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DIAMOND DRILL REPORT
NESBITT MAHAFFY PROJECT
NESBITT & MAHAFFY TOWNSHIPS
PORCUPINE MINING DIVISION

NTS: 42-A/13
48 53" N
81 20" W

CLAIM MAP #: 3024
CLAIM MAP #: 3546

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January 31, 2000

K. M. Cunnison



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DIAMOND DRILL REPORT
NESBITT MAHAFFY PROJECT
NESBITT & MAHAFFY TOWNSHIPS
PORCUPINE MINING DIVISION

INTRODUCTION

During the period January 12 - January 15, 2000, a 176 metre diamond drill hole was drilled on the Nesbitt-Mahaffy Property to test an HLEM conductor. This report summarizes the results of the diamond drilling program.

LOCATION AND ACCESS

The property is located approximately 45 kilometres north of the city of Timmins (Figure 1) in the Porcupine Mining Division. It is accessed from bush roads off the old Abitibi Camp 40 Road; a detailed description of the access is given at the end of the report.

PROPERTY DESCRIPTION

The property consists of two contiguous claims (Table 1) which are comprised of eight 40 acre claim units, 4 units in Nesbitt Township and 4 units in Mahaffy Township (Figures 1 and 2).

CLAIM #	# OF UNITS	DESCRIPTION	TOWNSHIP
P1207057	4		Mahaffy
P1207058	4	S1/2, Lot 12, Con I	Nesbitt

Table 1: Property Description

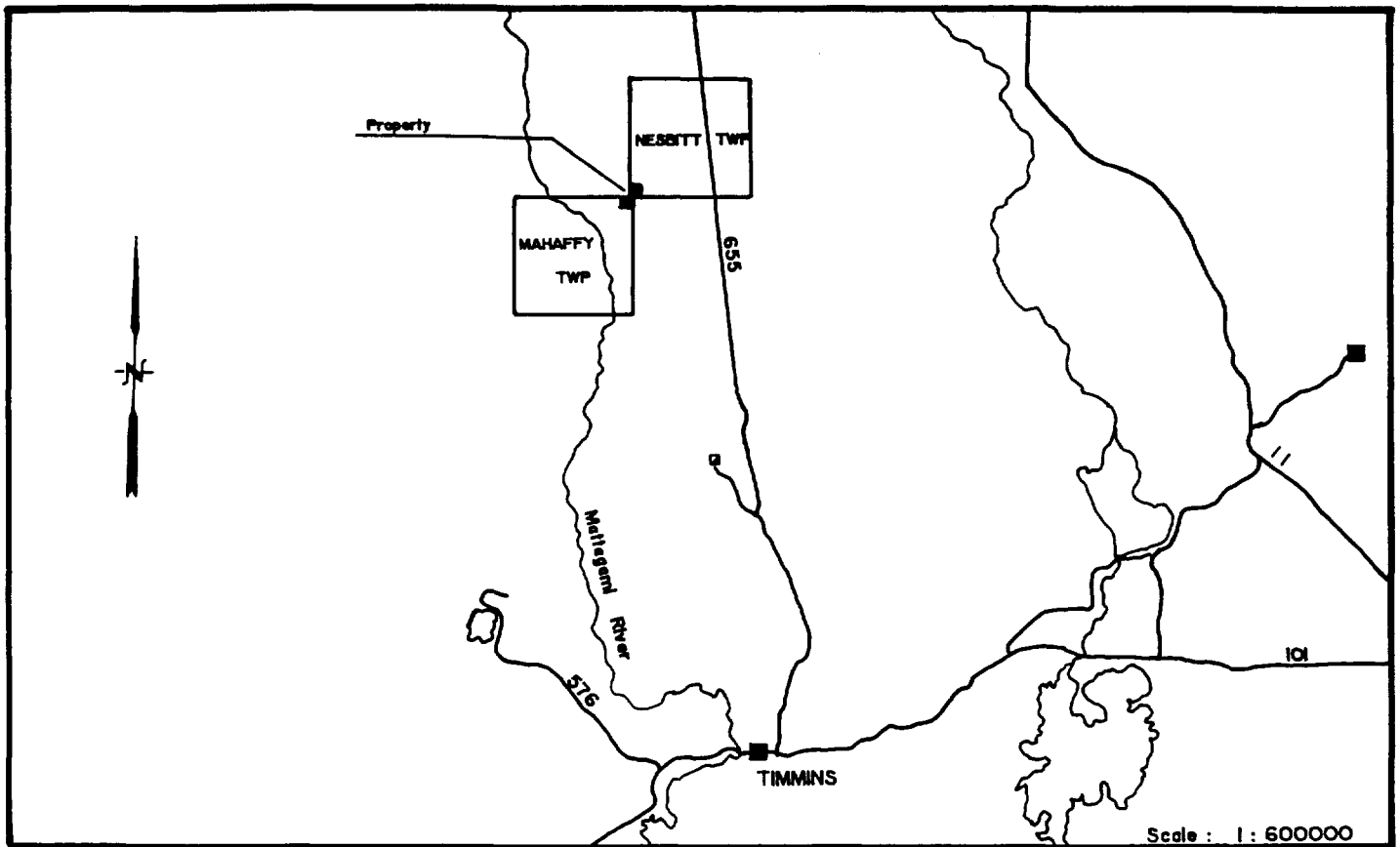


Figure: / : Location Map

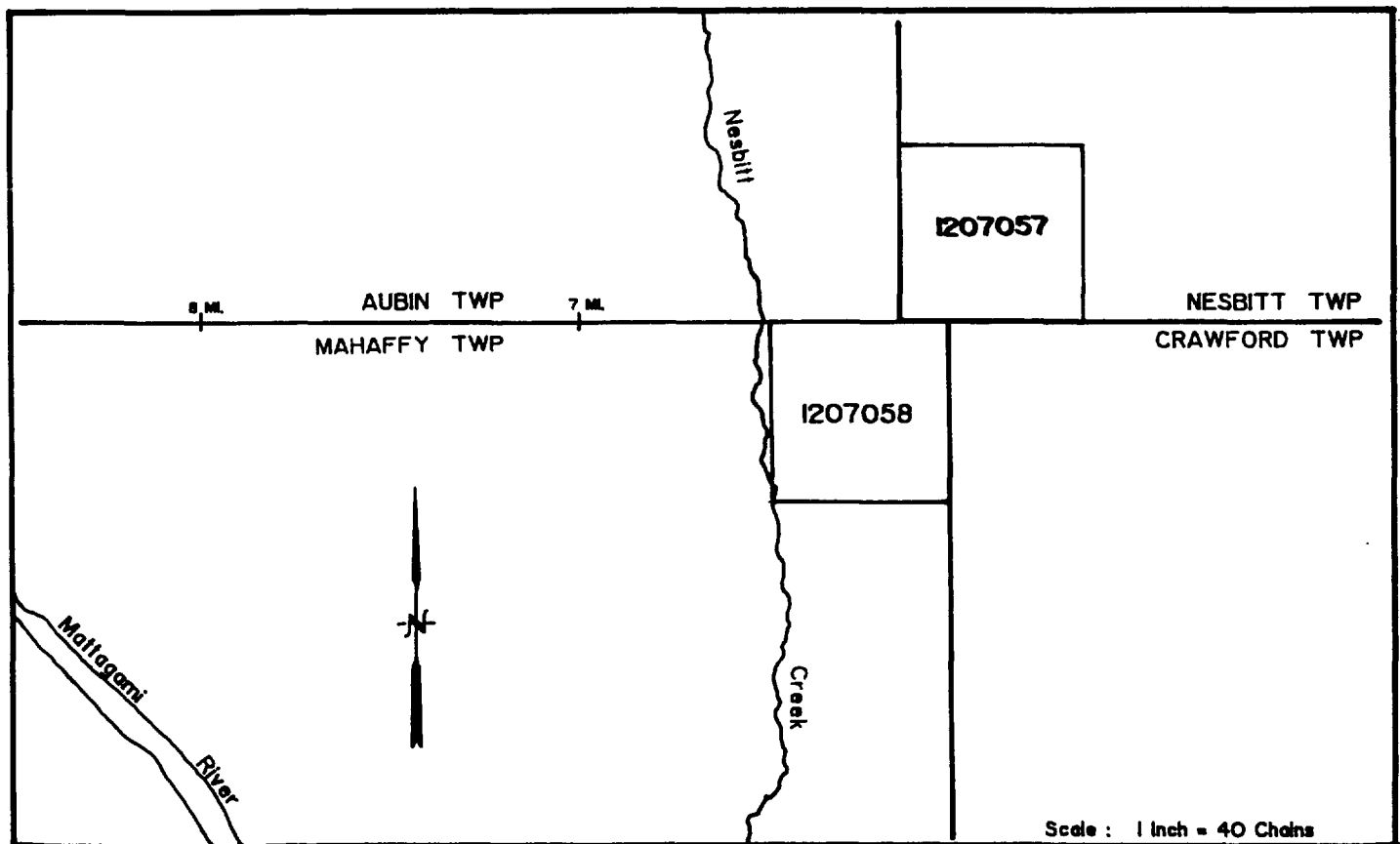


Figure: / : Claim Map

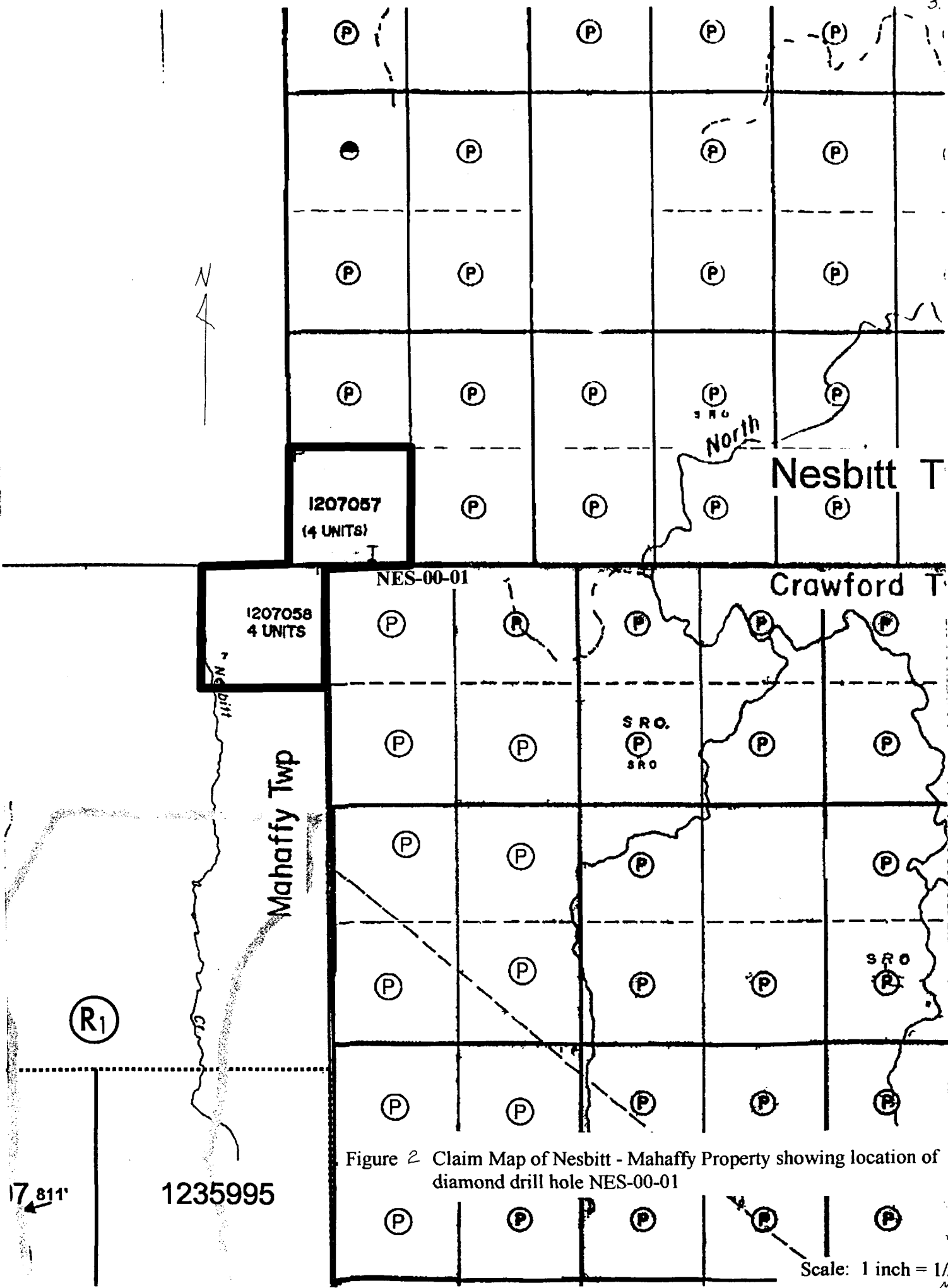


Figure 2 Claim Map of Nesbitt - Mahaffy Property showing location of diamond drill hole NES-00-01

Scale: 1 inch = 1/2 M./e.

