GEOPHYSICS, GEOLOGY AND GEOCHEMISTRY OF THE

MULDREW LAKE PROPERTY

DUBLIN TOWNSHIP

SUDBURY MINING DIVISION
ONTARIO

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1. INTRODUCTION

The Muldrew Lake property acquired in January, 1991 consists of 46 mining claims located in Dublin Township, Sudbury Mining Division (Figure 1). The property is jointly held by D.Pilkey, Y.Clement and the writer. The favourable results obtained by Pilkey and Clement (OPAP, 1991) and the encouragement received from discussions with Noranda geologists prompted the writer to continue further work on the property.

The present claim block was staked over a zone of known Cu-Pb-Zn mineralization initially discovered by Bert Jerome in 1970. The discovery showing occurs along the west side of the highway 144, directly north of Muldrew Lake. Additional claims encompass areas of favourable geology for additional base metal mineralization.

A program of line cutting and geophysics was carried out in October, 1992 by D. Patrie Expl. over two newly-established grids on the property. Geological mapping, sampling and prospecting was carried out by the writer from October to November, 1992. The results of this program form the basis of this report.

2. PROPERTY DESCRIPTION

2.1 CLAIM DESCRIPTION

The Muldrew Lake property encompasses forty-six (46) contiguous, unpatented, mining claims (S.1126104 to S. 1126149 inclusive) totalling approximately 735 hectares. The block is located in the west-central part of Dublin Township within the Sudbury Mining Division. Physiographic features and infrastructures with respect to the claim block are illustrated in (Figure 2).

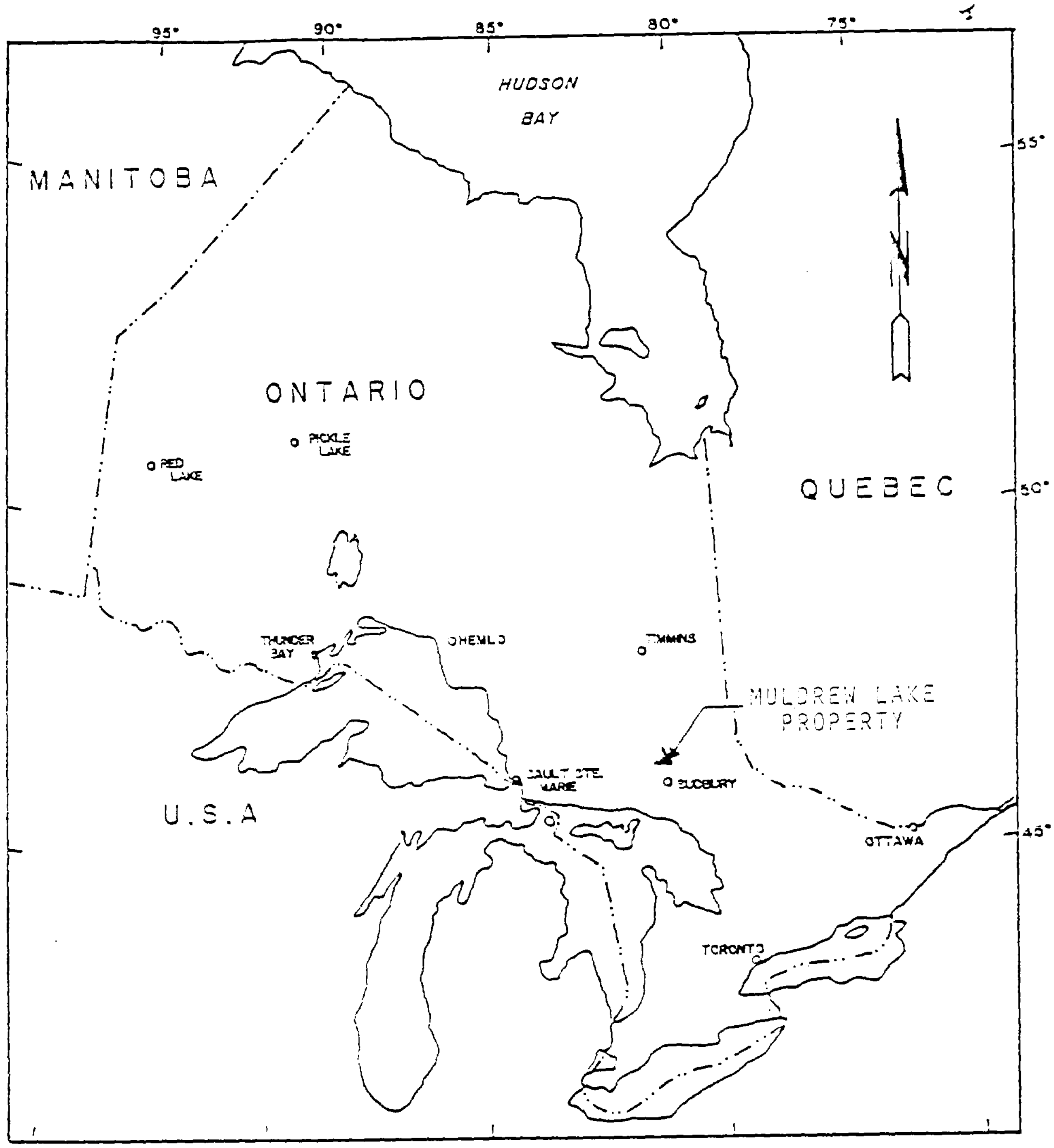


FIGURE 1

GENERAL LOCATION MAP

2.2 LOCATION AND ACCESS

The Muldrew Lake property is centered at 47 06'N latitude, 81 50'W longitude, approximately 120 kilometers northwest of Sudbury, Ontario (Figure 1).

The property is readily accessible via paved highway (144) which passes through the south-central portion of the claim block. Recent logging activity has increased access to the north-central portion of the block via gravel timber roads (Geology Map in backpocket). The most easterly end of the claim block is accessible by small boat or canoe along Dublin Lake.

2.3 TOPOGRAPHY AND VEGETATION

Topography in the area is characterized by hilly terrain with the maximum relief of 60 meters. For the most part fault controlled lakes and ravines separate hilly areas. Approximately 15% of the property is covered by lakes and swamps.

The hills are mantled with thin to moderate thicknesses of sand covered largely by spruce, poplar and birch. Sandy areas of low relief are characterized by jackpine with spruce, tamarack and alders bordering water courses.

2.4 GRID DESCRIPTION

Linecutting established two grids on the property; one east of Hwy 69 (Grid A) and one west of the highway (Grid B).

Grid A has a northeast oriented baseline, 1.4 km in length which parallels the mafic-felsic contact, south of Little Boot Lake. Grid lines are oriented northwest, perpendicular to the baseline, and spaced at 100 meter intervals. Grid lines extend 300

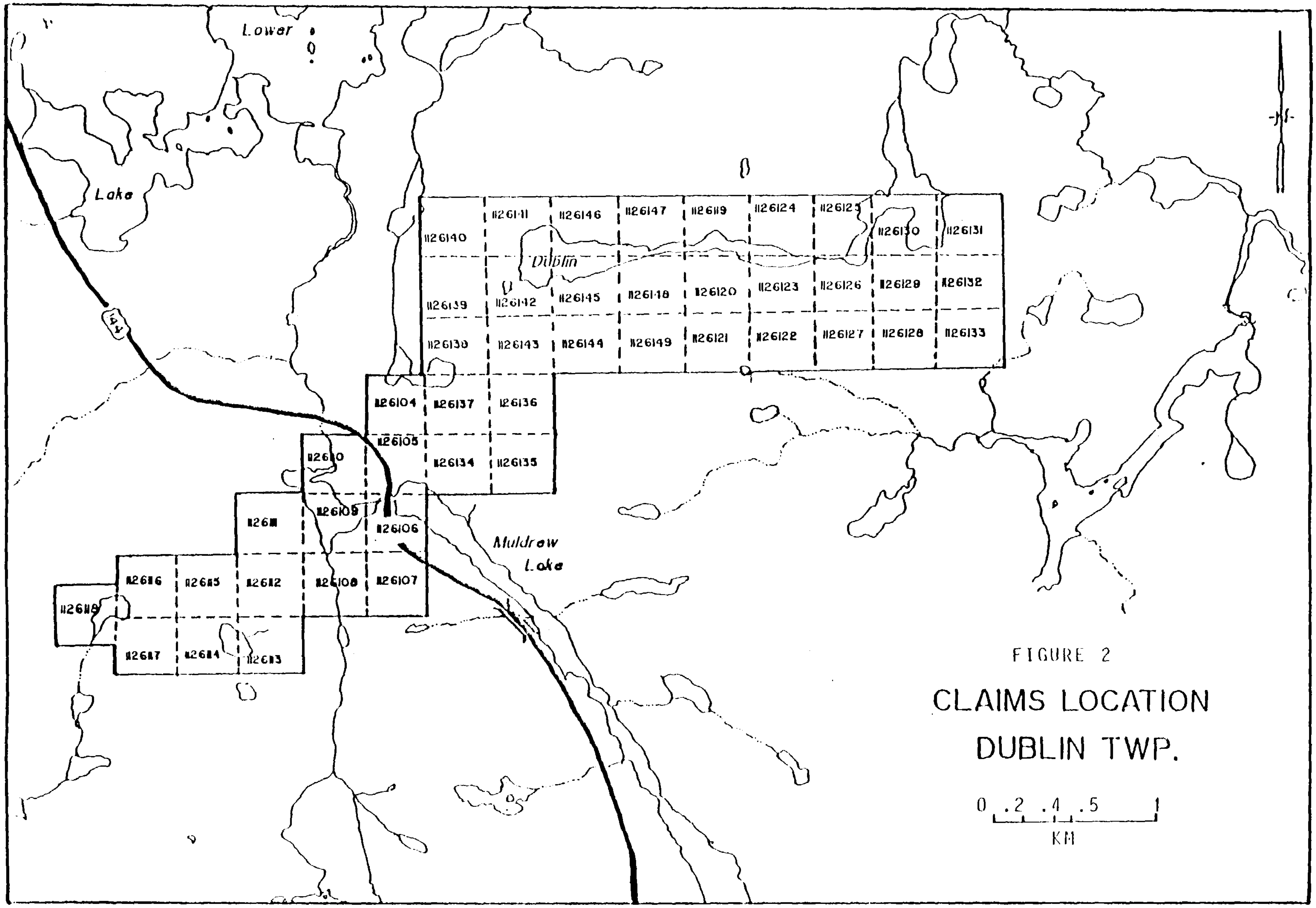


FIGURE 2

CLAIMS LOCATION
DUBLIN TWP.

meters to the north and 200 meters to the south with 25 meters picket spacing. The grid extends from L 0+00 to L 14+00 West.

Grid B has a northeast oriented baseline, 0.7 km in length, paralleling the mafic-felsic contact and located north of the small lake in the southeast corner of the property. Grid lines are oriented northwest, perpendicular to the baseline and spaced at 100 meter intervals. Grid lines are in general 300 meters in length with 25 meter picket spacing. The grid extends from L 28+00 W to L 35+00 W.

3. PREVIOUS WORK

A detailed history of the area to 1970 has been described in a report by A.S. Bayne (February 7, 1972).

There is no field or recorded evidence of any exploration on the property prior to prospector Bert Jerome's discovery of a Cu-Pb-Zn occurrence in a road cut along highway 144, just north of the Muldrew Lake narrows. No detailed published government geology maps cover the area. All government publications consist of regional geological compilation maps and airborne geophysical maps. A list of these maps is included in the reference section of this report. Figures 3a and 3b illustrate area of previous work and exploration data obtained during past programs.

