 assayed nil or trace Au. A 2.1 m long sample of a nonmineralized quartz vein from DDH GBO-23 assayed nil Au (A.F. 92734).

**CLASSIFICATION:**

Disseminated mineralization - not classified. Minor pyrite is disseminated in amphibolite.

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 92734 and 92779

Manitoba Energy and Mines, Minerals Division.

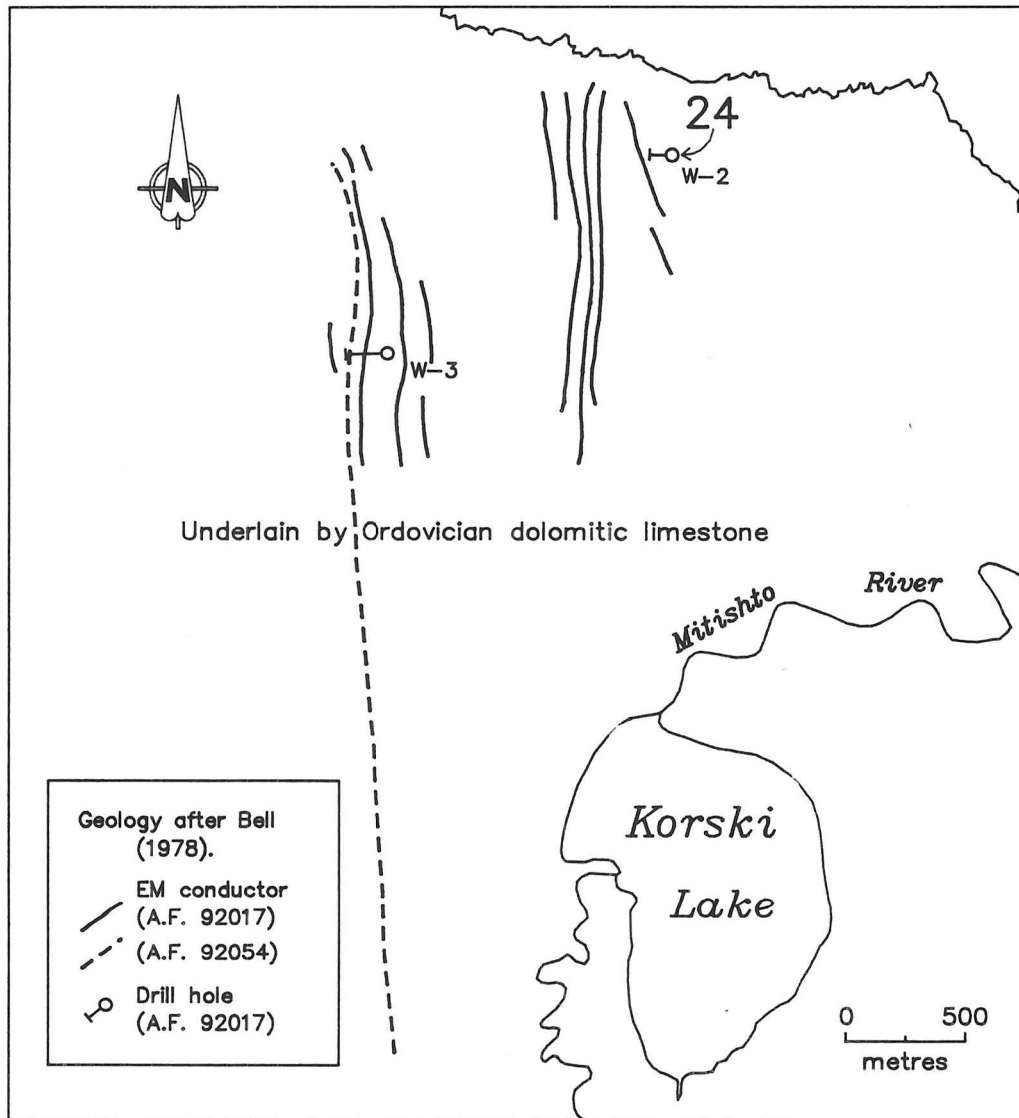


Figure 24-1: Geological setting and drill hole locations at occurrence 24.

**LOCATION: 24**

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

**UTM:** 6043407N/446134E

**ACCESS:** Via trail from Provincial Road 39, and traverse.

**AREA:** Korski Lake.

**AIRPHOTO:** A20781-64, -65, -66

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted airborne magnetometer and EM surveys in 1973 (A.F. 92054), and undertook Turam and HLEM surveys and drilled two holes totalling 259 m in 1974-76 (A.F. 92017) on Reservation of Mineral Rights 123. The area is open for staking (1990).

from DDH W-2 contains 20% coarse crystalline pyrite and 10% graphite. The pyrite is banded parallel to bedding (A.F. 92017).

**GEOCHEMICAL DATA:**

Four drill core samples from DDH W-2 and W-3 assayed nil to trace Au and nil Ag (A.F. 92017).

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 24-1). Drill holes intersected limestone, very finely bedded altered sedimentary rocks (type of alteration not specified), mafic flows and tuff, felsic tuff and graphite schist (A.F. 92017). The sedimentary rocks are light grey to light green to dark grey, thin bedded, and aphanitic to sandy, with local traces of garnet and hornblende crystals and local talcose layers.

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Moderate pyrite and minor graphite are interlayered in a very fine grained sedimentary sequence.

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 92017 and 92054

Manitoba Energy and Mines, Minerals Division.

**MINERALIZATION:**

The lower 3.7 m of a 10.4 m long graphitic schist unit from DDH W-3 contains 10 to 30% fine- to coarse-grained pyrite. Trace to minor pyrite and minor graphitic layers occur throughout a sedimentary sequence intersected by DDH W-3. The lower 3.1 m of a mafic tuff unit

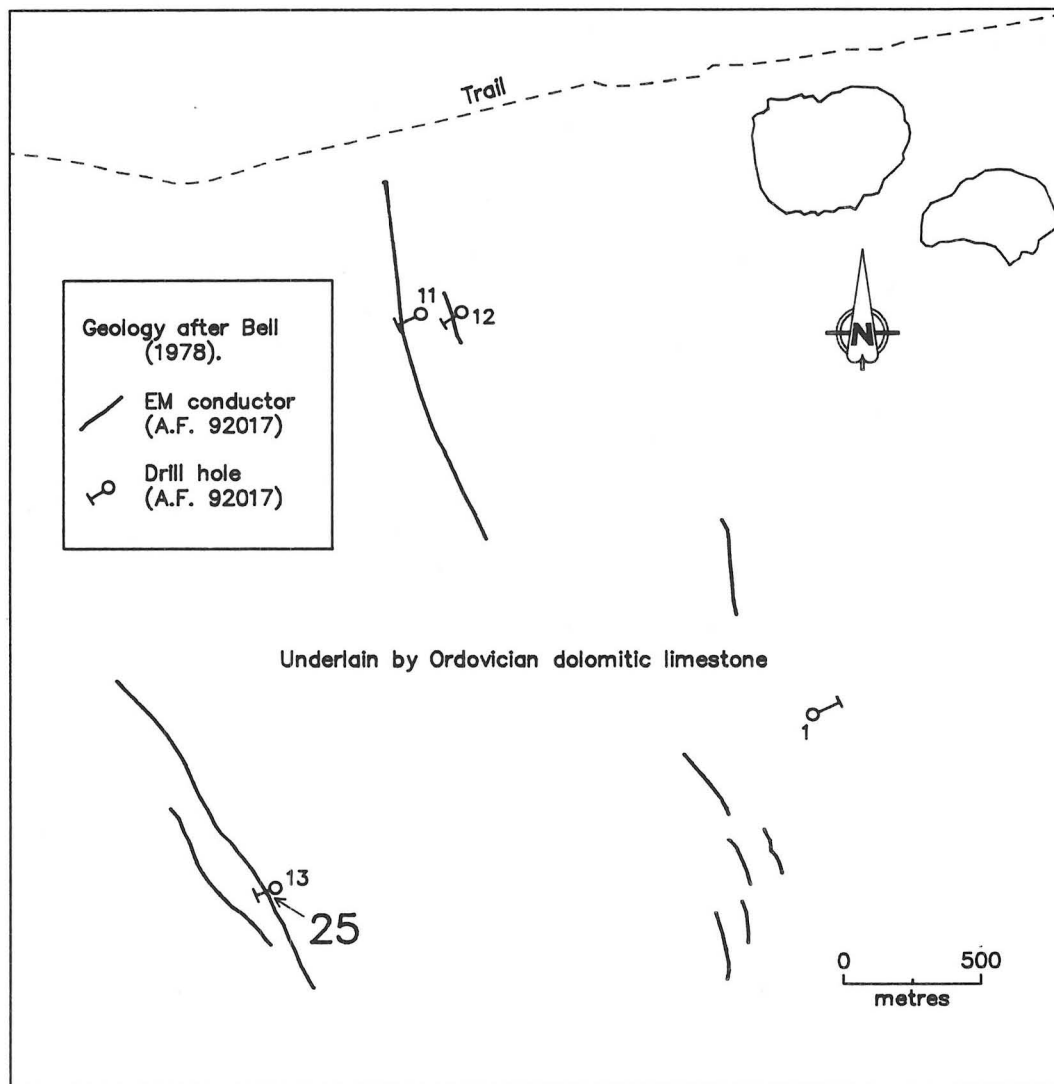


Figure 25-1: Geological setting and drill hole locations at occurrence 25.



**LOCATION: 25**

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

**UTM:** 6045812N/444661E

**ACCESS:** Via trail from Provincial Road 39, and traverse.

**AREA:** 2 km southeast of Langton Lake.

**AIRPHOTO:** A20781-62

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted Turam and HLEM surveys and drilled one hole (168 m) in 1975-76 (A.F. 92017). The area is open for staking (1990).

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 25-1). DDH W-13 intersected limestone, and rhyolitic to andesitic flows and tuff (A.F. 92017).

**MINERALIZATION:**

Drill core from DDH W-13 contained a 27.4 m interval of graphite with 20 to 30% banded pyrite stringers and up to 10% quartzite bands and fragments (A.F. 92017). The graphite unit is enveloped by chloritic andesite that also contains minor graphite bands. Rhyolitic rocks, locally sericitic and chloritic, are interbanded with rocks of intermediate composition and contain minor to moderate graphite stringers and minor pyrite.

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Solid graphite and moderate pyrite are hosted within a sequence of intermediate to felsic volcanic rocks.

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment File 92017

Manitoba Energy and Mines, Minerals Division.

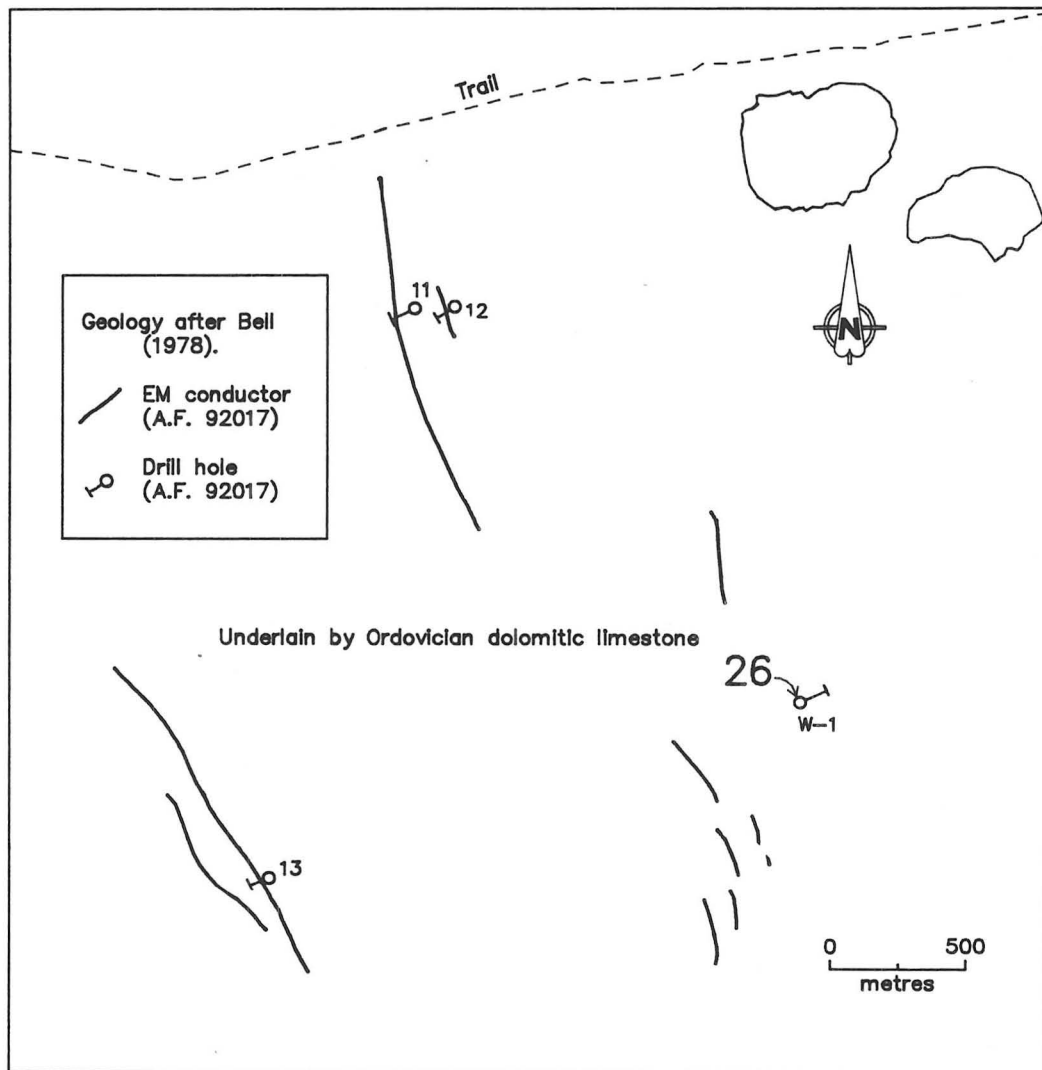


Figure 26-1: Geological setting and drill hole locations at occurrence 26.

**LOCATION: 26**

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

**UTM:** 6046492N/446663E

**ACCESS:** Via trail from Provincial Road 39, and traverse.

**AREA:** 3.5 km east of Langton Lake.

**AIRPHOTO:** A20170-66

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted Turam and HLEM surveys and drilled one hole (87 m) in 1975-76 (A.F. 92017). The area is open for staking (1990).

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 26-1). DDH W-1 intersected limestone, and rhyolitic to andesitic flows and tuff (A.F. 92017).

**MINERALIZATION:**

Drill core from DDH W-1 contained a 2.1 m interval of near solid, black, very fine banded pyrite with 20%, yellow, finely crystallized pyrite, 20% graphite and 10% quartz. The solid sulphide layer is hosted by a sequence of altered fragmental andesite (type of alteration not specified) (A.F. 92017).

**GEOCHEMICAL DATA:**

Two drill core samples assayed trace Au (A.F. 92017).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Near solid pyrite with moderate graphite is hosted by intermediate volcanic rocks.

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment File 92017

Manitoba Energy and Mines, Minerals Division.

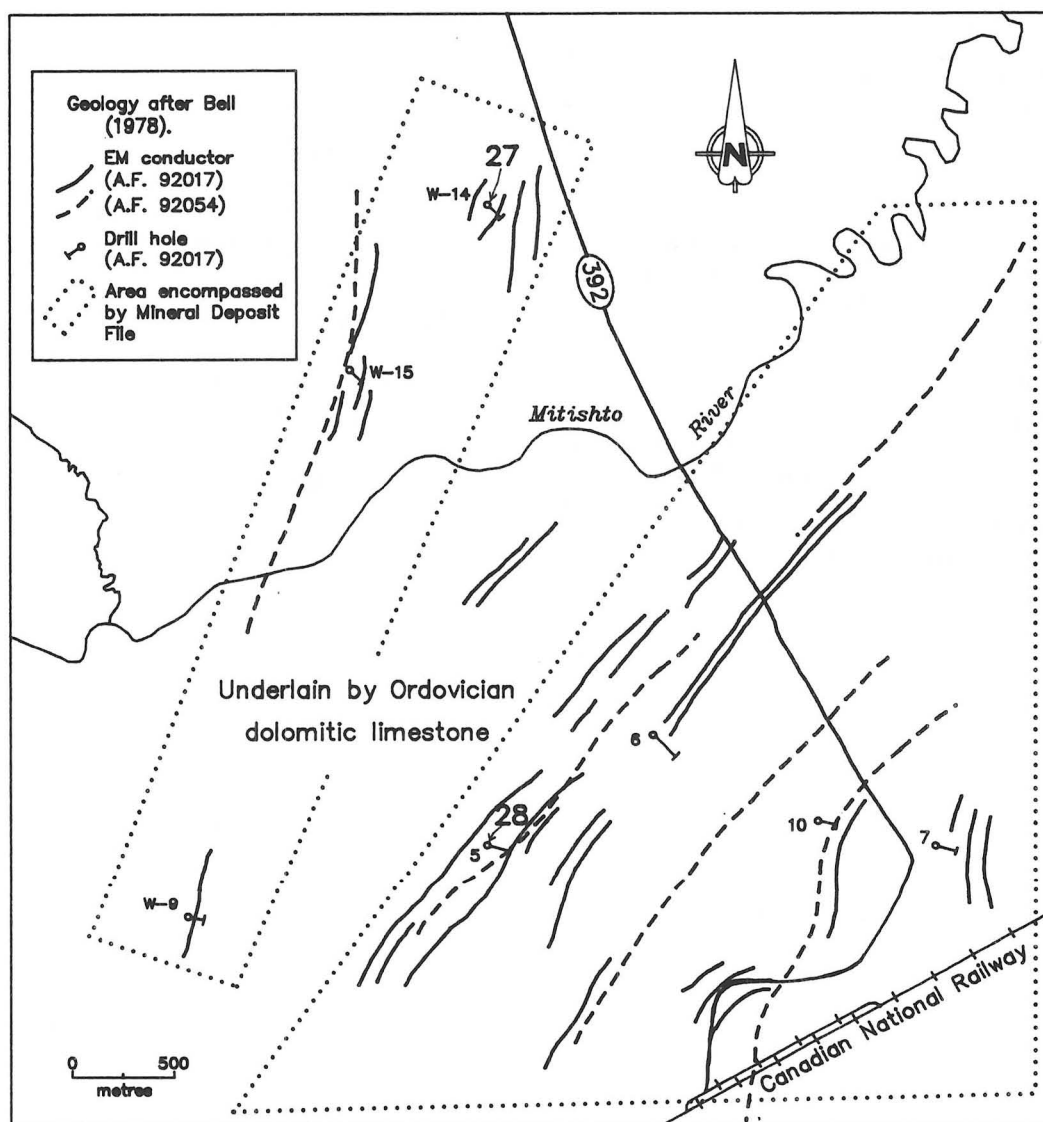


Figure 27-1: Geological setting and drill hole locations at occurrences 27 and 28.

**LOCATION: 27**

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

**UTM:** 6043984N/450174E

**ACCESS:** Via Provincial Road 392 and traverse.

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted airborne magnetometer and EM surveys in 1973 (A.F. 92054), and undertook Turam and HLEM surveys and drilled three holes totalling 424 m in 1975-76 on Reservation of Mineral Rights 123 (A.F. 92017). The area is partly covered by the Kim claim, staked by Charles McLeod in 1989.

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 27-1). DDH W-14 and W-15 intersected limestone and sandstone, sedimentary rocks, and quartz-biotite-garnet gneiss interbanded with quartzite bands, pebbles and lenses. DDH W-9 intersected limestone and sandstone, andesite, and sedimentary rocks including banded quartzitic rocks. Andesite is dark green, banded, chloritic, and partly biotitic or siliceous. Sedimentary rocks, including quartzite, are biotite  $\pm$  muscovite rich, siliceous, and locally garnetiferous (A.F. 92017).