GENERAL GEOLOGY

Little is known of the stratigraphic setting of the property due to a general lack of exploration work on the claim group and surrounding area. Two holes, drilled by Temco Mines Limited in 1974, indicate that the claim in Nesbitt Township is mainly underlain by basaltic volcanics and gabbro. Regional interpretation suggests that the rhyolites extending into the south part of the property in Mahaffy Township (Bright and Hunt, 1972) are possibly correlative with the Kidd Creek rhyolites.

PREVIOUS WORK

Other than regional geological compilation maps of the general Timmins area, the only geological maps available for the area are preliminary maps for Mahaffy Township (Bright and Hunt, 1972; Hunt and Maharaj, 1980).

Previous exploration work by other people (Table 2) has been confined to the 4 claim units in Nesbitt Township and consists of the following:

In 1964, Ghislau Mining Corporation Ltd. carried out magnetic and vertical loop electromagnetic (VLEM) surveys along north-south lines spaced every 300 feet. The magnetic survey was run with an Askania vertical field magnetometer and the VLEM survey was run with a Sharpe SE-200 unit. The EM survey detected a number of conductors on the flanks of an east west trending magnetic high anomaly. A horizontal loop EM survey was recommended, however none was undertaken.

In 1965, Canadian Aero Mineral Surveys Limited flew a combined EM and magnetic survey for Cincinnati-Porcupine Mines Ltd. in the northern part of Mahaffy and southern part of Aubin Townships. Part of the survey extended into the southern part of the claims in Mahaffy Township.

YEAR	COMPANY	GEOPHYSICS	DRILL HOLES	ASSESSMENT FILE
1974	TEMCO MINES LIMITED	VLF	75-1,75-2	1681
1965	CINCINNATI PORC. MINES LTD.	AMAG, AEM		
1964	GHISLAU MINING CORP. LTD.	MAG,VLF		829

Table 2: Summary of previous assessment work.

In 1975, Temco Mines Limited conducted a VLF survey and drilled two 500 foot diamond drill holes in the southeast part of claim P1207057, intersecting mainly basalt and gabbro with minor porphyry. One 5 foot section of gabbro, containing disseminated pyrrhotite with minor chalcopyrite, assayed 0.4 percent Cu. Bleaching (silicification?) is reported throughout a 60 foot section of basalt. No conductors were intersected in either of the holes to explain airborne EM anomalies on the property.

In 1988, the Ontario Geological Survey (OGS, 1988) conducted a combined airborne magnetic and electromagnetic survey for the Timmins area, which included the Nesbitt-Mahaffy claim group. The survey was flown along north-south lines spaced approximately every 200 metres.

PREVIOUS OPAP WORK

During December of 1992 and January 1993 a grid was established on the property and magnetic, very low frequency (VLF) and horizontal loop electromagnetic (HLEM) surveys were carried out by the present claim holders (Figure 2).

An east-west base line, designated 0 North, was established along the north edge of Mahaffy Township and the south edge of Nesbitt Township. North-south grid lines were cut every 100 metres and picketed

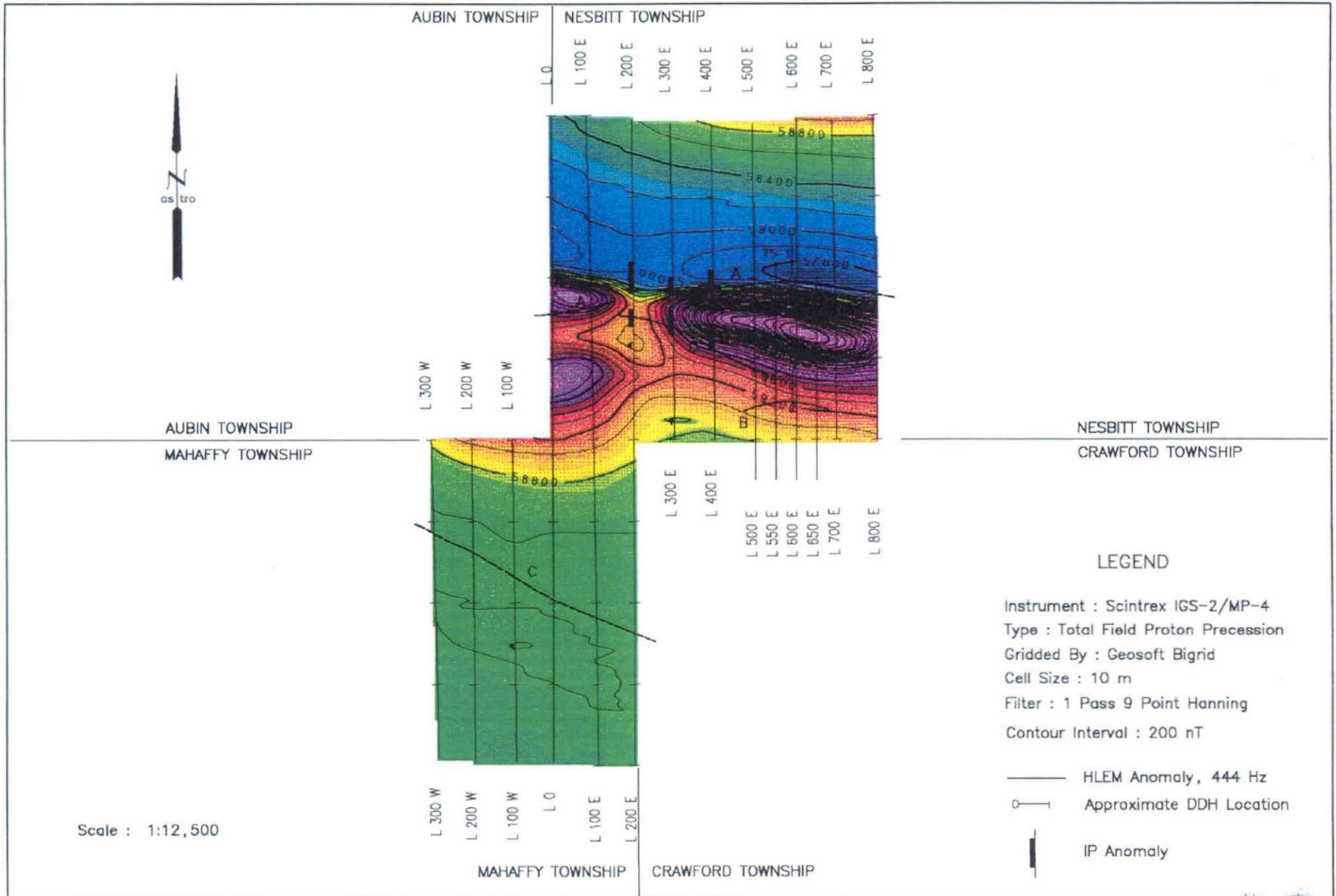


Figure 2 : Compilation of Previous Work

every 20 metres. The base line at 0 North and tie lines at 800 North and 800 South were picketed every 25 metres.

The HLEM survey outlined three bedrock conductors; two holes, drilled in 1975, did not intersect any of the conductors and all three conductors remain good drill targets. In 1994, two additional lines were cut to detail one of the conductors (anomaly 'B') and the lines were surveyed with HLEM.

The claims were subsequently dropped and re-staked in 1997. In 1998, an induced polarization survey was carried out to the west of anomaly 'B' on Lines 200, 300 and 400 East. The purpose of the survey was to map the west extension of conductor 'B' which was not detected in the EM survey. There was no anomaly outlined on strike with anomaly 'B', indicating that the zone has a limited strike length and may not represent a formational graphite conductor. The IP survey did detect mineralization along the southern edge of the ultramafic.

It was proposed for the 1999-2000 OPAP grant that EM anomaly 'B' should be tested with a diamond drill hole. The dip of the source of this anomaly is difficult to determine from the EM profile because the south shoulder of the anomaly is incomplete and the north shoulder is affected by the response from conductor 'A' to the north. EM profiles over conductor 'A' on Lines 0, 100 and 800 East, where they are not affected by other sources, indicate a south dip. The magnetic profile over the ultramafic also indicates a south dip. The fact that Hole 75-2, which was drilled by Temco in 1975, did not intersect a conductor also suggests that conductor 'B' dips to the south. It was proposed that anomaly 'B' be tested by a drill hole which is collared at 0 North on Line 550 East and drilled to the north at a dip of -50 degrees (Figures 3 & 4).

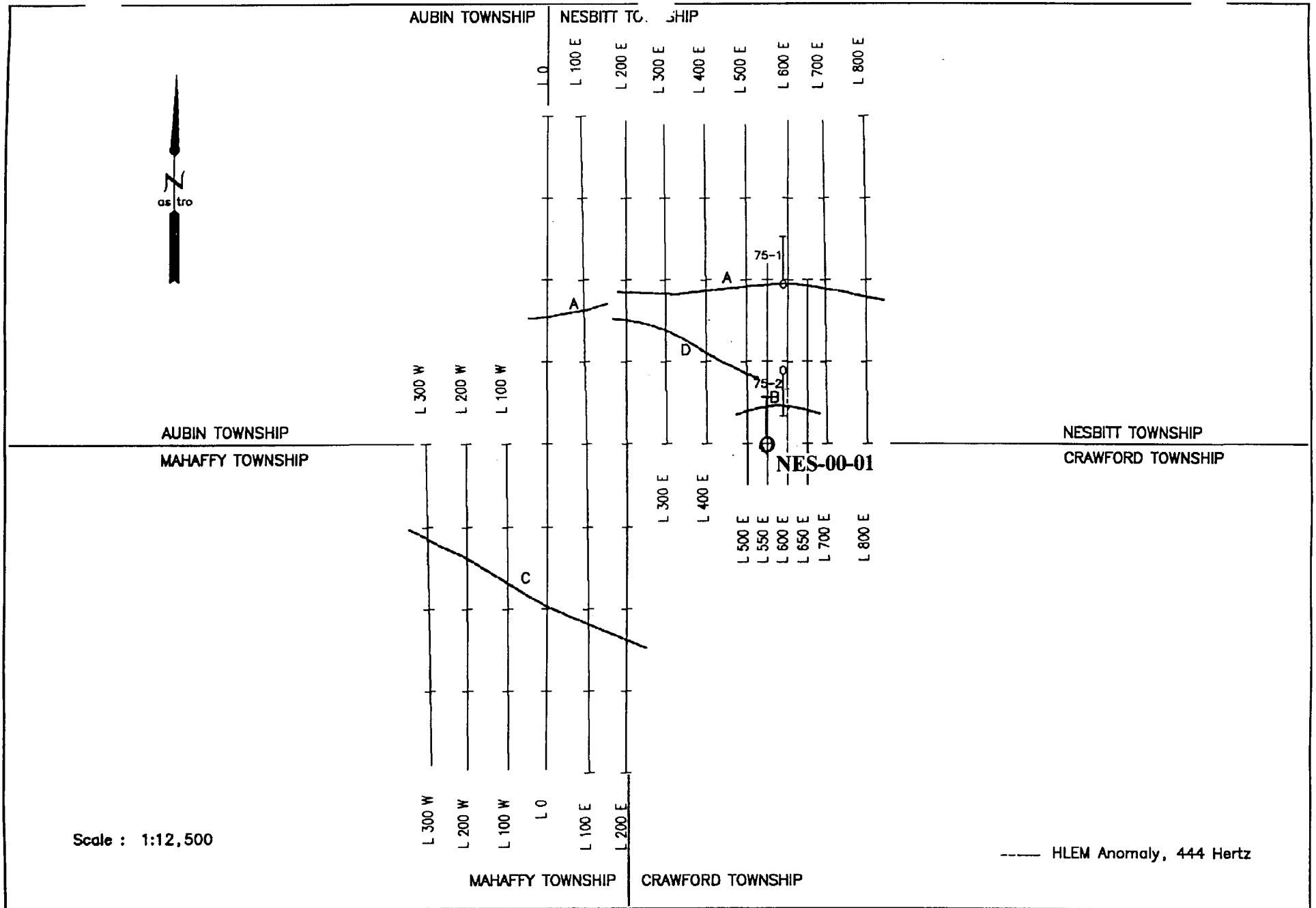


Figure 4. Location of diamond drill hole NES-00-01

SUMMARY AND RECOMMENDATIONS

DDH NES-00-01 (Figure 5) was drilled at 0 North on Line 550 East to test Conductor B for potential base metal mineralization. The conductor is a 10 metre wide gabbro matrixed graphite breccia bearing 5-20% pyrrhotite and 2-10% disseminated pyrite with traces of chalcopyrite. Brecciation of the highly sulphide bearing graphite schist occurred during entrapment within the upper portion of a layered mafic-ultramafic intrusion, whose upper (south) contact is weakly chilled against pillowed, amygdaloidal basalts. A highly feldspathic, 5 metre wide leucocoxene-bearing leucogabbro unit occurs within the upper portion of the layered intrusion, approximately 10 metres downhole from the lower graphite breccia contact. This unit has a sharp but unchilled uphole contact with the surrounding gabbro and contains 10-20% fine interstitial pyrrhotite with 1-4% pyrite and occasional fine traces of chalcopyrite. The leucogabbro is in contact downhole with a 40 metre wide interval of pyroxenite. This unit is moderately to highly sulphide-bearing, containing 5 to 20% fine grained interstitial pyrrhotite, 2-7% pyrite and common traces of chalcopyrite. Interstitial sulphides commonly exhibit a net texture. The last 10 metres of the drill hole intersected fine grained, highly serpentinized, massive peridotite-dunite with trace to locally 3% interstitial pyrrhotite and minor pyrite.