In 1972 Jerome Exploration Limited carried out 28 line miles of linecutting and 20 miles of VLF-EM and magnetic surveys. Channel sampling of the highway 144 showing and prospecting of the surrounding area was also performed during this program. The electromagnetic survey revealed the existence of two long, intermittent, parallel conductive zones approximately coincident with the main shear zone observed in field mapping. Channel sampling of the roadcut showing produced values up to 1.71% Cu,

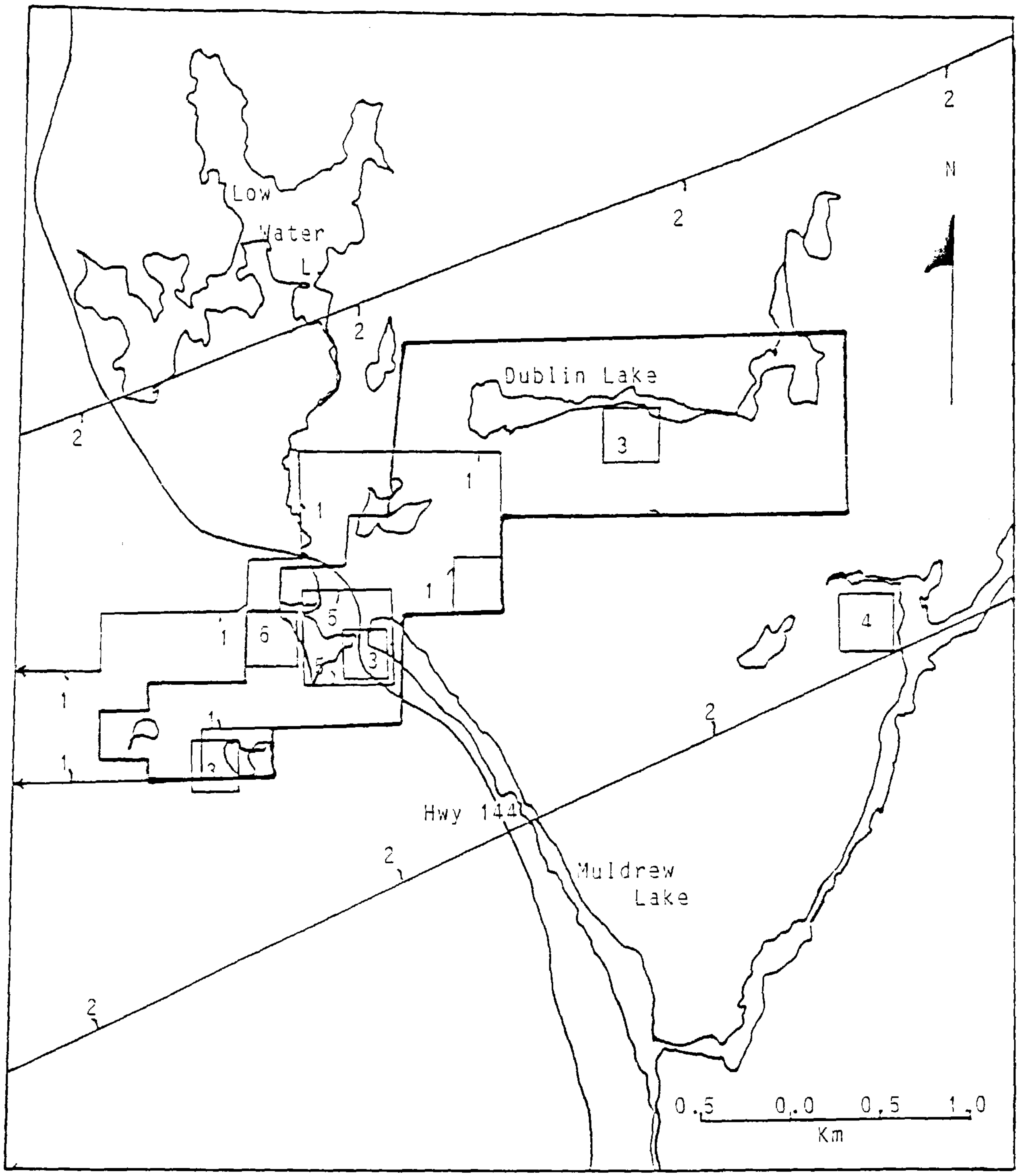


FIGURE 3a
PREVIOUS WORK

1) 1972;Jerome Exploration Ltd.
2) 1979;Rio Tinto Canadian Exploration Ltd.
3) 1980;Rio Tinto Canadian Exploration Ltd.
4) 1982-1985;J.R. Young
5) 1986;Queont Exploration Services
6) 1986;J. Brady
—— 1991:Muldrew Lake Property

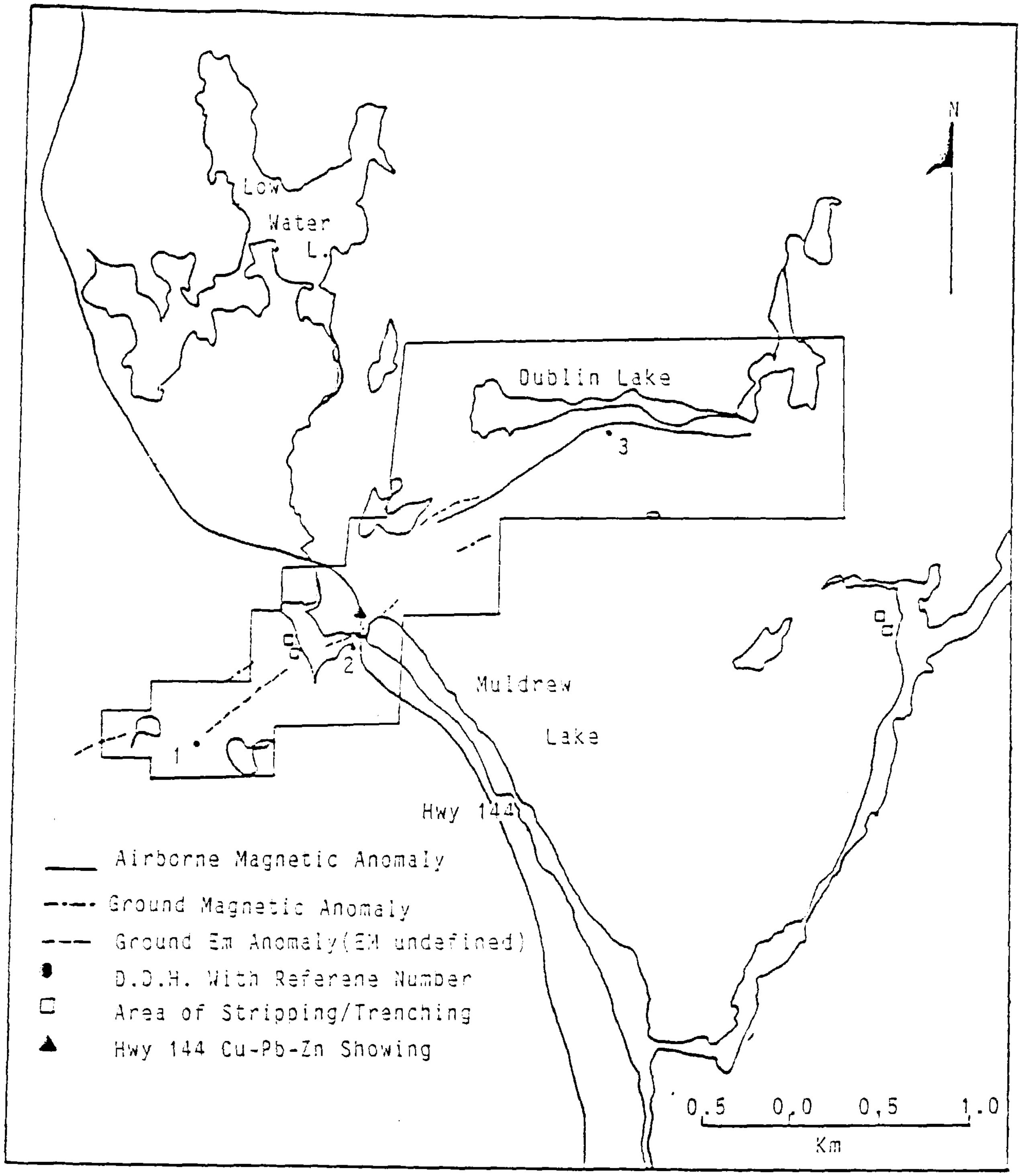


Figure 3b

EXPLORATION DATA MAP

2.20% Pb, 1.90% Zn and 0.81 oz/ton Ag over an interval of 9.0 feet (2.74 m).

In January, 1979 Aerodat Limited under contract by Rio Tinto Canadian Explorations Limited conducted an airborne magnetic survey over the property as part of an exploration program covering the entire Onaping Lake Volcanic Belt. This magnetic data indicated a strong magnetic anomaly along the south side of Dublin Lake extending east into Onaping Township.

In January, 1980 Rio Tinto Canadian Explorations Limited, as part of a larger drilling program, completed three (3) diamond drill holes on the ground covered by the present Muldrew Lake property. D.D.H.-01 and D.D.H.-03 were drilled to test the significance of coincident VLF, Max-Min and magnetic anomalies. D.D.H.-02 was drilled to evaluate mineralization beneath highway 144 showing and its' coincident flanking VLF anomaly. D.D.H.-02 intersected predominantly quartz muscovite and biotite schists that returned values of 0.33% Zn and 0.11% Pb over 4.95 feet (1.5 m).

Between 1982 and 1985 J.R. Young conducted intermittent stripping/trenching programs on a single claim located approximately 500 meters south of the southeast corner of the claim block.

In June 1986 Queont Explorations Services conducted a geological mapping program on four (4) claims straddling the highway 144 Cu-Pb-Zn occurrence. The mapping traced a sulphide-rich felsic schist unit to the west shore of the Westarm of Muldrew Lake.

During that same year J. Brady carried out a stripping and trenching program within the same area.

4. GEOLOGY

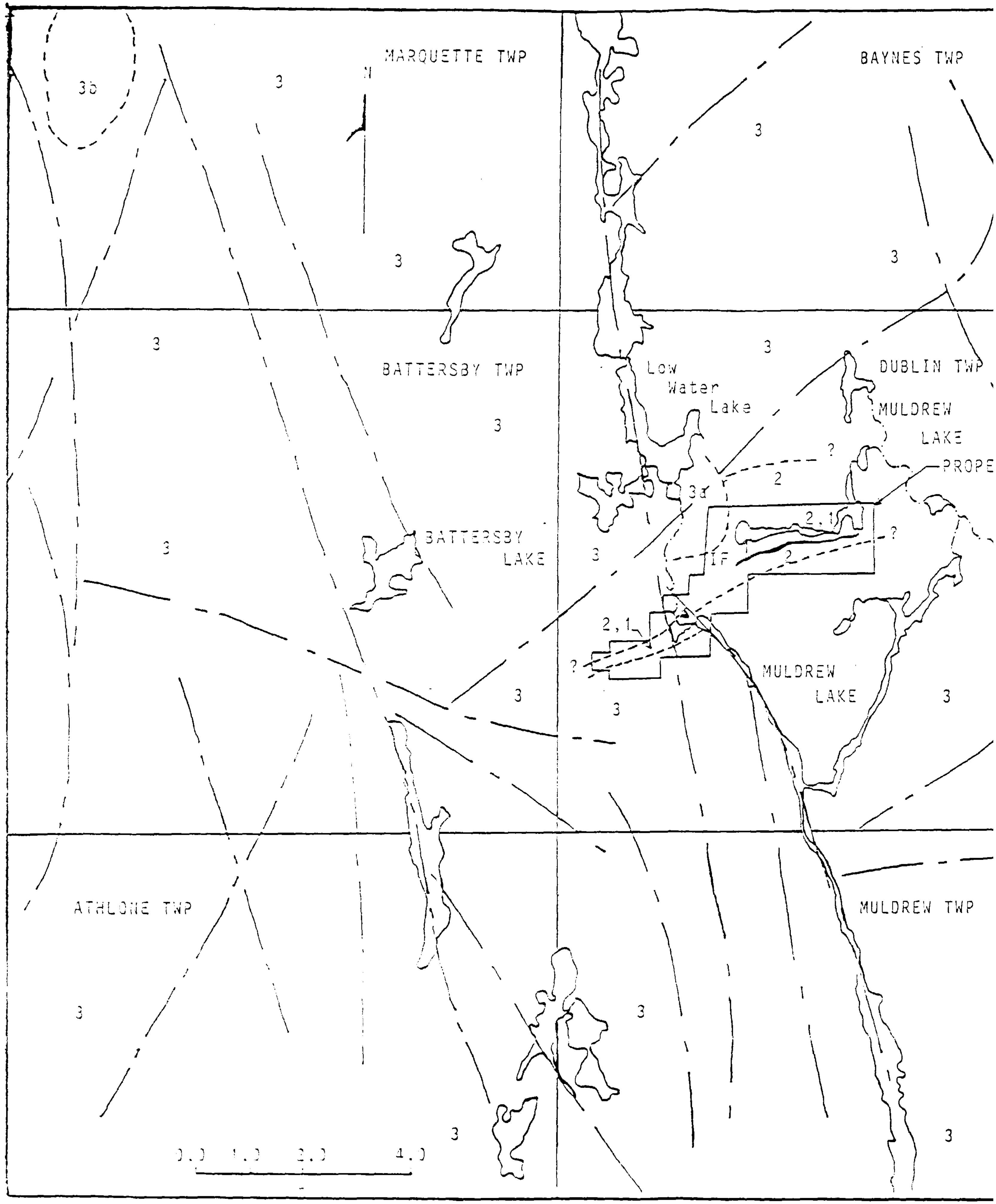
4.1 REGIONAL GEOLOGY

Regional geology map P.300 (Figure 4) indicates that the Muldrew Lake property is underlain entirely by Archean (Algoman) silicic intrusive rocks of the Superior Province of the Canadian Shield. This map indicates numerous "detached" greenstone segments (Keewatin Volcanics) within the township immediately to the east of Dublin Township. Within one of the above greenstone segments is a patented Pb-Zn-Ag occurrence (Zinc Lake Mines Ltd.) located along the common boundary of Marshay and Shelley townships.