**MINERALIZATION:**

Grey, siliceous, partly biotitic, finely banded quartzite from DDH W-14 and W-15 contained minor to moderate pyrite bands and fracture fillings and trace pyrrhotite. Within these rocks there are numerous zones, up to 1.5 m long, of near solid to solid pyrite,

**AREA:** The conjunction of the Mitishto River and Provincial Road 392.

**AIRPHOTO:** A20170-70; A20124-35, -36

minor disseminated pyrrhotite, and traces of chalcopyrite and sphalerite. Quartzitic rocks from DDH W-9 are similarly mineralized, however chalcopyrite and sphalerite were not identified in core from this drill hole (A.F. 92017).

**GEOCHEMICAL DATA:**

Drill core samples assayed nil to trace Au, 0.02 to 0.07% Cu and nil to 0.08% Zn. One notable exception occurs in core from DDH W-14, where 1.5 m of quartzite with 10 to 30% pyrrhotite, 1 to 40% pyrite and trace chalcopyrite assayed 0.54% Zn, 0.05% Cu and trace Au (A.F. 92017).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Quartzite hosts moderate to solid Fe-sulphide minerals and Zn-Cu mineralization.

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 92017 and 92054

Manitoba Energy and Mines, Minerals Division.

#### LOCATION: 28

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

UTM: 6040771N/450116E

ACCESS: Via Provincial Road 392.

#### EXPLORATION SUMMARY:

Manitoba Mineral Resources Limited conducted airborne magnetometer and EM surveys in 1973 (A.F. 92054), and undertook Turam and HLEM surveys and drilled four holes totalling 616 m on Reservation of Mineral Rights 123 (A.F. 92017). The area is open for staking (1990).

#### GEOLOGICAL SETTING:

The area is underlain by Ordovician dolomitic limestone (Fig. 27-1). DDH W-5 and W-6 intersected limestone and sandstone, and a sequence of light grey to black shale, light green phyllite, and quartzite with interbedded siltstone. In addition, DDH W-6 intersected quartz-biotite-hornblende schist and gneiss, muscovite schist and pinkish-grey, fine grained granite. DDH W-7 intersected limestone and sandstone, quartz-biotite gneiss and schist, biotite granite gneiss, felsic pegmatites and hornblende diorite dykes. DDH W-10 intersected limestone and sandstone, chloritic mafic volcanic rocks, and quartz-biotite gneiss interbanded with biotite-muscovite gneiss and pegmatite (A.F. 92017).

#### MINERALIZATION:

Three zones, 1.5 to 3.0 m, of solid fine- to coarse-crystalline pyrite with 20 to 60% fine grained graphite layers occur within the sequence of sedimentary rocks from DDH W-5. Minor pyrite and graphite are present throughout this sedimentary sequence as fine grained layers, disseminations, and fracture and vug fillings. DDH W-6 intersected (a) 1.4 m of 80% black, fine grained pyrite with 20% small granitic fragments, (b) two zones, 0.3 and 0.5 m, of siltstone with 10% fine grained

AREA: Along Provincial Road 392 east of Korski Lake (Fig. 27-1).

AIRPHOTO: A20124-112, -113, -114; A20124-33, -34

pyrite along bedding planes, and (c) trace pyrite along fractures and joints in granitic dykes.

Granitic gneiss and pegmatite from DDH W-7 contain 5 to 40% pyrite in layered bands, coarse crystalline vug fillings, narrow veins and blebs. Rare molybdenite and chalcopyrite were identified locally. Quartz-biotite gneiss, biotite-muscovite gneiss and pegmatite from DDH W-10 contain trace to 20% pyrite stringers and disseminations; two zones, <0.3 m, within these rocks contain 50 to 65% pyrite (A.F. 92017).

#### GEOCHEMICAL DATA:

Drill core samples assayed nil to 0.3 g/t Au, nil Ag, trace to 0.05% Cu, and 0.02% Zn (A.F. 92017).

#### CLASSIFICATION:

Chemical sediment type deposit; sulphide facies iron formation. Solid pyrite and moderate to solid graphite occur in a siltstone-quartzite sequence from DDH W-5 and W-6.

In addition, drill core from DDH W-6, W-7 and W-10 contains disseminated mineralization-not classified. Granitic gneiss and pegmatite contain moderate (to solid) pyrite, and rare molybdenite and chalcopyrite.

#### REFERENCES:

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 92017 and 92054

Manitoba Energy and Mines, Minerals Division.

**LOCATION: 29**

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

**UTM:** 6047913N/445320E

**ACCESS:** Via trail from Provincial Road 392, and traverse.

**AREA:** 2.5 km east of Langton Lake.

**AIRPHOTO:** A20781-61

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted airborne magnetometer and EM surveys in 1973 (A.F. 92054), undertook Turam and HLEM surveys and drilled two holes totalling 187 m on Reservation of Mineral Rights 123 (A.F. 92017). The area is open for staking (1990).

nic rocks contain 10 to 40%, banded, disseminated pyrite; a 0.5 cm thick chalcopyrite stringer was identified in sedimentary rock above the mafic volcanic rocks. DDH W-12 also intersected 15 cm of 30 to 40% pyrite in mafic tuff with sericitized rhyolitic fragments (A.F. 92017).

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 29-1). Drill holes intersected limestone, chloritic mafic massive and fragmental volcanic rocks. Mafic fragmental rocks contain altered rhyolitic bombs and fragments. DDH W-12 also intersected conglomerate containing stretched sandstone or quartzite pebbles and fragments in a chloritic matrix, and narrow (<1 m) quartz veins (A.F. 92017).

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Near solid graphite and moderate pyrite are interbanded in altered mafic volcanic rocks.

**MINERALIZATION:**

Chloritic mafic fragmental rocks from DDH W-12 and W-11 contain 10.4 and 8.2 m long zones, respectively, with 50 to 60% graphite, 30 to 40% pyrite stringers and bands, and quartzite fragments. In core from DDH W-11, two other zones, each 1.2 m, in mafic volca-

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 92017 and 92054

Manitoba Energy and Mines, Minerals Division.

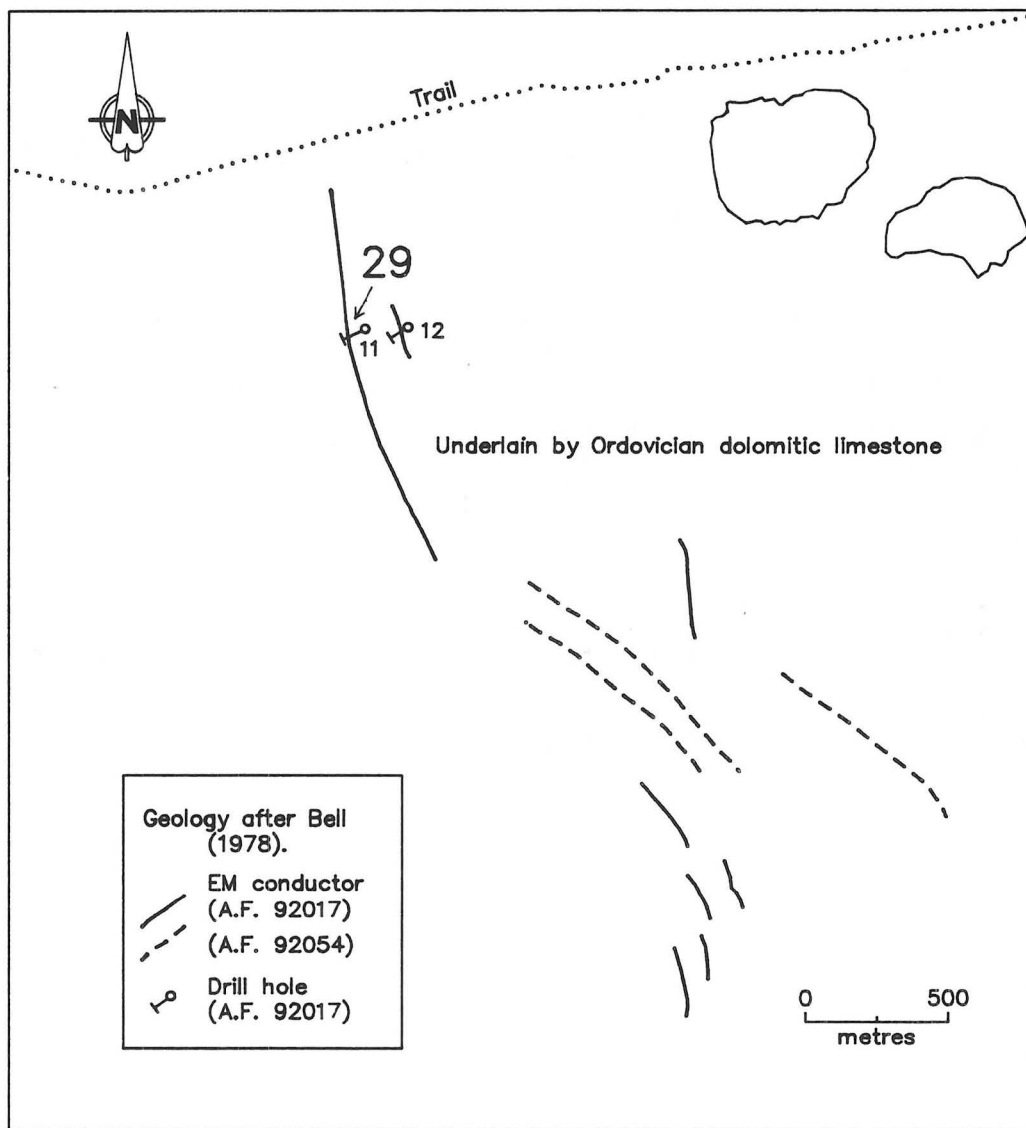


Figure 29-1: Geological setting and drill hole locations at occurrence 29.



**LOCATION: 30**

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

**UTM:** 6049940N/457186E

**ACCESS:** Via Provincial Road 39 and traverse.

**AREA:** 4 km northeast of Sunday Lake.

**AIRPHOTO:** A20137-83

**EXPLORATION SUMMARY:**

Manitoba Mineral Resources Limited conducted airborne EM and magnetometer surveys in 1973 (A.F. 92054), undertook Turam and HLEM surveys, and drilled DDH W-8 (154 m) on Reservation of Mineral Rights 123 in 1975-76 (A.F. 92017). The area is open for staking (1990).

tains 10% pyrite stringers and an unspecified amount of graphite.

**GEOCHEMICAL DATA:**

One drill core sample assayed trace Au (A.F. 92017).

**GEOLOGICAL SETTING:**

The area is underlain by Ordovician dolomitic limestone (Fig. 30-1). DDH W-8 intersected limestone, granite, granodiorite, granitic pegmatite, and minor biotite schist (A.F. 92017).

**CLASSIFICATION:**

Disseminated mineralization - not classified. Moderate pyrite stringers and minor(?) graphite are hosted by felsic intrusive rocks.

**MINERALIZATION:**

Sheared granodiorite contains trace to 30% pyrite stringers and blebs. Most pyritic intersections are narrow (<1 m). However, two intersections, each 2.7 m long, contain 10 to 20% fine pyrite stringers concentrated along shear planes, and a 5.2 m intersection con-

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment Files 92017 and 92054

Manitoba Energy and Mines, Minerals Division.

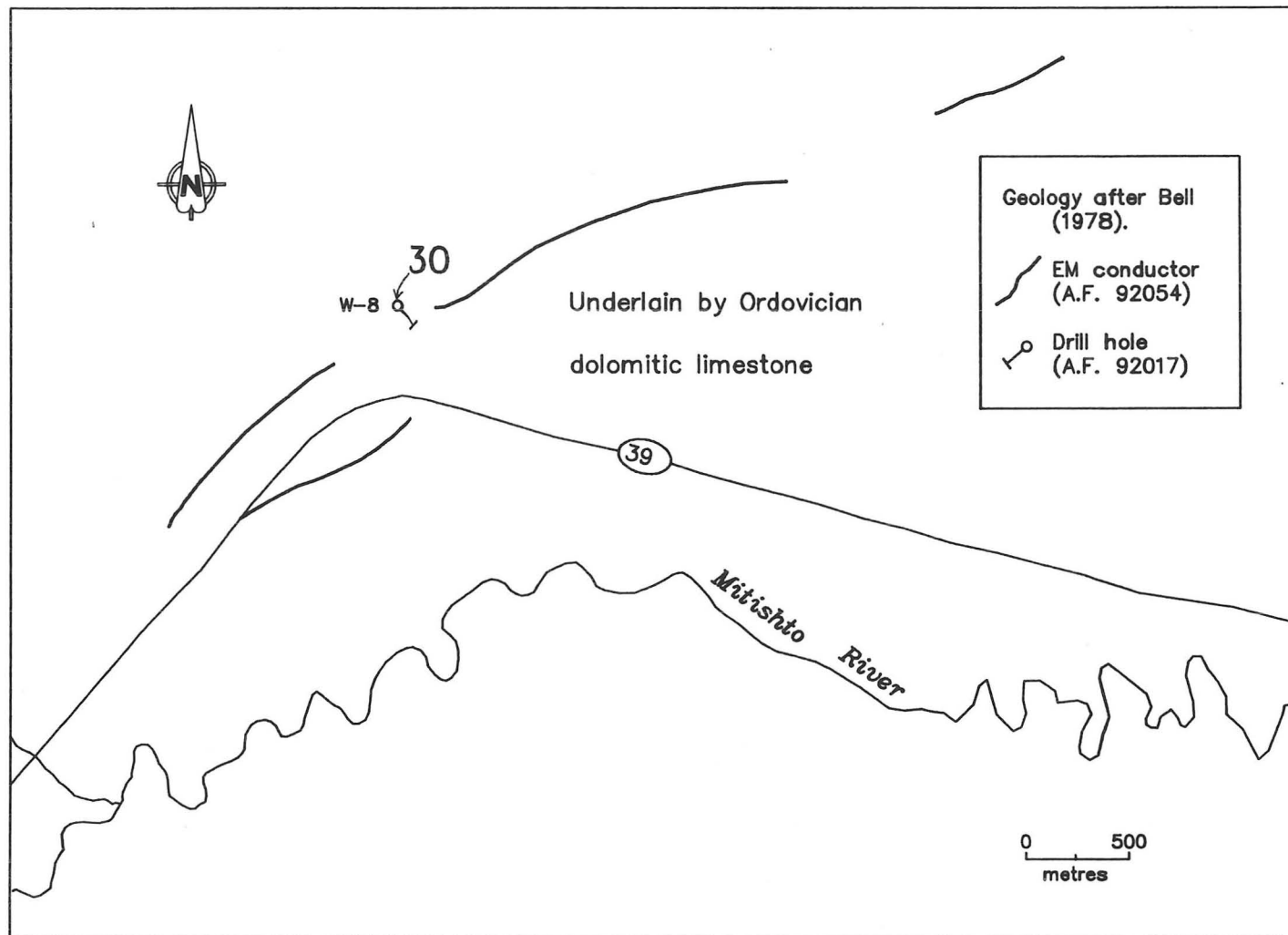


Figure 30-1: Geological setting and drill hole location at occurrence 30.

**LOCATION: 31**

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

**UTM:** 6054996N/465984E

**ACCESS:** Via bush plane to Lindsay Lake and traverse.

**AREA:** 1 km northwest of Lindsay Lake.

**AIRPHOTO:** A20808-174

**EXPLORATION SUMMARY:**

Canadian Nickel Company Limited drilled two holes totalling 360 m on the Ko claims in 1968 (A.F. 90571). HBED, the registered holder (1990), staked claim Kus 7803 in 1989.

**GEOLOGICAL SETTING:**

The area is underlain by an inlier of Missi Group quartzite and other sedimentary rocks within Ordovician dolomitic limestone (Fig. 31-1). DDH 33978 intersected quartzite, pegmatite, iron formation (type not specified) and biotite gneiss. DDH 33979 intersected amphibole gneiss, quartzite and schist (composition not specified) (A.F. 90571).

**MINERALIZATION:**

Quartzite from DDH 33978 contains "scattered bands of pyrite and pyrrhotite". "Sulphide streaks" are hosted by amphibole gneiss, quartzite and schist from DDH 33978 (A.F. 90571).

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. Disseminated mineralization - not classified is represented by sulphide "streaks" in core from DDH 33978.

**REFERENCES:**

Alcock, F.J.

1920: The Reed-Wekusko map-area; Geological Survey of Canada, Memoir 119, 47 p.

Assessment File 90571

Manitoba Energy and Mines, Minerals Division.

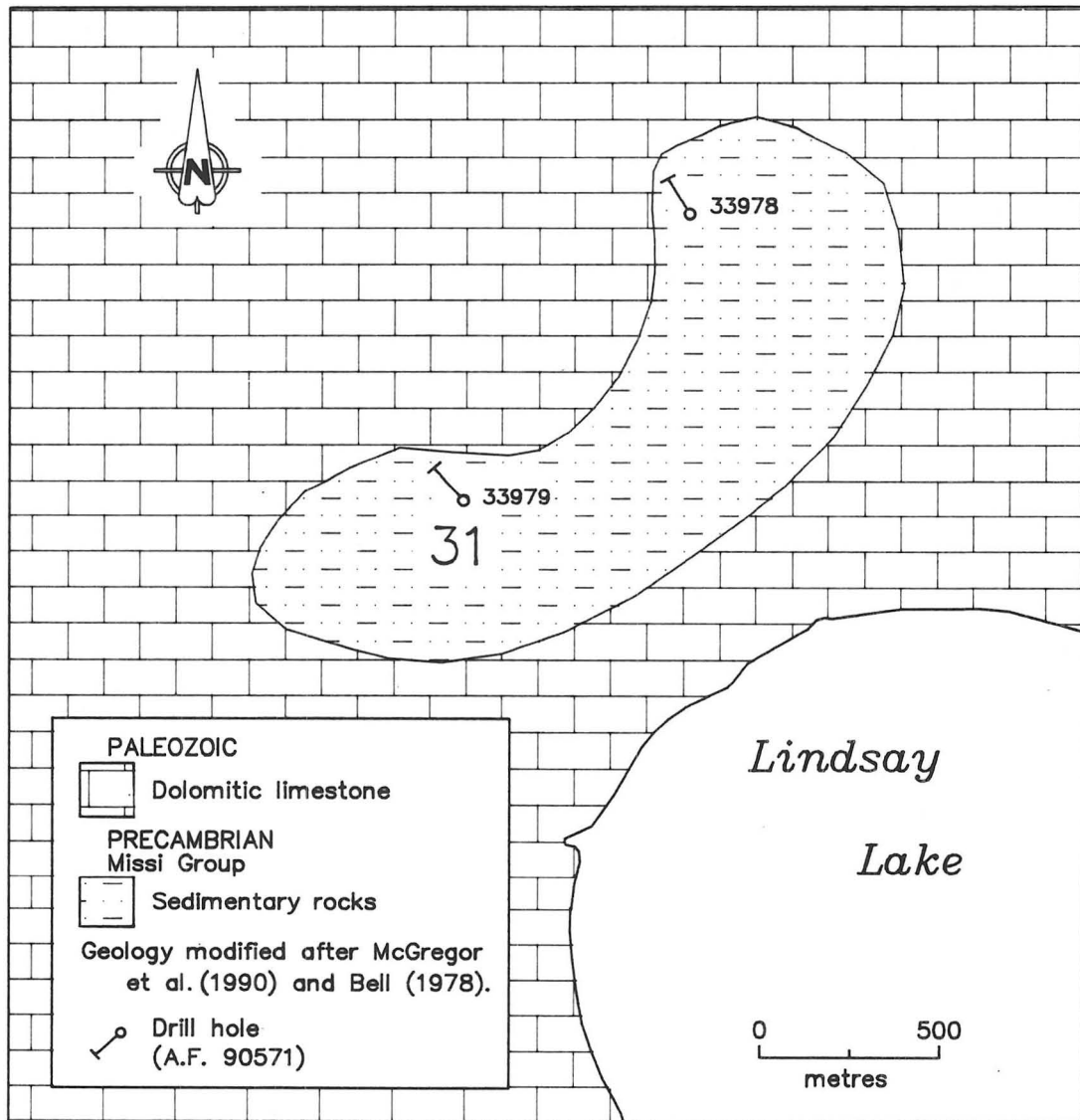


Figure 31-1: Geological setting and drill hole locations at occurrence 31.