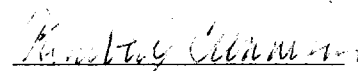
Magnetic susceptibility readings were taken every 0.33 metres throughout the entire drill hole. Readings, which are dimensionless and are calibrated in CGS units, were averaged every metre (ie three readings averaged per metre). High magnetic susceptibility readings were found to correlate well with higher percentages of pyrrhotite in the core (see Figure 6).

43 assay samples were taken from DDH NES-00-01. Assay results are appended to this report. All samples were assayed for copper and nickel, and selected samples were assayed for zinc and gold. In addition, 8 samples were analyzed for platinum and palladium. The graphite breccia was found to contain

significantly anomalous zinc (181 - 727 ppm), copper (266 - 535 ppm), nickel (157 - 606 ppm) and gold (nil to 51 ppb) over its entire width. The sulphide-bearing pyroxenite was sampled continuously for 19 metres from its uphole contact. The pyroxenite was found to contain quite anomalous nickel (133 - 1210 ppm) and copper (92 - 493 ppm) values over the entire interval sampled. One six metre wide assay interval (1.2 m wide samples) consistently returned nickel values over 1000 ppm (1030 - 1210 ppm) and anomalous copper values (343 - 493 ppm). None of the eight samples analyzed for platinum and palladium were found to contain these elements in detectable amounts.

The drilling suggests that part of a large layered mafic-ultramafic complex underlies much of the south half of claim P 1207057 in Nesbitt Township. The upper gabbroic phases of this intrusion are interpreted to have intruded a highly carbonaceous and sulphide-bearing graphitic schist unit. The ubiquitous presence of nickeliferous pyrrhotite and traces of chalcopyrite within the pyroxenitic unit encountered immediately below the gabbro suggests a favourable environment for nickel and possible platinum group element mineralization. On this basis, further drilling is warranted.

January 31, 2000


Kimberly M. Cunnison, Bsc, FGAC

REFERENCES

BRIGHT, E.G. and HUNT, D.S.

1972: Mahaffy Township; Ontario Department of Mines and Northern Affairs, Prelim Map P.740, scale 1 inch to 1/4 mile.

HUNT, D.S. and MAHARAJ, D.

1090: Mahaffy Township; Ontario Geological Survey, Prelim Map P.740 (rev), scale 1 inch to 1/4 mile.

ONTARIO GEOLOGICAL SURVEY

1988: Airborne Electromagnetic and Total Intensity Survey, Timmins Area, *Mahaffy Township*, Districts of Cochrane and Timiskaming Ontario; by Geoterrex Limited, for Ontario Geological Survey, Geophysical/Geochemical Series *Map 81045*. Scale 1:20,000. Survey and compilation from March 1987 to October 1987.

1988: Airborne Electromagnetic and Total Intensity Survey, Timmins Area, *Nesbitt Township*, Districts of Cochrane and Timiskaming Ontario; by Geoterrex Limited, for Ontario Geological Survey. Geophysical/Geochemical Series *Map 81038*. Scale 1:20,000. Survey and compilation from March 1987 to October 1987.

Access to Mahaffy/Nesbitt Property

mileage

- 0. Country Style Donut Shop at junction of Highways 655 & 101 - head north along Highway 655.
- 22.0 Km Junction of Kidd Creek Minesite road and Highway 655 - turn right and continue north along 655.
- 40.4 Km Hydro Dam road - turn left heading west.
- 43.3 Km Old Abitibi Camp 40 Road - stay to right heading north.
- 44.3 Km Site of the old Camp 40.
- 45.4 Km Turnoff to Hydro Dam - keep going north on Camp 40 Road. In the winter a snowmobile must be used beyond this point.
- 45.7 Km 'Y' in the Camp 40 road - keep to the left heading west. In summer a 4-wheel drive vehicle is recommended beyond this point.
- 51.0 Km Junction with smaller logging road - turn right onto this road heading north.
- 53.0 Km As far as you can drive in the summer, at 200 South, 200 West on established grid. East west bush roads at approximately 200 and 400 North allow access to the east side of the property in the winter by snowmobile.

NES-00-01
@ L5+50 E, 0+00N

HLEM Conductor 'B'

overburden

casing

projection of
graphite schist breccia conductor

75 m

pillowed, amygdaloidal
mafic volcanics

gabbro

gabbro matrixed
graphite schist breccia

gabbro

leucogabbro



sulphide zone

150 m

pyroxenite

dunite
EOH

176 m

-  Foliation to core axis
-  Angle of lithological contact

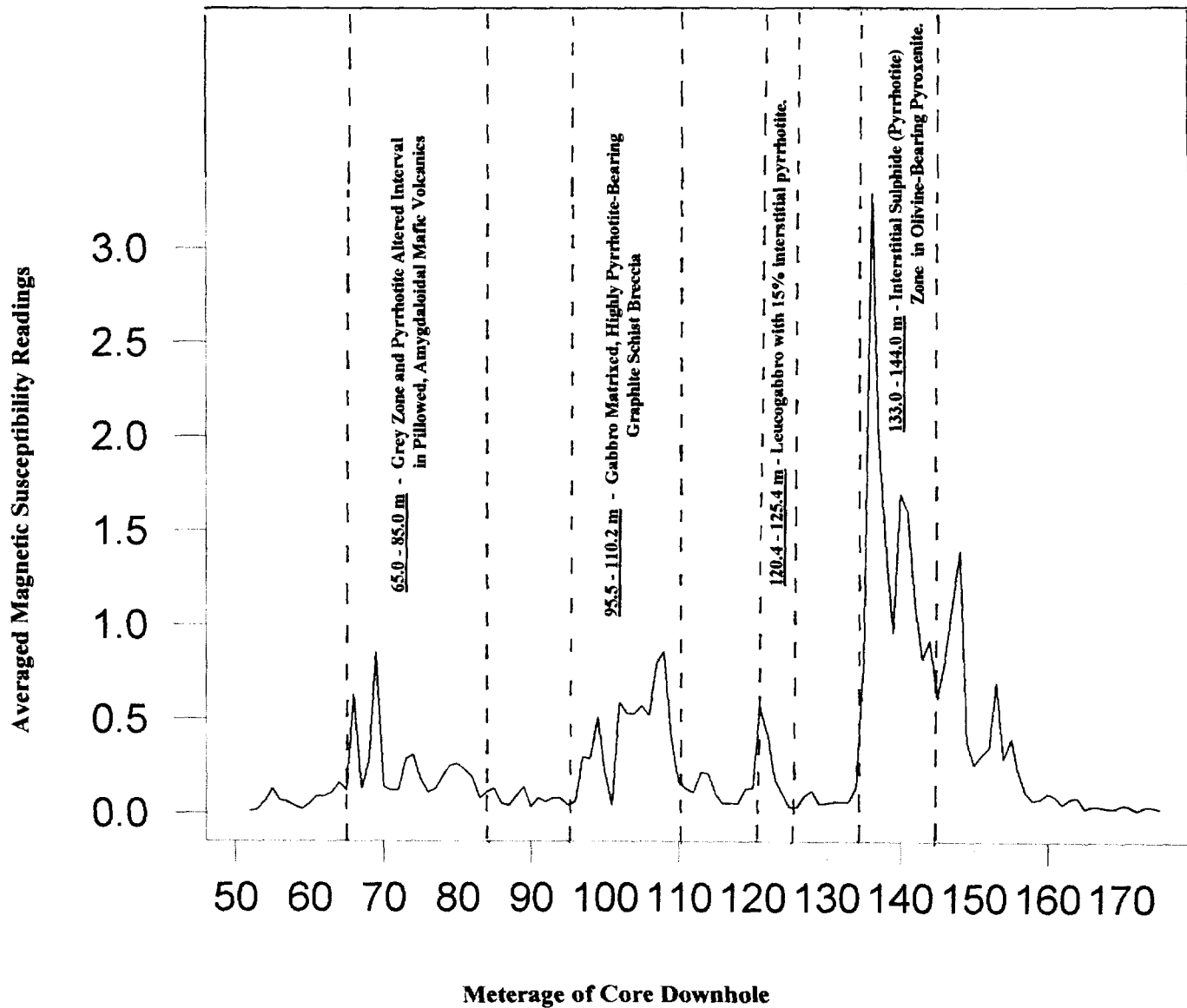
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DDH SECTION 5+50E

looking west
DDH NES-00-01

Scale 1 : 1000 1 cm = 10 metres

Figure 5



Average Magnetic Susceptibility Readings for DDH NES-00-01

Readings Were Taken Every 0.33 Metres and Averaged over 1 Metre Intervals

Figure 6

Diamond Drill Hole NES-00-01

Location	Nesbitt Township, Porcupine Mining Division
Mining claim	P 1207057 (South half of Lot 12, Concession 1)
N.T.S.	42A/NW
Contractor	Bradley Bros. Limited
Co-ordinates	L 5+50E, 0+00N
Started	January 12, 2000
Stopped	January 15, 2000
Collar Azimuth	360 degrees
Collar Dip	-50 degrees
Core Size	BQ
Length of Hole	176 metres
Casing Depth	49 metres
Logged by	K. Cunnison
Core stored at	Keefer Township, Big Star Lake

Down Hole Data (Acid Test)

Test depth: 50 m
Angle etched on tube: 58 degrees
Corrected angle of inclination: 49 degrees

Test depth: 125 m
Angle etched on tube: 60 degrees
Corrected angle of inclination: 51 degrees

Summary: The hole was drilled to test Conductor B for potential base metal mineralization. The conductor is a 10 metre wide gabbro matrixed graphite breccia bearing 5-20% pyrrhotite and 2-10% disseminated pyrite with traces of chalcopyrite. Brecciation of the highly sulphide bearing graphite schist occurred during entrapment within the upper portion of a layered mafic-ultramafic

(cont...)

DDH NES-00-01 Summary (cont...)

intrusion, whose upper (south) contact is weakly chilled against pillowed, amygdaloidal basalts. A highly feldspathic, 5 metre wide leucocoxene-bearing leucogabbro unit occurs within the upper portion of the layered intrusion, approximately 10 metres downhole from the lower graphite breccia contact. This unit has a sharp but unchilled uphole contact with the surrounding gabbro and contains 10-20% fine interstitial pyrrhotite with 1-4% pyrite and occasional fine traces of chalcopyrite. The leucogabbro is in contact downhole with a 40 metre wide interval of pyroxenite. This unit is moderately to highly sulphide-bearing, containing 5 to 20% fine grained interstitial pyrrhotite, 2-7% pyrite and common traces of chalcopyrite. Interstitial sulphides commonly exhibit a net texture. The last 10 metres of the drill hole intersected fine grained, highly serpentinized, massive dunite with trace to locally 3% interstitial pyrrhotite and minor pyrite.

Magnetic susceptibility readings were taken every 0.33 metres throughout the entire drill hole. Readings, which are dimensionless and are calibrated in CGS units, were averaged every metre (ie three readings averaged per metre). High magnetic susceptibility readings were found to correlate well with higher percentages of pyrrhotite in the core (see Figure 6).

43 assay samples were taken from DDH NES-00-01. Assay results are appended to this report. All samples were assayed for copper and nickel, and selected samples were assayed for zinc and gold. In addition, 8 samples were analyzed for platinum and palladium. The graphite breccia was found to contain significantly anomalous zinc (181 - 727 ppm), copper (266 - 535 ppm), nickel (157 - 606 ppm) and gold (nil to 51 ppb) over its entire width. The sulphide-bearing pyroxenite was sampled continuously for 19 metres from its uphole contact. The pyroxenite was found to contain quite anomalous nickel (133 - 1210 ppm) and copper (92 - 493 ppm) values over the entire interval sampled. One six metre wide assay interval (1.2 m wide samples) consistently returned nickel values over 1000 ppm (1030 - 1210 ppm) and anomalous copper values (343 - 493 ppm). None of the eight samples analyzed for platinum and palladium were found to contain these elements in detectable amounts.