A similar band of intercalated mafic volcanics, felsic volcanics and interflow sediments was found in central Dublin Township through geological mapping (detailed and reconnaissance) and assessment work evaluation.

Lithologies have undergone repeated folding, shearing and faulting during, prior to and after periods of igneous and metamorphic activity. Units within the Muldrew Lake property have undergone metamorphism of lower to middle amphibolite facies. Two prominent fault directions are observed in the Muldrew Lake area. The first trends roughly northeast crossing the property along the northern end of Muldrew Lake. Geological mapping suggests right lateral offsets along this structure of several hundred feet. The second trends approximately 350 degrees and runs roughly parallel to the west side of the western most arm of Muldrew Lake. This feature is marked by steep faced outcrop ridges on both sides of the fault.

All lithologies are cross-cut by Proterozoic gabbroic (diabasic) dyke sets trending northeast to northwest.



MARQUETTE TWP
BAYNES TWP
N
3b
3
BATTERSBY TWP
DUBLIN TWP
Low
Water
Lake
MULDREW
LAKE
PROPE
3a
2
2,1
IF
?
BATTERSBY
LAKE
2,1
MULDREW
LAKE
ATHLONE TWP
MULDREW TWP

4.2 PROPERTY GEOLOGY

Limited geological data was available for the Muldrew Lake property prior to the work carried out by Pilkey and Clement (OPAP, 1991). Early regional geologic maps indicated that the property was underlain by silicic intrusive rock of Archean (Algoman) age.

Geological mapping and whole-rock geochemistry have delineated a sequence of metavolcanic rocks trending 060 degrees and having an average width of 900 meters (Pilkey and Clement, 1991). The sequence consists of a mixture of felsic metavolcanic rocks of rhyolite-dacite composition and mafic metavolcanic rocks of basaltic-andesitic composition. The felsic unit varies from 300-500 meters in width and extends southwest through the claim block from Dublin Lake. These rocks are massive to banded, a unit of felsic tuff occurs at the northern edge of the felsic volcanic pile. Mafic volcanic rocks are present on both sides of the felsic band in thickness of up to 400 meters. Thickest accumulations occur to the south of the felsic rocks with the mafics typically exhibiting a weak to moderately well-developed slaty cleavage. Poorly developed pillows are encountered within the mafic volcanic rocks to the north. Basalts north and northwest of Dublin Lake occur as restricted, narrow fingers, possible xenoliths, within predominantly intrusive rocks. A concordant band of cherty, magnetite iron-formation was mapped within the southern basalts and traced over a strike length of 1500 meters. The southern end of the iron formation unit is characterized by an increase in sulphide mineralization and may represent a change from an oxide to sulphide facies.

Silicic intrusive rocks border the Muldrew Lake volcanic stratigraphy to the north, south and west. Western portions occur as a mixture of metavolcanic rocks and intrusive rocks. Whole-rock geochemistry suggests the intrusive rocks are granitic in composition south and west of the volcanic units and granodioritic to the north of the volcanic pile. Granitic intrusives are typically foliated to gneissic in character while the granodiorites are less foliated and often quartz or quartz-feldspar porphyritic.

The youngest rocks on the property are mafic dikes (diabasic-gabbroic). Locally narrow, coarse grained, mafic dikes are observed cross-cutting stratigraphy. These dikes are texturally typical of lamprophyres. Diabase dikes trend north-northwest to north-northeast. Lamprophyres trend east-west.

Sulphide mineralization consists of scattered pyrite and pyrrhotite with local sphalerite, galena and chalcopyrite. The showings most commonly lie along a 060 degree trend within the felsic volcanics and to a lesser degree in the gneissic granites west of highway 144. Minor pyrite occurs in the basalts near the diabase dike contacts.

The Muldrew Lake property is bisected by two main faults, both of which occur in the western portion of the claim block adjacent to Muldrew Lake. The first trends approximately 315 degrees along the eastern side of Muldrew Lake. The fault appears to have a right-lateral (dextral) sense of displacement indicated by an abrupt termination of the volcanic stratigraphy east of highway 144 and slightly north of the original Cu-Pb-Zn occurrence. A second fault trending 345 degrees is interpreted along the west side of the most westerly arm of Muldrew Lake. A third structure occurs as a zone of strong to intense deformation trending subparallel to stratigraphy through the central portion of the felsic volcanics. In this zone the volcanics and possibly minor granodiorite have undergone intense shearing producing quartzo-feldspathic sericite schists and local zones of brecciation.

5. GEOLOGICAL PROGRAM (1992)

5.1 PROGRAM DESCRIPTION

Linecutting commenced in October, 1992 and established two grids one east and one west of highway 144 with 7.3 km. and 3.3 km. of line cut on each grid respectively. This was followed up by a horizontal loop electromagnetic survey over both grids with 2.6 km. and 5.8 km. of HLEM surveying carried out on the east and west grids respectively.

Geological mapping, prospecting and sampling were carried out by the writer in October and November, 1992. Sampling consisted of collecting mineralized samples for assaying and whole-rock samples for rock composition and alteration studies. Geophysical and lithogeochemical interpretations were carried out by the writer.

5.2 GEOLOGY OF GRID A

Grid A is underlain by predominately mafic and felsic volcanic rocks (95%) which have been intruded by a variety of felsic to mafic intrusive rocks (5%). Outcrop exposure is approximately 10% to 15%. The mafic-felsic volcanic contact lies north of the baseline along the south shoreline of Little Boot Lake. This contact trends east northeast roughly parallel to the baseline. Immediately to the northwest of Little Boot Lake lies the contact between the Muldrew Lake supracrustal sequence and granitoid intrusive rocks. Felsic intrusive rocks of probable co-magmatic origin with the felsic volcanics rocks of the area occurs just north and northeast of Little Boot Lake. The rocks have been metamorphosed to amphibolite grade (Grid A - Geology Map (backpocket).

Mafic volcanic rocks occur as fine to medium grained, equigranular, massive and pillowed flows. Pillows are typically strongly attenuated and often difficult to recognize. These rocks weather to a grey green colour and have a black to grey-black fresh surface. Primary volcanic textures are generally absent. Characteristic of these rocks especially south of the baseline is a weak to strongly developed gneissosity. The gneissosity gives the rock a banded appearance that becomes increasing well-developed southwards, approaching the mafic-granitoid contact. The rocks are characterized by a strong penetrative fabric.

The upper 100 meters of the mafic volcanic unit is characterized by chemical sediments consisting of mainly oxide-facies iron-formation, chert and graphitic chert. These rocks occurs generally as thin (2 meters to > 5 meters) tightly folded lensoidal bodies often poorly exposed.

The mafic-felsic volcanic contact is exposed in several places on the grid and is commonly intruded by a variety of felsic-intermediate intrusive rocks. On L 9+00W, 0+50N recrystallized chert occurs at the contact. Rocks at the contact are generally strongly schistose or sheared.

The felsic volcanic rocks underlying grid A are fine to medium grained, equigranular to subporphyritic, massive and almost always strongly schistose. Primary textures have been completely obliterated not only by metamorphism but by a very strong penetrative schistosity and shear fabric. Mineralogy as observed in handspecimen commonly consists of quartz+/-feldspar+/-sericite+/-biotite (trace to 10%)+/-garnet. Sillimanite and cordierite may occur in these rocks. Felsic rocks weather to a creamy-buff colour and have a grey to buff-grey coloured fresh surface. Fragmental rocks were not recognized, although tuffaceous rocks may be present at the contact.

Felsic volcanic rocks appear to terminate between L 13+00W and L 14+00W at 0+50N. Only mafic volcanic rocks occur west of Line 14+00W. However, felsic volcanic (?) rocks occur on L14+00W at about 2+75N. Detailed mapping is required to resolve the geology of the area west of Little Boot Lake.

Intrusive rocks of felsic to mafic composition crosscut both mafic and felsic rocks commonly, as narrow sills, dikes or dike `swarms'. Compositions range from granite, quartz monzonite, granodiorite, trondjhemite, and amphibolite. Rocks are fine to coarse grained and equigranular to porphyritic (amphibole, feldspar). On L 14+00W, 3+00N relative age relations can be determined from the crosscutting dikes and sills present. Amphibolites are the oldest rocks of the intrusive suite. The amphibolites may be misinterpreted as hypabyssal mafic rocks when they intrude the mafic volcanic unit. The proportion of felsic dikes/sills increases to the south and southwest end of grid A.

Diabase dikes are very common throughout the property and on Grid A. These dikes trend northeast to north and less commonly to the northwest. Dike widths vary from less than one meter to 10's of meters.

Stratigraphy trends east-northeast on Grid A. A strong penetrative schistosity is developed in all rocks on the property. Schistosities appear to trend northeast, somewhat oblique to stratigraphy. Dips are generally south. Mineral lineations plunge steeply (65 to 75 degrees) to the northeast. Shearing is common on the property exemplified by the intensely deformed felsic (?) rocks on L 5+00W, 3+00N where rocks are isoclinally folded and schistose. Rocks are often brecciated and appear to be the result of tectonic deformation (fault breccias).

The rocks on Grid A have been variably altered and include the following:

- epidotization
- development of quartz and felsic stringers
- gneissosity
- fracture-controlled, ribboning
- sericitization
- bleaching
- sillimanite, cordierite(?), garnet
- mica (phlogopite?)
- pyritization

Mafic volcanics are variably banded resulting from a gneissosity that increases towards the south end of the grid as the granite contact is approached. Also as the granite contact is approached there is an increase in a fracture-controlled alteration producing a distinct criss-crossing network or pattern (similar to a stockwork of quartz veining). The latter alterations are the result of the emplacement of the granitoid rocks south of Grid A.

Approaching the mafic-felsic volcanic contact, the development of thin (< 1cm) felsic (very fine-grained, quartzo-feldspathic) stringers and quartz veins\stringers increases, reaching 10% to 12% near the contact. At the contact on L 9+00W, 0+50N within the mafic rocks a pale `golden' mica (phlogopite ?) is developed parallel to the local schistosity and ranging from 1% to about 10%. This development of this mica appears to be restricted to this area.

The development of garnets within the mafic rocks is sporadic but more widespread.

Bleaching--carbonatization (silicification ?) is rarely developed; on L 9+00W, 0+25N rocks are weak to moderately bleached.

The main alteration within felsic volcanic rocks is sericitization; sericitic schists predominate at the contact. Common constituents of these sericite schist include quartz+/-pyrite+/-garnet+\-andalusite(?)+\-sillimanite+\-cordierite(?)+\-biotite. (This mineralogy should be confirmed by thin-section studies).

Epidotization and hematitization are common alterations within both mafic and felsic volcanic rocks especially near diabase dikes. At or near dike contacts an intense and pervasive development of epidote+hematite+quartz (veining) is common. Within the mafic rocks epidotization occurs more commonly as an alteration within the cores of pillows and as stringers\veins in massive flows. This alteration appears to be strongly developed in the follow localities:

1) L 13+00W, 0+50N (mafic-felsic contact)

2) L11+00W, 1+70S

3) L10+00W, between 1+50S and 2+00S (related to diabase intrusion)
4) general increase in epidote in southwest corner of Grid A.

Pyritization is the dominate form of mineralization on Grid A. Minor visible chalcopyrite, sphalerite and galena were observed. Mineralization is sporadically developed within the mafic rocks; pyrite appears to be more commonly formed within the upper 100 meters of the mafic sequence in association with the chemical sedimentary rocks. Within the felsic sequence the sericitic schist developed along the mafic-felsic contact is often strongly pyritized.

Mineralized areas include:

1) L6+00W, BL; poorly exposed, pyritized gossanous cherty iron-formation (?) with minor graphite returned assays of 113 ppb Au, 260 ppm Cu, 924 ppm Zn, < 2 ppm Pb, and 1.6 ppm Ag (Sample No. 25907).