**LOCATION: 32**

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

**UTM:** 6057272N/454640E

**ACCESS:** Via trails from road to Hales Landing (Wekusko Lake) that leads from Provincial Road 392.

**EXPLORATION SUMMARY:**

R.J. Jowsey Mining Company Limited conducted a Turam survey on the Acme claims in 1958 (A.F. 91810). W.B. Dunlop drilled five holes totalling 457 m on the Acme claims in 1966 (A.F. 90569). HBED, the registered holder (1990), staked claims Kus 4265 and Kus 4266 in 1985.

**GEOLOGICAL SETTING:**

The area is underlain by Missi Group felsic and mafic volcanic rocks intruded by felsic plutons, and overlain unconformably to the south by Ordovician dolomitic limestone (Fig. 32-1). Drill holes intersected biotite granite, diorite, quartz diorite, fine grained massive "greenstone", and minor nonmineralized quartz veins (A.F. 90569).

**MINERALIZATION:**

Granite and quartz diorite in core from DDH 2 contain trace chalcopyrite. "Greenstone" from DDH 5 con-

**AREA:** 1.5 km east-northeast of Buzz Lake.

**AIRPHOTO:** A20871-149

tains a fine network of quartz-carbonate stringers and one 0.5 cm thick chalcopyrite stringer (A.F. 90569).

**GEOCHEMICAL DATA:**

Drill core samples from DDH 1 and 2 assayed 0.03 to 0.08% Cu (A.F. 90569).

**CLASSIFICATION:**

Disseminated mineralization - not classified. Trace chalcopyrite is hosted by felsic to intermediate intrusive rocks.

**REFERENCES:**

Assessment Files 90569 and 91810

Manitoba Energy and Mines, Minerals Division.

Frarey, M.J.

1948: Crowduck Bay, Manitoba; Geological Survey of Canada, Map 987A, 1:63 360.

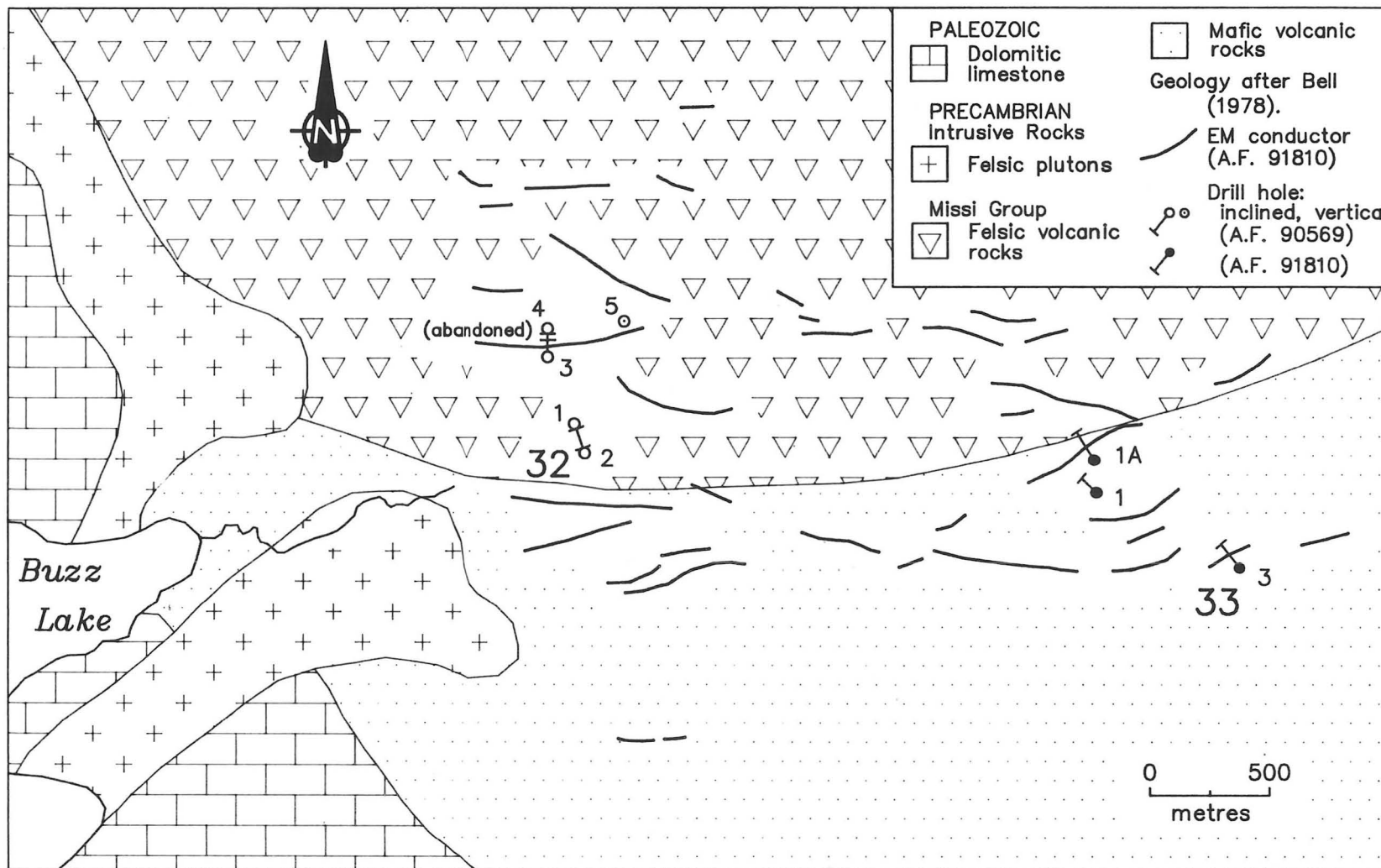


Figure 32-1: Geological setting and drill hole locations at occurrences 32 and 33.

**LOCATION: 33**

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

**UTM:** 6056758N/457353E

**ACCESS:** Provincial Road 392 and local access road to Hales Landing, traverse using bush trails.

**AREA:** 4 km east of Buzz Lake.

**AIRPHOTO:** A20137-89

**EXPLORATION SUMMARY:**

R.J. Jowsey Mining Company Limited conducted a Turam survey and drilled three holes totalling 346 m on the Acme claims in 1958 (A.F. 91810). HBED, the registered holder (1990), staked claims Kus 4253 and Kus 4254 in 1985 and 1986, respectively.

quartz stringer from DDH 1A. "Greenstone" from DDH 1 and 1A contains trace to minor pyrite, and traces of disseminated chalcopyrite and pyrrhotite (A.F. 91810).

**GEOCHEMICAL DATA:**

None.

**GEOLOGICAL SETTING:**

The area is underlain by Missi Group felsic and mafic volcanic rocks intruded by felsic plutons, and overlain unconformably to the south by Ordovician dolomitic limestone (Fig. 32-1). Drill holes intersected "greenstone" with minor quartz  $\pm$  carbonate veins and veinlets up to 1.2 m thick, and minor mafic dykes. In addition, DDH 3 intersected granite and gneiss (composition not specified) (A.F. 91810).

**CLASSIFICATION:**

Vein type deposit; multiple veins. Quartz veins contain base metal sulphide mineralization.

**REFERENCES:**

Assessment File 91810

Manitoba Energy and Mines, Minerals Division.

Frarey, M.J.

1948: Crowduck Bay, Manitoba; Geological Survey of Canada, Map 987A, 1:63 360.

**MINERALIZATION:**

Quartz veins have fine grained pyrite  $\pm$  chalcopyrite concentrated along margins with wall rocks and fractures. Accessory tourmaline also occurs in one

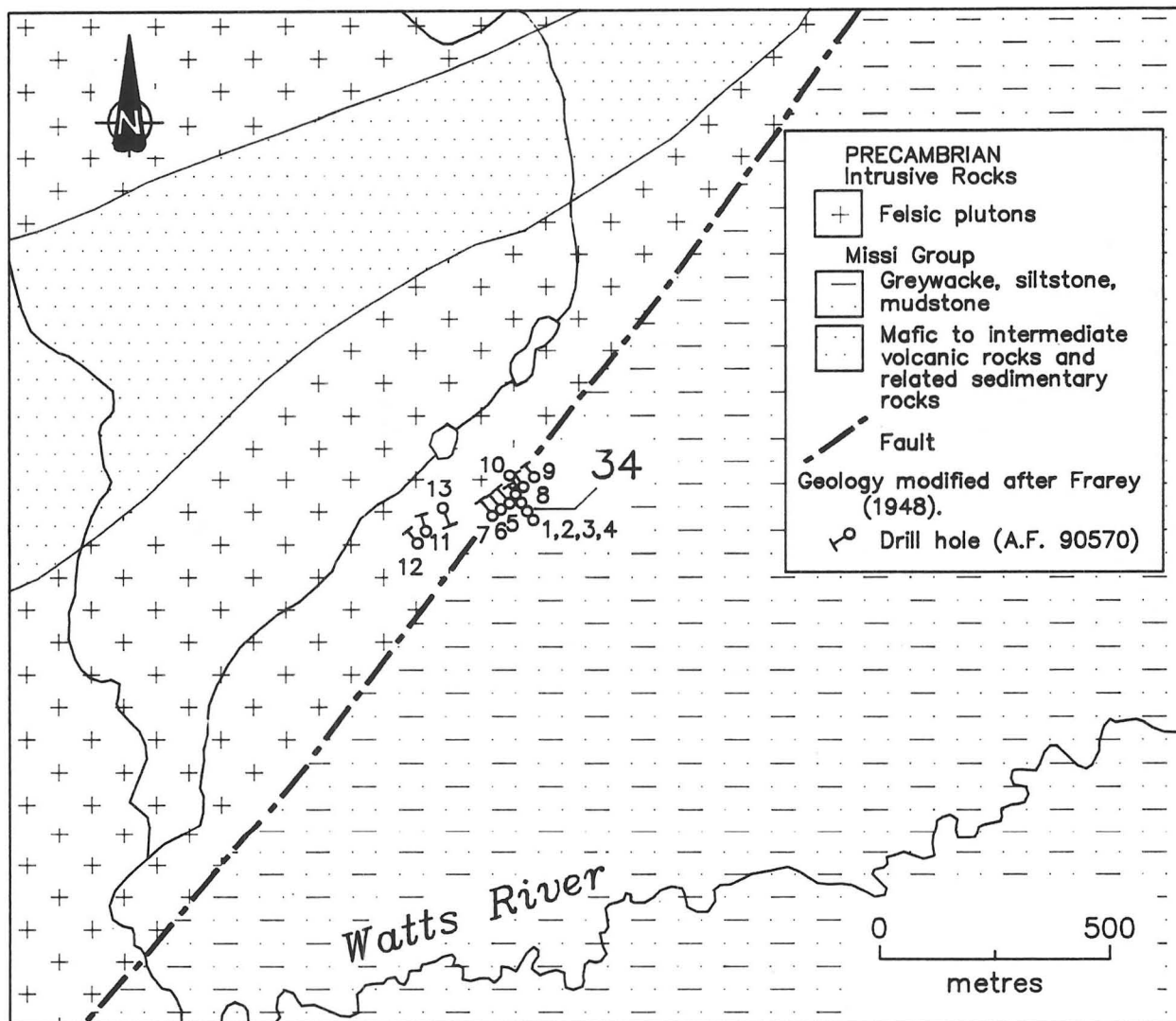


Figure 34-1: Geological setting and drill hole locations at occurrence 34.



**LOCATION: 34**

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

**UTM:** 6061555N/461934E

**ACCESS:** Helicopter to Watch Lake and traverse; alternatively, traverse on drill/winter roads from Provincial Highway 392.

**EXPLORATION SUMMARY:**

A.L. Parres drilled thirteen holes totalling 506 m on claim K.A. 1 in 1951 (A.F. 90570). The area is open for staking (1990).

**GEOLOGICAL SETTING:**

The area is underlain by felsic intrusive rocks, including large inliers of Missi Group mafic volcanic rocks (Fig. 34-1). A NE-trending fault transects the area. Drill holes intersected hornblende-biotite schist with pegmatite and quartz stringers, and minor "impure quartzite" (A.F. 90570).

**MINERALIZATION:**

In core from DDH 2, hornblende-biotite schist contains "considerable scheelite" over 0.9 m adjacent to a schist-pegmatite contact (A.F. 90570). Mineralization was not noted in logs for the other drill holes.

**AREA:** 4 km southwest of Watch Lake.

**AIRPHOTO:** A20808-230

**GEOCHEMICAL DATA:**

None.

**CLASSIFICATION:**

Disseminated mineralization - not classified. The mode of occurrence of the scheelite is not described in the drill log. The scheelite may represent a layer or a vein in the hornblende-biotite schist.

**REFERENCES:**

Assessment File 90570

Manitoba Energy and Mines, Minerals Division.

Frarey, M.J.

1948: Crowduck Bay, Manitoba; Geological Survey of Canada, Map 987A, 1:63 360.

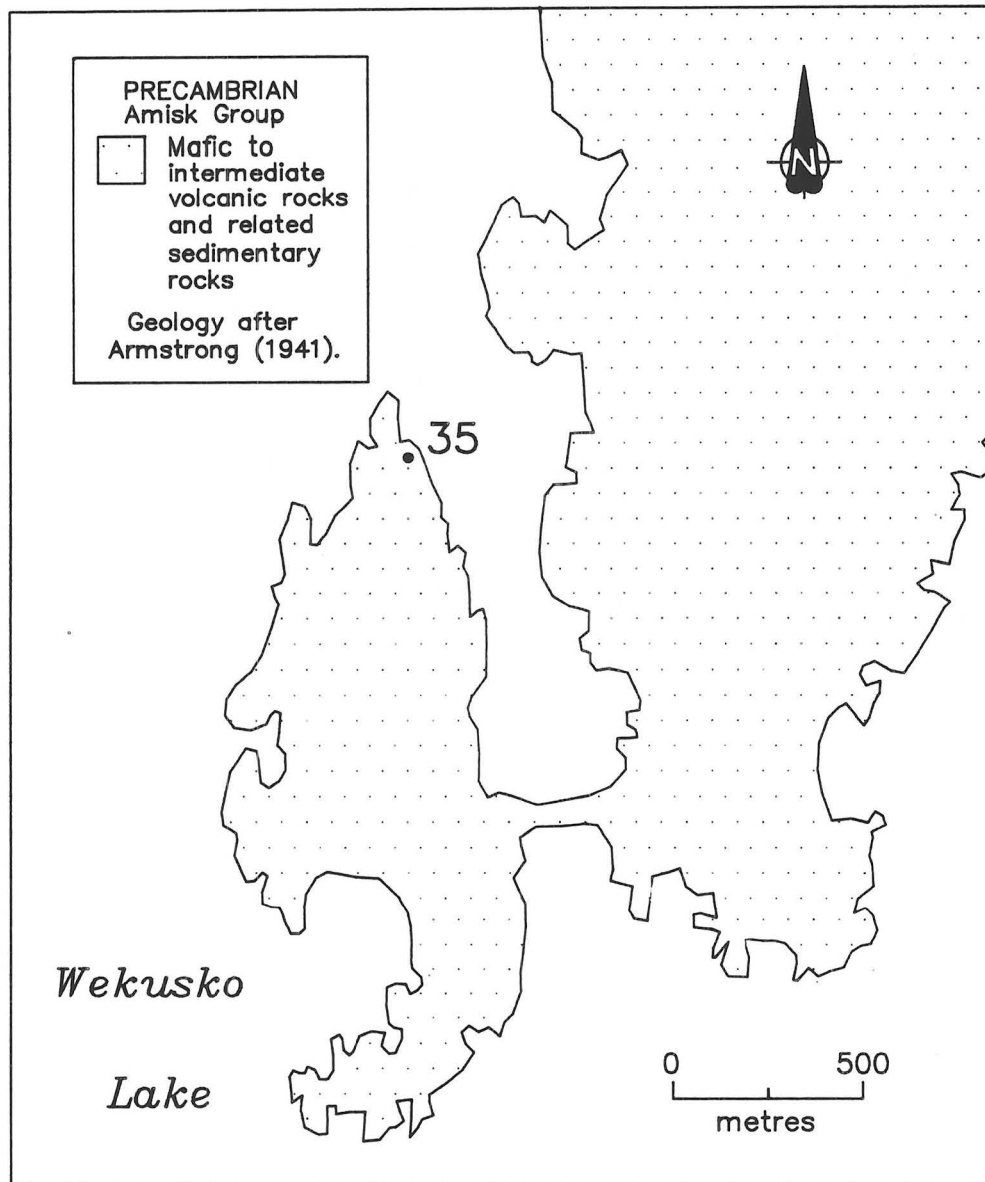


Figure 35-1: Geological setting of occurrence 35.

**LOCATION: 35**

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

**UTM:** 6063706N/448113E

**ACCESS:** Via boat on Wekusko Lake.

**AREA:** Wekusko Lake.

**AIRPHOTO:** A20170-55

**EXPLORATION SUMMARY:**

Cangold Limited prospected CB 7675 in 1981 (A.F. 92481). The area is covered (1990) by claim RTG, staked by George Green in 1989.

quently collected by Cangold Ltd.; these samples contained nil to trace Au and Ag (A.F. 92481). The relationship, if any, between the near solid pyrite and the single high Au assay is not known.

**GEOLOGICAL SETTING:**

The area is underlain by Amisk Group mafic volcanic rocks (Fig. 35-1).

**CLASSIFICATION:**

Chemical sediment type deposit; sulphide facies iron formation. The near solid pyrite layer may be auriferous.

**MINERALIZATION:**

Near solid pyrite and a gossan zone were noted at one end of a trench (Fig. 35-2).

**REFERENCES:**

Armstrong, J.E.

1941: Wekusko, Manitoba; Geological Survey of Canada, Map 665A, 1:63 360.

**GEOCHEMICAL DATA:**

Cangold Ltd. reported that a grab sample taken from a trench by J.B. Barton assayed 20.6 g/t Au (Fig. 35-2). Thirteen channel and grab samples were subse-

Assessment File 92481

Manitoba Energy and Mines, Minerals Division.