Nesbitt Township Property

Diamond Drilling Log for DDH NES-00-01

OPAP 1999 - 2000

0.0 - 49.0 m

Casing in Overburden

49.0 - 53.0 m

Likely Boulders Drilled at Bedrock Interface- very large

At the beginning of the first box of drill core, there are two core meterage blocks labelled NW49 and NQ 49. The 50 metre block is 0.3 metres downhole from the NW and NQ 49 metre blocks. The 53 metre block is 2.0 metres downhole from the 50 metre block.

The core is moderately blocky from 49 metres until approximately 54 metres. From 53.0 - 53.15 metres, the rock is very soft, green and crumbly.

2.52 metres of measured core between the 56 and 59 metre blocks.

From 49.0 - 53.0 m - interval is fine grained, pale greenish buff in colour, quite hard, mafic to intermediate volcanics (?). Moderately banded, with moderate to strong pervasive and fracture filling bleaching/zoisite alteration. 10-15%, 0.5-3.0 cm wide creamy buff zoisite veins, often pitted with minor seams of pyrite, generally trending at 50-85 degrees to the core axis.

From 50.5 - 53.0 m - moderately bleached and banded; 15% pitted zoisite veins; zone contains 5% to locally 50%, 0.5 -2.0 mm sized anhedral disseminated "clots" of a very dark green to black, hard mineral (amphibole?). The heterogeneous distribution of amphibole clots forms vague dark "clotted bands" from 1 to 5 cms in width, which are generally diffuse and trend at 50 -60 degrees to the core axis.

53.0 - 92.04 m

Amygdaloidal and Pillowed Mafic Volcanics

Amygdaloidal, pillowed mafic volcanics. Fine grained, medium grey-green in colour, weakly foliated, and commonly containing 2-3% very fine, white disseminated leucoxene. Pillow selvages are generally thin (< 1 cm), filled with zoisite + calcite + chlorite and, increasing down hole, containing significant pyrrhotite. The rock within 1 to 2 cms of zoisite altered selvages is weakly pervasively bleached. Minor thin zoisite filled fractures throughout. Amygdules are not abundant (< 5%), are moderately elongate, 2-6 mm in length, and are filled with zoisite + minor calcite +/- pyrrhotite.

(cont...)

DDH NES-00-01 (cont...)

Weak pervasive calcite alteration throughout, with minor granular grey-white calcite-quartz veinlets from 0.5-3.0 cm in width, trending at 30 - 45 degrees to the core axis. Trace to 1% fine disseminated pyrrhotite in veins near vein margins.

From 54.95 - 57.90 m - darker green, non bleached, more massive interval with 5 % fine disseminated leucoxene - possible mafic dyke (?) - contacts broken.

From 64.0 - 84.0 metres - Carbonaceous in situ fracture brecciated zone with moderate to strong pyrrhotitic alteration of pillow selvages and amygdules.

From 65.0 - 84.0 m - Weak to moderate grey zone alteration with pyrrhotite mineralization developed in pillowed, amygdaloidal basalt.

At 65.0 m - core becomes greyer in colour (medium grey-buff), with a weak to moderate intensity of thin, irregular, in-situ brecciation fractures. Fractures are 0.5 to 5 mm in width and are filled with fine grained, dark grey, hard, carbonaceous-siliceous material, and contain 1 to 10% fine grained, magnetic pyrrhotite. Pillow selvages in this interval are commonly pyrrhotite bearing. 0.5 to 3.0 cm wide bands of massive to semi-massive, fine grained pyrrhotite fill moderately zoisite and calcite altered pillow selvages trending at 55 - 70 degrees to the core axis. Traces of chalcopyrite are commonly observed associated with pyrrhotite in this zone. Chalcopyrite occurs as fine grained to patchy irregular blebs, seams and stringers (from 0.2 - 7 mm in length) at the margins of pyrrhotite altered pillow selvages and fractures, and as fine intergrown patches within the pyrrhotite. 2-5 cm wide margins to pyrrhotite-bearing pillow selvages are commonly highly bleached (zoisitic). Fine, planar cooling cracks within pillows commonly contain pale yellow-grey zoisite(?) + quartz. The zone is cut by minor zoisite fractures and veinlets and minor pale grey, planar, granular textured calcite-quartz veinlets.

From 65.96 - 66.0 m - 4 cm wide band containing 70% fine bands to locally massive pyrrhotite in pillow selvage. 7 mm long fine fracture filled with chalcopyrite cuts the downhole margin of the pyrrhotite band.

From 67.5 - 67.8 m, 73.05 - 73.55 m - 10-15% black, siliceous, carbonaceous in situ brecciation fractures contain 5-10% pyrrhotite and traces of chalcopyrite.

At 69.3 m - 2 cm wide band of semi-massive pyrrhotite in pillow selvage trends at 65 degrees to the core axis. A 2 mm wide and 1 cm long seam of chalcopyrite borders the uphole margin of the pyrrhotite band.

(cont...)

From 69.66 - 69.72 m - 4.5 cm wide band of layered, massive to semi-massive pyrrhotite in pillow selvage trending at 70 degrees to the core axis. Traces of chalcopyrite in the margins of the pyrrhotite band.

From 71.26 - 71.33 m - 7 cm wide pillow selvage contains a 3 cm wide very siliceous, pale creamy white alteration band trending at 80 degrees to the core axis. The siliceous alteration band is cut by several, 0.7 -1.5 cm wide bands of massive pyrrhotite. Several 2-4 mm long fractures filled with chalcopyrite occur in and bordering the pyrrhotite at 71.28 m. (*Photograph 1*)

At 74.06 m, 74.95 m, 77.25 m, 78.0 m, 78.13 m, 80.10 m, 80.90 m, 81.40 m, 81.50 m, 82.35 m - 0.5 to 2 cm wide pillow selvages or in situ brecciation fractures containing semi-massive to massive pyrrhotite. All have traces of chalcopyrite as fine patchy to streaky intergrowths in pyrrhotite or as fine seams in the margin of the pyrrhotite bands. Pyrrhotite bands trend at 50-85 degrees, averaging 60-65 degrees to the core axis.

81.35 - 81.55 m - 4-5 mm clot of coarser chalcopyrite within semi-massive pyrrhotite in pillow selvage.

At 84.0 m - the pillowed volcanic rapidly (over 1 meter) becomes greener in colour and loses the dark grey to black in situ brecciation fracturing. Fine cooling cracks and amygdules are more pronounced, and are pale creamy yellow in colour and very hard. The volcanic appears to be more highly amygdaloidal (5+% amygdules common). The amygdules are weakly elongate, 1-6 mm in length (averaging 2-4 mm) and are cored with greyish-white calcite and minor pyrrhotite, and rimmed by pale creamy yellow zoisite. Pillow selvages generally no longer contain pyrrhotite after approximately 84 metres, although 1-5% pyrrhotite is occasionally observed in localized in situ brecciation fractures. The intensity of in situ brecciation fractures drops off to low-very low. Trace chalcopyrite is common in pyrrhotite-bearing fractures, where they do occur. The intensity of granular grey-white calcite stringers and veins to 1 cm wide increases slightly, but is less than 5-7%. Calcite veins trend at 25 degrees to sub-parallel to the core axis, and are occasionally oxidized, pitted and vuggy.

84.0 - 95.5 m - Trace to locally 4-5% pyrrhotite as fine fracture fillings and diffuse disseminated clots. Higher pyrite percentages generally occur within restricted, brecciated intervals from 10-25 cm in width.

84.3 - 84.7 m - Moderately to strongly bleached zone - highly zoisite altered. The alteration occurs along numerous fine, irregular fractures generally trending at 40-50 degrees to the core axis. Several 0.5 cm wide pyrrhotite bands within this interval are offset along the bleached fractures.

(cont...)

DDH NES-00-01 (cont...)

90.0 - 92.04 m - The rock is a fine grained, amygdaloidal basalt with 5% amygdules up to 1 cm in size. At 92.04 is an intrusive contact (?) although no well developed chilled margin is observed.

92.04 - 95.50 m

Gabbro, Medium to Coarse Grained, Massive (*Photograph 2*)

Chilled (?) contact into massive, medium to coarse grained gabbro. The rock is mottled, medium grey-green in colour and displays a well developed gabbroic texture. The rock contains 40% subhedral plagioclase feldspar (colour index is 60), 50% mafic minerals, now altered actinolite and lesser chlorite, and 1-2% pale blue to mauve anhedral quartz grains from 1-2 mm in size. The gabbro exhibits weak pervasive calcite alteration. The quartz grains are commonly observed coring feldspar aggregates. The gabbro gradationally becomes coarser grained downhole. Trace to very locally 3-4% anhedral, 0.2 - 1.3 cm wide clots of diffuse interstitial pyrrhotite.

At 92.04 m - Poorly developed 1.5 cm wide chilled contact trends at 30 degrees to the core axis. The gabbro rapidly becomes coarser grained away from the contact.

At 92.54 m - Thin seam of fracture filling pyrrhotite trends at 55 degrees to the core axis. Trace fine chalcopyrite in pyrrhotite.

94.45 - 95.50 m - coarsest grained interval (still medium grained) with several 1-3 cm size angular to subrounded inclusions of finer grained basalt. From 95.0 - 95.5 m - 2-3% interstitial pyrrhotite as anhedral, diffuse clots from 0.2 - 2.0 cm in size and as finer disseminations. The sulphide distribution is quite variable. At 95.02 m - 3% pyrrhotite containing traces of chalcopyrite.

At 95.50 m - The downhole contact is occupied by a 4 cm wide quartz-epidote-calcite vein trending at 35-45 degrees to the core axis. The vein is vuggy and fractured. 0.5% blebs of pyrrhotite + pyrite in fine vein fractures and vein margin.

95.50 - 110.20 m

Gabbro Matrixed Graphite Schist Breccia, Highly Pyrrhotite and Lesser Pyrite Bearing (Highly Conductive - Conductor B)

Angular breccia with 30 - 70% highly pyrrhotite bearing graphitic schist fragments, set within a fine to medium fine grained, medium greenish grey leucocratic gabbro matrix. The rock is very dark grey to black and moderately to strongly magnetic where there are a high percentage of graphitic fragments (*Photograph 3*)

30-70% irregular and angular fragments of very dark grey to black,

(cont...)

highly pyrrhotite bearing and moderately magnetic graphite schist. The fragments are very "greasy", soft and highly graphite bearing. Fragments vary in size from < 1 mm to 5-6 cms. Larger fragments appear as 3 mm to 3 cm wide bands (ie very elongate fragments are longer than the core diameter). The percentage of fragments is gradationally variable, with the lowest percentage of fragments occurring near the margins of the breccia. Fragments are strongly (often very finely) foliated to schistose and occasionally exhibit a crenulated to contorted deformation fabric, indicating the graphite was highly deformed prior to brecciation. In some fragments, the foliation planes contain very thin (<0.5 mm) seams of calcite which are contorted along with the foliation in many samples.

A well developed fabric in the breccia trends at 40-70 degrees to the core axis (generally at 50-60 degrees) and is defined by the orientation or imbrication of elongate fragments. In many cases, the internal schistosity of elongate fragments is parallel to the direction of fragment elongation. However, approximately 25% of the fragments exhibit highly contorted schistositities. Near its contacts, the breccia contains a higher proportion of matrix (to 70%), and the fragments are often randomly or chaotically oriented, although weak imbrication of fragments does persist.

Many of the fragments (>85%) are highly pyrrhotite bearing. Most of the pyrrhotite (>95%) is very fine grained, moderately to strongly magnetic, and occurs as fine seams and bands in the fragments, which may reflect primary sulphide layering. The bands are often planar and parallel to the schistosity, but are contorted along with the graphite bands in fragments exhibiting contorted fabrics.

The gabbroic breccia matrix is moderately hard, medium to fine-medium grained, medium greenish grey in colour and exhibits a fine "acicular gabbroic" mottled texture. The gabbroic matrix colour index is 35. The matrix consists of 70% pale grey to pale whitish green (where saussuritized), subrounded to stubby lath shaped plagioclase feldspars, from 0.5 - 2 mm in size, which form a framework. Fine grained, pale to medium green actinolite + chlorite occur interstitial to plagioclase and comprise 10-15% of the breccia matrix. A highly acicular, white to pale green mineral (7%) (actinolite?, rutile?) forms randomly oriented needles to 1.5 mm long which occur interstitial to both the feldspars and mafic minerals.

The matrix contains 2-5% pyrrhotite, occurring as intergranular, irregular, anhedral diffuse clots from 0.2 - 4 mm in size, and rare fine fractures. 10% of the pyrrhotite has been altered to pyrite. Traces of very fine chalcopyrite are observed occasionally throughout the unit, and are generally contained within pyrrhotite in both the clasts and matrix.