2) L8+00W, 0+80S; pyritized oxide-facies iron-formation with quartz veining returned assays yielding geochemically anomalous copper (381 ppm, 219) from samples 25905 and 25903.

3) L1+00W, 1+30S; altered pyritic mafic volcanics with geochemically anomalous copper (873 ppm).

4) L 13+00W, 0+50N; L 9+00W, 0+50N; L5+00W, 0+75N; pyritic sericite schist with 1% to 15%, disseminated, fine to medium grained pyrite yielded low geochemically anomalous copper values.

Sericite-pyrite schists from west of Little Boot Lake yielded geochemically anomalous Zn and Pb values (Pilkey and Clement, 1991).

6. GEOCHEMISTRY

6.1 INTRODUCTION

During the mapping program rock samples were collected for with two objectives in mind:

1) mineralized samples were collected and analyzed for their Cu, Zn, Pb, Au and Ag content

2) unaltered samples were collected to determine their whole-rock compositions to determine rock type and alteration of primary rock compositions.

Samples of each type (1 & 2) were collected and results compiled below.

6.2 ASSAY RESULTS

Sixteen (16) mineralized rock samples were collected from Grid A and analyzed for their Cu, Zn, Pb, Au, and Ag values. Sample descriptions are given in Table 1 in the appendix. Analytical results are presented in Table 2 in the appendix. Sample locations are presented in Grid A: GEOLOGY MAP ..... (backpocket).

All significant analytical results have been discussed in section 5.2 Geology of Grid A. Assay results from this study have been incorporated with the earlier work of Pilkey and Clement (OPAP, 1991) and presented in a Geochemistry Compilation Map (backpocket).

Whole Rock Major-Oxide and Trace Element Analysis

Eleven (11) surface rock samples were collected for whole rock analysis, six (6) from Grid A and five (5) from outside of the latter grid (Sample Location Map). This data was used in defining lithologic units as well as possible alteration zones indicative of base metal mineralization.

Samples were analyzed for eleven (11) major element oxides, together with loss of ignition, and trace elements (Rb, Sr, Y, Zr, Nb, and Ba) by X-RAY Laboratories of Don Mills, Ontario. Analytical results, and rock sample descriptions are presented in Tables 3 and 4 respectively in appendix. The analyses were determined by x-ray fluorescence spectrometry on fused discs. The analytical precision is +/- 0.01 wt. percent for oxides; detections limits for trace elements were lowered to the 2 to 3 ppm range using pressed pellets in lie of fused glass disc. The lower detection limits yielded results that could be utilized in discriminant plots such as Floyd and Winchester (1977).

The results of this study are incorporated with the data collected by Dave Pilkey and Yves Clement (OPAP, 1991) and presented on a geochemistry compilation map (backpocket).

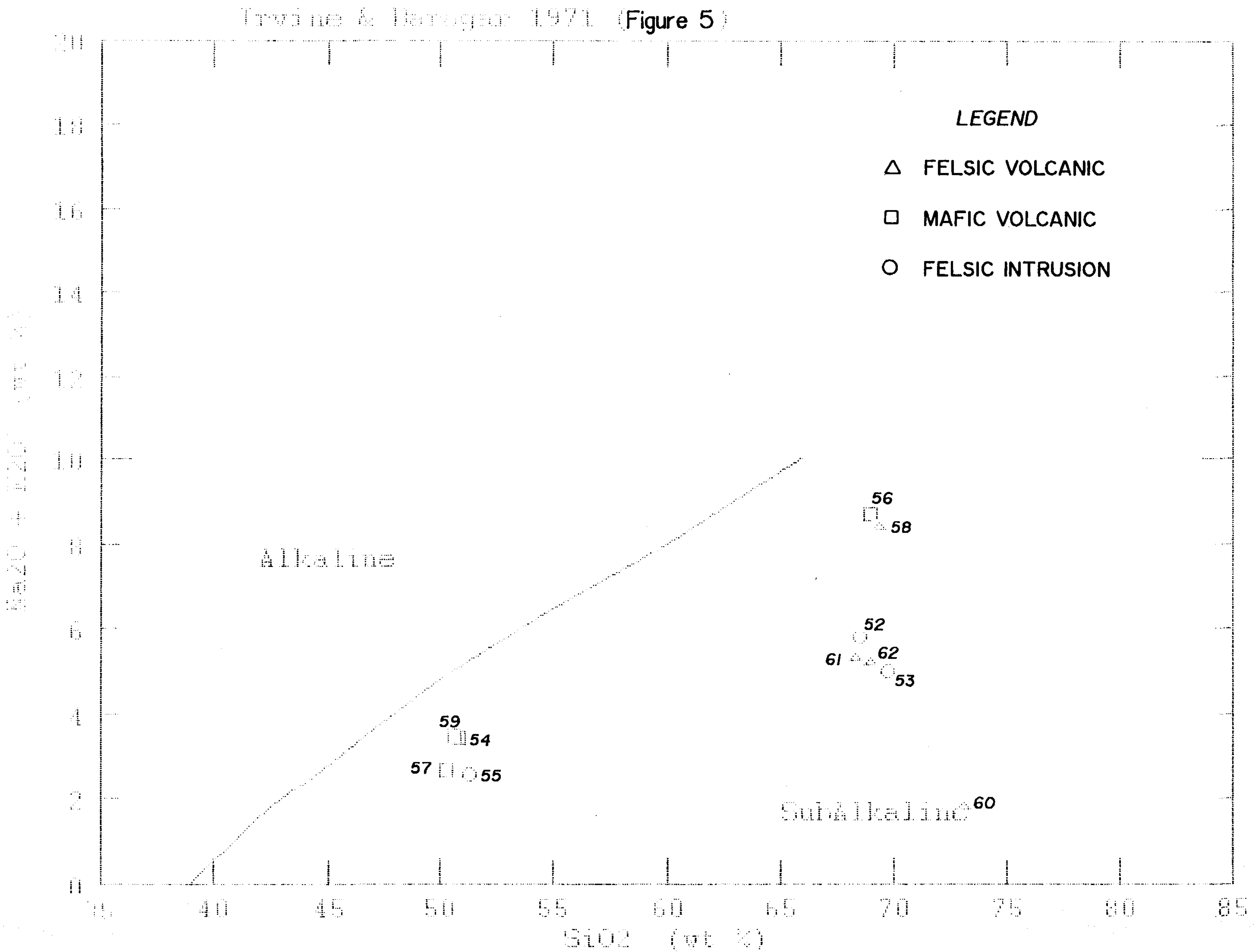
Of the eleven (11) whole-rock samples, four (4) are mafic volcanics, four (4) are felsic volcanics and three (3) are felsic intrusive rocks. These have been plotted on various geochemical discriminant plots, presented in Figures 5 to 9, to aid in the interpretation of rock classification and alteration (related to base metal mineralization).

Figure 5: Irvine & Baragar (1971), $Na_2O + K_2O$ vs SiO_2.

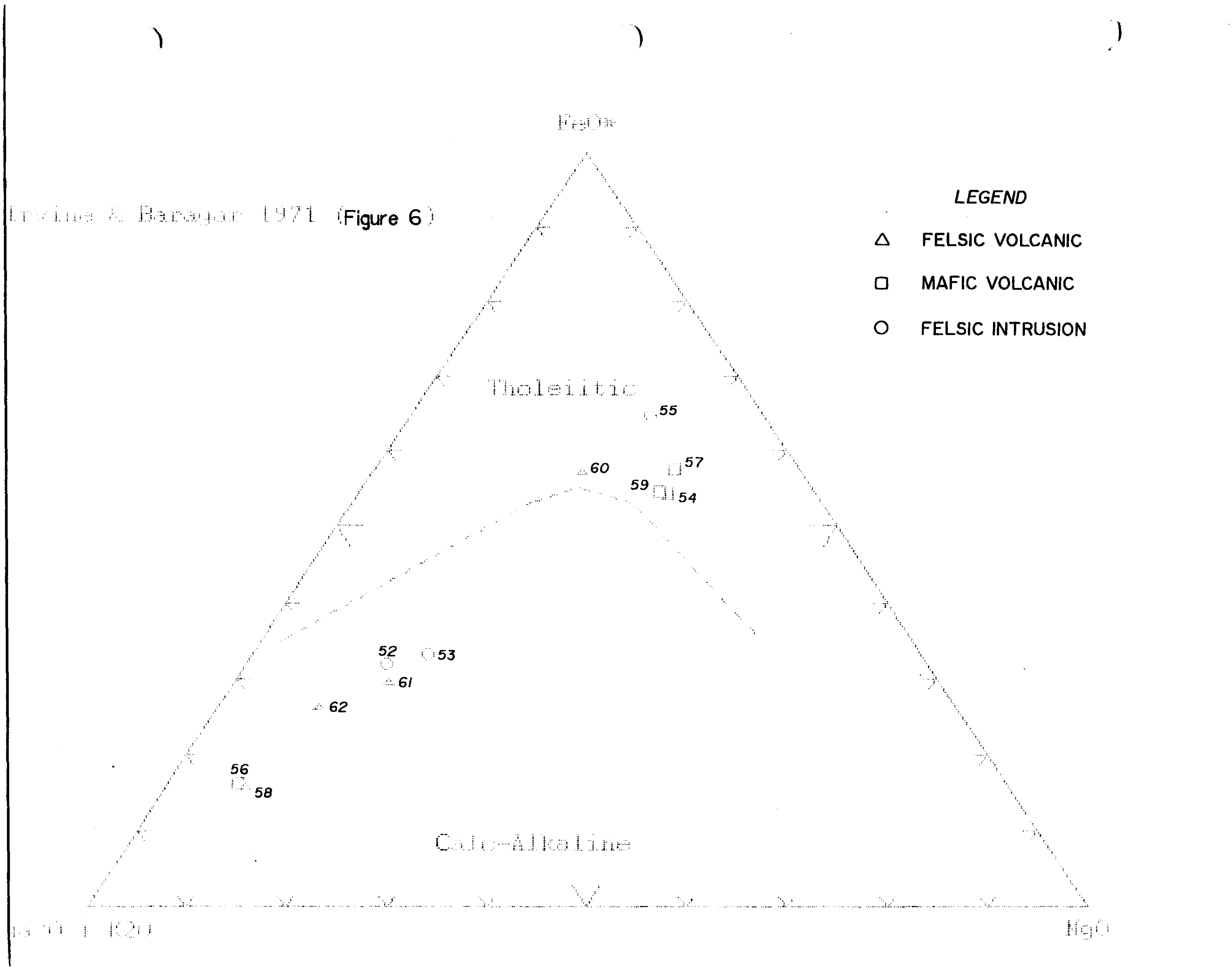
This plot indicates that rocks of all compositions are subalkaline. The overlap or clustering of felsic volcanics and felsic intrusive rocks indicates similar geochemical compositions and a probable genetic affinity.

Figure 6: Irvine & Barager (1971), AFM plot.

This plot shows the calc-alkaline affinity of both the felsic volcanic and intrusive rocks and the tholeiitic affinity of the mafic volcanic rocks. Mafic volcanic rocks have similar geochemical compositions indicated by the tight clustering of samples. However, felsic volcanic compositions appear to vary more, possible due to varying degrees of alkali alteration. The straight linear trend of the samples on this plot suggests that



Irvine & Baragar 1971 (Figure 5)
LEGEND
FELSIC VOLCANIC
MAFIC VOLCANIC
FELSIC INTRUSION
Alkaline
SubAlkaline
Na2O + K2O (wt %)
SiO2 (wt %)



Irvine & Baragar 1971 (Figure 6)
FeO*
Tholeiitic
Calc-Alkaline
Na2O + K2O
MgO
LEGEND
FELSIC VOLCANIC
MAFIC VOLCANIC
FELSIC INTRUSION
55
60
57
59
54
52
53
61
62
56
58

alkali mobility was operative in the area.

Figure 7: Jensen (1976), AFM Cation Plot.

Mafic volcanic rocks plot in the high-iron tholeiitic field and again cluster tightly. Felsic volcanic rocks plot as calc-alkaline rhyolites. The felsic intrusive rocks plot in the calc-alkaline dacite field, separate and distinct from the felsic volcanic rocks.