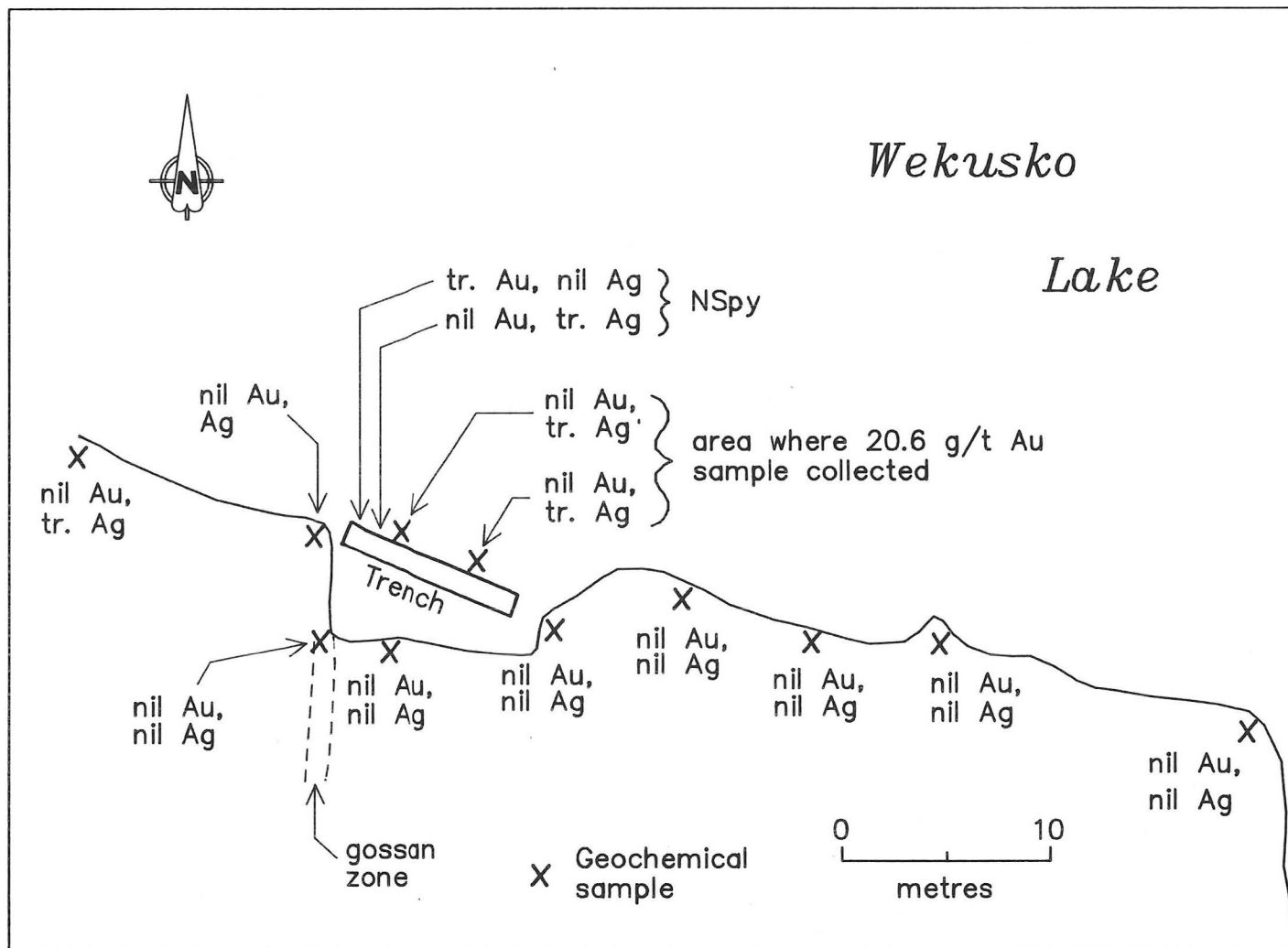


Figure 35-2: Sample locations at occurrence 35 (A.F. 92481).

## APPENDIX I: MULTI-ELEMENT GEOCHEMICAL ROCK ANALYSES

Rock samples were routinely collected as (1) bulked or composite continuous chip samples over 1 or 2 m intervals from trenches and/or outcrop, (2) single or multiple 1 to 2 kg samples from representative mineralized zones in trenches and outcrop, or (3) chips or sections of split drill core from specific intervals in a drill hole. These samples were routinely analyzed by Acme Analytical Laboratories Ltd. (Vancouver) by digesting 0.500 g of rock powder with 3 ml of HCl, HNO<sub>3</sub>, H<sub>2</sub>O (in the proportions 3:1:2) at 95°C for one hour and then diluted to 10 ml with deionized water. This solution is then analyzed by inductively coupled argon plasma-atomic absorption spectrophotometry (ICP-AAS) for 30 elements. The lower limit of detection (LLD) for Au using a 0.500 g sample aliquot is 3 ppm, which was considered too high for the purposes of this study. Ac-

cordingly, a LLD of 1 ppb was attained for Au with a preconcentration of a 10 g sample and AAS finish. Assay data for Cu, Pb, Zn, Au and Ag obtained from the analytical laboratories of the Geological Services Branch are presented on figures or in tables accompanying individual mineral occurrence descriptions. All other analytical specifications are given below.

### Specifications:

1. Au1: Au by ICP on 10 g sample.
2. Au2: Au, Pt and Pd by INAA on 50 g sample.
3. All other analyses by ICP on 0.500 g samples after a HCl, HNO<sub>3</sub>, H<sub>2</sub>O dissolution in the proportions 3:1:2. This digestion is partial for Mn, Fe, Ca, P, La, Cr, Mg, Ba, Ti, B, W, Na, K, Al.
4. Hg by flameless AAS.

Mineral Occurrence	UTM Coordinates		Sample Numbers	Mo	Cu	Pb	Zn	Au1	Au2	Pt	Pd	Ag	As	Sb	Bi	Cd	Ni
	Northing	Easting		(ppm)	(ppm)	(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
63J12-1 (Outcrop and float)	6061749	452263	01129	3	32	6	26	1				0.1	9	2	2	1	62
			01142	24	53	92	8	1				0.3	137	2	3	1	26
			01146	3	23	2	5	1				0.1	20	2	3	1	18
			01156	2	60	11	155	1				0.1	17	2	2	1	40
			01157	3	23	14	67	3				0.1	23	2	3	1	62
			01158	4	18	21	81	1				0.1	15	2	5	1	47
			01159	3	25	100	67	1				0.6	11	2	2	1	50
			01160	6	31	133	74	5				1.0	21	2	3	1	96
			01161	3	18	41	79	1				0.3	17	2	2	1	58
			01162	3	80	17	146	1				0.4	21	2	2	1	125
			01163	3	61	39	181	5				0.2	23	2	5	1	149
			01164	1	29	19	242	1				0.2	17	2	2	1	162
			01165	2	62	25	211	1				0.2	10	2	4	1	136
			01149	20	1132	14	26125	98				2.1	18	2	2	90	7
			01150	14	1457	172	17372	94	60	<10	<2	3.6	36	2	2	59	8
T 1			01151	21	1198	12	29041	53				1.7	29	2	2	106	10
			01166	3	48	9	175	3				0.1	42	2	2	1	49
			01167	3	79	11	174	1				0.3	15	3	2	1	44
			01168	3	30	8	119	1				0.1	58	2	2	1	61
			01169	3	26	10	109	4				0.1	54	3	2	1	95
			01174	5	26	13	123	2				0.4	23	2	4	1	45
			01175	3	20	5	78	1				0.2	42	2	2	1	37
			01176	3	37	20	169	1				0.3	48	2	3	1	37
			01177	7	27	5	87	1				0.3	25	2	2	1	40
			01178	5	16	2	106	2				0.3	23	2	2	1	44
			01179	4	29	6	76	1				0.2	46	2	2	1	38
			01193	5	30	6	47	1				0.3	34	2	2	1	35
			01194	3	18	2	39	1				0.1	83	2	2	1	38
			01181	3	25	8	89	1				0.4	35	2	2	1	41
T 2			01182	3	44	7	87	1				0.3	35	2	2	1	43
			01183	2	52	2	99	2				0.2	36	2	2	1	45
			01184	4	58	13	808	2				0.4	31	3	3	4	24
			01185	2	43	3	111	1				0.1	32	2	2	1	47
			01186	3	54	11	79	1				0.1	42	2	2	1	56
			01180	2	13	5	29	1				0.4	33	2	2	1	29
			01187	2	50	12	67	3				0.1	10	2	3	1	45
			01188	3	20	12	83	2				0.1	13	2	2	1	56
			01189	3	22	15	70	1				0.1	10	2	3	1	36
			01190	3	41	29	116	2				0.3	8	2	2	1	43
			01191	4	14	13	63	1				0.1	3	3	5	1	17
			01192	2	19	27	127	1				0.1	12	2	2	1	34
			01195	3	37	43	144	3				0.1	12	2	3	1	29
			01196	4	37	33	180	10				0.4	30	2	8	1	45
T 3			01197	2	46	35	175	5				0.6	24	2	14	1	41
			01198	2	32	22	202	6				0.3	25	2	11	1	68

Sample Numbers	Co (ppm)	Fe (%)	Mn (ppm)	Ba (ppm)	B (ppm)	Cr (ppm)	Mg (%)	W (ppm)	U (ppm)	Th (ppm)	P (%)	La (ppm)	V (ppm)	Ti (%)	Na (%)	K (%)	Ca (%)	Sr (ppm)	Al (%)
01129	13	5.53	390	42	57	59	1.33	1	5	3	0.101	8	44	0.05	0.25	0.69	1.05	105	3.30
01142	4	5.91	156	51	3	29	0.23	2	5	1	0.209	8	86	0.02	0.03	0.12	0.46	52	0.31
01146	16	1.61	43	22	9	25	0.21	168	7	4	0.026	15	22	0.01	0.03	0.08	0.10	55	0.50
01156	14	3.35	151	87	31	31	1.30	25	5	6	0.097	12	37	0.12	0.04	1.27	0.22	7	1.71
01157	24	5.43	185	40	42	30	0.92	27	5	7	0.066	15	21	0.05	0.04	0.79	0.27	9	1.36
01158	13	3.29	182	51	27	15	0.76	1	5	5	0.071	20	10	0.03	0.06	0.47	0.30	13	1.04
01159	12	4.68	396	58	28	27	1.22	2	5	7	0.062	26	25	0.04	0.24	0.66	1.30	46	2.22
01160	20	5.32	195	32	17	24	0.66	1	5	4	0.054	11	9	0.03	0.04	0.41	0.36	16	0.92
01161	13	3.21	127	51	20	18	0.77	3	5	4	0.080	7	21	0.06	0.05	0.63	0.16	7	0.96
01162	28	5.21	314	33	19	171	1.46	1	5	6	0.223	28	64	0.16	0.08	1.12	0.73	24	2.03
01163	32	6.57	816	43	14	233	2.17	4	6	8	0.233	37	96	0.21	0.28	1.46	3.27	127	3.71
01164	26	5.23	656	83	26	312	2.71	15	9	7	0.238	47	123	0.36	0.26	2.51	3.96	134	5.58
01165	31	5.65	874	95	23	344	3.10	24	5	9	0.242	53	123	0.33	0.34	1.96	5.24	133	5.28
01149	7	3.01	4811	12	2	1	7.83	204	9	3	0.010	12	3	0.01	0.01	0.10	15.70	91	0.15
01150	19	3.13	3222	12	4	2	5.99	331	6	4	0.010	11	3	0.01	0.01	0.10	12.78	94	0.15
01151	10	3.50	3705	13	2	1	7.25	242	11	4	0.012	10	5	0.01	0.01	0.12	15.27	117	0.14
01166	19	4.21	549	70	79	60	1.97	65	5	7	0.099	31	53	0.21	0.10	1.75	0.98	20	3.38
01167	17	4.48	779	133	43	56	2.04	19	5	8	0.078	35	63	0.29	0.21	2.09	2.12	52	4.45
01168	19	4.23	548	58	67	54	1.90	44	5	7	0.102	34	46	0.19	0.11	1.63	1.12	27	3.21
01169	18	3.81	477	64	49	128	1.75	2	6	8	0.093	30	39	0.15	0.12	1.22	0.89	27	2.91
01174	14	4.78	581	93	39	78	2.35	3	5	8	0.091	33	81	0.31	0.19	1.65	1.73	30	3.00
01175	13	4.75	539	41	42	62	2.12	3	5	8	0.081	34	67	0.26	0.13	1.52	1.40	29	3.08
01176	18	4.33	638	117	49	62	2.18	23	5	8	0.100	37	69	0.26	0.21	1.55	1.21	36	3.50
01177	11	3.77	472	109	59	54	2.21	2	7	7	0.075	32	57	0.23	0.08	1.48	0.89	20	3.09
01178	11	3.58	421	132	65	54	2.05	1	5	7	0.087	30	65	0.25	0.05	1.32	0.74	14	3.04
01179	11	3.44	468	97	51	35	1.45	1	5	5	0.089	33	30	0.12	0.11	0.96	1.13	26	2.28
01193	10	2.87	384	55	47	22	1.47	3	5	9	0.078	33	16	0.06	0.04	0.74	1.05	13	1.61
01194	17	4.62	414	47	79	44	1.97	32	5	7	0.092	29	48	0.13	0.11	1.41	1.16	21	3.05
01181	15	5.23	474	51	26	60	2.27	2	5	7	0.107	33	86	0.26	0.12	1.65	1.04	20	2.92
01182	14	5.03	446	53	46	56	2.13	4	5	8	0.111	32	74	0.25	0.18	1.49	0.74	17	2.88
01183	13	4.36	526	49	42	58	1.95	1	5	7	0.078	37	49	0.19	0.18	1.39	1.10	26	3.13
01184	4	4.68	2333	28	4	10	5.71	2	5	2	0.015	6	9	0.02	0.14	0.24	13.20	94	0.31
01185	14	3.97	891	83	46	52	2.62	33	7	6	0.068	29	38	0.16	0.18	1.34	3.55	37	2.77
01186	12	4.47	478	48	61	68	1.97	1	5	5	0.077	34	46	0.18	0.16	1.44	1.01	23	3.05
01180	5	2.99	247	73	35	56	1.40	1	5	7	0.042	11	17	0.06	0.03	0.79	0.61	11	1.81
01187	12	3.93	400	76	42	38	1.22	1	5	7	0.073	15	31	0.11	0.08	0.81	0.34	8	2.17
01188	12	3.80	352	111	68	63	1.74	1	5	6	0.085	18	40	0.15	0.06	1.25	0.43	10	2.89
01189	8	4.41	1455	92	27	36	2.92	4	5	4	0.040	12	32	0.09	0.17	0.67	6.36	21	1.64
01190	12	5.44	1336	153	40	47	3.28	3	5	5	0.059	17	51	0.18	0.21	1.21	5.25	30	2.77
01191	2	4.77	2567	33	7	6	6.26	5	5	2	0.011	6	13	0.02	0.15	0.15	15.62	40	0.34
01192	14	5.18	953	64	63	27	3.09	1	5	5	0.062	20	70	0.19	0.20	1.62	4.97	55	4.22
01195	14	4.93	686	72	35	36	2.03	3	5	6	0.070	19	71	0.17	0.34	1.23	2.79	47	3.93
01196	15	5.36	872	45	42	131	2.38	1	5	5	0.095	22	62	0.19	0.21	1.80	2.12	48	3.85
01197	16	5.30	1406	61	30	121	3.00	1	5	3	0.107	21	87	0.26	0.21	2.04	4.05	53	4.58
01198	19	4.83	863	67	49	120	2.37	3	5	6	0.088	25	65	0.18	0.21	1.37	2.00	31	3.34

Mineral Occurrence	UTM Coordinates		Sample Numbers	Mo	Cu	Pb	Zn	Au1	Au2	Pt	Pd	Ag	As	Sb	Bi	Cd	Ni
	Northing	Easting		(ppm)	(ppm)	(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
T 8			01199	3	36	21	131	1				0.1	14	2	4	1	61
			01200	5	64	32	173	8				0.4	18	4	16	1	47
			01527	32	21	11	41	3				0.5	10	2	2	1	50
			01529	2	32	15	43	8				0.3	10	2	2	1	51
			01530	3	53	11	34	8				0.5	17	2	2	1	45
			01531	3	28	8	47	1				0.3	17	2	2	1	45
			01532	6	26	11	39	1				0.2	16	2	2	1	42
			01533	3	42	8	55	1				0.2	19	2	2	1	42
			01534	3	27	13	39	1				0.3	10	2	2	1	48
			01535	5	26	10	26	4				0.3	13	2	2	1	52
T 9			01536	6	35	15	61	3				0.3	15	2	2	1	63
			01537	9	28	17	85	10				0.3	12	2	2	1	32
			01538	4	50	16	132	4				0.5	23	2	2	1	63
			03146	3	11	3	16	1				0.1	2	2	2	2	5
			03147	2	12	2	30	1				0.1	2	2	2	3	5
T10			03148	3	54	11	62	1				0.1	2	2	2	2	19
			03149	3	18	3	58	1				0.1	2	2	2	1	16
			03150	4	69	11	67	1				0.1	6	2	2	1	25
			03151	3	68	6	57	1				0.1	4	2	2	1	18
			03152	3	43	5	37	2				0.1	4	2	2	1	16
T13			03153	2	34	7	49	5				0.1	3	2	2	1	17
			03154	3	33	3	38	1				0.1	7	2	2	1	21
			03199	3	42	15	74	1				0.2	5	2	2	1	41
			04501	6	39	18	71	1				0.1	4	2	2	1	28
			04502	6	46	7	45	1				0.1	10	2	2	1	27
T14			04503	3	28	6	129	1				0.2	2	2	2	1	47
			04504	5	42	4	62	1				0.2	4	2	2	1	36
			04505	4	53	7	99	1				0.1	7	2	2	1	46
			04506	6	63	6	61	1				0.1	5	2	2	1	42
			04507	5	39	3	32	2				0.1	9	2	2	1	17
T15			03192	4	33	2	64	1				0.1	13	2	2	1	19
			03193	5	32	3	59	1				0.1	19	2	4	1	25
			03194	9	41	5	36	1				0.1	11	2	2	1	23
			03195	6	40	7	47	1				0.1	12	2	3	1	23
			03196	5	28	7	62	2				0.2	5	2	2	1	17
T16			03197	4	31	7	95	1				0.3	5	2	2	1	20
			03198	4	34	2	87	1				0.1	4	2	2	1	19
			03162	4	26	13	42	1				0.4	35	2	2	1	85
			03163	4	25	10	40	1				0.5	19	2	2	1	45
			03164	4	61	4	52	1				0.2	4	2	3	1	223
T16			03165	3	26	8	60	1				0.1	13	2	2	1	41
			03166	3	16	12	46	1				0.2	28	2	2	1	74
			03167	5	28	11	44	1				0.1	19	2	2	1	42
			03168	4	31	6	49	1				0.4	11	2	2	1	52
			03169	5	47	6	82	1				0.2	11	2	2	1	53