(cont...)

Within the matrix, pyrite generally occurs as 0.5 - 7 mm irregular, anhedral diffuse clots which internally have a fine granular texture and are almost always finely pitted. The clots are often weakly to moderately elongate (3:1) parallel to the main breccia fabric, as indicated by imbrication of elongate graphite clasts. Diffuse pyrite clots are confined to the matrix, but often occur at the immediate boundary of graphitic clasts. Less than 5% of the pyrite occurs as extremely fine, thread-like fracture fillings, some subparallel to the main breccia fabric and others cross-cutting the fabric at varying angles. The fractures cut both the clasts and the matrix, and are themselves not folded. Locally there are minor traces of brown, disseminated sphalerite (?), which forms anhedral clots and patches less than 4 mm in size within both clasts and matrix.

From 95.50 to roughly 99.0 m - 30-45% fragments. The percentage of fragments in this interval increases gradationally downhole away from the uphole graphite-gabbro contact.

From 95.85 - 95.90 m - 4 cm wide band (fragment?) of dark grey siliceous chert with very sharp and planar but broken margins trending at approximately 60° to the core axis. A vague, 2-4 mm scale planar fabric is observed in the fragment and trends parallel to the fragment margins. The chert is cut by minor irregular, extremely fine fractures filled with the matrix material. Trace pyrrhotite and pyrite in fractures.

At 96.72 m - 1.5 cm wide medium to pale grey, fine grained quartz vein trending at 55 degrees to the core axis. Trace to 0.5% fine pyrite bands in the vein margins.

From 99.0 - 109.7 m - 50 to 75 or 80% fragments, averaging 60%. Fragments are often moderately to strongly imbricated. The interval is moderately to strongly magnetic.

From 101.00 - 101.30 m - 0.25 metre wide vuggy white quartz-calcite-epidote vein. The uphole vein contact is sheared and planar at 50 degrees to the core axis, and the downhole contact is fractured and broken. White granular calcite occurs as 0.5 cm fracture veinlets in quartz. Vuggy epidote occurs in the vein within 0.07 metres of the uphole and downhole contacts. Trace to 0.5% disseminated pyrite, trace pyrrhotite in vein margins.

At 104.03 m - 1.5 cm wide dike of the medium grey-green matrix material trending at 80 degrees to the core axis. The dyke margins are sharp, but very invaginated and irregular. 2-3% combined very fine disseminated, interstitial pyrrhotite and pyrite.

At 104.47 m - 0.5 to 1.2 cm wide irregular dyke of matrix material (as described above), trending at 75-80 degrees to the core axis.

(cont...)

From 104.96 - 105.15 m - 0.5% chalcopyrite as irregular, 1-2 mm granular blebs and in fine fractures also containing pyrrhotite and pyrite. 5-7% total sulphides in this interval.

At 105.4 m - 1.2 cm wide dyke of matrix material similar to the dyke at 104.03 m, but here is paler grey. The dyke is wavy to irregular and contains <5%, 0.2 to 1.5 mm sized angular inclusions of black graphitic material. Trace very fine disseminated pyrrhotite and pyrite.

From approximately 102.5 - 110.2 m - The graphite breccia is moderately to strongly magnetic, and contains 3 to locally 12-15% pyrrhotite, averaging greater than 5%. Also contains trace to locally 3-4% granular disseminated pyrite clots and bands.

At 102.3 m, 103.55 m, 103.85 m, 104.96-105.15 m, 105.35 m, 105.64 m, 107.50 m, 108.30-108.43 m - Traces (very locally to 0.5 - 1%) of chalcopyrite as fine blebs and seams at the margins of pyrrhotite patches or as fine exsolutions within the pyrrhotite in both the clasts and matrix.

From 108.30 - 108.43 m - 0.5 to 1% chalcopyrite as fine, granular textured fracture fillings. Fractures also contain pyrrhotite and pyrite. 7% total sulphides in this interval.

From 109.7 - 110.2 m - 30-40% fragments. The percentage of gabbro matrix gradationally increases towards the downhole graphite-gabbro contact.

From 109.70 - 109.9 m - 5-10% total sulphides. Pyrrhotite and pyrite in roughly equal amounts. Traces of chalcopyrite. Several 1-2 mm clots of brown sphalerite(?), but may be oxidized pyrrhotite.

From 109.7 - 110.2 m - 7-10% coarser disseminated and fracture filling pyrite, often finely pitted. 5-6% pyrrhotite, trace chalcopyrite and trace sphalerite.

From 109.9 - 110.2 m - many of the clasts in this interval (30%) are very "delicate" and elongate, with length to width ratios of 4:1 to 6:1, and are up to 2 cm in length. 85% of the clasts are moderately imbricated sub-parallel to the breccia fabric (50-60 degrees to the core axis), but 15% of these elongate clasts have a very random, non-systematic orientations (*Photograph 3*)

The downhole contact is sharp, planar and trends at 62 degrees to the core axis.

(cont...)

110.20 - 120.37 m **Gabbro, Medium to Coarse Grained** (*Photograph 2*)

Massive, medium grey-green, generally medium grained gabbro with finer grained gradational zones. The gabbro, with a colour index of 55, contains 50 percent subhedral to anhedral, light grey plagioclase crystals averaging 2-4 mm in size, with rare grains/aggregates to 5+ mm. 35-40% fine grained, dark to medium green actinolite occurs interstitial to plagioclase. Possible 2-3% fine (<1 mm) black, serpentinized olivine (?) grains. Metre scale alternating finer grained and coarser (medium grained) intervals are defined by the percentage and size of plagioclase crystals in the intervals. Coarser grained intervals generally have higher percentages of plagioclase and slightly lower colour indices.

The gabbro is cut by minor (<5%) pale, fine grained, creamy white quartz-zoisite veins. Most veins are 0.2 - 1 cm wide planar fracture fills, and >85% of the veins trend at between 45 and 15 degrees to the core axis. The veins contain trace to 1%, 1-2 mm disseminated clots and bands of pyrrhotite and trace pyrite. The gabbro contains 0.5 - locally 4% weakly to moderately magnetic pyrrhotite and 0.2 - 2.0 mm diffuse intergranular textured clots and discontinuous fine fracture fills, often in zoisite veined and altered intervals.

From 110.20 - 110.26 m - 6 cm wide fine grained chill margin at the uphole gabbro contact trends at 55 degrees to the core axis. At 110.26 m, the chill grades abruptly over 1 cm into medium grained gabbro. 1-2% very fine grained disseminated pyrrhotite and 2-3%, 1-4 mm disseminated clots and discontinuous fracture fills of fine granular pyrite in chilled margin.

110.26 - 112.70 m - Medium grained gabbro interval. Trace to very locally 4% pyrrhotite (eg at 111.9 m), as fine grained, 0.3 - 3.0 mm disseminated intergranular clots which are weakly to moderately magnetic. The pyrrhotite content averages 1.5-2%. Very minor disseminated pyrite. 3-5%, 3 mm to 1 cm wide quartz-zoisite filled fractures with weak pervasive alteration for 1-2 cm on either side of the vein margins

111.12 - 111.48 m - 7 cm wide massive quartz-zoisite-minor chlorite vein trending at 25-30 degrees to the core axis. 10%, 0.2 - 0.5 cm wide cockscomb textured bands of pale cream zoisite and minor seams of chlorite occur at the vein margins and in internal vein fractures parallel to the vein margins. Trace to 1% disseminated pyrrhotite and minor fine seams of pyrrhotite at the vein margins.

At 111.90 m - A 2 cm irregular patch bears 10% fine intergranular pyrrhotite.

(cont...)

From 112.7 - 115.10 m - Fine to medium-fine grained gabbro interval. At 112.7 metres, the grain size rapid gradationally decreases downhole (over 2 cm). Feldspar crystals are up to 2 mm in size. The overall grain size increases downhole in this interval, but there are occasional 4-5 cm wide intervals of alternating finer grained and coarser grained gabbro. Alternation from finer to coarser grain size is generally rapid gradational over 1-3 cms. No well defined crystal layering was observed. 5% zoisite veins (as described above) carry 1-3% fine pyrrhotite clots and bands. The downhole boundary of this interval is arbitrary and is not defined by discernable layering or mineralogical banding.

From 115.50 - 120.37 m - Medium grained gabbro interval, very massive with little veining. Within 15 cm of the downhole contact, the grain size grades from medium to fine-medium grained. No chilled downhole contact. 0.5 to locally 4-5% pyrrhotite as diffuse, intergranular clots from 1.5 - 5 mm in size.

From 118.5 - 119.3 m - Higher percentage of pyrrhotite - 4 to 5%, occurs as described above.

120.37 - 125.35 m - **Leucoxene-Bearing Leucogabbro with 10-15% Interstitial Sulphides**
(*Photographs 4 and 5*)

The leucogabbro is massive, medium to pale grey-green in colour with a mottled gabbroic texture and medium to coarse grained. The colour index is 20. 70% feldspar occurs as subhedral, grey to white crystals from 1-5 mm in size, often forming clotty aggregates. 10-15% fine grained shreddy to acicular, medium green actinolite occurs as seams and grain aggregates interstitial to the framework feldspars. 3-5% leucoxene is enclosed within the mafic material and occurs as 0.2 - 1.2 mm, very pale whitish-grey anhedral grains. 3-4% very fine granular calcite occurs as pervasive alteration of interstitial mafic material and along fractures in feldspar grains. 10-13% (to very locally 15+%) granular, fine grained pyrrhotite occurs as 2-10 mm, irregular bands and patches within the mafic material interstitial to feldspars. The highest percentages of sulphide occur in the upper two-thirds of the unit; after this the percentage gradually decreases downhole. Minor traces of very fine chalcopyrite occur throughout (eg at 120.80 m and 121.5 m).

The uphole contact of the leucogabbro is sharp and wavy at 20-30 degrees to the core axis, but is not chilled on either side of the contact (*Photograph 4*). The leucogabbro may have been injected into the "normal" gabbro as a more fractionated crystal mush. The leucogabbro is somewhat coarser grained within 0.2 metres of the uphole contact.

(cont...)

From 121.60 - 122.08 m - two, 4-5 cm wide, fractured quartz-zoisite-calcite veins trend at 20-30 degrees to the core axis. The vein from 121.89 - 122.08 metres contains 5-7% pyrrhotite as discontinuous seams along internal vein bands/fractures. Pyrrhotite occurs along the margins of 2-4 mm wide zoisite veins, which occur as crack-seal fills within the quartz vein.

From 124.00 - 124.50 m - 1.5 cm wide wavy to irregular grey quartz-zoisite-chlorite-minor calcite vein trends subparallel to the core axis. Vein margins are moderately sheared and highly chloritized, and contain 4-5% coarse anhedral pyrrhotite clots and traces of fine cubic pyrite.

After approximately 124.20 - The percentage of sulphides drops off rapidly to less than 1% to very locally 2%.

At 124.92 m - 2 cm wide interval with 2% intergranular pyrrhotite and several coarse blebs of chalcopyrite.

From 124.93 - 125.05 m - The core is quite rubbly, broken, therefore it is very difficult to determine the downhole contact of the leucogabbro unit.

From 123.95 - 124.95 m - At 123.95 metres, the rock begins to get finer grained. Approximately 50% of this interval is fine grained, dark green, with 1-3% very fine, disseminated white leucoxene. The remaining 50% of the rock in this interval is medium-coarse grained, feldspar-rich leucogabbro, as described above. The alternating finer and coarser grained intervals define a vague layering, the contacts of which trend approximately at 45 - 50 degrees to the core axis. Transition zones between coarser and finer grained material occur at 123.75 m, 124.90 m and 124.95 m. At 124.90, there is a rapid gradational planar "contact" from finer grained to coarser grained rock. At 124.95 metres there are several very large euhedral feldspar crystals, 8-10 mm in size. After 124.95, no macroscopic feldspar crystals are observed in this unit.

From 124.95 - 125.36 m - The rock is fine grained, dark green with no visible feldspar crystals, but contains 2-3% fine disseminated white leucoxene. Traces of pyrrhotite. The downhole contact from 125.26 - 125.36 is very rubbly and broken.

125.36 - 165.90 m

Medium Grained, Olivine-Bearing Pyroxenite, Highly Altered and Sulphide-Bearing (*Photographs 6 and 7*)

Massive, medium grained olivine-bearing pyroxenite. The rock is very dark green-grey to black in colour, highly altered to serpentine-tremolite-lesser talc, with 10-15% white to pale grey mottling due to patchy

(cont...)

pervasive calcite+ talc alteration. 2-10% olivine (averaging 5% ?) occurs as 1 - 3 mm size black, highly serpentinized, subrounded to rounded grains throughout the unit. Generally 5-10%, 3-5 cm wide planar, whitish green, soft, talc-carbonate+/quartz veins, most often trending at 35 - 40 degrees to the core axis. Occasional 0.5 - 2.0 metre wide intervals are more strongly in situ fracture brecciated and altered, containing 10 to locally 40% irregular, thin talc-carbonate-minor quartz veins.