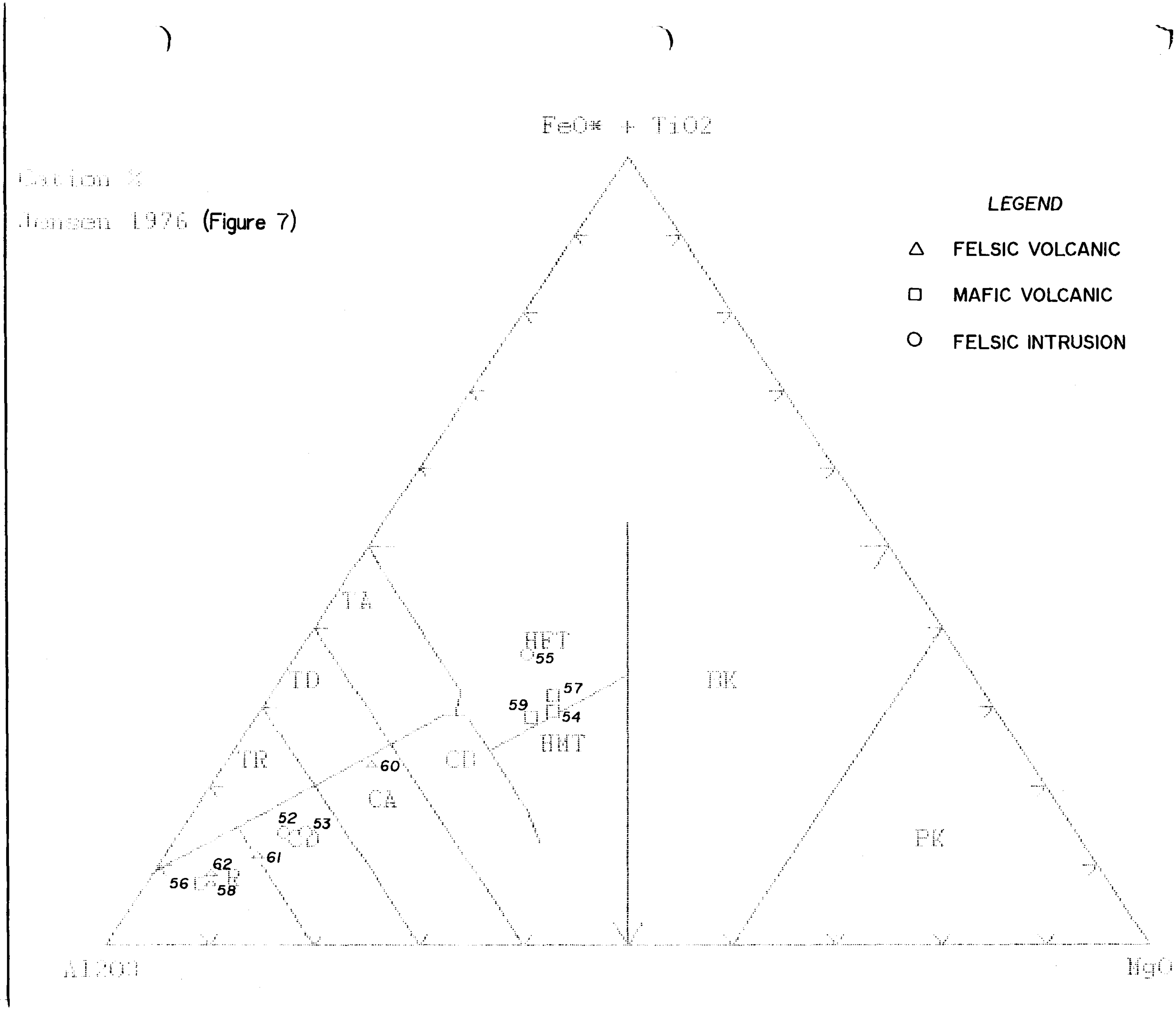
Figure 8: Winchester & Floyd (1977), SiO2 vs Log (Zr/TiO2).

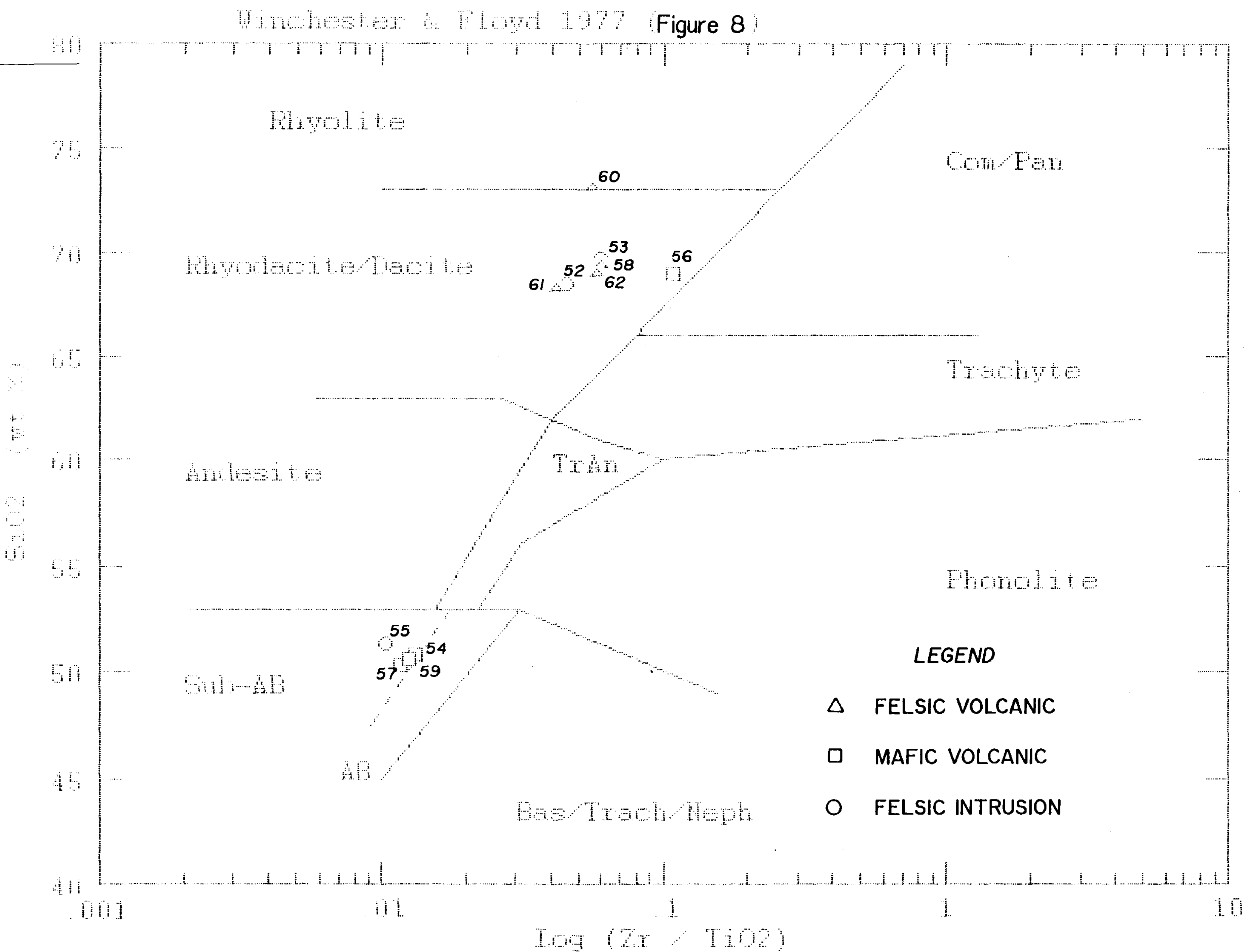
This plot assumes the immobility of certain major and trace elements (Si, Ti and Zr). In general this plot confirms the findings of Jensen's AFM plot. However, the felsic intrusive rocks cannot be distinguished from the felsic volcanic rocks in this plot as they were in the latter diagram.

Figure 9: Winchester & Floyd (1977), Log (Zr/TiO2) vs Log (Nb/Y).

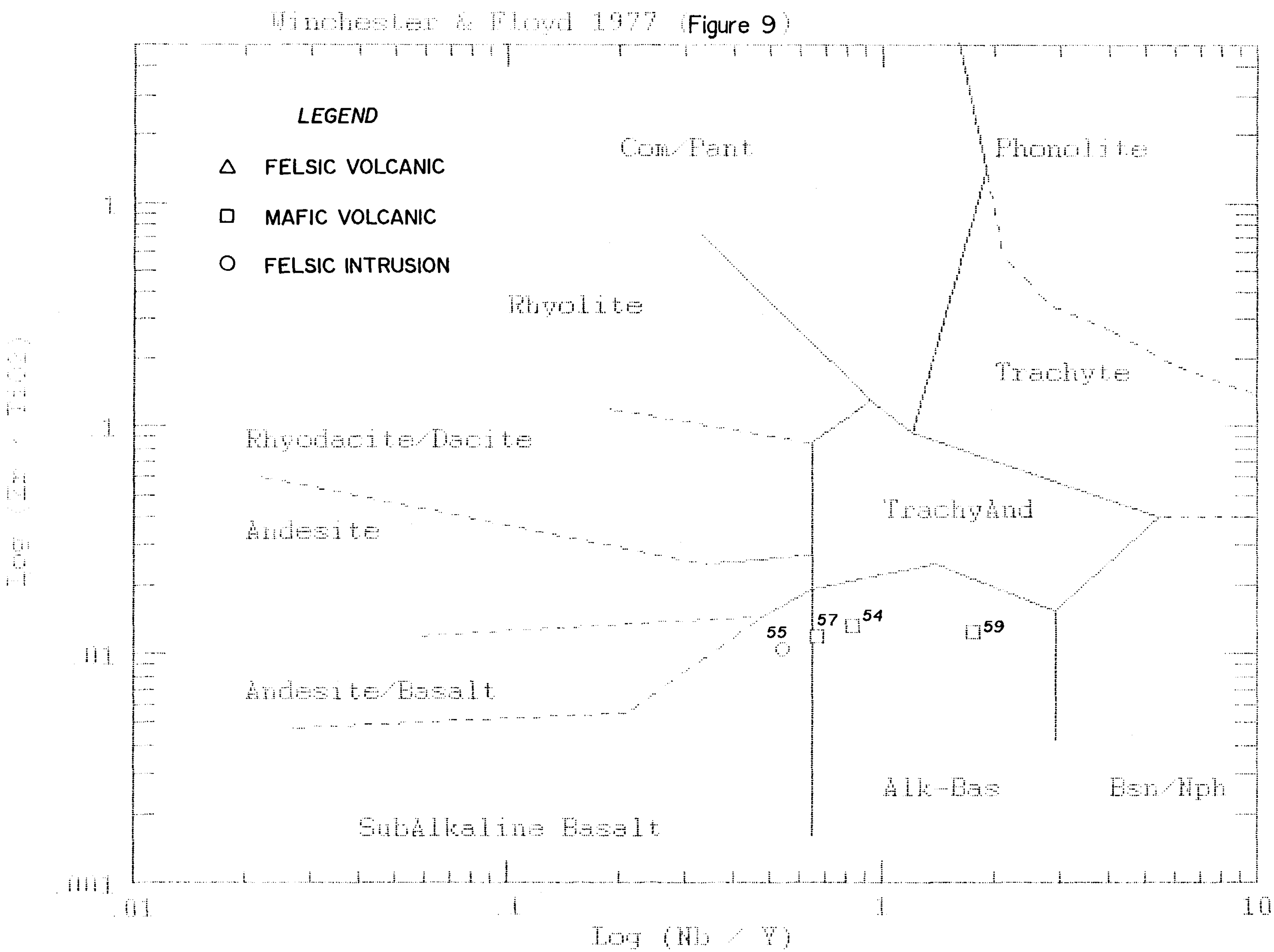
Geochemical classification of rock compositions is based on the immobility of trace elements Nb,Y, and Zr and of Ti. It should be noted that only four of the eleven samples plot on the diagram the rest of the samples have too high Nb/Y ratios. This is the result of either high primary Nb/Y ratios in the rock or alteration. Alteration would imply however, that the initial premise of trace element immobility was invalid, assuming of course no analytical errors. The mafic volcanic rocks also plot in the alkaline field.