Sample Numbers	Co (ppm)	Fe (%)	Mn (ppm)	Ba (ppm)	B (ppm)	Cr (ppm)	Mg (%)	W (ppm)	U (ppm)	Th (ppm)	P (%)	La (ppm)	V (ppm)	Ti (%)	Na (%)	K (%)	Ca (%)	Sr (ppm)	Al (%)
01199	20	5.23	805	42	65	69	2.24	44	5	6	0.063	22	43	0.14	0.16	1.48	2.03	37	3.40
01200	22	5.55	771	39	53	73	2.17	27	5	6	0.119	24	57	0.18	0.26	1.47	1.47	36	3.57
01527	29	7.66	381	20	49	76	1.45	2	6	5	0.127	20	48	0.11	0.15	0.92	0.93	30	2.55
01529	24	7.07	488	24	23	54	1.47	2	5	5	0.131	18	41	0.09	0.24	0.93	1.42	47	2.61
01530	20	7.53	778	19	23	49	1.87	2	5	3	0.097	15	44	0.08	0.27	0.85	2.76	48	2.94
01531	22	6.54	417	22	32	50	1.60	2	5	5	0.137	17	36	0.07	0.20	0.90	1.37	35	2.48
01532	22	6.29	409	22	32	46	1.35	3	5	5	0.125	15	34	0.06	0.18	0.79	0.99	31	2.23
01533	23	6.29	329	19	27	47	1.37	1	5	4	0.132	10	34	0.06	0.10	0.84	0.68	19	1.87
01534	23	7.32	309	24	25	40	1.16	3	5	4	0.128	14	26	0.06	0.19	0.69	1.19	37	2.19
01535	13	4.24	192	40	16	26	0.95	2	5	8	0.053	29	16	0.06	0.18	0.56	1.15	27	2.05
01536	17	4.75	658	35	25	110	2.23	3	5	6	0.057	27	44	0.15	0.26	1.18	3.36	45	3.71
01537	15	5.95	1209	32	17	38	3.18	2	5	4	0.094	22	64	0.19	0.21	1.43	6.10	45	3.85
01538	31	7.91	504	27	40	76	1.74	5	5	7	0.219	34	75	0.14	0.28	1.21	1.25	32	2.90
03146	2	2.25	420	11	10	4	7.82	3	5	1	0.015	4	6	0.03	0.01	0.29	14.78	98	0.30
03147	2	2.46	461	34	9	4	7.45	3	5	1	0.031	3	7	0.03	0.01	0.37	14.46	156	0.41
03148	5	3.71	638	48	32	46	4.46	1	5	6	0.053	28	52	0.28	0.02	2.35	4.44	28	2.87
03149	8	2.93	406	231	13	16	3.37	1	5	6	0.051	25	43	0.16	0.02	0.97	4.85	36	1.30
03150	10	3.66	316	303	23	29	2.23	1	5	9	0.068	36	61	0.23	0.04	1.24	1.85	13	1.90
03151	7	2.81	238	213	16	27	1.75	1	5	9	0.067	35	50	0.14	0.02	0.80	1.57	11	1.37
03152	8	2.77	293	208	10	23	2.18	1	5	9	0.061	29	50	0.15	0.02	0.75	2.51	29	1.23
03153	6	3.13	400	224	18	22	3.14	1	5	8	0.056	31	46	0.17	0.03	0.95	4.21	26	1.39
03154	8	3.00	211	89	12	29	1.06	1	5	11	0.064	40	47	0.15	0.03	0.72	1.81	15	1.28
03199	11	4.02	701	195	18	59	3.22	1	5	5	0.040	36	31	0.13	0.02	1.67	1.87	11	2.48
04501	8	3.97	897	205	21	29	3.01	1	5	10	0.026	46	21	0.10	0.03	1.77	2.31	18	2.66
04502	8	3.32	474	97	20	33	1.62	3	5	6	0.027	30	13	0.06	0.02	0.88	0.96	8	1.29
04503	11	2.99	285	88	16	145	1.82	1	5	5	0.092	16	31	0.20	0.01	1.54	0.21	4	2.15
04504	9	3.58	594	122	18	40	1.99	1	5	6	0.048	40	29	0.12	0.02	1.19	1.10	10	1.67
04505	15	4.41	496	119	14	62	2.05	1	5	5	0.059	35	40	0.17	0.02	1.46	0.62	7	2.02
04506	12	3.98	579	154	20	39	1.86	1	5	6	0.061	40	36	0.16	0.03	1.23	0.94	10	1.77
04507	4	2.60	475	59	23	16	1.16	1	5	7	0.016	33	1	0.04	0.02	0.55	0.81	6	0.86
03192	5	3.06	381	38	17	14	1.01	1	5	8	0.032	39	5	0.06	0.02	0.62	0.47	7	0.96
03193	8	3.68	403	41	14	19	1.15	1	5	8	0.044	40	13	0.08	0.02	0.77	0.50	6	1.10
03194	6	3.37	478	52	14	20	1.03	3	5	8	0.029	45	8	0.06	0.02	0.62	0.66	8	0.95
03195	5	3.43	575	79	18	17	1.24	1	5	8	0.030	48	8	0.08	0.03	0.79	0.72	8	1.17
03196	5	2.73	261	82	7	14	0.95	1	5	6	0.034	29	8	0.10	0.02	0.76	0.15	5	1.07
03197	8	3.81	518	129	7	25	1.53	1	5	6	0.070	27	35	0.23	0.02	1.41	0.17	5	1.85
03198	9	3.74	476	108	9	24	1.46	1	5	6	0.066	31	31	0.22	0.02	1.33	0.21	4	1.74
03162	15	4.35	1018	68	39	125	1.70	1	5	11	0.061	32	50	0.16	0.20	1.25	1.47	27	3.01
03163	12	3.97	466	68	43	48	1.39	1	5	10	0.051	28	28	0.12	0.05	0.97	0.41	9	1.78
03164	22	2.72	274	246	2	274	1.85	1	5	9	0.113	46	45	0.10	0.06	0.73	0.71	7	1.26
03165	7	4.25	727	137	29	25	2.31	1	5	14	0.037	31	29	0.12	0.09	1.53	2.02	33	2.60
03166	14	4.29	597	81	39	67	2.18	1	5	11	0.062	36	43	0.17	0.12	1.30	1.41	28	2.43
03167	10	4.30	878	102	31	52	2.66	1	5	9	0.048	32	42	0.18	0.10	1.46	2.22	32	2.49
03168	11	3.58	599	98	50	67	1.69	1	7	11	0.063	40	48	0.20	0.03	1.26	1.06	15	1.91
03169	10	4.02	579	113	29	70	1.72	1	5	9	0.059	36	51	0.24	0.02	1.37	0.85	12	1.94

Mineral Occurrence	UTM Coordinates		Sample Numbers	Mo	Cu	Pb	Zn	Au1	Au2	Pt	Pd	Ag	As	Sb	Bi	Cd	Ni
	Northing	Easting		(ppm)	(ppm)	(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
T17			03170	6	54	8	79	2				0.2	17	2	2	1	57
			03171	5	49	5	98	1				0.4	15	2	2	1	58
			03200	4	50	6	111	1				0.1	15	2	2	1	36
			04508	4	32	8	88	2				0.1	8	2	2	1	22
			04509	6	41	5	30	1				0.1	17	2	2	1	23
T18			04510	6	39	4	28	2				0.1	15	2	2	1	20
			04588	5	66	8	63	3				0.3	32	3	2	1	31
			04589	4	76	15	48	6				0.3	172	2	2	1	92
			04590	6	45	3	21	1				0.1	13	2	2	1	40
			04591	6	42	2	23	1				0.1	10	2	2	1	32
T19			04592	7	57	6	22	1				0.1	9	2	2	1	26
			04593	5	42	5	24	1				0.1	6	2	2	1	24
			04594	5	47	6	260	1				0.1	3	2	2	3	25
			04584	3	41	15	114	2				0.4	18	2	2	1	44
			04585	3	59	2	94	4				0.4	21	2	2	1	39
T20			04586	3	73	14	148	3				0.5	19	2	2	1	42
			04587	3	41	15	120	3				0.3	16	2	2	1	46
			03126	3	22	2	15	9				0.1	20	2	2	1	19
			03127	4	40	5	14	16				0.1	20	2	2	1	22
			03128	3	28	5	10	8				0.2	17	2	3	1	17
T21			03129	3	20	2	12	7				0.1	101	2	2	1	19
			03130	3	20	3	15	6				0.2	14	2	2	1	17
			03131	4	25	2	20	46				0.1	21	2	2	1	22
			03132	3	18	7	20	6				0.1	18	2	2	1	19
			03133	3	32	4	20	8				0.2	17	2	2	1	17
T22			03134	6	35	6	29	12				0.2	20	2	2	1	24
			03135	5	91	7	23	16				0.1	25	2	2	1	34
			03136	5	56	9	16	9				0.1	14	2	2	1	32
			03137	15	35	2	17	13				0.1	10	2	2	1	22
			04575	4	54	7	67	1				0.1	9	2	2	1	262
T22			04576	5	62	3	47	1				0.1	6	3	2	1	213
			04577	3	45	10	64	1				0.2	7	2	2	1	189
			04578	3	38	13	81	1				0.3	27	2	2	2	260
			04579	3	46	13	75	2				0.3	18	2	2	1	140
			04580	3	45	12	20	1				0.1	22	2	2	1	43
T22			04581	4	36	3	23	1				0.2	21	2	2	1	50
			04582	4	42	9	29	1				0.2	22	2	2	1	50
			04583	5	45	8	48	1				0.1	14	2	2	1	50
			04511	4	50	7	80	1				0.2	4	2	2	1	34
			04512	2	41	8	42	1				0.3	3	2	2	1	190
T22			04513	5	47	5	36	1				0.1	11	2	5	1	39
			04514	5	41	6	50	1				0.1	19	2	2	1	49
			04515	5	74	9	65	1				0.4	10	2	4	1	42
			04516	5	118	13	73	1				0.2	13	2	2	1	53
			04517	4	66	16	37	2				0.2	24	2	4	1	41

Sample Numbers	Co (ppm)	Fe (%)	Mn (ppm)	Ba (ppm)	B (ppm)	Cr (ppm)	Mg (%)	W (ppm)	U (ppm)	Th (ppm)	P (%)	La (ppm)	V (ppm)	Ti (%)	Na (%)	K (%)	Ca (%)	Sr (ppm)	Al (%)
03170	12	4.16	645	98	44	84	2.01	1	5	10	0.064	39	52	0.23	0.03	1.44	0.92	14	2.14
03171	12	3.87	512	127	24	79	1.63	1	6	10	0.061	33	45	0.22	0.03	1.22	0.77	11	1.75
03200	12	3.85	684	174	14	44	2.30	1	5	6	0.056	32	35	0.18	0.03	1.64	0.44	6	2.40
04508	9	3.44	808	173	21	29	2.46	1	5	6	0.043	31	23	0.12	0.03	1.47	1.15	13	2.22
04509	6	3.61	365	35	16	17	1.10	1	5	5	0.026	28	5	0.05	0.02	0.54	0.75	10	0.84
04510	6	3.27	395	47	26	18	1.18	2	5	5	0.027	27	6	0.05	0.02	0.65	0.45	6	1.04
04588	21	6.59	514	109	15	45	2.67	1	5	3	0.079	20	111	0.30	0.04	2.16	0.45	8	2.98
04589	43	10.38	540	52	36	175	3.18	1	5	4	0.096	23	107	0.31	0.04	2.22	2.15	14	3.05
04590	8	3.96	380	74	30	69	2.06	1	5	5	0.055	27	38	0.13	0.03	1.01	1.87	15	1.38
04591	8	2.98	265	43	21	30	1.55	1	5	8	0.038	36	14	0.06	0.02	0.71	1.21	10	1.01
04592	7	2.65	324	51	20	22	1.27	2	5	6	0.033	34	9	0.04	0.02	0.55	1.08	9	0.81
04593	6	2.40	279	58	19	21	1.56	2	5	5	0.034	28	8	0.05	0.02	0.60	1.22	10	0.84
04594	5	2.20	447	37	20	19	2.08	1	5	6	0.039	33	7	0.05	0.02	0.60	2.26	26	0.83
04584	21	6.57	1279	67	15	92	3.21	1	5	3	0.107	23	79	0.19	0.05	1.79	1.45	16	2.58
04585	22	7.33	940	56	28	38	2.82	1	5	5	0.161	34	75	0.18	0.04	1.70	1.42	14	2.47
04586	23	7.11	958	74	14	41	2.91	1	5	3	0.128	35	100	0.26	0.07	2.12	1.18	21	3.44
04587	22	7.19	1148	72	22	42	2.76	1	5	4	0.154	34	91	0.22	0.07	1.76	1.53	24	2.81
03126	6	3.21	248	43	25	20	1.11	1	5	12	0.033	43	9	0.07	0.03	0.67	0.77	8	1.11
03127	6	3.75	233	57	34	23	1.21	1	5	12	0.032	38	10	0.07	0.04	0.76	0.69	9	1.30
03128	5	3.34	227	49	27	19	1.16	1	5	12	0.029	41	8	0.05	0.03	0.59	0.78	8	0.99
03129	6	3.43	224	42	25	17	1.26	1	5	11	0.028	40	8	0.06	0.02	0.65	0.76	9	1.08
03130	4	2.75	342	37	20	25	1.25	1	5	11	0.033	42	9	0.07	0.03	0.74	1.16	9	1.21
03131	6	3.57	491	41	17	21	1.23	1	5	11	0.030	43	10	0.08	0.02	0.70	1.26	9	1.10
03132	7	3.71	364	49	27	20	1.50	1	5	11	0.028	42	10	0.08	0.09	0.84	1.25	17	1.82
03133	5	3.29	302	55	14	21	1.21	1	5	11	0.027	40	9	0.06	0.02	0.58	0.85	7	0.86
03134	7	3.66	399	52	8	23	1.35	1	5	11	0.034	45	12	0.08	0.03	0.69	1.05	8	1.01
03135	8	4.00	438	42	22	31	1.11	1	5	10	0.031	38	15	0.07	0.20	0.93	1.13	17	1.71
03136	9	3.80	424	55	13	34	0.99	1	5	10	0.034	39	13	0.06	0.04	0.47	1.15	12	0.76
03137	8	3.70	400	66	10	24	1.35	1	5	13	0.036	59	11	0.08	0.02	0.62	1.37	11	0.87
04575	30	4.93	655	321	10	573	3.29	1	5	5	0.240	43	96	0.25	0.05	1.81	2.95	37	2.56
04576	26	3.77	383	192	4	432	2.20	1	5	4	0.245	47	60	0.13	0.05	0.86	2.35	28	1.55
04577	22	5.55	963	663	17	551	4.43	1	5	5	0.227	42	106	0.32	0.05	2.25	6.20	103	3.19
04578	52	5.80	891	323	40	550	3.90	1	5	6	0.270	43	119	0.42	0.09	2.88	4.24	76	4.93
04579	25	5.33	649	168	21	246	2.82	1	5	5	0.188	42	93	0.29	0.14	2.04	2.73	75	4.13
04580	11	3.90	296	51	39	50	1.47	1	5	6	0.082	53	38	0.12	0.10	1.03	1.09	24	2.24
04581	15	4.56	295	79	30	49	1.65	1	5	6	0.070	45	39	0.15	0.03	1.21	0.84	16	2.00
04582	14	4.32	361	90	26	47	1.49	1	5	7	0.066	41	36	0.16	0.03	1.16	0.59	11	1.76
04583	12	4.43	582	156	26	59	1.82	1	5	8	0.067	40	46	0.22	0.04	1.45	0.79	14	2.03
04511	12	3.38	570	122	31	33	1.83	1	5	9	0.036	40	23	0.12	0.02	1.12	0.96	11	1.90
04512	23	3.83	627	117	48	444	3.08	3	5	5	0.113	46	75	0.27	0.07	2.00	4.10	54	3.92
04513	6	2.36	333	109	31	65	1.39	4	7	6	0.064	40	22	0.08	0.05	0.75	1.32	14	1.18
04514	10	3.23	493	96	28	51	1.86	1	5	6	0.053	43	29	0.12	0.06	0.98	1.71	23	1.94
04515	11	3.94	528	114	28	52	2.32	1	5	7	0.060	41	34	0.15	0.03	1.17	1.93	16	1.95
04516	12	3.71	434	90	25	60	2.19	1	5	6	0.066	45	37	0.16	0.04	1.18	1.66	20	2.11
04517	6	2.47	319	36	26	23	1.05	2	5	5	0.055	33	10	0.04	0.02	0.41	1.12	12	0.68

Mineral Occurrence	UTM Coordinates		Sample Numbers	Mo	Cu	Pb	Zn	Au1	Au2	Pt	Pd	Ag	As	Sb	Bi	Cd	Ni
	Northing	Easting		(ppm)	(ppm)	(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
T23			04518	6	101	13	50	1				0.2	15	2	2	1	61
			04519	6	45	6	67	1				0.1	18	2	2	1	52
			04520	3	24	27	133	1				0.3	14	2	2	2	31
			04521	3	55	20	96	1				0.1	8	2	2	1	98
			04522	1	2141	19142	27920	149				48.2	22	34	2	122	51
			04523	3	64	30	86	2				0.4	25	2	2	1	170
			04524	4	104	41	119	2				0.4	29	2	2	2	268
			04525	3	40	11	145	2				0.3	5	2	2	1	167
			04526	4	35	13	149	1				0.4	3	2	2	1	180
			04527	2	58	22	177	3				0.3	5	2	2	1	209
			04528	3	39	2	158	1				0.3	8	2	2	2	155
			04529	4	51	7	89	3				0.3	15	2	2	2	127
			04530	4	258	14	69	12				0.3	9	2	2	1	81
			04531	11	254	728	3547	21				2.2	24	2	2	12	31
			04532	12	279	174	2372	11				1.2	27	2	7	10	35
			04533	4	38	123	79	4				0.3	37	2	2	1	94
			04534	4	74	19	184	5				0.4	13	2	2	2	223
			04554	4	30	10	263	6				0.6	82	2	2	2	65
			04555	7	25	7	222	6				0.3	34	2	2	1	43
			04556	2	24	4	147	3				0.3	13	2	2	1	77
			04557	4	21	4	216	4				0.3	10	2	2	2	66
			04558	4	14	8	385	3				0.4	11	2	2	3	26
			04559	2	17	2	80	1				0.3	6	2	2	2	34
T24			04537	4	110	12	65	15				0.4	10	2	2	2	49
			04538	5	99	14	84	9				0.5	8	2	2	2	105
			04539	4	59	22	632	21				0.7	13	2	2	6	56
			04540	5	48	11	42	14				0.1	6	2	2	1	40
			04541	5	37	15	48	7				0.3	20	2	2	1	32
T25			04542	3	66	20	99	6				0.4	10	2	2	1	114
			04543	4	56	10	29	9				0.1	30	2	2	1	26
			04544	3	40	16	157	8				0.3	7	2	2	2	122
			04545	2	28	7	58	3				0.2	9	2	2	2	43
			04546	3	37	11	76	26				0.3	10	2	2	1	49
			04547	1	86	19	88	6				0.7	13	2	2	3	30
			04548	1	85	6	92	8				0.6	9	2	2	2	33
			04549	3	621	9	57	42				1.4	13	2	2	2	38
			04550	1	138	11	88	12				0.6	12	2	2	3	36
			04535	4	47	23	44	5				0.4	31	2	2	1	193
T26			04536	3	108	10	62	6				0.2	12	2	2	2	192
			03155	8	55	7	111	1				0.2	20	2	2	1	151
T27			03156	7	52	6	90	1				0.2	27	2	2	1	166
			03157	8	31	4	40	1				0.3	40	2	2	1	48
			03158	8	54	6	95	1				0.1	14	2	2	1	48
			03159	6	50	17	79	1				0.2	9	2	2	1	106
			03160	9	46	12	108	2				0.4	28	2	2	2	214