The pyroxenite contains from 3 - locally 20% fine grained, moderately to strongly magnetic, granular textured interstitial pyrrhotite, occurring between highly altered pyroxene and olivine grains and grain aggregates. The sulphide often exhibit moderately well developed net textures (eg from 134 - 135 m). The percentage of pyrrhotite is highly variable within the unit, but probably averages 5-10%. The pyroxenite itself is very weakly magnetic, and therefore magnetic susceptibility readings taken across this unit are very useful for estimating the percentage of interstitial pyrrhotite. Intervals with higher magnetic susceptibility readings contain higher percentages of pyrrhotite, which is corroborated by visual estimates. Trace to 3% pyrite, as fine to medium grained clots and patches replacing pyrrhotite occurs throughout, with higher percentages in more highly veined and brecciated intervals. Fine flecks and minor seams of chalcopyrite are commonly observed within pyrrhotite throughout the pyroxenite, although the percentage is low (nil to < 0.5% very locally).

From 125.36 - 126.50 m - The interval is finer grained, medium grey-green in colour. From 126.50 through 127.0 metres there is a very gradational increase in grain size downhole, and the core becomes darker grey-green to black in colour. 1-3% very fine grained, patchy, interstitial pyrrhotite containing very minor flecks of fine chalcopyrite.

From 134.0 - 144.0 m - Main sulphide-bearing zone (*Photographs 6 and 7*). 4% to locally 15-20% interstitial pyrrhotite, averaging 5-10%. Trace to 3% pyrite and very minor blebs and seams of chalcopyrite. Moderate to high magnetic susceptibility readings of 0.14 to 3.3 From 135.5 - 142.2 m - Interval contains 10-20% pyrrhotite, averaging 13 - 15%. Trace to 3% pyrite, trace to very locally 0.5% fine chalcopyrite in pyrrhotite.

At approximately 144.5 m - the percentage of sulphides decreases to an average of <1-2%, although occasional 1-5 cm intervals contain up to 5% sulphides (eg at 146.5 m, 146.65 m)

From 145.60 - 146.70 m - moderately to strongly fractured, with 15-20% irregular, pale greenish white veins of talc+tremolite+carbonate.

(cont...)

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From 158.0 - 158.40 m - 4-5% interstitial fine pyrite, < 0.5% pyrite in pyrrhotite and trace chalcopyrite(?) - not assayed.

165.90 - 176.0 m

Fine to Medium Grained Massive Peridotite-Dunite

The peridotite-dunite is very massive, weakly magnetic, fine to medium grained, medium to dark greyish green in colour and highly altered to serpentine + tremolite. The rock has a very felty texture on core ends, and contains 50+%, 0.5 - 2.5 mm, black, subrounded to rounded, highly serpentinized olivine grains. The percentage of olivine is difficult to estimate due to the strong serpentine-tremolite alteration. The unit is cut by very minor talc-carbonate slips and fractures generally trending at 40-45 degrees to the core axis. Trace to locally 2% very fine disseminated pyrrhotite and traces of fine pyrite.

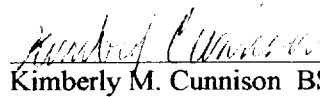
At 165.0 m - very rapid gradation (over 2 cm) downhole into the finer grained peridotite-dunite unit.

From 166.3 - 166.7 m - Core is very rubbly and broken, with several 0.5 cm wide seams of fine, white fault gouge material.

176.0 m

End of Hole. The casing was pulled.

January 31, 2000

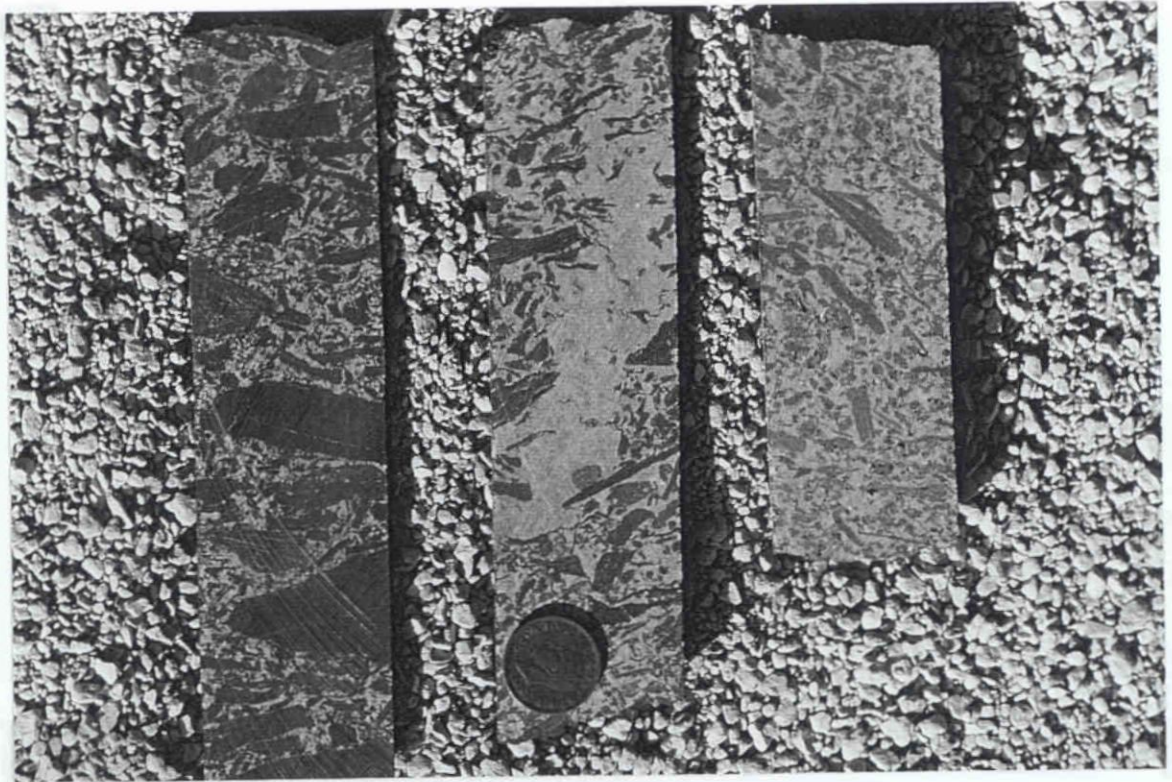

Kimberly M. Cunnison BSc., FGAC



Photograph 1. (71.2 - 71.35 m) Highly silicified and pyrrhotite altered pillow selvage in pillowed, amygdaloidal mafic volcanic. The black arrow points to a fine seam of fracture filling chalcopyrite at margin of pyrrhotite band.



Photograph 2. Two samples of medium grained gabbro. The upper sample (93.54 - 93.68 m) is gabbro uphole of the graphite breccia, near the uphole contact of the intrusion. The lower sample (111.00-111.15 m) is coarser grained gabbro occurring in the drillhole between the graphite breccia and the leucoxene bearing leucogabbro.

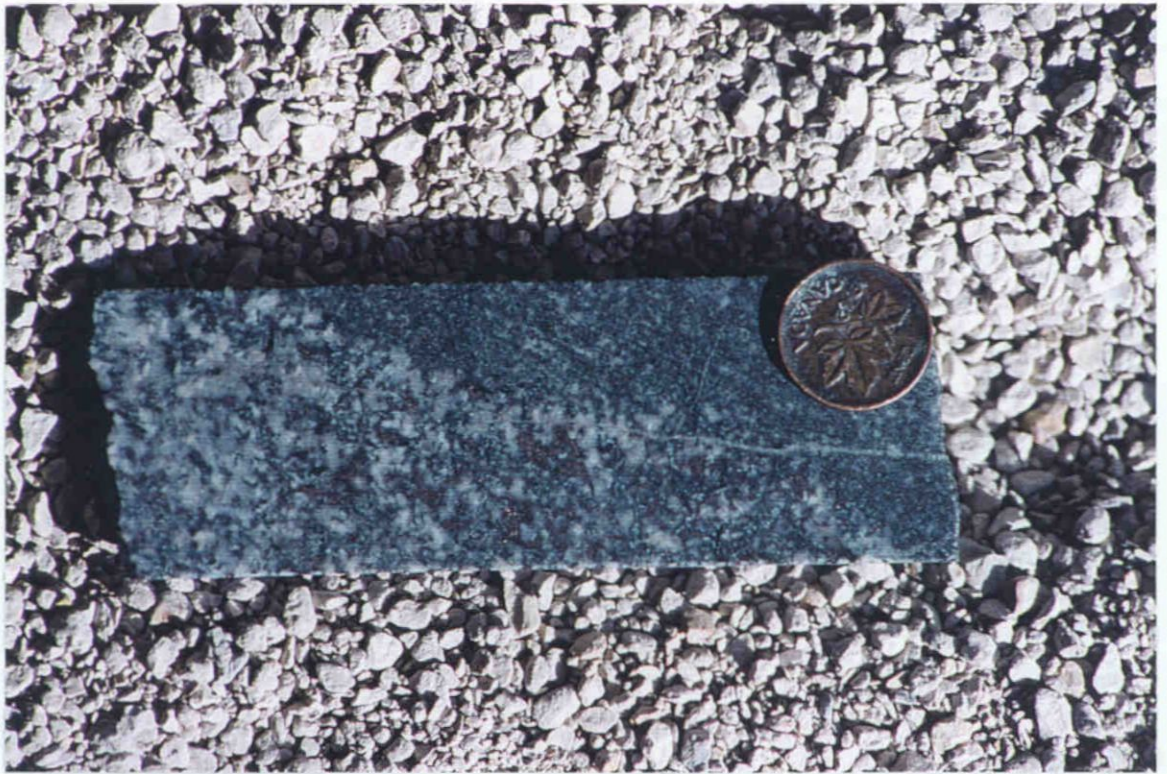


Photograph 3. Three samples of gabbro matrixed graphite schist breccia, sampled downhole from within five metres of the lower (downhole) contact at 110.2 metres.

The left hand sample (105.6 - 105.75 m) is more typical of the central portions of the breccia, containing 60-70% highly graphitic and pyrrhotite-bearing angular fragments which often show moderate to well developed imbrication.

The middle sample (109.7 - 109.85 m) contains a 1.5 cm wide irregular dyke of medium grained leucocratic gabbro which is very similar to the breccia matrix. The dyke contains many fine, angular inclusions of the graphitic clast material. 30-40% graphite-pyrrhotite fragments. The percentage of gabbro matrix increases towards both the uphole and downhole contacts of the breccia.

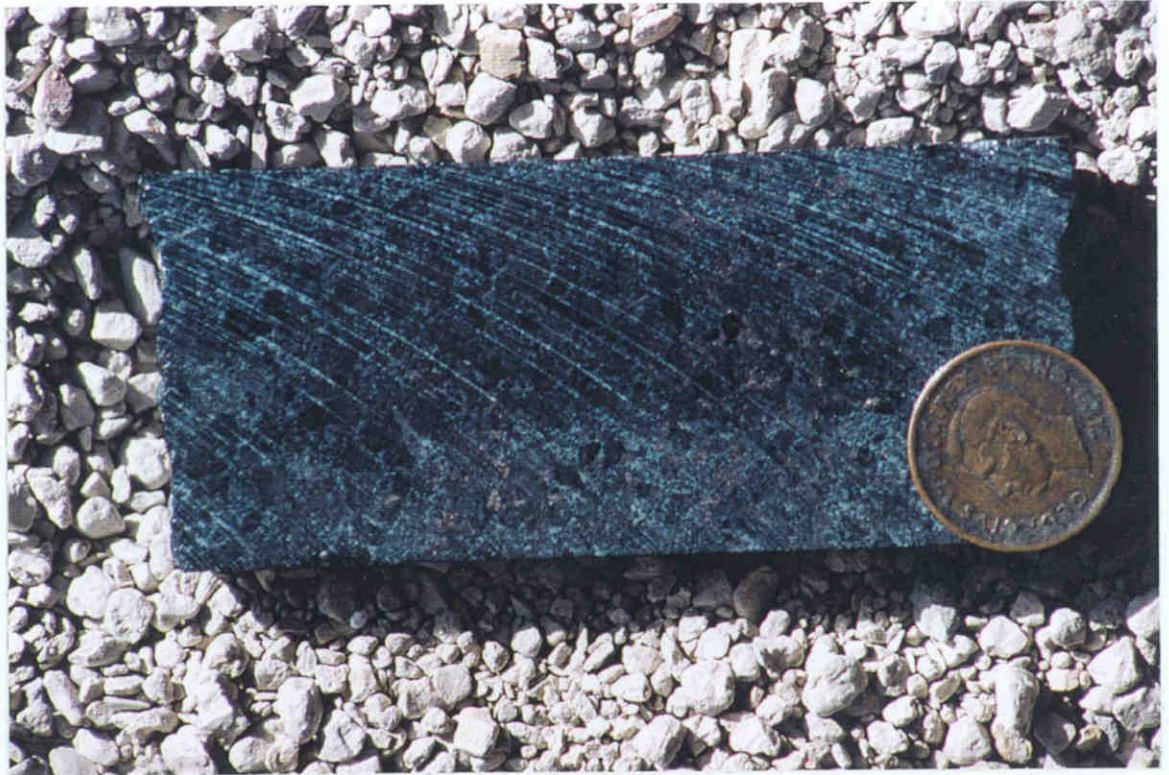
The right hand sample (110.0 - 110.1 m) of gabbro matrixed graphite breccia contains 35% fragments and was taken immediately uphole from the downhole breccia contact. Many of the fragments are delicate and elongate and are up to 2 cm in length. 85% of the elongate clasts are weakly to moderately imbricated, but 15% have a very random, non-systematic orientation. The sample contains 5-6% pyrrhotite, 5% coarser, disseminated and fracture filling pyrite which is often finely pitted, and traces of chalcopyrite and medium brown sphalerite (?)