Samples WR-55,56 and 60 show evidence of strong to moderate alteration. Felsic intrusive rock (WR-55) plots


FeO* + TiO2
Cation %
Jensen 1976 (Figure 7)
LEGEND
FELSIC VOLCANIC
MAFIC VOLCANIC
FELSIC INTRUSION
TA
HFT
55
TD
57
59
54
BMT
TR
60
CB
CA
52
53
61
62
56
58
PK
Al2O3
MgO



Winchester & Floyd 1977 (Figure 8)
Rhyolite
Com/Pan
Rhyodacite/Dacite
Trachyte
Andesite
TrAn
Phonolite
Sub-AB
AB
Bas/Trach/Neph
60
53
58
62
52
61
56
55
54
57
59
LEGEND
FELSIC VOLCANIC
MAFIC VOLCANIC
FELSIC INTRUSION
SiO2 (wt %)
Log (Zr / TiO2)
80
75
70
65
60
55
50
45
40
.001
.01
.1
1
10



Winchester & Floyd 1977 (Figure 9)
LEGEND
FELSIC VOLCANIC
MAFIC VOLCANIC
FELSIC INTRUSION
Com/Pant
Phonolite
Rhyolite
Trachyte
Rhyodacite/Dacite
TrachyAnd
Andesite
Andesite/Basalt
Alk-Bas
Bsn/Nph
SubAlkaline Basalt
55
57
54
59
1
.1
.01
.001
.01
.1
1
10
Log (Nb / Y)
Log (Zr / TiO2)

consistently in the mafic volcanic field. Sample WR-56, a mafic volcanic rock plots consistently in the felsic volcanic field. Sample WR-60, a felsic volcanic rock, plots in the felsic field but generally lies outside the 'cluster' of the other felsic volcanic rocks.

7. GEOPHYSICAL SURVEY

7.1 INTRODUCTION

During the fall of 1992 a geophysical survey was completed on the Muldrew Lake property on Grids A and B by Patrie Explorations Ltd. The survey consisted of a horizontal loop electromagnetic survey.

The horizontal loop EM survey was carried out using a Max-Min II unit. The Max-Min II is a frequency domain, horizontal loop electromagnetic (HLEM) system, based on measuring the response of conductors to a transmitted, time varying electromagnetic field.

The Max-Min II survey was carried out in the "maximum coupled" mode (horizontal co-planar). The transmitter and receiver are carried in-line down the survey line separated by a constant distance, in this case 100 meters, with the receiver leading. The transmitter and receiver are connected by a cable, for phase reference and operator communication. The survey was carried out traversing lines spaced at 100 meters and with readings taken every 25 meters. At each station, the in-phase and quadrature measurements were taken transmitting at both 222 Hz and 1,777 Hz frequencies.

A total of 8.4 line km were surveyed and 514 stations were collected with four readings per station.

7.2 HLEM SURVEY RESULTS

GRID A

Results of the Max-Min survey are presented in Geophysical Maps (backpocket). Interpretation of the results is often difficult due to short cable effects and or instrumentation problems, as discussed below.

Two weak HLEM conductors A and B are interpreted on Line 0+00, 1+00 N and on Line W 14+00, 1+75N respectively. Conductor A coincides with poorly exposed, strongly folded iron-formation. Conductor B occurs in granitoid rocks just north of a mafic - granitoid contact. Granitoid rocks in this area are 'intercalated' with felsic mineralized volcanic rocks. Exposure in this area is also poor and the geology has not been fully resolved.

The significance of the 'anomaly' on Line 7+00W and 0+75N is not clear, it may be a result of short-cable effect as the anomaly occurs on a ridge slope.

In-phase and out-phase readings on Lines 6, 7 and possible 8 suggest an anomaly may lie south of these lines.

On lines 4 and 5, north of the baseline, the data is uninterpretable. This area coincides with a prominent ridge which may in part be causing a short-cable effect. However, the area is underlain by a mineralized mafic-felsic contact.

GRID B

Results of the HLEM survey on grid B are presented on Geophysical maps (backpocket).

Two weak HLEM conductors, referred to as A and B, have been interpreted on L28+00W and L 30+00W respectively. Conductor A is weak and indicated on 1777Hz frequency but not on the 222Hz frequency. Conductor B is weak and dubious on the 1777 Hz frequency because of the lack of an out-of-phase response. There may be a second weak parallel anomaly south of conductor B (1777 Hz).

Readings at the south ends of lines 32,33,34, and 35 suggest a possible anomaly to the south.

Interpretation of the data of grids A and B is difficult and at times uninterpretable because of the following reasons:

1) short-cable effect due to topography

2) possible instrumentation problems e.g. flat out-of-phase readings on several lines

3) cable separation of 100 meters is too long considering that the lines are themselves only often 200 meters long. A 50 meter cable length would have been preferred. Also many of the lines are too short especially on grid B.

8. CONCLUSIONS

1) Recognition of the mafic-felsic volcanic contact located north of the grid baseline along the south shoreline of Little Boot Lake and trending northeast.

2) The felsic volcanic sequence ends at the west end of Grid A between L 13+00W and L 14+00W.

3) Recognition of several distinct chemical sedimentary horizons within the upper, approximately, 100 meters of the mafic volcanic sequence.

4) Several strongly pyritized zones were located on Grid A. Felsic volcanic rocks near the mafic-felsic contact often occur as strongly pyritized schists with minor and spotty visible chalcopyrite, sphalerite and\or galena. Pyritization within the mafic rocks is often associated with units of iron-formation.

5) A zone of Na and Ca depletion occurs in felsic volcanic schists north of the felsic-mafic contact between L 13+00W and L 1+00W and trends northeast.

6) A HLEM survey on Grid A identified two short weak conductors that correspond to tightly folded iron-formation within the upper 100 meters of the mafic volcanic unit. Other possible conductors may exist along the felsic-mafic contact, however, the HLEM data along the contact is often `uninterpretable´.

9. RECOMMENDATIONS

The writer recommends the following work be carried out on the Muldrew Lake property as a consequence of the findings of this study and those of D. Pilkey and Y. Clement (OPAP, 1991).

1) Extend the lines (north and south) of both grids A and B; using a 50 meter cable separation re-run the HLEM survey over known mineralized zones and over areas where questionable conductors were found by the present survey. Specific areas to resurvey have been noted earlier under Geophysics.

2) Complete geological mapping, prospecting and sampling on Grid B.

3) Follow-up prospecting and sampling in the following areas:

a) between L 2+00W and L 1+00W, 1+00S.
b) between L 14+00W and L 13+00W, 2+50N.
c) between L 7+00W and L 4+00W, along the baseline.
d) L 8+00W, 0+80S.

4) Magnetic (total field and gradient) survey across the entire Muldrew Lake property.

5) Stripping and trenching should be carried out in any of the latter areas recommended for further prospecting if encouraging results warrant.

Respectfully submitted,

Edward Sawitzky
January, 1993

CERTIFICATE OF QUALIFICATIONS

I, Edward George Sawitzky do hereby certify:

1. that I am a geologist and reside at 1290 Bancroft Drive, Sudbury, Ontario P3B 4G9,

2. that I am a Fellow of the Geological Association of Canada,

3. that I graduated from Carleton University, Ottawa, in 1978,

4. that I have practiced my profession continuously for 16 years.

5. that my report on the Muldrew Lake Property is based on my personal knowledge of the area, and a review of published and unpublished information of the area.

E. Sawitzky
B.Sc., F.G.A.C.
January, 1993

APPENDIX

TABLE 1 - ASSAY SAMPLE DESCRIPTIONS

SAMPLE NO./ LOCATION	ASSAY Au (ppb)	Cu (ppm)	Zn (ppm)	Ag (ppm)	Pb (ppm)	ROCK DESCRIPTION
25900 L9+00W: 50N	4	92.3	51.7	1.1	9	Interm.-felsic volc? qtz. str's rusty, bio+ser. dissem 1/2% py.
25901 L9+00W; 50N	4	105	13.1	.7	<2	Felsic volc? qv's,sil. granular, rusty, dissem 1/2% py
25902 L9+00W. 50N	10	148	45.9	1.3	25	Chert. banded, recrystallized, med.g. dissem 1% py
25903 L8+00W. 75S	58	381	21.2	1.4	6	I.F., qtz str's(granular), banded. mass. py layers 3-8mm
25904 L8+00W. 75S	8	105	59.3	.7	<2	I.F., dk sil. bio, rusty qtz str's granular, tr. py
25905 L8+00W. 85S	58	219	61.1	1.9	14	Mafic volc, gran. dk. qtz str, dissem 1% py
25907 L6+00. B.L.	113	260	924	1.6	<2	I.F., sil. banded gossanous. dissem 2-3% f.g. py
25908 L5+00W. 75N	<1	26.2	46.8	<.5	<2	Felsic volc., sericite-qtz-py schist, dissem 2-3% f.g. py
25909 L4+00W. 2+37N	<1	61.1	70.6	.8	<2	Interm. volc? dk, f.g., granular, qtz-felds-bio-amph.?, dissem py 1%
25910 L4+00W. 80N	<1	18.3	18.1	.5	<2	Felsic volc. calc-silicate? crude banding, sil., gossanous in part, min py

SAMPLE NO./ LOCATION	ASSAY Au (ppb)	Cu (ppm)	Zn (ppm)	Ag (ppm)	Pb (ppm)	ROCK DESCRIPTION
25911 L4+00W, 50N	<1	324	80.6	.9	<2	Mafic volc., rusty qtz str's dissem 1\2% py
25912 L1+00W, 2+45N	<1	27.6	54.2	.5	7	Felsic volc? qtz-ser-bio-py schist, qtz str's, dissem f.g. 1\2% py
25913 L1+00W, 1+25S	2	873	13.0	3.5	<2	Mafic volc, altered bands, (green sil granular), dissem py in narrow zones
25914 L13+00W, 50N	<1	5.7	30.5	<.5	3	Felsic volc, heterogeneous, mass to schist, py f.g. dissem 2-3%
25915 L14+00W, 2+75N	<1	69.4	33.2	<.5	<2	Felsic-interm volc? qtz-feld-bio schist, rusty, qtz str's, min py
25916 L14+00W, 2+63N	<1	11.0	39.9	<.5	3	Felsic volc, qtz-ser-feld-bio schist, dissem f.g. 2-3% py

Table 2:
Assay Results

SAMPLE	AU	CU	ZN	AG	PB
UNITS	PPB	PPM	PPM	PPM	PPM
25900	4	92.3	51.7	1.1	9
25901	4	105	13.1	0.7	-2
25902	10	148	45.9	1.3	25
25903	58	381	21.2	1.4	6
25904	8	105	59.3	0.7	-2
25905	58	219	61.1	1.9	14
25907	113	260	924	1.6	-2
25908	-1	26.2	46.8	-0.5	-2
25909	-1	61.1	70.6	0.6	-2
25910	-1	18.3	18.1	0.5	-2
25911	-1	324	80.6	0.9	-2
25912	-1	27.6	54.2	0.5	7
25913	2	873	13	3.3	-2
25914	-1	5.7	30.5	-0.5	3
25915	-1	69.4	33.2	-0.5	-2
25916	-1	11	39.9	-0.5	3
DCP CONTROL	-999	11.1	17.9	-0.5	-2
25900	-999	92.9	55	1.1	10
25913	-999	894	12.7	3.4	-2

Table 3 : ANALYTICAL RESULTS

SAMPLE	NA2O	MGO	AL2O3	SIO2	P2O5	K2O	CAO	TIO2	CR2O3	MNO	FE2O3	RB	SR	Y	ZR	NB	BA	LOI	SUM
UNITS	%	%	%	%	%	%	%	%	%	%	%	PPM	PPM	PPM	PPM	PPM	PPM	%	%
W.R.#52	3.85	1.51	14.5	68.5	0.13	1.96	3.04	0.472	0.02	0.07	3.83	40	282	-2	129	10	556	1.8	99.682
W.R.#53	3.65	1.79	13.7	69.7	0.09	1.34	4.25	0.359	0.02	0.06	3.76	35	219	-2	129	8	217	1	99.719
W.R.#54	2.54	7.15	13.6	50.8	0.08	0.89	8.06	0.799	0.02	0.24	14	30	92	6	64	5	330	1.65	99.829
W.R.#55	1.75	5.48	12.9	51.3	0.11	0.91	9.16	1.48	0.02	0.21	16.5	32	139	11	93	6	260	1.1	99.82
W.R.#56	6.12	0.8	16.4	69	0.11	2.58	1.74	0.24	0.02	0.05	2.04	53	303	-2	156	8	900	1.15	100.25
W.R.#57	2.15	6.5	12.9	50.3	0.08	0.55	9.66	1.03	0.03	0.23	14.1	16	129	9	73	6	151	1.35	98.88
W.R.#58	3	0.9	15.5	69.4	0.08	5.39	1.93	0.292	0.02	0.07	1.93	92	232	-2	105	5	635	1.4	100.012
W.R.#59	2.62	6.74	14.4	50.6	0.07	0.85	8.81	0.786	0.02	0.23	13.7	20	143	4	59	7	232	1.55	100.376
W.R.#60	0.31	1.76	10	73.1	0.07	1.5	3.88	0.34	0.02	0.16	5.28	47	29	-2	114	10	299	2.2	98.42
W.R.#61	0.36	1.49	16.6	68.3	0.1	4.45	1.08	0.481	0.03	0.09	3.15	115	88	-2	121	8	873	3.2	99.841
W.R.#62	4.04	0.94	16.2	69	0.08	1.18	4.31	0.307	0.02	0.05	2.38	37	237	-2	106	6	423	0.75	99.157
XRA CONTR	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	-999	221	293	138	293	25	443	-999	-999
SY-2	4.25	2.63	12.1	60	0.43	4.5	8.02	0.134	-0.01	0.32	6.28	-999	-999	-999	-999	-999	-999	0	98.714
SY-2	4.24	2.62	12	59.7	0.43	4.48	7.97	0.131	-0.01	0.32	6.25	-999	-999	-999	-999	-999	-999	0	98.191
W.R.#52	3.92	1.54	14.7	69.2	0.13	1.94	3.08	0.484	0.02	0.07	3.73	39	286	-2	132	10	554	1.8	100.614