Sample Numbers	Co (ppm)	Fe (%)	Mn (ppm)	Ba (ppm)	B (ppm)	Cr (ppm)	Mg (%)	W (ppm)	U (ppm)	Th (ppm)	P (%)	La (ppm)	V (ppm)	Ti (%)	Na (%)	K (%)	Ca (%)	Sr (ppm)	Al (%)
04518	14	3.72	555	96	34	53	1.76	3	5	7	0.067	45	29	0.12	0.05	0.94	2.00	20	1.78
04519	11	3.54	498	105	28	43	1.95	1	5	6	0.067	42	25	0.09	0.03	0.73	2.12	16	1.37
04520	8	5.28	1517	78	33	20	6.04	1	5	3	0.023	14	14	0.07	0.01	0.86	12.38	83	1.35
04521	18	3.89	605	94	52	147	3.18	1	5	5	0.067	44	32	0.14	0.06	1.46	3.39	41	3.42
04522	14	5.46	3190	33	3	25	6.29	3	5	2	0.010	5	7	0.02	0.01	0.34	13.57	66	0.45
04523	20	3.96	927	102	51	253	3.50	1	5	4	0.060	23	51	0.17	0.05	1.51	4.40	47	3.28
04524	27	4.06	626	109	50	441	2.82	1	5	6	0.081	26	73	0.22	0.08	1.78	3.71	51	4.52
04525	19	3.35	390	166	98	445	2.47	1	5	4	0.093	16	76	0.22	0.02	1.61	0.81	12	3.68
04526	22	4.00	483	210	80	483	3.36	1	5	5	0.083	22	82	0.27	0.04	2.07	2.01	28	4.60
04527	25	4.42	680	145	35	405	2.69	1	5	6	0.081	29	70	0.25	0.11	1.87	3.22	50	4.66
04528	21	4.24	975	102	55	199	5.11	1	5	5	0.056	22	48	0.16	0.04	1.70	7.17	66	3.21
04529	25	4.68	1195	283	30	218	4.92	1	5	6	0.064	22	38	0.14	0.03	1.20	8.44	69	2.11
04530	13	3.80	2144	57	22	126	5.66	3	5	3	0.057	11	20	0.07	0.01	0.65	11.50	100	0.99
04531	8	4.25	1121	68	22	24	4.36	1	5	3	0.022	14	18	0.06	0.01	0.77	7.23	48	1.24
04532	9	4.96	1427	61	17	29	5.16	1	5	4	0.024	12	22	0.08	0.02	0.92	9.47	58	1.43
04533	22	4.99	784	74	51	108	3.44	1	5	5	0.061	24	50	0.17	0.06	1.74	3.70	45	3.81
04534	33	5.45	670	164	20	502	3.29	1	5	6	0.118	36	81	0.27	0.17	2.08	4.47	81	4.74
04554	21	6.15	1196	138	42	119	6.18	1	5	3	0.048	19	27	0.12	0.01	1.34	10.89	50	2.14
04555	13	4.68	1084	122	55	50	5.85	1	5	3	0.042	19	20	0.11	0.01	1.58	8.66	38	2.58
04556	12	4.58	998	126	61	212	5.58	1	5	3	0.073	21	44	0.15	0.02	1.45	9.23	45	2.67
04557	12	5.29	1352	75	42	131	6.95	1	5	1	0.056	17	29	0.11	0.01	1.12	13.90	66	1.82
04558	7	4.69	1484	38	17	54	7.82	1	5	1	0.027	5	12	0.06	0.01	0.52	16.97	85	0.77
04559	5	5.53	1514	32	9	59	7.69	1	5	1	0.027	8	13	0.05	0.01	0.49	17.62	92	0.78
04537	42	10.14	1160	91	18	20	2.34	1	5	4	0.062	9	80	0.07	0.08	0.67	3.72	41	1.84
04538	21	5.23	802	173	18	115	2.76	1	5	6	0.086	28	65	0.23	0.05	1.70	1.62	28	3.17
04539	31	7.23	951	239	27	40	2.89	1	5	4	0.064	15	89	0.23	0.09	1.79	3.84	78	3.74
04540	12	4.62	763	155	29	52	2.18	2	8	8	0.070	41	30	0.11	0.04	1.11	2.19	37	2.46
04541	9	3.24	574	79	44	60	2.19	1	5	8	0.040	43	24	0.10	0.05	1.00	2.05	31	2.82
04542	23	5.78	992	248	28	334	3.73	1	5	6	0.101	36	81	0.29	0.08	2.40	3.69	61	4.64
04543	7	3.21	520	70	43	24	1.89	1	7	9	0.034	40	14	0.08	0.06	0.99	2.18	32	3.28
04544	28	5.42	1072	437	38	449	4.91	1	5	6	0.109	38	83	0.28	0.07	2.60	4.72	71	5.14
04545	12	5.24	511	792	22	110	2.78	1	5	5	0.088	31	81	0.31	0.06	2.05	1.66	29	3.64
04546	17	5.08	579	494	22	116	2.97	1	5	5	0.086	34	87	0.31	0.04	2.20	1.49	17	3.26
04547	36	8.71	957	541	6	11	2.91	1	5	3	0.059	11	165	0.43	0.10	3.11	3.32	57	4.89
04548	37	7.84	887	396	7	13	2.56	1	5	2	0.060	11	133	0.35	0.06	2.37	3.05	22	3.49
04549	26	6.45	670	404	8	19	1.93	1	5	2	0.041	7	101	0.27	0.07	1.69	2.15	36	2.86
04550	35	7.86	999	470	10	11	2.63	1	5	2	0.059	11	133	0.38	0.06	2.56	3.49	27	3.70
04535	34	5.07	595	116	37	454	2.59	1	5	5	0.185	25	83	0.18	0.12	1.31	4.11	89	4.72
04536	26	4.63	884	141	23	398	2.80	1	5	5	0.131	34	78	0.19	0.12	1.46	4.25	71	4.66
03155	25	5.44	982	94	22	254	2.81	1	5	9	0.099	33	74	0.25	0.10	1.70	2.57	59	2.82
03156	23	4.89	743	102	33	208	2.54	1	5	8	0.077	30	68	0.23	0.07	1.58	1.30	20	2.39
03157	15	6.02	705	77	24	94	2.31	1	5	10	0.080	35	54	0.14	0.03	0.92	2.61	29	1.27
03158	15	4.58	698	211	30	123	2.49	1	5	12	0.114	44	90	0.34	0.06	1.93	1.28	22	2.73
03159	18	4.42	1426	187	30	201	2.89	1	5	10	0.105	37	61	0.22	0.11	1.56	3.25	76	2.93
03160	28	6.58	891	65	39	383	3.51	1	5	7	0.166	31	92	0.31	0.11	2.11	2.57	66	3.56

Mineral Occurrence	UTM Coordinates		Sample Numbers	Mo (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Au1 (ppb)	Au2 (ppb)	Pt (ppb)	Pd (ppb)	Ag (ppm)	As (ppm)	Sb (ppm)	Bi (ppm)	Cd (ppm)	Ni (ppm)
T28			03161	8	46	6	97	1				0.5	9	2	2	1	68
			04551	3	37	6	55	3				0.2	9	2	2	1	64
			04552	5	55	6	65	3				0.2	10	2	2	1	47
			04553	5	62	9	60	3				0.2	14	2	2	1	84
T29			04560	5	70	9	39	1				0.2	21	3	5	1	41
			04561	2	52	13	173	1				0.3	10	2	2	2	226
			04562	7	100	7	30	1				0.1	6	3	2	1	66
			04563	9	103	9	24	1				0.1	7	2	5	1	84
T30			04564	6	61	3	33	1				0.2	5	2	2	1	63
			04565	3	52	4	50	3				0.2	15	2	2	1	69
			04566	5	77	4	60	1				0.2	11	2	2	1	82
			04567	5	56	2	36	1				0.2	10	2	2	1	125
T31			04571	3	73	5	67	1				0.2	11	2	2	1	225
			04572	3	38	2	47	1				0.2	4	2	2	1	153
			04573	5	65	2	20	1				0.2	2	3	2	1	158
			04574	4	159	2	17	3				0.3	6	2	2	1	162
T32			04568	4	50	4	73	1				0.1	10	2	2	1	71
			04569	4	56	6	67	1				0.1	11	2	2	1	82
			04570	5	43	12	37	1				0.1	10	2	2	1	48
			04595	7	80	3	80	2				0.2	23	2	2	1	159
T33			04596	4	55	3	55	2				0.2	15	2	2	1	117
			04597	2	24	2	58	1				0.3	4	2	2	1	106
			04598	3	31	2	55	1				0.1	18	2	2	1	43
			04599	6	56	6	18	3				0.1	5	2	2	1	44
T32			04600	13	30	9	5	3				0.2	6	2	2	1	13
			04601	35	186	9	18	8				0.3	160	2	2	1	250
			04602	2	69	7	79	1				0.2	2	2	2	1	156
			04603	3	62	10	64	4				0.2	39	2	2	1	248
T32			04604	3	55	12	133	1				0.2	32	2	2	1	231
			04605	4	52	6	43	4				0.3	21	2	2	1	66
			04606	4	59	3	57	3				0.1	15	2	2	1	77
			04607	6	90	7	40	5				0.5	22	2	2	1	72
T32			04608	5	55	7	34	1				0.1	25	2	2	1	52
			04609	5	73	7	39	1				0.1	14	2	2	1	69
			04610	4	75	15	133	2				0.3	30	2	2	1	127
			04611	3	96	11	125	1				0.3	13	2	2	1	215
T33			04612	4	46	3	45	1				0.1	4	2	2	1	20
			04613	4	38	4	46	1				0.1	3	2	2	1	17
63J12-2	6059667	451880	04617	7	503	4	7	6550				0.2	2	2	2	1	25
			04618	8	186	6	9	4490				0.5	2	2	3	1	28
			04619	9	2050	4	7	10560				1.6	2	2	19	1	36
			04620	6	312	3	11	1480				0.3	2	2	31	1	34
			04623	5	85	2	10	37800				0.8	2	2	31	1	17
			04624	4	60	4	3	10				0.1	3	2	2	1	16

Sample Numbers	Co (ppm)	Fe (%)	Mn (ppm)	Ba (ppm)	B (ppm)	Cr (ppm)	Mg (%)	W (ppm)	U (ppm)	Th (ppm)	P (%)	La (ppm)	V (ppm)	Ti (%)	Na (%)	K (%)	Ca (%)	Sr (ppm)	Al (%)
03161	14	4.08	856	310	21	86	2.08	1	5	9	0.074	38	63	0.27	0.03	1.46	1.99	28	2.21
04551	14	2.91	426	81	16	46	1.51	1	6	8	0.070	43	43	0.17	0.07	1.02	1.60	19	2.31
04552	10	4.10	520	117	13	45	1.61	2	5	6	0.068	39	40	0.12	0.03	0.86	2.02	22	1.80
04553	16	3.97	489	114	10	46	1.39	2	5	6	0.068	37	39	0.11	0.02	0.67	1.69	16	1.43
04560	11	3.43	571	129	10	28	2.53	2	5	9	0.031	35	18	0.10	0.03	1.14	2.24	17	1.55
04561	20	5.79	531	321	15	560	4.31	1	5	6	0.111	30	80	0.36	0.02	3.35	1.77	21	4.18
04562	9	3.44	378	169	3	50	1.60	2	5	4	0.040	25	21	0.10	0.05	0.74	1.25	22	1.15
04563	11	3.16	346	106	22	41	1.49	1	5	8	0.055	53	18	0.09	0.03	0.78	1.37	29	1.39
04564	6	3.35	388	145	7	51	1.97	2	5	6	0.056	41	28	0.12	0.04	0.86	1.80	28	1.24
04565	8	4.00	1180	94	11	101	5.05	1	5	2	0.041	13	14	0.07	0.01	0.69	9.82	182	0.87
04566	19	4.89	818	137	15	112	3.86	1	5	7	0.052	30	37	0.15	0.03	1.22	5.77	68	1.75
04567	14	4.24	724	161	23	138	3.31	1	5	6	0.045	30	34	0.12	0.04	1.17	4.62	61	1.86
04571	25	4.88	630	190	14	391	2.95	1	5	5	0.070	27	71	0.24	0.04	1.92	3.06	36	3.08
04572	16	3.61	416	293	20	282	3.14	1	5	5	0.069	26	53	0.17	0.03	1.43	2.13	23	2.30
04573	19	2.48	204	94	5	195	1.44	2	5	5	0.087	31	30	0.05	0.04	0.26	0.93	11	0.76
04574	20	2.71	245	63	8	185	1.82	2	5	5	0.089	27	34	0.04	0.05	0.20	1.45	18	0.87
04568	10	3.64	438	199	23	160	2.17	1	5	8	0.055	55	36	0.18	0.03	1.47	1.78	21	2.15
04569	12	5.15	448	214	22	56	2.67	1	5	6	0.053	48	41	0.19	0.03	1.77	1.68	17	2.65
04570	6	3.44	580	190	13	84	2.28	1	5	7	0.054	49	36	0.16	0.03	1.32	2.08	18	1.81
04595	29	5.38	384	145	14	219	2.94	1	5	5	0.065	34	76	0.31	0.03	2.07	1.18	15	3.27
04596	21	4.56	860	212	31	169	5.19	1	5	5	0.042	20	39	0.15	0.03	1.68	6.71	45	2.95
04597	12	4.20	770	263	31	181	5.20	1	5	6	0.043	28	42	0.18	0.02	1.82	6.04	37	3.10
04598	8	4.26	1481	157	17	75	6.15	1	5	4	0.024	10	20	0.07	0.01	0.73	12.12	98	1.18
04599	6	2.54	353	87	28	46	1.77	1	5	3	0.044	28	15	0.06	0.03	0.66	1.68	17	1.33
04600	2	1.18	35	22	20	13	0.06	1	5	5	0.030	23	3	0.01	0.01	0.13	0.07	4	0.29
04601	50	14.57	160	7	2	18	0.36	1	5	1	0.006	2	9	0.01	0.01	0.04	0.79	17	0.10
04602	17	4.48	520	246	13	256	3.43	1	5	4	0.056	26	69	0.30	0.05	2.30	2.32	36	3.85
04603	35	5.25	788	140	34	503	3.24	1	5	6	0.073	32	75	0.24	0.10	2.04	4.09	91	5.32
04604	44	6.02	1091	100	25	488	4.38	1	5	4	0.118	31	88	0.29	0.13	2.38	4.29	104	5.87
04605	20	5.62	277	68	35	65	1.72	1	5	9	0.068	31	49	0.14	0.07	1.08	0.68	20	2.61
04606	15	5.07	367	64	19	143	1.84	1	5	6	0.095	38	54	0.15	0.04	1.10	1.30	16	2.21
04607	22	6.24	438	48	20	61	1.59	1	5	8	0.094	43	53	0.12	0.02	0.84	1.57	17	1.65
04608	16	4.68	540	48	16	57	1.72	1	5	7	0.072	46	44	0.13	0.02	0.86	2.35	20	1.61
04609	20	5.43	414	70	21	61	1.45	1	5	6	0.070	36	51	0.16	0.07	0.98	1.36	28	2.15
04610	27	6.12	541	73	20	144	2.75	1	5	5	0.185	53	105	0.30	0.19	2.13	2.86	107	5.92
04611	27	4.74	808	297	16	451	3.13	1	5	7	0.105	35	83	0.31	0.15	2.21	4.41	121	5.61
04612	7	2.84	311	147	23	22	2.82	1	5	6	0.075	32	50	0.14	0.02	0.94	3.35	22	1.65
04613	7	2.56	324	57	15	16	4.50	1	5	5	0.052	25	32	0.08	0.02	0.64	7.90	63	1.06
04617	51	4.70	138	30	6	22	0.21	1	5	3	0.025	11	9	0.03	0.01	0.17	0.11	2	0.36
04618	12	3.92	225	36	28	27	0.27	1	5	3	0.030	15	12	0.04	0.02	0.22	0.35	4	0.46
04619	19	4.86	130	25	27	25	0.16	1	5	3	0.010	6	9	0.03	0.01	0.13	0.06	2	0.30
04620	56	5.06	248	27	25	24	0.34	2	5	2	0.012	4	9	0.04	0.01	0.26	0.37	2	0.41
04623	27	3.61	136	10	2	19	0.59	1	5	1	0.004	3	4	0.01	0.01	0.05	0.59	2	0.24
04624	2	1.43	48	2	2	18	0.01	1	5	1	0.002	2	2	0.01	0.01	0.01	0.01	1	0.02

Mineral	UTM Coordinates		Sample	Mo	Cu	Pb	Zn	Au1	Au2	Pt	Pd	Ag	As	Sb	Bi	Cd	Ni
Occurrence	Northing	Easting	Numbers	(ppm)	(ppm)	(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
			04625	8	82	4	6	1				0.1	2	2	2	1	35
63J12-3	6061705	460985	04809	9	200	7	9	240				0.1	8	2	2	1	43
			04810	5	292	2	3	10200				0.4	3	2	11	1	26
			04811	6	76	2	3	16				0.1	3	2	2	1	24
			04812	5	74	7	13	1930				0.2	3	2	2	1	23
			04813	6	77	5	15	15				0.1	5	2	2	1	24
			04814	6	75	2	31	3820				0.4	6	2	2	1	29
			04815	7	57	4	15	52				0.2	7	2	2	1	30
			04816	8	81	2	5	6				0.1	2	2	2	1	30
			04817	2	171	7	64	45				0.2	13	2	2	1	20
			04818	3	64	5	26	4				0.1	5	2	2	1	13
			04819	4	40	11	11	7				0.1	14	2	2	1	20
			04820	7	105	7	3	14				0.1	5	2	2	1	32
			04821	5	43	2	10	15				0.1	2	2	2	1	16
			04822	4	192	7	32	7740				0.6	15	2	2	1	62
			04823	4	43	2	4	200				0.1	2	3	2	1	17
			04824	7	82	2	4	810				0.1	3	2	2	1	28
			04825	5	122	5	6	129				0.1	7	2	2	1	22
			04826	5	60	2	4	68				0.1	10	2	2	1	23
			04827	7	208	8	65	20				0.2	3	2	2	1	28
63J12-4	T1	6055821 443189	01621	4	6097	9	2083	165				1.7	26	2	2	7	19
			01623	13	22971	15	121832	425	450	<10	6	9.0	12	2	2	473	19
			01624	5	6112	20	25876	34				1.8	6	2	2	101	10
	T2		01622	5	15866	53	13099	875				2.0	1487	2	4	46	13
			01625	4	7106	6	7122	265				3.3	188	2	8	24	18
	T3		01626	1	296	14	94	13				0.3	42	2	2	1	6
	T4	01627	2	174	3	102	19				0.2	15	2	4	1	17	
		01628	4	494	21	182	1				0.9	59	2	2	1	15	

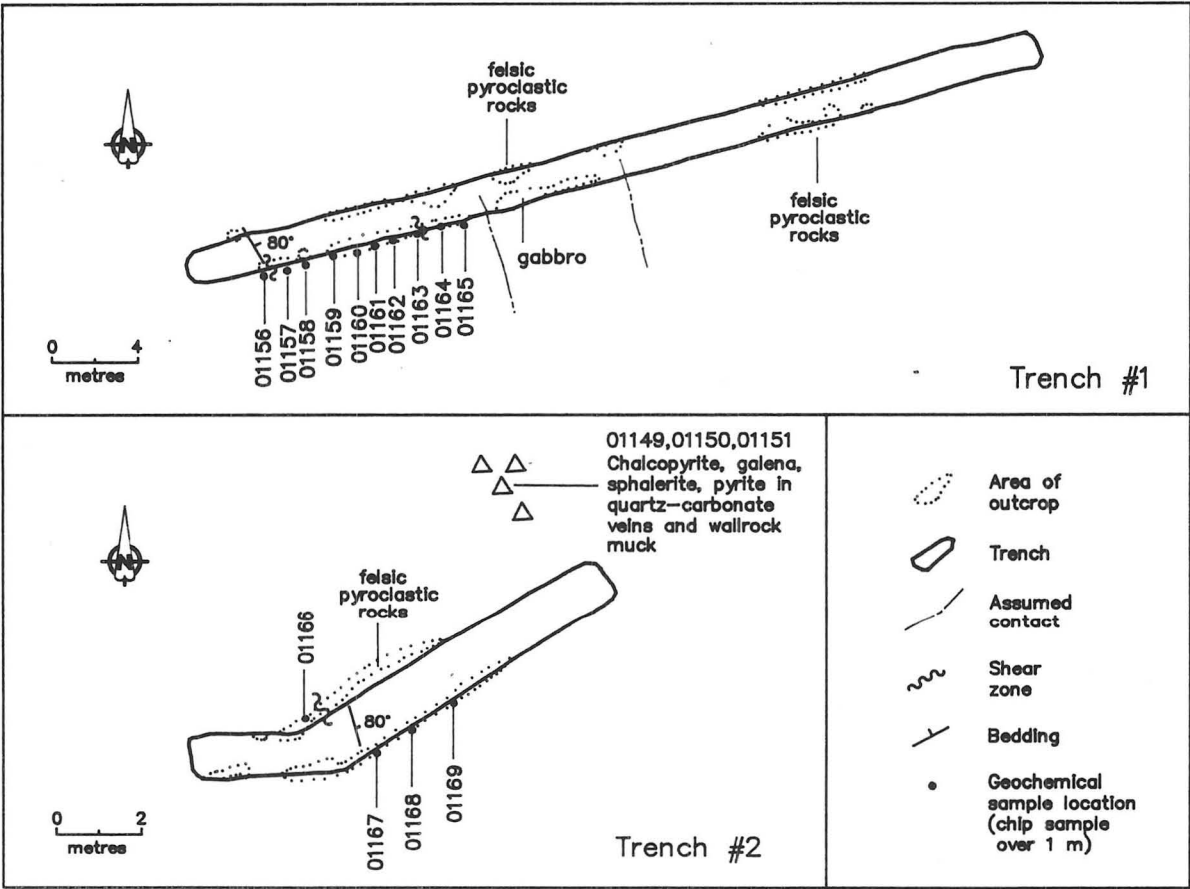
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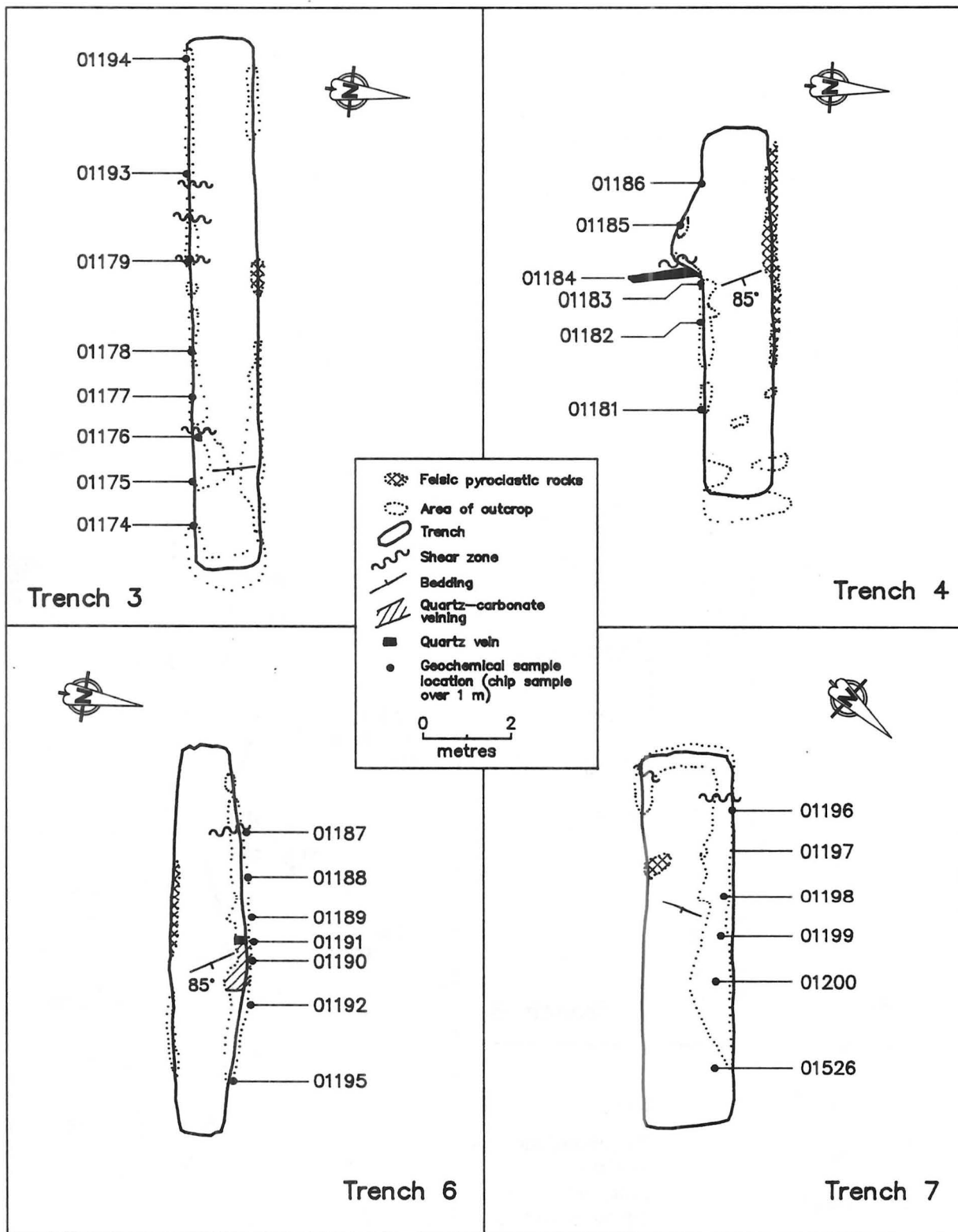