Photograph 4. This sample (120.45 - 120.57 m) contains the sharp uphole contact between the leucoxene-bearing leucogabbro (downhole) and the "normal" medium grained gabbro (uphole). Although the contact is sharp, it is not chilled on either side, suggesting that the leucogabbro may have been intruded into the normal gabbro as a "crystal mush". Notice the very high percentage of sulphides (mostly pyrrhotite) within the leucogabbro.



Photograph 5. Sample (123.3 - 123.42 m) of the medium to coarse grained, leucoxene-bearing leucogabbro containing 12-15% interstitial, moderately magnetic pyrrhotite, minor pyrite and very minor traces of chalcopyrite.



Photograph 6. Medium grained, highly serpentinized olivine-bearing pyroxenite (134.28 - 134.37 m) containing 10-15% interstitial sulphides which display a moderately well developed net texture. The sulphides are pyrrhotite with 1-2% pyrite and fine traces of very minor chalcopyrite.



Photograph 7. Medium grained, highly serpentinized olivine-bearing pyroxenite (137.65 - 137.75 m) from the main sulphide horizon. The sample contains 15-20% interstitial fine grained pyrrhotite, minor pyrite and trace chalcopyrite.

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ASSAY SAMPLE DESCRIPTIONS

14951 (93.40 - 94.40 m)

Medium grained massive gabbro sill with trace to very locally 3% interstitial pyrite, averaging less than 1%. Trace pyrite and very minor traces of chalcopyrite in pyrrhotite.

14952 (94.4 - 95.4 m)

Medium to coarse grained gabbro. 2-3% interstitial granular pyrrhotite clots from 95.0 - 95.5 metres, with trace chalcopyrite.

14953 (95.40 - 96.40 m)

Gabbro matrixed graphite breccia; includes pitted quartz-calcite-epidote vein at uphole breccia unit contact. 2-3% pyrrhotite, 2% disseminated pyrite. Trace chalcopyrite associated with pyrrhotite.

14954 (96.4 - 97.4 m)

Gabbro matrixed graphite breccia. 2% pyrrhotite, 2-3% disseminated and fine fracture filling pyrite. Trace chalcopyrite associated with pyrrhotite.

14955 (97.4 - 98.4 m)

Gabbro matrixed graphite breccia. 3-5% pyrrhotite, 2-3% disseminated and fine fracture filling pyrite. Traces of chalcopyrite associated with pyrrhotite.

14956 (98.40 - 99.90 m)

Gabbro matrixed graphite breccia. 3-5% pyrrhotite, 1-4% disseminated and fine fracture filling pyrite, averaging 2.5%. Trace chalcopyrite associated with pyrrhotite.

14957 (99.90 - 101.00 m)

Gabbro matrixed graphite breccia, 4-5% pyrrhotite, 3% disseminated and fine fracture filling pyrite. Trace chalcopyrite within pyrrhotite.

14958 (101.0 - 101.4 m)

Gabbro matrixed graphite breccia. Interval includes a 0.25 metre wide vuggy white quartz-calcite-epidote vein (as described in the drill log). Trace to 0.5% disseminated pyrite, trace pyrrhotite in vein margins.

14959 (101.4 - 102.9 m)

Gabbro matrixed graphite breccia. 2-5% pyrrhotite, 1-2% disseminated pyrite (as previously described).

(cont...)

DDH NES-00-01 ASSAY SAMPLE DESCRIPTIONS (cont...)

All assay samples from 14960 to 14966 are of gabbro matrixed graphite schist breccia with variable percentages of pyrrhotite, 1-7% pyrite and traces of chalcopyrite and medium brown sphalerite. Refer to diamond drill log for detailed description of mineralized intervals.

14960 (102.9 - 103.9 m) - graphite schist breccia

14961 (103.9 - 104.9 m) - graphite schist breccia

14962 (104.9 - 105.9 m) - graphite schist breccia

14963 (105.9 - 107.2 m) - graphite schist breccia

14964 (107.2 - 108.2 m) - graphite schist breccia

14965 (108.2 - 109.2 m) - graphite schist breccia

14966 (109.2 - 110.2 m) - graphite schist breccia

14967 (110.2 - 111.12 m)

Medium grained gabbro; trace to very locally 4% fine disseminated intergranular pyrrhotite, averaging 1-1.5% with trace disseminated pyrite. 2-3% pyrite and 1-2% disseminated pyrrhotite in uphole 6 cm margin from 110.20 - 110.26 m

14968 (111.48 - 112.7)

Medium grained gabbro; trace to very locally 4% fine disseminated intergranular pyrrhotite, average 1-1.5%. Trace disseminated pyrite clots and discontinuous fine fractures.

14969 (112.7 - 113.7 m)

Fine to medium grained massive gabbro. Minor quartz-zoisite veining. 0.5 to locally 4% pyrrhotite as 0.2-2 mm disseminated clots and discontinuous fine fracture fillings and in zoisite veins.

14970 (113.7 - 114.7 m)

Same as 11969

14971 (118.4 - 119.4)

Medium grained massive gabbro. 4-5% pyrrhotite as diffuse, irregular intergranular clots from 1.5-5 mm in size.

14972 (119.4 - 120.37)

Medium grained massive gabbro. 0.5 - locally 3% irregular disseminated clots of intergranular pyrrhotite. Trace fine disseminated pyrite.

14973 (120.37 - 121.4)

Leucoxene-bearing leucocratic gabbro. 10-13% granular pyrrhotite, occurring as 2-10 mm irregular intergranular patches, aggregates interstitial to framework feldspars. Trace chalcopyrite in pyrrhotite at 120.8 m.

14974 (121.4 - 122.4)

Leucoxene-bearing leucocratic gabbro. 10-13% granular, interstitial pyrrhotite (as in 14973). Interval contains two, 4-5 cm wide quartz-zoisite-calcite veins (as described in drill log). 5-7% pyrrhotite as discontinuous seams within vein. Trace chalcopyrite in pyrrhotite at 121.5 m.

(cont...)

DDH NES-00-01 ASSAY SAMPLE DESCRIPTIONS (cont...)

14975 (122.4 - 123.4 m)

Same as 14973. 10% pyrrhotite, trace chalcopyrite at 123.6 m

14976 (123.4 - 124.4 m)

As described in 14973, but 7-10% pyrrhotite. Pyrrhotite content decreases gradually downhole in sample. Sample includes a 1.5 cm irregular grey quartz-zoisite-chlorite-calcite vein (124.0-124.5 m) subparallel to core axis. 4-5% coarse anhedral pyrrhotite clots and traces of pyrite in chloritized vein margins.

14977 (124.4 - 125.36 m)

Downhole 1.0 m of leucocratic gabbro (see diamond drill hole for description). 1-3% fine disseminated pyrrhotite. Several small flecks of chalcopyrite in margin of 3 mm pyrrhotite clot at 124.92 m.

14978 (125.36 - 126.4 m)

Fine grained, medium grey green pyroxenite. 1-3% fine grained, interstitial pyrrhotite and trace pyrrhotite.

All samples from **14979 to 14993** are of the medium grained, highly serpentized and sulphide-bearing olivine pyroxenite, with 1-10% subrounded to rounded olivine grains and from 3-locally 20% fine intergranular sulphides (pyrrhotite, 1-4% disseminated pyrite and traces of chalcopyrite and very locally traces of medium brown sphalerite).

14979 (126.4 - 127.6 m) - Olivine pyroxenite. 1-7% interstitial sulphides.

14980 (127.6 - 128.8 m) - Olivine pyroxenite. 1-5% interstitial sulphides.

14981 (128.8 - 130.0 m) - Olivine pyroxenite. 1-5% interstitial sulphides.

14982 (130.0 - 131.2 m) - Olivine pyroxenite. 1-7% interstitial sulphides.

14983 (131.2 - 132.4 m) - Olivine pyroxenite. 1-5% interstitial sulphides.

14984 (132.4 - 133.6 m) - Olivine pyroxenite. 4-7% interstitial sulphides.

Main Sulphide-Bearing Zone in the Olivine Pyroxenite from 134 - 144 metres

14985 (133.6 - 134.8 m) - Olivine pyroxenite. 5-8% interstitial sulphides.

14986 (134.8 - 136.0 m) - Olivine pyroxenite. 15-20% interstitial sulphides.

14987 (136.0 - 137.2 m) - Olivine pyroxenite. 20% interstitial sulphides.

14988 (137.2 - 138.4 m) - Olivine pyroxenite. 10-15% interstitial sulphides.

14989 (138.4 - 139.6 m) - Olivine pyroxenite. 12-16% interstitial sulphides.

(cont...)

DDH NES-00-01 ASSAY SAMPLE DESCRIPTIONS (cont...)

Main Sulphide-Bearing Zone in the Olivine Pyroxenite from 134 - 144 metres (cont...)

14990 (139.6 - 140.8 m) - Olivine pyroxenite. 10% interstitial sulphides.

14991 (140.8 - 142.0 m) - Olivine pyroxenite. 10-12% interstitial sulphides.

14992 (142.0 - 143.2 m) - Olivine pyroxenite. 7-10% interstitial sulphides.

14993 (143.2 - 144.4 m) - Olivine pyroxenite. 3-7% interstitial sulphides



Established 1928

Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 1 of 2

Geochemical Analysis Certificate

0W-0221-RG1

Company: **D. PYKE**

Date: JAN-26-00

Project:

Attn: **D. Pyke**

We hereby certify the following Geochemical Analysis of 43 Core samples submitted JAN-24-00 by .

Sample Number	Au PPB	Au Check PPB	Cu PPM	Ni PPM	Zn PPM	Pt PPB	Pd PPB
14951	-	-	28	54	-	-	-
14952	-	-	35	65	-	-	-
14953	Nil	-	266	303	429	-	-
14954	14	-	295	317	453	-	-
14955	48	34	378	426	481	-	-
14956	7	-	347	394	529	-	-
14957	10	-	535	449	624	-	-
14958	3	-	115	157	181	-	-
14959	3	-	339	401	697	-	-
14960	14	-	423	482	727	-	-
14961	21	27	359	470	644	-	-
14962	14	-	337	441	647	-	-
14963	7	-	350	412	636	-	-
14964	24	-	368	596	576	-	-
14965	Nil	-	449	606	534	<5	<5
14966	51	48	306	446	700	-	-
14967	-	-	30	73	-	-	-
14968	-	-	25	33	-	-	-
14969	-	-	30	64	-	-	-
14970	-	-	35	80	-	-	-
14971	3	-	26	48	-	<5	<5
14972	-	-	8	37	-	-	-
14973	5	-	34	11	56	<5	<5
14974	Nil	-	59	10	96	<5	<5
14975	Nil	-	95	12	43	<5	<5
14976	Nil	-	53	11	54	<5	<5
14977	Nil	-	36	133	80	<5	<5
14978	-	-	92	394	-	-	-
14979	-	-	178	543	-	-	-
14980	-	-	213	761	-	-	-

One assay ton portion used.

Certified by



Established 1928

Swastika Laboratories Ltd

Assaying - Consulting - Representation

Page 2 of 2

Geochemical Analysis Certificate

0W-0221-RG1

Company: **D. PYKE**

Date: JAN-26-00

Project:

Attn: **D. Pyke**

We hereby certify the following Geochemical Analysis of 43 Core samples submitted JAN-24-00 by .