TABLE 4

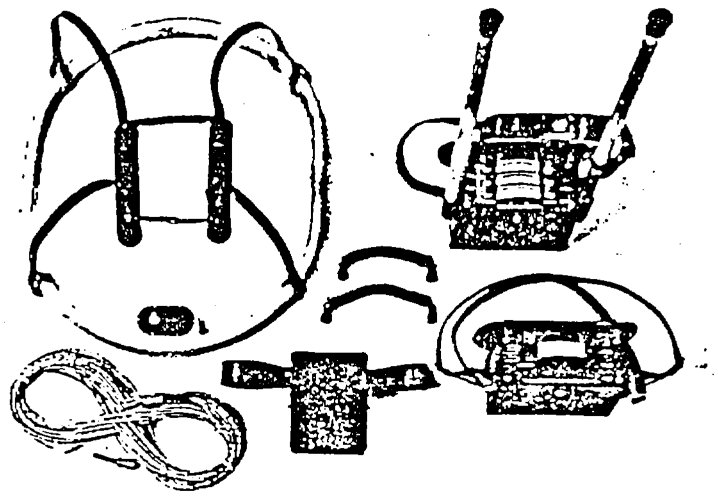
Sample No.	Field No.	Location	Rock Description
WR-52	MY-57		QFP? Granitoid. Lineated qtz; bi 10% patchy qtz grain distribution (pyroclastic?) med. g., grey-pink-bl fresh surface, creamy surf. weath.
WR-53	ML-027		F.g., equig., grey streak - black fresh, buff weath; folia stra; tourm? patch feldspathic alteration; and epid.
WR-54	MY-60		Mafic volc; f.g. equig. black foliated minor py <<1/2% rare felsic stringers.
WR-55	MY-203		QFP? Felsic volc; buff-cream weath, f.g., subporphy; weak folia; tr py, <5% mafics (bi).
WR-56	MY-68		Mafic, f.g. equig, gneissic; foliated; black-cream fresh and weath. surfaces, tr py, no qtz.
WR-57	MY-70		M. volc, f.g. equig, green-black fresh and weath.; small q.v. 1/8"; tr py, well folia.
WR-58	MY-72		Felsic; well foliated; f.g., cream weath., creamy grey-fresh tectonic laminae; no qtz v's, no py, <3% bi.

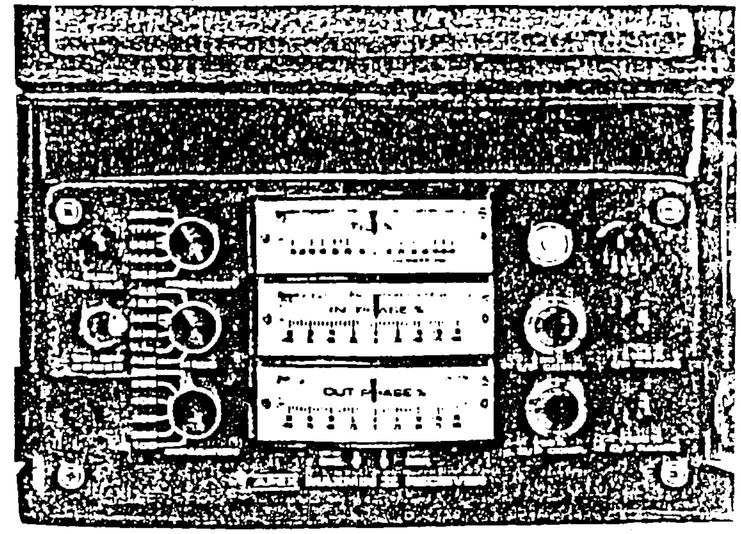
Sample No.	Field No.	Location	Rock Description
WR-59		L9+00, 50N	M.V.: f. med. g., black fresh phlogopite? str. folia., tr py, minor <<1/2% qs.
WR-60		L5+00W, 2+40N	Felsic ...., f.g., equig. weakly epidotized, stray folia; granular text., qtz (felds/gn, bi 10%); weakly sericitized, py 1/2% dissem. f.g.
WR-61	25916		Felsic ser. py schist, f.g. str. folia, crenulated; py 1/2-1%. No Qt v's.
WR-62		L1+00, 2+50N	Felsic; str. folia, cream weath., dark grey fresh, f.g. equig; bi 5-7%, minor qtz eyes?; tr py 1/2%. No QV's, massive.

APEX MAXMIN II PORTABLE EM

- Five frequencies: 222, 444, 888, 1777 and 3555 Hz.
- Maximum coupled (horizontal-loop) operation with reference cable.
- Minimum coupled operation with reference cable.
- Vertical-loop operation without reference cable.
- Coil separations: 25, 50, 100, 150, 200 and 250 m (with cable) or 100, 200, 300, 400, 600 and 800 ft.
- Reliable data from depths of up to 180 m (600 ft).
- Built-in voice communication circuitry with cable.
- Tilt meters to control coil orientation.

NOW ALSO ±4% QUADRATURE FULL SCALE.





SPECIFICATIONS :

Frequencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation:
MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refer. cable.
MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.
V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF).
Coil separations in V.L. mode not restricted to fixed values.

Parameters Read:
- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:
- Automatic, direct readout on 90 mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90 mm edgewise meters in V.L. mode.

Scale Ranges:

NOW ALSO ±4% QUADRATURE FULL SCALE.

In-Phase: ±20%, ±100% by push-button switch.
Quadrature: ±20%, ±100% by push-button switch.
Tilt: ±75% slope.
Null (V.L.): Sensitivity adjustable by separation switch.

Readability: In-Phase and Quadrature: 0.25 % to 0.5 % ; Tilt: 1 %.

Repeatability: ±0.25 % to ±1% normally, dependin on conditions, frequencies and cc separation used.

Transmitter Output:
- 222 Hz : 220 Atm^2
- 444 Hz : 200 Atm^2
- 888 Hz : 120 Atm^2
- 1777 Hz : 60 Atm^2
- 3555 Hz : 30 Atm^2

Receiver Batteries: 9V trans. radio type batteries (4 Life: approx. 35 hrs. continuous d ty (alkaline, 0.5 Ah), less in col weather.

Transmitter Batteries: 12V 6 Ah Gel-type rechargeabl battery. (Charger suppliec

Reference Cable: Light weight 2-conductor teflo cable for minimum friction. Unshiel ed. All reference cables option at extra cost. Please specif

Voice Link: Built-in intercom system fc voice communication between r ceiver and transmitter operator in MAX and MIN modes, via r ference cable.

Indicator Lights: Built-in signal and reference war ing lights to indicate erroneou readings.

Temperature Range: -40°C to +60°C (-40°F to +140°

Receiver Weight: 6 kg (13 lbs.)

Transmitter Weight: 13 kg (29 lbs.)

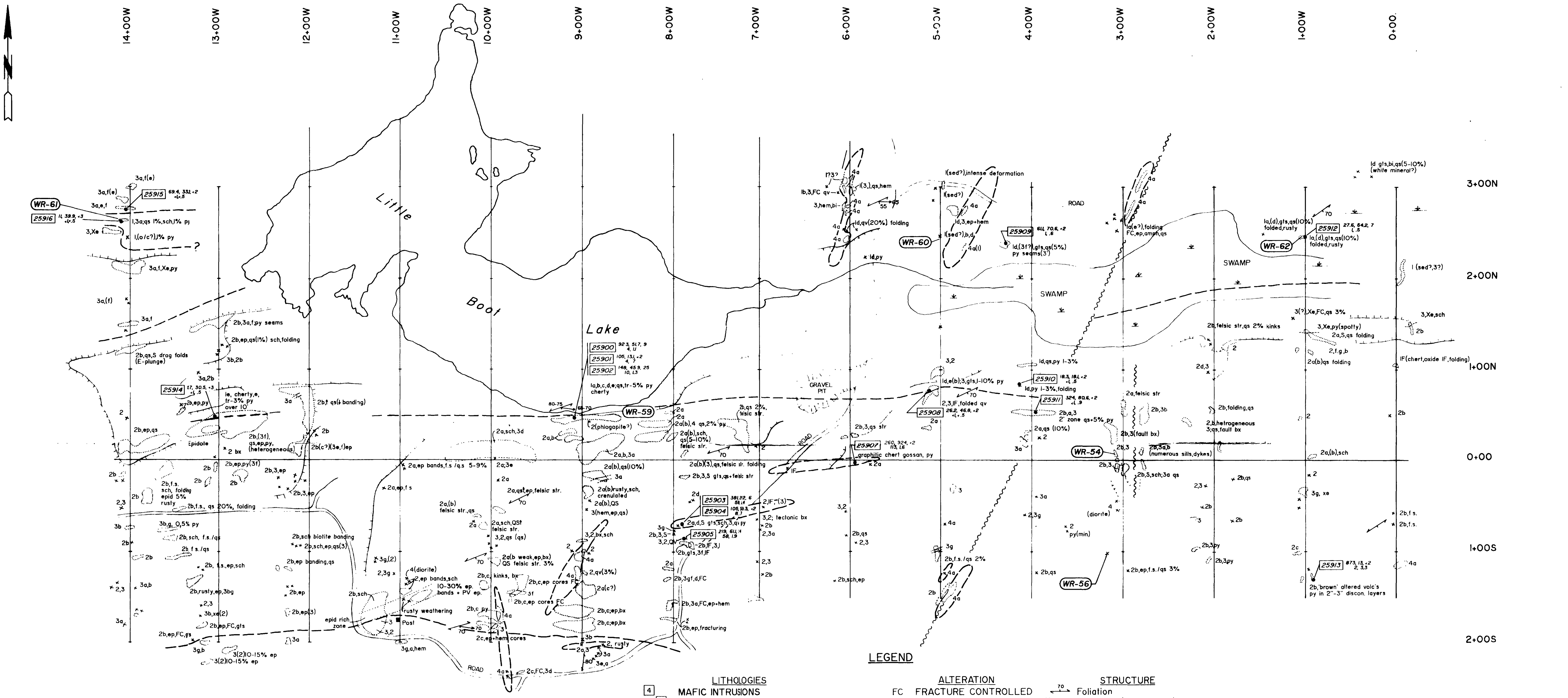
Shipping Weight: Typically 60 kg (135 lbs.), deper ing on quantities of referenc cable and batteries include Shipped in two field/shipping case

Specifications subject to change without notificatic

APEX PARAMETRICS LIMITED

200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612 Cables: APEXPARA TORONTO Telex: [illegible]



LEGEND

LITHOLOGIES

4 MAFIC INTRUSIONS
- 4a DIABASIC (gabbro)

3 FELSIC INTRUSIVE ROCKS
- 3a GRANODIORITE (porphyritic)
- 3b GRANITE, QUARTZ MONZONITE
- 3c GNEISSIC GRANITE
- 3d GRANITIC DYKED + SILLS
- 3e PEGMATITE + APLITE
- 3f AMPHIBOLITE
- 3g DIORITE (trondhjemite/granodiorite)

2 MAFIC METAVOLCANIC ROCKS
- 2a MASSIVE
- 2b GNEISSIC (banding)
- 2c PILLOWED
- 2d ASSIMILATED

IF IRON FORMATION (chert)

1 FELSIC METAVOLCANIC ROCKS
- 1a MASSIVE
- 1b GNEISSIC (banding)
- 1c TUFFACEOUS (possible metasediments)
- 1d QUARTZO-FELDSPATHIC SERICITE SCHIST
- 1e INTRUSIVE PHASE

ALTERATION

FC	FRACTURE CONTROLLED
hm	hematite
mag	magnetite
se	sericite
ep	epidote
si	silica
bi	bleaching
tr	trace
gts	garnetiferous
xe	xenoliths
bx	breccia
sch	schistose
plw	pillowed
porph	porphyritic
f.s.	felsic stringers
qv	quartz veining
qs	quartz stringers