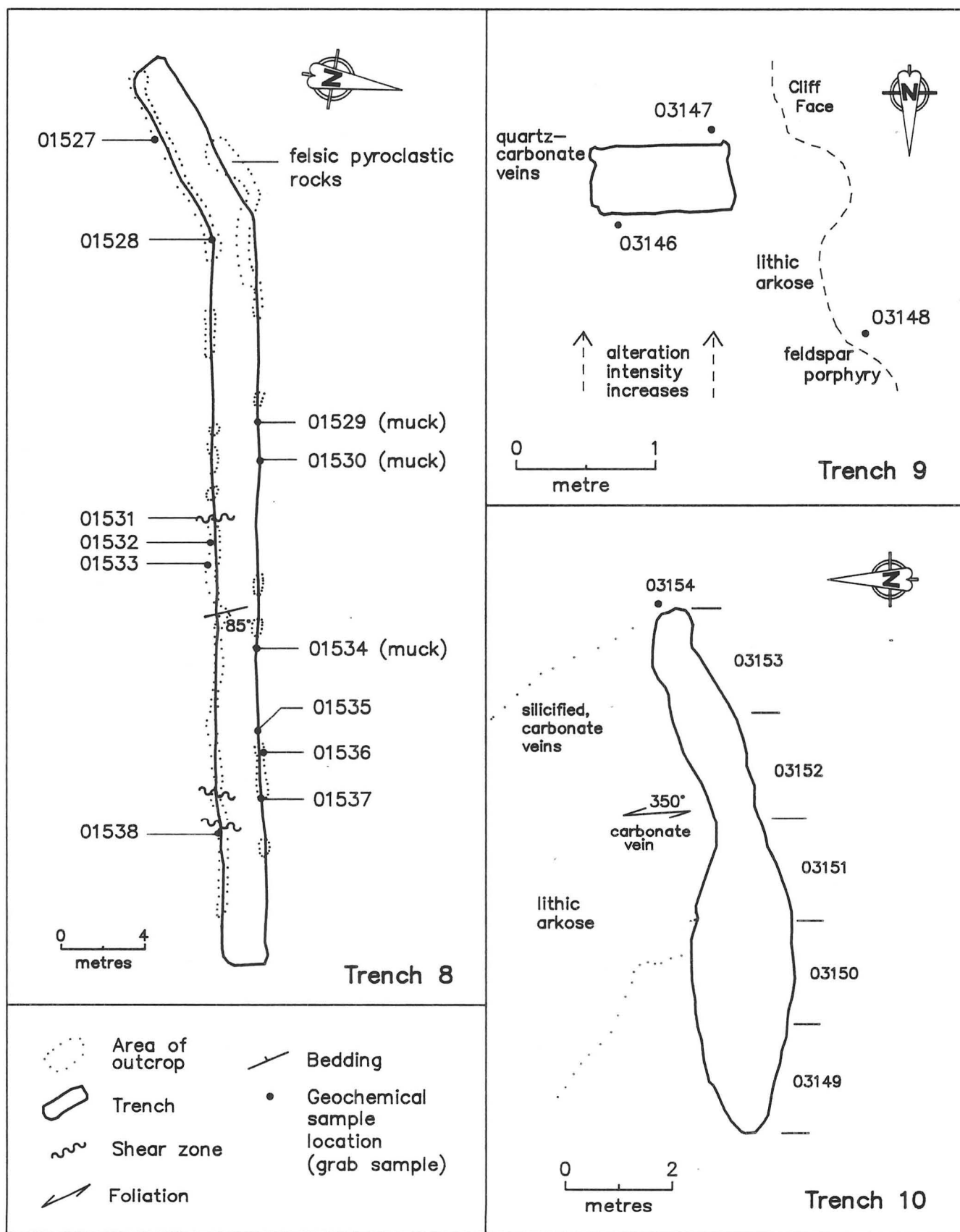
Sample Numbers	Co (ppm)	Fe (%)	Mn (ppm)	Ba (ppm)	B (ppm)	Cr (ppm)	Mg (%)	W (ppm)	U (ppm)	Th (ppm)	P (%)	La (ppm)	V (ppm)	Ti (%)	Na (%)	K (%)	Ca (%)	Sr (ppm)	Al (%)
04625	2	2.57	93	1	2	31	0.01	1	5	1	0.008	2	4	0.01	0.01	0.01	0.03	1	0.03
04809	19	4.66	135	3	2	34	0.14	1	5	1	0.006	2	8	0.01	0.01	0.01	0.08	1	0.22
04810	16	2.75	69	1	4	22	0.03	1	5	1	0.003	2	3	0.01	0.01	0.01	0.08	1	0.01
04811	2	1.88	64	1	2	24	0.01	1	5	1	0.004	2	2	0.01	0.01	0.01	0.01	1	0.01
04812	7	2.61	127	26	4	22	0.25	1	5	1	0.007	3	16	0.03	0.01	0.14	0.10	1	0.30
04813	5	2.64	190	60	6	25	0.36	1	5	1	0.019	5	22	0.07	0.01	0.17	0.28	4	0.41
04814	7	3.31	295	68	8	30	0.58	1	5	1	0.025	9	34	0.15	0.03	0.50	0.28	4	0.84
04815	4	2.35	135	1	3	31	0.31	1	7	1	0.005	2	13	0.01	0.01	0.02	0.05	1	0.31
04816	3	2.42	94	4	4	31	0.02	1	5	1	0.004	2	4	0.01	0.01	0.01	0.01	1	0.03
04817	19	4.96	335	185	15	8	0.77	1	5	1	0.317	15	38	0.14	0.07	0.50	1.30	10	1.37
04818	4	1.91	97	45	5	16	0.23	1	5	4	0.010	37	7	0.08	0.01	0.36	0.09	2	0.49
04819	3	1.55	90	90	13	16	0.23	1	10	14	0.004	62	3	0.03	0.02	0.19	0.36	7	0.38
04820	7	2.04	70	1	2	26	0.01	1	5	1	0.005	2	2	0.01	0.01	0.01	0.02	1	0.01
04821	2	1.84	228	15	9	23	0.14	1	5	6	0.019	10	6	0.03	0.01	0.13	0.08	3	0.31
04822	20	6.42	334	37	16	20	0.69	1	5	3	0.123	7	33	0.17	0.04	0.12	0.68	7	1.34
04823	2	1.37	55	1	2	20	0.05	1	5	1	0.006	2	2	0.01	0.01	0.01	0.07	1	0.03
04824	3	2.38	69	1	5	27	0.01	1	5	1	0.003	2	1	0.01	0.01	0.01	0.01	1	0.01
04825	6	2.45	86	5	8	17	0.10	1	5	1	0.011	2	1	0.01	0.01	0.03	0.04	2	0.29
04826	3	1.91	61	1	2	23	0.03	1	5	1	0.007	2	2	0.01	0.01	0.01	0.02	1	0.04
04827	6	2.48	76	10	6	25	0.03	1	5	1	0.007	2	4	0.01	0.01	0.03	0.01	1	0.08
01621	9	3.45	196	3	2	18	0.32	1	5	1	0.006	2	7	0.01	0.01	0.02	0.10	6	0.35
01623	90	8.99	240	2	2	30	0.38	1	5	2	0.008	2	4	0.01	0.01	0.02	0.10	1	0.41
01624	26	5.55	560	43	2	20	1.67	13	5	2	0.018	6	19	0.03	0.02	0.26	0.10	1	1.76
01622	29	5.27	300	12	3	12	0.84	1	5	2	0.018	3	5	0.01	0.01	0.04	0.10	15	0.91
01625	31	5.26	133	11	2	15	0.27	1	5	1	0.007	2	3	0.01	0.01	0.06	0.01	5	0.35
01626	9	5.38	706	117	8	3	1.71	1	5	2	0.042	6	10	0.07	0.02	0.59	0.10	8	2.56
01627	2	1.69	82	1	2	14	0.10	1	5	1	0.003	2	3	0.01	0.01	0.01	0.10	2	0.05
01628	13	6.09	1039	12	2	48	2.87	2	5	1	0.009	4	53	0.01	0.01	0.06	0.01	8	3.02

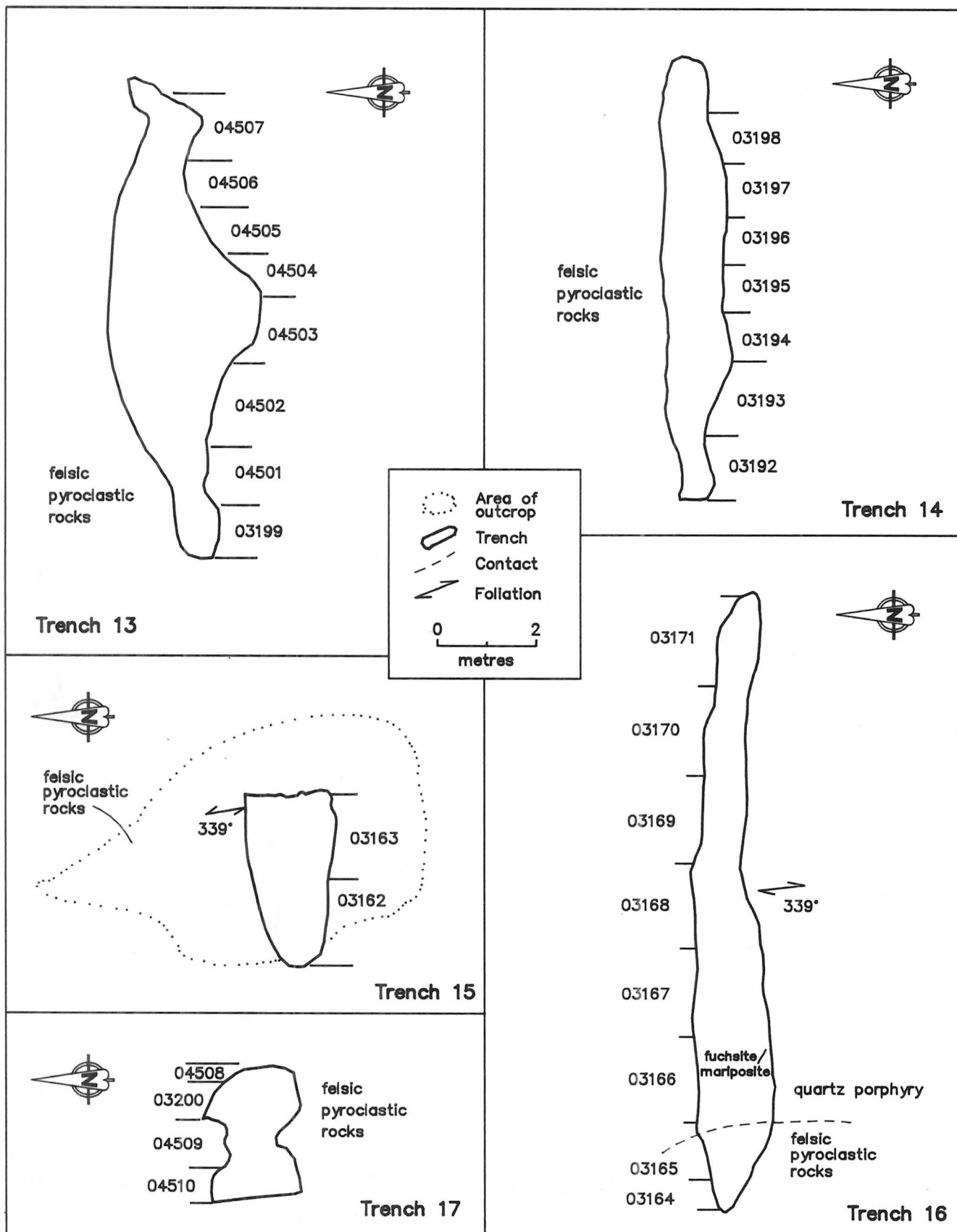
APPENDIX II: SAMPLE LOCATIONS FROM TRENCHES, OCCURRENCE 1 (PUELLA BAY)

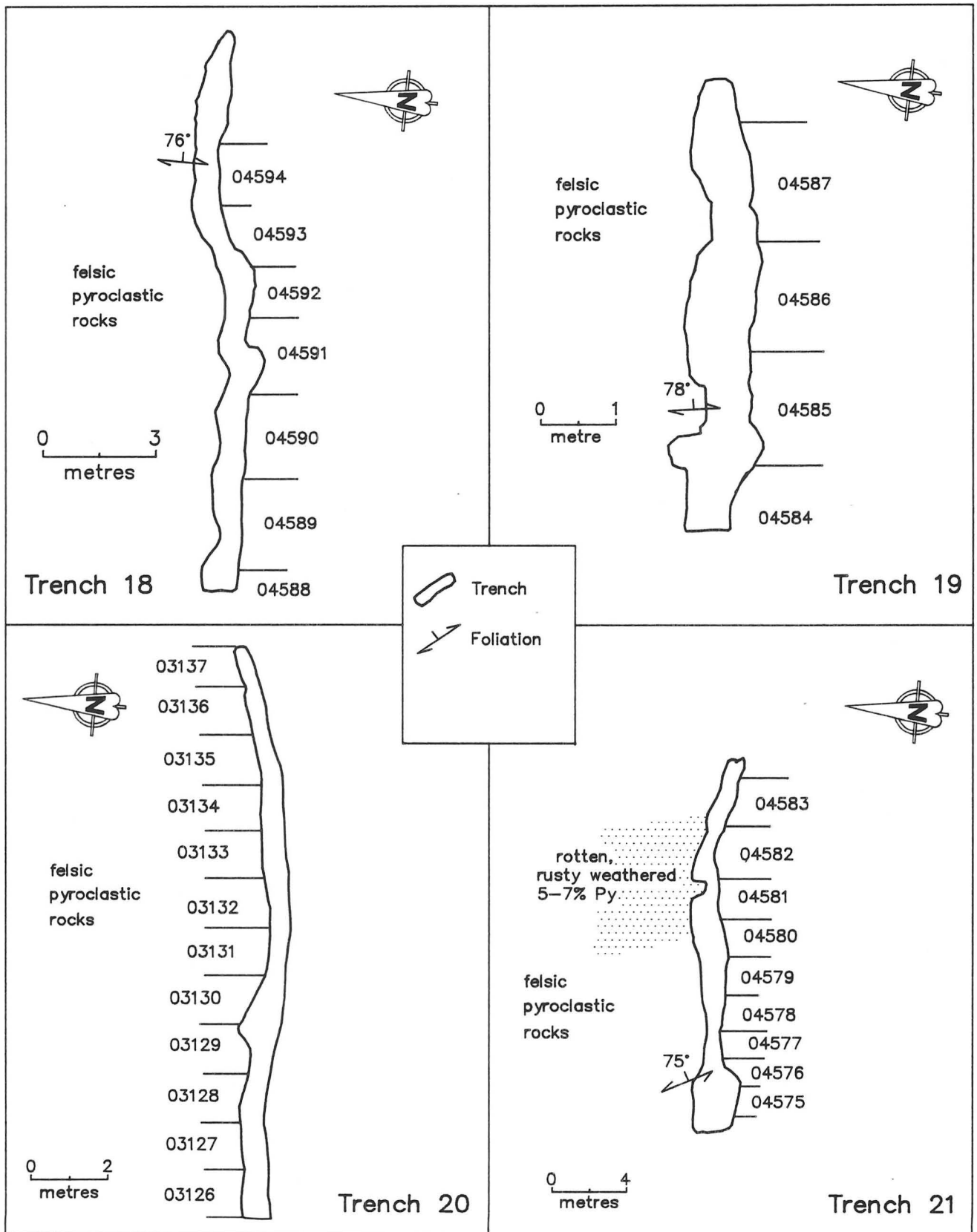
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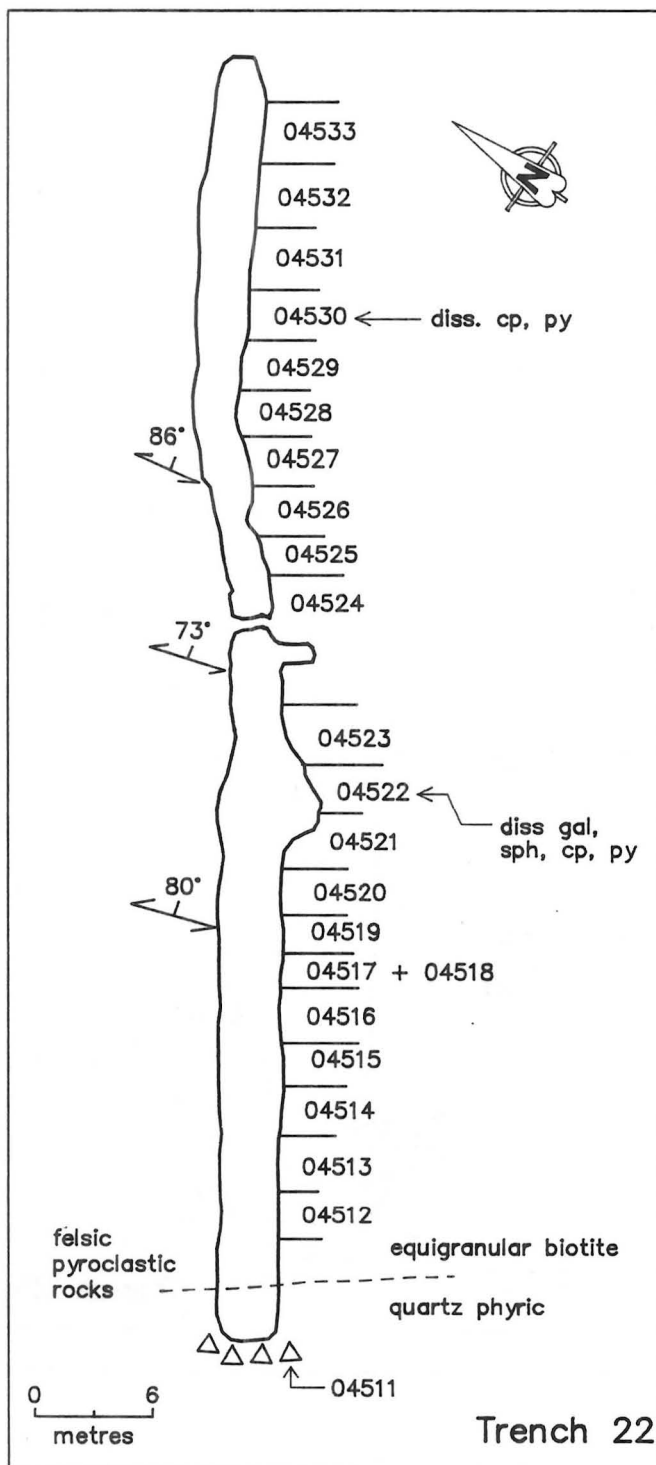