Sample Number	Au PPB	Au Check PPB	Cu PPM	Ni PPM	Zn PPM	Pt PPB	Pd PPB
14981	-	-	170	749	-	-	-
14982	-	-	157	722	-	-	-
14983	-	-	247	803	-	-	-
14984	-	-	135	724	-	-	-
14985	-	-	166	771	-	-	-
14986	-	-	230	751	-	-	-
14987	5	-	395	1030	-	<5	<5
14988	-	-	451	1040	-	-	-
14989	-	-	343	1090	-	-	-
14990	-	-	493	1210	-	-	-
14991	-	-	391	1080	-	-	-
14992	-	-	220	974	-	-	-
14993	-	-	142	762	-	-	-

One assay ton portion used.

Certified by 

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
 Telephone (705) 642-3244 Fax (705) 642-3300



Declaration of Assessment Work Performed on Mining Land

Mininn Act. Subsection 66(2) and 66(3), R.S.O. 1990

Transaction Number (office use)

40060-00074
Assessment Files Research Imaging



42A14NW2002 2.20104 NESBITT

900

subsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, U
sment work and correspond with the mining land holder. Questions about this collecti
opment and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Instructions: - For work performed on Crown Lands before recording a claim, use form 40.
- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

Name	DALE R. PYKE	Client Number	184975
Address	31 DELAIR CRES THORNHILL ONTARIO L3T2M3	Telephone Number	905-731-1913
		Fax Number	905-731-1913
Name		Client Number	
Address		Telephone Number	
		Fax Number	

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OFFICE

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

Geotechnical: prospecting, surveys, assays and work under section 18 (regs) Physical: drilling stripping, trenching and associated assays Rehabilitation

Work Type	DIAMOND DRILLING	Office Use	
		Commodity	
		Total \$ Value of Work Claimed	15,635
Dates Work Performed	From Day 12 Month 01 Year 2000 To Day 31 Month 01 Year 2000	NTS Reference	
Global Positioning System Data (if available)	Township/Area NESBITT	Mining Division	Porcupine
	M or G-Plan Number G-3546	Resident Geologist District	Thurman

Please remember to: - obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name	KIMBERLY M. CUNNISON	Telephone Number	519-657-1386
Address #	707-540 Proudfoot Lane London Ont	Fax Number	
Name	N6H 1W4	Telephone Number	
Address		Fax Number	
Name		Telephone Number	
Address		Fax Number	

4. Certification by Recorded Holder or Agent

I, DALE R. PYKE, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent	D R Pyke	Date	Feb 18/200
Agent's Address	31 DELAIR CRES THORNHILL ONT L3T2M3	Telephone Number	905-731-1913
		Fax Number	905-731-1913

961

5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

W00600074

Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	Number of Claim Units. For other mining land, list hectares.	Value of work performed on this claim or other mining land.	Value of work applied to this claim.	Value of work assigned to other mining claims.	Bank. Value of work to be distributed at a future date
eg TB 7827	16 ha	\$26,825	N/A	\$24,000	\$2,825
eg 1234567	12	0	\$24,000	0	0
eg 1234568	2	\$ 8,892	\$ 4,000	0	\$4,892
1 P1207057	4	*15635	*8000	*4800	*2835
2 P1207058	4	0	4800	0	0
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Column Totals	8	*15635	*12800	*4800	*2835

I, DALE R. PYKE (Print Full Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing: D.R. Pyke Date: FEB 18/2000

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

- 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- 2. Credits are to be cut back starting with the claims listed last, working backwards; or
- 3. Credits are to be cut back equally over all claims listed in this declaration; or
- 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

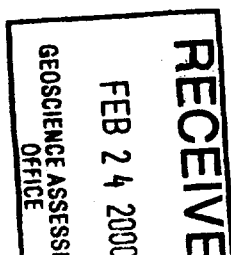
Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp

Deemed Approved Date	Date Notification Sent
Date Approved	Total Value of Credit Approved
Approved for Recording by Mining Recorder (Signature)	

0241 (03/97)



2.20104

Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

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Work Type	Units of Work <small>Depending on the type of work, list the number of hours/days worked, metres of drilling, kilo-metres of grid line, number of samples, etc.</small>	Cost of Work	Total Cost
<i>DIAMOND Drilling</i>	<i>176 metres</i>		<i>*9,982.82</i>
<i>Drill Supervision</i>	<i>4 DAYS - 1 person</i>	<i>200/day</i>	<i>800.00</i>
<i>Logging & sampling</i>	<i>5 days - 1 person</i>	<i>300/day</i>	<i>1500.00</i>
<i>Report preparation</i>	<i>3.5 DAYS - 1 person</i>	<i>300/day</i>	<i>1050.00</i>
Associated Costs (e.g. supplies, mobilization and demobilization).			
<i>Mobilization & demobilization</i>		<i>*500 each</i>	<i>*1000.00</i>
<i>ASSAYS (43)</i>		<i>*15.44</i>	<i>663.95</i>
<i>Reproductions</i>		<i>*0.99</i>	<i>34.57</i>
<i>Reproductions</i>		<i>0.09</i>	<i>22.05</i>
<i>Film development</i>		<i>0.86</i>	<i>20.69</i>
Transportation Costs			
<i>TRUCK - 488 Km</i>		<i>*0.30/Km</i>	<i>146.00</i>
<i>AIRFARE - return - London → Timmins</i>			<i>317.46</i>
Food and Lodging Costs			
<i>Meals 5 days - 1 person</i>			<i>97.44</i>
Total Value of Assessment Work			*15,634.98

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK × 0.50 = Total \$ value of worked claimed.

Note:

- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, DALE R. PYKE, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Recorded Holder I am authorized to make this certification.

Signature: D.R. Pyke Date: Feb 18/2000

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9845
Fax: (877) 670-1555

March 21, 2000

DALE RANDOLPH PYKE
31 DELAIR CRESCENT
THORNHILL, ON
L3T-2M3

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

Dear Sir or Madam:

Submission Number: 2.20104

Status

Subject: Transaction Number(s): W0060.00074 Approval

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. **WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.**

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in **DUPLICATE** to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact **STEVE BENETEAU** by e-mail at steve.beneteau@ndm.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,



ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Work Report Assessment Results

Submission Number: 2.20104

Date Correspondence Sent: March 21, 2000

Assessor: STEVE BENETEAU

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W0060.00074	1207057	NESBITT	Approval	March 20, 2000

Section:
16 Drilling PDRILL

Correspondence to:
Resident Geologist
South Porcupine, ON

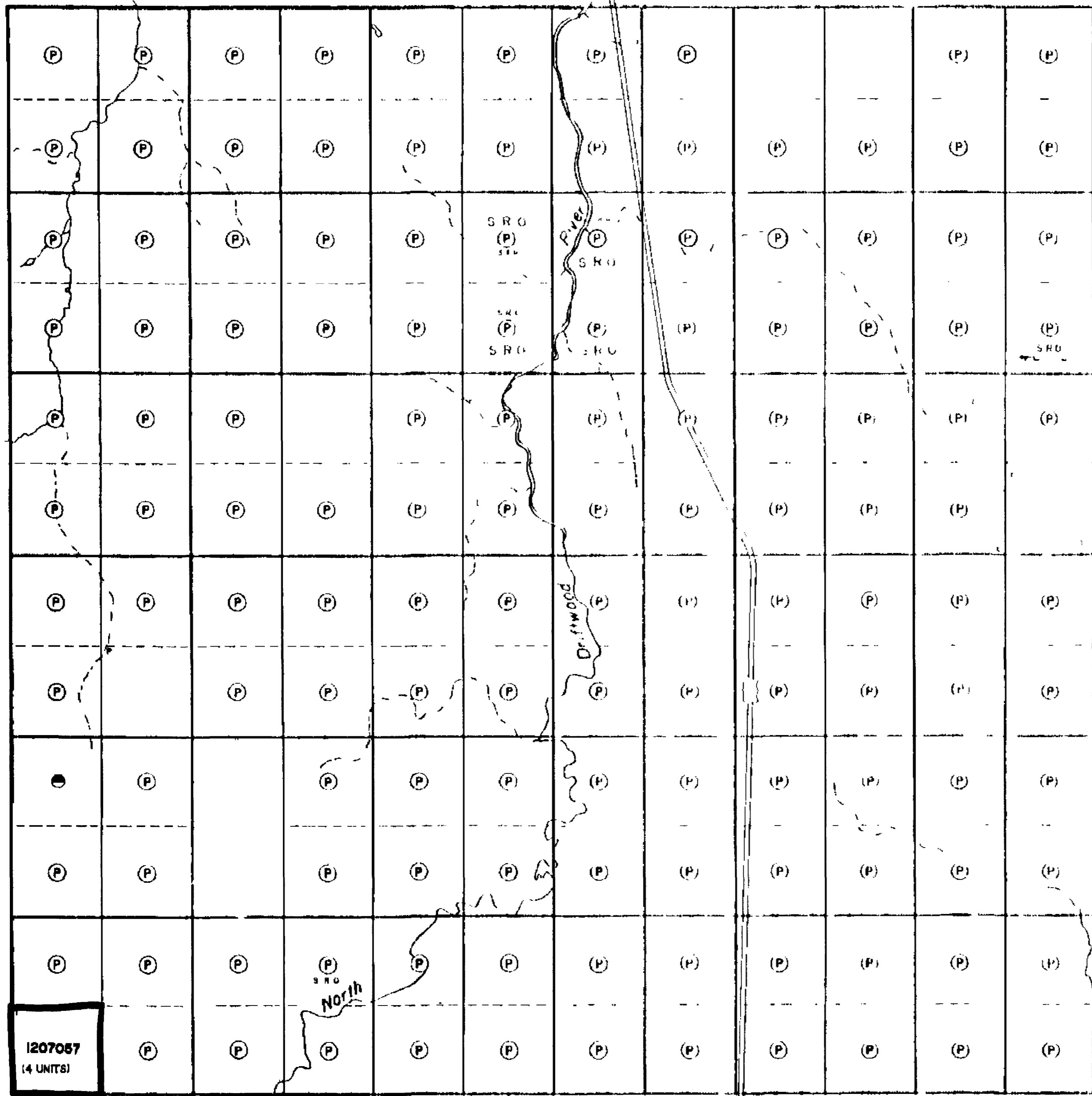
Recorded Holder(s) and/or Agent(s):
DALE RANDOLPH PYKE
THORNHILL, ON

Assessment Files Library
Sudbury, ON

Lennox Twp

Aubin Twp

Beck Twp



VI

V

IV

III

II

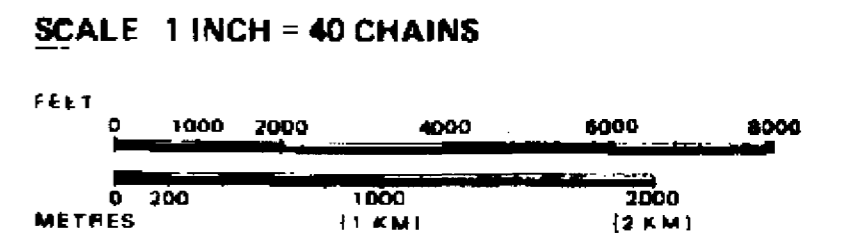
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LEGEND

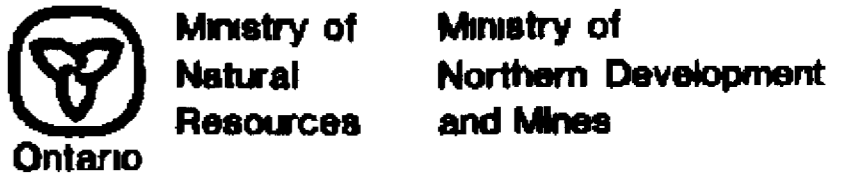
- HIGHWAY AND ROUTE No
- OTHER ROADS
- TRAILS
- SURVEYED LINES
 - TOWNSHIPS BASE LINES ETC
 - LOTS MINING CLAIMS PARCELS ETC
- UNSURVEYED LINES
 - LDT LINES
 - PARCEL BOUNDARY
 - MINING CLAIMS ETC
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT SURFACE & MINING RIGHTS	Ⓟ or ●
SURFACE RIGHTS ONLY	SRG or ●
MINING RIGHTS ONLY	○
LEASE SURFACE & MINING RIGHTS	■
SURFACE RIGHTS ONLY	□
MINING RIGHTS ONLY	▣
LICENCE OF OCCUPATION	▼
ORDER IN COUNCIL	OC
RESERVATION	⊙
CANCELLED	⊖
SAND & GRAVEL	⊙



TOWNSHIP
NESBITT
 M N R ADMINISTRATIVE DISTRICT
 COCHRANE
 MINING DIVISION
 PORCUPINE
 LAND TITLES / REGISTRY DIVISION
 COCHRANE



12 2. 20104
 Mahaffy Twp
 DRILL

Crawford Twp



Date: _____ Number: **G-3546**
 ACTIVATED AUGUST 18 1992 BY DC