MINERALIZATION

cp	CHALCOPYRITE
py	PYRITE
sp	SPHALERITE

STRUCTURE

- 70 Foliation
- 20 Lineation (with plunge)
- Lithological contact
- Fault (shear)
- Outcrop
- Small outcrop
- Claim post (located)
- Claim number
- 25911 Outcrop sample

SAMPLE NUMBER — 25909 — 64, 70.6, 2, 1, .6 — Cu ppm, Zn ppm, Pb ppm, Ag ppm, Au ppb

WHOLE ROCK SAMPLE NUMBER

WR-59

MULDREW LAKE PROPERTY
DUBLIN TOWNSHIP
SUDBURY MINING DISTRICT ONTARIO

GRID "A" - GEOLOGY

NTS 41 P4/SW
PREPARED BY: E.S.
DRAFTED BY: E.S.
SCALE: 1 : 2500
DATE: JANUARY, 1993

200

H.L.E.M SURVEY
CABLE LENGTH 100 metres
SPACING 25 metres
FREQUENCY 222

INPHASE NUMBERS ——— | OUTPHASE NUMBERS - - - - - -

PROFILE SCALE 1cm = 5%
INSTRUMENTATION APEX PARAMETRICS MAX-MIN II

PERSONNEL D. Patrie, B.Patrie

MULDREW LAKE PROPERTY
DUBLIN TOWNSHIP
SUDBURY MINING DISTRICT

GRID A-HORIZONTAL LOOP EM (222)

SCALE: 1 : 2500
PREPARED BY: E.S.
NTS: 41 P4/SW
DRAWN BY: E.S.
DATE: DEC., 1992

H.L.E.M. SURVEY
CABLE LENGTH 100 metres
SPACING 25 metres
FREQUENCY 1777

INPHASE NUMBERS ——— | OUTPHASE NUMBERS - - - - -

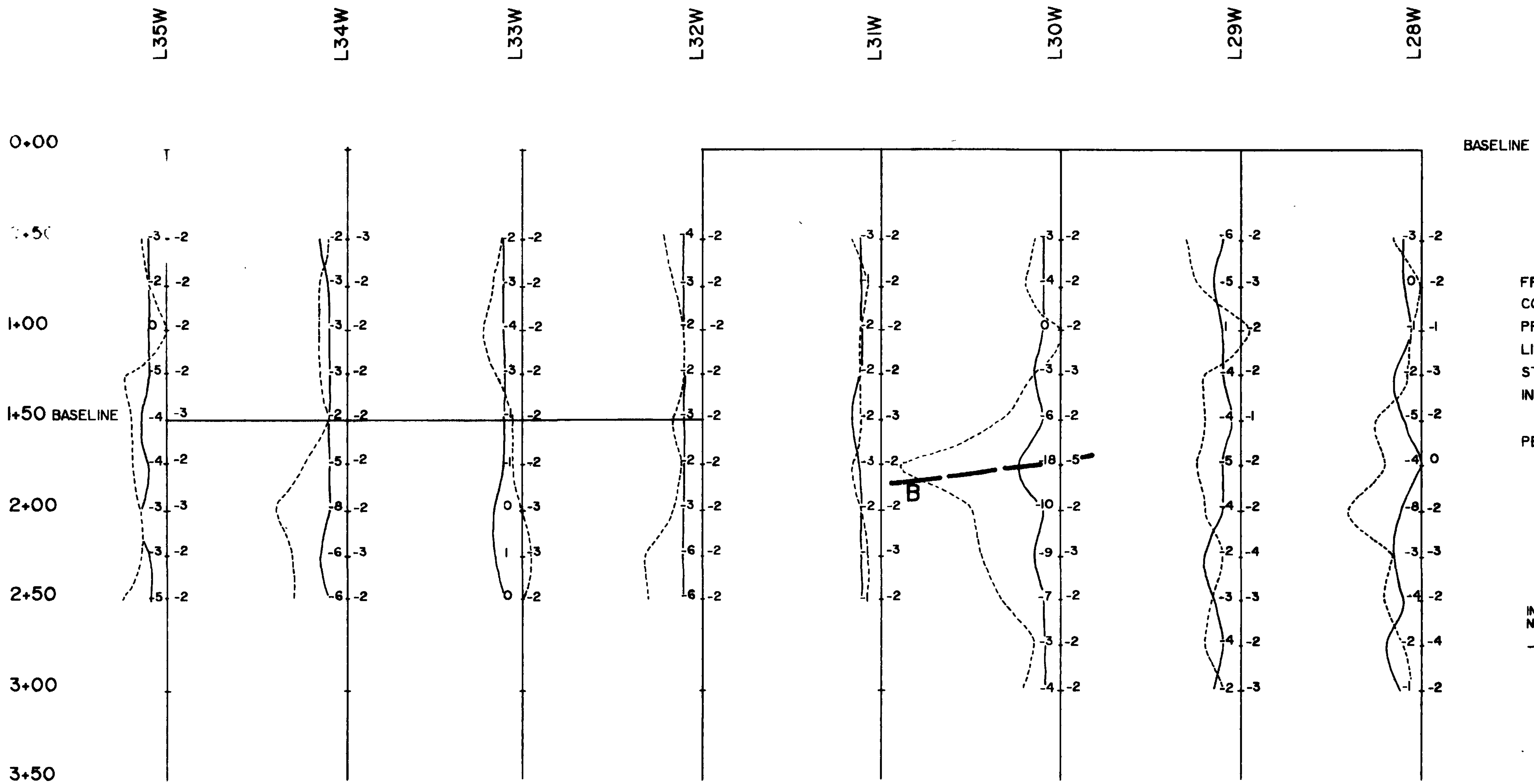
PROFILE SCALE 1cm = 5%
INSTRUMENTATION APEX PARAMETRICS MAX-MIN II

PERSONNEL D. Patrie, B. Patrie

MULDREW LAKE PROPERTY
DUBLIN TOWNSHIP
SUDBURY MINING DISTRICT

GRID A-HORIZONTAL LOOP EM (1777)

SCALE: 1 : 2500
PREPARED BY: E.S. NTS: 41 P4/SW
DRAWN BY: E.S.
DATE: DEC., 1992



LEGEND

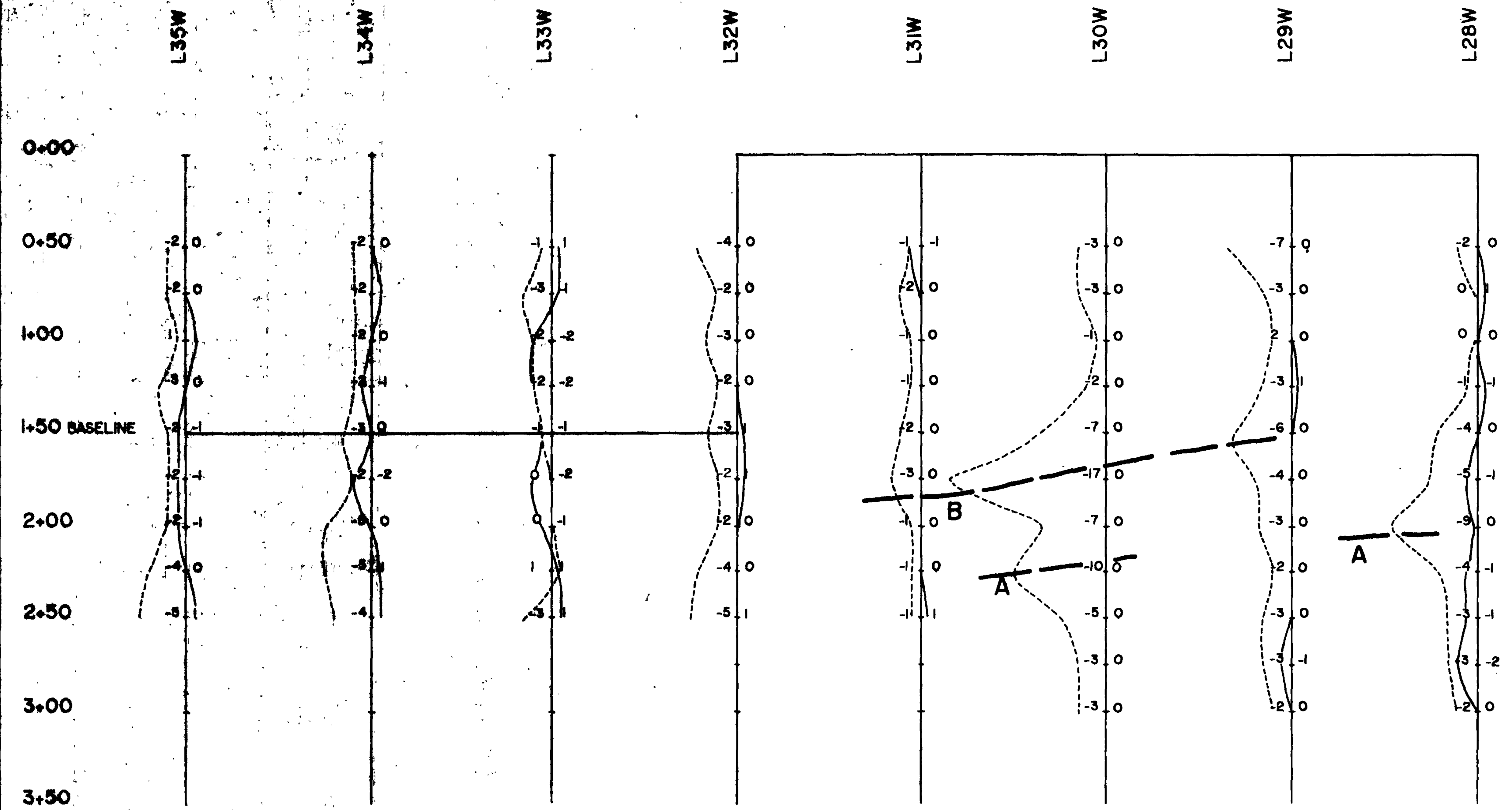
FREQUENCY : 222 Hz.
COIL SEPERATION : 100 Metres
PROFILE SCALE : 1cm = 5%
LINE SPACING : 100 Metres
STATION SPACING : 25 Metres
INSTRUMENTATION : APEX PARAMETRES MAX-MIN II
PERSONNEL : D. Patrie, D. Patrie

INPHASE NUMBERS ——
OUTPHASE NUMBERS ------

MULDREW LAKE PROPERTY
DUBLIN TOWNSHIP
SUDBURY MINING DISTRICT ONTARIO

GRID "B"- HORIZONTAL LOOP EM (222)

SCALE: 1 : 2500
PREPARED BY: E.S. NTS: 41 P4/SW
DRAWN BY: E.S.
DATE: DEC., 1992



LEGEND

FREQUENCY	:	1777 Hz
COIL SEPERATION	:	100 Metres
PROFILE SCALE	:	1cm = 5%
LINE SPACING	:	100 Metres
STATION SPACING	:	25 Metres
INSTRUMENTATION	:	APEX PARAMETRICS MAX-MIN II
PERSONNEL	:	D. Patrie, B. Patrie

INPHASE NUMBERS ——— | OUTPHASE NUMBERS - - - - - -

MULDREW LAKE PROPERTY
DUBLIN TOWNSHIP
SUDBURY MINING DISTRICT ONTARIO

GRID "B" - HORIZONTAL LOOP EM (1777)

SCALE: 1 : 2500
PREPARED BY: E.S. NTS: 41 P4/SW
DRAWN BY: E.S.
DATE: DEC., 1992


LOW WATER LAKE
DUBLIN LAKE
WESTARM OF MULDREW LAKE
EASTARM OF MULDREW LAKE
LEGEND
D.C.P. SAMPLES (outcrop)
D.C.P. SAMPLES (boulder)
WHOLE ROCK SAMPLES
13,35,5 — Cu ppm, Pb ppm, Zn ppm
REVISED DATA
WR-52 TO WR-62
Na2O < 1%
CaO < 1%
Cu Pb Zn geochemical anomaly
MULDREW LAKE PROPERTY
DUBLIN TOWNSHIP
SUDBURY MINING DISTRICT ONTARIO
GEOCHEMISTRY
NTS 41 P4/SW
PREPARED BY: D.M.E.P. & Y.C. REVISED : E.S.
DRAFTED BY: E.P.
SCALE: 1 : 5000
SEPTEMBER, 1991
REVISED : JANUARY, 1993
250