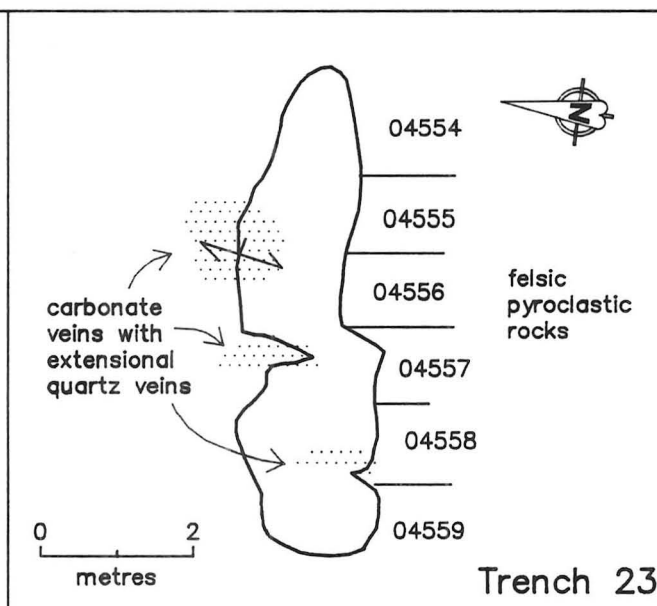




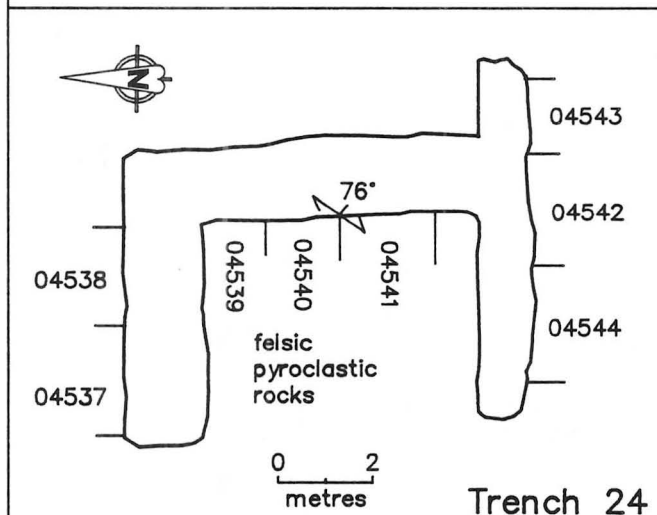




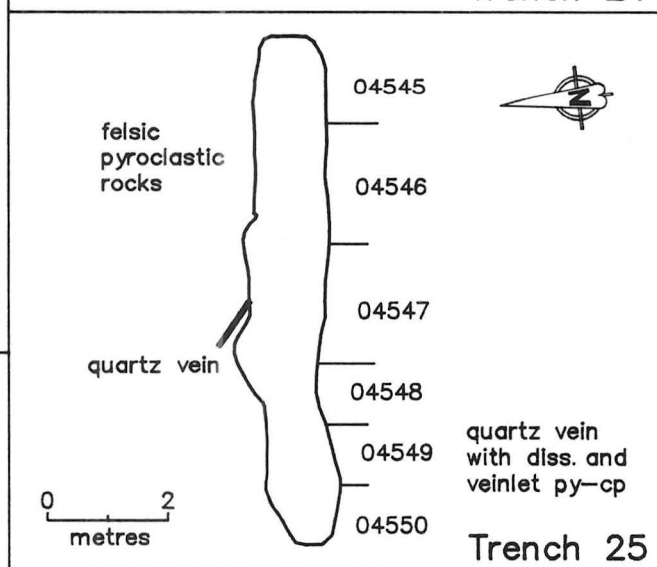
Trench 22



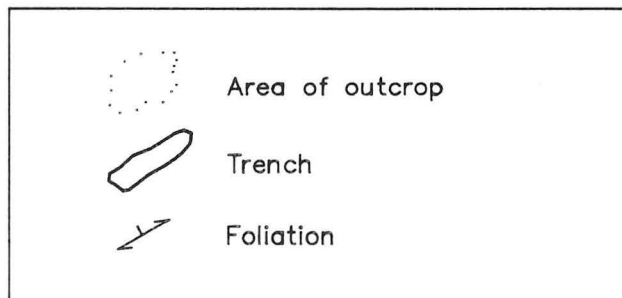
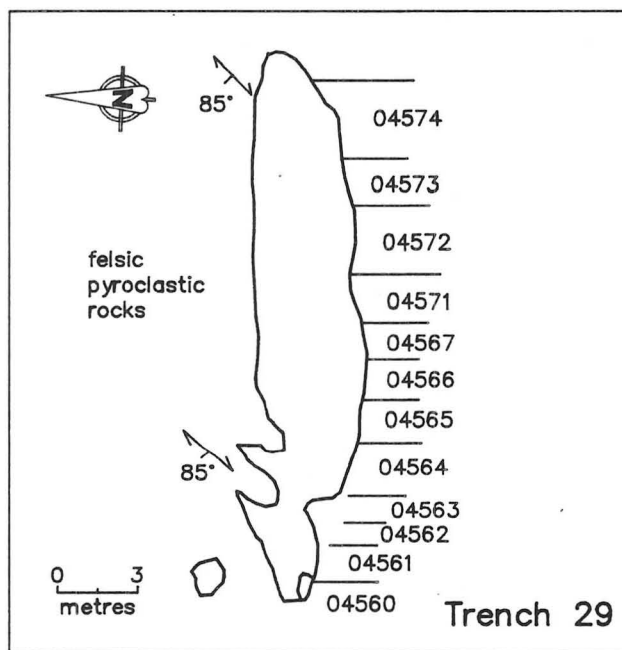
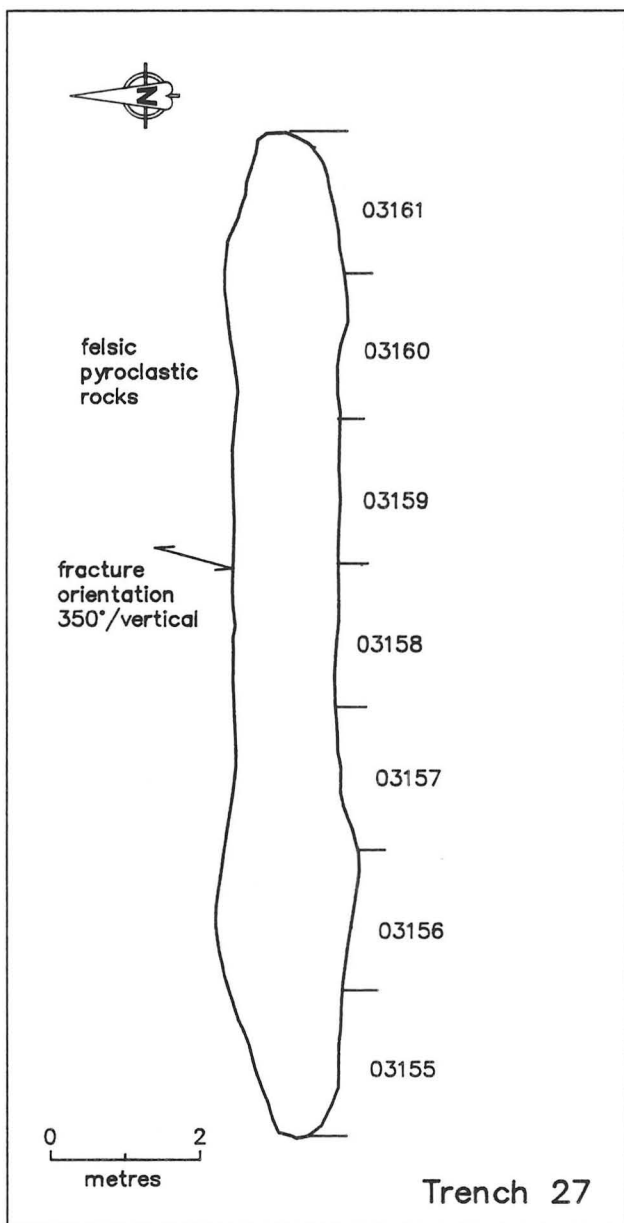
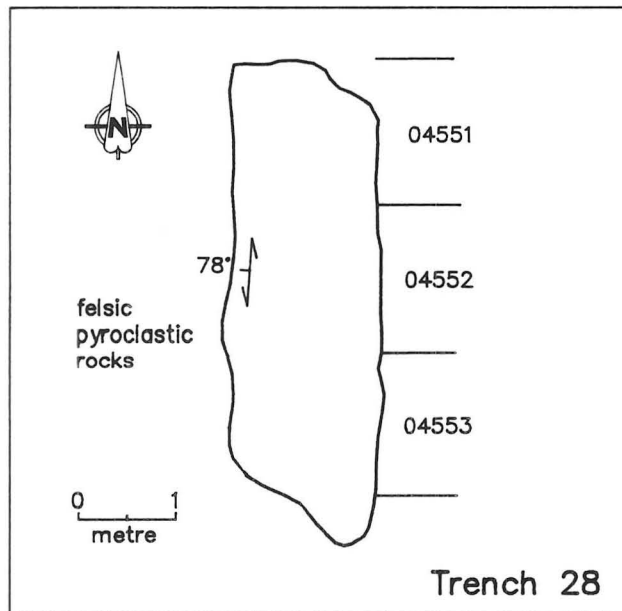
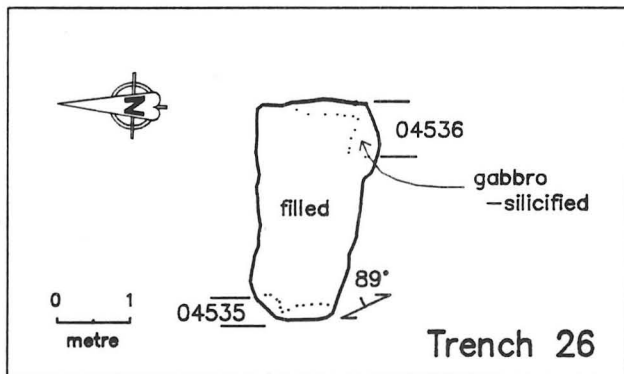
Trench 23



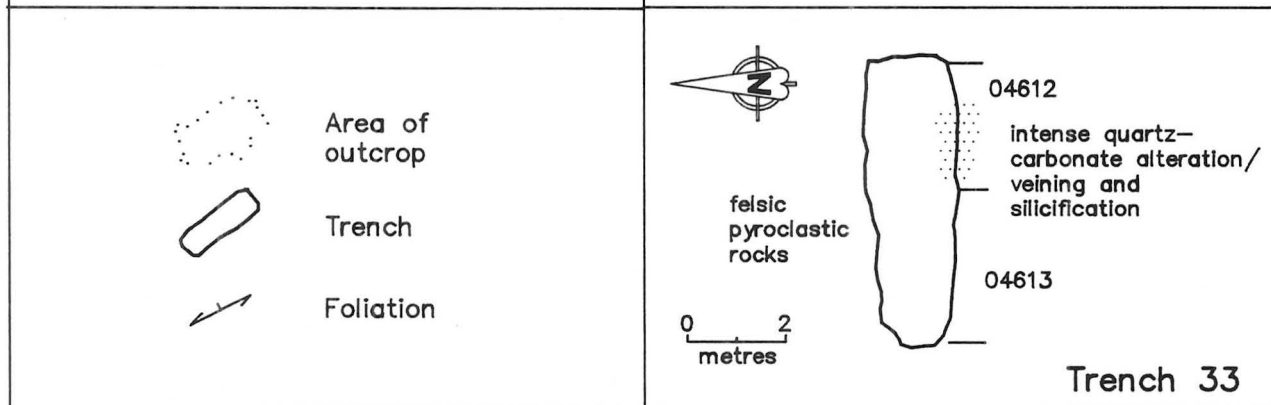
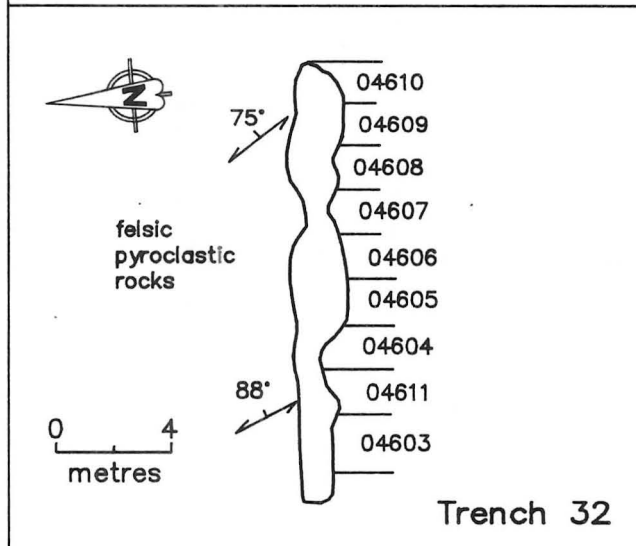
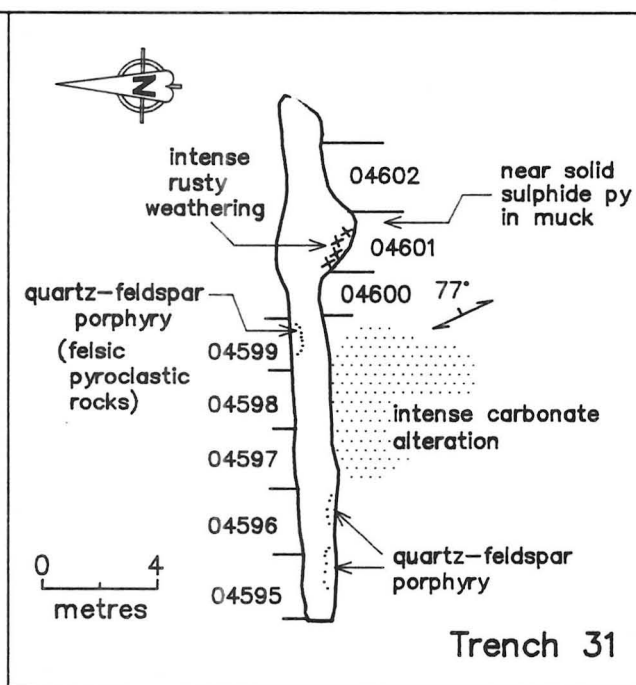
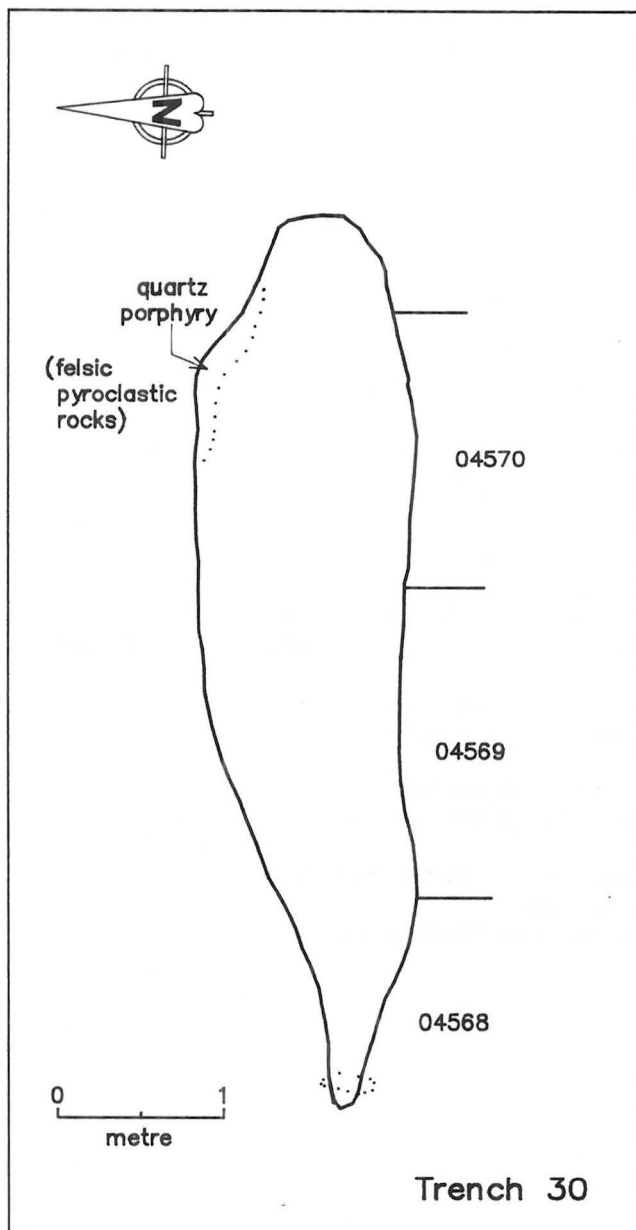
Trench 24



Trench 25







### APPENDIX III: NONMINERALIZED DRILL HOLES, NTS 63J/12

Only those drill holes not already incorporated with mineral occurrence data are listed here. Data are compiled from cancelled assessment files.

A.F.	DDH No.	Length (m)	Rock Types
90574	31204	124	Biotite gneiss, granite gneiss
90577	31206	96	Limestone, siltstone
90577	33980	145	Limestone, argillite, tuff
90577	33981	160	Limestone, argillite, tuff
90577	33982	287	Dolomitic limestone, sandstone, argillite, tuff
90577	33983	165	Limestone, sandstone, "sediments - clay-like material", argillite, tuff
90577	33984	160	Dolomitic limestone, sandstone, grey clay, argillite, tuff
90577	33985	160	Limestone, sandstone, clay, tuff, argillite
90577	33986	176	Limestone, sandstone, "mud zone", tuff, "greenstone"
90577	33987	198	Limestone, sandstone, tuff, gabbro
90577	33988	173	Limestone, sandstone, tuff, argillite
90577	33989	138	Limestone, sandstone, tuff, argillite
90577	33990	137	Limestone, sandstone, tuff, "greenstone", iron formation
90591	1	34	Abandoned in overburden
90591	2	37	Abandoned in overburden
91729	96A	98	Limestone, "greenstone"
91729	96B	137	Limestone, "greenstone"
91811	31205	123	Granite gneiss, amphibole gneiss
91811	31214	138	Biotite gneiss
91811	31215	123	Granite gneiss, biotite gneiss

